# EXHIBIT 2

Exhibit 2 includes proposed amendments to Comprehensive Plan Volume I related to the Cooper Mountain Community Plan but also including some citywide changes.

- Proposed new language is underlined.
- Proposed deleted language is ~~stricken~~.
- Language that has been skipped is indicated by "***"

In some cases, photographs have been removed from the draft document to make the document shorter and to direct focus to the written policies.

# CHAPTER 1 – AMENDMENT PROCEDURES ELEMENT

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**Commentary:**

State law and administrative rules require notice of decision in 20 days for DLCD notices. That is reflected in the revised 1.7.1.B. State law does not have requirement for sending the order to the property owners, Neighborhood Association Committee or County Participation Organization. The appeal period does not start until the notice is mailed to those parties, so no deadline for 1.7.1.C is needed to comply with the law or ensure adequate time for appeals. In practice sending within five working days is sometimes challenging because staff have to wait for the Mayor to sign the order before it can be mailed.

## 1.7. FINAL ADOPTION

[Ord. # 4809, 09/16/2021]

### 1.7.1 Final Order

A. The written decision in the form of a final order shall be prepared regarding the application. The final order shall include:

1. A listing of the applicable approval criteria by Comprehensive Plan section number.
2. A statement or summary of the facts upon which the City Council relies to find the application does or does not comply with each applicable approval criterion and to justify any conditions of approval. City Council may adopt or incorporate a staff report or written findings prepared by any party to the proceeding into the final order to satisfy this requirement.
3. A statement of conclusions based on the facts and findings.
4. A decision to deny or to approve the application and, if approved, any conditions of approval necessary to ensure compliance with applicable criteria.

B. Within ~~five (5)~~ 20 working days after the Final Decision (City Council Ordinance or Final Order adoption), mail the required DLCD Notice of Adoption to DLCD, pursuant to ORS 197.615 and OAR Chapter 660- Division 18.

C. ~~Within five (5) working days from the date that~~After the City Council adopts a final order, the Community Development Director shall cause the order to be signed, dated, and mailed to the applicant, the property owner, the Neighborhood Association Committee or County Participation Organization in which the subject property is

located, and other persons who appeared orally or in writing before the public record closed. The final order shall be accompanied by a written notice which shall include the following information:

1. A statement that the City Council decision is final, but may be appealed to the Land Use Board of Appeals as provided in Oregon Revised Statutes (ORS 197.805 through 197.860) or to the Land Conservation and Development Commission as provided in Oregon Revised Statutes (ORS 197.633), in the case of Periodic Review Amendments.
2. A statement indicating the Amendment application number, date, and brief summary of the decision. The statement shall list when and where the case file is available and the name and telephone number of the City representative to contact for information about the proposal.
3. A statement of the name and address of the applicant.
4. If applicable, an easily understood geographic reference to the subject property and a map.

The following diagrams, Diagrams I-1 through I-4, are intended for illustrative purposes only and are not adopted as procedural requirements within this ordinance. Thus, periodic updates to Diagrams I-1 through I-4 will not require a Comprehensive Plan Amendment.

[Ord. # 4809, 09/16/2021]

Effective on: 9/16/2021

## 1.8. APPLICATION FEES

In order to defray expenses incurred in connection with the processing of applications, the City has established a reasonable fee to be paid to the City upon the filing of an application for a Plan amendment. Fees for privately initiated Plan amendments requiring extraordinary staff time or expertise beyond the scope of the average process may be subject to an additional project management fee as established by Council Resolution 3285.

# EXHIBIT 2

Exhibit 2 includes proposed amendments to Comprehensive Plan Volume I related to the Cooper Mountain Community Plan but also including some citywide changes.

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# CHAPTER 3 – LAND USE ELEMENT

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## Chapter Format

The Land Use Element is organized into 9 sections, each with a discussion of issues and one or more goals. Each goal is followed by a series of policies intended to help Beaverton grow and develop in a manner that exhibits the city's commitment to livability, equity, sustainability, and resiliency.

Sections 3.1 through 3.5 address issues and goals of citywide relevance. Sections 3.6 through 3.9 provide goals and policies for each land use designation defined in the Comprehensive Plan. The Comprehensive Plan designations are grouped into four categories as shown below.

| MIXED USE AREAS | COMMERCIAL CENTERS AND CORRIDORS | NEIGHBORHOODS | EMPLOYMENT AND INDUSTRIAL LAND |
|---|---|---|---|
| • Downtown Regional Center<br>• Town Centers<br>• Station Communities<br>• Mixed Use Corridors<br>• Cooper Mountain Mixed Use Corridor | • Regional Commercial<br>• Community Commercial<br>• Neighborhood Centers<br>• Cooper Mountain Commercial | • Lower Density Neighborhoods<br>• High Density Neighborhoods<br>• Cooper Mountain Residential | • Employment<br>• Industrial |

[Ord. # 4822, 06/30/2022]

## 3.1 Land Use and Transportation Connections

Land use and transportation are inherently inter-related, as the transportation system is what connects different uses in different areas and moves people and goods between them. Development is strongly influenced by the transportation system that surrounds it, and land use and development can influence how attractive it is to travel by car, transit, bike, or on foot. While cars remain an important feature of daily life, a commitment to sustainability, livability, equity and resiliency means increasing the transportation options available and making it easier for people to meet daily needs without a car. That shift can't come from investments in the transportation

system alone; land use patterns play an equal or greater role in shaping transportation options and choices. The policies below recognize and address the important relationship between land use and transportation.

## Goal 3.1.1: Encourage development and land use patterns that support a variety of transportation options

### Policies:

**Policy a)** Emphasize pedestrian convenience and safety in all developments and transportation facilities.

**Policy b)** Encourage development and programs that reduce the need for vehicle use and ownership.

**Policy c)** Ensure that new development is designed to provide safe, comfortable and direct pedestrian and bicycle connections for all, regardless of ability or age, to and through the development, including to reach nearby points of interest.

**Policy d)** Apply land use designations and development regulations that support high-density development near transit and services, in order to provide greater opportunities to live, work, and meet daily needs near transit.

**Policy e)** Encourage increased intensity of development within Mixed Use, Commercial, and Employment areas that are located within a half-mile of high capacity transit stops or stations, such as MAX and WES.

**Policy f)** Ensure that development adjacent to transit stops and stations is designed to provide direct, convenient and comfortable connections between buildings and the stop or station.

**Policy g)** Encourage providing amenities for transit users at transit stops or stations, such as food carts and coffee stands, covered benches, trash/recycling receptacles, and lighting.

**Policy h)** Allow use of private parking lots near transit stops and stations for park-and-ride facilities during hours when the parking spaces are not needed for on-site uses.

**Policy i)** Encourage the use of innovative technologies that improve parking and transportation efficiency.

**Policy j)** Encourage use of structured, underground, and/or tuck-under parking for commercial, office, middle housing and multi-dwelling development.

**Policy k)** Encourage shared parking agreements in all areas with significant volumes of surface parking lots.

**Policy l)** Accommodate automobile access and parking in an efficient manner that does not detract from the desirability of other modes.

***

## 3.4 Planning and Development Review

The city is responsible for establishing development code regulations to implement the Comprehensive Plan. The code regulates growth through the review of development applications, and through code enforcement efforts.

Portions of the city were originally developed under Washington County development regulations. In these areas, annexation occurred after County planning and initial development, requiring the city to implement the County's plans through city zoning. In addition, the city and county have defined an "Urban Planning Area", an area larger than the current city limits in which both jurisdictions have an interest in comprehensive planning and development. The Urban Planning Area Agreement spells out roles and responsibilities for both jurisdictions within the Urban Planning Area.

# Goal 3.4.1: Provide effective and inclusive planning and development review services

## Policies:

**Policy a)** Ensure that development regulations are consistent with and implement the Comprehensive Plan.

**Policy b)** Ensure that land use planning, notification, and public involvement procedures and processes are inclusive and provide meaningful opportunities for engagement by all community members.

**Policy c)** Expand outreach to under-represented populations and increase participation in community activities by posting event and service notices in multiple venues and providing information in multiple languages, consistent with the city's language access practices.

**Policy d)** Apply zoning districts consistent with Comprehensive Plan policies; applicable Community Plans; adopted Comprehensive Plan designations, as identified in the Comprehensive Plan and zoning district matrix, below; and the following policies.

- **i.** New zoning districts consistent with applicable Comprehensive Plan policies may be added or modified as needed to address area-specific needs or changing circumstances.
- **ii.** Existing zoning that is not consistent with the Comprehensive Plan and zoning district matrix may remain in place until the city or property owner initiates a zone change; however, zoning map amendments must be consistent with the Comprehensive Plan and zoning district matrix.
- **iii.** Area-specific zoning districts (as indicated in the Comprehensive Plan and Zoning District Matrix) shall be applied only in locations consistent with the title and purpose statement of the zone, applicable Community Plan policies or Metro Title 6 designations.
- **iv.** Where a property is subject to an area-specific zone (as indicated in the Comprehensive Plan and Zoning District Matrix), quasi-judicial zone changes shall be limited to applying another implementing zone specific to the same area, consistent with applicable Community Plan policies or Metro Title 6 designations.

**Policy e)** Where a land use approval requires demonstration of consistency with the policies of the Comprehensive Plan, the policies of the adopted Comprehensive Plan designation shall apply, regardless of whether the zone is listed as an implementing zone for the applicable Comprehensive Plan designation.

| **Comprehensive Plan and Zoning District Matrix** | |
|---|---|
| **Comprehensive Plan Designation** | **Implementing Zoning Districts** |
| **Mixed Use Areas** | |
| Downtown Regional Center | RC-E, Downtown Regional Center – East* |
| | RC-BC. Downtown Regional Center – Beaverton Central District* |
| | RC-OT, Downtown Regional Center – Old Town District* |

| Comprehensive Plan and Zoning District Matrix | |
|---|---|
| **Comprehensive Plan Designation** | **Implementing Zoning Districts** |
| | RC-DT Downtown Regional Center – Downtown Transition District* |
| | RC-MU Downtown Regional Center – Mixed Use District* |
| Town Centers | TC-HDR, Town Center – High Density Residential District |
| | TC-MU, Town Center – Multiple Use District |
| Station Communities | SC-E1, Station Community – Employment Sub Area 1 District |
| | SC-E3, Station Community – Employment Sub Area 3 District |
| | SC-HDR, Station Community – High Density Residential District |
| | SC-MU, Station Community – Multiple Use District |
| | SC-S, Station Community – Sunset District* |
| Mixed Use Corridors | CS, Community Service |
| | NS, Neighborhood Service |
| | MR, Multi-Unit Residential |
| | RMA, Residential Mixed A |
| Cooper Mountain Mixed Use Corridor | CM-HDR – Cooper Mountain - High Density Residential*<br>CM-MR – Cooper Mountain - Multi-unit Residential*<br>CM-RM – Cooper Mountain - Residential Mixed* |
| **Commercial Centers and Corridors** | |
| Regional Commercial | CC, Corridor Commercial |
| | CS, Community Service |
| | C-WS, Washington Square Regional Center – Commercial District* |
| | GC, General Commercial |
| Community Commercial | CC, Corridor Commercial |
| | CS, Community Service |
| | C-WS, Washington Square Regional Center – Commercial District* |
| Cooper Mountain Commercial | CM-CS, Cooper Mountain - Community Service* |
| Neighborhood Centers | NS, Neighborhood Service |
| | RMA, Residential Mixed A |
| | RMB, Residential Mixed B |
| **Neighborhoods** | |

| Comprehensive Plan and Zoning District Matrix | |
|---|---|
| **Comprehensive Plan Designation** | **Implementing Zoning Districts** |
| Lower Density Neighborhoods | RMA, Residential Mixed A |
| | RMB, Residential Mixed B |
| | RMC, Residential Mixed C |
| Cooper Mountain Residential | CM-RM – Cooper Mountain - Residential Mixed* |
| High Density Neighborhoods | MR, Multi-Unit Residential |
| **Employment and Industrial Land** | |
| Employment | OI, Office Industrial |
| | OI-NC, Office Industrial – Nike Campus* |
| | OI-WS, Washington Square Regional Center – Office Industrial District* |
| Industrial | IND, Industrial |
| | OI, Office Industrial |
| * Area-specific zones subject to Policy 3.4.1.d, part iii and iv | |

# Goal 3.4.2: Coordinate with Washington County on planning for the Urban Planning Area

## Policies:

**Policy a)** Coordinate with Washington County on planning and development review for the area outside city limits but within the Urban Planning Area, consistent with the adopted Urban Planning Area Agreement between the City of Beaverton and Washington County.

**Policy b)** Recognize planning work done by Washington County when applying city policies and development regulations as annexation occurs.

**Policy c)** Update city policies or create City of Beaverton Community Plans for newly annexed areas as needed to reflect changing conditions or where County plans offer little guidance.

[Ord. # 4822, 06/30/2022]

Effective on: 6/30/2022

# 3.5 Community Plans

Beaverton has many different and unique neighborhoods and places. Each one of these areas has its own distinct set of qualities to be preserved, problems to address and opportunities to seize. Community Plans are a way to identify and address these unique needs with Comprehensive Plan policies specific to geographical areas.

The Community Plans provide policies that refine the vision for individual areas. The focus area for a Community Plan can cover a few parcels, a corridor, a neighborhood or multiple neighborhoods. The scope of issues considered can be as narrow or as broad as the situation warrants, but typically focus on issues that are within the scope of the Comprehensive Plan chapters.

Where maps illustrating land use designations for the area in question are included in a Community Plan, they are for convenience and reference only and do not take precedence of the city's official land use designation map. Community Plans may be implemented through refinements to zoning and/or the development code as well as special policies.

## Goal 3.5.1: Recognize unique needs of different parts of the city through Community Plans

### Policies:

**Policy a)** Create and implement Community Plans to address place-specific issues and opportunities and to tailor development regulations and policies to certain areas of the city where more detailed consideration is warranted.

**Policy b)** Prioritize creation of Community Plans for areas where:

- **i.** Public facilities and/or physical improvements need to be addressed;
- **ii.** Significant change is occurring or anticipated;
- **iii.** Opportunities for substantial new development, infill or redevelopment are present or needed;
- **iv.** Opportunities arise to influence site selection, development or major expansion of a single, large activity generator;
- **v.** There is evidence of disinvestment, deteriorating housing, and/or high vacancy, unemployment and poverty rates;
- **vi.** There is a need to coordinate private development and public investment; and/or
- **vii.** The opportunity for development in conjunction with a transit station exists.

**Policy c)** Ensure that Community Plans are created using an inclusive public process and include both analysis of place-specific needs and consideration of citywide needs and goals.

**Policy d)** Consider the needs of Beaverton's diverse cultural communities in developing Community Plans.

# 3.6 Mixed Use Areas

**MIXED USE AREAS**

- Downtown Regional Center
- Town Centers
- Station Communities
- Mixed Use Corridors
- Cooper Mountain Mixed Use Corridor

The designations within this category (Downtown Regional Center, Town Center, Station Community, and Neighborhood Mixed Use) reflect the scale and character of different types of Mixed Use Areas, and their unique roles within the urban tapestry of the city.

The Downtown Regional Center serves as the central urban core of the city, serving the entire community and surrounding areas. With access to Highways 217, 8 and 10, plus two MAX stations and a commuter rail station, the Downtown Regional Center is highly connected to the community and the region. The Downtown Regional Center includes several distinct districts, each with their own personality, including the historic Old Town area.

Town Centers provide services to the surrounding community, roughly within a two- to three-mile radius. They tend to have one- to three-story development with a mix of housing and commercial uses.

Station Communities are focused around light-rail stations and show an on-going transition from older development that pre-dates the construction of light rail to newer development that is more transit- oriented and at a greater intensity.

Mixed Use Corridors tend to have a mix of housing and commercial uses that face the street and provide shops and services that primarily meet the needs of several adjacent neighborhoods.

Goals and policies that apply to all Mixed Use areas, as well as goals and policies specific to each type of Mixed Use Area are provided below.

***

## Goal 3.6.5: Mixed Use Corridor: Promote a mix of residential and commercial uses that complement and serve adjacent neighborhoods in a pedestrian- friendly environment

The following policies apply to Mixed Use Corridors, in addition to policies under Goal 3.6.1.

### Policies:

**Policy a)** Prioritize commercial uses at key intersections where retail is most likely to thrive.

**Policy b)** Allow for and encourage multi-dwelling and middle housing as part of vertical mixed use developments and as stand-alone uses between and behind commercial nodes at intersections.

**Policy c)** Ensure that new development and redevelopment creates a pedestrian-friendly environment, using pedestrian-oriented design as described in the policies for all mixed use areas.

**Policy d)** Maintain or increase residential densities in order to provide more households within walking distance of Mixed Use Corridor businesses by allowing zone changes, infill and redevelopment that maintains or increases residential density.

**Policy e)** Improve multi-modal connections to adjacent neighborhoods to make it easier and more convenient for neighbors to walk or ride to the Mixed Use Corridor.

**Policy f)** Encourage tuck-under and structured parking and reliance on on-street parking wherever available and appropriate to reduce the amount of land dedicated to parking and make the distances between destinations shorter and more walkable.

**Policy g)** Coordinate land use and transportation planning within Mixed Use Corridors to recognize the importance of streetscape design in supporting a pedestrian-oriented environment and the goals for Mixed Use Corridors.

**Policy h)** The Mixed Use Corridor designation may be applied in areas:

- **i.** along streets that can support and emphasize pedestrian, bicycle and/or transit use;
- **ii.** that include, or provide opportunities for, a mix of housing and commercial uses; and
- **iii.** that are surrounded by, and serve as a focal point for, nearby neighborhoods.

## Goal 3.6.6: Cooper Mountain Mixed Use Corridor: Promote a mix of residential and commercial uses consistent with the Cooper

## Mountain Community Plan and prioritize safe and convenient ways to walk, bike, and roll

The following policies apply to Mixed Use Corridors, in addition to policies under Goal 3.6.1.

## Policies:

**Policy a)** Apply the Cooper Mountain Mixed Use land use designation in areas:

- **i.** With high accessibility, such as along arterials, collectors, and neighborhood routes;
- **ii.** Where site conditions support higher density multi-dwelling options, such as areas with relatively flatter, more developable land with fewer identified natural resource constraints;
- **iii.** Near community or neighborhood parks; and
- **iv.** In locations that improve multi-dwelling residents' equitable access to commercial uses, nature, and parks/recreation. This includes but is not limited to areas near Cooper Mountain Commercial Land Use designations to provide additional locations where:
  - i. Homes can be built so that residents can access goods, services, and community gathering places, and those residents can provide a customer base for those businesses; and
  - ii. Additional commercial uses can be located to address demand not met by development in the Commercial Land Use designation.

**Policy b)** Ensure commercial uses and residential development intensity are established in areas where "Neighborhood Center" is indicated on the Cooper Mountain Community Plan Preferred Approach Concept Map. The centers will:

- **i.** Allow a mix of commercial – with some commercial square footage required – and residential uses at relatively high densities to create vibrant, walkable areas; and
- **ii.** Provide people living and working in Cooper Mountain with the ability to access the centers through safe and convenient ways to travel, such as walking and biking; and
- **iii.** Serve as priority locations for civic uses and regulated affordable housing.

**Policy c)** Apply zones that allow commercial uses or a mix of commercial and residential uses in areas:

- **i.** Along or near arterials or collectors;
- **ii.** Along neighborhood routes with higher density multi-dwelling options; and
- **iii.** Near multi-use paths.

**Policy d)** Apply residential zones that have higher minimum densities in all developable subareas of the Cooper Mountain Community Plan area. Residential zones with higher minimum densities are most appropriate:

- **iv.** Near land with Cooper Mountain Mixed Use land use designations;
- **v.** Near Commercial and Mixed Use areas;
- **vi.** Along existing or planned transit routes;
- **vii.** Along collector streets;
- **viii.** Along neighborhood routes in areas without nearby higher density multi-dwelling options;
- **ix.** Near neighborhood and community parks; and
- **x.** In locations that improve multi-dwelling residents' equitable access to commercial uses, nature, and parks/recreation.

**Policy e)** Promote vibrant places by providing zoning that requires and/or encourages development intensity near commercial and mixed-use locations, including land where commercial uses are allowed as an option, that provides flexibility for additional commercial, mixed-use, and multi-dwelling development.

**Policy f)** In addition to being consistent with other Comprehensive Plan policies, future zoning map amendment applications shall be consistent with Comprehensive Plan policies if they:

**i.** Provide the same or similar housing units and the same, similar, or more housing variety within Cooper Mountain and its geographic sub-areas; and

**ii.** Provide the same or similar commercial opportunities in Cooper Mountain and its geographic sub-areas; and

**iii.** Support equitable access to commercial uses, natural areas and parks for Cooper Mountain residents and other nearby residents outside the Cooper Mountain boundary.

## 3.7 Commercial Centers and Corridors

Commercial Centers and Corridors generally have an emphasis on commercial and service uses and access to major roads. The land use designations within this category reflect different scales and characters among Commercial Centers and Corridors.

The city's commercial centers and corridors provide for a wide range of businesses that meet the needs of Beaverton residents as well as visitors from around the region. While these areas are largely developed, renovations, new buildings, and remodels have continued to bring new investment to the city. Commercial Centers and Corridors may take the form of a continuous stretch of commercial uses, or be focused at a major intersection.

**COMMERCIAL CENTERS AND CORRIDORS**

- Regional Commercial
- Community Commercial
- Neighborhood Centers
- Cooper Mountain Commercial

Goals and policies that apply to all Commercial Centers and Corridors, as well as goals and policies specific to each type of Commercial Centers and Corridors are provided below.

# Goal 3.7.1: Enhanced Commercial Centers and Corridors

The following policies apply to all Commercial Centers and Corridors.

## Policies:

**Policy a)** Over time, new development and redevelopment should improve accessibility and comfort for non-auto modes, including

**i.** Improving pedestrian and bicycle connections within and between sites

**ii.** Enhancing or creating multi-modal connections wherever feasible

**iii.** Providing direct pedestrian connections to, and amenities near, transit stops

**iv.** Providing a more visually engaging and appealing street frontage through the addition of buildings adjacent to the street, enhanced landscaping, more pedestrian scale signage, etc.

**v.** Providing safe and convenient paths for pedestrians within large parking areas

**Policy b)** Emphasize commercial and employment uses, and limit ground floor residential uses to preserve land to meet the city's employment needs.

**Policy c)** Allow for housing as part of an integrated mixed use development, generally behind or above commercial uses, and buffered from high-traffic roadways or uses incompatible with residential use.

# Goal 3.7.2: Regional Commercial: Provide suitable locations for commercial uses that serve the broader region and require large sites, significant access and visibility

The following policies apply to Regional Commercial areas, in addition to policies under Goal 3.7.1.

## Policies:

**Policy a)** Allow for the continuation of auto-oriented uses and large-format commercial uses, while encouraging a transition to more compact and pedestrian-friendly development over time.

**Policy b)** Apply development regulations that:

- **i.** Allow commercial uses at a range of scales, including large-format retail, to address community needs
- **ii.** Allow automotive services (e.g. gas stations, car wash, and car repair)
- **iii.** Limit new land-intensive vehicle sales and service uses and uses requiring extensive outdoor storage to areas that are over a half-mile from a high-capacity transit station and that are not heavily used by pedestrians

**Policy c)** The Regional Commercial designation may be applied in areas along highways and major arterials with high visibility and auto accessibility.

# Goal 3.7.3: Community Commercial: Provide for commercial services that serve the surrounding community, with limited auto-oriented uses

The following policies apply to Community Commercial areas, in addition to policies under Goal 3.7.1.

## Policies:

**Policy a)** Allow commercial uses at a range of scales, including large-format retail, to address community needs.

**Policy b)** Allow limited new automotive services (e.g. gas stations, car wash, and car repair) where compatible with adjacent uses and where the design of the site and building or structure promote a quality pedestrian environment along the street.

**Policy c)** Prohibit land-intensive vehicle sales and service uses and uses requiring extensive outdoor storage.

**Policy d)** Use development standards and/or conditional use review to address potential issues related to compatibility of commercial uses with adjacent housing, including noise, access and parking.

**Policy e)** Require multimodal or pedestrian connections based on block size standards to encourage a pattern of development that can be easily navigated by foot or bike.

**Policy f)** The Community Commercial designation may be applied in areas along arterial roads with relatively high visibility and auto accessibility that also provide pedestrian, bicycle, and/or transit connections to the surrounding community.

## Goal 3.7.4: Cooper Mountain Commercial: Provide for commercial services that are accessible to community members within Cooper Mountain and nearby neighborhoods and that provide entrepreneurship opportunities

The following policies apply to Cooper Mountain Commercial areas, in addition to policies under Goal 3.7.1.

### Policies:

**Policy a)** Apply the Cooper Mountain Commercial land use designation in areas:

- **i.** Where commercial activity is necessary to ensure community members within the Cooper Mountain area and surrounding areas have access to goods, services, and community gathering places;
- **ii.** Along or near arterial roads with relatively high visibility or near an intersection with an arterial; and
- ~~**i.**~~**iii.** Near existing or planned community parks.

**Policy b)** Ensure commercial uses and residential development intensity is achieved in areas where "Neighborhood Center" is indicated on the Cooper Mountain Community Plan Preferred Approach Concept Map. The centers will:

- **i.** Allow a mix of commercial – with some commercial square footage required – and residential uses at relatively high densities to create vibrant, walkable areas; and
- **ii.** Provide people living and working in Cooper Mountain with the ability to access the centers through safe and convenient ways to travel, such as walking and biking; and
- ~~**i.**~~**iii.** Serve as priority locations for civic uses and regulated affordable housing.

**Policy c)** Promote vibrant places by providing zoning that requires and/or encourages development intensity near commercial and mixed-use locations, including land where commercial uses are allowed as an option, that provides flexibility for additional commercial, mixed-use, and multi-dwelling development.

**Policy d)** Apply zones that allows commercial uses or a mix of commercial and residential uses in areas:

- **i.** Along or near arterials or collectors;
- **ii.** Along neighborhood routes with higher density multi-dwelling options; and
- ~~**i.**~~**iii.** Near multi-use paths.

**Policy e)** Apply residential zones that have higher minimum densities in all developable sub-areas. The most appropriate locations for residential zones with higher minimum densities are:

- **i.** Near land with Cooper Mountain Mixed Use land use designations;
- **ii.** Near Commercial and Mixed Use areas;
- **iii.** Along existing or planned transit routes;
- **iv.** Along collector streets;
- **v.** Along neighborhood routes in areas without nearby higher density multi-dwelling options;
- **vi.** Near neighborhood and community parks; and
- **vii.** In locations that improve multi-dwelling residents' equitable access to commercial uses, nature, and parks/recreation.

**Policy f)** In addition to being consistent with other Comprehensive Plan policies, future zoning map amendment applications shall be consistent with Comprehensive Plan policies if they:

i. Provide the same or similar housing units and the same, similar, or more housing variety within Cooper Mountain and its geographic sub-areas; and

ii. Provide the same or similar commercial opportunities within Cooper Mountain and its geographic sub-areas; and

iii. Support equitable access to commercial uses, natural areas and parks for Cooper Mountain residents and other nearby residents outside the Cooper Mountain boundary.

## Goal 3.7.45: Neighborhood Center: Provide opportunities for small-scale commercial development that serves adjacent neighborhoods

The following policies apply to Neighborhood Centers, in addition to policies under Goal 3.7.1.

### Policies:

**Policy a)** Limit the scale and type of non-residential uses to ensure compatibility with surrounding neighborhoods.

**Policy b)** Limit or prohibit auto-oriented commercial uses:

- **i.** Allow limited new automotive services (e.g. gas stations, car wash, and car repair) at a small scale where compatible with adjacent uses and where the design of the site and building or structure promote a quality pedestrian environment along the street.
- **ii.** Prohibit land-intensive vehicle sales and service uses, uses requiring extensive outdoor storage, and large- scale automotive services.

**Policy c)** Use development standards and/or conditional use review to address potential issues related to compatibility of neighborhood commercial uses with adjacent housing, including noise, access and parking.

**Policy d)** Allow the continuation of existing residential uses and new residential uses that are part of a mixed use development or support and provide opportunities for future neighborhood commercial uses within the Neighborhood Center.

**Policy e)** Improve and enhance connections to adjacent neighborhoods to make it easier and more enjoyable for neighbors to walk or bike to the Neighborhood Center.

**Policy f)** The Neighborhood Center designation may be applied in areas that:

- **i.** include existing small-scale commercial and neighborhood-serving uses;
- **ii.** provide a transition between more intensive commercial or mixed use designations and Neighborhood Residential designations; or
- **iii.** are along collector or arterial roads adjacent to Medium and/or High Density Neighborhoods that lack commercial services.

# 3.8 Neighborhoods

Neighborhoods generally prioritize residential uses and compatible non-residential uses, such as schools and public parks. The different designations within this category reflect different scales and densities among different types of Neighborhoods.

The city's existing Lower Density Neighborhoods are mostly developed with subdivisions built in the second half of the 20th Century and newer small-lot single-detached and townhouse developments. In existing neighborhoods with mostly single-detached dwellings, streets were often built with larger collector roads connecting between neighborhoods and many dead ends, loops, and curving streets within neighborhoods. Many subdivisions include protected open space, either in the form of parks or tracts preserved and owned by a homeowners association. Schools, religious institutions, and other civic uses are found throughout the neighborhoods, often on the larger roads.

- Lower Density Neighborhoods
- Cooper Mountain Residential
- High Density Neighborhoods

Existing High Density Neighborhoods are developed with a mix of housing types but with an emphasis on multi-dwelling housing.

# Goal 3.8.1: Complete and livable Neighborhoods

The following policies apply to all Neighborhoods.

## Policies:

**Policy a)** Regulate maximum residential density and/or minimum lot area by zone to maintain a balance between planned land uses and infrastructure capacity.

**Policy b)** Regulate minimum residential density to ensure efficient use of residential land and meet regional housing needs.

ii. Generally, the zoning code should require that residential development achieve at least 80% of the maximum density, where applicable, allowed in the applicable zoning district.

iii. Minimum densities should be calculated excluding significant natural resource areas and other constrained lands.

**Policy c)** Allow flexibility to provide housing variety while maintaining an overall density consistent with the Comprehensive Plan designation and zoning.

**Policy d)** For development that achieves a public benefit or goal (such as increased housing options, public space or affordable housing) the city may provide code incentives, such as opportunities for additional floor area or housing units.

**Policy e)** Provide opportunities for a variety of housing types in all residential plan designations while maintaining a scale and character consistent with the intent of each plan designation.

**Policy f)** Facilitate development of housing that is affordable to a range of incomes, including low-income households.

**Policy g)** Ensure integration of parks and schools into neighborhoods in locations where safe, convenient connections from adjacent neighborhoods on foot and by bike are or will be available.

**Policy h)** Use Crime Prevention through Environmental Design (design that provides opportunities for "eyes on the street" through street-facing windows and doors) to reduce graffiti, vandalism and other property crimes and to promote a feeling of safety for pedestrians.

**Policy i)** Require subdivisions and development on large sites to create a connected network of pedestrian ways, local streets, and other multimodal connections, including connections to adjacent properties or opportunities to connect in the future.

## Goal 3.8.2: Lower Density Neighborhoods: Provide residential neighborhoods that emphasize housing variety and integrate parks, schools, and other community institutions

The following policies apply to Lower Density Neighborhoods, in addition to policies under Goal 3.8.1.

### Policies:

**Policy a)** Allow and encourage a variety of housing types that respond to the scale and form of existing neighborhoods as a way to increase housing options within established neighborhoods while recognizing neighborhood character.

**Policy b)** Establish zoning regulations that allow housing variety at low-to-medium minimum densities, with the lowest minimum density at 7 units per acre.

**Policy c)** Provide adequate flexibility on development standards (e.g., setbacks and lot coverage) to make development of single-story housing feasible.

**Policy d)** The Lower Density Neighborhood designation may be applied in areas that have less walkable access to transit, commercial services, parks and/or other amenities than the High Density Neighborhood designation. Implementing zones in the Lower Density Neighborhood designation with higher minimum density may be applied relatively closer to existing or planned transit, commercial areas, and parks and implementing zones with lower minimum density may be applied relatively farther from transit, commercial areas, and parks.

## Goal 3.8.3: Cooper Mountain Residential: Promote equitable, inclusive neighborhoods that emphasize housing variety and integration and include parks and commercial opportunities within walkable neighborhoods

The following policies apply to Lower Density Neighborhoods, in addition to policies under Goal 3.8.1.

### Policies:

**Policy a)** Apply the Cooper Mountain Residential land use designation in areas:

- **i.** Where site conditions, including both flatter land and land with steeper slopes, are better suited for single-detached dwellings, middle housing, and lower density multi-dwelling options;
- **ii.** In locations where Commercial and Mixed Use land use designations are less suitable considering policies for those designations; and
- **iii.** Relatively farther from any intersection with an arterial.

**Policy b)** Allow small-scale commercial uses in residential neighborhoods in locations that prevent or minimize disturbance of natural areas and that are:

- **i.** Near areas zoned for higher density multi-dwellings;
- **ii.** Near parks (excluding the Cooper Mountain Nature Park) and other key destinations; and
- **iii.** Along Neighborhood Routes.

**Policy c)** The city will support efforts by THPRD to find, acquire, and develop appropriate park and trail sites. Appropriate sites include those with sufficient land outside wetland and sensitive resource areas that

are not too steep to accommodate park features such as playgrounds and picnic shelters and trail corridors within the Community Plan area.

**Policy d)** Promote vibrant places by providing zoning that requires and/or encourages development intensity near commercial and mixed-use locations, including land where commercial uses are allowed as an option, that provides flexibility for additional commercial, mixed-use, and multi-dwelling development.

**Policy e)** In addition to being consistent with other Comprehensive Plan policies, future zoning map amendment applications shall be consistent with Comprehensive Plan policies if they:

**i.** Provide the same or similar housing units and the same, similar, or more housing variety within Cooper Mountain and its geographic sub-areas; and

**ii.** Provide the same or similar commercial opportunities within Cooper Mountain and its geographic sub-areas; and

**iii.** Support equitable access to commercial uses, natural areas and parks for Cooper Mountain residents and other nearby residents outside the Cooper Mountain boundary.

# Goal 3.8.~~3~~4: High Density Neighborhoods: Provide for a variety of housing types and higher residential densities in areas with more amenities and transit service

The following policies apply to High Density Neighborhoods, in addition to policies under Goal 3.8.1.

## Policies:

**Policy a)** Provide for a variety of housing types while emphasizing multi-dwelling and middle housing.

**Policy b)** Establish zoning regulations that allow housing that is consistent with one unit per 1,000 square feet of residential land area while allowing for flexibility as described under Goal 3.8.1.

**Policy c)** Focus the highest density housing closest to transit, commercial services, parks, and/or other amenities, to provide convenient access to these amenities by as many households as possible.

**Policy d)** Provide direct and efficient pedestrian and bicycle connections to nearby retail and services, transit, parks, and/or schools.

**Policy e)** Ensure that the internal circulation system for larger developments creates direct and desirable pedestrian and bicycle routes and connects to adjacent local streets wherever possible.

**Policy f)** Allow for innovative housing types and designs that are consistent with the other policies for these neighborhoods to accommodate projected growth and meet the diverse housing needs of the community.

**Policy g)** Allow limited, small-scale retail and service uses that primarily serve the immediate neighborhood and are compatible with adjacent residential uses in terms of the amount of traffic created, noise, parking needs, and other quality of life issues.

**Policy h)** The High Density Neighborhood designation may be applied in areas that have walkable access to transit, commercial services, parks, and/or other amenities.

***

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# CHAPTER 5 – PUBLIC FACILITIES AND SERVICES ELEMENT

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## 5.2 Public Facilities Plan

The City's Public Facilities Plan (PFP), mandated by State statute for all cities with a population over 2,500, consists of this Element, the Transportation Element of the Comprehensive Plan, the City's Capital Improvements Plan, and the most recent versions of master plans adopted by providers of the following facilities and services in the City: storm water drainage, potable water, sewage conveyance and processing, parks & recreation, schools and transportation. Master plan documents included in the Public Facilities Plan are:

- Tualatin Valley Water District Water Master and Management Plan
- Water System Plan for the West Slope Water District
- Raleigh Water District Water System Master Plan
- City of Beaverton Water System ~~Facilities~~ Master Plan
- City of Beaverton ~~Sanitary~~ Sewer Master Plan Update
- Clean Water Services of Washington County, Sewer System Master Plan
- The City of Beaverton Stormwater Drainage Master Plan
- Tualatin Hills Park and Recreation District 20-Year Comprehensive Master Plan
- Tualatin Hills Park and Recreation District Trails Master Plan
- Beaverton School District Long-Range Facility Plan 2021 (Ord. 4567, Ord. 4823)
- City of Beaverton Transportation System Plan
- City of Beaverton Active Transportation Plan
- City of Beaverton Cooper Mountain Utility Plan

The City of Beaverton has chosen to define its Public Facilities Plan in this way because it provides a limited range of municipal services and relies on other independent public agencies to provide many facilities and services for Beaverton residents and property owners. The facilities and services provided by these agencies, as well as the City, are generally described in other sections of this element, by type of facility and service. The exception to this is transportation facilities and services, which are addressed in the Transportation Element of this Plan.

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## 5.4 Storm Water and Drainage

The storm water collection and treatment system maintained by the City consists of inlets and pipe systems, regional detention facilities, streams and their adjacent riparian corridors, wetland areas, and habitat benefit areas. Many streams, habitat benefit areas, and wetland areas are located on private or park district property and are not actively maintained.

Pursuant to the current intergovernmental agreement (IGA) with CWS, ownership and maintenance of facilities operated by CWS are transferred permanently to the City for all areas annexed to the City. The current IGA with CWS establishes certain maintenance service levels that the City follows and may be amended from time to time as allowed by the IGA.

Urban storm water runoff is a major water quantity and quality issue affecting Beaverton area streams. As development continues, the magnitude of this problem can increase without proper mitigation.

Predevelopment or natural hydrologic function is the relationship among the overland and subsurface flow, infiltration, storage and evapotranspiration characteristics of the landscape. Sustainable stormwater management avoids and minimizes impacts to natural resources by protecting native vegetation and natural hydrologic function. A sustainable system mimics natural water flow by minimizing land disturbances and incorporating natural landscape features into a development.

The process of planning, design, construction, and maintenance of storm water run-off facilities is more difficult and expensive when an area is already developed. The management of storm water run-off is a problem that crosses jurisdictional boundaries. The City of Beaverton has worked with CWS to conduct storm water planning, implement storm water utility and system development charge funding methods, develop design standards for storm water facilities and execute agreements for storm water facility operation and maintenance. In addition, the City contracts with CWS for regional stream system water testing and federal/state permitting such as the National Pollution Discharge Elimination System (NPDES) Permit.

In 1990, CWS's jurisdiction was expanded from exclusively sanitary sewer service to include storm water. The State Legislature officially authorized formation of CWS's Surface Water Management (SWM) program on July 23, 1990, to more effectively deal with the quantity (associated with flooding) and quality of urban surface (storm) water runoff. The Oregon Department of Environmental Quality and the U.S. Environmental Protection Agency had previously established strict regulations on water quality to control the pollutants that were being carried directly into streams and rivers. CWS in concert with other cities implemented the Surface Water Management utility to address the new regulations that affected the urbanized portion of Washington County (which includes all of Beaverton's assumed Urban Services Area). This was the first time that surface water runoff was administered regionally in Washington County. At the time that CWS formed the SWM program, the City of Beaverton and Washington County had long recognized and developed drainage systems to convey storm water and control flooding. Today, the City continues to own and operate the storm water conveyance system and non-regional detention basins within the City limits.

The CWS SWM program focuses on controlling pollution at the source thus reducing the sediments and pollutants that enter receiving streams and the Tualatin River. Preventative measures like using natural and artificial filtration systems, cleaning streets and catch basins, and building holding basins for quantity and quality detention are used. There are also rules for erosion at construction sites, floodplains and wetlands. These methods and many more are currently being used by CWS and cities to effectively control flooding and reduce pollutant loads carried by receiving streams and the Tualatin River.

The City of Beaverton has been involved in a number of studies over the last several years relating to storm water planning and development of storm water design standards. These studies include:

### Storm Water Planning

- Millikan Subbasin Drainage Analysis, August 2000, David Evans and Associates
- Beaverton Creek Watershed Management Plan, June 1999, Brown & Caldwell (CWS with City of Beaverton)
- Analysis of the Central Interceptor Drainage System, June 1999, Economic and Engineering Services
- Murray Scholls Town Center Master Plan, April 1998, Zimmer Gunsul Frasca Partnership
- Westside Interceptor Storm Drainage Project, December 1997, KCM
- Fanno Creek Watershed Management Plan, June 1997, Kurahashi & Associates (CWS with City of Beaverton)
- Carrying Capacity Analysis and Capital Improvement Plan for the Beaverton Regional Center and Tek Station Area, December 1996, KCM
- Subbasin Strategies Plan for Rock, Bronson and Willow Creeks, March 1996 (CWS with City of Beaverton)
- The most recent version of The City of Beaverton, Stormwater Drainage Master Plan
- City of Beaverton, Cooper Mountain Utility Plan

### Storm Water Design Standards

- City of Beaverton – Engineering Design Manual and Standard Drawings. CWS standards entitled *"Design and Construction Standards for Sanitary Sewer and Surface Water Management"* are incorporated by reference from the Beaverton Design Standards.

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## 5.5 Potable Water

The City operates and maintains a system for the storage and distribution of potable water within a service area that includes the majority of its residents. Several areas along the easterly boundary of the City are served by the West Slope Water District (WSWD), Raleigh Water District (RWD) or Tualatin Valley Water District (TVWD). Similarly, in the northern and western portions of the City, several areas receive water from the Tualatin Valley Water District. The water provider service areas are shown on Figure V-2.

In 1979, the City entered into a joint service agreement with the Cities of Forest Grove and Hillsboro to establish joint operations for the water supply, pumping, treatment and transmission. In conjunction with this agreement, the City constructed new transmission lines, several new reservoirs, and other improvements to the water system. The agreement was amended in 1994 to add the Tualatin Valley Water District. The joint facilities are administered by the Hillsboro - Forest Grove – Beaverton - Tualatin Valley Water District Joint Water Commission. The Joint Water Commission consists of twelve members with three members appointed by each agency.

This joint system obtains raw water (prior to treatment) from the Trask and Tualatin Rivers with raw water storage in Barney Reservoir and Hagg Lake. Treatment is at the Joint Water Commission Treatment Plant located south of Forest Grove. Treated water is conveyed to Beaverton from the plant through 45, 42 and 36-inch transmission pipes.

The West Slope Water District, Raleigh Water District and a portion of the Tualatin Valley Water District purchase their water from Portland's Bull Run system. Most of this water is delivered by way of the 60-inch Washington County supply line that comes from the Powell Butte reservoir in east Portland. The City has separate intergovernmental agreements for water supply with the Tualatin Valley Water District and West Slope Water District. The agreements establish obligations and boundaries between the parties.

The following documents set forth the City of Beaverton's water service plan, method of financing and maintenance program:

## Water System Planning

- Fire Hydrant Replacement Program, Phase 1 Beta Test, Phase 1 Preliminary Prioritization, June 2000, Murray, Smith and Associates, Inc.
- Technical Memorandum, Fire Hydrant Replacement Program Prioritization, Phase 1 and 2 Summary, June 1, 2000.
- Regional Water Providers Consortium Regional Transmission and Storage Strategy, Board Discussion Draft Report, February 22, 2000, Montgomery Watson
- SW 155th Avenue Reservoir Preliminary Siting Evaluation, November 10, 1999, Murray, Smith and Associates, Inc.
- Joint Water Commission, Water Management Plan Final Report, August 1998, Montgomery Watson
- Murray Scholls Town Center Master Plan, April 1998, Zimmer Gunsul Frasca Partnership
- Carrying Capacity Analysis and Capital Improvement Plan for the Beaverton Regional Center and Tek Station Area, December 1996, KCM
- Regional Water Supply Plan for the Portland Metropolitan Area, Final Report, October 1996, Prepared by the Water Providers of the Portland Metropolitan Area
- Report for Phase I, Joint Infrastructure Planning Project for City of Beaverton and Tualatin Valley Water District, March 1993, Murray, Smith and Associates
- Report for Phase II, Joint Infrastructure Planning Project for City of Beaverton and Tualatin Valley Water District, June 1993, Murray, Smith and Associates
- Cooper Mountain Water Storage Tank, July 17,1992, OTAK, Inc.
- Modeling TVWD/Beaverton Water System on Cooper Mountain, April 13, 1992, OTAK, Inc.
- The most recent version of the Water System Facility Plan
- City of Beaverton, Cooper Mountain Utility Plan

## Water System Design Standards

- City of Beaverton – Engineering Design Manual and Standard Drawings

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# 5.6 Sanitary Sewer

The City owns and maintains the wastewater collection system (all pipes 21-inches and smaller) within its incorporated limits and conveys flows to a trunk interceptor system that is owned and maintained by the sewer treatment service provider, CWS. CWS is a special district that was established in eastern Washington County to provide sanitary sewer service in a coordinated and economic manner necessary to meet federal, state, and regional water quality regulations. The City contracts with CWS for sanitary sewerage treatment, trunkline conveyance service, development of regional minimum design standards for sanitary sewer systems and regulation of industrial discharge permits. The National Pollution Discharge Elimination System Permit (NPDES) permit is held by CWS.

Pursuant to the current intergovernmental agreement (IGA) with CWS, ownership and maintenance of collection pipes 21-inches and less operated by CWS are transferred permanently to the City for all areas annexed to the City. The current IGA with CWS establishes certain maintenance service levels that the City follows and may be amended from time to time as allowed by the IGA.

The City's collection system directs flow to sewer trunk lines that convey the flow to two treatment plants: the Durham Treatment Plant and the Rock Creek Treatment Plant. Flows from Downtown Beaverton as well as the easterly and southerly areas of the City are conveyed to the Durham Plant located on the north side of the Tualatin River south of Tigard. Flows from the westerly portion of the City are directed to the Rock Creek Plant near Hillsboro.

The following documents set forth the City of Beaverton's sewer service plan and maintenance program:

## Sewer System Planning

- Clean Water Services Conveyance System Management Study, Final Draft Report, November 1998, Shaun Pigott Associates
- Murray Scholls Town Center Master Plan, April 1998, Zimmer Gunsul Frasca Partnership
- Carrying Capacity Analysis and Capital Improvement Plan for the Beaverton Regional Center and Tek Station Area, December 1996, KCM
- Clean Water Services of Washington County, Sewer System Master Plan Update 1995, David Evans and Associates
- The most recent version of The City of Beaverton Sanitary Sewer Master Plan
- City of Beaverton, Cooper Mountain Utility Plan
- Clean Water Services, East Basin Master Plan

## Sewer System Design Standards

- City of Beaverton – Engineering Design Manual and Standard Drawings. CWS standards entitled *"Design and Construction Standards for Sanitary Sewer and Surface Water Management"* are incorporated by reference into the Beaverton Design Standards.

***

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# CHAPTER 6 – TRANSPORTATION ELEMENT

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## Goal 6.2.8: Create a stable, flexible financial system.

### Policies:

**Policy a)** Plan for an economically viable and cost-effective transportation system.

**Policy b)** Identify and develop diverse and stable funding sources to implement recommended projects in a timely fashion.

**Policy c)** Use the System Development Charge, Traffic Impact Fees, and development exactions as elements of an overall program to pay for adding capacity to the transportation system and for making safety improvements related to development impacts.

**Action 1:** Base the transportation system taxes and fees on the total expected cost of making extra capacity and safety improvements over a twenty-year period, allocated back to development on a pro rata formula taking into account the relative expected future transportation impact of the development in question.

**Policy d)** Develop a long-range financial strategy to make needed improvements to the transportation system and to support operational and maintenance requirements by working in partnership with Metro, Oregon Department of Transportation, Washington County, and other jurisdictions and agencies.

**Action 1:** The financial strategy should consider the appropriate shares of motor vehicle fees, impact fees, property tax levies, and development contributions to balance needs, costs, and revenue. View the process of improving the transportation system as that of a partnership between the public (through fees and taxes) and private sectors (through exactions and conditions of development approval), each of which has appropriate roles in the financing of these improvements to meet present and projected needs.

**Policy e)** Provide adequate funding for maintenance of the capital investment in transportation facilities.

**Action 1:** Develop a long-term financing program that provides a stable source of funds to ensure cost-effective maintenance of transportation facilities and efficient effective use of public funds.

**Action 2:** Apply low impact development techniques on a city-wide basis where projects can accommodate the techniques.

**Action 3:** Fund the increased cost of the water quality and quantity additions to the streets through the surface water management program fees and systems development charges and other funding sources, as appropriate.

**Policy f)** Track and report transportation funding receipts and expenditures for the purposes of keeping Beaverton residents and businesses informed about funding the big picture.

## Goal 6.2.9: In the Cooper Mountain Community Plan area, provide safe, comfortable, convenient access to important destinations while supporting transportation options, including walking and biking.

## Policies:

### ACTIVE TRANSPORTATION POLICIES

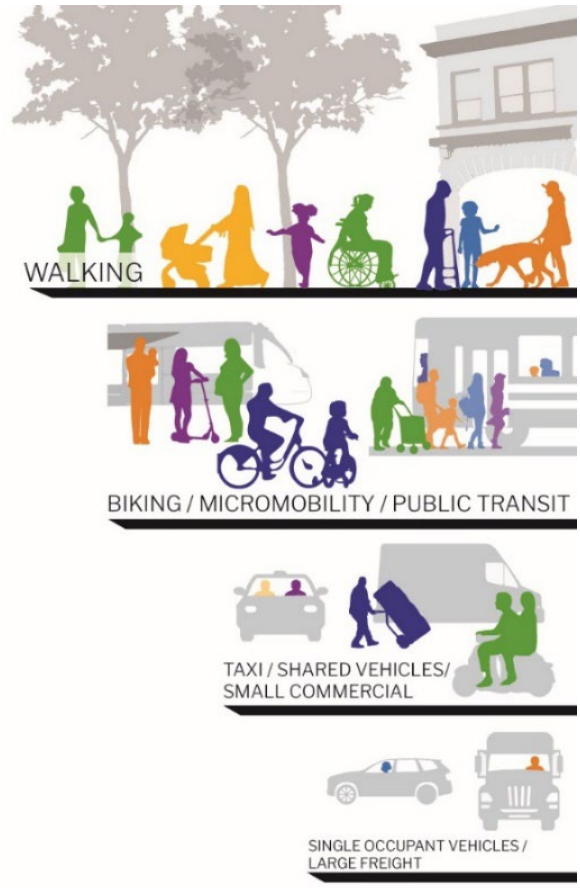
**Policy a)** Extend Beaverton's bicycle network by connecting bicycle facilities in Cooper Mountain to existing adjacent facilities and planned facilities Beaverton's Active Transportation Plan. Classify new bike facilities consistent with Beaverton's Active Transportation Plan and in coordination with Tualatin Hills Park & Recreation District for facilities that covered in its Trails Functional Plan.

**Policy b)** The city shall plan for and make transportation policy, design, and investment decisions consistent with its Complete Streets policy. Streets in the Cooper Mountain Community Plan area shall:

i. Be designed with the goal of preventing all death and serious injuries.
ii. Center people who have been negatively impacted by policy choices or those who are most vulnerable in our current system, including communities of color; children and their caregivers; seniors; and people with disabilities.
iii. Provide easy, dignified, and affordable access to places for people who cannot drive, or choose not to drive, for the trip they need to make.
iv. Reflect the fact that everyone is a pedestrian and benefits from generous, attractive, and socially activated walking environments.
v. Make walking, biking, and transit a viable and desirable transportation option for people of all ages and abilities.
vi. Be designed to advance the city toward its goal of 100 percent greenhouse gas emissions reduction by 2050.
vii. Facilitate an equitable, communitywide transition from gas-powered vehicles to electric vehicles.
viii. Accommodate the movement of goods and services to sustain a vibrant local, regional, and state economy.
ix. Comply with federal, state, and regional regulations.

x. Be planned, designed, built, and maintained in accordance with the design principles and modal hierarchy in Beaverton's complete street policy below.

**Complete street policy modal hierarchy**




**Policy c)** Design the pedestrian and bike network so it is the most direct, enjoyable, and easiest way for people to access key destinations in the neighborhood.

**Policy d)** Provide low-stress, comfortable bike and pedestrian facilities for all ages and abilities, including along arterials, collectors, and neighborhood routes, and support people walking, bicycling, and using other modes of active transportation in Cooper Mountain.

**Policy e)** Coordinate with THPRD to implement Cooper Mountain's trails, and with Metro for trails connecting to the Nature Park, as follows:

i. Integrate the multi-use paths/trails planned for SW Kemmer, SW 175th, SW Tile Flat, and SW Grabhorn as part of street improvements.

ii. Illuminate paved multi-use trails, where feasible, to provide safer nighttime travel routes for people walking and biking. Consider the use of "dark sky" lighting techniques or other strategies to reduce disturbance to wildlife.

iii. Coordinate with THPRD on planning for the McKernan Creek Regional Trail.

iv. Provide opportunities for scenic viewpoints and environmental education along the McKernan Creek Regional Trail.

v. Coordinate the McKernan Creek Regional Trail with the Utility Plan when possible.

vi. Extend community trails from South Cooper Mountain, consistent with the Active Transportation Concept Map and THPRD Trails Functional Plan.

vii. Coordinate with THPRD and Metro on connecting active transportation facilities to the Nature Park's nature trails, where feasible, consistent with the Active Transportation Map and THPRD's Trails Functional Plan.

**Policy f)** In collaboration with THPRD, plan, design, and implement a pedestrian-bike bridge to connect the Cooper Lowlands and Grabhorn Meadow neighborhoods, applying the following principles:

i. Minimize impact to McKernan Creek and riparian habitat.

ii. Provide passage for deer and other large mammals, such as by elevating the bridge to allow animals to pass underneath.

iii. Work with natural resource stakeholders during the design process.

iv. Coordinate bridge design and construction with THPRD's Trails Functional Plan, and where feasible, with the Cooper Mountain Utility Plan.

**Policy g)** Integrate Americans with Disabilities Act standards and guidelines into the design and implementation of active transportation facilities, and for trails, meet THPRD standards established in THPRD's Trails Functional Plan that balance accessibility with prohibitive impacts that include harm to significant cultural or natural resources; requirements of construction methods that are against federal, state, or local regulations; or terrain characteristics that prevent compliance.

## TRANSIT POLICIES

**Policy h)** Ensure the mix and intensity of uses, community destinations, street design, and other characteristics of the Community Plan area support the future provision of transit service to the area.

**Policy i)** Coordinate with TriMet regarding future fixed route transit service.

**Policy j)** Coordinate with Washington County regarding future on-demand, microtransit service.

**Policy k)** Coordinate with TriMet and other mobility providers to promote access to public transportation and private mobility services and the ability to transfer between those services easily and efficiently.

## COMPLETE AND CONNECTED STREETS POLICIES

**Policy l)** Implement the city's Complete Streets Policy and tailor street designs to their land use context. Center people who have been negatively impacted by policy choices or those who are most vulnerable in our current system, including communities of color; children and their caregivers; seniors; and people with disabilities.

**Policy m)** Coordinate with Washington County on arterial planning, funding, improvements, and jurisdictional responsibilities.

**Policy n)** Design arterial streets consistent with the city's Complete Streets Policy, Transportation System Plan (TSP), and the elements listed below.

i. Realign the "kink" on SW 175th.

ii. The cross-sections for Cooper Mountain arterials should include:

1. Two general purpose travel lanes, one in each direction;

2. Center turn lanes between the general purpose lanes as needed. When turn lanes are not required, median islands or similar treatments should be incorporated to promote speed management.
3. Additional vehicle turn lanes at intersections to address safety needs of all users of the shared right of way that are designed to provide protection and priority to people of all ages and abilities walking, cycling, and taking transit.
4. Arterials on the edge of the urban growth boundary shall have rural edges on the rural side and a separated multi-use path on the urban side.
5. Safe, protected, and comfortable crossings that minimize crossing distances and give priority at intersections for people walking and using bicycles, mobility devices for people with disabilities, or other small mobility devices.
6. Facilities designed to make the biking experience enjoyable and comfortable for people using bicycles or other small devices with wheels, including people in the "interested but concerned[1]" user category.
7. Wildlife-friendly crossing at the SW 175th "kink" realignment area and SW Grabhorn Road crossing of McKernan Creek.
8. Planter/furnishing zone widths of 8 feet with sufficient soil volume or equivalent configurations to ensure larger trees can thrive and contribute to Cooper Mountain's tree canopy goals.

**Policy o)** Design and build collector streets consistent with the city's Complete Streets Policy, TSP, and the following:

i. ***The*** cross-sections for Cooper Mountain collectors should include:

1. Two general purpose travel lanes, one in each direction.
2. Center turn lanes between the general purpose lanes as needed. When turn lanes are not required, median islands or similar treatments should be incorporated to promote speed management.
3. Additional vehicle turn lanes at intersections to address safety needs of all users of the shared right of way that are designed to provide protection and priority to people of all ages and abilities walking, cycling, and taking transit.
1. Safe, protected, and comfortable crossings that minimize crossing distances and give priority at intersections for people walking and using bicycles, mobility devices for people with disabilities, or other small mobility devices.
2. Facilities designed to make the biking experience enjoyable and comfortable for people using bicycles or other small devices with wheels, including people in the "interested but concerned[2]" user category.

[1] Interested but Concerned Bicyclists are the largest group identified by the research and have the lowest tolerance for traffic stress. Those who fit into this group tend to avoid bicycling except where they have access to networks of separated bikeways or very low-volume streets with safe roadway crossings. Source: U.S. Department of Transportation Federal Highway Administration Bikeway Selection Guide (2019)

4. A wildlife-friendly crossing where Route 1 crosses McKernan Creek and where the pedestrian-bike bridge crosses McKernan Creek between Cooper Lowlands and Grabhorn Meadow.
5. Planter/furnishing zone widths of 8 feet with sufficient soil volume or equivalent configurations to ensure larger trees can thrive and contribute to Cooper Mountain's tree canopy goals.
6. The McKernan Creek Trail continued on the south side of Weir Road.
7. The McKernan Creek Trail along portions of the "Route 1" north-south collector in a way that minimizes impacts to slopes and natural resources.

**Policy p)** Design and build neighborhood routes consistent with the city's Complete Streets Policy, TSP, and the following:

i. The ***cross-***sections for Cooper Mountain neighborhood routes should include:
   1. Two general purpose travel lanes, one in each direction.
   2. Ten-foot general purpose travel lanes unless a transit route or truck route necessitates additional width along the neighborhood route.
   3. Safe, protected, and comfortable crossings that minimize crossing distances and give priority at intersections for people walking and using bicycles, mobility devices for people with disabilities, or other small mobility devices.
   4. Facilities designed to make the biking experience enjoyable and comfortable for people using bicycles or other small devices with wheels, including people in the "interested but concerned " user category.
   5. Planter/furnishing zone widths of 8 feet with sufficient soil volume or equivalent configurations to ensure larger trees can thrive and contribute to Cooper Mountain's tree canopy goals.

ii. The Cooper Lowlands Neighborhood Route south of and adjacent to McKernan Creek is planned as the access to lands north of the Community Park. The neighborhood route shall include the McKernan Creek Regional Trail where it is adjacent to natural resources area along McKernan Creek.

iii. The High Hill Neighborhood Route will connect Siler Ridge Road to South Cooper Mountain. As the road is designed, it should take into account topography, tree preservation, and existing homes.

iv. Incorporate street design elements that support vehicle speed and volume management such as roundabouts, curb extensions, and traffic diverters.

**Policy q)** Cooper Mountain streets shall connect to South Cooper Mountain streets and other abutting existing streets or streets planned for in the TSP except where the city concludes the connections are not feasible or desirable because of significant natural resources.

**Policy r)** Design bridges/culverts (vehicular and pedestrian-bike) for safe passage of deer and other large mammal in the following locations:

i. Where Route 1 crosses McKernan Creek.

ii. The realignment of SW 175th Avenue.

iii. The pedestrian/bike bridge between the Cooper Lowlands and Grabhorn Meadow neighborhoods.

iv. The SW Grabhorn Road crossing of McKernan Creek.

# 6.3 TRANSPORTATION NEEDS

To establish transportation system needs and guide the development of an updated transportation plan, each mode of travel was inventoried for existing conditions. Then future growth was used to forecast year 2035 conditions for each mode. In addition, revenue streams were analyzed to establish reasonable funding levels that can be anticipated for transportation investment in Beaverton. (Note: the city-wide analysis supporting the identification of transportation needs was not updated upon inclusion of specific policies and projects serving the South Cooper Mountain Community Plan area. However, analysis specific to the planned land uses and transportation improvements identified in the Community Plan was undertaken as part of the planning effort for the Community Plan.)

## Existing Conditions

Existing travel activity was collected throughout the City and compared to the previous transportation plan to determine how existing conditions changed. Bicycle volumes were found to have increased during peak traffic hours on corridors where investment was made to provide bike lanes such as 5th Street, Hall Boulevard, Hart Road, Walker Road, Jenkins Road, and on most roadways in downtown Beaverton.

Pedestrian volumes were found to have increased the most near the Beaverton Transit Center, which reflects additional connectivity opportunities to public transit. Motor vehicle volumes were found to have decreased or stayed the same as year 2000 levels on major corridors in the City, which reflects the downturn in the economy as well as improvements in capacity and connectivity in the roadway network. Overall, the volume trends indicated a positive shift away from peak hour motor vehicle trips to other modes.

Since the year 2000 analysis conducted for the previous forecast year 2020 transportation plan, significant investment was made in roadway, pedestrian, and bicycle improvements. In addition, the WES commuter rail line is providing a new public transit mode and link to areas south of Beaverton. Combined with the positive volume shifts observed during peak hours, the transportation system investment has resulted in improved roadway operations in 2008 compared to the year 2000. While there continue to be deficiencies in mobility and connectivity that are yet to be addressed, the efforts of the City and the region to improve transportation conditions in Beaverton is positive and continues to be recognized in such ways as the continued designation of Beaverton as a Bicycle Friendly Community at the Bronze Level by the League of American Bicyclists.

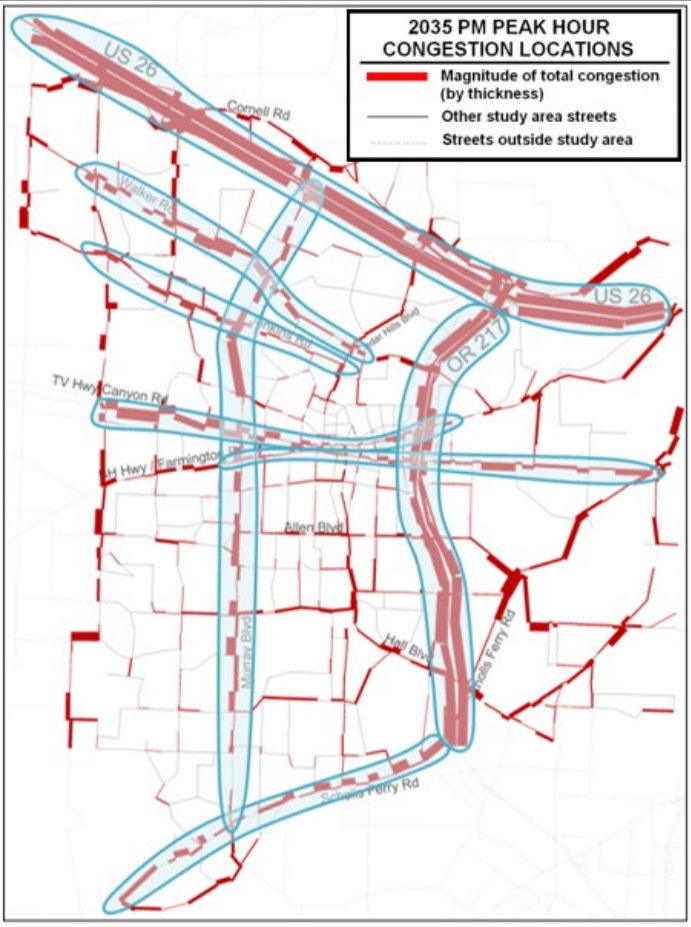
## Future Growth

Land use is a key factor in developing a functional transportation system. The amount of land that is planned to be developed, the type of land uses, and how the land uses are mixed together have a direct relationship to expected demands on the transportation system. Projected land uses were developed for areas within the urban growth boundary and reflect the Comprehensive Plan designations and coordination with Metro's 2035 land use projections. These land use projections were used with Metro's travel demand model to project future travel volumes and determine future needs.

| Beaverton Land Use Summary | | | | | |
|---|---|---|---|---|---|
| **Land Use** | **2005** | **2035** | **Increase** | **Percent Increase** | **Percent Annual Increase** |
| Households (HH) | 67,095 | 96,995 | 29,900 | 44% | 1.2% |
| Retail Employees (RET) | 23,395 | 36,240 | 12,845 | 55% | 1.5% |
| Service Employees (SER) | 30,342 | 64,732 | 34,390 | 113% | 2.6% |
| Other Employees (OTH) | 40,074 | 46,719 | 6,645 | 17% | 0.5% |
| Source: Metro | | | | | |

## Future Needs

Based upon land use and growth in the City and the increase in regional travel coming through Beaverton, future year 2035 conditions were evaluated. The impact of future growth would be severe without significant investment in transportation improvements. Corridors would become unmanageably congested resulting in travel speeds below five miles per hour over long stretches of road. The duration of congestion is likely to increase as a result of "peak spreading" and the additional demand on the transportation system that is already at or near capacity during the current peak periods. The greatest problem areas can be grouped into the following key deficiency areas:



Congestion Locations

- Lack of east-west capacity – Three of the key east-west routes (Tualatin Valley Highway, Cornell and Farmington) all experience significant congestion problems if improvements are not made.
- Lack of connectivity – Areas near OR 217 between Walker and Hall are the best examples, where all north-south movements must use local streets or divert to neighboring arterials. In addition, connections between Scholls Ferry Road and Oleson Road are limited.
- Lack of intersection turning capacity – Many intersections experience congested conditions and need additional right and left turning capacity.
- System performance issues – Traffic queues extending into upstream intersections along some corridors increase delay by blocking adjacent intersections so that only limited numbers of vehicles are able to travel through the intersection while the signal is green. This indicates the need for system management and considering corridor needs rather than individual intersections.
- The capacity deficiencies throughout the City indicate the need to not only invest in roadway operations and capacity, but also a need to balance investment with other modes of travel to provide improved travel choices and reduce the demand on the system. Projects to respond to these needs are identified in the transportation plan. In areas outside City limits, designations and projects included in the transportation plan are considered recommendations to the appropriate lead agency(ies) responsible for that area or facility.

## Funding

Through previous planning efforts, transportation studies, and updates to the City's transportation plan, numerous transportation projects were identified to address future needs, creating an extensive set of system solutions in the 2015 and 2020 TSPs. While the majority of these projects identified in prior efforts remain applicable to existing and future needs of the transportation system, the large set of projects was not developed with financial constraints. The total for needed projects under City jurisdiction identified in the 2035 and 2020 TSPs is currently over $700 million. This level of transportation investment cannot be reasonably funded with anticipated City transportation revenues through 2035 of approximately $185 million.

| Beaverton Funding Gap | |
|---|---|
| **Item** | **Total** |
| **Capital Project Funding** | $185 million |
| **Previously Identified Projects** (RTP & 2020 TSP) | $720 million |
| **Funding Gap:** | $-535 million |

The costs of the transportation projects identified in the RTP and TSP exceed the reasonably expected funding levels by approximately $535 million. Since funding is not available for the entire set of identified projects, a subset of projects that can be reasonably funded was selected for prioritization and implementation. The purpose of the alternatives analysis performed for the 2035 TSP was to determine the needed projects and programs from current and past TSPs and the RTP that provide the greatest benefit to the transportation system using the estimated available funding resources.

# 6.4 DEVELOPING A FINANCIALLY CONSTRAINED TRANSPORTATION PLAN

To address system needs in the high-priority corridors, improvement projects from previous TSPs and other relevant studies were compiled and assessed for their potential to serve priority corridor travel patterns. Projects that were estimated to serve a priority corridor were then prioritized by mode to develop a high-priority list of projects that form the financially constrained Beaverton Action Plan.

All other projects continue to be recognized as needed Master Plan projects, meaning that the need remains, and if unanticipated funding sources become available, these projects will be pursued for implementation. **These RTP and City bicycle, pedestrian, street, and intersection improvement projects are included in the 2035 TSP, which is in Appendix IV**. They are not considered funded, however, for purposes of this Transportation Element.

## Pedestrian Improvements

The existing pedestrian system network map was updated from the previous TSP to reflect recent improvements and the expanded study area. In most cases sidewalk improvements are aimed at closing gaps in the existing sidewalk network to provide connectivity rather than capacity. Generally, it is more important that a continuous sidewalk be available than it be of a certain type or size. Figure 6.1 Pedestrian Master Plan shows the existing gaps in the pedestrian system along arterial and collector roadways, as well as various activity generators that have the potential to attract pedestrian use.

Metro's RTP includes designations for pedestrian districts and transit/mixed use corridors. The RTP defines pedestrian districts as areas of high or potentially high pedestrian activity where regional policy places priority on creating a safe, direct, and attractive pedestrian environment. In general, these are areas planned for compact, mixed-use development served by transit and correspond to the following 2040 design type designations within the City of Beaverton: regional centers (RC), town centers (TC), station communities (SC), main streets, and corridors. The corresponding areas within the 2035 TSP boundary include the Beaverton Downtown RC, the Washington Square RC, Murray Scholls TC, Raleigh Hills TC, Cedar Mill TC, and the station communities including Sunset Transit Center, 185th and Baseline, Tektronix, Beaverton Creek, Elmonica/ Merlo. Areas such as these areas should be characterized by buildings oriented to the street and by boulevard street design features such as wider sidewalks with buffering from traffic, marked street crossing at intersections, pedestrian-scale lighting, benches, bus shelters, and street trees.

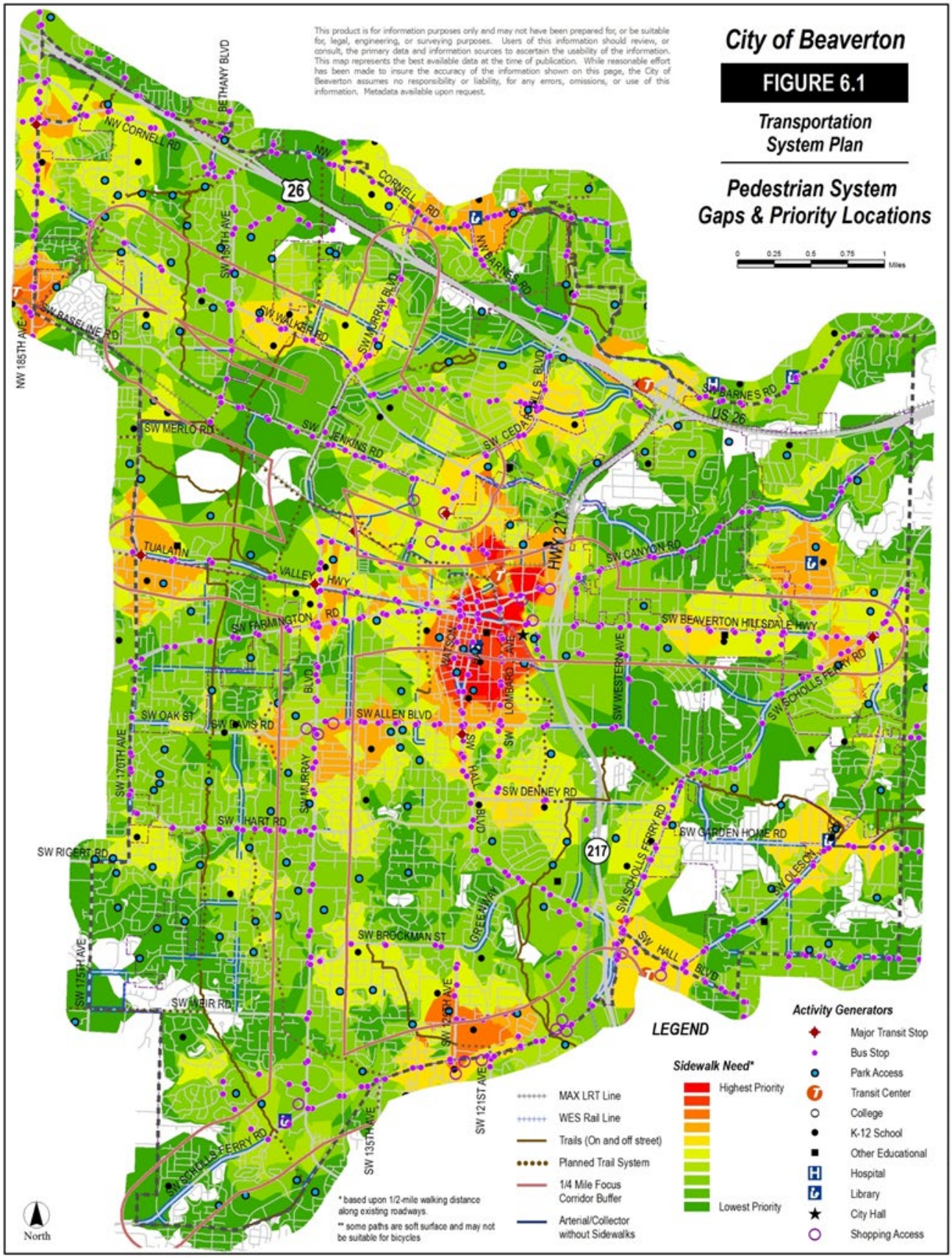
Transit/mixed-use corridors are defined as priority areas for pedestrian travel that are served by good quality transit service and that will generate substantial pedestrian traffic near neighborhood-oriented retail development, schools, parks, and bus stops. These corridors should include such design features as wide sidewalks with buffering from traffic, pedestrian scale-lighting, benches, bus shelters, and street trees. The 2040 design type designation for transit/mixed-use corridors is "Corridors." The corresponding corridor areas within the 2008 Beaverton TSP boundary include Murray Boulevard, Scholls Ferry Road, Hall Boulevard, Beaverton Hillsdale Highway/ Farmington Road, Canyon Road/ Tualatin Valley Highway, Cedar Hills Boulevard, Walker Road, and Cornell Road. The City of Beaverton Development Code regulations require new development in the pedestrian districts and transit/mixed use corridors to comply with the RTP descriptions listed above.

The most important existing pedestrian need in Beaverton is a well-connected pedestrian system within a half-mile grid of light rail transit (LRT) stations and key centers in Beaverton (parks, schools, retail, etc.). Additional needs include safe, direct and convenient access to transit and crossings of large arterial streets which act as barriers to pedestrian movement, marked crossings at major transit stops, as well as a sidewalk connectivity plan. A well-connected pedestrian system in the RTP designated pedestrian districts and transit/mixed use corridors will insure direct and logical pedestrian crossings at transit stops. The City of Beaverton coordinates with Washington County, TriMet, Metro, and ODOT to ensure that major transit stops are located at sites with a signalized and/or marked pedestrian crossing. In the future, additional activity centers will need to be considered and interconnected with the existing pedestrian system. The ranking of pedestrian strategies from the previous TSP is listed from most important to least important:

- Connect key pedestrian corridors to schools, parks, recreational uses and activity centers (public facilities, commercial areas, etc.)
- Fill in gaps in the network where some sidewalks exist
- Pedestrian corridors to transit stations and stops
- Signalized pedestrian crossings
- Pedestrian corridors that connect neighborhoods
- Improve streets having sidewalks on one side to two sides
- As development occurs, construction of sidewalks by developers
- Pedestrian corridors that commuters might use
- Reconstruct all existing substandard sidewalks to City standards

The transportation network was analyzed to determine potential sidewalk locations that would maximize the benefit of additional infrastructure by providing service to as many activity locations as possible. In Figure 6.1, areas that would serve the greatest number of activity generators (generally located in dense development) are indicated in red, while locations that lie outside the walking distance, assumed to be ½ mile, to activity generators (generally areas of sparse development) or would provide benefit to the least number of users are indicated in green. Sidewalk gaps that exist in red shading indicate potential locations for prioritizing sidewalk improvements or additions. The figure indicates that the highest priority need locations lie within the Beaverton Regional Center, around Walker Road/170th Avenue, and along 155th Avenue between Davis Road and Weir Road.

The existing gap locations shown in Figure 6.1 represent the ultimate Pedestrian Master Plan of pedestrian system needs and projects. Those projects that were selected as high priority locations and are reasonably likely to be funded by 2035 are included in Table 6-1 Action Plan with other modal Action Plan projects. Figure 6.5 indicates the locations for these high priority projects.


City of Beaverton
FIGURE 6.1
Transportation System Plan
Pedestrian System Gaps & Priority Locations
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0 0.25 0.5 0.75 1 Miles
BETHANY BLVD
NW CORNELL RD
NW 185TH AVE
SW BASELINE RD
SW 158TH AVE
SW WALKER RD
SW MURRAY BLVD
NW BARNES RD
SW BARNES RD
US 26
SW MERLO RD
SW JENKINS RD
SW CEDAR HILLS BLVD
HWY 217
TUALATIN VALLEY HWY
SW FARMINGTON RD
SW CANYON RD
SW BEAVERTON HILLSDALE HWY
SW WESTERN AVE
SW SCHOLLS FERRY RD
SW OAK ST
SW DAVIS RD
SW ALLEN BLVD
SW WATSON AVE
SW LOMBARD AVE
SW HALL BLVD
SW 170TH AVE
SW MURRAY BLVD
SW DENNEY RD
SW HART RD
SW RIGERT RD
SW GARDEN HOME RD
SW OLESON RD
SW BROCKMAN ST
SW GREENBURG RD
SW 175TH AVE
SW MEIR RD
SW 125TH AVE
SW 121ST AVE
SW 135TH AVE
SW SCHOLLS FERRY RD
LEGEND
Sidewalk Need*
Highest Priority
Lowest Priority
MAX LRT Line
WES Rail Line
Trails (On and off street)
Planned Trail System
1/4 Mile Focus Corridor Buffer
Arterial/Collector without Sidewalks
* based upon 1/2-mile walking distance along existing roadways.
** some paths are soft surface and may not be suitable for bicycles
Activity Generators
Major Transit Stop
Bus Stop
Park Access
Transit Center
College
K-12 School
Other Educational
Hospital
Library
City Hall
Shopping Access
North
10_0274 S:_TRANSPORTATION_2010\10_0274\FIG_6.1.mxd GIS-MRJ 2011/01/28

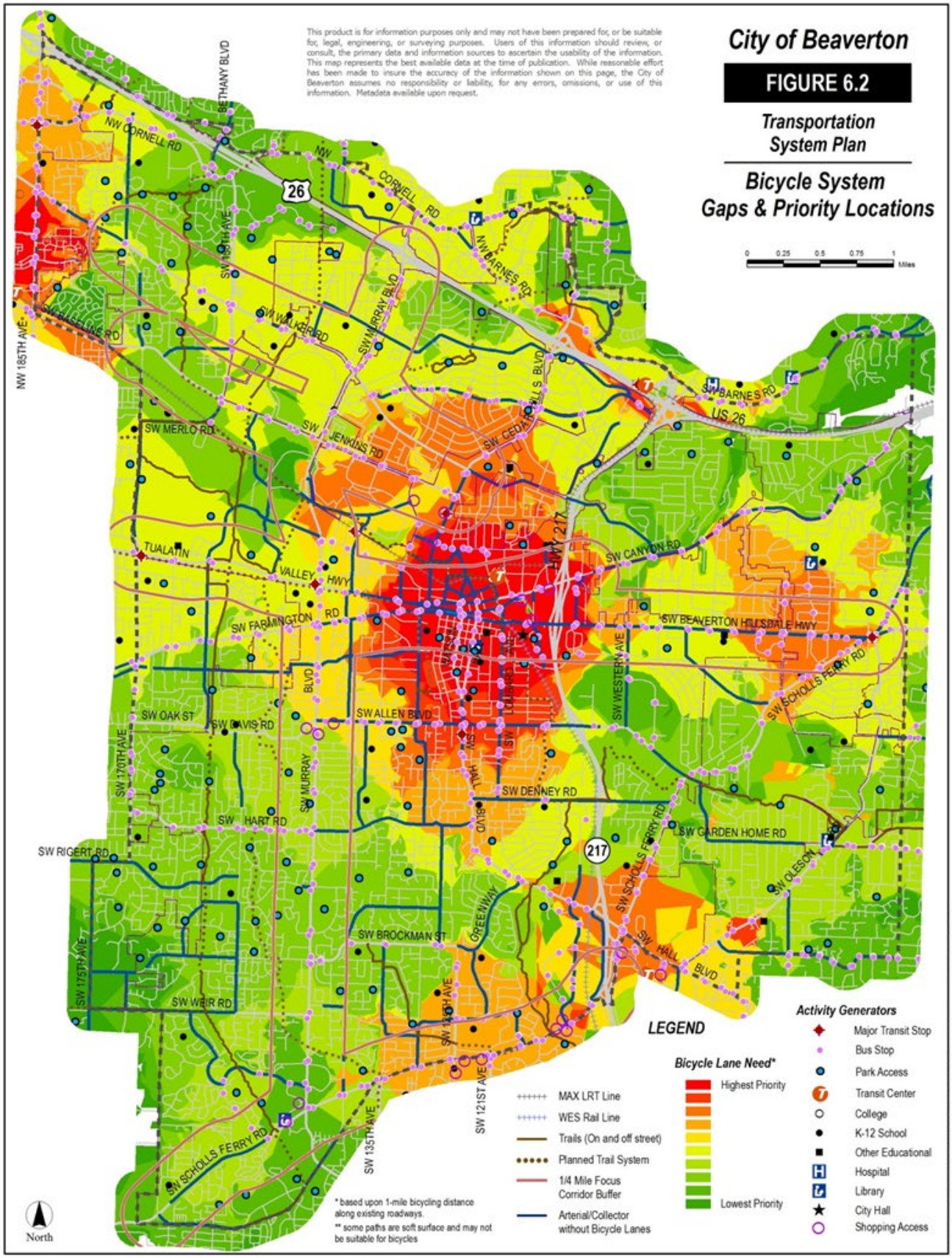
## Bicycle Improvements

The Bicycle Master Plan has been updated from the previous TSP to include completed improvement projects and the expanded study area. Bikeway improvements are aimed at closing the gaps in the bicycle network along arterial and collector roadways. The ranking of the bicycle strategies from the previous transportation plan is listed from most important to least important:

- Connect key bicycle corridors to schools, parks, recreational uses and activity centers (public facilities, commercial areas, transit centers, etc.)
- Fill in gaps in the network where some segments of bikeway exist
- Bicycle corridors that connect neighborhoods
- Construct bike lanes with roadway improvement projects
- Bicycle corridors that commuters might use
- Bicycle corridors providing mobility to and within commercial areas

State policy from the Transportation Planning Rule and City of Beaverton policy require that all arterial and collector roads have bikeways. City standards require that all arterials and collectors have bike lanes. Figure 6.2 Bicycle Master Plan shows the existing gaps in the bicycle system along arterial and collector roadways, as well as various activity generators that have the potential to attract bicycle use. As with the pedestrian system, the transportation network was analyzed to determine potential bicycle lane locations that would maximize the benefit of such widening or striping by providing service to as many activity locations as possible. In Figure 6.2, areas that would serve the greatest number of activity generators (generally located in dense development) are indicated in red, while locations that lie outside the cycling distance (assumed to be two miles) to activity generators or would provide benefit to the least number of users, are indicated in green. Bicycle lane gaps that exist in red shading indicate potential locations for prioritizing improvements such as striping or widening.

The highest priority locations for filling bicycle lane gaps are along Beaverton Hillsdale Highway between White Pine Lane and 107th Avenue, and Western Avenue and Jamieson Road south of Beaverton Hillsdale Highway. The existing gap locations shown in Figure 6.2 represent the ultimate master plan of bicycle system needs and projects. Those projects that were selected as high priority locations and are reasonably likely to be funded by 2035 are included in Table 6-1, the financially constrained improvement plan, with other modal projects. Figure 6.2a represents the bicycle and pedestrian needs for the South Cooper Mountain Community Plan Area. Figure 6.5 shows the locations for these high priority projects.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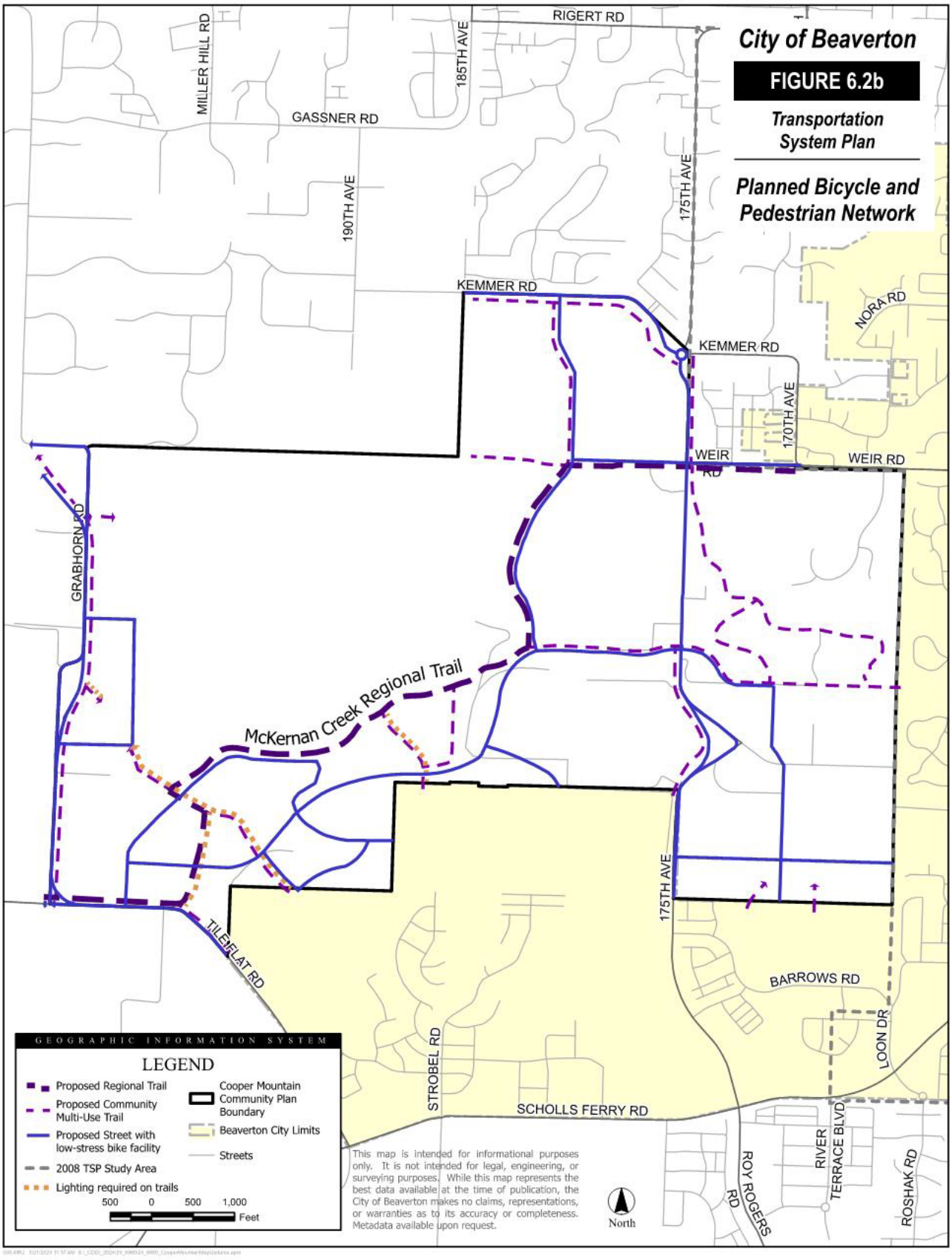
City of Beaverton
FIGURE 6.2
Transportation System Plan
Bicycle System Gaps & Priority Locations
0 0.25 0.5 0.75 1 Miles
BETHANY BLVD
NW CORNELL RD
NW CORNELL RD
26
NW BARNES RD
SW BARNES RD
US 26
NW 185TH AVE
SW WALKER RD
SW MURRAY BLVD
SW CEDAR HILLS BLVD
SW MERLO RD
SW JENKINS RD
TUALATIN
VALLEY HWY
HWY 217
SW CANYON RD
SW FARMINGTON RD
SW BEAVERTON HILLSDALE HWY
SW WESTERN AVE
SW SCHOLLS FERRY RD
SW OAK ST
SW DAVIS RD
SW ALLEN BLVD
SW 170TH AVE
SW MURRAY BLVD
SW HALL BLVD
SW DENNEY RD
SW HART RD
SW RIGERT RD
217
SW GARDEN HOME RD
SW OLESON RD
SW SCHOLLS FERRY RD
SW BROCKMAN ST
GREENWAY
SW HALL BLVD
SW 175TH AVE
SW WEIR RD
SW 125TH AVE
SW 121ST AVE
SW 135TH AVE
SW SCHOLLS FERRY RD
LEGEND
Bicycle Lane Need*
Highest Priority
Lowest Priority
MAX LRT Line
WES Rail Line
Trails (On and off street)
Planned Trail System
1/4 Mile Focus Corridor Buffer
Arterial/Collector without Bicycle Lanes
Activity Generators
Major Transit Stop
Bus Stop
Park Access
Transit Center
College
K-12 School
Other Educational
Hospital
Library
City Hall
Shopping Access
* based upon 1-mile bicycling distance along existing roadways.
** some paths are soft surface and may not be suitable for bicycles
North
10_0274 S:_TRANSPORTATION_20\10\10_0274\FIG_6.2.mxd GIS-MRJ 2011-01-28


City of Beaverton
FIGURE 6.2b
Transportation System Plan
Planned Bicycle and Pedestrian Network
RIGERT RD
MILLER HILL RD
185TH AVE
GASSNER RD
190TH AVE
175TH AVE
KEMMER RD
KEMMER RD
NORA RD
170TH AVE
WEIR RD
WEIR RD
GRABHORN RD
McKernan Creek Regional Trail
175TH AVE
TILEFLAT RD
BARROWS RD
LOON DR
STROBEL RD
SCHOLLS FERRY RD
RIVER TERRACE BLVD
ROY ROGERS RD
ROSHAK RD
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
Proposed Regional Trail
Proposed Community Multi-Use Trail
Proposed Street with low-stress bike facility
2008 TSP Study Area
Lighting required on trails
Cooper Mountain Community Plan Boundary
Beaverton City Limits
Streets
500 0 500 1,000
Feet
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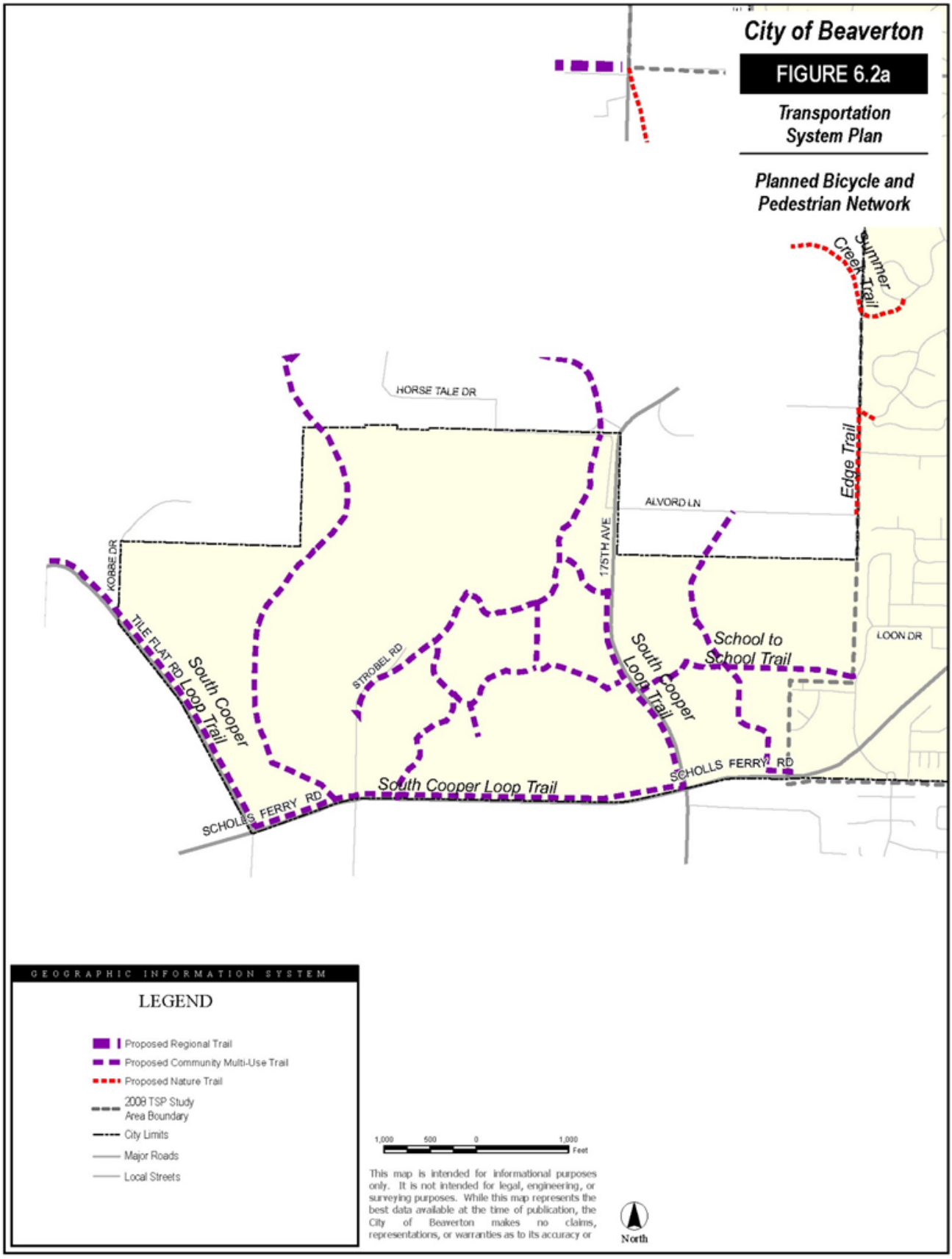
North


City of Beaverton
FIGURE 6.2a
Transportation System Plan
Planned Bicycle and Pedestrian Network
Summer Creek Trail
HORSE TALE DR
Edge Trail
ALVORD LN
175TH AVE
KOBBE DR
TILE FLAT RD
South Cooper Loop Trail
STROBEL RD
School to School Trail
LOON DR
SCHOLLS FERRY RD
South Cooper Loop Trail
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
Proposed Regional Trail
Proposed Community Multi-Use Trail
Proposed Nature Trail
2008 TSP Study Area Boundary
City Limits
Major Roads
Local Streets
1,000 500 0 1,000
Feet
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North

## Transit Improvements

The existing TriMet services corridors were reviewed to determine which corridors may potentially be underserved in the future as development occurs if transit frequencies are not increased. To support TriMet investment in the potentially underserved corridors, pedestrian and bicycle connectivity was prioritized within one-quarter mile of major corridors. In addition to current transit service, WES Commuter Rail service connecting Beaverton to Wilsonville will enhance the area's access to employment. The service is focused on peak commute periods and will potentially reduce the congestion of adjacent frequent or regional bus routes and Highway 217. The importance of the frequent and regional bus lines in Beaverton will be enhanced as more passengers travel through Beaverton on both the MAX and WES lines leading to more passenger transfers throughout the city.

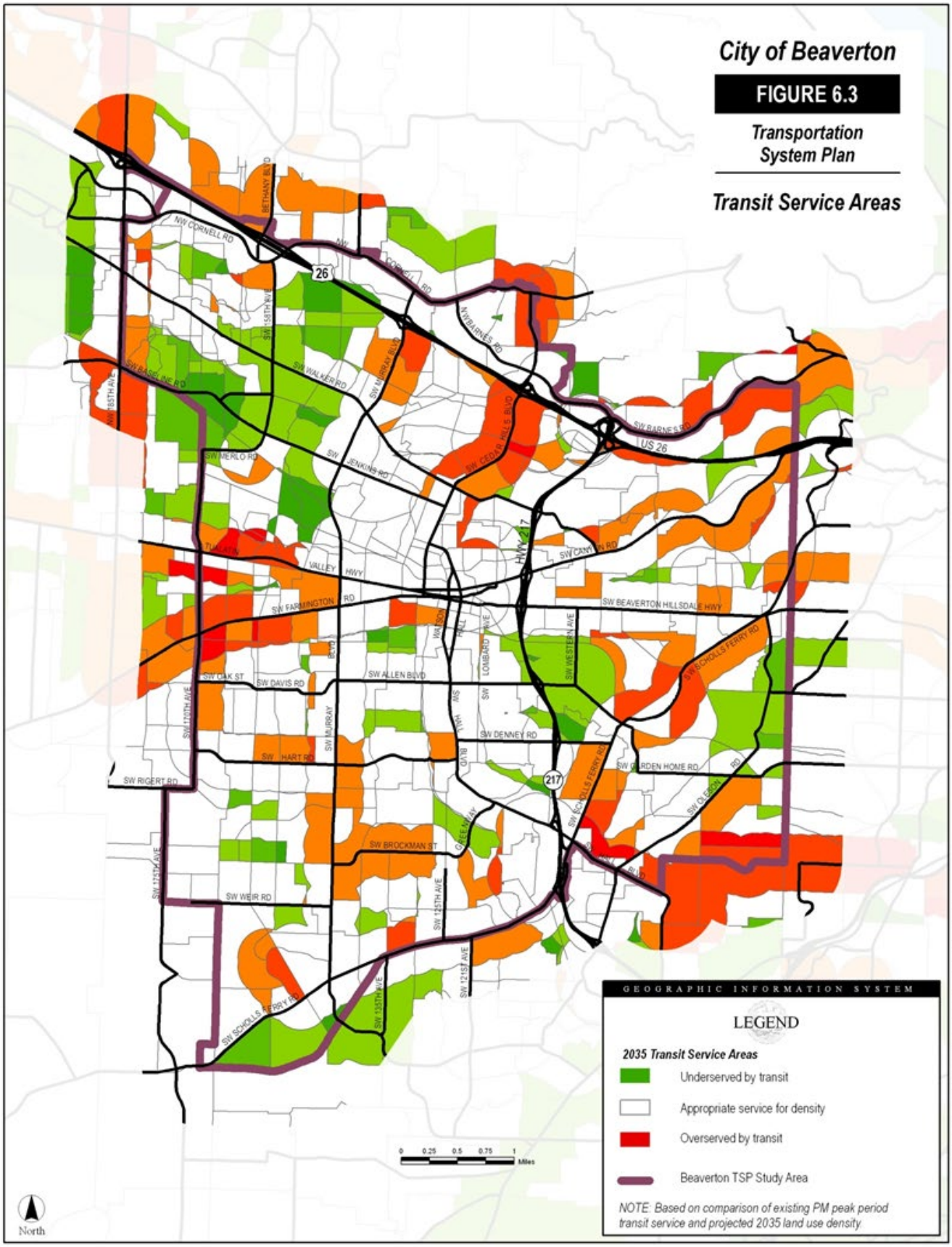
The existing transit system coverage area includes approximately 77 percent of the modeled transit supportive zones within the Beaverton TSP study area[2]. The future 2035 land use would increase the transit supportive area and the percentage of coverage to approximately 81 percent without an increase in service coverage.

Corridors designated as frequent bus routes by the RTP in the 2035 TSP study area include Beaverton Hillsdale Highway, Tualatin Valley Highway, Cedar Hills Boulevard, and Hall Boulevard. Major Streets designated as regional bus routes in the 2035 TSP study area include Barnes Road, Murray Boulevard, 185th Avenue, Walker Road, Canyon Road, Farmington Road, Lombard Avenue, Allen Boulevard, Garden Home Road, Oleson Road, and Scholls Ferry Road.

Future transit stops along these streets would further improve the coverage of the transit supportive area in Beaverton:

- 173rd Avenue between Cornell Road and Walker Road
- Davis Road between 170th Avenue and Murray Boulevard
- Hart Road between Murray Boulevard and Hall Boulevard
- Weir Road between Murray Boulevard and Mount Adams Drive
- Scholls Ferry Road between Loon Drive and 155th Terrace
- Oleson Road between Garden Home Road and Scholls Ferry Road

Because TriMet is responsible for the region's transit master plan, it continually updates and reevaluates its coverage and routes, and adopts a five-year Transit Improvement Plan. The City reviews and comments on these and participates in the High Capacity Transit Plan and RTP development. Thus, the coverage area map, the RTP plans and projects, and the above recommendations to TriMet comprise the City's recommendations for transit improvements.


City of Beaverton
FIGURE 6.3
Transportation System Plan
Transit Service Areas
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
2035 Transit Service Areas
Underserved by transit
Appropriate service for density
Overserved by transit
Beaverton TSP Study Area
NOTE: Based on comparison of existing PM peak period transit service and projected 2035 land use density.
North
0 0.25 0.5 0.75 1 Miles
NW CORNELL RD
SW BASELINE RD
SW MERLO RD
SW FARMINGTON RD
SW BEAVERTON HILLSDALE HWY
SW ALLEN BLVD
SW DENNEY RD
SW HART RD
SW RIGERT RD
SW BROCKMAN ST
SW WEIR RD
SW SCHOLLS FERRY RD
US 26
HWY 217

## Functional Classification Plan

The current functional classification of streets in Beaverton was updated to reflect the expanded TSP study area, on-going regional planning, the functional needs of Beaverton, and consistency with the RTP. Classifications of principal arterial, arterial, collector, neighborhood route, and local were developed based on connectivity (defined in the 2020 TSP), which is the best indicator of function. Figures 6-4 and 6.4a provide the functional classification of Beaverton streets. Streets designated in the RTP are to be designed with a modal orientation that reflects the function of the street and the character of surrounding land uses.

Freeways provide the highest level of connectivity. These roadways generally span several jurisdictions and are of regional and statewide importance.

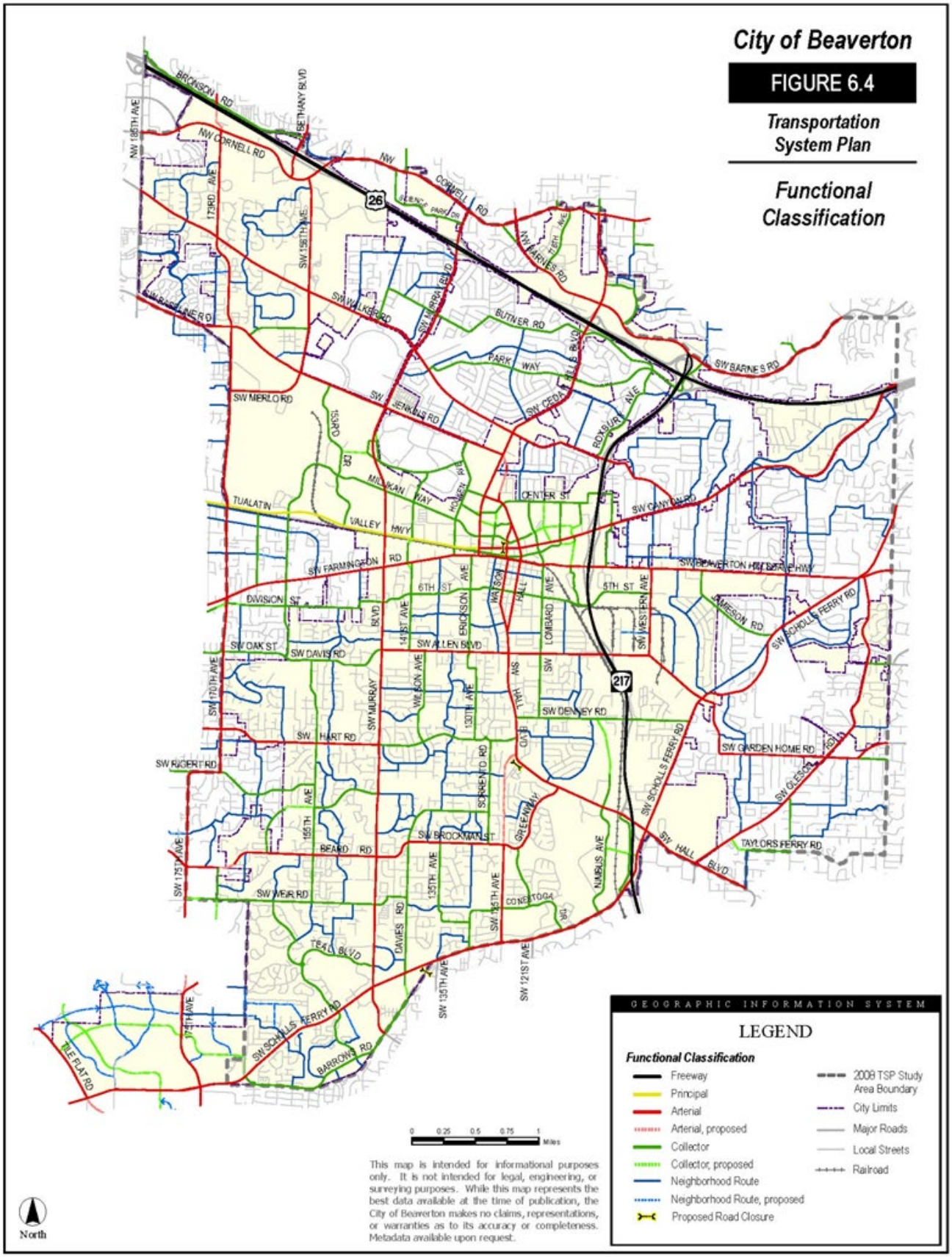
Principal arterial streets serve to connect neighboring cities and urban areas. They are of regional significance and often of statewide importance as well.

Arterial streets serve to interconnect and support principal arterials and freeways. They link major commercial, residential, industrial, and employment areas. Arterials are typically spaced about one mile apart to assure access to through routes and to reduce the incidence of traffic using collectors or local streets in lieu of a well-placed arterial street.

Collector streets balance access and circulation within residential, commercial, and industrial areas. Collectors differ from arterials in that they provide circulation within the city and distribute trips onto neighborhood routes and local streets.

Neighborhood routes are usually longer than local streets and provide connectivity to collectors or arterials. Because they have greater connectivity, they generally have more traffic than local streets and are used by residents to get into and out of their neighborhoods.

Local streets have the sole function of providing access to adjacent land. Local street design deliberately discourages through traffic and is important to neighborhood identity.


City of Beaverton
FIGURE 6.4
Transportation System Plan
Functional Classification
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
Functional Classification
Freeway
Principal
Arterial
Arterial, proposed
Collector
Collector, proposed
Neighborhood Route
Neighborhood Route, proposed
Proposed Road Closure
2008 TSP Study Area Boundary
City Limits
Major Roads
Local Streets
Railroad
0 0.25 0.5 0.75 1 Miles
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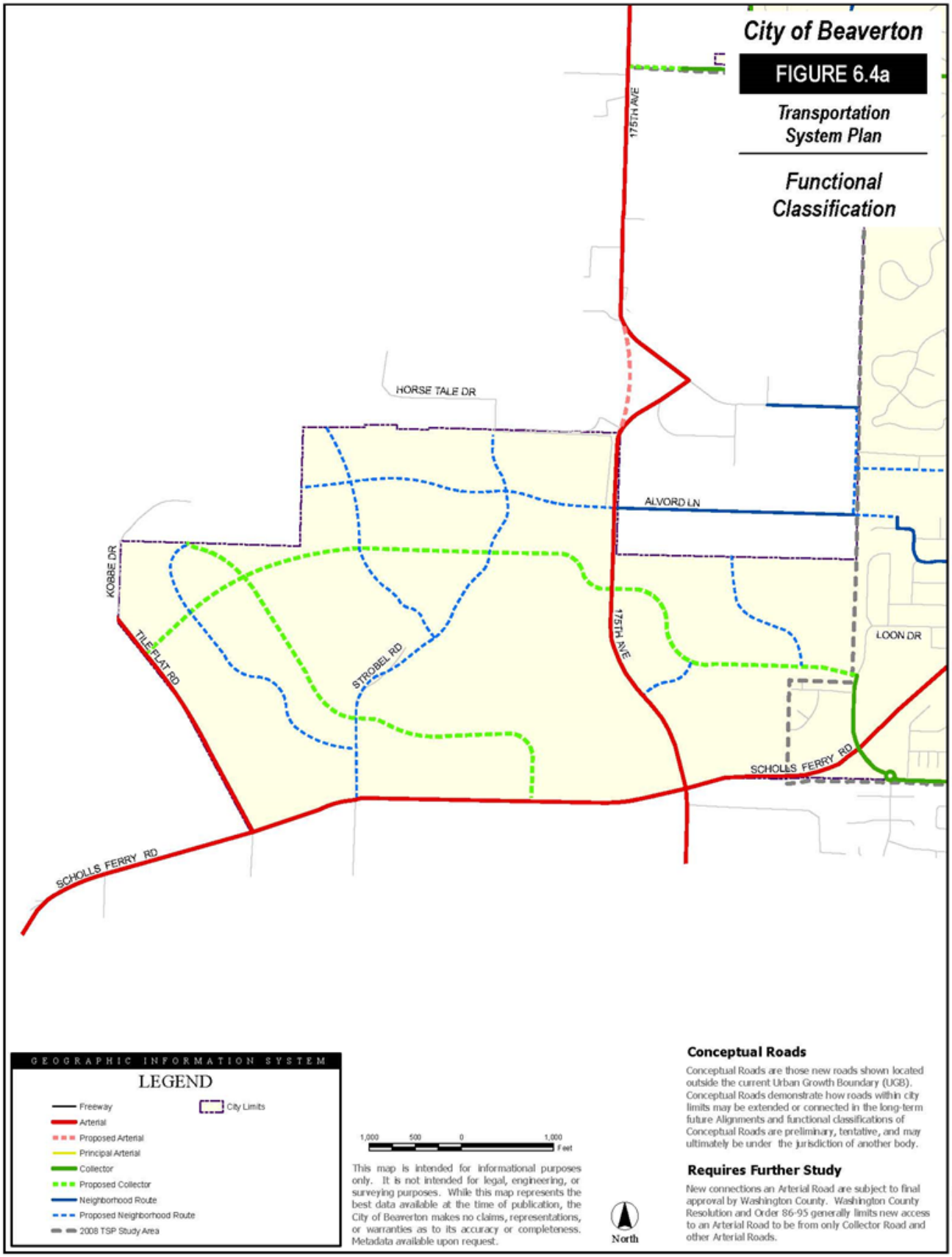
North
S:_CDD_2014_14_0859\14_0859_FunctionalClassification\RG_8-4.mxd GIS-DT 11/26/2014


City of Beaverton
FIGURE 6.4a
Transportation System Plan
Functional Classification
175TH AVE
HORSE TALE DR
ALVORD LN
KOBBE DR
TILE FLAT RD
STROBEL RD
LOON DR
SCHOLLS FERRY RD
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
Freeway
Arterial
Proposed Arterial
Principal Arterial
Collector
Proposed Collector
Neighborhood Route
Proposed Neighborhood Route
2008 TSP Study Area
City Limits
1,000 500 0 1,000
Feet
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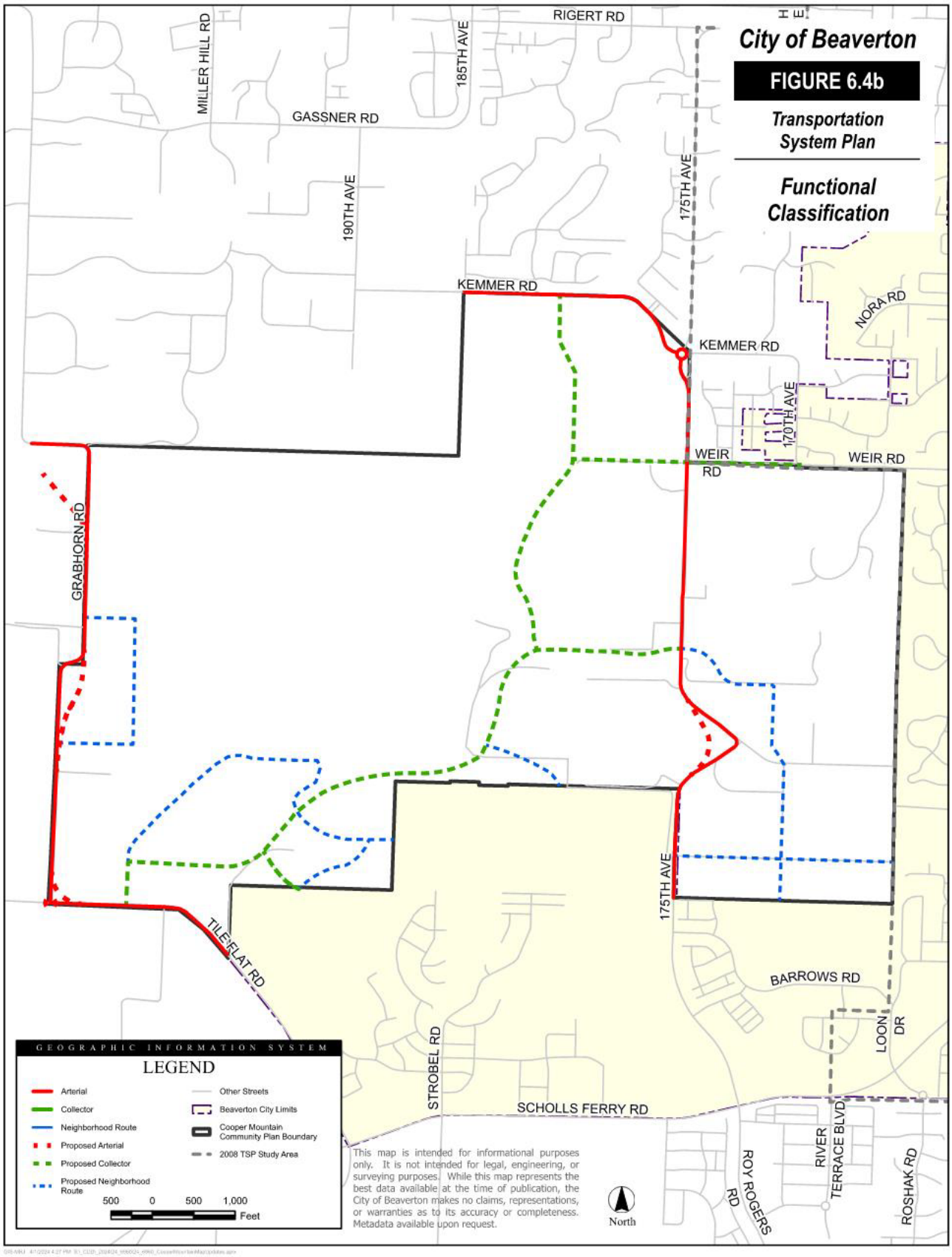
North
Conceptual Roads
Conceptual Roads are those new roads shown located outside the current Urban Growth Boundary (UGB). Conceptual Roads demonstrate how roads within city limits may be extended or connected in the long-term future Alignments and functional classifications of Conceptual Roads are preliminary, tentative, and may ultimately be under the jurisdiction of another body.
Requires Further Study
New connections an Arterial Road are subject to final approval by Washington County. Washington County Resolution and Order 86-95 generally limits new access to an Arterial Road to be from only Collector Road and other Arterial Roads.
S:_CDD_2014_14_0965\14_0965_FunctionalClassification\FIG_6-4a.mxd GIS-MRJ 12/23/2014


City of Beaverton
FIGURE 6.4b
Transportation System Plan
Functional Classification
RIGERT RD
MILLER HILL RD
185TH AVE
GASSNER RD
190TH AVE
175TH AVE
KEMMER RD
KEMMER RD
NORA RD
170TH AVE
WEIR RD
WEIR RD
GRABHORN RD
175TH AVE
TILE FLAT RD
BARROWS RD
LOON DR
STROBEL RD
SCHOLLS FERRY RD
RIVER TERRACE BLVD
ROY ROGERS RD
ROSHAK RD
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
Arterial
Collector
Neighborhood Route
Proposed Arterial
Proposed Collector
Proposed Neighborhood Route
Other Streets
Beaverton City Limits
Cooper Mountain Community Plan Boundary
2008 TSP Study Area
500 0 500 1,000
Feet
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North

## Transportation Demand Management

Transportation Demand Management (TDM) is the general term used to describe any action that removes single occupant vehicle trips from the roadway network during peak travel demand periods. As growth in the Beaverton area occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to change a user's travel behavior and provide alternative mode choices will help accommodate this growth.

Generally, TDM focuses on reducing vehicle miles traveled and promoting alternative modes of travel for large employers of an area. This is due in part to the Employee Commute Options (ECO) rules that were passed by the Oregon Legislature in 1993 to help protect the health of Portland area residents from air pollution and to ensure that the area complied with the Federal Clean Air Act.[3]

Research has shown that a comprehensive set of complementary policies implemented over a large geographic area can have an effect on the number of vehicle miles traveled to/from that area.[4]

However, the same research indicates that in order for TDM measures to be effective, they should go beyond the low-cost, uncontroversial measures commonly used such as carpooling, transportation coordinators/associations, priority parking spaces, etc. The more effective TDM measures include elements related to parking, improved services for alternative modes of travel, and other market-based measures. However, TDM includes a wide variety of actions that are specifically tailored to the individual needs of an area.

Redevelopment in the Beaverton area will also allow for TDM friendly development. With many regional trips destined to, or traveling through, the Beaverton area, region wide TDM measures should help to reduce congestion. Metro has established non-SOV (Single Occupancy Vehicle) mode share targets by 2040 for regional centers. These targets may also serve as performance measures for areas that have been designated as "Areas of Special Concern" The Beaverton Regional Center is classified by Metro as this type of area.[5] The 2040 non-SOV modal target for regional centers, town centers, station communities, main streets, and corridors is 45-55%.[6]

## Transportation System Management

Transportation System Management (TSM) focuses on lower cost strategies to enhance operational performance of the transportation system by seeking solutions to immediate transportation problems, finding ways to better manage transportation, maximizing urban mobility, and treating all modes of travel as a coordinated system. These types of measures include such things as signal improvements, ramp metering, traffic calming, access management, intelligent transportation systems (ITS) and programs that enhance and smooth transit operations. Typically, the most significant measures that can provide tangible benefits to the traveling public are traffic signal coordination and systems.

TSM measures focus primarily on region wide improvements; however there are a number of TSM measures that are used in a smaller scale environment such as the Beaverton area. The following are TSM strategies appropriate for Beaverton to continue implementing:

- Traffic monitoring: The City and Washington County routinely collect traffic volume data in the area. The data is used as a tool to compare historical growth. The use of closed circuit television cameras and vehicle detection systems are used to help monitor the network during peak hours in order to make adjustments to signal timing to help improve flow and decrease delay, travel time, fuel consumption, and vehicle emissions.
- Signal coordination and optimization, and adaptive signal systems: The state-of-the-art traffic signal systems, using a central computer to communicate and coordinate timing plans, have proven to produce substantial benefits in reducing congestion and travel time while increasing travel speeds. In Beaverton, a recent signal timing update on Canyon Road corridor showed a reduction of 12 percent in total delay during midday, and 11 percent during the weekend period. Overall, the new signal update resulted in up to a 10 percent reduction in stops in the corridors and up to 11 percent reduction in overall delay. The reduction in side street delay in the project corridor ranged from eight percent to 33 percent. The implementation of signal optimization helps to maximize the total cycle length of a signal to provide optimal timing patterns

for both the main arterial and the side street traffic. Optimization can provide additional reliability and efficiency for the transportation network. Adaptive signals are most responsive to traffic conditions and improve flow by 10 percent to 30 percent.

- Signal priority: The provision of signal priority works for both transit vehicles and emergency vehicles. Both operate on the same principles, which are improving the reliability and speed of the vehicles. Implementation of transit signal priority may supplement bus rapid transit (BRT) to improve transit travel along a corridor, allowing a bus to clear an intersection and begin passenger boarding/alighting downstream of the signal. Studies indicate that with signal priority transit travel times have decreased from 15 percent to 18 percent, while service reliability has increased from 12 percent to 23 percent for on-time performance.[7] These improvements can help cost effectiveness for transit operations.
- Information availability: An uninformed public can make inefficient transportation choices that could place a strain on the limited available capacity of a transportation network. This could create more congestion in an area that is already highly congested. By providing travelers with real-time information, the ability to make a more informed and efficient transportation decision is available.
- Incident management: Incident management includes detection, verification, response, site management, traffic management, clearance time, and recovery. Each of these steps takes time, during which the transportation operations along the corridor decrease. Research indicates that effective incident management has the potential to reduce response times by 40 percent and decrease fatalities by 10 percent in urban areas.[8] In addition, incident management has the potential to reduce delay to users and reduce emissions from vehicles.
- Access management strategies: Access management is important, particularly on high volume roadways, for maintaining traffic flow and mobility. Where local and neighborhood streets function to provide access, collector and arterial streets serve greater traffic volume. Numerous driveways, or street intersections, increase the number of conflicts and potential collisions and decrease mobility and traffic flow. Beaverton, and every city, needs a balance between streets that provide access and streets that serve mobility.

  Based on the 1999 Oregon Highway Plan (OHP), access points should not be allowed within 1320 feet of freeway interchanges. Interchanges within the TSP study area exist with numerous access points within 1320 of the interchange. These access points are locations of potential conflict with vehicles queued from the freeway on ramps, especially with queues formed from ramp meters. The following recommendation addresses the need to reclaim vehicular access control near the freeway interchanges to meet ODOT spacing standards:

  - As property redevelops, an evaluation of compliance with relevant access management policies is made for areas proximate to freeway interchanges.
  - If an existing access point is found non-compliant and it is the sole vehicular access for the property, a temporary access permit is issued that allows the property owners to continue access until such a time that alternative means can be made available.
  - In addition, the applicant will agree to potential cross-easements for circulation between adjoining properties.
  - When adjoining property re-develops that has compliant alternatives for vehicular access, the temporary permit of the first property owner is terminated and the noncompliant access is closed.
  - Intelligent Transportation System (ITS): ITS involves the application of advanced technologies and proven management techniques to relieve congestion, enhance safety, provide services to travelers, and assist transportation system operators in implementing suitable traffic management strategies. ITS focuses on increasing the efficiency of existing transportation infrastructure, which enhances the overall system performance and reduces the need to add capacity. Efficiency is achieved by providing services and information to travelers so they will make better travel decisions and to transportation system operators so they can better manage the system and improve system reliability. A regional ITS

framework plan[9] has been developed by Washington County, ODOT, City of Beaverton, City of Tualatin, City of Tigard, City of Hillsboro, City of Portland, TriMet, FHWA, Washington County Consolidated Communications Agency (WCCCA) and Tualatin Valley Fire and Rescue that includes projects in the Beaverton area such as traffic monitoring, signal controller interconnect, information availability, incident management, weather data collection, traffic data retrieval, and advanced rail warning systems.

While the existing ITS infrastructure in Beaverton is moderate, projects planned through 2035 will greatly increase coverage and the type of ITS equipment used in Beaverton and throughout Washington County. Existing ITS equipment in Beaverton, future equipment that is included in the Washington County ITS Plan, and additional future equipment and projects can be used to improve operations in Beaverton. The following actions should be taken as follows:

- Implement ITS projects previously contained in the Washington County ITS plan, including:
  - Install fiber communication lines along US 26 from Highway 217 to the Helvetia interchange and along Tualatin Valley Highway from US 26 to Hillsboro.
  - Install an arterial management system along Scholls Ferry Road from Hall Boulevard to Murray Boulevard, along southwest 185th Avenue from US 26 to Baseline Road and along Cornell Road from Cornelius Pass Road to Hillsboro.
  - Installation of central signal system software that allows remote management of traffic signals and is integrated with other agencies throughout the region. Configure a virtual traffic operation center (TOC) at Washington County for the purpose of controlling regional traffic operations. To provide communication connections between Washington County and the City of Portland traffic signal systems server.
  - Configure a virtual TOC at the City of Beaverton for monitoring and control of City-maintained traffic operations. The connection between the City of Beaverton and the City of Portland traffic signal system server is already in place.
- Implement additional ITS projects not included in the Washington County ITS Plan to support the Beaverton transportation network, including installing fiber communication lines along all arterial roadways.
- Consider projects addressed in Metro's Transportation System Management and Operations (TSMO) strategic plan. The purpose of this plan is to identify and prioritize TSMO projects that will benefit the region. Revisions or additions to the regional ITS plan will require coordination with the agencies involved (including Washington County, ODOT, City of Beaverton, City of Tualatin, City of Tigard, City of Hillsboro, City of Portland, TriMet, FHWA, WCCCA and Tualatin Valley Fire and Rescue) to implement changes to the plan.

All of the previously mentioned TSM measures can work together in a transportation environment to help reduce congestion and decrease travel times for travelers. The following are the RTP projects that support Beaverton TSM. Beyond the RTP designated TSM projects, the City of Beaverton should continue to coordinate with TriMet, ODOT, and Washington County in providing signal priority at signalized intersections along rapid or frequent bus routes (Tualatin Valley Highway and Cedar Hills/Hall corridor – approximately 50 intersections) to increase transit efficiently, reduce transit travel times, and promote non-SOV person trips. Signal priority should be activated for transit vehicles that are operating behind schedule. The implementation of additional strategies should be on a case-by-case basis and evaluated for effectiveness.

- Scholls Ferry Road: Hall Boulevard to Murray Boulevard (RTP 10602); Install integrated advanced traffic monitoring systems (ATMS) and management equipment
- 185th Avenue: Baseline Road to US 26 (RTP 10604); Install integrated advanced traffic monitoring systems (ATMS) and management equipment

- Allen Boulevard, Cedar Hills Boulevard, Hall Boulevard, Farmington Road Beaverton-Hillsdale Highway (RTP 10642) Adaptive traffic signal systems; New signals and signal upgrades

### Safety

The City monitors intersection collision history through its own safety index program and Washington County's Safety Priority Index System. Both are linked to the Oregon Department of Transportation's safety program. Intersections with high collision rates are given special attention for safety improvements. Safety improvement projects are developed and proposed for funding through various State and local sources.

---

[2] Coverage is determined as the area within 0.25 miles of a bus stop or 0.50 miles of a light rail transit stop

[3] Oregon Administrative Rules, Chapter 340, Division 30.

[4] *The Potential for Land Use Demand Management Policies to Reduce Automobile Trips*, ODOT, by ECO Northwest, June 1992.

[5] Based on the *2000 Metro Regional Transportation Plan*, Ordinance No. 00-869A (August 10, 2000), page 1-32.

[6] Based on the *2000 Metro Regional Transportation Plan*, Ordinance No. 00-869A (August 10, 2000), page 1-62.

[7] *Intelligent transportation system initiatives in Clark County: VAST Program*, January 2001.

[8] *Intelligent Transportation System Initiatives in Clark County: VAST Program*, January 2001.

[9] Washington County ITS Plan, prepared for ODOT by DKS Associates and ,

## 6.5 TRANSPORTATION SYSTEM PLAN IMPROVEMENTS

### Motor Vehicle Needs and Alternatives

Motor vehicle projects that were identified in the 2035 TSP as potentially meeting a need for a corridor in the initial screening process were summarized in a matrix and analyzed further for each corridor. The following three criteria were analyzed for each project that was considered:

- **Feasibility** - Includes issues such as right of way, land use impact, and overall cost. While not a fatal flaw analysis, it considers the likelihood that a project could be reasonably constructed. This measure favors projects that can be practically implemented. In some cases, projects may include factors that make implementation difficult, however given the magnitude of benefit the project is still considered feasible, even with the recognized challenges. In some cases regional projects are not considered feasible for the City of Beaverton due to total cost, and feasibility is contingent on funding partnerships with other regional agencies.
- **Grid and Function Consistency** – Considers issues related to system design such as connectivity, functional class of a facility, facility spacing, and consistency within the existing facility and regional design.
- **Congestion** – This considers if the project addresses an identified congestion issue. While identified projects generally address a specific operational need, in some cases these projects are local issues that do not impact the overall system or corridor need that has been identified as providing the greatest benefit to the system. In many cases a project may have been previously identified if the minor street delay was expected to exceed adopted performance standards. However, funding constraints do not allow every identified project to be constructed and only the specific focus corridor mobility is identified as the congestion need.

Each project was assigned a ranking of low, medium, or high based on the three criteria. Generally, projects that were not considered feasible were assigned a priority of "low" since they would not be a cost-effective solution to the problem, while projects that met all three criteria were considered high priority. A project that was considered "feasible" and met one of the other two criteria was listed as medium. **The Transportation System Solutions Report in the 2035 TSP Appendix contains additional detail for the alternatives analysis.** Additional right turn lane channelization projects were identified based on capacity need and implementation feasibility in the TSP.

## Financially Constrained Action Plan

Multimodal improvement projects that address the needs of the transportation system were selected based on the 2035 TSP alternatives analysis. Projects that were selected as high priority projects and are reasonably likely to be funded by 2035 are included in Table 6-1 with other modal Action Plan projects. Figure 6.5 shows the locations for these high priority Action Plan projects.

***

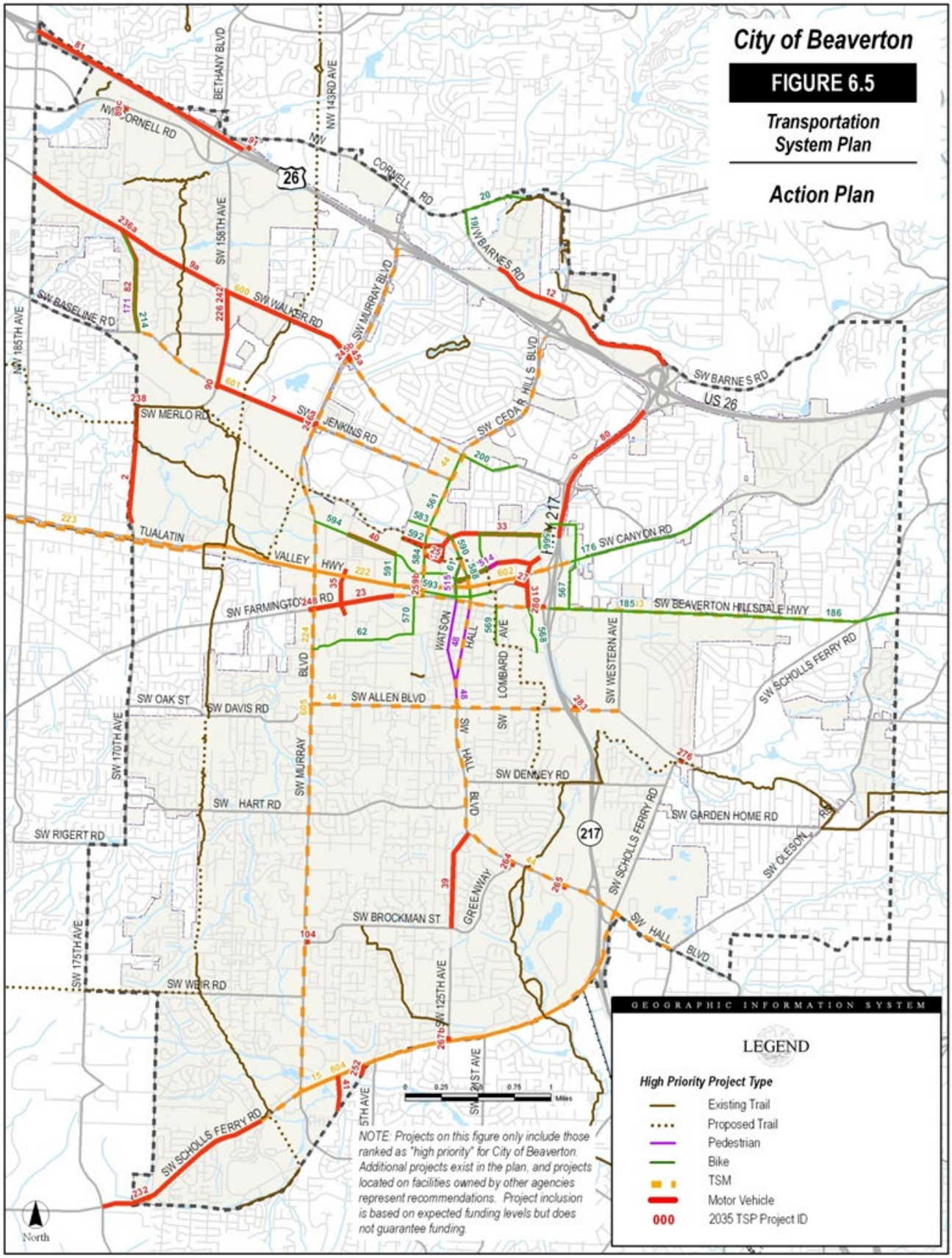
## Project Implementation

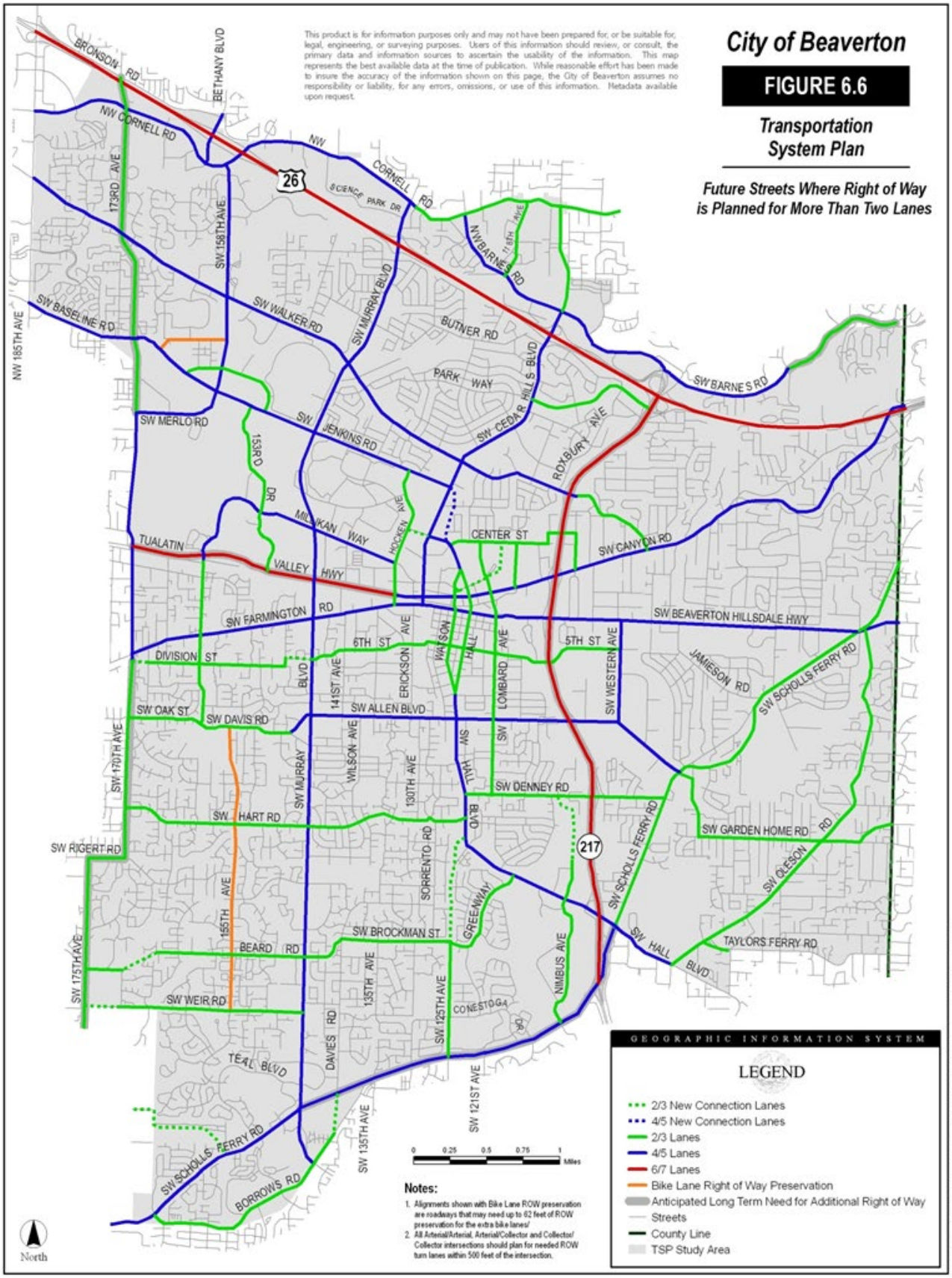
Transportation needs identified in the 2035 TSP analysis remain as unfunded needs though they are not all listed or mapped within this chapter. The figures and tables do not preclude implementing any project whether mapped or not mapped, listed or not listed, in order to take advantage of an opportunity provided by a proposed development or redevelopment, a roadway construction or reconstruction project, or any other project involving infrastructure improvements. The responsibility of new development to provide improvements and the standards to which all improvements must be built are identified in the Beaverton Development Code, the Engineering Design Manual, and the standards of 28 CFR Part 36 Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities (the Americans with Disabilities Act).

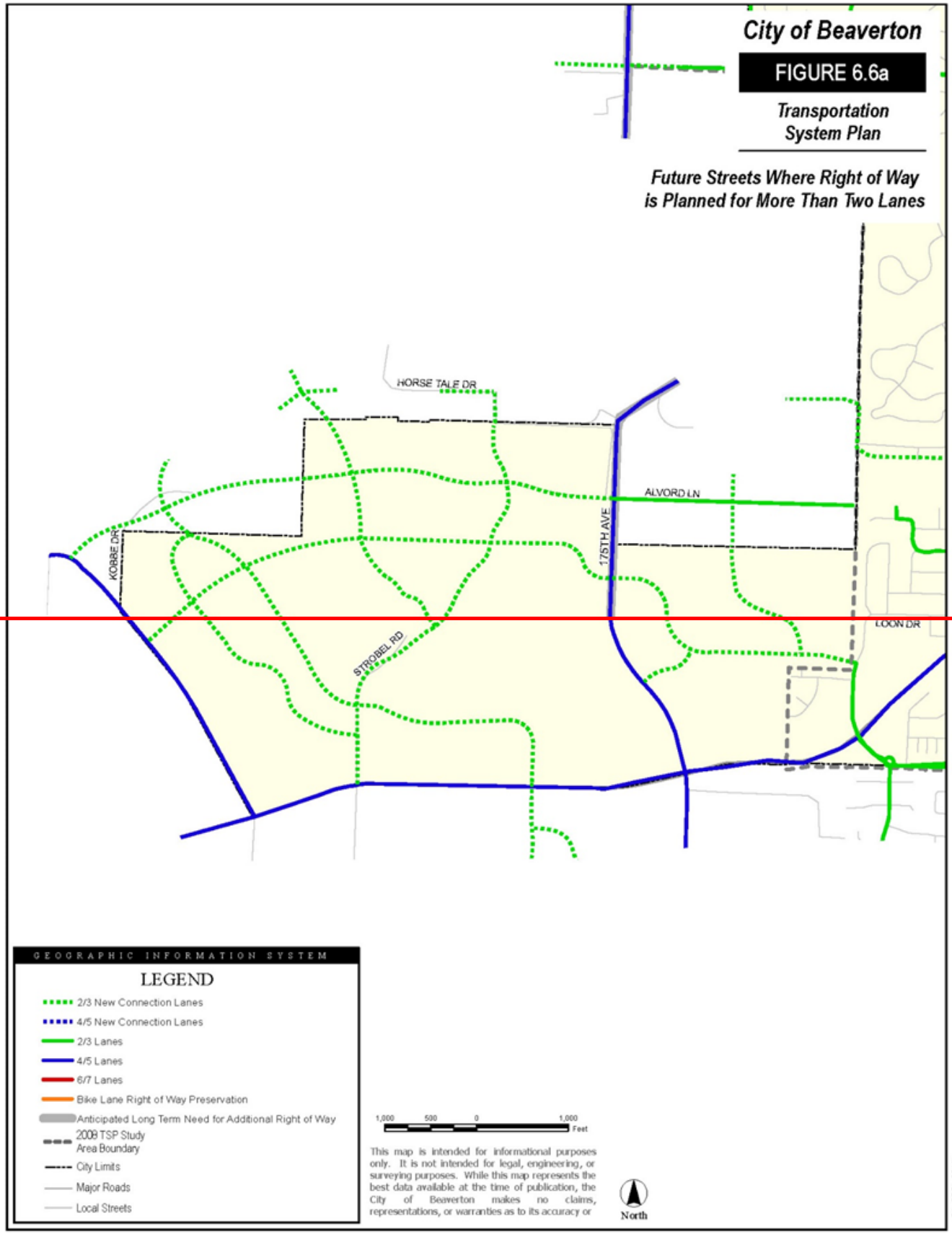
Any change within or adjacent to a transportation facility or public right-of-way represents an opportunity to expand or improve the system. To take advantage of such opportunities and make the most cost-effective use of public and private funds, the City may schedule and make financing provision for any transportation improvement that the City deems necessary or desirable, whether the improvement is specifically planned in the Comprehensive Plan or not, whether the improvement is funded publicly, privately, or in combination, whether the improvement is ultimate or interim, and regardless of the timing of the improvement relative to the priorities and timing in the Comprehensive Plan.

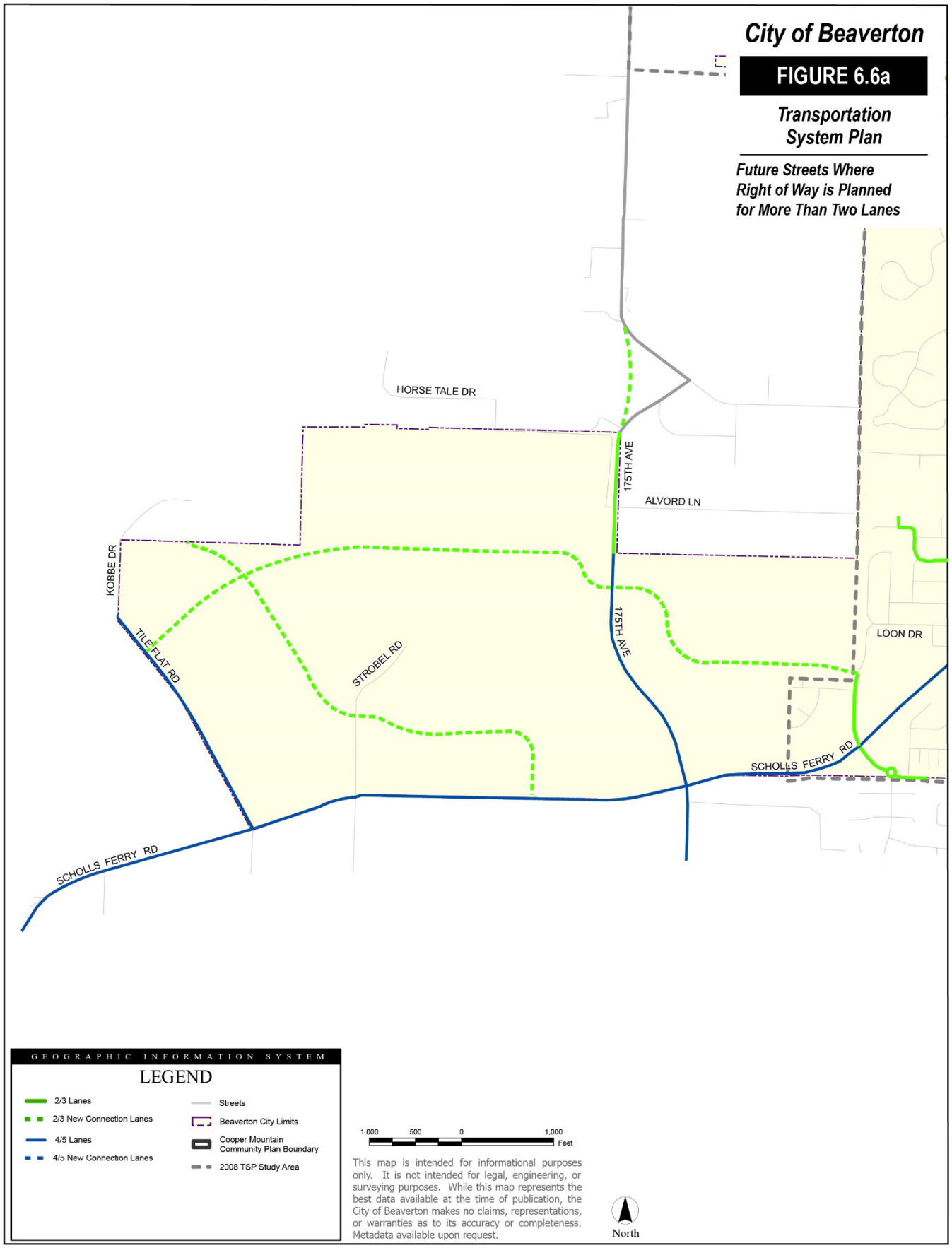
Correspondingly, the City Council may include a transportation improvement that it deems necessary in the capital improvement plan and budget. The City may seek state, regional, and federal funding assistance whether an improvement is specifically planned in the Comprehensive Plan or not, and whether the improvement is ultimate or interim. However, only those transportation improvements that comply with applicable provisions of the City's adopted codes, ordinances, and Comprehensive Plan shall be implemented.

Streets where future right-of-way is needed for more than two lanes are identified in Figures 6.6 and 6.6a. At times, right-of-way may be needed for construction of bike lanes on a collector or arterial to City standards. Such needs are also included in Figures 6.6 and 6.6a to preserve the right-of-way if new development is proposed or anticipated in the area or additional funds are accessed. In addition, arterial and collector intersections should plan for right-of-way for turn lanes within 500 feet of the intersection.


City of Beaverton
FIGURE 6.5
Transportation System Plan
Action Plan
NW CORNELL RD
BETHANY BLVD
NW 143RD AVE
NW CORNELL RD
26
SW 158TH AVE
NW 185TH AVE
SW BASELINE RD
SW WALKER RD
SW MURRAY BLVD
191ST
NW BARNES RD
SW BARNES RD
US 26
SW CEDAR HILLS BLVD
SW MERLO RD
SW JENKINS RD
217
TUALATIN VALLEY HWY
SW CANYON RD
SW FARMINGTON RD
SW BEAVERTON HILLSDALE HWY
WATSON AVE
HALL BLVD
LOMBARD AVE
SW WESTERN AVE
SW SCHOLLS FERRY RD
SW OAK ST
SW DAVIS RD
SW ALLEN BLVD
SW 170TH AVE
SW MURRAY BLVD
SW DENNEY RD
SW HART RD
SW RIGERT RD
SW GARDEN HOME RD
SW OLESON RD
GREENWAY
SW BROCKMAN ST
SW HALL BLVD
SW 175TH AVE
SW WEIR RD
SW 125TH AVE
SW 117TH AVE
SW 5TH AVE
SW SCHOLLS FERRY RD
0 0.25 0.5 0.75 1 Miles
North
NOTE: Projects on this figure only include those ranked as "high priority" for City of Beaverton. Additional projects exist in the plan, and projects located on facilities owned by other agencies represent recommendations. Project inclusion is based on expected funding levels but does not guarantee funding.
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
High Priority Project Type
Existing Trail
Proposed Trail
Pedestrian
Bike
TSM
Motor Vehicle
000 2035 TSP Project ID


City of Beaverton
FIGURE 6.6
Transportation System Plan
Future Streets Where Right of Way is Planned for More Than Two Lanes
This product is for information purposes only and may not have been prepared for, or be suitable for, legal, engineering, or surveying purposes. Users of this information should review, or consult, the primary data and information sources to ascertain the usability of the information. This map represents the best available data at the time of publication. While reasonable effort has been made to insure the accuracy of the information shown on this page, the City of Beaverton assumes no responsibility or liability, for any errors, omissions, or use of this information. Metadata available upon request.
BRONSON RD
BETHANY BLVD
NW CORNELL RD
173RD AVE
SW 158TH AVE
26
SCIENCE PARK DR
NW BARNES RD
SW BASELINE RD
NW 185TH AVE
SW WALKER RD
SW MURRAY BLVD
BUTNER RD
PARK WAY
SW CEDAR HILLS BLVD
SW BARNES RD
SW MERLO RD
SW JENKINS RD
153RD DR
ROXBURY AVE
MILIKAN WAY
HOCKEN AVE
CENTER ST
SW CANYON RD
TUALATIN VALLEY HWY
SW FARMINGTON RD
SW BEAVERTON HILLSDALE HWY
DIVISION ST
6TH ST
ERICKSON AVE
WATSON AVE
HALL BLVD
LOMBARD AVE
5TH ST
SW WESTERN AVE
JAMIESON RD
SW SCHOLLS FERRY RD
SW OAK ST
SW DAVIS RD
141ST AVE
SW ALLEN BLVD
WILSON AVE
130TH AVE
SW 170TH AVE
SW MURRAY BLVD
SW DENNEY RD
SW HART RD
SW RIGERT RD
SORRENTO RD
217
SW GARDEN HOME RD
SW OLESON RD
155TH AVE
GREENWAY
SW BROCKMAN ST
SW HALL BLVD
TAYLORS FERRY RD
BEARD RD
SW 175TH AVE
NIMBUS AVE
SW WEIR RD
135TH AVE
SW 125TH AVE
CONESTOGA
DAVIES RD
TEAL BLVD
SW 121ST AVE
SW 135TH AVE
SW SCHOLLS FERRY RD
BORROWS RD
North
0 0.25 0.5 0.75 1 Miles
Notes:
1. Alignments shown with Bike Lane ROW preservation are roadways that may need up to 62 feet of ROW preservation for the extra bike lanes/
2. All Arterial/Arterial, Arterial/Collector and Collector/Collector intersections should plan for needed ROW turn lanes within 500 feet of the intersection.
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
2/3 New Connection Lanes
4/5 New Connection Lanes
2/3 Lanes
4/5 Lanes
6/7 Lanes
Bike Lane Right of Way Preservation
Anticipated Long Term Need for Additional Right of Way
Streets
County Line
TSP Study Area


City of Beaverton
FIGURE 6.6a
Transportation System Plan
Future Streets Where Right of Way is Planned for More Than Two Lanes
HORSE TALE DR
ALVORD LN
175TH AVE
KORBE DR
STROBEL RD
LOON DR
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
2/3 New Connection Lanes
4/5 New Connection Lanes
2/3 Lanes
4/5 Lanes
6/7 Lanes
Bike Lane Right of Way Preservation
Anticipated Long Term Need for Additional Right of Way
2009 TSP Study Area Boundary
City Limits
Major Roads
Local Streets
1,000 500 0 1,000 Feet
This map is intended for informational purposes only. It is not intended for legal, engineering, or surveying purposes. While this map represents the best data available at the time of publication, the City of Beaverton makes no claims, representations, or warranties as to its accuracy or
North


City of Beaverton
FIGURE 6.6a
Transportation System Plan
Future Streets Where Right of Way is Planned for More Than Two Lanes
HORSE TALE DR
175TH AVE
ALVORD LN
KOBBE DR
TILE FLAT RD
STROBEL RD
175TH AVE
LOON DR
SCHOLLS FERRY RD
SCHOLLS FERRY RD
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
2/3 Lanes
2/3 New Connection Lanes
4/5 Lanes
4/5 New Connection Lanes
Streets
Beaverton City Limits
Cooper Mountain Community Plan Boundary
2008 TSP Study Area
1,000 500 0 1,000
Feet
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North
S:_CDD_2014_14_0965\14_0965_FunctionalClassificationFIG_6-4a.mxd GIS-MRJ 12/29/2014

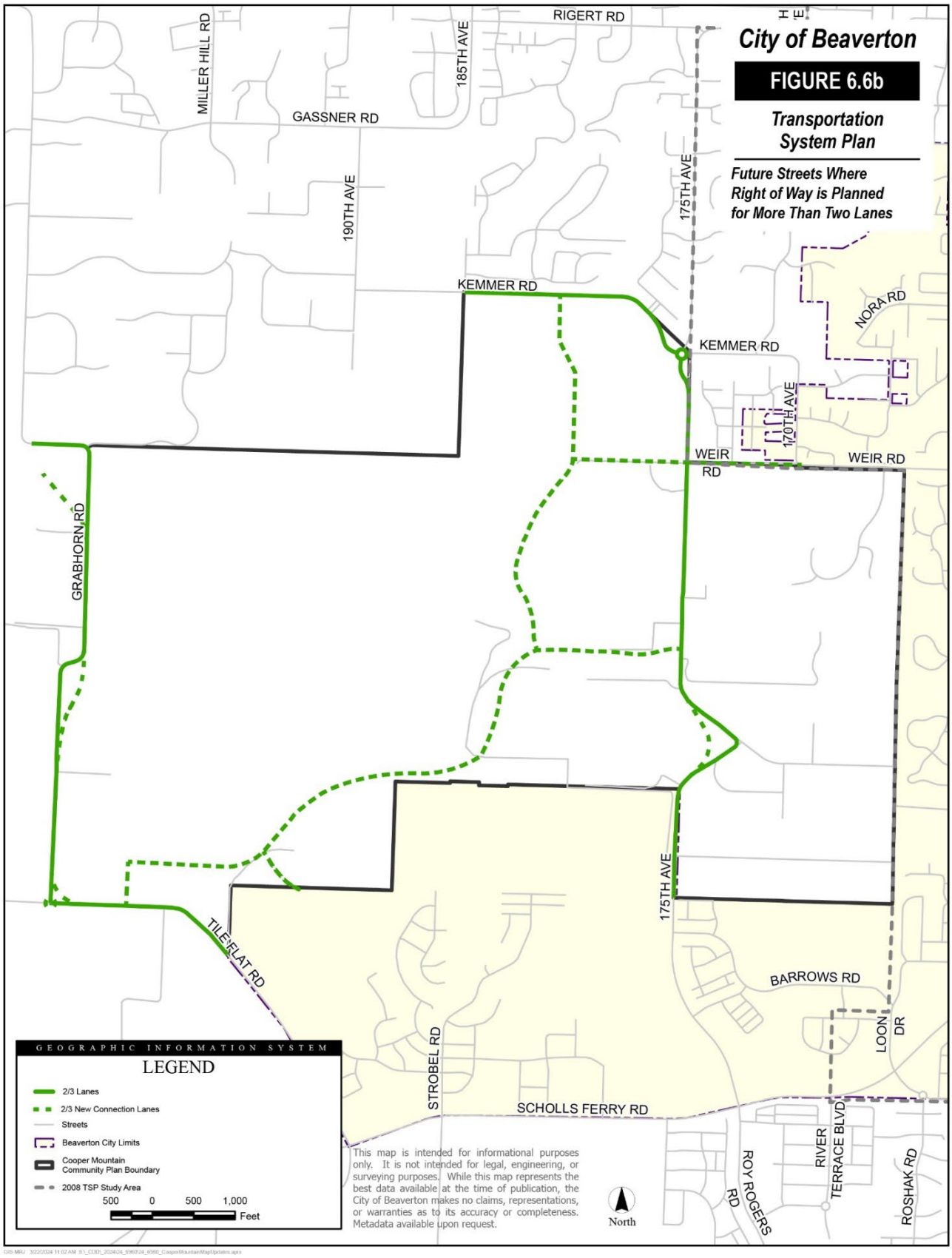
City of Beaverton
FIGURE 6.6b
Transportation System Plan
Future Streets Where Right of Way is Planned for More Than Two Lanes
RIGERT RD
MILLER HILL RD
185TH AVE
GASSNER RD
190TH AVE
175TH AVE
KEMMER RD
NORA RD
170TH AVE
WEIR RD
GRABHORN RD
TILE FLAT RD
BARROWS RD
LOON DR
STROBEL RD
SCHOLLS FERRY RD
ROY ROGERS RD
RIVER TERRACE BLVD
ROSHAK RD
GEOGRAPHIC INFORMATION SYSTEM
LEGEND
2/3 Lanes
2/3 New Connection Lanes
Streets
Beaverton City Limits
Cooper Mountain Community Plan Boundary
2008 TSP Study Area
500 0 500 1,000
Feet
This map is intended for informational purposes only. It is not intended for legal, engineering, or surveying purposes. While this map represents the best data available at the time of publication, the City of Beaverton makes no claims, representations, or warranties as to its accuracy or completeness. Metadata available upon request.
North

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Exhibit 2 includes proposed amendments to Comprehensive Plan Volume I related to the Cooper Mountain Community Plan but also including some citywide changes.

- Proposed new language is underlined.
- Proposed deleted language is ~~stricken~~.
- Language that has been skipped is indicated by "***"

In some cases, photographs have been removed from the draft document to make the document shorter and to direct focus to the written policies.

# CHAPTER 7 – NATURAL, CULTURAL, HISTORIC, SCENIC, ENERGY, AND GROUNDWATER RESOURCES ELEMENT

***

## 7.1 Overview

This Plan element addresses natural, cultural, historic, scenic, energy, and groundwater resources within the context of Statewide Planning Goal 5. Statewide Planning Goal 5, Open Spaces, Scenic Resources and Historic Area, and Natural Resources, provides a mechanism for local governments to plan for resources. Procedures to comply with this goal are specified in Oregon Revised Statutes (ORS 660-23-000 through 660-23-250.) The procedures include a three-part process:

1) Inventory the resource,
2) Analyze the economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit or prohibit a conflicting use, and
3) Adopt a program to implement the decisions made through the ESEE analysis.

An alternative process is also provided for some resources: the Safe Harbor alternative. In this alternative, local governments are given the option to adopt inventories based on information gathered by other agencies, or to adopt standardized programs to implement protection of the resource, thereby eliminating the need to complete the ESEE analysis.

Volume III of the Comprehensive Plan, Statewide Planning Goal 5 Resource Inventory Documents, provides the information necessary to satisfy the inventory requirements of this goal. The Cooper Mountain Community Plan's Natural Resource Report also includes inventory information. This information includes quantity, quality and location data on specific resources. Additionally, the inventoried resources are mapped or listed, and a determination of significance of the individual resource sites is provided in map or list form.

The text that follows addresses the third requirement in the Goal 5 process. Where possible, the program decision has been to follow the Safe Harbor regulations of the goal; therefore, an ESEE analysis is not necessary. Where necessary, the ESEE analysis is included in Volume III.

The resource protection goals, policies and actions that follow in this section are divided into Statewide Planning Goal 5 resource categories, to match each City inventory. Each category provides the foundation for the regulations and programs designed to protect, enhance or restore these resources, and to further demonstrate compliance with Statewide Planning Goal 5.

Metro, the regional government encompassing Washington, Clackamas, and Multnomah counties, identified regionally significant wildlife habitat and riparian corridors. These areas were divided into categories: wildlife habitat, riparian corridors, and upland wildlife habitat and subdivided by classes: I, II and III or Class A, B and C. Upon completion of the inventory, the local governments within the Tualatin Basin combined together to form the Tualatin Basin Natural Resource Coordinating Committee, also known as the Tualatin Basin Partners. This group, headed by Washington County, conducted an ESEE analysis and developed a program to protect, conserve and restore Class I and II riparian corridors, Class I and II wildlife habitat, and Class A upland wildlife habitat (termed Habitat Benefit Areas) as a voluntary program. Each local government, through the Tualatin Basin Partnership, agreed to "allow and encourage" habitat friendly development practices to comply with the intergovernmental agreement that the partners have with Metro. Additionally, to minimize storm water impacts on the Habitat Benefit Areas low impact development techniques are proposed, in some cases, throughout the city. The program, applies only to Habitat Benefit Areas, is implemented through the Beaverton Development Code, Engineering Design Manual and Municipal Code.

The protection of natural resources is necessary to preserve a healthy, sustainable environment in an urban setting. Protection of these resources today will ensure that as the community grows in density and expands its boundaries the natural landscape will be preserved for the health, safety and welfare of its citizens. Natural resources also provide aesthetic beauty. Their protection benefits property values and increases the livability of the City.

Beaverton is fortunate to have natural and historic resources that significantly add to the quality of life. These include streams, adjacent riparian areas, wetlands, large wooded tracts, open space, and historic sites and buildings. Under state planning goals, the citizens of Beaverton have the opportunity and obligation to protect these resources. While it is unreasonable to expect all of Beaverton's resource areas to remain unchanged, we must recognize that the presence of these areas contributes to our overall quality of life. The retention of these resources maintains visual and scenic diversity, provides areas for education and passive or active recreation, and can provide site development amenities for residents and employees alike. Thus, a balance between full protection of all inventoried resources and full development of the inventoried resources is provided in the following goals, policies and actions.

***

## 7.3.1 Significant Natural Resources

# Goal 7.3.1.1: Conserve, protect, enhance or restore the functions and values of inventoried Significant Natural Resources.

## Policies:

**Policy a)** Inventoried natural resources shall be conserved, protected, enhanced or restored:

- to retain the visual and scenic diversity of our community;
- for their educational and recreational values;
- to provide habitats for fish and wildlife in our urban area.

**Policy b)** Conserve, protect and enhance natural resource sites and values though a combination of programs that involve development regulations, purchase of land and conservation easements, educational efforts, and mitigation of impacts on resource sites.

**Action 1:** Establish acquisition programs for Significant Goal 5 Resources; prepare and maintain a long-range list of priority resource locations for public acquisition.

**Action 2:** Facilitate and encourage habitat friendly development practices and low impact development through flexibility in site development standards and reduction in surface water management fees and systems development charges.

**Policy c)** Inventoried natural resources shall be incorporated into the landscape design of development projects as part of a site development plan, recognizing them as amenities for residents and employees alike.

**Policy d)** The City shall rely on its site development permitting process as the mechanism to balance the needs of development with natural resource protection.

**Action 1:** For properties located within significant natural resource areas, the City shall consider relaxation of its development standards where necessary to accomplish protection of riparian, wetland and significant upland habitat areas. Such standards include, but are not limited to, setbacks, building height, street width, location of bike paths, etc. Where the combination of riparian, wetlands, and other requirements would result in an unbuildable lot, such a situation may be relevant to a decision that may grant a hardship variance.

**Action 2:** City Staff will provide pre-application conferences to developers of property to provide available information and to discuss alternative methods of development acceptable to meet the adopted policies and ordinance standards.

**Action 3:** Adopt and apply land use regulations that require integration of natural features with the overall design of developments. Natural features include, but are not limited to, wetlands and water areas, intermittent and perennial streams, riparian corridors, urban forests and significant individual or community trees, slopes, geologic hazards, flooding, and erosion prone soils**.**

**Action 4:** Adopt and apply land use regulations that will minimize impacts from adjacent uses. Development Code design criteria shall be adopted that address the following considerations:

- Land uses immediately adjacent to protected resource areas should be designed to physically separate human activity from the resource activity. Preferred development abutting the resource should be 1) buildings with entrances oriented away from the resource area, and then 2) roadways with limited or no street parking with 3) parking lots as the lowest preference.
- Garbage facilities and materials storage areas should be located away from habitat areas.
- Habitat areas should be preserved as a few large connected areas, rather than many disconnected small areas and should be designed to minimize the amount of habitat edge exposed to development areas.
- Existing native vegetation should be retained to provide wildlife habitat. Snags and dying trees should be left in protected wildlife areas for wildlife use.
- To minimize disturbances to wildlife, lights for buildings and parking areas should be screened, and the light should be directed away from the protected habitat areas,
- Walkways should not bisect wildlife areas. If walkways do encroach upon wildlife areas, security lighting should be designed to shine primarily on the path and avoid shining directly into habitat areas.

Regulations to address the above considerations shall not compromise public safety.

**Action 5:** Adopt and apply regulations for resource areas, mitigation sites, areas adjacent to natural areas, wetlands, and tree groves that include but are not limited to the following requirements:

- Require use of native vegetation in mitigation areas and riparian buffers. Seed-and fruit-producing native plants with aesthetic value should be incorporated into the landscaping at locations adjacent to wildlife habitat areas.
- Allow for buffer averaging in order to create opportunities for habitat protection and enhancement while accommodating urban forms of development.

**Policy e)** Development within Significant Natural Resource areas shall be consistent with the relevant regulations or guidelines of the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, U.S. Army Corps of Engineers, Oregon Division of State Lands, Clean Water Services, and the Oregon Department of Environmental Quality.

**Action 1**: During pre-application conferences for developers, City staff will attempt to identify any Federal, State, or local requirements and regulations affecting sites in Significant Natural Resource areas.

**Action 2:** The City will continue to monitor and review policies and regulations as necessary, to ensure consistency with Federal, State, and service providers' guidelines and regulations.

**Policy f)** Specific uses of or development activities in Significant Natural Resources areas shall be evaluated carefully and those uses or activities that are complementary and compatible with resource protection shall be permitted. This is not intended to prohibit a land use permitted by the underlying zoning district but only to regulate the design of development such as building or parking location or type of landscaping.

**Policy g)** Limited alteration or improvement of Significant Natural Resource areas may be permitted so long as potential losses are mitigated and "best management practices" are employed.

**Policy h)** Roads and utilities, which must be located within, or traverse through, a Significant Natural Resource Area, shall be carefully planned and aligned so as to minimize loss and disruption. A rehabilitation or restoration plan shall be a necessary component. The City should allow variations from standard street sections in these areas.

**Policy i)** In the Cooper Mountain Community Plan area:

i. Protect Cooper Mountain natural resources, including but not limited to stream corridors, riparian areas, upland habitat, and wetlands, and integrate natural features into neighborhoods and the community.

ii. Encourage equitable community member access, both visual and physical, to natural areas through methods that balance natural resource and habitat preservation with the need for people to connect with nature.

iii. Encourage equitable access to the environmental and social benefits of trees by establishing higher preservation standards inside significant natural resource areas and moderate preservation standards in other areas; implement innovative approaches to meeting tree canopy requirements in developments of different sizes and configurations; institute effective ways to reduce the urban heat island effect; and retain or enhance the benefits of diverse, mixed-age forests.

iv. Provide incentives that encourage the retention of native trees, such as white oak; drought-tolerant trees; mature trees; and groves; which collectively provide higher quality habitat and support diverse, mixed-age forests.

## 7.3.2 Riparian Corridors

Significant Riparian Corridors are identified in Planning Commission Order No. 1318, located in the beginning of the Local Wetland Inventory within Volume III of the Comprehensive Plan. Properties listed as Significant Riparian Corridors must comply with the policies and actions set forth in Section 7.3.1 as well as those promulgated in this section.

## Goal 7.3.2.1: Promote a healthy environment and natural landscape in riparian corridors, and manage conflicting uses through education, and adoption and enforcement of regulations.

### Policies:

**Policy a)** Significant Riparian Corridors shall be protected for their fish and wildlife habitat values, and other values associated with the natural resource area. Development plans for these areas shall treat these components as assets and encroachment into the riparian corridor shall require enhancement, mitigation, or restoration.

**Action 1:** Develop and implement a fish habitat protection program in compliance with Statewide Planning Goal 5.

**Action 2:** Amend City regulations and development standards to ensure compliance with Clean Water Services Design and Construction Standards relating to development in or near water resource areas.

**Action 3:** Work with other local governments in the Tualatin River Watershed to develop and implement a program to comply with the Federal Endangered Species Act (ESA) for Federally listed threatened or endangered species found within the watershed.

**Policy b)** Streams, creeks, and other watercourses, including a number of small drainages not identified on the Significant Natural Resources inventory maps, can be significant amenities. The City should protect the natural resource values of these areas from damage or degradation caused intentionally or by neglect. The city should cooperate with and assist property owners in maintaining and upgrading these areas for their potential aesthetic, wildlife, or recreational value.

## 7.3.3 Significant Wetlands

The Local Wetland Inventory is part of the Statewide Planning Goal 5 Inventory Resource documents. Significant wetlands are found within Appendix A, Table 5 of the Local Wetland Inventory. The Significant Wetlands designation must comply with the policies and actions set forth in Section 7.3.1 as well as those promulgated in this section.

## Goal 7.3.3.1: Protect or enhance wetlands adopted as Significant Wetlands in the Local Wetland Inventory.

### Policies:

**Policy a)** Significant Wetlands in the Local Wetland Inventory shall be protected for their filtration, flood control, wildlife habitat, natural vegetation and other water resource values.

**Policy b)** Development within the buffer area adjacent to a significant wetland shall be subject to restrictions on building, grading, excavation, placement of fill, and native vegetation removal.

**Action 1**: Amend the City regulations and development standards as appropriate, to ensure compliance with Clean Water Services Design and Construction Standards provisions for encroachment.

**Policy c)** Where development is constrained due to wetland protection regulations, a hardship variance may be granted if approval criteria are met.

**Action 1**: Amend the implementing ordinances as appropriate to ensure compliance with Clean Water Services Design and Construction Standards provisions for a hardship variance.

## 7.3.4 Wildlife Habitat

OAR 660-23-110 contains procedures and requirements for complying with Statewide Planning Goal 5 as it pertains to protection of wildlife habitat. The rule specifies that a local government must obtain any current habitat inventory information from the Oregon Department of Fish and Wildlife (ODFW) and other state and federal agencies. Under "safe harbor" criteria, OAR 660-23-110(4) says local governments may determine that "wildlife" does not include fish, and that significant wildlife habitat is only those sites where one or more of the following conditions exist:

(a) The habitat has been documented to perform a life support function for a wildlife species listed by the federal government as a threatened or endangered species, or by the state of Oregon as a threatened, endangered or sensitive species;

(b) The habitat has documented occurrences of more than incidental use by a species described under (a) above;

(c) The habitat has been documented as a sensitive bird nesting, roosting, or watering resource site for osprey or great blue herons;

(d) The habitat has been documented to be essential to achieving policies or population objectives specified in a wildlife species management plan adopted by the Oregon Fish and Wildlife Commission; or

(e) The area is identified and mapped by ODFW as habitat for a wildlife species of concern and/or as a habitat of concern.

According to OAR 660-23-110(1)(a), "documented" means that an area is shown on a map published or issued by a state or federal agency, or by a professional with demonstrated expertise in habitat identification.

In 1999 the Planning Commission indicated that staff should use the "safe harbor" criteria to determine the presence of significant wildlife habitat in the city, based on documentation from ODFW and other appropriate agencies. Staff subsequently sent letters to ODFW and the United States Fish and Wildlife Service asking whether they had any documentation regarding the presence in the city of the types of habitat listed above. Both agencies responded with letters indicating that there was no documentation of such habitat in the city, although such habitat may be present. Based on these responses, it has been determined that there is no evidence available to demonstrate the presence of significant wildlife habitat, meeting State "safe harbor" criteria, in the city limits as of the year 2000.

Although there is presently no documented significant wildlife habitat in the city, wildlife habitat that does not meet State safe harbor significance criteria is certainly present. The presence of common wildlife species (e.g., squirrels, raccoons, beaver, various species of birds, etc.) in the city is a source of interest and entertainment for citizens and generally enriches our daily lives. In protecting significant natural resources in the city, such as wetlands, riparian corridors and scenic trees, habitat for these wildlife species can also be protected.

In the event documentation is provided to the City in the future of the presence in the city of wildlife habitat meeting the "safe harbor" criteria, it will be necessary to give further consideration to City programs for wildlife habitat protection.

# Goal 7.3.4.1: Protect wildlife habitat in the city in association with protecting significant natural resources.

## Policies:

**Policy a)** Limit impacts from development or human intrusion on sites likely to contain wildlife habitat through use of regulations adopted for protection of other natural resources, or by adopting new regulations if necessary.

**Action 1:** Adopt development regulations that call for consideration of impacts of development on wildlife species likely to be present on development sites, and mitigation of such impacts to the extent practicable. These regulations should allow for flexibility in development standards to achieve wildlife habitat protection.

**Action 2:** Use existing or new development regulations to minimize impacts to areas identified by Metro as significant regional upland habitat within areas added to the Urban Growth Boundary after December 28, 2005.

**Policy b)** For primary wildlife corridors identified in the Cooper Mountain Community Plan, support use by wildlife, limit impacts from development, and preserve the connectivity of the corridors within and outside the Cooper Mountain planning area.

**Policy c)** Design crossings within the Cooper Mountain Community Plan, such as for roads and trails, so that they allow passage by large mammals through the primary wildlife corridors identified in the Cooper Mountain Community Plan.

**Policy d)** Prioritize protection of interior habitat, which exists beyond the habitat edge and inside a natural resource area, over edge habitat, which refers to the boundary between two landscape elements, such as when a tree grove abuts a residential development, since interior habitat provides a more stable environment for birds, mammals, and amphibians.

## 7.4 Scenic Views and Sites

Significant Scenic Views and Sites are lands that are valued for their aesthetic appearance. Conserving the views of surrounding scenic features such as mountain ranges, Mount Hood, streams and wetlands, and forested areas, helps to maintain the quality of life and unique character of the City. Scenic sites in the city may include streams, wetlands, forested areas or single specimen trees identified on either public or private lands. Significant scenic sites may also have value as wildlife habitat while providing a link to other natural resources such as streams and wetlands as well as parks and other open space. Scenic sites can be viewed from surrounding residences, shopping or employment areas, public or semi-public open spaces such as parks, or from nearby or adjoining bicycle, pedestrian and multi-use pathways or streets. Conservation of both Significant Scenic Views and Sites adds to the livability and attractiveness of our community. That, in turn, helps to maintain property values, and provides an attractive backdrop for businesses located in the City.

The City of Beaverton has focused its efforts on identifying and conserving scenic sites, particularly forested areas and specimen trees, because these resources are considered to be most vulnerable to loss as a result of development. Other scenic sites, including streams and wetlands, are protected to some degree under federal, state and local regulations. For scenic sites to have any aesthetic value to the public, however, views of those sites must be conserved along with the sites.

At this point, the City has chosen to not to regulate conservation of scenic views of surrounding mountains, including Mount Hood, although such scenic views may be present in the city. However, where such views can be preserved for public enjoyment through voluntary, incentive-based measures, it will help to maintain the quality of life and unique character of the City.

# Goal 7.4.1: Conserve Significant Scenic Views and Sites, and the value they add to community.

## Policies:

**Policy a)** Help to preserve and enhance the City's character, beauty and livability through the identification and protection of significant scenic sites in the city and views of those sites.

**Action 1:** Following the Goal 5 process:

- survey forested areas and specimen trees in the city, evaluating them using the criteria in Policy b) below, and adopt an inventory of scenic sites and views of those sites;
- identify land uses or development activities that might conflict with conservation of the inventoried scenic sites and views, as well as the impact area of the conflicting uses on each inventoried scenic site and view;
- consider the economic, social, environmental and energy (ESEE) consequences of allowing, limiting or prohibiting identified conflicting uses within each identified impact area; and
- devise and adopt a program to conserve the inventoried significant scenic sites and views . The program should make use of a variety of conservation tools including existing and new development regulations, acquisition of property or scenic easements, and public education efforts.

**Policy b)** Significant Scenic Sites may include forested areas or a specimen tree and are determined to have two or more of the following characteristics:

- aesthetic value,
- uniqueness of tree size, shape, rarity of specie,
- proximity of forested area to wetlands or riparian areas,
- provides slope stability,
- absorption of rainfall (canopy effects to offset adjoining impervious surfaces ), and
- absorbs stormwater runoff.

All significant scenic sites must be visible from an existing or planned viewpoint that is safe and accessible to the general public.

**Policy c)** The City will balance the conservation of significant scenic resources with the need to allow urban uses and activities.

**Policy d)** Provide incentives for protection of Scenic Views of topographic features such as mountain ranges and individual peaks for public enjoyment.

**Action 1:** Facilitate and encourage preservation of scenic views of topographic features through flexibility in site development standards and reduction in open space requirements, as appropriate.

# 7.5 Energy

Energy is generated from resources such as natural gas, oil, coal, geothermal, uranium, flowing water, sunshine, wind, and municipal waste. The City lacks significant energy sources, as defined by OAR 660-23-019(a). The City's greatest influence over the protection of energy resources derives from efforts to reduce energy consumption

In the 1970s and early 1980s, the rising costs of fossil fuels resulted in government sponsored incentive programs to encourage research, development and feasible applications of renewable energy technologies such as solar and wind. To provide citizens with the opportunity to utilize solar technologies, Beaverton in conjunction with twenty-one other jurisdictions within the Portland-Vancouver Metropolitan area, participated in the development of a uniform solar access protection ordinance.

Current development programs lack incentives or public demand for the use of renewable energy resources, despite federal objectives to reduce energy consumption, continuing price increases for fossil fuels and increased concerns over the impacts of hydro and geothermal power, and nonrenewable energy resources.

Zoning regulations and transportation plans are currently structured to maximize energy savings. The City has higher density and mixed used districts to allow for living, working and shopping in close proximity, thereby reducing energy consumption for travel. Further, the City's transportation plan has mapped multi-modal transportation corridors for use by automobiles, pedestrians and bicycles. The Westside Light Rail was developed as part of a transportation network designed to reduce energy consumption and to improve air quality.

## Goal 7.5.1: Development projects and patterns in the City that result in reduced energy consumption.

## Goal 7.5.2: Increased use of solar energy and other renewable energy resources in new development in the City.

### Policies:

**Policy a)** Assist in the conservation of energy by promoting more efficient transportation modes and land use patterns.

**Policy b)** Encourage higher density development where appropriate.

**Policy c)** Continue to update applicable codes and regulations to promote energy conservation.

**Policy d)** Support educational programs on energy conservation and use of renewable energy resources through cooperation with other agencies and energy suppliers.

**Policy e)** Support energy programs that inform senior citizens and low income groups of available local, state, and federal winterization, and energy efficient programs.

**Policy f)** Support state and federal legislation that encourages energy saving design and building practices.

**Policy g)** The City should set an energy efficient example by using best management conservation practices in all of their facilities. Alternatives should be economically beneficial.

**Policy h)** The City shall retain and apply regulations requiring consideration of solar energy options in the development process.

## 7.6 Groundwater Resources

Although most of the potable water used in the city is imported, at times of peak use water is drawn from aquifers via City wells. Some of this water is injected into aquifers in the winter when supplies exceed demand, and withdrawn during summer months. Contamination of these groundwater resources can occur through pollution emanating from surface sources.

# Goal 7.6.1: Protect groundwater in the City from contamination.

## Policies:

**Policy a)** Cooperate with other local water providers and neighboring jurisdictions in preventing pollution in areas around municipal and domestic wells so as to protect groundwater that is a source of potable water for the City from contamination.

**Action 1:** Develop a groundwater wellhead protection program, in cooperation with local water districts and neighboring jurisdictions.

Exhibit 2 includes proposed amendments to Comprehensive Plan Volume I related to the Cooper Mountain Community Plan but also including some citywide changes.

- Proposed new language is underlined.
- Proposed deleted language is ~~stricken~~.
- Language that has been skipped is indicated by "***"

In some cases, photographs have been removed from the draft document to make the document shorter and to direct focus to the written policies.

# CHAPTER 8 – ENVIRONMENTAL QUALITY AND SAFETY ELEMENT

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## 8.1 Overview

In response to the requirements of Statewide Planning Goals 6 (Air, Water and Land Resources Quality) and 7 (Areas Subject to Natural Disasters and Hazards) this chapter contains sections addressing water quality, air quality, noise, seismic hazards, geologic hazards, flood hazards, and solid and hazardous waste. The chapter contains goal, policy and action statements written to ensure that 1) the condition of air, water and land resources is adequately maintained and improved upon, and 2) public safety is protected by prohibiting or regulating development of land in hazardous areas, or by managing the hazards through methods that protect existing development.

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## 8.6 Geological Hazards

Geological hazards include unstable steep slopes, erosion and deposition, and weak foundation soils. In the interest of public safety, the location of natural hazards should be determined, and the degree of hazard present should be evaluated. Based on this evaluation, decisions should be made about the amount of development, if any, that should be allowed at the location. If development is to be allowed, consideration should be given to conditioning development approval to limit potential losses resulting from natural disasters.

### Goal 8.6.1: Protect life and property from geological hazards associated with identified unstable steep slopes, erosion and deposition, and weak foundation soils.

### Policies:

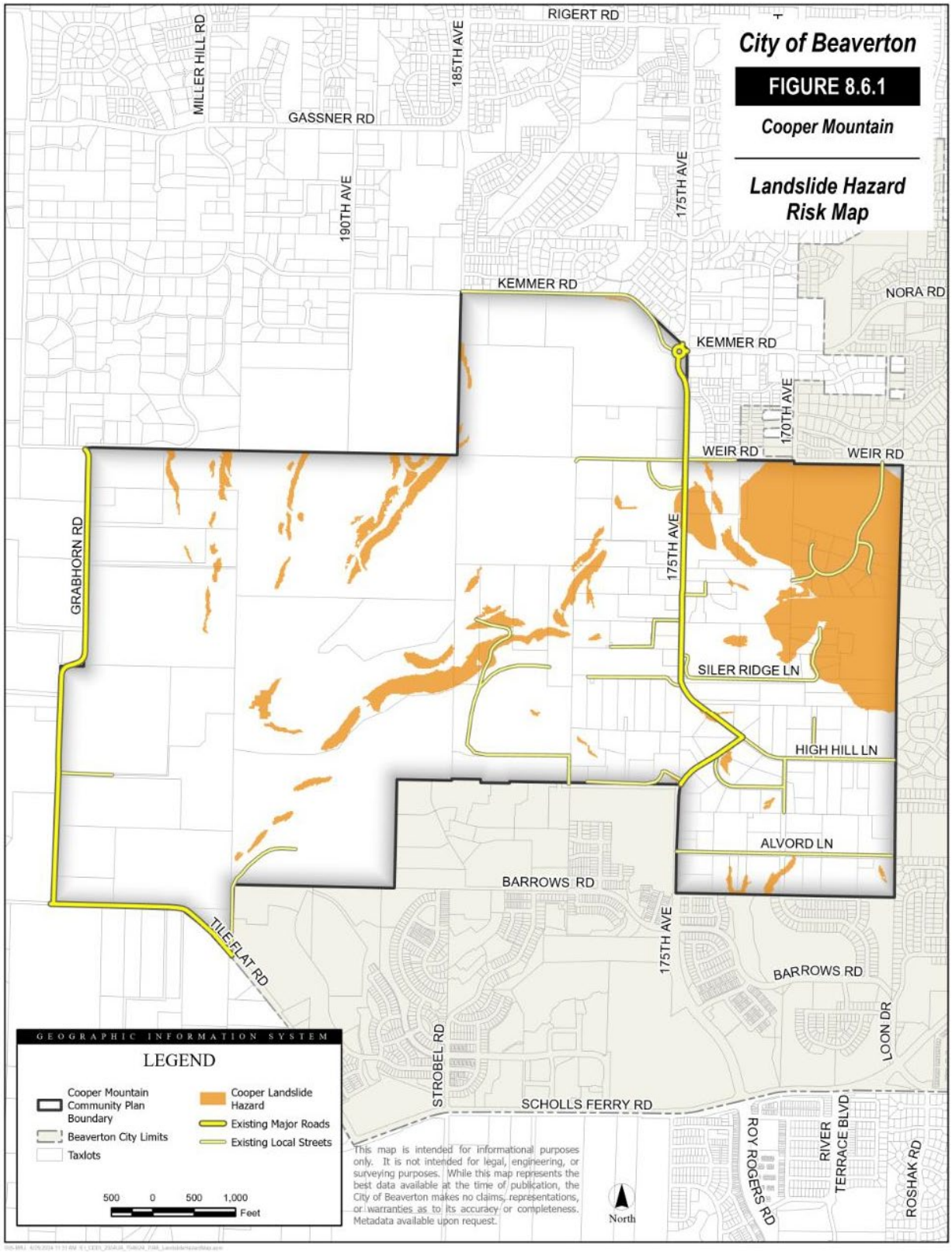
**Policy a)** Limit or prohibit development in geologically hazardous areas that pose a threat to life and property.

**Action 1:** Identify geological hazard sites in the City including unstable steep slopes, weak foundation soils, and areas subject to erosion and deposition. Adopt and apply regulations to these sites through engineering standards and site development design criteria to allow, limit, or prohibit development, as appropriate. Cooper Mountain Community Plan area landslide hazard risks are shown in Figure 8.6.1.

**Action 2:** Periodically review and update the existing erosion control regulations and enforcement procedures to improve their effectiveness.

**Action 3**: Adopt and apply land use regulations requiring that building sites, streets and other improvements in areas with 25% or greater slopes, be designed so that cuts and fills are minimized and best management practices for erosion control are integrated into the design.

**Figure 8.6.1 Cooper Mountain Landslide Hazard Risk Map**



**Policy b)** The City shall support the reclamation of aggregate sites having a Department of Geology and Mining Industry (DOGAMI) mining permit, to ensure the stability of slopes and prevention of erosion, and to prevent the creation of weak foundation soils.

**Action 1:** Adopt and apply appropriate site development code requirements to ensure the DOGAMI reclamation process is completed prior to the issuance of a site development permit.

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