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Planning Division
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MEMORANDUM

DATE: June 14, 2024

TO: Doaa Elhaggan, PMP | Beaverton School District

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SUBJECT: Greenway Elementary School- Land Use Application Trip Generation Project #24403-000

INTRODUCTION

The purpose of this memorandum is to summarize the additional vehicle trips generated by adding portable classrooms at Greenway Elementary School (GES). The addition of portable classrooms at GES is due to the rebuilding of Raleigh Hills Elementary School (RHES) and the resulting temporary shift of students and staff from RHES to GES during construction (School years 2024-2025 and 2025-2026). A full Traffic Impact Analysis (TIA) is required if trip generation is above the threshold of 300 vehicles per day in accordance with the City of Beaverton Development Code 60.55.20.2. The following sections describe the project and summarize trip generation estimations to determine if a full TIA is required per City of Beaverton Development Code 60.55.20.2.

Based on the analysis summarized in the following sections, the relocation of RHES students to GES is anticipated to add approximately 72 daily vehicle trips above the approved GES land use and would not meet the 300 daily trip threshold to trigger a full TIA.

PROJECT DESCRIPTION

RHES is currently the second oldest school in the Beaverton School District dating back to 1927. Today, the school does not meet current seismic standards and contains other systems that are not adequate for the size of the school. The school is slated to be demolished in the summer of 2024 and will be rebuilt and opened in the fall of 2026. During this two-year rebuilding period, students and staff at RHES will temporarily move to GES.

The bus service for the Beaverton School District is consistent with Oregon Revised Statute 327.043. Due to the location of GES (boundaries for each school are shown in Figure 1) during the temporary relocation, bus service will be provided for all RHES students to travel to GES. The GES and RHES start times would be staggered by approximately 30 minutes to minimize traffic impacts to existing conditions; GES and pre-kindergarten (Pre-K) programs would be an early-start

elementary school, scheduled from 7:45 a.m. to 2:20 p.m., while RHES would be a late-start elementary school with a schedule from 8:15 a.m. to 2:50 p.m.¹

There are currently no buses serving GES, allowing parent pick up to be complete prior to bus and parent arrival for RHES student pick up. Parent pick up and drop off vehicles are expected to park in available parking lot stalls.

Bussing is currently provided to all RHES students and during the temporary relocation of RHES students, bussing will continue to be offered to all RHES students to get to GES. The current bus ridership at RHES is 57 percent of eligible riders.² It is assumed that most students will continue to take the bus and that few students will be dropped off at GES. Riding the bus to GES will not be mandatory for all RHES students, but bus ridership is anticipated to be higher than typical since the distance to GES will not support walking and during other recent swing school operations in the City (Hazeldale, William Walker, and Vose), bus ridership exceeded 90 percent on average. Final routes have not yet been determined for the bus routes of RHES to GES.

¹ Beaverton School District New Bell Schedule for 2024-2025 School Year full access online:
<https://www.beaverton.k12.or.us/about-us/new-bell-schedule-for-2024-2025-school-year>

² Refer to Beaverton School District Transportation Frequently Asked Questions webpage for elementary school Transportation Service eligibility: <https://www.beaverton.k12.or.us/departments/transportation/transportation-faq#:~:text=Students%20enrolled%20in%20a%20K,that%20schools%20non%2Dtransportation%20zone.>

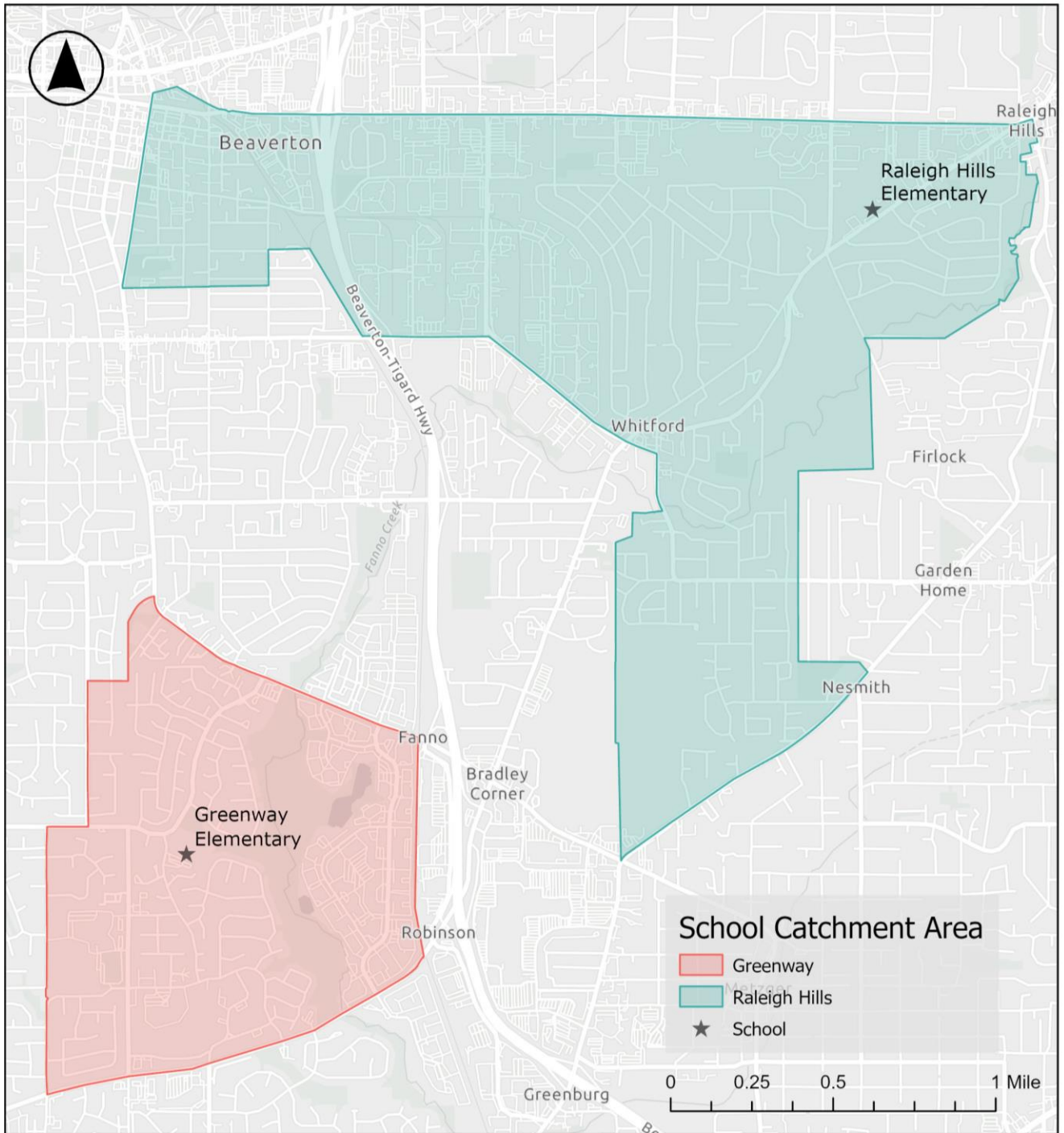


FIGURE 1: GREENWAY ELEMENTARY SCHOOL AND RALEIGH HILLS SCHOOL BOUNDARIES

TRIP GENERATION

Trip generation is the method used to estimate the number of vehicles added to site roadways and the adjacent roadway network by a development during a specified period (i.e., the p.m. peak hour). Today, the combined enrollment of GES and RHES is at approximately 41% of the combined capacity, and the combined enrollment of both schools is less than the previously approved capacity of GES. Although scheduled start times for GES and RHES would be staggered, a conservative approach was utilized to estimate peak hour trips hence all trips are assumed to arrive at once.

The objective in evaluating trip generation is to determine if the proposed (temporary) site use will add 300 or more daily trips when compared to the previously established site capacity, and thus trigger a full TIA.

TEMPORARY RELOCATION SCENARIO

Initial trip generation estimates were developed using rates published in the ITE Trip Generation Manual, 11th Edition³. ITE land use code 565 (Day Care Center) and land use code 520 (Elementary School) were used to estimate the trip generation for the proposed (temporary) site use in a fully utilized capacity scenario.

Prior land use decisions established a GES capacity of 539 students. Over the last several years the enrollment at both schools has continued to decline.⁴ According to the School District's Demographer, which maintains detailed enrollment and projection statistics of the school district, the upcoming projected combined enrollment for the two schools is 519 students; 259 students from GES and 260 from RHES. It is estimated that the total enrollment for the two schools combined for SY 2024-2025 will be at most 519 students if there are no major changes in enrollment. This is a conservative assumption based on the declining enrollment at both schools mentioned previously.

ADDED VEHICLE TRIPS

Table 1 summarizes the trip generation for three peak hours and for the overall daily total. The current allowed use (GES capacity of 539 students) would generate approximately 1,224 daily vehicle trips. The projected temporary use (reduced enrollment at GES, reduced enrollment at RHES, and RHES Pre-K) would generate approximately 1,238 daily trips. This projected increase in 72 daily trips is below the 300 daily trip threshold that would trigger a full transportation study.

³ Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, 2021.

⁴ Over the past five years, the enrollment at GES has dropped an average of 10 students a year and the enrollment at RHES has declined by an average of 18 students per year. These trends indicate that the maximum number of students will most likely be less than the full capacity.

TABLE 1: ESTIMATED SITE TRIP GENERATION (VEHICLE TRIPS)

LAND USE	A.M. PEAK HOUR			M.D. PEAK HOUR			P.M. PEAK HOUR			DAILY TRIPS
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL	
PERMANENT USE										
GES CAPACITY (539 STUDENTS) ELEMENTARY SCHOOL – ITE 520	215	184	399	112	131	243	40	46	86	1,224
COMBINED TEMPORARY USES										
GES ENROLLMENT (259 STUDENTS) ITE 520	103	89	192	54	63	117	19	22	41	588
RHES PRE-K (20 STUDENTS) ITE 565	11	11	22	10	10	20	9	9	18	118
RHES ENROLLMENT (260 STUDENTS) ITE 520	104	88	192	54	63	117	19	23	42	590
TEMPORARY USE SUBTOTAL	218	188	406	118	136	254	47	54	101	1,296
CHANGE (TEMPORARY USE MINUS PERMANENT USE)	3	4	7	6	5	11	7	8	15	72

INTERNAL CIRCULATION EVALUATION

The proposed (temporary) site plan was reviewed to ensure adequate internal circulation during the temporary relocation of RHES. The site currently contains two parking lots for staff and visitor use with one-way circulation in the parking drive aisles. The current parking lot is not filled to capacity with staff parking.

Currently, GES does not include bus service and vehicles that drop off and pick up students along the curb circulate as shown in Figure 2. Vehicles enter the site from the southern entry-only driveway and exit the site via the northern exit-only driveway. The site provides approximately 700 feet of storage from where vehicles enter the site to where they exit the site.

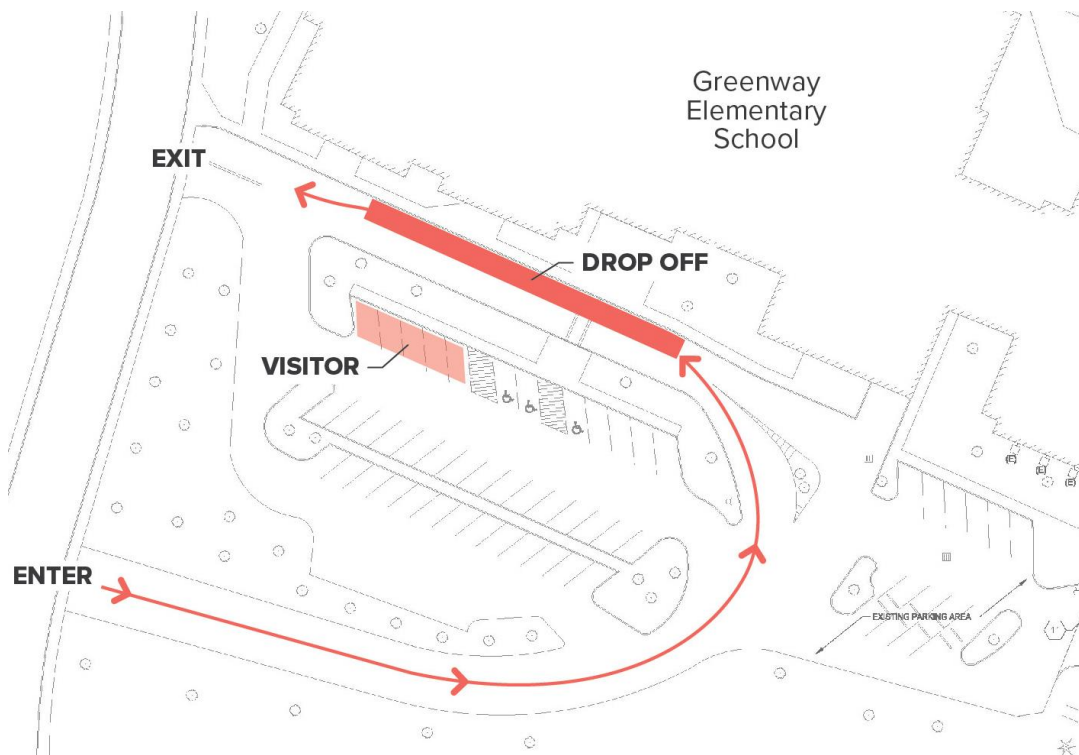


FIGURE 2: GREENWAY EXISTING CIRCULATION

The proposed temporary use would introduce the following changes to how the site operates:

- 1) The schedules for GES and RHES students would be staggered by approximately 30 minutes. GES and pre-kindergarten (Pre-K) programs would be an early-start elementary school, scheduled from 7:45 a.m. to 2:20 p.m., while RHES would be a late-start elementary school with a schedule from 8:15 a.m. to 2:50 p.m.
- 2) The temporary inclusion of RHES students would introduce buses to the site.

The temporary use would be configured and function in a similar manner to how it currently exists, with the following physical changes:

- 1) An additional parking lot with 17 spaces would be constructed to the east beside the current smaller parking lot to accommodate the increase of 24 staff parking needs.
- 2) There will be an internal sidewalk connection between the proposed parking lot on the east side of the property to the existing sidewalk in front of the permanent school building.

Overall, the introduction of RHES to the site would not have a significant impact on circulation and traffic queuing on site due to two key factors:

- 1) The two school programs would be staggered by 30 minutes, having both arrival and departure periods occurring separately, and
- 2) The RHES enrollment is projected to be approximately the same as the GES enrollment (currently projected as 260 students and 259 students, respectively). Further, GES does not currently have bus service, while the RHES program would provide bus service for all students. Therefore, the RHES program would likely generate similar or less car trips than the GES program.

When buses are not present, RHES vehicles would continue to drop off and pick up students as they do today for GES, as shown in Figure 2.

When buses are stacked along the curb (e.g., the end of the school or if multiple buses arrive in the morning) then vehicles can alternately drop off students adjacent to the crosswalk within the parking lot as shown in Figure 3.

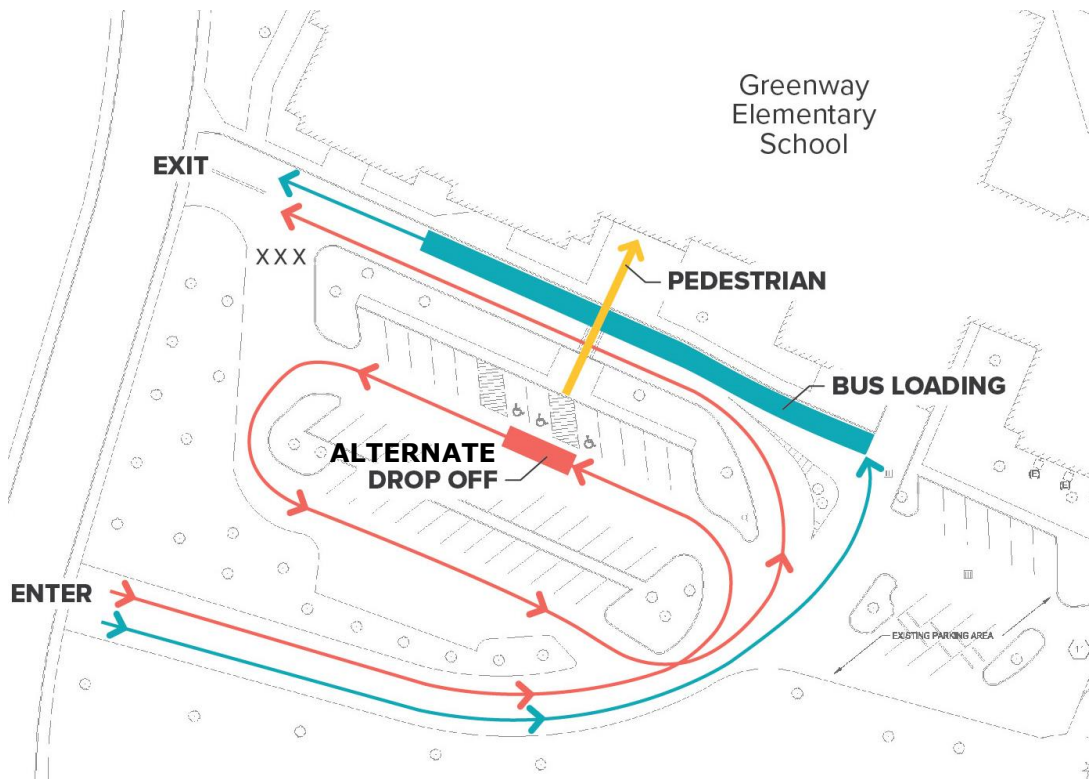


FIGURE 3: GREENWAY PROPOSED (TEMPORARY) CIRCULATION FOR RHES (WHEN BUS PRESENT ON CURB)

The site would accommodate buses curbside adjacent to the school building for drop-off and pick-up. This direct bus loading area adjacent to the school will allow students to follow the pedestrian path through the permanent school building access points and minimizes pedestrian conflicts for the additional RHES students that will be bussed to and from the school. Also, minimal conflicts are foreseen between buses and personal vehicles. During the morning period, buses that arrive would drop students off at this location and then exit the site. In the afternoon period, the buses would stack approximately as shown in Figure 3.⁵

The existing parent loading area will remain the same, leading from the existing marked crosswalk into the parking lot. The additional drive aisle beside the queued buses would allow other vehicles to circulate through and exit the site in either direction while buses are loading or unloading students. The bus stacking configuration shown in Figure 3 would maximize the space for personal vehicles leaving the site, allowing approximately six personal vehicles (average vehicle length of 20

⁵ The five buses shown in Figure 2 represents the worst-case scenario for site queuing. Not represented in Figure 2 are periods staggered with general student arrival/departure where 2-3 special education buses will queue at the school frontage to pick up/drop off students in the SPED program.

feet) to queue for the right-turn ahead of the buses. The drive aisle entering the site would provide additional stacking distance for parents (approximately 500 feet).

When buses are present, vehicles would be able to drop off students as shown in Figure 3. This location would allow students to use the crosswalk to access the site building. When buses are not at the curb, guardians can drop students off directly at the curb and no additional pedestrian crossing would be required.

FINDINGS

The following summarizes the findings from the trip generation analysis of the proposed project.

- The land use entitlement for GES can already accommodate trips related to up to 539 students which is greater than the projected combined enrollment.
 - The recent enrollment for GES is 259 students.
- The recent enrollment for RHES is 260 students.
- The temporary relocation of RHES would add approximately 72 additional daily trips above the existing GES entitlement and would not require an additional traffic study.
- The proposed (temporary) site plan is expected to be able to accommodate the existing and future bus, vehicle, and pedestrian traffic. RHES would be on a staggered schedule (30 minutes behind) GES, which would minimize traffic impacts on the site.
- A cumulative impact will not occur by adding RHES students to GES since the schools' schedules will be staggered. Additional queuing beyond what currently exists is not expected.