MEMORANDUM

To: Multnomah County

From: Alta Planning + Design

Date: June 13, 2025

Re: Task 2: Existing Conditions Memorandum

Executive Summary

This memorandum assesses the current state of NE Sandy Boulevard (Sandy Boulevard) between the Gresham city limits to 230th Avenue and compiles the plans and policies affecting the corridor and its neighboring areas. The chapters of this memorandum provide an in-depth analysis of Sandy Boulevard's multimodal functionality, safety, constraints, and opportunities for future improvements.

Sandy Boulevard serves as a critical arterial corridor connecting Portland, Gresham, Fairview, and Wood Village in East Multnomah County. This major regional freight route transitions from a five-lane arterial west of 201st Avenue to a two and three-lane arterial eastward, traversing diverse residential, commercial, and industrial areas while supporting significant transit operations and planned multimodal improvements.

The corridor faces notable safety challenges, with 10 (ten) crashes involving people walking and biking occurring between 2012 and 2022, including one pedestrian fatality. These safety concerns are compounded by infrastructure gaps. For example, some TriMet Bus Route 21 stops—serving over 200 daily boardings within the project area—are located more than 1,000 feet from marked crossings.

The surrounding community reflects significant diversity, with 32% Latino or Hispanic residents and 32% of households speaking languages other than English. Economic data reveals 14% of residents living in poverty, 8% of households lacking vehicles, and 15% reporting disabilities, underscoring the importance of accessible transportation options.

Current infrastructure presents mixed conditions. While pavement is generally in good condition east of 223rd Avenue, pavement between 201st Avenue and 223rd Avenue is in poor to moderate condition. Lighting is deficient along the entire corridor, except for the 205th Avenue intersection, which meets minimum standards. The corridor's stormwater system

drains to Osborne and Fairview Creeks, with environmental considerations including fish-bearing streams and flood zones. Utility infrastructure includes overhead electrical lines requiring coordination for future improvements.

Multnomah County's Road Capital Improvement Plan proposes reconstructing the corridor to arterial standards, incorporating bike lanes, sidewalks, enhanced pedestrian crossings, and intersection improvements. These planned enhancements align with regional growth concepts and local transportation system plans that envision Sandy Boulevard as a multimodal corridor supporting safe, efficient movement for all users while accommodating the diverse land uses and transportation needs of this dynamic community.

Contents

Introduction

This memorandum assesses the current state of NE Sandy Boulevard (Sandy Boulevard) and compiles the plans and policies affecting the corridor and its neighboring areas. The following chapters provide an in-depth analysis of various aspects affecting Sandy Boulevard's multimodal functionality, safety, constraints, and opportunities for future improvements.

Project Description

The project (referred to as "Safer Sandy") aims to improve conditions for all users—including people walking, biking, driving, and accessing transit—by addressing key safety concerns and identifying infrastructure improvements. While the project is a Multnomah County roadway within the City of Fairview, the project area also includes a short segment within Gresham city limits that connects to Multnomah County's right-of-way near 201st Avenue (Figure 1). These improvements are intended to close a critical gap in the east-west regional transportation network and enhance safe access along the corridor.

This report discusses findings relevant to the entire corridor and information related to understanding specific segments of the corridor. The project team broke the corridor into the following four segments, shown in Figure 1:

- Segment 1: 201st Avenue to Fairview Parkway
- Segment 2: Fairview Parkway to Blossom Hill Road
- Segment 3: Blossom Hill Road to 223rd Avenue
- Segment 4: 223rd Avenue to 230th Avenue

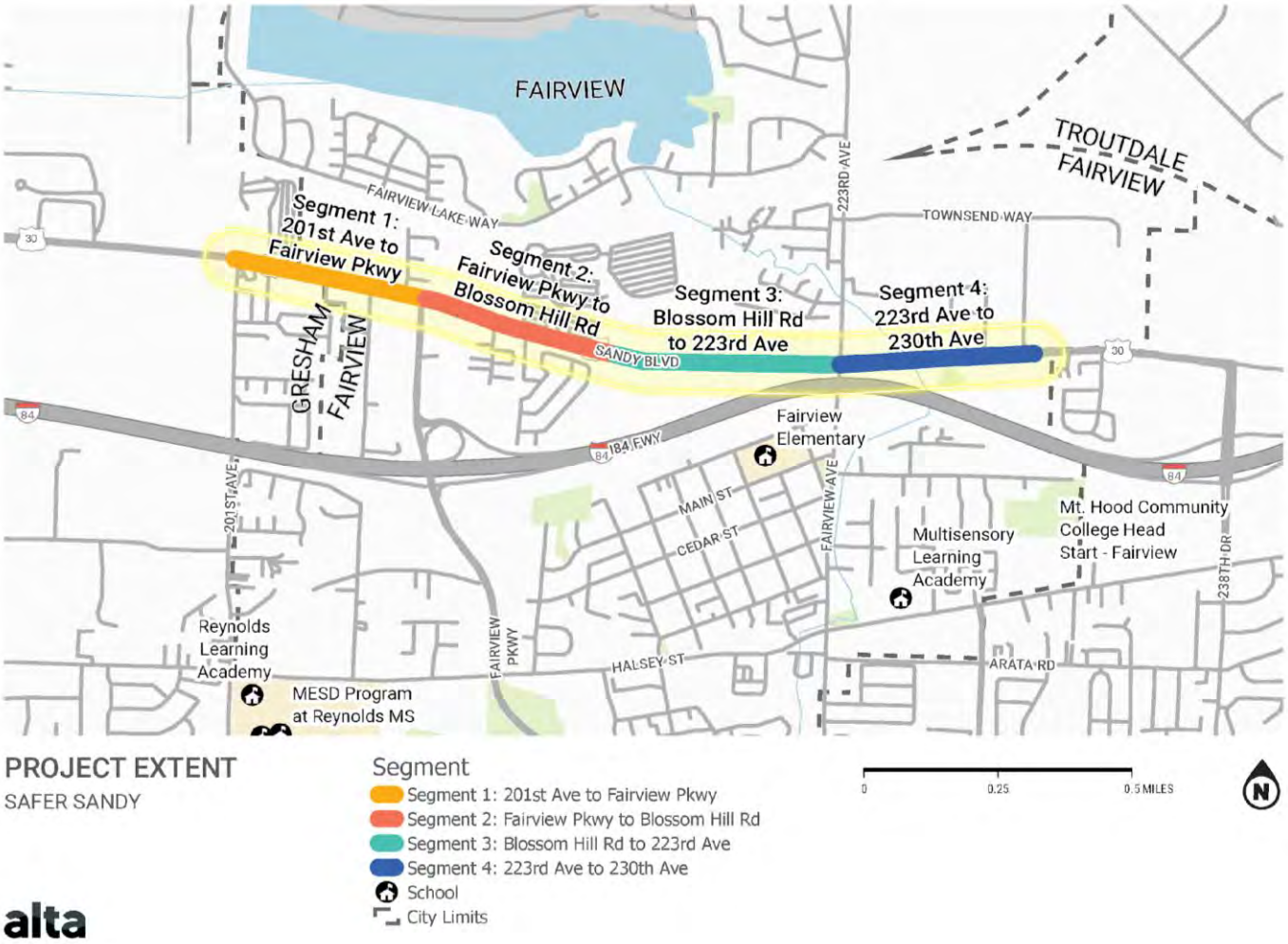


Figure 1. Safer Sandy Boulevard Project Extent

Corridor Description

Sandy Boulevard is a critical east-west arterial located in East Multnomah County that connects the cities of Portland, Gresham, Fairview, and Wood Village. Designated as a major arterial west of Fairview Parkway and a minor arterial to the east, the corridor serves a wide range of functions: it is a regional freight route, a transit corridor, and a planned regional bikeway and pedestrian route. Multnomah County's jurisdiction begins at the Gresham city limits (just east of 201st Avenue) and extends to the roadway's terminus east of 238th Drive.

Sandy Boulevard plays a vital role in supporting the mobility and economic vitality of the surrounding area. It travels through diverse land uses—ranging from established neighborhoods and small commercial centers to rapidly growing mixed-use and industrial zones—and connects residents to key destinations such as schools, transit stops, regional parks, and employment centers. With few east-west alternatives in the area, this corridor is a critical link for trips made by the area's residents, whose household incomes are generally lower and are more racially diverse than countywide averages.

Initial findings from the corridor study reinforce Sandy Boulevard's importance while highlighting critical infrastructure needs. Across the corridor, sidewalks and bike facilities are inconsistent or missing entirely, and lighting levels fall below recommended standards in nearly all segments. These gaps pose daily challenges for people walking, biking, or waiting for transit, particularly in areas with multi-family housing, mobile home communities, and transit-dependent populations. Roadway segments with steep embankments and culvert crossings—such as near Osborn and Fairview Creeks—also present engineering constraints that will require significant investment to accommodate future improvements.

Pavement conditions vary along the corridor, with the western segments (Segments 1, 2, and 3) exhibiting condition scores that are mostly poor, while the eastern segment (Segment 4) is in satisfactory condition. Key intersections such as Sandy Boulevard at 201st Avenue, Fairview Parkway, and 223rd Avenue are heavily used by people walking, biking, and driving—and currently have faded crosswalks, wide turning radii, and a lack of pedestrian amenities. Most bus stops along the corridor lack adequate sidewalk connections, crosswalks, and shelters. Among the 10 crashes involving people walking or biking along the project extent between 2012 and 2022, one was fatal. Meanwhile, destinations like the Gresham-Fairview Trail, Blue Lake Regional Park, Fairview Elementary School, and Fairview Meadows Apartments, and employers in the industrial area east of 223rd all contribute to steady demand for multimodal access.

Despite these challenges, Sandy Boulevard presents a significant opportunity to deliver equitable infrastructure investments in East Multnomah County. Upgrading this corridor to support safe and comfortable travel for people of all ages and abilities will improve access to housing, jobs, and essential services—and directly advance local, regional, and state goals for safety, sustainability, and equity.

Demographics and Socioeconomic Data

To inform public engagement and assess equity impacts, the project team analyzed demographic data to better understand the surrounding community's racial, linguistic, economic, and accessibility characteristics. These insights helped identify key community characteristics that will shape project outcomes.

Methodology

The demographic data informing this summary comes from two key reports: the Screening Tool for Equity Analysis of Projects (STEAP) Project Analysis Profile Report,[1] prepared by the FHWA Office of Planning, and the EPA EJScreen Community Report,[2] prepared by the consultant team in 2024 using the latest data (from 2022). When block group-level data was unavailable, estimates were made using census tract-level data.

Both reports analyze demographics within a 1-mile radius, covering approximately 6 square miles. This radius provides a balance between detailed insights and feasibility, capturing information on the broader community, including those who use the road but may live further away. The results of the reports are shown in Table 1. Percentages in the reports are rounded, and totals may not add to 100%.

Key Findings and Equity Considerations

Table 1. Demographics and Equity Considerations

Demographic Finding	Equity Consideration
Diverse Racial Groups: The area has a diverse community, with 32% identifying as Latino or Hispanic, including 90% of Mexican origin. White alone residents account for 48%, Black Alone 7%, Asian Alone 4%, Hawaiian/Pacific Islander Alone 3%, and American Indian/Alaska Native 1%.	Engage with local leaders and culturally specific organizations serving these communities.
Significant Multilingual Community: 32% of the community speaks a language other than English. Spanish is spoken by 22%, followed by Other Indo-European languages (5%), Asian and Pacific Island languages (5%), and 1% other languages. This includes populations speaking Russian, Polish, or Other Slavic languages (2%), Chinese (1%), and Vietnamese (1%).	Provide translation and interpretation services in Spanish, Russian, and Ukrainian. Provide interpretation services for activities to make participation accessible to community members, reflecting the community's diverse linguistic needs.
Economic Challenges: 14% of people live in poverty. 34% of people are not in the labor force. 8% of households lack a vehicle.	Host or attend activities in the project area or locations easily accessible by transit and at convenient times. Providing compensation helps reduce barriers to engagement.
Disabilities: 15% of residents report living with a disability.	Ensuring event locations are ADA accessible, offering online participation, and making materials accessible to screen readers, etc.

[1] Oregon Department of Transportation. Screening Tool for Equity Analysis of Projects (STEAP), 2024.
[2] US Environmental Protection Agency. EJScreen: Environmental Justice Screening and Mapping Tool, 2024.

Demographic Finding	Equity Consideration
Internet Access Gaps: 13% of households lack broadband internet access and 7% do not have access to a computer.	Use both online and in-person options to reach households without reliable internet. Printed materials and in-person events can improve accessibility. Make sure that all online content is mobile-friendly.

Source: US Census Bureau, American Community Survey (ACS) 2017-2021 and 2018-2022.

Alta's Equity Analysis

Alongside the information gathered from the STEAP Report and EJScreen Community Report, Alta produced a custom equity index using complementary variables to those used in STEAP and EJScreen. The index offers a holistic look at equity, factoring in health variables and vehicle access metrics not included in the previous summaries. The project team gathered the data sets below into a database at the census block group level to complete the equity analysis. The project team compiled these variables, percentile-ranked them relative to the study region (East Multnomah County) and then combined them through a weighted sum using the weights in Table 2.[3] Variables and weights used in the custom equity index. Once the index was calculated, a map of the results was generated by categorizing all the census block groups into five bins that indicate how high they scored on the index.[4] Higher scores indicate areas of higher priority.

Table 2. Variables and weights used in the custom equity index

Shorthand	Weight	Description	Source
Low Income	0.25	The percentage of a block group's population in households where the household income is less than or equal to twice the federal "poverty level."	EJScreen 2.3 (based on ACS 2018-2022 5-Year Estimates)
Percent People of Color (Non-white)	0.2	The percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals. The word "alone" in this case indicates that the person is of a single race, not multiracial.	EJScreen 2.3 (based on ACS 2018-2022 5-Year Estimates)
Opportunity	0.1	Mean predicted 'Kid Family Rank' (The Opportunity Atlas's percentile measure of economic mobility) of children from all races, all genders, and with parents in the 25th percentile in the national household income distribution. In other words, this variable measures a tract's economic mobility for children from lower-income families.	Opportunity Atlas US Tract 2010-2020 Crosswalk
Zero Vehicle Households	0.1	Percentage of households with access to 0 vehicles.	ACS 2019-2023 5-Year Estimates
Educational Attainment	0.1	The percent of people aged 25 or older in a block group whose education is less than a high school diploma.	EJScreen 2.3 (based on ACS 2018-2022 5-Year Estimates)
Air Quality (Particulate Matter)	0.05	PM2.5 level in air.	EJScreen 2.3 (based on ACS 2018-2022 5-Year Estimates)

[3] Percentile ranking is a way to evaluate the relative standing of a value within a data set. A percentile rank is the percent of scores in the distribution that are less than it. For example, if Block Group A receives a 0.65 percentile rank for total population, that means that out of all the census block groups in the study area, 65% of them have a smaller total population than Census Block A.

[4] The census block groups are categorized using quintiles, which means that the distribution of their index scores is broken out into five bins comprised of an equal number of census block groups in each bin.

Shorthand	Weight	Description	Source
Canopy Coverage	0.05	Tree Canopy Gap: based on the generalized natural biome baseline targets selected in conjunction with the USDA Forest Service.	Tree Equity Score
Coronary Heart Disease	0.05	Percent crude prevalence of Coronary Heart Disease Among Adults Aged >18 years.	CDC
Percentage of households in a census tract earning less than 80% of HUD Area Median Family Income by county and paying more than 30% of their income to housing costs.	0.05	Housing cost: Percentage of households in a census tract earning less than 80% of HUD Area Median Family Income by county and paying greater than 30% of their income to housing costs. The calculations are drawn from Table 8 of the Comprehensive Housing Affordability Strategy. This methodology was developed in collaboration between CEJST and HUD. To compute this variable, calculate the following: (# of Owner-Occupied Units Meeting Criteria + # of Renter Occupied Units Meeting Criteria) / (Total # of Owner-Occupied Units + Total # of Renter Occupied Units - # of Owner-Occupied Units with HUD Area Median Family Income (HAMFI) Not Computed - # of Renter Occupied Units with HAMFI Not Computed).	CHAS (Comprehensive Housing Affordability Strategy) data
Aged less than 17, more than 65	0.05	Aged less than 17, more than 65	ACS 2019-2023 5-Year Estimates
Equity Index			

As shown in Figure 2, most of the census block groups adjacent to the project area are in the middle to high range in terms of need as determined by the equity analysis. In particular, the census block group south of the eastern terminus of the project area was rated as an area in high need. The neighborhoods north of Sandy Boulevard are in the middle range.

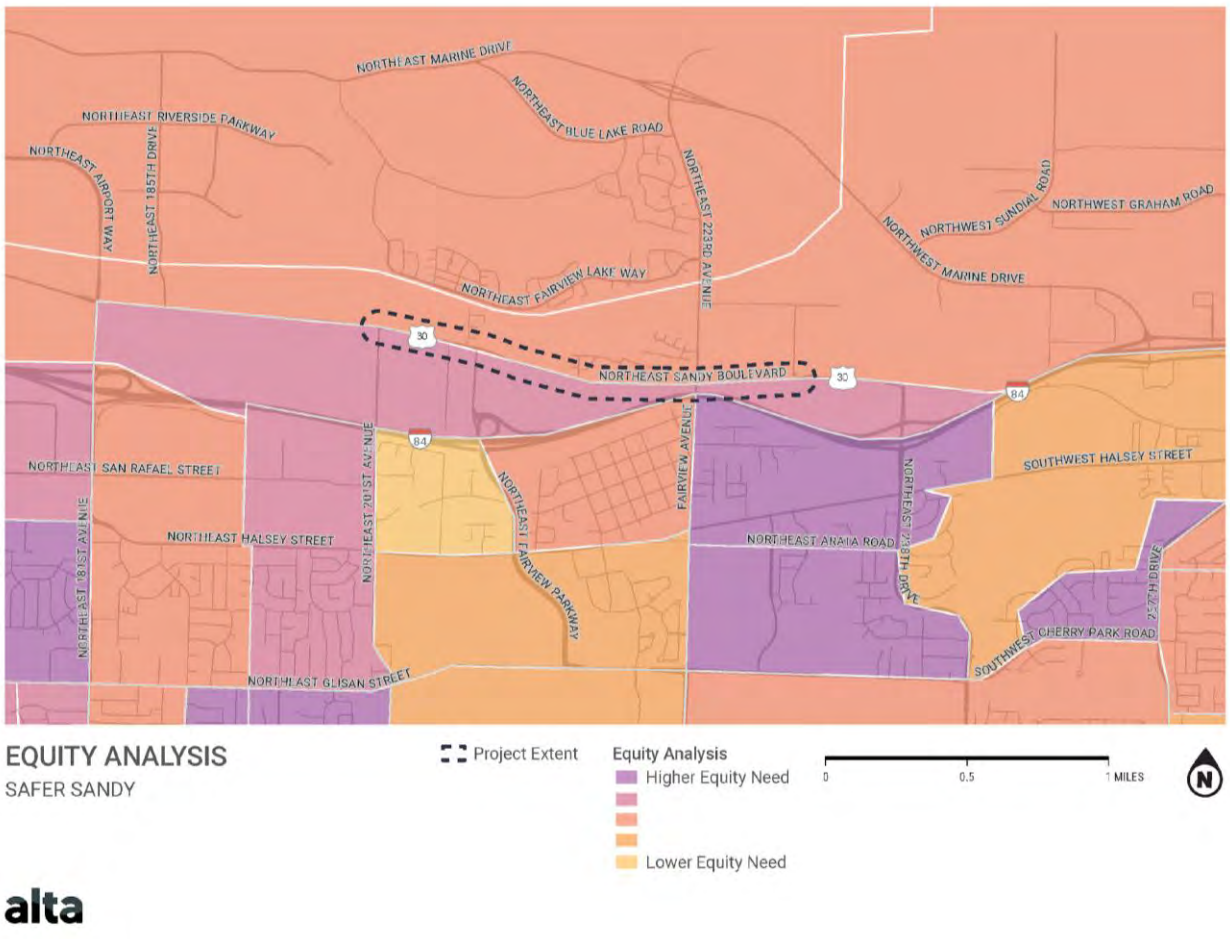


Figure 2. Equity Analysis

Race and Ethnicity

As noted above, persons identifying as white alone (not Hispanic/Latino) make up the largest share of the population in the area. Figure 3 describes the distribution of race and ethnicity for each census block group. The census block group directly south of the project area has a population of nearly 50% that identifies as Hispanic/Latino. The three block groups further south have a nearly equal percentage of white and Hispanic/Latino populations. The block group on the north side of Sandy Boulevard is more diverse with a greater share of the Black and Asian population.

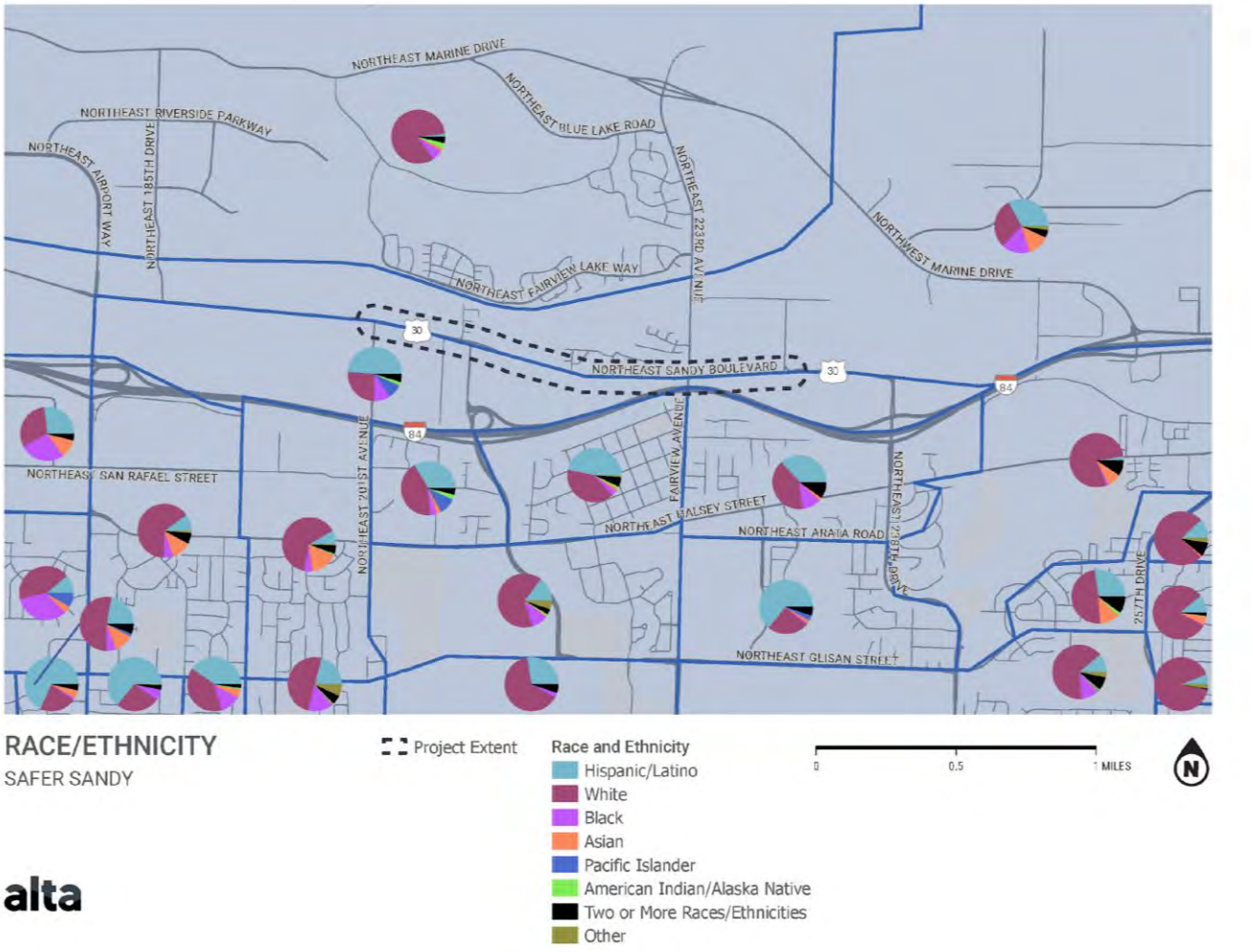


Figure 3. Race and Ethnicity of Surrounding Population

Low-Income Households

The distribution of low-income households shows stark differences between census block groups. Households were categorized as "low income" if they earned less than 200% of the federal poverty line. North of Sandy Boulevard, less than 16% of households were considered low income compared to the neighborhoods south of the corridor, where roughly two out of five households were considered low income. The block group just south of Interstate 84 (I-84), which is still close to the corridor, had a high concentration of low-income households (Figure 4).

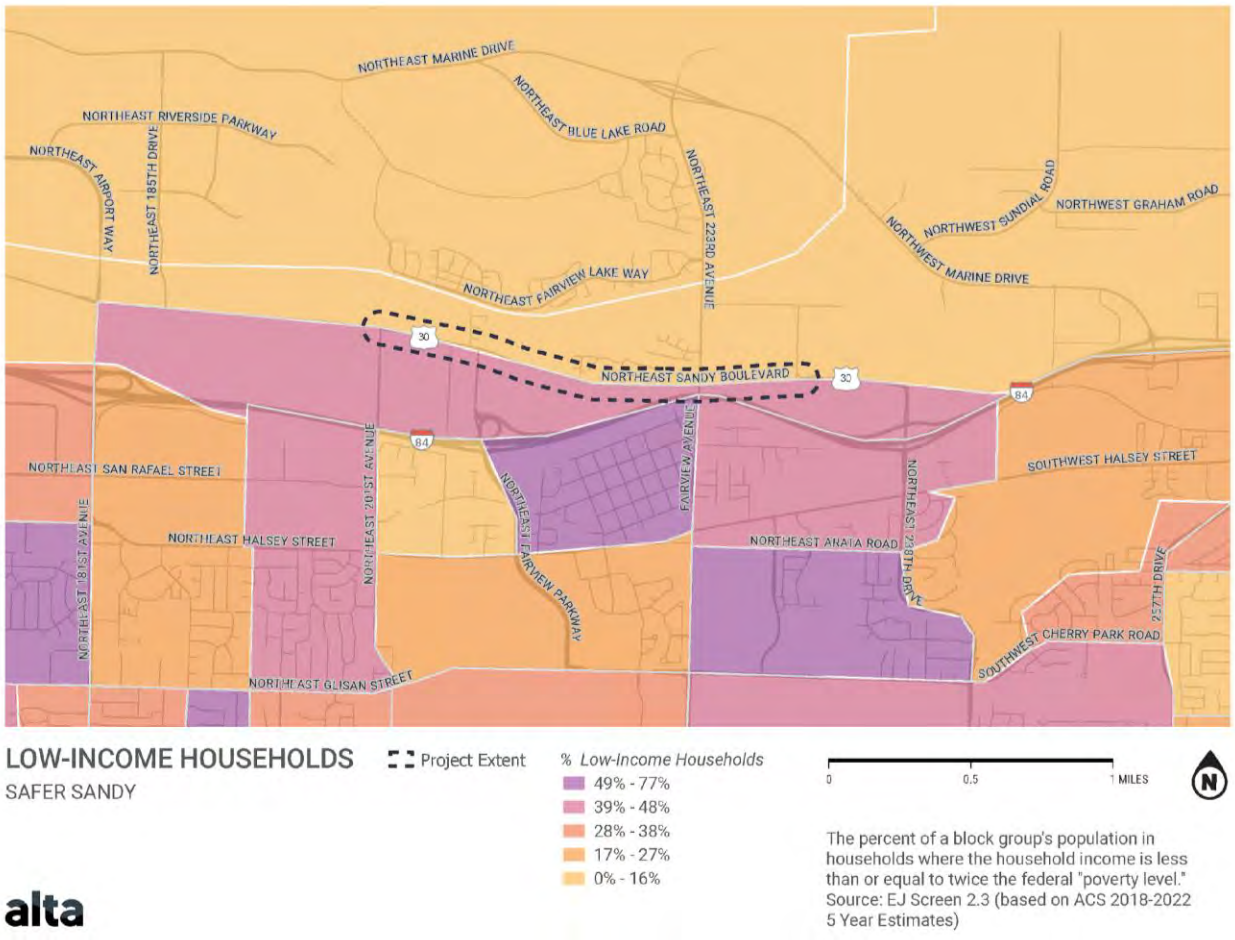


Figure 4. Percentage of Low-Income Households

Takeaways for public engagement

The demographic profile of the Safer Sandy project area underscores the need for targeted engagement strategies in key areas relative to the study corridor to ensure inclusive participation and assess equity impacts. Addressing language barriers, economic constraints, accessibility needs, and digital access gaps will be essential in fostering equitable project processes.

Safety and Crash History

While the crash data is explored in greater detail in the segment-by-segment findings section, Table 3 summarizes the total number of crashes on Sandy Boulevard within the project extent between 2012-2022 (Source: Oregon Department of Transportation). The two right-most columns mention the crash locations and details the factors typically involved for each mode throughout East Multnomah County. These were identified by Alta in the East Multnomah County Transportation Safety Action Plan (2025).

Table 3. Number of crashes by mode 2012-2022 along project extent

Mode	Number of Crashes 2012-2022	Crash Locations	Typical Crash Factors Involving Mode.
Vehicle-Only	157	Crashes occurred throughout corridor with the intersection at 223rd Avenue accounting for the highest concentration.	Alcohol or other drugs, 35 mph road, Collision with a fixed object
Bicycle	3	At and just to the east of the intersection with 201st Avenue.	Vehicle-turning movement, Failure to yield by driver, at intersection, presence of bicycling facility
Pedestrian	7	Near Intersections of 201st Avenue, Fairview Parkway, and 223rd Avenue.	Improper maneuver by driver, pedestrian illegally in roadway, at intersection, dark

Among the 10 crashes involving people walking or biking along the project extent between 2012-2022, one was fatal. The crash happened on 01/14/2020 near Bus Stop 9724 (near 201st Avenue), which, as is documented in the next section, 350 feet away from the nearest crosswalk. The report notes that the crash occurred between 6 and 7 p.m. and that the conditions were rainy and dark. The photometric analysis confirms that this area does not meet minimum average luminescence standards.

East Multnomah County Transportation Safety Action Plan (2025)

Alta is currently working on a Transportation Safety Action Plan for East Multnomah County and many findings from the Systemic Safety Analysis help inform existing conditions along Sandy Boulevard. Throughout East Multnomah County, vulnerable road users are more likely to be involved in crashes which result in serious injury or fatality. Crashes resulting in injury or fatality also tend to spike in winter months, especially for bicyclists and pedestrians. More specific to the project area, crashes have been increasing over time in Fairview and Sandy Boulevard was identified as being part of the area's high injury network for all modes of travel. Along Sandy Boulevard, the area around its intersection with 201st Avenue saw the largest increase in the number of crashes between 2013 and 2022 while multiple sections of the road were found to have a moderate to high percent of low-income individuals using active transportation modes. Key takeaways from the safety action plan include the following:

A. Crashes have been increasing over time in Fairview.
B. Sandy Boulevard was identified as being a part of the area's high injury network for all modes of travel.

C. Vulnerable road users (people walking or biking) throughout East Multnomah County are more likely to be involved in serious or fatal crashes.
D. Injuries and fatalities spike in winter months and in the evenings. This is especially true for pedestrians and bicyclists.
E. Multiple sections of Sandy Boulevard saw an upward trend in the total number of crashes between 2013 and 2022 while some others saw a decrease. The areas with an increase in crashes were mainly located near the intersection with 201st Avenue.
F. Portions of the Sandy Boulevard project extent were found to have a moderate to high percent of low-income individuals using active transportation modes.

Crash Profiles

Through the Systemic Safety Analysis process of the Transportation Safety Action Plan, Alta identified and mapped six crash profiles (groups of crashes with similar characteristics) throughout East Multnomah County. Profiles were chosen based on factors which appeared across a high number of total crashes with additional weight given to those involved in crashes resulting in serious injury or fatality. Table 4 lists these profiles and notes the locations where each has occurred within the Sandy Boulevard project extent. Nearby destinations which may be related to each crash type and location are also mentioned, although they have not been directly linked with the origin or destination of anyone involved in the reported crashes.

Table 4. Crash profiles, locations, and destinations

Crash Profile and Description	Locations of Crashes Along Sandy Boulevard Matching this Profile
1. Crashes with Alcohol or Drugs Involved	At and near intersection with 201st Avenue
	At intersection with Fairview Parkway
	At and near intersection with 223rd Avenue
2. Fixed Object Crashes on 35 MPH Roads	Near intersection with 223rd Avenue
3. Pedestrian Crash, After Dark, On Road with Full or Partial Sidewalk	At intersection with 223rd Avenue
4. Pedestrian Crash, At Intersection, with Improper Maneuver by Driver	At intersection with Fairview Parkway
5. Bicycle Crash, At Intersection, with a Turning Vehicle, On Road with Dedicated Bike Facility	At and near intersection with 201st Avenue
6. Motorcycle Crash, At Intersection, with a Turning Vehicle	Just east of intersection with Fairview Parkway

Segment Findings

This section summarizes key findings from the existing conditions analysis for Sandy Boulevard, organized into four segments spanning Sandy Boulevard from 201st Avenue to 230th Avenue. The analysis draws from multiple sources, including a field-based Road Safety Audit conducted on January 28, 2025, with participation from the project team, local staff, and one community member. For each segment, the findings highlight observed safety and mobility challenges for people walking and biking, contextual considerations such as surrounding land use and key destinations, and results from supporting technical analyses related to stormwater infrastructure, lighting conditions, and pavement quality.[5] Together, these insights provide a comprehensive picture of current conditions along the corridor.

The four segments along Sandy Boulevard are as follows:

Segment 1: 201st Avenue to Fairview Parkway

Segment 2: Fairview Parkway to Blossom Hill Road

Segment 3: Blossom Hill Road to 223rd Avenue

Segment 4: 223rd Avenue to 230th Avenue

[5] Oregon Metro RLIS. Zoning. (2025). https://rlisdiscovery.oregonmetro.gov/datasets/drcMetro::zoning/about. Note: the zoning data contains zones from local jurisdictions along with Metro-assigned zoning classifications for the entire Metro region.

Segment 1: 201st Avenue to Fairview Parkway

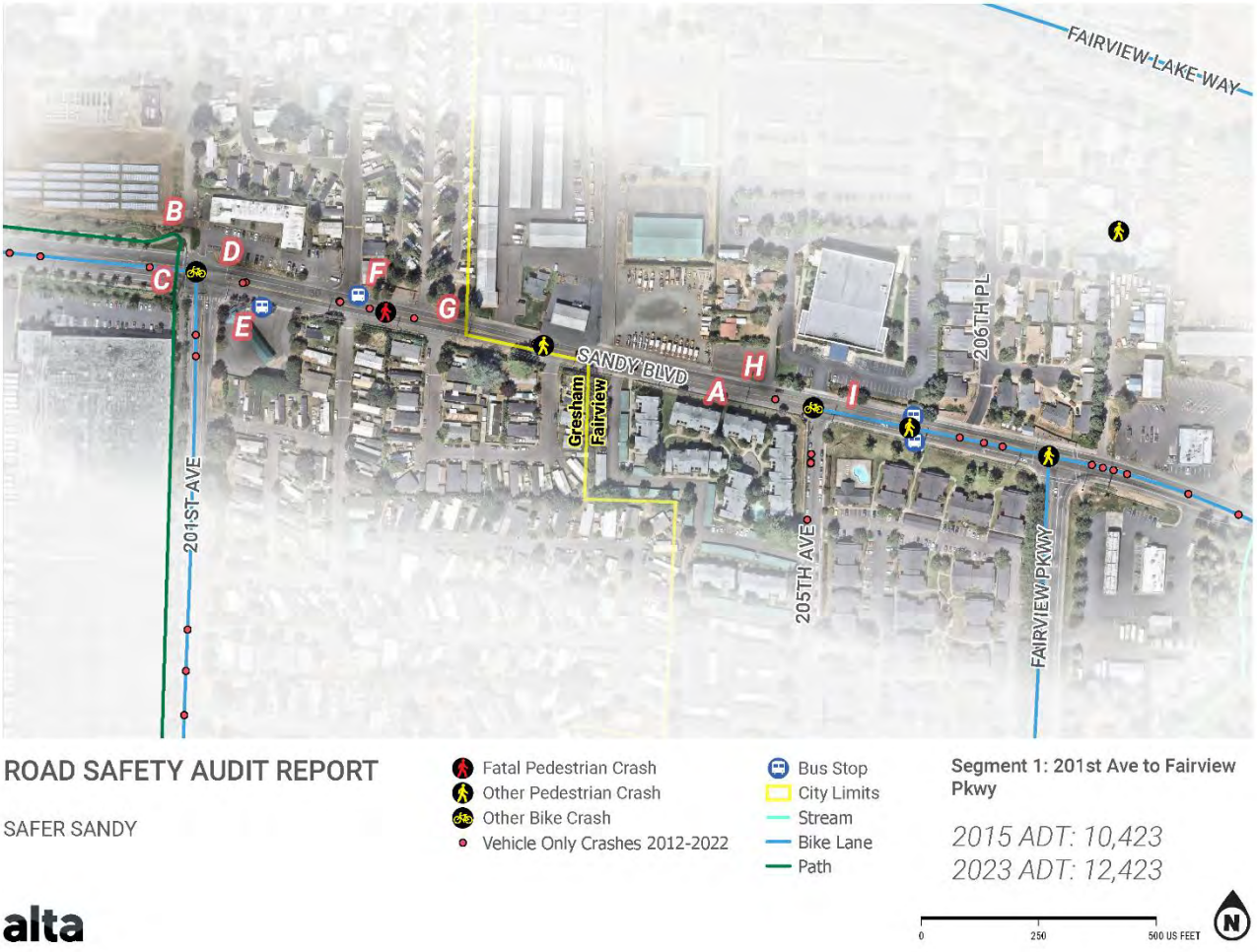


Figure 5. Segment 1 Road Safety Audit Report

Sandy Boulevard between 201st Avenue and Fairview Parkway experiences the largest traffic volumes of the four segments assessed by the project team. According to traffic data collected by Multnomah County, the average daily traffic (ADT) of this segment has grown from 10,423 in 2015 to 12,423 in 2023. The western portion of the segment is located within Gresham's city limits, whereas the eastern portion lies in Fairview's city limits (see Figure 5).

The project team began the road safety audit at the intersection of Sandy Boulevard and 201st Avenue. The road safety audit group assigned a descriptive "safety score" for each intersection (1 to 10, 10 being the most uncomfortable/unsafe) to compare how it feels to be a pedestrian in each location. Sandy Boulevard and 201st Avenue received a 6.5. The intersection's traffic signals control three approaches for through traffic on its east, west, and south legs and a driveway approach on its north leg, which serves several businesses. The west approach is a five-lane roadway with on-street unprotected bike lanes and complete sidewalks. On the north side is a shared-use path,

which is part of the Gresham-Fairview Trail. Given the number of lanes, ADT, and posted speed limit (40 MPH), these bike lanes offer insufficient separation for all but the strongest and most confident cyclists and would be considered suboptimal if built today (see Figure 6). Most people walking and biking on the segment will use the Gresham-Fairview Trail on the north side of Sandy Boulevard instead of the bike lanes.

Figure 6. Western approach of Sandy Boulevard *at intersection with* 201st Avenue

The south approach, 201st Avenue, is a collector and is three lanes wide. Its northbound bike lane ends before the intersection, replaced by a right-turn lane with a wide turning radius. Given that the Gresham-Fairview Trail is on the east side of 201st Avenue, most people riding bikes will likely use the trail instead of the bike lane to head northbound. Consequently, the western approach is a critical crossing for bicycles connecting from the Gresham-Fairview Trail on the west side of 201st Avenue to the north side of Sandy Blvd. **It is also the location of a bike crash that occurred in September 2017. A person driving a vehicle turned and crashed into another vehicle, causing the second vehicle to crash into a person riding a bicycle.**

The southeast corner of the intersection is connected by a crosswalk across 201st Avenue, but lacks a crosswalk across Sandy Boulevard. This is particularly important because there are bus stops on the east approach, so if people were to cross Sandy Boulevard to reach either stop, they would have to use the crosswalk on the far side of the intersection. This is prohibitively far given the current placement of the bus stops and is a safety issue compounded

by the fact that there is no sidewalk on the north side and no crosswalk on the north leg of the intersection. **In January 2020, a person driving a vehicle killed a person walking across the street between the two bus stops.**

Between 2012 and 2022, this segment saw 78 crashes, two of which involved bicycles and four of which involved pedestrians, with one pedestrian fatality. **The data shows that many appear clustered around driveways as nearly half (32) of crashes were due to turning movements.** A center left-turn lane is intermittent in this segment, as are sidewalks and bike lanes west of 205th Avenue. Combined with the fact that there are nine driveways on the north side and five on the south side, these factors present safety concerns for all modes, and especially for people walking and biking.

On the east portion of this segment, the residential street of 205th Avenue intersects Sandy Boulevard across from the driveway accessing Sulamita Slavic Evangelical Church, which includes a K–8 school. According to road safety audit participants, the intersection is frequently congested with vehicle traffic. The two bus stops adjacent to this intersection are sheltered, reflecting likely higher use than others in the corridor. The closest crosswalk to the bus stops and school is the far side of Fairview Parkway, over 530 ft away. While this section does have curb-tight sidewalks on both sides of the roadway, in the last 10 years, three people driving vehicles have crashed into people crossing the road. Vehicle speeds have a large effect on the survivability rate of a crash. With a posted speed limit of 40 MPH, Sandy Boulevard in its current form is more likely to give rise to crashes that result in fatalities than roadways with lower speeds (see Figure 7).

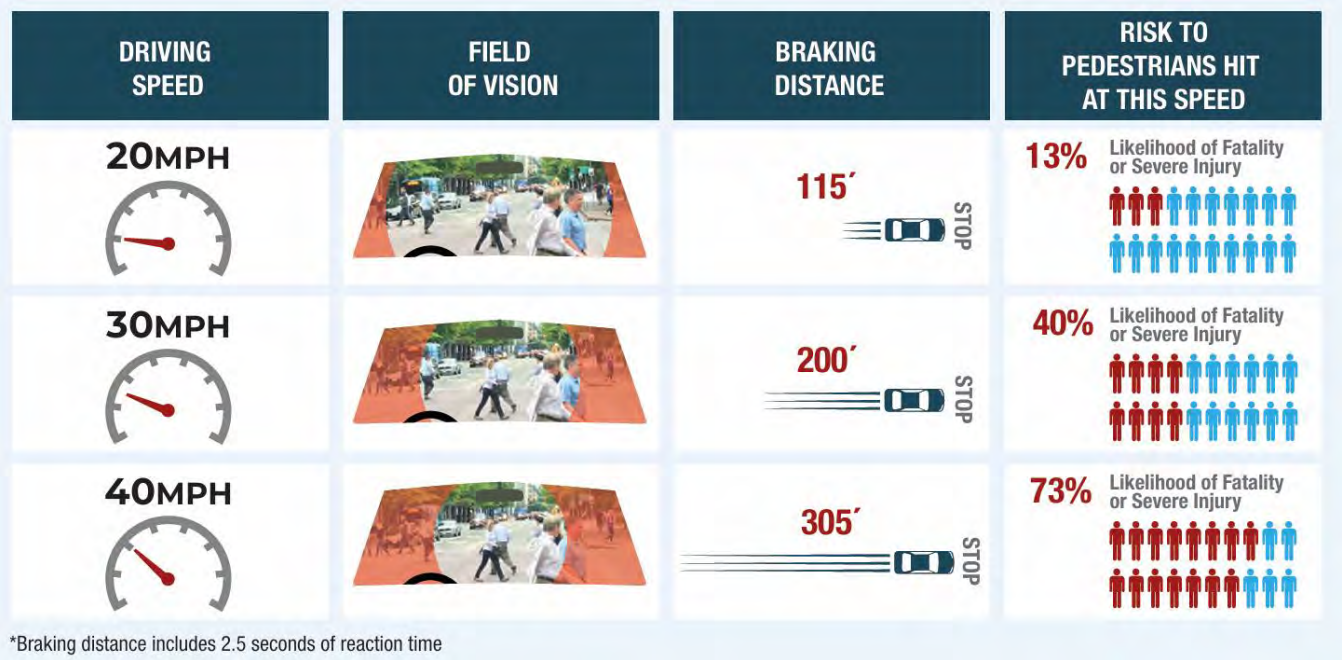


Figure 7. The effect of speed on crash survivability (Source: NHTSA)

Summary of Safety Issues in Segment 1: 201st Avenue – Fairview Parkway

A. With a documented crash history, limited facilities, and a posted speed limit of 40 MPH, this segment presents a deadly safety risk for pedestrians and bicyclists.
B. The north side shared-use path is a key destination and route for pedestrians and bicyclists.
C. The crossing of the western approach of the 201st intersection has a crash history with bicycles and would likely benefit from enhancement.
D. There is no crosswalk across the east approach or north approach of the 201st intersection.
E. The southeast corner has a wide effective turn radius despite 201st Avenue not being a designated freight route.
F. The bus stops at 201st Avenue are poorly placed, are inaccessible by sidewalk, and do not have a nearby crosswalk to cross Sandy Boulevard.
G. The center left-turn lane is intermittent in this segment, as are bike lanes and sidewalks.
H. There are more driveways on the north side (nine) compared to the south side (five).
I. The Sulamita Slavic Evangelical Church and school driveway, 205th Avenue, and adjacent bus stops generate vehicle-turning, biking, walking, and transit activity, but the Fairview Parkway intersection lacks traffic controls and crosswalks.

In this segment, there are several important locations that generate trips. On the east end of the segment, the Gresham-Fairview Trail at 201st Avenue is less of a destination for people traveling by motor vehicle and instead acts as a gateway for people walking and biking to and from the Columbia River and the trails along Marine Drive. Additionally, the Stagecoach Saloon, Rolling Hills Market, and other small businesses are located on the north side of the intersection at 201st Avenue. While the Gresham-Fairview Trail likely sees people walking and biking from

communities south of I-84, these small businesses are likely destinations serving convenience trips for people in the local neighborhoods adjacent to Sandy Boulevard. The proximity of these businesses to residential areas lends them to trips made by walking and biking, but there are also bus stops at the intersection of 201st, which provide additional foot traffic. Last, Segment 1 also includes the Slavic Evangelical Church and Sulamita Christian Academy, which generate many trips both throughout the week and on the weekends. These destinations are visited by many families and people of all ages.

Figure 8. Segment 1 Key Destinations and Crashes

The western segment of the corridor, which has a mixture of commercial, industrial, and residential uses, is shown below (Figure 9). Most of the parcels zoned for industrial are closer to 201st Avenue, with one of the few "Light Industrial" zoned lots in Fairview located north of Sandy Boulevard. The segment then transitions to a mixture of medium-density and corridor commercial heading eastward.

This industrial zone is particularly important because it conflicts somewhat with the stated goal in the Fairview TSP that Sandy Boulevard west of 223rd Avenue should have a street design supporting neighborhood activities and safe

bicycle and pedestrian travel. By contrast, Sandy Boulevard to the east of 223rd Avenue should support industrial and commercial uses. Future designs for Segment 1 should account for large industrial vehicle turns at this parcel and aim to minimize conflicts with people walking and biking.

Additionally, some of the areas around Segment 1 are zoned for medium-density residential uses. These parcels are near commercial areas as well. Given the mix of these zones, it is reasonable to expect many local walking and biking trips to and from businesses.

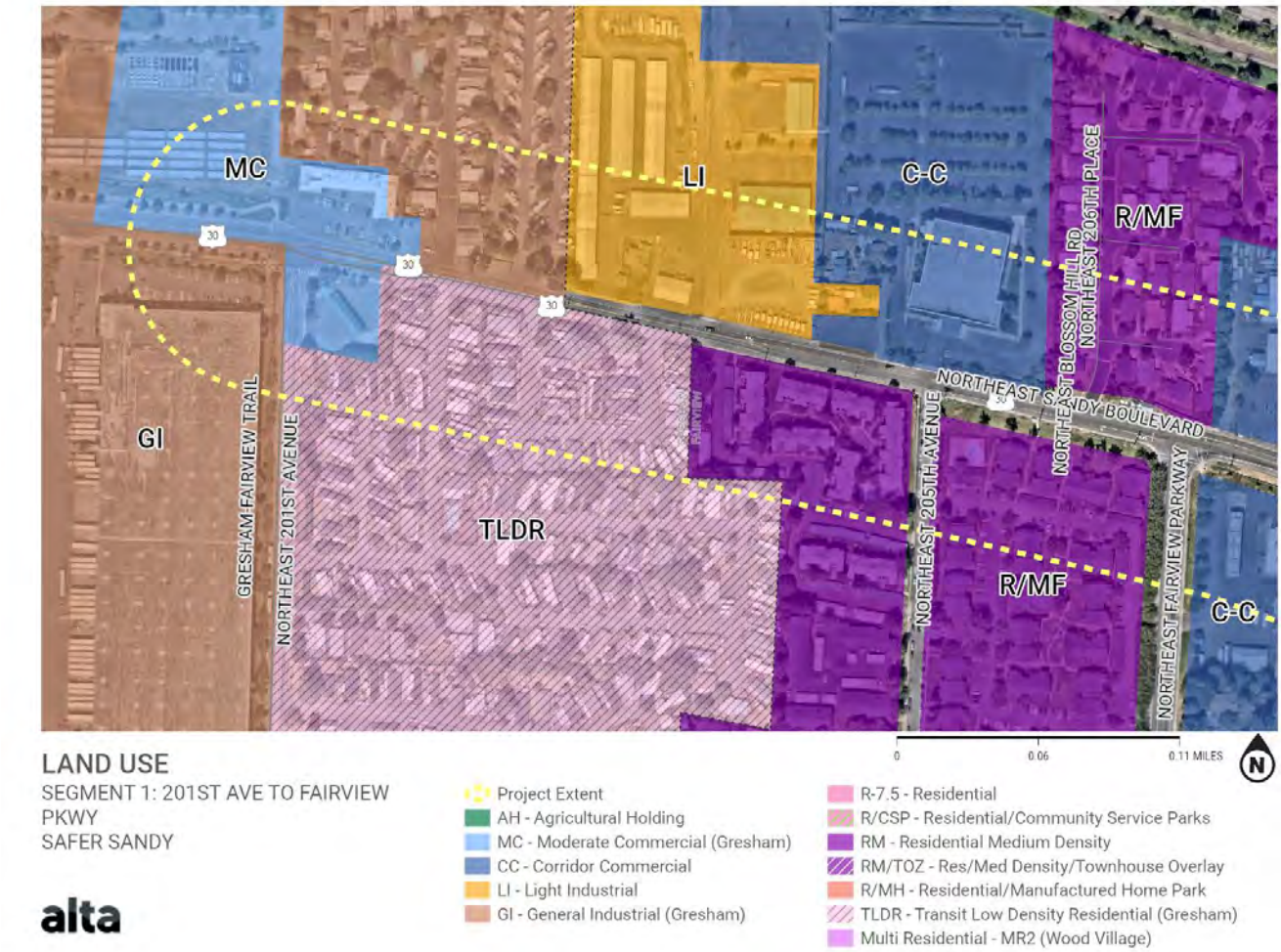


Figure 9. Adjacent land uses along between 201st Avenue *and* Fairview Parkway

According to the lighting analysis, Segment 1 has mixed lighting levels, with varying levels of compliance with illuminance standards and uniformity targets:

- Does not meet minimum average illuminance standards nor its uniformity target:

    - Area between 201st Avenue and 205th Avenue:
- Meets minimum illuminance standards but not its uniformity target:
    - Between 205th Avenue and Fairview Parkway
    - Intersection of 201st Avenue and Sandy Boulevard
- Meets both minimum illuminance standards and its uniformity target:
    - Intersection of 205th Avenue
- Meets neither the minimum illuminance standards or the uniformity target:
    - Intersections of 206th Pl and Fairview Parkway

For more information on lighting, see Appendix D: Photometric Analysis (Task 2.10).

According to the pavement analysis, the Pavement Condition Index (PCI) rating from 201st Avenue to 207th Avenue is 40.1, which indicates that the pavement is in poor condition. This area should be further evaluated by additional coring and testing to determine whether a full reconstruction or pavement overlays are required. For more details, see Appendix F: Preliminary Geotechnical and Pavement Review Report (Task 2.11).

Segment 2: Fairview Parkway to Blossom Hill Road

Figure 10. Segment 2 Road Safety Audit Report

Sandy Boulevard between Fairview Parkway and Blossom Hill Road experiences the second-highest traffic volumes among the four project segments. In 2015, Multnomah County measured 9,902 ADT, which grew to 11,789 ADT in 2023 (Figure 10).

Similar to the previous segment, the intersection of Fairview Parkway and Sandy Boulevard has traffic signals that control three approaches for through traffic, yet there are only two crosswalks: one across Sandy Boulevard on the east approach and one across Fairview Parkway on the south approach (see Figure 11). The group rated this intersection a 6 out of 10 for pedestrian comfort. This limits pedestrian connectivity and accessibility in the area, especially given the two bus stops just west of the intersection. The two crosswalks do have push-activated pedestrian crossing phases. **The intersection of Fairview Parkway and Sandy Boulevard has seen two pedestrian crashes between 2012 and 2022 (the only pedestrian or bike crashes documented in this segment). Notably, this**

intersection is prominently represented among all crashes: 18 of the 44 crashes on this segment occurred at this intersection.

Additionally, the intersection of Fairview Parkway and Sandy Boulevard has curb-tight sidewalks on both sides of the street in good condition. The on-street unprotected bike lanes connect all the way to the intersection, except for the eastbound bike lane on the west approach, which is dropped to accommodate a right-turn lane. The level of separation of the bike lanes, given the posted speed limit (40 MPH) and ADT (>11,000), is inadequate except for all but the strongest and most confident cyclists. The wide crossing distances, closed crosswalk on the west approach, and unprotected bike lanes present safety challenges for people walking and biking in the area. Walking and biking trips in this segment are generated by the gas station on the southeast corner, restaurants on the northeast corner, the school and residential areas to the west, and the I-84 trail to the south.

A potential contributor to the high incidence of crashes is that, in contrast to the previous segment, the intersection of Fairview Parkway and Sandy Boulevard is the intersection of two designated freight routes and two major arterials. The additional turning movements of vehicles and freight likely caused the implementation of wider effective turn radii on the southwest and southeast corners of the intersection, lengthening the pedestrian crossing distances and increasing the exposure to traffic experienced by people walking and biking.

Moving east, the team noted a lack of sidewalks, particularly as Sandy Boulevard crosses Osborn Creek. The width of the roadway at this location presents a constraint for all modes and a design constraint for future improvements. The lack of sidewalks, combined with a lack of delineation between Sandy Boulevard and the driveways of businesses on the north side of Sandy Boulevard, introduces additional points of potential conflict between turning vehicles and people walking and biking. Sandy Boulevard narrows to one travel lane in both directions for the remainder of this segment.

In this segment, two residential areas (Quail Hollow and Portland Fairview RV Park) are served by bus stops, but with sidewalk gaps. This segment is part of the longest stretch of the project corridor without a crosswalk (0.75 miles). At Blossom Hill Road, the sidewalks on the north side resume and are in good condition. Across from Blossom Hill Road is a driveway access point for a stormwater facility and industrial uses (trucking services) on the south side of Sandy Boulevard. The skew of the intersection creates a wide crossing distance, decreasing the comfort of people walking and biking along the south side in this location.

Summary of Safety Issues in Segment 2: Fairview Parkway – Blossom Hill Road

A. There are only two crosswalks at the intersection of Sandy Boulevard and Fairview Parkway, and both have wide crossing distances.
B. The on-street bike lanes are unprotected.
C. The southeast and southwest corners of the Sandy Boulevard and Fairview Parkway intersection have large effective turning radii.
D. Sidewalks are missing on both sides of Sandy Boulevard moving eastward from the Fairview Parkway intersection.
E. Poorly defined driveway access to businesses on the north side present safety challenges for people walking and biking.
F. There are several bus stops that serve residential areas east of Fairview Parkway, but there are no sidewalks or places to cross Sandy Boulevard.
G. The skew of the intersecting driveway across from Quail Hollow Road creates a wide crossing distance.

In this segment, destinations that generate walking and biking trips include the I-84 trail to the south and nearby residential neighborhoods. Key destinations adjacent to Sandy Boulevard include Country Coffee, Celebrities Parkway Grill, and Shell gas station. These destinations are highly car-oriented, with driveways designed for easy access by vehicles. Each of the destinations here offers food and beverages, making them desirable locations for people in the adjacent neighborhoods of Quail Hollow and Kings Garden Apartments to access, though walking and biking connections are limited, especially to the east due to the lack of sidewalks or bike lanes.

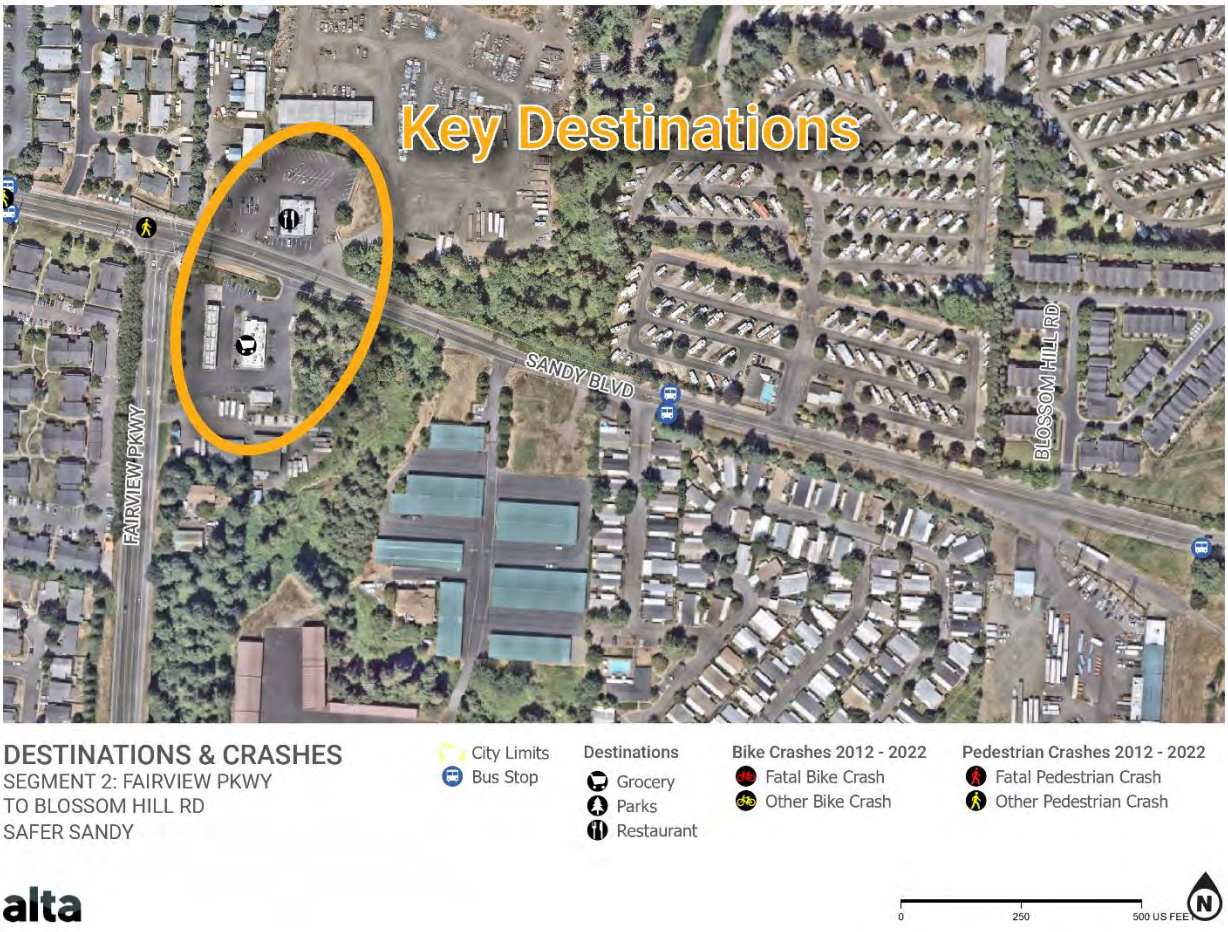


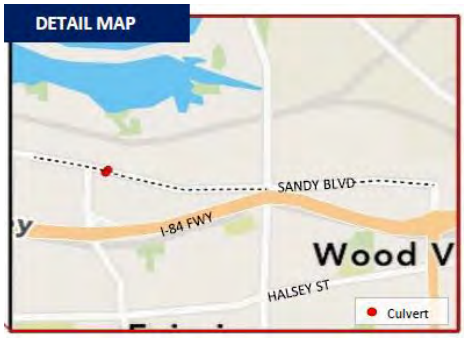
Figure 12. Segment 2 Key Destinations and Crashes

Parcels along this segment are a mixture of commercial uses and various forms of residential uses, as shown in Figure 13. Both sides of Sandy Boulevard, directly east of Fairview, are zoned as commercial, which transitions to medium-density residential, with townhomes on the north side and a manufactured home park on the south side. Given the orientation of these zones, it is reasonable to expect people to make short walking trips across Sandy Boulevard between the two residential zones and to commercial destinations at the intersection of Fairview Parkway. Additionally, the size of the parcels in Segment 2, along with the fact that there are fewer intersecting streets, means that there are fewer places where turning vehicles would conflict with people biking and walking.

Figure 13. Adjacent land uses along between Fairview Parkway and Blossom Hill Road

Key engineering findings related to stormwater infrastructure were found in Segment 2 during the existing conditions analysis. The project team found that accommodating any potential roadway widening in this segment will be

challenging due to steep embankment slopes, especially near Osborn Creek, which runs across the segment just east of Fairview Parkway.



Finally, there are other opportunities to site stormwater facilities to meet Multnomah County stormwater requirements in Segment 2, specifically at the southeast corner of the intersection of Sandy Boulevard and Fairview Parkway where there is an existing public stormwater facility (Figure 15).

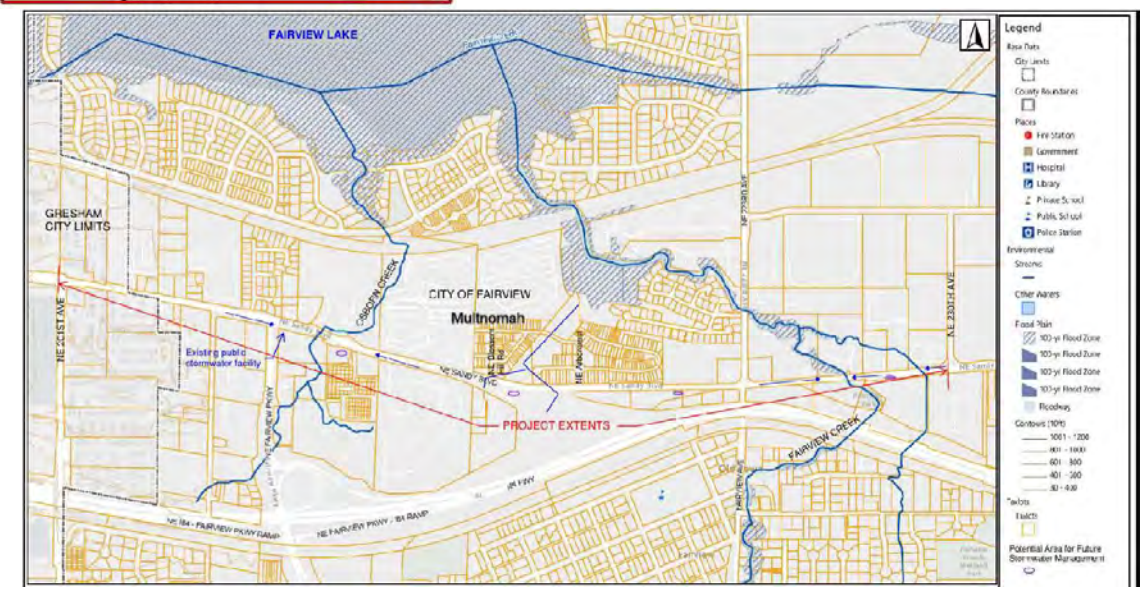


Figure 15. Drainage Features within Sandy Boulevard Project Extents

For more details, view Appendix B: Existing Stormwater Conveyance Analysis (Task 2.8)

According to the lighting analysis, none of the intersections or roadway segments in Segment 2 meet minimum illuminance standards or target uniformity. For more details, view Appendix D: Photometric Analysis (Task 2.10).

According to the pavement condition analysis, the PCI of the pavement from 207th Avenue to 223rd Avenue (Segment 2) is indicated as 52.8, which is at the borderline between poor to fair. This area should also be further evaluated for overlays or full reconstruction. For more details, see Appendix F: Preliminary Geotechnical and Pavement Review Report (Task 2.11).

Segment 3: Blossom Hill Road to 223rd Avenue

Figure 16. Segment 3 Road Safety Audit Report

Sandy Boulevard between Blossom Hill Road and Fairview Avenue (223rd Avenue) has the same traffic volumes as Segment 2 (9,902 ADT in 2015, which grew to 11,789 ADT in 2023) (Figure 16). The segment is characterized by an abundance of residential development located on the north side of Sandy Boulevard, with only two consolidated driveways on the north side, and only one driveway access on the south side between Blossom Hill Road and 223rd Avenue. There are two bus stops located between the two developments, but only the north side stop is connected by sidewalk. There is no accessible route or crosswalk to reach the south side bus stop in this segment.

Moving eastward, the project team found the sidewalk on the north side to be curb-tight and in good condition. The large amount of right-of-way in this segment resulted in a parking lane permitted on the north side of the roadway, although participants noted that parking lanes are not a feature for typical minor arterial facilities. Still, the added

buffer improved the level of comfort for the project team walking along this segment, due to the increased separation from the roadway. The sidewalk on the south side is only present immediately adjacent to the intersection of Sandy Boulevard and 223rd Avenue but does not connect in either direction. The bike lanes on Sandy Boulevard from Segment 2 cease to exist in Segment 3.

Closer to the intersection of Sandy Boulevard and 223rd Avenue, new construction (live/work units likely to serve as new destinations for people walking and biking in the area) prevented pedestrian access on the north side of the roadway. As noted in the previous section, there are no crossings between 223rd Avenue and Fairview Parkway (0.75 miles).

The significant intersection in Segment 3 is Sandy Boulevard and 223rd Avenue, and its signals control four approaches. The group rated this intersection a 7 out of 10 because of the additional turning movements. As a designated collector street, 223rd Avenue is an important pedestrian connection for students and families along Sandy Boulevard, as it connects under I-84 to Fairview Elementary. Participants noted that 223rd Avenue also serves as an important bikeway that connects residents to Blue Lake Regional Park, and the recently constructed Ch'ak Ch'ak trail to the north, which will eventually connect to the 40-mile loop and historic downtown Troutdale. The intersection has four faded crosswalks, but each have wide crossing distances requiring pedestrians to navigate turning movements from all directions. The turning radii at this intersection are wide to accommodate freight moving on both roadways, as both are designated freight routes.

Of the 54 crashes documented between 2012 and 2022 on Segment 3, 36 were located at the intersection of Sandy Boulevard and 223rd Avenue. Only one, however, involved a person crossing the street.

Summary of Safety Issues in Segment 3: Blossom Hill Road to 223rd Avenue

A. Two bus stops are located between the developments on the north side; only the bus stop on the north side is accessible.
B. A parking lane protects the sidewalk on the north side, but no other buffer exists. There is no sidewalk on the south side, except at the intersection of Sandy Boulevard and Fairview Avenue. There is limited right-of-way (ROW) on the south side, and no buffer for walking or biking on the south side of Sandy Boulevard.
C. There are no bike lanes on this segment.
D. The crosswalks at the intersection of Sandy Boulevard and 223rd Avenue are faded and have long crossing distances.
E. There are wide turning radii on all four corners of the 223rd Avenue intersection, which increases the accessibility for freight vehicles and the turning speed of non-freight vehicles.

In this segment, the key destinations include the mixed-use development at Fairview Meadows Apartments, Fairview Elementary School by way of 223rd Avenue (south), and Blue Lake Regional Park/Chinook Landing Marine Park/Ch'ak Ch'ak Trail by way of 223rd Avenue (north). These destinations likely generate a significant number of walking and biking trips, or at least demand for such trips, given that they are important destinations for families and students.

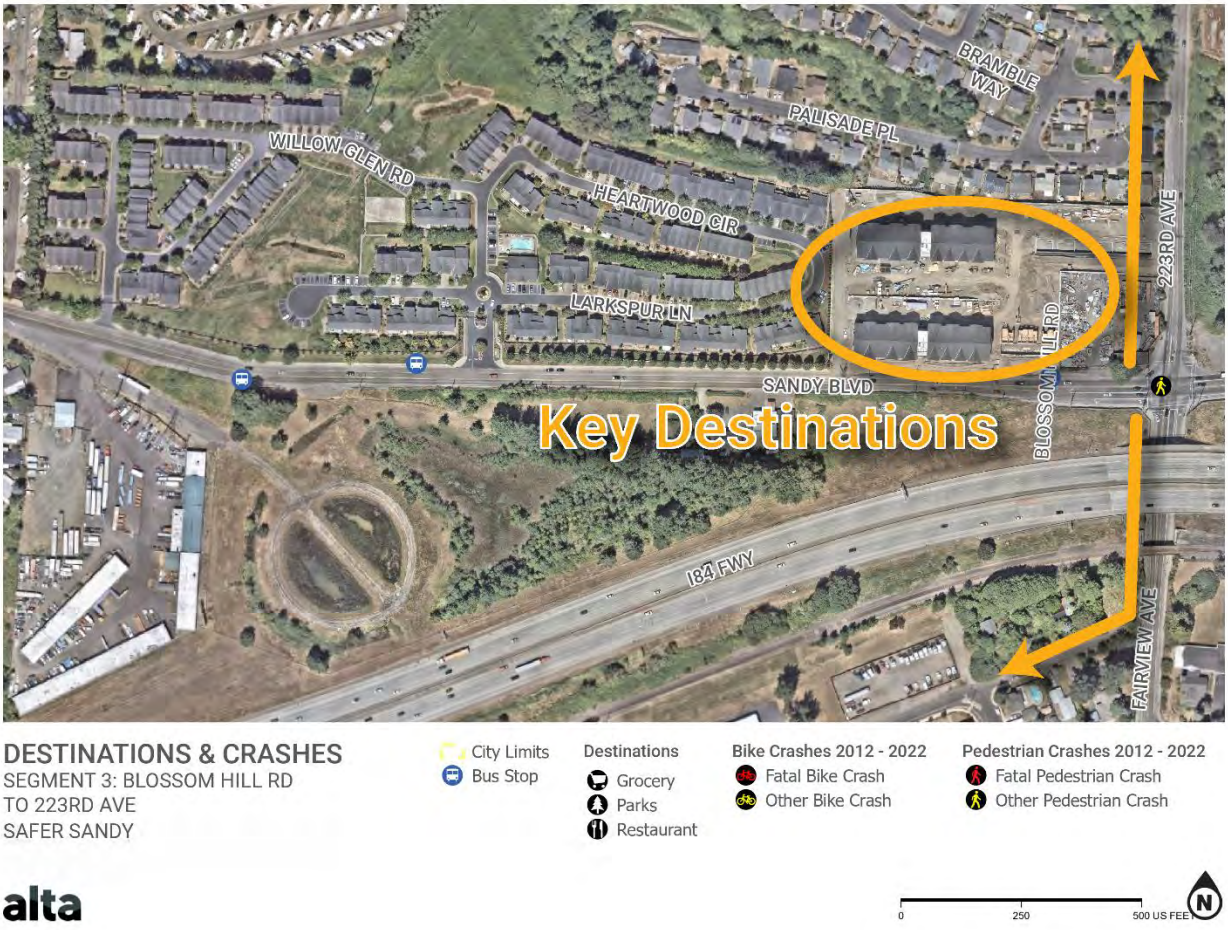


Figure 17. Segment 3 Key Destinations and Crashes

Along the northern portion of this segment, there are medium-density townhomes, as shown in Figure 18. The configuration of parcels and land uses in this segment indicates that biking and walking trips will largely be confined to the north side of the roadway. There is a narrow commercial parcel between the corridor and I-84 to the south, which is not connected by any sidewalks. There is also a new residential development in construction on the northwest corner of Sandy Boulevard and 223rd Avenue, which is currently zoned as corridor commercial. As a part of the project, improvements will be made to adjacent road segments on Sandy Boulevard and 223rd Avenue. For more information on how this development will affect Sandy Boulevard, see the detailed construction plans in Appendix E: Fairview Meadows Apartments Development Plans.

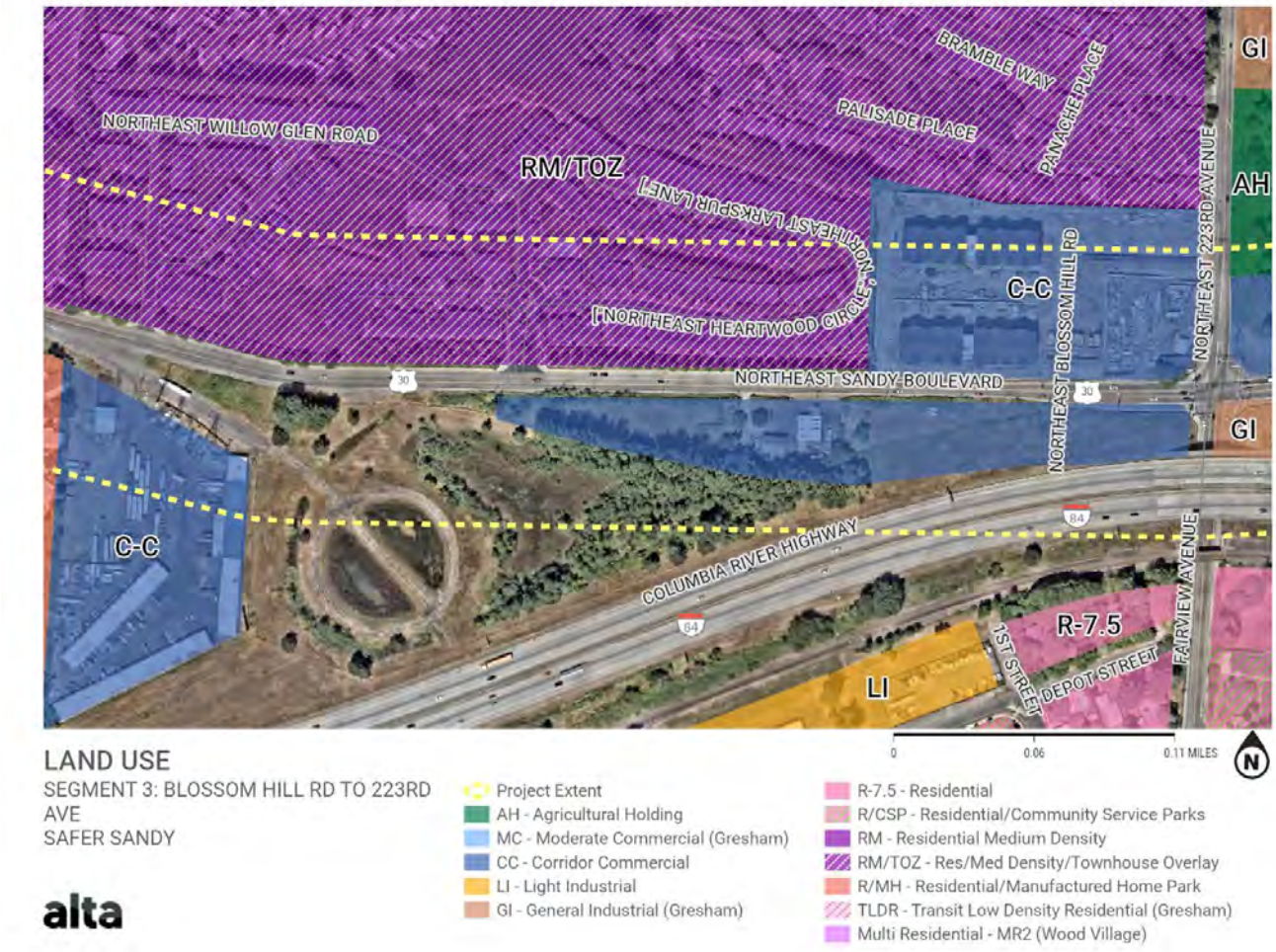


Figure 18. Adjacent land uses along between Blossom Hill Road and 223rd Avenue

According to the lighting analysis, none of the intersections or roadway segments in Segment 3 meet minimum illuminance standards or target uniformity, except the segment between Arbor Crest Drive and 223rd Avenue, which

meets illuminance standards but not target uniformity. For more details, view Appendix D: Photometric Analysis (Task 2.10).

According to the pavement condition analysis, the PCI of the pavement from 207th Avenue to 223rd Avenue (Segment 3) is indicated as 52.8, which is at the borderline between poor to fair. This area should also be further evaluated for overlays and/or full reconstruction. For more details, see Appendix F: Preliminary Geotechnical and Pavement Review Report (Task 2.11).

Segment 4: 223rd Avenue to 230th Avenue

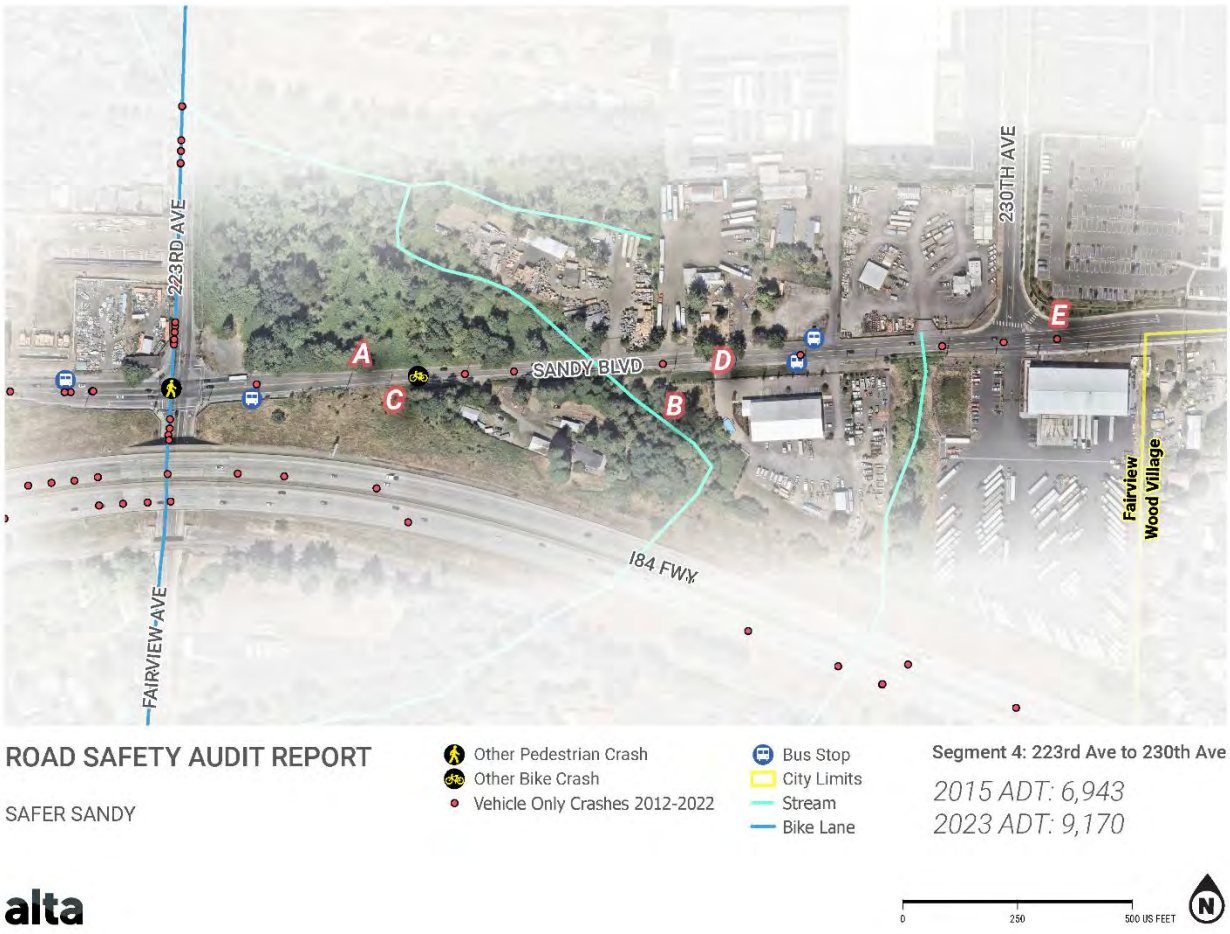


Figure 19. Segment 4 Road Safety Audit Report

Segment 4 between 223rd Avenue to 230th Avenue is an arterial roadway, but the surrounding land use context is dominated by industry, and as a result the segment is characterized by more freight traffic. The destinations for most freight vehicles on the project corridor exist at the eastern terminus of this segment near 230th Avenue. This segment

experienced growth in ADT as new industrial facilities developed in Townsend Business Park in the Fairview Enterprise Zone Boundary near 230th Avenue. In 2015, ADT was measured at 6,943, and in 2023 it was measured at 9,170 (see Figure 19).

Between 223rd Avenue and 230th Avenue, there are few destinations for people walking and biking, as most of the land is undeveloped greenspace and designated for industrial uses. The City of Fairview owns Pettijohn Park on the south side of Sandy Boulevard, but the park is undeveloped, and due to the lack of bike lanes or sidewalks on this segment, largely inaccessible to people walking and biking.

In this segment, Sandy Boulevard crosses Fairview Creek. The terrain slopes downward toward the north side of the roadway due to the retaining wall and berm of I-5. As a result, there is no shoulder, forcing all modes to use the same travel lane (Figure 20). **In 2013, a person driving a vehicle rear-ended a person riding a bike on this downhill segment of the roadway.** There were 12 recorded crashes on this segment between 2012 and 2022, many of which mentioned speeding or improper driving as a cause.

Figure 20. Sandy Boulevard near Fairview Creek

Moving eastward, participants noted that while there was little pedestrian activity during the audit, in the summer months there is a large influx of workers who stay on the Townsend Farm property on the north side of Sandy Boulevard. There are two bus stops located at the driveway for this property. The participants noted they frequently walk eastward on Sandy Boulevard to Walmart on the south side (east of the project extent). However, crossing to the south side in this segment requires two crosswalks and a pedestrian island, because the intersection of 230th Avenue and Sandy Boulevard has a right-turn slip lane on the northeast corner to accommodate freight vehicles. The road safety audit group observed a truck make an eastbound turn out of AD Truck and Service Repair and drive over a small segment of vertical curb and the landing of the curb ramp. The group rated this intersection a 6. There is no crosswalk on the east approach of this intersection. East of 230th Avenue, sidewalks are complete and in good condition but lack buffer space from the roadway. The on-street unprotected bike lanes resume but are likely inadequate for people of all ages and abilities.

Summary of Safety Issues on Segment 4: 223rd Avenue to 230th Avenue

A. There are no sidewalks or bike lanes on this segment.
B. Pettijohn Park is inaccessible but could provide an opportunity for stormwater management or other spatial needs in the corridor.
C. The slope of the terrain on the south side of the road further constrains the roadway and all modes.
D. The straight roadway with few destinations on either side likely results in high vehicle speeds.
E. Crossing to the south side of Sandy Boulevard from the north side at 230th Avenue requires two crosswalks.

In this segment, the number of destinations that would likely spur walking and biking trips declines, especially compared to the previous segments along the corridor. The destinations consist of various industry and job sites that generate commuter trips for people who work there, and a Walmart (outside of the project extent to the east) that generates shopping trips. The City of Fairview's Pettijohn Park is located along this segment, though it appears to have little to no supporting amenities or public use at this time.

These destinations are especially hard to reach because of a lack of supporting active transportation infrastructure in addition to heavy truck traffic that may discourage people from attempting to walk or bike to these locations. The bus stops in this segment are also somewhat removed from the intersection of 230th, the closest crosswalk. Despite these current conditions, these destinations are still less than half a mile from the Fairview Meadows Apartments, which is a reasonable distance to walk or bike to work or to shop.

Figure 21. Segment 4 Key Destinations and Crashes

Most parcels along the east segment of Sandy Boulevard consist of General Industrial land uses as shown in Figure 22. The exception is a small parcel on the northeast corner at 223rd Avenue zone for commercial corridor surrounded by land zoned for agricultural holding. Compared to Segments 1 through 3, Segment 4 will experience the most traffic from large industrial vehicles, and future designs for bicycle and pedestrian facilities along this extent will need to account for the additional discomfort people walking and biking experience while adjacent to those vehicles on a roadway.

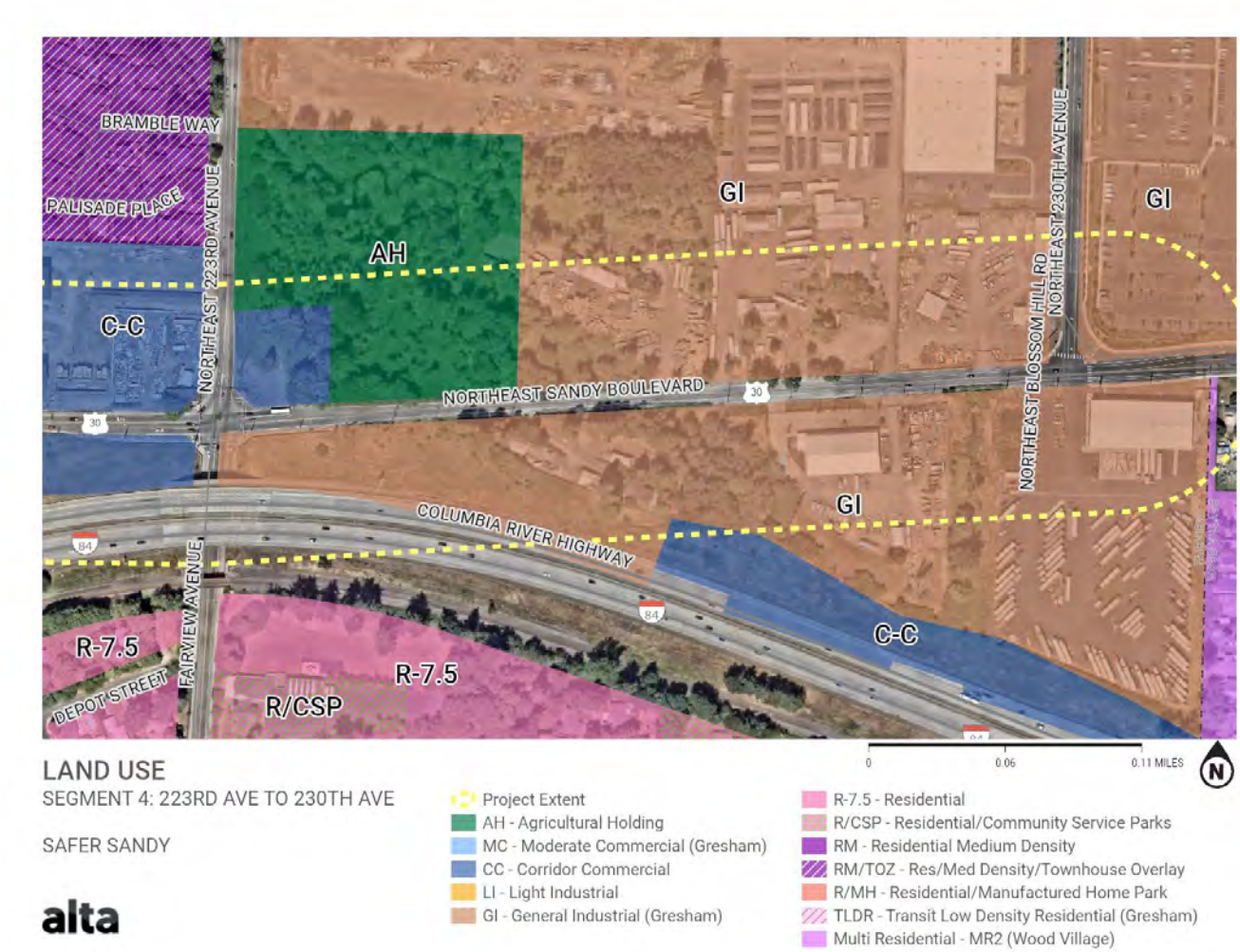


Figure 22. Adjacent land uses along between 223rd Avenue and 230th Avenue

Key engineering findings related to stormwater infrastructure were found in Segment 4 during the existing conditions analysis. The project team found that in Segment 4, accommodating potential roadway widening will be challenging due to steep embankment slopes along Fairview Creek; however, there are opportunities to leverage these improvements to potentially enhance access to green space, since Pettijohn Park connects to Fairview Creek on the

south side of Sandy Boulevard (Figure 23). For more details, see Appendix B: Existing Stormwater Conveyance Analysis (Task 2.8).

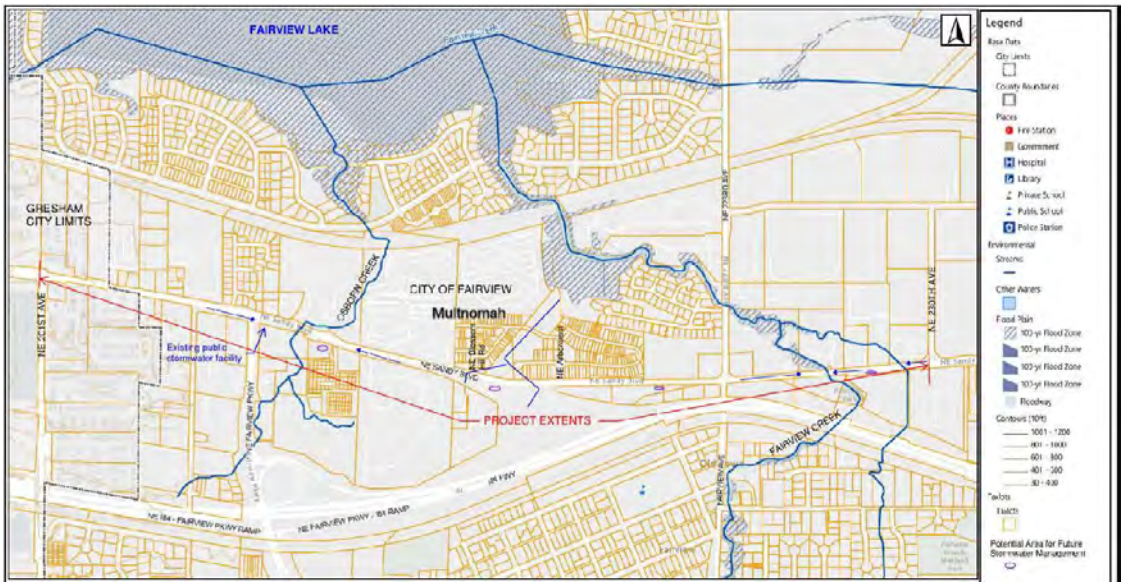


Figure 23. Drainage Features within Sandy Boulevard Project Extents

According to the lighting analysis, none of the intersections or roadway segments in Segment 4 meet minimum illuminance standards or target uniformity, except the intersection of 230th Avenue, which meets illuminance standards but not target uniformity. For more details, view Appendix D: Photometric Analysis (Task 2.10).

According to the pavement analysis, the PCI of the pavement from 223rd Avenue to 230th Avenue (Segment 4) is indicated as 76.6, which is satisfactory and therefore no repairs are required. For more details, see Appendix F: Preliminary Geotechnical and Pavement Review Report (Task 2.11).

Multimodal Findings

Active Transportation

In addition to active transportation improvements noted as part of multimodal improvements, pedestrian and bicycle-specific improvements are also proposed in existing plans and programs (Table 5 and Table 6). Trails project list on or near the project area from various plans and programs The Multnomah County ADA Transition Plan identifies barriers to pedestrian accessibility, recommends ways to address the barriers, estimates funding for proposals, and identifies an implementation schedule. In 2016, the urban roads in Multnomah County were inspected to identify barriers to pedestrian accessibility, recommend ways to address the barriers, estimate funding for proposals, and identify a schedule for implementation. Multnomah County completed a curb ramp inventory in 2016 and an inventory of transportation infrastructure in 2019 that included data related to ADA compliance. The non-compliant ramps were prioritized for reconstruction. The GIS data prioritization scoring methodology in the ADA Transition Plan focused on critical community services such as bus stops, schools, medical facilities, parks, libraries, and fire and police stations, and is still relevant in 2025.

The Fairview TSP identifies significant gaps in sidewalk and bicycle facilities and limited crossing opportunities along Sandy Boulevard. The lack of sidewalk connectivity on Sandy Boulevard limits transit connectivity. The Gresham TSP identifies Sandy Boulevard as a high priority for new bicycle lanes and identifies significant gaps in sidewalks along Sandy Boulevard at the eastern end of the city limits.

Sandy Boulevard Corridor Refinement Plan recommends crosswalks on all legs of the major intersections and paved surfaces that meet all ADA requirements. Midblock pedestrian crossings are identified at the intersections of 207th Avenue, 223rd Avenue, and 238th Avenue.

Table 5. Pedestrian and biking project list on or near the project area from various plans and programs

Project Location	Project Referenced From	Planning Agency	Project Type	Project Description
Sandy Blvd.: 230th Ave. to 238th Dr.	Wood Village TSP	City of Wood Village	Pedestrian/Bicycle	Install sidewalks on both sides of the roadway per minor arterial design standards.
Sandy Blvd.: 230th Ave. to 238th Dr.	Wood Village TSP	City of Wood Village	Pedestrian/Bicycle	Widen both sides of the roadway to accommodate bicycle lanes.
Sandy Blvd. Pedestrian Crossing Treatments	Fairview TSP (page 50)	City of Fairview	Pedestrian/Bicycle	Provide pedestrian crossings at locations recommended in the plan including at: NE 205th Ave., the bus stop between Fairview Parkway. and Blossom Hill Rd. (midblock crossing), Arbor Crest Dr., 230th Ave., and Elderberry St. (in Wood Village).

Project Location	Project Referenced From	Planning Agency	Project Type	Project Description
Sandy Blvd.	Multnomah County ADA Transition Plan	Multnomah County	Capital Roadway and Bridge Projects	Design Sandy Blvd. improvements for improving accessibility and seek funds to complete construction.

Table 6. Trails project list on or near the project area from various plans and programs

Project Location	Project Referenced From	Planning Agency	Project Type	Project Description
Sandy Blvd.: 181st Ave. to eastern city limits	Gresham TSP	City of Gresham	Trail	Construct to major arterial cross section (completed between 185th Dr. and 201st Ave. as of 2025).
Trail from Halsey St. to Marine Dr.	Gresham TSP	City of Gresham	Trail	Part of the trail runs along Sandy Blvd.
201st Ave. between Sandy Blvd. and Halsey St.	Regional Flexible Funds Allocation	City of Gresham	Trail Gap	Connect the Gresham-Fairview Trail.

The proposed pedestrian improvements in the Fairview TSP are shown in the map below:

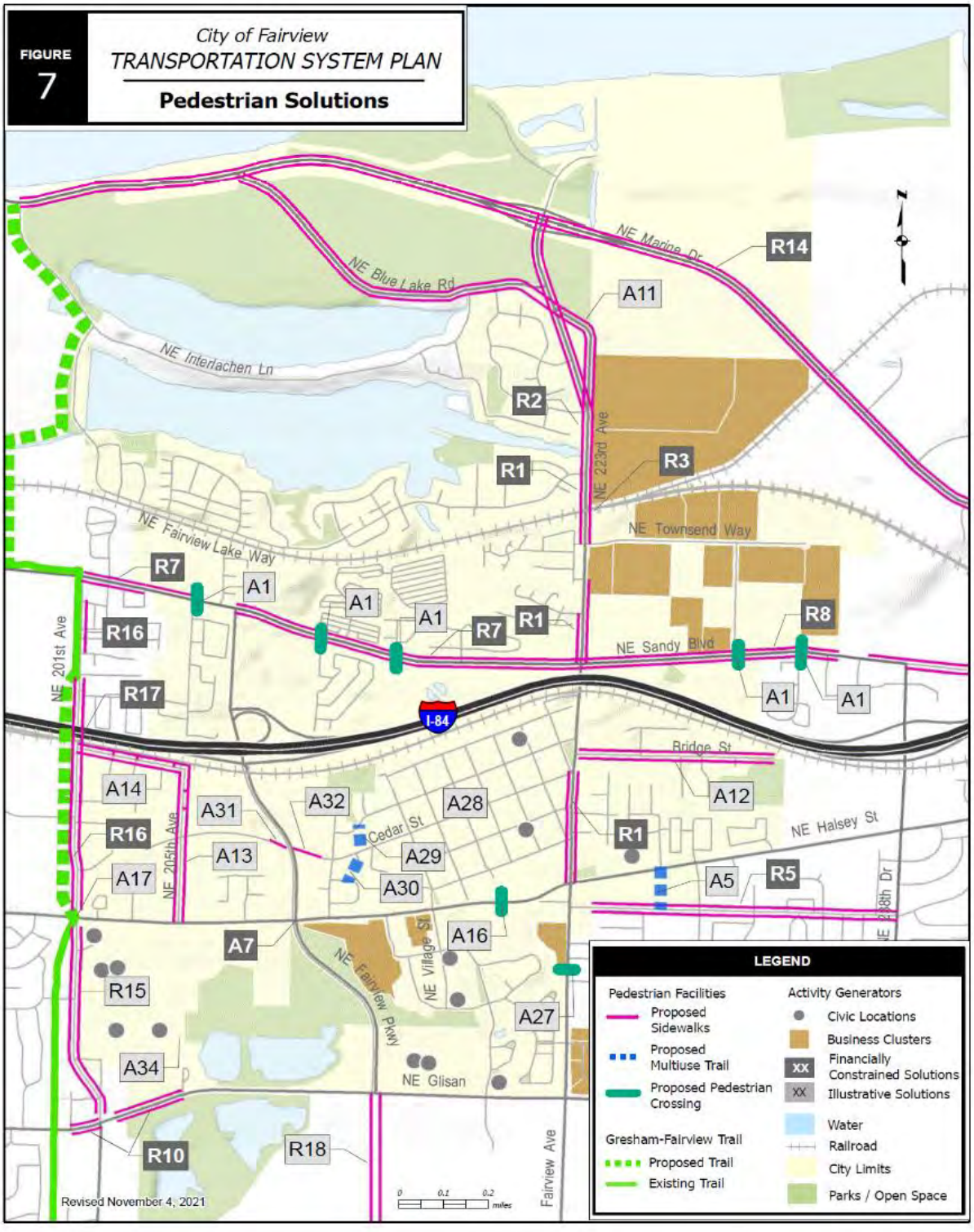


*Figure SEQ Figure * ARABIC 24. Fairview TSP Proposed Trail Projects: Pedestrians*

The Fairview TSP also proposes bike facilities and trails in the following locations:

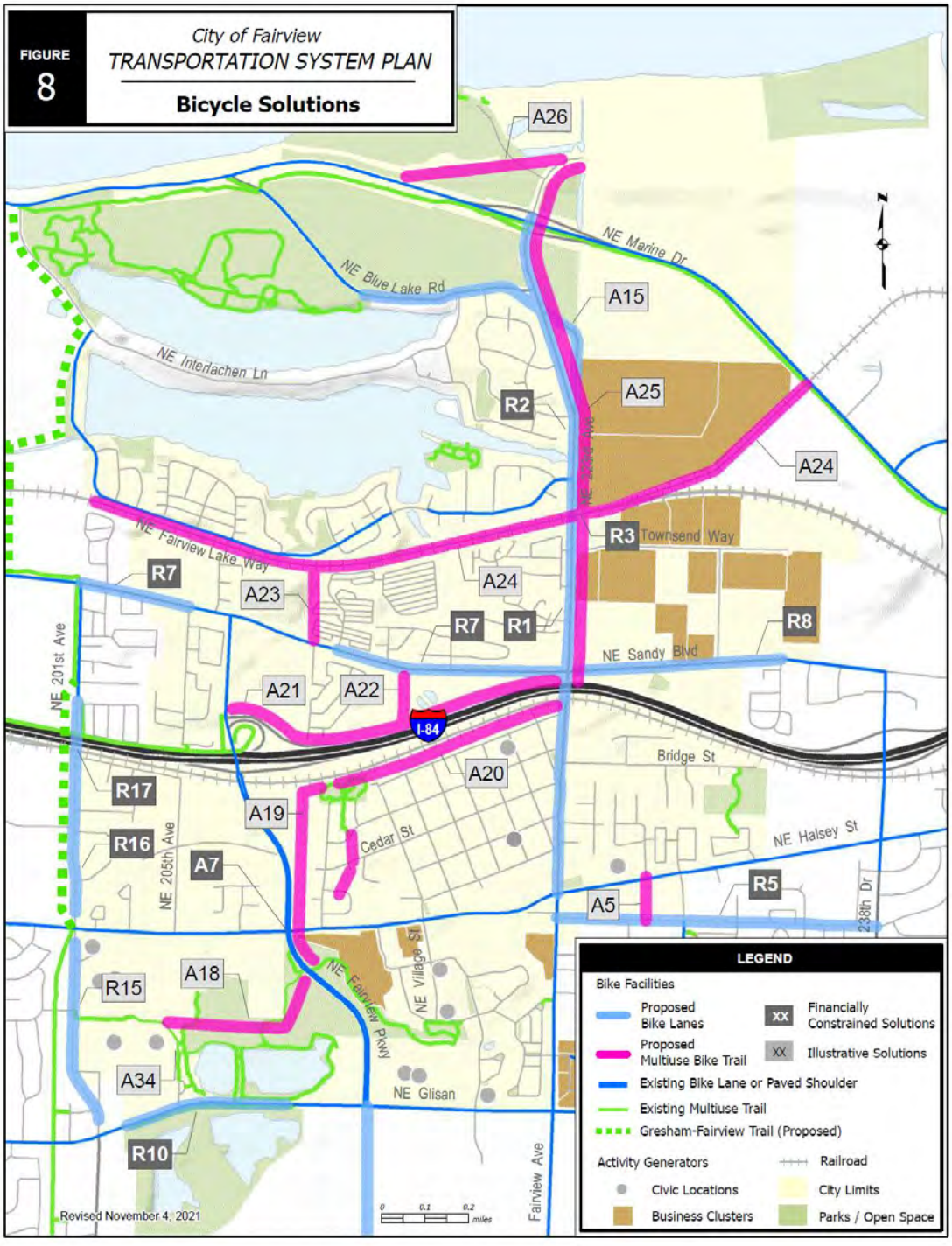


Figure 25. Fairview TSP Proposed Trail Projects: Bicycles

Trails

In addition to the proposed trails shown above in Figure 24 and Figure 25, the Gresham TSP identifies a trail (#BR2) from Halsey Street to Marine Drive as a priority project. The trail runs from Marine Drive along 185th Drive, along Sandy Boulevard from 185th Drive and 201st Avenue and south along 201st Avenue.

The Metro Regional Trails and Greenways Plan notes that regional trails differ from local trails in that they cross neighborhood lines and link cities, counties, and even states. Regional trails are typically separated from roads, making them more pleasant for recreational users and quicker routes for commuters. The Plan identifies the Gresham-Fairview Trail, a "rail-to-trail" that connects the Springwater Trail north to the Columbia Slough and Marine Drive Trails. The trail is 5 miles long and supports walking and biking. A small portion of the trail runs along Sandy Boulevard on the eastern terminus of this project's extent.

The City of Gresham was awarded $4.2 million by Metro funding through its 2025-2027 Regional Flexible Funding Allocation (RFFA) cycle for filling a gap in Gresham-Fairview Trail on 201st Avenue between Sandy Boulevard and Halsey Street and includes a connection to I-84 trail. While this project does not fall within the project area, it provides continuity to an existing paved multi-use path along Sandy Boulevard (Figure 26).

Transit

TriMet Bus Route 21 is a frequent service route serving Sandy Boulevard. The project area has 12 stops with varying levels of ridership. On average, over 200 boardings and unboardings occur within the project area every day.

The bus stops with the highest ridership are located on the west end of the corridor. Bus stops 9723 and 9719 (just west of Fairview Parkway) averaged over 40 daily riders in the fall of 2024 and are located next to the Slavic Evangelical Church Sulamita and the Sulamita Christian Academy, a private school.

Route 21 serves as an important connection for the area to major commercial and industrial employment centers in the region. It connects two major transit centers, Parkrose/Sumner and Gresham Central Transit Center. These centers provide access to MAX, C-TRAN, and Sandy Area Metro.

Table 7. Average Daily Ons and Offs and Distance to Nearest Crosswalk by Stop along Project Extent (Fall 2024)

Closest Intersection	Stop Location ID	Ridership: TriMet Rider Census Average Fall 2024 Total Day Ons and Offs	Distance to Nearest Crosswalk Across Sandy Blvd (Ft)
201st Ave.	9718	30	160
201st Ave.	9724	25	351
Fairview Pkwy.	9723	43	317
Fairview Pkwy.	9719	48	305
Quail Ln.	9717	12	1134
Quail Ln.	9722	12	1127
Arbor Crest Dr.	11773	5	1890
Arbor Crest Dr.	11772	7	1527
223RD Ave.	9776	10	209
223RD Ave.	9775	8	150
230th Ave.	13086	13	517
230th Ave.	13092	9	478
TOTAL AVG DAILY ONs+OFFS on SANDY BLVD.		222	

Many of the stops lack sidewalk connectivity and crosswalks, forcing riders to wait or disembark onto a gravel shoulder and cross a roadway with heavy freight traffic and posted speed limits of up to 40 MPH. Figure 27 illustrates the places along the corridor where sidewalks are partially completed and where gaps remain. Notably, Bus Stop 11773 is 1890 ft (over 1/3 of a mile) away from a crosswalk.

According to the US Department of Transportation, safe and accessible crossing options should be provided at regular intervals—around every 300–400 feet in an urban environment.[6] The Portland Bureau of Transportation (PBOT) calls for crossings at every transit stop within 100 ft: "Moving forward, PBOT practice will be to provide a marked pedestrian crossing at all transit stops, regardless of street classification. Demonstrating existing crossing demand will not be required to justify new marked crossings at transit stops. Marked crossing requirements at transit stops may be implemented by providing new marked crossings at existing transit stops, and/or by strategically relocating or consolidating transit stops such that they are located at existing marked crossings. This will require PBOT capital project managers to collaborate with TriMet to consolidate, relocate, or otherwise confirm stop locations."[7]

[6] McNeil, N., Dill, J., DeVitis, D., Doubleday, R., Duncan, A., & Weigand, L. (2017). *Manual on pedestrian and bicycle connections to transit (FTA Report No. 0111).* Transportation Research & Education Center (TREC) at Portland State University. Federal Transit Administration. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/64496/ftareportno0111.pdf

[7] Portland Bureau of Transportation. *PedPDX Action 1.2*. (2019). https://www.portland.gov/transportation/planning/documents/chapter-6-pedpdx-implementation-toolbox/download

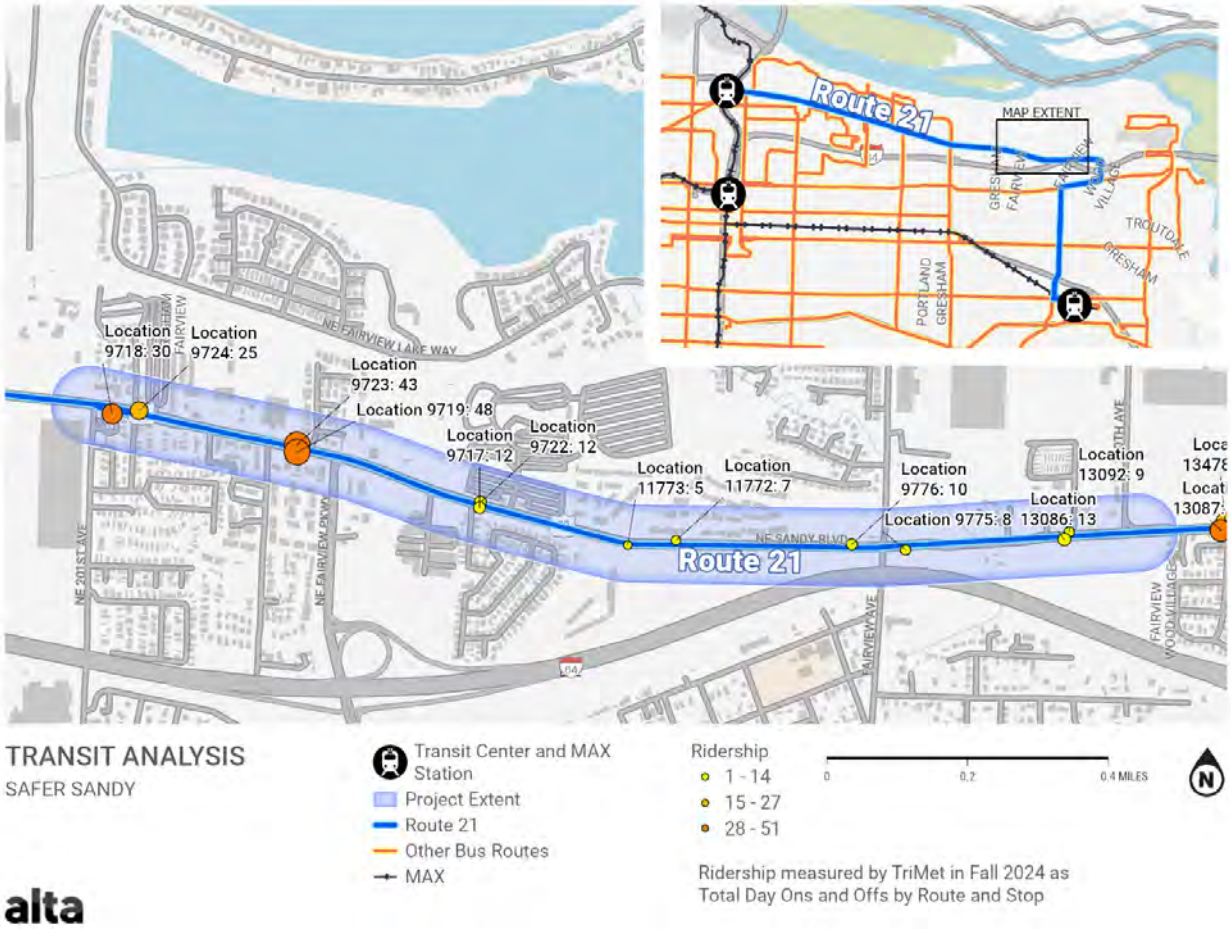


*Figure SEQ Figure * ARABIC 27. Existing transit and known sidewalk gaps*

The TriMet Pedestrian Plan (2020) identifies priorities for improving walking and rolling access to transit across the TriMet service area in the Portland Metro region (Table 8). The Plan defines transit walksheds as the area around a transit stop or station a person can reach by walking or rolling a quarter mile. The Plan analyzed the Future Pedestrian Network (i.e., pedestrian improvements from existing plans) with the region-wide sidewalk inventory and found that the Future Pedestrian Network would not fill all gaps in walking and rolling access to transit. Below is a map from the plan showing high-priority gaps (note, the plan identified five tiers of priority, with Tier 1 being the highest):

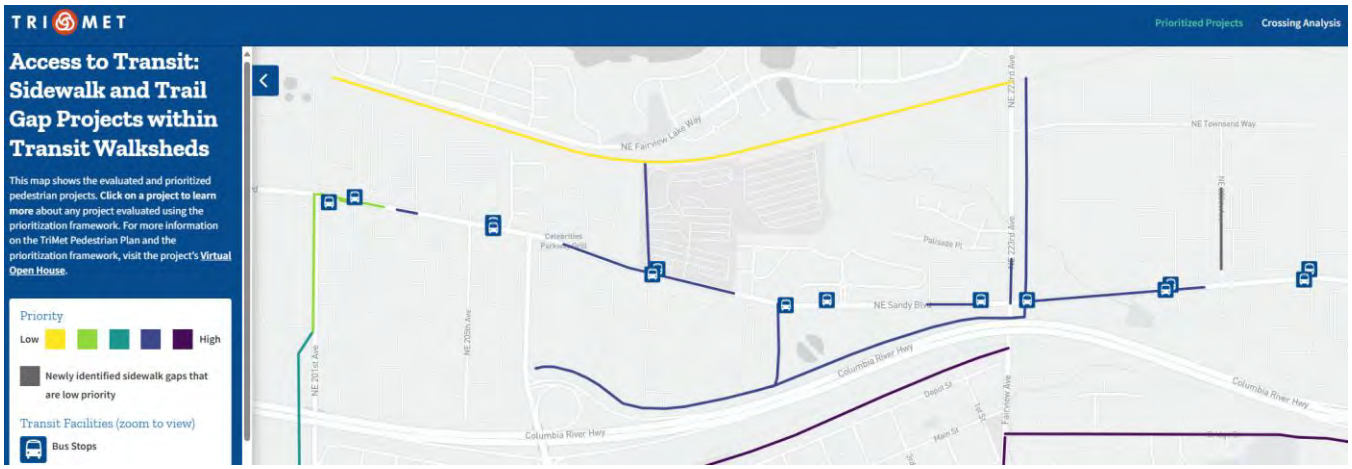


Figure 28. TriMet Pedestrian Plan high-priority gaps

Table 8. Transit project list on or near the Safer Sandy Blvd project area from various plans and programs

Project Location	Project Referenced From	Planning Agency	Project Type	Project Description
Sandy Blvd. & 223rd Ave.	TriMet Pedestrian Plan	TriMet	Transit: Bus Stop	Tier 2 Priority. TriMet Stop ID: 9775 and 9776
22800 Block Sandy Blvd.	TriMet Pedestrian Plan	TriMet	Transit: Bus Stop	Tier 2 Priority. TriMet Stop ID: 13086 & 13092
21100 Block Sandy Blvd.	TriMet Pedestrian Plan	TriMet	Transit: Bus Stop	Tier 2 Priority. TriMet Stop ID: 9717 & 9722
23200 Block Sandy Blvd.	TriMet Pedestrian Plan	TriMet	Transit: Bus Stop	Tier 2 Priority. TriMet Stop ID: 13478

The criteria for identifying the gaps in the TriMet Pedestrian Plan were a lack of sidewalk on both sides of the street, a minimum gap length of 100 feet, and being located within a transit walkshed and along a non-residential street. The gaps identified along Sandy Boulevard are primarily on the east and west of 223rd Avenue and the east of Fairview Parkway. The projects were prioritized using safety, equity, and demand as three overarching criteria to identify high-priority projects in various service areas. Additionally, the Plan calls for stops and stations located in Tier 1 and Tier 2 areas to be considered high-priority locations for assessing crossing gaps at the jurisdictional level.

Review of Existing Programs and Plans for Sandy Boulevard

This section reviews existing transportation plans, policies, guidelines, and regulations related to Sandy Boulevard from 201st Avenue to 238th Boulevard. The review will help the Safer Sandy Boulevard Project build on past and ongoing work by summarizing the most pertinent planning efforts, projects, and regulations that could affect future sidewalk improvements, crosswalks, bike lanes, and drainage improvements in the project area.

The documents reviewed fall into the following general categories:

Local Plans:

- Fairview Transportation System Plan (2016)
- Gresham Transportation System Plan (2013)
- Sandy Boulevard Corridor Refinement Plan (2001)
- City of Fairview Consolidated Stormwater Master Plan Update (2016)

Regional Plans and Strategies:

- Metro's Designing Livable Streets and Trails Guide (2020)
- Metro RFFA
    - Project Application and Allocation
    - Gresham-Fairview Trail
- Metro Regional Trails and Greenways Plan (2014)
- TriMet Pedestrian Plan (2020)
- Multnomah County Roads Capital Improvement Plan
    - 532U: Sandy Boulevard: Gresham City Limits to 223rd Avenue
- Multnomah County Functional Classifications of Roadways (2003)
- Multnomah County Stormwater Management Plan (2010)
- Multnomah County Title VI Program Plan (2022)
- Multnomah County ADA Transition Plan (2023)
- East Multnomah County Safe Routes to School Program
- Columbia South Shore Well Field Wellhead Protection Area Reference Manual (2003, Amended 2017)

Engineering Standards:

- General Conditions for Construction for Multnomah County (2024)
- Multnomah County Design and Construction Manual
- Multnomah County Road Rules (2018)

Findings

Plan Context and Classifications

In the application for Metro's Regional Flexible Funds (RFFA) grant, the primary purpose of the Safer Sandy Boulevard Project is to close an important east-west gap in the regional active transportation network, especially for underserved populations in Fairview and surrounding East County communities. The project has a dual purpose of

improving Sandy Boulevard as a regional freight route and attracting more business to this major employment center. The project is included in the 2018 RTP Constrained list (RTP Project ID # 10399).

The land use assumptions and traffic forecasts in the Fairview Transportation System Plan (Fairview TSP) identify commercial and industrial lands on either side of Sandy Boulevard, west of 223rd Avenue, as an area with the largest employment growth in the city. Some key outcomes by 2035 identified in the Fairview TSP are the multimodal connections, including sidewalk and bicycle lanes, and safety improvements on Sandy Boulevard. The East Metro Connections Plan identifies creating strategic partnerships with the implementers of the Columbia Cascade River District Strategic Plan for projects like Sandy Boulevard that are critical for economic development in East Multnomah County.

Multnomah County Functional Classifications of Roadways recommended the reclassification of Sandy Boulevard from 207th Avenue to the end from major arterial to minor arterial. Minor arterials carry less traffic volume than principal and major arterial streets. They provide major links in the regional road and bikeway networks, provide for truck mobility and transit corridors, and may serve as significant links in the local pedestrian system, especially where they are designed as community boulevards.

Fairview TSP identifies several projects to reduce travel conflicts along Sandy Boulevard, where there are documented safety issues. The TSP also reports that Sandy Boulevard has a collision rate greater than the statewide average for similar facilities, according to ODOT collision data from 2009 to 2013 and traffic volume data. The number of driveways along Sandy Boulevard exceeds the standards recommended by Multnomah County and introduces additional turning-movement conflicts that could compromise safety for all modes. The city considered access management strategies to reduce driveway conflicts along Sandy Boulevard. **The TSP calls for Sandy Boulevard west of 223rd Avenue to have a street design that supports neighborhood activities and safe bicycle and pedestrian travel. By contrast, Sandy Boulevard to the east of 223rd Avenue should support industrial and commercial uses.**

The Gresham Transportation System Plan (Gresham TSP) study area includes two Regionally Significant Industrial Areas that enable the efficient movement of freight. Notably, one of the Regionally Significant Industrial Areas north of Sandy Boulevard limits the type and scale of non-industrial uses and protects the transportation system for the movement of goods to support the areas.

Multnomah County Transportation Division created a Title VI Program Plan in 2022 with a system of policies and procedures to monitor agency and subcontractor compliance, address complaints, and eliminate discrimination when found to exist. The following list documents the implementation activities of the Title VI Program Plan that are relevant to the Safer Sandy Boulevard Project:

- Public engagement
    - Invite and encourage public participation from people of different social, economic, and ethnic groups, in the planning process
    - Ensure meeting times and locations are accessible with logistical support for impacted people
    - Use voluntary self-reporting forms to request demographic statistics from community members
- Design and Engineering / Environmental Activities
    - Depending on the scope, complexity, and impacts of a project, a National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) assessments will be completed.

    - Monitor compliance with Title VI requirements in all aspects of conducting Environmental Impact Statements or Assessments.
    - Provide a comprehensive summary of the demographic and environmental data elements to be considered by the EIS/EIA process to the coordinator.
- Additional guidelines on ROW activities and construction and maintenance activities are also included

The RFFA application for Safer Sandy Boulevard indicated a likelihood of ROW acquisition.

Sandy Boulevard Corridor Refinement Plan emphasizes transportation and land use and identifies solutions to enhance the capacity, appearance, and multimodal function on Sandy Boulevard through the study area. The transportation vision for the arterial corridor is divided into two segments: west of the intersection should support neighborhood activities with active transportation travel; and the east of 223rd should support industrial and commercial uses.

Multimodal Planning and Design Guidance

The Multnomah County Roads Capital Improvement Program proposes reconstructing Sandy Boulevard to minor arterial standards with bike lanes, sidewalks, enhanced pedestrian crossings, drainage improvements, and intersection upgrades at Sandy Boulevard and 223rd Avenue (Figure 29).

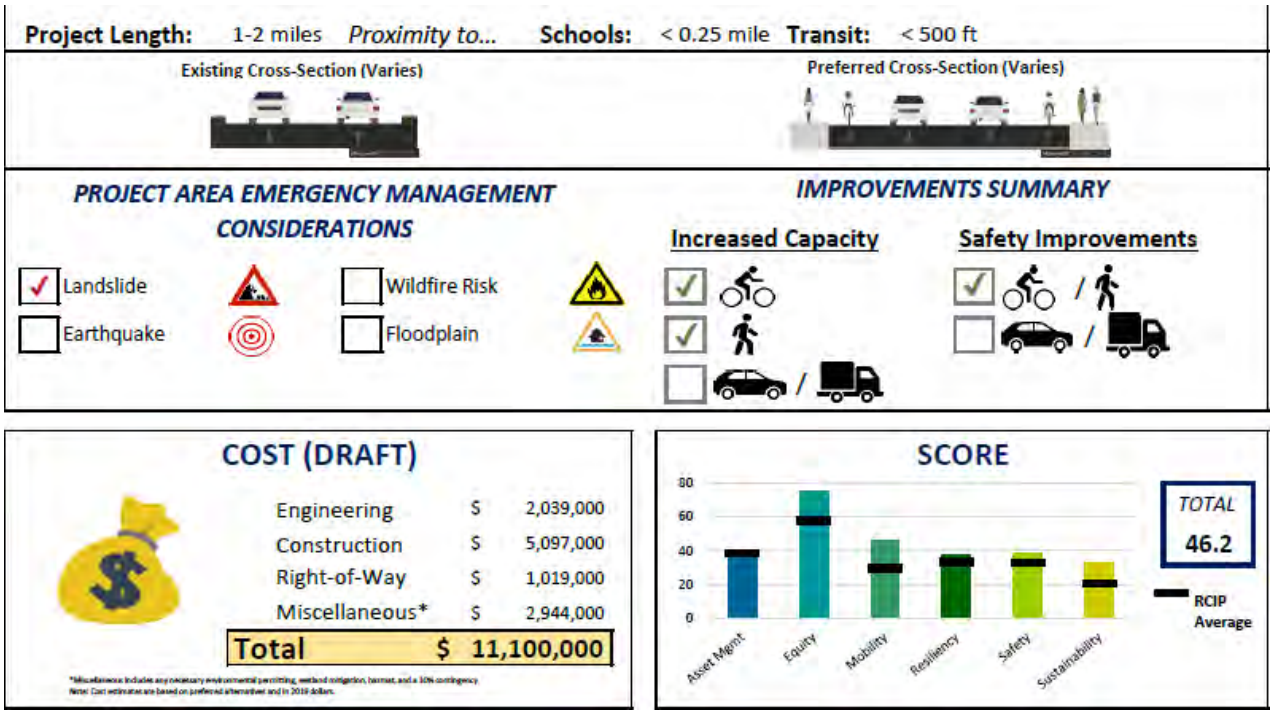


*Figure SEQ Figure * ARABIC 29. Preferred cross-section improvements for Sandy Boulevard in the Multnomah County Roads Capital Improvement Program*

The portion of Sandy Boulevard within Gresham is identified as a major arterial and serves Gresham's Title 4 industrial/employment land. Gresham's TSP notes that major arterials facilitate the high-demand travel needs of Gresham's valuable industrial and employment land uses. For freight purposes, the Metro region identifies primary freight routes using two designation types: main roadway routes (higher volumes and major connections with other regions) and roadway connectors (have lesser volumes, provide connectivity to industrial/employment land, and connect to main roadway routes). Sandy Boulevard is identified as a roadway connector freight route. The major arterial has two 12' auto travel lanes in each direction and a 14' median to accommodate the radii of large freight vehicles, 6' bicycle lanes, 8' planter strips, and 6' sidewalks. A raised median is preferred where it is functionally appropriate for travel safety and mobility.

Metro's Designing Livable Streets and Trails Guide was developed to help implement the 2040 Growth Concept and the RTP. The guide describes various street design elements like sidewalks, medians, transit stops, and stations. The design elements are combined to support various street and trail functions such as modal access and mobility, placemaking and public space, physical activity, and emergency response. Different functions are prioritized depending on the planned land use context and other policies to achieve desired outcomes.

Sandy Boulevard within the project area is identified as a corridor in the 2040 Growth Concept. The Designing Livable Streets and Trails Guide guidelines note that corridors are multimodal streets with frequent transit service linking centers, often serve as regional freight routes, and have commercial, retail, small-scale employment, or housing as

adjacent land uses. The guide assigns various design elements for the regional street classifications and regional trails. The preferred treatment for regional and community streets includes (Figure 30):

- Sidewalks: 6-8 ft unobstructed pedestrian through zone.
- Street corners: Truck apron, two perpendicular curb cuts, and curb extensions.
- Flex zone (space immediately next to the sidewalk): Transit stops and green street treatments.
- Motor vehicle travel lanes: 10 ft and 11 ft lanes. Lanes greater than 12 ft are not preferred.
- Access management: Restricted left-turn access, reducing access points and roundabouts.
- Median: Median refuge island and green streets treatments are preferred in regional and community streets. Additionally, landscaped medians and exclusive transit are preferred on regional streets.
- Speed Management treatments:
    - Regional Street: Median, curb extension, narrow lanes, road reorganization, on-street parking, street trees and street furniture, and pavement markings.
    - Community Street: Curb extension, narrow lanes, roundabout, on-street parking, street trees and street furniture, pavement marking, and raised intersection.
- Bikeways: One-way separated bicycle lanes.
- Transit stops and stations:
    - Placement: Far-side stop and pull-out stop.
    - Bikeway design: Bicycle bypass and separated bicycle lanes.
- Transit priority treatments
    - Regional Street: Transit-only lanes, part-time transit-only lanes, queue jumps, transit signal priority, and signal progression.
    - Community Street: Part-time transit-only lanes and transit signal priority.
- Enhanced and midblock crossings: Median refuge island, enhanced signage, high-visibility crosswalk, curb extension, and pedestrian scale lighting.
- When trade-offs exist in constrained spaces, pedestrian access, bicycle mobility, and transit mobility should be prioritized.

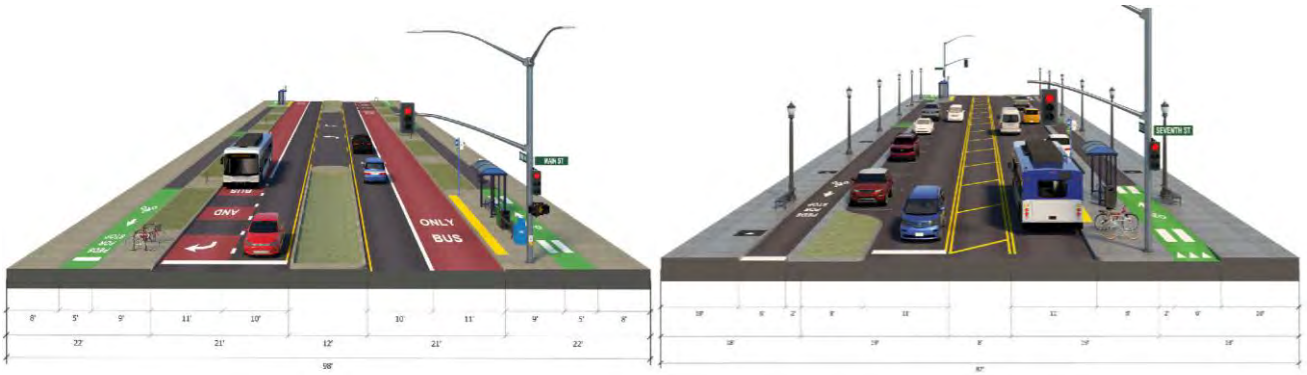


Figure 30. Potential street design cross section for regional streets (left) and community streets (right) classifications in the Designing Livable Streets and Trails Guide

The Sandy Boulevard Corridor Refinement Plan proposes street standards that apply to improvements within the ROW of Sandy Boulevard within the city limits of Fairview and Wood Village. The Plan recommends minor arterial street design standards for different street facilities: 11 ft for vehicle lane widths, 5 ft for bike lanes, 6-12 ft for sidewalks, 6 ft for landscape strips, and 14 ft for medians and turn lanes. The developments of Sandy Boulevard should comply with the Multnomah County Design and Construction Manual for minor arterial facilities. In alignment with the vision of the Plan, two lighting districts have been established, with Fairview Creek acting as the boundary between the districts, enhancing safety and acting as a unifying architectural element.

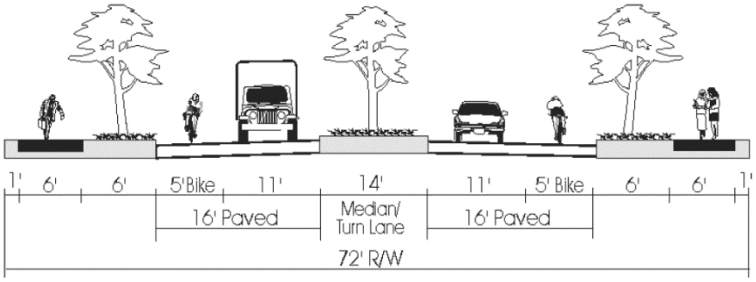


Figure 31 shows the street cross section without on-street parking and assumes the standard center median would be transitioned to left-turn pockets at intersections.

Figure 32 shows the other cross section without on-street parking and with a "Green Streets" median that can be applied in constrained access spaces. This cross section can be applied to any length of the corridor and can help reduce storm drainage impacts.

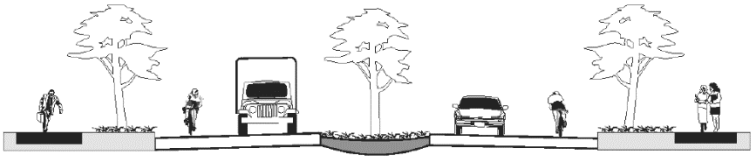


Table 9 compiles multimodal projects identified on or near the project area from various plans and programs.

*Figure SEQ Figure * ARABIC 32. Sandy Boulevard cross section without on-street parking and with "Green Streets" median in Sandy Boulevard Corridor Refinement Plan*

Table 9. Multimodal project list on or near the project area from various plans and programs

Project Location	Project Referenced From	Planning Agency	Project Type	Project Description
Sandy Blvd.: West of 223rd Ave.	Fairview TSP	City of Fairview	Multimodal Improvements	Street design that supports neighborhood activities and safe bicycle and pedestrian travel and meets Multnomah County standards.
Sandy Blvd.: East of 223rd Ave.	Fairview TSP	City of Fairview	Multimodal Improvements	Fairview TSP notes the East Metro Connections Plan that identifies a need for bike lanes, sidewalks, on-street parking, and four vehicle lanes.
Sandy Blvd. Reconstruction: 201st Ave. to 230th Ave.	Fairview TSP	City of Fairview	Multimodal Improvements	Reconstruct to minor arterial standards with bike lanes, sidewalks and drainage improvements utilizing recommendations from TGM grant.
Sandy Blvd.: 230th Ave. to 238th Ave.	Fairview TSP	City of Fairview	Multimodal Improvements	Improvements to correct substandard conditions.
Sandy Blvd.	Fairview TSP	City of Fairview	Multimodal Improvements	Address significant sidewalk gaps and limited crossing opportunities and significant gaps in the bicycle facilities network.
Sandy Blvd. Safety Study	Fairview TSP	City of Fairview	Safety Study	If safety issues remain after implementing corridor improvements, conduct a study to further analyze issues on Sandy Blvd. and identify improvements (low priority).
Sandy Blvd. Complete Street: 201st to Quail Hollow	Multnomah County Project List for 2023 RTP	Multnomah County	Multimodal Improvements	Fill gaps in sidewalks and bike lanes and add enhanced crosswalks and transit access improvements. This project will use proven safety countermeasures to reduce conflicts between freight and neighborhood use. Also includes replacing a culvert for fish passage.
223rd Ave. (Glisan St. to Sandy Blvd.): Complete Street	Multnomah County Project List for 2023 RTP	Multnomah County	Multimodal Improvements	RTP Project #: 10388 (2023-2030 Constrained Project List) Reconstruct 223rd Ave to 2 travel lanes, center turn lane/median, sidewalks, bicycle lanes, and intersection improvements and improve safety using proven safety countermeasures. (501U, 502U).

Project Location	Project Referenced From	Planning Agency	Project Type	Project Description
Sandy Blvd. Complete Street: 201st to Quail Hollow	Multnomah County Project List for 2023 RTP	Multnomah County	Multimodal Improvements	RTP Project #: 10399 (2023-2030 Constrained Project List) Fill gaps in sidewalks and bike lanes and add enhanced crosswalks and transit access improvements. This project will use proven safety countermeasures to reduce conflicts between freight and neighborhood use. Also includes replacing a culvert for fish passage.
Sandy Blvd Complete Street: Quail Hollow to 230th	Multnomah County Project List for 2023 RTP	Multnomah County	Multimodal Improvements	RTP Project #: 12223 (2023-2030 Constrained Project List) Reconstruct Sandy Blvd. to minor arterial standards with bike lanes, sidewalks, and drainage improvements, utilizing recommendations from TGM grant. Addition of bike lanes and sidewalks will improve safety of this area and reduce conflict among modes. To address safety and reduce crashes the project will use proven safety countermeasures.
223rd Ave. (Sandy Blvd. to 40 Mile Loop): Complete Street	Multnomah County Project List for 2023 RTP	Multnomah County	Multimodal Improvements	RTP Project #: 10389 *(2031-2045 Constrained Project List) Improve 223rd Ave. to major collector standards including 2 travel lanes, center turn lane/median, sidewalks, bicycle lanes; to address safety and reduce crashes the project will use proven safety countermeasures. Project includes replacing a culvert for fish passage. (10394) (503U).
Sandy Blvd.: Gresham City Limits to 223rd Ave.	Multnomah County Roads CIP	Multnomah County	Multimodal Improvements	Reconstruct Sandy Blvd. to minor arterial standards with bike lanes, sidewalks, enhanced pedestrian crossings, and drainage improvements. Project includes replacing a culvert (#4920) that is identified as a 5-year priority for reconstruction to improve fish passage. Project also includes intersection upgrades at Sandy Blvd. and 223rd Ave.

Safe Routes to School

Multnomah County operates a Safe Routes to School Program with a designated coordinator. The project is in the Reynolds School District. The East Multnomah County SRTS Program works with partners to offer bike and pedestrian education, walk and roll events, and coordinate with the school districts about site circulation issues and needed on-street improvements. Figure 33 shows the location of Safe Routes to School projects near the project area, the most relevant being the 223rd Avenue Safe Routes to School Project with ADA Ramps and Sidewalk Infill (#28).

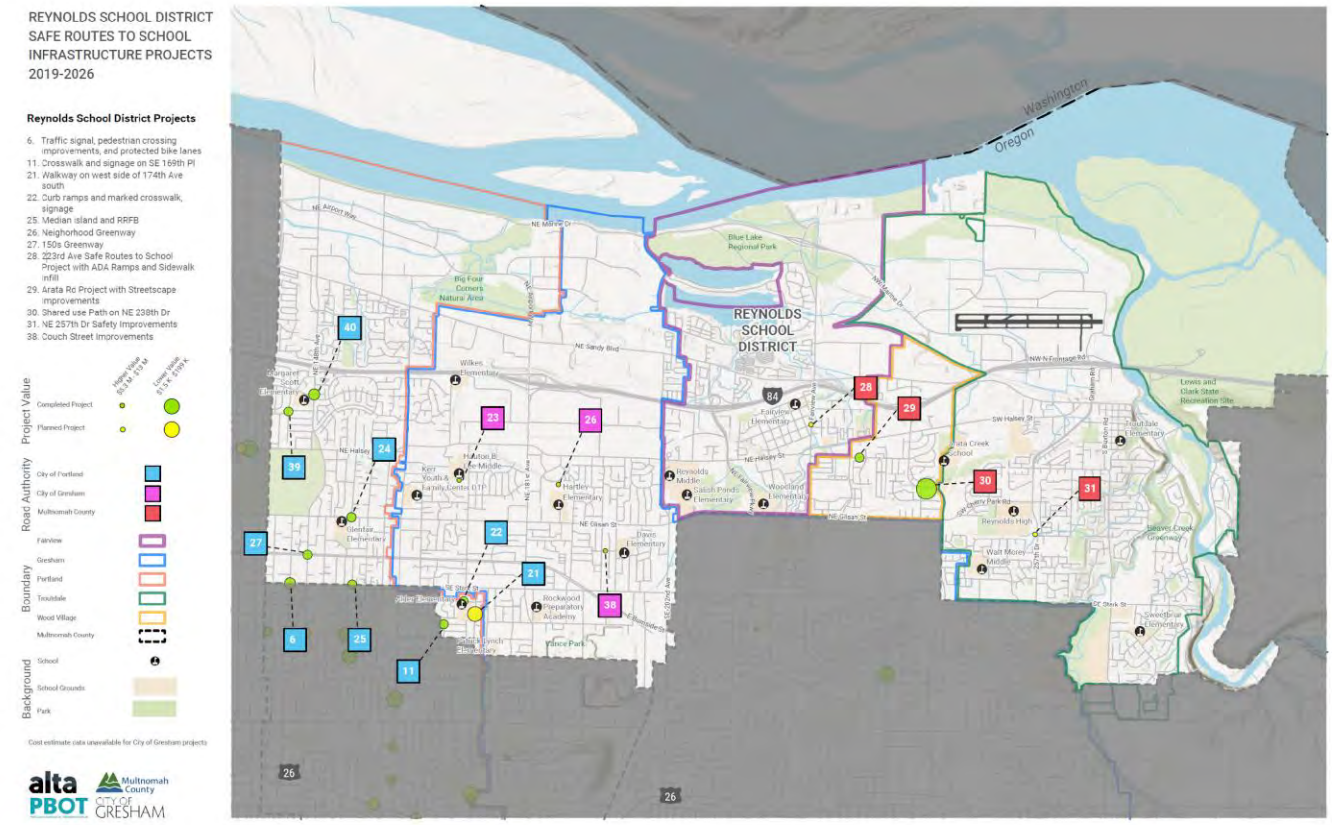


Figure 33. Safe Routes to School Projects Near the Project Area

Engineering Standards

In addition to past plans and policies, the following Multnomah County engineering and design standards documents were reviewed:

- General Conditions for Construction for Multnomah County (2024)
- Multnomah County Design and Construction Manual
- Multnomah County Design Standards - Traffic Planning
- Multnomah County Road Rules

Multnomah County's design standards offer a detailed overview of traffic planning principles and geometric design requirements for roadways within the county. These standards encompass various aspects of road development, including the classification of roadways by function, the design treatments applicable to these classifications, and the procedures for conducting traffic impact studies. Furthermore, the documents outline guidance critical for the Safer Sandy Boulevard project, such as access management strategies, standards for intersection and driveway spacing, geometric design elements like cross sections, sight distances, and horizontal/vertical alignments. Finally, these documents cover elements of traffic engineering design, such as signing, pavement marking, and considerations for pedestrian and transit facilities, alongside surveying requirements during road projects.

Technical Corridor Analyses

Topography and Natural Resources Analysis

Otak provided aerial topographic mapping for the preliminary design phase of the Safer Sandy Boulevard project. Otak prepared a base map in AutoCAD 2022 Civil 3D showing the aerial topographic data and other natural features. This data will be used in future design work for the project.

To view the full memorandum documenting the survey work for Task 2.3, see Appendix A: Sandy Boulevard Existing Conditions Survey (Tasks 2.3 and 2.7).

Figure 34. Surveyed Basemap Data including Digital Terrain Model and Features (Task 2.3), Preliminary Centerline and Preliminary ROW (Task 2.7)

Preliminary Right-of-Way Centerline and Cross Section Standards

Otak provided a preliminary ROW centerline and roadway cross sections (Task 2.7) for the preliminary design phase of the Safer Sandy Boulevard project. Using the preliminary ROW and centerline data, Otak prepared a base map in AutoCAD 2022 Civil 3D. This data will be used in future design work for the project.

To view the full memorandum documenting the survey work for Task 2.7, see Appendix A: Sandy Boulevard Existing Conditions Survey (Tasks 2.3 and 2.7).

Existing Stormwater Conveyance Analysis

Otak reviewed available information and conducted a site visit to document the existence and condition of existing stormwater infrastructure through the Safer Sandy Boulevard project corridor. Runoff from the project corridor generally drains to Osborne Creek and Fairview Creek. Portions of the corridor are curbed to direct stormwater to catch basins and underground pipe conveyance system; some sections shed to ditches. Accommodating potential roadway widening will be challenging due to steep embankment slopes; however, there are opportunities to site stormwater facilities to meet Multnomah County stormwater requirements (Figure 35).

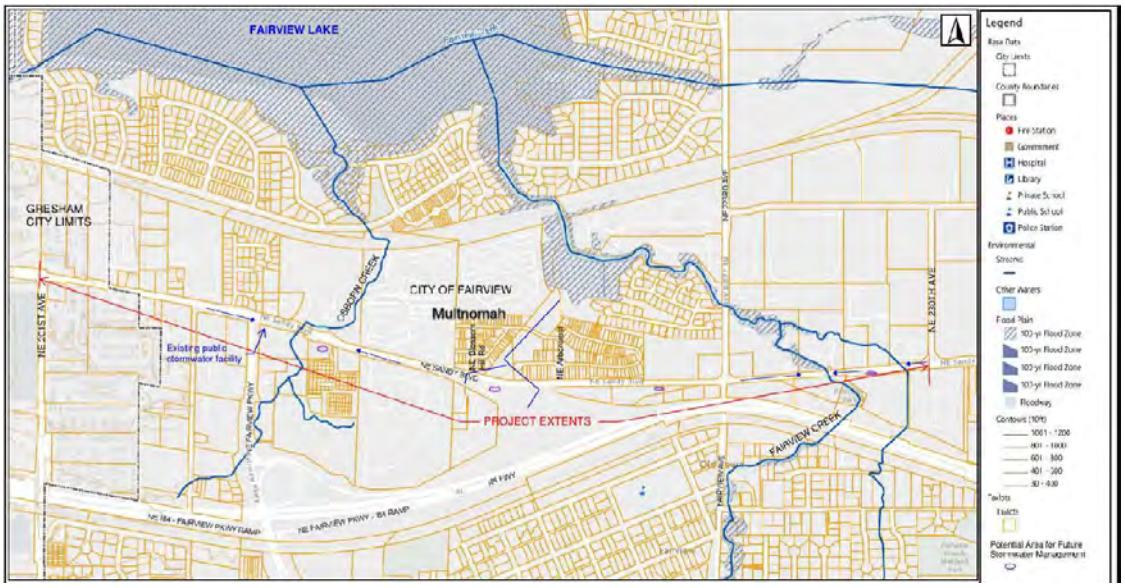


Figure 35. Drainage Features within Sandy Boulevard Project Extents

Drainage, Stormwater and Groundwater

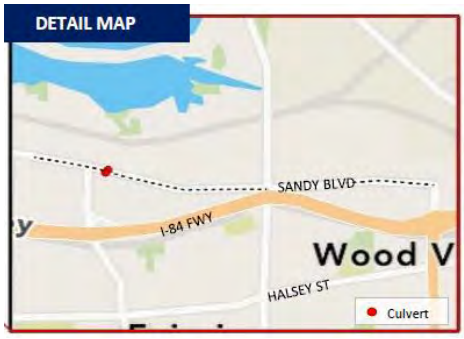
The Safer Sandy Boulevard RFFA application noted that there are fish-bearing streams and associated flood zones in the project area, and the project development will further identify any other permitting requirements. However, no environmental permitting has been scoped or completed. Water quantity, stormwater management, and removing nonpoint source pollution are part of the County standard and will be included in the project development.

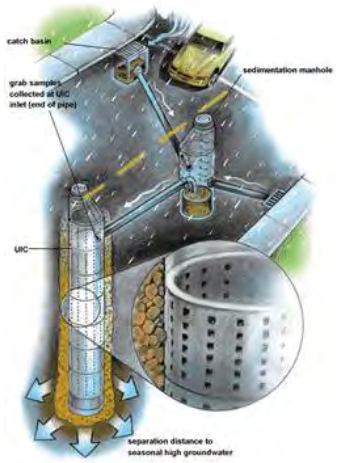
Multnomah County Stormwater Management Plan provides a list of best management practices, which outline the specific tasks the County will conduct to reduce stormwater pollution to the maximum extent practicable. The relevant best management practices for this project may include:

- Public involvement and education: Inform and educate the public about stormwater pollution, the need for stormwater management, and the need to encourage active participation in pollution reduction efforts.
- Operations and maintenance: Reduce pollutants in discharges from streets.
- Natural systems: Conduct Vegetation Management Activities and Specify Native Vegetation in ROW and Permitted Projects.
- New development: Regulate Stormwater Discharge.

The Columbia South Shore Well Field Wellhead Protection Area Reference Manual outlines groundwater protection requirements within the Columbia South Shore Well Field Wellhead Protection Area. The protection area includes the cities of Fairview, Gresham, and Portland, which have all adopted the manual. The project falls under Zone 2 of the protection area. In the manual, transportation routes are paths used to transport hazardous materials onto, off, or within a site, including streets and alleys, and publicly or privately owned rail lines. Reconstruction of existing transportation routes because of a development permit application is subject to the requirements that include standards for pavement material, drainage collection system with curbs and gutters, berm systems or slopes, and drainage conveyance system consisting of the conduits that collect runoff from the Hazardous Material transportation routes. There are Underground Injections Controls (UIC) installed by ODOT prior to County ownership of Sandy Boulevard between 201st and 207th Avenues. Upgrades to Sandy Boulevard should include pre-treatment retrofits to these UICs as these UICs are in the Columbia Wellfield protection area.

The Multnomah County Roads Capital Improvement Program identified reconstructing a culvert (#4920) as a 5-year priority to improve fish passage (see Figure 36).





To view the full report documenting the stormwater infrastructure (and potential areas for future stormwater management) within the public ROW along the Sandy Boulevard corridor, see Appendix B: Existing Stormwater Conveyance Analysis (Task 2.8).

Utility Location and Coordination

The project team gathered data available from various sources to document the existence of utility infrastructure within the public ROW along the Safer Sandy Boulevard project corridor. In general, the corridor includes utilities managed by public agencies, overhead electrical infrastructure, underground gas mains, and communication service networks. Underground utilities are sparse; only gas and water lines run the entire length of the corridor. Wooden utility poles line the entire south side of the roadway, with intermittent segments on both sides, requiring relocation for roadway widening. Additionally, while not directly impacted, a large aerial transmission overcrossing will require significant coordination during construction.

The City of Gresham, Fairview, Multnomah County, and Rockwood PUD all have water and stormwater utilities along the corridor. The project team contacted ODOT Electrical to coordinate on traffic signal and lighting infrastructure within the corridor. It was confirmed that Multnomah County owns the traffic signals and lighting in the project area and the City of Gresham is responsible for system maintenance. NW Natural Gas has supply lines ranging from 4-inch to 12-inch mains, and critical high-pressure gas transmission lines will require detailed survey and potholing for design integration.

Electric power infrastructure is managed by both PGE and Pacific Power, with overhead power lines and shared utility poles spanning the corridor. In addition, PGE confirmed multiple underground conflicts that will need coordination throughout preliminary and final design. Comcast, Astound Broadband, Ziply, Zayo, and CenturyLink (Lumen) provide telecommunications services, with some underground and overhead lines requiring further field verification. Townsend Farms, an adjacent property owner, has potential irrigation and water service lines that need further investigation.

While substantial progress has been made in utility coordination, continued engagement with service providers, field verification, and integration of updated utility maps into the project design will be necessary to mitigate conflicts and ensure seamless project execution. To view the full report documenting the facilities associated with existing public and private utilities within the public ROW along the Sandy Boulevard corridor, see Appendix C: Utility Location and Coordination (Task 2.9).

Photometric Analysis

The existing lighting conditions along Sandy Boulevard were evaluated between 201st Avenue and 230th Avenue. Light levels at intersections and roadway segments within the project area were analyzed. The target light level values for intersections and segments were based on the functional classification of the roadways and the Multnomah County Mid County Roadway Lighting Design Standards. A low level of pedestrian activity was assumed throughout the entire project area due to the adjacent residential uses.

Along Sandy Boulevard, within the project limits, there is a mix of cobra head style and ornamental post top luminaires. The cobra head style luminaires are mounted on utility poles, predominantly located on the south side of Sandy Boulevard, with mounting heights ranging from 30 to 35 feet. The post-top luminaires are situated on the north side of Sandy Boulevard between Quail Access Road and 223rd Avenue, all with an assumed mounting height of 16 feet.

An analysis of the existing lighting conditions was conducted using the AGI32 lighting software package. The illuminance method of calculation was used for this analysis. The existing lighting analysis indicates that more than half of the locations do not meet the minimum average maintained light level requirements, and the uniformity values at most intersections and roadway segments are higher than the recommended values. Only the intersection of Sandy Boulevard and 205th Avenue meets both the minimum average maintained light levels and uniformity values. Figure 34 provides a summary map of the existing lighting conditions compared to the target light levels.

Figure 38. Existing Light Levels and Uniformity Map

To view the full report documenting the current lighting conditions along the corridor and comparing them with the Multnomah County Lighting Design Standards to identify any deficiencies in intersection and roadway lighting, view Appendix D: Photometric Analysis (Task 2.10).

Pavement Surface Services

The project team conducted a coordinated geotechnical and pavement review study to inform the planning process for the project area. The following is a list of the activities conducted as part of the pavement review study:

- Collected and reviewed existing geologic and geotechnical literature in the project vicinity.
- Completed a geologic site walk and a pavement distress survey.

- Reviewed the pavement design based on Multnomah County Road Standards and 2019 ODOT Pavement Design Guide (State of Oregon, Department of Transportation, Pavement Services Unit, 2019) and the AASHTO Guide for Design of Pavement Structures (American Association of State Highway and Transportation Officials, 1993).

The recommendations in the report are summarized below:

Pavement Distress Survey

The existing pavement was visually surveyed to characterize surface distress, with specific attention given to identify areas of distress indicative of structural or subgrade failure. Table C1 of Appendix C in the report summarizes the various failure modes of the pavement:

Outer Sandy Boulevard (NE 201st Avenue to NE 230th Avenue)
Multnomah County 24-162-1
ALTA Project Number: 2024.0002024.162

Table C1: Summary of Pavement Distress Survey

Street	Sandy Blvd		Sandy Blvd		Sandy Blvd		Sandy Blvd		Sandy Blvd		Sandy Blvd		Sandy Blvd		Sandy Blvd		Sandy Blvd		Sandy Blvd	
Station	324+30 - 332+30		332+30 - 334+00		334+00 - 347+60		347+60 - 353+00		353+00 - 360+50		360+50 - 375+40		375+40 - 384+75		384+75 - 387+50		387+50 - 402+60		402+60 - 405+40	
Distress Mode	EB Lane	WB Lane	EB Lane	WB Lane	EB Lane	WB Lane	EB Lane	WB Lane	EB Lane	WB Lane	EB Lane	WB Lane	EB Lane	WB Lane	EB Lane	WB Lane	EB Lane	WB Lane	EB Lane	WB Lane
Rutting	zero	low	zero	zero	zero	zero	zero	zero	zero	zero	zero	zero	zero	zero	zero	zero	zero	zero	zero	zero
Fatigue Crack Severity	Low to Moderate	Low to Moderate	Low to Moderate	Moderate to High	Low to Moderate	Low to Moderate	Moderate	Moderate	Moderate	Moderate	Sealed	Low to Moderate	Low to Moderate	Low to Moderate	Low to Moderate	Low to Moderate	Low	Low	Low	Low
Longitudinal Crack Severity	Moderate	Moderate	Low to Moderate	Moderate to High	Low to Moderate	Low to Moderate	Sealed	Sealed	Sealed	Sealed	Sealed	Sealed	Low to Moderate	Low to Moderate	Low to Moderate	Low to Moderate	Low	Low	Low	Low
Transverse & Block Crack Severity	Low	Low	Moderate	Moderate	Low to Moderate	Low to Moderate	Sealed	Sealed	Sealed	Sealed	Sealed	Sealed	Low	Low	Low	Low	Low	Low	Low	Low
Patching Severity	Low to Moderate	Low to Moderate	Moderate	High	Low to Moderate	Low to Moderate	Moderate to High	Moderate to High	Low	Low	Low	Low	Low to Moderate	Low to Moderate	Low	Low	Low	Low	Low	Low
Pothole Severity	Low	Moderate	Moderate	High	Low to Moderate	Low to Moderate	Moderate	Moderate	None	None	None	None	Low	Low	Low	Low	None	None	None	None
Raveling Severity	Low to Moderate	Low to Moderate	Moderate	Moderate to High	Low to Moderate	Low to Moderate	Moderate	Moderate	Low to Moderate	Low to Moderate	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Bleeding	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

We also reviewed the PCI data provided by Multnomah County from their GIS database. The PCI rating from 201st Avenue to 207th Avenue is 40.1, which indicates that the pavement is in poor condition. This area should be further evaluated by additional coring and testing to determine whether a full reconstruction or pavement overlays are required. The PCI of the pavement from 207th Avenue to 223rd Avenue is indicated as 52.8 which is at the borderline between poor to fair. This area should also be further evaluated for overlays and/or full reconstruction. The PCI of the pavement from 223rd Avenue to 230th Avenue is indicated as 76.6 which is satisfactory and therefore no repairs are required.

Traffic Loading

Traffic volumes and estimated truck and bus activity were used to calculate a range of design loadings (ESALs), with a minimum of 2.1 million ESALs assumed per County standards.

Subgrade Resilient Modulus

Given our experience in the area, the description of the Web Soil Survey, and existing well logs, the preliminary pavement section recommendations use an effective subgrade modulus of 4,000 psi. Section 4.1 of the Multnomah County Design and Construction Manual uses a subgrade resilient modulus of 3,800 psi for “Pavement Standard Sections.”

Pavement Design Parameters

Design inputs—including ESALs, reliability, and material coefficients—were defined by Multnomah County and ODOT guidance. See Table 2 in the report for more information.

Recommended Pavement Section – Pavement Widening

New pavement recommendations include 2” ACP wearing course, 5–7” ACP base course, 16–17” aggregate base, and subgrade geotextile, with pavement thickness varying based on truck traffic percentage.

Grind and Inlay Recommendations

Though not planned, a 2-inch pavement inlay is recommended for cost estimating where matching to new pavement may be necessary.

Subgrade Stabilization

If the subgrade cannot be compacted, stabilization should include 12 inches of dense aggregate base over geotextile.

Recommended Materials and Specifications

Specifications follow 2024 ODOT standards, covering materials like geotextile, aggregate base, ACP, tack coat, and binder (PG 64-22).

Pedestrian Sidewalks and Shared-Use Paths Using Permeable Pavement

If permeable pavement is used, recommended sections include 6” permeable pavement over 6” permeable base; standard concrete sidewalks should have a 4” concrete layer over 6” aggregate base.

Appendix A: Sandy Boulevard Existing Conditions Survey (Tasks 2.3 and 2.7)

Appendix B: Existing Stormwater Conveyance Analysis (Task 2.8)

Appendix C: Utility Location and Coordination (Task 2.9)

Appendix D: Photometric Analysis (Task 2.10)

Appendix E: Fairview Meadows Apartments Development Plans

Appendix F: Preliminary Geotechnical and Pavement Review Report (Task 2.11)