CITY OF BEAVERTON COUNCIL AGENDA

FINAL AGENDA

FORREST C. SOTH CITY COUNCIL CHAMBER
4755 SW GRIFFITH DRIVE
BEAVERTON, OR 97005

REGULAR MEETING
APRIL 4, 2005
6:30 P.M.

CALL TO ORDER:

ROLL CALL:

PROCLAMATIONS:

Paralyzed Veterans of America Week: April 10 - 16, 2005

VISITOR COMMENT PERIOD:

COUNCIL ITEMS:

STAFF ITEMS:

CONSENT AGENDA:

Minutes of the Regular Meeting of March 28, 2005

05062 Liquor License Application: Change of Ownership - Bugatti's; New Outlet - Restaurant Max

05063 Traffic Commission Issue No. TC 573

05064 Authorize Mayor to Sign Third Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study (aka Tualatin Basin Water Supply Project)

WORK SESSION:

05065 Update of Tualatin River Basin Water Supply Project

PUBLIC HEARINGS:

05066 APP 2005-0002 Appeal of Garden Grove PUD; Conditional Use Approval (CU 2004-0021)

ORDINANCES:

Second Reading:

05059 An Ordinance Relating to the Fire Code, Repealing Beaverton Code Sections 8.01.010, 8.01.033, 8.01.038, 8.01.043, and 8.01.900. (Ordinance No. 4345)

05060 An Ordinance Amending Beaverton Code Section 6.02.215 to Allow Use of Muffled Exhaust Braking on Emergency Vehicles (Ordinance No. 4346)

EXECUTIVE SESSION:

In accordance with ORS 192.660 (2) (h) to discuss the legal rights and duties of the governing body with regard to litigation or litigation likely to be filed and in accordance with ORS 192.660 (2) (e) to deliberate with persons designated by the governing body to negotiate real property transactions and in accordance with ORS 192.660 (2) (d) to conduct deliberations with the persons designated by the governing body to carry on labor negotiations. Pursuant to ORS 192.660 (3), it is Council's wish that the items discussed not be disclosed by media representatives or others.

ADJOURNMENT

This information is available in large print or audio tape upon request. In addition, assistive listening devices, sign language interpreters, or qualified bilingual interpreters will be made available at any public meeting or program with 72 hours advance notice. To request these services, please call 503-526-2222/voice TDD.

PROCLAMATION

OFFICE OF THE MAYOR
CITY OF BEAVERTON

WHEREAS, Paralyzed Veterans of America (PVA) was founded more than 58 years ago by and for veterans of the armed forces with spinal cord injury or disease; and

WHEREAS, PVA is a dynamic, broad-based organization with more than 40 chapters and subchapters, 59 national service offices and more than 21,000 members in the United States and Puerto Rico; and

WHEREAS, The Oregon Chapter was founded in 1976; and

WHEREAS, Beginning in 1984, Paralyzed Veterans of America designated the week containing the date of our founding (April 14th) to honor America's paralyzed veterans; and

WHEREAS, It is important that we recognize the sacrifices made by our community's veterans who are paralyzed; and

NOW, THEREFORE, *I*, Rob Drake, Mayor of the City of Beaverton, Oregon, do hereby proclaim the week of April 10 - 16, 2005 as:

PARALYZED VETERANS OF AMERICA WEEK

in the City of Beaverton and encourage the citizens of Beaverton to reflect upon the sacrifices endured by our community's veterans who are paralyzed.

Rob Drake
Mayor

DRAFT

BEAVERTON CITY COUNCIL
REGULAR MEETING
MARCH 28, 2005

CALL TO ORDER:

The Regular Meeting of the Beaverton City Council was called to order by Mayor Rob Drake in the Forrest C. Soth City Council Chamber, 4755 SW Griffith Drive, Beaverton, Oregon, on Monday, March 28, 2005, at 6:35 p.m.

ROLL CALL:

Present were Mayor Drake, Couns. Catherine Arnold, Betty Bode, Dennis Doyle, Fred Ruby and Cathy Stanton. Also present were City Attorney Alan Rappleyea, Chief of Staff Linda Adlard, Finance Director Patrick O'Claire, Community Development Director Joe Grillo, Engineering Director Tom Ramisch, Operations/Maintenance Director Gary Brentano, Library Director Ed House, Human Resources Director Nancy Bates, Police Chief David Bishop and City Recorder Sue Nelson.

PROCLAMATIONS:

Mayor Drake proclaimed March 27 - April 2, 2005 as Community Development Week: March 27 - April 2, 2005

PRESENTATIONS:

05052 Presentation of Life Saving Commendation Plaque to Beaverton Police Department Sergeant and Officers

Mayor Drake introduced Tualatin Valley Fire & Rescue (TVF&R) Assistant Chief Kirk Hale.

Hale said TVF&R was acknowledging three Beaverton Police Officers for their quick response in an emergency situation. He explained how Sergeant Darren Fletchall and Officers Mandi Nicholson and Jeremy Shaw saved the life of an 83-year-old female administering CPR when they found her unconscious in her home. He said their training and quick action saved her life.

Mayor Drake, Police Chief Bishop, and Hale presented plaques of commendation to Sergeant Fletchall and Officers Nicholson and Shaw.

05051 Presentation of Shields and Swearing In of Three Officers to the Beaverton Police Department

Mayor Drake welcomed the new Police Officers to the City of Beaverton.

Police Chief Bishop swore in the new officers Robert Wolfe, Kevin Killian and Caroline Bunte.

Mayor Drake presented the shields to the officers.

VISITOR COMMENT PERIOD:

Henry Kane, Beaverton, said he praised the Community Development Department and the principal planner on the Wal-Mart application. He said he reviewed the pre-application documents that listed the requirements for development, which would be required by the Board of Design Review or the Planning Commission. He said he looked forward to the County and ODOT advising the applicant they could not encroach on County and State roads for private purposes. He said he would submit additional development requirements to the Planning staff. He said on Friday he filed six separate notices of intent to appeal the various annexations from February 28, 2005.

Mayor Drake thanked Kane for his comments. He said he was informed that Wal Mart was close to submitting an application for the design review process. He said once that happened, it would be an ex parte contact if Kane used the Visitors Comment Period, prior to the public hearing, to address this issue before the Council.

COUN. RUBY ARRIVED AT 6:45 P.M.

COUNCIL ITEMS:

Coun. Stanton asked if any Councilors would be attending the "Get Centered" event in Gresham on Thursday, March 31, 2005.

Coun. Arnold said she would be going.

Coun. Stanton said on Thursday, April 7, 2005, at the Library, Nancy Ponzi, Ponzi Vineyards, would be discussing the wine industry's influence on Beaverton's history and how it's helping to shape the future.

STAFF ITEMS:

There were none.

CONSENT AGENDA:

Coun. Bode MOVED, SECONDED by Coun. Doyle, that the Consent Agenda be approved as follows:

Minutes of Joint Meeting of March 1 and Regular Meeting of March 7, 2005

05053 Liquor License Application: Greater Privilege - Kingstad Center; Change of Ownership - Walker Road Chevron; New Outlet - Santa Fe Mexican Restaurant

05054 Adopt Resolution Amending the Building Division Administrative Rules

(Resolution No. 3811)

05055 Authorize Mayor to Sign IGA with Washington County for Mosquito Abatement

Contract Review Board:

05056 Award of Bid for Erickson Storm Drain and Sanitary Sewer Improvement, CIP (Capital Improvement Project) Project No. 8001D and Lombard Storm Drain Improvements

05057 Bid Award - Cedar Hills Boulevard Phase 3 Overlay Project

Couns. Bode, Ruby and Stanton said they were not at the Joint Meeting March 1, 2005; they would abstain from voting on those minutes.

Coun. Doyle said he had a word change on the Minutes for March 7, 2005 which he gave to the City Recorder.

Question called on the motion. Couns. Arnold, Bode, Doyle, Ruby and Stanton voting AYE, the MOTION CARRIED unanimously. (5:0) Couns. Bode, Ruby and Stanton abstained from voting on the Council Minutes of March 1, 2005.

ORDINANCES:

First Reading:

Coun. Doyle MOVED, SECONDED by Coun. Ruby, that the rules be suspended, and that the ordinances embodied in Agenda Bills 05059 and 05060, be read for the first time by title only at this meeting, and for the second time by title only at the next regular meeting of the Council. Couns. Arnold, Bode, Doyle, Ruby and Stanton voting AYE, the MOTION CARRIED unanimously. (5:0)

City Attorney Alan Rappleyea read the following ordinances for the first time by title only:

05059 An Ordinance Relating to the Fire Code, Repealing Beaverton Code Sections 8.01.010, 8.01.033, 8.01.038, 8.01.043, and 8.01.900. (Ordinance No. 4345)

05060 An Ordinance Amending Beaverton Code Section 6.02.215 to Allow Use of Muffled Exhaust Braking on Emergency Vehicles (Ordinance No. 4346)

Second Reading:

Rappleyea said as part of the second reading, Ordinance No. 4342 (Agenda Bill 05049) was being amended to include a legal description for Parcel 14, whose address was 16340 SW Nora Road. He said the legal description was inadvertently left out of the ordinance at first reading. He said Parcel 14 was included in the authorization Resolution No. 3802, in all the public notices, in the staff report and in all the exhibits to the staff report, except the legal description. He asked that Council adopt a motion to include this legal description in the ordinance.

Coun. Doyle MOVED, SECONDED by Coun. Ruby that Council amend the ordinance embodied in Agenda Bill 05049 to add the legal description of Parcel 14 as described by the City Attorney. Couns. Arnold, Bode, Doyle, Ruby and Stanton voting AYE, the MOTION CARRIED unanimously. (5:0)

Rappleyea read the following ordinances for the second time by title only:

05049 An Ordinance Annexing Several Parcels Located Generally in the Southern Portion of Beaverton to the City of Beaverton: ANX 2005-0001 (Ordinance No. 4342)

Rappleyea read the entire legal description to Parcel 14 which was added to Ordinance No. 4342. He asked that the Supplemental Staff Report be included in the ordinance as part of the findings for this annexation.

05050 TA 2004-0010 Utility Undergrounding Section 60.65 Amendment (Ordinance No. 4343)

Coun. Stanton MOVED, SECONDED by Coun. Doyle, that the ordinances embodied in Agenda Bills 05049 and 05050, now pass, including the amendment to Ordinance No. 4342 (Agenda Bill 05049) and adding the Supplemental Staff Report (dated March 22, 2005) to Ordinance No. 4342 (Agenda Bill 05049). Roll call vote. Couns. Arnold, Bode, Doyle, Ruby and Stanton voting AYE, the MOTION CARRIED unanimously. (5:0)

First and Second Reading and Adoption:

Coun. Doyle MOVED, SECONDED by Coun. Stanton, that the rules be suspended, and that the ordinances embodied in Agenda Bills 05058 and 05061, be read in full for the first time at this meeting, and for the second time by title only at this same meeting of the Council. Couns. Arnold, Bode, Doyle, Ruby and Stanton voting AYE, the MOTION CARRIED unanimously. (5:0)

Rappleyea read the following ordinance for the first time in full and for the second time by title only at this same meeting.

05058 An Ordinance Relating to the Building Code, Amending Beaverton Code Sections 8.02.015(E), 8.02.030, 8.02.040, 8.05.020; Repealing a Portion of Beaverton Code Sections 8.02.015(A) and (B); Repealing Beaverton Code Sections 8.02.025 and 8.02.110; and Declaring an Emergency (Ordinance No. 4344)

05061 An Ordinance Amending Ordinance 4339 (ANX 2004-0017) to Correct an Error in the Legal Description, and Declaring an Emergency (Ordinance No. 4347)

Coun. Doyle MOVED, SECONDED by Coun. Ruby, that the ordinances embodied in Agenda Bills 05058 and 05061, now pass. Roll call vote. Couns. Arnold, Bode, Doyle, Ruby and Stanton voting AYE, the MOTION CARRIED unanimously. (5:0)

OTHER BUSINESS

Request for Waiver of Appeal Fee: Garden Grove PUD

Mayor Drake said he distributed to the Council a memorandum regarding a request from Susan Greer for a fee waiver concerning an appeal of the Planning Commission's approval of the Garden Grove PUD. He asked that Council deny the request for the fee waiver appeal.

Coun. Stanton said she was an advocate for allowing the Neighborhood Association Committees one free appeal per year, because she felt they were in a unique position as a quasi-arm of the City and neighborhoods. She said she believed if someone chose to appeal the action of any public body to the next level, the fees would be needed to cover the internal costs of the appeal.

Coun. Stanton MOVED, SECONDED by Coun. Bode, that Council deny the request for an appeal fee waiver in the amount of $638.00 as presented on March 18, 2005, by Susan Greer. Couns. Arnold, Bode, Doyle, Ruby and Stanton voting AYE, the MOTION CARRIED unanimously. (5:0)

Coun. Doyle referred to the proclamation for Community Development Week announced earlier in the meeting. He stressed the importance of the Community Development Block Grant (CDBG) Program, which provides funding for many cities throughout the country for the construction of needed infrastructure and facilities. He said the proposed Federal Budget would remove funding for the CDBG Program. He said thanks to the efforts of the National League of Oregon Cities, both senators from Oregon and all five representatives signed a letter insisting the CDBG Program not be diminished. He said at this time, this Program has been restored which was a significant victory as the funding from this Program was significant. He thanked everyone who assisted in restoring this program.

ADJOURNMENT

There being no further business to come before the Council at this time, the meeting was adjourned at 7:15 p.m.

_____
Sue Nelson, City Recorder

APPROVAL:

Approved this day of , 2005.

_____
Rob Drake, Mayor

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: **LIQUOR LICENSE APPLICATION:**

CHANGE OF OWNERSHIP
Bugatti's
2905 SW Cedar Hills Blvd

NEW OUTLET
Restaurant Max
16755 SW Baseline, Suite 100

FOR AGENDA OF: 04/04/05 **BILL NO:** 05062

MAYOR'S APPROVAL:

DEPARTMENT OF ORIGIN: Police

DATE SUBMITTED: 03/22/05

PROCEEDING: Consent Agenda

EXHIBITS: None

BUDGET IMPACT

EXPENDITURE REQUIRED$ 0	AMOUNT BUDGETED$ 0	APPROPRIATION REQUIRED $ 0

HISTORICAL PERSPECTIVE:

Background investigations have been completed, and the Chief of Police has found that the applicants meet the standards and criteria as set forth in B.C. 5.02.240. The City has published in a newspaper of general circulation a notice specifying the liquor license applications.

INFORMATION FOR CONSIDERATION:

The Beach Shack, licensed by the OLCC to The Holland, Inc., is undergoing a change of ownership. The new owner, Bugatti's, Inc., has made application for a Full On -Premises Sales License under the trade name of Bugatti's. The establishment will serve Italian food. It will operate seven days a week, Sunday through Thursday, from 11:00 a.m. to 9:30 p.m., and Friday through Saturday, from 11:00 a.m. to 11:00 p.m. No entertainment will be offered. A Full On-Premises Sales License allows the sale of distilled spirits, malt beverages, wine and cider for consumption at the licensed business.

M&M Dream, LLC, is opening a new establishment and has made application for a Full On-Premises Sales License under the trade name of Restaurant Max. The establishment will serve Italian food. It will operate seven days a week, serving lunch from 11:00 a.m. to 2:00 p.m., and dinner from 5:00 p.m. to 10:00 p.m. No entertainment will be offered. A Full On-Premises Sales License allows the sale of distilled spirits, malt beverages, wine, and cider for consumption at the licensed business.

RECOMMENDED ACTION:

The Chief of Police for the City of Beaverton recommends City Council approval of the OLCC license applications.

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: Traffic Commission Issue No. TC 573

FOR AGENDA OF: 4-4-05 **BILL NO:** 05063

Mayor's Approval:

DEPARTMENT OF ORIGIN: Engineering

DATE SUBMITTED: 3-22-05

CLEARANCES: Transportation
City Attorney

PROCEEDING: Consent

EXHIBITS:
1. Vicinity Map
2. City Traffic Engineer's report on Issue TC 573
3. Final Written Order on TC 573
4. Written comments received at the Traffic Commission meeting
5. Draft minutes of the meeting of March 3, 2005 (excerpt)

BUDGET IMPACT

EXPENDITURE REQUIRED $0	AMOUNT BUDGETED $0	APPROPRIATION REQUIRED $0

HISTORICAL PERSPECTIVE:

On March 3, 2005, the Traffic Commission considered the following issue:

- TC 573, Center Turn Lane on SW Greenway

The staff report for Issue TC 573 is attached as Exhibit 2.

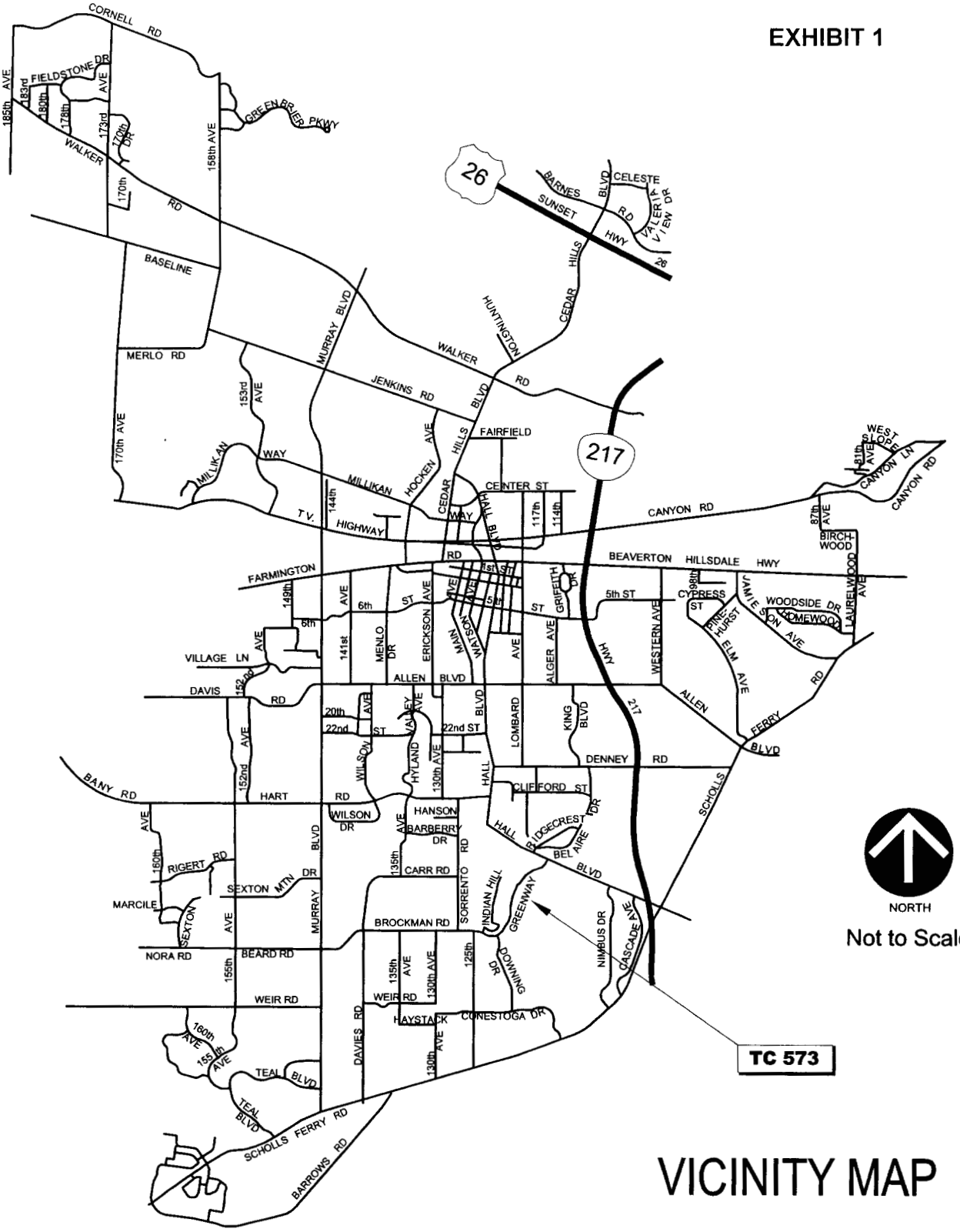
INFORMATION FOR CONSIDERATION:

A hearing was held on Issue TC 573. No one requested to testify. The Commission approved the staff recommendation on TC 573 by a unanimous vote of 7:0.

RECOMMENDED ACTION:

Approve the Traffic Commission recommendation on Issue TC 573.

EXHIBIT 1



VICINITY MAP

Y:\ Traffic \ Drawings \ TC VICINITY MAP

City Of Beaverton

VICINITY MAP for March, 2005
TC ISSUES: 573

ENGINEERING DEPARTMENT
TRANSPORTATION DIVISION

Drawn By:	JR	Date:	2/09/05
Reviewed By:		Date:	
Approved By:		Date:	

EXHIBIT 2

CITY TRAFFIC ENGINEER'S REPORT
ISSUE NO. TC 573

(Center Turn Lane on SW Greenway)

February 10, 2005

Background Information

The proposal is to modify pavement markings on Greenway so that a center turn lane will exist on all portions of Greenway from Hall Boulevard to 125th Avenue.

In January 2005, the City Council received an e-mail message from Nathan Shumaker (copy attached) requesting that the City consider either a traffic signal or a center turn lane on Greenway to facilitate access from Windmill Drive (a private street) during peak traffic hours. The intersections of Windmill Drive and the other side streets along Greenway do not meet warrants for installation of a traffic signal as required by the MUTCD (Manual on Uniform Traffic Control Devices). Staff reviewed the alternative suggestion and determined that marking of a center turn lane on Greenway is feasible.

Currently, a center turn lane is marked on Greenway near Hall Boulevard and from approximately Downing Drive to 125th Avenue. The remainder of Greenway is currently marked as a two-lane street.

Greenway carries approximately 17,000 vehicles per day. The posted speed limit is 35 mph.

Staff reviewed data on collisions that were reported along Greenway between Downing Drive and the driveway to Albertsons near Hall Boulevard (the portion of Greenway currently marked as a two-lane street). Data was reviewed for 2001 through 2003, the most recent three years for which complete data is available. Nine collisions were reported in 2001, six in 2002 and one in 2003. During 2003, construction at the Greenway/125th intersection and at the Greenway/Hall intersection reduced traffic on Greenway. Of the 16 collisions reported, nine involved rear-end collisions and three involved left-turning vehicles. Although the data is not clear, it is likely that some of the rear-end collisions involved vehicles slowing or waiting to make left turns.

Greenway is 40 feet wide from curb to curb. This width allows for a 12-foot center turn lane and a 14-foot through lane in each direction. The width is not adequate for marked bike lanes; however, national standards consider a 14-foot lane adequate as a shared lane for cars and bikes.

Marking of a center turn lane will provide a refuge for vehicles waiting to turn left into the side streets. It will also allow left turns out of the side streets to be made in two steps – first turning into the center lane, then waiting for an adequate gap to merge into traffic. Striping of the center turn lane will visually narrow the street, which may reduce vehicle speeds on Greenway.

The distance between Murphy Lane and Davies Road is rather short and could potentially lead to conflicts between left-turning vehicles at the two intersections. However, both Murphy and Davies have relatively low traffic volumes. The distance between the intersections is adequate to accommodate four vehicles waiting to turn left (or two vehicles in each direction). Due to the

relatively low traffic volumes at the intersections, the storage should be adequate. Based on experience with similar situations on other streets, staff concludes that the short spacing, while not ideal, will operate safely for the conditions at this particular intersection.

Applicable Criteria

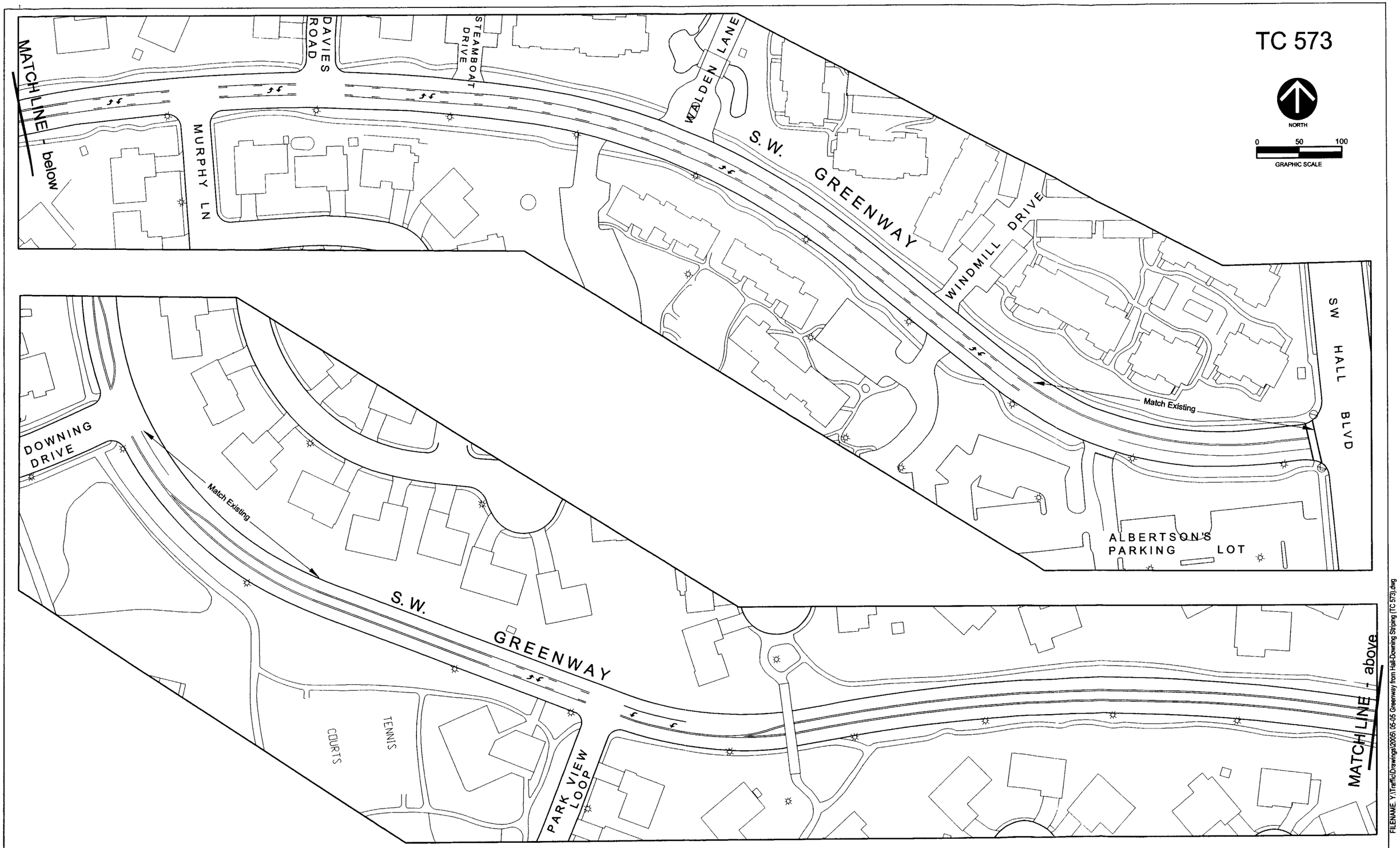
- 1a (provide for safe vehicle, bicycle and pedestrian movements);
- 1b (help ensure orderly and predictable movement of vehicles, bicycles and pedestrians);
- 1g (carry anticipated traffic volumes safely).

Conclusions:

- The proposed turn lane will improve safety for turning vehicles by providing a marked refuge. Through traffic lanes will comply with the standards for shared lanes for bicycles. Therefore, Criteria 1a and 1g are satisfied.
- The proposed turn lane will provide more orderly and predictable turn movements by separating left-turning traffic from through traffic. Therefore, Criterion 1b is satisfied.

Recommendation:

Mark a center turn lane along the entire length of SW Greenway as shown conceptually on the attached drawing.



FILENAME: Y:\Traffic\Drawings\2005\ 05-05 Greenway from Hall-Downing Striping (TC 573).dwg

CITY OF BEAVERTON
ENGINEERING DEPARTMENT
TRANSPORTATION DIVISION

DESIGNED BY:	JK
DRAWN BY:	JR
CHECKED BY:	JK
APPROVED BY:	RW

NO	DATE	REVISION	BY

Center Turn Lane on SW Greenway

PLAN

DATE: 2/09/05

PROJECT NO: 4

SHEET NO: 1 OF 1

Randy Wooley TC 573, 1 of 2

From: Randy Wooley
Sent: Friday, January 21, 2005 1:35 PM
To: Sue Nelson
Subject: RE: Comments for City Council

Sue, Here is a response to Mr. Shumaker's earlier e-mail. Please send this response to Mr. Shumaker, Mayor and Council as appropriate.

Randy

Mr. Shumaker:

Thank you for your comments about Greenway traffic.

The City Council is very aware of the traffic concerns on Greenway. Traffic issues related to Greenway have been on the Council's agenda frequently in the past several years.

The City's transportation plan calls for SW 125th Avenue to be extended north of Greenway to connect to Hall Boulevard near Hart Road. The 125th Avenue extension is expected to provide an alternate route and to reduce traffic volumes on Greenway. Much work has been done on design of the new road and the necessary property has been purchased. The construction last summer at the intersection of Greenway and 125th was in preparation for the new road. Unfortunately, several million dollars of additional funding is still needed to complete the connection. So, it will be a while before this project is completed.

The side streets along Greenway, including Windmill Drive, do not qualify for a traffic signal. By law, the City follows the Manual on Uniform Traffic Control Devices, a national publication that establishes standards for traffic control devices. Because a traffic signal can create new safety issues and traffic delays, the Manual establishes minimum "warrants" that must be met before a signal can be considered. The intersections along Greenway do not meet the warrants.

We will explore your suggestion of adding a center turn lane on more of Greenway. If this concept proves feasible, we will take this suggestion to the Beaverton Traffic Commission for consideration.

Sincerely,

Randy Wooley
City Traffic Engineer
503-526-2443
rwooley@ci.beaverton.or.us

P.S. Copies of your comments and my response will be sent to the City Council.

-----Original Message-----
From: councilcomments@ci.beaverton.or.us [mailto:councilcomments@ci.beaverton.or.us]
Sent: Friday, January 14, 2005 10:21 PM
To: Mailbox Citymail
Subject: Comments for City Council

Comments for City Council:

Type of comment: Traffic

TC 573, 2 of 2

Comments: Greenway BLVD is packed with traffic from early in the morning till around 10am and in the evening from around 3pm till about 7pm. For the people who live in the two apartments there at the corner of Hall and Greenway in Beaverton, it is hard to get out of the apartments. If there is a way to get something done there it would be great. Perhaps a middle saftey zone for merging, or a traffic light that would work during the morning and night. Please consider a traffic change for all of us there on greenway across from Albertsons. Thank you.

From: Nathan Shumaker
Address: 12216 SW Windmill Dr. Beaverton
Email: Falcon2707@copper.net

Resident: Yes

To: All Councilors

CITY OF BEAVERTON

FINAL WRITTEN ORDER OF THE TRAFFIC COMMISSION

REGARDING ISSUE NUMBER TC 573
(Center Turn Lane on SW Greenway)

1. A hearing on the issue was held by the Traffic Commission on March 3, 2005.

2. The following criteria were found by the City Traffic Engineer to be relevant to the issue:
   - 1a (provide for safe vehicle, bicycle and pedestrian movements);
   - 1b (help ensure orderly and predictable movement of vehicles, bicycles and pedestrians);
   - 1g (carry anticipated traffic volumes safely).

3. In making its decision, the Traffic Commission relied upon the following facts from the staff report and public testimony:
   - Portions of SW Greenway currently are marked with a center turn lane. The remainder of the street is marked as a two-lane street.
   - A resident of SW Windmill Drive requested marking of a center turn lane to facilitate left turns at the Greenway/Windmill intersection.
   - The street has sufficient width to accommodate a center turn lane.
   - With the center turn lane, there is not sufficient room to mark dedicated bicycle lanes. However, the width of the through traffic lanes will be adequate to qualify as a shared car/bike lane. Currently, no bike lanes are marked on Greenway.
   - The City Traffic Engineer suggests that a center turn lane may reduce collision frequency and may reduce average traffic speeds on Greenway.

4. Following the public hearing, the Traffic Commission voted (7 aye, 0 nay) to recommend the following action:

Mark a center turn lane along the entire length of Greenway as shown conceptually on the drawing attached to the staff report.

5. The Traffic Commission decision was based on the following findings:

   - The proposed turn lane will improve safety for turning vehicles by providing a marked refuge. Through traffic lanes will comply with the standards for shared lanes for bicycles. Therefore, Criteria 1a and 1g are satisfied.
   - The proposed turn lane will provide more orderly and predictable turn movements by separating left-turning traffic from through traffic. Therefore, Criterion 1b is satisfied.

6. The decision of the Traffic Commission shall become effective upon formal approval of the City Council.

SIGNED THIS 3 DAY OF MARCH, 2005

Traffic Commission Chair

MEMORANDUM
Beaverton Police Department

Chief David G. Bishop

DATE: February 24, 2005

TO: Randy Wooley

FROM: Jim Monger

SUBJECT: TC 573

TC 573. I concur with the recommendations to mark a center turn lane along the entire length of SW Greenway.

I do have the following concerns;
I've noticed vehicles traveling both north and south have a tendency to "cut the corners' on the gradual curves on SW Greenway. Cutting these corners puts vehicles closer to the curbing. A center turn lane will narrow the north and south lanes and may cause vehicles to come even closer to the curbing and too close to bicyclist that share the lane.

Draft

EXHIBIT 5

City of Beaverton

TRAFFIC COMMISSION

Minutes of the March 3, 2005, Meeting

CALL TO ORDER

Chairman Scott Knees called the meeting to order at 7:00 p.m. in the Forrest C. Soth City Council Chamber at Beaverton City Hall, Beaverton, Oregon.

ROLL CALL

Traffic Commissioners Scott Knees, Holly Isaak, Carl Teitelbaum, Louise Clark, Kim Overhage, Tom Clodfelter, and Ramona Crocker constituted a quorum. Alternate member Bob Sadler was in the audience to observe.

City staff included City Traffic Engineer Randy Wooley, Project Engineer Jabra Khasho, Traffic Safety Team Officer Jeffrey Debolt, and Recording Secretary Debra Callender.

— EXCERPT START —

PUBLIC HEARING

ISSUE TC 573: CENTER TURN LANE ON SW GREENWAY

Chairman Knees opened the public hearing on Issue TC 573.

Staff Report

Mr. Wooley said Mr. Khasho would project a RoadViewer software program so everyone could view the entire length of Greenway in both directions as well as its many intersections.

Mr. Wooley said TC 573 originated with a citizen request. Mr. Nathan Shumaker of Windmill Drive e-mailed the City Web site to say it is difficult to exit his driveway at peak traffic hours. Mr. Shumaker suggested adding either a "middle safety zone" or a traffic signal at Windmill Drive. Mr. Wooley said none of the streets along Greenway meet warrants for a traffic signal. Staff reviewed the idea of striping a continuous center turn lane on Greenway and found the idea to be practical and beneficial to traffic flow.

Mr. Wooley said much of Greenway already has a striped center turn lane. The proposed change would mark the remaining portions into three lanes. This center turn lane would be either a dedicated turn lane or a two-way left turn, depending on the location. The proposed changes are shown on the drawing attached to the staff report.

Mr. Khasho showed the RoadViewer program. The parts of the roadway currently striped with a center turn lane demonstrate how the full length of Greenway would look if this proposal is accepted. *(Excerpt of RoadViewer showing is on file.)*

Mr. Wooley said striping three lanes would improve safety, increase efficiency for drivers making left turns, and provide a refuge for vehicles entering the flow of traffic from driveways and at intersections.

Mr. Wooley said striping a center turn lane will not change or improve Greenway's carrying capacity. Greenway's capacity is controlled by the intersections at Hall Boulevard and at 125th Avenue. This proposal will not alter the need for the 125th Avenue extension.

Mr. Wooley said narrowing the lane width might also slow traffic. He added that striping changes are relatively low cost projects.

Mr. Wooley said the staff report also addresses possible disadvantages of striping a center turn lane. On Greenway, the intersections of Murphy Lane and Davies Road are very close. This could potentially cause conflicts between east and west bound vehicles needing to use the same turn space. Mr. Wooley observed that there are several low-volume streets similar to this in Beaverton and that these do not experience conflict problems. Another disadvantage is that the proposal will narrow the driving lanes and allow less room for bicycles. The proposed lanes will be 14 feet wide, which is enough width for vehicles and bikes to safely share the roadway.

For the above reasons, staff recommends that the Commission approve this proposal.

Commissioner Teitelbaum said he drives Greenway often, yet he rarely sees bikes on that roadway. He has noticed that the few bikes using Greenway are generally on the sidewalks, yet Sgt. Monger's memo mentions potential adverse impacts on bikes. Commissioner Teitelbaum asked staff if they had counted how many bikes travel on Greenway each day.

Mr. Wooley said staff has not counted bikes. He agrees with Commissioner Teitelbaum's observation that few bikes use this roadway.

Commissioner Clodfelter commented that the resident's original request was for striping only at Windmill Drive, yet staff is proposing to stripe seven separate areas of Greenway.

Mr. Wooley granted that the requester asked only for improvements at the Windmill/Greenway intersection. When staff reviewed the suggestion, it became clear that left turns are difficult at any intersection on Greenway during peak traffic hours. They concluded that a center turn lane would benefit all drivers using Greenway.

Commissioner Crocker noted the staff report covers the number of turn-related crashes that have occurred on Greenway. Nine crashes were reported in 2001, six in 2002, and one in 2003. The Commissioner asked if staff had crash data for 2004.

Mr. Wooley said the State will provide 2004 data sometime this summer. The staff report points out that crash data for 2003 was atypical because construction projects on both ends of Greenway reduced traffic volume.

Commissioner Crocker asked at which intersections and driveways the nine 2001 crashes occurred.

Mr. Wooley said staff pooled the crash data for all parts of Greenway that currently do not have a center turn lane. They did not break the data down by intersection. Crashes at Albertson's driveway and Downing Drive (where a turn lane already is marked) were excluded from the total shown in the staff report.

Commissioner Crocker asked how much it would cost to re-stripe Greenway.

Mr. Wooley estimated the cost at $25,000 if an independent contractor does the job. If the work is performed by City of Beaverton crews, the cost would be less.

Commissioner Clark asked if the two travel lanes on Greenway, as they are currently striped, are evenly divided according to the roadway width.

Mr. Wooley said Greenway currently has two, 20-foot travel lanes. That provides enough room for a left-turning vehicle to wait while continuing traffic passes on the right.

Commissioner Clark commented that in the RoadViewer presentation travel lanes looked wider or narrower at some points. She noted this was particularly true near the Albertson's driveway. She asked if it is legal for drivers to pass a left-turning vehicle on the right in a single lane.

Traffic Officer Jeffrey Debolt said this is legal as long as the passing driver stays on the paved portion of the road.

Commissioner Overhage asked if parking is allowed along any part of Greenway.

Mr. Wooley said it is not.

Commissioner Overhage observed that the RoadViewer presentation showed a police speed trailer parked on the west side of Greenway. If the lanes are narrowed as proposed, there will no longer be room to park a speed trailer.

Officer Debolt said that is not a problem. Speed enforcement would need to be done by a parked officer if the proposed center turn lane is striped. Many streets do not have room for the speed trailer.

Commissioner Crocker asked if fresh traffic speed measurements were taken on Greenway after the improvements at the intersection of 125th and Greenway/Brockman were completed last year.

Mr. Wooley said they have not taken new speed measurements.

Commissioner Crocker said the staff report indicates that striping narrower lanes on Greenway could possibly reduce vehicle speeds.

Mr. Wooley believes 35 mph will still be an appropriate speed on Greenway even with narrower travel lanes.

Commissioner Clark asked for more information on how these narrower lanes will accommodate both motor vehicles and bicycles.

Mr. Wooley said the City standard is a 12-foot auto lane and a 5-foot bike lane, together equaling 17 feet of travel lane. This proposal uses 14-foot travel lanes shared by cars and bikes. There would not be a separate striped bike lane. A car could still safely pass a bike without crossing the striped line. Mr. Wooley said the State standard uses 14 feet as a minimum for a shared travel lane. He said combined 14-foot travel lanes are already being used in other parts of Beaverton without problems.

Commissioner Clark asked about the City's goal for increased bicycle use.

Mr. Wooley said that, ideally, all Beaverton arterial and collector streets would have separate bike lanes. Mr. Wooley referred to a 2003 Traffic Commission issue involving left turns into the Albertson's driveway from Greenway. When that issue was appealed to City Council, they asked staff to provide a cost estimate for widening Greenway at the intersection with Hall and installing bike lanes. Based on cost, City Council decided to abandon the idea.

Commissioner Clark asked if Greenway is listed on the City's 2020 Transportation System Plan as a street that should eventually have bike lanes.

Mr. Wooley said it is. Greenway would need to be widened, which would include building retaining walls, before the roadway would be wide enough to allow striped bike lanes.

Commissioner Clark asked if staff received any comments on this proposal from bike advocates.

Mr. Wooley said the Beaverton Bicycle Advisory Committee was not specifically consulted. Several members of that committee receive Traffic Commission agendas every month so they knew of the proposal.

Commissioner Teitelbaum asked if bike lanes could be striped on Greenway as it stands today.

Mr. Wooley said, as it stands today, the segments of Greenway with only two lanes could be marked with separate bike lanes. Greenway has always had very wide shared lanes so the issue was never raised. The most congested areas of Greenway have center turn lanes, so those segments currently have 14-foot travel lanes. Bike lanes were striped west of Downing Drive as part of the recent 125th Avenue intersection construction project.

Chairman Knees asked about truck traffic on Greenway.

Mr. Wooley said Greenway is signed "No Through Trucks," and truck traffic is further restricted by the low pedestrian bridge. Bicycles have more room because there are no trucks and few buses on Greenway. Well-used pathways and the pedestrian bridge provide passage for students between the neighborhoods and Greenway School.

Chairman Knees asked about Sgt. Monger's concern that vehicles frequently "cut the corners" on Greenway's curves.

Mr. Wooley said that problem already exists. He said the areas of greatest concern for corner cutting would be at the sharpest corners. Those areas are already striped into three lanes. Mr. Wooley understood Sgt. Monger's concern to be in the form of an observation. Sgt. Monger still concurred with the proposal to stripe a continuous center lane.

Public Testimony

The Commission received written testimony relating to this hearing from Traffic Sergeant Jim Monger.

No one came forward to testify.

Staff Comments

Mr. Wooley had no additional comments.

Chairman Knees closed the public hearing on Issue TC 573.

Commission Deliberation

Commissioner Overhage **MOVED** and Commissioner Teitelbaum **SECONDED** a **MOTION** to mark a center turn lane along the entire length of Greenway as shown conceptually on the drawing attached to the staff report and to approve the final written order.

On discussion, Commissioner Crocker said this proposal is a safety issue for people wanting to enter and exit Greenway from side streets and private driveways. Sixteen crashes in three years demonstrate a problem. Considering the heavy traffic volume on Greenway during peak hours, she is surprised there have not been more crashes.

Commissioner Crocker believes this proposal is a "Band-aid" solution for the heavy traffic that Greenway is forced to carry. She said the only real solution is to finish the 125th Avenue connection to Hall Boulevard. That connection must be made to alleviate traffic congestion in this part of Beaverton.

Chairman Knees stated he agrees with Commissioner Crocker.

Commissioner Teitelbaum said he supports this recommendation because he has often found himself waiting in a queue while a driver farther up Greenway waits for a break in traffic in order to make a left turn. This change will keep traffic flowing. If the narrower lanes slightly lower the traffic speed, that will be an additional benefit.

Commissioner Clark had concerns about the lack of bike lanes on Greenway. She would feel uncomfortable riding a bike on Greenway because drivers cut corners. Since it is at present impossible to stripe bike lanes from one end of Greenway to the other without building expensive retaining walls, she supports the recommendation for a center turn lane.

There was no further discussion.

The **MOTION CARRIED** unanimously, 7:0.

— EXCERPT END —

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: Authorize Mayor to Sign Third Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study (aka Tualatin River Basin Water Supply Project)

FOR AGENDA OF: 4-4-05 **BILL NO:** 05064

Mayor's Approval:

DEPARTMENT OF ORIGIN: Engineering

DATE SUBMITTED: 3-22-05

CLEARANCES: City Attorney
Finance
Purchasing

PROCEEDING: Consent

EXHIBITS:
1. Draft Third Amendment
2. Agenda Bill No. 03227
3. WSFS Congressional Project Information

BUDGET IMPACT

EXPENDITURE REQUIRED	AMOUNT BUDGETED	APPROPRIATION REQUIRED
$ 67,619 FY 2005-06 *	$-0-	$ 67,619 *
$155,803 FY 2006-07 *		$155,803 *

* Account Number 505-75-3636-683 Water Construction Fund, Water Extra-Capacity Supply System Program, Scoggins Dam Raise Project. As stated in the Recommended Action, staff recommends that appropriations of $67,619 and $155,803 be included in the FY 2005-06 and FY 2006-07 budgets respectively.

HISTORICAL PERSPECTIVE:

On October 13, 2003, Council authorized signing of a second amendment to a June 2001 funding agreement in Agenda Bill No. 03227 (Exhibit 2), for the purpose of continued funding for the IWRM (Integrated Water Resource Management) Water Supply Feasibility Study (WSFS) of the Tualatin River basin. The parties to the funding agreement are generally seeking to expand the water supply in the Tualatin basin. To date, the joint funding agreement and first amendment have jointly funded a work program to identify supply options and study the feasibility of the supply approaches to increasing the water supply in the Tualatin River basin, as well as a "no action alternative."

During the last two years, the Tualatin River Basin Water Supply Project has been evaluating reliable, safe and sustainable water supply options to meet the long-term Tualatin River instream flow, agricultural irrigation, and municipal and industrial water needs in Washington County to the year 2050. Additionally, over the last year, a draft planning report and Environmental Impact Statement for a water supply project was initiated. The study is being led by Clean Water Services in partnership with local cities, water districts, and the U.S. Bureau of Reclamation, builder and owner of the Scoggins Dam/Hagg Lake facility.

Three principal groups have helped guide the Tualatin River Basin Water Supply Project through evaluating and narrowing the list of supply options. The three groups consist of 1) the technical

group known as the Washington County Water Managers Group (WMG), 2) the public and interested stakeholders, and 3) the Tualatin River Basin Water Supply Feasibility Study Policy Steering Committee (PSC) made up of elected officials of the financially participating agencies and one non-voting stakeholder, the Lake Oswego Corporation. The City of Beaverton is represented on the PSC by former Councilor Forrest Soth, and on the WMG by David Winship, City Utilities Engineer. As a part of the water supply project, an extensive public review process has been established with a high profile outreach program of public meetings and presentations, newsletter, brochures, web site, and media releases and coverage.

From results so far in the Tualatin River Basin Water Supply Project, four key water source options, one of which is a no action alternative, have been identified and closely evaluated. The three "action" source options that add to the existing water supply are as follows:

- 40-foot Scoggins Dam (Hagg Lake) Raise. This would add an estimated 50,000 acre-feet (16.5 billion gallons), which would nearly double the current volume of the lake of 60,640 acre-feet (usable volume 53,640 acre-feet). Cost of a 40-foot dam raise is approximately $135 million. Completion of the 40-foot dam raise option is projected to be in FY 2010-11. An accompanying project is the Sain Creek Tunnel, closely associated with the 40-foot dam raise option, which was analyzed over the last year. The Sain Creek Tunnel was envisioned as a means to convey water by gravity from the upper Tualatin River to Sain Creek, where it would then flow as creek water into Hagg Lake. The Sain Creek Tunnel concept was sought as a way to increase the reliability of annually refilling Scoggins Reservoir. The 40-foot dam raise does not by itself reliably fill each year. Overall cost of this dam raise option with the tunnel is estimated to be $170 million.
- 20-foot Scoggins Dam (Hagg Lake) Raise. This would add an estimated 26,500 acre-feet (8.6 billion gallons) to current lake storage.
- Irrigation Exchange Pipeline from the Willamette River. This new pipeline would pump water approximately 23 miles from the Willamette River near Newberg to the Tualatin Valley Irrigation District (TVID) pump station and storage tank. This water would be used to irrigate crops in exchange for 25,000 acre-feet (8.15 billion gallons) of water now being used by TVID from Hagg Lake. The 25,000 acre-feet of water in Hagg Lake would then be available to allocate amongst the builders of the exchange pipeline.

The most likely project for implementation was adopted by the project's Policy Steering Committee on February 17, 2005, as the proposed action for inclusion in the Draft Environmental Impact Statement. The proposed project is a 40-foot high dam raise of Scoggins Reservoir in conjunction with a large raw water pipeline that would extend from Scoggins Reservoir to the Joint Water Commission (JWC) Treatment Plant and large pumping station located near the easterly end of the raw water pipeline. The combination of the pumping station and raw water pipeline form the Raw Water Pipeline Pump Back option where winter and spring flow surplus in the Tualatin River would be pumped out of the river and through the raw water pipeline back into Hagg Lake to increase the annual reliability of filling the reservoir.

The Sain Creek Tunnel option in combination with the 40-foot Scoggins Dam raise was dropped from further consideration in favor of the Raw Water Pipeline Pump Back primarily due to the latter project's ability to provide a 93 percent reliability of refilling the expanded Scoggins Reservoir each year. The Sain Creek Tunnel was found to only provide a 71 percent chance of annually refilling the reservoir, coupled with other unfavorable issues related to environmental impacts and permitting.

The Third Amendment lists Beaverton's level of participation in the Joint Funding Agreement as 4,121 acre-feet (1.3 billion gallons) or 7.79 percent of the total nominal 52,900 acre-feet new raw water storage that would be created in an expanded Scoggins Reservoir with a 40-foot dam raise. The City currently owns a right to use up to 4,000 acre-feet in Hagg Lake and 4,300 acre-feet in Barney Reservoir for summertime water supply. During the summer, water in the dams is released into the Tualatin River as needed to meet the City's potable water demand. Before reaching Beaverton, raw water in the upper Tualatin River is withdrawn and filtered in the Joint Water Commission Water Treatment Plant. The City owns a 15 million gallon per day share of the JWC treatment plant.

INFORMATION FOR CONSIDERATION:

To move forward with the project, a third amendment is needed to fund continuing project costs to undertake the next two years of scheduled tasks. A two-year scope of work of the various project elements to be completed for fiscal years 2005-06 and 2006-07 is attached as Exhibit A of the third amendment (Exhibit 1).

The third amendment to the joint funding agreement does not change Beaverton's required financial participation of up to $155,803 during the current budget FY 2004-05. The third amendment to the joint funding agreement lists a required Beaverton expenditure in FY 2005-06 of $67,619 and $155,803 in FY 2006-07 to continue with the project.

At the current participation level of 4,121 acre-feet, the latest overall project cost to Beaverton from inception of the project through FY 2010-11, as estimated by Clean Water Services, would be $11.7 million. This cost represents the potential financial obligation in a 40-foot Scoggins Dam Raise with the Raw Water Pipeline Pumping Station, should the two project components be constructed. The Raw Water Pipeline is a separate project being undertaken in parallel by the JWC with several other intergovernmental partners.

RECOMMENDED ACTION:

1. Council authorize the Mayor to execute the Third Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study (aka Tualatin River Basin Water Supply Project), in a form approved by the City Attorney.

2. Council direct the Finance Director to include the required Beaverton expenditure in FY 2005-06 of $67,619 and $155,803 in FY 2006-07 budgets to continue with the project.

EXHIBIT 1

THIRD AMENDMENT
TO JOINT FUNDING AGREEMENT FOR
IWRM WATER SUPPLY FEASIBILITY STUDY
(AKA AS TUALATIN BASIN WATER SUPPLY PROJECT)

This Amendment, dated _____, 2005, is between Clean Water Services (District), formerly known as Unified Sewerage Agency, a county service district formed by authority of ORS 451, the Tualatin Valley Water District, a domestic water district formed by authority of ORS 264 and the cities of Hillsboro, Beaverton, Forest Grove, Tigard, Sherwood, and Tualatin, all municipal corporations of the State of Oregon (Partners) and amends the parties' Joint Funding Agreement – IWRM Water Supply Feasibility Study dated June 20, 2001 as amended by the First Amendment dated November 14, 2002 and the Second Amendment dated December 4, 2003 (collectively, Joint Funding Agreement).

RECITALS

1. The parties previously entered into the Joint Funding Agreement under which the parties agreed to jointly fund a study of the feasibility of alternative approaches to increase the water supply, as well as the "no action alternative."

2. The parties now wish to amend the Joint Funding Agreement to fund additional tasks to complete the Planning Report/Draft Environmental Impact Statement, Final Environmental Impact Statement (EIS) and Permitting. The Water Supply Feasibility Study was completed in March 2004.

TERMS AND CONDITIONS

1. From the effective date of this Amendment, Partners shall compensate District for each party's share of the cost of the Study as provided in Section 2 of the Joint Funding Agreement. A revised payment schedule is attached hereto as Exhibit B and incorporated herein.

   Total payment to District for compensation for services provided during fiscal years 2005-2006 and 2006-2007 shall not exceed $2.86 million.

2. The first sentence of Section 4 is hereby deleted and the following is substituted therefore.

   "Except as otherwise indicated in this section, no party may terminate its rights and obligations under this agreement until the Study is completed or a total of $7,335,400 has been expended, whichever occurs first."

3. Exhibit A of the Joint Funding Agreement is hereby deleted and replaced with Exhibit A, attached hereto and incorporated herein.

4. Except as amended herein, the Joint Funding Agreement shall remain in full force and effect.

5. This Amendment may be signed in counterparts and becomes effective upon the date of the latest signature of the signatories authorized by the governing body of each party.

CLEAN WATER SERVICES

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
District Counsel

TUALATIN VALLEY WATER DISTRICT

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF HILLSBORO

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BEAVERTON

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF FOREST GROVE:

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TIGARD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF SHERWOOD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TUALATIN

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

Exhibit A

SCOPE OF WORK AND PROJECT ELEMENTS

TUALATIN BASIN WATER SUPPLY PROJECT

The following is a review of the various phases and project elements:

Scope of Work

Phase 1 – Completion of Planning Report and Draft Environmental Impact Statement (PR/DEIS)

1. Additional hydrologic modeling for optimization and mitigation actions.
2. Coordination of modeling with Bureau of Reclamation on ESA consultation.

Phase 2 – Final Environmental Impact Statement, Record of Decision, and permit negotiations

1. Final Environmental Impact Statement and Record of Decision (ROD)
2. Permitting
3. Mitigation Site investigation and conceptual designs

Additional Project Elements

The following are additional Project elements handled with separate contracts or agreements:

1. Governmental Affairs Consultant – Consultant contracts to continue efforts to secure federal funding assistance and community support at local and national levels.
2. Bureau of Reclamation (BOR) Technical and Engineering Services
    a. Preliminary Designs – Further dam pre-design element investigations, such as construction access, utility locations, borrow area delineation, site explorations and new spillway channel requirements.
    b. Road Relocation Conceptual Design and Alignment Options – A preliminary survey and conceptual design of Scoggins Valley road relocation areas.
    c. Biological Resources Coordination – Coordination of existing operations consultation with EIS and permitting requirements. Determination of environmental and associated mitigation elements, such as wetlands, fish and wildlife mitigation areas implementation.
    d. Lands Review Coordination – Coordinate with Reclamation Lands Resources staff on review of lands acquisition needs and requirements.

e. Cooperative Study and Agreement with BOR/Corps of Engineers for Flood Damage Assessment Study – A cooperative study with the COE and BOR to evaluate the flood control benefits of the Raw Water Pipeline Pump Back and the raise of Scoggins Dam.

3. Geotechnical and Site Investigations

   Geotechnical and Site Investigation tasks may include such activities as core drilling and other methods for project elements such as road and recreation facilities relocation, borrow and construction areas.

4. Review of Raw Water Pipeline Pump back option.

   a. Review of hydrology and water quality modeling for pumping winter water from Springhill Pump Plant (intake for Joint Water Commission and Tualatin Valley Irrigation District) via Raw Water Pipeline into Hagg Lake.

   b. Conceptual Designs for potential expansion and modifications of the Springhill Pump Plant to provide pump inflow into Hagg Lake.

5. Hagg Lake Water Quality Modeling Study – A cooperative agreement with USGS to construct a water quality model for Hagg Lake, including flow, temperature and water quality parameters. The model will assist in determining the water quality impacts of release changes from Hagg Lake with a raised dam and additional water storage volumes. Several modeling scenarios will be run to address issues of impacts of lake water quality from storage releases, raw water pipeline and pump back system.

6. Lands Easement Services – Research the potential land easements and other property related elements for the project areas. These services may include appraisals, environmental assessments and conceptual designs of mitigation sites and other project related areas.

7. Biological Studies and Mitigation elements – Conduct site investigations and studies for potential mitigation elements, such as fish, wetlands and wildlife. These studies may include wetlands delineations, wildlife habitat inventories and other related elements.

8. Clean Water Services Project Management – Continued project management and staff support for this phase of the Project.

9. Miscellaneous expenses – The tasks and elements of the project not currently provided for in the above listed items.

Tualatin Water Supply Project and Feasibility Report
Payment Schedule for Environmental Impact Statements and Permitting Phase
For FY05-06 and FY 06-07
Project Manager - Tom VanderPlaat Date 2/16/04

EXHIBIT B

PAYMENT SCHEDULE

(Based on reallocation)

	Water Allocations	% Share	Total Costs	FY05-06 Qtr1 Jul-Sep	FY05-06 Qtr 2 Oct-Dec	FY05-06 Qtr 3 Jan- Mar	FY05-06 Qtr 4 Apr-Jun	FY05-06 Total	FY06-07 Qtr1 Jul-Sep	FY06-07 Qtr 2 Oct-Dec	FY06-07 Qtr 3 Jan- Mar	FY06-07 Qtr 4 Apr-Jun	FY06-07 Total
	Ac - ft		100.0%	0.0%	0.0%	10.3%	20.0%	30.3%	20.0%	20.0%	15.0%	14.7%	69.7%
Water Quality													
Clean Water Services	15,453	29.21%	$837,792	$0	$0	$85,999	$167,558	$253,558	$167,558	$167,558	$125,669	$123,449	$584,234
M&I													
City of Tigard	10,302	19 47%	$558,528	$0	$0	$57,333	$111,706	$169,038	$111,706	$111,706	$83,779	$82,299	$389,490
TVWD	10,302	19.47%	$558,528	$0	$0	$57,333	$111,706	$169,038	$111,706	$111,706	$83,779	$82,299	$389,490
City of Hillsboro	7,726	14.60%	$418,869	$0	$0	$42,997	$83,774	$126,771	$83,774	$83,774	$62,830	$61,720	$292,098
City of Beaverton	4,121	7.79%	$223,422	$0	$0	$22,934	$44,684	$67,619	$44,684	$44,684	$33,513	$32,921	$155,803
City of Sherwood	2,060	3.89%	$111,684	$0	$0	$11,464	$22,337	$33,801	$22,337	$22,337	$16,753	$16,457	$77,883
City of Tualatin	1,906	3.60%	$103,335	$0	$0	$10,607	$20,667	$31,274	$20,667	$20,667	$15,500	$15,226	$72,060
City of Forest Grove	1,030	1.95%	$55,842	$0	$0	$5,732	$11,168	$16,901	$11,168	$11,168	$8,376	$8,228	$38,941
Total M&I	**37,447**	**70.79%**	**$2,030,208**	$0	$0	$208,401	$406,042	$614,442	$406,042	$406,042	$304,531	$299,151	$1,415,766
Sub Total	**52,900**	**100.00%**	**$2,868,000**	$0	$0	$294,400	$573,600	**$868,000**	$573,600	$573,600	$430,200	$422,600	**$2,000,000**

WQ(exisiting)	**12,618**		
M&I (existing)	**14,000**		
Irrigation	**27,022**		
Fish and Wildlife			
Recreation*	6,900		
Hydro power			
Flood Management			
Total (active storage)	**106,540**		
			$2,868,000

EXHIBIT 2

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: Authorize Mayor to Sign Second Amendment to Joint Funding Agreement, Water Supply Feasibility Study (Scoggins Reservoir and Tualatin River Basin)

FOR AGENDA OF: 10/13/03 **BILL NO:** 03227

Mayor's Approval:

DEPARTMENT OF ORIGIN: Engineering

DATE SUBMITTED: 09/30/03

CLEARANCES: City Attorney
Finance
Purchasing

PROCEEDING: Consent Agenda

EXHIBITS:
1. Second Amendment
2. Signed First Amendment
3. Agenda Bill No. 02274
4. WSFS Project Information

BUDGET IMPACT

EXPENDITURE	AMOUNT	APPROPRIATION
REQUIRED $95,819	BUDGETED $87,510 *	REQUIRED $8,309 **

* Account Number 505-75-3636-683 Water Construction Fund, Water Extra-Capacity Supply System Program (budgeted amount $87,510), Scoggins Dam Raise Project.
** The $8,309 additional appropriation is available from the Water Fund's Contingency Account and is recommended to be included in the next supplemental budget.

HISTORICAL PERSPECTIVE:

On October 7, 2002, Council authorized signing of an amendment to a June 2001 funding agreement in Agenda Bill No. 02274 (attached) for the purpose of funding a Water Supply Feasibility Study (WSFS) of the Tualatin River basin. Subsequently the Mayor signed the *First Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study* (intergovernmental agreement) dated November 14, 2002. To date, the joint funding agreement and first amendment have jointly funded a work program to identify supply options and study the feasibility of the supply approaches to increasing the water supply in the Tualatin River basin, as well as the "no action alternative."

As the attached information from Clean Water Services explains, during the last two years the Tualatin Basin Water Supply Feasibility Study (WSFS) has been evaluating reliable, safe and sustainable water supply options to meet the long-term Tualatin River instream flow, agricultural irrigation, and municipal and industrial water needs in Washington County to the year 2050. The study is being led by Clean Water Services in partnership with local cities, water districts and the U.S. Bureau of Reclamation, builder and owner of the Scoggins Dam/Hagg Lake facility.

Three principal group efforts have helped guide the WSFS toward evaluating and narrowing the list of supply options. The three groups consist of 1) the technical group known as the Washington County Water Managers Group (WMG), 2) the public and interested stakeholders, and 3) the Tualatin Basin Water Supply Feasibility Study Policy Steering Committee (PSC) made up of elected officials of the financially participating agencies and one non-voting stakeholder, the Lake Oswego Corporation. The City is represented on the PSG by Councilor Forrest Soth, and on the WMG by David Winship, City Utilities Engineer. As a part of the WSFS an extensive public review process has been established with a high profile outreach program of public meetings and presentations (speakers bureau), newsletter, brochures, web site, web survey, information board for display in public places, and media releases and coverage.

From results thus far in the WSFS, four key water source options, one of which is a no action alternative, have been identified and are being closely evaluated. The three "action" source options that add to the existing water supply are as follows:

- 40-foot Scoggins Dam (Hagg Lake) Raise, adding an estimated 50,000 acre-feet (16.5 billion gallons), which would nearly double the current volume of the lake of 60,640 acre-feet (usable volume 53,640 acre-feet). Cost of a 40-foot dam raise is estimated at $129 million. Completion of the 40-foot dam raise option is projected to be in FY 2010-11. An accompanying project is the Sain Creek Tunnel, closely associated with this option and viewed by the Water Managers Group (WMG) as virtually mandatory to augment annual reliability of filling the larger reservoir. Overall cost of this dam raise option with the tunnel is estimated to be $154 million.
- 20-foot Scoggins Dam (Hagg Lake) Raise, adding an estimated 26,500 acre-feet (8.6 billion gallons) to current lake storage.
- Irrigation Exchange Pipeline from the Willamette River, a new pipeline would pump water approximately 23 miles from the Willamette River near Newberg to the Tualatin Valley Irrigation District (TVID) pump station and storage tank. This water would be used to irrigate crops in exchange for 25,000 acre-feet (8.15 billion gallons) of water now being used by TVID from Hagg Lake. The 25,000 acre-feet of water in Hagg Lake would then be available to allocate amongst the builders of the exchange pipeline.

A more detailed description of the initial water source options list and the three key source options now being evaluated is found in the informational materials attached to this agenda bill.

Beaverton's level of participation in the original Joint Funding Agreement was established using a City staff estimate of water storage need for the future of 4,000 acre-feet (1.3 billion gallons) or about eight percent of the total nominal 50,000 acre-feet in new raw water storage. The City currently owns a right to use up to 4,000 acre-feet in Hagg Lake and 4,300 acre-feet in Barney Reservoir for summertime water supply. During the summer, water in the dams is released into the Tualatin River as needed to meet the City's potable water demand. Before reaching Beaverton, raw water in the upper Tualatin River is withdrawn and filtered in the Joint Water Commission Water Treatment Plant. The City owns a 15 million gallon per day share of the JWC treatment plant.

INFORMATION FOR CONSIDERATION:

It can be seen from the attached project information, a great deal of work has been accomplished in the Water Supply Feasibility Study to carefully evaluate and narrow the list of supply alternatives since the Council approved the first amendment to the joint funding. City staff have represented Beaverton at monthly technical committee meetings since the beginning of the project.

To move forward with the project, a second amendment is needed to fund continuing project costs to undertake the next two years of scheduled tasks.

As noted above under Budget Impact, the current budget contains $87,510 as the expenditure for this fiscal year. Staff have been notified by Clean Water Services that Beaverton's FY 2003-04 project share will likely increase by $8,309 to a total of $95,819, due to the cost of a large consultant contract about to be awarded by Clean Water Services. The scope of the consultant contract covered under the proposed *Second Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study* will cover tasks to prepare a Planning Report, Draft Environmental Impact Statement (EIS), Final Environmental Impact Statement, and permitting. The consultant contract comprises the largest portion of the two-year (FYs 2003-04 and 2004-05) project cost to be paid by participating agencies. The proposed second amendment also includes a required Beaverton expenditure in FY 2004-05 of $155,803 to continue with the project.

Funding of the Second Amendment to the June 2001 Joint Funding Agreement is recommended as shown above under Budget Impact. The City's two fiscal year total (FYs 2003-04 and 2004-05) cost obligation by the second amendment is $251,622.

At the current nominal participation level of 4,000 acre-feet, the latest overall project cost to Beaverton from inception of the project through FY 2010-11, as estimated by Clean Water Services, would be $11,685,255. This cost represents the potential financial obligation in a 40-foot Scoggins Dam Raise, should that supply option be chosen.

RECOMMENDED ACTION:

1. Council authorize the Mayor to execute *Second Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study*, approved as to form by the City Attorney.

2. Council direct the Finance Director to include an $8,309 appropriation in the next scheduled FY 2003-04 Supplemental Budget as shown above and include $155,803 in the recommended FY 2004-05 budget.

MEMORANDUM

Date: September 30, 2003

To: Tualatin Water Supply Feasibility Study Partners

From: Tom VanderPlaat, Water Supply Feasibility Study Project Manager

Subject: Joint Funding Agreement 2nd Amendment and Cost reallocation

Please find attached the following documents for the Joint Funding Agreement – 2nd amendment:

1. Joint Funding Agreement – 2nd Amendment document
2. Exhibit B - Schedule of payments for FY 03-04 and FY 04-05
3. Tasks and cost estimate for environmental impact statement (EIS) and permitting phase for FY03-04 and FY04-05.
4. Reallocation Review of Water and Costs – based on partner withdrawals (dollar figures differ slightly due to rounding)
5. Review of Overall Project costs for a $150 million dollar water supply improvement.

The reallocation of the water and costs are based on the withdrawal of Cities of Cornelius, Banks and North Plains. In 2001, the Municipal and Industrial (M&I) volumes were reduced to meet the target volume of 50,600 acre-feet. At the September 17, Water Managers Group meeting, the following rational for reallocation was developed. The rational for reallocation is based on the following:

1. City of Cornelius had originally requested 2,500 acre-feet. This share was provided to City of Hillsboro based on the City of Cornelius being a current wholesale customer of City of Hillsboro.
2. Cities of Banks and North Plains originally requested 1,000 acre-feet each. The 2000 acre-feet was reallocated to all M&I partners, based on the reduction from the original requests.
3. A review of the storage volume for the dam raise sources options showed an increase of available volumes of 1,550 acre-feet. This water volume was reallocated based on the partner's percentage share.

The spreadsheets provide information on the reallocation impacts on the Joint Funding agreement – 2nd amendment and overall project costs. The reallocation and costs share do not include any federal funding assistance with the exception of the cost share agreements with the Corp of Engineers – Flood Study and US Geological Survey (USGS) – Hagg Lake Water Quality Modeling. Both of these cost share agreements are 50% federal share and 50% local matching funds. There no information on the level of funding for FY03-04 from the Bureau of Reclamation until their budget approved by Congress.

SECOND AMENDMENT
TO JOINT FUNDING AGREEMENT FOR
IWRM WATER SUPPLY FEASIBILITY STUDY

This Amendment, dated _____, 2003, is between Clean Water Services ("District"), formerly known as Unified Sewerage Agency, a county service district formed by authority of ORS 451, the Tualatin Valley Water District, a domestic water district formed by authority of ORS 264 and the cities of Hillsboro, Beaverton, Forest Grove, Tigard, Sherwood, and Tualatin, all municipal corporations of the State of Oregon (Partners) and amends the parties' Joint Funding Agreement – IWRM Water Supply Feasibility Study dated June 20, 2001 ("Joint Funding Agreement").

RECITALS:

1. The parties previously entered into the Joint Funding Agreement under which the parties agreed to jointly fund a study of the feasibility of alternative approaches to increasing the water supply, as well as the "no action alternative."

2. The parties now wish to amend the Joint Funding Agreement in order to fund additional tasks to complete the Water Supply Feasibility Study (Study), Planning Report/Draft Environmental Impact Statement, Final Environmental Impact Statement and Permitting.

TERMS AND CONDITIONS

1. From the effective date of the Joint Funding Amendment, Partners shall compensate District for each party's share of the cost of the Study as provided in Section 2 of the Joint Funding Agreement. A revised payment schedule is included as Exhibit B.

   Total payment to District for compensation for services provided during fiscal years 2003-2004 and 2004-2005 shall not exceed $3.23 million.

2. The First Amendment to the Joint Funding Agreement amended Section 4 from $734,000 to $1,237,400. Section 4 is hereby amended as follows:

   "$1,237,400" is changed to "$4,467,400".

3. Exhibit A of the Joint Funding Agreement is amended by replacing it with Exhibit A of this Amendment.

4. This Amendment shall be effective upon signing of all parties.

5. Except as amended herein, the initial Joint Funding Agreement shall remain in full force and effect.

The above is hereby agreed to by the parties and executed by the duly authorized representative below:

CLEAN WATER SERVICES

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
District General Counsel

TUALATIN VALLEY WATER DISTRICT

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF HILLSBORO

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BEAVERTON

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF FOREST GROVE:

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TIGARD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF SHERWOOD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TUALATIN

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

Exhibit A

SCOPE OF WORK AND PROJECT ELEMENTS

WATER SUPPLY PROJECT

The following is a review of the various phases and project elements:

Phase 1 – Draft Planning Report and Draft Environmental Impact Statement (PR/DEIS)

1. Project Plan and Kickoff
2. Review Water Supply Feasibility Study and Related Work
3. Overall Water Management Strategic Plan, Operating Principles and Water Rights
4. Natural Environment – Earth Resources
5. Natural Environment – Biological (Land, Air and Water)
6. Human Environment – Surface water
7. Human Environment – Groundwater, Air, Noise, Hazards and Nuisances
8. Human Environment – Historic and Cultural Resources
9. Human Environment – Economics
10. Human Environment – Recreation
11. Public Involvement
12. NEPA Notices and other correspondence
13. Project Management

Phase 2 – Final Environmental Impact Statement, Record of Decision, and permit negotiations

1. Final Environmental Impact Statement and Record of Decision (ROD)
2. Permitting

Additional Project Elements

The following are additional Project elements handled with separate contracts or agreements:

1. Governmental Affairs Consultant – A consultant contract to continue efforts to secure federal project authorization and funding assistance.
2. Bureau of Reclamation Technical and Engineering Services
    a. Seismic (earthquake) Study – A cooperative seismotectonic study of the existing dam and 20 foot and 40 foot raised impacts

b. Road Relocation Preliminary Design – A preliminary survey and design of Scoggins Valley road relocation areas.

c. Revised dam inundation study - a revise inundation study for raised dam and updated information on downstream impacts.

d. New outlet facilities – Preliminary design of a new outlet works including study of a variable level intake tower.

e. Lands Review Coordination – To coordinate with Reclamation Lands resources staff on review of lands acquisition needs and requirements.

3. Climate Change Impacts Study Contract – Completion of the Climate Change Study to review the impacts of global climate change on the Tualatin Watershed.

4. Corps of Engineers Flood Control Study – A cooperative Study with the Corps of Engineers to evaluate the flood control benefits of the Sain Creek Tunnel and Scoggins Dam raises.

5. Hagg Lake Water Quality Modeling Study – A cooperative agreement with USGS to construct a model of Hagg Lake, including flow, temperature and water quality. The model will assist in determining the release changes to Hagg Lake with a raised dam and additional water storage volumes. Several modeling scenarios will be run to address issues of impacts within the lake and storage releases.

6. Lands Easement and Options Services – To research the potential land easement and option needs for the preferred alternative.

7. Clean Water Services Project Management – Continued project management and staff support for the Project.

8. Miscellaneous expenses – The tasks and elements of the project not currently provided for in the above listed items.

Tualatin Water Supply Project and Feasibility Report
Payment Schedule for Envirnomental Impact Statements and Permitting Phase

Project Manager - Tom VanderPlaat Date 09/30/2003

EXHIBIT B

PAYMENT SCHEDULE

(Based on reallocation)

	Water Allocations	% Share	Total Costs	FY03-04 Qtr1 Jul-Sep	FY03-04 Qtr 2 Oct-Dec	FY03-04 Qtr 3 Jan- Mar	FY03-04 Qtr 4 Apr-Jun	FY03-04 Total	FY04-05 Qtr1 Jul-Sep	FY04-05 Qtr 2 Oct-Dec	FY04-05 Qtr 3 Jan- Mar	FY04-05 Qtr 4 Apr-Jun	FY04-05 Total
	Ac - ft		100.0%	0.0%	5.0%	20.0%	13.0%	38.1%	15.9%	12.0%	19.0%	15.0%	61.9%
Water Quality													
USA	15,453	29.21%	$943,539	$0	$47,417	$188,944	$122,943	$359,304	$150,207	$113,225	$179,272	$141,531	$584,234
M&I													
City of Tigard	10,302	19.47%	$629,026	$0	$31,612	$125,962	$81,962	$239,536	$100,138	$75,483	$119,515	$94,354	$389,490
TVWD	10,302	19.47%	$629,026	$0	$31,612	$125,962	$81,962	$239,536	$100,138	$75,483	$119,515	$94,354	$389,490
City of Hillsboro	7,726	14.60%	$471,739	$0	$23,707	$94,466	$61,468	$179,640	$75,098	$56,609	$89,630	$70,761	$292,098
City of Beaverton	4,121	7.79%	$251,622	$0	$12,645	$50,387	$32,786	$95,819	$40,057	$30,195	$47,808	$37,743	$155,803
City of Sherwood	2,060	3.89%	$125,781	$0	$6,321	$25,188	$16,389	$47,898	$20,024	$15,094	$23,898	$18,867	$77,883
City of Tualatin	1,906	3.60%	$116,378	$0	$5,849	$23,305	$15,164	$44,317	$18,527	$13,965	$22,112	$17,457	$72,060
City of Forest Grove	1,030	1.95%	$62,890	$0	$3,161	$12,594	$8,195	$23,949	$10,012	$7,547	$11,949	$9,434	$38,941
City of Cornelius	0	0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
City of North Plains	0	0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
City of Banks	0	0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total M&I	**37,447**	**70.79%**	**$2,286,461**	$0	$114,906	$457,864	$297,926	$870,695	$363,993	$274,375	$434,428	$342,969	$1,415,766
Sub Total	**52,900**	**100.00%**	**$3,230,000**	$0	$162,323	$646,808	$420,869	**$1,230,000**	$514,200	$387,600	$613,700	$484,500	**$2,000,000**

WQ(exisiting)	**12,618**
M&I (exisiting)	**14,000**
Irrigation	**27,022**
Fish and Wildlife	
Recreation*	6,900
Hydro power	
Flood Management	
Total (active storage)	**106,540**
	$3,230,000

95,818

something

Tualatin Water Supply Project - DEIS/FEIS Phase

Environmental Impact Statements and Permitting Phase Costs

Project Manager - Tom VanderPlaat

09/30/2003

Expenses Review

	Project Elements			FY 03-04	FY04-05	Percent
		Total Costs		Costs	Costs	Complete
	DEIS/FEIS Contract	$1,900,000		$600,000	$1,300,000	100%
	Governmental Affairs	$160,000		$80,000	$80,000	**
	Bureau of Reclamation Contract					
	Seismic Review	$75,000		$5,000	$70,000	100%
	Road Relocation	$160,000		$120,000	$40,000	**
	Dam Indunation	$40,000		$10,000	$30,000	**
	New Outlet Predesign	$70,000		$40,000	$30,000	100%
	Lands Review Coordination	$25,000		$25,000	$0	**
	Sub Total	$370,000				
	Climate Change Study - U of W	$10,000		$10,000	$0	100%
	Flood Study - Corps of Eng ***	$45,000		$35,000	$10,000	**
	Lake Water Quality - USGS ***	$40,000		$40,000	$0	100%
	Lands Easement/Options	$250,000		$30,000	$220,000	**
	CWS Project Management	$320,000		$160,000	$160,000	100%
	Misc Expenses	$135,000		$75,000	$60,000	100%
	Total	$3,230,000		$1,230,000	$2,000,000	
	*** - 50% Cost Share (not included)					
	** - Task completion percentage cannot be determined					

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Tualatin Water Supply Feasibility Study
Water Share and Cost Reallocation

09/18/2003

Update of Water and Cost Reallocation

	Existing	Requests	Total	% Share	FY01-03 Costs	2002 Allocations	Adjustments	Original Allocations	% Share	Adjustments	New Allocations	% Share	FY03-04 Costs	FY04-05 Costs
Water Quality														
USA	12,618	15,000	27,618	28 12%	$347,910	15,000	0	15,000	29 21%	453	15,453	29 21%	$359,299	$584,226
M&I														
City of Tigard	0	10,000	10,000	18 74%	$231,940	9,500	500	10,000	19 47%	302	10,302	19 47%	$239,533	$389,484
TVWD	0	10,000	10,000	18 74%	$231,940	9,500	500	10,000	19 47%	302	10,302	19 47%	$239,533	$389,484
City of Hillsboro	5,000	5,000	10,000	9 37%	$115,970	4,600	2,900	7,500	14 61%	226	7,726	14 61%	$179,649	$292,113
City of Beaverton	4,000	4,000	8,000	7 50%	$92,776	3,600	400	4,000	7 79%	121	4,121	7 79%	$95,813	$155,794
City of Sherwood	0	2,000	2,000	3 75%	$46,388	1,800	200	2,000	3 89%	60	2,060	3 89%	$47,907	$77,897
City of Tualatin	0	1,850	1,850	3 47%	$42,909	1,700	150	1,850	3 60%	56	1,906	3 60%	$44,314	$72,055
City of Forest Grove	4,500	1,000	5,500	1 87%	$23,194	900	100	1,000	1 95%	30	1,030	1 95%	$23,953	$38,948
City of Cornelius	0	2,500	2,500	4 69%	$57,985	2,000	0	0		0	0		$0	$0
City of North Plains	0	1,000	1,000	1 87%	$23,194	1,000	0	0		0	0		$0	$0
City of Banks	0	1,000	1,000	1 87%	$23,194	1,000	0	0		0	0		$0	$0
Lake Oswego Corp	500	0	500	0 00%	$0									
Total M&I	**14,000**	**38,350**	**52,350**			35,600	4,750	36,350	70 79%	1,097	37,447	70 79%	$870,701	$1,415,774
Sub Total	**26,618**	**53,350**	**79,968**	**100.00%**	**$1,237,400**	**50,600**	**4,750**	**51,350**	**100.00%**	**1,550**	**52,900**	**100.00%**	**$1,230,000**	**$2,000,000**
							1,550						$1,230,000	$2,000,000
Irrigation(existing)	**27,022**	**0**	**27,022**			**27,022**		**27,022**						
Fish and Wildlife														
Recreation*	6,900					6,900								
Hydro power														
Flood Management														
Total	**53,640**	**53,350**	**106,990**			**77,622**	**6,300**	**83,922**						
Feasibility Report Estimate					$1,237,400		**6,300**							
*Non-active pool														

Notes Cornelius original allocation of 2500 acre-feet allocated to Hillsboro Banks and North Plains allocation of 2000 acre-feet allocated to M&I reduction adjustment
Revised storage volume to reflect updated capacity for an increase of 1,550 acre-feet This volume is reallocated on percentage share basis

Tualatin Water Supply Project
Estimate of Water Supply Project Cost Share and Total Project Costs
Project Manager - Tom VanderPlaat Date 09/18/03

	Water Allocations	% Share	Costs Original	FY 01-02	FY02-03	FY03-04	FY04-05	FY-05-06	FY06-07	FY07-08	FY-08-09	FY09-10	FY10-11	Totals
	Ac - ft			0.2%	0.6%	0.8%	1.3%	2.0%	3.0%	10.0%	30.0%	25.0%	27.0%	100.0%
Water Quality														
Clean Water Services	15,453	29 21%	$43,817,580	$107,207	$254,259	$359,304	$584,234	$876,352	$1,314,527	$4,381,758	$13,145,274	$10,954,395	$11,840,270	$43,817,580
M&I														
City of Tigard	10,302	19 47%	$29,211,720	$71,471	$169,506	$239,536	$389,490	$584,234	$876,352	$2,921,172	$8,763,516	$7,302,930	$7,893,513	$29,211,720
TVWD	10,302	19 47%	$29,211,720	$71,471	$169,506	$239,536	$389,490	$584,234	$876,352	$2,921,172	$8,763,516	$7,302,930	$7,893,513	$29,211,720
City of Hillsboro	7,726	14 60%	$21,907,372	$53,600	$127,121	$179,640	$292,098	$438,147	$657,221	$2,190,737	$6,572,212	$5,476,843	$5,919,752	$21,907,372
City of Beaverton	4,121	7 79%	$11,685,255	$28,590	$67,806	$95,819	$155,803	$233,705	$350,558	$1,168,526	$3,505,577	$2,921,314	$3,157,558	$11,685,255
City of Sherwood	2,060	3 89%	$5,841,210	$14,291	$33,895	$47,898	$77,883	$116,824	$175,236	$584,121	$1,752,363	$1,460,302	$1,578,396	$5,841,210
City of Tualatin	1,906	3 60%	$5,404,537	$13,223	$31,361	$44,317	$72,060	$108,091	$162,136	$540,454	$1,621,361	$1,351,134	$1,460,400	$5,404,537
City of Forest Grove	1,030	1 95%	$2,920,605	$7,146	$16,947	$23,949	$38,941	$58,412	$87,618	$292,060	$876,181	$730,151	$789,198	$2,920,605
City of Cornelius	0	0 00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
City of North Plains	0	0 00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
City of Banks	0	0 00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total M&I	**37,447**	**70.79%**	**$106,182,420**	$259,793	$616,141	$870,696	$1,415,766	$2,123,648	$3,185,473	$10,618,242	$31,854,726	$26,545,605	$28,692,330	$106,182,419
Sub Total	**52,900**	**100.00%**	**$150,000,000**	$367,000	$870,400	$1,230,000	$2,000,000	$3,000,000	$4,500,000	$15,000,000	$45,000,000	$37,500,000	$40,532,600	$150,000,000

WQ(exisiting)	**12,618**		
M&I (existing)	**14,000**		
Irrigation	**27,022**		
Fish and Wildlife			
Recreation*	6,900		
Hydro power			
Flood Management			
Total (active storage)	**106,540**		
Total Project Cost			**$150,000,000**

Notes Cornelius original allocation of 2500 acre-feet allocated to Hillsboro Banks and North Plains allocation of 2000 acre-feet allocated to M&I reduction adjustment
Revised storage volume to reflect updated capacity for an increase of 1,550 acre-feet This volume is reallocated on percentage share basis

FIRST AMENDMENT TO JOINT FUNDING AGREEMENT FOR IWRM WATER SUPPLY FEASIBILITY STUDY

This Amendment, dated November 14, 2002, is between Clean Water Services ("District"- formerly known as Unified Sewerage Agency) a county service district formed by authority of ORS 451, The Tualatin Valley Water District, a domestic water district formed by authority of ORS 264 and the cities of Hillsboro, Beaverton, Forest Grove, Tigard, Sherwood, Tualatin, North Plains, Cornelius and Banks, all municipal corporations of the State of Oregon (Partners) and amends the parties Joint Funding Agreement – IWRM Water Supply Feasibility Study dated June 20, 2001 ("Joint Funding Agreement").

RECITALS:

1. The parties previously entered into the Joint Funding Agreement under which the parties agreed to jointly fund a study of the feasibility of alternative approaches to increasing the water supply, as well as the 'no action alternative".

2. The parties now wish to amend the Joint Funding Agreement in order to fund additional Study tasks to complete the Water Supply Feasibility Study.

TERMS AND CONDITIONS

1. From the effective date of the Amendment, Partners shall compensate District for each party's share of the cost of the Study as provided in Section 2 of the Agreement. A revised payment schedule is included as Exhibit B.

   Total payment to District for compensation for services provided during fiscal year 2002-2003 shall not exceed $1,237,400.

2. Section 4 is amended as follows:

   "$734,000" is changed to "$1,237,400".

3. Exhibit A of the Joint Funding Agreement is amended as provided in Exhibit A of this Amendment.

4. This Amendment shall be effective upon signing of all parties.

5. Except as amended herein, the initial Joint Funding Agreement shall remain in full force and effect.

The above is hereby agreed to by the parties and executed by the duly authorized representative below:

6. Counterparts/Effective Date. This Agreement may be signed in counterparts and becomes effective upon the date of the latest signature of the signatories authorized by the governing body of each party.

CLEAN WATER SERVICES

By: _____

Date: 10/09/07

APPROVED AS TO FORM:

By: _____
for District General Counsel

TUALATIN VALLEY WATER DISTRICT

By: _____

Date: _____

APROVED AS TO FORM:

By: _____
Attorney

CITY OF HILLSBORO

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BEAVERTON

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF FOREST GROVE:

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

The above is hereby agreed to by the parties and executed by the duly authorized representative below:

6. Counterparts/Effective Date. This Agreement may be signed in counterparts and becomes effective upon the date of the latest signature of the signatories authorized by the governing body of each party.

CLEAN WATER SERVICES

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
District General Counsel

TUALATIN VALLEY WATER DISTRICT

By: _____
Richard P. Burke, President

Date: 9/18/02

APROVED AS TO FORM:

By: _____
Attorney Clark Balfour

CITY OF HILLSBORO

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BEAVERTON

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF FOREST GROVE:

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

The above is hereby agreed to by the parties and executed by the duly authorized representative below:

6. Counterparts/Effective Date. This Agreement may be signed in counterparts and becomes effective upon the date of the latest signature of the signatories authorized by the governing body of each party.

CLEAN WATER SERVICES

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
District General Counsel

TUALATIN VALLEY WATER DISTRICT

By: _____

Date: _____

APROVED AS TO FORM:

By: _____
Attorney

CITY OF HILLSBORO

By: Tim Everett

Date: 09-13-02

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BEAVERTON

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF FOREST GROVE:

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

The above is hereby agreed to by the parties and executed by the duly authorized representative below:

6. Counterparts/Effective Date. This Agreement may be signed in counterparts and becomes effective upon the date of the latest signature of the signatories authorized by the governing body of each party.

CLEAN WATER SERVICES

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
District General Counsel

TUALATIN VALLEY WATER DISTRICT

By: _____

Date: _____

APROVED AS TO FORM:

By: _____
Attorney

CITY OF HILLSBORO

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BEAVERTON

By: _____

Date: 11/14/02

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF FOREST GROVE:

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

The above is hereby agreed to by the parties and executed by the duly authorized representative below:

6. Counterparts/Effective Date. This Agreement may be signed in counterparts and becomes effective upon the date of the latest signature of the signatories authorized by the governing body of each party.

CLEAN WATER SERVICES

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
District General Counsel

TUALATIN VALLEY WATER DISTRICT

By: _____

Date: _____

APROVED AS TO FORM:

By: _____
Attorney

CITY OF HILLSBORO

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BEAVERTON

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF FOREST GROVE:

By: Verge Lopez

Date: 10/23/02

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TIGARD

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF SHERWOOD

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TUALATIN

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF NORTH PLAINS

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF CORNELIUS

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BANKS

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TIGARD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF SHERWOOD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TUALATIN

By: Tony Weller
Mayor Pro Tem

Date: 10-14-02

APPROVED AS TO FORM:

By: Brenda L. Braden
Attorney

CITY OF NORTH PLAINS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF CORNELIUS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BANKS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TIGARD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF SHERWOOD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TUALATIN

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF NORTH PLAINS

By: Henry J. Drecke

Date: 9/6/02

APPROVED AS TO FORM:

By: Pair Gil
Attorney

CITY OF CORNELIUS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BANKS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TIGARD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF SHERWOOD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TUALATIN

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF NORTH PLAINS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF CORNELIUS

By:_____

Date: 10-7-02

APPROVED AS TO FORM:

By: N/A
Attorney

CITY OF BANKS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TIGARD

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF SHERWOOD

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TUALATIN

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF NORTH PLAINS

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF CORNELIUS

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BANKS

By: Ralph Ochenski

Date: 10/9/02

APPROVED AS TO FORM:

By: _____
Attorney

Exhibit A (First Amendment)

TUALATIN BASIN WATER SUPPLY FEASIBILITY STUDY

Scope of Work Tasks

(Revised and additional Tasks)

August 16, 2002

Task 400 – Economics

1. Conduct Principles and Guidelines for National Economic Development benefits-cost analysis
2. Conduct Principles and Guidelines for Regional Economic Development benefits-cost analysis
3. Conduct Repayment Analysis
4. Write Economic affected environment
5. Conduct impact analysis
6. Revise economic input in response to comments

Task 900 – Social and Environmental Justice

1. Affected Environmental/Existing conditions
2. Environmental Consequences/Impact Analysis
3. Review drafts and respond to comments

Task 1200 – Cultural Resources

1. Conduct background research/initial information gathering.
2. Conduct data collection/file search.
3. Draft affected environment section.
4. Evaluate alternatives/draft environmental consequences section.
5. Consult with SHPO.
6. Consult with Native Americans.
7. Attend team meetings.
8. Review and revise drafts.
9. Respond to public comments.
10. Conduct site visit to project area.

Task 1300 – Resources Management (Project Management)

1. Coordinate with BOR management and staff on federal funding process and review of tasks.
2. Coordinate and administer governmental affairs contractor for the federal funding process.
3. Develop action plan for seeking congressional appropriations and federal agency grant processes.

Task 1400 – Sain Creek Tunnel Analysis (new task)

1. Gather and review technical information on the geologic and seimsicity in the area of the tunnel.
2. Assess potential water yield and its impact on reservoir filling. Describe tunnel hydrology and operational parameters.
3. Evaluate the potential of hydropower benefits of alternative tunnel configurations.
4. Evaluate daily streamflows in upper watershed, including quantifying the flood control benefit of the tunnel.

Task 1500 – Climate Change Survey for Water Demands (new task)

1. Evaluate climate changes models and determine potential general climate change trend.
2. Based on climate change information, determine impacts to streamflows and current hydrology.
3. Evaluate and review water supply impacts from climate-altered streamflows.
4. Summarize the climate change elements as related to water demand and present management implications.

EXHIBIT 3

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: Amendment to Joint Funding Agreement – Integrated Water Resource Management (IWRM) Water Supply Feasibility Study of the Tualatin River Basin

FOR AGENDA OF: 10/7/02 **BILL NO:** 02274

Mayor's Approval:

DEPARTMENT OF ORIGIN: Engineering

DATE SUBMITTED: 9/24/02

CLEARANCES: City Attorney
Finance
Purchasing

PROCEEDING: Consent Agenda

EXHIBITS:
- IGA Amendment
- June 2001 funding IGA
- 8/14/02 Funding Options memorandum
- Agenda Bill No. 01088

BUDGET IMPACT

EXPENDITURE REQUIRED	AMOUNT BUDGETED	APPROPRIATION REQUIRED
$30,593 *	$-0-	$30,593 **

* See attached Consultant Proposal

** Source of funding is the Water Fund's Contingency Account No. 501-80-0741-991. Budgeted Contingency Account amount is $2,899,161. This Agenda Bill recommends that funds should be transferred in supplemental budget to Account No. 505-75-3635-683, Water Construction Fund, JWC Capacity Projects Program, Construction Design and Engineering Inspection Account.

HISTORICAL PERSPECTIVE:

On March 19, 2001, Council approved entering into a funding agreement in Agenda Bill No. 01088 (attached) for an IWRM Water Supply Feasibility Study of the Tualatin River. Subsequently the Mayor signed a Joint Funding Agreement (intergovernmental agreement) dated June 20, 2001. The Joint Funding Agreement jointly funds a study of the feasibility of alternative approaches to increasing the water supply in the Tualatin River basin, as well as the "no action alternative."

The Joint Funding Agreement, which was signed subsequent to the Council approval, was to set out the arrangement for Clean Water Services to fund and manage a preliminary step toward completion of a Planning Report and Draft Environmental Impact Statement, constituting the IWRM Water Supply Feasibility Study. The report is being prepared in cooperation with the US Bureau of Reclamation, which built and owns the Scoggins Dam. The original June 20, 2001, Joint Funding Agreement, consisting of 11 partners, funded a $734,000 project. Beaverton's participation in that agreement was $57,966. Beaverton's level of participation in the original Joint Funding Agreement was established using a City staff preliminary estimate of water storage need for the future of 4,000 acre-feet or about 8 percent

of the total nominal 50,000 acre-feet in new storage. There was a $100,000 commitment from the Bureau of Reclamation toward the estimated total of $834,000 for the Water Supply Feasibility Report. The Joint Funding Agreement funds the remaining $734,000.

INFORMATION FOR CONSIDERATION:

Since work on the project was begun in June 2001, the project team has made substantial progress. City staff have represented Beaverton at monthly technical committee meetings since the beginning. In August 2002, the technical committee agreed that a number of important additional tasks and modifications of existing tasks were necessary for the project to succeed. The proposed amendment is to fund additional and modified tasks as described in the attached August 14, 2002, "WSFS Funding Options Review" memorandum. The memorandum is from Tom Vanderplaat of Clean Water Services, the project manager for the Tualatin Basin Water Supply Feasibility Study.

Although Beaverton's original amount of $57,966 in the Joint Funding Project was budgeted by the City in its FY 2001-2002 fiscal budget, no additional amount was anticipated or proposed by staff when that budget was adopted by Council.

Funding of the additional tasks proposed in the attached "First Amendment" to the June 20, 2001, Joint Funding Agreement is recommended as shown above.

RECOMMENDED ACTION:

1. Council authorize the Mayor to execute "First Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study," approved as to form by the City Attorney.

2. Council direct the Finance Director to include a $30,593 appropriation in the next scheduled Supplemental Budget as shown above.

FIRST AMENDMENT
TO JOINT FUNDING AGREEMENT FOR
IWRM WATER SUPPLY FEASIBILITY STUDY

This Amendment, dated _____, 2002, is between Clean Water Services ("District"- formerly known as Unified Sewerage Agency) a county service district formed by authority of ORS 451, The Tualatin Valley Water District, a domestic water district formed by authority of ORS 264 and the cities of Hillsboro, Beaverton, Forest Grove, Tigard, Sherwood, Tualatin, North Plains, Cornelius and Banks, all municipal corporations of the State of Oregon (Partners) and amends the parties Joint Funding Agreement – IWRM Water Supply Feasibility Study dated June 20, 2001 ("Joint Funding Agreement").

RECITALS:

1. The parties previously entered into the Joint Funding Agreement under which the parties agreed to jointly fund a study of the feasibility of alternative approaches to increasing the water supply, as well as the 'no action alternative".

2. The parties now wish to amend the Joint Funding Agreement in order to fund additional Study tasks to complete the Water Supply Feasibility Study.

TERMS AND CONDITIONS

1. From the effective date of the Amendment, Partners shall compensate District for each party's share of the cost of the Study as provided in Section 2 of the Agreement. A revised payment schedule is included as Exhibit B.

   Total payment to District for compensation for services provided during fiscal year 2002-2003 shall not exceed $1,237,400.

2. Section 4 is amended as follows:

   "$734,000" is changed to "$1,237,400".

3. Exhibit A of the Joint Funding Agreement is amended as provided in Exhibit A of this Amendment.

4. This Amendment shall be effective upon signing of all parties.

5. Except as amended herein, the initial Joint Funding Agreement shall remain in full force and effect.

The above is hereby agreed to by the parties and executed by the duly authorized representative below:

6. Counterparts/Effective Date. This Agreement may be signed in counterparts and becomes effective upon the date of the latest signature of the signatories authorized by the governing body of each party.

CLEAN WATER SERVICES

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
District General Counsel

TUALATIN VALLEY WATER DISTRICT

By: _____

Date: _____

APROVED AS TO FORM:

By: _____
Attorney

CITY OF HILLSBORO

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BEAVERTON

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF FOREST GROVE:

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TIGARD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF SHERWOOD

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF TUALATIN

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF NORTH PLAINS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF CORNELIUS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

CITY OF BANKS

By:_____

Date:_____

APPROVED AS TO FORM:

By: _____
Attorney

Exhibit A (First Amendment)

TUALATIN BASIN WATER SUPPLY FEASIBILITY STUDY

Scope of Work Tasks

(Revised and additional Tasks)

August 16, 2002

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1. Conduct Principles and Guidelines for National Economic Development benefits-cost analysis
2. Conduct Principles and Guidelines for Regional Economic Development benefits-cost analysis
3. Conduct Repayment Analysis
4. Write Economic affected environment
5. Conduct impact analysis
6. Revise economic input in response to comments

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1. Affected Environmental/Existing conditions
2. Environmental Consequences/Impact Analysis
3. Review drafts and respond to comments

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5. Consult with SHPO.
6. Consult with Native Americans.
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8. Review and revise drafts.
9. Respond to public comments.
10. Conduct site visit to project area.

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3. Develop action plan for seeking congressional appropriations and federal agency grant processes.

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3. Evaluate and review water supply impacts from climate-altered streamflows.
4. Summarize the climate change elements as related to water demand and present management implications.

Exhibit B

Water Supply Feasibility Report
Water Supply Feasibility Report Cost Share
Project Manager - Tom VanderPlaat

Date 08/14/2002

Options Review

	Water Allocations	% Share	Costs	Option 1 Gov. affairs & CWS PM	Option 1A Sain Cr. Tunnel	Option 2 Climate Change	Option 3 BOR Tasks
	Ac - ft			$105,000	$60,000	$50,000	$215,000
Water Quality							
CWS	15,000	29.64%	$239,348	$270,474	$288,261	$303,083	$366,818
M&I							
City of Tigard	9,500	18.77%	$151,587	$171,300	$182,565	$191,953	$232,318
TVWD	9,500	18.77%	$151,587	$171,300	$182,565	$191,953	$232,318
City of Hillsboro	4,600	9.09%	$73,400	$82,945	$88,400	$92,945	$112,491
City of Beaverton	3,600	7.11%	$57,443	$64,914	$69,183	$72,740	$88,036
City of Sherwood	1,800	3.56%	$28,722	$32,457	$34,591	$36,370	$44,018
City of Tualatin	1,700	3.36%	$27,126	$30,654	$32,670	$34,349	$41,573
City of Forest Grove	900	1.78%	$14,361	$16,228	$17,296	$18,185	$22,009
City of Cornelius	2,000	3.95%	$31,913	$36,063	$38,435	$40,411	$48,909
City of North Plains	1,000	1.98%	$15,957	$18,032	$19,217	$20,206	$24,455
City of Banks	1,000	1.98%	$15,957	$18,032	$19,217	$20,206	$24,455
Total M&I	35,600	70.36%	$568,052	$641,926	$684,139	$719,317	$870,582
Sub Total	50,600	100.00%	$807,400	$912,400	$972,400	$1,022,400	$1,237,400
WQ(exisiting)	12,618						
M&I (exisiting)	14,000						
Irrigation	27,022						
Fish and Wildlife							
Recreation*	6,900						
Hydro power							
Flood Management							
Total (active storage)	104,240						
Feasibility Report Estimate			$807,400				

				Total
Original Contract			$734,000	
Contingency (10%)			$73,400	
				$807,400
Option 1 - Governm. Affairs and CWS Project Mgt.			$105,000	
				$912,400
Option 1A - Sain Creek Tunnel Feasibility			$60,000	
				$972,400
Option 2 - Climate Change Rev. for Water Demands			$50,000	
				$1,022,400
Option 3- BOR Tasks			$215,000	
Totals				$1,237,400

May 14, 2001

JOINT FUNDING AGREEMENT

IWRM WATER SUPPLY FEASIBILITY STUDY

This agreement, dated June 20 --, 2001, is between The Unified Sewerage Agency of Washington County, a county service district formed by authority of ORS 451, (Agency), The Tualatin Valley Water District, a domestic water district formed by authority of ORS 264 (District) and the cities of Hillsboro, Beaverton, Forest Grove, Tigard, Sherwood, Tualatin, North Plains, Cornelius and Banks, all municipal corporations of the State of Oregon.

RECITALS

1. The parties acknowledge that new sources of water will be necessary in order to meet the needs of domestic, commercial, industrial and agricultural users within the Tualatin Basin, as well as the water quality and quantity needs of the Tualatin River;

2. The parties wish to enter into an agreement under which the parties shall jointly fund a study of the feasibility of two alternative approaches to increasing the water supply, as well as the "no action" alternative.

3. The parties hereto have the authority to enter into this agreement pursuant to their applicable charters and Oregon Revised Statutes sections 190.003 through 190.030.

TERMS AND CONDITIONS

1. Description of Project

The project to be funded pursuant to this agreement shall be known as "The Integrated Water Resources Management Water Supply Feasibility Study" (the Study). The Study shall be conducted jointly by consultants hired by the parties to this agreement and the U.S. Bureau of Reclamation. The Study shall examine the feasibility of several water supply alternatives to increasing the water supply within the Tualatin Basin. The alternatives provided in the IWRM Strategy Plan included; expanding the Hagg Lake reservoir, and other potential new supply alternatives. The Study shall also examine the feasibility of not increasing the water supply within the Tualatin Basin. The Study shall recommend a preferred approach to meeting water needs within the Tualatin Basin and shall contain either a strategy or a draft strategy for obtaining an Environmental Impact Statement. In examining the alternative approaches to increasing the water supply, the Study shall assume that an additional 50,600 acre feet of supply will be needed on an

annual basis. The estimated cost of the Study to the parties of this agreement is $14,500 per 1000 acre feet of additional supply or an estimated total of $734,000. In the event the Bureau of Reclamation portion of the Study increases in scope, there will be a corresponding reduction in the cost of the study to the parties to this agreement. The parties understand that the Study is an initial step in addressing the water needs of the Tualatin Basin and that participation in funding the study does not confer a right to water. The parties understand that the estimated current cost of increasing the water supply by 50,600 acre-feet per year is $112 million.

2. Cost Share

Each party's share of the cost of the Study shall be proportional to the party's projected share of the additional water supply as of the date of this agreement, assuming 50,600 acre-feet of additional supply. The cost share for each party shall be equal to the percentage indicated below:

	Acre Ft.	%
Unified Sewerage Agency	15,000	29.65
Tualatin Valley Water District	9,500	18.77
City of Tigard	9,500	18.77
City of Hillsboro	4,600	9.09
City of Beaverton	3,600	7.11
City of Sherwood	1,800	3.56
City of Tualatin	1,700	3.36
City of Cornelius	2,000	3.95
City of Forest Grove	900	1.78
City of North Plains	1,000	1.98
City of Banks	1,000	1.98

The actual amount and percentage of any additional water supply agreed to by a party may ultimately vary from the amount assigned to the party in the chart above.

3. Project Management

The parties agree that Agency shall be the Project Manager for the Study, and shall seek and retain such contracted services as may, from time to time, be deemed necessary to carry out the work of the Study. Agency will seek and retain such services through a Request for Proposals process. A draft scope of work for the Study is included as Exhibit A. Agency shall pay such bills and invoices as may be deemed proper and appropriate and upon payment thereof shall deliver invoices to the parties to this agreement in the applicable percentages as set forth in Section 2 above. Each party shall pay such invoice(s) within thirty (30) days of receipt and shall pay such invoice(s) even if there is a question to resolve with Agency. All questions that cannot be resolved between a party and Agency shall be submitted to all of the parties to this agreement for final resolution.

4. Voluntary Termination of Party

Except as otherwise indicated in this section, no party may terminate its rights and obligations under this agreement until the Study is completed or a total of $734,000 has been expended, whichever occurs first. A party may terminate its rights and obligations if another party to this agreement agrees to assume the party's rights and obligations and the Joint Commission approves, or, if the Joint Commission has not been established, if all other parties to this agreement approve. No transfer of a party's rights and obligations under this section shall include a profit to the party.

5. Amendments

This agreement may be amended if each party concurs in the proposal. Such amendment must be in writing and signed by authorized representatives of all parties.

6. Assignment

No party shall have the right to assign its interest in this agreement (or any portion thereof) without the prior written consent of all other parties.

7. Severability

In case one or more of the provisions contained herein should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby.

8. Notices

Any notice deemed necessary by the Project Manager or any representative agency shall be given in writing to the designees of each agency by either hand delivery or by United States Mail, first class postage prepaid or by e-mail if return is acknowledged.

9. Attorney Fees

If any dispute should arise under this agreement the prevailing party shall be entitled to such reasonable attorney fees as may be awarded by any trial court or arbitrator and including any appeal therefrom.

10. Binding Effect and Indemnity

All acts undertaken in the course of the project, by any authorized party, shall be deemed to be the acts of all parties. For all other acts or omissions each party hereto agrees to indemnity the other, their governing bodies, officers, agents, employees and consultants from and against all claims, demands, penalties and causes of action of any

kind or character, including the cost of defense and attorney fees, arising in favor of any person or entity on account of personal injury, death or damage to property resulting from the solely negligent acts or omissions of the entity or one under its control.

11. Authorship; Legal Review

This agreement shall not be construed for or against any party by reason of the authorship or alleged authorship of any provision. Each party is encouraged to obtain the advice of legal counsel before signing this agreement.

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12. Signature Page

CITY OF HILLSBORO

By: Rob Massar
Rob Massar, Assistant City Manager

Date: 5-23-01

APPROVED AS TO FORM:

By: Terry J. Lenz
City Attorney

12. Signature Page

CITY OF CORNELIUS

By: _____

Date: 5/22/01

APPROVED AS TO FORM:

By: _____
Attorney for City

1. Signature Page

UNIFIED SEWERAGE AGENCY

By: Bill Gaffke

Date: 6/20/01

APPROVED AS TO FORM:

By: for Agency General Counsel

TUALATIN VALLEY WATER DISTRICT

By: James P. Duggan

Date: 6/1/01

APPROVED AS TO FORM:

By: Clark Balfour
Outside Counsel

CITY OF HILLSBORO

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF BEAVERTON

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF FOREST GROVE:

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

12. Signature Page

CITY OF BANKS

By: Robert C. Oehmke Mayor

Date: 5/16/2001

APPROVED AS TO FORM:

By: [illegible]

Attorney for City

12. Signature Page

CITY OF BEAVERTON

By: Rob Drake, MAYOR

Date: 6/27/01

APPROVED AS TO FORM:

By: _____
Attorney for City

12. Signature Page

CITY OF FOREST GROVE:

By: Gerald L. Ries

Date: 6/4/01

APPROVED AS TO FORM:

By: _____

Attorney for City

CITY OF TIGARD

By: _____

Date: 5/16/01

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF SHERWOOD

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF TUALATIN

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF NORTH PLAINS

By: _____

Date:

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF CORNELIUS

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF BANKS

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF TIGARD

By:

Date:

APPROVED AS TO FORM:

By:

Attorney for City

CITY OF SHERWOOD

By: Ron E. Shetty

Date: 6/15/01

APPROVED AS TO FORM:

By: E. Shannon Johnson

Attorney for City

CITY OF TUALATIN

By:

Date:

APPROVED AS TO FORM:

By:

Attorney for City

CITY OF NORTH PLAINS

By:

Date:

APPROVED AS TO FORM:

By:

Attorney for City

CITY OF CORNELIUS

By:

Date:

APPROVED AS TO FORM:

By:

Attorney for City

CITY OF BANKS

By:

Date:

APPROVED AS TO FORM:

By:

Attorney for City

12. Signature Page

CITY OF TUALATIN

By: Steve Wheeler

Date: 5/17/01

APPROVED AS TO FORM:

By: Brenda L. Braden
Attorney for City

CITY OF TIGARD

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF SHERWOOD

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF TUALATIN

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF NORTH PLAINS

By: Henry J. Drefel

Date: May 7th, 2001

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF CORNELIUS

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

CITY OF BANKS

By: _____

Date: _____

APPROVED AS TO FORM:

By: _____
Attorney for City

Exhibit A

IWRM WATER SUPPLY FEASIBILITY STUDY
Scope of Work Tasks

Task 100 – Engineering

1. Scoggins Dam Raise
   - New Flood routing
   - Relocation of existing shoreline facilities
   - Fish Passage Assessment
   - Power Generation Analyses

2. Willamette River Exchange Pipeline
   - Topographic and Location Maps for Pipeline Routing
   - Pumping Plant Locations and Power Supply Review
   - Pipeline System Capacity
   - Pipeline System Routing Alternatives

3. Alternatives Analysis Process
   - Review of existing BOR Information

4. No Action Alternative

Task 200 - Biological Resources

1. Scoping and Public Involvement
2. Collect and Review of existing information
3. Conduct Wetland evaluation and delineation
4. Conduct habitat evaluation procedure
5. Conduct field surveys
6. Agency Coordination
7. Impact and effected environment section of Environmental Impact Statement
8. Preparation of a biological assessment (BA)

Task 300 – Technical Writing

1. Review function

Task 400 - Economics

1. Review function

Task 500 – Surface/Groundwater Hydrology

1. Team Meetings and Coordination
2. Literature Review and data collection
3. Surface Water Supply Modeling
4. Presentation and coordination
5. Develop water supply technical input to report
6. Peer review, report revisions

7. Maps, supplies and printing costs

Task 600 - Water Quality

1. Review of Existing data and reports.
2. Conduct Water Quality data analysis
3. Prepare Water quality sections for Planning report
4. Meetings and Coordination
5. Conduct peer review

Task 700 – Land and Soil Resources (Soils and Geology)

1. Review of existing data (Phase II Planning Report)
2. Land Inventory of irrigated lands
3. Onsite evaluations and expanded reservoir site
4. Land Classification status
5. Agricultural history
6. Crop survey of irrigated and non-irrigated lands
7. Interviews of Agricultural users and agencies
8. Soils information and technical review
9. Soil trace element review
10. Prepare Land and Soils chapter for Planning Report
11. Respond to comments
12. Team Meetings

Task 800 – Outdoor Recreation

1. Coordination with state, local and private entities
2. Document existing recreational activities
3. Locate and identify existing recreational facilities
4. Prepare recreation sections for Planning Report
5. Prepare basic recreation maps
6. Team meetings and status reports

Task 900 – Social and Environmental Justice

1. Review of Information

Task 1000 – Indian Trust Assets

1. Review of Information

Task 1100 – Public Involvement

1. Develop and revise public involvement strategy
2. Identify stakeholders; develop and maintain mailing lists
3. Public meeting and document notification
4. Public meeting preparation
5. Attend public meetings
6. Process public comments
7. Attend Team meetings
8. Write public involvement sections for Planning Report
9. Public Notices, Court Reporter, Facility Rental Fees

Task 1200 - Cultural Resources

1. Review information as needed

Task 1300 – Resources Management (Project Management)

1. Develop agreements and modify as needed.
2. Track work accomplishments and costs.
3. Coordinate with the client and other participants.
4. Coordinate and participate in the development of a final purpose and need statement, goals and objectives, criteria for alternative development, and alternative formulation for the proposed project.
5. Insure that all documents meet project requirements in accordance with purpose and need, goals, and objectives of the project.
6. Prepare for and participate in public meetings.
7. Coordinate reviews and revisions of draft documents.
8. Provide periodic progress reports to participating client staff as a management aid, outlining accomplishments and providing information on problems or concerns.
9. Conduct technical team meetings.

Tualatin Basin Water Supply Feasibility Study

Date: August 14, 2002

To: Water Managers Group (WMG)

From: Tom VanderPlaat - CWS Project Manager

Subject: WSFS Funding Options review

Since signing the Joint Funding Agreement in June 2001, the Water Supply Feasibility study has made good progress. As mentioned at the previous WMG, we have several issues that related to the budget and time schedule as we move forward.

In January 2002, as part of the budget review, it was agreed that a 10% contingency would be included in the partner's budgets for FY 02-03, which equates to $73,400 and total of $807,400.

As presented at the last WMG meeting, the BOR budgeted only $25,000 for FY 02-03, which is not adequate for completion for the tasks committed in the BOR/CWS Memorandum of Agreement (MOA). The funding limitations have an impact on the options for the future. The costs for the various options would allocate based on the current joint funding agreement percentages. The following is the funding options for completion of the Study:

Option 1. – Governmental Affairs and CWS Project Management.

This option includes two elements. First, based on the recent discussions with BOR management, they strongly recommended that we increase our efforts with the governmental affairs consultant (Washington DC lobbyist). It would likely take up to two years to obtain BOR funding given the federal budget process. Based on the unanticipated complexity of the Study, we underestimated the level of effort for CWS management and suggest that an addition to this element. Specifically, the BOR coordination and public involvement are two task areas have taken more time than anticipated.

- Increased Budget for Governmental Affairs ---- $60,000
- Increase Budget for CWS Project Management -- $45,000

Total Increase $105,000

Option 1A. – Sain Creek Tunnel Feasibility

This option is based on the MWH Scope and tasks elements to be preformed by the CWS project manager. This option would include the flood control and hydropower elements of the draft MWH scope of work. The CWS work tasks include the water availability analysis for the Tualatin River diversion.

- Sain Creek Tunnel Feasibility $60,000

Option 2. – Climate Change Review of Water Demands

This option is to conduct the climate change study for the Tualatin Basin and understand the impact to the water demands. This review would similar to the Portland Bull Run analysis.

- Climate Change Review of Water Demands ---- $50,000

Option 3 – BOR tasks for completion of the WFSF

This option is based on advancing funding to the BOR for completion of the Study, in order to keep the Study on the proposed time schedule. The BOR tasks include dam engineering, economics, cultural resources and others. The BOR management indicated the funding would be credited at a later phase of the Project. However, given the future of federal funding, this is of considerable concern. As part of the federal funding process, the crediting of this option would be included as part of the future legislation with the BOR.

- BOR tasks for completion of the WSFS - $215,000

In the case that all the above options are chosen, the budget would increase by $430,000 and from the original $807,400 to $1,237,000. The attached spreadsheets show the impact to the individual partners.

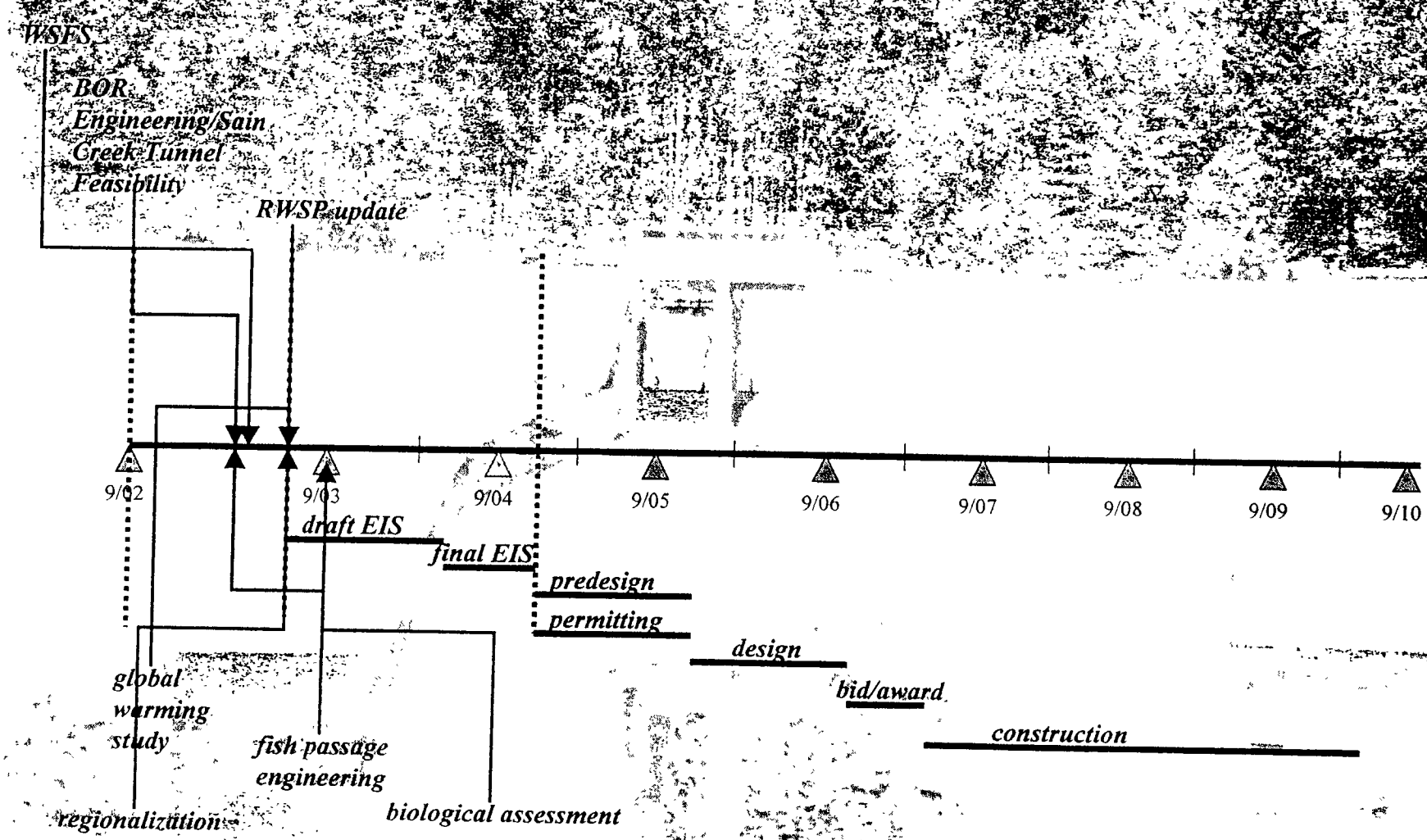
Additional Study Elements (Fish Passage Engineering and Biological Assessment)

The original Study work tasks did not include tasks related to fish passage and endangered species act consultation, due to the BOR consultation initiated on the existing dam and its operations. It was hoped that BOR consultation process would be completed and could be included in the Study, however, due to changing federal priorities it will not be completed. Therefore in order to maintain the Study time schedule, there maybe a need to include two additional work tasks for fish passage engineering and development of biological assessment (BA) for endangered species. The biological assessment will identify the impacts associated with project alternatives on threatened and endangered species. The BA will need to be coordinated with BOR and estimated to cost approximately $50,000. The fish passage engineering task will conduct an engineering, biological and economic assessment of passage alternatives. The estimated cost of the task is $50,000 to evaluate the costs and benefits of fish passage. These costs are not included in the Joint Funding Agreement amendment and will need further review by the WMG.

TABLE OF TASKS

TASK	START	DURATION	INFORMATION AVAILABLE
WSFS Feasibility Study	Oct - 01	18 mo.	Apr-03
BOR Engineering	Sep - 02	6 mo.	Mar-03
Sain Creek Tunnel Feasibility	Sep - 02	6 mo.	Mar-03
RWSP Update	-	-	Jun-03
Global Warming Study	Jan - 03	6 mo.	Jun-03
Regionalization Discussions	-	-	Jun-03
Fish Passage Engineering	Sep-02	6 mo.	Mar-03
Biological Assessment	Jun-03	3 mo.	Sep-03
Draft EIS	Jun-03	12 mo.	Jun-04
Final EIS and ROD	Jun-04	6 mo.	Dec-04
Predesign	Jan-05	12 mo.	Jan-06
Permitting	Jan-05	12 mo.	Jan-06
Design	Jan-06	12 mo.	Jan-07
Bid/Evaluation/Award	Jan-07	6 mo.	Jun-07
Construction	Jun-07	3 years	Jun-10

Conceptual Project Schedule



RECEIVED
MAR - 6 2001
ENGINEERING DEPT.

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: Water Supply Feasibility Report Participation -- Integrated Water Resource Management (IWRM) for the Tualatin River

FOR AGENDA OF: 3/19/01 **BILL NO:** 01088

Mayor's Approval:

DEPARTMENT OF ORIGIN: Engineering

DATE SUBMITTED: 3/6/01

CLEARANCES: City Attorney
Finance
Purchasing

PROCEEDING: Consent Agenda

EXHIBITS: Statement of Intent
IWRM Executive Summary

BUDGET IMPACT

EXPENDITURE REQUIRED $0	AMOUNT BUDGETED $0	APPROPRIATION REQUIRED $0

HISTORICAL PERSPECTIVE:
The Integrated Water Resource Management (IWRM) Strategy for the Tualatin River, presented under a separate agenda item, lists several options that could accomplish the "Water Supply" policy objective. One of the supply options is to increase the storage volume in Hagg Lake (Scoggins Reservoir) by raising the existing dam. Such a dam raise would provide approximately 50,000 acre-feet (16.5 billion gallons) in additional storage behind Scoggins Dam for multiple uses.

INFORMATION FOR CONSIDERATION:
The proposed Statement of Intent is a preliminary step toward completion of a Planning Report and Draft Environmental Impact Statement, which constitutes the IWRM Water Supply Feasibility Report. The report would be prepared in cooperation with the US Bureau of Reclamation, which built and owns the Scoggins Dam. There is $100,000 currently allocated by the Bureau of Reclamation toward the estimated total of $834,000 for the Water Supply Feasibility Report. This leaves $734,000 to be funded by potential participants in the project. Beaverton's initial participation, if the Council chooses to participate, would be $57,966 as shown on the attached "Schedule A" cost share table.

Beaverton's share was computed using a City staff preliminary estimate of water storage need for the future of 4,000 acre-feet or about 8 percent of the total 50,000 acre-feet in new storage. Based on the July 2000 Joint Water Commission Cost Allocation Study Final Report, staff estimates that in the 2010-2015 timeframe there will exist a potential deficit in raw (prior to treatment) water storage, which is used during the summer when City surface water (stream flow) rights in the Tualatin River cannot be used.

Integrated Water Resources Management (IWRM)
Water Supply Feasibility Report

Statement of Intent

The following is a statement of intent for actions related to the completion of a Planning Report and Draft Environmental Impact Statement – known here as the IWRM Water Supply Feasibility Report. It is signed by representatives of the parties in the proposed actions the City of _____ (City) and the Unified Sewerage Agency (USA)

The IWRM Water Supply Feasibility Report is to be completed as part of the IWRM strategy for the purposes of obtaining additional water supply for instream, municipal and industrial, and agricultural uses. In cooperation with the Bureau of Reclamation, the Report when completed will provide a preferred alternative recommendation and Environmental Impact Statement (EIS). The report is to review alternatives for facilities to secure about 50,000 acre-feet of water supply for the Tualatin River watershed. The Draft Schedule A is a preliminary cost estimate for only the feasibility portion of the project. The total project costs is estimated to be $14,000 to $16,000 per 1000 acre-feet. This statement of intent only deals with the IWRM Water Supply Feasibility Report

The Unified Sewerage Agency intends to:

1) Request its Board of Directors approve an Intergovernmental Agreement (IGA) for development and completion of the Feasibility Report.

2) Request its Board of Directors approve a cost share agreement with the Bureau of Reclamation for participation in development of the Feasibility Report.

The IWRM Water Supply Partner intends to

1) Request its Council approve an Intergovernmental Agreement (IGA) for development and completion of the Feasibility Report. This statement of intent will terminate upon approval of the IGA.

Signatures:

_____

Bill Gaffi, General Manager — Date
Unified Sewerage Agency

_____

_____, City Manager — Date
City of _____

Integrated Water Resources Management (IWRM) Strategy Plan
Public Review and Recommendations
January, 2001

To ensure adequate water supplies in the Tualatin River watershed for the next 50 years, water resources managers developed the Integrated Water Resources Management Strategy Plan. The mission is:

"To collaboratively manage water resources to provide the greatest collective benefit."

By 2050, water demands will more than double in the Tualatin River watershed, according to the best projections. Instream flows are too low now. Municipal and industrial water demands will change as the community grows, as will agricultural irrigation demands. The community's water needs will be met through collaboration among all stakeholders, valid information, knowledge of the communities involved, and sophisticated planning. The IWRM provides the framework for users and regulators with widely diverse issues to work together to meet their shared objectives. The Tualatin River Watershed Council, a voluntary forum for addressing watershed issues, helped draft the IWRM strategy. The seven areas of concern identified by the IWRM are listed below, followed by prioritized action items and information needs.

Protection of Tualatin River tributaries
Healthy tributaries are fundamental to watershed health, water quality and flow goals.

- establish minimum flow targets
- manage use of tributary flows
  improve ecological condition; wetlands/riparian restoration, land management
- develop small, multi-use storage to augment low flows
- evaluate options to replace irrigation with other water sources

Efficient water use
Conservation is a source of water to meet future needs.

- include municipal conservation programs in Regional Water Supply Plan process
- encourage/promote agricultural conservation with watershed council Action Plan

Stormwater management

- support USA efforts to renew and improve Surface Water Management Program
- work with watershed council to meet Action Plan stormwater goals basinwide

Water supply
Regional demand forecasts based on recent population and employment trends
Willamette River studies
City of Portland system expansions
Hagg Lake expansion feasibility
Implications of the Endangered Species Act

Instream flow
Ongoing USGS modeling and instream flow demands need further definition
Flow targets impacted by new water quality parameters and Endangered Species Act

Agricultural demands
Potential agricultural expansion
Evaluation of demand trends due to conservation, crop changes and new technologies Basinwide database of withdrawals from the river and tributaries

Tributaries
Water use by irrigators not regulated by TVID must be understood to identify users and major diversion points, and help develop minimum flow targets for each creek.

The IWRM Strategy is a dynamic work that will be updated and revisited continually in order to remain a useful tool in water resources management through the years.

EXHIBIT 4

Clean Water Services
Our commitment is clear.

September 17, 2003

NOTICE OF PUBLIC MEETING

The Tualatin Basin Water Supply Feasibility Study Policy Steering Committee (PSC) will hold a public meeting on Thursday, September 25 at 6:30 pm at the Clean Water Services Water Quality Lab conference room, 2550 SW Hillsboro Highway, Hillsboro, Oregon (a mile south of downtown Hillsboro on Hwy 219).

The PSC has been established to provide guidance on major decisions for the study. This meeting will focus on a review of the process to evaluate and narrow the key source options for providing up to 50,000 acre/feet of water by the year 2050. The key source options being recommended include raising Scoggins dam by 20 feet, raising Scoggins dam by 40 feet, and an irrigation exchange pipeline from the Willamette River.

Members of the public are invited to comment about water supply source options at the meeting. More information about the study is available at www.cleanwaterservices.org or contact Jeanna Cernazanu at Clean Water Services, 503-846-3619 or by e-mail to cernazanuj@cleanwaterservices.org

155 N First Avenue, Suite 270 • Hillsboro, Oregon 97124

Tualatin Basin Water Supply Feasibility Study
Policy Steering Committee (PSC)

Thursday, September 25, 2003
6:30 – 8:30 p.m.
Clean Water Services Water Quality Lab

Purpose of Meeting:
1 –Review the evaluation of source options for the study and the impacts
2 – Review public process for study
3 –Hear public perceptions and concerns about the source options

AGENDA

6:30 p.m.	Welcome, Introductions	Tom Brian, Chair
6:35 p.m.	Review of WSFS supply options evaluation	Tom VanderPlaat, Clean Water Services Project Mgr & Lisa Obermeyer, MWH
7:00 p.m.	Key source option summary and impacts	" "
7:45 p.m.	Public review process and schedule	Jeanna Cernazanu Public Involvement Coord. Clean Water Services
8:00	Public Comment	
8:25 p.m.	Next Meeting – approval of key source options and draft report	

WATER SUPPLY FEASIBILITY STUDY
POLICY STEERING COMMITTEE
Revised - July 2003

Tom Brian, Chair
Chair, Board of Directors
Clean Water Services

Kirk Andrews
City Councilor
Banks

Forrest Soth
City Councilor
Beaverton

Alfredo Solares-Vega
City Councilor
Cornelius

Rod Fuiten
City Councilor
Forest Grove

Shirley Huffman
Utility Commissioner
Hillsboro

Herb Hirst
City Councilor
North Plains

Brian Moore, Vice Chair
City Councilor
Tigard

Ed Truax
Council President
Tualatin

Lee Weislogel
City Councilor
Sherwood

Jim Doane
TVWD Commissioner
TVWD

Lisa Melyan, Alternate
TVWD Commissioner
TVWD

Mark W. Eves
Board of Directors
Lake Oswego Corp.
(non-voting)

Tualatin Basin Water Supply Feasibility Study (WSFS) Supply Options Evaluation Summary
Revised 9/03

The purpose of the Water Supply Feasibility Study (WSFS) is to evaluate reliable, safe and cost-effective water supply options to meet the long term water needs of the Tualatin Basin community. The study began in November 2001 as a collaborative effort led by Clean Water Services in cooperation with the Bureau of Reclamation and local water providers.

Background

A series of water supply studies set the stage for the WSFS. In the early 1990's the Regional Providers "Phase I Source Options Study" evaluated 29 different new water source options (options list attached in Appendix A). Expansion of Hagg Lake was not included in this study.

Phase II of the Regional Water Supply Plan (RWSP), adopted in 1996, detailed how to meet regional 2050 water supply needs and added conservation to the supply options recommended in Phase I.

The Integrated Water Resources Management Strategy (IWRM), completed in 2001, is a cooperative approach among water resource agencies in Washington County for addressing a range of water issues. A priority IWRM action is to ensure a long-term water supply to meet future basin needs. The IWRM strategy estimated that the Tualatin Basin would face supply shortfalls by 2050

WSFS Source Options Screening

The current Tualatin Basin WSFS is the next step of the IWRM. Using the comprehensive list of potential sources from previous studies and input from a scoping process in early 2002, a set of options were identified for more detailed evaluation.

The following options were carried forward.

- **Water conservation.** Programs and policies that reduce the demand for municipal/industrial and agricultural water supplies.

- **Wastewater reuse.** Infrastructure to distribute treated wastewater for irrigation, primarily for non-food crops. Reuse would result in a reduction in demand in the municipal/industrial and agricultural sectors.

- **New Tualatin Basin storage.** Includes several specific options:
  - **Scoggins Dam raise.** Constructed dam raise would result in a larger pool behind the dam and increased storage.
  - **New in-line storage on a Tualatin River tributary.** New dam on a tributary, similar to the existing Scoggins Dam.
  - **Off-line storage on a Tualatin River tributary.** Water impounded away from tributaries in the high flow season and pumped back to the tributary during low flows to satisfy in-stream water needs only.
  - **Stimson Dam.** New dam below Scoggins Dam and upstream from Stimson Lumber Mill.

- **Aquifer storage and recovery (ASR).** Injecting treated drinking water into underground aquifers during low demand periods and pumping it to provide supplemental peak use supply. Assumed to satisfy municipal needs only.

- **Bull Run System Contracts.** Two scenarios: Near-term (by 2020) expansion of supply capacity through filtration treatment and a raise of the existing Bull Run Dam Number 2; and construction of a third dam in the Bull Run watershed. Either requires a new transmission pipeline to Washington County and is assumed to satisfy municipal needs only.

- **Irrigation Exchange Pipeline from the Willamette River.** Raw water pipeline from the Willamette River pumped for Tualatin Basin agricultural irrigation use. Provided to Tualatin Valley Irrigation District (TVID) in lieu of the Hagg Lake storage making that water available for municipal and in-stream use.

WSFS Source Options Evaluation
The Washington County Water Manager's Group (WMG) evaluated these options based on criteria developed from prior studies. Comments received from the Tualatin River Watershed Council, Clean Water Advisory Council and the general public also helped shape the following evaluation criteria list.

Evaluation Criteria

- Cost
- Institutional and financial feasibility
- Legal and regulatory feasibility
- Supply reliability
- Emergency reliability
- Efficiency
- Water quality
- Recreation
- Flood control
- Environmental impact
- Timeliness
- Property rights preservation
- Security from intentional harm

The objective of the screening process was to identify source options that rated poorly in terms of their ability to meet the criteria. These source options were not recommended for further WSFS analysis. It should be noted that source options not being carried forward in the WSFS may be revisited in the future.

Based on this evaluation, the WMG made the following recommendations for further WSFS detailed analysis.

<u>Source Options Not Recommended for Further Study</u>
These options were ruled out, primarily due to high cost or impact to private property:

- **Stimson Dam** – New dam has the advantage of providing same amount of storage as 40 foot Scoggins raise with impacts similar to 20 foot raise and potential for meeting fish passage requirements on a new facility better than retrofit of existing dam.
  Main disadvantages are high cost per acre foot of new storage compared to the Scoggins Dam raise options, impacts to fish habitat, Stimson operations and relocation of access roads.

- **New in-line tributary storage** – Storage sites throughout the basin have been studied for years and have been rejected for multiple reasons including high cost, water availability, feasibility, environmental and property impacts, and water rights conflicts.

- **Off-line tributary storage** – Only useful to meet in stream flow needs. Significant drawbacks include area-intensive footprint, cost and competition with existing land use, and impacts to private property.

- **Bull Run Dam #3** –This source option is being evaluated in a regional context as part of the RWSP Update, now underway. Information will be considered as it becomes available. This source option has the disadvantage of not increasing the diversification of the region's water supplies.

Qualitative Assessment of Source Options Not Recommended for Further Evaluation

Source Option	Cost	Geo/Climatic Feasibility	Legal Res Feasibility	Supply Reliability	Fitness Reliability	Water Quality	Recreation	Flood Control	Env Impacts	Mining	Property Impacts	Security
Stimson Dam	☐	☐	◪	◪	■	■	■	◪	■	◪	◪	◪
New In-Line Storage	☐	☐	☐	■	■	■	◪	◪	☐	☐	☐	◪
Off-Line Storage	☐	☐	☐	◪	☐	■	☐	☐	☐	☐	☐	☐
Bull Run Dam 3	will be evaluated in RWSP Update											

■ = good ◪ = fair ☐ = poor

Source Options That Should Be Components of All Supply Alternatives

These options were perceived as strongly positive in one or more evaluation criteria and should be considered as part of any overall water supply strategy.

- **Water conservation** – Reducing per capita demand is an ongoing goal. Water use in the Portland area peaked in the 1980's and has been dropping ever since (estimated to be a 20 percent drop). An 8% Washington County demand reduction assumption has been made for this analysis. Potential supply – 7,600 AF/year***

*(***based on updated information, the yield is reduced to 5,000 AF/year)*

- **Wastewater reuse** –Based on Clean Water Service's Recycled Wastewater Master Plan, WSFS assumes that a modest level of reuse will be achieved by 2050. Potential supply – 3,500 AF/year***

*(***based on updated information, the yield is reduced to 1,000 AF/year)*

- **Aquifer storage and recovery** – Several Tualatin Basin water providers have tested, or are currently testing, ASR. WSFS assumes 10 MGD will ultimately be developed including 4.5 MGD being developed by Beaverton. Potential supply – 5,500 AF/year (M/I use only).

- **Near-term Additional Supply from Portland** - Assumes that Portland will continue to provide water and that additional water may become available to the Westside by 2020. New transmission pipeline will be required. Potential supply – 9,200 AF/year (M/I use only).

Source Options Recommended for Further Study

- **No Action** – This scenario considers the impact of no increase in water supply on flow and water quality, on irrigated agriculture and on municipal/industrial demand in the Basin.

- **Scoggins Dam Raise (20 feet)** – Raise would increase Hagg Lake storage but would not be adequate to meet projected 2050 water needs unless combined with conservation, reuse, and/or ASR. Potential supply – 26,500 AF/year.

- **Scoggins Dam Raise (40 feet)** - Raise would increase Hagg Lake storage to meet 2050 projected need. WSFS will study the environmental impacts of any dam raise, as well as impacts to property and park facilities. Potential supply – 50,600 AF/year.

- **Irrigation Exchange Pipeline from the Willamette River** – Trading Willamette River water for TVID irrigation supply in Hagg Lake. WSFS will study the engineering feasibility, cost and environmental impacts of the roughly 18 mile irrigation pipeline. Potential supply – 25,000 AF/year. (M/I and in-stream use only)

Qualitative Assessment of Source Options Recommended for Further Evaluation

Source Option												
No Action	■	■	◪	□	□	□	◪	◪	◪	■	■	◪
Scoggins Dam Raise - 20'	◪	■	◪	◪	◪	◪	■	◪	◪	◪	■	◪
Scoggins Dam Raise - 40'	◪	◪	◪	■	■	■	■	■	◪	◪	◪	◪
Irrigation Exchange Pipeline	◪	□	◪	◪	■	■	◪	□	◪	◪	□	◪

■ = good ◪ = fair □ = poor

Attachment A

Water Source Options List Generated by the WMG and TRWC:

The following list was developed by these groups in the course of planning meetings conducted during the IWRM project. The list is the result of brainstorming exercises conducted by the groups, and is not intended to be a comprehensive or prioritized evaluation of water supply.

- Willamette River:
  1. trade for Hagg Lake storage
  2. use for irrigation
  3. use for municipal supply
- Bull Run:
  1. Another Dam In Bull Run
  2. Purchase more surplus
- Increased Tualatin River withdrawals
- Raise Hagg Lake
- Deepen Hagg Lake/Dredge Hagg Lake
- Side-System Storage On Tributaries
- Off-Stream Storage
- Build Another Dam On Tualatin
- Deepen Tualatin River Channel
- Additional Groundwater Use
- Aquifer Storage and Recovery (ASR)
- Yamhill River
- Columbia River
- Storm Water System Collection
- Snow Making Machines
- Cloud Seeding
- Fill In Lake Oswego
- Drain Lake Oswego Every Year & Reuse/Recycle Water
- Bunkers - Underground Storage
- Trucking Snow
- Create Water (Scientific Manner)
- Screening To Prevent Evaporation
- Icebergs
- Desalination
- Deep Tunnel
- Two-Way Pipe To Willamette River/Columbia River
- Put In Pump At Mouth Of Tualatin & Circulate Back
- Subsidize Reuse
- Using Effluent For Groundwater Recharge
- Reuse Back To Hagg Lake/Barney
- Non-Potable Distribution Systems
- Developing Extensive Grey Water
- Potable Reuse
- Multiple Recycling
- Required Reuse
- Dual Distribution For Reuse & Potable

Tualatin Basin Water Supply Feasibility Study

Review of Source Options – Cost Criteria

Revised 9/03

The Tualatin Basin Water Supply Feasibility Study is to review water supply sources to meet the future water needs of the Tualatin Basin. The Study reviewed the alternatives analysis results of previous water supply studies conducted regionally and within the Tualatin Basin. An additional 50,000 acre-feet of water could be needed by the year 2050.

The analysis was a qualitative review process. Sources options were evaluated against a broad range of criteria. The cost criterion is one of the key elements of the alternatives analysis. In some cases, the cost criterion was not the determining factor for maintaining or removing a source option. Costs shown here represent the estimated current capital cost for each option, when available. These cost estimates are accurate to a planning level, which is defined as +50% to –30%. The following is a review of the estimated costs for the various source options reviewed.

Source Options Not Recommended for Further Study

These options were ruled out, primarily due to high cost or other key criteria:

- **Stimson Dam – Downstream of Scoggins Dam and upstream of Stimson**
  - **Build a new dam to elevation 313 feet (existing height).**
    - Additional storage yield - 11,200 AF/year
    - Estimated cost - $107 million
    - Cost per additional storage ($ per acre-Ft) - $9,590

- **Stimson Dam – 20 foot raise**
  - **Build a new Dam to elevation 333 feet (20 foot increase)**
    - Additional storage yield – 48,000 AF/year
    - Estimated cost - $153 million
    - Cost per additional storage ($ per acre-Ft.) - $3,188

- **New in-line tributary storage –**
  - **New dams on Tualatin tributaries (Rock Creek and McKay Creek)**
    - Additional Storage yield - 35,000 AF/year
    - No cost information developed.
    - Regional Water Supply Plan did not develop cost information
    - Option removed due to other evaluation criteria

- **Off-line tributary storage**
  - **Construct storage facilities adjacent to streams for winter diversion or pumping.**
    - No cost information developed
    - Option removed due to other evaluation criteria, such as impacts to private property

- **Bull Run Dam #3 - Portland Water Supply System**
  - **Build a third dam in the Bull Run Watershed**
    - Additional Storage yield of 58,900 AF/year
    - Estimated cost - $210 million

- Cost per additional storage ($ per acre-ft.) – $3,565
- Option being reviewed as part of the Regional Water Supply Plan Update
- Municipal yield reduced 50 %, due to instream flow and ESA requirements
- Additional transmission and storage facilities would be required for Westside municipal and industrial supply utilization, cost undetermined.

Source Options That Should Be Components of All Supply Alternatives

These options were perceived as strongly positive in one or more evaluation criteria and should be considered as part of any overall water supply strategy.

- **Water conservation**
  - **Water suppliers Conservation programs**
    - Potential supply - 7,600 AF/year***
    - No cost information currently available
    - Regional Water Supply Plan Update is reviewing programs and costs

    *(***based on updated information, the yield is reduced to 5,000 AF/year)*

- **Wastewater reuse**
  - **Clean Water Services Recycled Wastewater Master Plan - 1992**
    - Additional storage yield – 3,500 AF/year***
    - Estimated costs - $53 million***
    - Cost per additional storage ($ per acre-ft.) – $15,142
    - Reuse opportunities will need to be balanced with flow and water quality impacts on Tualatin River

    *(***based on updated information, the yield is reduced to 1,000 AF/year and estimated cost is $15 million)*

- **Aquifer storage and recovery (ASR)**
  - **ASR programs for M&I water suppliers**
    - Additional storage yield – 5,500 AF/year (municipal use only)
    - No programs costs developed to date
    - Cost information will available as part of the Regional Water Supply Plan Update

- **Near-term Additional Supply from Portland**
  - **Dam 2 Raise/Expansion and Transmission improvements**
    - Additional storage yield – 9,200 AF/year (municipal use only)
    - Estimated costs - $45 million
    - Cost per additional storage ($ per acre-ft.) – $4,891

Source Options Recommended for Further Study

These options met many of the criteria and were recommended for further study.

- **No Action**
  - **Tualatin Basin – reduced future water supply**
    - No cost estimates available

        - Impacts of no increase in water supply on River flow and water quality, on irrigated agriculture and on lack of water to meet growth in municipal/industrial demand in the Basin

- **Scoggins Dam Raise (20 feet)**
    - **Raise Scoggins Dam/Hagg to elevation 325 feet**
        - Additional storage yield – 26,500 AF/year
        - Estimated costs - $71 million
        - Cost per additional storage ($ per acre-ft.) – $2,679

- **Scoggins Dam Raise (40 feet)**
    - **Raise Scoggins Dam/Hagg Lake to elevation 353 feet**
        - Additional storage yield – 50,000 AF/year
        - Estimated costs - $129 million
        - Cost per additional storage ($ per acre-ft.) – $2,580

- **Irrigation Exchange Pipeline from the Willamette River**
    - **Construct an irrigation exchange pipeline for trading Willamette River water for TVID irrigation supply in Hagg Lake.**
        - Additional storage yield – 25,000 AF/year
        - Estimated costs - $96 million
        - Cost per additional storage ($ per acre-ft.) – $3,840

Public Review Process Update

Tualatin Basin Water Supply Feasibility Study

Updated July 2003

Introduction

The purpose of this Update is to document the public review process for the Tualatin Basin Water Supply Feasibility Study (WSFS). The need for this study was determined through an Integrated Water Resource Management (IWRM) strategy to ensure adequate water in the Tualatin Basin for instream flow, agricultural irrigation and municipal and industrial demands. The study is evaluating reliable, safe and cost-effective water supply options to provide up to 50,000 acre feet of water by the year 2050.

This Update reflects the major steps in the study that have been completed to-date – the scoping process and identifying/receiving input on key source options for further study.

Scoping Process: January – February 2002

On December 13, 2001, a Notice of Intent to prepare an Environmental Impact Statement (EIS) was placed in the Federal Register by the US Bureau of Reclamation, as required by the National Environmental Policy Act (NEPA). The first step in preparing an EIS is called Scoping, a process of information-gathering relevant to the study, including important resources, opportunities and constraints. Scoping is accomplished through notification and provision of opportunities to comment on the study.

For the WSFS, the Scoping process was intended to inform stakeholders and the general public about proposed evaluation criteria and a range of source options to be studied and to solicit their initial feedback.

A notice for four (4) scoping meetings was distributed with a fact sheet to a combined mailing list of about 1500 developed by Clean Water Services. The list included Hagg Lake property owners, environmental groups, elected officials, CPOs, businesses and interested citizens. A press release was distributed to all area newspapers announcing the scoping meetings. The notice was printed in *The Oregonian*.

Scoping meetings were held on January 8 from 2-4 pm and 6-8 pm at a Clean Water Services facility in Hillsboro and January 9 from 2-4 pm and 6-8 pm at Metro in downtown Portland. A total of 23 people attended the scoping meetings. Comment cards were distributed at the meetings and four comment cards were received.

A Scoping Report summarizing the process with copies of all materials and comments was prepared by the project consultant (Montgomery Watson Harza) and distributed to the Water Managers Group who serve as the technical staff from each partner city/district for the project. Most comments were consistent with previous comments from meetings and other communications, with several questions about Hagg Lake as a source. Other comments were received via e-mail.

Meetings with Key Stakeholder Groups

Tualatin River Watershed Council
Tom VanderPlaat attended the January meeting to provide an update and receive comments from this group about the evaluation criteria.

Clean Water Services Advisory Commission (CWAC)
In January, Clean Water Services staff attended the commission and presented an update on the study process and comments.

Coordination with Hagg Lake Resource Management Plan (RMP)
Clean Water Services staff attended an open house for the Hagg Lake RMP and provided fact sheets, comment cards and other information.

Regulatory Agencies
Clean Water Services staff held a meeting for regulatory agencies to provide an overview and solicit comments on the study. Agencies attending included Oregon Dept. of Fish and Wildlife (ODFW), Corps of Engineers, Environmental Protection Agency (EPA), and Oregon Dept. of State Lands (ODSL). A summary of the meeting is contained in the project file.

Summary of Issues from Scoping

Concerns about raising Scoggins Dam as a supply option, including:

- impacts home owners around Hagg Lake including geologic impacts
- impacts to wetlands, fish and wildlife and upstream tributaries
- whether the dam is structurally sound enough to hold the additional volume of water and whether it is seismically sound

Concerns about building a pipeline from the Willamette River, including:

- impacts to natural resources from construction
- inefficient use of water due to annual energy cost to pump it, cost to build it and uncertainty of its availability because of senior water rights
- impacts from mixing the water with local water on fish and other habitat
- concern that the Willamette River water would be used exclusively for irrigation and not for drinking and assurance that the water is safe for irrigation of crops

Questions and comments about conservation and reuse, including:

- important that the public (homeowners, businesses, golf courses and farmers) practices water conservation
- need for a thorough analysis of both voluntary and mandatory measures
- need to examine reuse of treated effluent as a strategy to reduce temperature loading and provide irrigation source
- what types of conservation would be recommended?
- what amount of total supply could be attained with conservation and reuse?

Comments about aquifer storage and recovery, including:

- need to do analysis to identify suitable aquifers
- what are the impacts to ground water, neighboring wells and historic hydrologic function?

Comment that the study should identify options for restoration of the watershed in addition to options for water supply – they are inter-related.

Concern about building in-channel water detention facilities as a supply option because of the impacts to fish and wildlife.

Concern about water rights and need to insure that farmers who wish to continue to irrigate will be able to do so.

Concern that the study is promoting growth by projecting a larger water need rather than seeking ways to discourage growth.

Source Options Review: April 2002 – May 2003

Water managers proposed three key source options and several other source options to reach a total need of 50,000 acre feet. Public involvement for this step included meetings with key stakeholders and community groups, newsletter articles and accompanying public information materials - a 2002 Spring Update, frequently asked questions, source option display and survey.

Key stakeholder groups

Hagg Lake neighbors
2002: Staff from the study met with 26 residents of the Hagg Lake area in June to present the proposed key source options and preliminary information on road relocation. Maps of the proposed road relocation were distributed to those whose property was impacted. A summary of the meeting is contained in the project file. Individual meetings were held with six (6) with property owners to answer specific questions. Letters were sent in November to 23 owners directly adjacent to the lake to determine their interest in using a surveyor to measure approximate water levels on individual properties with a dam raise.
2003: Staff met with one property owner who had submitted a petition with 80 signatures opposing the 40-foot dam raise to discuss concerns and ideas. A separate meeting was held with six (6) property owners to discuss specific concerns and a third meeting with a property owner wanting general information.

Tualatin River Watershed Council
2002: Staff attended the June and December meetings to provide an update and receive comments from this group about the key source options being recommended for further study. Members of the group were asked to take the web survey and provide individual feedback about the source options.
2003: This stakeholder group was asked to respond to the three proposed key source options by voting whether to continue studying them. The council was not unanimous, but the majority recommended continuing to study the three key source options.

Clean Water Services Advisory Commission (CWAC)
2002: Updates about the study were provided by mail in June, including a web survey about the source options that CWAC was asked to assist in testing and revising. In November, Clean Water Services staff attended the commission and presented an update on the study process and survey responses.
2003: In February, CWAC heard the public response to key source options and public comments from a Hagg Lake neighbor who submitted a petition with 80 signatures opposing the 40-foot dam raise and suggested alternative dam sites. Staff coordinated a tour of Hagg Lake and Scoggins Dam requested by CWAC.

Public Information on Key Source Options
2002

- Clean Water Connection to 9,000 (elected officials, stakeholder groups, Friends Groups, CPOs)
- Article in CPO newsletters
- Article in Westside Economic Alliance newsletter
- Article in billing insert to all customers in Sept/Oct and Nov/Dec (Water Words - 50,000)
- Water Supply Study display sites (all partner facilities, libraries, PCC, Pacific University)
- Events (Crawfish Festival, Washington County Fair, Hillsboro Tuesday Market)
- Web site page with overview of the study, survey and all public information materials

2003

- Presentations to 16 civic, environmental and citizen participation organizations including Beaverton CCI, Tigard CIT, Washington County CCI, Hillsboro Leadership team, Forest Grove Rotary and Tualatin Riverkeepers
- Article promoting web survey in City of Beaverton and City of Tualatin newsletter
- Newsletter (6-page) to 10,000 including Clean Water Services list and CPO lists

2002 Web Survey and Display
A survey was designed to obtain feedback through the internet about the key source options, other source options and criteria for the water supply study. A limitation of the web survey is that it is NOT scientific and therefore the results are not a representative sample. There is no assurance that responses are not duplicated. The web survey went online in August 2002 on the Water Supply Feasibility Study page of the Clean Water Services web site.

At the same time the web survey was promoted, the survey was also available at sites with a display describing the source options. The display was scheduled for consecutive weeks (see details in the chronology at the end of this report) at events, libraries, colleges and local partner buildings from August through November.

Total number of responses to both the web survey and display surveys as of November 18, 2002 was 102. Many respondents made additional comments, especially on the web survey.

2003 Web Survey Update

Articles in January 2003 newsletters to promote web survey: "Your City" (City of Beaverton) and City of Tualatin newsletter

Total responses from web survey: 129

Web survey	129 responses (most from reading Clean Water Connection, Water Words and TRWC; zip codes are Portland, Beaverton, Hillsboro, Aloha – includes stakeholders and general public)
Events/display	37 responses (most from Hillsboro, Beaverton, some Portland –students and general public)
TOTAL:	166

Summary of comments

- No particular source option received significantly stronger support than any other
- A majority of respondents can accept or "live with" any of the three key source options.
- There is a slight preference for the 20 foot dam raise over the 40 foot dam raise.
- Many people have reiterated their support for conservation measures to reduce the demand for water.
- Respondents are concerned with meeting water quality standards and maintaining a reliable water supply with few environmental impacts.

Key Source Options Questions/Concerns

Dam raise:

- what are impacts to wetlands
- how is fish passage addressed
- need fair compensation to residents who are impacted
- need for more data before comparing or making a preference
- recreational features should be enhanced

Pipeline:

- impacts of removing water from the Willamette River
- impacts on water quality
- fewer environmental impacts than dam raise
- opposed to using Willamette water on food crops

Other Source Options

Survey respondents selected conservation as one of the two most important other sources. Portland supply and wastewater reuse were also selected as important.

Level of Criteria Importance

Respondents rated "meeting water quality standards" the highest in importance, and "reliability of supply" as the second highest.

"Ability to withstand catastrophes" and "protecting from intentional harm" were also ranked high.

Additional factors to consider in selecting key source options:

- Impact of silting
- Compatible with overall restoration of watershed
- Diversifies water sources
- Encourages conservation
- Protects instream flow for aquatic species and ecosystem functions
- Support sound land and water conservation efforts
- Progressive rate structures to induce conservation
- Less susceptible to cyclic drought years and climate changes
- Meets longterm supply needs

General survey comments:

- Waiting will cost many times more...now is the time to be wise and expand our water sources
- Conservation through wise use and low impact on the land is the best way to go
- Price water fairly to all users and develop more programs to encourage conservation
- Do not consider any further the use of the Willamette water for drinking or agricultural purposes until the political will is there to fully return this river to the condition in which our pioneers found it.

Listing of Presentations and Publications - 2003

Public Presentations on Water Supply Feasibility Study Source Options

January 9	Tigard Citizen Action Team*	Mark Jockers
January 21	Washington County Committee for Citizen Involvement (CCI)	Jeanna Cernazanu
January 31	Stimpson Lumber Co	Tom VanderPlaat
Feb 5	TRWC	Tom VanderPlaat
Feb 18	Wash. Co CCI	Tom VanderPlaat & Jeanna Cernazanu
Feb 19	CWAC	Tom VanderPlaat & Jeanna Cernazanu
Feb 20	Regulatory agencies	Tom VanderPlaat
March 5	Forest Grove Rotary	Tom VanderPlaat & Jeanna Cernazanu
March 5	TRWC - Vote on key source options	Tom VanderPlaat & Jeanna Cernazanu
March 6	Tualatin Riverkeepers	Tom VanderPlaat & Jeanna Cernazanu

March 11	CPO #8	Jeanna Cernazanu
March 20	Central Beaverton NAC	Jeanna Cernazanu
April 8	Five Oaks/Triple Creek NAC	Jeanna Cernazanu
April 9	Raleigh West NAC	Jeanna Cernazanu
April 9	Hillsboro Leadership Group	Tom VanderPlaat
April 22	Beaverton CCI	Jeanna Cernazanu
May 13	Lake Oswego Corp	Tom VanderPlaat
July 11	Joint Water Commission	Tom VanderPlaat
July 23	TVWD Board	Tom VanderPlaat

*presentation was also videotaped for viewing on Tualatin Valley Television (expected to be viewed by approximately 700 people)

Hagg Lake Property Owner Meetings

February 26	Greg Edwards	Tom V & Jeanna C
April 7	Joan & Don Mosley, Hope & Kory Kramer	Tom V
July 24	Mary Brottlower and Les Marion Matteson	Tom V

Related Newspaper Articles

March 6, 2003	The Oregonian	"Watching the Water Line"
April 24, 2003	Beaverton Valley Times	"Water supply balance expansion needed soon"

Display locations: Tualatin Basin Winter Conference on Feb 8 (approx. 50 attended)

Scoping Reports: Mailed to more than 55 individuals who attended scoping meetings or submitted comments

Listing of Presentations and Publications - 2002

Hagg Lake Property Owner Meetings

Feb 25	Bill Stoller	Tom V, Jeanna C
June 4	John Kelly	Tom V
June 13	all residents for Source Options update	Tom V, Jeanna C, BoR
July 3	Doug Hogue about road relocation	Tom V, Jeanna C
June 26	Dan & Beth Irwin about road relocation	Tom V
Sept 23	John Heistad, John Kelly – survey prep	Tom V
Dec 3	Doris & Larry Beman – general information	Tom V, Jeanna C

Public Presentations on Water Supply Feasibility Study

Scoping

January 8	2 Scoping Meetings, Water Quality Lab	Tom V, Lisa O, Jeanna C, BoR
January 9	2 Scoping Meetings, Metro	Jeanna C, Lisa O, BoR
January 9	Tualatin River Watershed Council	Tom V
January 17	Hagg Lake RMP open house	Tom V, Jeanna C
January 18	Joint Water Commission	Tom V
February 6	Tigard Open House	Tom V, Lisa O, Jeanna C, BoR
February 15	Regulatory agencies	Tom V, Lisa O, Jeanna C, BoR
February 21	Washington County Parks Advisory Board	Tom V

Source Options

May 21	CCI (representatives from all CPOs)	Jack Franklin (CWAC member)
May 30	WA County League of Women Voters	Mark Jockers
June 3	Congressional staff: tour of Hagg Lake	Tom V
June 5	Tualatin River Watershed Council	Tom V, Jeanna C
July 11	West Beaverton NAC	Jeanna C
July 12	Washington County Elected Officials update	Chair Tom Brian, staff
Aug 16	Senator Wyden staff: tour of Hagg Lake	Tom V
Aug 29	Westside Economic Alliance	Chair Tom Brian
Sept 16	Cornelius: amend contract	Tom V
Sept 17	Tigard: amend contract	Tom V
Sept 18	TVWD: amend contract	Tom V
Oct 7	Beaverton: amend contract	Tom V
Nov 1	Senator Smith staff: watershed tour	Tom V
November 12	WA County Soil & Water Conservation District	Tom V
November 20	CWAC – update and process review	Jeanna C, Tom V
December 3	TRWC - update and process review	Jeanna C, Tom V
December 26	Beaverton Optimists Club	Jeanna C

Source Options Display and Survey

July 25-28	Washington County Fair
Aug 5 – 9	Tualatin Library & Crawfish festival
Aug 12 – 16	Hillsboro Public Service Bldg, Tuesday Market
Aug 17 & 18	North Plains Garlic Festival
Aug 19 – 23	TVWD
Aug 26 – 30	Tigard City Hall
Sept 3 – 6	Beaverton Library
Sept 9 – 13	Beaverton City Hall
Sept 16 – 20	Forest Grove library
Sept 23 – 27	Cornelius City Hall/Library
Oct 21 - Nov 8	PCC Rock Creek
Nov 11 – 25	Pacific University

R lated Newspaper Articles and Broadcast Coverage

January 7	The Oregonian	Community Snapshot - "water study meetings"
January 16	Forest Grove News Times	"Hagg Lake raise topic of meeting" (RMP)
January 24	Forest Grove News Times	"Planning for the Future" (RMP and WSFS)
January 31	Tigard Times	"Clean Water Services sets Water Supply Me ting"
June 10	The Oregonian	Community Snapshot – "Hagg Lake Meeting"

June 12	Forest Grove News Times	"Hagg Lake meeting set"
June 19	Forest Grove News Times	"Engineering not the only problem in securing water"
June 20	The Oregonian	"Future a worry for Hagg Lake neighbors"
June 27	Tigard Times	"Search for water supply options goes deeper"
Sept 19	The Oregonian	"Tunnel to Tualatin River considered"

Newsletter Articles

February 2002 newsletters for Washington County CPOs - WSFS Fact Sheet and notice for Tigard open house

February 2002 Tigard Cityscape – Finding enough water to meet future demand

July 2002 newsletters for Washington County CPOs – Tualatin Water Supply Feasibility Study Identifies Source Options

Summer 2002 Clean Water Connection (Clean Water Services newsletter) – Tualatin Basin Water Supply Study Proposes Key Water Sources, Studying the Major Source Options

Sept/October Water Words (TVWD & Clean Water Services billing insert) – Planning for Future Water Supply

Nov/Dec Water Words – Tell us your ideas about future water supply options

2001

Public Presentations of IWRM Overview and Water Supply Feasibility Study

February 15	CPO 3 (W.Slope/R. Hills/Garden Home)	Mark Jockers
March 7	Tualatin River Watershed Council	Tom VanderPlaat
March 13	TVID Board	Tom V
March 13	Hillsboro Utilities Commission	Tom V/Sheri Wantland
March 13	Banks City Council	Mayor Orlowski
March 13	Sherwood City Council	Todd Heidgerken
March 19	Beaverton City Council	Sheri Wantland
March 20	Washington County CCI	Mark Jockers
March 21	TVWD Board	Lisa Obermeyer/Sheri
March 27	Clean Water Services Board (Dinner Meeting)	Tom V
April 2	North Plains City Council	Tom V
April 10	Tigard City Council	Tom V
April 13	Joint Water Commission	Tom V
April 18	Clean Water Advisory Commission	Tom V/Sheri W
June 5	CPO 1 (Cedar Hills/Cedar Mill)	Mark Jockers
July 13	Joint Water Commission	Tom V
August 2	Tour of Scoggins Dam (CWS Board)	Tom V
August 8	Hillsboro Optimist Club	Tom V
August 22	Clean Water Advisory Commission	Sheri W
S ptember 6	Tualatin Riverkeepers Citizen Action Committee	Tom V
September 24	Washington County Public Affairs Forum	Bill Gaffi
October 16	CCI	Chair Tom Brian

Octob r 19	Mayors Meeting on Westside Water Supply	Chair Tom Brian
November 7	Tualatin River Watershed Council	Tom V
November 27	Mayor/City Manager Meeting	Chair Brian and Bill Gaffi
December 5	Regional Water Supply Consortium Board	Tom V

Hagg Lake Property Owner Meetings

May 16	All owners for general information	Tom V, Sheri W, Wally Otto, Chris
June 19	Repeat of May 16 (media invited)	Wayland, Dave Nelson, reporters
Oct 9	Heistad, Watkins, Stutz	Tom V, Sheri W
Oct 16	Edwards	Tom V, Sheri W
Oct 24	All owners to view map	Tom V, Sheri W, Wally Otto, Chris W

R lat d Newspaper Articles and Broadcast Coverage

2001

Date	*publication/station*	*headline*
March 21	Oregonian	"Cornelius will take part in study to raise Scoggins Dam"
March 22	Hillsboro Argus	"Cities, agencies set water supply study"
April 5	Oregonian	"Face-lift for Scoggins Dam?"
April 12	Hillsboro Argus	"Water supply below earlier expectations"
May 10	Hillsboro Argus	"Banks joins study on water"
May 10	Hillsboro Argus	"Hagg Lake lowest in 23 years, water conservation urged"
June 19	Oregonian	"Plan to raise Scoggins Dam subject of meeting tonight"
June 21	Oregonian	"Hagg Lake-area residents ask for answers on possibly raising dam"
June 21	Hillsboro Argus	"Water Source Sought"
June 26	Koin TV 6	"Hagg Lake Dam Expansion"
June 27	Forest Grove News Times	"Low water, rising concerns . . . "
Sept 4	Oregonian	"Water Supply Meeting" notice in Community Snapshot
Oct 16	Oregonian	"Scoggins Dam meeting" notice in Community News
Oct 17	Forest Grove News Times	"Future of Hagg Lake Oct 24 Topic"
Oct 26	Oregonian	"Net effect of Hagg Lake options remains uncertain"
Oct 31	Forest Grove News Times	" Raising Hagg Lake at issue"
Oct 31	FG Editorial	"Listen to People"
Nov 15	Tualatin Times Editorial	"Charter change about water more than trust"

N wsletter Articles 2001

Washington County Extension Service "Friends" publication, Spring 2001 issue featured half page IWRM fact sheet.

TUALATIN BASIN WATER SUPPLY FEASIBILITY STUDY

Summer 2003 Update

"With all these competing needs for water, it is no wonder there is not enough to go around."

testimony of Tom Brian, Chairman of Clean Water Services Board of Directors, submitted to U.S. Senate committee

Meeting the Water Supply Challenge

In the next 50 years, demands for water in the Tualatin River Watershed are expected to double. In addition to needing water for homes, businesses and agriculture, water is needed to restore flows to the Tualatin River and its tributaries to improve water quality and protect stream health. How our community meets this challenge will play a critical role in the future health of our environment, economy and the quality of life throughout the region.

During the last two years, the Tualatin Basin Water Supply Feasibility Study (WSFS) has been evaluating reliable, safe and sustainable water supply options to meet the long term water needs of our community. The study is being led by Clean Water Services in partnership with local cities, water districts and the US Bureau of Reclamation.

The WSFS started with a process known as "scoping." During scoping, project partners held five open houses and worked closely with the Tualatin River Watershed Council (TRWC), Clean Water Services Advisory Commission (CWAC), natural resource agencies and other interested groups to develop a broad list of potential source options. The partners also worked with stakeholders to develop and validate criteria for evaluating the options.

Using a comprehensive list of potential sources from both previous studies as well as public input, the options were evaluated against the criteria and the most promising source options were recommended for further study. These key source options will receive further technical analysis and public scrutiny to determine the best approach for meeting future water needs.

Evaluation Criteria

- *Cost and cost allocation*
- *Feasibility (legal and regulatory)*
- *Reliability*
- *Water quality*
- *Flood control*
- *Efficiency and timeliness*
- *Environmental impacts*
- *Property rights*
- *Recreation*
- *Security*

STUDY PARTNERS

Cities of:

Beaverton	Hillsboro
Tualatin	Sherwood
North Plains	Tigard
Banks	Cornelius
Forest Grove	

US Bureau of Reclamation
Tualatin Valley Water District
Clean Water Services

Other Partners:
Tualatin Valley Irrigation District
Washington County
Lake Oswego Corporation

New Committee will Offer Policy Guidance

A WSFS Policy Steering Committee of elected or appointed policy makers from each local partner in the study is being established to:

- Provide a forum for the public to offer input about the study
- Act as a liaison to project partners
- Make policy recommendations to project partners

The committee is expected to meet for the next two years through the completion of a Final Environmental Impact Statement (FEIS) which is the next stage in the NEPA process.

Local and Federal Funding Needed for Project

Local partners are funding most of the cost of the $1.37 million Feasibility Study. The cost of completing a Final Environment Impact Statement and preliminary design is estimated at $5.5 million. Efforts are now under way to secure $2.9 million in federal assistance for the next phases of the project. The partners would fund the remaining $2.6 million.

U.S. Senators Gordon Smith and Ron Wyden introduced Senate Bill 625 that would authorize the Bureau of Reclamation to expend funding for the Water Supply Study. The bill passed the Senate Energy and Natural Resources Committee on May 21, 2003. Clean Water Services Board Chair Tom Brian submitted written testimony and thanked our senators for their leadership on this issue. Congressman David Wu introduced a similar bill in the U.S. House of Representatives.

Coordinating with Related Studies

Sain Creek Tunnel Analysis

This analysis is part of the WSFS and will evaluate the potential of transporting water directly from the Tualatin River near Haines Falls to Hagg Lake near the mouth of Sain Creek. Besides increasing storage in Hagg Lake, the approximately 2-3 mile long tunnel would provide some flood control during high winter flows and reduce the risk of contamination of water from Barney Reservoir. The cost is estimated at $20-25 million.

Climate Change Analysis

As part of the WSFS, an analysis is being done on how climate change would affect the supply and demand for water in the Tualatin Basin. The results of this analysis will be incorporated into the study.

Raw Water Pipeline Study by JWC

The City of Hillsboro is currently leading a Joint Water Commission (JWC) study of a pipeline from Hagg Lake to its water treatment plant south of Forest Grove. The pipeline would allow for controlled release of water as well as protecting the quality of the water coming from the lake. Clean Water Services is directly involved with the project and will ensure full coordination with the WSFS.

Update of Regional Water Supply Plan (RWSP)

The RWSP was adopted in 1996 and provides a comprehensive, integrated framework of technical information, resource strategies and implementing actions to meet the water supply needs of the Portland Metropolitan area to the year 2050. The plan is intended to be updated every five years. The current update is occurring in coordination with the WSFS.

Hagg Lake

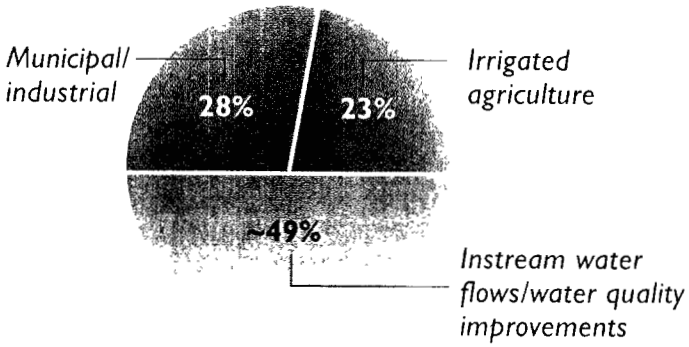
" Water is essential to our life, and now is the time to be wise and expand our water sources. "

— quote from a survey respondent

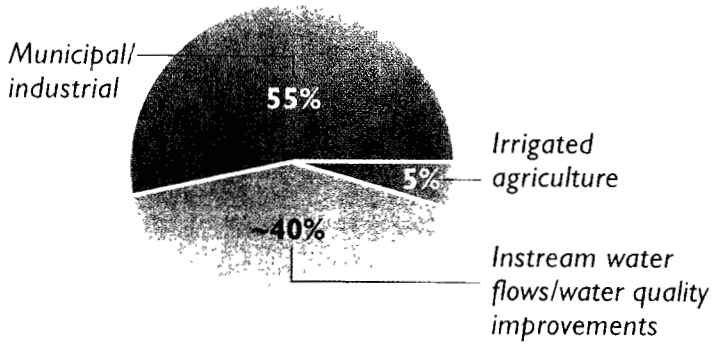
Who Needs More Water?

Up to 50,000 acre-feet (16.25 billion gallons) will be needed by the year 2050.

CURRENT WATER USE



FUTURE WATER NEEDS



Comparing the Key Source Options *

Scoggins Dam Raise (20-foot)

- Additional storage yield: 26,500 acre-feet
- Estimated costs: $71 million
- Cost per additional storage ($ per acre-foot): $2,676

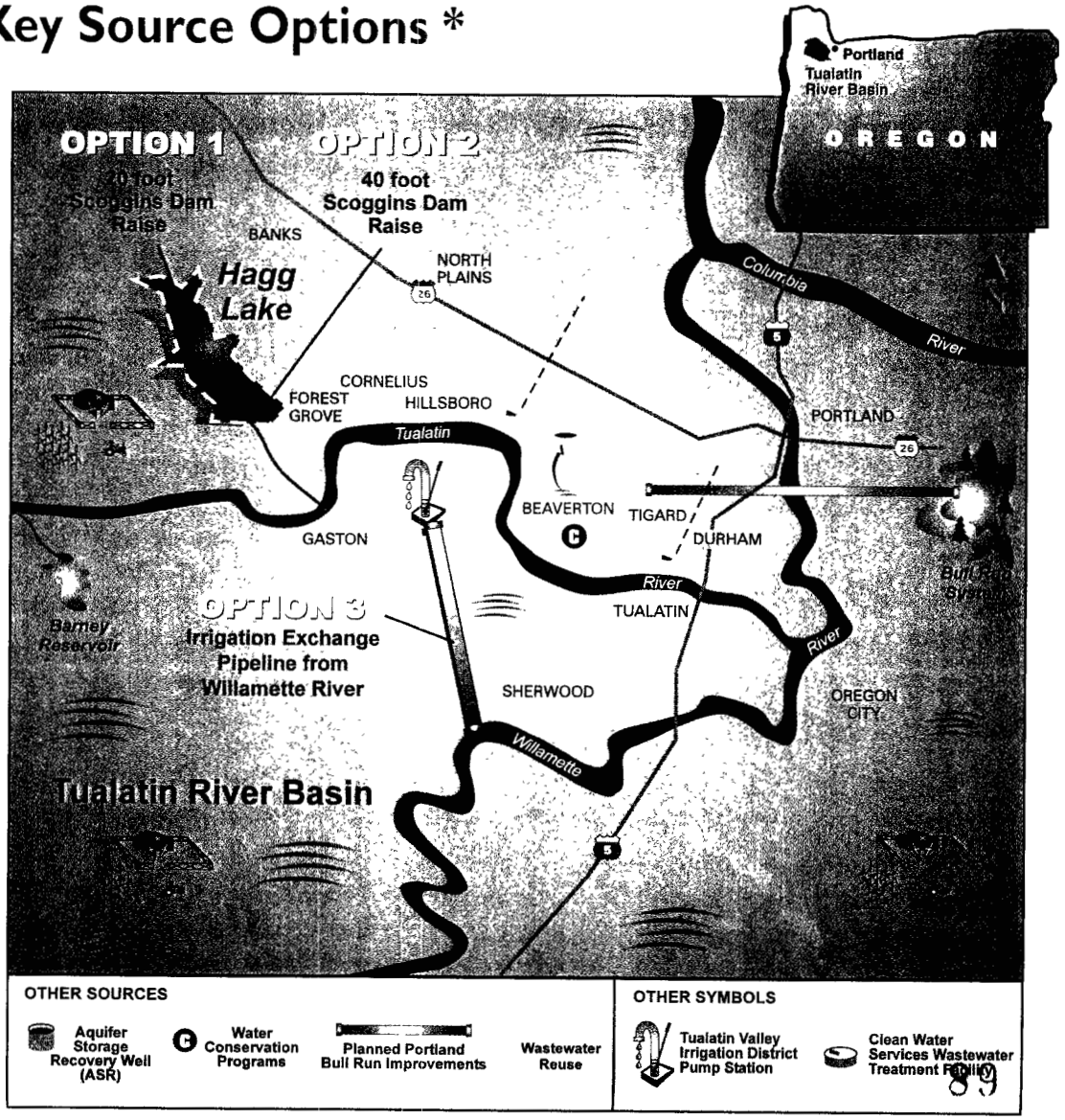
Scoggins Dam Raise (40-foot)

- Additional storage yield: 50,000 acre-feet
- Estimated costs: $129 million
- Cost per additional storage ($ per acre-foot): $2,580

Irrigation Exchange Pipeline from the Willamette River

- Additional storage yield: 25,000 acre-feet
- Estimated costs: $96 million
- Cost per additional storage ($ per acre-foot): $3,840

*** Options may be combined to provide up to 50,000 acre-feet**



What Are the Differences Among the Key Source Options?

Irrigation Exchange Pipeline from the Willamette River

A new pipeline would pump water approximately 23 miles from the Willamette River near Newberg to the Tualatin Valley Irrigation District (TVID) pump station and storage tank. This water would be used for irrigation of crops in exchange for water now being used from Hagg Lake. A new contract between the US Bureau of Reclamation and TVID would be needed to use the Willamette River as a source of irrigation water.

Some of the impacts being studied include stream crossings and wetlands, utility impacts due to the pipeline located in right-of-ways, recreational and environmental impacts from greater volume of water taken out of Hagg Lake in the summer, impacts from taking water out of the Willamette River and costs for pumping, operation and maintenance. A comparison between the water quality of Hagg Lake and the Willamette River will be developed.

Scoggins Dam Raise (20-foot)

The study is evaluating the engineering feasibility and hydrologic impacts of raising the dam. It also is examining the impacts to wetlands, vegetation, wildlife, recreation, fish passage and private property. Raising the dam would require approval by the US Bureau of Reclamation who owns the dam.

Raising the dam by 20 feet would be achieved by adding 1.24 million cubic yards of material to the downstream side of the existing dam. The 20-foot dam raise would provide about half the needed water at proportionally higher costs than the 40-foot raise. When alternative packages are developed, a 20-foot dam raise would be combined with other options to provide a similar quantity of water. The 20-foot dam raise would impact the perimeter road around Hagg Lake and some park facilities.

Scoggins Dam Raise (40-foot)

The 40-foot dam raise would require adding 2.66 million cubic yards of material to the downstream side of the existing dam. It would provide the entire amount of needed water at a lower cost per acre than the other options. Impacts to property owners would be greatest from the 40-foot raise along Tanner Creek, Sain Creek and Scoggins Creek where the water level would extend up these creeks. The recreational impacts from a 40-foot raise would require the existing park facilities to be replaced and would impact portions of the perimeter road around the park.

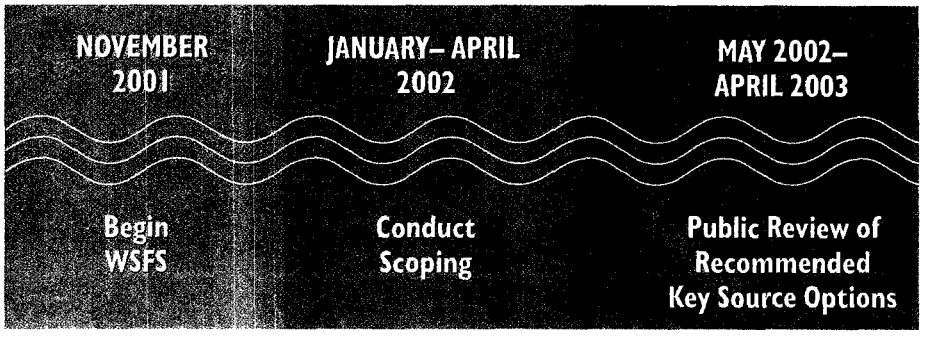
Water Sources That Will Be Used with Any Future Option

The partners in the study also concluded that some water supply sources should be pursued regardless of which of the above options is determined to be the best. Those are:

- ✓ Continuing water conservation programs
- ✓ Wastewater reuse
- ✓ Aquifer storage and recovery
- ✓ Additional supply from Portland

Project Schedule

The next step in the study is a more detailed review of the recommended source options. Options will be assembled into alternative packages to be compared against each other and a "no action" alternative. Ongoing public input and field studies will help determine each option's impacts and benefits. A preferred alternative will be selected by the partners in the study.



Here's What We've Heard

The partners in the study are committed to actively seeking and utilizing community input as they prepare to select a preferred alternative. In addition to working closely with key stakeholder groups, the study has received public input through one-on-one meetings; presentations to community planning organizations, neighborhood associations and business groups; letters, e-mails and an online survey.

Public Responses to Source Options

- The Tualatin Valley Irrigation District (TVID) and other stakeholders requested more information about the reliability of the Irrigation Exchange Pipeline and quality of the water from the Willamette River.
- The TRWC recently voted to continue study of the three key source options.

CWAC tour of Hagg Lake

- A petition was signed by more than 80 Hagg Lake residents opposing the 40-foot dam raise, primarily because of the direct impact to property owners and concerns about a fault line. One resident suggested dredging or excavating Hagg Lake or building a dam at a different location.
- Conservation was suggested most often as a method to reduce water demand, using more aggressive approaches than are currently practiced.
- Several other dam locations have been suggested.

Web Survey Provides Snapshot of Public Preferences

An online survey about the WSFS has been posted on the Clean Water Services web site since last summer. The survey was taken by 128 people to register their opinions about the various source options under consideration.

The results include:

- No source option received significantly stronger support than any other.
- A majority of respondents can accept or "live with" any of the three key source options.
- There is a slight preference for the 20-foot dam raise over the 40-foot dam raise.
- Many people reiterated their support for conservation measures to reduce the demand for water.
- Respondents are concerned with meeting water quality standards and maintaining a reliable water supply with few environmental impacts.

We are here

APRIL– AUGUST 2003	FALL 2003		WINTER 2003
Analysis of Key Source Options	Publish WSFS Planning Report	Public Review of Recommended Preferred Alternative	Preferred Alternative Selected by Partners

Clean Water Services
Our commitment is clear.

155 N. First Avenue, Suite 270
Hillsboro, Oregon 97124

Have a Question or Want to Be on the Mailing List?

Visit our web site. Clean Water Services has posted information, including a fact sheet and frequently asked questions about the study at **www.cleanwaterservices.org**.

We invite you to comment about the study, get on the study mailing list, or ask questions at any time by calling or sending an e-mail to the following contact people:

Tom VanderPlaat
Clean Water Services Project Manager at
***503.846.8758** or*
VanderPlaatt@cleanwaterservices.org

Dave Nelson,
U.S. Bureau of Reclamation at
***503.872.2801** or*
drnelson@pn.usbr.gov

Jeanna Cernazanu
Clean Water Services Public Affairs at
***503.846.3619** or*
cernazanuj@cleanwaterservices.org

Need a Meeting Speaker?

Staff from the study will provide updates at community meetings and other events. Contact Jeanna Cernazanu to schedule a speaker at your next community meeting.

EXHIBIT 3

CONGRESSIONAL FUNDING REQUEST

Water Supply Challenge for Washington County, Oregon

Tualatin Basin Water Supply Project

February 2005

Sustaining Our Economy, Watershed and Community

"Adequate instream flow is essential for maintaining water quality and improving fish habitat."

Tom Wolf
Trout Unlimited

The Region has a solid track record of effective and well managed water resource programs

The cost of completing the Draft and Final Environmental Impact Statement is estimated at $6.87 million. The majority of funds, $3.97 million, will be provided by local water resource agencies. Congress appropriated $250,000 to the U.S. Bureau of Reclamation for the project in FY 2005. The remainder of needed federal funds is $2.65 million.

Project Component	Total Cost	Local Funding	BOR Funding
Water Supply Feasibility Study (WSFS) completed	$1.3 million	$1.2 million	$100,000
Environmental Impact Statement (EIS)	$6.87 million	$3.97 million	$2.9 million**

**BOR received $250,000 in FY 2005
Balance requested for BOR = $2 65 million

Project Timetable

Task	Start	Completion
Water Supply Feasibility Study (WSFS)	Fall 2001	Spring 2004
Environmental Impact Statement (EIS)	Winter 2004	Summer 2006
Permitting	Winter 2005	Winter 2006
Final Design	Winter 2006	Winter 2008
Construction	Winter 2008	Summer 2011

Washington County, Oregon

Washington County, Oregon is the second-fastest growing county in the state. It has a population of nearly 500,000. Since 1987, the number of jobs on the westside has doubled to a total of 220,000.

"Diversity is the cornerstone of a safe, secure and reliable water supply for the region—we can't put all of eggs in one basket."

Mayor Rob Drake,
City of Beaverton

Washington County Communities and Water Agencies Request $2.65 Million to Sustain Regional Growth and Livability

The Water Supply Partners, made up of Washington County Cities and Water Agencies, are requesting $2.65 million in FY 2006 for the U.S. Bureau of Reclamation to complete the Environmental Impact Statement (EIS) for the Tualatin Basin Water Supply Project. Total cost of the EIS is $6.87 million, of which local governments are contributing $3.97 million, or more than 55%. Federal authorization for this Project was secured in the "Energy and Water Development Act, 2004" (P.L. 108-137).

A federal appropriation of $250,000 for the Tualatin Water Supply Project was secured in the "Consolidated Appropriations Act, 2005" (P.L. 108-447) to partially fund the EIS for this Project. It is critical the balance of funding is secured in FY 2006 to meet the community's growing municipal, industrial, agricultural and environmental water needs and sustain the economic health of the region.

"The region's future is tied to our ability to plan for and deliver fresh, clean water to every home, farm and business while restoring flow to the river."

Chair Tom Brian,
Washington County Commission

The residents and businesses of Washington County, Oregon need dependable, safe and secure fresh water resources to ensure the long-term economic health and livability of our region. Demand for water in the Tualatin Basin is expected to double by the year 2050, which means the basin will need an additional 50,000 acre feet per year. Water resource agencies in the Tualatin Basin are making efforts to plan now for diverse, safe and reliable water supplies in order to avoid potential water shortages such as those experienced in the Klamath Basin.

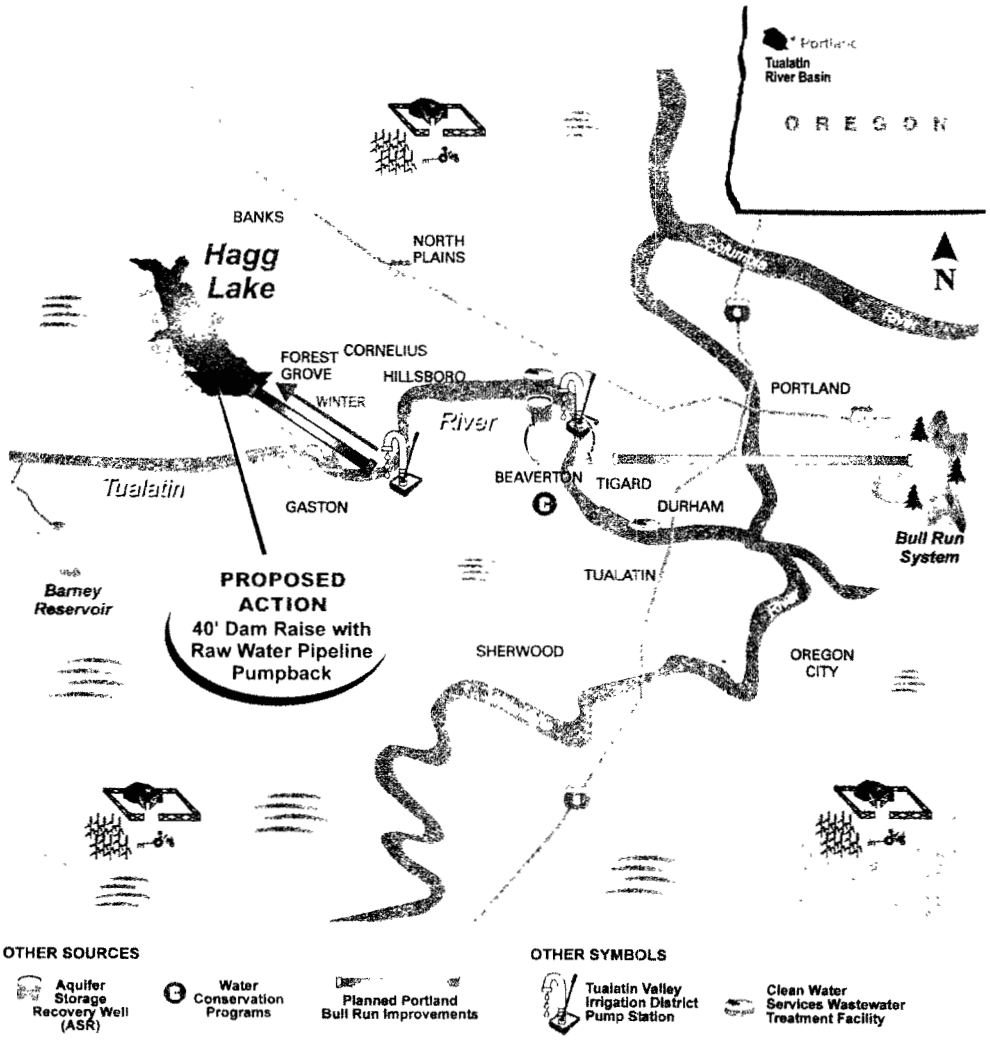
Water Project is Key Element for Longterm Regional Vitality

Water resource agencies in Washington County, Oregon have been working collaboratively to meet the long-term water resource needs of drinking water, agricultural irrigation and in-stream flow. They contributed more than $1.2 million to fund the Tualatin Basin Water Supply Feasibility Study (WSFS) which was completed in March 2004.

"Long-term water resource planning is critical to maintaining a positive business operating environment and to sustain conditions suitable for further investment."

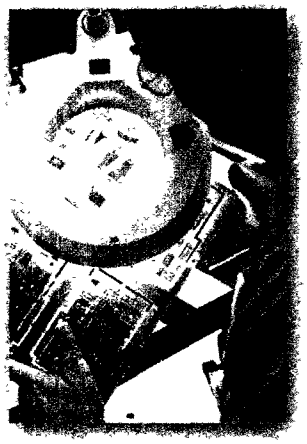
Rick Kroon
Intel Oregon Corporate Services Manager

The next phase of the Water Supply Project is to prepare an Environmental Impact Statement (EIS). The EIS will study the impacts and benefits of a proposed action for supplying an additional 50,000 acre feet of needed water. Some sections of the EIS will be completed by the US Bureau of Reclamation (BOR) which owns the dam at Hagg Lake. The partners are considering a 40' dam raise at Hagg Lake with a raw water pipeline pumpback as the proposed action for the EIS.



Smart Investments Now will Benefit Entire Region for Generations

The Tualatin Basin Water Supply Project is an investment in the health and sustainability of the region's watershed, economy, and community. Direct benefits of the project include:



Economic Development

Washington County is the economic engine of the state, generating more state revenue than is returned to the area. A reliable, secure and cost-effective water supply is essential to the continued economic health of the region.

Watershed Health

Sustaining the overall health of the Tualatin River watershed is a primary goal of local water resource agencies. Adequate instream flow is a major factor in maintaining water quality and fish habitat. Two fish species in the Tualatin River are listed as threatened under the federal Endangered Species Act (ESA). Restoration of fish habitat will require more water.

Community Livability

Quality of life is directly related to the region's economy and sustainability. Residents of Washington County value the beauty, quality and recreational opportunities afforded by the area's natural environment. The region must continue to maintain and enhance a distinctive quality of life to attract talented workers.

Other Project benefits include:

- Reliable, safe and cost-effective water supply
- River and tributary flow restoration
- Improved fish and wildlife habitat
- Expanded recreational use
- Restoration of ESA listed Spring Chinook and Steelhead
- Agricultural irrigation
- Water conservation
- Flood management

Contacts

Washington County

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(503) 846-8681
Fax: (503) 846-4545

Tom Brian, Chairman
Washington County Board of Commissioners and Clean Water Services Board of Directors

Dennis Mulvihill,
Government Affairs Officer

Washington, D.C. Contact

Tim Rutten
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(202) 638-3730
trutten@peyser.com

Clean Water Services

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Hillsboro, Oregon 97123
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Fax: (503) 681-3603
www.CleanWaterServices.org

Bill Gaffi, General Manager
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Tom VanderPlaat,
Senior Water Resources Program Manager
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vanderplaatt@CleanWaterServices.org

Mark Jockers
Public Affairs Manager
(503) 681-4450
jockersm@CleanWaterServices.org

Watershed Project Partners

City of Beaverton	*Rob Drake*, Mayor	(503) 526-2481
City of Forest Grove	*Richard Kidd*, Mayor	(503) 359-3200
City of Hillsboro	*Tom Hughes*, Mayor	(503) 681-6100
City of Sherwood	*Keith Mays*, Mayor	(503) 625-5522
City of Tigard	*Craig Dirksen*, Mayor	(503) 639-4171
City of Tualatin	*Lou Ogden*, Mayor	(503) 692-2000
Tualatin Valley Irrigation District	*Joe Rutledge*, District Manager	(503) 357-3118
Tualatin Valley Water District	*Greg Diloreto*, Manager	(503) 642-1511
U.S. Bureau of Reclamation	*Ron Eggers*, Local Area Manager Lower Columbia	(503) 872-2795
Clean Water Services	*Bill Gaffi*, General Manager	(503) 681-3600

"This project is essential for meeting the long-term water supply needs of our community."

Mayor Tom Hughes,
City of Hillsboro

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: Update of Tualatin River Basin Water Supply Project

FOR AGENDA OF: 4-4-05 **BILL NO:** 05065

Mayor's Approval:

DEPARTMENT OF ORIGIN: Engineering

DATE SUBMITTED: 3-30-05

CLEARANCES: City Attorney

PROCEEDING: Work Session

EXHIBITS: 1. 4-4-05 Agenda Bill: Third Amendment to Funding Agreement w/o Exhibits (Agenda Bill 05064)

BUDGET IMPACT

EXPENDITURE REQUIRED $-0-	AMOUNT BUDGETED $-0-	APPROPRIATION REQUIRED $-0-

HISTORICAL PERSPECTIVE:

On March 19, 2001, Council approved entering into a funding agreement in Agenda Bill No. 01088 for an IWRM (Integrated Water Resource Management) Water Supply Feasibility Study (WSFS) of the Tualatin River. Subsequently, the Mayor signed a Joint Funding Agreement (intergovernmental agreement) dated June 20, 2001. The original Joint Funding Agreement jointly funded a study of the feasibility of alternative approaches to increasing the water supply in the Tualatin River Basin, as well as the "no action alternative."

On October 13, 2003, Council authorized the signing of a second amendment to the June 2001 funding agreement in Agenda Bill No. 03227, for the purpose of continued funding for the IWRM (Integrated Water Resource Management) Water Supply Feasibility Study (WSFS) of the Tualatin River Basin.

During the last two years, the Tualatin River Basin Water Supply Project has been evaluating reliable, safe, and sustainable water supply options to meet the long-term Tualatin River instream flow, agricultural irrigation, and municipal and industrial water needs in Washington County to the year 2050. Additionally, over the last year, a draft planning report and Environmental Impact Statement for a water supply project was initiated. The study is being led by Clean Water Services in partnership with local cities, water districts, and the U.S. Bureau of Reclamation, builder and owner of the Scoggins Dam/Hagg Lake facility.

INFORMATION FOR CONSIDERATION:

Also included in the April 4, 2005, regular meeting, the Council will consider the agenda bill titled: Authorize Mayor to Sign Third Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study (aka Tualatin River Basin Water Supply Project).

In recognition of the importance of this water supply project being pursued by the intergovernmental partners and the magnitude of the potential financial investment by the City of Beaverton in the project, staff recommend a Council Work Session be conducted to present relevant information to Council. The Work Session will give an overview and update of progress in the latest phase of the project.

RECOMMENDED ACTION:
Conduct a Council Work Session.

EXHIBIT 1

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: Authorize Mayor to Sign Third Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study (aka Tualatin River Basin Water Supply Project)

FOR AGENDA OF: 4-4-05 **BILL NO:** 05064

Mayor's Approval:

DEPARTMENT OF ORIGIN: Engineering

DATE SUBMITTED: 3-22-05

CLEARANCES: City Attorney
Finance
Purchasing

PROCEEDING: Consent

EXHIBITS:
1. Draft Third Amendment
2. Agenda Bill No. 03227
3. WSFS Congressional Project Information

BUDGET IMPACT

EXPENDITURE REQUIRED	AMOUNT BUDGETED	APPROPRIATION REQUIRED
$ 67,619 FY 2005-06 *	$-0-	$ 67,619 *
$155,803 FY 2006-07 *		$155,803 *

* Account Number 505-75-3636-683 Water Construction Fund, Water Extra-Capacity Supply System Program, Scoggins Dam Raise Project. As stated in the Recommended Action, staff recommends that appropriations of $67,619 and $155,803 be included in the FY 2005-06 and FY 2006-07 budgets respectively.

HISTORICAL PERSPECTIVE:

On October 13, 2003, Council authorized signing of a second amendment to a June 2001 funding agreement in Agenda Bill No. 03227 (Exhibit 2), for the purpose of continued funding for the IWRM (Integrated Water Resource Management) Water Supply Feasibility Study (WSFS) of the Tualatin River basin. The parties to the funding agreement are generally seeking to expand the water supply in the Tualatin basin. To date, the joint funding agreement and first amendment have jointly funded a work program to identify supply options and study the feasibility of the supply approaches to increasing the water supply in the Tualatin River basin, as well as a "no action alternative."

During the last two years, the Tualatin River Basin Water Supply Project has been evaluating reliable, safe and sustainable water supply options to meet the long-term Tualatin River instream flow, agricultural irrigation, and municipal and industrial water needs in Washington County to the year 2050. Additionally, over the last year, a draft planning report and Environmental Impact Statement for a water supply project was initiated. The study is being led by Clean Water Services in partnership with local cities, water districts, and the U.S. Bureau of Reclamation, builder and owner of the Scoggins Dam/Hagg Lake facility.

Three principal groups have helped guide the Tualatin River Basin Water Supply Project through evaluating and narrowing the list of supply options. The three groups consist of 1) the technical

group known as the Washington County Water Managers Group (WMG), 2) the public and interested stakeholders, and 3) the Tualatin River Basin Water Supply Feasibility Study Policy Steering Committee (PSC) made up of elected officials of the financially participating agencies and one non-voting stakeholder, the Lake Oswego Corporation. The City of Beaverton is represented on the PSC by former Councilor Forrest Soth, and on the WMG by David Winship, City Utilities Engineer. As a part of the water supply project, an extensive public review process has been established with a high profile outreach program of public meetings and presentations, newsletter, brochures, web site, and media releases and coverage.

From results so far in the Tualatin River Basin Water Supply Project, four key water source options, one of which is a no action alternative, have been identified and closely evaluated. The three "action" source options that add to the existing water supply are as follows:

- 40-foot Scoggins Dam (Hagg Lake) Raise. This would add an estimated 50,000 acre-feet (16.5 billion gallons), which would nearly double the current volume of the lake of 60,640 acre-feet (usable volume 53,640 acre-feet). Cost of a 40-foot dam raise is approximately $135 million. Completion of the 40-foot dam raise option is projected to be in FY 2010-11. An accompanying project is the Sain Creek Tunnel, closely associated with the 40-foot dam raise option, which was analyzed over the last year. The Sain Creek Tunnel was envisioned as a means to convey water by gravity from the upper Tualatin River to Sain Creek, where it would then flow as creek water into Hagg Lake. The Sain Creek Tunnel concept was sought as a way to increase the reliability of annually refilling Scoggins Reservoir. The 40-foot dam raise does not by itself reliably fill each year. Overall cost of this dam raise option with the tunnel is estimated to be $170 million.
- 20-foot Scoggins Dam (Hagg Lake) Raise. This would add an estimated 26,500 acre-feet (8.6 billion gallons) to current lake storage.
- Irrigation Exchange Pipeline from the Willamette River. This new pipeline would pump water approximately 23 miles from the Willamette River near Newberg to the Tualatin Valley Irrigation District (TVID) pump station and storage tank. This water would be used to irrigate crops in exchange for 25,000 acre-feet (8.15 billion gallons) of water now being used by TVID from Hagg Lake. The 25,000 acre-feet of water in Hagg Lake would then be available to allocate amongst the builders of the exchange pipeline.

The most likely project for implementation was adopted by the project's Policy Steering Committee on February 17, 2005, as the proposed action for inclusion in the Draft Environmental Impact Statement. The proposed project is a 40-foot high dam raise of Scoggins Reservoir in conjunction with a large raw water pipeline that would extend from Scoggins Reservoir to the Joint Water Commission (JWC) Treatment Plant and large pumping station located near the easterly end of the raw water pipeline. The combination of the pumping station and raw water pipeline form the Raw Water Pipeline Pump Back option where winter and spring flow surplus in the Tualatin River would be pumped out of the river and through the raw water pipeline back into Hagg Lake to increase the annual reliability of filling the reservoir.

The Sain Creek Tunnel option in combination with the 40-foot Scoggins Dam raise was dropped from further consideration in favor of the Raw Water Pipeline Pump Back primarily due to the latter project's ability to provide a 93 percent reliability of refilling the expanded Scoggins Reservoir each year. The Sain Creek Tunnel was found to only provide a 71 percent chance of annually refilling the reservoir, coupled with other unfavorable issues related to environmental impacts and permitting.

The Third Amendment lists Beaverton's level of participation in the Joint Funding Agreement as 4,121 acre-feet (1.3 billion gallons) or 7.79 percent of the total nominal 52,900 acre-feet new raw water storage that would be created in an expanded Scoggins Reservoir with a 40-foot dam raise. The City currently owns a right to use up to 4,000 acre-feet in Hagg Lake and 4,300 acre-feet in Barney Reservoir for summertime water supply. During the summer, water in the dams is released into the Tualatin River as needed to meet the City's potable water demand. Before reaching Beaverton, raw water in the upper Tualatin River is withdrawn and filtered in the Joint Water Commission Water Treatment Plant. The City owns a 15 million gallon per day share of the JWC treatment plant.

INFORMATION FOR CONSIDERATION:

To move forward with the project, a third amendment is needed to fund continuing project costs to undertake the next two years of scheduled tasks. A two-year scope of work of the various project elements to be completed for fiscal years 2005-06 and 2006-07 is attached as Exhibit A of the third amendment (Exhibit 1).

The third amendment to the joint funding agreement does not change Beaverton's required financial participation of up to $155,803 during the current budget FY 2004-05. The third amendment to the joint funding agreement lists a required Beaverton expenditure in FY 2005-06 of $67,619 and $155,803 in FY 2006-07 to continue with the project.

At the current participation level of 4,121 acre-feet, the latest overall project cost to Beaverton from inception of the project through FY 2010-11, as estimated by Clean Water Services, would be $11.7 million. This cost represents the potential financial obligation in a 40-foot Scoggins Dam Raise with the Raw Water Pipeline Pumping Station, should the two project components be constructed. The Raw Water Pipeline is a separate project being undertaken in parallel by the JWC with several other intergovernmental partners.

RECOMMENDED ACTION:

1. Council authorize the Mayor to execute the Third Amendment to Joint Funding Agreement for IWRM Water Supply Feasibility Study (aka Tualatin River Basin Water Supply Project), in a form approved by the City Attorney.

2. Council direct the Finance Director to include the required Beaverton expenditure in FY 2005-06 of $67,619 and $155,803 in FY 2006-07 budgets to continue with the project.

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: APP 2005-0002 Appeal of Garden Grove PUD; Conditional Use Approval (CU 2004-0021)

FOR AGENDA OF: 04-04-05 **BILL NO:** 05066

Mayor's Approval:

DEPARTMENT OF ORIGIN: CDD

DATE SUBMITTED: 03-23-05

CLEARANCES: Dev. Services
City Attorney

PROCEEDING: Public Hearing

EXHIBITS: Vicinity Map
Table of Contents / Exhibits List

BUDGET IMPACT

EXPENDITURE	AMOUNT	APPROPRIATION
REQUIRED $0	BUDGETED $0	REQUIRED $0

HISTORICAL PERSPECTIVE:

CES-NW is the applicant for a Conditional Use application for a Planned Unit Development (PUD) to allow a 15-lot single-family residential development (Garden Grove PUD; CU 2004-0021). On February 16, 2005 the Planning Commission conducted a public hearing and approved the application finding the proposal met the relevant criteria for approval. On March 1, 2005, the Commission adopted Order No. 1784 memorializing the decision with supplemental findings. On March 11, 2005, Ms. Susan Greer submitted a Notice of Appeal, objecting to the Commission's decision.

The development site is located on vacant property south of SW Canby Street and north of SW Multnomah Blvd. and is specifically identified as Tax Lot 301 on Washington County Assessor's Tax Map 1S1-24DA. The property is approximately 2.8 acres in size and is zoned R-7 Urban Standard Density, a zone in which single-family detached dwellings are permitted outright and requiring Conditional Use approval for a PUD.

INFORMATION FOR CONSIDERATION:

This appeal hearing will consider the application *de novo*. The appellant alleges in the Notice of Appeal, dated March 11, 2005, that the Planning Commission erred in its decision to approve CU 2004-0021 based upon traffic issues and compatibility of future homes with the surrounding area. In this appeal, staff provides responses to the appeal in the Memorandum to Council, dated March 23, 2005. Documents including the Notice of Appeal, the Commission's Land Use Order on this matter, the Staff Report, Memoranda, Planning Commission hearing minutes, and all exhibits presented to the Commission, including letters, are attached for the Council's consideration. The deadline for a final decision by the City on this application is April 15, 2005.

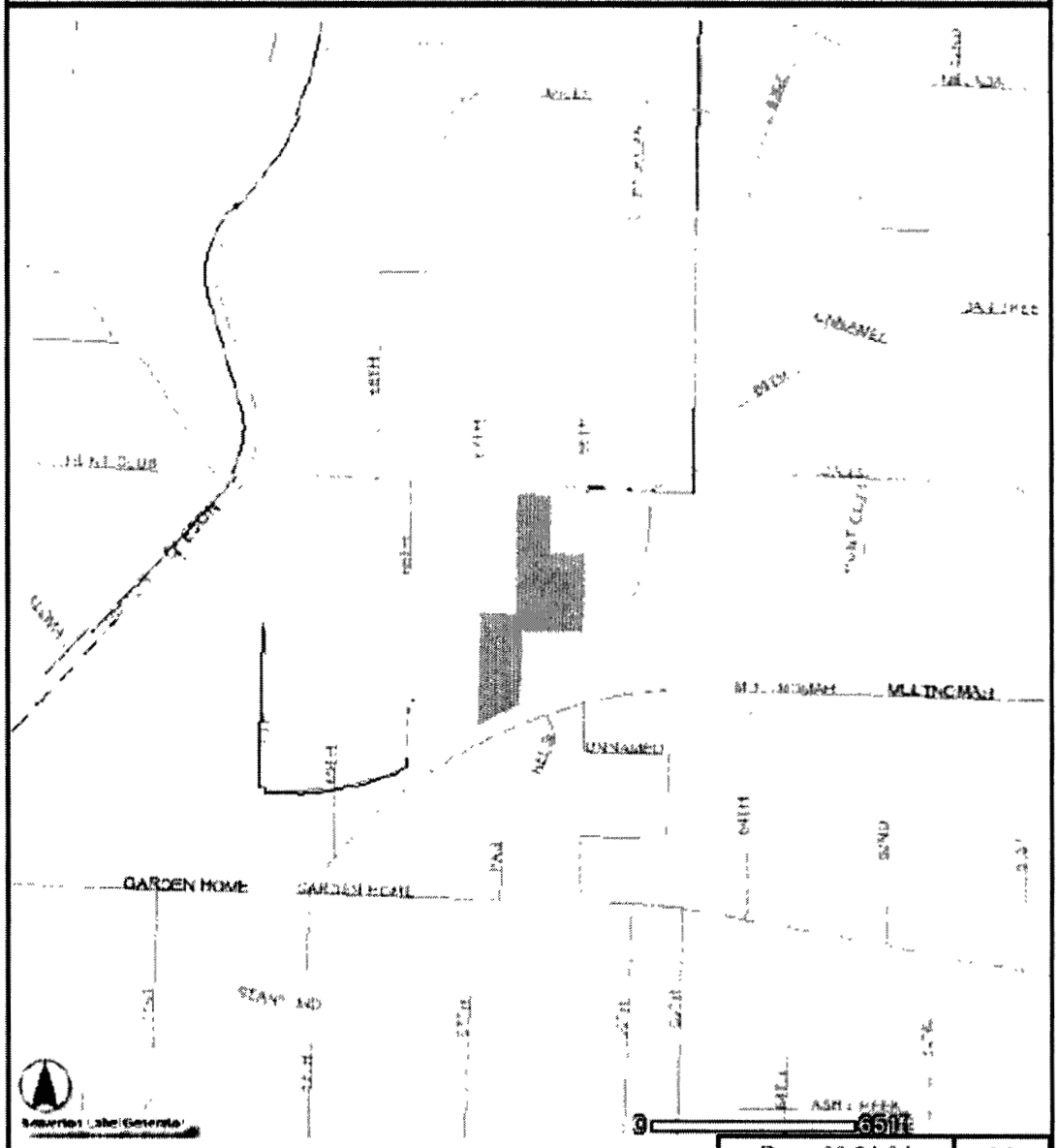
RECOMMENDED ACTION:

Conduct a public hearing, deny the appeal (APP 2005-0002), thereby upholding the decision of the Planning Commission, and approve CU 2004-0021. Further, it is recommended that Council direct staff to prepare findings and a final order that embodies the Council's decision.

EXHIBIT 1

VICINITY MAP

Exhibit Name:DETAIL MAP **Exhibit Number: 1**



Project: GARDEN GROVE 14-LOT PLANNED UNIT DEVELOPMENT	Date: 08/04/04	**N**
	Map Number 1S124DA00301	
Department:COMMUNITY DEVELOPMENT ***Division: Development Services***	Application # CU2004-0021 LD2004-0030 FS2004-0017 TP2004-0018	

TABLE OF CONTENTS and EXHIBITS LIST

GARDEN GROVE PUD APPEAL TO CITY COUNCIL
APP 2005-0002 / CU 2004-0021

Council Packet Page Number — **Exhibits listed in approximate reverse chronological order**

Exhibit 5

MEMORANDUM
City of Beaverton
Community Development Department

"make it happen"

To: Mayor and City Council

From: John Osterberg, Senior Planner

Date: March 23, 2005

Subject: ***APP 2005-0002 Garden Grove PUD Appeal***

Proposal

The applicant, CES-NW, requests approval of a Conditional Use for the Garden Grove PUD; a 15 lot single-family detached residential development. The Planning Commission's approved CU 2004-0021, (Land Use Order 1784, dated March 1, 2005) which makes use of flexibility permitted by the Planned Unit Development (PUD) process in meeting site development standards. The flexibility of a PUD permits a reduction in lot sizes, lot dimensions, and internal building setbacks in comparison to standard R-7 zone development. The PUD process also requires a minimum of 20 percent open space within the development and that the setbacks of the parent parcel be maintained. The Commission's approval of CU 2004-0021 contains no conditions of approval because the Commission determined that necessary conditions were appropriate for the other Garden Grove approvals which are, LD 2004-0030 and TP 2004-0018.

Appeal

The appellant, Ms. Susan Greer, has submitted the appeal (APP 2005-0002) which objects to the Commission's approval of the CU/PUD. The appeal, submitted March 11, 2005, objects to the Commission's approval on the basis of potential traffic congestion and compatibility of likely future homes in the development in relation to the surrounding area. The appeal states that neither the Staff Report, dated January 5, 2005, nor the Land Use Order, dated March 1, 2005, contain adequate findings, with regard to the objections cited, to support the Commission's conclusion that the criteria for CU/PUD approval are met. Since the time that the appeal was submitted, Ms. Greer has submitted a letter dated March 17, 2005 that clarifies the submitted appeal is only of the Commission's decision to approve CU 2004-0021, and not the Commission's other land use approvals for Garden Grove.

Staff Response to the Appeal

Within this memorandum, intended to supplement the findings of the January 5, 2005 Staff Report and March 1, 2005 Land Use Order, staff provide additional findings to support approval of the CU/PUD.

Evaluation of the Objections Cited by the Appellant
Below, staff will address objections and other statements by the appellant in the general order that they are listed, beginning with Objection #1.

1. **Appellant's Objection #1: Facilities Review Criterion 1 (Section 40.03.1), which requires a finding on "critical facilities" is not met because no information was presented by staff on the threshold for requiring a traffic analysis for Garden Grove.**

   Sec. 40.03.01

   "All critical facilities and services related to the development have, or can be improved to have, adequate capacity to serve the proposal at the time of its completion".

Staff Response:
Findings in the record with regard to Facilities Review Criterion 1 are found on pages 73-74 of the Council's packet and with regard to traffic, on page 26 of Land Use Order 1784. In the staff report of January 5, 2005, Transportation Planning Division staff referenced Development Code Section 60.55.20 of the Traffic Analysis section but did not state the actual vehicle trip threshold number that is found in the Code. Section 60.55.20.2.A states: ***"A Traffic Impact Analysis is required when the proposed land use change or development will generate 200 vehicles or more per day (vpd) in average weekday trips as determined by the City Engineer".*** Staff is in agreement with the applicant' statement located on page 153-154 of the submittal, that this 15 lot subdivision will generate approximately 150 trips per day, based on the Institute of Transportation Engineer's (ITE) Trip Generation Manual of national average trip rates for single family residential use. Therefore, the Garden Grove PUD proposal does not meet the Code's threshold for the requirement of a Traffic Impact Analysis.

However, Section 60.55.20.B states: ***A Traffic Impact Analysis or some elements of a Traffic Impact Analysis may be required when the volume threshold under subsection A. of this section is not met but the City Engineer finds that the traffic impacts attributable to the development have the potential to significantly impact the safe and efficient operation of the existing public transportation system.***

SW Canby Street is designated by the Functional Classification Plan in the Comprehensive Plan as a Residential Neighborhood Route. By definition of the Development Code (Chapter 90), a "***Residential Neighborhood Route is a street that is usually long relative to local streets and provides connectivity to***

collectors or arterials. Neighborhood routes generally have more traffic than local streets and are used by residents in the area to get into and out of the neighborhood, but do not serve citywide/large area circulation."

The City Engineer reviewed the Garden Grove application and considered impacts to SW Canby Street, and did not find that the development's traffic would have the potential to significantly impact the safe and efficient operation of SW Canby Street or the public transportation system. The addition of 150 vehicle trips, 75 in and 75 out, in a day on to SW Canby, a Residential Neighborhood Route, is not a significant additional volume. The City Engineer determined that the development would have a minor, but not significant traffic impacts.

Development Code Section 60.55.10.2 states that ***In order to protect the public from potentially adverse impacts of the proposal, to fulfill an identified need for public services related to the development, or both, development shall provide traffic capacity, traffic safety, and transportation improvements in rough proportion to the identified impacts of the development.*** The proposed development is conditioned in the Land Division approval to provide additional right of way and construction of the south half of SW Canby Street to Neighborhood Route Standards for the frontage of the site. Staff believes that right of way dedication and street improvements are the development's roughly proportional mitigation of the minimal adverse impacts its traffic may have on the street system. Staff found that, as conditioned in the Land Division decision, the proposal met the Code standards for approval.

City staff had not been aware of any traffic capacity problems or related complaints on SW Canby previous to this development proposal. Staff did receive traffic concerns from three residents after they received public notice. It was determined by staff that these concerns, existing cut-through traffic and a request for speed bumps, are not a result of the proposed development, and that the development would not have a significant impact in compounding the problems identified. These concerns were taken into consideration in the review of this proposed development but it was determined that they are not appropriately addressed through the land use review process. Review of existing neighborhood traffic concerns is addressed through the neighborhood traffic calming program. The City's procedures are found on the City's web page at: http://www.beavertonoregon.gov/departments/engineering/docs/NEIGH_TRAFFIC_CALMING_PROGRAMDec2000_revisions.pdf. Once traffic concerns are submitted to the City, the concerns will be investigated and responded to by the City Traffic Engineer as outlined in the procedures.

2. **<u>Appellant's Objection #2</u>: Policy 6.2.1.a of the Comprehensive Plan is not met because findings on this Policy were not adequate with respect to traffic impacts, and that the Plan intends that streets be designed to respect the characteristics of surrounding land uses, and therefore the Planning Commission did not properly consider the traffic impact of the Garden Grove development on neighborhood streets, especially SW Canby Street.**

<u>Comprehensive Plan Goal Section 6.2.1:</u>

Transportation facilities designed and constructed in a manner to enhance Beaverton's livability and meet federal, state, regional, and local requirements.

<u>Policy 6.2.1.a</u>

"Maintain the livability of Beaverton through proper location and design of transportation facilities."

<u>Action:</u>
"Design streets and highways to respect the characteristics of the surrounding land uses, natural features and natural hazards, and community amenities. "

<u>Staff Response:</u>
Findings in the record with regard to Plan Policy 6.2.1.a are found on page 85 of the Council's packet, as part of the staff report, and with regard to traffic on page 26 (Land Use Order 1784). Conditions of approval regarding street improvements are found generally on pages 34-36.

The appellant cites the Action statement above, as applicable. Findings with regard to the Action were not prepared because the Action is not a criterion for approval, because CU Criterion 4 states the requirement: "*The proposal will comply with the applicable* ***<u>policies</u>*** *of the Comprehensive Plan*" (emphasis added). However, because the appellant has addressed the first action statement, staff's findings below are intended to address both the Policy and the implementing Actions. Should the Council find that the appellant identified Action is part the review of the Plan Policy, staff also cite the second action statement under Policy 6.2.1.a. as applicable: *Recognizing that the magnitude and scale of capital facilities also affect aesthetics and environmental quality, the City will continue to require design plans and impact analyses as specified in the Development Code.*

The proposed development is conditioned in the Land Division approval to provide additional right of way and construction of the south half of SW Canby Street to Neighborhood Route Standards for the frontage of the site on SW Canby Street. Staff believe that the right-of-way dedication and street improvements are the development's roughly proportional mitigation of the minimal adverse impacts its traffic may have on the street system. Also, the development is conditioned under the Land Division approval to provide evidence that new street intersection with SW Canby Street meets City safety requirements for intersection sight distance. No obstructions shall be placed within the driveway intersection sight vision triangle except as provided by City Ordinance, including but not limited to parking. New street intersections are required to meet sight distance criteria and public street standards of the City's Engineering Design Manual for the design speed of the roadway. As conditioned in the Land Division approval, the design of street improvements will respect the site surroundings and will not detract from community amenities.

3. **Appellant's Objection #3: Policy 3.13.1.c of the Comprehensive Plan is not met because findings on this Policy were not adequate with respect to compatibility with respect to the size, scale and dimension of the proposal with the surrounding area, and no discussion of the character of existing development within the Maplewood area was done by the Commission.**

   Policy 3.13.1.c
   "Require Planned Unit Development application procedures for projects proposing two or more families within the Low Density and Standard Density land use designations. Planned Unit Developments encourage flexibility in standards and provide a mechanism for staff to make adequate findings with respect to compatibility in size, scale, and dimension. Exceptions to this requirement are dwellings designed as primary units with an accessory dwelling unit, as specified in the Development Code."

Staff Response:
With regard to the CU staff report, staff agree with Ms. Greer that the finding under Policy 3.13.1.c (page 82) are not complete. However, there are findings under Criterion 6, (page 88-89) that describe how the proposal will be reasonably compatible with its surroundings. Land Use Order 1784, (page 24) notes that Ms. Greer's testimony to the Commission described the characteristics of the Maplewood neighborhood with regard to history, lotting patterns and lot sizes, noting that lots in the area were larger than the lot sizes proposed. Staff provide the following additional findings, below, with regard to the Plan policy.

Staff have visited the site and viewed property and development in the surrounding area, and submit Exhibit 6 (page 13), a map of the area in close proximity of the site. The surrounding area is characterized by a variety of development types and patterns, that appear to have been constructed over a long period of time, ranging from old homes on large lots built in the 1920's-30's, to newer infill-type residential development on smaller lots, with homes that appear to have been built in the 1970's, '80's and '90's. A majority of streets in the area, with notable exceptions of SW Canby Street, SW Multnomah Blvd., and SW Oleson Road, are short 'no-outlet' streets, as would be the proposed SW Kelsi Street, by not connecting vehicular access to SW Multnomah.

Surrounding Area: South

Adjacent to the southern portions of the proposed Garden Grove site is commercial development such as Power Plumbing Products and Tualatin Upholstery located on the north side of Multnomah Blvd. Elsewhere on Multnomah Blvd., apartments, two churches, and small lot single family residential development are found in close proximity to the project site.

Finding: Staff find that the area to the south, on either side of Multnomah Blvd. contains a variety of development types, and that the introduction of small lot single-family homes, with lot sizes of approximately 0.10 acre, would not be incompatible with that development pattern and would have minimal impact on the surrounding area to the south.

Surrounding Area: West

The area to the west is almost entirely residential with an area of large lots, typically one-quarter acre to one half acre containing older homes. Abutting the site are three large lots, with approximately one and a half of these lots abutting the proposed open space tract, and the remainder abutting three proposed small lots. The majority of the west property line abuts a private driveway that serves 4 smaller homes on moderately sized lots (less than one quarter-acre in size). The proposed Garden Grove lots sizes are smaller than any of the lots abutting it on the west. However, in comparing the approximate home sizes with the prospective home-building 'footprint' in Garden Grove, (applicant's plan, page 164), the home sizes appear roughly similar in footprint area

Finding: Staff find that, due to the proposed open space tract abutting some existing large lot homes, and due to proposed homesites with lot sizes of approximately 0.10 acre that would abut the private driveway tract serving, that future single-family homes in Garden Grove are reasonably compatible with the surrounding area to the west.

Surrounding Area: North

The area to the north, across SW Canby Street, is entirely residential with areas of large lots, typically one-quarter acre to one-half acre containing older homes, and

areas of newer residential development on smaller lots. On SW 67th, the Haley Woods subdivision contains newer homes on lots ranging between approximately 5,200 square feet to 9,000 square feet. On 64th Place, the Woods Creek Planned Development contains newer homes on small lots, generally between 6,500 to 8,500 square feet, which are larger than the proposed Garden Grove lot sizes. Both Haley Woods and Woods Creek developments provide open space tracts, as would Garden Grove PUD if approved.

Finding: Staff find that a majority of the area north of SW Canby Street, is currently developed with homes on large lots, but that some areas have been developed more recently with lots which are smaller and at higher density relative to the older lots us the area. Although the newer lots in the area are not as small as proposed Garden Grove lot sizes, staff find that because existing and proposed homes will be the same single-family land use and the existing development pattern of the area to the north of the project site contains homes on lots with a variety of sizes, that the Garden Grove development does not introduce either a new land use or a substantially different lot pattern. Therefore, staff find the proposal will be reasonably compatible with, and should have no more than minimal impact on, the surrounding area to the north.

Surrounding Area: East

The east property line of Garden Grove abuts properties containing Power Plumbing Products, four (4) homes on moderately sized lots (approximately one-quarter acre in size) in the Canby Lane subdivision, and one large lot with a single house at the corner of Canby Street. The Garden Grove lot sizes are smaller than any of the abutting lots to the east. From review of the plans of the applicant (pages 164-168), some of the abutting Canby Lane homes appear to have larger footprints than the footprints (building setback envelope) proposed in the Garden Grove PUD, and two Canby Lane homes (lots 4600 and 4700) are shown to be approximately ten (10) feet apart. Staff find that in the surrounding area, including some abutting properties, there is a variety of home sizes, lot sizes and building setbacks. Staff find, that because the same land use is proposed (single family homes) as that found on abutting lots, that the 15 foot building setbacks proposed on the east property line will be adequate to provide for a reasonable amount of buffering and compatibility between homes on either side of the property line.

Conclusions

The Maplewood-Garden Home neighborhood, as described by the appellant, is in close proximity to the proposed Garden Grove PUD and the neighborhood appears to be an attractive and desirable residential area. It is an attractive and well-maintained area even though the neighborhood contains a variety in home sizes, lot sizes, age of homes, and other similar residential neighborhood characteristics where development has occurred over time. Along Multnomah Blvd, commercial,

institutional and multi-family development is found abutting and in close proximity of the site. Considering the existing surroundings, the introduction of 15 new homes will be reasonably compatible with the surroundings. Staff find that, although the Garden Grove PUD would contain small lots and could have homes as close together as six (6) feet, it should not be assumed that future homes would necessarily be that close. Neither housing styles nor the future homebuilder have been determined at this time.

Residential development is subject to meeting minimum density standards of the Comprehensive Plan, as implemented by Section 20.05.60 of the Development Code. Older neighborhoods, such as that surrounding the proposed Garden Grove PUD, are likely to experience increasing residential densities due to re-development opportunities presented over time to property owners. In-fill development, whereby relatively small properties are redeveloped at higher densities or in clustered development patterns, located within larger lower density areas, is likely to continue in the neighborhood. Within that context, the proposed Garden Grove PUD serves as one example of development that has already occurred in the past, and what will continue in the future, within the Maplewood-Garden Home area.

Staff conclude that due to the variety of development types, ages and patterns, the proposal does not introduce any new land use or substantially different lot patterns than what is currently found in the neighborhood. Staff find that the development of Garden Grove PUD will be reasonably compatible with the surrounding area in terms of the development's size, scale and dimensions, and therefore meets Conditional Use –PUD Criteria 4 and 6.

Recommendation In support of the Planning Commission Decision:

Based upon the facts and findings presented in the January 5, 2005 Planning Commission staff report, Land Use Order 1784, and as supplemented by the findings of this memorandum dated March 23, 2005, staff recommend **DENIAL of APP 2005-0002: the Appeal of the Approval of CU 2004-0021 Garden Grove PUD.**

By Denial of APP 2005-0002, the Council hereby uphold the decision of the Planning Commission, and therefore **APPROVE CU 2004-0021 Garden Grove PUD.** There are no conditions of approval.

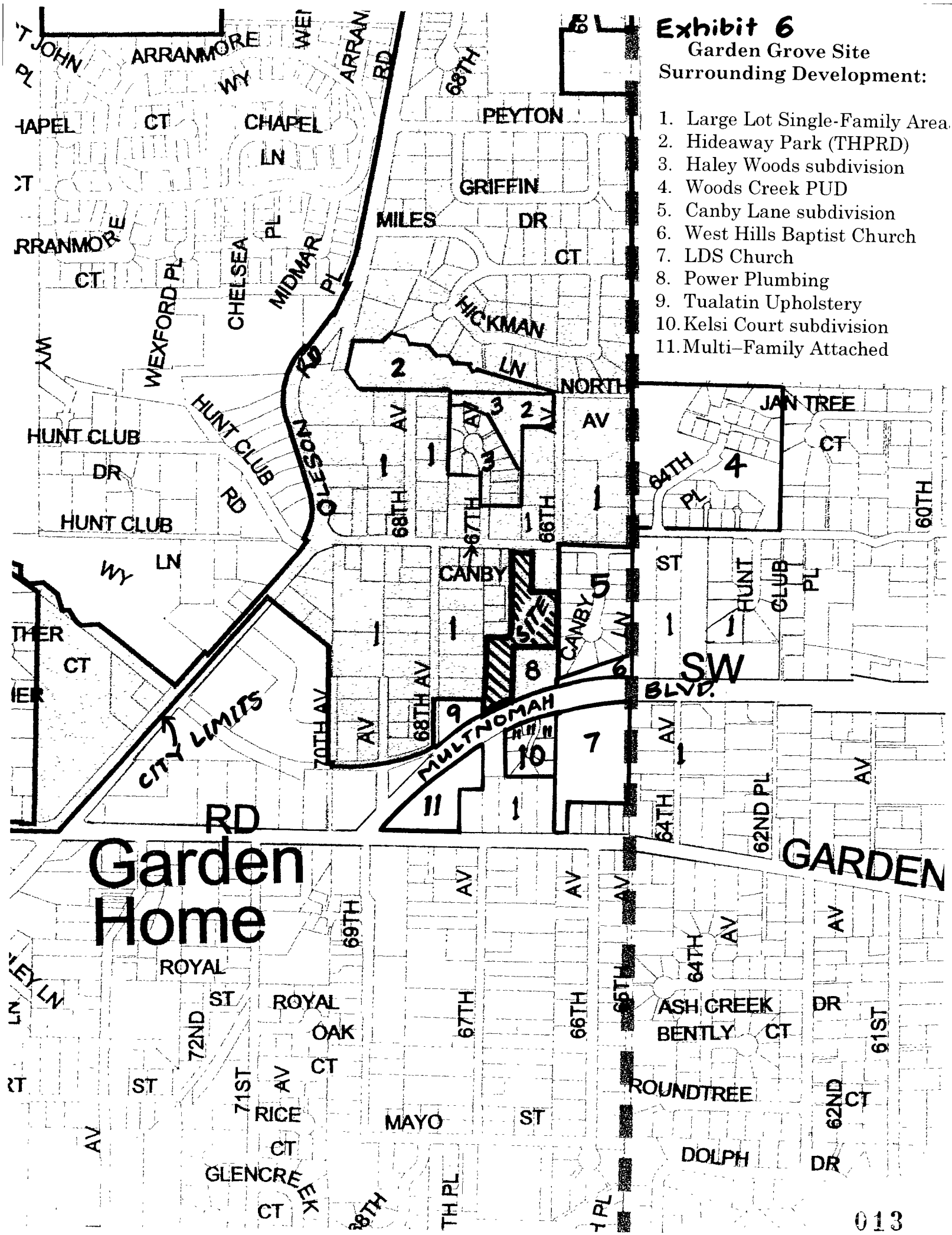


Exhibit 6
Garden Grove Site
Surrounding Development:
1. Large Lot Single-Family Area
2. Hideaway Park (THPRD)
3. Haley Woods subdivision
4. Woods Creek PUD
5. Canby Lane subdivision
6. West Hills Baptist Church
7. LDS Church
8. Power Plumbing
9. Tualatin Upholstery
10. Kelsi Court subdivision
11. Multi–Family Attached
Garden Home
RD
GARDEN
SW
BLVD.
MULTNOMAH
CITY LIMITS
OLESON
RD
HUNT CLUB
DR
HUNT CLUB
RD
HUNT CLUB
LN
WEXFORD PL
CHELSEA
PL
MIDMAR
PL
ARRANMORE
CT
CHAPEL
LN
CHAPEL
CT
ARRANMORE
WY
ARRAN
RD
PEYTON
GRIFFIN
MILES
DR
CT
HICKMAN
LN
NORTH
AV
JAN TREE
CT
64TH
PL
4
60TH
68TH
67TH
66TH
CANBY
SITE
CANBY
LN
5
ST
HUNT
CLUB
PL
8
9
10
7
11
70TH AV
68TH AV
64TH
62ND PL
ROYAL
ST
ROYAL
OAK
CT
72ND
71ST
AV
RICE
CT
GLENCREEK
CT
MAYO
ST
ROUNDTREE
DOLPH
DR
ASH CREEK
DR
BENTLY
CT
61ST
62ND
CT
69TH
67TH
66TH
65TH
64TH
AV

EXHIBIT 7

CITY of BEAVERTON

4755 S.W. Griffith Drive, P.O. Box 4755, Beaverton, OR 97076 General Information (503) 526-2222 V/TDD

March 22, 2005

Ms. Susan Greer
7700 SW Garden Home Road, Ste 16
Portland, OR 97223

Re: Appeal of Garden Grove PUD

Dear Ms. Greer:

In response to your letter of March 17, 2005, please be aware that a "de novo" hearing allows for new evidence and argument to be introduced to City Council in writing, orally or both, with regard to your appeal. This means that such evidence and argument can apply to all aspects of the Garden Grove PUD proposal, and are not limited to the subject matter that you raised in your Notice of Appeal.

This letter also notes that the Planning Director determined, on March 18, 2005, that your appeal met the criteria for Type 3 appeal listed under Section 50.70.2 of the Development Code. Your letter of March 17, 2005 cleared up the matter of which of the three Garden Grove decisions was being appealed.

On the day of your appeal (March 11, 2005) you had requested the Appeal application form, but it was unavailable at that time. The appeal form is necessary. I am enclosing that form now with a request that you fill it out and send it to me, or drop it by my office next week. Also, I have received your typed copy of the Notice of Appeal and plan, based on your request, to substitute it for the handwritten original in the material that is forwarded to City Council.

Please feel free to contact me at 503-526-2416 if I can answer any questions you may have about the appeal process.

Sincerely,

John Osterberg
Senior Planner

Copy to Appeal file APP 2005-0002

EXHIBIT 8

CITY of BEAVERTON

4755 S.W. Griffith Drive, P.O. Box 4755, Beaverton, OR 97076 General Information (503) 526-2222 V/TDD

DECISION FINAL

NOTICE OF APPEAL

March 18, 2005

To whom it may concern:

RE: CU2004-0021 -- GARDEN GROVE P.U.D.

Please note that the application described above has been appealed.

The tentative date and time for the hearing by the City Council is scheduled at 6:30 p.m. on Monday, April 4, 2005, and this will be held in the City Council Chambers, First Floor, Beaverton City Hall, 4755 SW Griffith Drive.

If you have any questions, please call 503-526-2348.

Sincerely,

Steven A. Sparks, AICP
Development Services Manager

Cc: Jeff Mitchell
CPO 3 Leadership Team
Craig Krech
Carl Jenson
Jamie Hartz
Michael & Bonnie Hayes
Brendan Buckley
Brad Roast
Jan Youngquist
Project File
Miles Edwards
City of Portland – Planning Director
Albert Hoguet
Jim Mann
Dale & Sylvia Butler
Jeff & Judy Mitchell
Amanda Rhoads
Sue Nelson
Bill Avery
Kirsten Van Loo
Susan Greer
Vance & Carolyn Boelys
Michael Cottham
Catherine Darby
Jim Duggan
Phil Healy
John Osterberg

EXHIBIT 9

March 18, 2005 COPY 03-18-05P04:35 RCVD

RECORD COPY

Mayor Drake and Members of the Beaverton City Council
City of Beaverton
4755 SW Griffith Drive
Beaverton, Oregon 97076

RE: Filing Fee for Appeal to Planning Commission
Approval of the Garden Grove PUD

Dear Mayor Drake and Council Members,

I am writing to request your consideration of waiving all or part of the $638.00 filing fee for my appeal of the Garden Grove PUD approval decision by the Planning Commission on 2-16-05.

Numerous concerns have been expressed by Maplewood-Garden Home residents about the design and impact of this proposed housing development. Due to time constraints and the complexities of communicating with various neighborhood residents, I took the initiative to file the appeal on 3-11-05 so that there would be more opportunity to evaluate this proposal in relation to the local community which has been relatively recently annexed to the City of Beaverton.

At the moment, I am a very much underemployed social worker (UE benefits exhausted) and in the start-up phase of a private information and referral/advocacy service. The $638.00 is a very substantial fee for an individual (my rent is $640/month). I would very much appreciate any assistance that you could provide in reducing the fee for the PUD appeal.

Thank you.

Sincerely,

Susan Greer

Susan Greer
7700 SW Garden Home Road, Ste 16
Portland, Oregon 97223
503.892.6640

RECEIVED
MAR 22 2005
COMMUNITY DEVELOP DEPT.

cc City Recorder

EXHIBIT 10

March 17, 2005

John Osterberg
Senor Planner – Development Services
Community Development Department
4755 SW Griffith Drive
Beaverton, Oregon 97076

RE: Garden Grove – 15 lot PUD on SW Canby Street

Dear Mr. Osterberg,

I would like to amend my appeal of the Beaverton Planning Commission's decision to approve the Garden Grove PUD. (See my original letter dated 3-11-05 attached.)

My intention was to appeal only the decision re: CU 2004-0021 as this proposal attempts to address the City's criteria for construction of a Planned Unit Development (PUD). Please disregard the inclusion of the LD and TP applications in my appeal notice.

Also, would you please advise me as to whether or not, "the appeal hearing shall be *de novo*, which means new evidence and argument can be introduced in writing, orally, or both" as noted on p2 of the 3-1-05 Notice of Decision re: Garden Grove PUD.

If you are available on Friday, 3-18-05, I would appreciate an opportunity to discuss with you the *de novo* status of the City Council hearing on 4-4-05 and the hearing procedures, etc of Section 50.85 through 50.88 of the Beaverton Development Code.

Thank you for your time and assistance on this matter.

Sincerely,

Susan Greer

Susan Greer, MSW
7700 SW Garden Home Road, Ste 16
Portland, Oregon 97223
503.892.6640

Enclosure
cc LCDC
Maplewood residents

EXHIBIT 11

March 11, 2005

Ms. Sue Nelson
City Recorder
City of Beaverton
4755 SW Griffith Drive
PO Box 4755
Beaverton, OR 97076

RE: LD 2004-0030/CU 2004-0021/TP2004-0018 –
Garden Grove PUD

Ms. Nelson:

This letter is to advise you that I wish to appeal the orders of the Beaverton Planning Commission (Order #1783, 84 and 85) approving the proposal for the Garden Grove – 15 lot PUD on SW Canby Street.

The grounds for my appeal are as follows:

I. Section 40.03 of the Development Code states that "all critical facilities and services related to the development have, or can be improved to have, adequate capacity to serve the proposal at the time of its completion.

The Planning Department staff report (submitted for the 1-5-05 Planning Commission hearing) stated that "a traffic analysis was not required by this development. The trip generation of the proposed 15 lot subdivision is not great enough to meet the threshold requirement (Development Code Section 60.55.20 Traffic Analysis).

It is estimated that the PUD will add approximately 150 vehicle trips per day to Canby Street which already has far more than normal "neighborhood route" usage as it is frequently used by higher speed traffic attempting to "cut through" between Vermont Street and, either, Oleson Road or Multnomah Blvd. No discussion or clarification was presented by staff of what the "threshold requirement" is for a significant impact on a neighborhood street such as SW Canby.

Despite numerous written and verbal appeals to the Planning Commission from residents of the neighborhood which must bear increased congestion as residential infill occurs, the Planning Commission refused to consider these concerns as worthy of further analysis or discussion.

The additional traffic congestion and the associated increased risks to current resident/drivers, pedestrians and bicyclists was ignored by staff and decision-makers. The City of Beaverton Comprehensive Plan under Transportation Goal 6.2.1, Policy a) is required "to maintain the livability of Beaverton through proper location and design of transportation facilities" and to take action to "design streets and highways to respect the characteristics of the surrounding land uses, natural features and natural hazards, and community amenities."

II. The Land Use Element of the Beaverton comprehensive Plan Policies (3.13.1c) requires that staff provide adequate findings with respect to compatibility in size, scale and dimension.

The staff reports and the Planning Commission discussion at two hearings on this proposal made no mention of the character and nature of existing residential development in the Maplewood area. The proposed PUD, with its barracks-style housing units which all but share a common wall are totally inconsistent and incompatible with the surrounding homes.

Please advise me of future meeting dates re: this PUD proposal.

Sincerely,

Susan Greer
7700 SW Garden Home Ste 16
Portland, OR 97223

cc: LCDC
Maplewood Residents

EXHIBIT 12

CITY of BEAVERTON

4755 S.W. Griffith Drive, P.O Box 4755, Beaverton, OR 97076 General Information (503) 526-2222 V/TDD

NOTICE OF DECISION

March 1, 2005

To Whom It May Concern:

Attached, please find a copy of the approved Land Use Order finalizing the PLANNING COMMISSION recommendation to the Beaverton City Council on **LD2004-0030/CU2004-0021/TP2004-0018 GARDEN GROVE PUD.**

The Planning Commission's recommendation may be appealed within ten (10) calendar days of the date of this notice. The appeal closing date is **5:00 p.m., Friday, March 11, 2005.** Appeals shall be filed pursuant to Section 50.75 of the Beaverton Development Code. Pursuant to Section 50.75, an appeal application shall contain the following minimum information:

1. The case file number designated by the City.

2. The name and signature of each appellant.

3. Reference to the oral or written evidence provided to the decision-making authority by the appellant that is contrary to the decision.

4. If multiple people sign and file a single appeal, the appeal shall include verifiable evidence that each appellant provided written testimony to the decision-making authority and that the decision being appealed was contrary to such testimony. The appeal shall designate one person as the contact representative for all pre-appeal hearing contact with the City. All contact with the City regarding the appeal, including notice, shall be through this contact representative.

5. The specific approval criteria, condition, or both being appealed, the reasons why the finding, condition, or both is in error as a matter of fact, law or both, and the evidence relied on to allege the error.

6. The appeal fee, as established by resolution of the City Council.

The appellate decision making authority on appeal of Type 4 decision shall be the City Council. The appeal hearing shall be *de novo*, which means new evidence and argument can be introduced in writing, orally, or both. The hearing of the appeal shall be conducted in the manner specified in Section 50.85 through 50.88 except as otherwise required by statute.

Please note that the failure to comply with the requirements of Sections 50.75.1 and 50.75.2 is jurisdictional and deprives the appellant of an opportunity for the appellate decision making authority to hear an appeal.

The current appeal fee due at time of filing is $638.00.

The complete case file is available for review at the Development Services Division, Community Development Department, 2nd Floor, City Hall, 4755 SW Griffith Drive. Hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, except for holidays. For more information about the project, please contact John Osterberg at 503-526-2416.

For further information about your appeal rights, please contact the City Recorder at (503) 526-2650.

Sincerely,

Steven A. Sparks, AICP
Development Services Manager

cc:	Jeff Mitchell	Miles Edwards	Kirsten Van Loo	
	CPO 3 Leadership Team		City of Portland – Planning Director	
	Craig Krech	Albert Hoguet	Susan Greer	
	Carl Jenson	Jim Mann	Vance & Carolyn Boelys	
	Jamie Hartz	Dale & Sylvia Butler		
	Michael Cottham	Michael & Bonnie Hayes		
	Jeff & Judy Mitchell		Catherine Darby	
	Brendan Buckley	Amanda Rhoads	Jim Duggan	
	Brad Roast	Sue Nelson	Phil Healy	
	Jan Youngquist	Bill Avery	John Osterberg	Project File

SPACE RESERVED FOR WASHINGTON CO RECORDERS USE

EXHIBIT 13

BEFORE THE PLANNING COMMISSION FOR THE CITY OF BEAVERTON, OREGON

After recording return to:
City of Beaverton, City Recorder:
4755 SW Griffith Drive
P.O. Box 4755
Beaverton, OR 97076

IN THE MATTER OF A REQUEST FOR APPROVAL OF A CONDITIONAL USE FOR A 15-LOT PLANNED UNIT SUBDIVISION (GARDEN GROVE PUD). CES-NW, APPLICANT.	)))))	ORDER NO. 1784 CU2004-0021 ORDER APPROVING REQUEST WITH CONDITION.

This matter came before the Planning Commission on January 5 and February 16, 2005, on a request for Conditional Use approval for a 15-Lot Subdivision and Planned Unit Development (PUD) to include detached dwellings. The proposed site is located at 6600 block of SW Canby Street, and is more specifically described as Tax Lot 301 on Washington County Assessor's Map 1S1-24DA.

Pursuant to Ordinance 2050 (Development Code), Sections 50.15.2 and 50.45, the Planning Commission conducted a public hearing and considered testimony and exhibits on the subject proposal. At the January 5, 2005 hearing, staff had recommended Denial of the CU/PUD and LD applications due to the applicant's proposal not meeting the 20 percent open space requirement of the Code. During that hearing, the applicant clarified that the Flexible Setback (FS) request had been proposed solely to seek relief from

the PUD open space area calculation method and was not needed for any other purpose and subsequently staff changed its Flexible Setback recommendation from Approval to Denial. At the January 5, 2005 hearing the applicant requested a continuance and so that the applicant could consider the Commission's concerns and revise the PUD and subdivision layout. The Commission set a public hearing for February 16, 2005, with the applicant agreeing to a waiver of the 120 day decision deadline, accommodating the 42 day continuance.

The Commission adopts the following supplemental findings in support of the final action, in response to key issues raised at the hearing, as identified herein.

At the hearing of January 5, 2005, the Commission deliberated and concluded that the proposal to reduce the PUD's 20 percent minimum open space requirement, by approving a Flexible Setback request (FS 2004-0017), would not meet the Code standard and purpose of PUD's by failing to provide 20 percent minimum open space excluding required setback areas. The Commission also determined that the proposal for narrow strips of open space between some lots also did not meet the purpose for the required open space. The Commission, at the hearing of February 16, 2005, determined that the applicant's revised plan, showing the 26 percent open space and the size and location of three open space tracts, met the Development Code's purpose of open space in PUD's.

The applicant provided a draft document of the Conditions, Covenants & Restrictions (CC&R's) and a preliminary list of future Homeowners Association (HOA) maintenance responsibilities and estimated payment dues, responding to a request by the Commission that the matter of private maintenance be given close attention in order to meet the intent of Facilities Review Criterion No. 5 of Section 40.03 of the Development Code, with respect to subdivisions and residential PUD's with private streets and open space tracts. In addition, the applicant provided a list of all lot sizes and building setbacks for each lot in order to provide the Commission with information on the lots and expected future building locations (Garden Grove Lot Analysis: dated February 14, 2005). The applicant stated that the flexible setback application no longer served a purpose, and was thereby withdrawn.

In public testimony, Ms. Susan Greer provided comment about the historical development of the Garden Home-Maplewood area, noting the area's early large lot residential development pattern. Ms. Greer also noted that in her opinion, because the internal building setbacks would allow homes to be constructed very close together and house locations are shown to be aligned evenly in a row, that the Garden Grove houses could have a barracks-like appearance, unlike homes in the surrounding area which are spaced farther apart. Ms. Greer also indicated that she felt that auto traffic in the area was already congested in the area, particularly on SW Canby

Street, and that a traffic analysis should have been required by the City, but was not.

The Commission noted that with internal setbacks proposed at three (3) feet from property lines, that houses could be as close as six (6) feet apart. Sec. 60.50.15.1 of the Code allows eaves and similar architectural features to extend up to two (2) feet provided that other standards, such as Building Code standards are met. Therefore, eaves from two adjacent houses could potentially be as close as two (2) feet apart. On this matter the Commission concluded that building and fire codes are adequate to determine the minimum spacing of buildings internal to the PUD and that externally the perimeter setbacks of the PUD either meet or exceed the minimum Development Code setback standards for the R-7 zone. Therefore, building setbacks along abutting properties would equal or exceed the distance and amount of visual buffer between homes, as perceived from neighboring properties that would be expected with a non-PUD subdivision in the R-7 zone.

In response to the comments by Ms. Greer, the Commission concluded that the applicant's proposal provides single-family detached homes and open space tracts abutting existing single-family detached house lots, which typically ensures the greatest amount of compatibility these dwellings. Furthermore, the applicant is bound by the minimum residential density standards of the Code and so must provide a minimum of 11 lots and a maximum of 17 lots. Although one Commissioner stated at the January 5,

2005 hearing that in order to meet the 20 percent open space requirement the applicant should consider deleting a lot, the Commission conclude that no evidence has been provided showing that deleting one or more lots would result in a better site layout or otherwise prove beneficial to the neighborhood. The Commission concluded that the proposed Subdivision and PUD layout, as amended by the applicant and as conditioned in this approval, meets all of the Code criteria, providing single-family detached homes, adequate open space and setbacks, and would therefore provide reasonable compatibility with its surroundings.

In response to Ms. Greer's concern about traffic, the subdivision is too small to meet the Code threshold for requiring a traffic analysis. SW Canby Street is designated as a "Neighborhood Route" which is intended for greater traffic use in comparison to a "local street". Furthermore, there has been no authoritative evidence presented by testimony that would counter the staff report's finding that the traffic impact generated by Garden Grove would have no more than a minimal effect upon surrounding streets.

The Commission, after holding the public hearing and considering all oral and written testimony, adopts the findings of the Staff Report dated January 5, 2005, except as amended by the Staff Memorandum dated February 9, 2005, which concluded that the reason for staff's recommendation for Denial was due to the applicant's original proposal not meeting the 20 percent open space PUD requirement. Now that the applicant has amended the CU/PUD application to meet the open space

requirement of the Development Code, the Commission provide the supplemental findings contained herein, and conclude that the approval criteria contained in Sections 40.03 and 40.15.15.6.C of the Development Code have now met, with conditions.

At the February 16, 2005 hearing, three members of the Commission commented that, although the application met the Development Code CU/PUD criteria for approval, the PUD proposal was not particularly creative in its design and layout and did not provide the amenities that they have in mind when they consider the best PUD developments in the City. The three Commission members indicated that PUD development standards may need to be addressed through a future Development Code text amendment; but as proposed, the Garden Grove PUD meets all of the Code criteria for approval. A majority of the Commission did not provide additional comments.

IT IS HEREBY ORDERED that CU2004-0021, as amended, is approved based on the testimony, reports and exhibits presented during the public hearings on the matter and upon the background facts and findings and conclusions found in the Staff Report dated January 5, 2005, the conclusions found in the memorandum dated February 9, 2005, and the supplemental findings found herein. There are no conditions of CU approval, as it was concluded that necessary conditions for the development were appropriately placed upon the approval of the associated Garden Grove land division, LD 2004-0030.

Motion **CARRIED** by the following vote:

AYES:	Pogue, Bliss, Barnard, DeHarpport, Winter, and Johansen.
NAYS:	None.
ABSTAIN:	Maks.
ABSENT:	None.

Dated this 1st day of March, 2005.

To appeal the decision of the Planning Commission, as articulated in Land Use Order No. 1784, an appeal must be filed with the City of Beaverton Recorder's Office by no later than 5:00 p.m. on Friday, March 11, 2005.

PLANNING COMMISSION
FOR BEAVERTON, OREGON

ATTEST:

JOHN OSTERBERG
Senior Planner

STEVEN A. SPARKS, AICP
Development Services Manager

APPROVED:

ERIC H. JOHANSEN
Chairman

SPACE RESERVED FOR WASHINGTON CO RECORDERS USE

EXHIBIT 14

BEFORE THE PLANNING COMMISSION FOR THE CITY OF BEAVERTON, OREGON

After recording return to:
City of Beaverton, City Recorder:
4755 SW Griffith Drive
P.O. Box 4755
Beaverton, OR 97076

IN THE MATTER OF A REQUEST FOR A LAND DIVISION (PRELIMINARY SUBDIVISION) APPROVAL TO CREATE 15 RESIDENTIAL LOTS, OPEN SPACE TRACTS AND ASSOCIATED PUBLIC AND PRIVATE IMPROVEMENTS (GARDEN GROVE PUD), CES-NW, APPLICANT.	)	ORDER NO. 1783 LD2004-0030 ORDER APPROVING REQUEST WITH CONDITION.

This matter came before the Planning Commission on January 5 and February 16, 2005, on a request for Conditional Use approval for a 15-Lot Subdivision to include detached dwellings. The proposed site is located at 6600 block of SW Canby Street, and is more specifically described as Tax Lot 301 on Washington County Assessor's Map 1S1-24DA.

Pursuant to Ordinance 2050 (Development Code), Sections 50.15.2 and 50.45, the Planning Commission conducted a public hearing and considered testimony and exhibits on the subject proposal. At the January 5, 2005 hearing, staff had recommended Denial of the CU/PUD and LD applications due to the applicant's proposal not meeting the 20 percent open space requirement of the Code. During that hearing, the applicant clarified that the Flexible Setback (FS) request had been proposed solely to seek relief from

the PUD open space area calculation method and was not needed for any other purpose and subsequently staff changed its Flexible Setback recommendation from Approval to Denial. At the January 5, 2005 hearing the applicant requested a continuance and so that the applicant could consider the Commission's concerns and revise the PUD and subdivision layout. The Commission set a public hearing for February 16, 2005, with the applicant agreeing to a waiver of the 120 day decision deadline, accommodating the 42 day continuance.

The Commission adopts the following supplemental findings in support of the final action, in response to key issues raised at the hearing, as identified herein.

At the hearing of January 5, 2005, the Commission concluded that the proposal to reduce the PUD's 20 percent minimum open space requirement, by approving a Flexible Setback request (FS 2004-0017), would not meet the Code standard and purpose of PUD's by failing to provide 20 percent minimum open space excluding required setback areas. The Commission also determined that the proposal for narrow strips of open space between some lots also did not meet the purpose for the required open space. The Commission, at the hearing of February 16, 2005, determined that the applicant's revised plan, showing the 20 percent open space and the size and location of three open space tracts, met the Development Code's purpose of open space in PUD's.

The applicant provided a draft document of the Conditions, Covenants & Restrictions (CC&R's) and a preliminary list of future Homeowners Association (HOA) maintenance responsibilities and estimated payment dues, responding to a request by the Commission that the matter of private maintenance be given close attention in order to meet the intent of Facilities Review Criterion No. 5 of Section 40.03 of the Development Code, with respect to subdivisions and residential PUD's with private streets and open space tracts. In addition, the applicant provided a list of all lot sizes and building setbacks for each lot in order to provide the Commission with information on the lots and expected future building locations (Garden Grove Lot Analysis: dated February 14, 2005). The applicant stated that the flexible setback application no longer served a purpose, and was thereby withdrawn.

In public testimony, Ms. Susan Greer provided comment about the historical development of the Garden Home-Maplewood area, noting the area's early large lot residential development pattern. Ms. Greer provided comment on the CU/PUD application which is summarized in the findings and decision for CU 2004-0021. Ms. Greer also indicated that she felt that auto traffic in the area was already congested in the area, particularly on SW Canby Street, and that a traffic analysis should have been required by the City, but was not.

In response to the comments by Ms. Greer, the Commission concluded that the proposed Subdivision and PUD layout, as amended by the applicant

and as conditioned in this approval, meets all of the Code criteria, providing single-family detached homes, adequate open space and setbacks, and would therefore provide reasonable compatibility with its surroundings.

In response to Ms. Greer's concern about traffic, the Commission concluded that the subdivision is too small to meet the Code threshold for requiring a traffic analysis. SW Canby Street is designated as a "Neighborhood Route" which is intended for greater traffic use in comparison to a "local street". Furthermore, there has been no authoritative evidence presented by testimony that would counter the staff report's finding that the traffic impact generated by Garden Grove would have no more than a minimal effect upon surrounding streets.

The Commission, after holding the public hearing and considering all oral and written testimony, adopts the findings of the Staff Report dated January 5, 2005, except as amended by the Staff Memorandum dated February 9, 2005, which concluded that the reason for staff's recommendation for Denial of the Land Division was due to the applicant's original proposal not meeting the 20 percent open space PUD requirement, and therefore not meeting Criterion 3 of Section 40.45.15.3.C. Now that the applicant's amended CU/PUD meets Code open space requirements, the Land Division is now found to meet Section 40.45.15.3.C.3. Therefore, the Commission provide the supplemental findings contained herein, and conclude that the approval criteria contained in Sections 40.03 and 40.45.15.3.C of the Development Code have now been met, with conditions.

IT IS HEREBY ORDERED that LD2004-0030 is APPROVED, based on the testimony, reports and exhibits, and amended subdivision plan presented during the public hearings on the matter and based on the facts, findings, and conclusions found in the Staff Report and supplemental memorandum as identified herein, subject to the following conditions:

Prior to issuance of the site development permit, the applicant shall:

1. Ensure that Preliminary Land Division approval has not expired. In accordance with Section 50.90.1 of the Development Code, Land Division approval shall expire after two (2) years from the date of approval unless prior to that time a construction permit has been issued and substantial construction pursuant thereto has taken place, or an application for extension is filed pursuant to Section 50.93, or that authorized development has otherwise commenced in accordance with Section 50.90.3.B. (CDD / AJC)
2. Contract with a professional engineer (or professional architect if allowed by the City Engineer) to design and monitor the construction for any work governed by Beaverton Municipal Code 9.05.020, as set forth in Ordinance 4303 (City Engineering Design Manual and Standard Drawings), Beaverton Development Code (Ordinance 2050, 4010 +rev.), the Clean Water Services District Design and Construction Standards (February 2004, Resolution and Ordinance 2004-009), and the City Standard Agreement to Construct and Retain Design Professionals in Oregon. (Site Development Div./JJD)
3. Submit a completed and executed City Standard Agreement to Construct Improvements and Retain Design Professional Registered in Oregon. After the site development permit is issued, the City Engineer and the Planning Director must approve all revisions as set out in Ordinances 2050, 4010+rev., and 4303; however, any required land use action shall be final prior to City staff approval of the engineering plan revision and work commencing as revised. (Site Development Div./JJD)
4. Have the ownership of the subject property guarantee all public improvements, storm water management (quality and quantity) facilities, site grading, private streets, and common driveway paving by submittal of a City-approved security. The security approval by the City consists of a review by the City Attorney for form and the City Engineer for amount, equivalent to 100 percent or more of estimated construction costs. (Site Development Div./JJD)

5. Submit any required off-site easements, executed and ready for recording, to the City after approval by the City Engineer for legal description of the area encumbered and City Attorney as to form. For this project, the off-site storm water outfall and piping will need a public easement north of Canby Street as proposed. (Site Development Div./JJD)

6. Have obtained the City Building Official's approval of the private plumbing plan for facilities regulated under the Uniform Plumbing Code with Oregon Amendments. (Site Development Div./JJD)

7. Submit to the City a copy of issued permits or other approvals needed from the City of Portland for work within, and/or construction access to the Multnomah Boulevard right of way. (Site Development Div./JJD)

8. Have obtained the Tualatin Valley Fire and Rescue District Fire Marshal's approval of the site development plans. (Site Development Div./JJD)

9. Demonstrate on the plan that the transition from public street to private street (Tract "A") meets Tualatin Valley Fire and Rescue District standards.(Site Development Div./JJD)

10. Submit a copy of issued permits or other approvals needed from the Tualatin Valley Water District for public water system construction, backflow prevention facilities, and service extensions. (Site Development Div./JJD)

11. Submit a copy of issued permits or other approvals needed from the Clean Water Services District for storm system connections. (Site Development Div./JJD)

12. Submit a completed 1200-C General Permit (DEQ/CWS/City Erosion Control Joint Permit) application to the City. (Site Development Div./JJD)

13. Submit a detailed water supply analysis (Fire Flow) to the City Building Official in accordance with the requirements of the Fire Code as adopted by the Tualatin Valley Fire and Rescue. (Site Development Div./JJD)

14. Provide a detailed drainage analysis of the subject site and prepare a report prepared by a professional engineer meeting the standards set by the City Engineer. The analysis shall identify all contributing drainage areas and plumbing systems on and adjacent to the site with the site development permit application. The analysis shall also delineate all areas on the site that are inundated during a 100-year storm event in addition to any mapped FEMA flood plains and flood ways. (Site Development Div./JJD)

15. Pay a storm water system development charge (overall system conveyance) for the net new impervious area proposed for any common areas or private streets. The project shall be eligible for a storm water

system development charge credit equal to the estimated construction cost value of extra capacity improvements as determined and administered by the City Utilities Engineer. (Site Development Div./JJD) (Site Development Div./JJD)

16. Submit a copy of issued permits or other approvals if needed from the State of Oregon Division of State Lands and the United States Army Corps of Engineers (for work within a jurisdictional wetland). (Site Development Div./JJD)

17. Provide plans showing a stormfilter vault (for treatment of the site's piped surface water runoff) with a minimum of 3.0 cartridges per impervious acre. Plans shall also show a trash capture water quality pre-treatment manhole (CDS manhole or City of Beaverton approved equivalent as determined by City Engineer) located in front any stormfilter vaults. Plans shall also show a high flow bypass system to bypass surface water runoff high flows (flows greater than the 5-year design storm) around the stormwater vaults. (Site Development Div./JJD)

18. The plans shall show access for a maintenance vehicle within 6-feet from the front, or within 15-feet from the side of a vehicle to all control structures unless otherwise specifically approved by the City Engineer. A direct route to the structures in the pond area shall be no steeper than 4(horizontal) to 1 (vertical) slope. This direct route shall be a minimum of 6-feet wide and have a surface consisting of the equivalent of 3-inches of ¾"-minus crush rock (to allow walking access in winter) and vegetation shall allow easy access. This direct access route shall be delineated on the plans. (Site Development Div./JJD)

19. Provide plans for the placement of underground utility lines along street frontages, within the site, and for services to the proposed new development. (Site Development Div./JJD)

20. Provide plans for street lights (Option C unless otherwise approved by the City Operations and Maintenance Director) and for the placement of underground utility lines along street frontages, within the site, and for services to the proposed new development. (Site Development Div./JJD)

21. Provide evidence that new street intersections meet City requirements for intersection sight distance. No obstructions shall be placed within the driveway intersection sight vision triangle except as provided by City Ordinance, including but not limited to parking. New street intersections shall meet sight distance criteria in the City's Engineering Design Manual for the design speed of the roadway. (Transportation/DRG)

22. Show on the plans a detail of the rubble retaining wall. The design shall substantially match the rockery wall design as shown in Exhibit 2 of the staff report. (CDD / AJC)

23. Show on the landscape plan a proposal for vegetative screening for the purpose of screening views from the property to the south. The vegetative screening shall be evergreen and be maintained to a mature height of at least 20-feet. (CDD / AJC)

Prior to building permit issuance, the applicant shall:

24. Ensure that Final Plat has been recorded at Washington County. (CDD / AJC)
25. Obtain the issuance of site development permit from the Site Development Division. (Site Development Div./JJD)
26. Have substantially completed the site development improvements as determined by the City Engineer, including streetlights being fully functional. (Site Development Div./JJD)
27. Have placed underground all existing overhead utilities and any new utility service lines within the project and along any existing street frontage, except high voltage lines (>57kV). (Site Development Div./JJD)
28. Make provisions for installation of all mandated erosion control measures to achieve City inspector approval at least 24 hours prior to call for foundation footing form inspection from the Building Division. (Site Development Div./JJD)
29. Pay a storm water system development charge (overall system conveyance) for each new equivalent surface unit. The project shall be eligible for a storm water system development charge credit equal to the estimated construction cost value of extra capacity improvements as determined and administered by the City Utilities Engineer. (Site Development Div./JJD)

Prior to approval of the final plat, the applicant shall:

30. Have commenced construction of the site development improvements to provide minimum critical public services to each proposed lot (streets graded, cored and rocked; wet utilities installed) as determined by the City Engineer and to allow for verification that the location and width of proposed rights of way and easements are adequate for the completed infrastructure, per adopted City standards. (Site Development Div./JJD)
31. Dedicate street right of way for a total of 30 feet from centerline on the south side of SW Canby Street to Beaverton Neighborhood Route Standards, for the frontage of the site (Development Code Sec. Code 60.55.10). (DRG / Transportation)
32. Name the north/south public street, tentatively identified as "SW Kelsi Avenue", in accordance with the City's Street Naming Guidelines. (Transportation/DRG)

Prior to final inspection of any building permit, the applicant shall:

33. Install or replace, to City specifications, all sidewalks which are missing, damaged, deteriorated, or removed by construction along the street frontage. (Site Development Div./JJD)

34. Have the landscaping completely installed or provide for erosion control measures around any disturbed or exposed areas per Clean Water Services standards. (Site Development Div./JJD)

35. Install "No Parking" signs along the private street and emergency access way leading to Multnomah Boulevard and in sections that are 20 foot in width. (Site Development Div./JJD)

36. Construct the south side of SW Canby Street to Beaverton Neighborhood Route Standards, including planter strip and 5 foot sidewalk, for the frontage of the site. (Transportation/DRG)

37. Post "no parking" signs on the 20 foot wide section of SW Kelsi Avenue and on the internal private street in accordance with a street sign plan approved by the City Traffic Engineer. (Transportation/DRG)

Prior to release of performance security, the applicant shall:

38. Have completed the site development improvements as determined by the City Engineer and met all outstanding conditions of approval as determined by the City Engineer and Planning Director. Additionally, the applicant and professional(s) of record shall have met all obligations under the City Standard Agreement to Construct Improvements and Retain Design Professional Registered in Oregon, as determined by the City Engineer. (Site Development Div./JJD)

39. Submit any required on-site easements, if not already granted through the subdivision plat, executed and ready for recording, to the City after approval by the City Engineer for area encumbered and City Attorney as to form. The applicant's engineer or surveyor shall verify all pre-existing and proposed easements are of sufficient width to meet City standards. (Site Development Div./JJD)

40. Provide an additional performance security for 100 percent of the cost of twice-a-year (6-month interval) cleaning, maintenance, and filter recharge/replacement by Stormwater Management, Inc., for the StormFilter vault's cartridges for a two-year period, as determined by the City Utilities Engineer. Alternatively, provide evidence satisfactory to the City Utilities Engineer of a pre-paid service contract with Stormwater Management, Inc., for maintenance of the StormFilters consisting of cartridge replacement and sediment removal per manufacture's recommendations for a two year period from the date of performance acceptance. (Site Development Div./JJD)

41. Temporary irrigation shall be provided for open space tracts for a period not less than two (2) growing seasons after planting. Dead or dying plants shall be replaced during the first two (2) growing season establishment period. (Development Services/JO)

Motion **CARRIED**, by the following vote:

AYES:	Pogue, Bliss, Barnard, DeHarpport, Winter, and Johansen.
NAYS:	None.
ABSTAIN:	Maks.
ABSENT:	None.

Dated this 1st day of March, 2005.

To appeal the decision of the Planning Commission, as articulated in Land Use Order No. 1783, an appeal must be filed with the City of Beaverton Recorder's Office by no later than 5:00 p.m. on Friday, March 11, 2005.

PLANNING COMMISSION
FOR BEAVERTON, OREGON
APPROVED:

ERIC H. JOHANSEN
Chairman

ATTEST:

JOHN OSTERBERG
Senior Planner

STEVEN A. SPARKS, AICP
Development Services Manager

SPACE RESERVED FOR WASHINGTON CO RECORDERS USE

BEFORE THE PLANNING COMMISSION FOR THE CITY OF BEAVERTON, OREGON

After recording return to:
City of Beaverton, City Recorder:
4755 SW Griffith Drive
P.O. Box 4755
Beaverton, OR 97076

IN THE MATTER OF A REQUEST FOR APPROVAL OF A TREE PLAN TWO FOR REMOVAL OF APPROXIMATELY 50 TREES FOR THE DEVELOPMENT (GARDEN GROVE PLANNED UNITE DEVELOPMENT). CES-NW, APPLICANT.	ORDER NO. 1785 TP2004-0018 ORDER APPROVING REQUEST WITH CONDITION.

The matter came before the Planning Commission on January 5, and on February 16, 2005, on a request for approval of a Tree Plan Two requesting the removal of approximately 50 trees for the development of the project. There are no significant or historical trees on the site. The proposal is applicable to a project site located on the 6600 block of SW Canby Street, and is more specifically identified as Tax Lot 301 on Washington County Tax Assessor's Map 1S1-24DA. The zoning map designation for this property is Residential Urban Standard Density (R-7), and the project site totals approximately 2.78 acres.

Pursuant to Ordinance 2050 (Development Code) Sections 50.15.2 and 50.45, the Planning Commission conducted a public hearing and considered testimony and exhibits on the subject proposal. At the January 5, 2005 hearing, staff had recommended Denial of the CU/PUD and LD applications

due to the applicant's proposal not meeting the 20 percent open space requirement of the Code. At the January 5, 2005 hearing the applicant requested a continuance and so that the applicant could consider the Commission's concerns and revise the PUD and Subdivision layout. The Commission set a public hearing for February 16, 2005, with the applicant agreeing to a waiver of the 120 day decision deadline, accommodating the 42 day continuance for all applications, including the Tree Plan request.

The Commission, after holding the public hearing and considering all oral and written testimony, adopts the Staff Report dated January 5, 2005, and Staff Memorandum dated February 9, 2005, and the findings contained herein, as applicable to the approval criteria contained in Sections 40.03 and 40.90.15.2.C of the Development Code.

Therefore, **IT IS HEREBY ORDERED** that **TP 2004-0018** is **APPROVED**, based on the testimony, reports and exhibits, and evidence presented during the public hearings on the matter and based on the facts, findings, and conclusions found in the Staff Report dated January 5, 2005, and Staff Memorandum dated February 9, 2005, subject to Conditions of Approval, as follows:

Prior to issuance of the site development permit, the applicant shall:

1. Ensure that Tree Plan approval has not expired. In accordance with Section 50.90.1 of the Development Code, Tree Plan approval shall expire after two (2) years from the date of approval unless prior to that time a construction permit has been issued and substantial construction pursuant thereto has taken place, or an application for extension is filed pursuant to Section 50.93, or that authorized development has otherwise commenced in accordance with Section 50.90.3.B. (CDD / AJC)

2. The following trees shall be illustrated as to be preserved on the Site Development Permit: four 8-inch trees located along the western property line of proposed lot 10 as identified on the Tree Preservation Plan (Sheet 2A of 6) in Exhibit 3. (CDD / AJC)
3. Illustrate on the site development plan, the location of all trees approved for retention, the root zone of the trees, and the location of tree protection fencing. (CDD / AJC)

During the Site Development phase of the project, the applicant shall:

4. Ensure that all tree removal and tree preservation shall be conducted in accordance with the American National Standards Institute (ANSI) A300-1995 standards and International Society of Arborists (ISA) standards. (CDD / AJC)
5. Ensure that a construction fence remains around all trees approved for retention. The fence shall be placed no closer than the edge of the root zone. The fence shall meet the following standards:

   - Fencing shall consist of, at a minimum, a four foot (4') high orange plastic or snow fence, secured to six foot (6') tall metal posts, driven two feet (2') into the ground. Heavy gauge 12 wire shall be attached to the top and midpoint of each post. (CDD / AJC)

   - If the development cannot meet the above standards, then other City approved protection devices maybe used, provided that equal or greater protection will be achieved. (CDD / AJC)
6. Ensure that a certified arborist is on site during times of construction when community trees are being removed or construction is taking place within 5 feet of tree root zones of trees approved for preservation, in order to minimize potential construction damage. (CDD / AJC)
7. Ensure that no development shall take place within the protected root zone of trees which are approved for retention. Development includes, but is limited to:
   - New Buildings
   - Grade change or cut and fill during or after construction
   - New impervious surfaces
   - Trenching for utilities, irrigation, or drainage
   - Staging or storage of materials and equipment during construction
   - Vehicle maneuvering during construction
   - Any activity deemed by the City to be harmful to trees or roots within the construction site. (CDD / AJC)

Prior to the issuance of any building permit, the applicant shall, for every individual lot:

8. Ensure that a construction fence remains around all trees approved for retention. The fence shall be placed no closer than the edge of the root zone. The fence shall meet the following standards:
   - Fencing shall consist of, at a minimum, a four foot (4') high orange plastic or snow fence, secured to six foot (6') tall metal posts, driven two feet (2') into the ground. Heavy gauge 12 wire shall be attached to the top and midpoint of each post. (CDD / AJC)
   - If the development cannot meet the above standards, then other City approved protection devices maybe used, provided that equal or greater protection will be achieved. (CDD / AJC)
9. Ensure that a certified arborist is on site during times of construction when community trees are being removed or construction is taking place within 5 feet of tree root zones of trees approved for preservation to minimize potential construction damage. (CDD / AJC)

Prior to final inspection of any building permit or issuance of any certificates of occupancy from the City Building Official, the applicant shall:

10. Ensure that all activity associated with construction are carried out consistent with the tree plans marked Exhibit 3. (CDD / AJC)

Motion CARRIED, by the following vote:

AYES:	Pogue, Bliss, Barnard, DeHarpport, Maks, Winter, and Johansen.
NAYS:	None
ABSTAIN:	None.
ABSENT:	None.

Dated this 1st day of March, 2005.

To appeal the decision of the Planning Commission, as articulated in Land Use Order No. 1785 an appeal must be filed with the City of Beaverton Recorder's Office by no later than 5:00 p.m. on Friday, March 11, 2005.

PLANNING COMMISSION
FOR BEAVERTON, OREGON

ATTEST:

JOHN OSTERBERG
Senior Planner

STEVEN A. SPARKS, AICP
Development Services Manager

APPROVED:

ERIC H. JOHANSEN
Chairman

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EXHIBIT 15

PLANNING COMMISSION MINUTES

February 16, 2005

CALL TO ORDER: Chairman Eric Johansen called the meeting to order at 6:30 p.m. in the Beaverton City Hall Council Chambers at 4755 SW Griffith Drive.

ROLL CALL: Present were Chairman Eric Johansen, Planning Commissioners Bob Barnard, Alan DeHarpport, Dan Maks, Shannon Pogue, Scott Winter and Gary Bliss.

Senior Planner John Osterberg and Recording Secretary Sheila Martin represented staff.

The meeting was called to order by Chairman Johansen, who presented the format for the meeting.

VISITORS:

Chairman Johansen asked if there were any visitors in the audience wishing to address the Commission on any non-agenda issue or item. There were none.

STAFF COMMUNICATION:

Staff indicated that there were no communications at this time.

OLD BUSINESS:

CONTINUANCES:

A. GARDEN GROVE 15-LOT PUD

1. **LD2004-0030 – LAND DIVISION**
2. **CU2004-0021 – CONDITIONAL USE**
3. **FS2004-0017 – FLEXIBLE SETBACK**
4. **TP2004-0018 – TREE PLAN**

(Continued from January 5, 2005)

The applicant requests Conditional Use approval for a Final Planned Unit Development (PUD) and associated Land Division for a Preliminary Subdivision to create a 15 single family residential development. In association with the proposed PUD and subdivision, the applicant requests approval of a Tree Plan Two application to remove Community Trees on the site, and a Flexible Setback application to request a "zero" side and rear yard setbacks in two proposed open space tracts within portions of the parent parcel. One open space tract is proposed on the north side of the parent parcel, adjacent to Canby Street. The other open space tract is proposed on the south side of the parent parcel, adjacent to Multnomah Blvd. The PUD request is to provide flexibility to the dimensional standards of the R-7 zoning district to accommodate the development, including but not limited to the reduction to minimum lot size, reduction to the internal building setback requirements within the parent parcel, and the modification of street standards, and the construction of a private street serving three (3) lots, while creating approximately 20% of open space. The Preliminary Subdivision application is a request to create 15 single family lots, two open space tracts, and one tract for a private street. The subject site is approximately 2.8 acres in size and is located on SW Canby Street, west of SW Canby Lane.

Chairman Johansen briefly described the hearing process for the benefit of those in attendance.

Senior Planner John Osterberg mentioned the distributed Staff Memorandum dated February 9, 2005, in response to the applicant's revised submittal. He noted that during the January 5, 2005, hearing, staff had recommended denial of the Conditional Use and Land Division applications as the applicant had not proposed the 20-percent open space requirement of the Code. He indicated that the applicant had since revised the Conditional Use and Land Division applications to meet the minimum 20 percent open space standard, adding that staff can now recommend approval of the Conditional Use and related Land Division applications. He pointed out that the applicant has withdrawn the Flexible Setback application, as the FS no longer serves a purpose.

Mr. Osterberg pointed out that the applicant had submitted a Lot analysis indicating the specific setback for each lot and noted that staff is in agreement with the revised proposal, as it keeps within the concept of the PUD setbacks previously administered. He requested that the record indicate that he had received a phone call from the applicant's representative, Kristen Van Loo, specifically with regard

to Conditions of Approval Nos. 20 and 28 pertaining to street frontage improvements, and explained that Ms. Van Loo questioned whether these Conditions applied to Multnomah Boulevard. In response, he pointed out that neither Condition apply to Multnomah Boulevard, as Multnomah Boulevard is within the City of Portland, and that the City of Beaverton did not intend for either the street lighting standard or the undergrounding of overhead utility standard to apply to the frontage of Multnomah Boulevard. He clarified that SW Canby Street is the frontage street of this subdivision and the internal streets have frontage on the proposed SW Kelsi. Concluding, he stated that staff is now recommending approval of the Conditional Use, Land Division and Tree Plan applications and offered to respond to questions.

Referring to page 47 of the Staff Report, Commissioner Winter expressed his opinion that Conditions of Approval Nos. 36 and 38 are essentially the same thing and suggested combining the two to indicate "no parking" on Kelsi Street. He also referred to Condition No. 49 on page 50 of the Staff Report and noted that under the first bullet, the last word should read post and not point.

Chairman Johansen questioned whether the City is comfortable with the modified street design for the proposed site.

Mr. Osterberg pointed out that the City Engineer had reviewed the proposed street design modifications and also indicated that the plans reflect that approval. He noted that the plans illustrate the profiles that are in conformance with the street design modification and explained that a narrower planter strip had been approved with additional sections of a narrower right-of-way.

Chairman Johansen observed that the Lot Analysis indicated that the Front Setback to Garage is now 18.5', and questioned whether this is acceptable and consistent with the Code.

Mr. Osterberg concurred, adding that 18.5' is the minimum figure that staff refers to in order to create a full standard size parking space which includes a 3 foot overhang. He also noted that 18.5' is the size of a full size stall depth for a parking lot in the Development Code and that the figure 18.5' was used as a measure from the garage door as the minimum figure. He also pointed out that staff is comfortable with this figure and indicated that no parking space of 18.5 feet shall obstruct the sidewalk.

Observing that there were some concerns with regard to Tualatin Valley Fire and Rescue (TVF&R) at the previous hearing, Commissioner DeHarpport questioned whether anything had been submitted to address those concerns.

Noting that he had not received additional TVF&R comments, Mr. Osterberg stated that the plans meet the minimum 20 feet of clear area for all of the public and private streets as measured at any point, adding that a radius curve was provided which does not affect any particular lot. He pointed out that the radius curve is a performance standard to allow an emergency vehicle to traverse the curve where Kelsi Street changes from the public street to the private street at Tract B, adding that this meets both of the performance standards for the Fire District.

Commissioner DeHarpport questioned if a condition should be included into the record that addresses the 18.5' front setback.

Mr. Osterberg expressed his opinion that he does not believe that a condition is necessary, noting that the evidence that has been entered into the record by the applicant identifies the 18.5' for each Lot.

APPLICANT

KIRSTEN VAN LOO, Senior Planner with *CES Northwest*, introduced the Applicant/Developer, Jeff Mitchell, and Carl Jensen, Project Engineer. She distributed colored copies of the drawings that were presented at the previous hearing and explained that the revised submittal had addressed all the concerns expressed by the Commission, including open space standards, a redesign of the site to accommodate a street right-of-way with planter strips and full street sections, TVF&R standards, submittal of draft CC&R's and budget.

Referring to Commissioner Winter's question with regard to "no parking", Ms. Van Loo clarified that "no parking" will apply to the entrance of the northern part of Kelsi and to the private street contained in Tract B. She further explained that the full width of Kelsi Street which includes streets, curbs, planter strips, and sidewalks on both sides is not restricted to "no parking", adding that parking is allowed on this small section. Observing that she would defer any specific or detailed questions with regard to ingress, egress, and turning movements to Mr. Jensen, she stated that the revised drawings address the turning radius that demonstrates that the trucks

can make the turn and fit within the proposed improvements, thus meeting all of the TVF&R standards.

Ms. Van Loo briefly explained how this project meets the purpose statement, the intent, and all the criteria of the PUD. She noted that this property is an irregularly shaped piece of land, adding that there were a number of chunks taken out of it. She pointed out a non-conforming commercial use on the southeast corner that has an illegal fill which created a parking lot for drainage on this site. She stated that this property abuts the City of Portland to the south and east, and abuts an older single family detached development to the west. She explained that creatively this project is designed with 24,000 net square feet open space, and over 30,000 square feet of gross open space in three parcels that are all usable and will provide visual balance and opportunities for passive and semi-active outdoor use buffering this development from the busy activity from Multnomah Boulevard. Noting that the lots are smaller in square footage than some of the adjacent parcels, she feels confident to be able to build comfortable, moderate sized homes on these lots with adequate private open space to serve a segment of the community and to integrate as best as they can with the surrounding single family detached neighborhood. Concluding, she emphasized that this development meets the City of Beaverton goals for providing a range of housing styles, and making the best and most efficient use of existing urban residential land within walking distance and bicycling distance to full urban services.

Commissioner DeHarpport thanked Ms. Van Loo for the revised submittal. Observing that the landscaped plan for Tract D was not submitted, he requested clarification if this area will be landscaped and maintained.

Ms. Van Loo explained that she inquired whether to include the Tract D Landscape plan with the submittal and pointed out that staff felt it was unnecessary. She described the landscaping plan and pointed out that since this tract is essentially flat with a gradual slope, the applicant proposes to landscape this area with grass, or groundcover, and a few trees, adding that this area could be utilized for dog walking, and child play with no play structures.

Chairman Johansen questioned whether there are plans to irrigate.

Ms. Van Loo responded that underground permanent irrigation was not proposed on the existing site, adding that the intent was to keep it

as what she referred to as "zeroscapic" and low maintenance as possible.

Chairman Johansen questioned whether the applicant would be opposed to a condition that required permanent irrigation.

Ms. Van Loo noted that she's fairly confident that her client would prefer not to put in permanent irrigation.

Commissioner Bliss questioned whether Ms. Van Loo was opposed to temporary irrigation to establish the plants.

Ms. Van Loo stated that temporary irrigation is reasonable and appropriate to establish the plants.

7:07 p.m. – 7:11 p.m. – recess.

PUBLIC TESTIMONY

SUSAN GREER testified that she has been a resident of the Garden Home/Maplewood area since 1973, and has resided in Washington County all her life. Observing that the neighbors and residents had several informal discussions concerning the design of the PUD and impact to the area, she had hoped for a better turn out from the neighbors during tonight's public hearing. She described the uniqueness of Maplewood with it's long history of Swiss/German dairy farms including Alpenrose, and noted that this area has but a few remaining stands of Cedar amongst a variety of trees including Sequoia's and Silver Maples. She presented a document prepared by the Hoffman family in honor of Maplewood's Centennial in 1975, and mentioned the old photographs, history of the busy railroad intersection, and community cannery. She explained that this area was originally platted and named Garden Home as there were no home sites smaller than 1 acre to ensure that families could have large gardens.

Ms. Greer expressed her concerns with regard to the traffic, and environmental issues, specifically the wetland areas upstream from Tualatin Valley Park, Recreation Hideaway Park and a section of Canby that has a history of flooding. She described the proposed design as "army barracks", adding that the quality of the design is not what is expected as infill within this area. She noted that the White Estates Property inside the city limits to the east, and the PUD approved by Washington County to the north, had a great deal of

common area dedicated adjacent to Hideaway Park and expressed her opinion that the proposed common area fronting Multnomah Boulevard is not an appropriate playground for children. She also noted that traffic from the subdivision may be inappropriate for a residential street like SW Canby.

APPLICANT'S REBUTTAL

Ms. Van Loo expressed her appreciation for the comments from the people in the neighborhood, adding that a Neighborhood meeting was conducted with over 30 people in attendance. She explained that the City had sent out notices to over 100 people, and that the proposal had gone through the public involvement process. Addressing the concern with regard to the small wetland on site, she stated that this had been signed off as an inconsequential wetland, adding that the applicant has permission from Clean Water Services to fill this wetland. She indicated that the wetland is there because the drainage runs off the adjacent property.

Ms. Van Loo expressed her appreciation for the approvals that the City of Portland had done on adjacent properties, and expressed her opinion that they have different zoning districts and standards in the City of Beaverton. She also expressed her appreciation for the work that was done in Washington County for a PUD across the street, and reiterated that it is different zoning and district standards. She expressed her opinion that the applicant team has done an admirable job dealing with a difficult piece of property and understands that this plan appears to be regimental as the plans only depict the lots and not the 15 houses that are proposed to be built on the site. She respectfully disagrees with the testimony that Tract C was placed in an auspicious location merely because this land is not marketable, adding that if the applicant had the opportunity to build on every square inch of this property they would. She also pointed out that if this land was in Washington County instead of the City of Beaverton, the applicant would probably be building on every square inch of this property, emphasizing the fact that it's a good thing that this property is in the City of Beaverton because the site provides open space tracts, not just for children's play areas, but also for buffers to and from Multnomah Boulevard and the adjacent non-conforming commercial use. Concluding, she again expressed appreciation for the neighbors concerns and expressed her opinions that her client has created a wonderful plan and that all standards were met that were enforced by the City of Beaverton.

The public portion of the Public Hearing was closed.

Referring to page 50 of the Staff Report, first bullet under Condition No. 49, Mr. Osterberg clarified that the last word should read post and not point.

Commissioner DeHarpport questioned if the 3 foot side setback is eave to eave, foundation wall to foundation wall, or both.

Observing that all setbacks are typically measured from foundation walls, Mr. Osterberg emphasized that the Code does allow eaves to extend up to 24 inches into a setback.

Commissioner DeHarpport discussed his experience in dealing with 3 feet side yard setbacks, and expressed his concern regarding fire issues, adding that he's uncertain if insurance companies cover this as attached units if the eaves are less than 6 feet apart. He questioned if his fellow Commissioners would support a condition that would require at least 6 feet between the eaves.

Commissioner Bliss pointed out that it is not within the Commission's purview to condition at least 6 feet between the eaves, and expressed his opinion that burning material within the proximity of two buildings would be properly addressed under the Fire Code.

Commissioner Maks concurred with Commissioner Bliss' comments and stated that it's not within the Commission's purview to address concerns over fire or safety issues.

Mr. Osterberg pointed out that the Code allows other elements besides eaves to go two feet into a setback and recommended that if the Commission wishes to have this as a Condition of Approval, than he would advise that the Public Hearing be reopened to take additional testimony from the applicant and public to address this specific matter.

Commissioner DeHarpport expressed thanks to the applicant for providing answers to all of the Commissions concerns, and expressed his concerns with parent parcels not included in the 20 percent. He stated that he supports all three of the applications, adding that they meet applicable approval criteria.

Noting that the application adequately meets the applicable approval criteria, Commissioner Barnard expressed his concerns regarding the

use of a PUD system on such a small property. He reiterated that this property and development meet the adequate means of the Code and questioned if this is how we envision the usage of our PUD process in its best manner.

Commissioner Bliss stated that he supports all three applications with the proviso that an additional condition is included to add temporary irrigation for a minimum of two years to establish the plantings within the open space area.

Commissioner Maks concurred with Commissioner Barnard's comments, emphasizing that this makes him want to bring back the 4 acre minimum for the PUD process. Noting that he's been an avid supporter of the PUD process and believes that one of the minimum drops of the PUD process was due to the fact that so many developers were able to use it in a creative manner. He expressed his opinion that this application is not creative, and noted that the applicant brought up a good point with regard to the surrounding community – that one can do many different things and go to different places without the use of a vehicle. He understands that this is a difficult site and commented that the application does not encourage, enhance or preserve the value of spirit or character in the entirety of the site. He emphasized that PUD's are not a gift, and stated that waivers are potentially obtainable for the density in order to develop in a standard fashion. He concurs that the design looks like "army barracks", adding that the applicant could have gone with a lower density and used the open space in a much creative, active fashion. He pointed out that the only public testimony received dealt with issues other than with regard to mass, bulk, and/or scale, and stated that this application appears to meet all the criteria.

Commissioner Pogue expressed his opinion that the modifications meet the criteria and would support based on the facts and findings.

Commissioner Winter stated that the revised plan addressed all the concerns from the previous hearing and is in support of the application as it meets the applicable approval criteria.

Chairman Johansen expressed thanks to the applicant for providing answers to all of the Commissions concerns. He expressed his opinion that if maximizing density on a given piece of property is the measurement of a successful development, then this one is a success, adding that he does not believe this should be the measurement of a quality PUD. He believes that this PUD is a way to get smaller lots

sizes with reduced setbacks and noted that the only thing that is introduced through the City's PUD process is the 20% open space requirement. He expressed his opinion that the 20% open space is not well integrated with regard to this development as a whole. Observing that special irrigation was not proposed on the areas, he questions what the open spaces will look like in five years. He noted that he hasn't heard public testimony raising the same concerns, adding that he's lacking evidence that he would have like to have in order to deny this application. He pointed out that he does not believe that this development represents the intent of the PUD process, adding that when they give flexibility to development standards and lot sizes, there should be something more coming back than a small piece of open space which barely makes the 20% requirement. He concluded that although he has reservations about the development based on personal opinion, the applications meet the minimum criterion for approval.

Commissioner Pogue **MOVED** and Commissioner Bliss **SECONDED** a motion for approval of LD 2004-0030 – Garden Grove Planned Unit Development, based upon the testimony, reports and exhibits presented during the Public Hearings on the matter, and upon the background facts, findings and conclusions found in the Staff Report dated January 5, 2005, and as amended by the Staff Memorandum dated February 9, 2005, including Conditions of Approval 41.a as follows:

41.a.: Temporary irrigation shall be provided for the open spaces for a period not less than 2 growing seasons.

Motion **CARRIED**, by the following vote:

AYES: Pogue, Bliss, Barnard, DeHarpport, Winter, and Johansen.
NAYS: None.
ABSTAIN: Maks.
ABSENT: None.

Motion **CARRIED** (6:0)

Commissioner Pogue **MOVED** and Commissioner Bliss **SECONDED** a motion for approval of CU2004-0021 – Garden Grove Planned Unit Development, based upon the testimony, reports and exhibits presented during the Public Hearings on the matter, and upon the background facts, findings and conclusions found in the Staff Report

dated January 5, 2005, and as amended by the Staff Memorandum dated February 9, 2005.

Motion **CARRIED**, by the following vote:

AYES: Pogue, Bliss, Barnard, DeHarpport, Winter, and Johansen.
NAYS: None.
ABSTAIN: Maks.
ABSENT: None.

Motion **CARRIED** (6:0)

Commissioner Pogue **MOVED** and Commissioner Bliss **SECONDED** a motion for approval of TP2004-0018 – Garden Grove Planned Unit Development, based upon the testimony, reports and exhibits presented during the Public Hearings on the matter, and upon the background facts, findings and conclusions found in the Staff Report dated January 5, 2005, and as amended by the Staff Memorandum dated February 9, 2005, including Conditions of Approval 1 through 51, and revising Conditions of Approval Nos. 46 and 49, as follows:

46. and 49. Ensure that a construction fence remains around all trees approved for retention. The fence shall be placed no closer than the edge of the root zone. The fence shall meet the following standards:

- Fencing shall consist of, at a minimum, a four foot (4') high orange plastic or snow fence, secured to six foot (6') tall metal posts, driven two feet (2') into the ground. Heavy gauge 12 wire shall be attached to the top and midpoint of each ~~point~~ ***post.***

Motion **CARRIED**, by the following vote:

AYES: Pogue, Bliss, Barnard, DeHarpport, Maks, Winter, and Johansen.
NAYS: None.
ABSTAIN: None.
ABSENT: None.

Motion **CARRIED** (7:0)

APPROVAL OF MINUTES:

Minutes of the meeting February 2, 2005, were submitted. Commissioner Pogue **MOVED** and Commissioner Maks **SECONDED** a motion that the minutes be amended as written.

Motion **CARRIED** by the following vote:

AYES:	Pogue, Maks, Barnard, DeHarpport, Winter, and Johansen.
NAYS:	None.
ABSTAIN:	Bliss.
ABSENT:	None.

Motion **CARRIED**, unanimously.

MISCELLANEOUS BUSINESS:

The meeting adjourned at 7:41 p.m.

EXHIBIT 16

MEMORANDUM
City of Beaverton
Community Development Department

"make it happen"

To: Planning Commission

From: John Osterberg, Senior Planner

Date: February 9, 2005

Subject: ***Garden Grove PUD; continuance***

Background

On January 5, 2005, the applicant (CES-NW) requested a continuance of the combined applications for the Garden Grove project, and the hearing date of February 16, 2005 was determined at that hearing. At the January 5, 2005 hearing staff had recommended Denial of the CU-PUD and LD applications due to the applicant's proposal not meeting the 20 percent open space requirement of the Code. During that hearing the applicant clarified that the Flexible Setback (FS) request had been proposed solely to seek relief from the PUD open space area calculation method and was not needed for any other purpose. Subsequently the staff changed their Flexible Setback recommendation from Approval to Denial.

Revised Plan

Since the time of the January hearing, the applicant has revised the CU-PUD application so that the development meets the minimum 20 percent open space standard. Therefore, staff can now recommend Approval of the CU-PUD application and the related LD application. Staff's recommendation for Approval of the Tree Plan (TP) remains unchanged. The applicant may withdraw the FS request, but has not yet done so. Staff believe that the FS request should be withdrawn because, considering the applicant's revised plans, it appears FS no longer serves a purpose. Also note staff have provided revised Conditions of Approval, attached.

Recommendation:

If the Commission finds that all of the criteria for approval of the Garden Grove applications have been met, then based upon the facts and findings presented in the staff report dated January 5, 2005, as amended by the staff memorandum dated February 9, 2005, staff recommend **APPROVAL** of **CU 2004-0021, LD 2004-0030, and TP 2004-0018 Garden Grove PUD**, with the revised conditions of approval found in Attachment F.

CONDITIONS OF APPROVAL

CU2004-0019 Conditional Use Permit Application:

No conditions of approval.

FS2004-0017 Flexible Setback Application:

No conditions of approval.

LD2004-0030 Land Division Application:

Prior to issuance of the site development permit, the applicant shall:

1. Ensure that Preliminary Land Division approval has not expired. In accordance with Section 50.90.1 of the Development Code, Land Division approval shall expire after two (2) years from the date of approval unless prior to that time a construction permit has been issued and substantial construction pursuant thereto has taken place, or an application for extension is filed pursuant to Section 50.93, or that authorized development has otherwise commenced in accordance with Section 50.90.3.B. (CDD / AJC)
2. Contract with a professional engineer (or professional architect if allowed by the City Engineer) to design and monitor the construction for any work governed by Beaverton Municipal Code 9.05.020, as set forth in Ordinance 4303 (City Engineering Design Manual and Standard Drawings), Beaverton Development Code (Ordinance 2050, 4010 +rev.), the Clean Water Services District Design and Construction Standards (February 2004, Resolution and Ordinance 2004-009), and the City Standard Agreement to Construct and Retain Design Professionals in Oregon. (Site Development Div./JJD)
3. Submit a completed and executed City Standard Agreement to Construct Improvements and Retain Design Professional Registered in Oregon. After the site development permit is issued, the City Engineer and the Planning Director must approve all revisions as set out in Ordinances 2050, 4010+rev., and 4303; however, any required land use action shall be final prior to City staff approval of the engineering plan revision and work commencing as revised. (Site Development Div./JJD)
4. Have the ownership of the subject property guarantee all public improvements, storm water management (quality and quantity) facilities, site grading, private streets, and common driveway paving by submittal of a City-approved security. The security approval by the City consists of a review by the City Attorney for form and the City Engineer

for amount, equivalent to 100 percent or more of estimated construction costs. (Site Development Div./JJD)

5. Submit any required off-site easements, executed and ready for recording, to the City after approval by the City Engineer for legal description of the area encumbered and City Attorney as to form. For this project, the off-site storm water outfall and piping will need a public easement north of Canby Street as proposed. (Site Development Div./JJD)
6. Have obtained the City Building Official's approval of the private plumbing plan for facilities regulated under the Uniform Plumbing Code with Oregon Amendments. (Site Development Div./JJD)
7. Submit to the City a copy of issued permits or other approvals needed from the City of Portland for work within, and/or construction access to the Multnomah Boulevard right of way. (Site Development Div./JJD)
8. Have obtained the Tualatin Valley Fire and Rescue District Fire Marshal's approval of the site development plans. (Site Development Div./JJD)
9. Demonstrate on the plan that the transition from public street to private street (Tract "A") meets Tualatin Valley Fire and Rescue District standards.(Site Development Div./JJD)
10. Submit a copy of issued permits or other approvals needed from the Tualatin Valley Water District for public water system construction, backflow prevention facilities, and service extensions. (Site Development Div./JJD)
11. Submit a copy of issued permits or other approvals needed from the Clean Water Services District for storm system connections. (Site Development Div./JJD)
12. Submit a completed 1200-C General Permit (DEQ/CWS/City Erosion Control Joint Permit) application to the City. (Site Development Div./JJD)
13. Submit a detailed water supply analysis (Fire Flow) to the City Building Official in accordance with the requirements of the Fire Code as adopted by the Tualatin Valley Fire and Rescue. (For more information, see http://www.tvfr.com/Dept/fm/brochures/fire_flow_and_hydrant_requirements.pdf) If needed, this analysis shall include an actual flow test and analysis by a professional engineer meeting the standards set by the City Engineer. The analysis shall provide the available water volume (GPM) at 20 psi residual pressure from the fire hydrant nearest to the proposed project. (Site Development Div./JJD)

14. Provide a detailed drainage analysis of the subject site and prepare a report prepared by a professional engineer meeting the standards set by the City Engineer. The analysis shall identify all contributing drainage areas and plumbing systems on and adjacent to the site with the site development permit application. The analysis shall also delineate all areas on the site that are inundated during a 100-year storm event in addition to any mapped FEMA flood plains and flood ways. (Site Development Div./JJD)

15. Pay a storm water system development charge (overall system conveyance) for the net new impervious area proposed for any common areas or private streets. The project shall be eligible for a storm water system development charge credit equal to the estimated construction cost value of extra capacity improvements as determined and administered by the City Utilities Engineer. (Site Development Div./JJD) (Site Development Div./JJD)

16. Submit a copy of issued permits or other approvals if needed from the State of Oregon Division of State Lands and the United States Army Corps of Engineers (for work within a jurisdictional wetland). (Site Development Div./JJD)

17. Provide plans showing a stormfilter vault (for treatment of the site's piped surface water runoff) with a minimum of 3.0 cartridges per impervious acre. Plans shall also show a trash capture water quality pre-treatment manhole (CDS manhole or City of Beaverton approved equivalent as determined by City Engineer) located in front any stormfilter vaults. Plans shall also show a high flow bypass system to bypass surface water runoff high flows (flows greater than the 5-year design storm) around the stormwater vaults. (Site Development Div./JJD)

18. The plans shall show access for a maintenance vehicle within 6-feet from the front, or within 15-feet from the side of a vehicle to all control structures unless otherwise specifically approved by the City Engineer. A direct route to the structures in the pond area shall be no steeper than 4(horizontal) to 1 (vertical) slope. This direct route shall be a minimum of 6-feet wide and have a surface consisting of the equivalent of 3-inches of ¾"-minus crush rock (to allow walking access in winter) and vegetation shall allow easy access. This direct access route shall be delineated on the plans. (Site Development Div./JJD)

19. Provide plans for the placement of underground utility lines along street frontages, within the site, and for services to the proposed new development. (Site Development Div./JJD)

20. Provide plans for street lights (Option C unless otherwise approved by the City Operations and Maintenance Director) and for the placement of

underground utility lines along street frontages, within the site, and for services to the proposed new development. (Site Development Div./JJD)

21. Have obtained the City Building Official's approval of the private plumbing plan for facilities regulated under the Uniform Plumbing Code with Oregon Amendments. (CDD / AJC)

22. Provide evidence that new street intersections meet City requirements for intersection sight distance. No obstructions shall be placed within the driveway intersection sight vision triangle except as provided by City Ordinance, including but not limited to parking. New street intersections shall meet sight distance criteria in the City's Engineering Design Manual for the design speed of the roadway. (Transportation/DRG)

23. Show on the plans a detail of the rubble retaining wall. The design shall substantially match the rockery wall design as shown in Exhibit 2 of the staff report. (CDD / AJC)

24. Show on the landscape plan a proposal for vegetative screening for the purpose of screening views from the property to the south. The vegetative screening shall be evergreen and be maintained to a mature height of at least 20-feet. (CDD / AJC)

Prior to building permit issuance, the applicant shall:

25. Ensure that Final Land Division approval has been granted by the City. (CDD / AJC)

26. Submit a complete site development permit application and obtain the issuance of site development permit from the Site Development Division. (Site Development Div./JJD)

27. Have substantially completed the site development improvements as determined by the City Engineer, including streetlights being fully functional. (Site Development Div./JJD)

28. Have placed underground all existing overhead utilities and any new utility service lines within the project and along any existing street frontage, except high voltage lines (>57kV). (Site Development Div./JJD)

29. Make provisions for installation of all mandated erosion control measures to achieve City inspector approval at least 24 hours prior to call for foundation footing form inspection from the Building Division. (Site Development Div./JJD)

30. Pay a storm water system development charge (overall system conveyance) for each new equivalent surface unit. The project shall be eligible for a storm water system development charge credit equal to the

estimated construction cost value of extra capacity improvements as determined and administered by the City Utilities Engineer. (Site Development Div./JJD)

Prior to approval of the final plat, the applicant shall:

31. Have commenced construction of the site development improvements to provide minimum critical public services to each proposed lot (streets graded, cored and rocked; wet utilities installed) as determined by the City Engineer and to allow for verification that the location and width of proposed rights of way and easements are adequate for the completed infrastructure, per adopted City standards. (Site Development Div./JJD)
32. Dedicate street right of way for a total of 30 feet from centerline on the south side of SW Canby Street to Beaverton Neighborhood Route Standards, for the frontage of the site (Development Code Sec. Code 60.55.10). (DRG / Transportation)
33. Name the north/south public street, tentatively identified as "SW Kelsi Avenue", in accordance with the City's Street Naming Guidelines. (Transportation/DRG)

Prior to final inspection of any building permit, the applicant shall:

34. Install or replace, to City specifications, all sidewalks which are missing, damaged, deteriorated, or removed by construction along the house frontage. (Site Development Div./JJD)
35. Have the landscaping completely installed or provide for erosion control measures around any disturbed or exposed areas per Clean Water Services standards. (Site Development Div./JJD)
36. Install "No Parking" signs along the private street and emergency access way leading to Multnomah Boulevard and in sections that are 20 foot in width. (Site Development Div./JJD)
37. Construct the south side of SW Canby Street to Beaverton Neighborhood Route Standards, including planter strip and 5 foot sidewalk, for the frontage of the site (Development Code Sec.'s 60.55.10 & 60.55.30). (Transportation/DRG)
38. Post "no parking" signs on the 20 foot wide section of SW Kelsi Avenue and on the internal private street in accordance with a street sign plan approved by the City Traffic Engineer. (Transportation/DRG)

Prior to release of performance security, the applicant shall:

39. Have completed the site development improvements as determined by the City Engineer and met all outstanding conditions of approval as determined by the City Engineer and Planning Director. Additionally, the applicant and professional(s) of record shall have met all obligations under the City Standard Agreement to Construct Improvements and Retain Design Professional Registered in Oregon, as determined by the City Engineer. (Site Development Div./JJD)

40. Submit any required on-site easements, if not already granted through the subdivision plat, executed and ready for recording, to the City after approval by the City Engineer for area encumbered and City Attorney as to form. The applicant's engineer or surveyor shall verify all pre-existing and proposed easements are of sufficient width to meet City standards. (Site Development Div./JJD)

41. Provide an additional performance security for 100 percent of the cost of twice-a-year (6-month interval) cleaning, maintenance, and filter recharge/replacement by Stormwater Management, Inc., for the StormFilter vault's cartridges for a two-year period, as determined by the City Utilities Engineer. Alternatively, provide evidence satisfactory to the City Utilities Engineer of a pre-paid service contract with Stormwater Management, Inc., for maintenance of the StormFilters consisting of cartridge replacement and sediment removal per manufacture's recommendations for a two year period from the date of performance acceptance. (Site Development Div./JJD)

TP2004-0018 Tree Plan II Application:

Prior to issuance of the site development permit, the applicant shall:

42. Ensure that Tree Plan approval has not expired. In accordance with Section 50.90.1 of the Development Code, Tree Plan approval shall expire after two (2) years from the date of approval unless prior to that time a construction permit has been issued and substantial construction pursuant thereto has taken place, or an application for extension is filed pursuant to Section 50.93, or that authorized development has otherwise commenced in accordance with Section 50.90.3.B. (CDD / AJC)

43. The following trees shall be illustrated as to be preserved on the Site Development Permit: four 8-inch trees located along the western property line of proposed lot 10 as identified on the Tree Preservation Plan (Sheet 2A of 6) in Exhibit 3. (CDD / AJC)

44. Illustrate on the site development plan, the location of all trees approved for retention, the root zone of the trees, and the location of tree protection fencing. (CDD / AJC)

During the Site Development phase of the project, the applicant shall:

45. Ensure that all tree removal and tree preservation shall be conducted in accordance with the American National Standards Institute (ANSI) A300-1995 standards and International Society of Arborists (ISA) standards. (CDD / AJC)

46. Ensure that a construction fence remains around all trees approved for retention. The fence shall be placed no closer than the edge of the root zone. The fence shall meet the following standards:

    - Fencing shall consist of, at a minimum, a four foot (4') high orange plastic or snow fence, secured to six foot (6') tall metal posts, driven two feet (2') into the ground. Heavy gauge 12 wire shall be attached to the top and midpoint of each point. (CDD / AJC)

    - If the development cannot meet the above standards, then other City approved protection devices maybe used, provided that equal or greater protection will be achieved. (CDD / AJC)

47. Ensure that a certified arborist is on site during times of construction when community trees are being removed or construction is taking place within 5 feet of tree root zones of trees approved for preservation, in order to minimize potential construction damage. (CDD / AJC)

48. Ensure that no development shall take place within the protected root zone of trees which are approved for retention. Development includes, but is limited to:
    - New Buildings
    - Grade change or cut and fill during or after construction
    - New impervious surfaces
    - Trenching for utilities, irrigation, or drainage
    - Staging or storage of materials and equipment during construction
    - Vehicle maneuvering during construction
    - Any activity deemed by the City to be harmful to trees or roots within the construction site. (CDD / AJC)

Prior to the issuance of any building permit, the applicant shall, for every individual lot:

49. Ensure that a construction fence remains around all trees approved for retention. The fence shall be placed no closer than the edge of the root zone. The fence shall meet the following standards:

    - Fencing shall consist of, at a minimum, a four foot (4') high orange plastic or snow fence, secured to six foot (6') tall metal posts, driven two feet (2') into the ground. Heavy gauge 12 wire shall be attached to the top and midpoint of each ~~point.~~ post (CDD / AJC)
    - If the development cannot meet the above standards, then other City approved protection devices maybe used, provided that equal or greater protection will be achieved. (CDD / AJC)

50. Ensure that a certified arborist is on site during times of construction when community trees are being removed or construction is taking place within 5 feet of tree root zones of trees approved for preservation to minimize potential construction damage. (CDD / AJC)

Prior to final inspection of any building permit or issuance of any certificates of occupancy from the City Building Official, the applicant shall:

51. Ensure that all activity associated with this application, all associated land use applications shall be carried out in accordance with the plans marked Exhibit 3. (CDD / AJC)

EXHIBIT 2.1

CITY of BEAVERTON

4755 S.W. Griffith Drive, P.O. Box 4755, Beaverton, OR 97076 General Information (503) 526-2222 V/TDD

STAFF REPORT

HEARING DATE: Wednesday, January 5, 2005

TO: Planning Commission

FROM: Jeff Caines, Assistant Planner

PROPOSAL: **Garden Grove Planned Unit Development**

LOCATION: 6600 block of SW Canby Street
Map 1S1-24DA, Tax Lot 301

SUMMARY: Conditional Use, Land Division, Flexible Setback and Tree Plan applications are submitted by the applicant to propose construction of a fifteen lot subdivision. The Conditional Use application requests Planned Unit Development approval for the fifteen lots to include detached dwellings. The Land Division application requests preliminary approval to create fifteen residential lots and two tracts with associated public and private improvements. The Flexible Setback application requests a zero side and rear yard set back for the two "open space tracts" only. The applicant is not requesting a reduction to the front yard setback. The Tree plan II is for the removal of approximately 50 trees for the development of the project. There are no significant or historical trees on the site. The following issues have been identified for the development:

- Consider if the intent of the required common open space includes the setback areas of the open space tracts, or if the intent of the PUD is to create additional open space areas outside of the parent parcel setbacks.

APPLICANT'S CES-NW; REPRESENTATIVE: Kirsten Van Loo
15573 SW Bangy Road, Suite 300
Lake Oswego, OR 97035

RECOMMENDATIONS: **DENIAL of CU2004-0021 (Garden Grove Planned Unit Development Conditional Use).** However, if the Planning Commission finds that the Conditional Use application does meet the approval criteria staff recommends **APPROVAL** of **CU2004-0021 (Garden Grove Planned Unit Development Conditional Use),** subject to conditions identified at the end of this report.

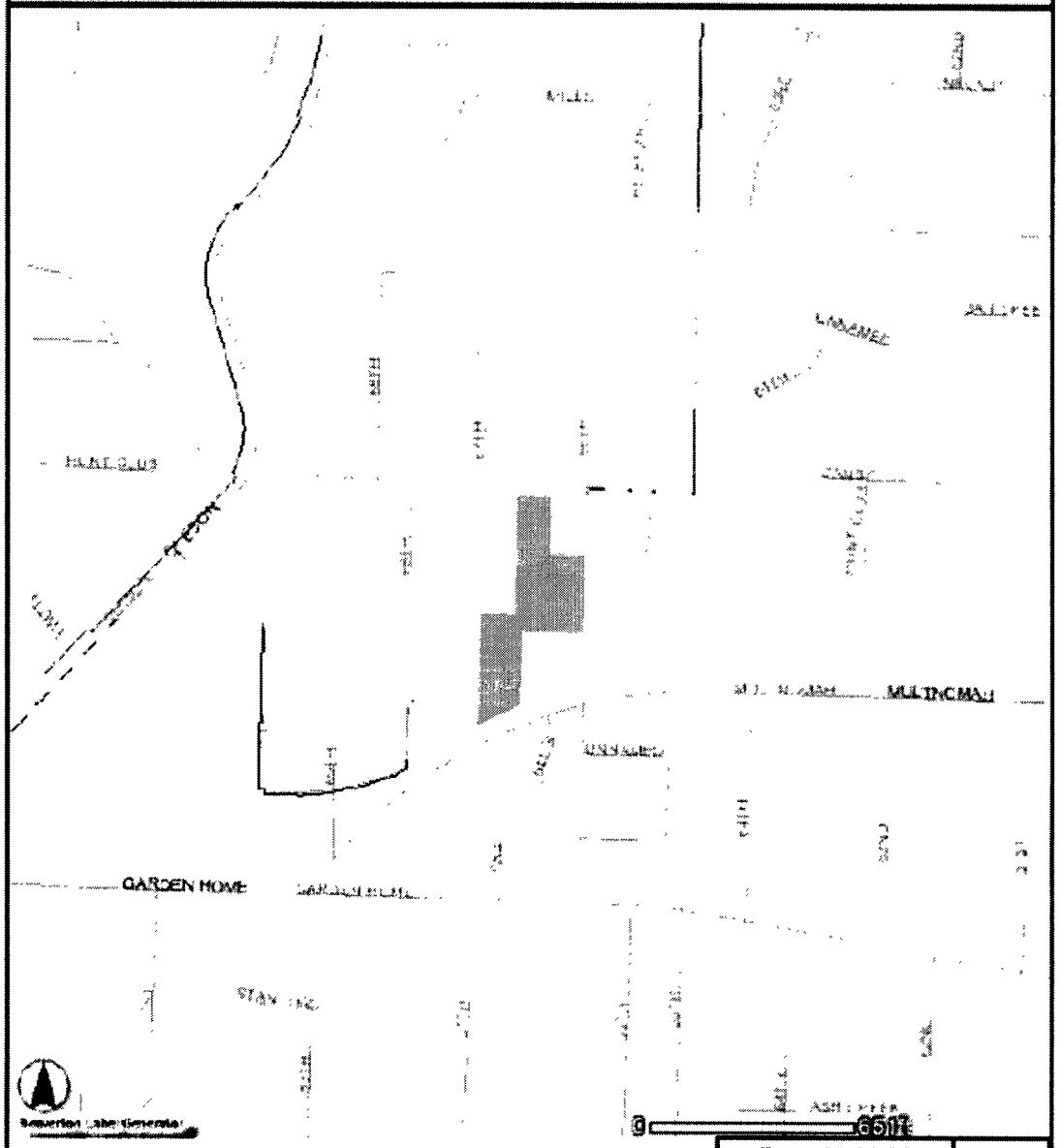
APPROVAL of **FS2004-0017 (Garden Grove Planned Unit Development Flexible Setback),** subject to conditions identified at the end of this report.

DENIAL of **LD2004-0030 (Garden Grove Planned Unit Development),** subject to conditions identified at the end of this report. However, if the Planning Commission finds that the Land Division application does meet the approval criteria staff recommends **APPROVAL** of **LD2004-0030 (Garden Grove Planned Unit Development),** subject to conditions identified at the end of this report.

APPROVAL of **TP2004-0018 (Garden Grove Planned Unit Development Tree Plan),** subject to conditions identified at the end of this report

VICINITY MAP

Exhibit Name:DETAIL MAP **Exhibit Number: 1**



Project: GARDEN GROVE 14-LOT PLANNED UNIT DEVELOPMENT

Department:COMMUNITY DEVELOPMENT
Division: Development Services

Date: 08/04/04

N

Map Number
1S124DA00301

Application #
CU2004-0021 LD2004-0030
FS2004-0017 TP2004-0018

BACKGROUND FACTS

Key Application Dates

Application	Submittal Date	Deemed Complete	Final Written Decision Date	240-Day*
CU2004-0021	August 4, 2004	Nov. 4, 2004	March 4, 2005	July 2, 2005
FS2004-0017	August 4, 2004	Nov. 4, 2004	March 4, 2005	July 2, 2005
LD2004-0030	August 4, 2004	Nov. 4, 2004	March 4, 2005	July 2, 2005
TP2004-0018	August 4, 2004	Nov. 4, 2004	March 4, 2005	July 2, 2005

* Pursuant to Section 50.25.9 of the Development Code this is the latest date, with a continuance, by which a final written decision on the proposal can be made.

Existing Conditions Table

Zoning	Residential Urban Standard Density (R-7)	
Current Development	Vacant	
Site Size	2.78 Acres	
NAC	CPO – 3	
Surrounding Uses	Zoning: North: Urban Standard Density (R-7) East: Urban Standard Density (R-7) West: Public Right-of-Way South: Urban Standard Density (R-7)	Uses: North: Residential East: Residential West: Residential South: Non-Conforming Commercial Use

DESCRIPTION OF APPLICATION AND TABLE OF CONTENTS

EXHIBITS

Exhibit 1. Vicinity Map (page 3 of this report)

Exhibit 2. Materials Submitted by Staff
Rock wall design profile

Exhibit 3. Materials Submitted by Applicant
Written Statements
Reduced Plans
Pre-Application Conference Notes
Neighborhood Review Meeting Packet
Clean Water Services Service Provider Letter
Beaverton School District Letter

Exhibit 4. Materials Submitted by Public

Exhibit 4.1 – Dale & Sylvia Butner, 6675 SW Canby Street Portland, OR 97223
Exhibit 4.2 – Michael Cottam, 6625 SW Canby Street Portland, OR 97223
Exhibit 4.3 – Michael & Bonnie Hayes 7275 SW 68th Avenue Portland, OR 97223

FACILITIES REVIEW COMMITTEE TECHNICAL REVIEW AND RECOMMENDATIONS GARDEN GROVE PLANNED UNIT DEVELOPMENT (LD2004-0030; CU2004-0021; FS2004-0017; TP2004-0018)

Section 40.03 Facilities Review Committee:
The Facilities Review Committee has conducted a technical review of the application, in accordance with the criteria contained in Section 40.03 of the Development Code. The Committee's findings and recommended conditions of approval are provided to the decision-making authority. As they will appear in the Planning Commission Decision and Order, the Facilities Review Conditions may be re-numbered and placed in different order.

The decision-making authority will determine whether the application as presented meets the Facilities Review approval criteria for the subject application and may choose to adopt, not adopt, or modify the Committee's findings, below.

The Facilities Review Committee Criteria for Approval will be reviewed for all criteria that are applicable to the four (4) submitted applications as identified below:

- **All eleven (11) criteria are applicable to the submitted Land Division application, LD2004-0030.**
- **The Conditional Use application, CU2004-0021, only is applicable to criteria #3, #4, and #11.**
- **The Flexible Setback application, FS2004-0017, only is applicable to criteria #3 and #11.**
- **The Tree Plan application, TP2004-0018, only is only is applicable to criteria #11.**

1. ***All critical facilities and services related to the development have, or can be improved to have, adequate capacity to serve the proposal at the time of its completion.***

   Chapter 90 of the Development Code defines "critical facilities" to be services that include public water, public sanitary sewer, storm water drainage and retention, transportation, and fire protection.

   The applicant states that all public improvements including water lines, water services, hydrants, sanitary sewer, storm facilities, street lights, and street signs have been or can be improved to provide adequate capacity to serve the proposed development.

Public water is served by Tualatin Valley Water District, which the applicant state there is adequate capacity to serve the project at the time of its completion. City of Beaverton administers the sanitary and storm sewer services. The City Development Services Engineer has reviewed the applicant's utility and grading plans and has provided a list of conditions in response to these plans to ensure adequate critical facilities are provided and installed. The conditions includes the requirement for storm filters with the proposed storm water system to ensure the proposed design addresses storm water quality issues. Therefore, the Committee finds that utilities will be adequate, subject to the conditions of approval requiring construction to meet City standards.

A traffic analysis was not required of this development. The trip generation of the proposed 15 lot subdivision is not great enough to meet the threshold requirement (Development Code Sec 60.55.20. Traffic Analysis). The surrounding street system will adequately accommodate the traffic from this development. SW Canby Street, currently not improved to current city standards, is classified as a Neighborhood Route and SW Multnomah Boulevard, within the city limits of the City of Portland, is classified as an Arterial Street. The site will be accessed with one public street connection to SW Canby Street and one future connection to SW Multnomah Boulevard, at the time of redevelopment of the adjoining property to the southeast. The site will have emergency access to SW Multnomah Boulevard through a private street connection. The applicant is conditioned to provide additional right of way and construction of the south half of SW Canby Street to Neighborhood Route standards for the frontage of the site. The City of Portland does not request any improvements within the right of way of SW Multnomah Boulevard.

Tualatin Valley Fire and Rescue have provided no comments to the project at this time. Further, TVF&R will need to sign off on the site development permit prior to its issuance.

Staff finds that the development meets the requirements of Development Code Section 60.55.10.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

2. ***Essential facilities and services are available or can be made available prior to occupancy of the development. In lieu of providing essential facilities and services, a specific plan strategy may be submitted that demonstrates how these facilities, services, or both will be provided within five years of occupancy.***

Chapter 90 of the Development Code defines "essential facilities" to be services that include schools, transit improvements, police protection, and

pedestrian and bicycle facilities in the public right-of-way. The applicant's plans and materials were forwarded to the Beaverton School District, the City Transportation staff, City Police Department, and Tualatin Valley Fire and Rescue.

The proposal includes curb tight sidewalks on the proposed street of SW Kelsi, but no bike lanes are proposed for this local street. The City of Beaverton Police will serve the development site. The Police Department provided no comments to the development applications.

The City Operations Department has commented on the street design with regards to the accessibility of their street sweeper to clean Kelsi Avenue. Operations will require the applicant to transition the corner west of lot # 15 and lot #11 to meet Engineering Design Standards to allow the street sweeper to maneuver the street. Operations will also require the applicant to demonstrate that there is a minimum of 21-feet turning radius at the southern end of Kelsi Avenue to allow the street sweeper to turn around.

There are no bus routes on SW Canby Street or Multnomah Boulevard. The closest bus route is in SW Garden Home Road with Tri-Met Bus Lines #45, which is approximately a quarter mile away. The Committee has not received comments from Tri-Met regarding any potential transit improvements requirements within the project's scope.

Staff find adequate essential facilities are available or can be made available to serve the site.

Therefore, the Committee find the proposal meets the criterion for approval.

3. ***The proposal is consistent with all applicable provisions of Chapter 20 (Land Uses) unless the applicable provisions are subject to an Adjustment, Planned Unit Development, or Variance which shall be already approved or considered concurrently with the subject proposal.***

Staff cite the Code Conformance Analysis chart at the end of this report, which evaluates the project as it relates the applicable Code requirements of Chapter 20 for the R-7 zone, as applicable to the above mentioned criteria. As demonstrated on the chart, the applicant is requesting approval of a Planned Unit Development through Conditional Use application to deviate from many of the Site Development requirements of Section 20.05.50 of the Development Code and a Flexible Setback application to deviate from the setback requirements of the parent parcel as part of the Planned Unit Development.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

4. ***The proposal is consistent with all applicable provisions of Chapter 60 (Special Regulations) and that all improvements, dedications, or both required by the applicable provisions of Chapter 60 (Special Regulations) are provided or can be provided in rough proportion to the identified impact(s) of the proposal.***

Development Services staff cite the Code Conformance Analysis chart at the end of this report, which evaluates the proposal as it relates the applicable Code requirements of Chapter 60, as applicable to the above mentioned criteria.

The application is conditioned to provide additional right of way and construction of the south half of SW Canby Avenue to Neighborhood Route Standards for the frontage of the site (Development Code Section 60.55.10).

The applicant has requested approval from the City Engineer and City Transportation Engineer for modifications to the standards in the Engineering Design Manual and Standard Drawings as allowed in Section 145.1.2, DESIGN MODIFICATIONS. The request is to allow curb tight sidewalks on both sides of proposed SW Kelsi Avenue and reduce the Local Street L2 Standard right of way from 52 feet to 40 feet, eliminating the planter strips and constructing curb tight sidewalks. The applicant states that the justification for the modification is to maximize the individual lot size on this constrained site.

Drawings of the modifications have been included as part of the applicant's plan set. The above-described modifications have been reviewed by the City Engineer and the City Transportation Engineer. Based on the evidence presented by the applicant, the street modifications do not meet the design modification approval criteria found in Section 145.1.2, Engineering Design Manual and Standard Drawings. At this time, no evidence has been presented by which to conclude that topography, right of way or geographical conditions or impediments are in existence that would impose an undue economic hardship on the applicant, or that a change of the standard is necessary to address a problem that would impose other undue hardships on the applicant.

The public and private streets will be posted no-parking in the sections that are 20 foot in width (L-2 Local Street Standard).

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

5. ***Adequate means are provided or can be provided to ensure continued periodic maintenance and necessary normal replacement of the following private common facilities and areas: drainage ditches, roads and other improved rights-of-way, structures, recreation facilities, landscaping, fill and excavation areas, screening and fencing, ground cover, garbage and recycling storage areas and other facilities, not subject to periodic maintenance by the City or other public agency;***

The applicant states the PUD will provide conditions, covenants, and restrictions that will ensure continued periodic maintenance for the private street, common open space areas and facilities, and street lighting. The application will comply with Chapter 60.15.10.4 Homeowner Associations and Declarations which states: When a Homeowner's Association Agreement or other restrictive covenants are to be recorded with the development; a copy of the appropriate documents shall be submitted with the final plat. The City shall review such documents to ensure that common areas are properly maintained and that other restrictions required by the City are included. By reviewing, the Homeowner Associations and Declarations staff will be assured that continued periodic maintenance and necessary normal replacement not subject to periodic maintenance by the City or other public agency will take place.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

6. ***There are safe and efficient vehicular and pedestrian circulation patterns within the boundaries of the site.***

The applicant states the project provides a safe and efficient vehicular and pedestrian circulation pattern within the boundaries of the site. Kelsi Avenue is not currently a through street; thus, not allowing vehicles to access Multnomah Boulevard directly. In addition, the project, as proposed, contains a private street (Tract "B") and an access point for emergency vehicles directly to Multnomah Boulevard. The applicant's dimensioned site plan shows 20 foot setbacks for all lots from the garage to the right-of-way. To ensure cars parking in the driveway of these lots do not cross the sidewalk, staff recommend a condition requiring a minimum setback of 18.5 feet for the garage area. The site will have safe and efficient vehicular and pedestrian circulation patterns, in conformance with Development Code Sec 60.55.25

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

7. ***The on-site vehicular and pedestrian circulation system connects to the surrounding circulation system in a safe, efficient, and direct manner.***

The site as proposed has adequate internal vehicular circulation, in conformance with Development Code Section 60.55.25, and adequate internal pedestrian circulation, in conformance with Development Code Section 60.55.25.

Therefore, the Committee find the proposal meets the criterion for approval.

8. ***Structures and public facilities and services serving the site are designed in accordance with adopted City codes and standards at a level which will provide adequate fire protection, including, but not limited to, fire flow, and protection from crime and accident, as well as protection from hazardous conditions due to inadequate, substandard or ill-designed development;***

The applicant states the project engineer will design the necessary public facilities servicing the site according to adopted City Codes and standards, as well as other service agencies. The applicant's proposal includes emergency access to Multnomah Boulevard which will allow adequate fire protection while maintaining the open space requirements for the PUD. The City's "as-built" drawings indicate that there is an adequate water supply to serve the site in case of fire. Fire hydrants will be placed at a maximum of 500-feet along the public and private streets. Further, the proposal will need to show compliance to the City's Building Code Standards prior to issuance of site development and building permits, which includes compliance with TVF&R standards.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

9. ***Grading and contouring of the site is designed to accommodate the proposed use and to mitigate adverse effect(s) on neighboring properties, public right-of-way, surface drainage, water storage facilities, and the public storm drainage system.***

The applicant states the project grading plan is designed for sanitary sewer service, water service, and storm water detention, treatment and dispersal in compliance with the current City of Beaverton standards. In addition, the applicant states that the preliminary grading and erosion control plan demonstrates a methodology for contouring the site, and constructing the street to meet current City of Beaverton standards.

The applicant has also applied for a street design modification to construct curb tight sidewalks, claiming that site constraints are present that prevent the proposal from meeting City street design standards without undue hardship. The City Engineer has reviewed the request and has denied the construction of curb tight sidewalks for Kelsi Avenue. The applicant has been granted a Street Design Modification for the northern 200-feet (approximately) of the street to allow sheet flow drainage. This modification will be in place until such time the property to the northeast develop and will be required to construct street improvements.

Further, to ensure future grading will not result in adverse impacts to the surrounding area, the Committee recommends a standard condition of approval that require detailed grading and drainage information to be provided with the Site Development Permit.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

10. ***That access and facilities for physically handicapped people are incorporated into the site and building design, with particular attention to providing continuous, uninterrupted access routes.***

The applicant states the proposal provides sidewalks and ramps to accommodate handicap access meeting ADA standards. Conformance with applicable requirements of the Building Code, including handicap accessibility, must be demonstrated prior to issuance of Building permits. This is in conformance with Development Code Section 60.55.65.

Therefore, the Committee find the proposal meets the criterion for approval.

11. ***The proposal contains all applicable application submittal requirements as specified in Section 50.25.1 of the Development Code.***

The applicant submitted the applications on October 14, 2004 and was deemed complete on November 10, 2004. In the review of the materials during the application review, the Committee find that all applicable application submittal requirements, identified in Section 50.25.1 are contained within this proposal.

Therefore, the Committee find the proposal meets the criterion for approval.

ANALYSIS AND FINDINGS FOR CONDITIONAL USE APPROVAL

Major Issues

1. Consider if the intent of the required common open space could include the required setback areas of the open space tracts or if the intent of the PUD is to create additional open space areas outside of the parent parcel setbacks.

Section 40.15.15.6.C lists the criteria in order to approve a Final Planned Unit Development Conditional Use application, the decision making authority shall make findings of fact based on evidence provided by the applicant demonstrating that all the following criteria are satisfied:

1. The proposal satisfies the threshold requirements for a Final PUD application.

Facts and Findings:

Section 40.15.15.6.A *Threshold: An application for a Conditional Use shall be required when the following threshold applies:*

> *A Preliminary Planned Unit Development (PUD) application is an optional application process which may be chosen by the applicant. A Preliminary PUD application is the first application of a two-step application process with a Final PUD application as the second step. A Preliminary PUD is a plan that generally demonstrates the ultimate development of a project. A Preliminary PUD may be applied to properties within any City zoning district except Residential-Agricultural (RA).*

Section 20.05.15.2.B. identifies Planned Unit Developments (PUD) as a conditional use within the R-7 zoning district. Therefore, the project proposal meets the threshold requirement for a Type Three Conditional Use application. The applicant proposes to create a Planned Unit Development (PUD) with the fifteen-lot subdivision and proposes that the PUD be approved through the Final PUD process as provided by the threshold above.

FINDING: Therefore, staff find that the proposal meets the criterion for approval.

2. All City application fees related to the application under consideration by the decision making authority have been submitted.

Facts and Findings:

The intent of this criterion is to ensure that all fees have been paid to the City before a full review can proceed. According to city finance records, the applicant

paid with a check (#18591) in the amount of $1,274.00 to the City to have the proposed project review for compliance with the Development Code. The City issued receipt number 20045147 to verify payment.

Therefore, staff find that the proposal meets the criterion for approval.

3. ***The proposal meets the Site Development Requirement for setbacks within the applicable zoning district for the perimeter of the parent parcel unless the setbacks are approved as an Adjustment, Flexible Setback or Variance which shall be considered concurrently with the subject proposal.***

Facts and Findings:
The applicant has applied for a flexible setback in order to reduce the side and rear setback to zero. Development Code Section 60.35.15.2 states that "land required to be set aside as setbacks or buffers shall not be included in the calculation of required open space." The applicant states that the flexible setback is for the "open space" areas and not for the overall parcel. During the review process, staff has applied the flexible setback to the overall parent parcel and not specifically to the "open space" areas located to the northern and southern portions of the site. As stated in the flexible setback application, it is not the intent of the flexible setback to allow its reduction to influence the 20% open space requirement as stated in Section 60.35.15 of the Development Code. The intent of the flexible setback it to allow flexibility in the design of the site with respect to the structures, both existing and future development. It is not the intent to allow the flexible setback to be used as a mechanism to meet the 20% open space requirement by reducing the required setback standard. In addition, lot sizes for the project do not meet the minimum size requirements of the underlying R-7 zone of 7,000 sq-ft. However, the proposal will meet the criterion if the Conditional Use application is approved.

Staff further finds that the proposal meets the Site Development Requirement for setbacks within the R-7 zoning district for the perimeter of the parent parcel.

Therefore, staff find that the proposal meets the criterion for approval

4. ***The proposal will comply with the applicable policies of the Comprehensive Plan.***

Facts and Findings:
The Beaverton Comprehensive Plan (Plan) is not intended to be a site specific document. Therefore, the Planning Commission must determine whether a particular specific use request, such as approval of the PUD, would be applicable to the Comprehensive Plan. The following policies of the Beaverton Comprehensive Plan have been identified as being applicable to this Conditional Use Permit request.

Policies:

3.13.1a. *Regulate residential development to provide for diverse housing needs by creating opportunities for single and multi-family development of various sizes, types and configurations.*

3.13.1.b *Encourage a variety of housing types in residential areas, by permitting or conditionally permitting any housing type (one, two or more, family dwellings) within any zoning district so long as the underlying residential density of the zoning district is met. Accessory dwelling units shall not be considered in the calculation of the underlying housing density.*

3.13.1.c *Require Planned Unit Development application procedures for projects proposing two or more families within the Low Density and Standard Density land use designations. Planned Unit Developments encourage flexibility in standards and provide a mechanism for staff to make adequate findings with respect to compatibility in size, scale, and dimension. Exceptions to this requirement are dwellings designed as primary units with an accessory dwelling unit, as specified in the Development Code.*

3.13.1.d *Apply Residential Neighborhood designations (Low Density, Standard Density, Medium Density and High Density) consistent with the Metro 2040 Growth Concept Map and the City's housing target implementing strategy.*

Low Density	10,000 – 12,500
Standard Density	5,000 – 8,750
Medium Density	2,000 – 4,999
High Density	1,000 – 1,250

3.13.1.e *Apply zoning districts as shown in subsection 3.14 Comprehensive Plan and Zoning District Matrix.*

The applicant is proposing a fifteen lot single family residential planned unit development. The applicant is meeting the above Comprehensive Plan Policies by developing single family units according to Standard Density land use designation standards. Therefore, staff find the policy is met.

3.13.1.f *New Commercial zoning districts are not allowed within Residential Neighborhood Standard and Low Density land use designations. Existing properties with commercial zoning as shown on Figures III-2 through III-5 and listed by tax lot on said maps shall be allowed to continue in perpetuity. Expansion of the district is not allowed, but any use permitted within said district will be allowed subject to City approval through the procedures specified in the Development Code.*

The applicant is not proposing a zone change to a commercial use within the Residential Neighborhood Standard and Low Density land use designations. Therefore, staff find the policy is met.

3.13.1.g *Enhance the City's landscape through design measures considering the natural setting of the land and the character of existing residential neighborhoods.*

3.13.1.h *Foster innovation and variety in design to enhance the visual character of the City's landscape. Innovation in design can include designing infill structures to integrate into existing neighborhoods through compatible scale, similar design features, and similar setbacks.*

The applicant is proposing large landscape areas on both the northern and southern portion of the project site. Therefore, staff find the policy is met.

3.13.1.i *Residential development, in compliance with regional mandates, shall achieve at least 80% of the maximum density allowed in the respective zoning districts as applied through 3.14 Comprehensive Plan and Zoning District Matrix.*

3.13.3.a *Applying zoning districts as shown in Subsection 3.14 Comprehensive Plan and Zoning District Matrix to allow a variety of housing choices.*

The applicant states the matrix designates the R-7 zoning district for meeting the Standard Density Residential Development goal and that the proposed PUD will provide moderate sized lots for attached single family residences with some private open space. The R-7 zoning district allows PUD to be approved with a Conditional Use application to allow both variety of the housing type and the design of the subdivision. Therefore, staff find the policy is met.

4.2.1.1.a *Increase residential capacity in the City to substantially comply with requirements of Title 1 of the Metro Urban Growth Management Functional Plan.*

The applicant is proposing a fifteen lot residential PUD. This type of development will increase the housing density through in-fill development. Therefore, staff find the policy is met.

4.2.2.1.a *Allow development of a wide variety of housing types in the City.*

The applicant states the proposed PUD will provide fifteen detached single family dwellings and that these housing types will contribute quality, dwelling units to the City's housing stock. Therefore, staff find the policy is met.

5.4.1.b *On-site detention will be used as a storm water management tool to mitigate the impacts of increased storm water run-off associated with new land development.*

5.4.1.c *All new land development will be connected to a storm water drainage system. Each new development will be responsible for the construction or assurance of construction of their portion of the major storm water run-off facilities that are identified by the SWM program as being necessary to serve the new land development.*

The applicant has proposed the use if an underground storage facility to retain the increased run-off from the site after the project is complete. This facility and all other associated storm water run-off impacts will be captured and impacts be mitigated before being released into the city's storm drainage system. The Site Development Division will review a detailed set of plans and issue a Site Development Permit to ensure that the project will meet City standards and compliance with the storm water management program necessary to serve new land developments. Therefore, staff find the policy is met.

5.6.1.a *All new land development (residential subdivisions, and multiple family dwelling, industrial, and commercial developments) shall be connected to the City sewer system.*

This project has been designed to connect all proposed residential housing units with a sewer connection which shall be connects with the City sewer system. Therefore, staff find the policy is met.

5.7.1.f *The City shall notify the School District when considering Comprehensive Plan or land use regulation amendments that may significantly impact school capacity.*

The City of Beaverton has notified the Beaverton School District to the scope of the project as part of the review process. The Beaverton School District has indicated the project will cause a moderate impact at the elementary school level, and a negative impact at the middle and high school level.

6.2.1.a *Maintain the livability of Beaverton through proper location and design of transportation facilities.*

6.2.1.b *Consider noise attenuation in the design and redesign of arterial streets immediately adjacent to residential development.*

6.2.1.d *Protect neighborhoods from excessive through traffic and travel speeds while providing reasonable access to and from residential areas. Build streets to minimize speeding.*

The project entrance is located towards the east end Canby Street which is a dead-end street with emergency access available to Multnomah Boulevard. The proposal is designed with two open spaces located on either end of the lot with the residential lots located away from the road. Noise from Multnomah Boulevard will be less of an impact for residents since tract "C" buffers the residents from the roadway. The neighborhood will be protected form excessive through traffic since Kelsi Avenue (south of Multnomah Boulevard) does not currently go though at this time. The only through traffic design for the site will be emergency vehicles which will exit the development on to Multnomah Boulevard and emergency access easement. Therefore, staff find the policy is met.

6.2.2.a *Implement Beaverton's public street standards that recognize the multi-purpose nature of the street right-of-way for a combination of utility, pedestrian, bicycle, transit, truck, and auto uses, and recognize that streets are important to community identity and provide a needed service.*

The applicant has applied for a street design modification through the City's Engineering Department. The City Engineer has reviewed the proposal and has denied the request to deviate from City Street Standards, as shown in the Engineering Design Manual. As a condition of approval, the applicant will have to submit a revised set of plans to demonstrate that the proposal meets current City street standards. Upon review of the revised set of drawings staff can determine if the proposal implements Beaverton's public street standards that recognize the multi-purpose nature of the street right-of-way for a combination of utility, pedestrian, bicycle, transit, truck, and auto uses, and recognize that streets are important to community identity and provide a needed service. Therefore, staff **does not** find the policy is met. However, the Planning Commission may find that the application does meet the comprehensive policy. If that is the case then staff find the policy is met upon the Planning Commission's findings.

6.2.2.b *Develop and provide a safe, complete, attractive, efficient, and accessible system of pedestrian ways and bicycle ways, including bike lanes, shared roadways, multi-use paths, and sidewalks according to the pedestrian and bicycle system maps and the Development Code and Engineering Design Manual and Standard Drawings requirements.*

6.2.2.c *Provide connectivity to each area of the City for convenient multi-modal access. Ensure pedestrian, bicycle, transit, and vehicle access to schools, parks, employment and recreational areas, and destinations in station areas, regional and town centers by identifying and developing improvements that address connectivity needs.*

6.2.2.d *Develop neighborhood and local connections to provide adequate circulation into and out of neighborhoods.*

The project will provide a sidewalk connection, an amenity not currently found on the site. The sidewalk will connect pedestrians to both Canby Street and Multnomah Boulevard via the construction of Kelsi Avenue, thereby providing improved circulation for a segment of this local street. As SW Kelsi Avenue is, a local street and bicycle lanes are not being proposed. Bike access will be from the proposed roadway and is consistent with the street layout in the area.

The applicant proposes street lights on the extension of SW Kelsi Avenue as well as on the private street. The Facilities Review Committee has recommended a condition to address the lighting within the public right-of-way to meet City Standards. Staff find that by meeting the conditions of approval, the policies are met.

6.2.2.f *Design streets to accommodate transit while minimizing impacts to traffic flow.*

As the proposal is on a local street with no existing transit services, staff find the policy is not applicable.

6.2.3.b *Design streets to serve anticipated function and intended uses as determined by the Comprehensive Plan.*

SW Kelsi Avenue is a local street and is proposed to be continued as one. As local streets are to provide access to adjacent land, the function of the proposed roadway improvements meets the described function of a local street. The applicant has provided a plan for the future street extension upon redevelopment of the current non-conforming use located to the southeast of the subject property. Staff find the policy is met.

6.2.3.d *Designate safe routes from residential areas to schools.*
6.2.3.e *Construct multi-use paths only where they can be developed with satisfactory design components that address safety, security, maintainability, and acceptable uses. Multi-use paths should converge at traffic-controlled intersections to provide for safe crossing, although they should be separate and distant from major streets for most of their length.*

There are no designated pathways to local schools pr multi-use paths proposed and none required by the City. Therefore, staff find the policies are not applicable.

6.2.3.f *Provide satisfactory levels of maintenance to the transportation system in order to preserve user safety, facility aesthetics, and the integrity of the*

system as a whole.

6.2.3.g *Maintain access management standards for streets consistent with City, County, and State requirements to reduce conflicts among vehicles, trucks, bicycles, and pedestrians. Preserve the functional integrity of the motor vehicle system by limiting access per City standards.*

The applicant has been conditioned to dedicate a portion of the site to build Canby Street to local city standards. Also, the applicant has been conditioned to build Kelsi Avenue to local city standards. Both these street dedications will be conveyed to the City of Beaverton's Operations Department for regular street maintenance. By building to city standards conflicts that result from vehicles, trucks, bicycles, and pedestrians will be reduced. Therefore, staff find the policy is met.

6.2.3.h *Ensure that adequate access for emergency services vehicles is provided throughout the City.*

The development as proposed shows an emergency vehicle access easement which connects from Kelsi Avenue to Multnomah Boulevard. Therefore, staff find the policy is met.

FINDING: Therefore, staff find that by meeting the conditions of approval and by the findings of the Planning Commission, the proposal meets the criterion for approval.

5. The size, dimensions, configuration, and topography of the site and natural and man-made features on the site can reasonably accommodate the proposal.

Facts and Findings:

The applicant states the application as proposal can reasonably accommodate a fifteen lot development. However, staff finds that it is not possible to determine if the size, dimensions, configuration, and topography of the site and natural and man-made features on the site can reasonably accommodate the proposal for a number of reasons. First is the open space element, as required in Chapter 60. The applicant has stated that the purpose of the flexible setback is to include that setback area as required open space. Staff has stated in criterion #3 that the area within the flexible setback can not be included in the required open space. Second, the applicant has requested a modification to the street design standard from the City Engineer. The City Engineer has denied that request and will therefore be required to construct Kelsi Avenue to City street standards. The current proposal shows a street which does not meet current street standards. Therefore, staff can not make positive findings that the man-made (street) features on the site can reasonably accommodate the proposal. Finally, the applicant has not demonstrated on the site plan that it can be properly maintained by the City of Beaverton's

Operation's Department. Staff has conveyed to the applicant that City street sweepers are unable to service the site as currently proposed. Staff has conditioned the application, if approved, to meet the Operations Department's street sweeper standards, however it is impossible to review since the final street design will change since the street design modification has been denied.

FINDING: Therefore, staff can not find that the proposal meets the criterion for approval.

6. The location, size, and functional characteristics of the proposal are such that it can be made reasonably compatible with and have a minimal impact on livability and appropriate development of properties in the surrounding area of the subject site.

Facts and Findings:
Location: The subject site is located within the R-7 zoning district. To the east, of the subject site is the City of Portland. Aerial photographs show and site visits confirm that the properties to the west are residential housing units. The site to the southeast is a non-conforming use. The sites to the west are located within the City of Beaverton and are zoned R-7. These properties have residential housing units. In reviewing the impacts to the abutting parcels, staff finds that the current proposal being residential housing units will have minimal impact of the surrounding uses.

Size: The PUD allows modifications to the size of the lots, while requiring the proposed development to meet the density requirements of the zoning district. The applicant proposal requests a reduction in the lot size of the parcels ranging between 4,214 to 5,469 square feet. While the lot sizes are not consistent to the lots adjacent to the subject site or the underlying zoning district (R-7), the unique shape of the subject site, the construction of a private street and the open space requirements warrants the need for smaller lots. With the proposed setbacks for the individual lots, the building sizes of this development should be compatible to the range of building sizes found in the surrounding area.

Design: The design of the PUD has included common open space on the northern and southern boundary of the site. The private street proposed is a minimum of 20 feet in width providing adequate maneuvering area on the subject site. The private street will service lots 8, 9, and 10 as well as emergency vehicles entering Multnomah Boulevard.

To address the issue of noise and visual buffering of the non-conforming use located on the southeast corner of the site, staff has conditioned that the applicant plant a buffer / screening using evergreen vegetation which will grow to a minimum mature height of at least 20-feet. The applicant has proposed an extensive vegetation plan for the common open space areas, specifically at the southern property line (tract "C") of the subject site. The proposal includes a variety of plant material to help

screen the future residents from Multnomah Boulevard. The applicant also states that tract "A" will be landscaped with trees and shrubs to attract birds and butterflies. Please refer to the preliminary landscape plan (sheet 2A) of the plan set for specific details on plant type and location.

Functional Characteristics: The applicant's proposal is utilizing two areas for the proposed open spaces, Tracts A and C. While Tract C provides active recreational use with open areas, Tract A provides a more passive use with limited access to the area. Tract A provides some aesthetic value with the proposed landscaping. The applicant proposes special setbacks to reduce the rear and side yard setback of the parent parcel which may allows the development to meet the common open space requirements.

While the reduction in the parent parcel setback for the open space areas will not create adverse impacts to the abutting residential homes, staff finds that the reductions should not allow the additional area within the tract to be counted in the 20% open space requirement. As stated in Section 60.35.15.2 of the Development Code states land set aside for setbacks and buffer areas are not to be counted within the 20% open space requirement. As stated by the applicant and staff, the unique shape of the site warrants certain reductions in the site development requirements. However, staff finds that the reduction is not intended by the Development Code to allow the additional area within the tract to be counted in the 20% open space requirement.

FINDING: Therefore, staff can not find that the proposal meets the criterion for approval.

7. Lessening the Site Development Requirements results in benefits to the site, building, and structural design or preservation of natural features that could otherwise not be achieved.

Facts and Findings:
The applicant states that due to the shape of the lot only 4 to 6 lots could be platted using the standard subdivision requirements. By using the PUD process, the applicant will be able to meet housing density requirements however, it is not possible to implement the proposed development plan without lessening the Site Development Requirements and that the PUD design benefits the site by allowing it to be developed in a feasible manner that could otherwise not be achieved. Staff concurs that the unique shape of the site warrants deviation of the Site Development Requirements. The proposed development allows building design to be compatible to the surrounding area as well as provide amenities to the development such as active open space areas.

FINDING: Therefore, staff find that the proposal meets the criterion for approval.

8. ***Applications and documents related to the request, which will require further City approval, shall be submitted to the City in the proper sequence.***

Facts and Findings:
The intent of this criterion is to ensure the proposed project submits all the proper development applications on the proper sequence. The applicant has submitted three additional applications; Flexible Setback FS2004-0017, Land Division LD2004-0030 and Tree Plan TP2004-0018. The Planning Commission will review all four applications at one public hearing. All documentation and applications have been submitted to the City of Beaverton in the proper sequence.

Therefore, staff find that by meeting the conditions of approval, the proposal meets the criterion for approval.

SUMMARY OF FINDINGS: Staff find that the request for Conditional Use approval for the PUD is not supported within the approval criteria findings for Chapter 40, Section 15.15.5.C. Staff recommend that the Commission review the proposal and deny the application based on the staff report and testimony during the public hearing.

The Committee met on December 8, 2004, and have provided findings, and recommended conditions of approval to meet the necessary technical criteria identified in Section 40.03 of the Development Code. Based on the facts and findings presented, the Director concludes that the proposal, CU2004-0021 Garden Grove Planned Unit Development, does not meet the criteria.

RECOMMENDATION

Staff recommends **DENIAL** of **CU2004-0021 (Garden Grove Planned Unit Development)** based on Code Conformance of Development Code Section 40.15.15.5.

However, if the Planning Commission finds that the Conditional Use application does meet the approval criteria staff recommends **APPROVAL** of **CU2004-0021 (Garden Grove Planned Unit Development),** subject to the applicable conditions identified in Attachment F.

FACILITIES REVIEW COMMITTEE
TECHNICAL REVIEW AND RECOMMENDATIONS
GARDEN GROVE PLANNED UNIT DEVELOPMENT
(LD2004-0030; CU2004-0021; FS2004-0017; TP2004-0018)

Section 40.03 Facilities Review Committee:
The Facilities Review Committee has conducted a technical review of the application, in accordance with the criteria contained in Section 40.03 of the Development Code. The Committee's findings and recommended conditions of approval are provided to the decision-making authority. As they will appear in the Planning Commission Decision and Order, the Facilities Review Conditions may be re-numbered and placed in different order.

The decision-making authority will determine whether the application as presented meets the Facilities Review approval criteria for the subject application and may choose to adopt, not adopt, or modify the Committee's findings, below.

The Facilities Review Committee Criteria for Approval will be reviewed for all criteria that are applicable to the four (4) submitted applications as identified below:

- **All eleven (11) criteria are applicable to the submitted Land Division application, LD2004-0030.**
- **The Conditional Use application, CU2004-0021, only is applicable to criteria #3, #4, and #11.**
- **The Flexible Setback application, FS2004-0017, only is applicable to criteria #3 and #11.**
- **The Tree Plan application, TP2004-0018, only is only is applicable to criteria #11.**

1. ***All critical facilities and services related to the development have, or can be improved to have, adequate capacity to serve the proposal at the time of its completion.***

   Chapter 90 of the Development Code defines "critical facilities" to be services that include public water, public sanitary sewer, storm water drainage and retention, transportation, and fire protection.

   The applicant states that all public improvements including water lines, water services, hydrants, sanitary sewer, storm facilities, street lights, and street signs have been or can be improved to provide adequate capacity to serve the proposed development.

Public water is served by Tualatin Valley Water District, which the applicant state there is adequate capacity to serve the project at the time of its completion. City of Beaverton administers the sanitary and storm sewer services. The City Development Services Engineer has reviewed the applicant's utility and grading plans and has provided a list of conditions in response to these plans to ensure adequate critical facilities are provided and installed. The conditions includes the requirement for storm filters with the proposed storm water system to ensure the proposed design addresses storm water quality issues. Therefore, the Committee finds that utilities will be adequate, subject to the conditions of approval requiring construction to meet City standards.

A traffic analysis was not required of this development. The trip generation of the proposed 15 lot subdivision is not great enough to meet the threshold requirement (Development Code Sec 60.55.20. Traffic Analysis). The surrounding street system will adequately accommodate the traffic from this development. SW Canby Street, currently not improved to current city standards, is classified as a Neighborhood Route and SW Multnomah Boulevard, within the city limits of the City of Portland, is classified as an Arterial Street. The site will be accessed with one public street connection to SW Canby Street and one future connection to SW Multnomah Boulevard, at the time of redevelopment of the adjoining property to the southeast. The site will have emergency access to SW Multnomah Boulevard through a private street connection. The applicant is conditioned to provide additional right of way and construction of the south half of SW Canby Street to Neighborhood Route standards for the frontage of the site. The City of Portland does not request any improvements within the right of way of SW Multnomah Boulevard.

Tualatin Valley Fire and Rescue have provided no comments to the project at this time. Further, TVF&R will need to sign off on the site development permit prior to its issuance.

Staff finds that the development meets the requirements of Development Code Section 60.55.10.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

2. ***Essential facilities and services are available or can be made available prior to occupancy of the development. In lieu of providing essential facilities and services, a specific plan strategy may be submitted that demonstrates how these facilities, services, or both will be provided within five years of occupancy.***

Chapter 90 of the Development Code defines "essential facilities" to be services that include schools, transit improvements, police protection, and

pedestrian and bicycle facilities in the public right-of-way. The applicant's plans and materials were forwarded to the Beaverton School District, the City Transportation staff, City Police Department, and Tualatin Valley Fire and Rescue.

The proposal includes curb tight sidewalks on the proposed street of SW Kelsi, but no bike lanes are proposed for this local street. The City of Beaverton Police will serve the development site. The Police Department provided no comments to the development applications.

The City Operations Department has commented on the street design with regards to the accessibility of their street sweeper to clean Kelsi Avenue. Operations will require the applicant to transition the corner west of lot # 15 and lot #11 to meet Engineering Design Standards to allow the street sweeper to maneuver the street. Operations will also require the applicant to demonstrate that there is a minimum of 21-feet turning radius at the southern end of Kelsi Avenue to allow the street sweeper to turn around.

There are no bus routes on SW Canby Street or Multnomah Boulevard. The closest bus route is in SW Garden Home Road with Tri-Met Bus Lines #45, which is approximately a quarter mile away. The Committee has not received comments from Tri-Met regarding any potential transit improvements requirements within the project's scope.

Staff find adequate essential facilities are available or can be made available to serve the site.

Therefore, the Committee find the proposal meets the criterion for approval.

3. ***The proposal is consistent with all applicable provisions of Chapter 20 (Land Uses) unless the applicable provisions are subject to an Adjustment, Planned Unit Development, or Variance which shall be already approved or considered concurrently with the subject proposal.***

Staff cite the Code Conformance Analysis chart at the end of this report, which evaluates the project as it relates the applicable Code requirements of Chapter 20 for the R-7 zone, as applicable to the above mentioned criteria. As demonstrated on the chart, the applicant is requesting approval of a Planned Unit Development through Conditional Use application to deviate from many of the Site Development requirements of Section 20.05.50 of the Development Code and a Flexible Setback application to deviate from the setback requirements of the parent parcel as part of the Planned Unit Development.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

4. ***The proposal is consistent with all applicable provisions of Chapter 60 (Special Regulations) and that all improvements, dedications, or both required by the applicable provisions of Chapter 60 (Special Regulations) are provided or can be provided in rough proportion to the identified impact(s) of the proposal.***

Development Services staff cite the Code Conformance Analysis chart at the end of this report, which evaluates the proposal as it relates the applicable Code requirements of Chapter 60, as applicable to the above mentioned criteria.

The application is conditioned to provide additional right of way and construction of the south half of SW Canby Avenue to Neighborhood Route Standards for the frontage of the site (Development Code Section 60.55.10).

The applicant has requested approval from the City Engineer and City Transportation Engineer for modifications to the standards in the Engineering Design Manual and Standard Drawings as allowed in Section 145.1.2, DESIGN MODIFICATIONS. The request is to allow curb tight sidewalks on both sides of proposed SW Kelsi Avenue and reduce the Local Street L2 Standard right of way from 52 feet to 40 feet, eliminating the planter strips and constructing curb tight sidewalks. The applicant states that the justification for the modification is to maximize the individual lot size on this constrained site.

Drawings of the modifications have been included as part of the applicant's plan set. The above-described modifications have been reviewed by the City Engineer and the City Transportation Engineer. Based on the evidence presented by the applicant, the street modifications do not meet the design modification approval criteria found in Section 145.1.2, Engineering Design Manual and Standard Drawings. At this time, no evidence has been presented by which to conclude that topography, right of way or geographical conditions or impediments are in existence that would impose an undue economic hardship on the applicant, or that a change of the standard is necessary to address a problem that would impose other undue hardships on the applicant.

The public and private streets will be posted no-parking in the sections that are 20 foot in width (L-2 Local Street Standard).

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

5. ***Adequate means are provided or can be provided to ensure continued periodic maintenance and necessary normal replacement of the following private common facilities and areas: drainage ditches, roads and other improved rights-of-way, structures, recreation facilities, landscaping, fill and excavation areas, screening and fencing, ground cover, garbage and recycling storage areas and other facilities, not subject to periodic maintenance by the City or other public agency;***

The applicant states the PUD will provide conditions, covenants, and restrictions that will ensure continued periodic maintenance for the private street, common open space areas and facilities, and street lighting. The application will comply with Chapter 60.15.10.4 Homeowner Associations and Declarations which states: When a Homeowner's Association Agreement or other restrictive covenants are to be recorded with the development; a copy of the appropriate documents shall be submitted with the final plat. The City shall review such documents to ensure that common areas are properly maintained and that other restrictions required by the City are included. By reviewing, the Homeowner Associations and Declarations staff will be assured that continued periodic maintenance and necessary normal replacement not subject to periodic maintenance by the City or other public agency will take place.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

6. ***There are safe and efficient vehicular and pedestrian circulation patterns within the boundaries of the site.***

The applicant states the project provides a safe and efficient vehicular and pedestrian circulation pattern within the boundaries of the site. Kelsi Avenue is not currently a through street; thus, not allowing vehicles to access Multnomah Boulevard directly. In addition, the project, as proposed, contains a private street (Tract "B") and an access point for emergency vehicles directly to Multnomah Boulevard. The applicant's dimensioned site plan shows 20 foot setbacks for all lots from the garage to the right-of-way. To ensure cars parking in the driveway of these lots do not cross the sidewalk, staff recommend a condition requiring a minimum setback of 18.5 feet for the garage area. The site will have safe and efficient vehicular and pedestrian circulation patterns, in conformance with Development Code Sec 60.55.25

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

7. ***The on-site vehicular and pedestrian circulation system connects to the surrounding circulation system in a safe, efficient, and direct manner.***

The site as proposed has adequate internal vehicular circulation, in conformance with Development Code Section 60.55.25, and adequate internal pedestrian circulation, in conformance with Development Code Section 60.55.25.

Therefore, the Committee find the proposal meets the criterion for approval.

8. ***Structures and public facilities and services serving the site are designed in accordance with adopted City codes and standards at a level which will provide adequate fire protection, including, but not limited to, fire flow, and protection from crime and accident, as well as protection from hazardous conditions due to inadequate, substandard or ill-designed development;***

The applicant states the project engineer will design the necessary public facilities servicing the site according to adopted City Codes and standards, as well as other service agencies. The applicant's proposal includes emergency access to Multnomah Boulevard which will allow adequate fire protection while maintaining the open space requirements for the PUD. The City's "as-built" drawings indicate that there is an adequate water supply to serve the site in case of fire. Fire hydrants will be placed at a maximum of 500-feet along the public and private streets. Further, the proposal will need to show compliance to the City's Building Code Standards prior to issuance of site development and building permits, which includes compliance with TVF&R standards.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

9. ***Grading and contouring of the site is designed to accommodate the proposed use and to mitigate adverse effect(s) on neighboring properties, public right-of-way, surface drainage, water storage facilities, and the public storm drainage system.***

The applicant states the project grading plan is designed for sanitary sewer service, water service, and storm water detention, treatment and dispersal in compliance with the current City of Beaverton standards. In addition, the applicant states that the preliminary grading and erosion control plan demonstrates a methodology for contouring the site, and constructing the street to meet current City of Beaverton standards.

The applicant has also applied for a street design modification to construct curb tight sidewalks, claiming that site constraints are present that prevent the proposal from meeting City street design standards without undue hardship. The City Engineer has reviewed the request and has denied the construction of curb tight sidewalks for Kelsi Avenue. The applicant has been granted a Street Design Modification for the northern 200-feet (approximately) of the street to allow sheet flow drainage. This modification will be in place until such time the property to the northeast develop and will be required to construct street improvements.

Further, to ensure future grading will not result in adverse impacts to the surrounding area, the Committee recommends a standard condition of approval that require detailed grading and drainage information to be provided with the Site Development Permit.

Therefore, the Committee find that by meeting the conditions of approval the criterion for approval will be met.

10. ***That access and facilities for physically handicapped people are incorporated into the site and building design, with particular attention to providing continuous, uninterrupted access routes.***

The applicant states the proposal provides sidewalks and ramps to accommodate handicap access meeting ADA standards. Conformance with applicable requirements of the Building Code, including handicap accessibility, must be demonstrated prior to issuance of Building permits. This is in conformance with Development Code Section 60.55.65.

Therefore, the Committee find the proposal meets the criterion for approval.

11. ***The proposal contains all applicable application submittal requirements as specified in Section 50.25.1 of the Development Code.***

The applicant submitted the applications on October 14, 2004 and was deemed complete on November 10, 2004. In the review of the materials during the application review, the Committee find that all applicable application submittal requirements, identified in Section 50.25.1 are contained within this proposal.

Therefore, the Committee find the proposal meets the criterion for approval.

Code Conformance Analysis
Chapter 20 Use and Site Development Requirements
R-7 Urban Standard Density Zoning District

CODE STANDARD	CODE REQUIREMENT	PROJECT PROPOSAL	MEETS CODE?
Development Code Section 20.05.15			
Use	Permitted: Detached dwellings Conditional: Planned Unit Development	The applicant proposes to create fifteen residential lots with detached units. The applicant has requested conditional use approval for a planned unit development.	Yes if a Conditional Use application is approved
Development Code Section 20.05.50			
Minimum Lot Area	7,000 square feet	Existing lot is approximately 120,661 square feet in size and the applicant proposes to create the following lot sizes with their planned unit development: Lot 1: 4,214 square feet Lot 2: 4,214 square feet Lot 3: 4,216 square feet Lot 4: 4,349 square feet Lot 5: 4,495 square feet Lot 6: 4,600 square feet Lot 7: 5,076 square feet Lot 8: 5,469 square feet Lot 9: 4,693 square feet Lot 10: 4,996 square feet Lot 11: 5,110 square feet Lot 12: 4,888 square feet Lot 13: 4,888 square feet Lot 14: 4,888 square feet Lot 15: 4,888 square feet	Yes if a Conditional Use application is approved

Minimum Yard Setbacks Front Side Rear	 20 feet 5 feet 25 feet	**PARENT PARCEL** Front: 20 Rear: 0(Applicant requests Flexible Setback approval) Side: 0 (Applicant requests Flexible Setback approval) **PROPOSED LOT SETBACKS** **Front** Lot / Bldg. / Garage Lot 1: 15 20 Lot 2: 15 20 Lot 3: 15 20 Lot 4: 15 20 Lot 5: 15 20 Lot 6: 15 20 Lot 7: 15 20 Lot 8: 15 20 Lot 9: 15 20 Lot 10: 15 20 Lot 11: 15 20 Lot 12: 15 20 Lot 13: 15 20 Lot 14: 15 20 Lot 15: 15 20 **Side** Lot / Bldg (N) / Bldg (S) / Garage Lot 1: 3 3 n/a Lot 2: 3 3 n/a Lot 3: 3 3 n/a Lot 4: 3 3 n/a Lot 5: 3 3 n/a Lot 6: 3 3 n/a Lot 7: 3 8 n/a Lot 8: 5 3 n/a Lot 9: 3 3 n/a Lot 10: 3 3 n/a Lot 11: 3 10 n/a Lot 12: 3 3 n/a Lot 13: 3 3 n/a Lot 14: 3 3 n/a Lot 15: 5 5 n/a	Yes if Conditional Use and Flexible Setback applications are approved.

		Rear Lot / Bldg. / Garage Lot 1: 15 n/a Lot 2: 15 n/a Lot 3: 15 n/a Lot 4: 15 n/a Lot 5: 15 n/a Lot 6: 15 n/a Lot 7: 15 n/a Lot 8: 20 n/a Lot 9: 20 n/a Lot 10: 25 n/a Lot 11: 15 n/a Lot 12: 15 n/a Lot 13: 15 n/a Lot 14: 15 n/a Lot 15: 15 n/a	
Minimum Corner Lot Dimensions Width Depth	 75 feet 90 feet	Lot / Width / Depth Lot 1: 49 86 Lot 2: 49 86 Lot 3: 49 86+ Lot 4: 49 88 Lot 5: 50 89 Lot 6: 52 88+ Lot 7: 58 88 Lot 8: 52 88 Lot 9: 52 94 Lot 10: 52 96 Lot 11: 54 94 Lot 12: 52 94 Lot 13: 52 94 Lot 14: 52 94 Lot 15: 52 94	Yes if a Conditional Use application is approved

Maximum Building Height	35 feet	The applicant states the buildings will not exceed the maximum building height.	Yes
Development Code Section 20.05.60			
Residential Density	Minimum: 11 Maximum: 17	The applicant proposes fifteen (15) lots within this subdivision.	Yes

Chapter 60 Off-Street Parking and Loading Requirements

CODE STANDARD	-CODE REQUIREMENT	PROJECT PROPOSAL	MEETS CODE?
Development Code Section 60.15.10			
Easements	-Provide a 6-foot PUE along front lot lines. -Provide a 3-foot utility and drainage easement along all side and rear lot lines.	6-foot PUE (Front Yard) 3-foot utility and drainage easement (rear and side yard)	Yes
Easement granted to City	15-foot PUE	15-foot easement will be provided for public utilities.	By meeting the conditions of approval the code is met.
Dedications	As applicable to City or appropriate jurisdiction for maintenance.	The extension and terminus of SW Kelsi Avenue will be dedicated to City.	Yes
Homeowner Assoc.	Copy of draft CC&R's shall be submitted with final plat.	Will submit draft CC&R's with final plat.	Yes
Development Code Section 60.15.15			
Requirements Prior to Commencement of Work	Developer shall file plans, enter into City contract, and provide required security.	Developer will provide plans, cost estimate and security.	Yes
Improvement Procedures	Shall comply with the Code and in proper sequence.	Developer will comply with the improvement procedures identified in this section as part of the site development permit.	Yes
Improvements Required	Development related impacts shall be installed at developer's expense.	Developer will provide the improvements in accordance with City requirements.	Yes
Maintenance Security	Developer shall enter into a contract with City.	Developer will provide a maintenance agreement of improvements.	Yes
Development Code Section 60.30.10			
Off Street Parking	<u>Detached</u> Minimum: 15 spaces (one per lot) Maximum: n/a	Developer proposes a minimum of two parking spaces per detached dwelling.	Yes
Development Code Section 60.35.10			
Dimensional Standards	-May be modified through approval of a PUD; except for required setbacks of parent parcel.	-The applicant requests flexible setback approval to reduce the rear and side yard setback of the parent	Yes, if the Flexible Setback application

	-Intersection standards shall be satisfied.	parcel to 10 feet and the rear yard setback to 5. The setbacks of the individual lots within this subdivision have been revised as part of the PUD. -The intersection standards are met with this proposal.	is approved.
Allowed Uses	-Uses in a PUD shall comply with the permitted and conditional use requirements of the base zoning district. -Detached and attached dwellings shall be allowed, provided density requirements are met.	-As allowed as part of a PUD, detached and attached single family residences are proposed and are to meet minimum density requirements.	Yes
Development Code Section 60.35.15			
Common Open Space	-At least 20% of site (excluding setbacks and buffers) when up to and including 10 acres in size. -Shall be maintained and conveyed.	-Project is 2.78 acres, and is providing 21.2% open space, including setbacks. -The open space area is to be maintained by the Homeowner's Association.	Yes
Development Code Section 60.45.10			
Solar Access Requirement	-At least 80% of the lots in a development shall comply with one or more of the following: Basic Requirements, Protected Solar Line Option, and Performance Option. Lots that comply / Total Lots = 80% or more -If applicable, adjustments of this Design Standard may be granted by the Director.	-No lots are oriented to the north/south dimension. The applicant is requesting 100% adjustment to the solar access requirement.	No

ANALYSIS AND FINDINGS FOR LAND DIVISION APPROVAL

Section 40.45.15.3.C lists the criteria in order to approve a Preliminary Subdivision Type II application, the decision making authority shall make findings of fact based on evidence provided by the applicant demonstrating that all the following criteria are satisfied:

1. ***The proposal satisfies the threshold requirements for a Preliminary Subdivision application.***

Facts and Findings:
The intent of this criterion is to ensure the proposed project meets the threshold listed in Section 40.45.15.3.A. The proposal meets this requirement by being consistent with threshold #1, which states that an application for Preliminary Subdivision shall be required when the following threshold applies:

"The creation of four (4) or more new lots from a lot of record in one (1) calendar year." Therefore, the application follows the Preliminary Subdivision application procedure.

The applicant proposes to create fifteen (15) new lots and two tracts, thereby meeting the threshold for a preliminary subdivision application.

Therefore, staff find that the proposal meets the criterion for approval.

2. ***All City application fees related to the application under consideration by the decision making authority have been submitted.***

Facts and Findings:
The intent of this criterion is to ensure that all fees have been paid to the City before a full review can proceed. According to city finance records, the applicant paid with a check (#18591) in the amount of $2,108.00 to the City to have the proposed project review for compliance to the Development Code. The City issued receipt number 20045148 to verify payment.

Therefore, staff find that the proposal meets the criterion for approval.

3. ***Oversized lots shall have a size and shape which will facilitate the future partitioning or subdividing of such lots in accordance with the requirements of this Code. In addition, streets, driveways, and utilities shall be sufficient to serve the proposed lots as well as the future development on oversized lots.***

Facts and Findings:
The applicant states the development will not create any oversized lots. The definition of oversized lot in the Development Code reads: *"A lot which is greater than twice the required minimum lot size allowed by the subject zoning district."* The proposed lot sizes range between 4,214 to 5,496 square feet, well below the square footage required to be considered oversized within the R-7 district. Further, the proposal was shown to meet the density requirements, of the R-7 zoning district. Therefore, staff find that the proposal meets the criterion for approval.

4. ***If phasing is requested by the applicant, the requested phasing plan can be carried out in a manner which satisfies the approval criteria and provides necessary public improvements for each phase as the project develops.***

Facts and Findings:
The applicant states that there is no phasing proposed with this development.

Therefore, staff find that the criterion is not applicable to this development.

5. ***Applications and documents related to the request, which will require further City approval, shall be submitted to the City in the proper sequence.***

Facts and Findings:
The intent of this criterion is to ensure the proposed project submits all the proper development applications on the proper sequence. The applicant has submitted three additional applications; Conditional Use Permit CU2004-0021, Tree Plan II TP2004-0018 and Flexible Setback FS2004-0017. The Planning Commission will review all four applications at one public hearing. All documentation and applications have been submitted to the City of Beaverton in the proper sequence.

Therefore, staff find that by meeting the conditions of approval, the proposal can meet the criterion.

SUMMARY OF FINDINGS: For the reasons identified above, staff find that the request for Preliminary Subdivision approval is supported within the approval criteria findings, noted above, for Chapter 40, Section 45.15.3.C of the Development Code. However, the application, as proposed, does not meet minimum lot size as required by the Site Development requirements of Chapter 20. Because this proposal does not meet the Site Development requirements without the approval of the Conditional Use permit, and staff is recommending **DENIAL** of that application, staff also recommends **DENIAL** of this application as well.

The Committee met on December 8, 2004, and have provided findings, and recommended conditions of approval to meet the necessary technical criteria identified in Section 40.03 of the Development Code. Based on the facts and findings presented, the Director concludes that the proposal, LD2004-0030 Garden Grove Planned Unit Development, does not meet the criteria for approval as required by the Development Code.

RECOMMENDATION

Staff recommends **DENIAL** of **LD2004-0030 (Garden Grove Planned Unit Development)** based on Code Conformance of Development Code Section 20.05.50 and Critreion 3 or Section 40.03.

However, if the Planning Commission finds that the Land Division application does meet the approval criteria staff recommends **APPROVAL** of **LD2004-0030 (Garden Grove Planned Unit Development),** subject to the applicable conditions identified in Attachment F.

ANALYSIS AND FINDINGS FOR TREE PLAN II USE APPROVAL

Major Issues

1. No major issues were identified with respects to the Tree Plan II application. This application is part of a larger Planned Unit Development. In order to approve the Tree Plan II application, all other associated applications need to be approved.

Section 40.90.15.2.C lists the criteria in order to approve a Final Planned Unit Development Conditional Use application, the decision making authority shall make findings of fact based on evidence provided by the applicant demonstrating that all the following criteria are satisfied:

Criterion 1: The proposal satisfies the threshold requirements for a Tree Plan Two application.

Facts and Findings:

The intent of this criterion is to ensure the proposed project meets the threshold listed in Section 40.90.15.2.A.1-3. The proposal meets this requirement by being consistent with threshold #3, which states that an application for Tree Plan II shall be required when the following threshold applies:

"Removal of five (5) or more Community Trees within a one calendar year period on properties more than one-half acre in size." Therefore, the application follows the Tree Plan II application procedure.

The applicant is requesting to remove approximately 50 total trees from the above referenced property which is approximately 2.78 acres in size. The site is currently under review for a Conditional Use Permit (CU2004-0021), Land Division (LD2004-0030) and Flexible Setback (FS2004-0017) application at this time. All four applications will be reviewed concurrently and heard at one public hearing with the decision-making authority being the Planning Commission, pursuant to Section 50.15.2 of the Development Code.

Therefore, staff find that the proposal meets the criterion for approval.

Criterion 2: All City application fees related to the application under consideration by the decision making authority have been submitted.

Facts and Findings:
The intent of this criterion is to ensure that all fees have been paid to the City before a full review can proceed. According to city finance records, the applicant paid with a check (#18591) in the amount of $460.00 to the City to have the proposed project review for compliance with the Development Code. The City issued receipt number 20045151 to verify payment.

FINDING: Therefore, staff find that the proposal meets the criterion for approval.

Criterion 3: If applicable, pruning of any tree or removal of a landscape, street, or community tree is necessary to enhance the health of the tree, grove, group of trees, or an adjacent tree or to eliminate conflicts with structures or vehicles.

Facts and Findings:

FINDING: This application is being filed in order to remove the community trees for the development of the site. The trees are located in areas where building envelopes have been established. The removal of the trees is required to eliminate any possible conflicts with the proposed structures to be located in the subdivision. The applicant has proposed to save four trees on the west property line of proposed lot #10. The applicant also proposes to save 10 trees within the boundary of Tract "C". Trees, not scheduled for removal, in proposed lot #10 and tract "C" be protected and remain after the project has been built as a condition of approval. If the trees are damaged during construction and are not able to be saved, staff will review the damaged trees and make a determination if the trees will be removed.

All other trees which are shown to remain will be condition to remain, unless the building design is such that trees will not survive the construction process.

FINDING: Therefore, staff find that the proposal meets the criterion for approval.

Criterion 4: If applicable, it is necessary to remove diseased of landscape, street, or community trees or trees weakened by age, storm, fire, or other condition.

Facts and Findings:
The applicant has not stated that the trees scheduled for removal are diseased or weakened by age, storm, fire, or other conditions. Staff has determined that this criterion is not applicable to the overall application.

FINDING: Therefore, staff find that the criteria are not applicable.

Criterion 5: If applicable, pruning of any tree or removal of a landscape, street, or community tree is necessary to observe good forestry practices according to recognized American National Standards Institute (ANSI) A300-1995 standards and International Society of Arborists (ISA) standards on the subject.

Facts and Findings:
The applicant has not stated that the trees scheduled for removal is necessary to observe good forestry practices according to recognized American National Standards Institute (ANSI) A300-1995 standards and International Society of Arborists (ISA) standards on the subject. Staff has determined that this criterion is not applicable to the overall application.

FINDING: Therefore, staff find that the criteria are not applicable.

Criterion 6: If applicable, pruning of any tree or removal of a landscape, street, or community tree is necessary to accommodate development where no reasonable alternative exists for the development at another location on the site, or where variances to setback provisions of this Code will cause other undesirable circumstances on the site or adjacent properties if the tree is saved.

Facts and Findings:
The applicant states that an analysis has been conducted determine the best possible combination to balance the need to meet minimum density requirements and at the same time preserve the trees in the best possible location. As a result, the applicant has submitted a plan where trees will be saved on Tract "C" and trees will be saved on the western property line of proposed lot #10.

Therefore, staff find that the proposal meets the criterion for approval.

Criterion 7: If applicable, removal of a landscape tree or street tree or pruning of any tree is necessary because it has become a nuisance by virtue of damage to property or improvements, either public or private, on the subject site or adjacent sites.

Facts and Findings:
The applicant has not stated that the trees scheduled for removal have become a nuisance by virtue of damage to property or improvements, either public or private, on the subject site or adjacent sites.

FINDING: Therefore, staff find that the criteria are not applicable.

Criterion 8: If applicable, removal of landscape, street, or community tree is necessary to accomplish public purposes, such as installation of public utilities, street widening, and similar needs, where no reasonable alternative exists without significantly increasing public costs or reducing safety.

Facts and Findings:

FINDING: This application is being filed in order to remove the community trees for the development of the site. The trees are located in areas where public utilities, street widening, and similar needs, where no reasonable alternative exists without significantly increasing public costs or reducing safety. The removal of the trees is required to eliminate any possible conflicts with the proposed improvements are to be located in the subdivision. The applicant has proposed to save four trees on the west property line of proposed lot #10. The applicant also proposes to save 10 trees within the boundary of Tract "C". Trees, not scheduled for removal, in proposed lot #10 and tract "C" be protected and remain after the project has been built as a condition of approval. If the trees are damaged during construction and are not able to be saved, staff will review the damaged trees and make a determination if the trees will be removed.

All other trees which are shown to remain will be condition to remain, unless the building design is such that trees will not survive the construction process.

FINDING: Therefore, staff find that the proposal meets the criterion for approval.

Criterion 9: Removal of a tree or grove shall not increase erosion or any resulting erosion shall be controlled consistent with City and Clean Water Services regulations.

Facts and Findings:
The tree plan, as proposed by the applicant, will not increase erosion on the site in the context of the overall development. All areas to be developed will utilize erosion control devices consistent with Clean Water Services.

Therefore, staff find that the proposal meets the criterion for approval.

Criterion 10: Applications and documents related to the request, which will require further City approval, shall be submitted to the City in the proper sequence.

Facts and Findings:
The intent of this criterion is to ensure the proposed project submits all the proper development applications on the proper sequence. The applicant has submitted all the required information for the Tree Plan II application. This review process is a required step to receive City approval for the applicant's proposal to build a fifteen lot Planned Unit Development while saving four trees on the west property line of proposed lot #10 and the 10 trees within the boundary of Tract "C". The applicant has submitted three additional applications; Conditional Use Permit CU2004-0021, Land Division LD2004-0030 and FS2004-0017. The Planning Commission will review all four applications at one public hearing. All documentation and applications have been submitted to the City of Beaverton in the proper sequence.

FINDING: Therefore, staff find that the proposal meets the criterion for approval.

SUMMARY OF FINDINGS: Staff find that the request for Tree Plan II approval for the PUD is supported within the approval criteria findings for Chapter 40, Section 90.15.2.C. Staff recommend that the Commission review the project in its entirety to determine if the proposal meets this criterion based on the staff report and testimony during the public hearing.

The Committee met on December 8, 2004, and have provided findings, and recommended conditions of approval to meet the necessary technical criteria identified in Section 40.03 of the Development Code. Based on the facts and findings presented, the Director concludes that the proposal, TP2004-0018 Garden Grove Tree Plan II, meets the criteria.

RECOMMENDATION

Based on the facts and findings presented, staff recommend **APPROVAL** of **TP2004-0018 (Garden Grove Planned Unit Development Tree Plan),** subject to the applicable conditions identified in Attachment F.

EXHIBIT 3

TABLE OF CONTENTS

RECEIVED
DEC 10 2004
City of Beaverton
Development Services

Summary of Proposal

The applicant is proposing development of a ~~14~~ 15-lot single-family detached dwelling unit subdivision, through the PUD process. The application package includes requests for modifications to the street standards, a tree plan and flexible setbacks for side and rear yards.

The surrounding land uses are all single-family homes on large and moderate lots, developed under the City of Portland and/or Washington County Development standards.

CITY OF BEAVERTON
Community Development Department
Development Services Division
4755 SW Griffith Drive
PO Box 4755
Beaverton, OR 97076
Tel (503) 526-2420
Fax (503) 526-3720
www.ci.beaverton.or.us

OFFICE USE ONLY

FILE #: _____
FILE NAME: _____
TYPE: _____ RECEIVED BY: _____
FEE PAID: _____ CHECK/CASH: _____
SUBMITTED: _____ LWI DESIG: _____
LAND USE DESIG: _____ NAC: _____

DEVELOPMENT APPLICATION- CONDITIONAL USE

PLEASE SELECT THE SPECIFIC TYPE OF CONDITIONAL USE FROM THE FOLLOWING LIST:

- ☐ TYPE 1 MINOR MODIFICATION OF A CONDITIONAL USE
- ☐ TYPE 2 ADMINISTRATIVE CONDITIONAL USE
- ☒ TYPE 3 PRELIMINARY PLANNED UNIT DEVELOPMENT
- ☐ TYPE 3 MAJOR MODIFICATION OF A CONDITIONAL USE
- ☐ TYPE 3 CONDITIONAL USE
- ☐ TYPE 3 FINAL PLANNED UNIT DEVELOPMENT

APPLICANT: ☐ *Use mailing address for meeting notification.*

COMPANY: Mitchell & Hardy Construction
ADDRESS: PO Box 1137
(CITY, STATE, ZIP) Lake Grove, OR 97035
PHONE: 503-358-6973 FAX: 503-697-4212
SIGNATURE: [signature] CONTACT: Jeff Mitchell
(Original Signature Required)

APPLICANT'S REPRESENTATIVE:

COMPANY: CES-NW
ADDRESS: 15573 SW Bangy Rd., #300
(CITY, STATE, ZIP) Lake Oswego, OR 97035
PHONE: 503-968-6655 FAX: 503-968-2595
SIGNATURE: _____ **CONTACT:** Kirsten Van Loo
(Original Signature Required)

PROPERTY OWNER(S): ☐ *Attach separate sheet if needed.*

COMPANY: Miles Edwards
ADDRESS: 9705 SW Arborcrest Way
(CITY, STATE, ZIP) Portland, OR 97225
PHONE: _____ FAX: _____
SIGNATURE: Miles Edwards **CONTACT:** _____
(Original Signature Required)

PROPERTY INFORMATION (REQUIRED)

SITE ADDRESS: None

ASSESSOR'S MAP & TAX LOT #	LOT SIZE	ZONING DISTRICT
1S124DA - 301	+/- 2.8 Ac	R-7

AREA TO BE DEVELOPED (s.f.): +/-120,661
EXISTING USE OF SITE: Vacant
PROPOSED DEVELOPMENT ACTION: +/-14-Lot Planned Unit Development
PRE-APPLICATION DATE: 5/14/03;

CITY OF BEAVERTON
Community Development Department
Development Services Division
4755 SW Griffith Drive
PO Box 4755
Beaverton, OR. 97076
Tel: (503) 526-2420
Fax: (503) 526-3720
www.ci beaverton or.us

CONDITIONAL USE SUBMITTAL CHECKLIST

WRITTEN STATEMENT REQUIREMENTS- REQUIRED FOR ALL CONDITIONAL USE APPLICATIONS

☑ **A. APPLICATION FORM**. Provide **one (1) completed** application form with original signature(s).

☑ **B. CHECKLIST**. Provide **one (1) completed** copy of this five (5) page checklist.

☑ **C. WRITTEN STATEMENT.** Submit **three (3) copies** of a detailed description of the proposed project including, but not limited to, the changes to the site, structure, landscaping, parking, and land use. In the written statement, please:

- ☑ Address all applicable provisions of Chapter 20 (Land Uses)
- ☑ Address all applicable provisions of Chapter 60 (Special Regulations)
- ☑ Provide individual findings specifically addressing how and why the proposal satisfies each of the criterion within the appropriate Approval Criteria Section of Chapter 40 of the City's *Development Code* (ORD 2050), attached.
- ☑ Provide the hours of operation, total number of employees, and maximum number of employees per shift. If more than one type of operation exists or is proposed for the project site, please specify the information requested above for each use.

☑ **D. FEES,** as established by the City Council. Make checks payable to the City of Beaverton.

☑ **E. SITE ANALYSIS INFORMATION.**

- ☐ Proposed parking modification:_____sq. ft.

  Proposed number of parking spaces:_____

  Proposed use: _____

  Parking requirement:_____

- ☐ Existing landscaped area: _____sq. ft.

  Percentage of site:_____%

  Proposed landscape modification:_____sq. ft.

  Percentage of site:_____%

- ☐ Existing parking area: _____sq. ft.

  Existing number of parking spaces:_____

- ☐ Existing building height:_____ft.

  Proposed building height:_____ft

- ☐ Existing building area: _____sq. ft.

  Proposed building modification:_____sq. ft.

F. **CLEAN WATER SERVICES (CWS) DOCUMENTATION.** Pursuant to Section 50.25.1.F of the City's *Development Code* requires that all development proposals provide written documentation from Clean Water Services (formerly Unified Sewerage Agency) stating that water quality will not be adversely affected by the subject proposal. Therefore, the City recommends that you contact CWS in order to obtain the required documentation. For more information, please contact Heidi Berg, Site Assessment Coordinator, at (503) 846-3613 or bergh@usa-cleanwater.org.

G. **PRE-APPLICATION CONFERENCE NOTES.** ***(REQUIRED FOR TYPE 2, 3, & 4 APPLICATIONS ONLY)***
Provide a copy of the pre-application conference summary as required by the City's *Development Code Section* 50.25.1.E. The Pre-Application Conference must be held within the one (1) year prior to the submission date of the proposed project application.

H. **NEIGHBORHOOD REVIEW MEETING.** ***(REQUIRED FOR TYPE 3 APPLICATIONS ONLY)***
Provide the following information as required by the City's *Development Code Section* 50.30. The Neighborhood Review Meeting must be held within the six (6) months prior to the submission date of the proposed project application.

1. A copy of the meeting notice mailed to surrounding property owners and the NAC Representative
2. A copy of the mailing list used to mail out the meeting notice.
3. A written statement representative of the on-site posting notice.
4. Affidavits of mailing and posting
5. Representative copies of written materials and plans presented at the Neighborhood Review Meeting.
6. Meeting minutes that include date, time and location, as well as, oral and written comments received
7. Meeting sign-in sheet that includes names and address of attendees.
8. Documentation verifying that the meeting minutes and sign-in sheets have been provided to the NAC representative.

I. **TRAFFIC GENERATION.** Provide documentation showing any projected or actual increase in vehicle trips per day to and from the site. Either the Institute of Transportation Engineers (ITE) Trip Generation manual or an evaluation by a traffic engineer or civil engineer licensed by the State of Oregon may be used for this determination. ***Note: a traffic study may be required as part of the application submittal when deemed necessary by the Planning Director. The determination is made at the time of a Pre-Application Conference.***

J. **OTHER REQUIREMENTS.** Provide documentation showing that the project proposed is permitted by, or satisfies the requirements of, other agencies and/or jurisdictions OR submit a schedule that details the forecasted submission and approval timelines for permits/applications to the respective agencies and/or jurisdictions.

I. **PLANNED UNIT DEVELOPMENT DESCRIPTION.**
(REQUIRED FOR PLANNED UNIT DEVELOPMENT APPLICATIONS ONLY)
Submit a detailed description of the proposed planned unit development.
Provide the following information:

1. The intent of the project.
2. The factors which make the project desirable to the general public and to surrounding areas
3. The features and details of the project development.
4. The schedule of timing and phasing (if applicable) of the development program.
5. Any other material which the applicant believes to be relative to the use

PLANS & GRAPHIC REQUIREMENTS- *REQUIRED FOR ALL CONDITIONAL USE APPLICATIONS*

All plans, except architectural elevations, shall be presented at a **minimum of 1" = 20' engineering scale** and on a **maximum sheet size of 24" x 36"**. Architectural elevations may be presented at an architectural scale. **A total of three (3) copies of each plan shall be submitted, unless otherwise noted.**

Each of the following plans and drawings shall be submitted on **separate sheets**. If the size of the project requires the use of match line sets, each set of match line sets must include a sheet (at a scale to fit a 24" x 36" sheet) depicting the entire site, including match lines, as a cover sheet.

Include all of the following information:

☑ **A. EXISTING CONDITIONS PLAN:**

- ☐ 1. North arrow, scale and date of plan.
- ☐ 2. Vicinity map.
- ☐ 3. The entire lot(s), including area and property lines dimensioned.
- ☐ 4. Points of existing access, interior streets, driveways, and parking areas.
- ☐ 5. Location of all existing buildings and structures, including refuse storage locations, pedestrian/bike paths, swimming pools, tennis courts, tot lots, and lighting.
- ☐ 6. Existing right-of-way and improvements.
- ☐ 7. Dimension from centerline to edge of existing right-of-way.
- ☐ 8. Existing topographical information, showing 2 ft. contours.
- ☐ 9. Surrounding development and conditions within 100 ft. of the property such as zoning, land uses, buildings, driveways, and trees.
- ☐ 10. Location of existing public and private utilities, easements, and 100-year floodplain.
- ☐ 11. Natural Resource Areas, Significant trees, and Historic trees, as established by the City of Beaverton's inventories.
- ☐ 12. Sensitive areas, as defined by Clean Water Services (CWS) standards.
- ☐ 13. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out croppings, and streams. *Wetlands must be professionally delineated.*
- ☐ 14. Existing trees 6" in dbh (diameter at breast height) or larger. Indicate genus, species and size. Dbh is measured at 54" above grade.

☑ **B. DIMENSIONED SITE PLAN:**

- ☐ 1. North arrow, scale and date of plan.
- ☐ 2. The entire lot(s), including area, property lines dimensioned and labeled "front," "side," and "rear."
- ☐ 3. Points of access, interior streets, driveways, and parking areas.
- ☐ 4. Location of buildings and structures, including refuse storage locations, pedestrian/bike paths, swimming pools, tennis courts, and tot lots.
- ☐ 5. Proposed right-of-way, dedications and improvements.
- ☐ 6. Dimension from centerline to edge of proposed right-of-way.
- ☐ 7. Dimensions of all improvements, including setbacks, parking spaces, driveways, and distance between buildings.
- ☐ 8. Location of storm water quality/detention facilities.
- ☐ 9. Boundaries of development phases, if applicable.
- ☐ 10. Natural Resource Areas, Significant trees, and Historic trees, as established by the City of Beaverton's inventories.
- ☐ 11. Sensitive areas, as defined by CWS standards.
- ☐ 12. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out-croppings, and streams. *Wetlands must be professionally delineated.*

☐ **C. ARCHITECTURAL ELEVATIONS:** Provide drawings that depict the character of the proposed building(s) and structure(s) (these include buildings, retaining walls, refuse storage facilities, play structures, fences and the like). These drawing should include dimensions of the building(s) and structure(s) and indicate the materials, colors, and textures proposed for the structures.

IN PROCESS

PLANS & GRAPHIC REQUIREMENTS-The following plans, D through H, may be required to be part of the application submittal when deemed necessary by the Planning Director. If a Pre-Application Conference has been completed, the determination is made at that time.

bmit a total of three (3) sets of plans

☒ **D. PLANNED UNIT DEVELOPMENT PLAN:**

- ☑ 1. North arrow, scale and date of plan.
- ☑ 2. The entire lot(s), including area, property lines dimensioned.
- ☑ 3. Specific location of proposed circulation for pedestrians and vehicles, including points of access, interior streets, driveways, loading areas, transit lines, bicycle facilities and parking areas.
- ☑ 4. Specific location of proposed buildings and other structures, indicating design character and density.
- ☑ 5. Specific location of proposed right-of-way, dedications and improvements.
- ☑ 6. Boundaries of development phases, if applicable.
- ☑ 7. Proposed vegetative character of site including the location of Natural Resource Areas, Significant Trees, and Historic Trees as established by the City of Beaverton's inventories.
- ☑ 8. Location of Sensitive areas, as defined by the Unified Sewerage Agency standards, including streams, riparian areas, and wetlands.
- ☑ 9. Location of rock out-croppings and upland wooded areas.
- ☑ 10. Specific location of proposed storm water quality facilities, detention facilities, or both.
- ☑ 11. Specific location of proposed public uses, including schools, parks, playgrounds, and other public open spaces.
- ☑ 12. Specific location of proposed common open spaces, schematic massing of buffering, screening, and landscape featuring.

☒ **E. GRADING PLAN:**

- ☑ 1. North arrow, scale and date of plan.
- ☑ 2. The entire lot(s).
- ☑ 3. Points of access, interior streets, driveways, and parking areas.
- ☑ 4. Location of buildings and structures, including refuse storage locations, pedestrian/bike paths, swimming pools, tennis courts, and tot lots.
- ☑ 5. Proposed rights-of-way, dedications and improvements.
- ☑ 6. Dimension from centerline to edge of proposed right-of-way.
- ☑ 7. Existing and proposed topographical information, showing 2 ft. contours and appropriate spot elevations for features such as walls, retaining walls (top and bottom elevations), catch basins, stairs, sidewalks, and parking areas.
- ☑ 8. Location of 100 year flood plain.
- ☑ 9. Location of storm water quality/detention facilities.
- ☑ 10. Boundaries of development phases, if applicable.
- ☑ 11. Natural Resource Areas, Significant trees, and Historic trees, as established by the City of Beaverton's inventories.
- ☑ 12. Sensitive areas, as defined by the CWS standards.
- ☑ 13. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out-croppings, and streams. *Wetlands must be professionally delineated.*
- ☐ 14. Existing trees 6" dbh or larger. Indicate which trees are proposed to be saved and which are proposed to be removed.

☒ **F. LIGHTING PLAN:** IN PROCESS

- ☐ 1. Location of all existing and proposed exterior lighting, including those mounted on poles, walls, bollards and the ground.
- ☐ 2. Type, style, height, and the number of fixtures per light.
- ☐ 3. Wattage per fixture and lamp type, such as sodium, mercury, and halide.
- ☐ 4. 8 ½" x 11" manufacturer's illustrations and specifications (cut sheets) of all proposed lighting poles and fixtures.
- ☐ 5. For all exterior lighting, indicate the area and pattern of illumination, via the use of an isogrid or isoline system, depicting the emitted ½ foot candlepower measurement.

☒ **G. UTILITY PLAN:**

- ☐ 1. North arrow, scale and date of plan.
- ☐ 2. The entire lot(s).
- ☐ 3. Points of access, interior streets, driveways, and parking areas.
- ☐ 4. Location of buildings and structures, including refuse storage locations, pedestrian/bike paths, swimming pools, tennis courts, and tot lots.
- ☐ 5. Proposed right-of-way, dedications and improvements.
- ☐ 6. Proposed topographical information, showing 2 ft. contours.
- ☐ 7. Location of 100 year flood plain.
- ☐ 8. Location of existing and proposed public and private utilities, easements, surface water drainage patterns, and storm water quality/detention facility.
- ☐ 9. Boundaries of development phases, if applicable.
- ☐ 10. Natural Resource Areas, Significant trees, and Historic trees, as established by the City of Beaverton's inventories.
- ☐ 11. Sensitive areas, as defined by the CWS standards.
- ☐ 12. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock outcroppings, and streams. *Wetlands must be professionally delineated.*

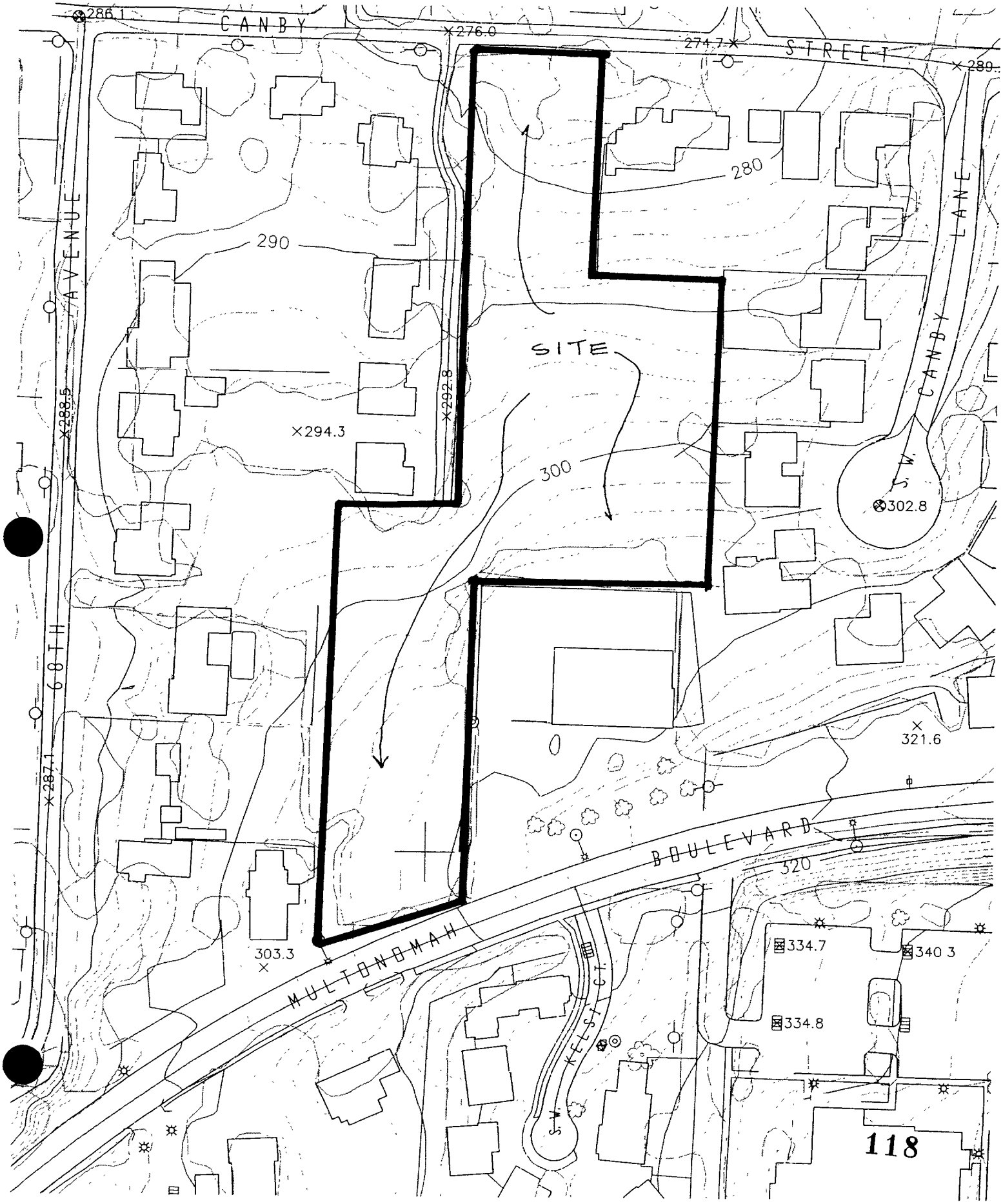
☐ **H. LANDSCAPE PLAN:** – IN PROCESS

- ☐ 1. North arrow, scale and date of plan.
- ☐ 2. The entire lot(s).
- ☐ 3. Points of access, interior streets, driveways, and parking areas.
- ☐ 4. Location of buildings and structures, including refuse storage locations, pedestrian/bike paths, swimming pools, tennis courts, and tot lots.
- ☐ 5. Proposed right-of-way, dedications and improvements.
- ☐ 6. Boundaries of development phases, if applicable.
- ☐ 7. Natural Resource Areas, Significant trees, and Historic trees, as established by the City of Beaverton's inventories.
- ☐ 8. Sensitive areas, as defined by the CWS standards.
- ☐ 9. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock outcroppings, and streams. *Wetlands must be professionally delineated.*
- ☐ 10. Existing trees 6" dbh or larger proposed to be saved. Include genus, species, and size.
- ☐ 11. The location and design of proposed landscaped areas, indicating all plant materials, including genus, species, common name, plant sizes, and spacing.
- ☐ 12. List of plant materials, including genus, species, common name, size, quantity, spacing and method of planting.
- ☐ 13. Other pertinent landscape features, including walls, retaining walls, berms, fences, and fountains.
- ☐ 14. Proposed location of light poles, bollards and other exterior illumination.
- ☐ 15. A note on the plan indicating that an irrigation system will be installed to maintain the landscape materials.

Note: Complete sets of plans reduced to 8 ½"x11" (11"x17" are not acceptable) will be required at the time the application is deemed complete.

I have provided all the items required by this five (5) page submittal checklist. I understand that any missing information, omissions or both may result in the application being deemed incomplete, which may lengthen the time required to process the application.

Kirsten Wilson	503-468-6655
nt Name	**Telephone Number**
Kirsten Wilson	30 July 2004
Signature	**Date**


CANBY
STREET
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280
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SITE
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CANBY
LANE
68TH
AVENUE
287.1
321.6
BOULEVARD
320
MULTNOMAH
303.3
334.7
340 3
334.8
KELSI CT.

PACIFIC NORTHWEST TITLE
of Oregon, Inc.

PACIFIC NORTHWEST TITLE
TRI-COUNTY
9020 SW Washington Sq. Rd., Suite 220
Tigard, OR 97223
Title: 503-671-0505 Fax: 503-643-3746
Escrow: (503) 350-5005 Fax: (503) 684-1005
Visit us at: www.pnwtor.com

PRELIMINARY COMMITMENT FOR TITLE INSURANCE

July 30, 2004

Order Number: 04247948-W

SUPPLEMENTAL REPORT

Pacific Northwest Title of Oregon, Inc.
5335 SW Meadows Rd., #144
Lake Oswego, OR 97035

Attention: Wyn L. Hendricks
Telephone: (503) 350-5005

Reference: Edwards/Mitchell & Hardy Construction Company, Inc.
Customer Reference: 4247948

	Amount	Premium
ALTA Owner's Policy (1992)	$ 554,000.00*	$ 1,549.00
Government Service Charge		$ 50.00
City Lien Search – City of Beaverton		$ 25.00

***REAL MARKET VALUE**

This is a preliminary billing only; a consolidated statement of all charges, credits, and advances, if any in connection with this order will be provided at closing.

Pacific Northwest Title is prepared to issue on request and on recording of the appropriate documents, a policy or policies as applied for, with coverages as indicated, based on this preliminary commitment that as of July 20, 2004 at 5:00 p.m. title of the property described herein is vested in:

MILES J. EDWARDS

Subject only to the exceptions shown herein and to the terms, conditions and exceptions contained in the policy form. This commitment is preliminary to the issuance of a policy of title insurance and shall become null and void unless a policy is issued, and the full premium paid.

Description:

See Exhibit A Attached hereto and made a part hereof

SCHEDULE B

GENERAL EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.

2. Any facts, rights, interest, easements or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.

3. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments or any other facts which a correct survey would disclose, and which are not shown by the public records.

5. Statutory liens or other liens or encumbrances, or claims thereof, which are not shown by the public records.

SPECIAL EXCEPTIONS:

6. The herein described premises are within the boundaries of and subject to the statutory powers, including the power of assessment, of Clean Water Services.

7. City liens, if any, of the City of Beaverton. We find none as of January 27, 2004.

8. Rights of the public in and to any portion of the herein described premises lying within the boundaries of Canby Street or Multnomah Boulevard.

9. Easement, including the terms and provisions thereof:

For	:	Sewer
Granted to	:	Gander Ridge Sanitary District, a municipal corporation
Recorded	:	May 5, 1965
Book	:	551
Page	:	390
Affects	:	Location cannot be determined

10. Easement, including the terms and provisions thereof:

For	:	Anchors and guy wires
Granted to	:	Portland General Electric Company, an Oregon corporation
Recorded	:	November 7, 1974
Book	:	999
Page	:	752
Affects	:	The Southwest portion

NOTE: We find no judgments or Federal Tax Liens against MITCHELL & HARDY CONSTRUCTION COMPANY, INC., an Oregon corporation.

NOTE: Taxes paid in full for 2003-2004:

Levied Amount	:	$3,195.95
Account No.	:	1S124DA-00301
Levy Code	:	051.75
Key No.	:	R218972

SCHEDULE B – CONTINUED

NOTE: Washington County Ordinance No. 193, recorded May 13, 1977 in Washington County, Oregon, imposes a tax of $1.00 per $1,000.00 or fraction thereof on the transfer of real property located within Washington County.

If you have any questions regarding this report or your escrow closing please contact Karen L. Fabio at (503) 350-5075, located at 7417 SW Beav-Hillsdale Hwy., Suite 300 Portland, OR 97225.
Email address: karenfa@pnwtor.com

PACIFIC NORTHWEST TITLE OF OREGON, INC.

By _____
Barbara Blum
Title Officer
Assistant Vice President

BKB:mlj

cc: Miles J. Edwards
cc: Mitchell & Hardy Construction Company, Inc. (Enclosure)
cc: Oregon Realty Company
Attn: Lloyd Pruitt

Exhibit A

All that portion of Lot No. 2, GARDEN HOME, in the County of Washington and State of Oregon, lying North of County Road No. 1761;

EXCEPT tract conveyed to Chester Stinnett and Ellen Stinnett, husband and wife, by deed dated May 19, 1942 and recorded May 28, 1942, in Deed Book 208, page 335, conveying property described as follows:

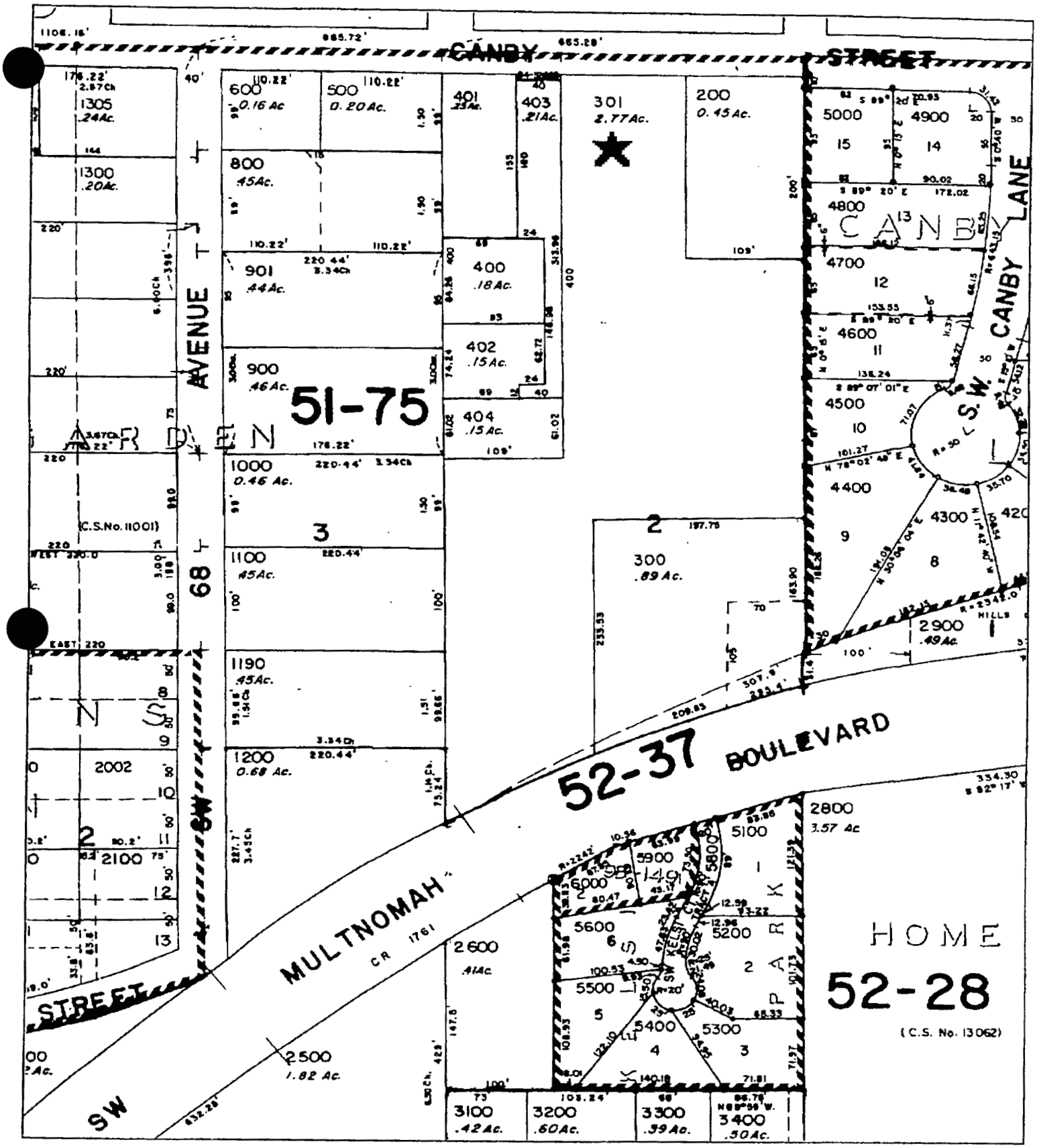
BEGINNING at the Northeast corner of Lot 2, GARDEN HOME, said point being in the center of County Road #856; thence South along the East line of Lot 2, 200 feet; thence West parallel to the North line of Lot 2, 109 feet; thence North parallel with the East line of Lot 2, 200 feet to the center of County Road #856; thence East 109 feet to the point of beginning;

AND ALSO EXCEPT tract conveyed to George Jones and Winified Jones, husband and wife, by deed dated May 19, 1942, and recorded December 11, 1945 in Deed Book 252, page 575, conveying property described as follows:

BEGINNING at the Northwest corner of Lot 2, GARDEN HOME, said point being in the center of County Road #856; thence South along the West line of Lot 2, 400 feet; thence East parallel to the North line of Lot 2, 109 feet; thence North parallel with the West line of Lot 2, 400 feet to the center of County Road #856; thence West 109 feet to the point of beginning.

FURTHER EXCEPTING a parcel of land situate in the Southeast one-quarter of Section 24, Township 1 South, Range 1 West, Willamette Meridian, Washington County, Oregon, and being more particularly descried as follows:

BEGINNING at the Southeast corner of that tract of land conveyed to the Bank of California, N.A. and James C. Dezendorf and recorded in Book 725, page 578, Washington County Deed Records; thence, along the North right of way line of Southwest Multnomah Boulevard along the arc of a 1482.50 foot radius curve to the left, through a central angle of 8°06'34" (chord bears South 70°51'08" West, 209.65 feet) an arc distance of 209.83 feet; thence North 0°15'00" East 233.53 feet; thence, South 89°45'00" East, 197 75 feet to a point on the West line of the plat of "Canby Lane", a duly recorded subdivision in Washington County, Oregon; thence South 0°15'00" West, along the West line of said "Canby Lane" and the East line of said Bank of California tract, 163.90 feet to the true point of beginning.



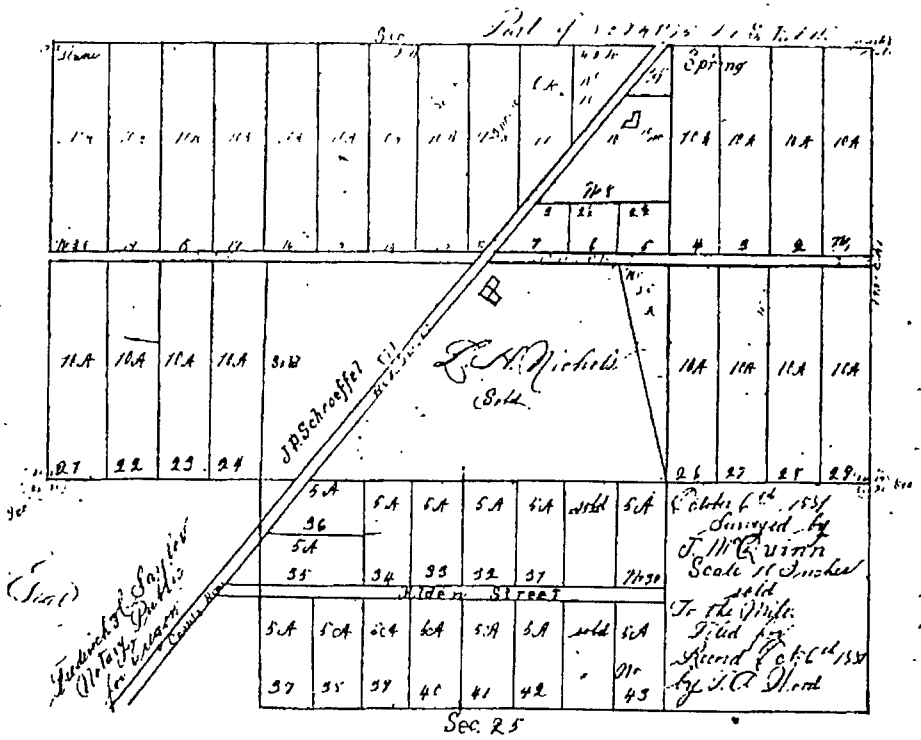
THIS MAP IS FURNISHED AS A CONVENIENCE BY PACIFIC NORTHWEST TITLE

This map is not a survey and does not show the location of any improvements.
The company assumes no liability for errors therein.

MAP # 1S124DA 00301

Records of Deeds Q Page 332

Map of Garden Home
Washington County Oregon
Recorded Octobr [illegible] page



[illegible] ... of Washington County ... of Oregon ... Lots 12, 13 ... [illegible] ... Nichols Street Except Lots 33 and 34 ... [illegible] ... with North and South line at right angles ... [illegible] ... said Street being S.E. line as shown on Map. Lot 12 ... [illegible] ... Commencing at the ... of Nichols Street and at center quarter S. of the S.E. of Sec. 24 ... [illegible] ... from the East line of said Section Thence North ... Rods Thence East 26 Rods Thence South to Center of ... Street Thence along center of said Street to center of ... Street Thence West to place of beginning 25 Contains five acres more or less ... line of the S.E.¼ of the S.E.¼ ... East Line. Runs 26 Rods ... in a South ... direction

125

Sec 23 is 40 feet wide and is named as Alder Street and is one half mile long. The Street laid out as per map. Running one fourth of a mile North and adjoining with the S. line of Sec 24 is 40 feet wide and is one mile long and is named Walnut Street as shown in Map. The Street Running from N.E. to S.W. is 10 feet wide and one fourth of a mile long and is named Vine Street. said Streets are hereby dedicated as public highways. And the said Streets and the said lots fronting thereon are included and constitute all of what I hereby name and is hereby designated as "Garden Home".

In Witness whereof I have hereunto set my hand and seal this 6th day of October A.D. 1887.

Signed sealed in presence of:
Frederick F. Saylor
Julius Gatland

J. A. Wood (Seal)

State of Oregon
County of Multnomah } ss

This Certifies that on this 6th day of October 1887 before me the Undersigned a Notary Public in and for the said County and State personally appeared the within named J. A. Wood who is known to me to be the identical person described in and who executed and acknowledged to me that he did so voluntarily for the uses and purposes therein mentioned. In Testimony Whereof I have hereunto set my hand and affixed my seal the day and year last above written.

(Seal)

Frederick F. Saylor
Notary Public for Oregon

Filed for Record
Oct 7 1887
A. N. Leadling
County Clerk
By J. W. Morgan Deputy

8802

SEWER EASEMENT

The Grantor(s) M. L. EDWARDS and Margaret Edwards, Husband and Wife,

of Santa Ana, California,

for and in consideration of $1.00 and other valuable considerations paid in hand, do hereby grant to the Cander Ridge Sanitary District, a municipal corporation, situated in Washington County, Oregon.

An easement and right of way for the construction, operation and maintenance of sewer pipes and a sewer line, through, under and across Tax Lot 300 (Part of Lot 2, Garden Home), Sec. 2DA T1S, R1W, WM.

A 15 ft. wide temporary easement for construction purposes along the W. line of said tract and parallel thereto from the S. line of Canby Street extending 195 ft. S. thereof; also a permanent easement 10 ft. wide being the Westerly 10 ft. of the above described temporary easement, all located in Washington County, Oregon.

It is understood and agreed that no building shall be erected upon said easement premises without the written consent of the Cander Ridge Sanitary District and that the said Sanitary District shall replace, as near as practicable, the surface of said easement premises after construction and maintenance work on said sewer.

This instrument does not grant or convey unto the Cander Ridge Sanitary District any right or title to the surface of the soil along the route of said sewer except for the purpose of laying down, inspecting, maintaining and replacing the same.

Said easement and right of way is to be used for the purpose of constructing, maintaining and operating said sewer line as the Grantee may desire for as long as said sewer line may be required as part of the Cander Ridge Sanitary District sanitary sewer system.

In witness whereof, we have hereunto set our hand and seal on this 5th day of April, 1965

L.S. M. L. Edwards

L.S. Margaret Edwards

State of ~~Oregon~~ California
County of ~~Washington~~ Orange } ss.

Be it remembered that on this 28th day of April 1965 before me, the undersigned, a Notary Public in and for the said County and State, personally appeared the within named M. L. EDWARDS and Margaret Edwards

to me known to be the identical individuals described in and who executed the within instrument, and acknowledged to me that they executed the same freely and voluntarily for the uses and purposes therein expressed.

In testimony Whereof, I have hereunto set my hand and affixed my Notarial Seal this the day and year last above written.

Notary Public for Oregon = California
My Commission Expires MANLANE, CO. KOB
My Commission Expires Sept. 23, 1965

Filed for record May 5 1965 at 9:00 A.M.
ROGER THOMSEN, Director of Records & Elections
By [illegible] Deputy

BOOK 551 PAGE 390

8602
MAY 5 1965

126

7767

ANCHOR EASEMENT

KNOW ALL MEN BY THESE PRESENTS, That THE BANK OF CALIFORNIA N.A. and JAMES DEZENDORF, Trustees (hereinafter called "the Grantors" whether one or more than one), for and in consideration of the payment of the sum of Fifty and no/100ths Dollars ($50.00), the receipt of which is hereby acknowledged, do hereby grant, sell and convey to Portland General Electric Company, an Oregon Corporation, hereinafter called the Grantee, its successors and assigns, perpetual easement over, under, upon and across the following described parcel of land situated in Washington County, State of Oregon, being a strip of land six (6) feet in width extending three (3) feet on each side of a center line more particularly described as follows:

Beginning at a point in the northerly line S. W. Multnomah Boulevard, Section 24, Township 1 South, Range 1 West, Willamette Meridian, said point being East 3 feet from the West Line of Lot 2, Garden Home running thence northerly 30 feet.

Said easement shall be for the perpetual right to install, maintain, extend and locate anchors and guy wires over, under, upon and across the above described land of the Grantors to support electric power transmission line structures, poles, and towers.

The Grantors hereby acknowledge that the purchase price named herein is accepted by the Grantors as full compensation for all damages incidental to the exercise of said easement, namely for guys and anchors extending over, under, upon and across the land of the Grantors.

If the Grantee, its successors and assigns shall fail to use said easement for the purpose above mentioned for a continuous period of five years after the construction of said power transmission facilities, then and in that event, this easement shall terminate and all rights and privileges granted hereunder shall revert to the Grantors, their heirs and assigns.

The Grantors hereby warrant that they are possessed of a marketable title to the property covered by this easement and have the right to grant the same.

The Grantors for themselves and their heirs and assigns, covenant to and with the Grantee, its successors and assigns, that the Grantee, its successors and assigns shall peaceably enjoy the rights and privileges herein granted.

IN WITNESS WHEREOF, the Grantors have caused this easement to be executed this 20th day of March 1974.

THE BANK OF CALIFORNIA, N. A.,
TRUSTEE
By G. H. Johnson (SEAL)
Trust Officer
(SEAL)
(SEAL)
Trustee
(SEAL)

STATE OF OREGON
County of Multnomah } ss.

On this 20 day of March 1974, before me, the undersigned, Notary Public in and for said County and State, personally appeared G. H. Johnson

to me known to be the individuals described in the foregoing instrument and who executed the foregoing instrument, and acknowledged that they executed the same freely and voluntarily.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my notarial seal this the day and year in this instrument first written.

Sandra L. Sorkki
Notary Public for Oregon
My commission expires

SANDRA L. SORKKI
NOTARY PUBLIC FOR OREGON
My Commission Expires March 1, 1975

INDEXED
Filed for record ... P.M.
ROGER THOMPSON, Director of Records & Elections
By

999 752

127

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CES|NW

Memorandum

TO: **John Osterberg, Sr. Planner @ City of Beaverton**

FROM: Kirsten Van Loo KVL

SUBJECT: Garden Grove PUD
CU 2004-0021
CESINC 1667

RECEIVED
FEB 14 2005
COMMUNITY DEVELOP DEPT.

DATE: February 14, 2005

John:

Thanks for the copy of the staff report memo on the referenced file. Please use this memo as notice to officially withdraw the application for the "Flexible Setbacks" on the parent parcel setbacks. The Flexible setback application is not necessary for approval of the current proposed preliminary plat.

As I discussed with you, we will be asking for specific setback approvals on the proposed lots, as delineated on the attached list. I would appreciate your presenting this list to the Planning Commission with your concurrence so they know that staff supports the proposed lot configurations.

Garden Grove Lot Analysis
LD-2004-0030

Lot No.	Lot Area (Sq. Ft.)	Front Setback to House	Front Setback to Garage	North Side Setback	South Side Setback	Rear Setback
1	3,741	15'	18.5'	3'	3'	15'
2	3,732	15'	18.5'	3'	3'	15'
3	3,724	15'	18.5'	3'	3'	15'
4	3,808	15'	18.5'	3'	3'	15'
5	3,883	15'	18.5'	3'	3'	15'
6	3,854	15'	18.5'	3'	3'	15'
7	3,835	15'	18.5'	3'	3'	15'
8	5,096	15'	18.5'	5'	3'	20'
9	4,124	15'	18.5'	3'	3'	20'
10	4,404	15'	18.5'	3'	3'	20'
11	5,993	15'	18.5'	3'	20'	15'
12	4,361	15'	18.5'	3'	3'	15'
13	4,272	15'	18.5'	3'	3'	15'
14	4,272	15'	18.5'	3'	3'	15'
15	4,450	15'	18.5'	5'	3'	15'

CASE FILE # LD 2004-0030

DRAFT

DECLARATION OF PROTECTIVE COVENANTS, CONDITIONS AND RESTRICTIONS AFFECTING GARDEN GROVE PUD

WHEREAS, Mitchell & Hardy Construction Co., Inc. is the owner of certain real Property situated in Washington County.

WHEREAS, Declarant desires to declare of public record, certain protective covenants, conditions and restrictions upon ownership of Property.

NOW, THEREFORE, in consideration of the forgoing, the Declarant does hereby declare that the following protective covenants, conditions and restrictions:

1. Shall become and are hereby made a part of all conveyances of the Property and any portion thereof.
2. Shall by reference become part of any conveyances of the Property or any part thereof, shall run with the Property, shall be binding on all parties having or acquiring any right, title or interest therein and shall apply thereto as fully and with the same effect as if set forth in full therein; and
3. Shall and do hereby replace and cause to be without any further effect the First Declaration.

SECTION I
PROPERTY SUBJECT TO THESE COVENANTS

1.01 Declaration of Covenants. Declarant hereby declares that the Property is held and shall be held, conveyed, hypothecated, encumbered, used, occupied and improved subject to these covenants.

SECTION II
OWNERS' ASSOCIATION

2.01 Organization. The Declarant shall organize an association of all the Owners of Lots. Such association, its successors and assigns, shall be organized under the name Garden Grove Homeowners Association or a name similar hereto and shall have property, powers and obligations as set forth in these covenants for the benefit of the Properties.

2.02 Membership. Every person or entity who is a record owner of a fee or undivided fee interest in any Lot. The foregoing is not intended to include persons or entities who hold an interest merely as security for the performance of an obligation. Membership shall be appurtenant to and may not be separated from ownership of any Lot, which is subject to assessment by the Association. Ownership of such Lot shall be sole qualification for membership.

2.03 Control of Affairs of Association. On the date that is not later than one hundred twenty (120) days after Lots representing seventy-five percent (75%) of the votes of the Members have been conveyed, Declarant shall call a meeting and at such meeting shall turn over administrative responsibility to the Association in accordance with applicable statutes.

SECTION III
COVENANT FOR MAINTENACE ASSESSMENTS

3.01 Creation of the Lien and Personal Obligation of Assessments. The Declarant hereby covenants for the Property, that each Owner and each vendee of any Lot, whether or not it shall be so expressed in any deed or other conveyance or agreement for conveyance, is deemed to covenant and agree to pay to the Association (i) regular annual or other periodic assessments or charges as established by the Association and (ii) special assessments for capital improvements, such assessments to be fixed, established and collected from time to time as hereinafter provided. The regular and special assessments, together with such interest thereon and costs of collection thereof, as hereinafter provided, shall be a charge on the Lot and shall be a continuing lien upon the property against which each such assessment is made. Each such assessment, together with interest, costs and reasonable attorney fees, shall also be the personal obligation of a person or entity who was the Owner of such property at the time such assessment became due. The obligation shall remain a lien upon the property until paid or foreclosed, but shall not be a personal obligation of successors in title unless expressly assumed by them.

3.02 Purpose of Assessments. The assessments levied by the Association shall be used exclusively for the landscaping of the common Tracts "A", "C" and "D" including the maintenance of the flowers, shrubbery, irrigation and other landscape improvements, fence, entry monument, the improvements thereon, to maintain the private street improvements and the maintenance of insurance policies thereon, and for funding the Reserve Account.

The Association may also render such additional services as designated by its Directors.

3.03 Basis and Maximum of Annual Assessments. Until January 1, 2006, the maximum regular annual assessment shall be $400.00 for each Lot subject thereto:

(a) From and after January 1, 2006, the maximum annual assessment may be increased effectively January 1 of each year, beginning January 1, 2007, without a vote of the membership, in conformance with the rise, if any, of the Consumer Price Index (published by the Department of Labor, Washington D.C. or successor U.S. governmental agency) from July of the year in which these covenants are recorded to July of the year preceding the year in which such increase becomes effective, taking into consideration prior increases in such maximum, if any.

(b) From and after January 1, 2006, the maximum annual assessment may be increased above that determined by reference to the Consumer Price Index, as aforesaid, by a vote of the Members; provided that any such increase shall be approved by the affirmative vote of not less than fifty-three percent (53%) of the Members who are voting in person or by proxy, written notice of which shall be sent to all Members not less than thirty (30) days nor more than sixty (60) days in advance of the meeting.

3.04 Reserve Account. The Declarant shall establish a reserve account for replacement of all items of common property which will normally require replacement, in whole or in part, in more than three (3) and less than thirty (30) years and which are insurable by a common carrier of all purpose risk insurance.

(a) The Reserve Account established under this section shall be funded by assessments against the Lots for maintenance of items for which the reserves are established. The amounts assessed shall take into account the estimated remaining life of the items for which the reserve is created and the current replacement costs of those items.

(b) The Reserve Account shall be established in the name of the Association. The Association is responsible for administering the account and for making periodic payments into it. The Association shall adjust the amount of the payments at regular intervals to reflect changes in current replacement costs over time.

(c) The account may be used only for replacement of common property and is to be kept separate from assessments for maintenance. However, after the individual lot Owners have assumed responsibility for Administration pursuant to Section 2.03, the Board of Directors of the Association may borrow funds from the Reserve Account to meet temporary expenses. Funds borrowed to meet temporary expenses under this subsection must be repaid from special assessments or maintenance fees.

(d) Following the second year after the Association has assumed administrative responsibility for the Association under Section 2.03, if Owners of the Lots representing seventy-five percent (75%) of the Properties agree to the action, they may vote to increase, reduce or eliminate future assessments for the Reserve Account.

(e) Assessments paid into the Reserve Account are the property of the Association and are not refundable to sellers or Owners of Lots.

3.05 Special Assessments for Capital Improvements. In addition to the annual assessments authorized above, the Association may levy, in any assessment year, a special assessment applicable to that year only, for the purpose of defraying, in whole or in part, the cost of any construction or reconstruction or unexpected repair or replacement of a described capital improvement upon the common areas, (which for this purpose may include lighting facilities for roads, streets and other public thoroughfares) including the necessary fixtures and personal property related thereto, provided that any such special assessment for structural alterations, capital additions or capital improvements shall require the assent of fifty-three percent (53%) of the votes of the Members who are voting in person or by proxy at a meeting duly called for this purpose, written notice of which shall be sent to all Members not less than thirty (30) days nor more than sixty (60) days in advance of the meeting setting forth the purpose of the meeting. This section shall not prohibit the Directors from authorizing capital expenditures for replacements or repairs or improvements from funds generated by regular assessments.

3.06 Uniform Rate of Assessment, Common Profits. Both annual assessments and any special assessments must be fixed as a uniform rate for services rendered for all Lots and may be collected on an annual, quarterly or monthly basis at the discretion of the Directors. If special services are rendered to specific Lots at the request of such Owner, additional assessments shall be charged to such Lots. If the Association has any common profits at the end of any fiscal year, the Board of Directors may, in its sole discretion elect to distribute said profits to Members in proportion to the assessments made to the Members' Lots during the same fiscal year.

3.07 Quorum for Any Action Authorized Under Section 2. At the first meeting called, as provided in Section 2.03, the presence at the meeting of Members or of proxies entitled to cast fifty-three percent (53%) of all the votes shall constitute a quorum. No such subsequent meeting shall be held more than sixty (60) days following the date of the meeting at which no quorum was forthcoming.

3.08 Date of Commencement of Annual Assessments: Due Dates. The annual assessments provided for herein shall commence as to all Lots on the first day of the month following the formation of the Association. The first regular assessment shall be adjusted

according to the number of months remaining in the calendar year. The Board of Directors shall fix the amount of the regular assessment at least thirty (30) days in advance of each annual assessment period. Written notice of the annual assessment shall be sent to every Owner subject thereto. The dues dates shall be established by the Board of Directors. The Association shall, upon demand at any reasonable time, furnish a certificate in writing signed by an officer of the Association setting forth whether the assessments on a specific Lot have been paid. A reasonable charge may be made by the Board for the issuance of these certificates; such certificate shall be conclusive evidence of payment of any assessment therein stated to have been paid.

3.09 Effect of Nonpayment of Assessments: Remedies of the Association. Any assessments, which are not paid when due, shall be delinquent. If the assessment is not paid within thirty (30) days after the due date, the assessment shall bear interest from the date of delinquency at the following rate per annum: From the date hereof until the first annual meeting of Members, twelve percent (12%) per annum; and thereafter at a rate per annum which the Members shall establish at each such annual meeting to be in effect until the next such annual meeting, but if no such rate is so established by the Members, then the rate shall be twelve percent (12%) per annum. The Secretary of the Association shall file in the office of the County Clerk, or appropriate recorder of conveyances of Washington County, Oregon, within one hundred twenty (120) days after delinquency, a statement of the amount of any such charges or assessments together with interest as aforesaid, which have become delinquent with respect to any Lot. Upon payment in full thereof, the Secretary shall execute and file a proper release of the lien securing the same. The aggregate amount of such assessment, together with interest, costs, expenses and reasonable attorney fees for the filing and enforcement thereof, shall constitute a lien on the Lot with respect to which it is fixed, including any improvement thereon, from the date the notice of delinquency thereof is filed in the office of said County Clerk or other appropriate recording office, until the same has been paid or released as herein provided. Such lien may be enforced by the Association in the manner provided by law with respect to liens upon real property. The Owner of said Lot at the time said assessment becomes due shall be personally liable for the expenses, costs, disbursements and attorney's fees, which shall also be secured by said lien, including additional attorney's fees incurred on appeal. The Owner at the time such assessment is incurred shall also be personally liable for any deficiency remaining unpaid after any foreclosure sale. No Owner may waive or otherwise escape liability for the assessments provided for herein by nonuse of the common areas or abandonment of his Lot or any improvement thereon.

3.10 Subordination of the Lien to Mortgagees. The lien of the assessments provided for herein shall be inferior, junior and subordinate to the lien of all mortgages and trust deeds now or hereafter placed upon said Property or any part thereof. The sale or transfer of any Lot which is subject to any mortgage or trust deed, pursuant to a decree of foreclosure under such mortgage or trust deed or any proceeding in lieu of foreclosure thereof, shall extinguish the lien of such assessments as to amounts thereof which became due prior to such sale or transfer. No sale or transfer shall relieve such Lot and any improvements thereon from liability for any assessments thereafter becoming due or from the lien thereof.

3.11 Exempt Property. The following property subject to this Declaration shall be exempt from the assessments created herein: (a) all properties expressly dedicated to and accepted by a local public authority; (b) the common areas; (c) all other properties owned by the Association.

SECTION IV
ARCHITECTURAL CONTROLS

4.01 Before any structure may be constructed within the subdivision, the owner of the proposed construction site shall comply with these CC&R'S. Failure to do so shall be deemed a violation of the CC&R'S.

(a) The architectural control committee, hereinafter referred to as "The ACC", shall consist of three (3) members, to be appointed by Mitchell & Hardy Construction Co., Inc. or their assigned.

4.02 Any subdivision lot owner who intends to build or have built a residence shall submit the following to the ACC:

(a) A proposed site plan showing the location, layout, dimensions and configuration of the proposed structure, as well as utility connections, drainage, grading plan, finished floor elevations and building elevations.

(b) A proposed building plan and supporting drawings, showing the style and design of the proposed residence including the type of exterior materials and colors to be used.

4.03 Within fifteen (15) days after submission of the plans described in Section 1.2 to the ACC, the lot owner shall be informed in writing as the plans acceptability. If any aspect of the plan does not conform to the ACC'S development concept for the subdivision, the lot owner shall revise and resubmit the plans until conformity with the development concept is reached and the plans arc approved by the ACC.

4.04 The ACC shall have the exclusive right and authority to establish the subdivision's development concept. The concept must, however, be consistent with these CC&R'S, zoning restrictions, and other governmental controls which pertain to this location. The development concept may be modified from time to time and may vary from lot to lot within the subdivision.

4.05 After approval of the plan, the lot owner may begin construction in accordance with the plans. Construction not in conformity with the plans shall be deemed a violation of these CC&R'S.

4.06 If, after inspection, The ACC believes any construction is not in agreement with the approved plans, it may halt construction, without court order, and may require, without court order, that corrective action be taken before construction can continue. The ACC shall not be liable for any damages, delays or inconveniences caused by its inspection, whether or not these inspections results in the discovery and correction of any unapproved work.

4.07 The ACC reserves the right to waive, in its sole discretion, any of these CC&R'S when, in its reasonable judgment, such waiver will not cause a significant deviation from the subdivision's development concept. However, any such waiver must be in writing and signed by two members of the ACC. A waiver given to one lot owner does not entitle other lot owners to a similar waiver.

SECTION V
USE AND MAINTENANCE OF PROPERTY

5.01 All lots in the subdivision shall be for residential use only. No business venture shall be conducted in or about any property in the subdivision except for:

(a) Builders, temporary sales office or model homes and
(b) One room offices, which are not designated by exterior signs.

5.02 Each lot owner in the subdivision shall be responsible for the exterior maintenance, repair and landscaping on his property. Maintenance is to be done in accordance with usual community standards for residential subdivisions, striving to keep the natural aesthetics of the property. No owner shall permit the growth of noxious or annoying weeds on his property. All proposed landscape plans, including general plant materials and any fencing, will be submitted to the ACC for approval prior to commencement of this work. Within three months of occupancy of any house erected or constructed in GARDEN GROVE, the front, rear, and side yards of the lot upon which said house is being erected or constructed shall be fully and completely landscaped in accordance with the plan for such landscaping submitted to and approved by the ACC.

5.03 No boat, motor home, mobile home, camper, trailer, or recreation vehicle shall be kept in open public view in the subdivision. Such vehicles must be stored in a garage or in the side or backyard screened from public view and not extending beyond the front of the home.

5.04 Single family dwelling units shall have a total living area of not less than 1,650 square feet (exclusive of porches, decks and garage).

5.05 All structures within the subdivision shall have cedar shake, composition, or tile roofs. All windows shall be wood, vinyl, or clad wood windows. All exteriors shall be sided with cedar, manufactured siding boards (not T-1-11), brick, stucco, or as may be deemed acceptable by the ACC.

5.06 Easements as shown on the subdivision plat or as otherwise recorded shall be preserved by the respective lot owners, site improvements shall not be placed so as to interfere with the maintenance of any easement. The owner of any lot which has an easement shall maintain the easement at his expense, except improvements for which a public authority or utility is responsible.

5.07 No disabled or dismantled vehicle shall be kept on any street or lot in public view for more than forty-eight (48) hours. No animals, livestock or poultry of any kind shall be kept on any subdivision lot, however, dogs, cats, and other household pets may be kept if in compliance with local controls and if they are not kept for any commercial breeding purposes.

5.08 All refuse shall be kept in sanitary containers and shall not be dumped in the subdivision. These containers shall be stored in a screened area not visible from the street.

5.09 No trailer, van, bus, camper, truck, tent, garage, or storage structure located in the subdivision shall be used as a residence, either permanently or temporarily, furthermore, on-site vehicle parking shall be maintained to provide two enclosed parking spaces and two open parking spaces on all lots.

5.10 No outside antenna shall be erected with the exception of Direct TV type mini dishes.

5.11 Solar collectors must be approved by the ACC.

5.12 No sign of any kind shall be posted on any lot except for one sign advertising the property for sale or rent.

5.13 All perimeter fencing not installed by the developer shall be a uniform design of materials and application (good neighbor style fence). The boards shall be applied in a good and workmanlike fashion. The height shall not exceed six feet.

5.14 Tracts "A", "C" and "D" shall be maintained by Declarant until the time that all approvals and bonding requirements are met. After the approvals have been obtained and Tracts "A", "C" and "D" become established, the lot owners shall have a one fifteenth interest in the tracts and all responsibilities for taxes and maintenance.

SECTION VI
GENERAL PROVISIONS OF THE CC&R'S

6.01 These CC&R'S shall run with and burden each of the subdivision lots to the benefit of any party who holds any right, title or interest in any lot.

6.02 These CC&R'S shall run permanently with the land with respect to properties within GARDEN GROVE.

6.03 Any modifications, repeal or amendment to these CC&R'S must be executed and recorded by The ACC as long as Mitchell & Hardy Construction Co., Inc. or their assigned holds title to any lot in the subdivision or is still in the process of exercising architectural control per Section IV. Other modification, repeal or amendments can only happen after The ACC has fulfilled its architectural responsibilities and Mitchell & Hardy Construction Co., Inc. or their assigned no longer holds legal title to any lot and only if eighty (80) percent or more of the lot owners sign and record a written instrument.

6.04 Notwithstanding the provisions of Paragraph 6.02 and 6.03, The ACC'S obligation to review plans pursuant to Section 1 of the CC&R'S shall continue upon the formation of a new review committee. This committee shall be formed from three homeowners of GARDEN GROVE. This formation of the new ACC shall take place upon the final sale of the last property that Mitchell & Hardy Construction Co., Inc. or their assigned owns. Mitchell & Hardy Construction Co., Inc.'s or their assigned involvement in the ACC shall expire when it has fulfilled its responsibility of initial plan reviews for all lots.

6.05 The CC&R'S are enforceable by any lot owner in the subdivision. If legal proceedings of any type are begun so as to enforce these CC&R'S or to seek damages for any CC&R'S violations, the prevailing party shall recover reasonable attorney fees as determined by the trial or appellate courts.

6.06 Homeowners Acknowledgment. Concurrent with the purchase of every Residence, the homeowner(s) shall execute an acknowledgment form declaring he/she/they have

reviewed, understood and agree to be bound by the Protective Covenants, Conditions and Restrictions affecting the Garden Grove PUD.

In witness whereof, the undersigned being the Declarant herein, has hereto set his hand on the _____ day of JANUARY, 2005.

Declarant: Mitchell & Hardy Construction Co., Inc.

_____
Jamie P. Hardy, President

_____
Jeffrey K. Mitchell, Secretary

State of Oregon, Washington County, on this _____day of January, 2005, personally appeared Jamie P. Hardy and Jeffrey K. Mitchell, who being duly sworn did say that they are President and Secretary of Mitchell & Hardy Construction Co., Inc. and that said instrument was signed in behalf of said corporation by their authority, and they acknowledged said instrument to be their voluntary act and deed. Before me:

Notary Public of Oregon
My commission expires:

Application and Findings
For
Garden Grove Subdivision
A 15 Lot
Planned Unit Development
CES #1667

APPLICANT:	Mitchell & Hardy Construction Jeff Mitchell & Jamie Hardy PO Box 1137 Lake Grove, OR 97035
APPLICANT'S REPRESENTATIVE:	Kirsten Van Loo CES | NW 15573 SW Bangy Road, #300 Lake Oswego, Oregon 97035 503-968-6655; 503-968-2595 fax
PROPERTY OWNER:	Miles Edwards
ZONING:	City of Beaverton R-7 District, Low Density Residential
PROPERTY DESCRIPTION:	1S1 24DA, Tax Lot 301 South side of SW Canby Street, east of SW 68th Avenue
SITE SIZE:	2.77 acres +/-
REQUEST:	Planned Unit Development; 15-Lot Subdivision; Flexible Setbacks; Tree Plan

Summary of Proposal
The applicant is proposing development of a 15-lot single-family detached dwelling unit subdivision, through the PUD process. The complete application package includes a request to the City Engineer for modifications to the street standards, facilitating the development of this parcel. The land use package includes a tree planting plan.

The surrounding land uses are all single-family homes on large and moderate lots, developed under the City of Portland and/or Washington County Development standards. The subdivision to the east, Canby Lane, was platted in 1971 through the City of Portland. The only exception to

the residential development pattern is the location of a "non-conforming" commercial use directly south of the property. The commercial use is located on residentially zoned land, but is a legal non-conforming use and is a viable – active - commercial operation. Site visits, combined with discussions with the City of Portland Transportation staff have determined that there is no possible CURRENT location for passenger vehicular access onto Multnomah Boulevard. A proposed emergency vehicle access is designed for access to Multnomah Boulevard. Enclosed with the application materials is a preliminary concept plan of the proposed emergency vehicle access and approval for same from the City of Portland staff, along with a memo recording the discussion items.

Development Code Standards

Section 20.05.15 Urban Standard Density (R7) District

2. District Standards and Uses

The R-7 District allows a Planned Unit Development as a Conditional Use.

The site is 121,185 sq. ft, or 2.78 acres. The Open Space tracts contain 25,687 sq. ft., totaling 21.2 % of the total site. The Development Code requires that 20% (min.) of a site be set aside in OPEN SPACE TRACTS as part of a PUD approval. This projects exceeds the minimum requirement for open space, the open space criteria is met.

Section 20.05.50 Site Development Requirements

Standard	***Required by R-7 Zoning District***	***Proposed***
Minimum Land Area Per Dwelling Unit	7,000 Sq. Ft.	4200 sq. ft.
Minimum Lot Dimensions:		
Width: Interior Lot:	70'	**48'**
Corner Lot:	75'	**58'**
Depth: Interior Lot:	100'	**86'**
Corner Lot:	90'	**88'**
Minimum Yard Setbacks:		
Front to Dwelling:	10'*	10'
Front to Garage:	20'	20'
Side:	5'	**interior lots 3'**
Side – Garage	20'	NA
Rear to Dwelling:	5'*	15'
Rear to Garage:	20'*	NA
Maximum Building Height:	30'	30'

**Reduced Setbacks allowed in the R-7 District*

Section 20.05.55 Supplemental Development Requirements

1. Design Features:

All detached dwellings shall utilize at least two (2) of the following design features…

The dwelling units built on this project will incorporate two or more of the fourteen recommended construction design features. Conceptual elevations will be presented at the required public hearing, and final construction documents will be reviewed at the time building permits for the

individual dwelling units are initiated. Issuance of the building permit for each lot will be contingent on providing final elevation drawings documenting compliance with the standards in this section.

2. *Landscaping:*

This standard is not applicable to development of a subdivision in the R-7 district.

3. *Extension of Facilities*

The extension of all public infrastructure facilities, as applicable to this project, will be accomplished as feasible and practicable. Most adjacent parcels of land are developed to allowable densities so significant extension of utilities is not necessary.

Section 20.05.60 Required Minimum Residential Density

Based on a net acreage of 80% of the total site available for development, the required minimum density for the subject site is 11 dwelling units. Maximum allowable density for the project site is 17 lots. The site is very constrained because it is an odd shape, and it is not possible to achieve the design of a subdivision with the required minimum density on the property while meeting the 70' by 100' minimum lot size and 7,000 sf lot area requirement. For this reason, a PUD application is part of this request for land use approval.

Section 40.03 Facilities Review Committee

1. *All critical facilities and services related to the development have, or can be improved to have, adequate capacity to serve the proposal at the time of its completion.*

The preliminary design drawings substantiate the fact that this criteria can be met. Preliminary design drawings have been prepared, reviewed by a licensed engineer and submitted as part of this complete application. The drawings include designs for sanitary sewer service, water service, and storm water detention, treatment and dispersal in compliance with the current City of Beaverton standards. The preliminary grading and erosion control plan demonstrates a feasible methodology for contouring the site, and the preliminary profile of the public street demonstrates the feasibility of constructing that street to meet current City of Beavertion standards. Thus all critical facilities and services have been or can be improved to provide adequate capacity to serve this 15 lot residential subdivision.

2. *Essential facilities and services are available or can be made available prior to occupancy of the development...*

The preliminary design drawings substantiate the fact that this criteria can be met. Preliminary design drawings have been prepared, reviewed by a licensed engineer and submitted as part of this complete application. The drawings include designs for sanitary sewer service, water service, and storm water detention, treatment and dispersal in compliance with the current City of Beaverton standards. Easements have been provided (see plans) for the installation of private utilities and electrical service is available to the site. Street lights will be installed to meet the City of Beaverton standards for residential streets. Street trees will be planted at the conclusion of the home construction.

3. *The proposal is consistent with all applicable provisions of Chapter 20 (Land Uses) unless the applicable provisions are subject to an Adjustment, Planned Unit Development, or Variance which shall be already approved or considered concurrently with the subject proposal.*

The site is very constrained because it is an odd shape, and it is not possible to achieve the design of a subdivision with the required minimum density on the property while meeting the 70' by 100' minimum lot size and 7,000sf lot area requirement. For this reason, a PUD application is part of this request for land use approval.

4. *The proposal is consistent with all applicable provisions of Chapter 60 (Special Regulations) and that all improvements, dedications, or both required by the applicable provisions of Chapter 60 are provided or can be provided in rough proportion to the identified impact(s) of the proposal.*

Please refer to the findings associated with Chapter 60 of the Beaverton Development Code in subsequent sections of this document. (see page 10 – 14)

5. *Adequate means are provided or can be provided to ensure continued periodic maintenance and necessary normal replacement of the following private common facilities and areas: drainage ditches, roads and other improved rights-of-way, structures, recreation facilities, landscaping, fill and excavation areas, screening and fencing, ground cover, garbage and recycling storage areas and other facilities, not subject to periodic maintenance by the City or other public agency.*

CC & R provisions will address the maintenance and replacement of private common facilities associated with this project.

6. *There are safe and efficient vehicular and pedestrian circulation patterns within the boundaries of the site.*

The preliminary design drawings substantiate the fact that this criteria is met. The plans include extensive design drawings for the proposed public street, as well as a private street providing additional access and emergency vehicle/pedestrian access from/to Multnomah Boulevard. The emergency vehicle/pedestrian access is proposed to be a grasscrete/paving block surface, satisfying the needs of the Fire Marshal and the Transportation Planner for a hard surface connection while minimizing the "look" of a street or alley.

7. *The on-site vehicular and pedestrian circulation system connects to the surrounding circulation system in a safe, efficient, and direct manner.*

The preliminary design drawings substantiate the fact that this criteria is met. The preliminary grading and erosion control plan demonstrates a feasible methodology for contouring the site, and the preliminary profile of the public street demonstrates the feasibility of constructing that street to meet current City of Beaverton standards. The plans include extensive design drawings for the proposed public street, improvements to the Canby Street frontage, as well as a private street providing additional access and emergency vehicle/pedestrian access from/to Multnomah Boulevard. The emergency vehicle/pedestrian access is proposed to be a grasscrete/paving block surface, satisfying the needs of the Fire Marshal and the Transportation Planner for a hard surface connection while minimizing the "look" of a street or alley.

8. *Structures and public facilities and services serving the site are designed in accordance with adopted City codes and standards at a level which will provide adequate fire protection, including, but not limited to, fire flow, and protection from crime and accident, as well as protection from hazardous conditions due to inadequate, substandard or ill-designed development.*

Preliminary design drawings have been prepared, reviewed by a licensed engineer and submitted as part of this complete application. The plans include extensive design drawings for the proposed public street and a private street providing additional access and emergency vehicle/pedestrian access from/to Multnomah Boulevard. The emergency vehicle/pedestrian access is proposed to be a grasscrete/paving block surface, satisfying the needs of the Fire Marshal and the Transportation Planner for a hard surface connection while minimizing the "look" of a street or alley. The City of Beaverton engineering staff provided "as-built" drawings verifying the adequacy of existing water system infrastructure to serve the site. Fire hydrants will be located a maximum of 500 feet apart along the public and private street – with the final locations determined after a review of the optimum protection opportunities, reducing conflicts with other utility structures. The Fire Marshal will review and approve the final fire protection utilities prior to the issuance of construction permits for the project – thus ensuring that fire and life safety issues are completely addressed prior to any on-site work.

The City of Beaverton Police Community Safety Officer will review this project prior to land use approval to provide any design suggestions that could improve protection from accident or crime. Those comments will be included in the staff report produced by the City of Beaverton planning staff. Discussion of any suggestions can take place during the public hearing – required for this project – before the City of Beaverton Planing Commission.

9. *Grading and contouring of the site is designed to accommodate the proposed use and to mitigate adverse effect(s) on neighboring properties, public right-of-way, surface drainage, water storage facilities, and the public storm drainage system.*

The preliminary design drawings substantiate the fact that this criteria can be met. Preliminary design drawings have been prepared, reviewed by a licensed engineer and submitted as part of this complete application. The drawings include designs for sanitary sewer service, water service, and storm water detention, treatment and dispersal in compliance with the current City of Beaverton standards. The preliminary grading and erosion control plan demonstrates a feasible methodology for contouring the site, and the preliminary profile of the public street demonstrates the feasibility of constructing that street to meet current City of Beavertion standards.

10. *The access and facilities for physically handicapped people are incorporated into the site and building design, with particular attention to providing continuous, uninterrupted access routes.*

The preliminary design drawings substantiate the fact that this criteria can be met. The sidewalks are designed with ADA approved curb drops and texturing as required by Federal and local codes.

11. *The proposal contains all applicable application submittal requirements as specified in Section 50.25.1 of the Development Code.*

The submittal of the preliminary design drawings and complete application package substantiate the fact that this criteria is met.

Section 40.15 Conditional Use

Section 40.15.15 Application

The proposal is for a Planned Unit Development, which is considered a Conditional Use application.

5. *Preliminary Planned Unit Development*
   C. *Approval Criteria*
      1. *The proposal satisfies the threshold requirements for a Preliminary PUD application.*

The preliminary design drawings and complete application package substantiate the fact that this criteria is met. All of the required materials have been prepared and submitted as requested by City of Beaverton Staff subsequent to our most recent meeting in August 2004.

2. *All City application fees related to the application...*

The fees are submitted in compliance with agency requirements.

3. *The proposal meets the Site Development Requirement for setbacks within the applicable zoning district for the perimeter of the parent parcel unless the setbacks are approved as an adjustment, flexible setback or variance...*

Please refer to the previous section of the findings addressing the required and proposed setbacks for the project – under Chapter 20. (see page 2)

4. *The proposal will comply with the applicable policies of the Comprehensive Plan.*

The applicable policies of the Comprehensive Plan are addressed in a subsequent section this document. (see page 15-20)

5. *The size, dimensions, configuration, and topography of the site and natural and man-made features on the site can reasonably accommodate the proposal.*

The preliminary design drawings and complete application package substantiate the fact that this criteria is met. The proposed site plan/preliminary plat demonstrate that the site can accommodate 15 lots, platted open space tracts in excess of the minimum required by the Development Code, and the necessary infrastructre to support the comfortable life for 15 families in close proximity to superior community infrastructure, churches, schools, shopping, and public amenities.

6. *The location, size, and functional characteristics of the proposal are such that it can be made reasonably compatible with and have a minimal impact on livability and appropriate development of properties in the surrounding area of the subject site.*

The development of 15 single family detached dwelling units is completely compatible with the variety of single family detached development in the surrounding area. The surrounding houses are between ten and fifty years old, with great diversity in size style and character. The non-conforming commercial development adjacent to the site on the SE will be separated from the existing neighborhood with retaining walls and landscaping. There will be no impact on the "liveability" of adjacent existing homes, and the construction of fifteen new houses will increase the overall "appraisal" value of the neighborhood.

7. *Lessening the Site Development Requirements results in benefits to the site, building, and structural design or preservation of natural features that could otherwise not be achieved.*

Only 4-6 lots could be platted on the property under the existing Site Development Requirements for the R-7 district. By employing the PUD provisions, and setting aside open space tracts of over 25,000 sf, benefits to the community are provided in the form of additional housing opportunities in a healthy diverse neighborhood. An open space of over 20,000sf has been designed with the project to maintain buffers from Multnomah Boulevard. Several large trees are preserved in the Open Space Tract C, and additional trees are proposed for color and landscape diversity. The emergency vehicle/pedestrian link will be paved with grasscrete/paving blocks to provide a hard surface connection to Multnomah Boulevard while minimizing the "paved" look of the connection. Tract A is proposed to be landscaped with trees and shrubs selected to provide food and attraction to local birds and butterflies, while also using zeriscape-type plants that will not require long term irrigation or extensive maintenance.

Fifteen single family detached dwelling units are proposed for the site, benefiting the community by taking advantage of a "close-in" parcel, utilizing existing infrastructure, and meeting the goals of METRO by making use of an "infill parcel", within the UGB. This project is designed with the necessary infrastructure to support the comfortable life for 15 families in close proximity to superior community infrastructure, churches, schools, shopping, and public amenities.

7. *Applications and documents related to the request, which will require further City approval, shall be submitted to the City in the proper sequence.*

The preliminary design drawings and complete application package substantiate the fact that this criteria is met.

40.30.15.

5. Zero Side or Zero Rear Yard Setback for a Proposed Residential Land Division.

A. *Threshold. An application for Zero Side or Zero Rear Yard Setback for a Proposed Residential Land Division shall be required when the following threshold applies:*

1. *The property is located within a residential zoning district and is accompanied by a land division application for the subject property.*

The subject property is located in a residential zoning district and this request is included with a Land Division application and a PUD application. This criteria is met.

B. *Procedure Type. The Type 3 procedure, as described in Section 50.45 of this Code, shall apply to an application for Zero Side or Zero Rear Yard Setback for a Proposed Residential Land Division in any residential zoning district and shall be considered concurrently with the proposed land division. The decision making authority is the Planning Commission.*

This request is included with a Land Division application and a PUD application. This criteria is met.

C. *Approval Criteria.* *In order to approve a Zero Side Yard or Zero Rear Yard Setback for a Proposed Residential Land Division application, the decision making authority shall make findings of fact based on evidence provided by the applicant demonstrating that all the following criteria are satisfied:*

1. *The proposal satisfies the threshold requirements for a Zero Side Yard or Zero Rear Yard Setback for a Proposed Residential Land Division application.*
2. *All City application fees related to the application under consideration by the decision making authority have been submitted.*
3. *The side or rear yard setback on all adjacent lots which abut the proposed zero side or rear setback are either zero feet (0') or ten feet (10') or more.*
4. *The zero side or zero rear yard is not abutting a public right-of-way or any access easement.*
5. *No portion of a structure or architectural feature shall project over a property line related to the zero side or rear yard setback unless a permanent easement allowing such projection has been granted.*

1. As stated in the previous two findings – this request for "zero" side and rear lot setbacks in the two "Open Space Tracts" ONLY meets the threshold requirements.
2. All required City fees have been paid.
3. The side or rear setbacks of all existing and/or potential future buildings on all of the adjacent lots is (as an as-built condition) ten feet or more, as evidenced by the development code requirements, the aerial photograph, and survey datum.
4. The proposed zero "setbacks " do abut public ROW, however, this request is to have the Planning Commission grant "zero" "setbacks" ONLY on two OPEN SPACE TRACTS which will not have ANY structures constructed on them. This request is to remove the *hypothetical* "setbacks" from two OPEN SPACE TRACTS that have no "setbacks" as defined by the City of Beaverton Development Code – *see definition below.*
5. No portion of any structure or architectural feature will extend over a property line in the OPEN SPACE TRACTS because they are OPEN SPACE TRACTS and no construction of permanent structures above ground is proposed.

> **Setback.** The minimum allowable horizontal distance from a given point or line of reference to the nearest vertical wall or other element of a principal building or structure as defined herein. The point of line of reference will be the lot line following any required dedication, or a special or reservation line if one is required pursuant to this ordinance.

40.30.15.5.C.

6. *A four foot (4') non-exclusive maintenance easement appears on the plat within the adjacent side or rear yard setback of the adjacent lot where it abuts the zero setback.*
7. *Satisfactory deed restrictions are submitted with the preliminary land division which address maintenance requirements for the zero setback wall.*
8. *Five foot utility easements are provided along all side and rear property lines except where the zero setback is designated.*
9. *The proposal is compatible with the surrounding area regarding topography, vegetation, building character, and site design. In determining compatibility, consideration shall be given to harmony in: scale, bulk, coverage, density, rooflines, and materials.*
10. *Applications and documents related to the request, which will require further City approval, shall be submitted to the City in the proper sequence.*

6, 7, 8. Easements can be placed along all of the edges of the OPEN SPACE TRACTS because there is no proposed "structure construction" on the OPEN SPACE TRACTS.

9. The proposal for zero setbacks in the OPEN SPACE TRACTS is compatible with the surrounding community/environment because it merely acknowledges that the OPEN SPACE TRACTS are in fact OPEN SPACE TRACTS and that the meet the purpose and intent of the PUD ordinance. There is no issue of scale, bulk, density, rooflines or materials relative to the reduction of the "setbacks: in the OPEN SPACE TRACTS to zero – because no construction above ground is anticipated in the current proposal anyway.
10. All necessary applications, documents and paperwork necessary for City approval will/has been – submitted to the City in proper order.

D. *Submission Requirements. An application for a Zero Side or Zero Rear Yard Setback for a Proposed Residential Land Division shall be made by the owner of the subject property, or the owner's authorized agent, on a form provided by the Director and shall be filed with the Director. The Zero Side or Zero Rear Yard Setback for a Proposed Residential Land Division application shall be accompanied by the information required by the application form, and by Section 50.25 (Application Completeness), and any other information identified through a Pre-Application Conference.*

Application has been made in the proper fashion.

40.90. TREE PLAN

40.90.05. Purpose

The purpose of a Tree Plan application is to provide a mechanism to regulate pruning, removal, replacement, and mitigation for removal of significant and historic tree and grove, landscape tree, street tree, and community trees thus helping to preserve and enhance the sustainability of the City's urban forest. This Section is carried out by the approval criteria listed herein.

40.90.15. Application.

There are four (4) Tree Plan applications which are as follows: Tree Plan One, Tree Plan Two, Tree Plan Three, and Tree Plan Four.

2. Tree Plan Two

A. Threshold. An application for Tree Plan Two shall be required when none of the actions listed in Section 40.90.10 apply, none of the thresholds listed in Section 40.90.15.1 apply, and one or more of the following thresholds apply:

3. Removal of five (5) or more Community Trees within a one calendar year period on properties more than one-half acre in size.

The development of this 15 lot subdivision requires the removal of the majority (approx 50) of the remaining trees on the property. Many of the trees slated for removal are over 10" DBH and a number are less than 10" DBH.

B. Procedure Type. The Type 2 procedure, as described in Section 50.40 of this Code, shall apply to an application for Tree Plan Two. The decision making authority is the Director.

C. Approval Criteria. In order to approve a Tree Plan Two application, the decision making authority shall make findings of fact based on evidence provided by the applicant demonstrating that all the following criteria are satisfied:

1. The proposal satisfies the threshold requirements for a Tree Plan Two application.

The preliminary design drawings and complete application package substantiate the fact that this criteria is met.

2. All City application fees related to the application under consideration by the decision making authority have been submitted.

The fees are submitted in compliance with agency requirements.

6. If applicable, pruning of any tree or removal of a landscape, street, or community tree is necessary to accommodate development where no reasonable alternative exists for the development at another location on the site, or where variances to setback provisions of this Code will cause other undesirable circumstances on the site or adjacent properties if the tree is saved.

The site is very constrained because it is an odd shape, and it is not possible to achieve the design of a subdivision with the required minimum density on the property while meeting the 70' by 100' minimum lot size and 7,000sf lot area requirement. For this reason, a PUD application is part of this request for land use approval. The removal of the trees as per the "Tree Survey Plan" is necessary to build a public and private street system, install necessary utilities and infrastructure, and grade the 15 proposed lots to build dwelling units.

8. *If applicable, removal of landscape, street, or community tree is necessary to accomplish public purposes, such as installation of public utilities, street widening, and similar needs, where no reasonable alternative exists without significantly increasing public costs or reducing safety.*

The removal of the trees as per the "Tree Survey Plan" is necessary to build a public and private street system, install necessary utilities and infrastructure, and grade the 15 proposed lots to build dwelling units.

9. *Removal of a tree or grove shall not increase erosion or any resulting erosion shall be controlled consistent with City and Clean Water Services regulations.*

A preliminary grading and erosion control plan is included with the application. The removal of trees from this site will have no impact on the "erodability" of the project because highly sophisticated erosion control and construction management techniques will be employed during the project construction process. After the land is platted and homes are constructed, the private landscaping on each individual lot will preclude erosion.

10. *Applications and documents related to the request, which will require further City approval, shall be submitted to the City in the proper sequence.*

The preliminary design drawings and complete application package substantiate the fact that this criteria is met.

D. *Submission Requirements. An application for a Tree Plan Two shall be made by the owner of the subject property, or the owner's authorized agent, on a form provided by the Director and shall be filed with the Director. The Tree Plan Two application shall be accompanied by the information required by the application form, and by Section 50.25 (Application Completeness), and any other information identified through a Pre-Application Conference.*

The preliminary design drawings and complete application package substantiate the fact that this criteria is met.

Tree Inventory for Garden Grove Subdivision

Diameter	Deciduous	Pine	Fir	Cedar
6"	11	1		
8"	12	2	5	
10"	10	1		1
12"	11			1
14"	8		5	2
15"			1	
16"	1			
18"	1		2	
20"			2	
26"			3	
36"			1	
Total Existing	54	4	19	4

Total number of existing trees: 81

On-Site Tree Removal for Garden Grove Subdivision

Diameter	Deciduous		Pine		Fir		Cedar	
	Total	**Remove**	**Total**	**Remove**	**Total**	**Remove**	**Total**	**Remove**
6"	11	7	1	1				
8"	12	11	2	2	5			
10"	10	8	1	1			1	1
12"	11	5					1	1
14"	8	5			5	1	2	1
15"					1	1		
16"	1	1						
18"	1				2			
20"					2	2		
26"					3	2		
36"					1	1		
Total Numbers	**54**	37	**4**	4	**19**	7	**4**	3
Total Inches	**540"**	356"	**32"**	32"	**315"**	215"	**50"**	36"

Total number of trees: **81** Total number of trees to be removed: 51 (63%)
Total number of inches: **937"** Total number of inches to be removed: 621" (66%)

Off-Site Tree Removal in location of drainage easement: Total of 4 Trees, 52"
10" Deciduous
10" Deciduous
6" Deciduous
26" Fir

Section 50.25 Application Completeness

The preliminary design drawings and complete application package substantiate the fact that this criteria is met for all of the five land use applications relevant to this project.

Section 50.30 Neighborhood Review Meeting

A neighborhood meeting was held in Spring 2004. The applicable materials are submitted herewith in a subsequent section of the application package. (see separate section)

Section 60.15 Land Division Standards

Section 60.15.10 General Provisions

1. Easements.
A. The minimum public utility and drainage easements for residential subdivisions shall be as follows:
1. A six-foot (6') public utility easement along all front lot lines.
2. A three-foot (3') utility and drainage easement along all side and rear lot lines.

The final plat will be approved with the necessary public utility easements as proscribed above.

B. Public water, sanitary sewer, and storm drainage lines on private property shall be centered within a permanent easement granted to the City, with a minimum width of fifteen feet (15') along its entire length….

The final construction documents will be approved for building the public utilities as proscribed above. The final plat will be approved with the necessary public utility easements as proscribed above.

C. Where a land division is traversed by a water course, drainage way, channel or stream…

The property is not traversed by a water course – and the small "unassociated" wetland will be filled after review and approval by the interested agencies. Please refer to the section of the application package labeled "Clean Water Services". The wetland is identified on the existing property conditions plan.

2. Building Lines

The director may approve special setbacks based upon the consideration for safety, topography, geology, solar access or other such reasons…

Please refer to the previous section of the findings addressing the required and proposed setbacks for the project – under Chapter 20. (see page 2)

3. Dedications

Public streets, sidewalks, pedestrian ways, bikeways, multi-use paths, parks, open space, and other public rights-of-way required as mitigation for on site of off site impacts in proportion to the identified impacts of the proposed development and reasonably related to the development, shall be dedicated or otherwise conveyed to the City or the appropriate jurisdiction for maintenance…

The final plat will be approved with the necessary public dedications as proscribed above.

4. Homeowner Associations and Declarations

When a Homeowner's Association Agreement or other restrictive convenants are to be recorded with the development, a copy of the appropriate documents shall be submitted with the final plat…

CC & R provisions will address the maintenance and replacement of private common facilities associated with this project. The final plat will be approved in conjunction with the necessary documents as proscribed above.

Section 60.15.15 Compliance with Land Division Approvals

In compliance with this section of the Development Code – the developer will meet all the applicable requirements and follow all applicable procedures relative to the production of construction documents, the approval of those documents and the procurement of all necessary permits for construction of a fifteen lot subdivision. The preliminary design drawings and complete application package substantiate the fact that this criteria can be met.

Street trees will be planted at the conclusion of the construction process, after the single family homes are approved for occupancy, at a rate of one street tree 30 lineal feet of street frontage – as required by Section 60.15.15.3.G.1 – according to staff. Location of the street trees is subject to final design of all of the infrastructure, and location of the driveways for each home. It is not feasible to show accurately (at this time) where the street trees will be located because the construction of driveways, streetlights, fire hydrants, water meters, utility vaults, etc. all take precedence over the street tree location. The final street tree plan will be produced with the

construction document package and will be reviewed and approved by the project planner as part of the construction document and permit issuance process.

Section 60.30 Off-Street Parking

Section 60.30.10 Number of Required Parking Spaces

Each dwelling unit will have a minimum of two off-street parking spaces in a residential garage, and two additional off-street parking spaces in the driveway of each home.

Section 60.35 Planned Unit Development

Section 60.35.05 Purpose

Section 60.35.10 Modification of Base Zoning Standards

1. Dimensional Standards

The dimensional standards for the applicable zoning district as listed in Chapter 20 may be modified through approval of a Planned Unit Development, except for the following situations:

- *A. Required setbacks shall continue to apply to the parent parcel upon which the proposed PUD will be located.*
- *B. The intersection standards in Section 60.55.50 shall continue to be satisfied.*
- *C. All building setbacks shall continue to meet applicable building and fire code requirements.*
- *D. Maximum building height standards may be increased up to twelve feet (12') when the applicable building setback distance along the perimeter of the parent parcel is increased at a ratio of 1.5 additional feet of setback for every foot of building height over the base zone standard for building height.*

This project requires adjustments from the base zone standards through the PUD approval process. The proposed lots are less than 7,000 square feet in area, and they are not a 70' by 100' dimension in either direction. The interior side yard setbacks are proposed at three feet, instead of a typical five feet. The interior side-yard setbacks (3 feet) can meet all applicable building code and fire code requirements. No increases in overall building height are necessary.

2. Allowed Uses

The proposed project is a 15 lot single family detached dwelling unit subdivision, which is permitted in the R-7 Zoning District.

Section 60.35.15 Common Open Space

1. A PUD shall be required to provide common open space according to the following rates:

A. The proposed project site is less than 10 acres, therefore a minimum of 20% of the site is set out as a common open space.

The site is 121,185 sq. ft, or 2.78 acres. The Open Space tracts contain 25,687 sq. ft., totaling 21.2 % of the total site. The Development Code requires that 20% (min.) of a site be set aside in OPEN SPACE TRACTS as part of a PUD approval. This projects exceeds the minimum requirement for open space, the open space criteria is met.

2. *Land required to be set aside as setbacks or buffers shall not be included in the calculation of required open space.*
"Setbacks" are clearly defined in the Beaverton Development Code as the distance from a building or structure to a property line. No buildings or structures *as defined in the Uniform Building Code* will be built in the Open Space tracts. Because there will be no buildings or structures in the Open Space, no land is required to be set aside as a setback. The entire area of the Open Space qualifies as common open space to satisfy the 20% minimum open space requirement. The Open Space area for this project does not include any back or side yards or required buffer(s) for any lot or natural resource tract.

3. *Land shown on the final development plan as common open space, and landscaping and/or planting contained therein shall be permanently maintained by and conveyed to one of the following:*
A. An association of owners or tenants, created as a non-profit corporation...
CC & R provisions will address the maintenance and replacement of private common facilities associated with this project.

Section 60.45 Solar Access Protection

Section 60.45.10 Solar Access for New Development

1. *Applicability*
The subject site is zoned R-7, therefore the solar access design standards apply to this project.

2. *Design Standard*
The subject property runs north/south – and all streets providing access to lots within the site must also run north/south.

4. *Adjustments to Design Standard*
If the solar-access design standard were applied to this site it would be virtually impossible to develop. No lots can be oriented with their north/south dimension as the "long dimension" because the vehicular access onto and through the site must run north/south. The existing road patterns do not exist or do not provide any opportunity for alternate project design. A 100% adjustment to the solar access requirements of the development code is required to facilitate development of this PUD.

Section 60.55 Transportation Facilities

This PUD will generate approximately 150 vehicle trip per day, as determined from the ITE manual (10 trips/day/single family detached residence). No additional traffic analysis or impact assessment is required, per the pre-application conference summary.

Section 60.55.30 Street Design Standards

1. Streets

The proposed interior public street (SW Kelsi Street) does not meet "regulation" street standards for a local street for the City of Beaverton. A modification to the street standards is necessary to facilitate development of the property through the PUD approval process. Curb-tight sidewalks are requested in order to maximize the individual lot size on this constrained site. The proposed street section is a variation of an L-2 local street – with the planters removed from the public ROW. The project will generate far less than the allowable 500 vehicle trip per day anticipated for the typical street section. A request for approval of a modification to the Street Standards has been submitted to the engineering staff.

SW Kelsi Street is designed to extend (in the far distant future) to Multnomah Boulevard as required by the City of Portland Traffic Engineering Department. The private street/emergency vehicle access provides the necessary immediate connections for life safety.

Section 60.55.40 Access Standards

All proposed lots will have direct access onto a new neighborhood street, or will access a private street that takes access on a public street, and will abut a public or private street for at least 20'.

Section 60.55.45 Dedication

Public right-of-way will be dedicated to the City for the new neighborhood street serving the subdivision, and along the south side of SW Canby St.

Section 60.55.50 Intersection Standards

Sight clearance areas will be maintained at all intersections.

Section 60.60 Trees and Vegetation

Trees on the property that are planned for retention will be protected with construction fencing installed at the dripline for the entire construction process.

Street trees will be planted at the conclusion of the construction process, after the single family homes are approved for occupancy, at a rate of one street tree 30 lineal feet of street frontage – as required by Section 60.15.15.3.G.1 – according to staff. Location of the street trees is subject to final design of all of the infrastructure, and location of the driveways for each home. It is not feasible to show accurately (at this time) where the street trees will be located because the construction of driveways, streetlights, fire hydrants, water meters, utility vaults, etc. all take precedence over the street tree location. The final street tree plan will be produced with the construction document package and will be reviewed and approved by the project planner as part of the construction document and permit issuance process. One additional "landscape canopy tree" will be planted in the rear yard of each dwelling unit to provide landscape variety and ultimately, a dappled shade cover for the rear yards of the dwelling units. These "rear yard trees" will also be located on the final construction plan set for project planner approval.

A final landscape plan will be submitted for the Open Space Tracts as a portion of the "final" PUD approval process. The landscape plan for the Open Space Tracts will include over 80

caliper inches of "mitigation tree plant materials", with trees a minimum of 2 inch caliper at the time of planting. The developer does not desire a "forested" open space, but rather a well landscaped open space with opportunities for passive recreational use.

Section 60.65 Utility Undergrounding

All utilities will be placed underground.

Comprehensive Plan Goals and Policies

Chapter 3 – Land Use Element

3.13 Residential Neighborhood Development

3.13.1 Goal: Provide for the establishment and maintenance of safe, convenient, attractive and healthful places to live.

Policies:

a) Regulate residential development to provide for diverse housing needs by creating opportunities for single and multi-family development of various sizes, types and configurations.

b) Encourage a variety of housing types in residential areas, by permitting or conditionally permitting any housing type (one, two or more, family dwellings) within any zoning district so long as the underlying residential density of the zoning district is met. Accessory dwelling units shall not be considered in the calculation of the underlying housing density.

c) Require Planned Unit Development application procedures for projects proposing two or more families within the Low Density and Standard Density land use designations. Planned Unit Developments encourage flexibility in standards and provide a mechanism for staff to make adequate findings with respect to compatibility in size, scale, and dimension. Exceptions to this requirement are dwellings designed as primary units with an accessory dwelling unit, as specified in the Development Code.

d) Apply Residential Neighborhood designations (Low Density, Standard Density, Medium Density and High Density) consistent with the Metro 2040 Growth Concept Map and the City's housing target implementing strategy.

Residential Neighborhood Designations	*Net Square Feet per Dwelling Unit*
Low Density	*10,000 – 12,500*
Standard Density	*5,000 – 8,750*
Medium Density	*2,000 – 4,999*
High Density	*1,000 – 1,250*

e) Apply zoning districts as shown in subsection 3.14 Comprehensive Plan and Zoning District Matrix.

f) New Commercial zoning districts are not allowed within Residential Neighborhood Standard and Low Density land use designations. Existing properties with commercial zoning as shown on Figures III-2 through III-5 and listed by tax lot on said maps shall be allowed to continue in perpetuity. Expansion of the district is not allowed, but any use permitted within said district will be allowed subject to City approval through the procedures specified in the Development Code.

g) Enhance the City's landscape through design measures considering the natural setting of the land and the character of existing residential neighborhoods.

h) Foster innovation and variety in design to enhance the visual character of the City's landscape. Innovation in design can include designing infill structures to integrate into existing neighborhoods through compatible scale, similar design features, and similar setbacks.

i) Residential development, in compliance with regional mandates, shall achieve at least 80% of the maximum density allowed in the respective zoning districts as applied through 3.14 Comprehensive Plan and Zoning District Matrix.

These policies – a through i – direct the City of Beaverton, Department of Community Development to take legislative action to promote the goal **"Provide for the establishment and maintenance of safe, convenient, attractive and healthful places to live"**. The City has taken the necessary actions to promote said goal – through the adoption of specific regulations in the Development Code. In proposing development of a single parcel, it is not within the

scope or responsibility of this application to take any legislative action in regard to the above-identified policies – but – rather – to comply with the adopted development code regulations as they apply to the subject parcel. The compliance with the applicable code sections has been addressed in previous section of this document.

3.13.3 Goal: Establish Standard Density Residential areas to provide moderate sized lots for typical single family residences with private open space.

Policies:

a) Apply zoning districts as shown in subsection 3.14 Comprehensive Plan and Zoning District Matrix to allow a variety of housing choices.

The adoption of the Beaverton Comprehensive Plan Map accomplished this policy. The proposed PUD subdivision is in compliance with the intent of the R-7 zoning district standards. The approval of the PUD will provide housing on moderately-sized individual lots that are compatible with the surrounding community.

Chapter 4 – Housing Element

4.2.1.1 Goal: Maximize use of buildable residential land in the City.

a) Increase residential capacity in the City to substantially comply with requirements of Title 1 of the Metro Urban Growth Management Functional Plan.

This policy directs the City of Beaverton, Department of Community Development to take legislative action to promote the goal "**Maximize use of buildable residential land in the City".** The City has taken the necessary actions to promote said goal – through the adoption of specific regulations in the Development Code. In proposing development of a single parcel, it is not within the scope or responsibility of this application to take any legislative action in regard to the above-identified policies – but – rather – to comply with the adopted development code regulations as they apply to the subject parcel. The compliance with the applicable code sections has been addressed in previous section of this document.

Strict compliance with staff interpretation of Section 60.35.15 Common Open Space item (5.) and (6.) identified below would require loss of one proposed building lot on the project because the specific location of the open space tracts includes 5550 sq. feet of land conservatively designated as "setbacks". Staff needs to resolve the direct conflict between that "non-codified" interpretation and the clear mandate of the above-stated goal. Substantial findings addressing a more logical and realistic interpretation of the term "setback" are found in earlier sections of this document.

Section 60.35.15 Common Open Space

5. A PUD shall be required to provide common open space according to the following rates:

6. Land required to be set aside as setbacks or buffers shall not be included in the calculation of required open space.

4.2.2.1 Adequate Variety of Quality Housing

Goal: Provide an adequate variety of quality housing types to serve Beaverton's citizenry.

Policies:

a. Allow development of a wide variety of housing types in the City.

The approval of the PUD will provide opportunity for 14 single family detached housing units on moderately-sized individual lots that are compatible with the surrounding community.

4.2.3.1 Retention of Existing Affordable Housing
Goal: Promote the retention of existing affordable housing stock in the City.
The site is vacant so this set of policies does not apply to this application.

4.2.3.2 Production of New Affordable Housing
Goal: Promote the production of new affordable housing units in the City.
Policies:

a. Inform Beaverton's residents, property owners, and business owners of the need for additional affordable housing within the City.
b. Partner with and assist developers in supplying and maintaining additional affordable units throughout the City.
c. Continue to devote funding through the City's HOME Program to local non-profit housing development agencies in order to aid in the development and maintenance of new long-term affordable housing in the City.
d. Work in partnership with TVHP to create housing that is affordable to households at or below 60% of the MFI.
e. Comply or substantially comply with Metro Urban Growth Management Functional Plan (UGMFP) provisions that pertain to affordable housing.

The developer has been told repeatedly by home buyers that there is a need for affordable housing in "close-in" neighborhoods. The City is responsible – as denoted in policy (b) for "*partnering and assisting*" this applicant in providing a supply of affordable housing. The City is also responsible to METRO to work diligently with the applicant to facilitate development of this *"infill"* parcel to slow the outward creep of the UGB.

The site is very constrained because it is an odd shape, and it is not possible to achieve the design of a subdivision with the required minimum density on the property while meeting the 70' by 100' minimum lot size and 7,000sf lot area requirement. For this reason, a PUD application is part of this request for land use approval. 15 single family detached dwelling units are proposed for the site, benefiting the community by taking advantage of a "close-in" parcel, utilizing existing infrastructure, and meeting the goals of METRO by making use of an "infill parcel", within the UGB. Strict compliance with staff interpretation of Section 60.35.15 Common Open Space item (5.) and (6.) identified above would require loss of one proposed building lot on the project because the specific location of the open space tracts includes 5550 sq. feet of land conservatively designated as "setbacks". Staff needs to resolve the direct conflict between that **"non-codified"** interpretation and the clear mandate of the **above-stated goal and policies**.

Chapter 5 – Public Facilities and Services Element

5.4.1 Stormwater and Drainage
Goal: Ensure long-term provision of adequate storm water management within existing City limits and areas to be annexed in the future.

Policies:

a. The City shall continue to participate in the CWS's Surface Water Management (SWM) program for the urban portion of the Tualatin River watershed. The City shall retain responsibility for planning, construction and maintenance of portions of the local storm water facilities within its incorporated limits.
b. On-site detention will be used as a storm water management tool to mitigate the impacts of increased storm water run-off associated with new land development
c. All new land development will be connected to a storm water drainage system. Each new development will be responsible for the construction or assurance of construction of their portion of the major storm water run-off facilities that are identified by the SWM program as being necessary to serve the new land development.

The City of Beaverton co-operates with CWS and participates in the SWM program. The City of Beaverton does administer (it is believed) the facilities within its boundaries. A storm water

detention and water quality facility has been designed for the project – in compliance with the CWS most recent adopted regulations. The preliminary design drawings and complete application package substantiate the fact that these policies are met. The design includes a detention mechanism, a water filtration mechanism, and connections to existing storm water drainage systems as required in the Beaverton Development Code and other City codes.

5.5.1 Potable Water

Goal: The City shall continue to participate in the Joint Water Commission and work with the West Slope, Raleigh and Tualatin Valley Water Districts to ensure the provision of adequate water service to present and future customers in Beaverton.

Policies:

a. All new land development (residential subdivisions, multiple family dwelling development, and industrial and commercial developments) shall be connected to a public water system

b. All new development served by the Beaverton Water Division shall be reviewed by the City to determine that the pressure of water available to serve the proposed development meets City standards

c. The City shall encourage water conservation consistent with current intergovernmental agreements, to prolong existing supplies and to help postpone water system capacity improvements needed to supply expected future demands as a result of projected population increases.

d) The City will comply with State and federal laws and regulations relating to potable water

The preliminary design drawings and complete application package substantiate the fact that these policies are met, to the extent possible, relative to this PUD development proposal.

5.6.1 Adequate Sewer Service

Goal: *The City shall continue to cooperate with CWS to ensure long-term provision of an adequate sanitary sewer system within existing City limits and areas to be annexed in the future.*

Policies:

a. All new land development (residential subdivisions, and multiple family dwelling, industrial, and commercial developments) shall be connected to the City sewer system.

b. When sewer service is extended into an area that contains existing development, all existing habitable buildings shall be connected to the new sewer if they are within 100 feet of the sewer line and if gravity lateral sewer lines can serve them

A sanitary sewer system has been designed for the project – in compliance with the City of Beaverton most recent adopted regulations. The preliminary design drawings and complete application package substantiate the fact that these policies are met. The design includes connections to existing development within the service areas of the project as required in the Beaverton Development Code and other City codes.

5.7.1 Schools

Goal: Cooperate with the Beaverton School District in its efforts to provide the best possible educational facilities and services to Beaverton residents.

Policies:

a. The City shall encourage the School District to provide facilities that will adequately accommodate growth while recognizing the limited supply of buildable land in the city for such facilities.

b. Schools should locate within or adjacent to residential districts for the convenience of those the facilities serve. However, public and private school proposals should be assessed for compatibility in order to assure that the stated purposes of the residential districts are not unnecessarily eroded.

c. The City shall encourage the District to provide for schools throughout the City in locations that are easily accessible to those they are intended to serve.

d. The City shall work cooperatively with the School District in implementation of the Comprehensive Plan through the District's various programs, joint acquisition and development efforts.

e. The City shall notify the school district of development proposals that may potentially impact a present or future school site to allow the district the opportunity to comment, purchase or request dedications.

f. The City shall notify the School District when considering Comprehensive Plan or land use regulation amendments that may significantly impact school capacity.

g. The City shall encourage the School District and the Tualatin Hills Park and Recreation District THPRD to continue their excellent level of cooperation in the joint acquisition, development and use of facilities for educational and recreational purposes.

The development of a 15 lot subdivision does not conflict with the policies relating to "Public Schools" in the City of Beaverton. It is assumed that the City will comply with policy (f) but this application is not a Comp Plan Amendment or land use regulation amendment – so the applicant is unsure whether the School District will be notified.

5.8.1 Parks & Recreation

Goal: Cooperate with THPRD in implementation of its 20-Year Comprehensive Master Plan and Trails Master Plan in order to ensure adequate parks and recreation facilities and programs for current and future City residents.

The development of a 14 lot subdivision does not conflict with the Goal and policies relating to "Parks and Recreation" in the City of Beaverton.

5.10.1 Fire & Emergency Medical Services

Goal: Cooperate with TVF&RD to insure adequate fire and emergency medical services for the current and future residents of the City.

Policies:

a. Retain TVF&RD as the provider of fire and emergency medical services for the entire City of Beaverton incorporated area

b. The City shall cooperate with TVF&RD in the siting of new facilities

c. The TVF&RD shall enforce the Uniform Fire Code for existing buildings and the City shall enforce it for new construction

d. The City shall adopt and enforce the State Building Code

The preliminary design drawings and complete application package substantiate the fact that these policies are met, to the extent possible, relative to this PUD development proposal.

Chapter 6 – Transportation Element

6.2 Transportation Goals and Policies

6.2.1. Goal: *Transportation facilities designed and constructed in a manner to enhance Beaverton's livability and meet federal, state, regional, and local requirements.*

Policies:

a) Maintain the livability of Beaverton through proper location and design of transportation facilities.
b) Consider noise attenuation in the design and redesign of arterial streets immediately adjacent to residential development.
c) Locate and design recreational multi-use paths to balance the needs of human use and enjoyment with resource preservation in areas identified on the Natural Resource Inventory Plan Map for their Significant Natural Resource values.
d) Protect neighborhoods from excessive through traffic and travel speeds while providing reasonable access to and from residential areas. Build streets to minimize speeding.

The preliminary design drawings and complete application package substantiate the fact that these policies are met, to the extent possible, relative to this PUD development proposal. The location of transportation facilities is not optional in most cases, especially when the project is an infill property, with multiple jurisdictions offering design input. The livability of Beaverton – as stated at numerous neighborhood meetings and city council sessions – will NEVER be the same – because there are more people and more cars now than ever before. The number of people living in Beaverton and driving in Beaverton will increase – and the design of this short local street has absolutely no impact on the "livability" of the city. The project has been designed with the location of a large open space tract adjacent to the arterial (Multnomah Boulevard) to reduce the noise impact on the new residences. A multi-use path has been included to provide pedestrian links and emergency vehicle access through the site. The only protection that can be afforded to the neighborhood to reduce excessive speed on Canby Street is the construction of traffic calming devices such as speed bumps. It is outside the purview of this application to propose or install speed bumps or other traffic calming devices on Canby Street. That responsibility is squarely on the shoulders of the City Traffic Engineering Staff.

6.2.2 Goal: *A balanced transportation system.*

Policies:

a. Implement Beaverton's public street standards that recognize the multi-purpose nature of the street right-of-way for a combination of utility, pedestrian, bicycle, transit, truck, and auto uses, and recognize that streets are important to community identity and provide a needed service.
b. Develop and provide a safe, complete, attractive, efficient, and accessible system of pedestrian ways and bicycle ways, including bide lanes, shared roadways, multi-use paths, and sidewalks according to the pedestrian and bicycle system maps and the Development Code and Engineering Design Manual and Standard Drawings requirements.
c. Provide connectivity to each area of the City for convenient multi-modal access. Ensure pedestrian, bicycle, transit, and vehicle access to schools, parks, employment and recreational areas, and destinations in station areas, regional and town centers by identifying and developing improvements that address connectivity needs.
d. Develop neighborhoods and local connections to provide adequate circulation into and out of neighborhoods.
e. The permanent closure of an existing road in a developed neighborhood is not recommended and will be considered by the City only under the following circumstances: as a measure of last resort, when the quality of life in the neighborhood is being severely threatened by excessive traffic volumes or the presence of a traffic safety hazard; or, as part of a plan reviewed through the City's land use, site development, and/or capital improvement process(es). Maintain existing neighborhood connectivity by avoiding closures of existing streets except when the closure is part of a larger plan for improvements to the neighborhood.
f. Design streets to accommodate transit while minimizing impacts to traffic flow.

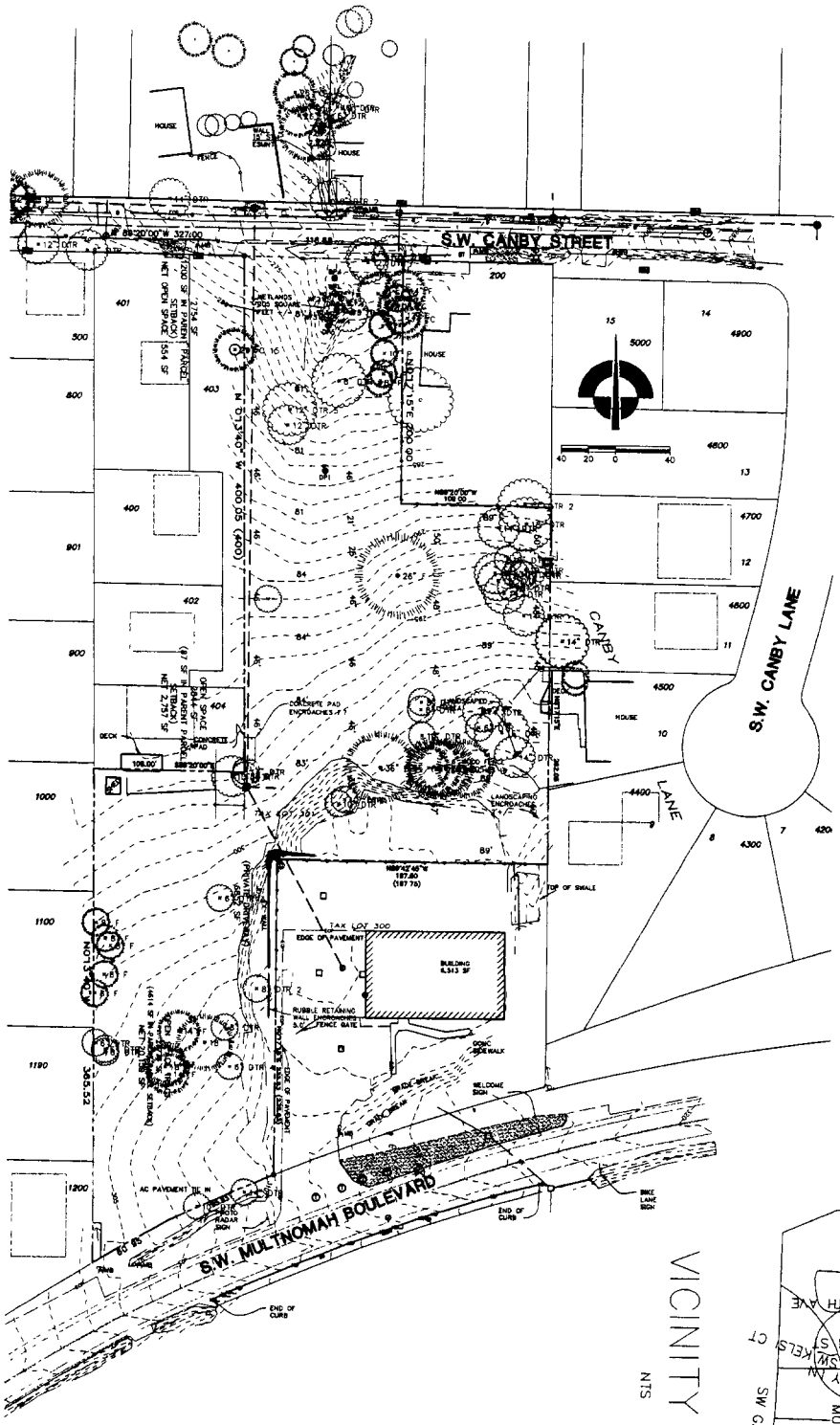
The preliminary design drawings and complete application package substantiate the fact that these policies are met, to the extent possible, relative to this PUD development proposal.

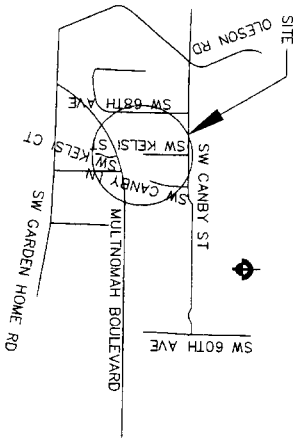
6.2.3 Goal: A safe transportation system.

Policies:

a. Improve traffic safety through a comprehensive program of engineering, education, and enforcement.
b. Design streets to serve anticipated function and intended uses as determined by the Comprehensive Plan.
c. Enhance safety by prioritizing and mitigating high accident locations within the City.
d. Designate safe routes from residential areas to schools.
e. Construct multi-use paths only where they can be developed with satisfactory design components that address safety, security, maintainability, and acceptable uses. Multi-use paths should converge at traffic-controlled intersections to provide for safe crossing, although they should be separate and distant from major streets for most of their length.
f. Provide satisfactory levels of maintenance to the transportation system in order to preserve user safety, facility aesthetics, and the integrity of the system as a whole.
g. Maintain access management standards for streets consistent with City, County, and State requirements to reduce conflicts among vehicles, trucks, bicycles, and pedestrians. Preserve the functional integrity of the motor vehicle system by limiting access per City standards.
h. Ensure that adequate access for emergency services vehicles is provided throughout the City.
i. Meet federal and State safety compliance standards for operation, construction, and maintenance of the rail system.
j. Provide safe routing of hazardous materials consistent with federal guidelines, and provide for public involvement in the process.

The preliminary design drawings and complete application package substantiate the fact that these policies are met, to the extent possible, relative to this PUD development proposal.

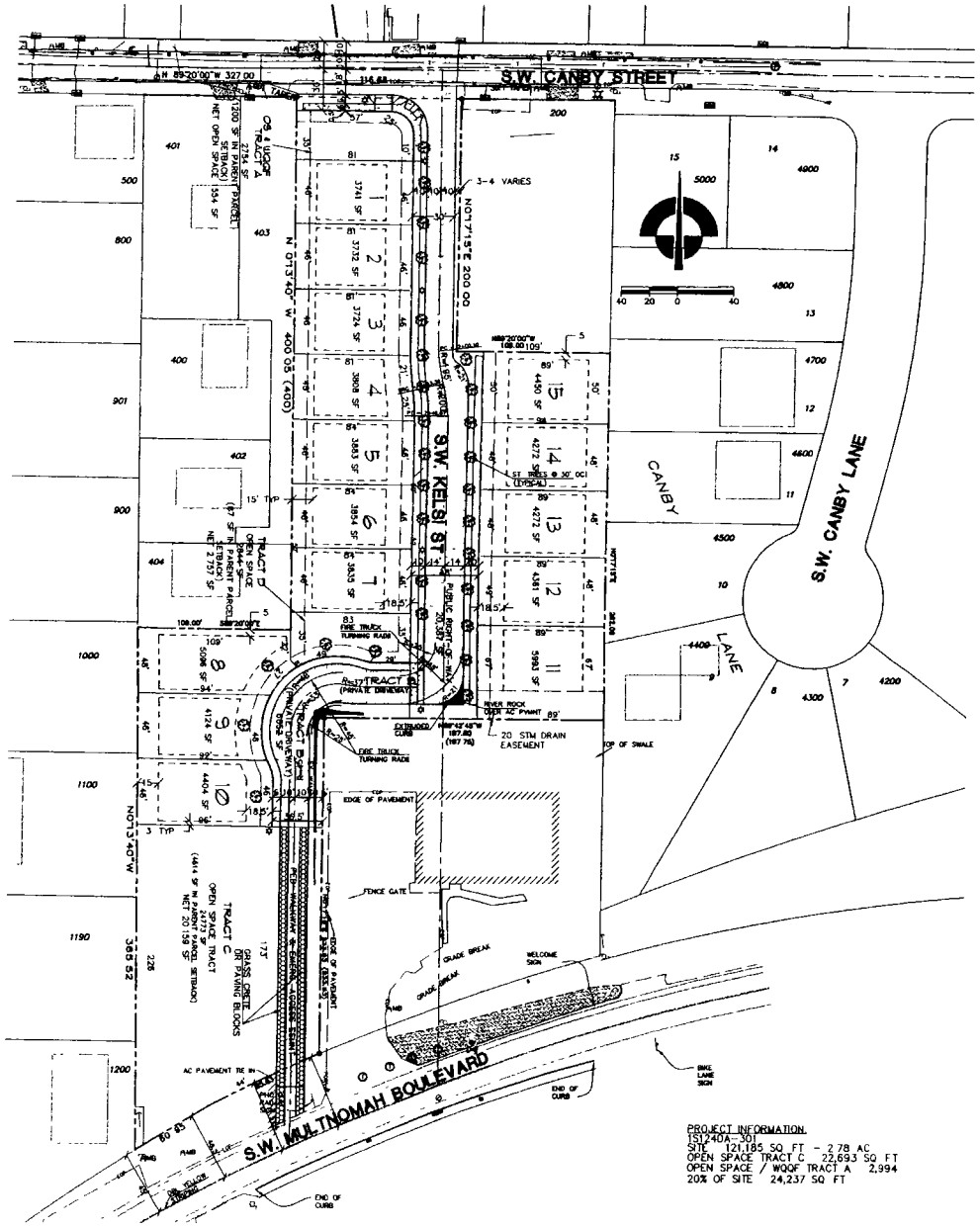




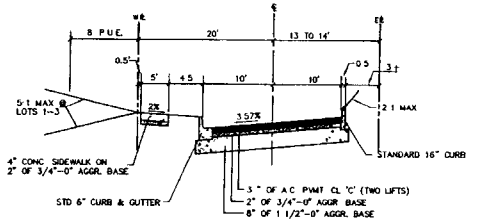
VICINITY MAP

NTS

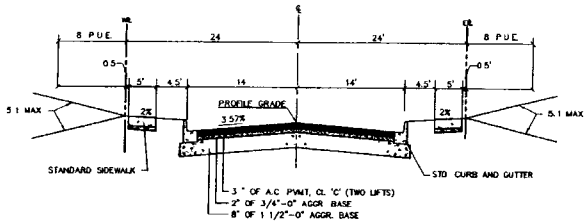
6	1	PROJECT NO. 1667 DATE 10-03-04 DESIGNED BY CBJ DRAWN BY CBJ	REVISIONS	CES|NW 15573 SW BANGY ROAD, STE 300 LAKE OSWEGO, OREGON 97035 503 968.6655 www.cesnw.com	GARDEN GROVE CASE FILE NO LD-2004-0030 MITCHELL HARDY HOMES PO BOX 1137 LAKE GROVE, OR 97035 503-358-6973
		EXISTING CONDITIONS	1667xbase.DWG		



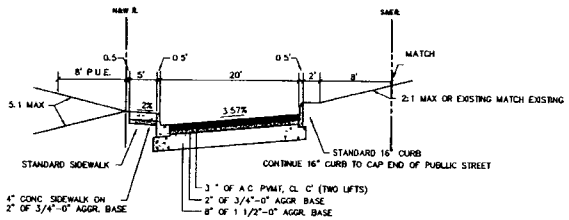
PROJECT INFORMATION
151240A-301
SITE 121,185 SQ FT - 2.78 AC
OPEN SPACE TRACT C 22,693 SQ FT
OPEN SPACE / WQQF TRACT A 2,994
20% OF SITE 24,237 SQ FT



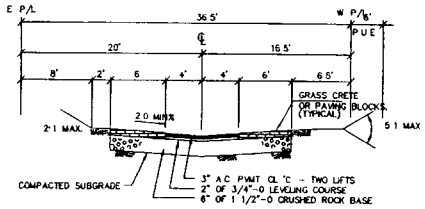
S.W. KELSI ST. (0+18 TO 2+05)
NTS



S.W. KELSI STREET (2+05 TO 4+55)
NTS



PRIVATE ROAD SECTION
NTS



EMERGENCY AND PED. ACCESS (TRACT C)
NTS

DATE 1-27-05

GARDEN GROVE
CASE FILE NO LD-2004-0030

MITCHELL HARDY HOMES
PO BOX 117
LAKE GROVE, OR 97035
503-358-6973

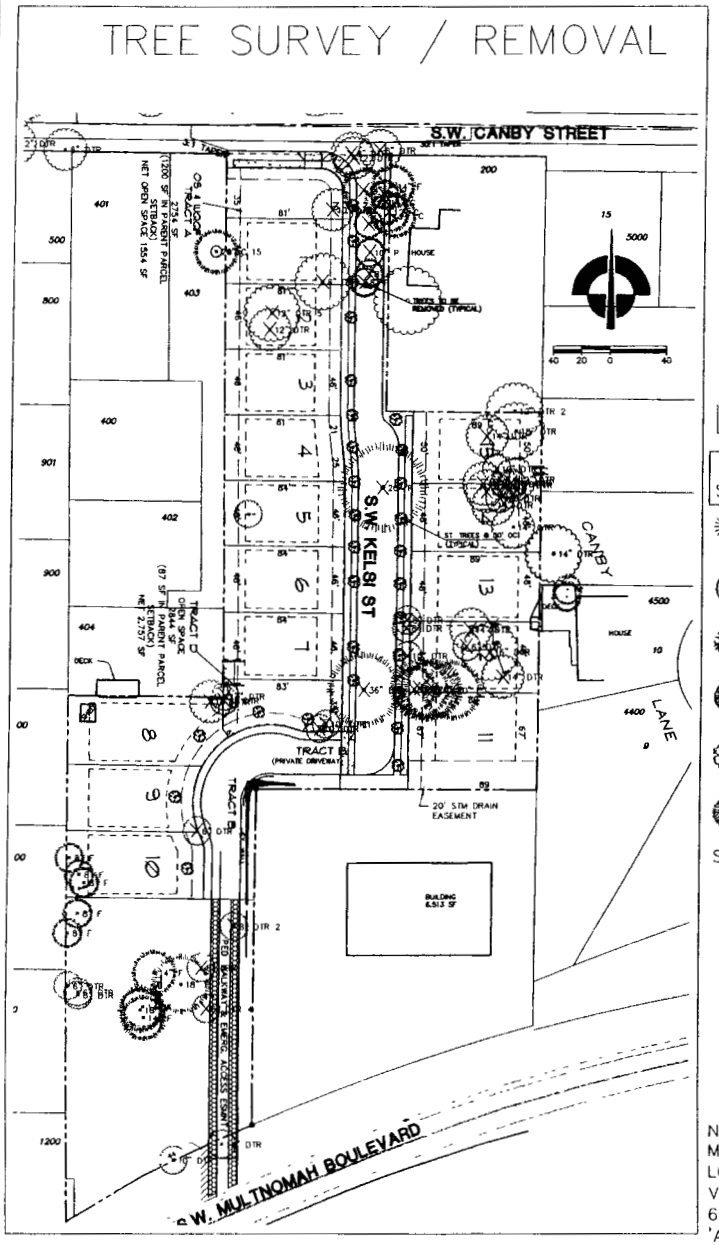
CES NW
15573 SW BANGY ROAD, STE 300
LAKE OSWEGO, OREGON 97035
503.906.6655 www.cesnw.com

REVISIONS	DATE	DRAWN BY
	10-05-04	CSA

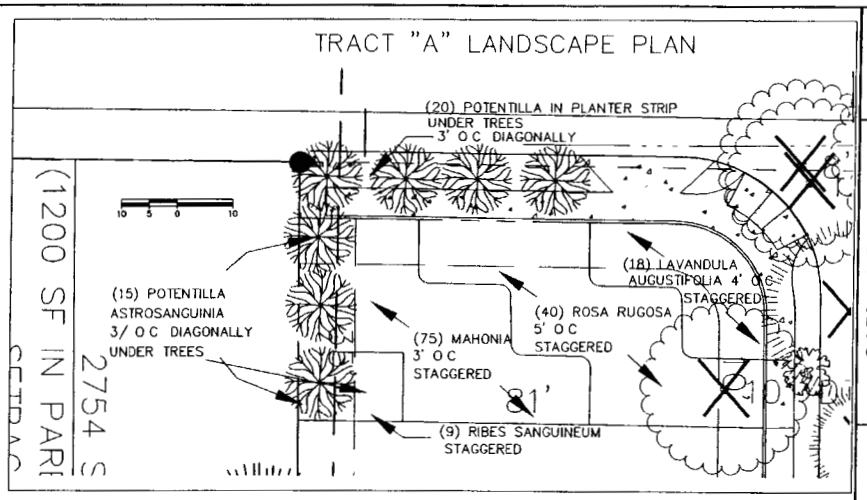
PRELIMINARY PLAT

SHEET 2 OF 6

TREE SURVEY / REMOVAL



TRACT "A" LANDSCAPE PLAN

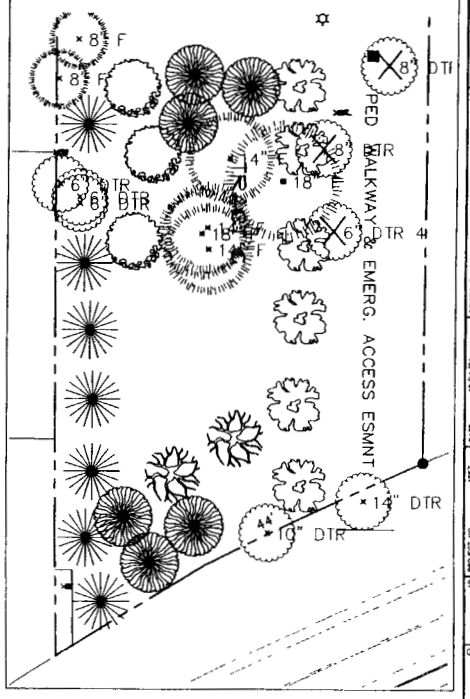


LEGEND

SYMBOL	(QUANTITY) SIZE	SCIENTIFIC NAME COMMON NAME
	(10) 5-6 FEET	THUJA PLICATA WESTERN RED CEDAR
	(3) 2" CALIPER	RHAMNUS PURSHIANA CASCARA
	(2) 2" CALIPER	GLEDITSIA TRIACANTHOS HONEY LOCUST
	(6) 2" CALIPER	FAGUS SYLVATICA FASTIGAT DAWYCK BEECH
	(6) 2" CALIPER	ZELKOVA SERRATA 'VILLAGE GREEN' V G. ZELKOVA
	(7) 2" CALIPER	MALUS STRATHMORE COLUMNAR FLOWERING CRAB APPLE
SHRUBS	(18) 2-3 GALLON	LAVENDULA AUGUSTIFOLIA ENGLISH LAVENDER
	(9) 2-3 GALLON	RIBES SANGUINEUM FLOWER CURRANT
	(75) 2-3 GALLON	MAHONIA OREGON GRAPE
	(35) 2-3 GALLON	POTENILLA ASTROSANGUINIA CINQUEFOIL
	(40) 2-3 GALLON	ROSA RUGOSA WILD ROSE

NOTE. ADJUST PLANT LOCATION TO ACCOMODATE ACCESS TO MAINTENANCE OPENINGS IN DETENTION VAULTS
LOCATE (6-10) 18" SQ STEPPING BLOCKS TO ACCESS DENTION VAULT MAINTENANCE OPENINGS FROM ROW/SIDEWALK
6" THICK BARK MULCH AROUND ALL TREES & SHRUBS IN TRACT 'A'

TRACT "C" LANDSCAPE PLAN



GARDEN GROVE
CASE FILE NO LD-2004-0030

MITCHELL HARDY HOMES
PO BOX 1137
LAKE GROVE, OR 97035
503-358-6973

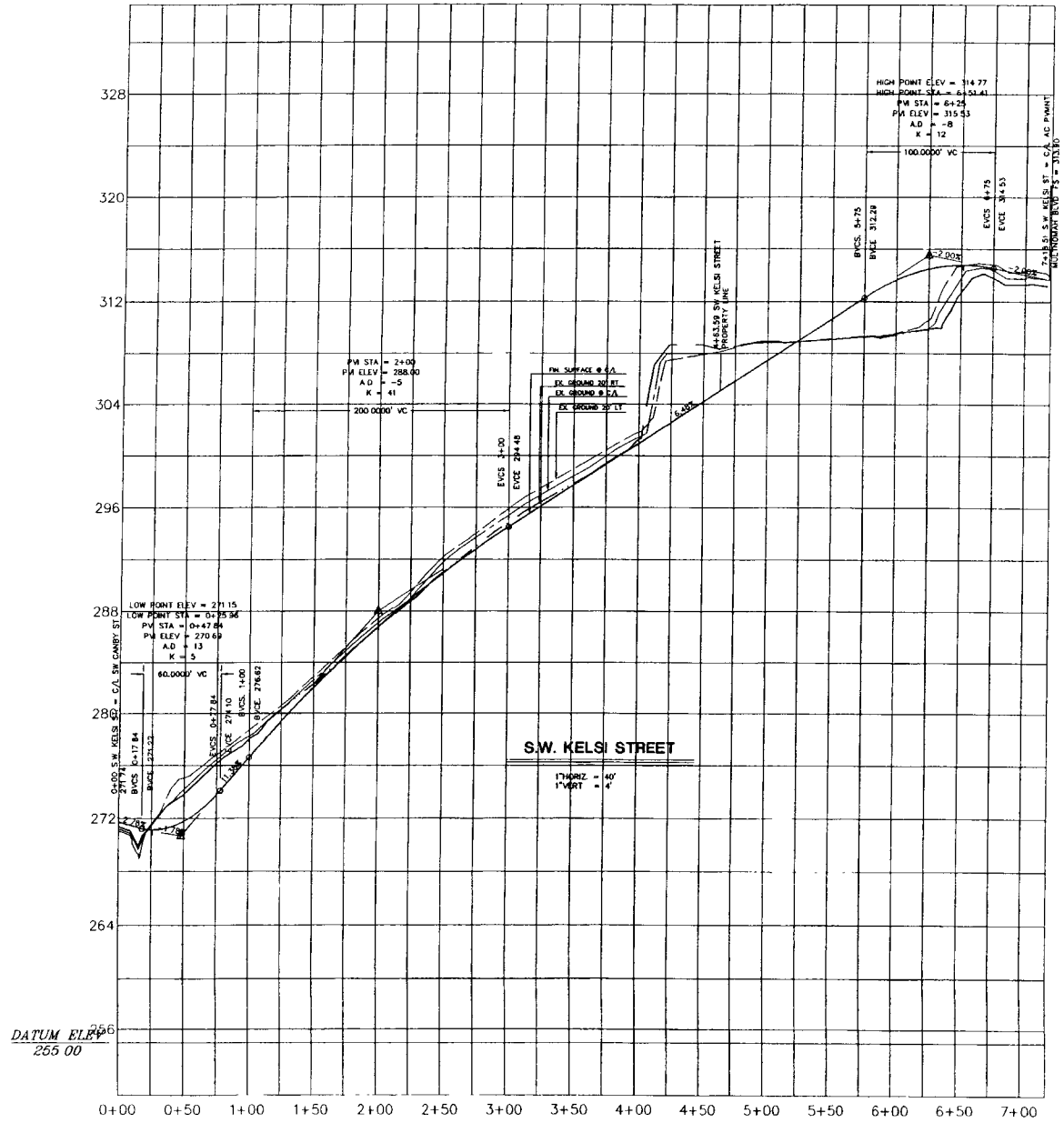
CES NW
15573 SW BANCY ROAD, STE 300
LAKE OSWEGO, OREGON 97035
503 968.6655 www.cesnw.com

REVISIONS

PROJECT NO. 1987 DATE 10-13-04
DESIGNED BY CB DRAWN BY CB

TREE SURVEY AND LANDSCAPE PLAN

SHEET 2A OF 6



CES/NW, INC.
OCT 13 2004

GARDEN GROVE
CASE FILE NO. LD-2004-0030

MITCHELL HARDY HOMES
PO BOX 1137
LAKE GROVE, OR 97035
503-356-6973

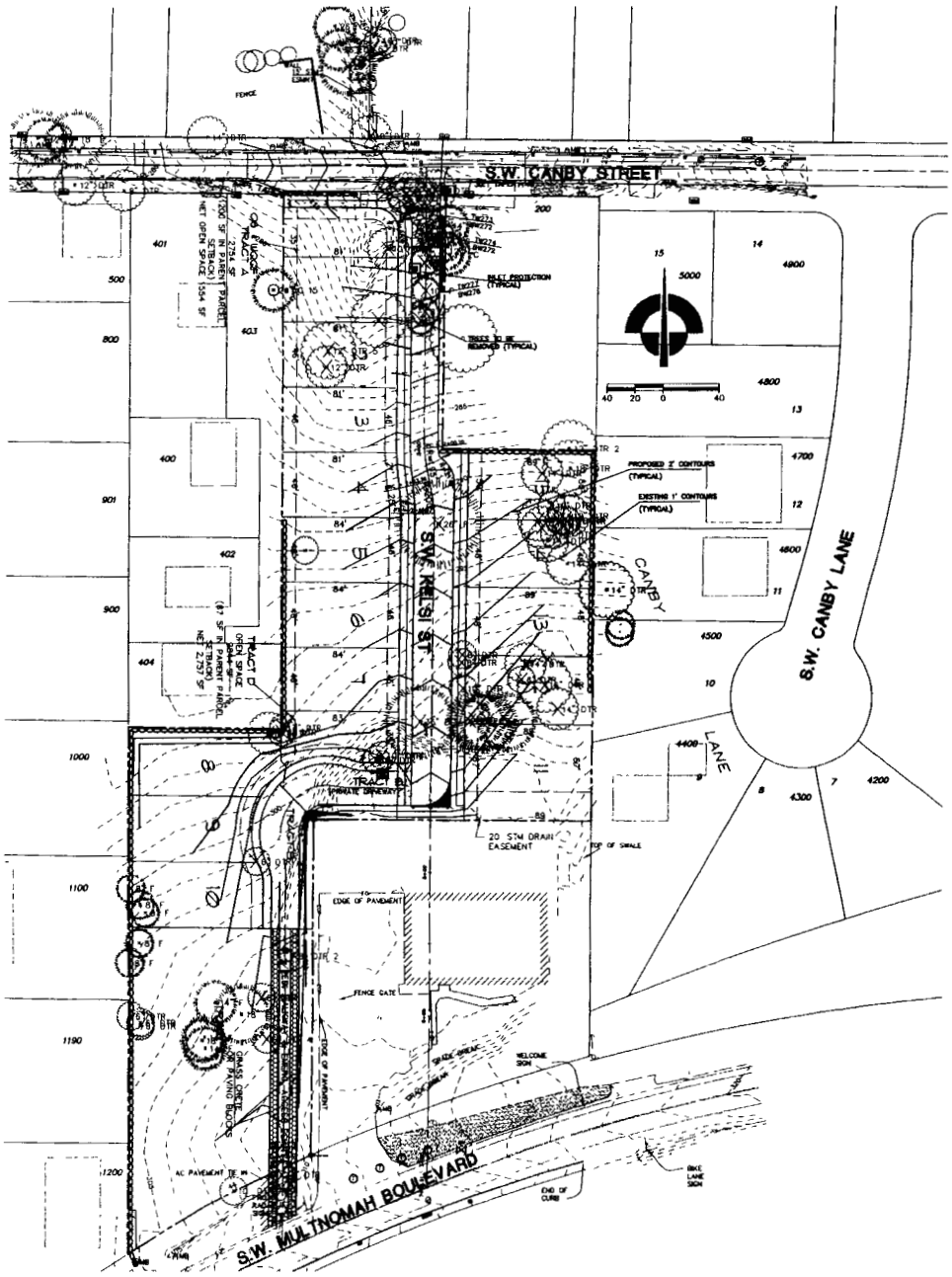
CES|NW
15573 SW BANGY ROAD, STE 300
LAKE OSWEGO, OREGON 97035
503 968 6655 www.cesnw.com

REVISIONS

PROJECT NO. 1967 | DATE 10-08-04
DESIGNED BY: CBJ | DRAWN BY: CBJ

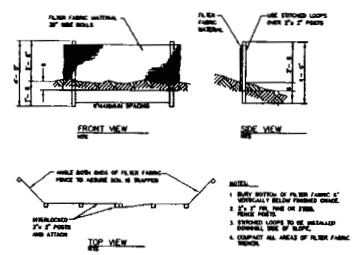
PROFILE SW KELSI ST
CANBY TO MULT. BLVD

SHEET 3 OF 6

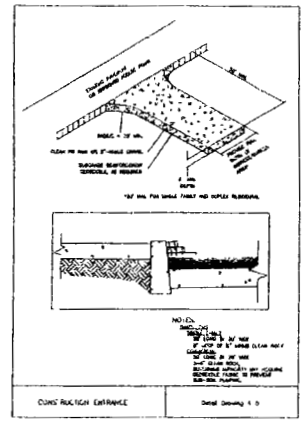


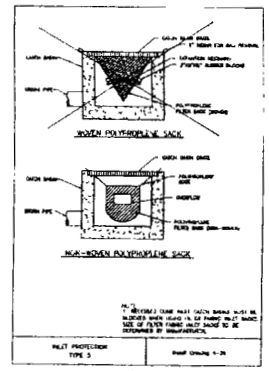
EROSION CONTROL NOTES

1. CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION/SEDIMENTATION CONTROL DURING CONSTRUCTION (ANY TIME OF YEAR) PER THE "EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, DECEMBER 2000 AND CWS' DESIGN AND CONSTRUCTION STANDARDS, R&O 04-9, CHAPTER 4.
2. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER PROPOSED PROJECT DESIGN ELEMENT
3. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETE AND APPROVED BY CLEAN WATER SERVICES (CWS) AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE PROJECT IS APPROVED UNTIL LOTS ARE SOLD.
4. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD NO DISTURBANCE BEYOND THE FLAGGED CLEARING SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION
5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS.
6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
8. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN 24 HOURS FOLLOWING A STORM EVENT
9. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING PROCESS SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM
10. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT
11. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.
12. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.
13. PLACE GRASS SEED OVER BARREN SOIL. 80/20 BLEND OF DWARF PERENNIAL RYE AND CREEPING RED FESCUE MIN. 100#/ACRE. APPLY 20-10-10 FERTILIZER IN ACCORDANCE WITH SUPPLIER'S RECOMMENDATIONS. SEEDING TO TAKE PLACE PRIOR TO SEPTEMBER 1ST UNLESS OTHERWISE DIRECTED BY CWS OR ENGINEER.
14. IF THERE IS EXPOSED SOILS OR SOILS NOT FULLY STABILIZED FROM OCTOBER 1 THROUGH APRIL 30, THE WET WEATHER EROSION CONTROL MEASURES WILL BE EFFECT, AND SHALL INCLUDE A MINIMUM 2" THICK STRAW MULCH OVER ALL DISTURBED AREAS AS AN ALTERNATE TO SEEDING FOR WET WEATHER MEASURES. SEE SECTIONS 3.3.7 AND 3.3.8, TECHNICAL GUIDANCE HANDBOOK, FOR REQUIREMENTS.
15. SEDIMENT FENCE ADJACENT TO INTERIOR STREET R.O.W. TO BE INSTALLED UPON COMPLETION OF STREET CONSTRUCTION. SEDIMENT FENCE ON PERIMETER OF SITE TO BE IN PLACE PRIOR TO EXCAVATION.
16. ESC MEASURES SHALL BE REMOVED BY THE DEVELOPER WHEN VEGETATION IS FULLY ESTABLISHED.
17. NOTIFY CWS INSPECTION DEPARTMENT AT 503-681-4444 24 HOURS PRIOR TO ANY WORK ON SITE.
18. WATER QUALITY PONDS OR SWALES ARE TO BE PROTECTED BY USE OF JUTE MATTING. USE 1/4 INCH OR SMALLER MESH JUTE MATTING IN UPPER AREAS, AND TIGHT WEAVE MATTING IN HERBACEOUS ZONE.



SEDIMENT FENCE DETAIL





GARDEN GROVE
CASE FILE NO. LD-2004-0030

MITCHELL HARDY HOMES
PO BOX 1137
LAKE GROVE, OR 97035
503-358-6973

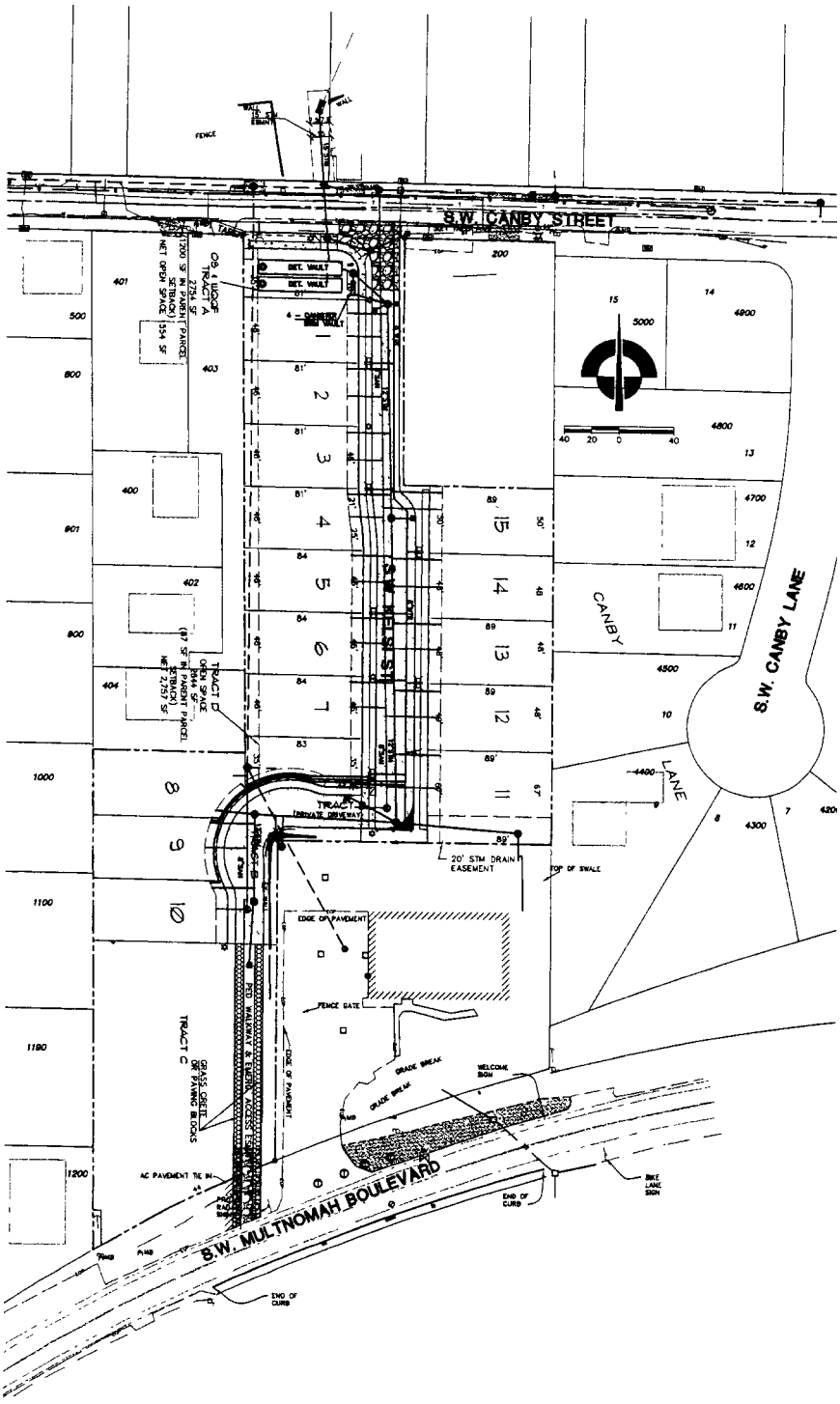
CES|NW
15575 SW BANGY ROAD, STE 300
LAKE OSWEGO, OREGON 97035
503.968.6655 www.cesnw.com

REVISIONS

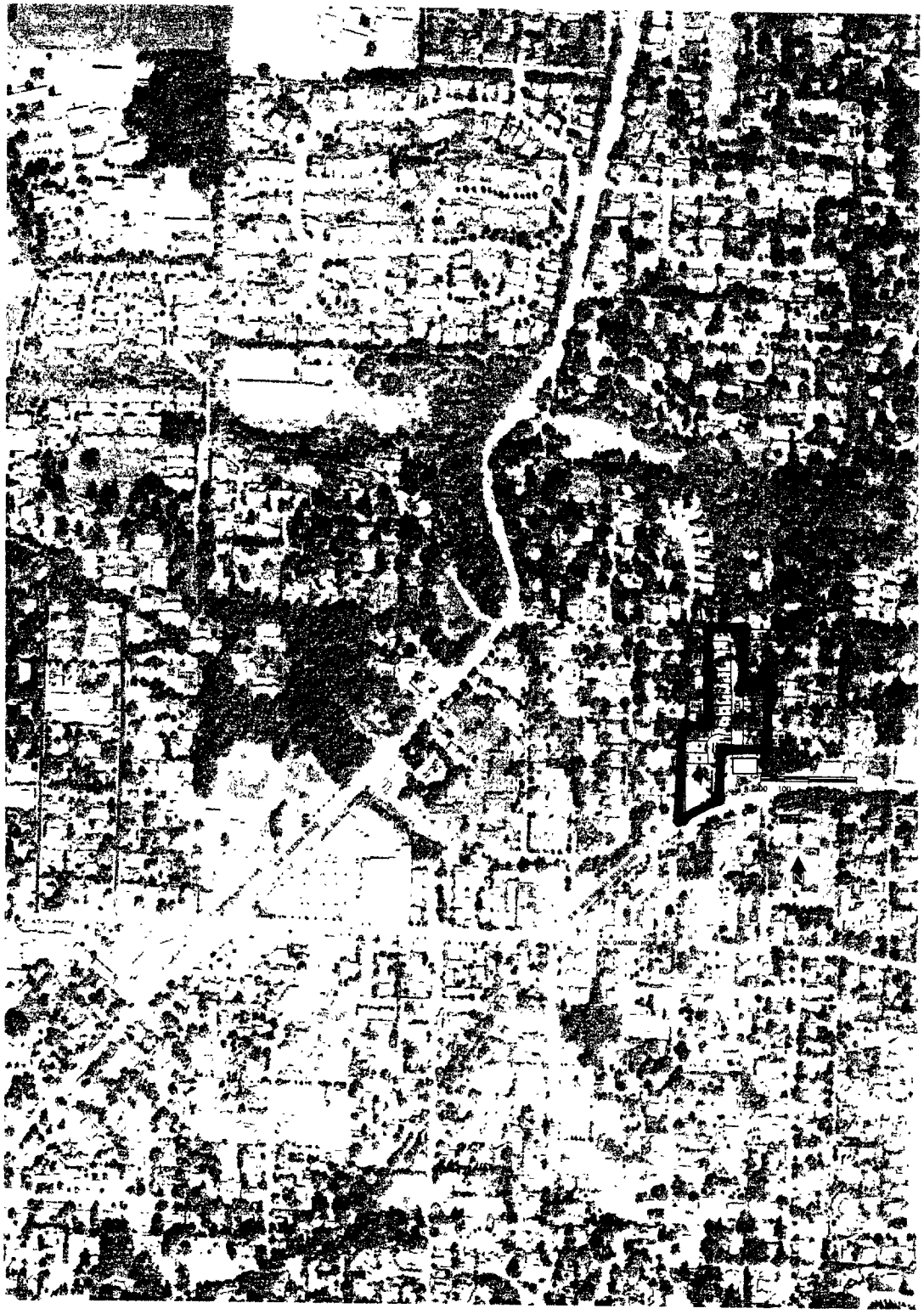
PROJECT NO.	DATE	10-20-04
DESIGNED BY:	DRAWN BY:	CBJ

GRADING & EROSION CONTROL PLAN

SHEET 4 OF 6



6	5	PROJECT NO. 1667 DATE 10-05-04 DESIGNED BY CBJ DRAWN BY CBJ	REVISIONS	CES NW 15573 SW BANGY ROAD, STE 300 LAKE OSWEGO, OREGON 97035 503 968.6655 www.cesnw.com	GARDEN GROVE CASE FILE NO LD-2004-0030 MITCHELL HARDY HOMES PO BOX 1137 LAKE GROVE, OR 97035 503-358-6973
		UTILITY PLAN	1667notes.DWG		



9	9	PROJECT NO. 1867 DATE 10-06-04 DESIGNED BY: CBJ DRAWN BY: CBJ	AERIAL PHOTO	REVISIONS	CES|NW 15575 SW BANGY ROAD STE 300 LAKE OSWEGO OREGON 97035 503 968 6655 www.cesnw.com

GARDEN GROVE
CASE FILE NO LD-2004-0030

MITCHELL HARDY HOMES
PO BOX 1137
LAKE GROVE OR 97035
503-358-6973

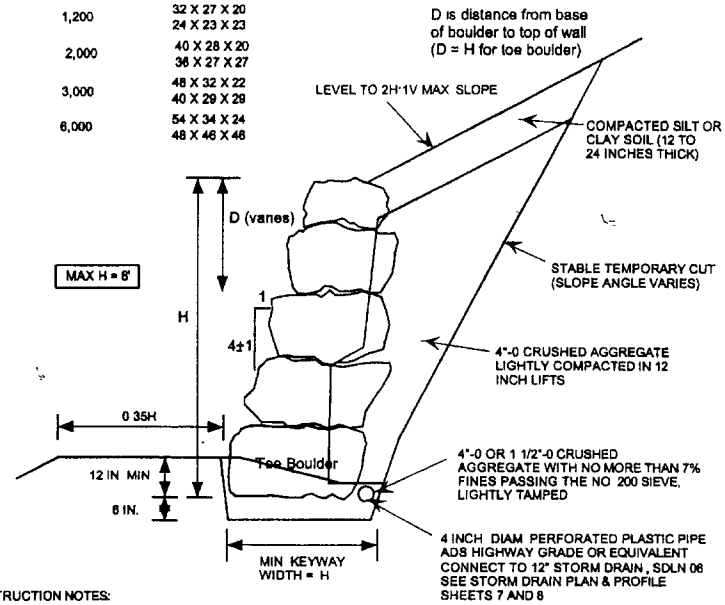
ROCK SIZE SCHEDULE (See note 4 below)

D (FT)	MIN WT (LBS)	TYPICAL SIZE (IN)
1	650	24 X 18 X 14 19 X 19 X 19
3	1,200	32 X 27 X 20 24 X 23 X 23
5	2,000	40 X 28 X 20 36 X 27 X 27
7	3,000	48 X 32 X 22 40 X 29 X 29
9	6,000	54 X 34 X 24 48 X 46 X 46

ROCKERYWALL DESIGN

MAXIMUM WALL HEIGHT (H) = 8 FEET

DRAWING NOT TO SCALE



CONSTRUCTION NOTES:

1 For walls supporting engineered fill, the fill should be overbuilt as a temporary 1H:1V slope starting at a minimum distance of H/3 from the base of the wall The slope should then be trimmed back such that the wall is constructed against a stable excavated face of compacted fill

2 Keyway subgrade and embedment should be verified by GeoPacific Engineering, Inc

3. Rocks should have a cubical, tabular, or semi-rectangular shape that roughly matches the space created by the previous rock course. Rocks should be laid flat with the long dimension oriented perpendicular to the wall and extending towards the excavation face. Rocks should be staggered such that each rock bears on at least two rocks below and vertical joints are discontinuous Rock placement and wall integrity should be checked (by builder) by lightly hammering on the top of each rock with excavator bucket.

4 Minimum rock sizes should be determined using the ROCK SIZE SCHEDULE above, where D is the distance from the base of the rock to be placed to the top of the wall Rocks should be no smaller than 650 lbs

5. Voids greater than 6 inches wide where there is no contact between adjacent rocks should be chinked with a small rock

6. Backfill behind the rocks should consist of an average 12-inch-wide sheet of 4"-0 crushed aggregate with no more than 7% fines passing the U.S Standard No. 200 sieve Backfill should be placed in 12 inch lifts and lightly compacted to an unyielding state as each course of rocks is placed

EXHIBIT _____

File Number 4339

Clean Water Services
Our commitment is clear.

RECEIVED MAY 24 2004

Sensitive Area Pre-Screening Site Assessment

Jurisdiction	BEAVERTON	Date	MAY 20 2004
Map & Tax Lot	1S124DA TL 301	Owner	MITCHELL / HARDY
Site Address	SW CANBY ST		
		Contact	KIRSTEN VANLOO @ CES/NW
Proposed Activity	14-16 LOT PUD	Address	15573 SW BANBY RD
	SUBDIVISION		LAKE OSWEGO OR 97035
		Phone	503-968-6655
			503-968-2595 FAX

Official use only below this line

Y	N	NA		Y	N	NA	
☒	☐	☐	Sensitive Area Composite Map Map # 1S1W-D	☐	☐	☒	Stormwater Infrastructure maps QS # 3822
☐	☐	☒	Locally adopted studies or maps Specify	☒	☐	☐	Other Specify 2002 AERIAL

Based on a review of the above information and the requirements of Clean Water Services Design and Construction Standards Resolution and Order No. 04-9:

☒ **Sensitive areas potentially exist on site or within 200' of the site. THE APPLICANT MUST PERFORM A SITE CERTIFICATION PRIOR TO ISSUANCE OF A SERVICE PROVIDER LETTER OR STORMWATER CONNECTION PERMIT. If Sensitive Areas exist on the site or within 200 feet on adjacent properties, a Natural Resourc s Assessment Report may also be required.**

☐ **Sensitive areas do not appear to exist on site or within 200' of the site. This pre-screening site assessment does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered on your property. NO FURTHER SITE ASSESSMENT OR SERVICE PROVIDER LETTER IS REQUIRED. THIS FORM WILL SERVE AS AUTHORIZATION TO ISSUE A STORMWATER CONNECTION PERMIT.**

☐ **The proposed activity does not meet the definition of development. NO SITE ASSESSMENT OR SERVICE PROVIDER LETTER IS REQUIRED.**

Comments:

R viewed By: [signature] **Date:** 5/24/04

Returned to Applicant
Mail ___ *Fax* ___ *Counter* ___
Date 5/24/04 *By* [illegible]

Post-it® Fax Note 7671	Date 5/24/04	# of pages ▸ 15
To KIRSTEN VAN LOO	From RANDY HOYT	
Co./Dept. CES/NW	Co. CWS	
Phone # 503 968 6655	Phone # 503 681 4474	
Fax # 503 968 2595	Fax # 503 681 4439	

171


HICKMAN
OLESON
68TH
CANBY
1S124DA00301
MULTNOMAH
UNNAMED
RAILROAD
64TH
GARDEN HOME
69TH
67TH
66TH
65TH
STANFORD

Clean Water Services
Our commitment is clear

August 24, 2004

Randy Cunningham
13131 SE 125th Ave
Clackamas, OR 97015

RE: Mossy Rock: SW Canby Street in Beaverton. 1S124DA00301

Clean Water Services (CWS) has received your Sensitive Area Certification form and Wetland Delineation Report for the above referenced site. District staff has reviewed the submitted materials including site conditions and the description of your project. Staff understands that the sensitive area found on site is a small isolated wetland and as such, is not jurisdictional to the USACE. Pending concurrence with ODSL, that filling the wetland on site will fall under the 50 cubic yard threshold to fill, this document will serve as your Service Provider Letter as required by Resolution and Order 04-09

All required permits and approvals must be obtained and completed under applicable local, state, and federal law.

This letter does NOT eliminate the need to protect sensitive areas if they are subsequently identified on your site.

If you have any questions, please feel free to call me at 503-846-5157.

Sincerely,

Astrid Dragoy
Environmental Plan Review

E:\Development Svcs\SP 00-7\SPR Letters\1S124DA00301 Mossy Rock #4339.doc

2550 SW Hillsboro Highway • Hillsboro, Oregon 97123
Phone. (503) 681-3600 • Fax: (503) 681-3603 • www.CleanWaterServices.org

CESINW Memorandum

To: Glen Pierce, Development Review, Office of Transportation, City of Portland

CC: Jamie Hardy, Mitchell Hardy Homes

From: Kirsten Van Loo, Principal Planner

Date: 08/20/01

Re: CESINW 01-1667 – MossyRock Planned Development

Glen:

Enclosed is a 24 x 36 concept plan of a proposed planned development project. It is located between Canby Street and SW Multnomah Blvd. I have also enclosed a copy of the memo you forwarded to us confirming PDX jurisdiction over this section of Multnomah Blvd, to refresh your memory.

I am sending this drawing to you to solicit your comments on the concept plan, specifically related to our proposal for a future street alignment and an additional pedestrian/bicycle connection with emergency vehicle access. We are working on a concept plan suitable for submission to the City of Beaverton. We want/need to have your concurrence on the street alignment/intersection design first, since that decision(s) will have great importance on the final design of the project.

Please comment on this concept plan (right on the dwg) and return a copy of the annotated drawing to me at your convenience.

I am available via telephone @ 503-968-6655 for discussion, and I can meet with you at your office on short notice. As always, time is of the essence, especially due to a lengthy submittal, review, and approval process for this project to facilitate a Spring 2002 construction schedule.

CITY OF
PORTLAND
OFFICE OF
TRANSPORTATION

Charlie Hales, Commissioner
1120 S.W. 5th Avenue, Suite 800
Portland, Oregon 97204-1914
(503) 8
FAX (503) 823-7576 (82 371
TD 823-6868

FAX TRANSMISSION

Date: July 19, 2001 Time: 3:45 pm

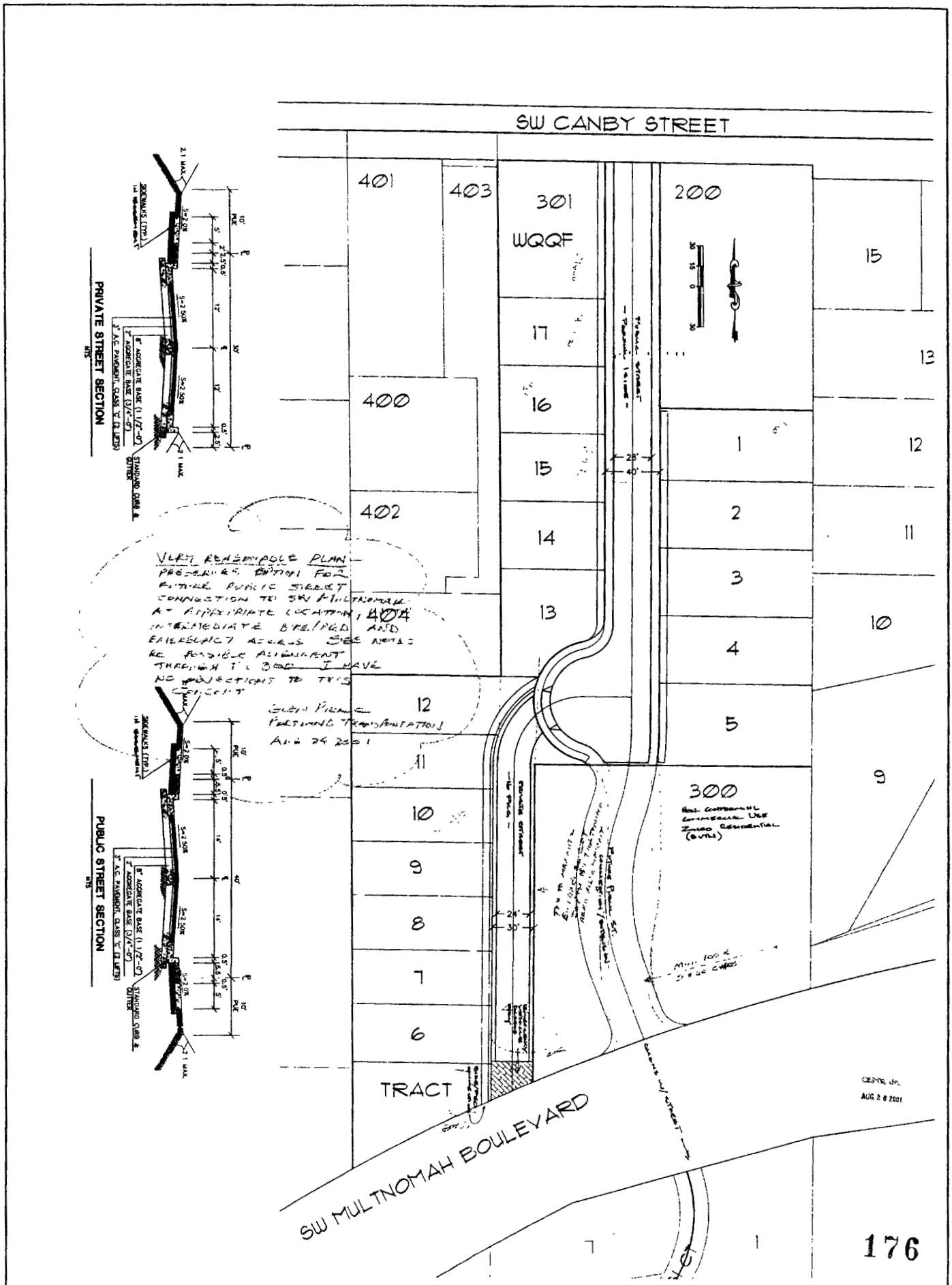
To: Haley Walker
Fax: 503-968-2595

From: Glen R. Pierce, Development Review
Phone 503-823-7079 FAX 503-823-7371

No of Pages (including this one): 1

Subject: SW Multnomah Boulevard

This confirms that the City of Portland has jurisdiction over SW Multnomah Boulevard in the vicinity of SW 68th Avenue and adjacent to property described as 1S1W24DA 301



1	1	PRELIMINARY SITE PLAN	CES|NW 15573 SW BANGY ROAD, STE 300 LAKE OSWEGO, OREGON 97035 503 968 6655 www.cesnw.com	MOSSY ROCK PLANNED DEVELOPMENT - BEAVERTON MITCHELL HARDY HOMES 8249 S.W. CIRRUS DRIVE BEAVERTON OR 97005 (503) 641-7855

CITY OF BEAVERTON
Community Development Department
Development Services Division
4755 SW Griffith Drive
PO Box 4755
Beaverton, OR 97076
Tel: (503) 526-2420
Fax: (503) 526-3720
www.ci.beaverton.or.us

PRE-APPLICATION CONFERENCE MEETING SUMMARY

PRE-APPLICATION CONFERENCE PURPOSE:

Pursuant to Section 50.20.1 of the Beaverton Development Code, pre-application conferences are required for all proposals that require a Type 2, Type 3 or Type 4 application. A pre-application conference is optional for Type 1 applications. The purpose of the pre-application conference is to acquaint the City, and outsid agencies, and servic providers, with a potential application, and to acquaint the potential applicant with the requirements of the Cod , the Comprehensive Plan, and other relevant criteria and procedures. The pre-application conference is not intended to be an exhaustive review of all potential issues, and the conference does not bind or preclude the City from enforcing all applicable regulations or from applying regulations in a manner differently than may have been indicated in the pre-application conference.

NOTE TO APPLICANT:

The following is intended to identify applicable code sections, requirements and key issues for your proposed d velopment application. Items checked are to be considered relevant to your proposed development. Development Code sections can be downloaded from the web or purchased from the Planning Counter. Copi s of th D velopment Code are available for review at the Community Development Departments Self-Help Center and at the City Library. The Pre-Application Conference is intended to assist you in submitting a compl te application. For your application to be deemed complete on the first review you must provide everything required in the pre-application conference and the application checklist(s). **Please note that this summary is intended to be informational only, and is not an approval in any manner of your proposal. The approval process can only occur after the submittal of a formal application.**

Comments Prepared by: Colin Cooper, AICP, Senior Planner, 503-526-2425 – If you have any questions pleas contact me directly.

PRE-APPLICATION CONFERENCE DATE: May 14, 2003

PROJECT INFORMATION:

Project Name:	**PA 2003-0035 Mossy Rock Residential PUD**
Project Description:	15-17 Lot Residential Subdivision
Property/Deed Owner:	Edward Mills
Site Address:	South of SW Canby Street
Legal Address:	1S1-24DA Tax Lot: 301
Zoning:	R-7
Comp Plan Designation	Neighborhood Residential – Standard Density
Site Size:	Approximately 2.82 acres

APPLICANT INFORMATION:

Applicant's Name:	Mitchell Hardy Construction Co
Address:	P.O. Box 1137, Lake Oswego, OR. 97035
Phone/E-Mail:	503-358-6473

PREVIOUS DEVELOPMENT HISTORY:

☐ Has site been previously proposed for development?

☐ Has site been previously approved for development?

Comments: No prior development approvals have been granted for this site.

SECTION 50.20 (PRE-APPLICATION CONFERERNCE):

☒ Required per Section 50.20.1? ☐ Optional per Section 50.20.1?

Comments: The required pre-application conference was held on May 14, 2003. Please note that the applicant must provide a copy of the pre-application conference summary with the submittal of the application.

SECTION 50.25 (APPLICATION COMPLETENESS):

☒ Application Completeness Process per Section 50.25.1-11 Explained?

Comments: The completeness process was explained to the applicant. The applicant is encouraged to contact staff to ask any questions or request clarification of any items found on the application checklists that were provided to the applicant at the time of the pre-application conference. In addition, the applicant should be aware that staff is not obligated to review any material submitted 14 days or later from the time the application has been deemed "perfected" that is not accompanied with a continuance to provide staff the necessary time to review the new material. The applicant may request a continuance for up to and no more than 60 days to allow staff to consider the new submittal if they should elect too.

APPLICATION FEES:

☒ Application Fees Identified per Currently Approved Development Service Fee Schedule?

Comments:	$2,008	Preliminary Subdivision
	$ 578	Final Land Division
	$1,214	Conditional Use Permit (Planned Unit Development – if applicable)
	$ 250	Street Design Modification (If applicable)
	$ 438	Tree Plan Two (If applicable)

Application fees are subject to change. The fees in effect at the time a complete application is received will control.

SECTION 50.30 (NEIGHBORHOOD REVIEW MEETING):

Neighborhood Review Meeting: ☒ Required? ☐ Not Required?

Name of Neighborhood Advisory Committee (NAC): CPO 3

NAC Contact Person & Phone No.: _____

Comments: There is no City recognized NAC for this property. A NRM is only required if you apply for a land use application that is classified as a Type 3 process, or requires a public hearing. Please review the Neighborhood Review Meeting Requirements found in Development Code Section 50.30 carefully. In order for your application to be found complete it is necessary that all required information be submitted. If you have any questions please call staff directly.

COMPREHENSIVE PLAN COMPLIANCE: A written response to the Comprehensive Plan Goals and Policies is required if you apply for a Planned Unit Development.

The following Comprehensive Plan Elements when checked are applicable to your development. You should consult these elements in the preparation of written and plan information for a formal application:

Chapter 3 (Land Use Element):

- ☐ 3.6 (Regional Center Development)
- ☐ 3.7 (Town Center Development)
- ☐ 3.8 (Station Community Development)
- ☐ 3.9 (Main Street Development)
- ☐ 3.10 (Corridor Development)
- ☐ 3.11 (Employment Areas)
- ☐ 3.12 (Industrial Development)
- ☒ 3.13 (Residential Neighborhood Development)
- ☐ 3.13.1 (Safe, Convenient, Attractive, & Healthful Places to Live)
- ☐ 3.13.2 (Low-Density Residential)
- ☒ 3.13.3 (Standard Density Residential)
- ☐ 3.13.4 (Medium Density Residential)
- ☐ 3.13.5 (High-Density Residential)

Comments: A complete written response to how and why the proposed application meets the above Comprehensive Plan Goals and Policies is required with the proposed Comprehensive Plan, Zone Map Amendments and Conditional Use Permit/Planned Unit Development application narrative.

COMPREHENSIVE PLAN COMPLIANCE CONTINUED:

Chapter 4 (Housing Element):

- [x] 4.2.2.1 (Adequate Variety of Quality Housing)
- [x] 4.2.3.1 (Retention of Existing Affordable Housing)
- [x] 4.2.3.2 (Production of New Affordable Housing)

Chapter 5 (Public Facilities and Services Element):

- [x] 5.4.1 (Adequate Stormwater Management)
- [x] 5.5.1 (Adequate Water Service)
- [x] 5.6.1 (Adequate Sewer Service)
- [x] 5.7.1 (Educational Facilities & Services)
- [x] 5.8.1 (Adequate Parks & Recreation Facilities)
- [x] 5.10.1 (Adequate Fire & Emergency Medical Services)

Chapter 6 (Transportation Element):

- [x] 6.2.1 (Enhance Beaverton's Livability)
- [x] 6.2.2 (Balanced Transportation System)
- [x] 6.2.3 (Safe Transportation System)
- [x] 6.2.4 (Efficient Transportation System)
- [ ] 6.2.5 (Accessible Transportation Facilities)
- [ ] 6.2.6 (Efficient Movement of Goods)

Chapter 7 (Natural, Cultural, Historic, Scenic, Energy, & Groundwater Resources Element):

- [ ] 7.2.2 (Historic Resources)
- [ ] 7.3.1 (Significant Natural Resources)
- [ ] 7.3.2 (Riparian Corridors)
- [ ] 7.3.3 (Significant Wetlands)
- [ ] 7.3.4 (Wildlife Habitat)
- [ ] 7.4.1 (Scenic Views and Sites)
- [ ] 7.5.1 (Energy)
- [ ] 7.6.1 (Groundwater Resources)

Comments: A complete written response to how and why the proposed application meets the above Comprehensive Plan Goals and Policies is required with the proposed Comprehensive Plan, Zone Map Amendments and Conditional Use Permit/Planned Unit Development application narrative.

COMPREHENSIVE PLAN COMPLIANCE CONTINUED:

Chapter 8 (Environmental Quality & Safety Element):

- ☐ 8.2 (Water Quality)
- ☐ 8.3 (Air Quality)
- ☐ 8.4 (Noise)
- ☐ 8.5 (Seismic Hazards)
- ☐ 8.6 (Geologic Hazards)
- ☐ 8.7 (Flood Hazards)
- ☐ 8.8 (Solid & Hazardous Wastes)

Comments:

CHAPTER 20 (LAND USES):

Zoning:

- ☒ Section 20.05 (Residential)
  Specific Type of Residential & Applicable Code Section: 20.05.1
- ☒ Section 20.05.50 (Site Development Requirements) Applicable?
- ☐ Section 20.10 (Commercial)
  Specific Type of Commercial & Applicable Code Section: _____
- ☐ Section 20.10.50 (Site Development Requirements) Applicable?
- ☐ Section 20.15 (Industrial)
  Specific Type of Industrial & Applicable Code Section: _____
- ☐ Section 20.15.50 (Site Development Requirements) Applicable?
- ☐ Section 20.20 (Multiple Use)
  Specific Type of Multiple Use & Applicable Code Section: _____
- ☐ Section 20.2050 (Site Development Requirements) Applicable?

Comments: The proposed development of single-family detached dwellings is a permitted use pursuant to Section 20.05.15.2.A.1. However, a Planned Unit Development (PUD) requires a Conditional Use Permit

pursuant to Section 20.05.15.2.B.1. In order for your application to be deemed complete the applicant must supply a written narrative that address how the proposal meets all of the applicable regulations checked above.

CHAPTER 30 (NON-CONFORMING USES):

Proposal subject to compliance to this chapter? ☐ Yes ☒ No

Comments: Based on the information provided by the applicant there do not appear to be any non-conforming use issues related to this proposal.

CHAPTER 40 (PERMITS & APPLICATIONS):

Facilities Review Committee review required? ☒ Yes ☐ No

Applicable Application Type(s):

Application Description	Code Reference	Application Type			
1. Planned Unit Development (CUP)		☐ Type 1	☐ Type 2	☒ Type 3	☐ Type 4
2. Preliminary Subdivision		☐ Type 1	☒ Type 2	☐ Type 3	☐ Type 4
3. Street Design Modification		☐ Type 1	☒ Type 2	☐ Type 3	☐ Type 4
4. Tree Plan Two		☐ Type 1	☒ Type 2	☐ Type 3	☐ Type 4
5. Final Land Division		☒ Type 1	☐ Type 2	☐ Type 3	☐ Type 4

Comments: **Please note that in order for your application to be deemed complete you will need to provide a written statement, supported by substantial evidence for all applicable approval criteria.** Specifically a written response to the Facilities Review Committee technical criteria found in Development Code Section 40.03 (1-10) is required for each application. Additionally, your application narrative will need to explain how and why the proposed application will meet the approval criteria for each of the land use applications identified above.

Approval criteria and development regulations in effect at the time an application is received will control. Approval criteria and development regulations are subject to change.

CHAPTER 60 (SPECIAL REGULATIONS):

The following special requirements when checked are applicable to your development. You should consult these special requirements in the preparation of written and plan information for a formal application:

- [ ] Section 60.05 (Drive-Up Window Facilities)
- [ ] Section 60.10 (Floodplain Regulations)
- [x] Section 60.15(Land Division Standards)
- [ ] Section 60.20 (Mobile & Manufactured Home Regulations)
- [ ] Section 60.25 (Off-Street Loading)
- [x] Section 60.30 (Off-Street Parking)
- [x] Section 60.35 (Planned Unit Development)
- [ ] Section 60.40 (Sign Regulations)
- [x] Section 60.45 (Solar Access Protection)
- [ ] Section 60.50 (Special Use Regulations)
- [x] Section 60.55 (Transportation Facilities)
- [x] Section 60.60 (Trees and Vegetation)
- [x] Section 60.65(Utility Undergrounding)

Comments: In order for your application to be deemed complete the applicant must supply a written narrative that address how the proposal meets all of the applicable regulations checked above.

JIM DUGGAN, P.E., Site Development Engineering

No Comments Submitted

CITY OF BEAVERTON
Engineering Department
Transportation Planning Division
4755 SW Griffith Drive
PO Box 4755
Beaverton, OR 97076
Tel: (503) 526-3726
Fax: (503) 526-4052
www.ci.beaverton.or.us

PRE-APPLICATION CONFERENCE MEETING SUMMARY
Transportation Issues

PRE-APPLICATION CONFERENCE NUMBER PA2003-0035 **DATE** 5/14/03

Mossy Rock Residential PUD

Prepared by Don Gustafson
503.350.4057 or dgustafson@ci.beaverton.or.us

GENERAL NOTES:

To be submitted with application for work as proposed:

☒ Dedicate Public Street Right of Way on the south side of SW Camby St to the following standard: (Development Code Sec 60.55.30.1)

☐ Arterial Street ☐ Collector Street ☒ Neighborhood Route ☐ Local Residential Street

☒ Construct improvements on the south side of SW Camby St to the following standard: (Development Code Sec 60.55.30.1)

☐ Arterial Street ☐ Collector Street ☒ Neighborhood Route ☐ Local Residential Street

☐ The proposed development will generate traffic (vehicle trips per day) in excess of the minimum threshold requirement for a **Traffic Impact Analysis**, therefore a Traffic Impact Analysis will be required to be submitted (Development Code 60.55.10.7). The traffic impact analysis is to identify methods of mitigating on-site and off-site deficiencies reasonably related to the impacts of the proposed development and by phases of the development and make recommendations for improvements necessary for safe and efficient traffic flow and bicycle, pedestrian, and transit movement and access. The traffic impact analysis shall discuss whether the recommended improvements, both on-site and off-site, are justified, reasonably related to, and roughly proportional to the impacts of the proposed development. The study must be signed by a professional engineer, submitted and accepted by City staff before application will be considered complete. Discuss the scope of the study with transportation staff of the city prior to report preparation.

☐ The proposed development will add more than 20 through trips in one hour to _____, designated a Local Street/Neighborhood Route. This will require the submittal of a Traffic Management Plan as required by Development Code Sec. 60.55.10.6. This plan shall identify the through trips and will recommend traffic management strategies to mitigate their impacts and shall discuss whether the recommended improvements, both on-site and off-site are justified, reasonably related to, and roughly proportional to the impacts of the proposed development. [ORD 4103;April 2000]

☐ The applicant shall provide secure bicycle parking to accommodate customers, employees, and/or residents, per Development Code Section 60.55.65.4. Indicate location of bicycle parking on site plan. Provide short-term and long-term bicycle parking in the amount specified in Section 60.30.10.5 of the Development Code.

☐ Provide pedestrian walkways through the parking areas and from the building and parking areas to the street. Pedestrian walkways within the parking lot shall be differentiated from parking areas and circulation aisles by grade, different paving material, landscaping or other similar method and be constructed at a minimum width of 4-feet, unobstructed (Development Code 60.55.70.2E).

☐ The proposed parking areas are to be designed to provide parking circulation and dimensions that meet City of Beaverton design requirements (Development Code 60.30.15 & 60.30.20). Two-way driveway aisles shall be a minimum of 24 feet wide (Engineering Design Manual and Standards Drawing 210.17).

☐ Walkways bordering perpendicular parking spaces shall be at least seven feet wide unless concrete wheel stops, bollards, curbing, landscaping, or other similar improvements are provided which prevent parked vehicles from obstructing the walkway (Development Code 60.55.70.2E).

☐ The applicant shall provide a 10 ft wide public bicycle and pedestrian path within a 15 ft easement from _____to_____ (Development Code 60.55.65.1.B) (Engineering Design Manual and Standards Drawings, Appendix Figure 1).

☒ New street intersections must meet sight distance criteria in the City's Engineering and Design Manual for the design speed of the roadway (Development Code 60.55.50.1 and Engineering Design Manual 210.5).

☒ Traffic Impact Fee (TIF) will be due for this development at issuance of building permits. This fee is based on the Washington County Traffic Impact Fee ordinance. For more information regarding TIF contact Don Gustafson at 503-350-4057.

☐ For potential exceptions to the vehicle parking standards see Development Code 60.30.10.11.

☐ Comments from Tri-Met are important to the City's decision and will be considered prior to facilities review approval (Development Code 60.55.60.1). Any required improvements shall be reviewed and approved by staff prior to issuance of site development permit. Contact Ben Baldwin, Tri-Met Project Planner, at 962-2140 to determine whether Tri-Met will require any improvements. **Applicant to provide a letter from Tri-Met as part of application** indicating what, if any, improvements Tri-Met requires.

Agencies to be contacted for review:

☐ **WASHINGTON COUNTY**

The sites frontage on_____ may require a Washington County Facility Permit for work within County right of way and/or permits for Access Spacing, Sight Distance and Traffic Safety Review. Contact Phil Healey at 503-846-3842 for information.

☐ Please contact Washington County before preparing the Traffic Analysis to review the scope of work.

☐ **OREGON D.O.T. (Sylvan Office)**

The sites frontage on_____ may require an

ODOT permit for work within State right of way, for access or construction access. Contact: Sam Hunaidi at 503.229.5002.

☐ Please contact ODOT to review the scope of work before preparing Traffic Analysis.

BUILDING SERVICES DIVISION
Facility Review Comments
Pre-Application Technical Notes

File Number: PA2003-0035 Mossy Rock Residential PUD Date: 14 MAY 2003

Person Commenting: Brad Roast

- Prior to the issuance of building permits, the applicant shall submit a Mylar copy (minimum 4-mil in thickness) of the recorded plat to the City of Beaverton's Building Division.

OTHER DEPARTMENT/AGENCY CONTACTS:

Your project may require review by other City departments and outside agencies. Please plan to contact the following staff persons at the City of Beaverton or other agencies when their name is checked. In some instances, some or all of these staff persons may submit written comments for the pre-application conference. These comments may be discussed at the pre-application conference and will be attached to this summary:

☒ Clean Water Services

☐ Written Comments Attached

The Clean Water Services (CWS) is the agency that regulates sanitary and storm water within Washington County and the City of Beaverton. CWS has adopted a Resolution & Order (R&O 00-007) that requires an applicant who is proposing development to obtain a site assessment "SERVICE PROVIDER LETTER" from CWS. Pursuant to Development Code Section 50.25.1.F in order for the application to be deemed complete the applicant is required to submit documentation from CWS stating that water quality will not be adversely affected by the proposal. This statement most commonly comes in the form of a service provider letter. For more information regarding "Service Provider Letters" contact Ms. Heidi Berg, Site Assessment Coordinator, at (503) 846-3613 or Bergh@cleanwaterservices.org.

Please note that Facilities Review Committee could not make a positive recommendation towards this proposal without this letter.

☒ John Dalby, Tualatin Valley Fire & Rescue

☐ Written Comments Attached

☒ Steve Brennen, Operations, City of Beaverton
(503) 526-2200 /sbrennen@ci.beaverton.or.us

☒ Written Comments Attached

Landscape/Urban Forestry Section: No comments
Storm Section: No comments
Street Section: Public street not designed to COB engineering design manual standards. Pete Davis 5/14/03
Traffic Section: Include lighting plan for public street.
Wastewater Section: No comments
Water Section: No comments

☒ Kathy Gaona, Finance Department, City of Beaverton**
(503) 526-2268/kgaona@ci.beaverton.or.us

☐ Written Comments Attached

(Contact to determine if there are any liens/assessments on the property that could affect development)**

☒ Glen Pierce, City of Portland – Office of Transportation

☐ Written Comments Attached

KEY ISSUES/CONSIDERATIONS:

Staff has identified the following key development issues, or design consideration or procedural issues that you should be aware of as you prepare your formal application for submittal. The identification of these issues or considerations here does not preclude the future identification of other key issues or considerations:

1. Minimum Density – Please take note of Development Code Section 20.05.60, Required Minimum Residential Density, where it states that "if meeting the minimum density will require the submission and approval of an adjustment or variance application(s) above and beyond applications(s) for adding new primary dwellings or land division of property, meeting minimum density shall not be required." Therefore, the minimum density would be the minimum number of lots that can be developed on the site without the application of an adjustment or variance. It is incumbent upon the applicant to demonstrate the minimum number through the use of a site plan.

2. Alternative Development to Planned Unit Development – In consideration of alternative designs for the proposed subdivision staff suggest the possible combination of a Street Design Modification, Flexible Setbacks, and Adjustment Applications.

3. Tree Preservation – Staff encourage the preservation of trees along property lines in order to provide continuity of the site through the development process.

4. PUD Open Space – Please be aware that the PUD Open Space required is 20 percent of the net area of the site.

CITY OF BEAVERTON
Community Development Department
Development Services Division
Site Engineering Section
4755 SW Griffith Drive
PO Box 4755
Beaverton, OR 97076
Tel: (503) 526-2552
Fax: (503) 526-3720
www.ci.beaverton.or.us

PRE-APPLICATION CONFERENCE MEETING SUMMARY
Site Engineering Issues

PROJECT SITE OR NAME: Mossy Rock Residential PUD (Canby & 68th)

PRE-APPLICATION CONFERENCE NUMBER: PA 2003-0035 **DATE:** May 14, 2003

Prepared by: Jim Duggan, Development Services Engineer
503.526.2442 or jduggan@ci.beaverton.or.us

☒ Please contact Ed Parks at **503.526.2441** or **asbuilts@ci.beaverton.or.us** for more detailed information regarding existing utilities, topography, and geographical information necessary for preparation of permit applications and other submittals.

☒ Public utilities (water, sanitary sewer, storm drainage) must be brought to, through, and along all public street frontages to serve this site upon development and to facilitate future adjacent development.

NOTE: REFERENCE CITY OF BEAVERTON ENGINEERING DESIGN MANUAL AND STANDARD DRAWINGS (Ordinance 4060) AND CLEAN WATER SERVICES STANDARDS (USA R&O 2000-007).

GENERAL NOTES: Storm drainage flows to the north to a culvert and storm system in Canby Street. A sanitary sewer is available in Canby street and along the west property line in the access tract to the west. The Power Plumbing site discharges storm water in a concentrated manner its northwest corner and onto the proposed development. This storm drainage issue will need to be addressed in any development application. Approvals are needed from the City of Portland for work within, and/or access to the Multnomah Boulevard right of way.

CITY PERMITS required for work as proposed or likely to be needed:	☒ CITY SITE DEVELOPMENT PERMIT Contact: Jennifer Kammerer at 503.526.2439 ☐ Floodplain, floodway, or wetland modification	☐ CITY RIGHT OF WAY PERMIT Contact: David Haase at 503.350.4087
	☐ CITY SITE EROSION CONTROL PERMIT Contact: Bonnie Webb at 503.526.2552	☐ BUILDING PERMIT w/Erosion Control ☒ Site Plumbing Permit for private utilities Contact: Bldg. Counter at 503.526.2401
WATER SERVICE AREA AND ISSUES	☐ CITY OF BEAVERTON SYSTEM Contact: David Winship at 503.526.2434 ☐ 410 HGL ☐ 525 HGL ☐ Other zone/split zone	☐ WEST SLOPE WATER DISTRICT Contact: Jerry Arnold at 503.292.2777
	☒ TUALATIN VALLEY WATER DISTRICT Contact: Stuart Davis at 503.642.1511	☐ RALEIGH WATER DISTRICT Contact: Matt Steidler at 503.292.4894

SITE ENGINEERING ISSUES

Prepared by Jim Duggan, Development Services Engineer

OTHER PERMITS and approvals required for work as proposed or likely to be needed:

☐ **WASHINGTON COUNTY**
For work within, access, or construction access to _____
NOTE: Storm and sanitary sewers in County roads inside City limits are City-owned and maintained. Some street lights on County roads are City-owned.

☐ Facilities and Access Permits
Contact DLUT Staff at 503.846.8761
☐ Right of Way Permits
Contact Miguel Guzman at 503.846.7645
☐ Utilities Permits
Contact Ted Voelker at 503.846.7647

☐ **OREGON D.O.T. (Sylvan Office)**
For work within, access, or construction access to _____
Contact: Sam Hunaidi at 503.229.5002

☐ **OREGON D.O.T. (Salem Office)**
Rail / Street Crossings
Contact: Robert Krebs at 503.986.4169.

☐ **OREGON DIVISION OF STATE LANDS**
Contact: Colin Maclaren at 503.378.3805

☐ **U.S. ARMY CORPS OF ENGINEERS**
Contact: Kathryn Harris at 503.808.4387

☒ **CLEAN WATER SERVICES DISTRICT**
☒ Site Assessments/Wetlands/Creeks/Springs
Contact: Heidi Berg at 503.846.3613
☒ Service Provider Letters/Connection Permits
Contact: Chuck Buckallew at 503.846.3553

☐ Connection to CWS Trunk Sewer (>21"dia.)
Contact: Lee Walker at 503.846.8877
☐ Industrial Waste Permit (all non-residential)
Contact: Clayton Brown at 503.846.8923

☒ **DEQ** 1200-C EROSION CONTROL PERMIT
Contact: Bonnie Webb at 503.526.2552
(Permit issued by City for CWS & DEQ)

☐ **DEQ** Letter of "No Further Action"(NFA) or other documentation concerning soil and/or groundwater contamination on this property and clearance allowing new construction.
Contact applicable Oregon DEQ staff.

☒ MUST UNDERGROUND EXISTING OVERHEAD UTILITIES ON-SITE AND ALL FRONTAGES.
☒ May be eligible for fee-in-lieu of undergrounding – see Dev. Code, Section 60.65.20-25

SITE SOIL, SURFACE & STORM WATER ISSUES

☐ MAPPED **FEMA** FLOODPLAIN
☐ 410240 (1987 City Limits)
☐ 410238 (Annexation post-1987)
☐ 410240 (May 25, 2000 LOMR)

☒ UNMAPPED FLOOD HAZARD AREA
A flood study is a required part of any development application.

_____Base Flood Elevation (NGVD)

☐ GEOTECHNICAL REPORT REQUIRED

☐Cut and fill grading balance required. ☐ Must flood proof* non-residential buildings OR
☐Certified minimum finish floor required: ☐ 1 foot ☐ 2 feet above base flood elevation.
☐SEPARATE FLOODPLAIN MODIFICATION PUBLIC NOTICE REQUIRED PRIOR TO SITE DEVELOPMENT PERMIT and BUILDING PERMIT ISSUANCE with a 10-DAY APPEAL PERIOD.
*UBC Section 3104 (Flood-resistant Construction)

☒ **STORM WATER FACILITIES REQUIRED**
☒ Winter Storm Detention (quantity)
☒ Summer Storm Treatment (quality)

☐ POSSIBLE FEE-IN-LIEU OF:
☐ Detention (quantity)
☐ Treatment (quality) - must justify using CWS criteria in BDR/Land Div. application submittals.

☐ REQUIRES IMPERVIOUS SURFACE INVENTORY

☐ OTHER ATTACHMENTS:

CITY OF BEAVERTON
Community Development Department
Development Services Division
4755 SW Griffith Drive
PO Box 4755
Beaverton, OR. 97076
Tel: (503) 526-2420
Fax: (503) 526-3720
www.ci.beaverton.or.us

OFFICE USE ONLY	
FILE #:	
FILE NAME:	
TYPE:	RECEIVED BY:
FEE PAID:	CHECK/CASH:
SUBMITTED:	LWI DESIG:
COMP. PLAN:	NAC:

PRE-APPLICATION CONFERENCE APPLICATION

SBB PA 2001-00415

APPLICANT: *Use mailing address for meeting notification.*

NAME/COMPANY: MITCHELL HARDY CONST. CO. INC
ADDRESS: PO BOX 1137
(CITY, STATE, ZIP) LAKE GROVE OR 97035
PHONE: 503-358-6973 CELL FAX:
E-MAIL:

SIGNATURE: _____ **CONTACT:** JEFF MITCHELL
(Original Signature Required)

APPLICANT'S REPRESENTATIVE: *If applicable*

NAME/COMPANY: CESNW
ADDRESS: 15573 SW BANBY RD S. 300
(CITY, STATE, ZIP) LAKE OSWEGO OR 97035
PHONE: 503-968-6655 FAX: 503-968-2595
E-MAIL: kvanloo@cesnw.com

SIGNATURE: _____ **CONTACT:** KIRSTEN VAN LOO
(Original Signature Required)

PROPERTY OWNER(S): *If different than Applicant*

NAME/COMPANY:
ADDRESS:
(CITY, STATE, ZIP)
PHONE: FAX:
E-MAIL:

SIGNATURE: _____ **CONTACT:**
(Original Signature Required)

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PROPERTY INFORMATION (REQUIRED)

SITE ADDRESS: CANBY SUBD.
SW CANBY ST.

ASSESSOR'S MAP & TAX LOT #	LOT SIZE	ZONING DISTRICT
1S1 24DA 301		R7

AREA TO BE DEVELOPED (s.f.):

EXISTING USE OF SITE: VACANT

PROPOSAL: 15-17 LOT SUBD.

CITY OF BEAVERTON
Community Development Department
Development Services Division
4755 SW Griffith Drive
PO Box 4755
Beaverton, OR. 97076
Tel: (503) 526-2420
Fax: (503) 526-3720
www.ci.beaverton.or.us

PRE-APPLICATION CONFERENCE

PRE – APPLICATION CONFERENCE SUBMITTAL CHECKLIST

WRITTEN STATEMENT REQUIREMENTS – Total of eight (8) copies

☑ **A. APPLICATION FORM.** Provide **one (1) completed** application form with original signature(s).

☑ **B. CHECKLIST.** Provide **one (1) completed** copy of this three (3) page checklist.

☑ **C. WRITTEN STATEMENT.** Provide a detailed description of the proposed project including, but not limited to, the changes to the site, structure, landscaping, parking, and land use. In addition, please also address:

- ☐ Applicable sections of the City's *Development Code* (ORD 2050), including but not limited to Chapter 20 (Land Uses), Chapter 40 (Applications), and Chapter 60 (Special Regulations) and how the proposal would comply with these sections.

☑ **D. FEE,** pursuant to current City of Beaverton Development Services Fee Schedule. Make checks payable to the City of Beaverton.

PLANS & GRAPHICS REQUIREMENTS – Total of eight (8) copies

All plans, except architectural elevations, shall be to scale (engineering scale) and shall have a maximum sheet size of **24" x 36"** and a minimum sheet size **of 11" x 17"**. Architectural elevations may be drawn to an architectural scale and shall have a maximum sheet size of **24" x 36"** and a minimum sheet size **of 11" x 17"**.

The following specifies the plan information that is required for a pre-application conference. This information can be shown on one (1) sheet, or multiple sheets can be submitted, provided that each sheet is broken down by the bolded subject matter on the next page (for example, Existing Conditions, Land Use and Transportation). If the size of the project requires the use of match line sets, each set of match line sets must include a sheet (at a scale to fit a 24" x 36" sheet) depicting the entire site, including match lines, as a cover sheet.

☑ **A. PROPOSED PLAN:**

☐ **1. GENERAL INFORMATION:**

- ☑ A. Proposed name of project (e.g., subdivision or business).
- ☑ B. Vicinity map covering 1/4-mile radius from the development site.
- ☑ C. Area of the site (acres or square feet).

☒ A. PROPOSED PLAN (continued):

☐ 2. EXISTING CONDITIONS:

- ☒ A. Existing unstable slopes and landslide hazard areas.
- ☒ B. Existing topographical information, showing 2 ft. contours.
- ☒ C. Location of existing public and private utilities, easements, and 100-year floodplain.
- ☒ D. Location, and species of on-site trees.
- ☒ E. Sensitive areas, as defined by Clean Water Services (CWS) standards.
- ☒ F. Location of on-site wetlands, upland wooded areas, riparian areas, rock out-croppings, and streams.

☐ 3. LAND USE AND TRANSPORTATION:

- ☒ A. Layout of existing parcels.
- ☒ B. Configuration and dimensions of all proposed lots and tracts, including proposed park, open space, and or drainage tracts or easements. Include the maximum and minimum density calculations.
- ☒ C. Location and dimensions of existing and proposed buildings, structures, off-street parking, internal circulation, and off-street loading.
- ☒ D. Name and location of existing and proposed roadways and roadway easements (private and public),and surface material of these roads (e.g., gravel, asphalt or concrete pavement, etc.).
- ☒ E. Location of existing and proposed on-site driveways, and existing off-site driveways acr the street.
- ☒ F. Location and width of existing and proposed on-site pedestrian and bicycle facilities on-site and existing pedestrian and bicycle facilities within one 100 feet of the site.
- ☒ G. Location and width of existing and proposed easement for access, drainage, etc.
- ☒ H. Location and width of proposed on-site public and private streets.
- ☒ I. Location and width of existing and proposed off-site right-of-ways and roadways that will provide access to the site.
- ☒ J. Location and species of proposed trees and other landscaping to be planted at the site.

SPECIFIC QUESTIONS AND ISSUES YOU WISH TO HAVE DISCUSSED AT THE PRE-APPLICATIONCONFERENCE:

1. See Attached

2.

3.

4.

5.

6.

TO ASSIST STAFF WHO WILL BE CONDUCTING THE PRE-APPLICATION CONFERENCE, PLEASE NOTE BELOW THE NAMES OF CITY STAFF WITH WHOM YOU HAVE ALREADY DISCUSSED THIS PROPOSAL, ESPECIALLY IN RELATION TO THE ABOVE QUESTIONS AND ISSUES:

	STAFF PERSON NAME	***DEPARTMENT***
1.	Coun Cooper	
2.		
3.		
4.		
5.		

CES|NW

Memorandum

TO: **File # 1667 - MossyRock**

FROM: Kirsten Van Loo

SUBJECT: Meeting with Jamie Hardy
Project Update

DATE: 17 April, 2003

Mitchell & Hardy Construction Co. Inc.
PO Box 1137
Lake Grove, Oregon 97035

Jamie Hardy - cell - 503-781-7052

Jeff Mitchell - cell - 503-358-6973
pager - 503-229-9746

Most encroachment issues have been resolved - the fill and retaining wall encroachment from TL 300 has not been resolved and will be handled by mutual agreement between the current owner of TL 300 and the developer by removing the encroaching fill and building retaining walls.

Client wants to set up meeting with City of Beaverton Staff to re-confirm the requirements addressed in the summer 2001 pre-app.

KamVL will contact Colin Cooper at City of Beaverton to set up meeting. KamVL will also contact Glen Pierce to reconfirm status of Multnomah Blvd - under City of Pdx. jurisdiction.

Questions for Colin Cooper

- Are curb tight sidewalks possible?
- What is the maximum lot coverage?
- What is the min. street width curb to curb with parking on one side?
- What are the street lighting requirements?
- What SDC's are applicable?
- Can we have a sidewalk on only one side?
- Can we have 3 foot interior side yards?
- Can we have an 18 foot setback to the garage?
- Can we have 15 foot rear yard setbacks?
- What are the required minimum utility easements?

1667

CITY of BEAVERTON

4755 S.W. Griffith Drive, P.O. Box 4755, Beaverton, OR 97076 General Information (503) 526-2222 V/TDD

CESNW, INC.

AUG 2 2 2001

August 15, 2001

Kirsten Van Loo
15573 SW Bangy Road, Suite 300
Lake Oswego, OR. 97035

RE: File: PA 2001-0045 – Canby Subdivision
Pre-Application Conference on July 11, 2001
Tax Map: 1S1-24DA; Tax Lot: 301
Zoned: R-7 Urban Standard Density

Dear Ms. Van Loo:

Thank you for participating in a pre-application conference with City staff. We hope the information presented will be useful as you prepare your development plans. This letter addresses the issues that were covered in your pre-application conference of July 11, 2001. Please be aware that the comments have been prepared without benefit of a site visit; therefore, particular site conditions or constraints may exist that staff is not aware of. If you have questions, please direct them to the person identified within particular comments in this letter.

A. COMMUNITY DEVELOPMENT DEPT. (CDD):

Prepared by Colin Cooper - (503) 526-2425 or ccooper@ci.beaverton.or.us colincooper@ci.beaverton.or.us

PROPOSAL:

The applicant is considering a proposal a 17 lot subdivision with the probability of developing the site as a Planned Unit Development (PUD).

Pre-Application Conference Request

Mitchell Hardy Homes

APPLICANT:	Mitchell Hardy Homes Jeff Mitchell 8251 SW Cirrus Beaverton , OR 97008 503-641-7855
APPLICANT'S REPRESENTATIVE:	Kirsten Van Loo CES|NW 15573 SW Bangy Road, #300 Lake Oswego, Oregon 97035 (503) 968-6655
PROPERTY OWNER:	Under Contract to Applicant
ZONING:	City of Beaverton R-7 District, Low Density Residential
PROPERTY DESCRIPTION:	1S1 24DA, Tax Lot 00301 South side of SW Canby Street, east of SW 68th Avenue
SITE SIZE:	2.77 acres +/-
REQUEST:	Pre-application conference

Summary of Proposal

The applicant is proposing a 17 lot subdivision. It is probable that the project will be developed as a PUD. The developer is unsure if the proposed units will be detached or attached, because the site appears suitable for a townhouse-style subdivision.

The consultant is researching the deed records related to TL 403 adjacent to the west. That TL was platted in the mid-1980's as an "access tract" under Wash. Co. Casefile 84-353-MLP. The specifics regarding, use and maintenance of that TRACT have impact on the potential design considerations for the subject property.

A site recognizance shows that there is no possible vehicular access onto Multnomah Boulevard. The topographic differences between the subject property and Multnomah Blvd. preclude street development. The developer is also talking with owners of TL 1000, 1100, 1190, 1200 to explore development options of those parcels, including a vehicular connection to SW 68th Avenue..

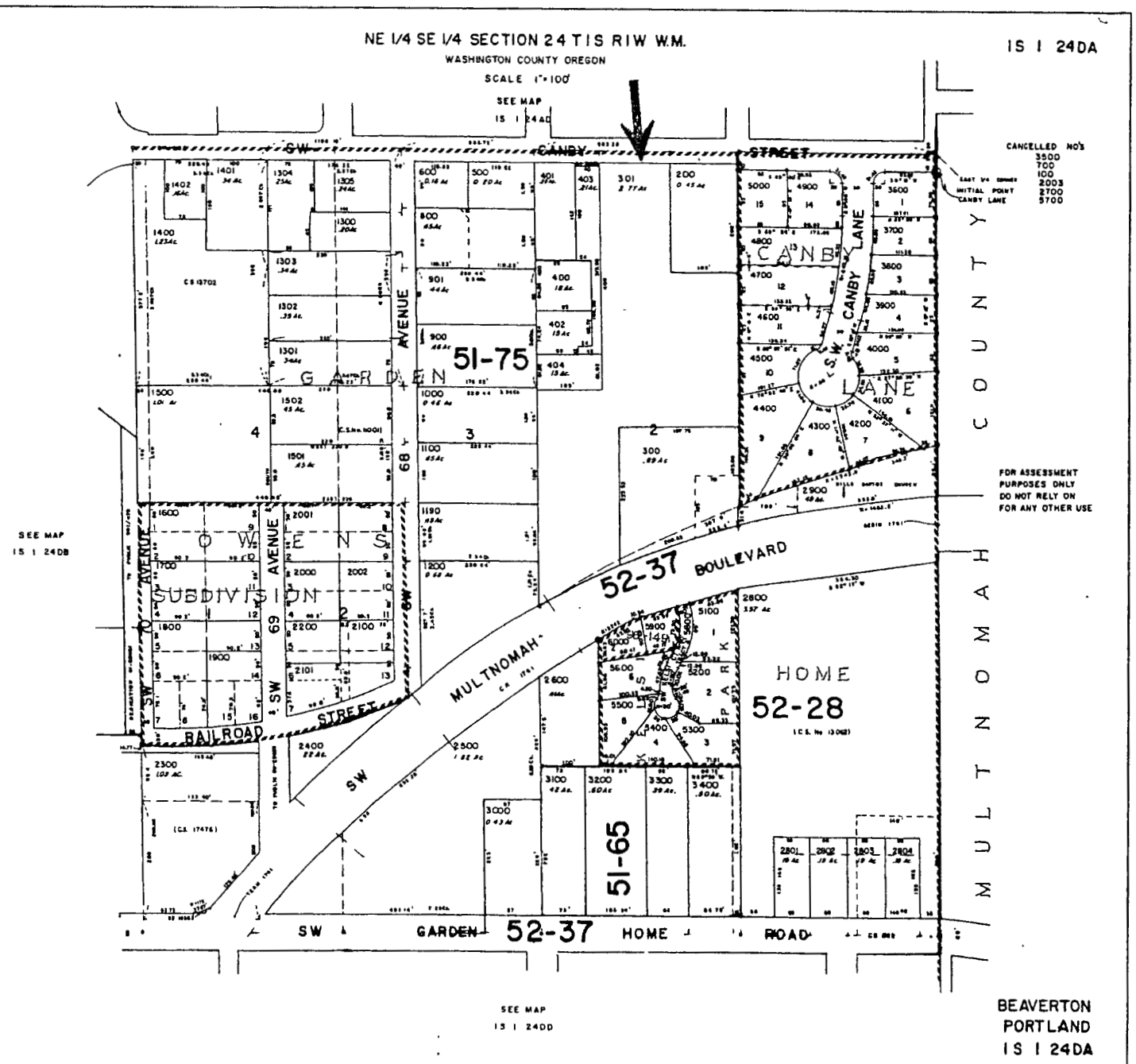
The surrounding land uses are all single-family residential on larger and moderate lots, developed under Washington County's Development Code. The subdivision to the east, Canby Lane was platted in 1971 through a process with the City of Portland.

Fidelity National Title Company of Oregon

Map # 1S124DA 00301

N W E S

The drawing below is copied from the public records and is provided solely for the purpose of assisting in locating the premises Fidelity National Title assumes no liability for variations, if any, in dimensions, area or location of the premises or the location of improvements ascertained by actual survey.



Fidelity National Title

Topography

Property Profile

contours

parks

Prepared by:

IDENTIFIED ISSUES:

1. Minimum Density. Although it appears the applicant is exceeding the minimum density this issue was highlighting in order to ensure the applicant is aware that a minimum of 80 percent of the planned density must be developed <u>if it is possible to do so without a variance</u>.

2. Planned Unit Development Design. Staff discussed the Approval Criteria related to the proposed PUD and the need to demonstrate neighborhood compatibility and what other amenities or features where being proposed as mitigation to allowing a more flexible approach as allowed for by the PUD Section of the Development Code.

3. Street Connectivity. There was a lengthy discussion regarding the requirements found in Section 60.50., Transportation Facilities.

   Based on the original pre-application meeting and a subsequent meeting two options appear to be available for the provision of access to the proposed development. The two options are predicated on what type of access is allowed from the subject site to SW Multnomah Boulevard, which is classified as an Arterial right-of-way and controlled by the City of Portland.

   1. The first option, is to construct an in-fill cul-de-sac with a private road access to the southern portion of the property. The private road should allow for a public access easement for bicycle, pedestrian, and emergency vehicle access to SW Multnomah Boulevard.
   2. The second option is to construct a public infill street or possibly a private street with full access between SW Canby Street and SW Multnomah Boulevard.

The Transportation issues discussed at the pre-application conference are identified later on within this report under Transportation Division section.

The Site Development issues discussed at the pre-application conference are identified later on within this report under Site Development Engineering section.

1667

CITY of BEAVERTON

4755 S.W. Griffith Drive, P.O. Box 4755, Beaverton, OR 97076 General Information (503) 526-2222 V/TDD

CESNW, INC.

AUG 2 2 2001

August 15, 2001

Kirsten Van Loo
15573 SW Bangy Road, Suite 300
Lake Oswego, OR. 97035

RE: File: PA 2001-0045 – Canby Subdivision
Pre-Application Conference on July 11, 2001
Tax Map: 1S1-24DA; Tax Lot: 301
Zoned: R-7 Urban Standard Density

Dear Ms. Van Loo:

Thank you for participating in a pre-application conference with City staff. We hope the information presented will be useful as you prepare your development plans. This letter addresses the issues that were covered in your pre-application conference of July 11, 2001. Please be aware that the comments have been prepared without benefit of a site visit; therefore, particular site conditions or constraints may exist that staff is not aware of. If you have questions, please direct them to the person identified within particular comments in this letter.

A. COMMUNITY DEVELOPMENT DEPT. (CDD):
Prepared by Colin Cooper - (503) 526-2425 or ccooper@ci.beaverton.or.us colincooper@ci.beaverton.or.us

PROPOSAL:
The applicant is considering a proposal a 17 lot subdivision with the probability of developing the site as a Planned Unit Development (PUD).

CLEAN WATER SERVICES
The Clean Water Services (CWS) is the agency that regulates sanitary and storm water within Washington County and the City of Beaverton. CWS has adopted a Resolution & Order (R&O 00-007) that requires an applicant who is proposing development to obtain a site assessment "SERVICE PROVIDER LETTER" from CWS. Pursuant to Development Code Section 50.10 the applicant is required to submit the CWS service provider letter in order for their application to be deemed complete. For more information regarding "Service Provider Letters" contact Ms. Heidi Berg, Site Assessment Coordinator, at (503) 846-3613 or bergh@cws-cleanwater.org.

Please note that Facilities Review Committee could not make a positive recommendation towards this proposal without this letter.

ZONING:
The site is within the R-7 Zoning District. The proposed 17 lot subdivision is permitted use, per Section 20.05.15.2.A.1, Single Family detached dwellings.

Based on the material presented to staff during the course of the pre-application conference indicates that your application would be processed as a Planned Unit Development/Conditional Use Permit and Subdivision.

Minimum Density Requirement:
Please note that the City has adopted minimum density requirement for all residential development within the City. Development Code Section 20.05.80 provides the method for calculating minimum residential densities. Your application will need to provide the calculations, which demonstrate compliance with this requirement. The code section is reprinted here for your convenience.

***20.05.80 Method for Calculating Minimum Residential Density** [ORD 4046; May 1999]*

> *New development applications must achieve at least the minimum density of the zoning district in which they are located. Projects proposed at less than the minimum density must demonstrate on a site plan how, in all aspects of site development requirements, future intensification of the site to the minimum density or greater can be achieved.*

For the purposes of this subsection, new development shall mean intensification of the site by adding new primary dwelling units, other than accessory dwelling units, or land division of the property. New development is not intended to refer to additions to existing structures, rehabilitation, renovation, remodeling, or other building modifications or reconstruction of existing structures.

Minimum density is calculated as follows:

1. *Multiply the net acreage by 0.80.*

2. *Divide the value in step 1 by the minimum lot size per dwelling unit of the applicable zoning district to determine the minimum number of dwelling units that must be built on the site.*

3. *If the value in step 2 is not a whole number, the number is rounded to the nearest whole number as follows: If the decimal is equal to or greater than 0.5, then the number is rounded up to the nearest whole number. If the decimal is less than 0.5, then the number is rounded down to the nearest whole number.*

Acreage, Net. *[ORD 4046; May 1999] The net acreage for a site is defined as the proposal size expressed in acreage minus any unbuildable area. The following areas are deemed undevelopable for the purposes of calculating net acreage:*

1. *Street dedications and those areas used for private streets and common driveways; and*
2. *Environmentally constrained lands, such as open water areas, floodplains, water quality facilities, wetlands, natural resource areas and tree preservation areas set aside in separate tracts or dedicated to a public entity, and*
3. *Land set aside in separate tracts or dedicated to a public entity for schools, parks, or open space purposes.*

The site requirements in the R-7 zoning district are as follows:

MINIMUM LOT DIMENSIONS:

Width:	
Corner Lots	75-feet
Interior Lots	70-feet
Depth:	
Corner Lots	90-feet
Interior Lots	100-feet

No lot depth shall be more than 2 ½ times the lot width.

SETBACKS:	Standard	With Flexible Setback
Front Yard:		
Dwelling	20-feet	10-feet
Garage	20-feet	20-feet
Side Yard:		
Dwelling	5-feet	5-feet
Garage	20-feet	20-feet
Rear Yard:		
Dwelling	25-feet	5-feet
Garage	22-feet	20-feet

Carports shall meet the same yard setbacks as the dwelling.

Minimum spacing between buildings on the same lot is 8 feet.

Maximum Building Height: 30-feet
(without a CUP)

Design Features:
All single family dwellings shall utilize at least two of the following design features (ORD 3899) [ORD 4047; May 1999]:

1. dormers
2. recessed entries
3. cupolas
4. bay or bow windows
5. attached garage
6. window shutters

7. a roof with a pitch greater than nominal 8:12
8. off-sets on building face or roof (minimum 12")
9. gables
10. covered porch or entry with pillars or posts
11. eaves (minimum 6")
12. tile or shake roof
13. horizontal lap siding
14. garage set at least 10 feet behind the front face of the primary dwelling unit

Parking:
The parking requirements can be found in Section 60.20.10.05 of the development code. Please note that the City has adopted minimum and maximum parking requirements. The maximum parking for your site is based on **Zone** The minimum and maximum parking requirement is as follows:

USE	Minimum Spaces	Maximum Spaces
Dwellings, Single-Family	1.0	n/a

Please be aware of **Section 60.20.15,** which regulates the construction and dimensions of parking lots. Specifically, the requirement that all-parking areas are at least 6-feet from the property line. In addition to these design standards, please note the Board of Design Review has adopted a standard that requires a parking lot landscape island, which has a width and length of a parking stall be located for every 12 spaces, and be planted with a canopy tree.

NEIGHBORHOOD REVIEW MEETING:
A Neighborhood Review Meeting (NRM) is required prior to application submittal by the Development Code Section 50.10, for all projects that appear before the Board of Design Review, Planning Commission, or City Council. Your application will not be deemed complete until satisfactory evidence that the meeting was conducted is presented to the City. Specific information with regard to this requirement was given to you at the Pre-Application Conference.

The site is not within a City of Beaverton Neighborhood Association Committee (NAC). The closest the Washington County Citizen Partipation Organization CPO1; therefore, please coordinate with them for your Neighborhood Review Meeting. It should be noted that the NRM is only valid for 6 months.

APPLICATIONS:
Your proposed development will require three separate application process prior to construction; 1) Land Use Permit(s); 2) Site Development Permit; and, 3) Building Permit(s). All three of these permits may be applied for concurrently with the provision that the Site Development Permit and Building Permit(s) will not be issued until all Land Use applications have been approved.

Land Use Applications
1. Subdivision
2. Conditional Use Permit (CUP)/(PUD)

The CUP requires a public hearing before the Planning Commission, and the Subdivision is a decision of the Planning Director. The applications can be processed at the same time; however, they are three separate applications, and the CUP-Public Hearing will need to be heard prior to a decision being rendered by the Planning Director.

Fees:

CUP-Hearing	$1,158
Subdivision (Preliminary Plat)	$1,982
Subdivision (Final Plat)	$ 1,883

Fees are valid until June 30, 2001.

PROCESS:
Please note that each application is separate and distinct and can not be combined in one submittal.

CUP – Public Hearing
To apply for a CUP you must submit 3 copies of complete plans and narratives along with a completed application form. (Please note that an application form was given to you at the Pre-Application Conference. If you would like additional you can request that the application form be sent by mail, or you may pick up the application form at the Development Services Information Counter, call (503) 526-2420). In addition, you will need to supply the information required as a result of your pre-application meeting. After your application has been deemed complete and the fees have been paid, the Facilities Review Committee will review your application and in approximately 5 weeks, at a scheduled meeting, review with you

the recommended conditions of approval. After the Facilities Review Committee Meeting a staff report will be written and will be available 7 days prior to your scheduled hearing before the Planning Commission. Within two weeks following the hearing a Land Use Order (LUO) will be prepared, signed and mailed to the applicant, property owner, the NAC, and parties of record. A 10-day appeal period follows the signing and mailing of the LUO. If no appeal than the CUP will appear on the City Council's consent agenda. The entire process will take approximately 14 weeks from submission of a complete application to the end of the appeal period.

Subdivision:

To apply for a Subdivision you must submit 3 copies of complete plans and narratives along with a City Application (Please note that an application form was given to you at the Pre-Application Conference. If you would like additional you can request that the application form be sent by mail, or you may pick up the application form at the Development Services Information Counter, call (503) 526-2420). In addition, you will need to supply the information required as a result of your pre-application meeting. After your application has been deemed complete and the fees have been paid, the Facilities Review Committee will review your application and in approximately 5 weeks, at a scheduled meeting, review with you the recommended conditions of approval. After the Facilities Review Committee meeting a report and notice are written and mailed within approximately 1 week to the applicant, all property owners within 500 feet of your site, the NAC, property owner, and any parties of record for a 10 day appeal period. The entire process will take approximately 8 weeks from submission of a complete application to the end of the appeal period.

Flexible Setback:

Applicants for proposed land divisions may request flexible setbacks. Requests for flexible setbacks shall be made and processed at the same time and in the same manner as the preliminary plat. Notice shall be provided in accordance with Section 50.30.1. The Planning Commission will hold a public hearing for all requests for flexible setbacks in conjunction with land divisions.

Approval Criteria.

Applicant must demonstrate compliance with approval criteria 1 and 2 or 1 and 3.

1. *The request meets the minimum standards specified in Section 20.05.50.3.D., and*

2. *The request otherwise meets the requirements of this ordinance, or*

3. In the case of new land divisions proposed in the City, the approval authority must find the request for flexible setbacks is compatible with the surrounding area, which is defined as abutting properties and properties directly across the street from the proposed development to grant the request. Properties directly across the street from the development shall be those properties perpendicular from the property line of the proposed development. Findings for compatibility must be made with regard to topography, vegetation, character of building, and site design. In determining compatibility, consideration shall be given to harmony in: scale, bulk, coverage, density, rooflines, and materials. The approval authority may require mitigation in order to make appropriate findings with regard to compatibility.

SUBDIVISION

When submitting the formal application you will need to submit a narrative describing the proposed project. The narrative should address **how** the project meets development code criterion for preliminary plats found for subdivisions in **Section 40.35.15.3.C (1-6)**. The detailed submittal requirements are contained within the application checklist, which was given to you at the meeting. The following is a list of the Criteria:

Subdivision - Approval Criteria:

In order to approve a preliminary plat, findings of fact shall be made to support the following conclusions:

1. *The proposal conforms with the City's Comprehensive Plan; and*

2. *The proposal complies with all applicable statutory and ordinance requirements and regulations; and*

3. *Adequate public facilities are available to serve the proposal; and*

4. *All proposed lots conform to the size and dimensional requirements of this ordinance; and*

5. *All proposed improvements meet City standards; and*

6. *That the phasing plan, if requested, can be carried out in a manner which meets the objectives of the above criteria and provides necessary public improvements for each phase as it develops.*

Please be aware that street trees are required for subdivisions. The City in accordance with Development Code Sections 40.35.15.3.D.1.k installs street trees. The standard requires that the developer pay the City a fee for street trees based on one street tree for every 30 lineal feet of road frontage.

Your application will have to show conformance with **Development Code Section 60.35 Solar Access Protection**. Your preliminary plat should indicate which lots are in compliance and which lots are subject to exception. In addition, your narrative should include a specific description of what lots may not meet the solar access requirements and why.

The subdivision requires a final plat approval to be submitted, within 12 months of approval of the preliminary plat. The Planning Director may grant time extensions allowing up to 12 additional months for platting of the partition if justifiable cause is shown; however, a platting extension beyond 2 years can not be granted.

CONDITIONAL USE PERMIT

When submitting for the formal application you will need to submit a narrative describing the proposed project. The narrative needs to address how the project meets the development code criteria for CUP's, Section 40.05.15.2.C. The following is the criteria as found in the code:

C. Approval Criteria.
In order to grant a Conditional Use Permit, the Planning Director shall make findings of fact to support the following conclusions:

1. *The proposed conditional use will comply with the purpose of this section and with all of the applicable provisions of this ordinance.*

2. *The proposed development will comply with the Comprehensive Plan.*

3. *That the location, size, design, and functional characteristics of the proposed use are such that it can be made reasonably compatible with and have a minimum impact on the livability and appropriate development of other properties in the surrounding neighborhood.*

For your convenience I have listed the Comprehensive Plan ???? Objectives and Policies. If you feel that an Objective or Policy is not applicable, then in your narrative you will need to discuss why it is not applicable.

3.4.2 Residential Objectives

3.4.2.1. The primary focus of residential development should be towards maintaining or creating maximum livability and promoting quality living areas.

3.4.2.2. All residential areas should be provided with services and facilities necessary for safe, healthful, convenient urban living.

3.4.2.3. Residential areas should be developed in ways which are consistent with the geographic features so as not to create health or erosion hazards.

3.4.2.4. Residential developments should be located so that they are convenient to places of employment and shopping facilities.

3.4.2.5. Residential opportunities should be increased in the central Beaverton area to take advantage of its proximity to a wide variety of urban services. However, these efforts must be balanced against preserving single family housing stock and the stability of neighborhoods.

3.4.2.6. Appropriate areas should be designed for various residential densities to provide a maximum range of choice with properly related amenities and facilities.

3.4.2.7. Densities recommended on the plan should be recognized in order to maintain proper relationships between proposed public facilities and services and population distribution.

3.4.2.8. Residential areas should offer a wide variety of housing types in locations that are best suited to each and consistent with the housing density and character of the area.

3.4.2.9. The City recognizes that planned unit developments offer the greatest opportunity to provide a variety of housing types, designs, preservation of natural features; and should be encouraged as much as possible.

3.4.2.11 Various residential uses should be protected from the intrusion of incompatible uses in order to preserve and stabilize values and the character of the area.

3.4.3. Residential Policies

b. All on and off-site improvements in residential areas should add to the character and quality of the area as a place for people to live.

c. Residential development should be coordinated with other land use elements and community facilities which are consistent with projected housing densities.

d. All new housing developments shall conform with the designated housing density, regardless of building type, site size, or timing as related to other developments.

f. Apartments, duplexes, or single-family dwellings can be permitted within any housing density area provided the required minimum lot area per dwelling unit is provided for each living unit in the development.

g. A planned unit development and a public hearing before the Planning Commission should be required to construct other than individual single-family houses within existing single-family areas.

h. A variety of lot sizes should be provided so as to increase moderate and low cost housing.

k. Residential opportunities shall be increased to take greater advantage of the proximity to urban services. These efforts must be balanced with the goals of preserving single family housing stock and the stability of neighborhoods.

m. Established and viable residential neighborhoods shall be preserved.

q. All new residential development should be encouraged to provide public, semi-public and/or private open space as part of the development.

r. All residential development should respect the natural ground cover of the area insofar as possible, and all existing and mature trees within the community should be preserved.

s. The City should collect from each developer the equivalent cost of two street trees for each lot and offer two trees to each residential owner in the development after construction of the dwelling unit on the lot.

y. Redevelopment and infill in the residential areas of the central Beaverton area should be encouraged by:

- providing flexibility in the development code to encourage creative solutions where strict application of the normal development standards will not meet the intent of efficient land utilization and preserving neighborhoods

- under certain circumstances, allowing duplexes as conditional uses on vacant and underutilized larger residential lots in single-family zones. Care will be needed in approving duplexes in order to preserve the single-family character and minimizing increased traffic impacts in each area.

z. All residential areas developed to urban standards shall be provided with essential urban services.

bb. All public utility facilities such as power, telephone, and cable television should be located underground in new developments. In addition, efforts should be made to underground utility lines in existing residential areas.

PUD - Approval Criteria, Section 40.05.15.3.C:

Special Findings for Approval. In addition to the findings required by Section 40.05.10. of this ordinance for conditional uses, the Planning Commission shall approve a planned unit development only if it finds that the planned unit development will satisfy the standards of these sections including the following:

1. *The use of the planned unit development process is warranted under existing circumstances and this application is an effective and unified treatment of the development possibilities on the site*

while remaining consistent with the Comprehensive Plan and making appropriate provisions for the preservation of natural features such as streams, wooded cover and rough terrain;

2. *The planned unit development will be compatible with the area surrounding the site and with no greater demand on public facilities and services than other authorized uses for the land; and*

3. *The planned unit development is financially feasible, based on a market study and other evidence of financial feasibility. (ORD 3918)*

If common open space is proposed. It will need to address the following criteria.

<u>*Common Open Space:*</u>
No open area may be accepted as common space within a planned unit development unless it meets the following requirements:

(1) The location, shape, size and character of the common open space is suitable for the planned development;

(2) The common open space is for amenity or recreational purposes and the uses authorized are appropriate to the scale and character of the planned unit development, considering its size, density, expected population, topography, and the number and type of dwellings provided; and

(3) Common open space will be suitably improved for its intended use, except that common open space containing natural features worthy of preservation may be left unimproved. The buildings, structures and improvements to be permitted in the common open space are those appropriate to the uses which are authorized for the common open space.

<u>Approval of the Final Development Plan:</u>
Within six (6) months following the approval of the preliminary development plan, the applicant shall file with the Planning Director a final development plan containing in final form the information required in the preliminary plan. In its discretion and for a good cause the Planning Commission may extend for six (6) months the period for filing of the final development plan. If the Planning Director finds that the final development plan is consistent with the preliminary development plan approval, and

that all conditions of the preliminary development plan approval have been satisfied, he or she shall approve the final development plan. Applications for any further development of the site, including future phases, shall be subject to all provisions of the Development Code. (ORD 3921)

B. DEVELOPMENT SERVICES/SITE ENGINEERING:
Prepared by Jim Duggan - (503) 526-2442 or jduggan@ci.beaverton.or.us

This site is served by the Tualatin Valley Water District. Storm drainage flows to the north to a culvert and storm system in Canby Street. A sanitary sewer is available in Canby street and along the west property line in the access tract to the west. The Power Plumbing site discharges storm water in a concentrated manner its northwest corner and onto the proposed development. This storm drainage issue will need to be addressed in any development application. **The comments below are typical conditions of approval that would apply to the proposed project, as shown in the submittal.**

1. The design and construction of the project shall comply with all applicable requirements of Beaverton Municipal Code, Beaverton Development Code (Ordinance 2050 +rev.), the City of Beaverton Engineering Design Manual and Standard Drawings (Ordinance 4060), and the Unified Sewerage Agency (USA) Design and Construction Standards (February 2000, Ordinance 2000-007; NOTE: USA is now Clean Water Services).

2. Prior to any work on the site governed by Beaverton Municipal Code 9.05.020, the project shall obtain a site development permit from the City Development Services Division. A separate application (with transmittal) shall be made to the Development Services Division for this permit.

(Note: All applications and legal form submittals shall be on originals as provided by the City; no facsimiles, copies, or substitutes will be accepted). Site plans shall be submitted on 24 inch x 36 inch size sheets, and to engineer's scale. Each sheet shall be stamped and signed by a registered professional engineer or as otherwise determined by the City Engineer. After the site development permit is issued, all revisions shall be approved by the City Engineer and the Planning Director; any required land use action must be final prior to approval of the engineering revision and work commencing as revised. *ADVISORY NOTE: Site Development Permit application packets are available in the second-floor, Community Development Department Resource Center. Information concerning existing public utilities may be available via "as-built" drawings. Contact the City As-built Archive at 503.526.2441 for more information. When submitting for site development permit, submit 7 sets of complete plans, a detailed cost estimate, a check for one percent of the cost of public improvements, site grading, private street and common driveway paving to the Engineering Section of the Development Services Division. (Beaverton Code 9.05.020, 9.05.040, Ordinance 4060, and Ordinance 2050 +rev.)*

3. The applicant shall contract with a professional engineer (or professional architect as allowed by the City Engineer) to design and monitor the construction as set forth in the City Standard Applicant/Engineer agreement. The applicant shall submit a completed City Standard Engineer/Applicant agreement prior to issuance of a site development permit. *ADVISORY NOTE: The City standard form is available from the second-floor, Community Development Department Resource Center, and is a part of the Site Development Permit application packet. (Ordinance 4060 and Beaverton Code 9.05.070)*

4. Prior to issuance of any building permits, the owner of the subject property shall install all public improvements, as required by the City Engineer, including but not limited to the following: water lines, water services, fire hydrants, sanitary sewer, storm facilities, street lights, regulatory street signs, street names and markings. Utilities shall be provided underground. Water meters shall be located adjacent to the public streets, or as otherwise determined by the City Engineer. *(Beaverton Code 9.05.055C and Ordinance 4060)*

5. All public improvements, site grading, private streets, and common driveway paving shall be guaranteed at 100 percent of cost. The security shall be approved by City Attorney prior to issuance of a site development permit. The location, design, size, and type of all public improvements shall be approved by the City Engineer. *(Oregon Revised Statutes Chapter 92, Beaverton Code 9.05.020, 9.05.070, and Ordinance 2050 +rev.)*

6. All existing overhead utilities, except high voltage lines (>57kV), within the project and along any existing street frontage shall be placed underground prior to the release of the site development performance security or as otherwise determined by the City Engineer and Planning Director. *(Ordinance 4010 Sections 60.40.25.11.B., 40.10.15.1.C.1.h./2.C.1.h./3.C.1.h., 40.35.15.2.D.9/3.D.9., 40.35.15.2.E.2.d./3.E.2.d)* ***NOTE:*** **Per the requirements of Ordinance 4010, Section 40.35.15.2.D.9, the existing overhead utility lines onsite and along the street frontages shall be placed underground. The applicant may request that the City consider allowing payment of a fee-in-lieu of utility undergrounding; however, the land division application submittal must include the information required under Ordinance 4010, Section 60.65.20. The application narrative needs to include a specific request with justifying information, per the criteria listed in Section 60.65.25, that a fee-in-lieu of undergrounding should be granted. Additionally, the information on the plans must clearly document the number and types of utility lines currently overhead onsite and along the street frontages.**

7. All underground piping which is not public shall be installed in accordance with Uniform Plumbing Specialty Code including Oregon amendments (UPC). The private plumbing plan for this project shall be approved by the City Building Division prior to the issuance of the site development permit. All plumbing that serves more than one lot, or crosses onto another lot, shall be considered a public system and shall be constructed to the requirements of the City Engineer as required with a site development permit. *ADVISORY NOTE: Contact the City Building Division at 526-2403 for more information concerning site plumbing permits for private plumbing. (UPC, Beaverton Municipal Code 4.02.070, 4.04.040, 9.05.055C, and Ordinance 4060)*

8. All easements necessary for public facilities (including slope easements, and surface drainage easements) shall appear on the final plans and/or plat and shall be to the standard specified by the City Engineer and Planning Director. *(Ordinance 2050 +rev., and Ordinance 4060)*

9. All required off-site easements shall be submitted for recording to the City and approved by the City Engineer and City Attorney, prior to the issuance of the site development permit. *(Beaverton Code 9.05.055C)*

10. All public utilities shall be installed and centered within a minimum fifteen foot wide easement. Easements for all public utilities including storm sewer, sanitary sewer, water, and illumination lines shall be of sufficient width to ensure that the foundation of any structure or parallel utility line shall be a minimum of 45 degree vertical angle from the invert elevation of the pipe measured from the trench wall in accordance with Section 315 of the Uniform Plumbing Code. The applicant's engineer or architect of record shall verify all existing and proposed easements are of sufficient width to ensure that structures and parallel utility lines will be outside the trench zone described above. If the existing easement or proposed new easement is insufficient to meet the criteria above, a revised or additional easement shall be provided prior to issuance of the site development permit or a building permit. *(UPC, Beaverton Code 9.05.055C, Ordinance 4060)*

11. No tree (with a mature height greater than 12 feet) shall be allowed within 5 feet of a public utility line or publicly-owned structure. Trees greater than 12 feet in height at maturity that are proposed between the outside of the 5 foot zone and the edge of the required easement can be evaluated by City staff on a case by case basis, and if acceptable, allowed by the City Engineer. *(Beaverton Code 9.05.055C, Ordinance 4060)*

12. All public utilities shall be installed at ultimate grade, size, and location unless otherwise specifically approved by the City Engineer. Public utilities (water, sanitary sewer, and storm drainage) shall be designed and constructed according to the City master plan. They shall also be extended within the site, adjacent to the site, and along public right of way frontages to all neighboring undeveloped and underdeveloped parcels. *(Beaverton Code 9.05.046, 9.05.055C, Ordinance 4060, and Ordinance 2050 +rev.)*

13. A detailed grading plan shall be prepared by a professional engineer or surveyor, showing existing and proposed grading at two foot contour intervals. Grading plan topography shall extend a minimum of fifty feet onto adjacent properties, or as otherwise approved by the City Engineer.

The use of aerial photos, or the City's quarter-section grading plans will be allowed for preliminary design, however final plans shall be from on-site surveys. The applicant's engineer or surveyor shall submit to the City a copy of the field notes documenting the extent of the field survey with the site development permit application. No grading shall occur within 10 feet of a property line unless the requirements of Beaverton City Code sections 9.05.110 and 9.05.115 are met. *(Beaverton Code 9.05 and Ordinance 4060)*

14. All existing wells, tanks, and septic drain fields shall be shown on the site development plans. These items, if proposed by the applicant or required by City Engineer to be abandoned, shall be removed during the site work in a manner approved by the governing authority. *(Ordinance 4060, Oregon Revised Statutes Chapter 92, Beaverton Code 4.04.030, 9.05.055C)*

15. The site development plans shall include erosion control measures that are designed to meet the requirements of Oregon Administrative Rule 340-41-455. *ADVISORY NOTE: The current Technical Guidance Handbook from USA is dated December 2000.*

16. The applicant shall submit to the City a copy of issued permits or other approvals needed from the City of Portland for work within, and/or access to the Multnomah Boulevard right of way (including sidewalks and approaches), prior to issuance of the site development permit. *(Beaverton Code 9.05.035D)*

17. The design and construction of private streets and parking lots along with drive access to public streets shall comply with City standards. *(Ordinance 4060 Section 210.17, Ordinance 2050 + rev., and UFC)*

18. Standard City sidewalk shall be installed along lot frontage prior to the Building Division releasing any building for occupancy. *(Beaverton Code 3.06)*

19. All sidewalks along non-access lot frontage, common property, tracts, lot frontages not in the plat, and existing house frontage shall be installed during site development. *(Beaverton Code 3.06)*

20. All public improvements built as a condition of development in the City of Beaverton shall be designed and constructed in such a manner as to be readily accessible to and usable by individuals with disabilities as per the requirements of the Americans With Disabilities Act of 1990.

This includes installing curb ramps (per City Standard Details) at intersections with pedestrian crosswalks to allow a smooth transition between street and sidewalk elevations during site development. The sidewalk shall also be installed around the radius of the corner (P.C. to P.T.) during site development. The applicant shall replace any existing ramps adjacent to the site which do not meet the new standard. *(Ordinance 4060)*

21. Street centerline monumentation shall be protected by a City standard monument box at all street intersections. All other street centerline monumentation shall be metallic caps. *(Ordinance 4060)*

22. An approved plan or approval letter from the Tualatin Valley Water District shall be submitted to the City prior to the issuance of the site development permit. *ADVISORY NOTE: Contact Stuart Davis at 503.642.1511 for TVWD submittal requirements. (Beaverton Code 9.05.035D)*

23. Prior to issuance of the site development permit, a detailed water analysis shall be provided. This analysis shall consist of an actual flow test and analysis by a professional engineer meeting the standards set by the City Engineer. The analysis shall indicate adequate water service to each meter, and adequate volume and pressure for fire protection service of the proposed buildings. *(Ordinance 4060)*

24. The applicant shall submit a copy of issued permits or other approvals needed from the Clean Water Services for storm system. *ADVISORY NOTE: Contact Lee Walker (503.648.8621) at Clean Water Services for more information (Beaverton Code 9.05.035D USA Resolution and Order 2000-007, and Intergovernmental Agreement).*

25. The applicant's engineer shall provide a detailed drainage analysis of the subject site and prepare 24 x 36-inch sheet identifying all contributing drainage areas and plumbing systems on and adjacent to the site with the site development permit application. The analysis shall also delineate all areas on the site that are inundated during a 100 year storm event in addition to any mapped FEMA flood plains and flood ways. *(Beaverton Code 9.05.135)*

26. This project shall provide on-site storm detention. Detention systems shall be designed for the 2, 10, and 25-year frequency storms to the technical requirements of the 1999 Engineering Design Manual, with provision for the safe overflow of the 100 year event. The applicant's engineer shall provide design computations with the site development permit application and field verification with submittal of "as-built" drawings that the detention volume and conveyance required by this condition has been provided. Prior to the installation of any asphalt or concrete pavement, the detention facility shall be completed and operational. *(Beaverton Code 9.05.135D and Ordinance 4060)*

27. This project shall construct and maintain an on-site storm water quality facility meeting or exceeding the minimum requirements of the City of Beaverton and the Clean Water Services. Prior to the installation of any asphalt or concrete pavement, the storm water quality facility shall be completed and operational. *(Ordinance 4060, Unified Sewerage Agency Resolution and Order 2000-007, and Intergovernmental Agreement)*

28. A storm water system development charge shall be assessed at time of building permit issuance. *ADVISORY NOTE: Currently per Ordinance 3910, this is $610 per each Equivalent Dwelling Unit (EDU) (2,640 square feet of new impervious surface).*

29. All wetlands, floodplains, drainage ways, and sensitive areas as defined by the Unified Sewerage Agency Resolution and Order 2000-007, the site assessment determination and conditions set by the storm system connection permit from USA, and City requirements shall be identified and clearly delineated on plans submitted with any land use permit and site development permit application. The applicant shall not rely on general community or FEMA maps for that information, but shall make an independent, professional determination for the project site and vicinity. The limits of such areas shall be determined, surveyed, and certified by a professional engineer, recognized wetland scientist or biologist, and/or professional surveyor as appropriate considering the circumstances associated with the project site. A copy of the delineation report shall be submitted with each application. *(Beaverton Code 9.05.035, Ordinance 4060, and Ordinance 2050)*

C. TRANSPORTATION DIVISION:

Prepared by Don Gustafson- (503) 350-4057 or dgustafson@ci.beaverton.or.us

1. With the Type 3 Design Review application, the applicant will be required to provide right of way street dedication to the Beaverton

Residential Local Street Two Lane (L1) Comprehensive Plan Standards - 29 feet from centerline - on SW Canby Street, unless already present (Development Code 40.10.15.3.C.1.b&c, 60.60.45.1). Improvements shall include transition tapers to existing roadway improvements.

2. The applicant will be required to construct SW Canby Street to Beaverton Residential Local Two Lane (L1) Street Comprehensive Plan Standards – 29 foot right of way from centerline, 34 foot pavement, 6.5 foot planter areas and 5 foot sidewalks. (Development Code 40.10.15.3.C.1 and 60.60.30). These improvements include but are not limited to: street trees, pedestrian ways, streetlights, and driveway installations. Improvements shall include transition tapers to existing roadway improvements.

3. The applicant will be required to provide street right of way dedication and construct SW Multnomah Blvd. to the City of Portland Arterial Comprehensive Plan Standard, unless already present. Label the centerline of SW Multnomah Blvd. right-of-way and dimension the sidewalk and the distance from centerline to property line.

4. An infill street design for the internal street may provide the best opportunities to develop the site (Development Code 60.60.30.1.G1 & Dwg. 6a). The applicant should investigate the restrictions and limitations of the City of Beaverton infill street designs to determine if this option is available. No subdivision may be approved without legal access and necessary public services such as streets and utilities available to the property.

5. New street intersections must meet sight distance criteria in the City's Engineering and Design Manual for the design speed of the roadway (Development Code 60.60.50.1 and Engineering Design Manual 210.5).

6. Traffic Impact Fee (TIF) will be due at issuance of building permits. With the proposed single-family use the TIF is $2260 per unit based on TIF rates valid through June 30, 2002. For more information regarding TIF contact Don Gustafson at 350-4057.

7. The applicant shall show development within 100-feet around the site. Show driveways, structures, and relevant utilities that may

indicate required extensions of facilities from the neighboring properties (Development Code 60.60.15.3).

8. Comments from the City of Portland are important to the City's decision and will be considered prior to facilities review approval. Provide written financial assurance for any improvements conditioned by the City of Portland prior to issuance of site development permit.

D. BUILDING DIVISION - Prepared by Brad Roast - (503) 526-2524

1. A demolition permit is required for the removal of the existing building(s). If a septic tank exists, it shall be pumped out and filled in with sand or gravel, or completely removed. An inspection shall be obtained from the plumbing inspector after the tank is filled or removed. A copy of the receipt from the pumping company shall be provided. If the building is connected to the public sanitary sewer system, the building sewer shall be capped off at the property line and inspected by the plumbing inspector. [SSC Section 106, PSC Section 722]

2. The removal of existing buildings on the property may provide credits towards some system development (SDC) fees, such as water, sanitary sewer, impervious surface, traffic.

E. FINANCE DEPARTMENT - Prepared by Kathy Gaona - (503) 526-2255

1. There are no liens.

F. TUALATIN VALLEY FIRE DISTRICT – Prepared by John K. Dalby - (503) 526-2519

1. No comments submitted.

G. OPERATIONS DEPARTMENT - Prepared by Leonard Apling - (503) 526-2223

1. Utilities are available to the site. No additional comments at this time.

ITEMS GIVEN TO APPLICANT:

1. Neighborhood Review Meeting Packet

The pre-application conference is intended to aid and assist the public in understanding the procedures and regulations of the City of Beaverton and how they might apply to a particular development given the information provided at the conference. The conference is not intended, however, to approve specific site plans. Accurately detailed plans will have to be submitted to fully determine what will be required to develop this site. Please be aware that various permits are required to build in Beaverton.

If you have any questions, please feel free to contact me at (503) 526-2425.

Sincerely,

Colin Cooper, AICP
Senior Planner

Attachments: Attendance Sheet

c: Development Services Information Counter
Jim Duggan
Jamie Mitchell, Mitchell Hardy Homes, 8251 SW Cirrus, Beaverton, OR. 97008

TRAFFIC IMPACT FEE PROGRAM SUMMARY

The following summarizes the Traffic Impact Fee (TIF) in the City of Beaverton. See page 2 for TIF rates for most projects. For more information or for TIF rates for developments not listed on page 2, contact Sean Morrison, TIF Coordinator, at 350-4012.

Types of Development Subject to TIF

- All new development.
- Changes in land use resulting in increased trip generation. Examples:
  - Existing office/warehouse tenant converting some warehouse area to office area.
  - New leaseholder converting existing office space into video rental.

TIF Exemptions

- Remodeling of single-family dwellings.
- Remodeling of multi-family dwellings, except if new units are added.
- Public mass transit improvements.

How TIF is Assessed

- TIF is a tax based on national trip generation averages for each land use.
- Assessed with building permit for construction of building shell.
- Specific procedures in accordance with TIF Ordinance.
- Based on land use information provided by applicant and trip generation for land use type.
- If trip generation rates not available, most similar land use type used.

Payment Methods

- Cash or check prior to issuance of building permit.
- Can defer payment until occupancy if TIF is greater than $5,000 and deferral selected on payment option form.
- Must apply in writing no later than time of application for building permit (use payment option form)
- Must select road construction credit or offset at time of deferral.
- Not eligible for Bancroft (installment plan) unless requested at time of deferral via payment option form. Bancrofting allows semi-annual payment of any TIF amount.
  - $250 non-refundable fee.
  - Interest rate is prime plus two percent.
  - Must apply at time of building permit application using payment option form.
  - Offset not allowed with bancrofting.

Credit

- Credits allowed for certain capacity and/or safety improvements to collector and arterials.
  - For capacity improvements, must be constructed to ultimate line and grade.
  - For safety improvements, must be a condition of development approval.
  - Must apply in writing within 90 days of acceptance of the improvement by the City.
- Credit form provided by City. Applicant responsible to present form to receive credit.

Notification

- Applicants and property owners notified in writing of TIF amount.

Refunds

- Must apply in writing. Refunds allowed under only two specific conditions:
- Clerical error in calculation of the fee.
- Failure to claim credit within 30 days of issuance of building permit or occupancy permit if deferred

Appeals

- Appeal fee is $625. Must be in writing within 14 days after notification mailed.

TABLE 1
TIF RATES FOR MOST COMMON LAND USES

Category	Land Use (Units)	TIF per Unit
Residential	Single-family house (per unit)	$2,260
	Apartment (per unit)	$1,379
	Condominium (per unit)	$1,322
	Retirement Community (per unit)	$ 746
Institutional	Church (per 1,000 gsf)	$1,005
	Day Care (per 1,000 gsf)	$4,663
	Nursing Home (per bed)	$ 235
	Hospital (per 1,000 gsf)	$1,424
	Elementary School (per student)	$ 97
Commercial		
	Specialty Retail (per 1,000 gsf)	$2,319
	Discount/Bulk Retail (per 1,000 gsf)	$3,999
	Shopping Center (per 1,000 gsf)	
	< 50,000 gsf	$5,398
	50,000 gsf to 99,999 gsf	$4,817
	100,000 gsf to 199,999 gsf	$3,797
	Fast Food (per 1,000 gsf)	$5,700
	Quality Restaurant (per 1,000 gsf)	$5,450
	Convenience Market (per 1,000 gsf)	$5,700
	Bank (per 1,000 gsf)	$5,700
	New Car Sales (per 1,000 gsf)	$2,709
	Supermarket (per 1,00 gsf)	$5,700
Office		
	General Office (< 100,000sf) (per 1,000 gsf)	$3,376
	Medical Office (per 1,000 gsf)	$7,073
	Business Park (per 1,000 gsf)	$2,571
Industrial		
	Light Industrial (per 1,000 gsf)	$1,512
	Heavy Industrial (per 1,000 gsf)	$ 326
	Manufacturing (per 1,000 gsf)	$ 835
	Warehouse (per 1,000 gsf)	$1,059
	Mini-warehouse (per 1,000 gsf)	$ 566

NOTE: TIF rates valid through June 2002.

CES|NW

March 24, 2004

RE: Proposed Subdivision

Dear Neighbor:

CES | NW is representing the owner of property located between SW Multnomah Blvd. and SW Canby Street, also know as 1S124DA Tax Lot 301. The owner will be applying for a +/-15-lot subdivision at this location. Prior to applying to the City of Beaverton for the necessary approvals, I would like to discuss the proposal in more detail with the members of the Citizen Participation Organization and surrounding property owners and residents. Pursuant to City of Beaverton requirements, you are invited to attend a meeting on:

Tuesday
April 13, 2004
6:00 – 7:30 pm
At
Garden Home Recreation Center
7475 SW Oleson Road

Please note that this will be an informational meeting on preliminary development plans. These plans may be altered prior to submittal to the City.

I look forward to more specifically discussing the proposal with you. Please call me at 503-968-6655 if you have any questions.

Sincerely,

CES | NW

Hayli Walker

Hayli Walker
Planner

CESNW, INC.
15573 SW BANGY RD , STE. 300 LAKE OSWEGO, OR 97035
503 968 6655 TEL 503 968 2595 FAX www cesnw com

NE 1/4 SE 1/4 SECTION 24 T1S R1W W.M.

WASHINGTON COUNTY OREGON

SCALE 1" = 100'

IS 1 24DA

229

SEE MAP
IS 1 24AD

CANCELLED NO'S
3500
700
100
2003
2700
5700
5100
3200

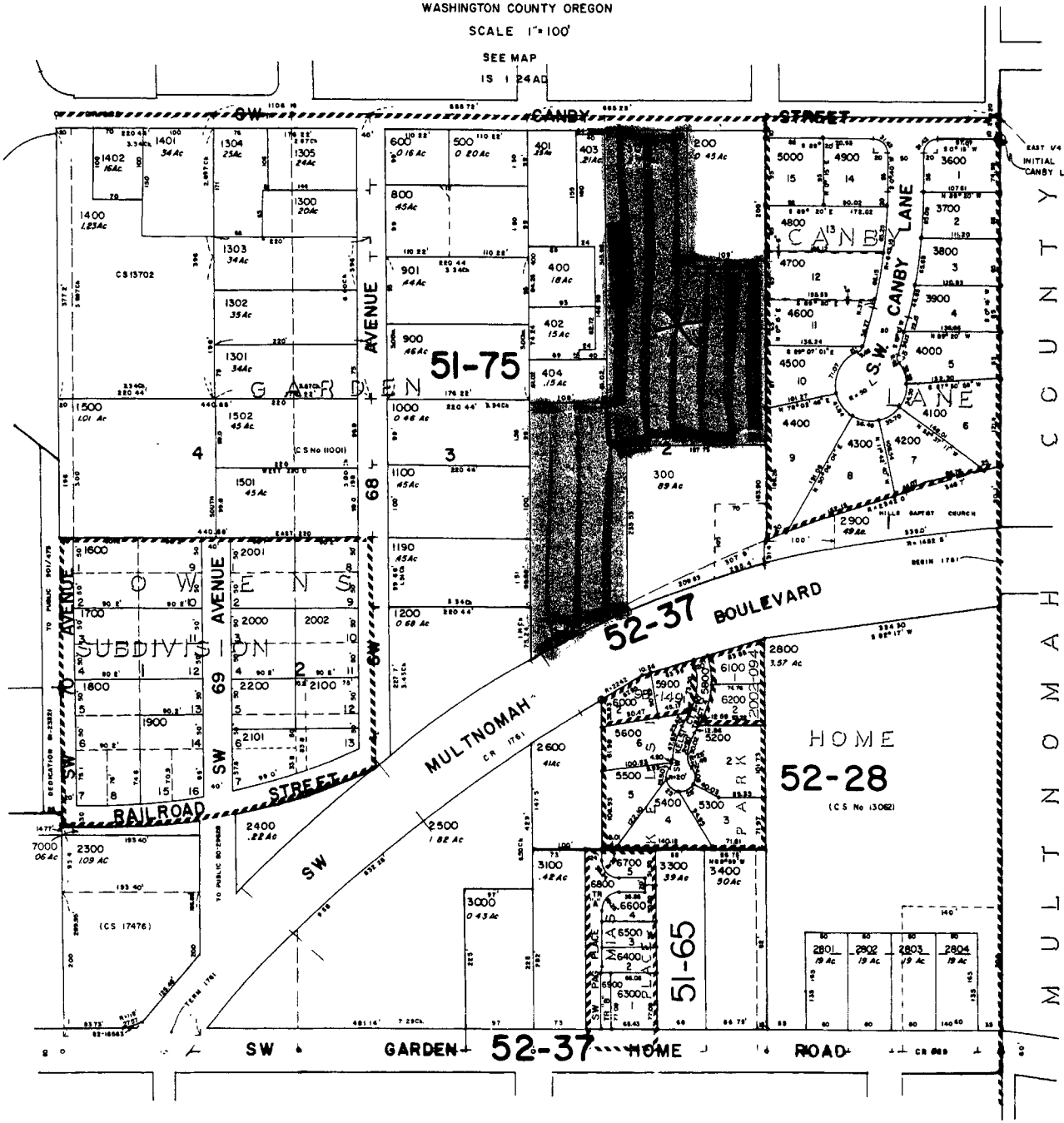
EAST 1/4 CORNER
INITIAL POINT
CANBY LANE

FOR ASSESSMENT PURPOSES ONLY
DO NOT RELY ON
FOR ANY OTHER USE

SEE MAP
IS 1 24DB

SEE MAP
IS 1 24DD

BEAVERTON
PORTLAND
IS 1 24DA



CPO 3 – David Wilson
[illegible]0 SW Parkview Ave.
[illegible]land, OR 97225

PGE
121 SW Salmon St.
Portland, OR 97204

Sue Gomes
1521 N. Jantzen Ave. #410
Portland, OR 97217

Albert Hoguet
1600 SW Highland Pkwy.
Portland, OR 97221

Yossi Judy Malka
16757 Maple Cir
Lake Oswego, OR 97034

Gary Sherman
4089 SW Chesapeake Ave.
Portland, OR 97239

Presiding Bishop
50 N Temple Re 510 1573 #E
Salt Lake City, UT 84150

Abbas & Linda Abbaspour
5433 SW Dover
Portland, OR 97225

Howard Elston
5562 SW Erickson Ave.
Beaverton, OR 97005

TW Fryon Treas Contr
621 SW Alder St.
Portland, OR 97205

Jeffery Wade
6501 SW Canby St.
Portland, OR 97223

West Hills Baptist Church
6501 SW Multnomah Blvd.
Portland, OR 97223

Mudrick Family Unlimited
6504 NW Siskiyou St.
Portland, OR 97213

Janine Maclean
6556 SW Canby St.
Portland, OR 97223

Helen Elston
6585 SW Canby St.
Portland, OR 97223

Virginia Cannon McCarthy
6607 SW Garden Home Rd.
Portland, OR 97223

Albert Duncan
6609 SW Garden Home Rd.
Portland, OR 97223

S. & V. Davorin Baricevic Jr.
6611 SW Garden Home Rd.
Portland, OR 97223

Michael Davis
6611 SW Multnomah Blvd.
Portland, OR 97223

Larry & Melody Helenius
6617 SW Garden Home Rd.
Portland, OR 97223

Charles & Catherine Darby
6620 Sw Canby St.
Portland, OR 97223

Michael Cottam
6625 Sw Canby St.
Portland, OR 97223

Craig & Kathleen Krech
6650 Sw Canby St.
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Gregory Freuler
6655 SW 67th Ave.
Portland, OR 97223

Nancy Burke
6660 Sw Canby St.
Portland, OR 97223

David & Judith Gillette
6670 Sw Canby St.
Portland, OR 97223

Dale Lee Butler
6675 Sw Canby St.
Portland, OR 97223

Mark Johnson
6680 Sw Canby St.
Portland, OR 97223

Richard & Thelma Moan
6715 SW Multnomah Blvd.
Portland, OR 97223

Clarence Moen
6715 SW Multnomah Blvd.
Portland, OR 97223

Scott & Aimee Jo Dardis
[illegible]5 SW Canby St.
[illegible]tland, OR 97223

Tudorel Fachiol
6755 Sw Canby St.
Portland, OR 97223

Justin Moore
6780 Sw Canby St.
Portland, OR 97223

Diane Nystrom
6785 SW Canby St.
Portland, OR 97223

Raymond & Nancy Valome
6820 Sw Canby St.
Portland, OR 97223

Gordon Hovies
6832 SW Canby St.
Portland, OR 97223

Mary Hinckley
6835 SW 67th Ave.
Portland, OR 97223

David & Mary Kelley
6848 Sw 67th Ave.
Portland, OR 97223

Betty Braich
6850 SW 68th Ave.
Portland, OR 97223

Dennis Crawford
6855 SW 67th Ave.
Portland, OR 97223

Jerry & Susan Hope
6864 SW 67th Ave.
Portland, OR 97223

Mariann Koop
6875 SW 66th Ave.
Portland, OR 97223

Stephen & Patricia Bosak
6880 SW 67th Ave.
Portland, OR 97223

Douglas & Rosemarie Walker
6880 SW 68th Ave.
Portland, OR 97223

Howard & Karen Cunningham
6896 SW 67th Ave.
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Aviva Cohen
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Portland, OR 97219

Harry & Elizabeth Dawson
6912 SW 67th Ave.
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Dianna & John Holmes
6925 SW 67th Ave.
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Robert/Vera Jean Beck
6940 SW Canby St.
Portland, OR 97223

S. & V. Scholibo
6969 SW 66th Ave.
Portland, OR 97223

GR Lessie Beck
6970 SW Canby St.
Portland, OR 97223

Tedd Hauptman
6980 SW 68th Ave.
Portland, OR 97223

Marci Hammel
7006 SW Canby Ln.
Portland, OR 97223

Ruven & Maria Zabari
7009 SW Canby Ln.
Portland, OR 97223

Raymond & Joy Burns
7020 SW Canby Ln.
Portland, OR 97223

Robert & Ruth Scott
7023 SW Canby Ln.
Portland, OR 97223

Robin Shaylor
7034 SW Canby Ln.
Portland, OR 97223

Jeremy & Chale Inman
7037 Sw Canby Ln.
Portland, OR 97223

Alan Gladstone
7048 SW Canby Ln.
Portland, OR 97223

Carol Federiuk
7049 SW Canby Ln.
Portland, OR 97223

Harold Cornett
[illegible]0 SW 68th Ave.
[illegible]tland, OR 97223

Marvin Kunz
7065 Sw 68th Ave.
Portland, OR 97223

Paul & Mary Faber
7090 SW 68th Ave.
Portland, OR 97223

Harold & Wanda Coe
7095 sW 68th Ave.
Portland, OR 97223

Philip Mary Belding
7108 SW Canby Ln.
Portland, OR 97223

Jerry & Sharin Pease
7111 SW Canby Ln.
Portland, OR 97223

Wayne & Nicole Rask
7117 SW Canby Ln.
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Irene Crosby
7118 SW Canby Ln.
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Ethel & Carmen Fredricks
7122 SW Canby Ln.
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Emma Jane Sayler
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Kevin Schlachter
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Portland, OR 97223

Terry Pamela Aldrich
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Jerard & Brenda Adams
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Portland, OR 97223

Raymond & Leslie Meads
7205 SW 68th Ave.
Portland, OR 97223

Daniel & Margaret Carson
7250 SW 70th Ave.
Portland, OR 97223

Michael & Bonnie Hayes
7275 SW 68th Ave.
Portland, OR 97223

Mary Kay Conover
7290 SW 69th Ave.
Portland, OR 97223

Christopher Dunlap
7295 SW 68th Ave.
Portland, OR 97223

Gordon Rice
7300 SW 70th Ave.
Portland, OR 97223

Alicia Pat Dyer Pasatiempo
7301 SW Kelsi Ct.
Portland, OR 97223

Michelle Forrer
7303 SW Kelsi Ct.
Portland, OR 97223

Linong Zeng
7315 SW Kelsi Ct.
Portland, OR 97223

Kimberly Wilkerson
7318 SW Kelsi Ct.
Portland, OR 97223

Gary Sheldon
7327 SW Kelsi Ct.
Portland, OR 97223

Thomas & Christalyn Tatomer
7330 SW Kelsi Ct.
Portland, OR 97223

Helen Melodde Kim
7339 SW Kelsi Ct.
Portland, OR 97223

[illegible]chael & Lucy McLean
7627 SW Skyhar Ct.
Portland, OR 97223

VE Romine
8220 SW Oak St.
Portland, OR 97223

Earla Mae Nash
8715 SE 28th Pl.
Milwaukie, OR 97222

Miles Edwards
8705 SW Arborcrest Way
Portland, OR 97225

Sheldon Land
PO Box 1306
Beaverton, OR 97075

Broadmoor Properties LLC
PO Box 3437
Wilsonville, OR 97070

James & Sandra Long
PO Box 71
Portland, OR 97207

James Hall
PO Box 80086
Portland, OR 97280

AB Industries Inc.
PO Box 80235
Portland, OR 97280

Katharine & David Hopkins
6420 SW Canby St.
Portland, OR 97219

Jack & Nancy Schifferdecker
6440 SW Canby St.
Portland, OR 97219

West Hills Baptist Church
6501 SW Multnomah Blvd.
Portland, OR 97223

Stephen & Cheryl Brischetto
7525 Sw 64th Pl.
Portland, OR 97219

James & Pilar Kelly
7531 SW 64th Pl.
Portland, OR 97219

Gordon Usher
7941 SW 64th Ave.
Portland, OR 97219

Scott Schaffer
8015 SW 64th Ave.
Portland, OR 97219

Peter Singer
PO Box 25249
Portland, OR 97298

Planning Director
City of Beaverton
PO Box 4755
Beaverton, OR 97076

CPO 3 Leadership Team
Garden Home Rec. Center
7475 SW Oleson
Portland, OR 97223

Sign Info:

PUBLIC MEETING
On A
Preliminary Development Proposal
Affecting
THIS SITE
PROPOSED
+/-15 Lot Subdivision
A meeting to discuss the preliminary
Development proposal is scheduled for
4-13-04 6:00 pm
ALL INTERESTED PERSONS MAY
ATTEND
FOR MORE INFORMATION
CONTACT:
CES | NW 503-968-6655

NEIGHBORHOOD REVIEW MEETING	HANDOUT # 8

PROJECT NAME: _____

FILE NUMBER: _____

POST ON SITE NO LATER THAN _____

AFFIDAVIT OF POSTING NOTICE

* *

I, KIRSTEN VANLOO, being first duly sworn; say that I am (represent) the party submitting an application to the City of Beaverton for a proposed PUD SUBDIVISION affecting land located at SW CONBY, and that pursuant to Ordinance 2050, Section 50.40.5 (Type 2 Applications) or Section 50.45.6-8 (Type 3 Applications), and the guidelines set out by the Community Development Director, did on the 24 day of MARCH, 2004 personally post public notice(s). The notice(s) was (were) posted on or before the deadline date determined by City staff for this application.

Sign and Date in the presence of a Notary Public. Certain City staff are Notary Public's and are available for witnessing.

Signature: KirstenVanLoo

Dated this 24 day of MARCH, 2004

Subscribed and sworn to before me this 24th *day of* March, *2004*.

Hayli Walker

Notary Public for the State of Oregon

My Commission expires: 1-24-05

OFFICIAL SEAL
HAYLI H. WALKER
NOTARY PUBLIC-OREGON
COMMISSION NO. 342308
MY COMMISSION EXPIRES JAN. 24, 2005

TURN PAGE OVER FOR POSTING INSTRUCTIONS

DEVELOPER OR AGENT: CES-NW

PROJECT LOCATION: _____

AFFIDAVIT OF MAILING NOTICE

* *

I, KIRSTEN VANLOO, being first duly sworn; say that I am (represent) the party intended to submit an application to the City of Beaverton for a proposed PUD SUBDIVISION affecting land located at SW COMBY, and that pursuant to Ordinance 2050, Section 50, and the guidelines set out by the Community Development Director, did on the 24 day of MARCH, 2004, personally mail notice to affected property owners and NAC's within 500 feet of the proposed development site.

Sign and Date in the presence of a Notary Public. Certain City staff are Notary Publics and are available for witnessing.

Signature: [signature]

Dated this 24 day of MARCH, 2004.

Subscribed and sworn to before me this 24th *day of* March, 2004.

[signature]

Notary Public for the State of Oregon

OFFICIAL SEAL
[illegible] H. WALKER
NOTARY PUBLIC-OREGON
COMMISSION NO. 342308
MY COMMISSION EXPIRES JAN 24 2005

My Commission expires: 1-24-05

h:\forms\neighborhood meeting\current nrmtngpacket elements\affdavt2.doc

MEETING AGENDA

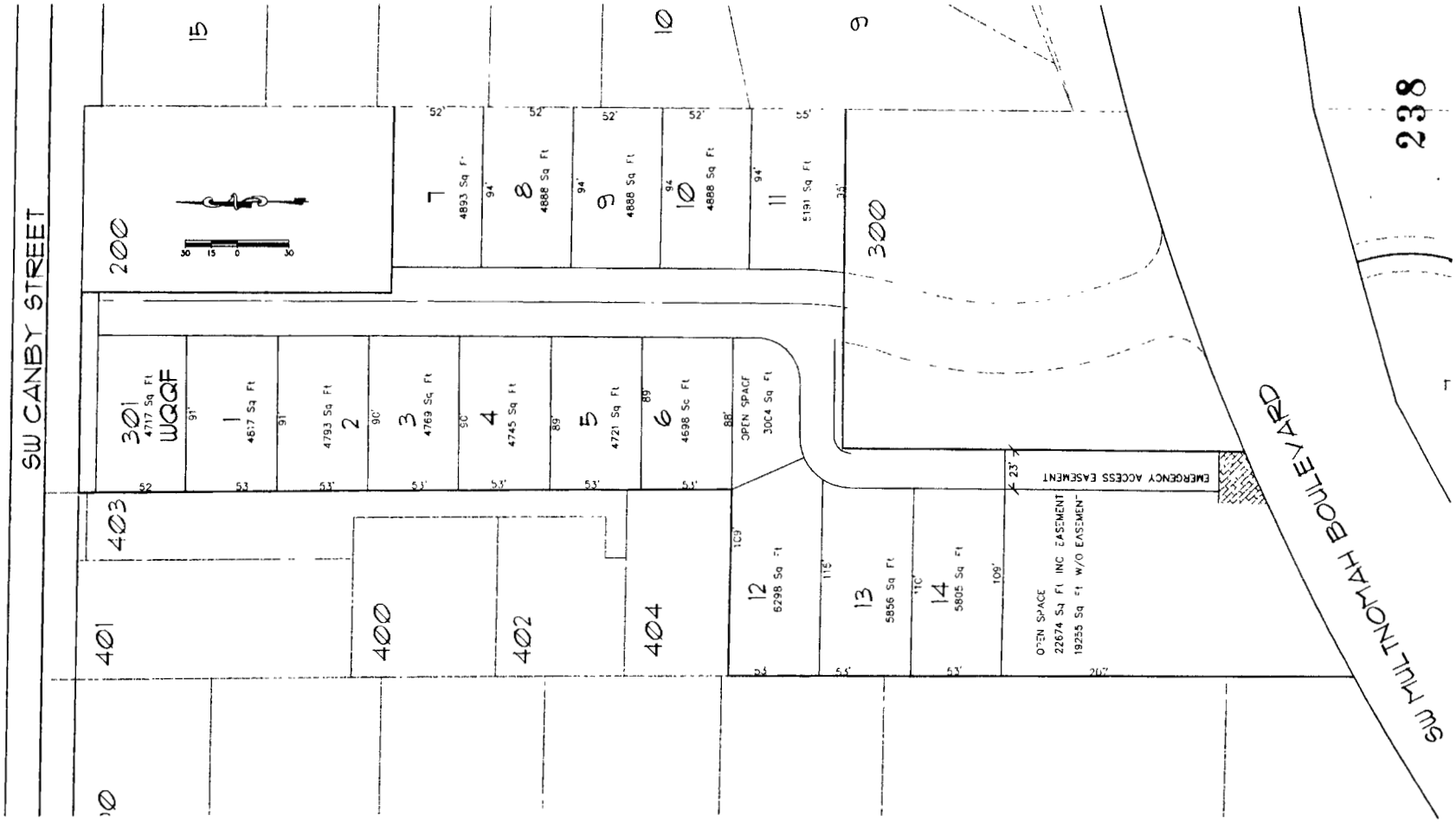
- Introduction / Purpose of Meeting — 5 Min
  Kirsten Van Loo - CES | NW
  503-968-6655 / kvanloo@cesnw.com
- Explanation of the City of Beaverton Land Use Application Process — 15 Min
- Explanation of the Proposed Project — 20 Min
- Questions / Comments * — 20 – 40 Min

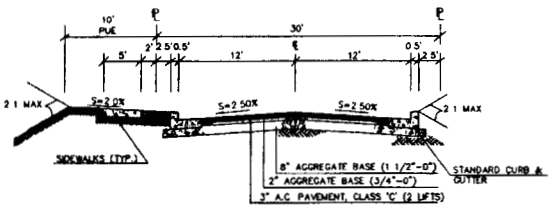
*For those with questions or comments, please put your name on a card (available by the sign-in sheet) and hand it to the presenter. When your name is called, please step to the microphone and state your name and question or comment.

- The purpose of this meeting is to introduce a possible development to the surrounding neighbors, businesses and the Neighborhood Association Committee.
- The City of Beaverton hopes that developers, neighbors and NACs will partner together to build a better community. This meeting is required by the City Development Code, but hopefully we can identify and consider issues constructively in a friendly and neighborly manner.
- Issues raised will be addressed during the application review process, but neighbors should also understand that there are land use requirements related to traffic, access, natural resources, zoning, the Comprehensive Plan, etc. The goal of this meeting is to find a way to meet these requirements and maintain the livability of the area.
- The applicant has a right to develop or change the property involved so long as it is approved by the City and satisfies the City of Beaverton Development Code and the City of Beaverton Comprehensive Plan.
- The meeting will work best if we concentrate on what can be done to minimize the development's impacts on us as neighbors.

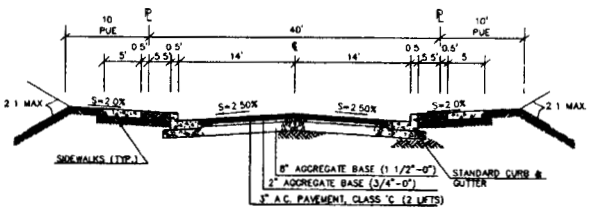
Here are some meeting guidelines:

1. Think how the proposal can be improved.
2. Be civil, positive and courteous.
3. Keep the discussion site specific.
4. Focus on what can be done, not on what cannot be done.
5. Allow others to speak before you speak again.





PRIVATE STREET SECTION
NTS



PUBLIC STREET SECTION
NTS

MOSSY ROCK
BEAVERTON PUD

CES|NW

PRELIMINARY

SHEET 1 OF 1

Job #1667

6:00 pm Garden Home Recreation Center 7475 SW Oleson Rd.	**NEIGHBORHOOD MEETING SIGN IN SHEET CANBY ST. SUBDIVISION**	Tuesday April 13, 2004
NAME	**ADDRESS**	**PHONE #**
Catherine Darby	6620 SW Canby St	503 244-4676
Jack Bertell	CP03 7475 SW Gardenhome Rd	
Dave + Mary Ann Kelley	6848 SW 67TH AVE	503 246 8989
Craig Krech	6650 SW Canby St	245-9665
Jerry & Sharin Pease	7111 SW Canby Lane	246-0625
JERRY ADAMS	7200 SW 68	
Mike Davis	6611 SW Multnomah	244-1900
Vonda Scholibo	6969 SW 66th Ave	
Judy Gillette	6670 SW Canby	503 246 8312
AL HOGUET	RE: 6730 SW CANBY	503-224-3028
Cheryl Brischetto	7525 SW 64th Place	503-245-1298
MARY Hinckley	6835 SW 67TH AVE	503-246-5319
Janine J. MacLean	6556 SW Canby St	503-246-1140
NANCY BURKE	6660 SW CANBY ST	503-892-9219
Helen + Kathleen Elston	6585 SW Canby St	
Jeremy Inman	7037 SW Canby Lane	503-244-8481
Joel Komarek	7432 SW 64th Pl	503.245.2541

Neighborhood Meeting Notes
Meeting held Tuesday, April 13, 2004
for 1S124DA-301

Introduction by Kirsten Van Loo

Agenda presented – description of City of Beaverton Land Use process, purpose of meeting

Requirements related to traffic, access, resources, etc.

Jack Brittel – CPO 3 representative introduced, gave brief explanation about Washington County / City of Beaverton land use process, had handouts.

Description of process for subject property.

Applying for Planned Unit Development – requires conditional use and PUD application. After City declares it complete, Facilities Review Committee to review infrastructure (about 6 weeks after completeness), notice will be sent. Three-four weeks later will be a public hearing before the Planning Commission. About 30 days later, they will make a decision, which can then be appealed by persons with standing.

Appealed projects go before the City Council, and then persons with standing can appeal their decision to LUBA.

Applications to be submitted: PUD, Modification to street standards, application for flexible setbacks, and a tree plan.

14-unit single family detached residential subdivision.

Vehicular access will be from Canby Street.

In the future, if/when the street is connected to Multnomah Blvd., the Canby street access will not be closed.

We're doing a 2/3 street improvement, the north east parcel will have to build the rest of the street.

There will be a homeowners association, we do not have CC&Rs at this time.

Homes 1,800 – 2,800 square feet approximately, 2-story with at least a 2-car garage.

17 units allowed on this site, but it could only work with attached housing.

Frontage improvements on Canby – along frontage of lot – sidewalks, curb and gutter and some pavement.

In lieu of off-site improvements, developer must pay TIF (Traffic Impact Fee) to Washco which funnels it back to City.

SDCs for water, sewer and storm, in addition to on-site improvements.

Multnomah Blvd. improvements not fully known at this time.

Emergency access will also be a ped link to Multnomah Blvd.

- Has soils testing been done? Soils report is in the file, as is geotech info.
- A blocked culvert has impacted drainage on this site.
- How do you make an emergency access for emergency only? Access is managed by "crash gates" or mountable curb with no curb cut access, or planted shrubs that the firetruck can go over.
- How long a process from today through ground breaking? Possibly March or April of next year at the earliest.
- What are the current setback requirements and what are you asking to change them to?
- Are you putting fences around the development and what are the surrounding neighbors going to have to look at?
- Lady from Lot 15 on Canby St.:, what is the standard minimum width for Canby St.? The street gets narrower as it comes from Multnomah County, a school bus and an SUV can't pass each other.
- Are the existing fir trees going to be removed? As many as can will be saved, but many fall within the right-of-way and they will be removed. Replacement plantings will be required.
- The last developer that tried to develop that land couldn't get access onto Canby Street, what has changed that they can now? Three pre-app meetings have resulted in no indication that access from Canby is prohibited.
- With land development fees, can some be allocated to Canby Street? No, Washington Co. Commissioners decided that TIF fees go to specific projects identified by the County.
- Where do the private and public street sections apply on the plan?

- Drainage?
- Traffic on Canby – an accident waiting to happen, neighbors are distressed to hear that the City and this development will not be doing anything to improve traffic on Canby – what kind of traffic studies have been done to date and what is the best way to appeal to the City of Beaverton to make the changes on Canby?

- Neighbor across the street from WQF – doesn't want an ugly pond like many she's seen around the area – ugly ponds with ugly fences around them.

- Is there an estimate for how much increased water flow there will be?

- There is already a drainage problem for the property and surrounding properties – flooded basements and such. Neighbor wants a guarantee that her drainage problems will not increase.

- Where will the drainage go?

- Why not keep all the water on the property?

- Will the fence be built at the beginning of the project?

- What will we see from Canby street as far as the mass of the structures? What part of the site will be filled?

- How will this development compare to existing developments in the area?

- How big will the houses be? How tall?

- Why do they allow two-story homes next to existing one-story homes?

CES|NW

Memorandum

TO: **File #1667 / City of Beaverton**

FROM: Hayli Walker

SUBJECT: Canby St. Subdivision

DATE: 4/12/04

A neighbor, Sylvia Butler, called with concerns regarding the proposed project as she is unable to attend the scheduled Neighborhood Meeting on April 13.

Her concerns are traffic - there is already too much on Canby Street, and its going too fast. Is it possible to limit access to Canby Street and place the entrance to the subdivision on Multnomah Blvd?

CES|NW

Memorandum

TO: **File #1667 - 14-lot PUD**

FROM: Hayli

SUBJECT: Neighbor Comments

DATE: 5/5/04

Jerry Adams, who lives near the proposed "Mossy Rock" PUD, and attended the neighborhood meeting, would like the 3 southern-most lots to not be included in the request for reduced rear setbacks. He believes the lots are large enough to accommodate the standard 20' rear setback, and would then allow for some larger fir trees to remain undisturbed.

CES|NW

LETTER OF TRANSMITTAL

TO:
CPO 3 Leadership Team
7475 SW Oleson
Portland, OR 97223
ATTENTION:

DATE: 7/28/04	JOB #: 1667
SUBJECT: Neighborhood Meeting Notes	

WE ARE SENDING YOU

☐ Prints ☐ Plans ☐ Specifications ☐ Copy of letter
☐ Documents ☐ Reports ☐ Change order ☐ Samples
☐ Other: _____

COPIES	DATE	NO.	DESCRIPTION
1	4/13/04		**Notes from neighborhood meeting held 4/13/04, regarding a 14-lot subdivision between Canby St. and Multnomah Blvd.**

These are transmitted as checked below:

☐ For approval ☐ For your use ☐ As requested ☐For review and comment
☐ Other _____
☐ FOR BIDS DUE _____

REMARKS:

COPY TO _____

SIGNED: Hayli Walker

CESNW, INC.
15573 SW BANGY RD., STE. 300 LAKE OSWEGO, OR 97035
503 968.6655 503 968.2595 FAX WWW CESNW.COM

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Preliminary Drainage Plan:

Existing Site Conditions

The existing drainage basin for Garden Grove is 3.67 acres with a drainage swale in approximately middle of the site. This swale drains North to an unnamed tributary to Fanno Creek. The project site is bounded on the South by Multnomah Boulevard, on the East by Canby lane Subdivision, on the North by SW Canby Street and on the West with developed parcels.

SW Multnomah Boulevard appears to drain Westerly in a system of roadside ditches and culverts which are covered and difficult to confirm their direction of flow.

The commercial building and parking lot on the Southeast corner of the site drain onto the subject property near its Northwest and Northeast corners of TL 300.

Homes in Canby Lane Subdivision appear to drain into SW Canby Lane and then to the roadside ditch on the South side of SW Canby Street.

Properties along the South side of Canby Street drain to an existing roadside ditch/culvert system. This system conveys run-off to the existing sag point on the East side of the proposed SW Kelsi Street intersection. From there, run-off flows in a culvert to the drainage swale located on the North side of SW Canby Street and about 60-feet Westerly of the sag point.

Properties on the Southwest side of the subject site drain West away from the site, and Northwesterly properties drain to the road side ditch/culvert system on the south side of SW Canby Street. This ditch/culvert system drains to the sag point just Easterly of SW Kelsi Street.

Proposed Drainage Plan:

The proposed PUD subdivision consists of 15 lots. Each lot will have an individual storm lateral that will convey storm run-off to a storm drain in SW Kelsi Street. This drainage system will also pick up run-off coming from the commercial site on the Southeast corner of the project site.

The storm drain system will convey run-off to the open space (Tract A) on the corner of SW Canby Street and SW Kelsi Street. Low flows will pass through a storm water management system to provide the required treatment prior to release. The high flows will bypass the treatment facility and connect to two concrete storage vaults that will provide the required storage volume of 4496 cubic feet. (See storage volume calculation in attached appendix.) Flow out of

the detention vaults will be regulated by orifices in Clean Water Services Storm Manhole # 544 (modified).

To achieve the required depth to provide treatment and storage, the outfall to the natural stream is located about 94 feet North of the flow control manhole. This system is illustrated in the proposed utility plan for the subdivision (sheet 5 of 6).

We are unable to treat run-off from the Canby Street improvements because of grade conflicts. We are exchanging treatment of the existing commercial property's impervious area for the Canby Street impervious area we are unable to treat.

APPENDIX

Water Quality Calculation:

Impervious Surfaces:

Street Area	=	20,912 SF
15 lots @ 2640	=	39,600 SF
		60,512 SF

WQF = [60,512 (0.36 /12"/ft)] / 14,400 sec = 0.126 cfs

Storm Filter:

0.126 cfs X 448.83 gal/min = 56.58 gal/min

Cartridges : [56.58 gal/min] / [15 gal/min] = 3.77 use 4

Use 3 X 10 feet linear vault with depth limited to < 5 feet.

Alt 6 X 8 vault if depth > 5 feet.

CES|NW

VAULT STORAGE ROUTING

Project: *Garden Grove*
Project Number: *1667*
Date: *09.30.04*
Basin: *Site*
Event: *year*

Pond Data:

Bot. L =	75	feet
Bot. W =	11	feet
Side Sl =	NA	Horizontal : 1 Vertical
AREA =	825	Bottom Area in Sq. Ft.
Height 0=	0	Elevation
Beg Sto =	0	cu. ft.

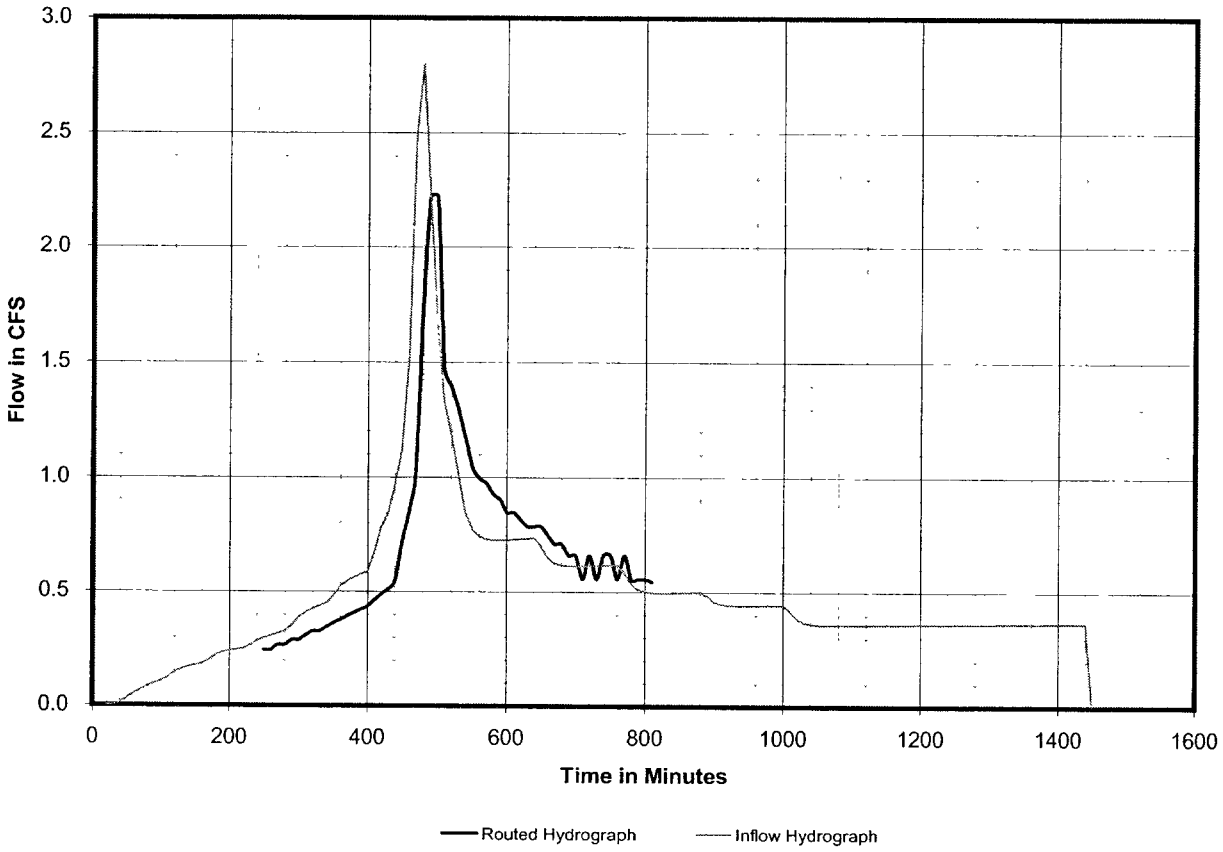
MAX STORAGE = 4496 cu ft
MAX OUTLET = 2.2 cfs

Outlet Data:

Orif1 A =	0 065	sq. ft.
Orif1 E =	0	
Dia 1 =	3.45	inches
Orif2 A =	0.056	sq. ft.
Orif2 E =	2.6	
Dia 2 =	3.20	inches
Orif3 A =	0.065	sq ft.
Orif3 E =	4.13	
Dia 3 =	3.45	inches

Broad Crested		
Weir1 L =	2.5	feet
Weir1 E =	4.8	
Rectangular		
Weir2 L =	0	feet
Weir2 E =	0	

Pond Outflow Hydrograph



File: VAULT-HC.XLS
9/30/2004

CES|NW, Inc.

Pond Storage vs. Outflow

Height (ft)	Storage (cu ft)	Surf Area (sq ft)	OUTLETS ORIF1	ORIF2	ORIF3	WEIR1	WEIR2	t = 600 sec S/t	2S/t	O+2S/t	Total Out
0	0	825	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0.0	0.0
0.1	83	825	0.1	0 0	0 0	0.0	0.0	0.1	0 3	0.4	0 1
0 2	165	825	0.2	0.0	0.0	0.0	0 0	0.3	0.6	0.7	0.2
0.3	248	825	0.2	0.0	0.0	0.0	0.0	0.4	0.8	1 0	0.2
0.4	330	825	0.2	0 0	0.0	0.0	0.0	0 6	1.1	1.3	0.2
0 5	413	825	0 2	0.0	0.0	0 0	0 0	0.7	1.4	1.6	0.2
0 6	495	825	0.3	0.0	0 0	0 0	0 0	0 8	1 7	1 9	0 3
0 7	578	825	0 3	0 0	0 0	0.0	0 0	1 0	1.9	2 2	0 3
0.8	660	825	0 3	0 0	0.0	0 0	0 0	1.1	2 2	2 5	0 3
0.9	743	825	0.3	0.0	0.0	0 0	0 0	1.2	2.5	2 8	0.3
1	825	825	0.3	0.0	0.0	0 0	0.0	1 4	2 8	3.1	0.3
1.1	908	825	0.4	0.0	0.0	0 0	0.0	1.5	3 0	3.4	0 4
1.2	990	825	0.4	0 0	0.0	0 0	0.0	1.7	3.3	3.7	0 4
1 3	1073	825	0 4	0.0	0 0	0 0	0.0	1.8	3 6	4 0	0.4
1 4	1155	825	0.4	0.0	0.0	0.0	0.0	1 9	3.9	4 3	0.4
1 5	1238	825	0 4	0.0	0.0	0.0	0.0	2 1	4.1	4 5	0.4
1.6	1320	825	0 4	0.0	0.0	0.0	0.0	2.2	4.4	4.8	0.4
1.7	1403	825	0.4	0 0	0.0	0 0	0 0	2 3	4 7	5.1	0 4
1.8	1485	825	0.5	0 0	0 0	0.0	0.0	2 5	5 0	5 4	0.5
1.9	1568	825	0.5	0.0	0 0	0 0	0 0	2.6	5 2	5.7	0.5
2	1650	825	0.5	0.0	0 0	0 0	0.0	2 8	5 5	6.0	0.5
2.1	1733	825	0 5	0 0	0.0	0 0	0.0	2 9	5.8	6 3	0.5
2.2	1815	825	0.5	0.0	0.0	0 0	0.0	3 0	6.1	6.6	0 5
2.3	1898	825	0.5	0 0	0.0	0 0	0 0	3 2	6.3	6 8	0 5
2 4	1980	825	0.5	0 0	0.0	0.0	0.0	3 3	6.6	7 1	0.5
2.5	2063	825	0 5	0 0	0.0	0.0	0 0	3.4	6.9	7.4	0.5
2.6	2145	825	0 6	0.0	0.0	0 0	0 0	3.6	7.2	7.7	0.6
2.7	2228	825	0 6	0.1	0.0	0 0	0.0	3.7	7.4	8.1	0.7
2.8	2310	825	0.6	0.1	0.0	0 0	0.0	3.9	7.7	8.4	0.7
2.9	2393	825	0.6	0.2	0 0	0 0	0.0	4.0	8 0	8 7	0.7
3	2475	825	0.6	0 2	0.0	0 0	0 0	4.1	8.3	9.0	0.8
3.1	2558	825	0.6	0.2	0.0	0.0	0.0	4 3	8 5	9.3	0.8
3.2	2640	825	0 6	0.2	0.0	0.0	0.0	4 4	8.8	9 6	0 8
3 3	2723	825	0 6	0.2	0.0	0.0	0.0	4 5	9.1	9.9	0.9
3.4	2805	825	0.6	0.3	0.0	0.0	0.0	4 7	9.4	10.3	0 9
3.5	2888	825	0.6	0 3	0.0	0 0	0 0	4.8	9 6	10 6	0.9
3.6	2970	825	0.7	0 3	0 0	0 0	0 0	5.0	9 9	10.8	0.9
3.7	3053	825	0.7	0 3	0 0	0 0	0 0	5.1	10.2	11.1	1.0
3 8	3135	825	0.7	0.3	0 0	0.0	0.0	5.2	10.5	11.4	1 0
3.9	3218	825	0.7	0.3	0.0	0.0	0.0	5 4	10.7	11.7	1.0
4	3300	825	0.7	0.4	0.0	0.0	0 0	5 5	11 0	12 0	1 0
4 1	3383	825	0.7	0 4	0 0	0 0	0.0	5 6	11 3	12 3	1.1
4 2	3465	825	0 7	0 4	0.1	0.0	0 0	5.8	11 6	12.7	1.2
4.3	3548	825	0 7	0.4	0.1	0.0	0 0	5.9	11.8	13.1	1.2
4.4	3630	825	0.7	0.4	0.2	0.0	0.0	6.1	12.1	13.4	1 3
4.5	3713	825	0.7	0.4	0.2	0 0	0.0	6.2	12.4	13.7	1.3
4 6	3795	825	0.7	0.4	0 2	0 0	0.0	6.3	12 7	14 0	1.4
4 7	3878	825	0 7	0.4	0.3	0 0	0.0	6.5	12 9	14.4	1.4
4.8	3960	825	0 8	0 4	0.3	0.0	0.0	6 6	13 2	14.7	1.5
4.9	4043	825	0.8	0 4	0.3	0.2	0.0	6 7	13.5	15 2	1 8
5	4125	825	0.8	0.5	0.3	0 7	0.0	6 9	13 8	16 0	2.2
5.1	4208	825	0.8	0.5	0.3	1 2	0 0	7.0	14 0	16.8	2.8
5.2	4290	825	0.8	0 5	0 4	1.9	0.0	7.2	14.3	17.8	3 5
5.3	4373	825	0.8	0.5	0.4	2.7	0 0	7.3	14.6	18 9	4 3
5.4	4455	825	0.8	0.5	0.4	3 5	0.0	7.4	14.9	20 0	5.2
5 5	4538	825	0.8	0 5	0.4	4 4	0.0	7 6	15 1	21 2	6 1
5.6	4620	825	0.8	0 5	0.4	5.4	0.0	7 7	15.4	22 5	7.1
5.7	4703	825	0.8	0 5	0.4	6.4	0 0	7 8	15 7	23 9	8.2
5.8	4785	825	0 8	0.5	0.4	7.5	0 0	8.0	16 0	25.3	9.3
5.9	4868	825	0.8	0.5	0.5	8.7	0 0	8.1	16 2	26.7	10.5
6	4950	825	0.8	0 5	0 5	9 9	0.0	8.3	16.5	28.2	11.7
6.1	5033	825	0.9	0 6	0 5	11 1	0.0	8 4	16.8	29.8	13.0
6.2	5115	825	0 9	0 6	0.5	12.4	0.0	8.5	17.1	31.4	14 3
6.3	5198	825	0.9	0 6	0.5	13 8	0 0	8.7	17 3	33.0	15.7
6.4	5280	825	0.9	0.6	0 5	15.2	0.0	8 8	17.6	34 7	17.1
6.5	5363	825	0.9	0.6	0.5	16.6	0.0	8 9	17.9	36 5	18 6
6.6	5445	825	0.9	0.6	0.5	18.1	0.0	9 1	18.2	38 3	20 1
6.7	5528	825	0.9	0.6	0.6	19.6	0.0	9 2	18.4	40.1	21 7
6 8	5610	825	0.9	0.6	0.6	21 2	0 0	9.4	18 7	42 0	23.3
6.9	5693	825	0.9	0 6	0.6	22.8	0.0	9.5	19.0	43 9	24.9
7	5775	825	0.9	0.6	0.6	24.5	0.0	9.6	19.3	45 8	26.6
7.1	5858	825	0.9	0.6	0.6	26.2	0.0	9 8	19 5	47 8	28 3

Height (ft)	Storage (cu ft)	Surf Area (sq ft)	OUTLETS ORIF1	ORIF2	ORIF3	WEIR1	WEIR2	t = 600 sec S/t	2S/t	O+2S/t	Total Out
7.2	5940	825	0.9	0.6	0 6	27.9	0.0	9 9	19.8	49.8	30.0
7.3	6023	825	0.9	0.6	0.6	29.6	0.0	10.0	20.1	51.9	31.8
7.4	6105	825	0.9	0 6	0.6	31.4	0.0	10.2	20 4	54 0	33.7
7 5	6188	825	0.9	0.7	0.6	33.3	0.0	10.3	20.6	56.1	35.5
7 6	6270	825	0.9	0.7	0.6	35 1	0 0	10 5	20.9	58.3	37 4
7.7	6353	825	1.0	0.7	0.7	37 0	0.0	10.6	21 2	60.5	39.3
7.8	6435	825	1 0	0.7	0.7	39 0	0 0	10.7	21.5	62.7	41.3
7.9	6518	825	1.0	0.7	0 7	40.9	0 0	10.9	21.7	65.0	43.3
8	6600	825	1.0	0.7	0.7	42.9	0.0	11 0	22 0	67 3	45 3
8.1	6683	825	1.0	0.7	0 7	45 0	0.0	11 1	22 3	69.6	47.3
8.2	6765	825	1.0	0.7	0.7	47.0	0 0	11.3	22.6	72 0	49.4
8.3	6848	825	1.0	0.7	0.7	49.1	0 0	11.4	22.8	74.3	51.5
8.4	6930	825	1 0	0.7	0 7	51.2	0 0	11.6	23.1	76.8	53.7
8.5	7013	825	1.0	0.7	0.7	53 4	0.0	11.7	23 4	79.2	55.8
8 6	7095	825	1.0	0.7	0.7	55.6	0.0	11.8	23 7	81.7	58 0
8.7	7178	825	1.0	0 7	0.7	57.8	0.0	12.0	23.9	84.2	60.2
8.8	7260	825	1.0	0 7	0.7	60.0	0.0	12.1	24.2	86.7	62 5
8.9	7343	825	1.0	0.7	0 8	62 3	0.0	12 2	24.5	89.3	64.8
9	7425	825	1.0	0.8	0.8	64.6	0.0	12.4	24.8	91.8	67.1
9 1	7508	825	1 0	0.8	0.8	66.9	0.0	12.5	25.0	94.5	69 4
9 2	7590	825	1.0	0.8	0.8	69.2	0 0	12.7	25.3	97.1	71 8
9.3	7673	825	1.0	0.8	0 8	71.6	0.0	12.8	25 6	99.8	74.2
9.4	7755	825	1.1	0.8	0 8	74.0	0.0	12 9	25.9	102 5	76.6
9.5	7838	825	1.1	0.8	0.8	76 4	0.0	13 1	26.1	105.2	79.1
9.6	7920	825	1.1	0 8	0.8	78.9	0.0	13.2	26.4	107.9	81 5
9.7	8003	825	1.1	0 8	0 8	81.3	0 0	13.3	26.7	110 7	84.0
9 8	8085	825	1.1	0.8	0 8	83.9	0.0	13.5	27.0	113 5	86.5
9 9	8168	825	1.1	0 8	0 8	86.4	0.0	13.6	27 2	116.3	89 1
10	8250	825	1.1	0 8	0.8	88.9	0.0	13.8	27.5	119.2	91.7

Pond Storage Routing

Time	I1	I2	2S1	I1+I2+2S1	O1	O2+2S2	STORAGE
10	0.0	0 0	0.0	0 0	0.0	0 0	0 0
20	0.0	0.0	0.0	0 0	0.0	0.0	0 7
30	0.0	0.0	0 0	0 0	0.0	0.0	5.3
40	0 0	0.0	0.0	0.1	0 0	0.1	18.6
50	0 0	0.1	0.1	0.1	0.0	0 1	43.0
60	0.1	0.1	0.1	0.3	0.0	0 3	78.4
70	0.1	0.1	0.3	0 4	0.0	0 4	123.3
80	0.1	0 1	0.3	0 5	0.1	0 4	78 5
90	0.1	0 1	0.4	0.6	0.0	0 6	171.3
100	0.1	0 1	0.5	0.7	0.1	0 6	142 0
110	0.1	0.1	0.5	0.7	0 1	0 6	157 2
120	0 1	0.2	0 5	0 8	0.1	0.7	183 0
130	0 2	0.2	0.6	0.9	0 2	0.7	175 5
140	0 2	0.2	0 6	0.9	0 2	0.8	186.9
150	0.2	0.2	0.6	1.0	0 2	0.8	202.5
160	0.2	0.2	0.7	1.1	0.2	0 9	224.9
170	0.2	0.2	0.7	1.2	0.2	1.0	258.2
180	0 2	0.2	0.8	1 3	0.2	1.1	270.1
190	0.2	0.2	0.9	1 4	0 2	1.2	298.2
200	0.2	0.2	1.0	1.5	0 2	1.3	330.0
210	0.2	0.2	1.1	1.6	0.2	1 4	364.5
220	0.2	0 3	1.2	1.7	0.2	1.5	378.5
230	0.3	0 3	1.3	1.8	0.2	1 6	411 8
240	0 3	0.3	1 4	2 0	0 2	1 7	454 7
250	0.3	0.3	1 5	2.1	0 2	1.8	481.5
260	0.3	0.3	1.6	2.2	0 2	2.0	522.4
270	0.3	0.3	1.7	2 4	0.3	2 1	548.6
280	0.3	0 4	1.8	2 5	0.3	2.2	592.8
290	0.4	0 4	2.0	2.7	0.3	2.4	636.0
300	0 4	0.4	2.1	2.9	0 3	2 6	702 4
310	0 4	0.4	2.3	3.2	0.3	2 8	762 2
320	0.4	0.4	2.5	3 4	0 3	3.1	819 7
330	0.4	0 4	2.7	3.6	0.3	3.3	890.0
340	0.4	0.5	2.9	3.9	0 3	3.5	957.1
350	0.5	0.5	3.2	4.2	0.4	3 8	1036.0
360	0.5	0.5	3.4	4.5	0.4	4.1	1125.2
370	0.5	0.6	3.7	4 8	0.4	4.5	1217.7
380	0.6	0 6	4.0	5 2	0.4	4.8	1310 7
390	0.6	0.6	4.4	5 5	0.4	5.1	1402.7
400	0.6	0 7	4.7	5.9	0.4	5.5	1514 3
410	0.7	0.8	5.0	6.5	0.5	6 0	1664.7
420	0 8	0.8	5.5	7.1	0.5	6 7	1852.8
430	0 8	1.0	6 2	8.0	0.5	7 5	2082 1
440	1.0	1.1	6 9	9 0	0 5	8.5	2371 9
450	1.1	1 5	7.7	10.4	0.7	9.7	2691.7
460	1.5	2 5	8.8	12.8	0.8	12.0	3344.3
470	2.5	2.8	11.0	16.3	1.0	15 2	4264.2
480	2.8	2.2	13.5	18.5	1.8	16 7	4496.2
490	2.2	1.7	14.5	18 4	2.2	16.2	4185 6
500	1.7	1.3	14 0	16 9	2.2	14.7	3751.5
510	1.3	1.2	13.3	15.8	1 5	14.3	3843.5
520	1.2	1.0	12.9	15.1	1.4	13.7	3693.2
530	1.0	0.8	12.4	14.3	1.3	13 0	3502 7
540	0.8	0.8	11.8	13.4	1.2	12.3	3323 7
550	0.8	0.7	11 2	12.7	1.0	11 7	3193 6
560	0.7	0 7	10.7	12.2	1.0	11.2	3049.7
570	0 7	0.7	10.2	11.6	1.0	10.7	2908.2
580	0.7	0.7	9.7	11.2	0.9	10 3	2801.7
590	0.7	0.7	9 4	10 8	0.9	9.9	2704.0
600	0.7	0.7	9.1	10.5	0.8	9.7	2648 7
610	0.7	0 7	8.8	10.3	0.8	9.4	2578 4
620	0.7	0 7	8.6	10.1	0 8	9.3	2536.2
630	0 7	0.7	8.5	10.0	0.8	9.2	2515.4
640	0.7	0.7	8.4	9.8	0.8	9 0	2475.1
650	0.7	0.6	8.3	9.6	0 8	8.8	2408 8
660	0.6	0.6	8.1	9.3	0 7	8.6	2351.9
670	0.6	0.6	7.9	9.1	0.7	8.4	2311.0
680	0 6	0.6	7.7	8.9	0.7	8.2	2254.5
690	0 6	0.6	7.6	8.8	0.7	8.1	2241 1
700	0.6	0.6	7.5	8.7	0.7	8.0	2212.8
710	0.6	0.6	7.5	8.7	0.6	8.2	2279 0
720	0 6	0 6	7.5	8.7	0.7	8.1	2220 5
730	0.6	0 6	7.5	8.7	0.6	8 2	2288 0

Time	I1	I2	2S1	I1+I2+2S1	O1	O2+2S2	STORAGE
740	0.6	0.6	7.5	8.8	0.7	8.1	2231 0
750	0.6	0.6	7.4	8.7	0 7	8 0	2206.1
760	0.6	0.6	7.5	8.7	0.6	8 1	2265.1
770	0.6	0 5	7.4	8 6	0.7	7.9	2173.2
780	0.5	0 5	7.3	8 4	0.6	7.8	2184.5
790	0.5	0 5	7.3	8 3	0.6	7.7	2155.1
800	0.5	0.5	7.2	8.2	0.6	7.6	2121.7
810	0.5	0 5	7.1	8.1	0 5	7.5	2096.4
820	0 5	0.5	7.0	8.0	0 5	7 4	2067.5
830	0 5	0.5	6.9	7.9	0 5	7 3	2038 6
840	0.5	0.5	6.8	7.8	0 5	7.3	2019.9
850	0.5	0.5	6.7	7.7	0.5	7.2	1998 2
860	0.5	0.5	6.7	7.7	0.5	7.1	1976.9
870	0.5	0 5	6 6	7 6	0.5	7.1	1966.0
880	0.5	0 5	6.6	7 5	0.5	7.0	1947.1
890	0.5	0.5	6 5	7 4	0 5	6.9	1916.1
900	0 5	0.4	6.4	7.3	0.5	6.8	1874 6
910	0 4	0.4	6.3	7.2	0.5	6.6	1839.1
920	0.4	0.4	6.1	7.0	0.5	6.5	1798.3
930	0.4	0.4	6.0	6 9	0 5	6 4	1767.5
940	0.4	0.4	5.9	6 8	0 5	6 3	1733.0
950	0.4	0 4	5.8	6 7	0 5	6 2	1698 6
960	0.4	0 4	5.7	6 6	0.5	6.1	1675.2
970	0.4	0.4	5.6	6.5	0.5	6.0	1648.4
980	0.4	0.4	5.5	6.4	0.5	5.9	1633.0
990	0.4	0 4	5.4	6.3	0.5	5 9	1614 1
1000	0 4	0.4	5.4	6.2	0.5	5 8	1588.1
1010	0.4	0.4	5.3	6.1	0 5	5 6	1544 2
1020	0.4	0.4	5.2	5.9	0 5	5.5	1496 5
1030	0.4	0 4	5.0	5.7	0 5	5.3	1438 3
1040	0.4	0 4	4.8	5 5	0.4	5.1	1388.9
1050	0.4	0 4	4.6	5 4	0.4	4.9	1346.5
1060	0 4	0.4	4.5	5 2	0 4	4.8	1299 6
1070	0 4	0.4	4.3	5.1	0.4	4.6	1265.1
1080	0.4	0.4	4.2	4.9	0.4	4.5	1226 5
1090	0.4	0.4	4.1	4.8	0.4	4 4	1200.8
1100	0.4	0.4	4.0	4.7	0.4	4.3	1170.9
1110	0 4	0.4	3.9	4 6	0 4	4.2	1141.2
1120	0.4	0.4	3.8	4.5	0 4	4.1	1125.0
1130	0.4	0.4	3.8	4.5	0 4	4.1	1104.5
1140	0.4	0 4	3.7	4 4	0 4	4.0	1084.1
1150	0.4	0.4	3 6	4.3	0.4	3.9	1063.9
1160	0 4	0.4	3.6	4.3	0.4	3.9	1057.7
1170	0 4	0.4	3.5	4.2	0 4	3 9	1047.0
1180	0.4	0 4	3.5	4.2	0 4	3.8	1036 5
1190	0.4	0 4	3.5	4.2	0 4	3.8	1026.1
1200	0.4	0.4	3.4	4.1	0.4	3.8	1015.8
1210	0 4	0.4	3 4	4.1	0.4	3.7	1005.7
1220	0.4	0.4	3 4	4 1	0.4	3.7	995.7
1230	0.4	0 4	3.3	4.0	0.4	3.7	985 8
1240	0.4	0.4	3.3	4.0	0.4	3.7	990.6
1250	0.4	0.4	3.3	4.0	0.4	3.7	990.6
1260	0.4	0.4	3.3	4.0	0.4	3.7	990.8
1270	0.4	0 4	3.3	4.0	0 4	3.7	991.1
1280	0.4	0.4	3.3	4 0	0.4	3.7	991 6
1290	0.4	0.4	3 3	4.0	0 4	3.7	992 1
1300	0.4	0.4	3.3	4.0	0.4	3.7	992.8
1310	0.4	0 4	3.3	4.0	0.4	3.7	993.7
1320	0.4	0.4	3.3	4.0	0 4	3.7	994 6
1330	0.4	0 4	3.3	4.0	0 4	3.7	995 7
1340	0 4	0.4	3.3	4.0	0 4	3.7	982.4
1350	0.4	0.4	3.3	4.0	0.4	3.7	988.6
1360	0.4	0.4	3.3	4.0	0.4	3.7	990 0
1370	0.4	0.4	3.3	4.0	0.4	3.7	991 6
1380	0.4	0.4	3 3	4.0	0.4	3.7	993 3
1390	0.4	0.4	3.3	4.0	0 4	3 7	995 1
1400	0.4	0 4	3.3	4.0	0.4	3.7	982 6
1410	0 4	0.4	3 3	4 0	0.4	3.7	989.5
1420	0.4	0 4	3.3	4.0	0.4	3.7	991 6
1430	0 4	0 4	3 3	4 0	0.4	3 7	993.9
1440	0 4	0 0	3.3	3.7	0.4	3 3	886.7
1450	0.0	0.0	3.0	3.0	0.3	2.6	685 2
1460	0.0	0.0	2 3	2.3	0.3	2.0	511.4
1470	0.0	0 0	1.7	1.7	0.3	1.5	363.7
1480	0.0	0.0	1.3	1 3	0.2	1.0	247 8
1490	0.0	0.0	0.9	0 9	0 2	0.7	143.4

Time	I1	I2	2S1	I1+I2+2S1	O1	O2+2S2	STORAGE
1500	0.0	0 0	0 6	0 6	0.1	0 4	102 0
1510	0.0	0.0	0 3	0.3	0.1	0 2	36.7
1520	0.0	0.0	0 2	0.2	0.0	0.2	69.3
1530	0 0	0.0	0 2	0.2	0 0	0.2	69.3
1540	0 0	0.0	0.2	0.2	0.0	0.2	69.3
1550	0 0	0.0	0.2	0.2	0.0	0 2	69.3
1560	0 0	0.0	0.2	0.2	0.0	0 2	69.3
1570	0.0	0.0	0 2	0 2	0.0	0.2	69.3
1580	0.0	0.0	0.2	0 2	0 0	0.2	69.3
1590	0.0	0 0	0 2	0.2	0.0	0.2	69.3
1600	0 0	0 0	0.2	0.2	0.0	0.2	69.3
1610	0 0	0 0	0.2	0.2	0.0	0.2	69.3
1620	0 0	0.0	0.2	0.2	0.0	0.2	69 3
1630	0.0	0.0	0.2	0.2	0.0	0.2	69 3
1640	0 0	0.0	0 2	0.2	0 0	0.2	69.3
1650	0.0	0.0	0.2	0.2	0 0	0 2	69.3
1660	0.0	0.0	0.2	0.2	0.0	0.2	69 3
1670	0.0	0.0	0.2	0.2	0.0	0.2	69.3
1680	0 0	0 0	0.2	0 2	0.0	0.2	69 3
1690	0.0	0 0	0 2	0 2	0 0	0.2	69 3
1700	0.0	0.0	0 2	0.2	0.0	0 2	69.3
1710	0 0	0.0	0.2	0.2	0 0	0 2	69.3
1720	0 0	0.0	0.2	0.2	0 0	0.2	69.3
1730	0.0	0.0	0.2	0 2	0.0	0.2	69.3
1740	0 0	0.0	0.2	0.2	0.0	0.2	69.3
1750	0.0	0.0	0 2	0.2	0.0	0.2	69.3
1760	0 0	0.0	0.2	0.2	0.0	0.2	69.3
1770	0 0	0 0	0.2	0.2	0.0	0.2	69.3
1780	0 0	0 0	0.2	0.2	0.0	0.2	69 3
1790	0 0	0.0	0.2	0.2	0.0	0.2	69.3
1800	0.0	0.0	0.2	0.2	0 0	0.2	69.3
1810	0.0	0.0	0.2	0.2	0.0	0.2	69 3
1820	0.0	0 0	0.2	0.2	0.0	0.2	69 3
1830	0.0	0.0	0.2	0.2	0.0	0.2	69 3
1840	0.0	0 0	0.2	0.2	0.0	0.2	69 3
1850	0.0	0.0	0.2	0.2	0 0	0.2	69.3
1860	0.0	0.0	0.2	0.2	0 0	0 2	69.3
1870	0.0	0.0	0.2	0.2	0.0	0.2	69.3
1880	0 0	0.0	0.2	0.2	0.0	0.2	69.3
1890	0.0	0.0	0.2	0 2	0.0	0.2	69.3
1900	0.0	0.0	0.2	0.2	0.0	0.2	69.3
1910	0.0	0.0	0 2	0.2	0.0	0.2	69.3
1920	0.0	0.0	0.2	0.2	0.0	0.2	69.3
1930	0 0	0.0	0.2	0.2	0.0	0.2	69 3
1940	0 0	0 0	0.2	0.2	0.0	0.2	69.3
1950	0 0	0.0	0.2	0.2	0.0	0 2	69.3
1960	0.0	0.0	0.2	0.2	0.0	0.2	69.3
1970	0.0	0 0	0.2	0.2	0.0	0.2	69.3
1980	0 0	0 0	0.2	0 2	0.0	0.2	69.3
1990	0.0	0 0	0.2	0 2	0 0	0.2	69.3
2000	0.0	0 0	0 2	0.2	0.0	0.2	69.3
2010	0.0	0.0	0 2	0.2	0 0	0.2	69.3
2020	0.0	0.0	0.2	0 2	0.0	0.2	69.3
2030	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2040	0.0	0.0	0 2	0.2	0.0	0 2	69.3
2050	0 0	0.0	0.2	0.2	0.0	0.2	69.3
2060	0.0	0 0	0.2	0.2	0.0	0.2	69.3
2070	0 0	0 0	0.2	0.2	0 0	0.2	69.3
2080	0.0	0.0	0.2	0.2	0 0	0 2	69 3
2090	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2100	0 0	0 0	0.2	0.2	0.0	0.2	69.3
2110	0.0	0 0	0.2	0 2	0.0	0.2	69.3
2120	0.0	0.0	0.2	0.2	0 0	0.2	69 3
2130	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2140	0 0	0.0	0.2	0.2	0.0	0.2	69.3
2150	0.0	0.0	0.2	0.2	0.0	0.2	69 3
2160	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2170	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2180	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2190	0.0	0.0	0.2	0.2	0.0	0.2	69 3
2200	0.0	0.0	0.2	0.2	0.0	0.2	69 3
2210	0.0	0 0	0.2	0 2	0.0	0.2	69.3
2220	0.0	0.0	0.2	0 2	0 0	0.2	69.3
2230	0 0	0.0	0 2	0.2	0 0	0.2	69.3
2240	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2250	0.0	0.0	0.2	0 2	0.0	0 2	69 3

Time	I1	I2	2S1	I1+I2+2S1	O1	O2+2S2	STORAGE
2260	0.0	0.0	0.2	0 2	0.0	0.2	69 3
2270	0.0	0.0	0 2	0 2	0.0	0.2	69.3
2280	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2290	0 0	0.0	0.2	0.2	0.0	0.2	69.3
2300	0 0	0 0	0.2	0.2	0.0	0.2	69.3
2310	0.0	0 0	0.2	0.2	0.0	0 2	69.3
2320	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2330	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2340	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2350	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2360	0 0	0 0	0.2	0.2	0.0	0 2	69.3
2370	0.0	0.0	0.2	0 2	0.0	0.2	69.3
2380	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2390	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2400	0 0	0.0	0.2	0.2	0.0	0 2	69.3
2410	0.0	0.0	0.2	0 2	0.0	0 2	69 3
2420	0 0	0.0	0 2	0.2	0.0	0.2	69.3
2430	0.0	0.0	0 2	0.2	0.0	0.2	69.3
2440	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2450	0.0	0.0	0.2	0.2	0.0	0 2	69.3
2460	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2470	0.0	0 0	0.2	0.2	0.0	0.2	69.3
2480	0 0	0 0	0.2	0.2	0.0	0.2	69.3
2490	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2500	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2510	0.0	0.0	0.2	0 2	0.0	0.2	69 3
2520	0.0	0 0	0 2	0 2	0.0	0.2	69.3
2530	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2540	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2550	0 0	0.0	0.2	0.2	0.0	0 2	69.3
2560	0.0	0.0	0.2	0 2	0.0	0.2	69.3
2570	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2580	0.0	0.0	0.2	0.2	0.0	0.2	69 3
2590	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2600	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2610	0.0	0.0	0.2	0.2	0.0	0 2	69 3
2620	0.0	0 0	0.2	0.2	0.0	0 2	69.3
2630	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2640	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2650	0 0	0.0	0.2	0.2	0.0	0.2	69.3
2660	0.0	0 0	0.2	0.2	0.0	0.2	69 3
2670	0.0	0 0	0 2	0 2	0.0	0.2	69 3
2680	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2690	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2700	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2710	0.0	0.0	0.2	0 2	0.0	0.2	69 3
2720	0.0	0.0	0.2	0 2	0.0	0.2	69 3
2730	0.0	0 0	0.2	0.2	0.0	0.2	69 3
2740	0.0	0 0	0.2	0.2	0.0	0.2	69.3
2750	0.0	0 0	0.2	0.2	0.0	0.2	69.3
2760	0.0	0.0	0.2	0.2	0.0	0 2	69.3
2770	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2780	0.0	0 0	0.2	0.2	0.0	0.2	69.3
2790	0.0	0.0	0.2	0 2	0.0	0.2	69.3
2800	0 0	0.0	0.2	0.2	0.0	0.2	69.3
2810	0.0	0.0	0.2	0.2	0 0	0.2	69.3
2820	0.0	0.0	0 2	0 2	0.0	0 2	69.3
2830	0.0	0.0	0.2	0.2	0.0	0 2	69 3
2840	0.0	0.0	0.2	0.2	0.0	0.2	69.3
2850	0 0	0 0	0.2	0.2	0.0	0.2	69 3
2860	0 0	0 0	0.2	0.2	0.0	0 2	69.3
2870	0.0	0 0	0.2	0.2	0.0	0 2	69.3
2880	0.0	0.0	0.2	0.2	0.0	0 2	69.3

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *2-yr Pre*

Given:

Area =	3.67	acres
Pt =	2.5	inches
dt =	10	min.
Tc =	27	min.
w =	0.1563	routing constant

Pervious Area

Area =	3.27	acres
CN =	79	
S =	2.66	
0.2S =	0.53	

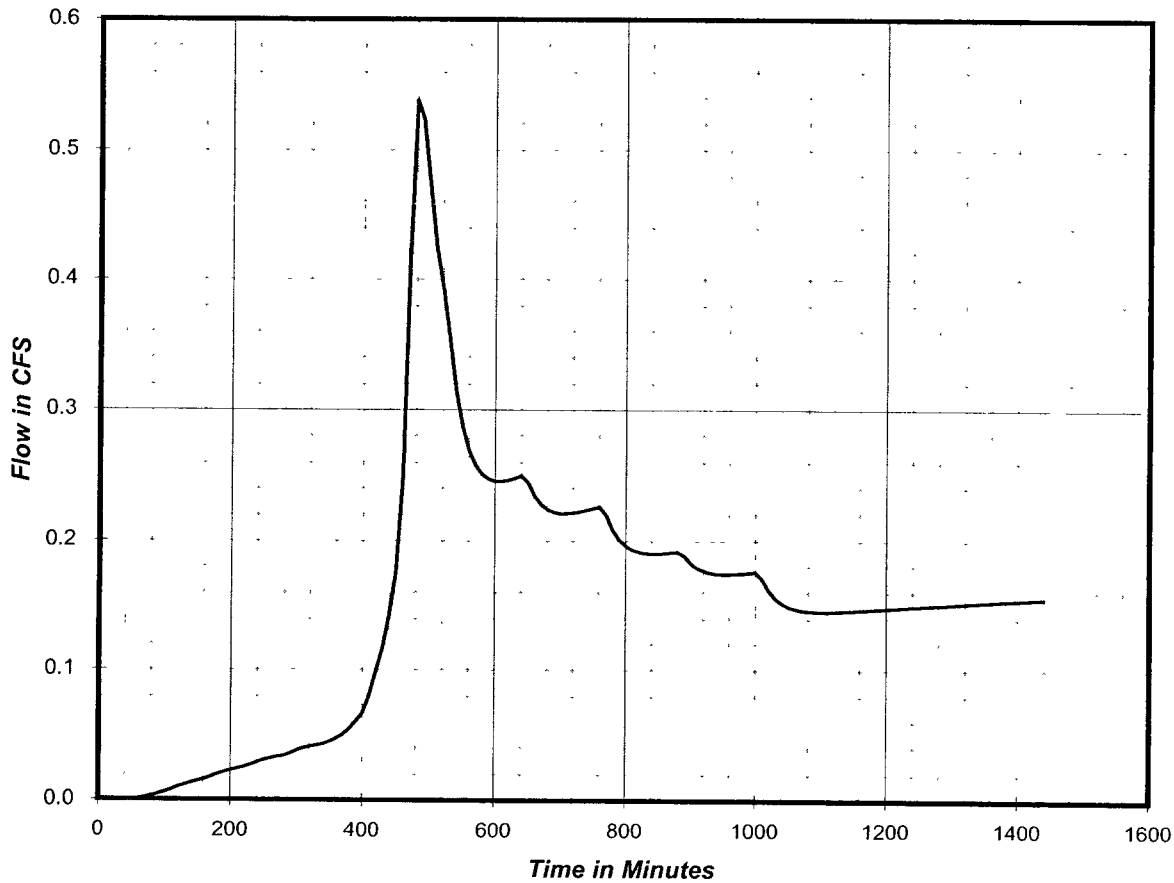
Impervious Area

Area =	0.4	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff:	0.5	cfs
Total Vol. :	12985	cf

Peak Runoff Hydrograph



File: SBUH-24-2yr-pre XLS
9/30/2004

CES|NW, Inc.

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	Pervious Area (6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	Impervious Area (8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
1	10	0.0040	0.0100	0.0100	0 0000	0.0000	0.0000	0.0000	0.0000	0.0	0 0
2	20	0.0040	0.0100	0.0200	0.0000	0.0000	0.0000	0.0000	0 0000	0 0	0 0
3	30	0.0040	0.0100	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0 0	0.0
4	40	0.0040	0.0100	0.0400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0	0.0
5	50	0 0040	0.0100	0.0500	0.0000	0.0000	0.0004	0.0004	0.0000	0.0	0.0
6	60	0 0040	0.0100	0.0600	0.0000	0.0000	0.0016	0.0013	0.0001	0 0	0 0
7	70	0 0040	0.0100	0.0700	0.0000	0.0000	0 0037	0 0020	0 0002	0 0	0 0
8	80	0 0040	0.0100	0.0800	0.0000	0.0000	0.0063	0 0027	0.0003	0 0	0.0
9	90	0.0040	0.0100	0.0900	0.0000	0 0000	0 0096	0.0032	0 0004	0.0	0 0
10	100	0.0040	0 0100	0 1000	0 0000	0.0000	0.0133	0 0038	0.0004	0 0	0.0
11	110	0 0050	0 0125	0.1125	0.0000	0.0000	0.0186	0 0053	0.0006	0.0	0.0
12	120	0 0050	0.0125	0 1250	0 0000	0.0000	0.0246	0.0060	0.0006	0.0	0.0
13	130	0 0050	0.0125	0.1375	0 0000	0.0000	0.0311	0.0065	0 0007	0.0	0.0
14	140	0.0050	0.0125	0 1500	0.0000	0.0000	0.0381	0.0070	0 0008	0 0	0 0
15	150	0.0050	0.0125	0.1625	0.0000	0 0000	0.0455	0 0074	0.0008	0 0	0 0
16	160	0.0050	0.0125	0.1750	0.0000	0 0000	0 0532	0.0078	0.0008	0 0	0.0
17	170	0 0060	0 0150	0.1900	0.0000	0.0000	0.0630	0.0098	0 0011	0 0	0.0
18	180	0 0060	0 0150	0.2050	0.0000	0.0000	0.0732	0.0102	0.0011	0.0	0.0
19	190	0 0060	0.0150	0.2200	0.0000	0.0000	0.0838	0 0106	0.0012	0.0	0.0
20	200	0.0060	0.0150	0.2350	0.0000	0.0000	0.0947	0.0109	0.0012	0.0	0.0
21	210	0.0060	0.0150	0.2500	0.0000	0.0000	0.1059	0.0112	0.0012	0.0	0.0
22	220	0 0060	0.0150	0.2650	0.0000	0 0000	0.1174	0.0115	0.0013	0.0	0.0
23	230	0.0070	0.0175	0.2825	0.0000	0.0000	0.1310	0.0137	0.0015	0.0	0.0
24	240	0 0070	0.0175	0.3000	0.0000	0.0000	0.1450	0.0140	0.0015	0.0	0.0
25	250	0 0070	0.0175	0.3175	0.0000	0.0000	0.1592	0.0142	0.0016	0.0	0 0
26	260	0.0070	0.0175	0.3350	0.0000	0.0000	0 1737	0.0145	0.0016	0 0	0.0
27	270	0.0070	0.0175	0.3525	0.0000	0 0000	0 1884	0.0147	0 0016	0.0	0 0
28	280	0.0070	0.0175	0.3700	0.0000	0 0000	0 2032	0.0148	0 0016	0 0	0.0
29	290	0 0082	0.0205	0 3905	0.0000	0.0000	0.2208	0 0176	0.0019	0.0	0.0
30	300	0.0082	0.0205	0.4110	0.0000	0.0000	0.2386	0 0178	0.0019	0.0	0.0
31	310	0 0082	0.0205	0 4315	0.0000	0.0000	0.2566	0.0180	0.0020	0.0	0.0
32	320	0 0082	0.0205	0.4520	0.0000	0.0000	0.2748	0.0182	0.0020	0.0	0.0
33	330	0 0082	0 0205	0.4725	0.0000	0.0000	0.2931	0.0183	0 0020	0.0	0 0
34	340	0 0082	0 0205	0.4930	0.0000	0 0000	0 3116	0.0185	0 0020	0 0	0 0
35	350	0 0095	0 0238	0.5168	0.0000	0.0000	0.3331	0 0215	0.0023	0.1	0.0
36	360	0.0095	0.0238	0.5405	0.0000	0 0000	0.3548	0 0217	0.0024	0.1	0.0
37	370	0.0095	0.0238	0.5643	0 0004	0.0004	0.3766	0.0218	0.0027	0.1	0.0
38	380	0 0095	0.0238	0.5880	0.0012	0.0008	0.3985	0.0219	0.0031	0.1	0.1
39	390	0 0095	0.0238	0.6118	0.0023	0.0012	0.4206	0.0221	0.0034	0.1	0.1
40	400	0 0095	0.0238	0.6355	0.0039	0.0016	0.4427	0.0222	0.0038	0.1	0.1
41	410	0.0134	0.0335	0.6690	0.0067	0.0028	0.4741	0.0314	0.0060	0.1	0.1
42	420	0 0134	0.0335	0.7025	0.0103	0.0036	0.5057	0.0316	0.0066	0 1	0.1
43	430	0.0134	0 0335	0.7360	0.0146	0.0043	0 5374	0.0317	0.0073	0.2	0.1
44	440	0.0180	0.0450	0.7810	0.0214	0.0068	0 5802	0.0428	0.0107	0 2	0 1
45	450	0.0180	0.0450	0.8260	0 0293	0.0080	0 6232	0.0430	0.0118	0 3	0.2
46	460	0 0340	0.0850	0.9110	0.0474	0.0180	0.7049	0.0817	0 0250	0.6	0 2
47	470	0.0540	0.1350	1.0460	0.0834	0.0360	0.8355	0.1307	0.0463	1.0	0 4
48	480	0 0270	0.0675	1.1135	0.1045	0 0211	0.9012	0.0657	0.0260	0.6	0.5
49	490	0.0180	0.0450	1.1585	0.1196	0.0151	0.9451	0.0439	0.0183	0 4	0.5
50	500	0.0134	0.0335	1.1920	0 1314	0 0118	0 9778	0.0327	0.0141	0.3	0.5
51	510	0 0134	0.0335	1.2255	0 1436	0.0122	1.0106	0.0328	0 0145	0.3	0 4
52	520	0.0134	0.0335	1.2590	0.1563	0.0126	1.0434	0.0328	0 0148	0.3	0 4
53	530	0.0088	0.0220	1.2810	0.1648	0.0085	1.0649	0.0216	0.0099	0.2	0.4
54	540	0.0088	0.0220	1.3030	0.1735	0 0087	1.0865	0.0216	0.0101	0.2	0.3
55	550	0 0088	0 0220	1.3250	0.1824	0.0089	1.1081	0.0216	0.0103	0.2	0 3
56	560	0.0088	0.0220	1.3470	0.1914	0.0090	1.1297	0.0216	0.0104	0.2	0.3
57	570	0.0088	0.0220	1.3690	0.2006	0.0092	1.1513	0.0216	0.0105	0.2	0.3
58	580	0 0088	0.0220	1 3910	0 2099	0 0094	1.1729	0.0216	0.0107	0.2	0.3
59	590	0 0088	0 0220	1.4130	0.2195	0 0095	1 1945	0 0216	0.0108	0 2	0 2
60	600	0 0088	0.0220	1.4350	0.2291	0.0097	1.2162	0.0216	0 0110	0 2	0 2
61	610	0.0088	0.0220	1.4570	0.2389	0.0098	1.2378	0 0216	0 0111	0.2	0.2
62	620	0.0088	0.0220	1.4790	0.2489	0 0100	1.2595	0.0217	0.0112	0.2	0.2
63	630	0 0088	0.0220	1.5010	0.2590	0 0101	1 2811	0 0217	0.0114	0.3	0.2
64	640	0.0088	0.0220	1.5230	0 2693	0 0103	1 3028	0.0217	0.0115	0.3	0.2
65	650	0.0072	0.0180	1.5410	0.2778	0.0085	1 3205	0.0177	0.0095	0.2	0.2
66	660	0 0072	0.0180	1.5590	0.2864	0.0086	1.3383	0.0177	0.0096	0.2	0 2
67	670	0.0072	0.0180	1.5770	0.2951	0 0087	1.3560	0 0177	0 0097	0 2	0.2
68	680	0.0072	0.0180	1.5950	0.3038	0.0088	1.3738	0 0178	0 0098	0 2	0 2
69	690	0 0072	0.0180	1.6130	0.3127	0.0089	1.3915	0.0178	0 0098	0.2	0 2
70	700	0 0072	0 0180	1 6310	0.3216	0.0089	1.4093	0.0178	0.0099	0.2	0.2
71	710	0 0072	0 0180	1 6490	0 3307	0 0090	1.4271	0.0178	0.0100	0.2	0.2

(1) Time Incre-ment	(2) Time (Min)	(3) Rainfall Distri-bution (% of Pt)	(4) Incre-mental Rainfall (in)	(5) Accumu-lated Rainfall (in)	(6) Accumu-lated Runoff (in)	(7) Incre-mental Runoff (in)	(8) Accumu-lated Runoff (in)	(9) Incre-mental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydro-graph (cfs)	(12) Design Hydro-graph (cfs)
72	720	0 0072	0.0180	1.6670	0.3398	0 0091	1.4449	0.0178	0.0101	0.2	0 2
73	730	0.0072	0.0180	1.6850	0.3490	0.0092	1.4626	0.0178	0 0101	0 2	0.2
74	740	0 0072	0.0180	1.7030	0.3583	0 0093	1.4804	0.0178	0.0102	0 2	0.2
75	750	0 0072	0.0180	1 7210	0.3677	0.0094	1.4982	0.0178	0 0103	0 2	0.2
76	760	0 0072	0.0180	1.7390	0 3771	0.0094	1.5160	0.0178	0.0104	0.2	0.2
77	770	0 0057	0.0143	1.7533	0.3846	0.0075	1.5301	0.0141	0.0083	0.2	0.2
78	780	0 0057	0.0143	1.7675	0 3922	0.0076	1.5442	0.0141	0.0083	0.2	0.2
79	790	0 0057	0.0143	1.7818	0.3999	0.0076	1.5583	0 0141	0.0083	0.2	0.2
80	800	0.0057	0.0143	1.7960	0.4075	0.0077	1 5724	0 0141	0.0084	0.2	0.2
81	810	0.0057	0.0143	1.8103	0.4153	0.0077	1.5865	0.0141	0.0084	0.2	0.2
82	820	0 0057	0.0143	1.8245	0.4230	0 0078	1.6006	0 0141	0.0085	0.2	0.2
83	830	0.0057	0 0143	1 8388	0.4309	0 0078	1.6147	0.0141	0.0085	0.2	0.2
84	840	0.0057	0 0143	1.8530	0.4387	0 0079	1.6288	0.0141	0.0085	0.2	0.2
85	850	0.0057	0.0143	1.8673	0.4466	0.0079	1.6429	0.0141	0.0086	0.2	0.2
86	860	0 0057	0 0143	1.8815	0.4546	0.0080	1 6570	0.0141	0.0086	0.2	0 2
87	870	0.0057	0.0143	1.8958	0 4626	0.0080	1.6711	0.0141	0.0087	0 2	0 2
88	880	0 0057	0 0143	1.9100	0.4707	0.0080	1 6852	0.0141	0.0087	0.2	0.2
89	890	0.0050	0.0125	1.9225	0.4778	0 0071	1.6976	0 0124	0 0077	0.2	0 2
90	900	0.0050	0.0125	1.9350	0.4849	0 0071	1.7100	0 0124	0 0077	0.2	0.2
91	910	0 0050	0 0125	1.9475	0.4920	0.0072	1.7223	0 0124	0 0077	0 2	0 2
92	920	0.0050	0 0125	1.9600	0.4992	0.0072	1.7347	0 0124	0 0078	0.2	0 2
93	930	0.0050	0.0125	1 9725	0.5065	0.0072	1.7471	0.0124	0 0078	0 2	0.2
94	940	0.0050	0.0125	1.9850	0.5137	0.0073	1 7595	0.0124	0.0078	0 2	0.2
95	950	0.0050	0.0125	1.9975	0.5210	0.0073	1 7719	0.0124	0.0078	0.2	0.2
96	960	0 0050	0.0125	2.0100	0.5283	0.0073	1 7843	0.0124	0.0079	0.2	0.2
97	970	0.0050	0.0125	2.0225	0.5357	0 0074	1.7967	0.0124	0.0079	0.2	0.2
98	980	0 0050	0.0125	2.0350	0.5431	0 0074	1.8090	0.0124	0.0079	0 2	0.2
99	990	0.0050	0.0125	2.0475	0.5505	0.0074	1 8214	0.0124	0 0080	0.2	0 2
100	1000	0.0050	0.0125	2.0600	0.5579	0.0074	1.8338	0.0124	0.0080	0 2	0.2
101	1010	0.0040	0.0100	2.0700	0 5639	0.0060	1.8438	0.0099	0 0064	0 1	0.2
102	1020	0.0040	0.0100	2.0800	0 5699	0.0060	1 8537	0.0099	0.0064	0 1	0.2
103	1030	0 0040	0.0100	2.0900	0.5759	0.0060	1 8636	0 0099	0.0064	0.1	0.2
104	1040	0.0040	0.0100	2.1000	0.5820	0.0060	1.8735	0 0099	0.0065	0.1	0.2
105	1050	0.0040	0.0100	2.1100	0.5880	0 0061	1 8834	0.0099	0.0065	0.1	0.1
106	1060	0.0040	0.0100	2.1200	0 5941	0 0061	1 8933	0 0099	0.0065	0.1	0.1
107	1070	0.0040	0 0100	2.1300	0 6002	0 0061	1.9033	0 0099	0.0065	0.1	0.1
108	1080	0 0040	0.0100	2.1400	0 6063	0.0061	1 9132	0 0099	0.0065	0.1	0.1
109	1090	0.0040	0.0100	2.1500	0.6124	0.0061	1.9231	0.0099	0.0065	0.1	0.1
110	1100	0 0040	0.0100	2.1600	0 6186	0.0061	1.9330	0.0099	0.0066	0.1	0.1
111	1110	0 0040	0.0100	2.1700	0 6247	0.0062	1.9430	0.0099	0.0066	0.1	0.1
112	1120	0 0040	0 0100	2 1800	0.6309	0.0062	1.9529	0.0099	0.0066	0.1	0.1
113	1130	0.0040	0.0100	2 1900	0.6371	0.0062	1.9628	0.0099	0.0066	0.1	0.1
114	1140	0.0040	0 0100	2.2000	0.6433	0 0062	1.9727	0.0099	0.0066	0.1	0.1
115	1150	0.0040	0.0100	2 2100	0.6496	0.0062	1.9827	0 0099	0.0066	0.1	0.1
116	1160	0 0040	0.0100	2.2200	0.6558	0.0063	1.9926	0 0099	0.0067	0.1	0 1
117	1170	0.0040	0.0100	2.2300	0.6621	0.0063	2.0025	0 0099	0.0067	0.1	0.1
118	1180	0 0040	0.0100	2.2400	0.6684	0.0063	2.0124	0.0099	0.0067	0 1	0.1
119	1190	0.0040	0.0100	2.2500	0.6747	0 0063	2 0224	0.0099	0.0067	0 1	0.1
120	1200	0.0040	0.0100	2.2600	0.6810	0 0063	2 0323	0.0099	0.0067	0.1	0.1
121	1210	0.0040	0.0100	2.2700	0.6873	0.0063	2.0422	0.0099	0.0067	0.1	0.1
122	1220	0.0040	0.0100	2.2800	0.6937	0.0064	2.0521	0 0099	0.0067	0.1	0.1
123	1230	0.0040	0.0100	2.2900	0.7000	0.0064	2.0621	0.0099	0.0068	0.2	0 1
124	1240	0 0040	0.0100	2.3000	0.7064	0.0064	2.0720	0.0099	0 0068	0.2	0 1
125	1250	0.0040	0 0100	2.3100	0.7128	0.0064	2.0819	0.0099	0 0068	0.2	0.1
126	1260	0.0040	0.0100	2 3200	0.7193	0.0064	2.0919	0.0099	0 0068	0.2	0.2
127	1270	0 0040	0.0100	2.3300	0 7257	0 0064	2 1018	0.0099	0 0068	0.2	0.2
128	1280	0 0040	0.0100	2.3400	0 7321	0 0065	2 1117	0 0099	0 0068	0 2	0.2
129	1290	0.0040	0.0100	2.3500	0.7386	0.0065	2 1217	0.0099	0 0068	0.2	0.2
130	1300	0.0040	0 0100	2.3600	0.7451	0.0065	2.1316	0 0099	0.0069	0.2	0.2
131	1310	0 0040	0 0100	2.3700	0.7516	0.0065	2.1415	0.0099	0.0069	0.2	0.2
132	1320	0.0040	0 0100	2.3800	0.7581	0.0065	2.1515	0 0099	0.0069	0.2	0.2
133	1330	0.0040	0.0100	2.3900	0.7646	0.0065	2.1614	0.0099	0.0069	0.2	0.2
134	1340	0 0040	0.0100	2.4000	0.7712	0.0065	2.1714	0.0099	0 0069	0.2	0.2
135	1350	0.0040	0.0100	2.4100	0.7777	0.0066	2.1813	0.0099	0.0069	0.2	0.2
136	1360	0.0040	0.0100	2 4200	0.7843	0.0066	2.1912	0.0099	0.0069	0.2	0.2
137	1370	0 0040	0.0100	2.4300	0.7909	0.0066	2.2012	0.0099	0.0070	0.2	0.2
138	1380	0 0040	0.0100	2.4400	0.7975	0 0066	2.2111	0 0099	0.0070	0.2	0.2
139	1390	0.0040	0.0100	2.4500	0 8041	0 0066	2.2210	0 0099	0.0070	0.2	0.2
140	1400	0.0040	0.0100	2 4600	0.8107	0.0066	2 2310	0.0099	0.0070	0.2	0 2
141	1410	0.0040	0 0100	2 4700	0.8174	0.0066	2 2409	0 0099	0 0070	0.2	0 2
142	1420	0 0040	0.0100	2.4800	0.8241	0.0067	2.2509	0.0099	0 0070	0.2	0 2
143	1430	0 0040	0.0100	2.4900	0.8307	0.0067	2.2608	0.0099	0 0070	0 2	0.2
144	1440	0 0040	0.0100	2.5000	0 8374	0.0067	2.2707	0.0099	0 0070	0 2	0.2
	Total	1.0000	2.5000						Hydrograph Volume (Cubic Feet)		12985

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *2-yr Post*

Given:

Area =	3.67	acres
Pt =	2.5	inches
dt =	10	min.
Tc =	19	min.
w =	0.2083	routing constant

Pervious Area

Area =	1.94	acres
CN =	79	
S =	2.66	
0.2S =	0.53	

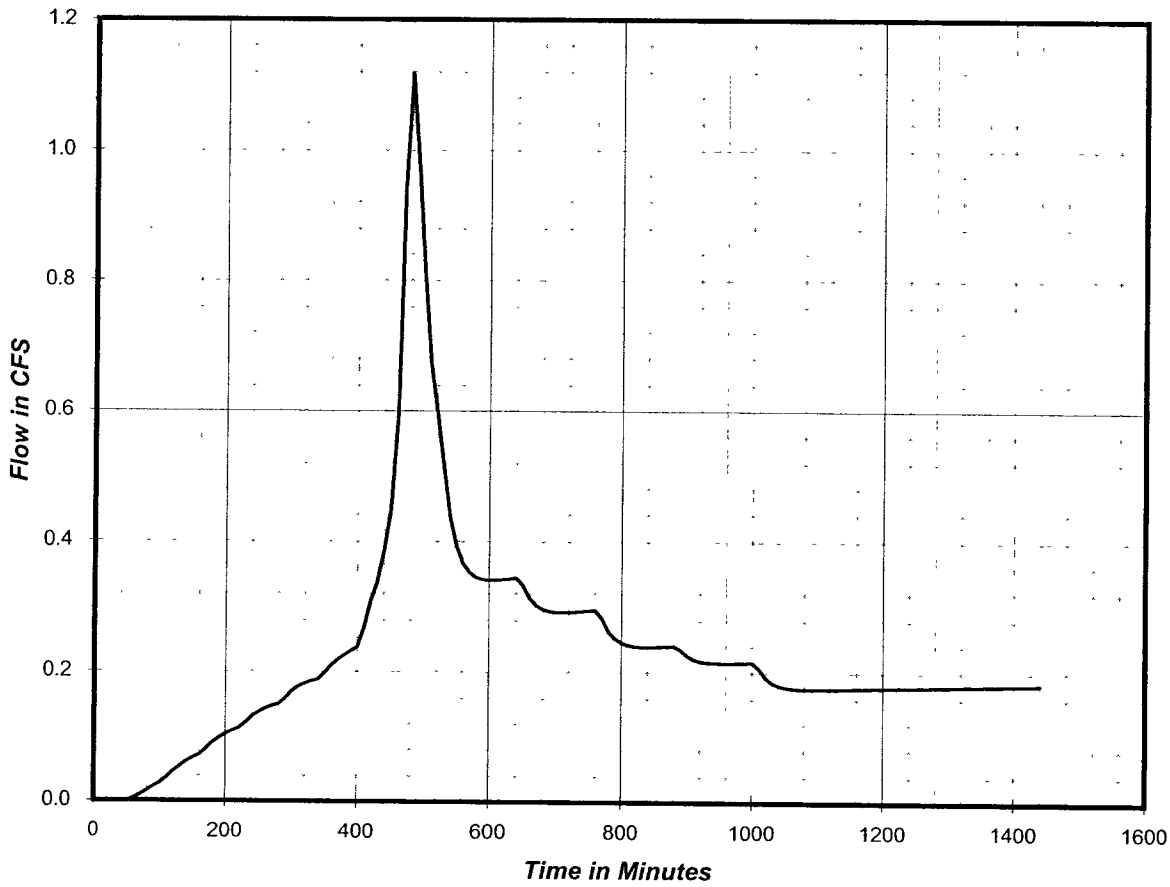
Impervious Area

Area =	1.73	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff:	1.1	cfs
Total Vol. :	19949	cf

Peak Runoff Hydrograph



File SBUH-24-2yr-post.XLS
9/30/2004

CES|NW, Inc.

(1) Time Incre-ment	(2) Time (Min)	(3) Rainfall Distri-bution (% of Pt)	(4) Incre-mental Rainfall (in)	(5) Accumu-lated Rainfall (in)	Pervious Area (6) Accumu-lated Runoff (in)	(7) Incre-mental Runoff (in)	Impervious Area (8) Accumu-lated Runoff (in)	(9) Incre-mental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydro-graph (cfs)	(12) Design Hydro-graph (cfs)
1	10	0 0040	0 0100	0.0100	0.0000	0.0000	0.0000	0 0000	0.0000	0.0	0.0
2	20	0 0040	0 0100	0.0200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0	0.0
3	30	0.0040	0.0100	0.0300	0 0000	0 0000	0 0000	0 0000	0.0000	0 0	0.0
4	40	0 0040	0.0100	0.0400	0 0000	0.0000	0.0000	0.0000	0 0000	0 0	0.0
5	50	0.0040	0.0100	0.0500	0 0000	0.0000	0 0004	0.0004	0.0002	0.0	0.0
6	60	0.0040	0.0100	0 0600	0.0000	0.0000	0.0016	0 0013	0.0006	0.0	0.0
7	70	0 0040	0.0100	0 0700	0 0000	0 0000	0.0037	0.0020	0.0009	0 0	0.0
8	80	0 0040	0.0100	0 0800	0 0000	0 0000	0 0063	0.0027	0 0013	0.0	0.0
9	90	0.0040	0.0100	0.0900	0 0000	0.0000	0.0096	0.0032	0.0015	0.0	0.0
10	100	0 0040	0 0100	0.1000	0 0000	0.0000	0.0133	0 0038	0.0018	0.0	0 0
11	110	0 0050	0.0125	0 1125	0.0000	0 0000	0.0186	0.0053	0.0025	0.1	0.0
12	120	0 0050	0.0125	0 1250	0.0000	0.0000	0 0246	0.0060	0.0028	0.1	0.0
13	130	0 0050	0.0125	0.1375	0 0000	0.0000	0 0311	0.0065	0.0031	0.1	0.1
14	140	0 0050	0 0125	0.1500	0 0000	0.0000	0.0381	0 0070	0.0033	0.1	0 1
15	150	0 0050	0 0125	0.1625	0.0000	0.0000	0.0455	0.0074	0.0035	0.1	0 1
16	160	0 0050	0.0125	0.1750	0.0000	0 0000	0.0532	0.0078	0.0037	0 1	0.1
17	170	0.0060	0.0150	0.1900	0 0000	0 0000	0 0630	0.0098	0.0046	0.1	0.1
18	180	0 0060	0 0150	0.2050	0.0000	0.0000	0.0732	0.0102	0.0048	0.1	0.1
19	190	0 0060	0.0150	0.2200	0.0000	0.0000	0.0838	0.0106	0.0050	0.1	0.1
20	200	0.0060	0.0150	0.2350	0.0000	0.0000	0.0947	0.0109	0.0051	0.1	0.1
21	210	0.0060	0.0150	0.2500	0.0000	0.0000	0.1059	0.0112	0.0053	0.1	0.1
22	220	0.0060	0.0150	0.2650	0 0000	0.0000	0 1174	0.0115	0.0054	0.1	0 1
23	230	0.0070	0.0175	0 2825	0.0000	0.0000	0.1310	0 0137	0 0064	0.1	0 1
24	240	0.0070	0.0175	0.3000	0.0000	0.0000	0.1450	0.0140	0.0066	0.1	0.1
25	250	0 0070	0.0175	0.3175	0.0000	0 0000	0.1592	0.0142	0.0067	0.1	0.1
26	260	0.0070	0.0175	0.3350	0.0000	0.0000	0.1737	0.0145	0.0068	0.2	0 1
27	270	0 0070	0.0175	0.3525	0.0000	0.0000	0.1884	0.0147	0.0069	0.2	0.1
28	280	0.0070	0.0175	0.3700	0.0000	0 0000	0.2032	0 0148	0.0070	0 2	0.2
29	290	0.0082	0.0205	0.3905	0.0000	0.0000	0.2208	0.0176	0 0083	0.2	0.2
30	300	0 0082	0 0205	0.4110	0 0000	0 0000	0.2386	0.0178	0 0084	0.2	0.2
31	310	0 0082	0.0205	0 4315	0.0000	0.0000	0.2566	0 0180	0.0085	0.2	0.2
32	320	0.0082	0.0205	0 4520	0.0000	0.0000	0.2748	0.0182	0.0086	0.2	0.2
33	330	0.0082	0 0205	0.4725	0.0000	0 0000	0.2931	0 0183	0.0086	0.2	0.2
34	340	0.0082	0.0205	0 4930	0 0000	0.0000	0.3116	0 0185	0.0087	0.2	0.2
35	350	0 0095	0.0238	0 5168	0.0000	0.0000	0 3331	0.0215	0 0102	0.2	0 2
36	360	0.0095	0.0238	0 5405	0.0000	0.0000	0.3548	0.0217	0 0102	0.2	0 2
37	370	0.0095	0 0238	0.5643	0.0004	0 0004	0.3766	0.0218	0.0105	0.2	0.2
38	380	0 0095	0 0238	0.5880	0 0012	0 0008	0.3985	0.0219	0.0108	0.2	0.2
39	390	0 0095	0.0238	0.6118	0.0023	0.0012	0.4206	0.0221	0.0110	0.2	0.2
40	400	0.0095	0.0238	0.6355	0.0039	0 0016	0.4427	0.0222	0 0113	0.3	0.2
41	410	0.0134	0.0335	0.6690	0 0067	0.0028	0.4741	0 0314	0.0163	0.4	0 3
42	420	0 0134	0.0335	0 7025	0.0103	0 0036	0.5057	0 0316	0.0168	0.4	0 3
43	430	0 0134	0.0335	0 7360	0.0146	0.0043	0.5374	0.0317	0 0172	0.4	0 3
44	440	0.0180	0.0450	0.7810	0.0214	0.0068	0 5802	0.0428	0 0238	0.5	0 4
45	450	0 0180	0.0450	0.8260	0 0293	0.0080	0.6232	0 0430	0.0245	0.5	0.4
46	460	0.0340	0.0850	0.9110	0.0474	0.0180	0.7049	0.0817	0.0480	1.1	0.6
47	470	0.0540	0.1350	1 0460	0.0834	0.0360	0 8355	0.1307	0.0806	1.8	0.9
48	480	0 0270	0 0675	1.1135	0.1045	0.0211	0.9012	0.0657	0 0421	0.9	1 1
49	490	0 0180	0 0450	1.1585	0.1196	0.0151	0.9451	0 0439	0.0287	0.6	1.0
50	500	0.0134	0 0335	1.1920	0.1314	0.0118	0.9778	0.0327	0.0217	0.5	0.8
51	510	0.0134	0.0335	1.2255	0.1436	0 0122	1.0106	0.0328	0.0219	0.5	0 7
52	520	0 0134	0.0335	1.2590	0 1563	0.0126	1.0434	0 0328	0.0221	0.5	0 6
53	530	0 0088	0.0220	1 2810	0.1648	0 0085	1.0649	0.0216	0.0147	0 3	0.5
54	540	0.0088	0.0220	1.3030	0.1735	0.0087	1.0865	0.0216	0 0148	0.3	0.4
55	550	0 0088	0 0220	1.3250	0.1824	0 0089	1 1081	0.0216	0 0149	0.3	0.4
56	560	0 0088	0.0220	1 3470	0 1914	0.0090	1.1297	0.0216	0.0150	0.3	0.4
57	570	0 0088	0 0220	1.3690	0 2006	0.0092	1 1513	0 0216	0.0150	0.3	0.4
58	580	0 0088	0 0220	1.3910	0.2099	0 0094	1 1729	0.0216	0.0151	0.3	0.3
59	590	0 0088	0.0220	1.4130	0.2195	0.0095	1.1945	0.0216	0 0152	0.3	0 3
60	600	0 0088	0.0220	1.4350	0.2291	0 0097	1.2162	0.0216	0.0153	0.3	0.3
61	610	0 0088	0.0220	1.4570	0.2389	0 0098	1.2378	0.0216	0.0154	0 3	0.3
62	620	0 0088	0 0220	1.4790	0 2489	0 0100	1.2595	0.0217	0 0155	0.3	0 3
63	630	0.0088	0.0220	1 5010	0.2590	0 0101	1.2811	0 0217	0.0156	0.3	0 3
64	640	0 0088	0 0220	1.5230	0.2693	0.0103	1 3028	0 0217	0.0156	0.3	0 3
65	650	0.0072	0.0180	1.5410	0.2778	0 0085	1 3205	0.0177	0 0129	0 3	0.3
66	660	0 0072	0 0180	1 5590	0.2864	0.0086	1.3383	0.0177	0.0129	0.3	0.3
67	670	0 0072	0 0180	1.5770	0.2951	0.0087	1.3560	0.0177	0.0130	0.3	0.3
68	680	0 0072	0.0180	1.5950	0.3038	0.0088	1 3738	0 0178	0.0130	0.3	0.3
69	690	0 0072	0.0180	1.6130	0.3127	0.0089	1 3915	0.0178	0.0131	0.3	0.3
70	700	0 0072	0 0180	1.6310	0.3216	0 0089	1.4093	0.0178	0.0131	0.3	0 3
71	710	0 0072	0.0180	1.6490	0 3307	0.0090	1.4271	0.0178	0.0132	0.3	0 3

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	(6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	(8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
72	720	0 0072	0 0180	1 6670	0.3398	0.0091	1 4449	0.0178	0.0132	0.3	0 3
73	730	0 0072	0 0180	1.6850	0 3490	0.0092	1 4626	0.0178	0.0132	0.3	0.3
74	740	0.0072	0.0180	1 7030	0 3583	0.0093	1.4804	0.0178	0.0133	0.3	0.3
75	750	0.0072	0.0180	1.7210	0.3677	0 0094	1.4982	0 0178	0.0133	0.3	0.3
76	760	0.0072	0.0180	1.7390	0 3771	0 0094	1.5160	0.0178	0.0134	0.3	0.3
77	770	0.0057	0.0143	1.7533	0.3846	0 0075	1.5301	0.0141	0.0106	0.2	0.3
78	780	0.0057	0 0143	1.7675	0 3922	0.0076	1 5442	0.0141	0.0107	0.2	0.3
79	790	0.0057	0.0143	1 7818	0 3999	0.0076	1 5583	0.0141	0.0107	0.2	0.3
80	800	0.0057	0.0143	1.7960	0 4075	0.0077	1.5724	0 0141	0.0107	0 2	0 2
81	810	0 0057	0.0143	1.8103	0.4153	0 0077	1.5865	0.0141	0.0107	0 2	0 2
82	820	0 0057	0 0143	1.8245	0.4230	0.0078	1 6006	0.0141	0 0108	0.2	0.2
83	830	0 0057	0.0143	1 8388	0 4309	0.0078	1 6147	0.0141	0.0108	0.2	0.2
84	840	0.0057	0 0143	1.8530	0 4387	0.0079	1 6288	0.0141	0.0108	0.2	0.2
85	850	0.0057	0.0143	1.8673	0 4466	0.0079	1.6429	0.0141	0.0108	0.2	0.2
86	860	0 0057	0.0143	1.8815	0.4546	0 0080	1 6570	0 0141	0.0109	0.2	0 2
87	870	0 0057	0 0143	1 8958	0.4626	0.0080	1 6711	0.0141	0.0109	0.2	0 2
88	880	0.0057	0 0143	1 9100	0.4707	0.0080	1 6852	0.0141	0.0109	0.2	0.2
89	890	0.0050	0.0125	1.9225	0.4778	0 0071	1 6976	0.0124	0.0096	0.2	0.2
90	900	0.0050	0.0125	1.9350	0.4849	0.0071	1.7100	0.0124	0.0096	0.2	0.2
91	910	0 0050	0.0125	1.9475	0 4920	0 0072	1.7223	0.0124	0.0096	0 2	0.2
92	920	0.0050	0 0125	1 9600	0 4992	0.0072	1 7347	0.0124	0.0096	0.2	0.2
93	930	0.0050	0.0125	1.9725	0 5065	0.0072	1 7471	0.0124	0.0097	0.2	0.2
94	940	0.0050	0.0125	1.9850	0.5137	0.0073	1.7595	0.0124	0.0097	0.2	0.2
95	950	0 0050	0.0125	1.9975	0.5210	0 0073	1.7719	0.0124	0.0097	0 2	0 2
96	960	0 0050	0.0125	2.0100	0.5283	0.0073	1.7843	0 0124	0.0097	0.2	0.2
97	970	0.0050	0 0125	2.0225	0 5357	0.0074	1 7967	0 0124	0.0097	0.2	0.2
98	980	0.0050	0.0125	2.0350	0 5431	0.0074	1.8090	0.0124	0.0097	0.2	0 2
99	990	0.0050	0.0125	2.0475	0.5505	0 0074	1.8214	0.0124	0.0098	0.2	0.2
100	1000	0 0050	0 0125	2 0600	0.5579	0.0074	1.8338	0.0124	0.0098	0.2	0 2
101	1010	0.0040	0.0100	2 0700	0 5639	0.0060	1 8438	0.0099	0.0078	0.2	0.2
102	1020	0.0040	0 0100	2 0800	0 5699	0.0060	1 8537	0.0099	0.0078	0.2	0.2
103	1030	0 0040	0.0100	2.0900	0.5759	0.0060	1 8636	0.0099	0.0079	0.2	0.2
104	1040	0 0040	0.0100	2.1000	0.5820	0 0060	1.8735	0 0099	0.0079	0.2	0.2
105	1050	0.0040	0 0100	2.1100	0 5880	0.0061	1 8834	0 0099	0.0079	0.2	0.2
106	1060	0.0040	0.0100	2 1200	0 5941	0.0061	1.8933	0 0099	0.0079	0.2	0.2
107	1070	0 0040	0.0100	2.1300	0 6002	0.0061	1 9033	0.0099	0.0079	0.2	0.2
108	1080	0 0040	0.0100	2.1400	0.6063	0.0061	1.9132	0.0099	0.0079	0.2	0.2
109	1090	0.0040	0 0100	2.1500	0.6124	0.0061	1.9231	0 0099	0 0079	0 2	0.2
110	1100	0.0040	0.0100	2.1600	0 6186	0.0061	1.9330	0.0099	0 0079	0.2	0.2
111	1110	0.0040	0.0100	2.1700	0.6247	0.0062	1 9430	0.0099	0.0079	0.2	0.2
112	1120	0 0040	0.0100	2.1800	0 6309	0.0062	1.9529	0.0099	0.0079	0.2	0.2
113	1130	0 0040	0 0100	2.1900	0.6371	0 0062	1.9628	0.0099	0.0080	0.2	0 2
114	1140	0.0040	0.0100	2.2000	0.6433	0 0062	1.9727	0 0099	0.0080	0.2	0.2
115	1150	0.0040	0 0100	2.2100	0 6496	0.0062	1.9827	0.0099	0 0080	0.2	0.2
116	1160	0 0040	0.0100	2.2200	0.6558	0.0063	1 9926	0.0099	0.0080	0.2	0.2
117	1170	0.0040	0.0100	2.2300	0.6621	0 0063	2.0025	0.0099	0.0080	0 2	0.2
118	1180	0.0040	0.0100	2.2400	0.6684	0 0063	2.0124	0 0099	0.0080	0 2	0.2
119	1190	0 0040	0.0100	2.2500	0 6747	0 0063	2.0224	0 0099	0.0080	0.2	0.2
120	1200	0.0040	0.0100	2.2600	0.6810	0.0063	2.0323	0.0099	0.0080	0.2	0.2
121	1210	0.0040	0 0100	2.2700	0.6873	0.0063	2 0422	0.0099	0.0080	0.2	0 2
122	1220	0.0040	0.0100	2.2800	0 6937	0.0064	2.0521	0.0099	0.0080	0.2	0.2
123	1230	0 0040	0.0100	2.2900	0 7000	0.0064	2.0621	0 0099	0.0080	0.2	0.2
124	1240	0 0040	0.0100	2.3000	0.7064	0 0064	2.0720	0.0099	0.0081	0.2	0.2
125	1250	0.0040	0.0100	2 3100	0.7128	0.0064	2.0819	0.0099	0.0081	0.2	0.2
126	1260	0 0040	0.0100	2.3200	0.7193	0 0064	2.0919	0.0099	0.0081	0.2	0 2
127	1270	0.0040	0 0100	2.3300	0.7257	0.0064	2 1018	0.0099	0 0081	0.2	0 2
128	1280	0 0040	0.0100	2.3400	0.7321	0 0065	2 1117	0.0099	0.0081	0.2	0.2
129	1290	0 0040	0.0100	2 3500	0.7386	0 0065	2.1217	0.0099	0.0081	0.2	0.2
130	1300	0 0040	0.0100	2 3600	0 7451	0.0065	2.1316	0.0099	0.0081	0 2	0.2
131	1310	0.0040	0 0100	2.3700	0 7516	0.0065	2.1415	0 0099	0.0081	0.2	0.2
132	1320	0.0040	0 0100	2.3800	0.7581	0.0065	2 1515	0.0099	0.0081	0.2	0.2
133	1330	0 0040	0.0100	2 3900	0.7646	0.0065	2.1614	0 0099	0.0081	0.2	0 2
134	1340	0 0040	0.0100	2.4000	0 7712	0.0065	2.1714	0 0099	0.0081	0.2	0.2
135	1350	0 0040	0 0100	2.4100	0 7777	0.0066	2 1813	0 0099	0.0082	0.2	0.2
136	1360	0.0040	0 0100	2 4200	0.7843	0.0066	2.1912	0.0099	0.0082	0.2	0.2
137	1370	0 0040	0.0100	2.4300	0.7909	0 0066	2.2012	0.0099	0.0082	0.2	0.2
138	1380	0 0040	0.0100	2.4400	0.7975	0.0066	2.2111	0 0099	0 0082	0.2	0 2
139	1390	0 0040	0.0100	2 4500	0.8041	0.0066	2 2210	0.0099	0.0082	0.2	0 2
140	1400	0.0040	0 0100	2.4600	0 8107	0.0066	2.2310	0.0099	0.0082	0.2	0.2
141	1410	0.0040	0.0100	2.4700	0 8174	0 0066	2.2409	0 0099	0.0082	0 2	0.2
142	1420	0 0040	0 0100	2 4800	0.8241	0.0067	2.2509	0.0099	0.0082	0.2	0.2
143	1430	0.0040	0.0100	2.4900	0 8307	0.0067	2 2608	0.0099	0.0082	0.2	0.2
144	1440	0.0040	0 0100	2.5000	0 8374	0 0067	2 2707	0.0099	0.0082	0.2	0.2
	Total	1.0000	2.5000						Hydrograph Volume (Cubic Feet)		19949

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *5-yr Pre*

Given:

Area =	3.67	acres
Pt =	3.1	inches
dt =	10	min.
Tc =	25	min.
w =	0.1667	routing constant

Pervious Area

Area =	3.27	acres
CN =	79	
S =	2.66	
0.2S =	0.53	

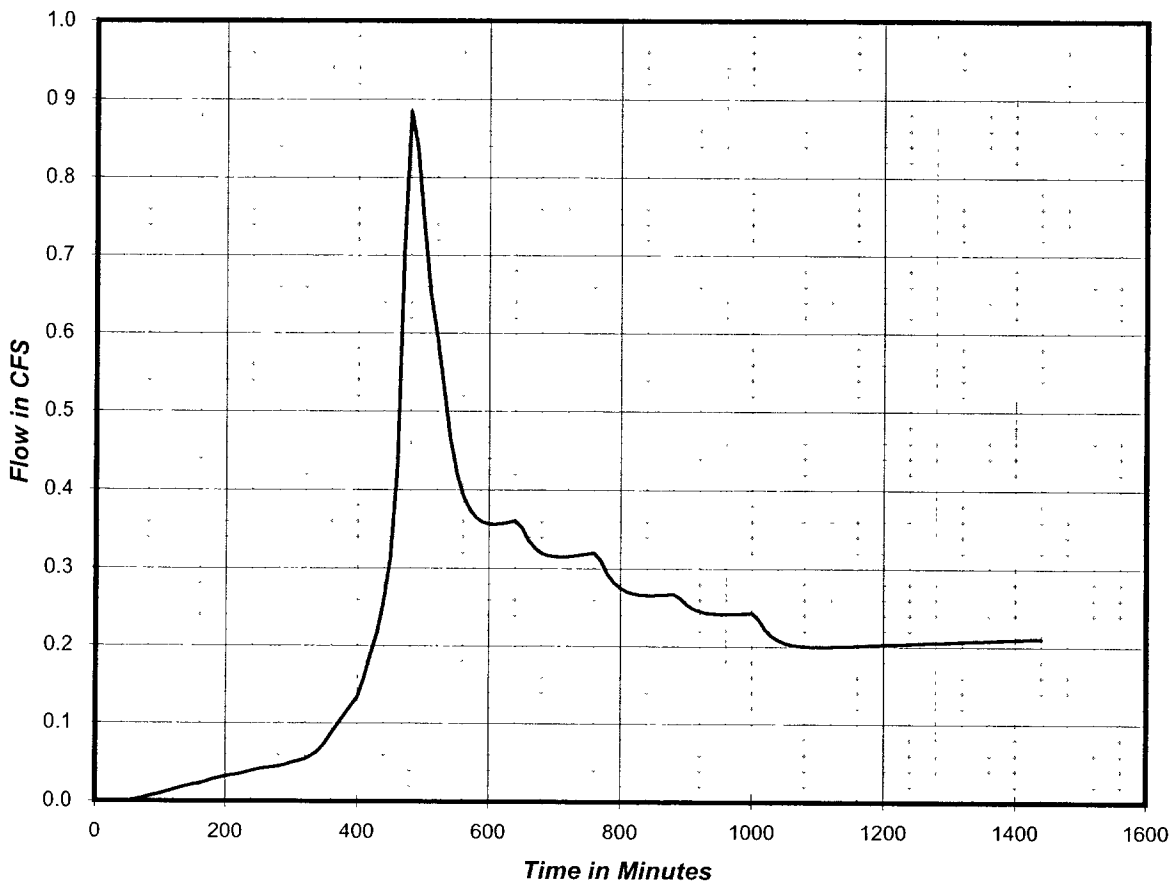
Impervious Area

Area =	0.4	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff:	0.9	cfs
Total Vol. :	18829	cf

Peak Runoff Hydrograph



File SBUH-24-5yr-pre.XLS
9/30/2004

CES|NW, Inc.

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	Pervious Area (6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	Impervious Area (8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
1	10	0 0040	0.0124	0.0124	0.0000	0 0000	0.0000	0.0000	0.0000	0.0	0.0
2	20	0 0040	0 0124	0 0248	0 0000	0.0000	0 0000	0.0000	0.0000	0.0	0.0
3	30	0 0040	0 0124	0.0372	0 0000	0 0000	0 0000	0.0000	0.0000	0 0	0 0
4	40	0 0040	0 0124	0.0496	0 0000	0.0000	0.0004	0 0004	0.0000	0 0	0 0
5	50	0 0040	0 0124	0.0620	0 0000	0 0000	0 0020	0 0016	0.0002	0 0	0.0
6	60	0.0040	0 0124	0.0744	0.0000	0 0000	0 0047	0 0028	0 0003	0 0	0.0
7	70	0.0040	0 0124	0.0868	0.0000	0.0000	0 0085	0 0037	0.0004	0.0	0.0
8	80	0.0040	0.0124	0 0992	0 0000	0.0000	0 0130	0.0045	0 0005	0 0	0.0
9	90	0 0040	0.0124	0 1116	0 0000	0 0000	0.0182	0 0052	0.0006	0.0	0.0
10	100	0 0040	0.0124	0 1240	0 0000	0.0000	0.0241	0.0059	0 0006	0.0	0.0
11	110	0 0050	0 0155	0.1395	0.0000	0.0000	0.0322	0.0081	0.0009	0 0	0 0
12	120	0.0050	0.0155	0.1550	0.0000	0 0000	0 0410	0.0088	0.0010	0.0	0 0
13	130	0.0050	0 0155	0.1705	0.0000	0 0000	0 0504	0 0094	0.0010	0 0	0.0
14	140	0 0050	0 0155	0.1860	0 0000	0.0000	0.0604	0.0100	0.0011	0 0	0.0
15	150	0 0050	0.0155	0.2015	0 0000	0.0000	0 0708	0 0104	0.0011	0.0	0.0
16	160	0 0050	0.0155	0 2170	0 0000	0.0000	0.0816	0 0108	0.0012	0.0	0.0
17	170	0 0060	0.0186	0.2356	0 0000	0.0000	0.0951	0.0135	0 0015	0.0	0.0
18	180	0 0060	0 0186	0.2542	0 0000	0 0000	0.1091	0.0139	0 0015	0.0	0.0
19	190	0.0060	0 0186	0 2728	0.0000	0 0000	0.1234	0.0143	0 0016	0.0	0.0
20	200	0.0060	0.0186	0 2914	0 0000	0 0000	0.1381	0.0147	0 0016	0.0	0.0
21	210	0.0060	0.0186	0 3100	0 0000	0.0000	0 1531	0.0150	0.0016	0.0	0 0
22	220	0.0060	0.0186	0 3286	0 0000	0.0000	0 1684	0 0153	0.0017	0.0	0 0
23	230	0 0070	0 0217	0.3503	0 0000	0.0000	0.1865	0 0181	0.0020	0 0	0.0
24	240	0 0070	0 0217	0.3720	0 0000	0.0000	0.2049	0.0184	0.0020	0.0	0.0
25	250	0 0070	0 0217	0.3937	0 0000	0.0000	0 2236	0 0187	0.0020	0.0	0.0
26	260	0.0070	0 0217	0.4154	0.0000	0.0000	0.2425	0.0189	0.0021	0.0	0.0
27	270	0.0070	0 0217	0.4371	0.0000	0 0000	0.2616	0.0191	0.0021	0.0	0.0
28	280	0.0070	0.0217	0 4588	0.0000	0 0000	0 2809	0.0193	0.0021	0.0	0.0
29	290	0.0082	0.0254	0 4842	0.0000	0.0000	0 3036	0.0228	0.0025	0 1	0.0
30	300	0 0082	0.0254	0 5096	0.0000	0.0000	0 3266	0.0230	0.0025	0 1	0.0
31	310	0 0082	0 0254	0.5351	0 0000	0 0000	0.3498	0 0232	0.0025	0 1	0.1
32	320	0.0082	0.0254	0.5605	0.0003	0 0003	0 3731	0 0233	0.0028	0 1	0.1
33	330	0.0082	0 0254	0.5859	0.0011	0 0008	0.3966	0.0235	0.0032	0.1	0.1
34	340	0 0082	0 0254	0.6113	0.0023	0 0012	0 4202	0 0236	0.0037	0 1	0 1
35	350	0 0095	0.0295	0 6408	0 0043	0.0020	0.4477	0.0275	0 0048	0.1	0.1
36	360	0 0095	0.0295	0 6702	0 0069	0.0026	0 4753	0.0276	0 0053	0.1	0.1
37	370	0 0095	0.0295	0 6997	0 0100	0.0031	0 5030	0.0277	0.0058	0.1	0 1
38	380	0.0095	0.0295	0.7291	0 0137	0.0037	0 5309	0.0279	0.0063	0.1	0 1
39	390	0.0095	0 0295	0.7586	0.0178	0 0042	0 5589	0.0280	0.0068	0 2	0.1
40	400	0.0095	0 0295	0 7880	0.0226	0 0047	0 5869	0 0281	0.0072	0 2	0.1
41	410	0.0134	0 0415	0 8296	0.0300	0 0075	0.6266	0.0397	0.0110	0.2	0.2
42	420	0 0134	0.0415	0 8711	0.0384	0 0084	0.6665	0.0399	0.0118	0 3	0.2
43	430	0 0134	0 0415	0.9126	0 0478	0 0093	0 7065	0.0400	0 0127	0.3	0.2
44	440	0 0180	0 0558	0.9684	0 0616	0.0139	0 7603	0.0539	0.0182	0.4	0.3
45	450	0.0180	0 0558	1.0242	0 0770	0.0154	0 8144	0 0541	0.0196	0.4	0.3
46	460	0.0340	0 1054	1.1296	0.1098	0.0328	0.9170	0.1025	0 0404	0.9	0 4
47	470	0.0540	0.1674	1 2970	0.1711	0.0613	1.0807	0.1637	0.0725	1.6	0.7
48	480	0.0270	0.0837	1.3807	0 2056	0.0344	1.1628	0 0822	0.0396	0.9	0.9
49	490	0.0180	0 0558	1.4365	0 2298	0.0242	1 2177	0.0549	0.0276	0.6	0.8
50	500	0 0134	0 0415	1 4781	0.2485	0 0187	1 2586	0.0409	0.0211	0.5	0.7
51	510	0 0134	0.0415	1.5196	0.2677	0 0192	1 2995	0.0409	0.0216	0.5	0.7
52	520	0 0134	0.0415	1.5612	0.2874	0 0197	1.3404	0 0409	0.0220	0 5	0.6
53	530	0 0088	0.0273	1.5884	0 3006	0.0132	1.3673	0.0269	0.0147	0.3	0.5
54	540	0.0088	0.0273	1.6157	0 3140	0 0134	1.3942	0 0269	0.0149	0.3	0.5
55	550	0.0088	0 0273	1.6430	0.3277	0.0136	1 4212	0.0269	0.0151	0.3	0.4
56	560	0 0088	0.0273	1 6703	0.3415	0.0138	1 4481	0.0269	0.0152	0.3	0 4
57	570	0 0088	0 0273	1 6976	0 3555	0.0140	1 4750	0 0269	0 0154	0.3	0.4
58	580	0 0088	0.0273	1 7248	0.3697	0 0142	1.5020	0.0270	0.0156	0.3	0 4
59	590	0.0088	0 0273	1.7521	0 3840	0 0144	1.5290	0.0270	0.0157	0 3	0 4
60	600	0.0088	0.0273	1.7794	0.3986	0.0146	1 5559	0.0270	0.0159	0 4	0.4
61	610	0.0088	0.0273	1 8067	0.4133	0.0147	1 5829	0.0270	0.0161	0 4	0.4
62	620	0 0088	0 0273	1.8340	0.4282	0.0149	1.6099	0.0270	0.0162	0.4	0.4
63	630	0.0088	0 0273	1 8612	0 4433	0.0151	1.6369	0 0270	0 0164	0.4	0.4
64	640	0 0088	0 0273	1.8885	0.4585	0.0152	1.6639	0 0270	0.0165	0.4	0.4
65	650	0.0072	0.0223	1 9108	0.4711	0 0126	1.6860	0.0221	0.0136	0.3	0 4
66	660	0.0072	0 0223	1.9332	0.4838	0 0127	1 7081	0.0221	0.0137	0.3	0 3
67	670	0 0072	0.0223	1.9555	0 4966	0 0128	1 7302	0 0221	0.0138	0.3	0 3
68	680	0 0072	0.0223	1 9778	0.5095	0.0129	1.7524	0.0221	0.0139	0.3	0.3
69	690	0 0072	0 0223	2.0001	0.5226	0.0130	1.7745	0 0221	0.0140	0.3	0 3
70	700	0 0072	0 0223	2 0224	0.5357	0.0131	1 7966	0.0221	0.0141	0.3	0.3
71	710	0.0072	0 0223	2.0448	0 5489	0.0132	1 8187	0 0221	0 0142	0.3	0.3

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	(6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	(8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
72	720	0 0072	0 0223	2.0671	0.5622	0.0133	1.8409	0.0221	0 0143	0 3	0 3
73	730	0 0072	0.0223	2 0894	0 5756	0.0134	1 8630	0.0221	0.0144	0 3	0.3
74	740	0.0072	0.0223	2 1117	0 5891	0 0135	1 8851	0.0221	0.0144	0 3	0 3
75	750	0 0072	0 0223	2.1340	0.6027	0 0136	1 9073	0.0221	0.0145	0 3	0.3
76	760	0 0072	0.0223	2.1564	0 6163	0 0137	1 9294	0.0221	0.0146	0.3	0.3
77	770	0 0057	0 0177	2.1740	0 6272	0 0109	1 9470	0 0175	0 0116	0 3	0 3
78	780	0 0057	0 0177	2 1917	0.6382	0 0109	1.9645	0 0175	0.0117	0 3	0.3
79	790	0 0057	0.0177	2 2094	0 6492	0.0110	1 9820	0 0175	0 0117	0 3	0 3
80	800	0 0057	0.0177	2 2270	0.6602	0.0111	1.9996	0 0175	0 0118	0 3	0 3
81	810	0.0057	0.0177	2.2447	0 6713	0.0111	2.0171	0.0175	0.0118	0 3	0.3
82	820	0.0057	0.0177	2.2624	0 6825	0 0112	2.0347	0.0175	0.0119	0 3	0 3
83	830	0 0057	0.0177	2.2801	0 6937	0 0112	2.0522	0.0175	0.0119	0.3	0.3
84	840	0 0057	0.0177	2.2977	0.7050	0.0113	2.0697	0.0175	0.0120	0.3	0.3
85	850	0 0057	0.0177	2 3154	0.7163	0.0113	2.0873	0 0175	0.0120	0.3	0 3
86	860	0 0057	0.0177	2 3331	0.7277	0.0114	2 1048	0 0176	0.0120	0 3	0 3
87	870	0 0057	0 0177	2.3507	0.7391	0 0114	2 1224	0 0176	0.0121	0 3	0.3
88	880	0 0057	0 0177	2 3684	0 7505	0 0115	2 1400	0.0176	0.0121	0.3	0.3
89	890	0.0050	0 0155	2 3839	0.7606	0 0101	2.1554	0.0154	0.0107	0.2	0 3
90	900	0.0050	0 0155	2.3994	0.7708	0 0101	2 1708	0.0154	0.0107	0.2	0.3
91	910	0 0050	0 0155	2.4149	0.7809	0 0102	2.1862	0.0154	0 0107	0 2	0 2
92	920	0 0050	0.0155	2 4304	0.7912	0.0102	2.2016	0.0154	0 0108	0.2	0.2
93	930	0 0050	0.0155	2 4459	0 8014	0 0102	2.2170	0 0154	0.0108	0 2	0.2
94	940	0 0050	0 0155	2.4614	0 8117	0.0103	2.2324	0.0154	0.0108	0 2	0.2
95	950	0 0050	0 0155	2.4769	0.8220	0 0103	2 2478	0.0154	0.0109	0.2	0.2
96	960	0 0050	0 0155	2 4924	0.8323	0 0103	2 2632	0.0154	0.0109	0.2	0.2
97	970	0.0050	0.0155	2 5079	0.8427	0 0104	2 2786	0.0154	0.0109	0.2	0.2
98	980	0 0050	0.0155	2 5234	0 8531	0 0104	2 2940	0.0154	0 0110	0.2	0.2
99	990	0.0050	0.0155	2 5389	0 8636	0.0105	2.3094	0 0154	0.0110	0 2	0.2
100	1000	0 0050	0 0155	2.5544	0 8741	0.0105	2.3248	0.0154	0 0110	0 2	0.2
101	1010	0.0040	0.0124	2.5668	0 8825	0.0084	2 3372	0.0123	0 0088	0 2	0.2
102	1020	0 0040	0 0124	2.5792	0.8909	0.0084	2.3495	0.0123	0.0089	0 2	0.2
103	1030	0 0040	0.0124	2 5916	0.8994	0 0085	2.3618	0.0123	0.0089	0.2	0.2
104	1040	0.0040	0.0124	2 6040	0.9078	0.0085	2.3742	0.0123	0.0089	0.2	0.2
105	1050	0.0040	0 0124	2 6164	0.9163	0.0085	2.3865	0.0123	0.0089	0.2	0.2
106	1060	0 0040	0 0124	2 6288	0 9249	0.0085	2.3988	0.0123	0.0089	0.2	0 2
107	1070	0 0040	0 0124	2.6412	0.9334	0 0085	2.4112	0 0123	0.0089	0 2	0 2
108	1080	0.0040	0 0124	2.6536	0.9419	0.0086	2.4235	0 0123	0.0090	0.2	0.2
109	1090	0 0040	0.0124	2.6660	0.9505	0 0086	2 4358	0 0123	0.0090	0.2	0.2
110	1100	0.0040	0.0124	2 6784	0.9591	0.0086	2.4482	0.0123	0.0090	0.2	0.2
111	1110	0.0040	0 0124	2.6908	0.9677	0 0086	2.4605	0.0123	0.0090	0.2	0.2
112	1120	0 0040	0 0124	2.7032	0 9764	0.0086	2.4728	0.0123	0 0090	0 2	0 2
113	1130	0 0040	0 0124	2.7156	0.9850	0 0087	2.4852	0.0123	0 0091	0.2	0.2
114	1140	0 0040	0 0124	2.7280	0 9937	0 0087	2.4975	0 0123	0 0091	0 2	0 2
115	1150	0 0040	0.0124	2 7404	1 0024	0 0087	2.5098	0.0123	0.0091	0.2	0.2
116	1160	0 0040	0.0124	2 7528	1.0111	0 0087	2 5222	0.0123	0.0091	0.2	0.2
117	1170	0 0040	0.0124	2.7652	1 0198	0 0087	2 5345	0.0123	0.0091	0.2	0.2
118	1180	0 0040	0.0124	2.7776	1 0286	0.0087	2.5469	0.0123	0 0091	0 2	0 2
119	1190	0 0040	0.0124	2.7900	1.0373	0.0088	2.5592	0 0123	0.0092	0 2	0 2
120	1200	0.0040	0 0124	2.8024	1.0461	0.0088	2 5715	0 0123	0.0092	0.2	0 2
121	1210	0.0040	0 0124	2 8148	1.0549	0.0088	2.5839	0 0123	0.0092	0.2	0.2
122	1220	0.0040	0 0124	2 8272	1 0637	0.0088	2.5962	0.0123	0.0092	0.2	0.2
123	1230	0 0040	0 0124	2.8396	1.0726	0.0088	2.6086	0.0123	0.0092	0 2	0.2
124	1240	0.0040	0.0124	2.8520	1.0814	0 0089	2 6209	0 0123	0.0092	0.2	0.2
125	1250	0 0040	0 0124	2 8644	1 0903	0 0089	2 6333	0 0123	0.0093	0.2	0.2
126	1260	0 0040	0 0124	2.8768	1 0992	0 0089	2 6456	0 0123	0.0093	0 2	0.2
127	1270	0 0040	0 0124	2 8892	1 1081	0.0089	2.6579	0.0123	0 0093	0 2	0 2
128	1280	0 0040	0.0124	2 9016	1.1170	0.0089	2.6703	0.0123	0.0093	0 2	0 2
129	1290	0.0040	0 0124	2 9140	1.1260	0 0089	2.6826	0.0123	0 0093	0.2	0 2
130	1300	0 0040	0 0124	2.9264	1.1349	0 0090	2 6950	0 0123	0 0093	0.2	0.2
131	1310	0 0040	0 0124	2.9388	1 1439	0.0090	2.7073	0.0123	0 0093	0 2	0.2
132	1320	0 0040	0.0124	2.9512	1 1529	0.0090	2.7197	0.0123	0.0094	0.2	0.2
133	1330	0 0040	0.0124	2 9636	1 1619	0.0090	2.7320	0.0123	0 0094	0.2	0.2
134	1340	0.0040	0 0124	2 9760	1.1709	0 0090	2.7444	0 0123	0.0094	0 2	0.2
135	1350	0.0040	0 0124	2 9884	1.1800	0.0090	2.7567	0.0123	0 0094	0 2	0 2
136	1360	0 0040	0 0124	3.0008	1 1891	0.0091	2.7691	0 0123	0 0094	0 2	0.2
137	1370	0 0040	0 0124	3.0132	1.1981	0 0091	2.7814	0.0123	0.0094	0 2	0.2
138	1380	0 0040	0.0124	3.0256	1.2072	0 0091	2.7938	0.0123	0.0094	0.2	0.2
139	1390	0 0040	0 0124	3.0380	1 2163	0 0091	2.8061	0.0123	0.0095	0.2	0.2
140	1400	0.0040	0 0124	3.0504	1.2254	0 0091	2 8185	0.0123	0.0095	0.2	0.2
141	1410	0.0040	0.0124	3.0628	1.2346	0.0091	2.8308	0 0124	0 0095	0.2	0 2
142	1420	0 0040	0 0124	3 0752	1.2437	0 0092	2.8432	0 0124	0.0095	0 2	0.2
143	1430	0 0040	0 0124	3 0876	1 2529	0 0092	2.8555	0 0124	0.0095	0.2	0.2
144	1440	0 0040	0.0124	3.1000	1 2621	0 0092	2.8679	0 0124	0.0095	0.2	0 2
	Total	1 0000	3.1000							Hydrograph Volume (Cubic Feet)	18829

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *5-yr Post*

Given:

Area =	3.67	acres
Pt =	3.1	inches
dt =	10	min.
Tc =	17	min.
w =	0.2273	routing constant

Pervious Area

Area =	1.94	acres
CN =	79	
S =	2.66	
0.2S =	0.53	

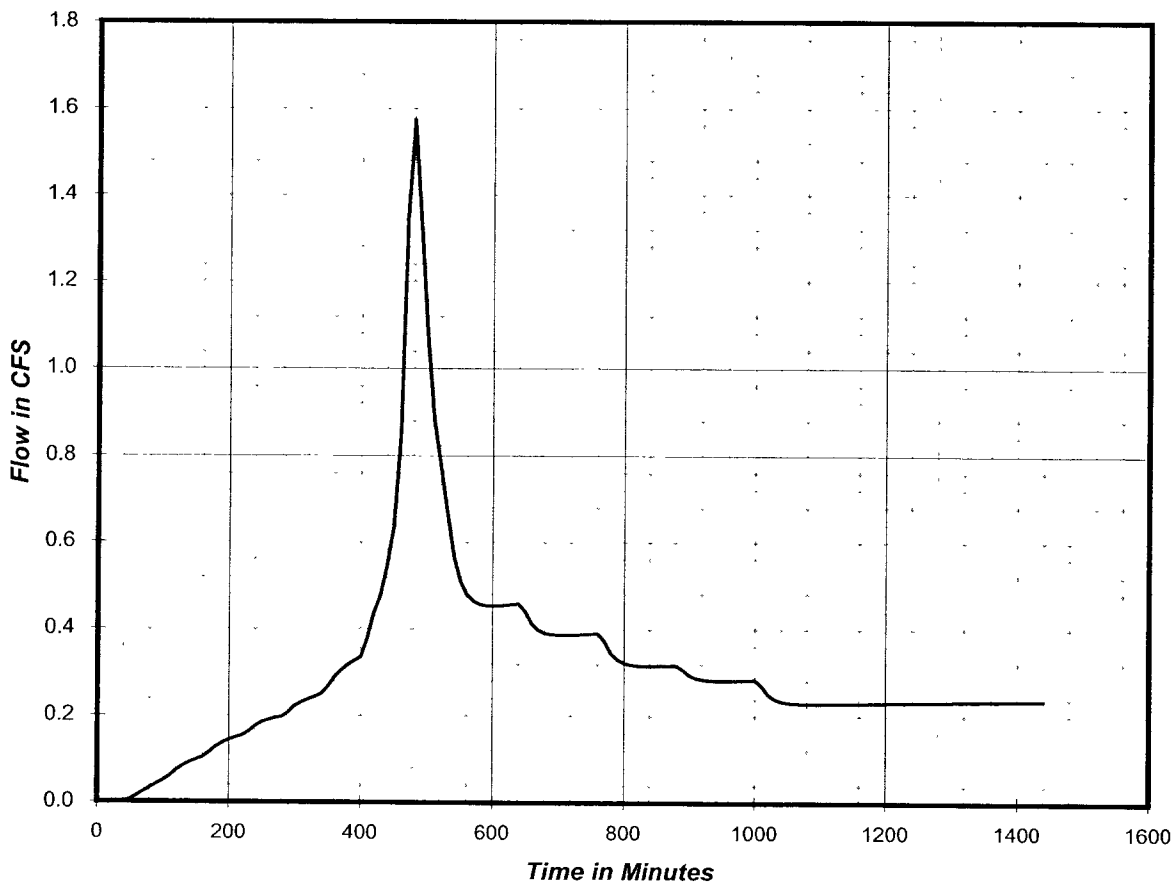
Impervious Area

Area =	1.73	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff.	1.6	cfs
Total Vol. :	26656	cf

Peak Runoff Hydrograph



(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	Pervious Area (6) Accumulated Runoff (in)	Pervious Area (7) Incremental Runoff (in)	Impervious Area (8) Accumulated Runoff (in)	Impervious Area (9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
1	10	0.0040	0.0124	0.0124	0 0000	0.0000	0.0000	0 0000	0 0000	0 0	0.0
2	20	0.0040	0.0124	0.0248	0 0000	0.0000	0 0000	0 0000	0.0000	0.0	0.0
3	30	0.0040	0.0124	0.0372	0.0000	0 0000	0 0000	0.0000	0 0000	0.0	0 0
4	40	0.0040	0.0124	0.0496	0 0000	0 0000	0 0004	0.0004	0.0002	0 0	0 0
5	50	0 0040	0.0124	0 0620	0 0000	0 0000	0.0020	0.0016	0.0008	0 0	0 0
6	60	0 0040	0 0124	0 0744	0 0000	0 0000	0 0047	0.0028	0.0013	0 0	0.0
7	70	0.0040	0 0124	0 0868	0.0000	0 0000	0.0085	0.0037	0.0017	0 0	0.0
8	80	0.0040	0 0124	0 0992	0.0000	0.0000	0.0130	0 0045	0.0021	0.0	0.0
9	90	0.0040	0.0124	0 1116	0.0000	0 0000	0 0182	0 0052	0.0025	0 1	0 0
10	100	0 0040	0.0124	0.1240	0.0000	0 0000	0.0241	0 0059	0 0028	0 1	0 0
11	110	0 0050	0.0155	0.1395	0 0000	0.0000	0 0322	0.0081	0 0038	0.1	0 1
12	120	0 0050	0 0155	0.1550	0.0000	0.0000	0.0410	0 0088	0.0041	0.1	0 1
13	130	0.0050	0 0155	0 1705	0 0000	0.0000	0.0504	0 0094	0.0044	0 1	0 1
14	140	0 0050	0 0155	0 1860	0 0000	0 0000	0.0604	0.0100	0.0047	0.1	0.1
15	150	0.0050	0 0155	0 2015	0 0000	0 0000	0.0708	0 0104	0 0049	0.1	0.1
16	160	0.0050	0 0155	0 2170	0 0000	0 0000	0 0816	0 0108	0 0051	0.1	0.1
17	170	0.0060	0.0186	0 2356	0.0000	0 0000	0 0951	0 0135	0 0064	0.1	0.1
18	180	0.0060	0.0186	0 2542	0.0000	0 0000	0.1091	0 0139	0.0066	0.1	0.1
19	190	0.0060	0.0186	0 2728	0.0000	0.0000	0 1234	0 0143	0 0068	0 2	0 1
20	200	0 0060	0.0186	0.2914	0.0000	0 0000	0 1381	0 0147	0.0069	0 2	0 1
21	210	0 0060	0.0186	0.3100	0 0000	0.0000	0 1531	0.0150	0.0071	0.2	0 1
22	220	0 0060	0 0186	0.3286	0 0000	0.0000	0.1684	0.0153	0 0072	0 2	0 2
23	230	0.0070	0 0217	0.3503	0.0000	0.0000	0 1865	0.0181	0.0085	0.2	0.2
24	240	0.0070	0 0217	0.3720	0.0000	0 0000	0.2049	0.0184	0.0087	0 2	0.2
25	250	0.0070	0 0217	0.3937	0.0000	0 0000	0.2236	0.0187	0.0088	0.2	0.2
26	260	0 0070	0.0217	0.4154	0.0000	0 0000	0.2425	0 0189	0.0089	0.2	0.2
27	270	0.0070	0.0217	0.4371	0.0000	0.0000	0.2616	0.0191	0 0090	0.2	0.2
28	280	0 0070	0.0217	0 4588	0 0000	0.0000	0 2809	0 0193	0 0091	0.2	0.2
29	290	0.0082	0.0254	0 4842	0.0000	0.0000	0 3036	0 0228	0 0107	0.2	0.2
30	300	0.0082	0.0254	0 5096	0 0000	0 0000	0 3266	0 0230	0 0108	0.2	0.2
31	310	0 0082	0 0254	0 5351	0 0000	0 0000	0 3498	0 0232	0 0109	0 2	0.2
32	320	0 0082	0.0254	0 5605	0 0003	0 0003	0 3731	0.0233	0 0112	0.2	0.2
33	330	0 0082	0.0254	0 5859	0.0011	0 0008	0.3966	0.0235	0.0115	0 3	0.2
34	340	0.0082	0.0254	0.6113	0 0023	0 0012	0 4202	0.0236	0.0118	0.3	0.3
35	350	0 0095	0 0295	0.6408	0.0043	0.0020	0.4477	0 0275	0.0140	0.3	0 3
36	360	0.0095	0 0295	0 6702	0 0069	0.0026	0 4753	0.0276	0 0144	0 3	0 3
37	370	0.0095	0 0295	0.6997	0 0100	0.0031	0 5030	0.0277	0.0147	0.3	0 3
38	380	0.0095	0.0295	0.7291	0 0137	0.0037	0.5309	0.0279	0.0151	0 3	0 3
39	390	0.0095	0.0295	0 7586	0 0178	0.0042	0 5589	0.0280	0.0154	0.3	0 3
40	400	0 0095	0.0295	0 7880	0 0226	0 0047	0.5869	0.0281	0.0157	0.3	0 3
41	410	0 0134	0 0415	0.8296	0.0300	0.0075	0.6266	0 0397	0.0227	0.5	0.4
42	420	0.0134	0 0415	0.8711	0.0384	0 0084	0.6665	0.0399	0.0232	0.5	0.4
43	430	0.0134	0 0415	0.9126	0.0478	0 0093	0.7065	0 0400	0 0238	0.5	0.5
44	440	0.0180	0 0558	0 9684	0 0616	0.0139	0 7603	0 0539	0 0327	0 7	0.5
45	450	0.0180	0 0558	1 0242	0 0770	0.0154	0 8144	0 0541	0 0336	0 7	0 6
46	460	0 0340	0.1054	1.1296	0.1098	0.0328	0.9170	0.1025	0.0657	1 5	0 8
47	470	0.0540	0.1674	1.2970	0.1711	0 0613	1.0807	0.1637	0.1096	2 4	1 3
48	480	0.0270	0.0837	1 3807	0.2056	0 0344	1.1628	0.0822	0.0569	1 3	1.6
49	490	0 0180	0.0558	1 4365	0.2298	0.0242	1.2177	0 0549	0.0387	0.9	1.3
50	500	0 0134	0.0415	1 4781	0 2485	0.0187	1 2586	0.0409	0 0291	0 6	1.1
51	510	0 0134	0.0415	1 5196	0 2677	0 0192	1.2995	0.0409	0 0294	0.7	0.9
52	520	0.0134	0.0415	1.5612	0.2874	0 0197	1.3404	0.0409	0.0297	0.7	0.8
53	530	0.0088	0 0273	1.5884	0.3006	0.0132	1.3673	0.0269	0.0197	0 4	0.7
54	540	0 0088	0 0273	1 6157	0.3140	0 0134	1.3942	0.0269	0.0198	0.4	0 6
55	550	0 0088	0 0273	1 6430	0 3277	0 0136	1.4212	0 0269	0.0199	0.4	0.5
56	560	0 0088	0.0273	1 6703	0 3415	0 0138	1.4481	0 0269	0.0200	0.4	0.5
57	570	0 0088	0.0273	1 6976	0 3555	0.0140	1 4750	0.0269	0.0201	0.4	0.5
58	580	0.0088	0 0273	1.7248	0 3697	0 0142	1.5020	0.0270	0 0202	0.4	0 5
59	590	0.0088	0.0273	1.7521	0.3840	0 0144	1.5290	0.0270	0 0203	0 5	0 5
60	600	0.0088	0 0273	1.7794	0.3986	0 0146	1 5559	0.0270	0.0204	0 5	0.5
61	610	0 0088	0.0273	1 8067	0.4133	0.0147	1.5829	0.0270	0.0205	0.5	0 5
62	620	0 0088	0.0273	1.8340	0.4282	0.0149	1.6099	0.0270	0.0206	0.5	0.5
63	630	0.0088	0.0273	1 8612	0.4433	0 0151	1 6369	0 0270	0.0207	0.5	0.5
64	640	0 0088	0.0273	1 8885	0.4585	0.0152	1 6639	0 0270	0 0208	0.5	0.5
65	650	0 0072	0.0223	1 9108	0 4711	0 0126	1 6860	0 0221	0 0171	0 4	0.4
66	660	0.0072	0.0223	1 9332	0 4838	0.0127	1.7081	0.0221	0 0171	0 4	0 4
67	670	0 0072	0 0223	1.9555	0 4966	0.0128	1.7302	0.0221	0 0172	0 4	0 4
68	680	0 0072	0.0223	1.9778	0.5095	0.0129	1 7524	0.0221	0.0172	0 4	0.4
69	690	0 0072	0.0223	2.0001	0.5226	0 0130	1 7745	0.0221	0.0173	0.4	0 4
70	700	0 0072	0.0223	2 0224	0 5357	0 0131	1.7966	0 0221	0.0174	0.4	0.4
71	710	0.0072	0 0223	2 0448	0 5489	0 0132	1 8187	0 0221	0 0174	0 4	0.4

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	(6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	(8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
72	720	0 0072	0.0223	2 0671	0 5622	0 0133	1.8409	0 0221	0 0175	0.4	0.4
73	730	0.0072	0.0223	2 0894	0.5756	0.0134	1.8630	0 0221	0 0175	0.4	0 4
74	740	0.0072	0.0223	2 1117	0.5891	0.0135	1.8851	0 0221	0.0176	0.4	0.4
75	750	0.0072	0.0223	2 1340	0.6027	0.0136	1 9073	0 0221	0 0176	0.4	0 4
76	760	0.0072	0.0223	2 1564	0.6163	0.0137	1 9294	0 0221	0.0177	0.4	0 4
77	770	0 0057	0 0177	2 1740	0 6272	0.0109	1 9470	0 0175	0.0140	0.3	0.4
78	780	0.0057	0.0177	2 1917	0.6382	0.0109	1.9645	0 0175	0.0141	0 3	0.3
79	790	0 0057	0.0177	2 2094	0.6492	0.0110	1.9820	0.0175	0.0141	0 3	0.3
80	800	0.0057	0 0177	2.2270	0.6602	0.0111	1 9996	0 0175	0.0141	0 3	0.3
81	810	0 0057	0.0177	2.2447	0 6713	0 0111	2.0171	0 0175	0.0141	0 3	0.3
82	820	0 0057	0.0177	2.2624	0 6825	0 0112	2.0347	0.0175	0.0142	0 3	0.3
83	830	0 0057	0.0177	2.2801	0 6937	0.0112	2 0522	0.0175	0 0142	0 3	0.3
84	840	0 0057	0.0177	2.2977	0.7050	0.0113	2 0697	0.0175	0 0142	0 3	0.3
85	850	0 0057	0.0177	2 3154	0 7163	0.0113	2.0873	0.0175	0 0143	0 3	0 3
86	860	0 0057	0.0177	2.3331	0 7277	0 0114	2 1048	0.0176	0 0143	0 3	0.3
87	870	0 0057	0.0177	2 3507	0 7391	0.0114	2.1224	0.0176	0 0143	0 3	0.3
88	880	0.0057	0.0177	2 3684	0 7505	0.0115	2 1400	0 0176	0.0143	0 3	0.3
89	890	0.0050	0 0155	2.3839	0.7606	0.0101	2 1554	0 0154	0 0126	0.3	0 3
90	900	0.0050	0 0155	2.3994	0.7708	0.0101	2.1708	0.0154	0 0126	0.3	0 3
91	910	0.0050	0 0155	2 4149	0.7809	0.0102	2 1862	0 0154	0 0126	0.3	0 3
92	920	0.0050	0 0155	2 4304	0.7912	0 0102	2 2016	0.0154	0.0127	0.3	0.3
93	930	0.0050	0 0155	2 4459	0.8014	0 0102	2 2170	0 0154	0 0127	0.3	0 3
94	940	0 0050	0.0155	2 4614	0.8117	0.0103	2 2324	0.0154	0.0127	0 3	0 3
95	950	0 0050	0.0155	2.4769	0.8220	0 0103	2 2478	0.0154	0.0127	0.3	0.3
96	960	0.0050	0.0155	2.4924	0 8323	0 0103	2.2632	0.0154	0.0127	0.3	0.3
97	970	0.0050	0.0155	2.5079	0 8427	0 0104	2 2786	0 0154	0.0128	0.3	0.3
98	980	0.0050	0.0155	2.5234	0.8531	0 0104	2 2940	0.0154	0.0128	0.3	0.3
99	990	0.0050	0 0155	2 5389	0.8636	0.0105	2 3094	0.0154	0 0128	0.3	0.3
100	1000	0 0050	0 0155	2 5544	0.8741	0.0105	2 3248	0 0154	0.0128	0.3	0 3
101	1010	0.0040	0 0124	2 5668	0.8825	0.0084	2 3372	0 0123	0.0103	0.2	0 3
102	1020	0 0040	0.0124	2.5792	0.8909	0.0084	2 3495	0 0123	0.0103	0 2	0 3
103	1030	0 0040	0 0124	2.5916	0.8994	0 0085	2.3618	0 0123	0.0103	0 2	0.2
104	1040	0.0040	0 0124	2 6040	0 9078	0 0085	2 3742	0 0123	0.0103	0.2	0 2
105	1050	0 0040	0 0124	2.6164	0 9163	0.0085	2 3865	0 0123	0.0103	0.2	0 2
106	1060	0 0040	0.0124	2.6288	0.9249	0.0085	2 3988	0 0123	0.0103	0 2	0.2
107	1070	0.0040	0.0124	2 6412	0 9334	0 0085	2.4112	0 0123	0 0103	0 2	0.2
108	1080	0.0040	0.0124	2.6536	0.9419	0 0086	2 4235	0.0123	0.0103	0 2	0 2
109	1090	0 0040	0.0124	2.6660	0 9505	0 0086	2 4358	0.0123	0 0103	0 2	0 2
110	1100	0.0040	0.0124	2 6784	0.9591	0 0086	2 4482	0 0123	0 0104	0 2	0 2
111	1110	0.0040	0.0124	2 6908	0 9677	0 0086	2.4605	0.0123	0 0104	0.2	0 2
112	1120	0.0040	0.0124	2 7032	0 9764	0 0086	2 4728	0.0123	0.0104	0 2	0 2
113	1130	0 0040	0 0124	2 7156	0.9850	0.0087	2.4852	0 0123	0 0104	0.2	0.2
114	1140	0 0040	0.0124	2 7280	0.9937	0.0087	2.4975	0.0123	0 0104	0 2	0.2
115	1150	0 0040	0 0124	2.7404	1.0024	0.0087	2.5098	0 0123	0.0104	0.2	0.2
116	1160	0 0040	0.0124	2.7528	1.0111	0.0087	2 5222	0.0123	0 0104	0.2	0.2
117	1170	0 0040	0.0124	2.7652	1 0198	0.0087	2.5345	0 0123	0.0104	0.2	0.2
118	1180	0.0040	0.0124	2.7776	1 0286	0.0087	2.5469	0 0123	0.0104	0 2	0.2
119	1190	0.0040	0 0124	2.7900	1 0373	0 0088	2 5592	0 0123	0.0105	0 2	0.2
120	1200	0.0040	0 0124	2.8024	1 0461	0.0088	2.5715	0.0123	0.0105	0 2	0.2
121	1210	0 0040	0.0124	2 8148	1 0549	0.0088	2 5839	0.0123	0 0105	0 2	0.2
122	1220	0 0040	0 0124	2 8272	1.0637	0.0088	2 5962	0.0123	0.0105	0 2	0.2
123	1230	0.0040	0 0124	2.8396	1.0726	0.0088	2.6086	0 0123	0 0105	0 2	0.2
124	1240	0.0040	0.0124	2.8520	1.0814	0.0089	2 6209	0 0123	0 0105	0.2	0.2
125	1250	0.0040	0.0124	2.8644	1 0903	0.0089	2.6333	0 0123	0 0105	0.2	0.2
126	1260	0 0040	0.0124	2.8768	1.0992	0 0089	2.6456	0 0123	0 0105	0.2	0 2
127	1270	0.0040	0.0124	2 8892	1.1081	0.0089	2 6579	0.0123	0 0105	0.2	0 2
128	1280	0 0040	0 0124	2.9016	1.1170	0 0089	2 6703	0 0123	0.0105	0.2	0.2
129	1290	0 0040	0 0124	2 9140	1.1260	0.0089	2 6826	0.0123	0 0105	0.2	0 2
130	1300	0 0040	0 0124	2.9264	1 1349	0 0090	2.6950	0 0123	0.0106	0 2	0 2
131	1310	0.0040	0 0124	2.9388	1 1439	0.0090	2 7073	0.0123	0 0106	0 2	0 2
132	1320	0.0040	0 0124	2 9512	1.1529	0.0090	2 7197	0.0123	0.0106	0.2	0.2
133	1330	0.0040	0.0124	2 9636	1 1619	0.0090	2 7320	0 0123	0.0106	0.2	0.2
134	1340	0.0040	0.0124	2 9760	1.1709	0.0090	2 7444	0 0123	0 0106	0.2	0.2
135	1350	0 0040	0.0124	2.9884	1 1800	0 0090	2.7567	0 0123	0.0106	0.2	0.2
136	1360	0 0040	0.0124	3 0008	1.1891	0 0091	2.7691	0 0123	0 0106	0 2	0 2
137	1370	0.0040	0.0124	3.0132	1 1981	0.0091	2.7814	0 0123	0.0106	0.2	0.2
138	1380	0.0040	0 0124	3.0256	1.2072	0.0091	2.7938	0.0123	0.0106	0.2	0.2
139	1390	0 0040	0 0124	3.0380	1 2163	0.0091	2.8061	0.0123	0 0106	0 2	0.2
140	1400	0 0040	0 0124	3 0504	1 2254	0.0091	2.8185	0.0123	0 0106	0.2	0 2
141	1410	0 0040	0 0124	3.0628	1 2346	0.0091	2.8308	0.0124	0 0107	0 2	0 2
142	1420	0.0040	0 0124	3 0752	1.2437	0 0092	2.8432	0 0124	0 0107	0 2	0 2
143	1430	0.0040	0.0124	3 0876	1.2529	0.0092	2.8555	0 0124	0 0107	0 2	0.2
144	1440	0.0040	0.0124	3.1000	1.2621	0.0092	2.8679	0 0124	0 0107	0 2	0.2
	Total	1.0000	3.1000						Hydrograph Volume (Cubic Feet)		26656

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *10-yr Pre*

Given:

Area =	3.67	acres
Pt =	3.45	inches
dt =	10	min.
Tc =	23	min.
w =	0.1786	routing constant

Pervious Area

Area =	3.27	acres
CN =	79	
S =	2.66	
0 2S =	0.53	

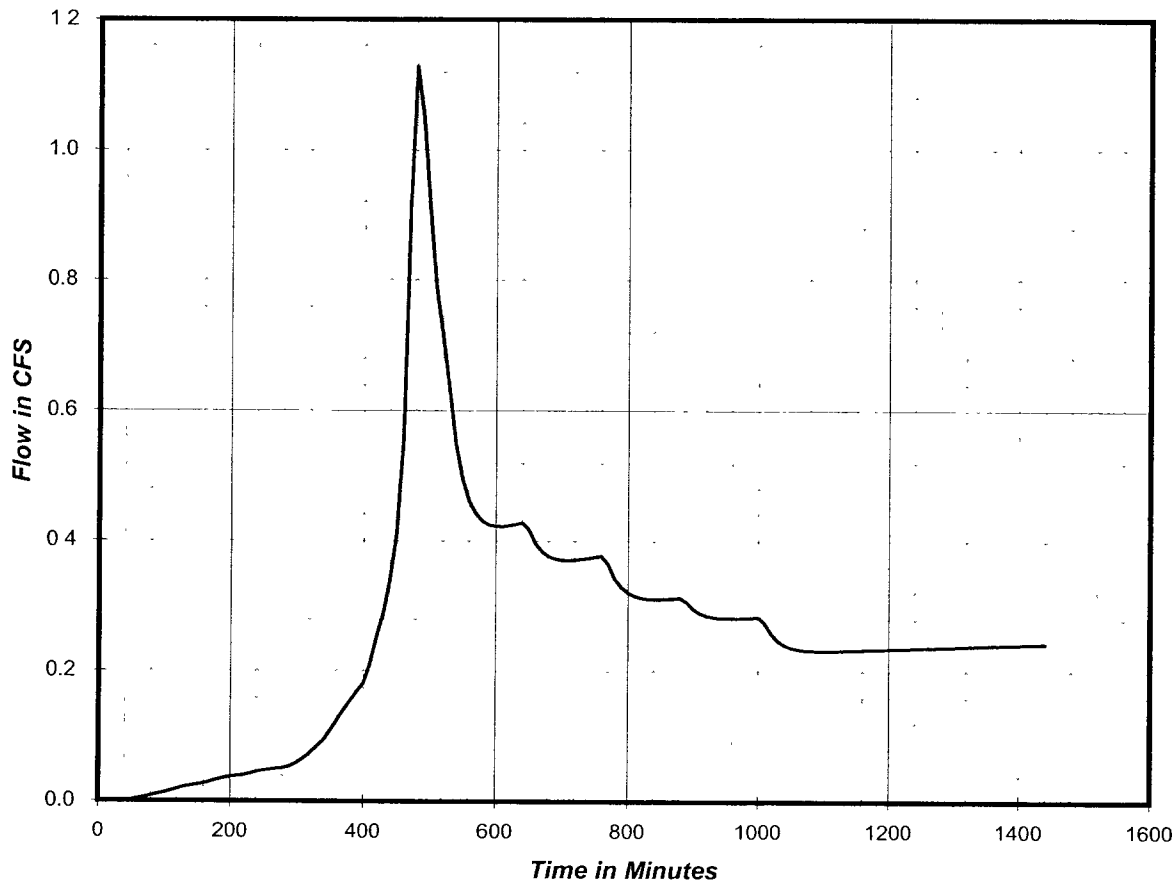
Impervious Area

Area =	0.4	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff:	1.1	cfs
Total Vol. :	22463	cf

Peak Runoff Hydrograph



File SBUH-24-10yr-pre.XLS
9/30/2004

CES|NW, Inc.

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	Pervious Area (6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	Impervious Area (8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
1	10	0.0040	0.0138	0.0138	0.0000	0.0000	0 0000	0.0000	0.0000	0.0	0.0
2	20	0.0040	0 0138	0.0276	0.0000	0.0000	0.0000	0.0000	0.0000	0 0	0 0
3	30	0.0040	0.0138	0 0414	0.0000	0 0000	0 0000	0.0000	0 0000	0 0	0 0
4	40	0.0040	0.0138	0 0552	0.0000	0 0000	0.0009	0 0009	0 0001	0 0	0 0
5	50	0 0040	0.0138	0.0690	0 0000	0 0000	0.0034	0 0025	0 0003	0.0	0 0
6	60	0.0040	0.0138	0.0828	0 0000	0 0000	0.0072	0 0037	0 0004	0 0	0 0
7	70	0.0040	0.0138	0.0966	0.0000	0 0000	0.0120	0 0048	0 0005	0.0	0 0
8	80	0.0040	0 0138	0 1104	0.0000	0 0000	0 0177	0.0057	0.0006	0 0	0.0
9	90	0 0040	0 0138	0.1242	0.0000	0.0000	0 0242	0.0065	0.0007	0.0	0.0
10	100	0 0040	0 0138	0.1380	0.0000	0.0000	0 0313	0.0072	0.0008	0.0	0.0
11	110	0.0050	0.0173	0.1553	0.0000	0.0000	0.0411	0.0098	0.0011	0.0	0 0
12	120	0 0050	0.0173	0.1725	0.0000	0 0000	0 0516	0 0105	0.0011	0.0	0.0
13	130	0.0050	0.0173	0.1898	0.0000	0 0000	0.0628	0.0112	0 0012	0 0	0.0
14	140	0.0050	0.0173	0.2070	0.0000	0 0000	0 0746	0.0118	0.0013	0 0	0.0
15	150	0.0050	0.0173	0.2243	0.0000	0 0000	0.0868	0 0122	0 0013	0 0	0.0
16	160	0.0050	0.0173	0 2415	0.0000	0 0000	0 0995	0.0127	0.0014	0 0	0.0
17	170	0.0060	0.0207	0 2622	0.0000	0 0000	0 1152	0.0157	0.0017	0.0	0 0
18	180	0 0060	0.0207	0.2829	0 0000	0.0000	0.1314	0.0162	0 0018	0.0	0 0
19	190	0 0060	0.0207	0.3036	0.0000	0.0000	0.1479	0.0166	0.0018	0.0	0 0
20	200	0.0060	0 0207	0.3243	0 0000	0.0000	0.1648	0 0169	0 0018	0.0	0 0
21	210	0.0060	0 0207	0.3450	0.0000	0 0000	0 1820	0.0172	0.0019	0.0	0 0
22	220	0.0060	0 0207	0.3657	0.0000	0 0000	0.1995	0 0175	0 0019	0.0	0 0
23	230	0.0070	0.0242	0.3899	0.0000	0.0000	0 2203	0.0207	0.0023	0 1	0.0
24	240	0 0070	0.0242	0 4140	0.0000	0.0000	0 2413	0 0210	0.0023	0 1	0.0
25	250	0.0070	0.0242	0.4382	0 0000	0 0000	0 2625	0.0213	0.0023	0 1	0 0
26	260	0.0070	0.0242	0.4623	0 0000	0 0000	0.2840	0.0215	0.0023	0 1	0 0
27	270	0.0070	0 0242	0 4865	0 0000	0.0000	0.3057	0.0217	0 0024	0.1	0 1
28	280	0.0070	0 0242	0 5106	0.0000	0 0000	0.3275	0 0219	0 0024	0.1	0.1
29	290	0.0082	0.0283	0 5389	0.0000	0.0000	0.3533	0 0258	0 0028	0.1	0.1
30	300	0.0082	0 0283	0.5672	0.0005	0.0004	0 3793	0 0260	0 0032	0.1	0.1
31	310	0 0082	0.0283	0.5955	0.0015	0.0010	0 4055	0 0262	0 0038	0 1	0 1
32	320	0.0082	0.0283	0.6238	0.0031	0.0016	0.4318	0 0263	0.0043	0.1	0 1
33	330	0.0082	0.0283	0.6521	0.0052	0.0021	0.4582	0.0265	0.0048	0.1	0.1
34	340	0.0082	0.0283	0 6803	0.0079	0 0027	0 4848	0 0266	0.0053	0.1	0.1
35	350	0.0095	0.0328	0.7131	0.0116	0.0037	0 5157	0.0309	0.0067	0.1	0.1
36	360	0.0095	0.0328	0 7459	0.0160	0 0044	0.5468	0.0311	0 0073	0.2	0.1
37	370	0 0095	0.0328	0 7787	0.0210	0 0050	0 5780	0.0312	0.0079	0 2	0 1
38	380	0 0095	0.0328	0 8114	0.0266	0 0056	0.6093	0.0313	0.0084	0.2	0.2
39	390	0.0095	0.0328	0 8442	0 0329	0.0062	0 6407	0.0314	0.0090	0 2	0 2
40	400	0.0095	0.0328	0.8770	0.0397	0.0068	0.6721	0.0315	0.0095	0 2	0 2
41	410	0.0134	0 0462	0.9232	0.0503	0.0106	0.7167	0.0445	0 0143	0 3	0 2
42	420	0.0134	0.0462	0 9695	0.0619	0 0116	0.7613	0 0447	0.0152	0.3	0 3
43	430	0.0134	0.0462	1.0157	0.0746	0.0127	0 8061	0 0448	0.0162	0 4	0 3
44	440	0.0180	0 0621	1.0778	0.0931	0.0185	0 8664	0 0603	0 0231	0.5	0.3
45	450	0 0180	0 0621	1 1399	0.1133	0 0202	0 9269	0 0605	0.0246	0 5	0 4
46	460	0.0340	0.1173	1 2572	0.1556	0.0423	1.0416	0.1147	0.0502	1 1	0 6
47	470	0 0540	0.1863	1.4435	0.2329	0 0773	1.2245	0 1829	0 0888	2.0	0 9
48	480	0.0270	0.0932	1.5366	0.2757	0 0428	1.3162	0 0917	0 0482	1.1	1.1
49	490	0.0180	0.0621	1 5987	0.3057	0.0299	1 3775	0 0612	0 0334	0 7	1.0
50	500	0 0134	0.0462	1 6450	0.3286	0.0230	1.4231	0 0456	0 0254	0 6	0.9
51	510	0 0134	0.0462	1 6912	0.3522	0.0235	1 4688	0 0457	0.0260	0.6	0.8
52	520	0.0134	0.0462	1 7374	0.3763	0 0241	1.5144	0.0457	0.0264	0.6	0.7
53	530	0.0088	0 0304	1 7678	0.3924	0 0161	1 5445	0.0300	0 0176	0.4	0.6
54	540	0.0088	0.0304	1.7981	0 4087	0.0163	1 5745	0 0300	0.0178	0 4	0 5
55	550	0 0088	0 0304	1 8285	0 4252	0.0165	1 6045	0 0300	0.0180	0 4	0.5
56	560	0.0088	0.0304	1 8589	0.4420	0.0168	1 6346	0.0300	0.0182	0 4	0 5
57	570	0 0088	0.0304	1 8892	0.4589	0 0170	1 6646	0.0301	0.0184	0 4	0.4
58	580	0 0088	0.0304	1.9196	0.4761	0.0172	1.6947	0.0301	0.0186	0 4	0 4
59	590	0 0088	0 0304	1 9499	0.4934	0.0174	1 7248	0.0301	0.0187	0.4	0 4
60	600	0.0088	0.0304	1.9803	0 5110	0.0175	1.7548	0 0301	0 0189	0.4	0.4
61	610	0.0088	0.0304	2 0107	0.5287	0.0177	1 7849	0 0301	0 0191	0.4	0 4
62	620	0 0088	0.0304	2 0410	0.5466	0 0179	1 8150	0 0301	0.0192	0 4	0.4
63	630	0 0088	0.0304	2.0714	0.5647	0 0181	1 8451	0 0301	0.0194	0 4	0.4
64	640	0.0088	0.0304	2 1017	0.5830	0.0183	1.8752	0 0301	0.0196	0 4	0 4
65	650	0.0072	0 0248	2.1266	0.5981	0.0151	1.8999	0.0246	0 0161	0.4	0.4
66	660	0.0072	0.0248	2.1514	0.6133	0 0152	1 9245	0 0246	0 0162	0.4	0.4
67	670	0 0072	0.0248	2 1763	0 6286	0 0153	1.9492	0 0246	0.0163	0.4	0.4
68	680	0 0072	0 0248	2.2011	0.6440	0 0154	1.9738	0 0247	0.0164	0 4	0.4
69	690	0 0072	0 0248	2.2259	0.6595	0 0155	1.9985	0 0247	0.0165	0 4	0 4
70	700	0.0072	0 0248	2 2508	0.6752	0.0156	2.0231	0 0247	0.0166	0.4	0 4
71	710	0.0072	0.0248	2 2756	0.6909	0 0157	2 0478	0.0247	0 0167	0.4	0.4

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	(6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	(8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
72	720	0.0072	0.0248	2.3005	0.7067	0.0158	2 0725	0 0247	0 0168	0.4	0 4
73	730	0 0072	0.0248	2.3253	0.7227	0.0159	2.0971	0 0247	0.0169	0.4	0 4
74	740	0.0072	0.0248	2.3501	0.7387	0.0160	2 1218	0 0247	0 0170	0.4	0.4
75	750	0.0072	0.0248	2.3750	0.7548	0.0161	2 1465	0.0247	0 0171	0 4	0 4
76	760	0.0072	0.0248	2 3998	0.7710	0.0162	2 1712	0.0247	0 0171	0 4	0.4
77	770	0.0057	0.0197	2 4195	0.7840	0.0129	2 1907	0.0195	0.0136	0.3	0.4
78	780	0.0057	0.0197	2 4392	0.7969	0 0130	2 2103	0.0195	0 0137	0 3	0.3
79	790	0.0057	0.0197	2 4588	0.8100	0 0130	2 2298	0.0195	0 0137	0.3	0.3
80	800	0 0057	0 0197	2 4785	0.8230	0.0131	2 2493	0 0195	0.0138	0.3	0 3
81	810	0 0057	0 0197	2.4981	0.8362	0.0131	2.2689	0 0195	0.0138	0 3	0 3
82	820	0.0057	0 0197	2.5178	0.8494	0.0132	2.2884	0 0196	0.0139	0.3	0 3
83	830	0 0057	0.0197	2.5375	0.8626	0.0133	2.3080	0 0196	0 0139	0 3	0 3
84	840	0.0057	0 0197	2.5571	0.8759	0.0133	2.3276	0 0196	0.0140	0 3	0 3
85	850	0.0057	0.0197	2.5768	0 8893	0 0134	2 3471	0 0196	0 0140	0 3	0.3
86	860	0.0057	0.0197	2.5965	0 9027	0.0134	2 3667	0 0196	0 0141	0 3	0 3
87	870	0.0057	0.0197	2.6161	0.9162	0 0135	2.3862	0.0196	0 0141	0 3	0.3
88	880	0 0057	0.0197	2 6358	0 9297	0.0135	2 4058	0.0196	0 0142	0 3	0.3
89	890	0.0050	0.0173	2 6531	0.9416	0 0119	2 4229	0.0172	0 0125	0 3	0.3
90	900	0.0050	0.0173	2 6703	0.9535	0.0119	2.4401	0.0172	0 0125	0 3	0.3
91	910	0 0050	0.0173	2.6876	0.9655	0 0120	2.4573	0.0172	0.0125	0 3	0 3
92	920	0.0050	0.0173	2.7048	0.9775	0 0120	2.4744	0.0172	0.0126	0 3	0 3
93	930	0.0050	0.0173	2.7221	0.9895	0.0120	2.4916	0.0172	0.0126	0.3	0 3
94	940	0.0050	0.0173	2.7393	1.0016	0.0121	2.5088	0.0172	0.0126	0.3	0 3
95	950	0.0050	0.0173	2.7566	1.0137	0.0121	2.5259	0.0172	0.0127	0.3	0 3
96	960	0.0050	0 0173	2.7738	1.0259	0.0122	2.5431	0 0172	0.0127	0.3	0 3
97	970	0.0050	0 0173	2.7911	1.0381	0.0122	2 5602	0.0172	0 0127	0.3	0.3
98	980	0.0050	0 0173	2.8083	1 0503	0.0122	2 5774	0.0172	0 0128	0 3	0.3
99	990	0.0050	0 0173	2.8256	1 0626	0 0123	2 5946	0.0172	0 0128	0 3	0 3
100	1000	0 0050	0 0173	2.8428	1.0749	0.0123	2 6118	0.0172	0.0128	0 3	0.3
101	1010	0 0040	0 0138	2 8566	1.0847	0.0099	2 6255	0.0137	0.0103	0.2	0 3
102	1020	0.0040	0 0138	2.8704	1.0946	0.0099	2 6392	0.0137	0.0103	0 2	0 3
103	1030	0.0040	0.0138	2.8842	1.1045	0 0099	2.6530	0 0137	0.0103	0 2	0 2
104	1040	0.0040	0.0138	2.8980	1.1144	0.0099	2 6667	0 0137	0.0103	0 2	0 2
105	1050	0 0040	0.0138	2.9118	1.1244	0.0099	2.6804	0 0137	0.0104	0.2	0.2
106	1060	0 0040	0.0138	2.9256	1.1344	0.0100	2.6942	0.0137	0 0104	0.2	0 2
107	1070	0 0040	0 0138	2.9394	1.1444	0.0100	2.7079	0 0137	0 0104	0.2	0.2
108	1080	0 0040	0 0138	2.9532	1.1544	0.0100	2 7217	0 0137	0 0104	0.2	0.2
109	1090	0.0040	0 0138	2 9670	1.1644	0.0100	2.7354	0 0137	0 0104	0.2	0.2
110	1100	0.0040	0.0138	2 9808	1.1744	0 0101	2 7491	0.0137	0 0105	0.2	0 2
111	1110	0.0040	0.0138	2.9946	1.1845	0 0101	2 7629	0.0137	0.0105	0.2	0 2
112	1120	0.0040	0.0138	3.0084	1.1946	0.0101	2 7766	0.0137	0 0105	0.2	0 2
113	1130	0 0040	0.0138	3.0222	1 2047	0.0101	2 7904	0.0137	0 0105	0.2	0 2
114	1140	0 0040	0.0138	3.0360	1 2149	0.0101	2.8041	0.0137	0.0105	0.2	0 2
115	1150	0.0040	0.0138	3.0498	1 2250	0.0102	2.8179	0 0137	0.0105	0 2	0 2
116	1160	0 0040	0 0138	3 0636	1 2352	0.0102	2.8316	0 0137	0 0106	0 2	0.2
117	1170	0.0040	0.0138	3 0774	1 2454	0.0102	2 8454	0 0137	0.0106	0.2	0.2
118	1180	0.0040	0.0138	3 0912	1 2556	0 0102	2 8591	0.0137	0 0106	0 2	0 2
119	1190	0.0040	0.0138	3.1050	1.2658	0 0102	2 8728	0 0137	0.0106	0 2	0.2
120	1200	0 0040	0.0138	3.1188	1.2760	0 0102	2 8866	0.0137	0 0106	0 2	0.2
121	1210	0 0040	0.0138	3.1326	1 2863	0.0103	2.9003	0.0137	0 0106	0.2	0 2
122	1220	0.0040	0 0138	3.1464	1 2966	0.0103	2.9141	0.0137	0.0107	0.2	0 2
123	1230	0.0040	0.0138	3.1602	1 3069	0.0103	2 9278	0 0137	0.0107	0.2	0 2
124	1240	0 0040	0 0138	3.1740	1.3172	0.0103	2.9416	0 0137	0.0107	0 2	0 2
125	1250	0.0040	0.0138	3.1878	1.3276	0 0103	2 9553	0.0137	0.0107	0 2	0.2
126	1260	0.0040	0.0138	3.2016	1.3379	0 0104	2 9691	0.0137	0 0107	0 2	0.2
127	1270	0.0040	0 0138	3.2154	1 3483	0 0104	2 9828	0 0137	0.0107	0 2	0.2
128	1280	0.0040	0 0138	3 2292	1.3587	0.0104	2 9966	0 0137	0.0108	0 2	0 2
129	1290	0.0040	0.0138	3 2430	1.3691	0.0104	3.0103	0 0138	0 0108	0 2	0 2
130	1300	0 0040	0.0138	3.2568	1.3795	0.0104	3 0241	0.0138	0.0108	0 2	0.2
131	1310	0 0040	0.0138	3.2706	1.3900	0.0104	3 0378	0 0138	0 0108	0.2	0.2
132	1320	0 0040	0.0138	3.2844	1.4004	0 0105	3 0516	0 0138	0 0108	0.2	0.2
133	1330	0.0040	0.0138	3.2982	1 4109	0.0105	3 0653	0.0138	0 0108	0.2	0.2
134	1340	0.0040	0.0138	3.3120	1 4214	0.0105	3.0791	0.0138	0.0108	0 2	0 2
135	1350	0.0040	0.0138	3 3258	1.4319	0.0105	3.0928	0.0138	0.0109	0.2	0 2
136	1360	0 0040	0 0138	3 3396	1.4424	0.0105	3.1066	0 0138	0 0109	0 2	0.2
137	1370	0.0040	0 0138	3.3534	1.4530	0 0105	3.1203	0.0138	0.0109	0.2	0 2
138	1380	0 0040	0.0138	3.3672	1.4635	0 0106	3 1341	0 0138	0.0109	0.2	0 2
139	1390	0 0040	0.0138	3 3810	1 4741	0.0106	3.1479	0 0138	0.0109	0.2	0.2
140	1400	0.0040	0.0138	3.3948	1.4847	0 0106	3.1616	0.0138	0 0109	0.2	0 2
141	1410	0.0040	0 0138	3.4086	1.4953	0.0106	3.1754	0 0138	0 0110	0 2	0.2
142	1420	0.0040	0 0138	3.4224	1.5059	0.0106	3.1891	0.0138	0 0110	0 2	0.2
143	1430	0.0040	0.0138	3 4362	1 5166	0 0106	3.2029	0.0138	0 0110	0.2	0 2
144	1440	0 0040	0.0138	3.4500	1 5272	0 0107	3 2166	0 0138	0 0110	0 2	0 2
	Total	1 0000	3 4500						Hydrograph Volume (Cubic Feet)		22463

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *10-yr Post*

Given:

Area =	3.67	acres
Pt =	3.45	inches
dt =	10	min.
Tc =	16	min.
w =	0.2381	routing constant

Pervious Area

Area =	1.94	acres
CN =	79	
S =	2.66	
0.2S =	0.53	

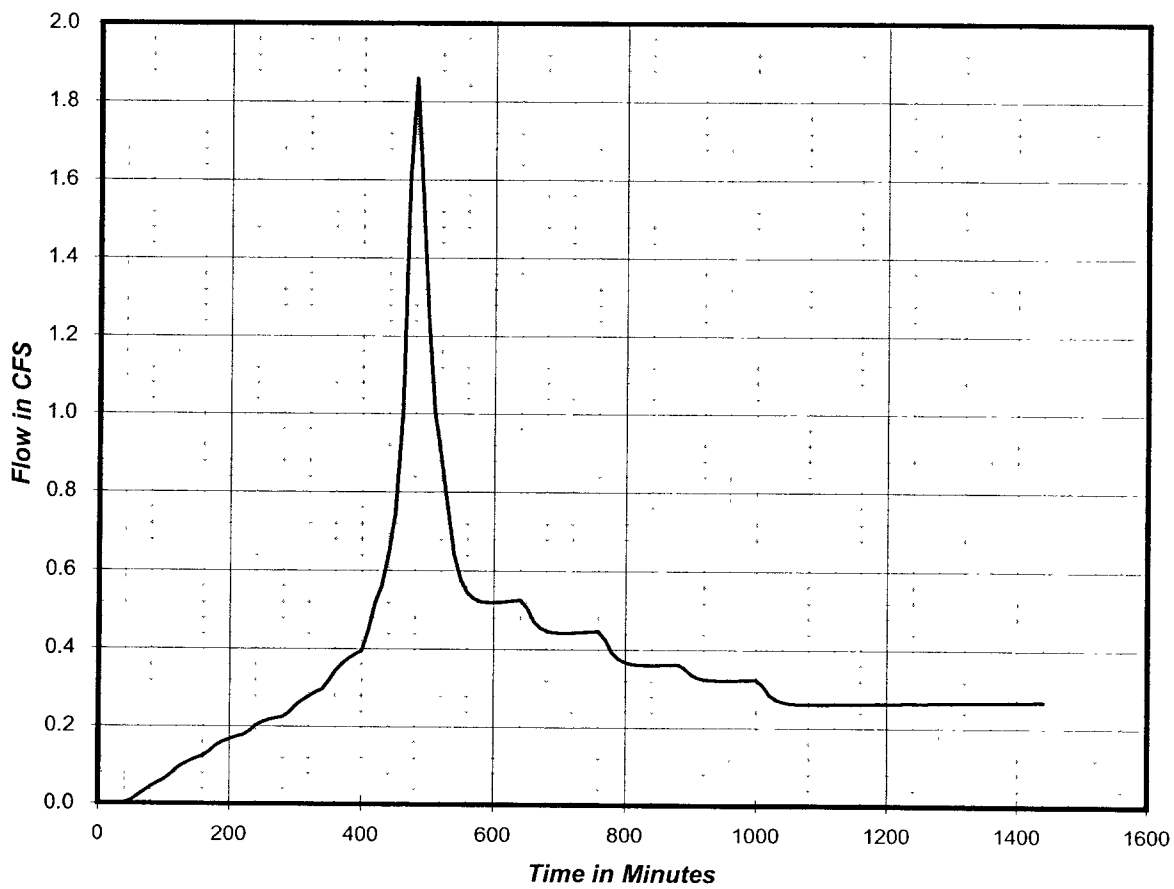
Impervious Area

Area =	1.73	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff:	1.9	cfs
Total Vol. :	30697	cf

Peak Runoff Hydrograph



File: SBUH-24-10yr-post.XLS
9/30/2004

CES|NW, Inc.

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	Pervious Area (6) Accumulated Runoff (in)	Pervious Area (7) Incremental Runoff (in)	Impervious Area (8) Accumulated Runoff (in)	Impervious Area (9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
1	10	0.0040	0 0138	0.0138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0	0 0
2	20	0.0040	0.0138	0 0276	0.0000	0 0000	0.0000	0.0000	0.0000	0.0	0.0
3	30	0.0040	0.0138	0 0414	0.0000	0.0000	0.0000	0 0000	0 0000	0.0	0.0
4	40	0.0040	0.0138	0 0552	0.0000	0.0000	0.0009	0.0009	0 0004	0 0	0.0
5	50	0.0040	0.0138	0.0690	0.0000	0 0000	0.0034	0.0025	0.0012	0 0	0 0
6	60	0 0040	0.0138	0.0828	0.0000	0.0000	0.0072	0.0037	0.0018	0 0	0 0
7	70	0.0040	0.0138	0.0966	0 0000	0 0000	0.0120	0.0048	0.0023	0 1	0 0
8	80	0.0040	0.0138	0.1104	0 0000	0 0000	0 0177	0.0057	0 0027	0.1	0.0
9	90	0.0040	0.0138	0.1242	0.0000	0 0000	0 0242	0 0065	0.0031	0.1	0.1
10	100	0.0040	0.0138	0.1380	0.0000	0.0000	0 0313	0.0072	0 0034	0 1	0.1
11	110	0.0050	0.0173	0.1553	0.0000	0.0000	0.0411	0 0098	0 0046	0 1	0.1
12	120	0.0050	0 0173	0.1725	0.0000	0.0000	0.0516	0.0105	0.0050	0.1	0.1
13	130	0.0050	0 0173	0.1898	0.0000	0.0000	0.0628	0.0112	0.0053	0.1	0.1
14	140	0.0050	0.0173	0 2070	0.0000	0 0000	0 0746	0.0118	0.0055	0.1	0.1
15	150	0 0050	0.0173	0 2243	0.0000	0.0000	0 0868	0 0122	0.0058	0 1	0 1
16	160	0.0050	0.0173	0.2415	0.0000	0.0000	0.0995	0 0127	0.0060	0 1	0.1
17	170	0 0060	0 0207	0.2622	0.0000	0.0000	0.1152	0.0157	0.0074	0 2	0.1
18	180	0.0060	0.0207	0 2829	0.0000	0 0000	0.1314	0.0162	0.0076	0.2	0.2
19	190	0.0060	0.0207	0.3036	0.0000	0 0000	0.1479	0.0166	0.0078	0.2	0.2
20	200	0.0060	0 0207	0 3243	0.0000	0.0000	0.1648	0.0169	0 0080	0.2	0.2
21	210	0.0060	0 0207	0.3450	0.0000	0.0000	0.1820	0.0172	0.0081	0 2	0 2
22	220	0.0060	0.0207	0.3657	0.0000	0.0000	0.1995	0.0175	0.0082	0 2	0 2
23	230	0.0070	0 0242	0.3899	0.0000	0.0000	0.2203	0.0207	0.0098	0 2	0 2
24	240	0.0070	0.0242	0.4140	0.0000	0.0000	0.2413	0.0210	0.0099	0 2	0.2
25	250	0.0070	0.0242	0.4382	0.0000	0 0000	0.2625	0 0213	0.0100	0.2	0.2
26	260	0 0070	0.0242	0.4623	0.0000	0.0000	0 2840	0 0215	0 0101	0.2	0.2
27	270	0.0070	0 0242	0.4865	0.0000	0.0000	0.3057	0 0217	0 0102	0.2	0 2
28	280	0.0070	0.0242	0 5106	0.0000	0.0000	0.3275	0.0219	0 0103	0.2	0.2
29	290	0.0082	0.0283	0.5389	0.0000	0.0000	0.3533	0.0258	0.0122	0.3	0.2
30	300	0 0082	0.0283	0 5672	0.0005	0.0004	0.3793	0.0260	0.0125	0.3	0.3
31	310	0 0082	0 0283	0.5955	0.0015	0.0010	0.4055	0.0262	0.0129	0.3	0.3
32	320	0.0082	0.0283	0.6238	0.0031	0.0016	0 4318	0 0263	0 0132	0 3	0 3
33	330	0.0082	0.0283	0.6521	0 0052	0.0021	0.4582	0 0265	0 0136	0 3	0 3
34	340	0.0082	0.0283	0 6803	0.0079	0 0027	0.4848	0 0266	0.0139	0 3	0 3
35	350	0 0095	0 0328	0 7131	0.0116	0 0037	0.5157	0.0309	0.0165	0 4	0.3
36	360	0.0095	0.0328	0.7459	0.0160	0.0044	0.5468	0.0311	0.0170	0.4	0.3
37	370	0 0095	0 0328	0.7787	0.0210	0.0050	0.5780	0.0312	0 0174	0 4	0 4
38	380	0.0095	0.0328	0.8114	0.0266	0.0056	0 6093	0.0313	0 0177	0 4	0 4
39	390	0.0095	0.0328	0.8442	0 0329	0.0062	0.6407	0.0314	0.0181	0 4	0 4
40	400	0 0095	0.0328	0.8770	0 0397	0 0068	0.6721	0.0315	0 0184	0 4	0 4
41	410	0 0134	0 0462	0.9232	0.0503	0 0106	0.7167	0.0445	0.0266	0 6	0.4
42	420	0.0134	0 0462	0.9695	0.0619	0.0116	0.7613	0.0447	0.0272	0.6	0.5
43	430	0 0134	0 0462	1 0157	0.0746	0.0127	0 8061	0 0448	0.0278	0 6	0 6
44	440	0.0180	0.0621	1.0778	0.0931	0.0185	0 8664	0 0603	0 0382	0 8	0.6
45	450	0.0180	0.0621	1.1399	0.1133	0 0202	0.9269	0.0605	0 0392	0.9	0.7
46	460	0.0340	0.1173	1.2572	0.1556	0.0423	1.0416	0.1147	0.0764	1.7	1.0
47	470	0.0540	0.1863	1 4435	0.2329	0.0773	1.2245	0.1829	0.1271	2 8	1 6
48	480	0 0270	0.0932	1.5366	0.2757	0 0428	1.3162	0 0917	0.0659	1 5	1.9
49	490	0.0180	0 0621	1.5987	0 3057	0 0299	1.3775	0.0612	0.0447	1.0	1 6
50	500	0 0134	0 0462	1.6450	0.3286	0.0230	1.4231	0.0456	0.0337	0.7	1.2
51	510	0.0134	0.0462	1.6912	0.3522	0 0235	1.4688	0.0457	0 0340	0.8	1.0
52	520	0 0134	0.0462	1.7374	0.3763	0 0241	1.5144	0.0457	0.0343	0 8	0 9
53	530	0.0088	0.0304	1.7678	0 3924	0.0161	1.5445	0.0300	0 0227	0 5	0 8
54	540	0.0088	0.0304	1.7981	0.4087	0 0163	1.5745	0.0300	0.0228	0 5	0.6
55	550	0.0088	0.0304	1 8285	0.4252	0 0165	1.6045	0.0300	0.0229	0 5	0.6
56	560	0 0088	0.0304	1 8589	0.4420	0.0168	1.6346	0.0300	0.0230	0.5	0.5
57	570	0.0088	0 0304	1.8892	0.4589	0.0170	1 6646	0 0301	0 0231	0.5	0.5
58	580	0.0088	0 0304	1.9196	0.4761	0 0172	1.6947	0 0301	0.0232	0.5	0.5
59	590	0.0088	0.0304	1 9499	0.4934	0.0174	1.7248	0 0301	0 0233	0.5	0 5
60	600	0 0088	0.0304	1 9803	0.5110	0.0175	1.7548	0.0301	0.0235	0 5	0 5
61	610	0.0088	0 0304	2.0107	0.5287	0 0177	1 7849	0.0301	0.0236	0.5	0 5
62	620	0.0088	0.0304	2.0410	0.5466	0 0179	1.8150	0 0301	0.0237	0 5	0 5
63	630	0.0088	0.0304	2.0714	0.5647	0.0181	1.8451	0 0301	0.0238	0 5	0.5
64	640	0.0088	0 0304	2.1017	0.5830	0.0183	1.8752	0.0301	0.0239	0 5	0.5
65	650	0.0072	0 0248	2.1266	0.5981	0 0151	1.8999	0.0246	0.0196	0.4	0 5
66	660	0 0072	0.0248	2 1514	0.6133	0.0152	1.9245	0.0246	0.0196	0 4	0.5
67	670	0.0072	0.0248	2 1763	0.6286	0.0153	1.9492	0 0246	0 0197	0 4	0 5
68	680	0.0072	0 0248	2.2011	0.6440	0.0154	1 9738	0.0247	0 0198	0 4	0 4
69	690	0 0072	0 0248	2.2259	0.6595	0 0155	1 9985	0.0247	0.0198	0 4	0.4
70	700	0.0072	0 0248	2 2508	0.6752	0.0156	2.0231	0.0247	0.0199	0.4	0.4
71	710	0.0072	0 0248	2.2756	0.6909	0.0157	2.0478	0 0247	0 0199	0.4	0.4

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	(6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	(8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
72	720	0.0072	0.0248	2.3005	0 7067	0.0158	2.0725	0.0247	0.0200	0.4	0.4
73	730	0.0072	0 0248	2.3253	0.7227	0 0159	2.0971	0.0247	0.0201	0.4	0 4
74	740	0.0072	0.0248	2.3501	0.7387	0 0160	2.1218	0 0247	0.0201	0.4	0.4
75	750	0.0072	0 0248	2.3750	0 7548	0.0161	2.1465	0.0247	0.0202	0 4	0 4
76	760	0 0072	0.0248	2.3998	0.7710	0.0162	2 1712	0.0247	0 0202	0 4	0 4
77	770	0 0057	0 0197	2.4195	0.7840	0.0129	2.1907	0.0195	0 0160	0 4	0 4
78	780	0 0057	0.0197	2.4392	0.7969	0 0130	2 2103	0.0195	0 0161	0 4	0.4
79	790	0 0057	0.0197	2 4588	0.8100	0 0130	2.2298	0.0195	0 0161	0 4	0 4
80	800	0 0057	0.0197	2 4785	0.8230	0.0131	2.2493	0.0195	0 0161	0 4	0.4
81	810	0 0057	0.0197	2 4981	0.8362	0 0131	2.2689	0 0195	0.0162	0 4	0.4
82	820	0.0057	0.0197	2.5178	0.8494	0 0132	2.2884	0 0196	0.0162	0 4	0 4
83	830	0.0057	0 0197	2.5375	0.8626	0.0133	2.3080	0 0196	0.0162	0 4	0 4
84	840	0.0057	0.0197	2.5571	0.8759	0 0133	2.3276	0 0196	0.0162	0.4	0 4
85	850	0.0057	0.0197	2.5768	0.8893	0.0134	2.3471	0.0196	0.0163	0.4	0 4
86	860	0.0057	0.0197	2.5965	0 9027	0 0134	2.3667	0 0196	0.0163	0.4	0 4
87	870	0 0057	0.0197	2 6161	0 9162	0.0135	2 3862	0.0196	0.0163	0.4	0 4
88	880	0 0057	0.0197	2 6358	0 9297	0.0135	2.4058	0.0196	0.0164	0 4	0.4
89	890	0 0050	0 0173	2 6531	0.9416	0.0119	2 4229	0.0172	0.0144	0 3	0.4
90	900	0.0050	0 0173	2.6703	0.9535	0 0119	2.4401	0 0172	0.0144	0 3	0.3
91	910	0 0050	0 0173	2.6876	0.9655	0 0120	2.4573	0.0172	0.0144	0 3	0 3
92	920	0.0050	0.0173	2.7048	0.9775	0.0120	2.4744	0 0172	0.0144	0 3	0.3
93	930	0.0050	0.0173	2.7221	0.9895	0.0120	2.4916	0 0172	0 0145	0.3	0 3
94	940	0 0050	0.0173	2.7393	1.0016	0.0121	2.5088	0.0172	0 0145	0.3	0 3
95	950	0.0050	0.0173	2.7566	1.0137	0.0121	2.5259	0 0172	0 0145	0 3	0.3
96	960	0.0050	0.0173	2.7738	1.0259	0.0122	2.5431	0.0172	0 0145	0 3	0.3
97	970	0.0050	0 0173	2.7911	1 0381	0 0122	2.5602	0 0172	0 0145	0.3	0.3
98	980	0.0050	0 0173	2.8083	1 0503	0.0122	2.5774	0.0172	0 0146	0.3	0 3
99	990	0.0050	0 0173	2.8256	1.0626	0 0123	2.5946	0.0172	0.0146	0.3	0 3
100	1000	0.0050	0.0173	2.8428	1.0749	0 0123	2.6118	0.0172	0.0146	0.3	0 3
101	1010	0 0040	0.0138	2 8566	1.0847	0.0099	2.6255	0.0137	0.0117	0.3	0 3
102	1020	0.0040	0.0138	2 8704	1.0946	0.0099	2.6392	0.0137	0.0117	0.3	0.3
103	1030	0.0040	0.0138	2 8842	1.1045	0.0099	2 6530	0.0137	0.0117	0.3	0 3
104	1040	0.0040	0 0138	2.8980	1.1144	0.0099	2.6667	0.0137	0 0117	0.3	0.3
105	1050	0.0040	0.0138	2.9118	1.1244	0.0099	2 6804	0.0137	0 0117	0 3	0 3
106	1060	0 0040	0.0138	2.9256	1.1344	0 0100	2.6942	0.0137	0 0117	0 3	0.3
107	1070	0 0040	0.0138	2.9394	1.1444	0 0100	2.7079	0.0137	0 0118	0 3	0.3
108	1080	0 0040	0.0138	2.9532	1.1544	0 0100	2.7217	0.0137	0 0118	0 3	0.3
109	1090	0.0040	0.0138	2.9670	1.1644	0 0100	2.7354	0.0137	0.0118	0 3	0 3
110	1100	0.0040	0 0138	2 9808	1.1744	0.0101	2.7491	0.0137	0 0118	0.3	0.3
111	1110	0.0040	0 0138	2 9946	1.1845	0.0101	2.7629	0 0137	0.0118	0.3	0 3
112	1120	0.0040	0 0138	3.0084	1 1946	0.0101	2.7766	0 0137	0.0118	0 3	0 3
113	1130	0.0040	0.0138	3.0222	1.2047	0.0101	2 7904	0 0137	0 0118	0 3	0 3
114	1140	0.0040	0.0138	3.0360	1.2149	0.0101	2 8041	0 0137	0.0118	0 3	0.3
115	1150	0.0040	0.0138	3.0498	1.2250	0 0102	2 8179	0.0137	0.0118	0 3	0.3
116	1160	0.0040	0.0138	3.0636	1.2352	0 0102	2.8316	0.0137	0 0119	0 3	0.3
117	1170	0.0040	0.0138	3.0774	1.2454	0.0102	2.8454	0.0137	0.0119	0 3	0.3
118	1180	0 0040	0 0138	3.0912	1 2556	0.0102	2.8591	0.0137	0.0119	0 3	0.3
119	1190	0 0040	0.0138	3.1050	1.2658	0.0102	2.8728	0.0137	0.0119	0.3	0.3
120	1200	0 0040	0.0138	3.1188	1 2760	0.0102	2.8866	0 0137	0.0119	0.3	0 3
121	1210	0.0040	0.0138	3.1326	1.2863	0 0103	2.9003	0 0137	0.0119	0.3	0 3
122	1220	0.0040	0.0138	3.1464	1.2966	0.0103	2.9141	0.0137	0.0119	0.3	0.3
123	1230	0.0040	0.0138	3.1602	1.3069	0.0103	2.9278	0.0137	0 0119	0 3	0.3
124	1240	0 0040	0.0138	3.1740	1.3172	0.0103	2.9416	0.0137	0.0119	0.3	0.3
125	1250	0 0040	0.0138	3.1878	1.3276	0.0103	2.9553	0.0137	0.0119	0.3	0.3
126	1260	0.0040	0.0138	3.2016	1.3379	0.0104	2.9691	0.0137	0.0120	0 3	0 3
127	1270	0.0040	0 0138	3.2154	1.3483	0.0104	2 9828	0.0137	0 0120	0.3	0 3
128	1280	0.0040	0 0138	3 2292	1.3587	0 0104	2 9966	0.0137	0 0120	0 3	0 3
129	1290	0 0040	0.0138	3.2430	1.3691	0.0104	3 0103	0.0138	0 0120	0 3	0 3
130	1300	0.0040	0.0138	3.2568	1.3795	0 0104	3.0241	0 0138	0 0120	0 3	0 3
131	1310	0.0040	0.0138	3.2706	1 3900	0.0104	3 0378	0.0138	0 0120	0 3	0 3
132	1320	0 0040	0.0138	3.2844	1.4004	0.0105	3.0516	0 0138	0 0120	0.3	0 3
133	1330	0.0040	0.0138	3.2982	1.4109	0.0105	3.0653	0.0138	0.0120	0.3	0.3
134	1340	0.0040	0 0138	3.3120	1.4214	0 0105	3 0791	0.0138	0.0120	0.3	0 3
135	1350	0.0040	0.0138	3.3258	1 4319	0.0105	3 0928	0.0138	0.0120	0 3	0 3
136	1360	0.0040	0.0138	3.3396	1.4424	0.0105	3.1066	0.0138	0.0120	0 3	0 3
137	1370	0.0040	0.0138	3.3534	1.4530	0 0105	3.1203	0.0138	0 0121	0 3	0.3
138	1380	0 0040	0.0138	3.3672	1.4635	0 0106	3.1341	0.0138	0.0121	0 3	0.3
139	1390	0.0040	0.0138	3.3810	1.4741	0 0106	3.1479	0.0138	0.0121	0 3	0.3
140	1400	0.0040	0.0138	3.3948	1.4847	0 0106	3.1616	0 0138	0.0121	0 3	0.3
141	1410	0 0040	0 0138	3 4086	1.4953	0 0106	3.1754	0.0138	0.0121	0 3	0.3
142	1420	0 0040	0 0138	3 4224	1.5059	0.0106	3.1891	0 0138	0.0121	0.3	0 3
143	1430	0.0040	0.0138	3.4362	1.5166	0.0106	3.2029	0.0138	0 0121	0.3	0.3
144	1440	0 0040	0.0138	3.4500	1 5272	0 0107	3.2166	0.0138	0 0121	0 3	0.3
	Total	1.0000	3 4500							Hydrograph Volume (Cubic Feet)	30697

275

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *25-yr Pre*

Given:

Area =	3.67	acres
Pt =	3.9	inches
dt =	10	min.
Tc =	22	min.
w =	0.1852	routing constant

Pervious Area

Area =	3.27	acres
CN =	79	
S =	2.66	
0.2S =	0.53	

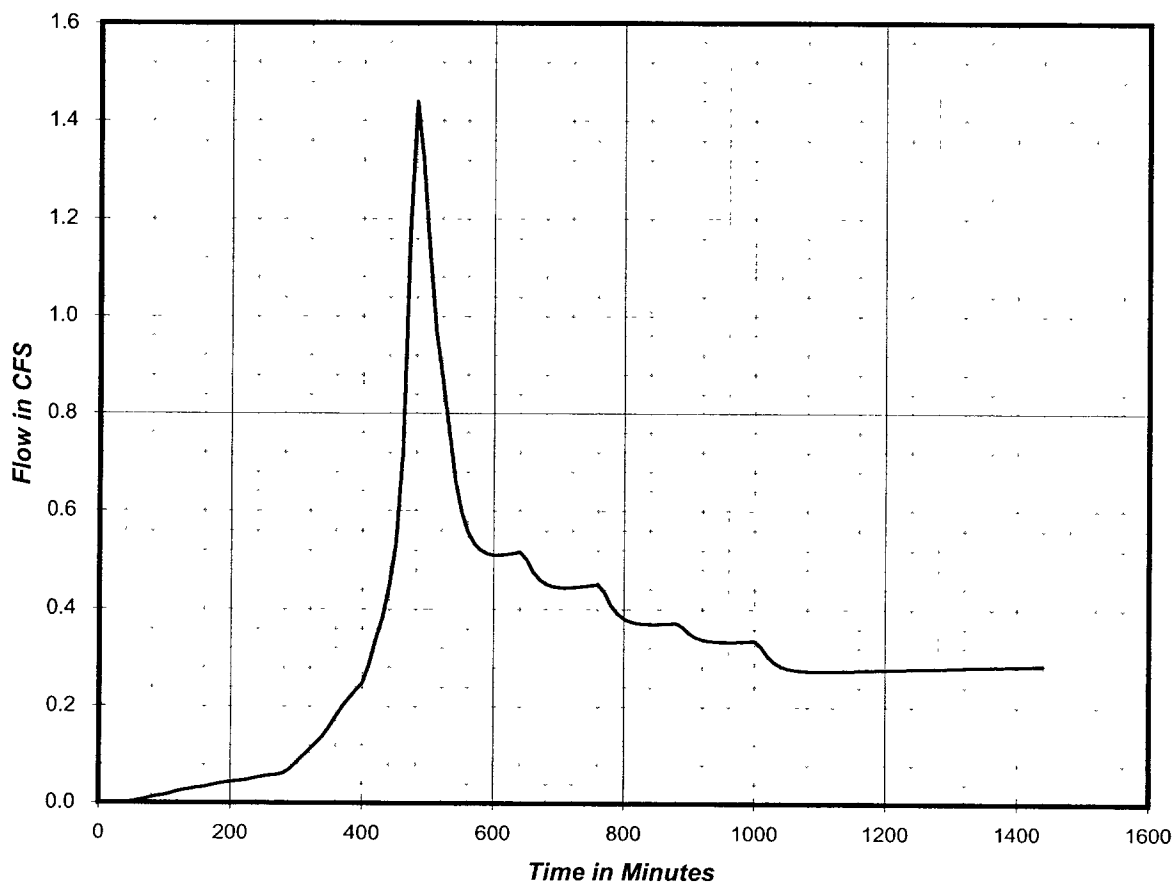
Impervious Area

Area =	0.4	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff:	1.4	cfs
Total Vol. :	27292	cf

Peak Runoff Hydrograph



File: SBUH-24-25yr-pre.XLS
9/30/2004

CES|NW, Inc.

(1) Time Incre-ment	(2) Time (Min)	(3) Rainfall Distri-bution (% of Pt)	(4) Incre-mental Rainfall (in)	(5) Accumu-lated Rainfall (in)	Pervious Area (6) Accumu-lated Runoff (in)	Pervious Area (7) Incre-mental Runoff (in)	Impervious Area (8) Accumu-lated Runoff (in)	Impervious Area (9) Incre-mental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydro-graph (cfs)	(12) Design Hydro-graph (cfs)
1	10	0 0040	0.0156	0.0156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0	0 0
2	20	0.0040	0 0156	0 0312	0.0000	0.0000	0.0000	0.0000	0.0000	0.0	0.0
3	30	0 0040	0.0156	0.0468	0.0000	0.0000	0.0002	0.0002	0.0000	0.0	0 0
4	40	0.0040	0.0156	0 0624	0 0000	0.0000	0.0021	0.0019	0.0002	0 0	0.0
5	50	0.0040	0.0156	0 0780	0.0000	0.0000	0.0057	0.0037	0.0004	0.0	0 0
6	60	0.0040	0.0156	0.0936	0 0000	0.0000	0.0108	0.0051	0 0006	0.0	0.0
7	70	0.0040	0.0156	0.1092	0.0000	0.0000	0.0172	0.0063	0 0007	0 0	0 0
8	80	0.0040	0.0156	0 1248	0 0000	0 0000	0 0245	0.0073	0 0008	0.0	0 0
9	90	0 0040	0.0156	0.1404	0.0000	0 0000	0.0327	0.0082	0 0009	0.0	0 0
10	100	0.0040	0.0156	0.1560	0 0000	0 0000	0.0416	0.0089	0.0010	0 0	0 0
11	110	0.0050	0.0195	0.1755	0 0000	0 0000	0.0535	0.0120	0 0013	0.0	0 0
12	120	0.0050	0.0195	0.1950	0 0000	0 0000	0.0664	0.0128	0.0014	0.0	0 0
13	130	0.0050	0.0195	0.2145	0 0000	0 0000	0.0799	0.0135	0 0015	0 0	0 0
14	140	0.0050	0.0195	0.2340	0 0000	0.0000	0.0939	0.0141	0.0015	0.0	0 0
15	150	0 0050	0.0195	0.2535	0 0000	0.0000	0.1085	0.0146	0 0016	0.0	0 0
16	160	0.0050	0.0195	0.2730	0 0000	0.0000	0.1236	0.0150	0 0016	0 0	0 0
17	170	0 0060	0.0234	0.2964	0 0000	0 0000	0.1421	0 0185	0.0020	0 0	0 0
18	180	0 0060	0 0234	0.3198	0 0000	0.0000	0.1611	0.0190	0 0021	0.0	0 0
19	190	0 0060	0.0234	0.3432	0 0000	0.0000	0.1805	0.0194	0.0021	0 0	0 0
20	200	0 0060	0.0234	0.3666	0.0000	0.0000	0.2003	0.0198	0 0022	0 0	0.0
21	210	0 0060	0.0234	0.3900	0 0000	0.0000	0.2204	0.0201	0.0022	0.0	0.0
22	220	0.0060	0.0234	0.4134	0.0000	0.0000	0.2407	0.0203	0 0022	0.0	0.0
23	230	0 0070	0.0273	0.4407	0.0000	0.0000	0.2648	0.0240	0.0026	0 1	0 0
24	240	0.0070	0.0273	0.4680	0.0000	0.0000	0.2891	0.0243	0.0027	0 1	0.1
25	250	0.0070	0.0273	0 4953	0.0000	0 0000	0.3136	0.0246	0.0027	0.1	0.1
26	260	0.0070	0.0273	0 5226	0.0000	0.0000	0 3384	0.0248	0.0027	0.1	0.1
27	270	0.0070	0.0273	0 5499	0.0001	0.0001	0.3634	0.0250	0.0028	0.1	0.1
28	280	0.0070	0.0273	0.5772	0.0008	0.0006	0 3885	0.0251	0.0033	0.1	0.1
29	290	0.0082	0.0320	0.6092	0.0022	0.0014	0.4182	0.0297	0.0045	0 1	0.1
30	300	0 0082	0.0320	0.6412	0 0043	0.0021	0 4480	0 0298	0.0052	0.1	0.1
31	310	0 0082	0.0320	0.6731	0.0072	0.0028	0.4780	0 0300	0.0058	0.1	0.1
32	320	0.0082	0.0320	0.7051	0.0106	0.0035	0.5082	0.0301	0 0064	0.1	0.1
33	330	0 0082	0.0320	0.7371	0.0147	0.0041	0.5385	0 0303	0 0070	0.2	0 1
34	340	0 0082	0.0320	0.7691	0.0195	0.0047	0.5689	0 0304	0.0075	0.2	0 1
35	350	0.0095	0.0371	0.8061	0.0257	0.0062	0.6042	0.0353	0.0094	0.2	0.2
36	360	0 0095	0.0371	0.8432	0.0327	0.0070	0.6397	0 0355	0.0101	0.2	0.2
37	370	0 0095	0.0371	0.8802	0.0404	0.0077	0.6752	0.0356	0.0108	0 2	0.2
38	380	0.0095	0.0371	0.9173	0.0489	0.0084	0.7109	0 0357	0 0114	0 3	0.2
39	390	0.0095	0.0371	0.9543	0.0580	0.0091	0.7467	0 0358	0 0120	0 3	0.2
40	400	0.0095	0.0371	0.9914	0.0678	0.0098	0.7826	0 0359	0.0126	0 3	0.2
41	410	0.0134	0.0523	1.0436	0.0827	0 0149	0.8333	0.0507	0.0188	0.4	0.3
42	420	0 0134	0.0523	1.0959	0.0988	0.0161	0.8841	0.0508	0 0199	0 4	0.3
43	430	0.0134	0.0523	1.1482	0 1161	0.0173	0 9350	0.0509	0 0209	0 5	0.4
44	440	0 0180	0 0702	1.2184	0.1410	0.0249	1.0036	0.0686	0.0297	0.7	0 4
45	450	0.0180	0.0702	1.2886	0.1678	0.0268	1.0723	0.0687	0.0314	0.7	0.5
46	460	0.0340	0.1326	1.4212	0 2230	0.0553	1.2025	0.1302	0.0634	1.4	0.7
47	470	0.0540	0.2106	1 6318	0.3220	0.0990	1.4101	0.2075	0.1108	2.5	1 2
48	480	0.0270	0.1053	1.7371	0.3761	0.0541	1.5141	0.1040	0.0595	1.3	1 4
49	490	0.0180	0.0702	1.8073	0.4136	0.0376	1.5835	0 0694	0.0410	0.9	1.3
50	500	0 0134	0.0523	1.8595	0.4423	0.0287	1.6352	0 0517	0.0312	0.7	1.1
51	510	0 0134	0.0523	1 9118	0.4717	0.0293	1.6870	0 0517	0.0318	0.7	1.0
52	520	0.0134	0.0523	1.9640	0.5016	0 0299	1.7387	0.0518	0.0323	0.7	0.9
53	530	0 0088	0.0343	1.9984	0.5215	0.0199	1.7727	0.0340	0.0215	0.5	0.8
54	540	0.0088	0.0343	2.0327	0 5417	0 0202	1.8067	0.0340	0.0217	0.5	0.7
55	550	0.0088	0.0343	2.0670	0.5621	0.0204	1.8408	0.0340	0.0219	0.5	0.6
56	560	0 0088	0.0343	2.1013	0.5828	0.0206	1.8748	0.0340	0.0221	0.5	0.6
57	570	0 0088	0 0343	2.1356	0.6036	0.0209	1.9089	0.0340	0.0223	0.5	0.5
58	580	0 0088	0 0343	2.1700	0.6247	0.0211	1.9429	0.0341	0.0225	0.5	0.5
59	590	0 0088	0.0343	2.2043	0.6460	0.0213	1.9770	0 0341	0.0227	0.5	0 5
60	600	0 0088	0.0343	2 2386	0.6675	0.0215	2 0110	0.0341	0.0229	0.5	0.5
61	610	0.0088	0 0343	2.2729	0.6892	0.0217	2.0451	0.0341	0.0230	0.5	0 5
62	620	0.0088	0.0343	2.3072	0.7111	0.0219	2.0792	0.0341	0 0232	0.5	0 5
63	630	0.0088	0.0343	2.3416	0.7331	0.0221	2.1133	0.0341	0 0234	0.5	0 5
64	640	0 0088	0.0343	2.3759	0.7554	0.0223	2.1474	0.0341	0 0236	0.5	0.5
65	650	0 0072	0 0281	2.4040	0.7738	0.0184	2.1753	0.0279	0 0194	0.4	0 5
66	660	0.0072	0 0281	2.4320	0.7922	0.0185	2.2032	0.0279	0 0195	0.4	0 5
67	670	0.0072	0 0281	2.4601	0.8108	0.0186	2 2311	0.0279	0 0196	0 4	0 5
68	680	0 0072	0.0281	2.4882	0.8295	0.0187	2.2590	0.0279	0 0197	0 4	0 5
69	690	0.0072	0.0281	2.5163	0.8484	0.0188	2.2869	0.0279	0 0198	0 4	0 4
70	700	0 0072	0.0281	2.5444	0 8673	0.0189	2.3148	0.0279	0.0199	0 4	0 4
71	710	0 0072	0.0281	2.5724	0 8863	0 0190	2.3428	0.0279	0.0200	0 4	0 4

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	(6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	(8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
72	720	0 0072	0.0281	2 6005	0.9055	0.0191	2 3707	0.0279	0.0201	0 4	0 4
73	730	0 0072	0.0281	2 6286	0 9247	0.0193	2 3986	0.0279	0.0202	0.4	0 4
74	740	0.0072	0.0281	2.6567	0 9441	0.0194	2.4266	0.0279	0.0203	0 5	0.4
75	750	0.0072	0.0281	2.6848	0 9635	0.0195	2.4545	0.0279	0.0204	0 5	0 4
76	760	0.0072	0.0281	2.7128	0.9831	0.0196	2.4824	0.0279	0.0205	0.5	0.5
77	770	0 0057	0.0222	2.7351	0 9986	0.0156	2.5045	0 0221	0.0163	0.4	0.4
78	780	0 0057	0 0222	2.7573	1 0143	0.0156	2.5267	0 0221	0 0163	0.4	0 4
79	790	0 0057	0.0222	2.7795	1.0299	0.0157	2 5488	0.0221	0 0164	0.4	0.4
80	800	0 0057	0.0222	2.8018	1.0457	0.0157	2.5709	0.0221	0 0164	0.4	0 4
81	810	0 0057	0.0222	2.8240	1.0615	0 0158	2 5930	0.0221	0.0165	0.4	0 4
82	820	0.0057	0 0222	2.8462	1.0773	0.0158	2 6152	0.0221	0.0165	0 4	0 4
83	830	0 0057	0.0222	2 8685	1.0932	0.0159	2.6373	0 0221	0.0166	0.4	0 4
84	840	0.0057	0.0222	2.8907	1.1092	0 0160	2.6594	0 0221	0.0166	0 4	0 4
85	850	0 0057	0.0222	2.9129	1.1252	0 0160	2.6816	0 0221	0.0167	0.4	0.4
86	860	0.0057	0.0222	2 9351	1.1413	0.0161	2.7037	0 0221	0.0167	0.4	0.4
87	870	0.0057	0.0222	2.9574	1.1574	0.0161	2.7258	0.0221	0.0168	0.4	0.4
88	880	0 0057	0.0222	2 9796	1.1736	0.0162	2.7480	0.0221	0.0168	0.4	0.4
89	890	0 0050	0 0195	2.9991	1 1878	0.0142	2.7674	0.0194	0.0148	0.3	0.4
90	900	0 0050	0.0195	3.0186	1 2021	0.0143	2 7868	0.0194	0.0148	0.3	0.4
91	910	0 0050	0 0195	3.0381	1.2164	0 0143	2.8062	0 0194	0.0149	0.3	0.3
92	920	0 0050	0.0195	3.0576	1.2308	0 0144	2.8256	0.0194	0.0149	0.3	0.3
93	930	0.0050	0 0195	3.0771	1.2451	0 0144	2.8451	0.0194	0 0149	0 3	0.3
94	940	0.0050	0.0195	3.0966	1.2596	0.0144	2.8645	0 0194	0.0150	0.3	0.3
95	950	0 0050	0.0195	3.1161	1.2740	0.0145	2.8839	0 0194	0.0150	0.3	0.3
96	960	0 0050	0.0195	3.1356	1.2885	0.0145	2.9033	0.0194	0.0150	0.3	0.3
97	970	0 0050	0.0195	3.1551	1.3031	0.0145	2.9228	0 0194	0 0151	0 3	0.3
98	980	0.0050	0.0195	3 1746	1.3177	0.0146	2 9422	0.0194	0.0151	0 3	0 3
99	990	0.0050	0.0195	3 1941	1.3323	0.0146	2.9616	0.0194	0.0151	0 3	0 3
100	1000	0.0050	0.0195	3.2136	1.3469	0.0147	2.9810	0.0194	0.0152	0 3	0.3
101	1010	0.0040	0.0156	3.2292	1.3587	0.0117	2.9966	0.0155	0.0122	0.3	0 3
102	1020	0.0040	0.0156	3.2448	1 3704	0.0118	3.0121	0 0155	0.0122	0 3	0.3
103	1030	0 0040	0.0156	3.2604	1 3822	0.0118	3.0277	0.0155	0 0122	0.3	0.3
104	1040	0 0040	0.0156	3.2760	1.3941	0.0118	3.0432	0 0155	0.0122	0.3	0.3
105	1050	0 0040	0 0156	3.2916	1.4059	0.0118	3.0588	0 0155	0 0122	0.3	0.3
106	1060	0.0040	0.0156	3.3072	1.4177	0.0119	3.0743	0.0155	0 0123	0.3	0.3
107	1070	0.0040	0 0156	3.3228	1.4296	0.0119	3.0898	0.0155	0.0123	0.3	0 3
108	1080	0.0040	0.0156	3.3384	1.4415	0.0119	3 1054	0.0155	0 0123	0.3	0 3
109	1090	0.0040	0.0156	3.3540	1.4534	0 0119	3.1209	0.0155	0.0123	0.3	0 3
110	1100	0.0040	0.0156	3.3696	1.4654	0 0119	3.1365	0.0155	0.0123	0 3	0.3
111	1110	0 0040	0.0156	3.3852	1.4773	0 0120	3.1520	0.0155	0.0124	0 3	0 3
112	1120	0 0040	0.0156	3.4008	1.4893	0.0120	3.1676	0 0155	0.0124	0.3	0.3
113	1130	0 0040	0.0156	3 4164	1.5013	0.0120	3.1831	0 0155	0.0124	0 3	0.3
114	1140	0.0040	0 0156	3 4320	1.5133	0.0120	3.1987	0 0155	0.0124	0.3	0.3
115	1150	0.0040	0 0156	3 4476	1 5254	0.0120	3.2142	0 0155	0 0124	0.3	0.3
116	1160	0.0040	0.0156	3.4632	1.5375	0 0121	3 2298	0.0156	0.0124	0.3	0.3
117	1170	0.0040	0.0156	3.4788	1 5495	0 0121	3.2453	0.0156	0.0125	0.3	0.3
118	1180	0.0040	0.0156	3.4944	1.5616	0 0121	3.2609	0 0156	0.0125	0.3	0.3
119	1190	0.0040	0.0156	3.5100	1.5738	0.0121	3.2764	0.0156	0.0125	0.3	0.3
120	1200	0.0040	0.0156	3 5256	1.5859	0.0121	3.2920	0.0156	0.0125	0.3	0.3
121	1210	0 0040	0.0156	3 5412	1.5981	0.0122	3.3075	0 0156	0 0125	0.3	0.3
122	1220	0 0040	0.0156	3.5568	1.6102	0.0122	3.3231	0 0156	0.0125	0 3	0.3
123	1230	0.0040	0.0156	3.5724	1 6224	0.0122	3.3387	0.0156	0 0126	0 3	0.3
124	1240	0 0040	0 0156	3.5880	1.6346	0.0122	3.3542	0.0156	0.0126	0 3	0.3
125	1250	0.0040	0 0156	3.6036	1.6469	0.0122	3.3698	0.0156	0.0126	0.3	0.3
126	1260	0.0040	0.0156	3.6192	1.6591	0.0123	3.3853	0 0156	0.0126	0 3	0.3
127	1270	0.0040	0.0156	3.6348	1.6714	0.0123	3.4009	0.0156	0 0126	0 3	0.3
128	1280	0 0040	0.0156	3.6504	1.6837	0 0123	3 4164	0.0156	0.0126	0 3	0.3
129	1290	0 0040	0.0156	3.6660	1.6960	0 0123	3.4320	0.0156	0.0127	0.3	0 3
130	1300	0.0040	0.0156	3.6816	1.7083	0 0123	3 4475	0.0156	0 0127	0 3	0 3
131	1310	0.0040	0 0156	3 6972	1.7207	0.0123	3.4631	0.0156	0.0127	0 3	0.3
132	1320	0.0040	0 0156	3.7128	1.7330	0.0124	3.4786	0 0156	0.0127	0.3	0 3
133	1330	0.0040	0.0156	3.7284	1 7454	0.0124	3.4942	0 0156	0.0127	0 3	0 3
134	1340	0 0040	0.0156	3.7440	1.7578	0.0124	3.5098	0 0156	0.0127	0 3	0.3
135	1350	0.0040	0.0156	3.7596	1.7702	0 0124	3 5253	0.0156	0 0128	0.3	0 3
136	1360	0.0040	0 0156	3.7752	1.7826	0 0124	3.5409	0.0156	0.0128	0.3	0.3
137	1370	0 0040	0.0156	3.7908	1.7951	0.0124	3.5564	0.0156	0.0128	0.3	0 3
138	1380	0.0040	0.0156	3.8064	1 8075	0.0125	3.5720	0.0156	0.0128	0.3	0.3
139	1390	0.0040	0.0156	3.8220	1.8200	0.0125	3.5876	0.0156	0.0128	0.3	0.3
140	1400	0.0040	0.0156	3 8376	1.8325	0.0125	3.6031	0 0156	0.0128	0 3	0.3
141	1410	0 0040	0 0156	3.8532	1.8450	0 0125	3.6187	0.0156	0 0128	0.3	0.3
142	1420	0 0040	0.0156	3.8688	1.8575	0.0125	3.6342	0 0156	0 0129	0.3	0.3
143	1430	0 0040	0.0156	3.8844	1.8701	0.0125	3.6498	0 0156	0 0129	0.3	0.3
144	1440	0 0040	0.0156	3.9000	1.8826	0.0126	3.6654	0.0156	0 0129	0.3	0.3
	Total	1.0000	3 9000						Hydrograph Volume (Cubic Feet)		27292

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *25-yr Post*

Given:

Area =	3.67	acres
Pt =	3.9	inches
dt =	10	min.
Tc =	15	min.
w =	0.2500	routing constant

Pervious Area

Area =	1.94	acres
CN =	79	
S =	2.66	
0.2S =	0.53	

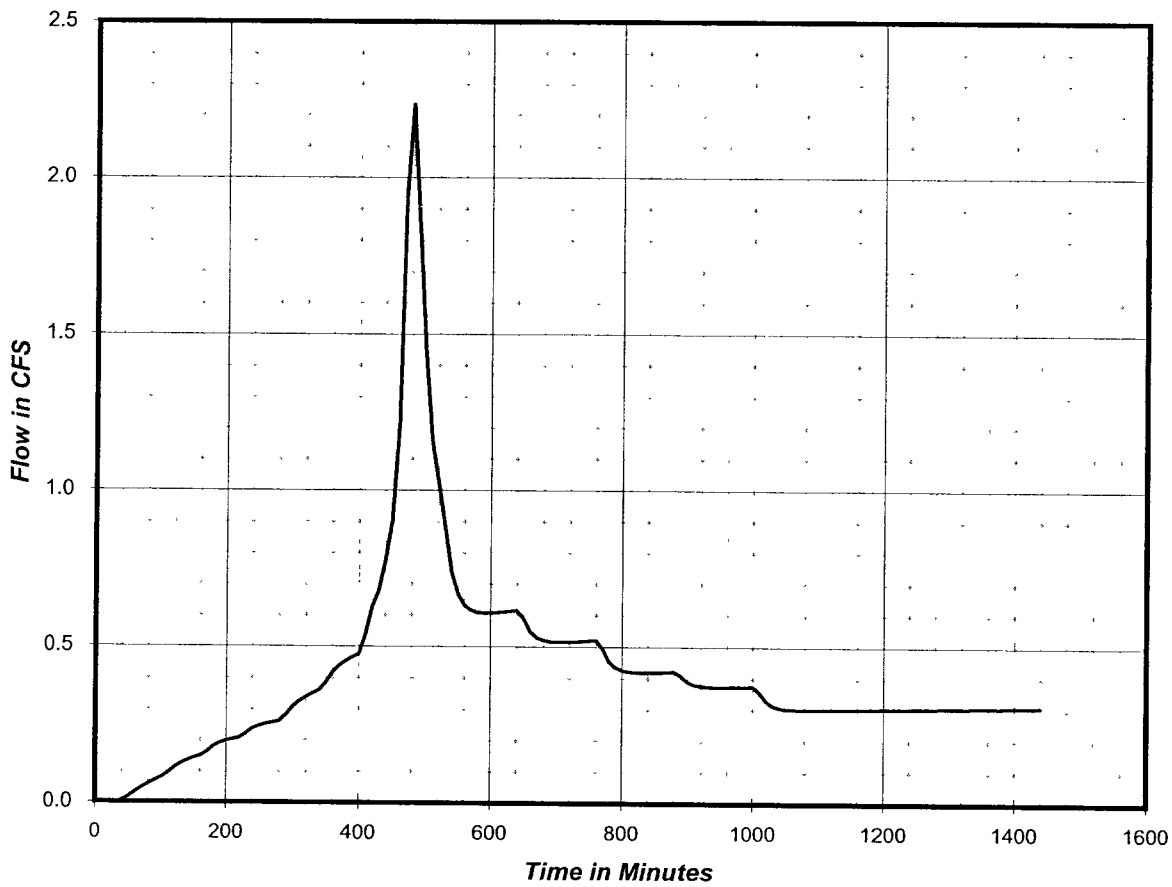
Impervious Area

Area =	1.73	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff:	2.2	cfs
Total Vol. :	35997	cf

Peak Runoff Hydrograph



File: SBUH-24-25yr-post.XLS
9/30/2004

CES|NW, Inc.

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	Pervious Area (6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	Impervious Area (8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
1	10	0.0040	0 0156	0 0156	0.0000	0 0000	0 0000	0.0000	0.0000	0 0	0 0
2	20	0.0040	0.0156	0.0312	0 0000	0.0000	0.0000	0.0000	0.0000	0 0	0.0
3	30	0.0040	0.0156	0.0468	0.0000	0.0000	0.0002	0.0002	0.0001	0.0	0.0
4	40	0.0040	0.0156	0.0624	0.0000	0.0000	0.0021	0.0019	0.0009	0.0	0.0
5	50	0 0040	0 0156	0.0780	0 0000	0 0000	0 0057	0.0037	0 0017	0 0	0 0
6	60	0 0040	0.0156	0.0936	0.0000	0.0000	0.0108	0.0051	0 0024	0 1	0 0
7	70	0.0040	0.0156	0.1092	0.0000	0.0000	0.0172	0.0063	0 0030	0 1	0.0
8	80	0 0040	0.0156	0 1248	0.0000	0.0000	0.0245	0.0073	0.0035	0.1	0 1
9	90	0.0040	0.0156	0.1404	0.0000	0.0000	0.0327	0.0082	0.0039	0.1	0.1
10	100	0 0040	0 0156	0.1560	0 0000	0.0000	0.0416	0.0089	0.0042	0 1	0 1
11	110	0 0050	0.0195	0 1755	0.0000	0.0000	0.0535	0.0120	0 0057	0 1	0.1
12	120	0 0050	0 0195	0 1950	0.0000	0.0000	0.0664	0 0128	0.0060	0 1	0.1
13	130	0.0050	0.0195	0 2145	0.0000	0.0000	0 0799	0.0135	0.0064	0.1	0 1
14	140	0.0050	0.0195	0.2340	0 0000	0 0000	0.0939	0.0141	0.0066	0.1	0 1
15	150	0 0050	0.0195	0.2535	0.0000	0.0000	0.1085	0 0146	0.0069	0.2	0.1
16	160	0 0050	0 0195	0.2730	0.0000	0.0000	0.1236	0.0150	0.0071	0.2	0.1
17	170	0 0060	0.0234	0.2964	0.0000	0 0000	0.1421	0 0185	0.0087	0.2	0.2
18	180	0.0060	0.0234	0.3198	0 0000	0.0000	0.1611	0.0190	0.0090	0.2	0 2
19	190	0.0060	0.0234	0.3432	0 0000	0.0000	0.1805	0.0194	0 0092	0.2	0.2
20	200	0.0060	0.0234	0 3666	0.0000	0.0000	0.2003	0.0198	0.0093	0 2	0.2
21	210	0.0060	0.0234	0.3900	0.0000	0.0000	0 2204	0.0201	0.0095	0.2	0.2
22	220	0.0060	0 0234	0.4134	0.0000	0.0000	0.2407	0.0203	0.0096	0.2	0 2
23	230	0 0070	0.0273	0 4407	0 0000	0.0000	0.2648	0.0240	0 0113	0.3	0 2
24	240	0.0070	0 0273	0 4680	0.0000	0.0000	0.2891	0.0243	0.0115	0 3	0 2
25	250	0 0070	0.0273	0.4953	0.0000	0 0000	0.3136	0 0246	0.0116	0.3	0.2
26	260	0.0070	0.0273	0.5226	0 0000	0 0000	0.3384	0.0248	0.0117	0.3	0 3
27	270	0 0070	0.0273	0.5499	0.0001	0.0001	0.3634	0.0250	0.0118	0.3	0 3
28	280	0 0070	0 0273	0 5772	0.0008	0.0006	0.3885	0 0251	0.0122	0.3	0.3
29	290	0.0082	0.0320	0.6092	0 0022	0.0014	0.4182	0.0297	0.0147	0.3	0.3
30	300	0.0082	0.0320	0.6412	0.0043	0.0021	0 4480	0 0298	0.0152	0.3	0.3
31	310	0 0082	0.0320	0 6731	0.0072	0 0028	0.4780	0.0300	0.0156	0.3	0 3
32	320	0.0082	0.0320	0 7051	0.0106	0.0035	0.5082	0.0301	0.0160	0 4	0.3
33	330	0.0082	0.0320	0.7371	0 0147	0.0041	0.5385	0.0303	0.0164	0.4	0.3
34	340	0.0082	0.0320	0 7691	0 0195	0.0047	0.5689	0.0304	0.0168	0.4	0.4
35	350	0.0095	0.0371	0.8061	0.0257	0.0062	0.6042	0.0353	0.0199	0 4	0 4
36	360	0 0095	0.0371	0 8432	0.0327	0.0070	0.6397	0.0355	0 0204	0 5	0.4
37	370	0 0095	0.0371	0.8802	0.0404	0 0077	0.6752	0 0356	0.0209	0 5	0.4
38	380	0 0095	0.0371	0.9173	0.0489	0.0084	0 7109	0.0357	0.0213	0.5	0.5
39	390	0 0095	0 0371	0.9543	0.0580	0.0091	0 7467	0.0358	0.0217	0.5	0 5
40	400	0.0095	0.0371	0.9914	0 0678	0 0098	0.7826	0 0359	0.0221	0.5	0.5
41	410	0 0134	0.0523	1 0436	0 0827	0.0149	0.8333	0.0507	0.0318	0.7	0.5
42	420	0.0134	0 0523	1.0959	0 0988	0 0161	0 8841	0 0508	0.0325	0.7	0.6
43	430	0.0134	0 0523	1.1482	0.1161	0.0173	0 9350	0.0509	0 0331	0.7	0 7
44	440	0.0180	0.0702	1.2184	0.1410	0.0249	1.0036	0.0686	0.0455	1 0	0.8
45	450	0 0180	0.0702	1 2886	0.1678	0.0268	1.0723	0.0687	0.0466	1 0	0.9
46	460	0.0340	0.1326	1.4212	0.2230	0.0553	1.2025	0.1302	0 0906	2.0	1.2
47	470	0.0540	0.2106	1.6318	0.3220	0.0990	1.4101	0.2075	0.1501	3.3	1 9
48	480	0 0270	0 1053	1 7371	0 3761	0.0541	1 5141	0.1040	0.0776	1 7	2.2
49	490	0.0180	0.0702	1.8073	0.4136	0.0376	1.5835	0.0694	0.0526	1.2	1.8
50	500	0 0134	0.0523	1.8595	0 4423	0 0287	1.6352	0.0517	0.0396	0.9	1 4
51	510	0 0134	0.0523	1 9118	0.4717	0 0293	1.6870	0.0517	0.0399	0.9	1.2
52	520	0.0134	0 0523	1.9640	0.5016	0.0299	1 7387	0 0518	0 0402	0.9	1.0
53	530	0 0088	0 0343	1.9984	0.5215	0.0199	1.7727	0.0340	0.0266	0.6	0 9
54	540	0 0088	0 0343	2.0327	0 5417	0.0202	1.8067	0.0340	0.0267	0 6	0.7
55	550	0.0088	0.0343	2 0670	0 5621	0.0204	1.8408	0 0340	0.0268	0 6	0 7
56	560	0 0088	0.0343	2.1013	0.5828	0.0206	1.8748	0.0340	0.0270	0.6	0 6
57	570	0 0088	0.0343	2.1356	0.6036	0 0209	1.9089	0 0340	0.0271	0 6	0 6
58	580	0 0088	0.0343	2.1700	0.6247	0.0211	1.9429	0 0341	0 0272	0 6	0.6
59	590	0.0088	0.0343	2.2043	0.6460	0.0213	1 9770	0 0341	0.0273	0.6	0.6
60	600	0 0088	0 0343	2.2386	0.6675	0 0215	2.0110	0 0341	0.0274	0.6	0.6
61	610	0 0088	0.0343	2.2729	0 6892	0.0217	2 0451	0.0341	0.0275	0.6	0.6
62	620	0.0088	0.0343	2.3072	0.7111	0.0219	2.0792	0 0341	0.0276	0.6	0.6
63	630	0 0088	0.0343	2.3416	0.7331	0.0221	2 1133	0 0341	0.0277	0 6	0.6
64	640	0 0088	0.0343	2.3759	0.7554	0.0223	2.1474	0.0341	0 0278	0.6	0.6
65	650	0 0072	0.0281	2.4040	0.7738	0.0184	2.1753	0.0279	0.0229	0.5	0.6
66	660	0 0072	0.0281	2 4320	0.7922	0 0185	2.2032	0.0279	0.0229	0 5	0.5
67	670	0 0072	0.0281	2.4601	0.8108	0.0186	2 2311	0.0279	0.0230	0 5	0 5
68	680	0 0072	0.0281	2 4882	0 8295	0.0187	2 2590	0 0279	0.0230	0.5	0 5
69	690	0 0072	0.0281	2 5163	0 8484	0 0188	2.2869	0 0279	0.0231	0.5	0.5
70	700	0 0072	0 0281	2.5444	0.8673	0 0189	2.3148	0.0279	0.0232	0 5	0.5
71	710	0.0072	0 0281	2.5724	0.8863	0.0190	2 3428	0.0279	0.0232	0 5	0.5

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	(6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	(8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
72	720	0 0072	0 0281	2 6005	0 9055	0 0191	2.3707	0.0279	0 0233	0 5	0.5
73	730	0 0072	0.0281	2 6286	0.9247	0 0193	2.3986	0.0279	0.0233	0.5	0.5
74	740	0.0072	0 0281	2 6567	0 9441	0.0194	2.4266	0.0279	0.0234	0 5	0.5
75	750	0.0072	0 0281	2.6848	0.9635	0.0195	2.4545	0.0279	0.0235	0 5	0.5
76	760	0.0072	0 0281	2.7128	0 9831	0.0196	2.4824	0.0279	0.0235	0.5	0.5
77	770	0 0057	0.0222	2.7351	0 9986	0.0156	2.5045	0 0221	0.0186	0.4	0.5
78	780	0 0057	0 0222	2.7573	1 0143	0.0156	2.5267	0 0221	0.0187	0.4	0 5
79	790	0 0057	0 0222	2.7795	1 0299	0.0157	2.5488	0.0221	0.0187	0.4	0 4
80	800	0 0057	0.0222	2 8018	1 0457	0 0157	2.5709	0 0221	0.0187	0.4	0 4
81	810	0 0057	0.0222	2.8240	1.0615	0 0158	2.5930	0.0221	0.0188	0.4	0.4
82	820	0 0057	0 0222	2.8462	1.0773	0.0158	2.6152	0.0221	0 0188	0.4	0 4
83	830	0 0057	0 0222	2.8685	1.0932	0 0159	2 6373	0.0221	0 0188	0.4	0.4
84	840	0.0057	0 0222	2.8907	1.1092	0.0160	2.6594	0.0221	0.0189	0.4	0.4
85	850	0.0057	0.0222	2.9129	1.1252	0 0160	2.6816	0.0221	0.0189	0 4	0 4
86	860	0.0057	0.0222	2 9351	1.1413	0.0161	2.7037	0.0221	0.0189	0.4	0.4
87	870	0.0057	0.0222	2.9574	1 1574	0.0161	2.7258	0.0221	0.0190	0.4	0.4
88	880	0.0057	0.0222	2 9796	1.1736	0 0162	2.7480	0.0221	0.0190	0 4	0.4
89	890	0.0050	0.0195	2 9991	1.1878	0 0142	2.7674	0.0194	0.0167	0.4	0.4
90	900	0.0050	0.0195	3.0186	1.2021	0 0143	2 7868	0.0194	0.0167	0.4	0.4
91	910	0.0050	0.0195	3.0381	1.2164	0.0143	2 8062	0.0194	0.0167	0.4	0.4
92	920	0 0050	0.0195	3 0576	1.2308	0.0144	2 8256	0.0194	0.0167	0.4	0 4
93	930	0 0050	0 0195	3 0771	1 2451	0.0144	2.8451	0.0194	0.0168	0.4	0.4
94	940	0.0050	0 0195	3 0966	1.2596	0.0144	2.8645	0 0194	0.0168	0.4	0 4
95	950	0.0050	0.0195	3.1161	1.2740	0.0145	2.8839	0.0194	0 0168	0.4	0 4
96	960	0.0050	0 0195	3.1356	1.2885	0.0145	2.9033	0.0194	0 0168	0 4	0 4
97	970	0 0050	0.0195	3.1551	1.3031	0.0145	2.9228	0.0194	0.0168	0 4	0.4
98	980	0.0050	0.0195	3.1746	1 3177	0.0146	2.9422	0.0194	0 0169	0 4	0.4
99	990	0 0050	0 0195	3.1941	1 3323	0.0146	2.9616	0.0194	0.0169	0 4	0.4
100	1000	0 0050	0.0195	3.2136	1 3469	0 0147	2.9810	0.0194	0.0169	0.4	0.4
101	1010	0.0040	0 0156	3.2292	1.3587	0.0117	2.9966	0 0155	0 0135	0.3	0 4
102	1020	0.0040	0 0156	3.2448	1.3704	0 0118	3 0121	0.0155	0.0135	0.3	0 3
103	1030	0.0040	0.0156	3.2604	1.3822	0.0118	3 0277	0.0155	0 0136	0.3	0 3
104	1040	0 0040	0 0156	3.2760	1.3941	0 0118	3 0432	0.0155	0.0136	0.3	0.3
105	1050	0.0040	0.0156	3 2916	1 4059	0.0118	3 0588	0.0155	0.0136	0.3	0.3
106	1060	0.0040	0 0156	3 3072	1.4177	0.0119	3.0743	0.0155	0.0136	0.3	0 3
107	1070	0.0040	0 0156	3.3228	1 4296	0.0119	3.0898	0.0155	0.0136	0.3	0 3
108	1080	0 0040	0.0156	3.3384	1.4415	0 0119.	3.1054	0.0155	0.0136	0.3	0.3
109	1090	0 0040	0.0156	3.3540	1.4534	0 0119	3.1209	0.0155	0.0136	0 3	0.3
110	1100	0 0040	0.0156	3.3696	1.4654	0 0119	3 1365	0.0155	0.0136	0.3	0.3
111	1110	0.0040	0.0156	3 3852	1 4773	0.0120	3.1520	0.0155	0.0137	0.3	0.3
112	1120	0 0040	0 0156	3 4008	1.4893	0.0120	3 1676	0.0155	0.0137	0.3	0.3
113	1130	0.0040	0 0156	3 4164	1.5013	0.0120	3 1831	0.0155	0.0137	0.3	0.3
114	1140	0 0040	0 0156	3.4320	1.5133	0.0120	3.1987	0 0155	0.0137	0.3	0 3
115	1150	0.0040	0.0156	3.4476	1.5254	0.0120	3.2142	0.0155	0 0137	0.3	0 3
116	1160	0 0040	0.0156	3.4632	1 5375	0.0121	3.2298	0.0156	0.0137	0 3	0 3
117	1170	0 0040	0.0156	3 4788	1 5495	0.0121	3 2453	0.0156	0.0137	0 3	0.3
118	1180	0.0040	0 0156	3.4944	1 5616	0.0121	3.2609	0.0156	0.0137	0.3	0.3
119	1190	0.0040	0 0156	3.5100	1.5738	0.0121	3.2764	0.0156	0.0137	0.3	0 3
120	1200	0.0040	0.0156	3.5256	1.5859	0 0121	3.2920	0 0156	0.0137	0.3	0 3
121	1210	0.0040	0.0156	3 5412	1.5981	0.0122	3.3075	0.0156	0.0138	0.3	0 3
122	1220	0.0040	0.0156	3.5568	1 6102	0 0122	3 3231	0.0156	0.0138	0.3	0.3
123	1230	0.0040	0 0156	3 5724	1.6224	0 0122	3 3387	0.0156	0.0138	0.3	0.3
124	1240	0 0040	0.0156	3.5880	1.6346	0.0122	3.3542	0.0156	0.0138	0.3	0.3
125	1250	0 0040	0.0156	3.6036	1.6469	0 0122	3.3698	0 0156	0.0138	0.3	0.3
126	1260	0.0040	0.0156	3.6192	1.6591	0 0123	3.3853	0.0156	0.0138	0 3	0.3
127	1270	0.0040	0 0156	3.6348	1 6714	0.0123	3 4009	0.0156	0.0138	0 3	0.3
128	1280	0.0040	0 0156	3 6504	1 6837	0.0123	3 4164	0.0156	0.0138	0.3	0.3
129	1290	0 0040	0.0156	3.6660	1.6960	0.0123	3.4320	0.0156	0.0138	0.3	0 3
130	1300	0.0040	0 0156	3.6816	1.7083	0.0123	3 4475	0.0156	0.0138	0.3	0.3
131	1310	0.0040	0 0156	3.6972	1.7207	0 0123	3.4631	0 0156	0.0139	0.3	0 3
132	1320	0.0040	0 0156	3 7128	1 7330	0.0124	3.4786	0.0156	0 0139	0.3	0 3
133	1330	0.0040	0.0156	3.7284	1 7454	0.0124	3.4942	0.0156	0 0139	0 3	0.3
134	1340	0 0040	0.0156	3.7440	1.7578	0.0124	3.5098	0.0156	0.0139	0 3	0.3
135	1350	0.0040	0 0156	3 7596	1.7702	0 0124	3.5253	0 0156	0.0139	0.3	0 3
136	1360	0 0040	0 0156	3 7752	1 7826	0.0124	3.5409	0 0156	0.0139	0.3	0 3
137	1370	0.0040	0 0156	3.7908	1.7951	0.0124	3.5564	0 0156	0.0139	0.3	0 3
138	1380	0.0040	0 0156	3.8064	1.8075	0.0125	3 5720	0.0156	0.0139	0.3	0.3
139	1390	0.0040	0 0156	3.8220	1.8200	0.0125	3.5876	0.0156	0.0139	0.3	0.3
140	1400	0 0040	0.0156	3 8376	1 8325	0 0125	3.6031	0.0156	0.0139	0.3	0.3
141	1410	0 0040	0.0156	3.8532	1.8450	0 0125	3.6187	0.0156	0.0139	0.3	0 3
142	1420	0.0040	0 0156	3.8688	1.8575	0.0125	3.6342	0.0156	0.0140	0.3	0.3
143	1430	0.0040	0 0156	3.8844	1 8701	0.0125	3 6498	0.0156	0.0140	0.3	0 3
144	1440	0.0040	0 0156	3.9000	1.8826	0.0126	3 6654	0.0156	0.0140	0 3	0.3
	Total	1.0000	3.9000						Hydrograph Volume (Cubic Feet)	35997	

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *100-yr Pre*

Given:

Area =	3.67	acres
Pt =	4.5	inches
dt =	10	min.
Tc =	20	min.
w =	0.2000	routing constant

Pervious Area

Area =	3.27	acres
CN =	79	
S =	2.66	
0.2S =	0.53	

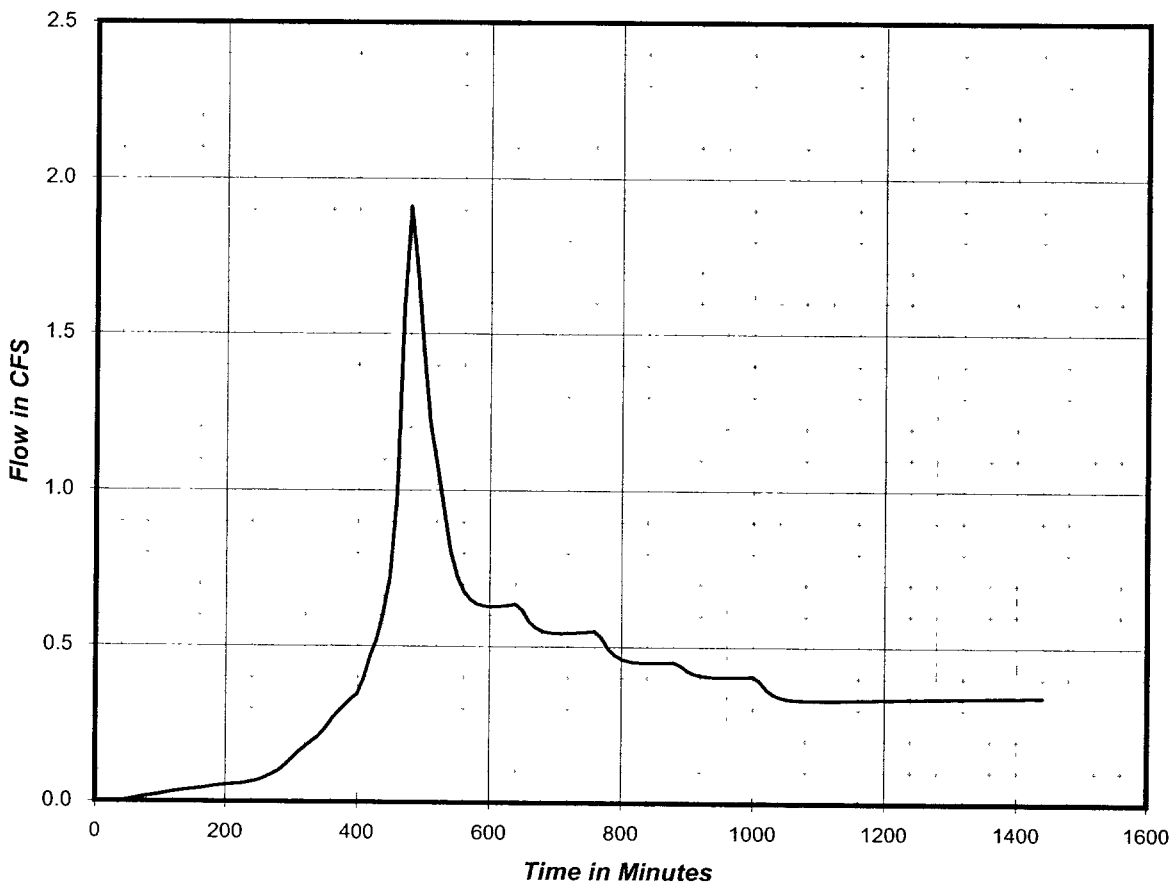
Impervious Area

Area =	0.4	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff:	1.9	cfs
Total Vol. :	33990	cf

Peak Runoff Hydrograph



File: SBUH-24-100yr-pre.XLS
9/30/2004

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(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	Pervious Area (6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	Impervious Area (8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
1	10	0.0040	0.0180	0.0180	0.0000	0.0000	0 0000	0.0000	0.0000	0.0	0.0
2	20	0 0040	0.0180	0.0360	0.0000	0.0000	0.0000	0 0000	0.0000	0.0	0 0
3	30	0 0040	0.0180	0 0540	0.0000	0 0000	0.0008	0.0008	0.0001	0.0	0 0
4	40	0.0040	0 0180	0 0720	0.0000	0 0000	0 0041	0.0033	0.0004	0 0	0.0
5	50	0 0040	0 0180	0 0900	0.0000	0 0000	0 0096	0.0054	0.0006	0 0	0.0
6	60	0.0040	0 0180	0.1080	0 0000	0 0000	0.0166	0 0071	0 0008	0.0	0.0
7	70	0.0040	0 0180	0.1260	0.0000	0.0000	0 0251	0 0084	0.0009	0.0	0.0
8	80	0 0040	0 0180	0.1440	0.0000	0.0000	0.0347	0 0096	0 0010	0 0	0.0
9	90	0 0040	0 0180	0.1620	0.0000	0.0000	0.0451	0 0105	0.0011	0.0	0.0
10	100	0 0040	0.0180	0 1800	0 0000	0 0000	0.0564	0.0113	0.0012	0 0	0.0
11	110	0 0050	0.0225	0.2025	0 0000	0.0000	0 0715	0.0150	0.0016	0 0	0.0
12	120	0 0050	0.0225	0.2250	0.0000	0.0000	0.0874	0.0159	0.0017	0.0	0 0
13	130	0 0050	0.0225	0.2475	0.0000	0.0000	0.1040	0.0166	0.0018	0.0	0.0
14	140	0 0050	0.0225	0.2700	0.0000	0.0000	0.1212	0 0172	0.0019	0 0	0.0
15	150	0 0050	0.0225	0 2925	0 0000	0 0000	0.1390	0 0178	0 0019	0 0	0.0
16	160	0 0050	0 0225	0 3150	0 0000	0 0000	0 1572	0 0182	0.0020	0.0	0.0
17	170	0 0060	0.0270	0.3420	0 0000	0 0000	0 1795	0.0223	0.0024	0 1	0.0
18	180	0.0060	0 0270	0.3690	0.0000	0.0000	0 2024	0.0228	0.0025	0.1	0.0
19	190	0.0060	0 0270	0.3960	0.0000	0.0000	0.2256	0.0232	0.0025	0.1	0.1
20	200	0 0060	0.0270	0 4230	0.0000	0 0000	0.2491	0 0236	0.0026	0.1	0.1
21	210	0.0060	0.0270	0 4500	0.0000	0 0000	0 2730	0 0239	0.0026	0.1	0.1
22	220	0.0060	0 0270	0.4770	0.0000	0 0000	0 2972	0 0241	0.0026	0.1	0.1
23	230	0.0070	0 0315	0.5085	0 0000	0.0000	0.3256	0.0284	0.0031	0.1	0.1
24	240	0 0070	0.0315	0.5400	0 0000	0.0000	0.3543	0.0287	0 0032	0.1	0.1
25	250	0 0070	0.0315	0.5715	0 0006	0.0006	0 3833	0.0290	0 0037	0 1	0.1
26	260	0.0070	0.0315	0.6030	0.0019	0.0013	0 4125	0 0292	0.0043	0.1	0.1
27	270	0.0070	0.0315	0.6345	0.0038	0.0020	0.4418	0 0294	0.0050	0.1	0.1
28	280	0 0070	0.0315	0.6660	0.0065	0.0026	0.4713	0.0295	0.0056	0.1	0.1
29	290	0 0082	0.0369	0.7029	0 0104	0.0039	0.5061	0.0348	0 0073	0.2	0.1
30	300	0 0082	0.0369	0 7398	0 0151	0 0048	0.5410	0.0349	0 0080	0 2	0.1
31	310	0 0082	0 0369	0.7767	0 0207	0 0056	0 5761	0 0351	0.0088	0.2	0.2
32	320	0.0082	0 0369	0.8136	0 0270	0.0064	0.6113	0.0352	0.0095	0 2	0.2
33	330	0 0082	0 0369	0.8505	0.0342	0.0071	0.6467	0.0353	0.0102	0.2	0.2
34	340	0 0082	0.0369	0.8874	0.0420	0.0078	0 6821	0 0355	0.0109	0.2	0.2
35	350	0.0095	0 0428	0 9302	0.0520	0.0100	0.7233	0.0412	0.0134	0.3	0.2
36	360	0 0095	0 0428	0 9729	0.0628	0 0109	0 7647	0 0413	0.0142	0.3	0.3
37	370	0 0095	0 0428	1.0157	0.0746	0 0117	0 8061	0 0414	0.0150	0 3	0.3
38	380	0 0095	0.0428	1.0584	0.0871	0.0126	0 8476	0.0415	0.0157	0.3	0.3
39	390	0 0095	0.0428	1.1012	0.1005	0.0134	0.8892	0.0416	0 0164	0.4	0.3
40	400	0 0095	0 0428	1.1439	0.1146	0 0141	0 9309	0 0417	0 0171	0 4	0.3
41	410	0 0134	0.0603	1.2042	0.1358	0 0212	0.9898	0.0589	0.0253	0.6	0.4
42	420	0 0134	0.0603	1.2645	0.1584	0.0226	1.0488	0 0590	0.0265	0 6	0 5
43	430	0 0134	0 0603	1.3248	0.1823	0.0239	1.1079	0.0591	0.0277	0.6	0.5
44	440	0.0180	0 0810	1 4058	0 2163	0 0341	1 1874	0.0796	0.0390	0.9	0.6
45	450	0.0180	0.0810	1.4868	0.2525	0 0362	1 2671	0.0797	0 0409	0 9	0.7
46	460	0 0340	0.1530	1.6398	0.3260	0 0736	1 4180	0.1509	0.0820	1.8	1.0
47	470	0.0540	0.2430	1.8828	0 4553	0.1293	1 6583	0.2403	0.1414	3.1	1.6
48	480	0 0270	0.1215	2.0043	0 5250	0.0697	1.7786	0 1204	0.0752	1.7	1.9
49	490	0 0180	0 0810	2.0853	0.5731	0 0481	1 8589	0 0803	0.0516	1.1	1.7
50	500	0 0134	0 0603	2.1456	0.6097	0 0366	1.9187	0 0598	0.0391	0.9	1.4
51	510	0 0134	0 0603	2.2059	0 6470	0.0373	1 9786	0.0598	0.0397	0.9	1.2
52	520	0.0134	0 0603	2.2662	0.6849	0.0379	2.0384	0.0599	0 0403	0 9	1.1
53	530	0 0088	0 0396	2.3058	0.7101	0.0252	2.0778	0.0393	0.0268	0.6	0.9
54	540	0 0088	0 0396	2.3454	0.7356	0.0255	2.1171	0 0393	0.0270	0 6	0.8
55	550	0 0088	0.0396	2 3850	0 7614	0.0257	2.1564	0.0393	0.0272	0 6	0.7
56	560	0.0088	0 0396	2 4246	0 7873	0 0260	2.1958	0.0393	0.0274	0.6	0.7
57	570	0 0088	0.0396	2.4642	0.8135	0.0262	2.2352	0.0394	0 0276	0 6	0.7
58	580	0.0088	0 0396	2 5038	0 8400	0.0264	2 2745	0 0394	0.0278	0 6	0 6
59	590	0 0088	0 0396	2.5434	0.8666	0 0267	2 3139	0.0394	0.0280	0.6	0.6
60	600	0 0088	0 0396	2.5830	0.8935	0.0269	2.3533	0.0394	0.0282	0.6	0.6
61	610	0 0088	0 0396	2.6226	0 9206	0 0271	2.3927	0.0394	0.0284	0.6	0.6
62	620	0.0088	0.0396	2.6622	0 9479	0.0273	2 4320	0 0394	0.0286	0.6	0.6
63	630	0.0088	0 0396	2.7018	0.9754	0.0275	2 4714	0 0394	0.0288	0 6	0.6
64	640	0 0088	0 0396	2 7414	1.0031	0 0277	2 5108	0 0394	0.0290	0.6	0.6
65	650	0 0072	0.0324	2 7738	1 0259	0.0228	2.5431	0.0322	0.0238	0.5	0.6
66	660	0.0072	0.0324	2 8062	1 0488	0.0229	2.5753	0.0322	0.0239	0.5	0.6
67	670	0 0072	0.0324	2.8386	1.0719	0 0231	2.6076	0 0322	0 0241	0 5	0 6
68	680	0.0072	0.0324	2 8710	1.0950	0 0232	2 6398	0 0323	0.0242	0 5	0 6
69	690	0 0072	0 0324	2 9034	1.1183	0.0233	2.6721	0 0323	0.0243	0 5	0 5
70	700	0 0072	0 0324	2.9358	1.1417	0.0234	2.7043	0.0323	0.0244	0.5	0 5
71	710	0 0072	0 0324	2.9682	1.1653	0 0235	2 7366	0.0323	0 0245	0.5	0.5

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	(6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	(8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
72	720	0 0072	0.0324	3 0006	1.1889	0 0236	2.7689	0.0323	0.0246	0 5	0.5
73	730	0 0072	0.0324	3.0330	1.2127	0.0237	2.8011	0 0323	0.0247	0.5	0.5
74	740	0 0072	0.0324	3.0654	1.2365	0.0239	2.8334	0.0323	0.0248	0.5	0.5
75	750	0 0072	0 0324	3 0978	1.2605	0.0240	2.8657	0 0323	0.0249	0.6	0 5
76	760	0.0072	0 0324	3 1302	1 2845	0.0241	2 8979	0 0323	0.0250	0.6	0 6
77	770	0.0057	0 0257	3 1559	1 3037	0.0191	2 9235	0 0256	0 0198	0.4	0 5
78	780	0.0057	0 0257	3.1815	1 3228	0.0192	2 9491	0 0256	0 0199	0.4	0 5
79	790	0.0057	0 0257	3 2072	1 3421	0.0192	2 9746	0 0256	0 0199	0 4	0 5
80	800	0 0057	0 0257	3.2328	1 3614	0 0193	3.0002	0.0256	0.0200	0 4	0.5
81	810	0 0057	0 0257	3 2585	1 3808	0.0194	3 0257	0 0256	0.0200	0 4	0.5
82	820	0 0057	0 0257	3 2841	1 4002	0.0194	3 0513	0 0256	0.0201	0 4	0.5
83	830	0 0057	0 0257	3 3098	1 4197	0.0195	3.0768	0.0256	0.0201	0.4	0.4
84	840	0 0057	0.0257	3.3354	1 4392	0.0195	3.1024	0.0256	0 0202	0.4	0.4
85	850	0 0057	0.0257	3.3611	1.4588	0.0196	3.1280	0.0256	0 0203	0.4	0.4
86	860	0.0057	0.0257	3.3867	1.4785	0.0197	3.1535	0.0256	0 0203	0.5	0.4
87	870	0.0057	0.0257	3.4124	1.4982	0.0197	3 1791	0.0256	0 0204	0.5	0.5
88	880	0.0057	0 0257	3.4380	1.5180	0.0198	3 2047	0 0256	0 0204	0.5	0 5
89	890	0.0050	0.0225	3 4605	1.5354	0.0174	3.2271	0 0224	0 0179	0.4	0 4
90	900	0.0050	0 0225	3.4830	1.5528	0.0174	3 2495	0 0224	0 0180	0.4	0.4
91	910	0 0050	0.0225	3 5055	1.5703	0 0175	3 2720	0.0224	0 0180	0.4	0.4
92	920	0.0050	0 0225	3.5280	1.5878	0.0175	3 2944	0.0224	0 0180	0 4	0.4
93	930	0 0050	0 0225	3 5505	1.6053	0 0175	3.3168	0.0224	0.0181	0 4	0.4
94	940	0 0050	0 0225	3 5730	1.6229	0 0176	3.3392	0.0224	0.0181	0.4	0.4
95	950	0 0050	0.0225	3.5955	1.6405	0.0176	3.3617	0.0224	0.0181	0.4	0.4
96	960	0 0050	0 0225	3.6180	1.6582	0.0177	3.3841	0.0224	0.0182	0.4	0.4
97	970	0.0050	0 0225	3.6405	1.6759	0.0177	3 4066	0.0224	0 0182	0.4	0.4
98	980	0.0050	0.0225	3.6630	1.6936	0.0177	3 4290	0 0224	0.0183	0.4	0 4
99	990	0 0050	0 0225	3 6855	1.7114	0.0178	3.4514	0 0224	0.0183	0.4	0.4
100	1000	0 0050	0 0225	3.7080	1.7292	0.0178	3 4739	0.0224	0 0183	0 4	0 4
101	1010	0 0040	0 0180	3 7260	1.7435	0.0143	3 4918	0 0180	0 0147	0 3	0.4
102	1020	0 0040	0 0180	3 7440	1.7578	0 0143	3 5098	0.0180	0 0147	0.3	0.4
103	1030	0 0040	0 0180	3 7620	1.7721	0.0143	3.5277	0.0180	0 0147	0 3	0.3
104	1040	0 0040	0.0180	3.7800	1 7864	0 0143	3.5457	0.0180	0 0147	0.3	0.3
105	1050	0 0040	0.0180	3.7980	1 8008	0 0144	3.5636	0.0180	0.0148	0.3	0.3
106	1060	0 0040	0 0180	3.8160	1.8152	0 0144	3.5816	0.0180	0.0148	0.3	0.3
107	1070	0 0040	0 0180	3.8340	1.8296	0 0144	3.5995	0.0180	0.0148	0.3	0.3
108	1080	0.0040	0 0180	3 8520	1.8440	0.0144	3.6175	0.0180	0.0148	0.3	0.3
109	1090	0.0040	0 0180	3 8700	1.8585	0.0145	3.6354	0.0180	0.0148	0.3	0 3
110	1100	0 0040	0 0180	3 8880	1.8730	0.0145	3.6534	0 0180	0.0149	0.3	0 3
111	1110	0 0040	0.0180	3 9060	1.8875	0.0145	3 6713	0 0180	0.0149	0.3	0.3
112	1120	0.0040	0 0180	3 9240	1.9020	0.0145	3 6893	0.0180	0 0149	0.3	0.3
113	1130	0 0040	0 0180	3.9420	1 9165	0.0145	3 7072	0 0180	0.0149	0 3	0 3
114	1140	0.0040	0.0180	3.9600	1 9311	0 0146	3.7252	0 0180	0.0149	0 3	0.3
115	1150	0 0040	0.0180	3.9780	1 9456	0 0146	3.7432	0.0180	0.0149	0 3	0.3
116	1160	0 0040	0 0180	3.9960	1.9602	0 0146	3.7611	0.0180	0.0150	0.3	0.3
117	1170	0 0040	0 0180	4.0140	1.9749	0.0146	3.7791	0.0180	0.0150	0.3	0.3
118	1180	0 0040	0 0180	4 0320	1.9895	0 0146	3.7970	0.0180	0 0150	0.3	0.3
119	1190	0 0040	0.0180	4 0500	2.0042	0 0147	3.8150	0 0180	0 0150	0.3	0.3
120	1200	0.0040	0.0180	4 0680	2.0188	0.0147	3.8329	0 0180	0.0150	0.3	0.3
121	1210	0.0040	0.0180	4 0860	2.0335	0 0147	3.8509	0.0180	0 0151	0.3	0.3
122	1220	0.0040	0.0180	4.1040	2.0482	0.0147	3.8689	0.0180	0.0151	0.3	0.3
123	1230	0 0040	0 0180	4.1220	2.0630	0 0147	3.8868	0.0180	0.0151	0.3	0.3
124	1240	0 0040	0 0180	4.1400	2 0777	0.0148	3 9048	0.0180	0.0151	0.3	0.3
125	1250	0 0040	0.0180	4.1580	2 0925	0.0148	3.9227	0 0180	0 0151	0.3	0.3
126	1260	0 0040	0.0180	4.1760	2 1073	0.0148	3 9407	0.0180	0.0151	0.3	0 3
127	1270	0 0040	0 0180	4.1940	2.1221	0 0148	3 9587	0.0180	0.0152	0.3	0.3
128	1280	0.0040	0 0180	4 2120	2.1369	0 0148	3 9766	0.0180	0 0152	0.3	0.3
129	1290	0.0040	0 0180	4.2300	2.1518	0 0148	3.9946	0 0180	0 0152	0 3	0.3
130	1300	0 0040	0.0180	4 2480	2.1666	0.0149	4 0125	0.0180	0.0152	0 3	0.3
131	1310	0.0040	0 0180	4 2660	2.1815	0.0149	4.0305	0.0180	0.0152	0.3	0.3
132	1320	0.0040	0.0180	4 2840	2.1964	0.0149	4 0485	0 0180	0.0152	0.3	0.3
133	1330	0.0040	0.0180	4.3020	2 2113	0.0149	4.0664	0.0180	0.0152	0.3	0 3
134	1340	0 0040	0.0180	4.3200	2.2262	0.0149	4 0844	0 0180	0.0153	0.3	0.3
135	1350	0 0040	0 0180	4.3380	2.2412	0.0149	4.1024	0 0180	0 0153	0 3	0.3
136	1360	0 0040	0 0180	4 3560	2.2562	0.0150	4.1203	0 0180	0.0153	0 3	0.3
137	1370	0.0040	0.0180	4 3740	2.2711	0.0150	4.1383	0 0180	0 0153	0 3	0.3
138	1380	0.0040	0.0180	4.3920	2.2861	0.0150	4.1562	0.0180	0.0153	0 3	0.3
139	1390	0 0040	0.0180	4.4100	2.3011	0 0150	4.1742	0.0180	0.0153	0 3	0.3
140	1400	0 0040	0.0180	4.4280	2.3162	0 0150	4.1922	0.0180	0 0154	0.3	0.3
141	1410	0 0040	0 0180	4.4460	2.3312	0 0150	4 2101	0.0180	0.0154	0 3	0.3
142	1420	0 0040	0.0180	4 4640	2.3463	0 0151	4 2281	0.0180	0.0154	0.3	0.3
143	1430	0.0040	0 0180	4.4820	2.3614	0.0151	4.2461	0.0180	0 0154	0.3	0.3
144	1440	0.0040	0 0180	4.5000	2 3765	0.0151	4.2640	0.0180	0 0154	0.3	0 3
	Total	1 0000	4 5000						Hydrograph Volume (Cubic Feet)		33990

CES|NW

SANTA BARBARA URBAN HYDROGRAPH
SCS TYPE 1A 24-HOUR DISTRIBUTION

Project: *Garden Grove*
Project Number: *1667*
Date: *9.24.04*

Basin: *Site*
Event: *100-yr Post*

Given:

Area =	3.67	acres
Pt =	4.5	inches
dt =	10	min.
Tc =	13	min.
w =	0.2778	routing constant

Pervious Area

Area =	1.94	acres
CN =	79	
S =	2.66	
0.2S =	0.53	

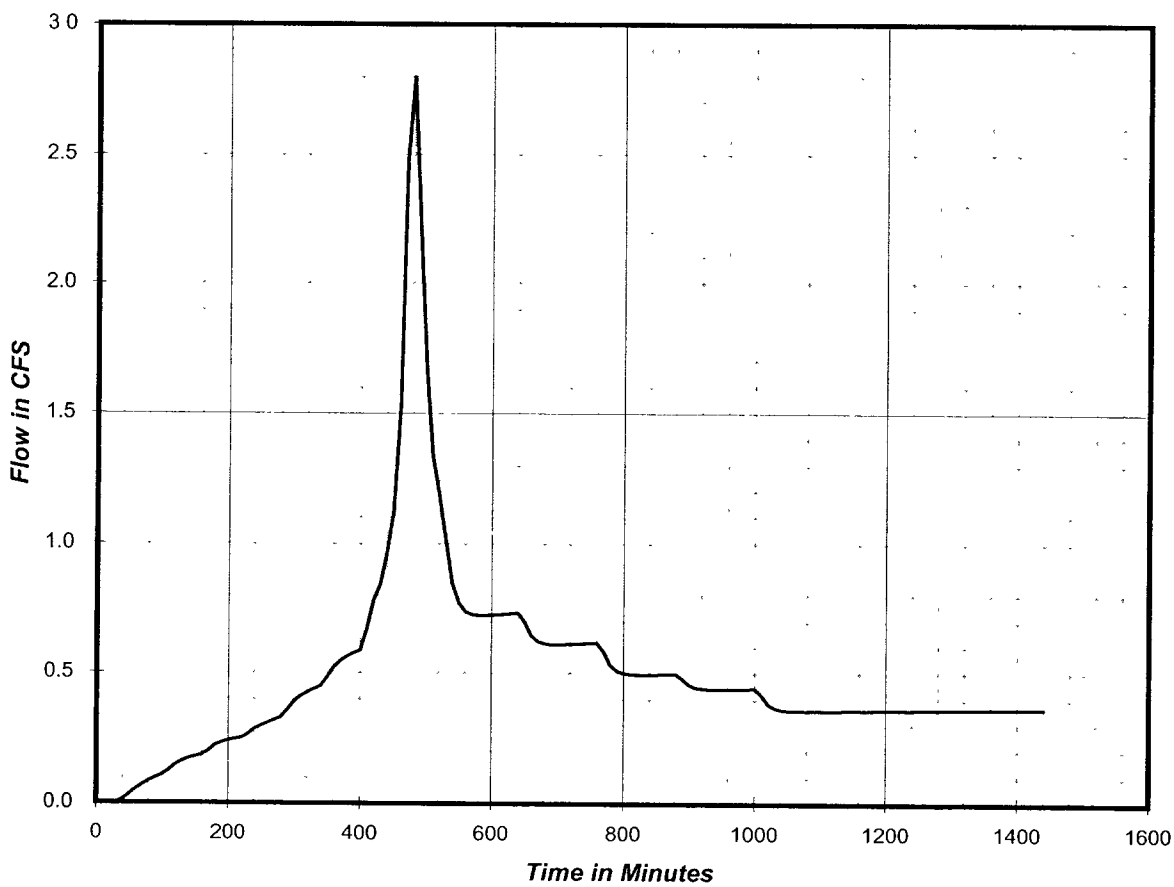
Impervious Area

Area =	1.73	acres
CN =	98	
S =	0.20	
0.2S =	0.04	

HYDROGRAPH RESULTS

Peak Runoff.	2.8	cfs
Total Vol. :	43228	cf

Peak Runoff Hydrograph



File: SBUH-24-100yr-post.XLS
9/30/2004

CES|NW, Inc.

(1) Time Incre-ment	(2) Time (Min)	(3) Rainfall Distri-bution (% of Pt)	(4) Incre-mental Rainfall (in)	(5) Accumu-lated Rainfall (in)	Pervious Area (6) Accumu-lated Runoff (in)	(7) Incre-mental Runoff (in)	Impervious Area (8) Accumu-lated Runoff (in)	(9) Incre-mental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydro-graph (cfs)	(12) Design Hydro-graph (cfs)
1	10	0 0040	0.0180	0.0180	0 0000	0 0000	0.0000	0 0000	0 0000	0.0	0.0
2	20	0 0040	0.0180	0 0360	0 0000	0.0000	0.0000	0 0000	0.0000	0.0	0.0
3	30	0.0040	0 0180	0 0540	0 0000	0.0000	0.0008	0 0008	0.0004	0.0	0.0
4	40	0.0040	0 0180	0 0720	0.0000	0.0000	0.0041	0 0033	0 0016	0 0	0 0
5	50	0 0040	0 0180	0 0900	0.0000	0.0000	0 0096	0 0054	0 0026	0.1	0 0
6	60	0 0040	0.0180	0 1080	0.0000	0 0000	0 0166	0.0071	0 0033	0 1	0.1
7	70	0 0040	0 0180	0 1260	0.0000	0 0000	0 0251	0.0084	0.0040	0.1	0.1
8	80	0 0040	0 0180	0 1440	0 0000	0 0000	0 0347	0 0096	0.0045	0 1	0.1
9	90	0.0040	0 0180	0.1620	0 0000	0.0000	0.0451	0.0105	0.0049	0 1	0 1
10	100	0.0040	0.0180	0.1800	0.0000	0.0000	0.0564	0 0113	0.0053	0.1	0.1
11	110	0.0050	0 0225	0 2025	0 0000	0.0000	0.0715	0 0150	0.0071	0 2	0 1
12	120	0 0050	0.0225	0 2250	0.0000	0.0000	0.0874	0.0159	0.0075	0.2	0.1
13	130	0 0050	0.0225	0 2475	0.0000	0 0000	0.1040	0.0166	0 0078	0.2	0.2
14	140	0 0050	0.0225	0 2700	0.0000	0.0000	0.1212	0.0172	0.0081	0.2	0.2
15	150	0 0050	0 0225	0.2925	0.0000	0 0000	0.1390	0.0178	0.0084	0 2	0.2
16	160	0 0050	0 0225	0.3150	0.0000	0 0000	0.1572	0 0182	0.0086	0 2	0.2
17	170	0.0060	0 0270	0.3420	0 0000	0 0000	0.1795	0.0223	0.0105	0.2	0.2
18	180	0.0060	0 0270	0 3690	0.0000	0 0000	0.2024	0.0228	0.0108	0.2	0 2
19	190	0.0060	0 0270	0.3960	0.0000	0 0000	0 2256	0.0232	0 0109	0.2	0 2
20	200	0 0060	0.0270	0 4230	0.0000	0.0000	0 2491	0.0236	0.0111	0.2	0 2
21	210	0.0060	0.0270	0 4500	0.0000	0.0000	0 2730	0.0239	0 0113	0.2	0.2
22	220	0 0060	0 0270	0.4770	0 0000	0.0000	0 2972	0.0241	0 0114	0.3	0.2
23	230	0.0070	0 0315	0.5085	0 0000	0 0000	0 3256	0 0284	0.0134	0 3	0.3
24	240	0 0070	0.0315	0 5400	0.0000	0 0000	0.3543	0 0287	0.0136	0.3	0.3
25	250	0 0070	0.0315	0 5715	0.0006	0.0006	0.3833	0.0290	0.0139	0.3	0.3
26	260	0 0070	0.0315	0 6030	0 0019	0 0013	0 4125	0 0292	0 0144	0.3	0.3
27	270	0 0070	0 0315	0.6345	0 0038	0 0020	0 4418	0.0294	0 0149	0 3	0.3
28	280	0.0070	0 0315	0.6660	0.0065	0 0026	0 4713	0.0295	0.0153	0 3	0 3
29	290	0 0082	0 0369	0.7029	0 0104	0 0039	0 5061	0.0348	0.0184	0 4	0 4
30	300	0.0082	0 0369	0.7398	0 0151	0.0048	0.5410	0 0349	0.0190	0 4	0.4
31	310	0 0082	0.0369	0 7767	0 0207	0.0056	0.5761	0.0351	0.0195	0 4	0 4
32	320	0 0082	0.0369	0.8136	0 0270	0.0064	0.6113	0 0352	0.0200	0 4	0 4
33	330	0 0082	0 0369	0.8505	0.0342	0 0071	0.6467	0 0353	0 0204	0.5	0.4
34	340	0.0082	0 0369	0.8874	0.0420	0 0078	0 6821	0 0355	0 0209	0.5	0.4
35	350	0.0095	0 0428	0 9302	0 0520	0 0100	0.7233	0.0412	0.0247	0 5	0.5
36	360	0.0095	0 0428	0 9729	0.0628	0 0109	0.7647	0.0413	0.0252	0 6	0.5
37	370	0.0095	0.0428	1 0157	0.0746	0 0117	0.8061	0.0414	0.0257	0 6	0.5
38	380	0 0095	0.0428	1 0584	0.0871	0 0126	0 8476	0 0415	0 0262	0.6	0 6
39	390	0.0095	0 0428	1.1012	0.1005	0.0134	0.8892	0.0416	0.0267	0 6	0 6
40	400	0 0095	0 0428	1 1439	0 1146	0.0141	0 9309	0.0417	0.0271	0.6	0.6
41	410	0 0134	0 0603	1 2042	0 1358	0 0212	0 9898	0 0589	0 0390	0 9	0.7
42	420	0 0134	0.0603	1 2645	0.1584	0 0226	1 0488	0 0590	0.0398	0 9	0.8
43	430	0 0134	0 0603	1 3248	0 1823	0.0239	1.1079	0 0591	0.0405	0 9	0.8
44	440	0 0180	0 0810	1 4058	0.2163	0 0341	1 1874	0 0796	0.0555	1.2	1 0
45	450	0 0180	0 0810	1.4868	0.2525	0.0362	1 2671	0.0797	0 0567	1.3	1.1
46	460	0 0340	0.1530	1.6398	0 3260	0.0736	1 4180	0.1509	0.1100	2 4	1.5
47	470	0 0540	0.2430	1 8828	0 4553	0 1293	1 6583	0.2403	0.1816	4 0	2 5
48	480	0 0270	0.1215	2.0043	0.5250	0 0697	1.7786	0 1204	0.0936	2 1	2 8
49	490	0.0180	0 0810	2.0853	0.5731	0 0481	1.8589	0 0803	0.0633	1 4	2 2
50	500	0 0134	0 0603	2 1456	0 6097	0 0366	1 9187	0 0598	0.0476	1.1	1.7
51	510	0.0134	0 0603	2 2059	0.6470	0 0373	1.9786	0.0598	0 0479	1.1	1.3
52	520	0 0134	0.0603	2 2662	0.6849	0 0379	2.0384	0.0599	0.0483	1 1	1.2
53	530	0 0088	0.0396	2 3058	0.7101	0 0252	2.0778	0.0393	0.0319	0 7	1 0
54	540	0 0088	0.0396	2.3454	0 7356	0.0255	2 1171	0 0393	0.0320	0.7	0 8
55	550	0 0088	0.0396	2.3850	0 7614	0.0257	2.1564	0.0393	0 0321	0.7	0 8
56	560	0 0088	0.0396	2 4246	0 7873	0 0260	2 1958	0.0393	0 0323	0 7	0.7
57	570	0 0088	0 0396	2 4642	0.8135	0 0262	2 2352	0 0394	0.0324	0 7	0.7
58	580	0 0088	0.0396	2.5038	0.8400	0.0264	2.2745	0 0394	0 0325	0.7	0.7
59	590	0 0088	0 0396	2.5434	0.8666	0 0267	2.3139	0 0394	0.0327	0.7	0.7
60	600	0 0088	0.0396	2.5830	0 8935	0 0269	2 3533	0.0394	0.0328	0 7	0.7
61	610	0.0088	0 0396	2 6226	0 9206	0 0271	2 3927	0.0394	0 0329	0.7	0.7
62	620	0.0088	0 0396	2.6622	0.9479	0 0273	2 4320	0.0394	0 0330	0 7	0.7
63	630	0 0088	0 0396	2.7018	0.9754	0.0275	2.4714	0 0394	0 0331	0.7	0.7
64	640	0.0088	0.0396	2 7414	1.0031	0 0277	2.5108	0.0394	0 0332	0 7	0.7
65	650	0 0072	0.0324	2 7738	1 0259	0 0228	2.5431	0 0322	0.0273	0 6	0 7
66	660	0 0072	0 0324	2 8062	1.0488	0 0229	2.5753	0.0322	0.0273	0.6	0 6
67	670	0 0072	0 0324	2.8386	1 0719	0 0231	2.6076	0 0322	0.0274	0.6	0.6
68	680	0 0072	0 0324	2.8710	1 0950	0.0232	2.6398	0 0323	0 0275	0 6	0 6
69	690	0 0072	0 0324	2.9034	1 1183	0.0233	2.6721	0.0323	0 0275	0.6	0.6
70	700	0 0072	0 0324	2 9358	1.1417	0.0234	2 7043	0 0323	0.0276	0.6	0.6
71	710	0 0072	0 0324	2 9682	1.1653	0 0235	2 7366	0.0323	0.0276	0 6	0.6

(1) Time Increment	(2) Time (Min)	(3) Rainfall Distribution (% of Pt)	(4) Incremental Rainfall (in)	(5) Accumulated Rainfall (in)	(6) Accumulated Runoff (in)	(7) Incremental Runoff (in)	(8) Accumulated Runoff (in)	(9) Incremental Runoff (in)	(10) Total Runoff (in)	(11) Instant Hydrograph (cfs)	(12) Design Hydrograph (cfs)
72	720	0.0072	0 0324	3.0006	1.1889	0 0236	2.7689	0 0323	0.0277	0 6	0.6
73	730	0.0072	0 0324	3 0330	1.2127	0.0237	2 8011	0.0323	0 0278	0 6	0.6
74	740	0.0072	0 0324	3.0654	1.2365	0.0239	2 8334	0.0323	0.0278	0 6	0.6
75	750	0.0072	0.0324	3.0978	1.2605	0.0240	2.8657	0 0323	0 0279	0.6	0.6
76	760	0 0072	0 0324	3.1302	1 2845	0.0241	2.8979	0 0323	0 0279	0 6	0.6
77	770	0.0057	0 0257	3.1559	1.3037	0.0191	2.9235	0.0256	0 0222	0 5	0.6
78	780	0 0057	0 0257	3.1815	1.3228	0.0192	2.9491	0 0256	0 0222	0.5	0.5
79	790	0.0057	0 0257	3.2072	1 3421	0 0192	2 9746	0 0256	0 0222	0 5	0.5
80	800	0.0057	0 0257	3.2328	1.3614	0.0193	3 0002	0 0256	0 0223	0 5	0.5
81	810	0 0057	0.0257	3.2585	1.3808	0.0194	3 0257	0 0256	0 0223	0 5	0.5
82	820	0.0057	0 0257	3.2841	1 4002	0.0194	3.0513	0 0256	0.0223	0 5	0.5
83	830	0.0057	0 0257	3.3098	1.4197	0 0195	3 0768	0 0256	0.0224	0 5	0.5
84	840	0 0057	0 0257	3.3354	1 4392	0.0195	3 1024	0 0256	0 0224	0.5	0.5
85	850	0.0057	0 0257	3.3611	1.4588	0 0196	3 1280	0 0256	0 0224	0 5	0.5
86	860	0 0057	0.0257	3 3867	1 4785	0.0197	3 1535	0 0256	0 0224	0 5	0.5
87	870	0.0057	0.0257	3 4124	1 4982	0.0197	3 1791	0 0256	0 0225	0 5	0.5
88	880	0.0057	0.0257	3 4380	1 5180	0.0198	3 2047	0 0256	0.0225	0 5	0.5
89	890	0.0050	0 0225	3 4605	1.5354	0.0174	3 2271	0.0224	0.0198	0 4	0.5
90	900	0 0050	0.0225	3 4830	1 5528	0 0174	3 2495	0 0224	0.0198	0 4	0.5
91	910	0 0050	0.0225	3 5055	1.5703	0.0175	3.2720	0 0224	0.0198	0 4	0.4
92	920	0 0050	0.0225	3.5280	1.5878	0 0175	3 2944	0 0224	0 0198	0 4	0.4
93	930	0 0050	0.0225	3.5505	1.6053	0.0175	3 3168	0 0224	0.0198	0 4	0.4
94	940	0 0050	0.0225	3 5730	1.6229	0.0176	3 3392	0.0224	0.0199	0 4	0.4
95	950	0 0050	0.0225	3 5955	1.6405	0.0176	3 3617	0 0224	0.0199	0 4	0.4
96	960	0 0050	0.0225	3 6180	1.6582	0.0177	3 3841	0 0224	0 0199	0 4	0.4
97	970	0 0050	0.0225	3 6405	1.6759	0.0177	3 4066	0 0224	0.0199	0 4	0.4
98	980	0 0050	0.0225	3 6630	1.6936	0.0177	3 4290	0 0224	0 0200	0 4	0.4
99	990	0 0050	0.0225	3 6855	1.7114	0.0178	3 4514	0 0224	0.0200	0 4	0.4
100	1000	0 0050	0.0225	3 7080	1.7292	0 0178	3.4739	0 0224	0.0200	0 4	0.4
101	1010	0 0040	0.0180	3 7260	1 7435	0.0143	3 4918	0 0180	0 0160	0 4	0.4
102	1020	0 0040	0.0180	3 7440	1.7578	0 0143	3 5098	0 0180	0.0160	0 4	0.4
103	1030	0 0040	0.0180	3 7620	1.7721	0.0143	3 5277	0 0180	0.0160	0 4	0.4
104	1040	0 0040	0.0180	3 7800	1 7864	0.0143	3 5457	0 0180	0 0160	0 4	0.4
105	1050	0 0040	0 0180	3 7980	1.8008	0 0144	3 5636	0 0180	0.0161	0.4	0.4
106	1060	0 0040	0 0180	3.8160	1.8152	0 0144	3.5816	0 0180	0 0161	0 4	0.4
107	1070	0 0040	0 0180	3.8340	1 8296	0.0144	3 5995	0 0180	0.0161	0 4	0.4
108	1080	0 0040	0 0180	3.8520	1 8440	0.0144	3 6175	0 0180	0.0161	0 4	0.4
109	1090	0 0040	0.0180	3.8700	1 8585	0 0145	3.6354	0 0180	0 0161	0 4	0.4
110	1100	0.0040	0.0180	3 8880	1 8730	0 0145	3 6534	0 0180	0.0161	0 4	0.4
111	1110	0.0040	0.0180	3.9060	1 8875	0.0145	3 6713	0 0180	0.0161	0.4	0.4
112	1120	0.0040	0.0180	3.9240	1 9020	0 0145	3.6893	0 0180	0.0161	0 4	0.4
113	1130	0.0040	0 0180	3.9420	1 9165	0 0145	3 7072	0 0180	0 0161	0 4	0.4
114	1140	0.0040	0.0180	3.9600	1 9311	0 0146	3.7252	0 0180	0.0162	0 4	0.4
115	1150	0.0040	0.0180	3 9780	1 9456	0 0146	3.7432	0 0180	0 0162	0 4	0.4
116	1160	0 0040	0.0180	3.9960	1 9602	0 0146	3.7611	0 0180	0.0162	0.4	0.4
117	1170	0 0040	0.0180	4.0140	1 9749	0 0146	3.7791	0.0180	0.0162	0.4	0.4
118	1180	0.0040	0.0180	4.0320	1 9895	0 0146	3.7970	0 0180	0.0162	0.4	0.4
119	1190	0.0040	0.0180	4.0500	2.0042	0.0147	3.8150	0.0180	0.0162	0.4	0 4
120	1200	0.0040	0.0180	4 0680	2.0188	0.0147	3.8329	0 0180	0.0162	0.4	0 4
121	1210	0.0040	0 0180	4 0860	2.0335	0.0147	3.8509	0.0180	0.0162	0.4	0.4
122	1220	0 0040	0 0180	4.1040	2.0482	0.0147	3 8689	0 0180	0 0162	0.4	0 4
123	1230	0.0040	0.0180	4 1220	2.0630	0.0147	3.8868	0 0180	0.0163	0 4	0 4
124	1240	0 0040	0 0180	4.1400	2.0777	0.0148	3.9048	0 0180	0.0163	0 4	0 4
125	1250	0 0040	0 0180	4.1580	2.0925	0.0148	3.9227	0 0180	0 0163	0 4	0.4
126	1260	0 0040	0.0180	4.1760	2.1073	0 0148	3.9407	0 0180	0 0163	0 4	0.4
127	1270	0 0040	0.0180	4.1940	2.1221	0 0148	3.9587	0 0180	0 0163	0 4	0 4
128	1280	0.0040	0.0180	4.2120	2.1369	0.0148	3.9766	0 0180	0 0163	0 4	0.4
129	1290	0.0040	0.0180	4.2300	2.1518	0.0148	3.9946	0 0180	0.0163	0 4	0 4
130	1300	0 0040	0.0180	4.2480	2.1666	0.0149	4.0125	0.0180	0 0163	0.4	0.4
131	1310	0.0040	0.0180	4.2660	2.1815	0.0149	4 0305	0 0180	0 0163	0 4	0.4
132	1320	0 0040	0 0180	4.2840	2.1964	0.0149	4.0485	0.0180	0 0163	0 4	0 4
133	1330	0 0040	0 0180	4.3020	2 2113	0.0149	4 0664	0 0180	0.0164	0 4	0.4
134	1340	0 0040	0.0180	4 3200	2.2262	0.0149	4 0844	0.0180	0 0164	0 4	0.4
135	1350	0 0040	0 0180	4.3380	2.2412	0.0149	4.1024	0.0180	0.0164	0 4	0.4
136	1360	0 0040	0 0180	4.3560	2 2562	0 0150	4 1203	0.0180	0 0164	0 4	0.4
137	1370	0 0040	0 0180	4.3740	2 2711	0.0150	4 1383	0.0180	0 0164	0 4	0.4
138	1380	0 0040	0.0180	4.3920	2.2861	0 0150	4 1562	0 0180	0.0164	0 4	0 4
139	1390	0.0040	0.0180	4.4100	2.3011	0 0150	4.1742	0 0180	0.0164	0 4	0.4
140	1400	0.0040	0.0180	4 4280	2.3162	0 0150	4 1922	0.0180	0.0164	0 4	0.4
141	1410	0 0040	0.0180	4 4460	2.3312	0 0150	4.2101	0 0180	0.0164	0 4	0.4
142	1420	0 0040	0.0180	4.4640	2.3463	0 0151	4 2281	0.0180	0.0164	0 4	0.4
143	1430	0 0040	0 0180	4 4820	2.3614	0.0151	4.2461	0.0180	0.0164	0 4	0.4
144	1440	0.0040	0.0180	4 5000	2 3765	0.0151	4 2640	0 0180	0.0164	0.4	0.4
	Total	1.0000	4.5000							Hydrograph Volume (Cubic Feet)	43228

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CES|NW

September 24, 2004

Jim Duggun
City of Beaverton
Engineering Department
PO Box 4577
Beaverton, OR 97076

RE: Modification of City Standard Typical Street Sections Garden Grove Subdivision, PUD LD 2004 – 0030 CU 2004 – 0021 Beaverton, Oregon

Dear Jim:

We hereby request to modify the City's current street standard section which requires a crown section to a shed roof design. The reason for this request is to best fit the proposed street within the site constrains of the existing property as illustrated on the attached grading plan.

The proposed subdivision of Garden Grove is an infill project consisting of 14 to 15 lots located North of Multnomah Boulevard, south of SW Canby Street, East of SW 68th Avenue and West of SW Canby Lane. The property is subject to a number of regulatory restrictions and adverse site conditions.

Primary access is from SW Canby Street with emergency access only on to Multnomah Boulevard. SW Canby Street is a two lane, 20-feet wide asphalt paved road with no curbs or sidewalks. Drainage on the South side is to a poorly defined ditch that conveys run-off to cross culverts. These culverts drain to a ditch on the North side of Canby Street.

SW Multnomah Boulevard, to the South, is under the City of Portland jurisdiction. The existing roadway is about 34-feet wide with curb on the South side and edge of pavement on the North side. We found no visual evidence of the existing drainage system on the North side.

All adjacent properties are developed. The first property on the East side of the proposed access road of SW Kelsi Street is developed with a single family residence built close to its West property line. The last property to the South is developed

CESNW, INC.
15573 SW BANGY RD , STE 300 LAKE OSWEGO, OR 97035
503 968 6655 TEL 503 968 2595 FAX www cesnw com

commercial with a building and asphalt pavement parking lot. This commercial property accesses directly to Multnomah Boulevard. This property has been filled to conform to the grades in Multnomah Boulevard. The grading extends beyond the North and West property line into the proposed property of Garden Grove Subdivision.

As indicated above, we are constrained by the existing Single Family Residence on the East property line. The grading plan illustrates the change in grade between the proposed street grades required to meet City Standards of Design and the existing ground next to the existing residence. By using a shed design, we can minimize the height of a retaining wall to 2-feet. With the standard off-set crown the height will increase to about 3-feet.

Staff has requested we design SW Kelsi Street to allow future extension to SW Multnomah Boulevard. The preliminary profile for SW Kelsi Street indicates the street will cut into the existing embankment that was placed for the commercial development.

Using a shed roof design, we are able to build the street closer to the South property line and keep the proposed grading within the development site and not adversely impact the existing bank for the commercial property. The grading is illustrated on the proposed grading plan. A crown section would push this cut down another foot and steepen the slope to more than 2:1 or we need to pull the street section back further from the property line to meet grading requirements.

By using the shed roof design at the North end and South end of SW Kelsi Street, we are best able to match existing grades and of the site and comply with other City design standards and restrictions.

Your approval is hereby request. Please call if you need additional information or clarification.

Sincerely,
CESNW, Inc.

Carl Boock Jensen

Carl B. Jensen, PE, PLS

REGISTERED PROFESSIONAL ENGINEER 7727 OREGON JULY 19, 1973 CARL BOOCK JENSEN

Renew 6/30/05

/1667/wp/Let 2 Beav City Engr.doc

CES|NW Memorandum

To: Glen Pierce – via FAX – 503-823-7371

CC: Mitchell Hardy Homes – via hand delivery

From: Kirsten Van Loo

Date: 07/25/01

Re: Telephone Conversation this date regarding access onto Multnomah Blvd.

Glen:

Thank you for your helpful phone call this afternoon. This memo is a written re-cap of my understanding of the points addressed in our conversation. If I have misunderstood or misquoted your information, please correct me.

You confirmed that City of PDX does control access to Multnomah Blvd. And that access could be granted, either full access or restricted emergency vehicle access, depending on the satisfaction of intersection sight distance requirements and a design conforming to the necessary intersection geometry. For full access to be granted, PDX would need confirmation of sight distance of 450 feet in either direction, and a design that had the new access "radial" or nearly radial to the curve on this portion of Multnomah Blvd. For emergency vehicle only access, the engineering design standards are not so stringent.

The approval review process would involve comments on a preliminary design from your office to the Beaverton staff. Any construction would be preceded by the submission and approval of construction documents through Mr. Markesino's review process.

CASE FILE # LD 2004-0030

DRAFT

PRELIMINARY ANNUAL BUDGET
for GARDEN GROVE PUD
(15 LOTS)
by
Mitchell & Hardy Construction Co., Inc

Tracts A, C & D Landscape maintenance	$1800.00	(Superior Landscaping)
Full Yearly Maintenance for a 4-Cannister Storm System	$ 820.00	(Storm Water Maintenance, Inc.)
Utilities	$ 450.00	
Insurance	$ 750.00	(State Farm Insurance)
Reserve Account	$2180.00	
TOTAL ANNUAL BUDGET	$6000.00	

Homeowners' Association Yearly Assessment	**$ 400.00**	**per Lot**

EXHIBIT 4.1

Case file No./Project Name: CU2004-0021/Tp2004-0018
LD2004-0030/FS2004-0017
Garden Grove 15-LOT PUD

We live right across from the proposed building area and we have a few concerns.

1. An entrance and/or exit on Canby Street would create too much traffic, congestion, and noise. The residents along Canby St. have complained many times about the speed that cars travel on this neighborhood street.
2. Since our sleeping rooms face Canby Street any street lamp would shine in our windows. Please do not place a light at this end of the development.
3. If there is a vehicle driveway onto Canby Street we definitely need speed humps or bumps to slow traffic. A development of 15 homes means an additional 60 to 75 automobile trips per day on the street.

Dale and Sylvia Butler
6675 SW Canby Street
Portland, OR 97223
503 246-8725

EXHIBIT 4.1

EXHIBIT 4.2

6625 SW Canby Street
Portland, Oregon 97223

27 November 2004

Development Services Division
P.O. Box 4755
Beaverton, Oregon 97076

NOV 30 2004

RE: Case File No. CU2004-0021/TP2004-0018, LD2004-0030/FS2004-0017
Garden Grove 15-Lot PUD

Dear Sir or Madam:

The city of Beaverton has become a very desirable area in which to live, in part because of the careful land use planning and zoning regulations developed. These rules, as you know, are the result of a great deal of thought, deliberation, and analysis, and these rules ensure that the quality of residential life in the Beaverton area remains high, and Beaverton remains a desirable location for families.

Exceptions to these rules should not be granted lightly, as exceptions may allow areas of Beaverton to deteriorate and NOT provide the quality of life that we all enjoy today.

The case in question asks for numerous exceptions to the land use policies in place. There seem to be no unusual circumstances to warrant this—**the applicant merely wishes to make a higher profit** on the development, at the expense of livability in this neighborhood, and at the expense of the residents of the neighborhood whose property values will decrease if these exceptions are granted for the applicant. I am not opposed to houses being built on the applicant's land, provided that the standards set forth by the city of Beaverton are followed.

We have excellent land use policies in place—policies developed for very good reasons. I ask you NOT to throw these policies out the window purely so that a developer/land owner—**who will NOT live in the neighborhood and experience the consequences of his greed**—can make extra profit.

Please, do not allow the applicant to ruin my neighborhood and lower my property value.

Sincerely,

Michael Cottam
Owner, 6625 SW Canby Street since 1993

EXHIBIT 4.2

EXHIBIT 4.3

SUBJ: Case File No./Project Name: CU2004-0021/TP2004-0018
LD2004-0030/FS2004-0017
Garden Grove 15-Lot PUD

RECEIVED
DEC 20 2004
COMMUNITY DEVELOP DEPT.

To: Development Service Division
PO Box 4755
Beaverton, OR. 97076

From: Michael A. Hayes & Bonnie A. Hayes
7275 SW 68TH Avenue
Portland, OR. 97223

Date: December 18th, 2004

We are writing due to our concern about the proposed case file/project listed above. Essentially, the project will result in substantially increased density in the neighborhood without addressing existing traffic flow problems on SW Canby and SW 68th streets.

Both of the above streets are used to bypass Oleson Road, Gardenhome Road, and Multnomah Boulevard. The additional density would add to the problem. There needs to be an access road to the development other than Canby and 68th streets in order to ameliorate the speeding problems that already occur routinely on both Canby and 68th.

If the City passes the zoning changes without providing an access to the development from Multnomah Boulevard, SW 68th and SW Canby will become off-ramps for residents of the new development. Adding an access road to the development from Multnomah Boulevard could lessen the above problem, as would the addition of speed bumps on both SW 68th and SW Canby.

We feel that these issues must be addressed or the zoning changes will lead to the devaluation of our property on SW 68th. This would in turn result in the need for us to seek legal recourse via the recently enacted Measure 37 designed to protect existing property owners from zoning changes made without the consent of affected homeowners.

You may contact us in writing regarding the proposed case file/project name or any further proposed projects at the address listed above.

Sincerely,

Michael A. Hayes / h - 1C

Michael A. Hayes & Bonnie A. Hayes

EXHIBIT 4.3

AGENDA BILL

Beaverton City Council
Beaverton, Oregon

SUBJECT: An Ordinance Relating to the Fire Code, Repealing Beaverton Code Sections 8.01.010, 8.01.033, 8.01.038, 8.01.043, and 8.01.900

FOR AGENDA OF: ~~3-28-05~~ 04-04-05 **BILL NO:** 05059

Mayor's Approval:

DEPARTMENT OF ORIGIN: CDD BCR

DATE SUBMITTED: 3-7-05

CLEARANCES: City Attorney

PROCEEDING: ~~First Reading~~
Second Reading and Passage

EXHIBITS: Ordinance
Current Code Language with Proposed Changes (Information Only)

BUDGET IMPACT

EXPENDITURE REQUIRED $0	AMOUNT BUDGETED $0	APPROPRIATION REQUIRED $0

HISTORICAL PERSPECTIVE:

Beaverton Code (BC) Section 8.01.010 provides definitions for use in enforcing the City's Fire Code, BC Section 8.01.033 references regulations in the Fire Code for storage of flammable and combustible liquids, BC Section 8.01.038 prohibits the storage of explosive materials within the City, BC Section 8.01.043 regulates storage of Liquefied Petroleum (LP) and Natural Gas, and BC Section 8.01.900 assesses penalties for violations of the Fire Code.

INFORMATION FOR CONSIDERATION:

BC Sections 8.01.010, 8.01.033, 8.01.038, 8.01.043, and 8.01.900 provide definitions, regulations, and penalties for a City Fire Code that no longer is necessary and, therefore, should be repealed. Fire Code regulations are enforced through the Fire Prevention Code of the Tualatin Valley Fire and Rescue District (TVF&R) as authorized by Council Resolution 3800. The Fire Prevention Code provides current and up-to-date regulations for the storage and use of flammable and combustible liquids, explosive materials, and flammable gas for the purpose of maintaining the health, safety, and welfare of the public. The Fire Prevention Code contains penalties for violations of these regulations.

Repealing the referenced code sections will promote greater overall consistency with the TVF&R Ordinances and statewide law. The TVF&R has reviewed these proposed changes and has no objection to them.

RECOMMENDED ACTION:

~~First Reading~~
Second Reading and Passage

ORDINANCE NO. 4345

AN ORDINANCE RELATING TO THE FIRE CODE, REPEALING BEAVERTON CODE SECTIONS 8.01.010, 8.01.033, 8.01.038, 8.01.043, AND 8.01.900

WHEREAS, The City's Fire Code as referenced in BC Sections 8.01.010 through 8.01.900 has been replaced by the Fire Prevention Code of the Tualatin Valley Fire and Rescue District as authorized by Council Resolution 3800; and

WHEREAS, The City's Fire Code contains outdated and unnecessary regulations; and

WHEREAS, The Fire Prevention Code of the Tualatin Valley Fire and Rescue District provides current and up-to-date regulations for protecting the health, safety, and welfare of the public from fire, explosion, and hazardous materials, now, therefore:

THE CITY OF BEAVERTON ORDAINS AS FOLLOWS:

Section 1. BC Sections 8.01.010, 8.01.033, 8.01.038, 8.01.043, and 8.01.900 are repealed.

First reading this 28th day of March, 2005.

Passed by the Council this ___ day of _____, 2005.

Approved by the Mayor this ___ day of _____, 2005.

ATTEST: APPROVED:

_____ _____

SUE NELSON, City Recorder ROB DRAKE, Mayor

CHAPTER EIGHT

BUILDING

FIRE CODE

~~8.01.010 Definitions. As used in BC 8.01.010-.090 the following mean:~~

~~Board of Appeals - The Board of Construction Appeals provided for in BC 2.03.030-.042.~~

~~Building Code or City Building Code - BC 8.02.005-.130 as now enacted or hereafter amended.~~

~~Chief, Chief of the Fire Department or Fire Chief - The chief of the fire department or the fire chief's designee notwithstanding the definition in Article 9, section 9.105 of the Uniform Fire Code.~~

~~Chief of the Bureau of Fire Prevention - Fire Marshal.~~

~~Corporation Counsel - City Attorney.~~

~~Jurisdiction - City of Beaverton.~~

~~Structural Specialty Code - Shall be given the same meaning as it has in BC 8.02.015.~~

~~8.01.033 Limits of Districts for Storage of Flammable, Combustible Liquids. The district referred to in Uniform Fire Code Section 79.501 is the entire city except for areas zoned Industrial Park (IP) and Residential-Agricultural (RA). The location and types of such facilities shall be subject to~~

~~prior review and approval by the Fire Chief.~~ [BC 8.01.033 added by Ordinance No. 3839(3), 2/8/93]

~~8.01.038 Limits of Districts for Storage of Explosives and Blasting Agents. The storage of explosives and blasting agents is prohibited within the entire boundaries of the city.~~ [BC 8.01.038, added by Ordinance No. 3839(4), 2/8/93]

~~8.01.043 Limits of Districts for Storage of LP or Natural Gas. The district referred to in Uniform Fire Code Section 82.104(b) is the entire city except for areas zoned Industrial Park (IP). The location and types of such facilities shall be subject to prior review and approval by the Fire Chief.~~ [BC 8.01.043, added by Ordinance No. 3839(5), 2/8/93]

~~8.01.900 Penalties.~~

~~A. A person who violates a provision of this ordinance or who violates or fails to comply with an order made hereunder, or who builds in violation of a detailed statement of specifications or plans submitted and approved hereunder, or a certificate or permit issued hereunder and from which no appeal has been taken, or who fails to comply with an order as affirmed or modified by the Board of Appeals or by a court of competent jurisdiction within the time fixed, shall severally for each violation and noncompliance be guilty of a Class 1 Civil Infraction, to be processed in accordance with the procedures contained in BC 2.10.010-.050. The imposition of one penalty for an infraction shall not excuse the infraction or permit it to continue. In addition, each day the infraction continues constitutes a separate violation.~~

~~B. A person described in subsection A of this section shall be required to correct or remedy a violation or defect within a reasonable time in addition to liability under BC 2.10.010-.050.~~

~~C. The application of the above penalty shall not prevent the enforced removal of prohibited conditions pursuant to BC 5.05.010-.260; and, in addition to other remedies, if the mayor so directs, the city attorney may file an action to alleviate a violation of this ordinance.~~ [BC 8.01.010-.140, amended and renumbered by Ordinance No. 3343, 11/8/83; and BC 8.01.090 renumbered to 8.01.900 by Ordinance No. 3839(23), 2/8/93]

AGENDA BILL

Beaverton City Council
Beaverton, Or gon

SUBJECT: An Ordinance Amending Beaverton Code Section 6.02.215 To Allow Use Of Muffled Exhaust Braking On Emergency Vehicles.

FOR AGENDA OF: ~~03-28-05~~ 04-04-05 **BILL NO:** 05060

Mayor's Approval:

DEPARTMENT OF ORIGIN: City Attorney's US

DATE SUBMITTED: 03-09-05

CLEARANCES: None

PROCEEDING: ~~First Reading.~~
Second Reading and Passage

EXHIBITS: Ordinance

BUDGET IMPACT

EXPENDITURE REQUIRED $0	AMOUNT BUDGETED $0	APPROPRIATION REQUIRED $0

HISTORICAL PERSPECTIVE:

In response to a citizen complaint to the Mayor's Office at the City of Beaverton, Tualatin Valley Fire & Rescue (TVF&R) recently completed a District wide review of compression braking and noise ordinances pertaining to them. The review finds that secondary braking devices are important auxiliary systems that are "best practice" for the trucking industry as well as the fire service, as the average gross vehicle weight for a fully equipped engine at Tualatin Valley Fire & Rescue is at or above 21 tons. The United States Environmental Protection Agency requires that all heavy-duty trucks, including fire apparatus, emit no more than 80 dB(A) at fifty (50) feet while operating, and that figure includes their compression braking systems. As demonstrated in the review, TVF&R fire apparatus using muffled compression brakes met that standard and emitted less noise than commonly used gas powered lawn mowers or leaf blowers.

INFORMATION FOR CONSIDERATION:

The State of Oregon prohibits the use of unmuffled compression braking systems. All TVF&R apparatus come from the manufacturer meeting noise emission standards from the EPA and are muffled compression braking systems. This Ordinance, requested by TVF&R, amends Section 6.02.215 of the City's vehicle code so as to allow use of "jake brakes" by emergency services employees in the course and scope of their work.

RECOMMENDED ACTION:

~~First Reading.~~

Second Reading and Passage

ORDINANCE NO. 4346

AN ORDINANCE AMENDING BEAVERTON CODE SECTION 6.02.215
TO ALLOW USE OF MUFFLED EXHAUST BRAKING
ON EMERGENCY VEHICLES

WHEREAS, Tualatin Valley Fire and Rescue (TVF&R) recently completed a District wide review of compression braking; and

WHEREAS, TVF&R fire apparatus using muffled compression brakes met noise emission standards from the Environmental Protection Agency (EPA); and

WHEREAS, This Ordinance amends Beaverton Code Section 6.02.215 so as to allow use of "jake brakes" by emergency services employees in the course and scope of their work;

Now, therefore,

THE CITY OF BEAVERTON ORDAINS AS FOLLOWS:

Beaverton Code 6.02.215 is amended to read as follows, with the new text underlined:

> No person shall use a compression braking system in conjunction with the operation of a motor vehicle, except for a person operating an emergency services vehicle (a fire engine or similar apparatus) equipped with a muffled exhaust braking system or except to avoid imminent danger to person or property. Compression braking systems, commonly found on trucks and busses and referred to as "Jake" brakes, convert an internal combustion engine into an air compressor for the purpose of slowing or stopping a vehicle with the use of wheel brakes.

First reading this 28th day of March, 2005.

Passed by the Council this __ day of _____, 2005.

Approved by the Mayor this __ day of _____, 2005.

ATTEST: APPROVED:

SUE NELSON, City Recorder ROB DRAKE, Mayor