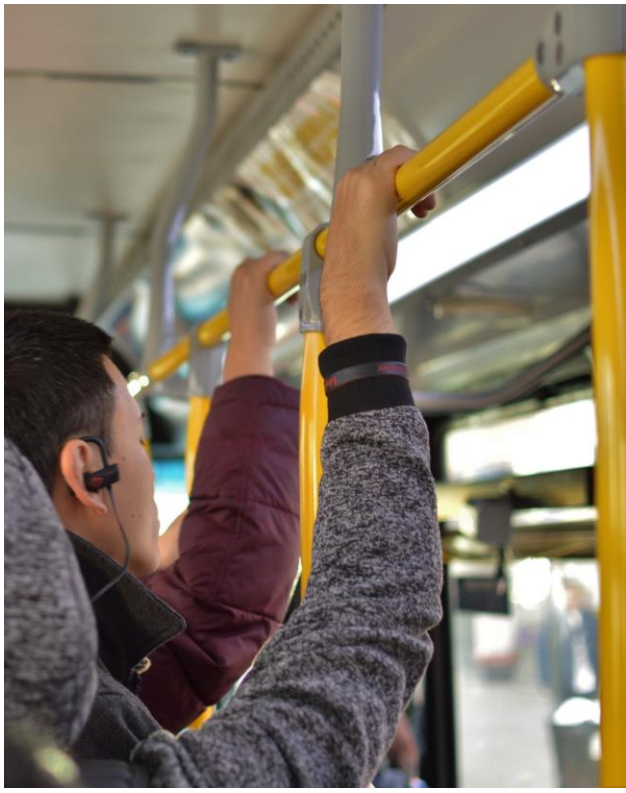
CITY OF SAMMAMISH

# Citywide Transit Plan



JANUARY 2024



City of Sammamish Washington

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# Introduction

The Sammamish Transit Plan evaluates the existing and future transit system in Sammamish, taking into consideration access to transit, transit speed and reliability, and transit-related safety. The result is a list of capital projects which the City can further develop and implement to improve the transit experience in Sammamish. The Transit Plan is a result of extensive public involvement and feedback, ensuring that the voices of the community were not only heard but actively integrated into the decision-making process.

Throughout the project, several intermediate documents were completed. Each is summarized in this Transit Plan and included in the Appendix to this Plan. They are:

1. Existing Conditions Report
2. Future Conditions Gaps Analysis
3. Equity Analysis
4. Transit Level of Service Guidelines

The Transit Plan development incorporated public outreach through workshops, surveys, and the formation of a dedicated Community Advisory Committee (CAC). Public feedback was gathered through an interactive map on the project website, powered by Social Pinpoint, which facilitated direct input from community members. Concurrently, the Technical Advisory Committee (TAC) provided expert insights, representing entities such as Sound Transit, the City of Issaquah, King County Metro, and Puget Sound Regional Council (PSRC).

Ultimately, these efforts resulted in the identification of six key projects intended to enhance transit access, improve transit speed and reliability, and bolster transit-related safety within Sammamish. The projects reflect a commitment to a transit infrastructure that not only meets the current needs but paves the way for a sustainable and connected future.

# Chapter 1: Existing Conditions

Existing conditions within Sammamish were evaluated to establish an understanding of how the current public transportation network is serving the public. The existing conditions assessment included a review of existing transit-related planning documents, an analysis of Sammamish's demographic characteristics, an inventory of current transit services, and an evaluation of transit operational performance. The full Existing Conditions Report is available as Appendix A to this Plan.

## EXISTING PLANS

First, the project team reviewed previously published plans from the City of Sammamish, King County Metro, Sound Transit, and Puget Sound Regional Council (PSRC) to gain familiarity with forthcoming projects and adopted policy goals as it relates to transit. The key results of this document review related to infrastructure projects along the transit route are as follows:

### CITY OF SAMMAMISH TRANSPORTATION IMPROVEMENT PLAN (TIP)

- The City's 2024 – 2029 TIP includes two planned transportation projects along existing transit corridors. Each project is five years or more from completed construction. These projects include:
    - Issaquah-Pine Lake Road Widening [TR-02] – The existing two-lane cross-section will be widened to allow for an urban three-lane cross section with curb, gutter, sidewalks, bike lanes, landscape strips, center turn lanes, and raised landscaped center median in certain locations. The project also includes a new signal with crosswalk at SE 37th Place, a new signalized intersection to replace the roundabout at SE 32nd, and a transition to 5-lanes between SE Klahanie Blvd and SE 44th St. The design work is planned to resume and reach completion in 2029.
    - Sahalee Way Widening [TR-115(05)] – The project begins with a Corridor Study to examine the corridor as a whole and compare alternatives that best align with Transit Plan, updates to the Comprehensive Plan, and other policy objectives. The study will result in a Corridor Plan with phasing of separate construction projects. The resulting selected alternative may generally plan for the existing two-lane cross-section to be widened to allow for a three-lane street section with one travel lane in each direction, center median island or turn lanes, bike lanes, planter strips, and sidewalks. Signalization is also being considered for intersections located at NE 28th Place / 223rd Avenue NE intersection, and NE 36th Street. The 30% design of the priority Phase 1 project will be completed in 2025 following approval of the Corridor Plan by Council.

### PSRC REGIONAL TRANSPORTATION PLAN (RTP)

- PSRC's Regional Transportation Plan (RTP) is updated every four years. The latest plan was adopted on April 28, 2022 and implements the policies and goals in VISION 2050. Appendix D2 of the RTP is the Regional Capacity Project List. Included in this document are two

transportation improvement projects within Sammamish which are labeled as "candidate", which means they have not yet been approved within the Regional Transportation Plan (RTP). The two projects are as follows:

- 228th Avenue SE Capacity Improvements – This project includes widening 228th Avenue SE to five lanes along with adding striped or buffered bike lanes, curb, gutter and sidewalk/boardwalk, intersection improvements at SE 40th Street, and signalization of the Providence Heights Loop intersection. The Regional Capacity List estimates that the project will be completed in 2026, but project scoping, timing, and budget have not yet been determined.

- Sahalee Way NE Capacity Improvements – This project includes widening Sahalee Way NE to three to five lanes along with adding buffered bike lanes, curb, gutter, sidewalk, intersections improvements, and signalization of the NE 28th Place intersection. It is estimated that the project will be completed in 2030. This project is also included in the City's TIP. A corridor study is planned for 2024 to allow the City to determine the improvements necessary and a phasing approach for this corridor.

### SOUND TRANSIT'S ST3 PLAN

- The ST3 plan proposes an expansion and improvement of Sound Transit's existing light rail service including new service that extends to both Issaquah in 2044 and Redmond in 2025.

- The ST3 plan proposes a new North Sammamish Park and Ride with up to 200 parking spaces. The opening of this facility is expected in 2045.

## EXISTING TRANSPORTATION PATTERNS

The project team used the latest available US Census data to develop an understanding of Sammamish's demographic characteristics and how those attributes relate to transit usage. As shown in Figure 1, for commute trips, 5.7% of Sammamish residents use transit, while the majority of people drive alone at 60%. The next highest commute mode choice is work from home at 24.6%. These workers do not use transportation services for regular commuting. Figure 1 also shows the commute mode share excluding people who work from home. It is notable that the drive alone proportion increases to 79.6% once non-commuters are removed.

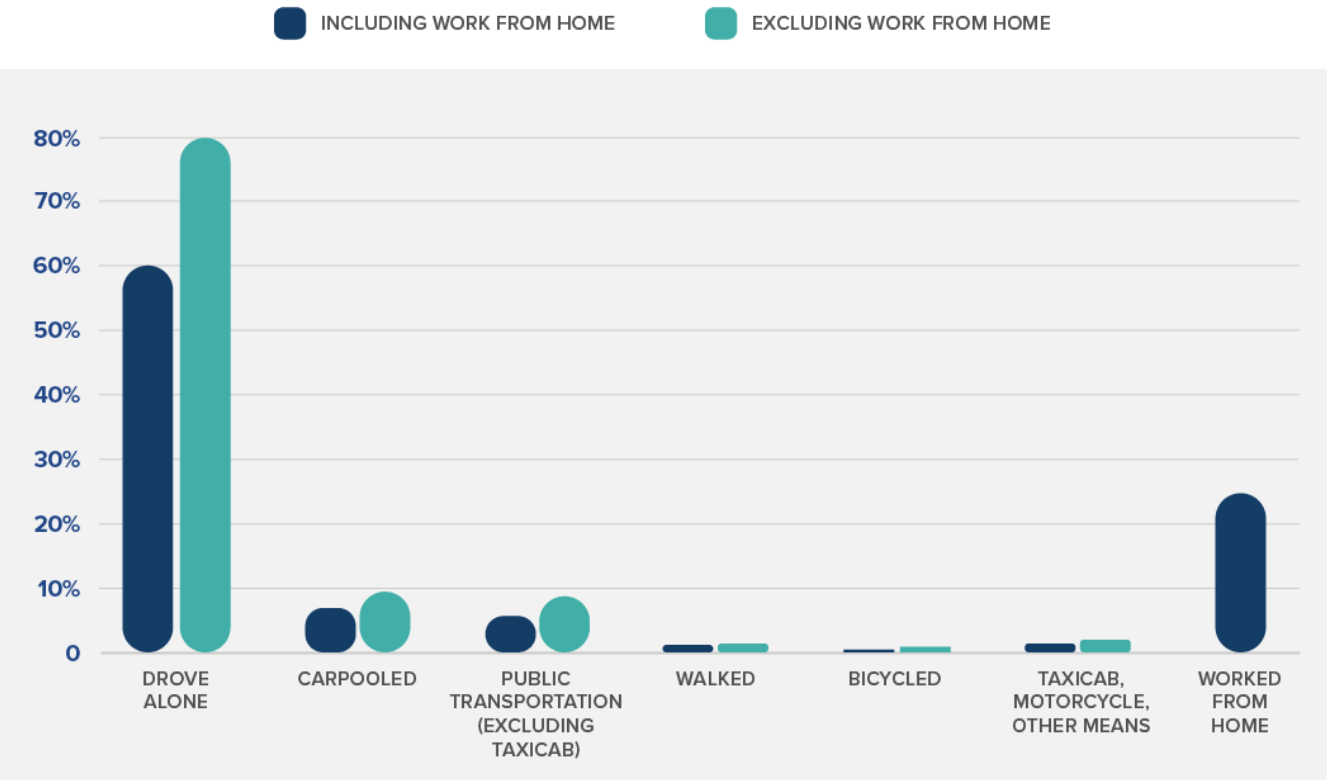



**FIGURE 1: COMMUTE MODE SHARE WITHIN SAMMAMISH (INCLUDING AND EXCLUDING WORK FROM HOME)**

*Source: US Census 2021*

Figure 2 shows the average commute time for workers living in Sammamish by commute mode. Of all those commuting to work, 12.4% of workers have a commute longer than an hour. This number increases significantly to 64% for public transit commuters. The data also shows that no public transit commuters in Sammamish have commutes less than 30 minutes. In general, Sammamish residents commuting via public transit have much longer travel times than those who commute via private automobile.

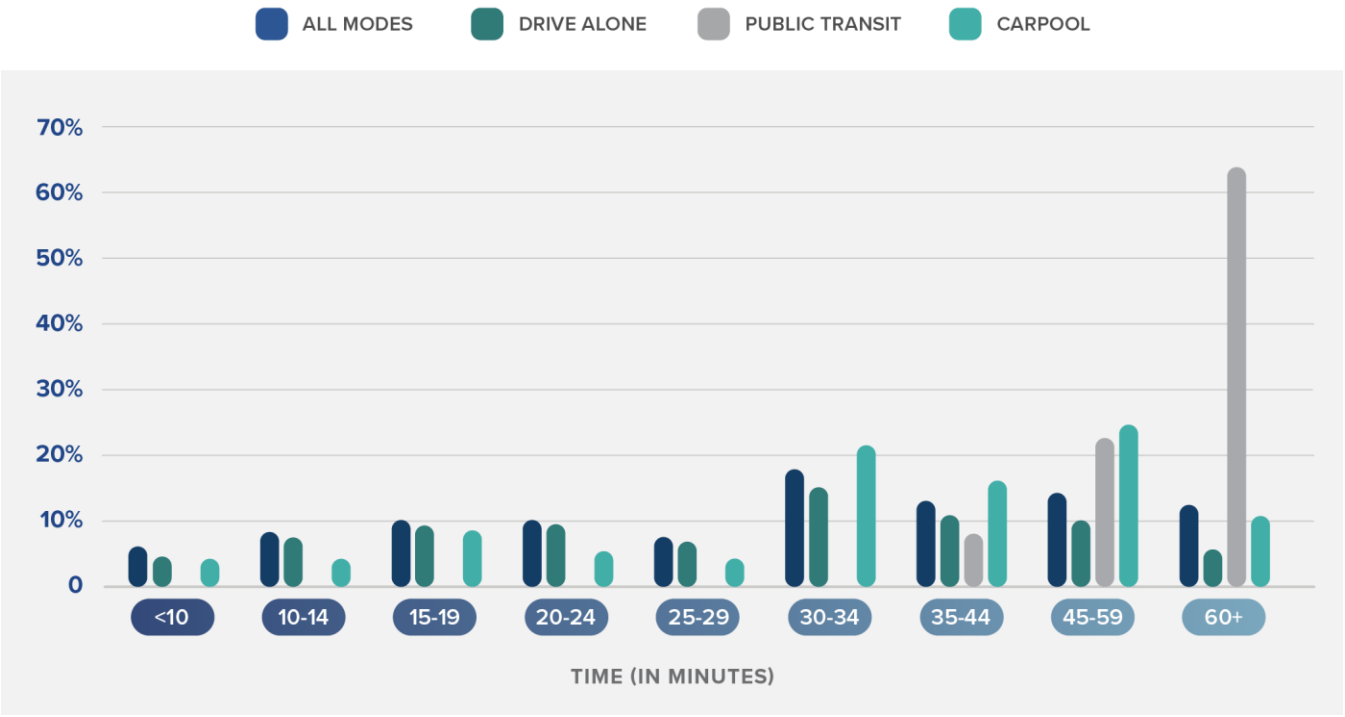



**FIGURE 2: COMMUTE TRAVEL TIME BY MODE FOR WORKERS LIVING IN SAMMAMISH**

*Source: US Census 2021*

## EXISTING TRANSIT NETWORK

At the time of the most recent existing conditions review, the most recently available ridership data was from Fall 2022. At that time, Sammamish was served by three bus routes that provided connections within east King County and to downtown Seattle. One King County Metro bus line, Route 219, was previously suspended in 2020 due to impacts from COVID-19. Another, Route 216, was suspended indefinitely in Fall 2023. Ridership data from Fall 2022 includes Route 216. Below is a summary of metro bus lines including recently suspended routes:

- **One all-day route (269)** that operates approximately every 30 minutes Monday through Friday. This route provides connection from Issaquah to the Redmond area, with several stops in Sammamish.
- **Suspended in Fall 2023: One peak-only, peak-direction route (216)** that connected to downtown Seattle and to the Bear Creek Park and Ride in Redmond. This route was indefinitely suspended by King County Metro with the Fall 2023 Service Revision.
- **Suspended in Spring 2020: One peak-only, peak-direction route (219)** that was suspended due to impacts from the COIVID-19 pandemic. Prior to being suspended, the route ran from Redmond to Seattle.
- **One limited-service route (554)** that is operated by Sound Transit. Route 554 is an express route with all-day 30-minute or better service between Seattle and Issaquah. The route extends from Issaquah, through Sammamish, and to Redmond for five trips in the

northbound direction during the evening and late night and two trips in the southbound direction during the early morning.

### WEEKEND SERVICE

While weekday transit service generally provides for the needs of typical peak-period commuters, weekend service is also an important resource for carrying out the tasks of everyday life. A robust transit network provides weekend service which allows its riders to reach a variety of destinations, facilitates a car-free or "car-light" lifestyle, and aligns well with transit-oriented development (TOD) land-use strategies. As of Fall 2022, there is no fixed route service in Sammamish on either weekend day. Route 554 does run on the weekend; however, the end of the route is at the Issaquah Highlands Park and Ride and does not continue through Sammamish to Redmond.

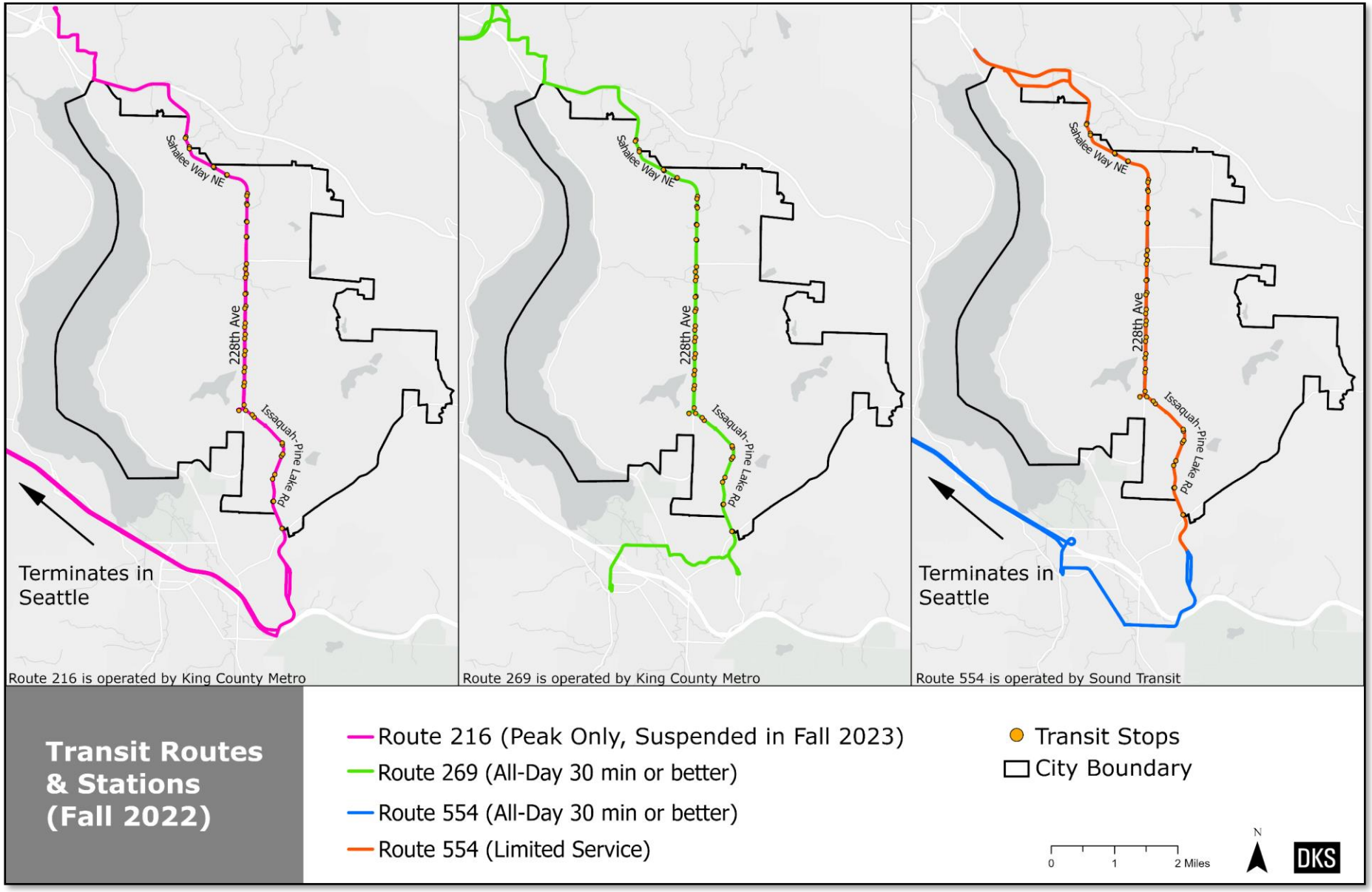



FIGURE 3: FALL 2022 TRANSIT ROUTES IN SAMMAMISH

**TABLE 1: WEEKDAY TRANSIT ROUTES OVERVIEW, FALL 2016, 2019 AND 2022**

| ROUTE | ROUTE DESCRIPTION | SERVICE TYPE (SAMMAMISH) | WEEKDAY SERVICE SPAN (SAMMAMMISH) | WEEKDAY HEADWAY | | | | # OF WEEKDAY DAILY TRIPS | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AM PEAK | MID-DAY | PM PEAK | EVE | FALL 2016 | FALL 2019 | FALL 2022 | |
| 216 | Bear Creek / Issaquah Highlands / Eastgate / Downtown Seattle | Peak-Only | 6:54 AM to 6:10 PM | 45 | - | 30 | - | 13 | 14 | 7 | [1] |
| 219 | Redmond / Issaquah Highlands / Downtown Seattle | Peak-Only | 6:26 AM to 6:54 PM (Fall 2019) | 30 | - | 30 | - | 15 | 15 | - | [2] |
| 269 | Issaquah TC / North Issaquah / Issaquah Highlands / Bear Creek / Overlake | All-Day (30 min or better) | 6:23 AM to 7:39PM | 30 | 30 | 30 | 45 | 31 | 55 | 50 | |
| 554 | Redmond / Issaquah Highlands / Issaquah TC/ Downtown Seattle | Peak-Only | 4:38 AM to 11:41 PM | - | - | - | 120 | 7 | 7 | 7 | [3] |

Notes: Rows in gray represent routes which have been suspended prior to 2024. Service span was based on the first and last stops within Sammamish. Headway was based on trips serving Sammamish and was generally categorized using the following ranges: 30=16-30 min, 45=31-45 min, 120=61-120 min. These ranges were adjusted, simplified, or reported as a range or average to reflect the irregular frequency of some routes that serve Sammamish. [1] Route 216 was indefinitely suspended in Fall 2023. [2] Route 219 was indefinitely suspended during the COVID-19 pandemic. [3] Route 554 only serves stops in Sammamish for select trips throughout the day: 5 trips northbound in the evening/late night and 2 trips southbound in the early morning.

## RIDERSHIP

Figure 4 illustrates ons and offs at transit stops in Sammamish for Fall 2022, which are concentrated at Sammamish Highlands Shopping Center (228th Avenue NE between NE 4th Street and NE 8th Street) and at South Sammamish Park and Ride. These locations include or are adjacent to retail, employment, and medical destinations.

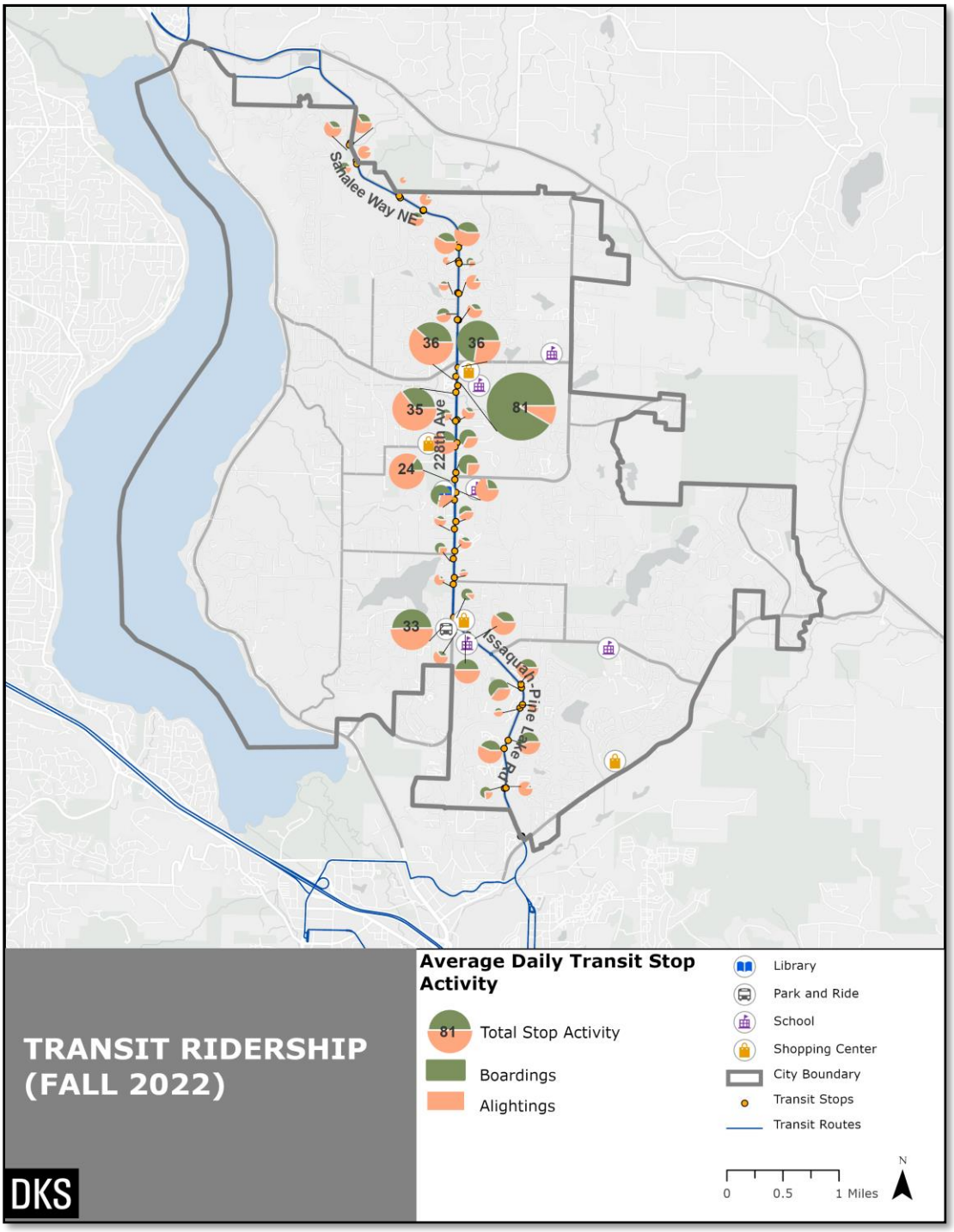



FIGURE 4: TRANSIT RIDERSHIP WITHIN SAMMAMISH

Figure 5 compares transit ridership between Fall of 2016, 2019, and 2022 within Sammamish. Transit ridership increased between 2016 and 2019, which represents the peak. Total stop activity (ons + offs) decreased 35% between 2019 and 2022. The South Sammamish Park and Ride was the highest stop activity in Sammamish stop in 2016 and 2019 with a total daily activity level of 192 and 212, respectively. In 2022, the total activity level at the Park and Ride dropped to 33 and was the stop with the fifth highest activity. This decrease may be indicative of post-COVID work from home patterns in which there is less demand to use transit to travel between Sammamish and regional employment centers. Sammamish should continue to track ridership levels to better understand the "new normal" post-COVID transit usage in the City.

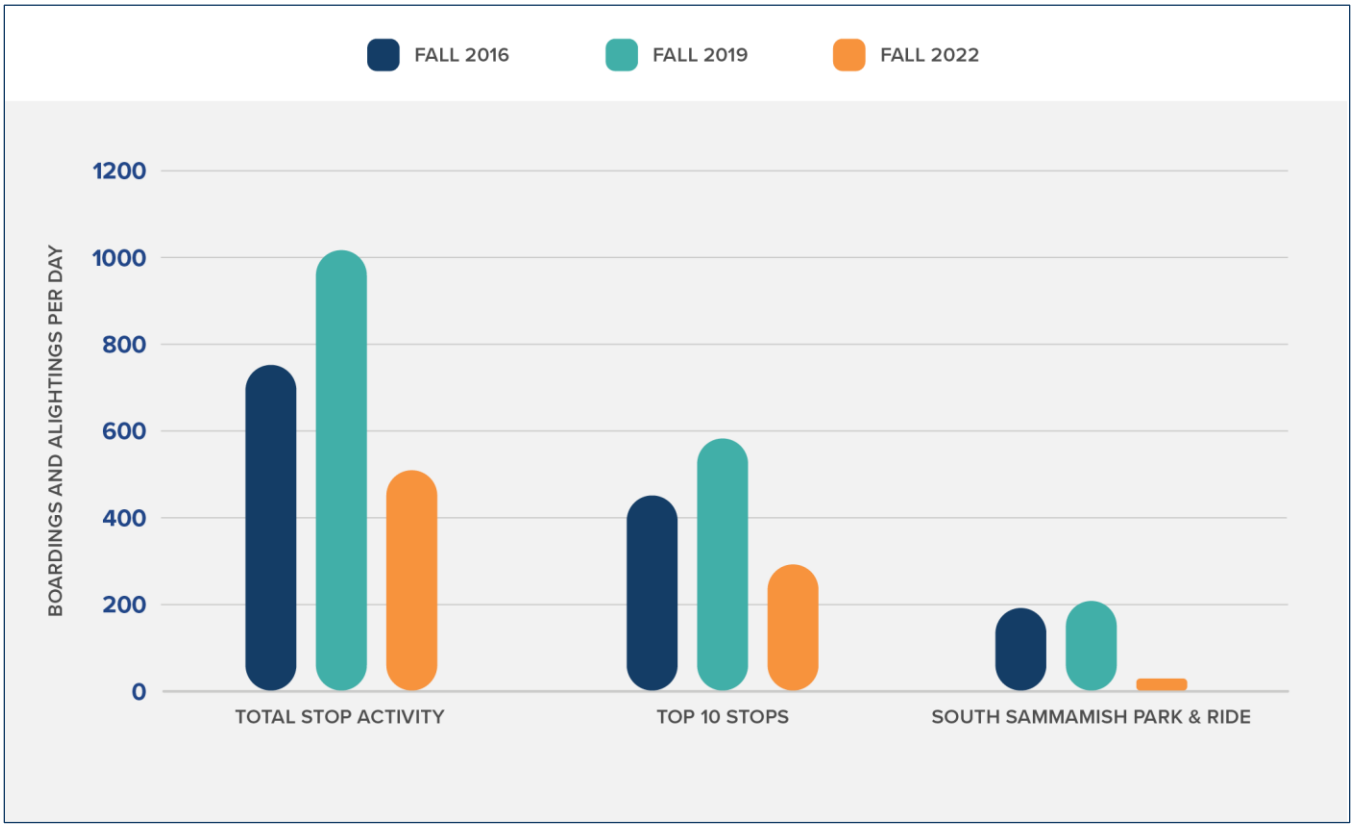



**FIGURE 5: TRANSIT RIDERSHIP BY YEAR**

## METRO FLEX

Metro Flex is a service provided by King County Metro through a contractor, Via, that provides on-demand neighborhood transit service for the same cost as a bus trip. This service is provided for trips beginning and ending in a certain area of Sammamish between 7am and 6pm Monday through Friday and between 9am and 6pm on Saturdays. In April 2023, Metro Flex in Sammamish had an average of 78 daily rides. In October 2023, the Metro Flex service area expanded to include parts of Issaquah. Figure 6 shows the October 2023 Metro Flex service area for Sammamish and Issaquah.

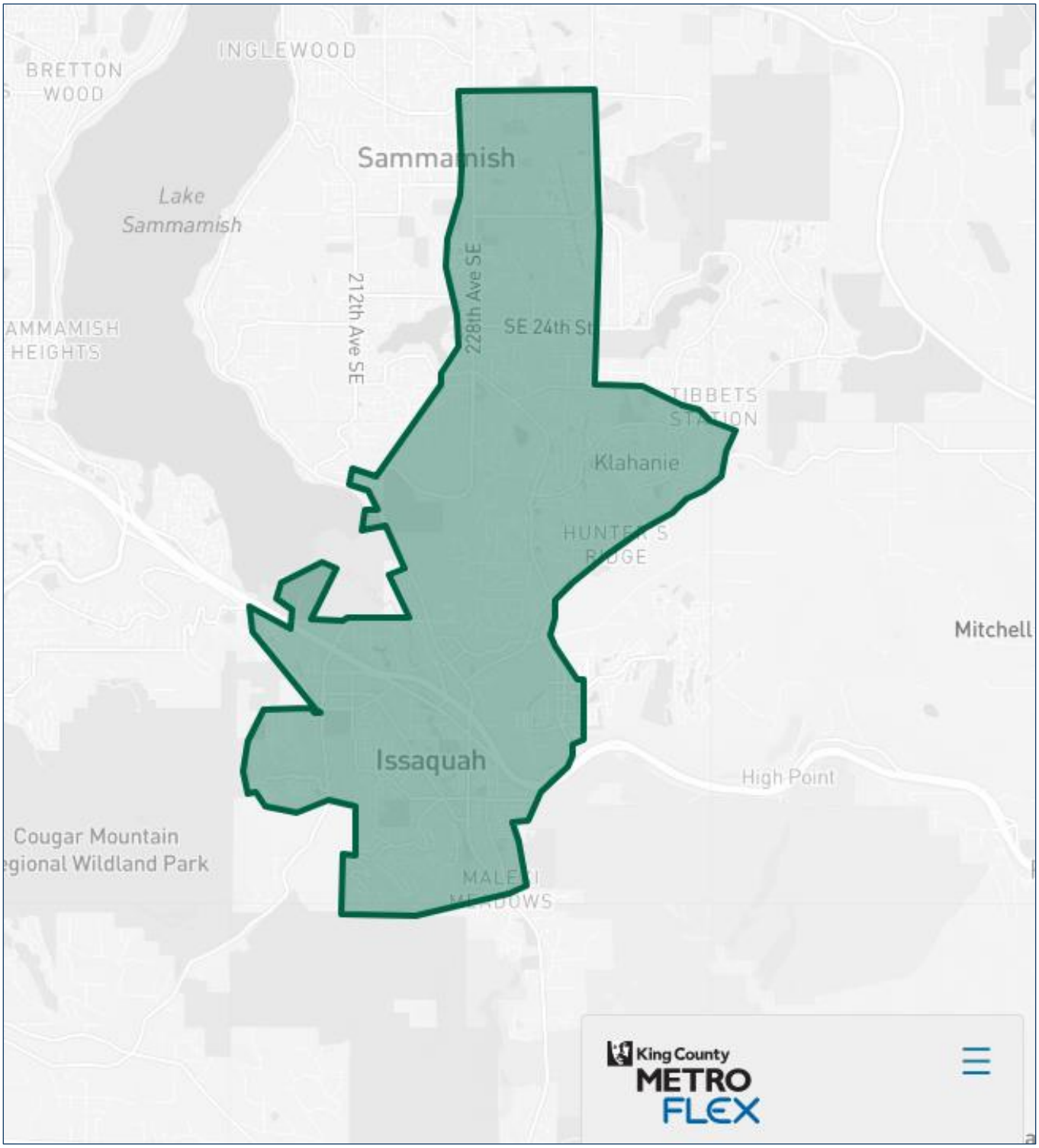
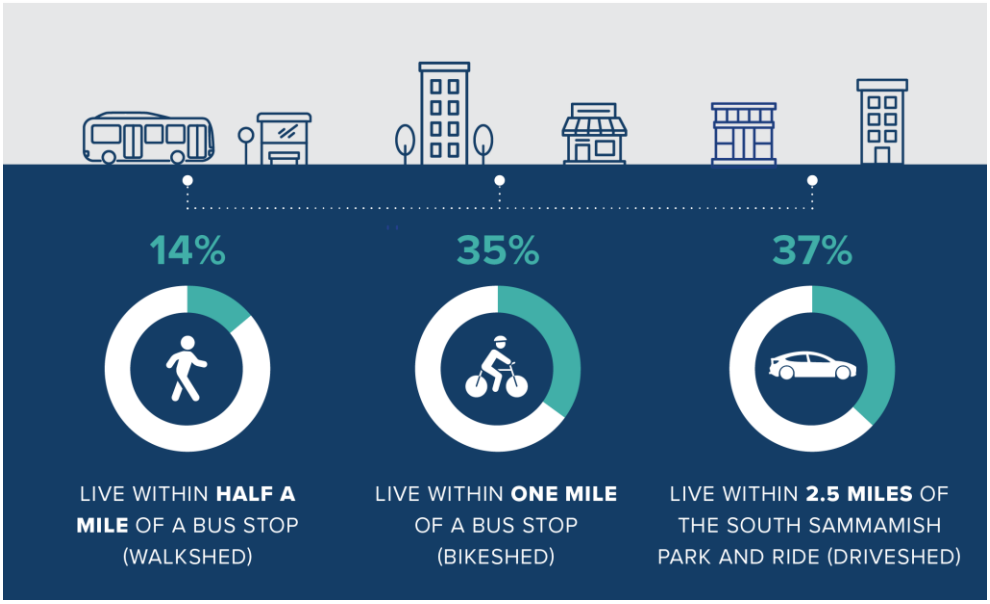



**FIGURE 6: METRO FLEX SERVICE AREA IN SAMMAMISH AND ISSAQUAH**

## ACCESS TO TRANSIT




A typical assumption in transportation planning is that people are willing to travel approximately 5 to 10 minutes to a transit stop, which generally equates to a 0.25 to 0.5 mile walk and a 1.0 to 1.25 mile bike ride. For those driving to a Park and Ride, a 2.5-mile radius is generally used to determine its service area. Through a spatial analysis of infrastructure data and demographic data, it was determined that most Sammamish residents (about 86%) do not live within a ½-mile walk of a bus stop. Furthermore, most jobs in Sammamish are not located within walking distance of a bus stop, although jobs are more likely than households to be close to transit. About 35% of the population live within a comfortable biking distance of a bus stop. About 37% of the population lives within a 2.5-mile drive of the South Sammamish Park and Ride, however, the Issaquah Highlands Park and Ride is also an option for Sammamish residents.

## EQUITY ANALYSIS

As a part of this project, an Equity Analysis report was completed and is available as Appendix B to this Plan. The Equity Analysis identified the existing and future underserved communities in Sammamish, and provided recommendations related to public transit. Ultimately, the report concluded that while Sammamish is among the wealthiest communities in King County, there are still equity concerns related to public transit usage and accessibility. A small percentage of the population (2.5%) live in poverty, and the population continues to age. Currently, about 17.6% of the low-income population live within a half mile walk of a transit stop. Some of the low-income population, particularly in Klahanie and the area on the east side of 228th Avenue NE near NE 8th Street, is covered by the Metro Flex service area. Other areas with low-income populations that may not have great access to fixed-route transit or Metro Flex include the northwest corner of the City and areas around Louis Thompson Road SE. This is shown in Figure 7. The majority of low paying jobs have good access to either fixed-route transit or Metro Flex.

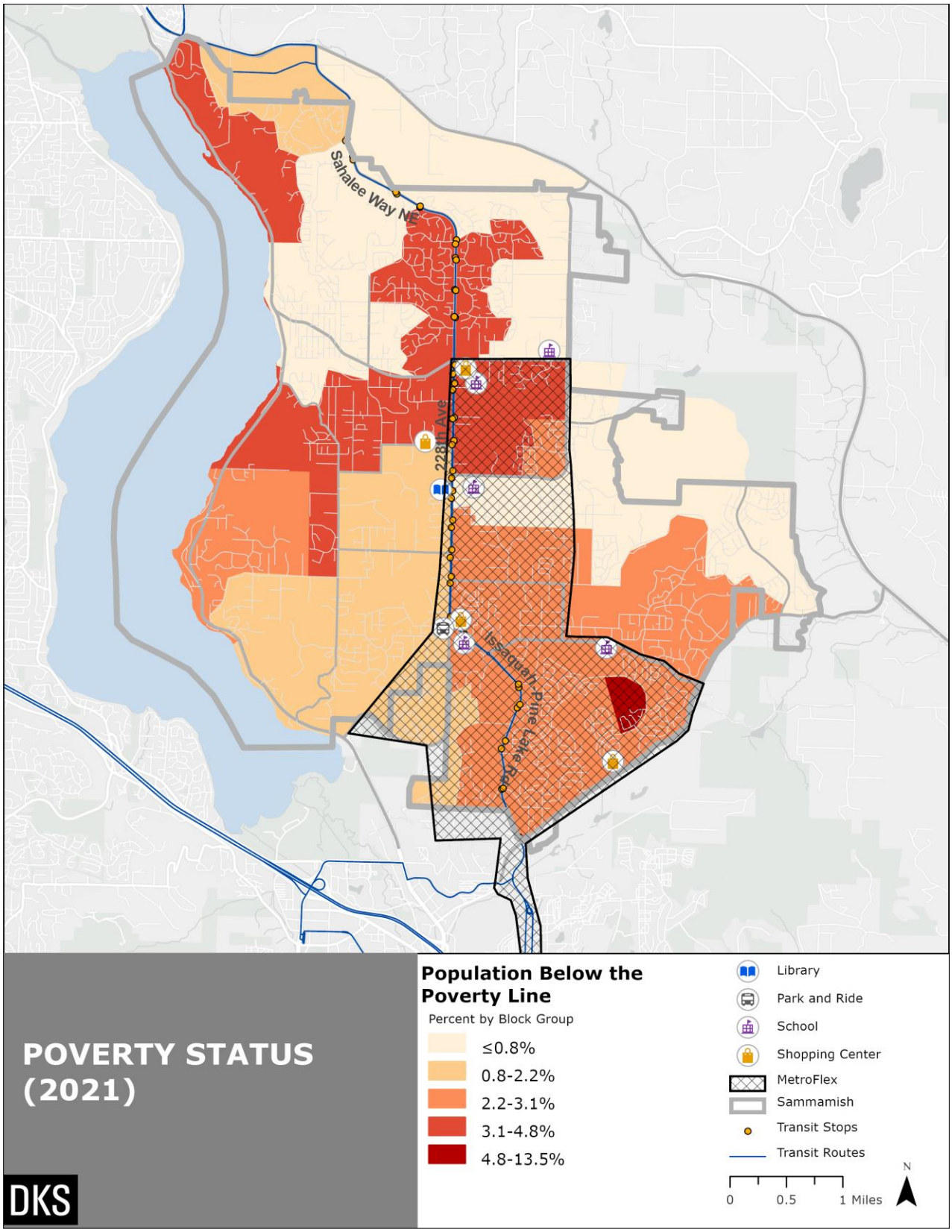



FIGURE 7: LOW INCOME POPULATION, TRANSIT STOPS, AND METRO FLEX

Sammamish is currently in the process of adopting future land use, including affordable housing targets. Affordable housing is expected to be planned along the transit route near the commercial areas near NE 8th Street, near Town Center along 228th Avenue, and near Issaquah-Pine Lake Road.

The following are recommendations to enhance transit-related equity in Sammamish:

- Sammamish should continue to plan dense housing, affordable housing, and mixed-use development near the transit route to provide better access to alternative transportation options.
- Sammamish should work with schools and employers to share information about Metro Flex as well as fixed route transit options. These programs could be advertised in schools, in Senior housing, in low-income or affordable housing, community gathering areas such as the King County Library and the YMCA, and at neighborhood pop-ups. The advertisements should be available in multiple languages. Some programs that are already available that would benefit potential riders are:
    - Move Ahead Washington: This is a program, more commonly referred to as "Youth Ride Free", that allows those under the age of 18 to ride transit for free with a Youth Orca Card or a current high school or middle school student ID. This includes all King County Metro and Sound Transit routes in Sammamish.
    - ORCA LIFT: This is a transit card that provides low-income users a reduced fare.
    - Regional Reduced Fare Permit: This program allows those over 65 years old and those with certain disabilities to ride transit at a reduced fare.
- Sammamish should prioritize non-motorized investments such as sidewalks, crosswalks, and bicycle lanes in neighborhoods with higher than average low-income households and low-paying jobs.

# Chapter 2: Future Conditions

The Transit Plan looked into Future Conditions of Sammamish to understand transit-related gaps in the near and long-term future. The full Future Conditions Transit Gaps Analysis is available as Appendix C to this Plan.

## PLANNED TRANSIT NETWORK CHANGES – NEAR TERM (2025)

### REGIONAL

The regional transit system will change with the Sound Transit Link light rail East Link extension in 2025. This will open the Link 2 Line, which will connect light rail from Seattle to Downtown Redmond with stops in Mercer Island, Bellevue, and Redmond Technology Center. The Downtown Redmond Link Extension project, also planned to open in 2025, will extend the light rail from Redmond Technology Center to Marymoor Village and Downton Redmond. The King County Metro bus system will have changes to the network to better connect the East Link area with the light rail system. The associated East Link Connections Project includes re-routing many of the existing bus routes serving eastside communities as well as the addition of several new routes and the elimination of others. Several other routes are planned for increased frequencies to enhance overall transit service.

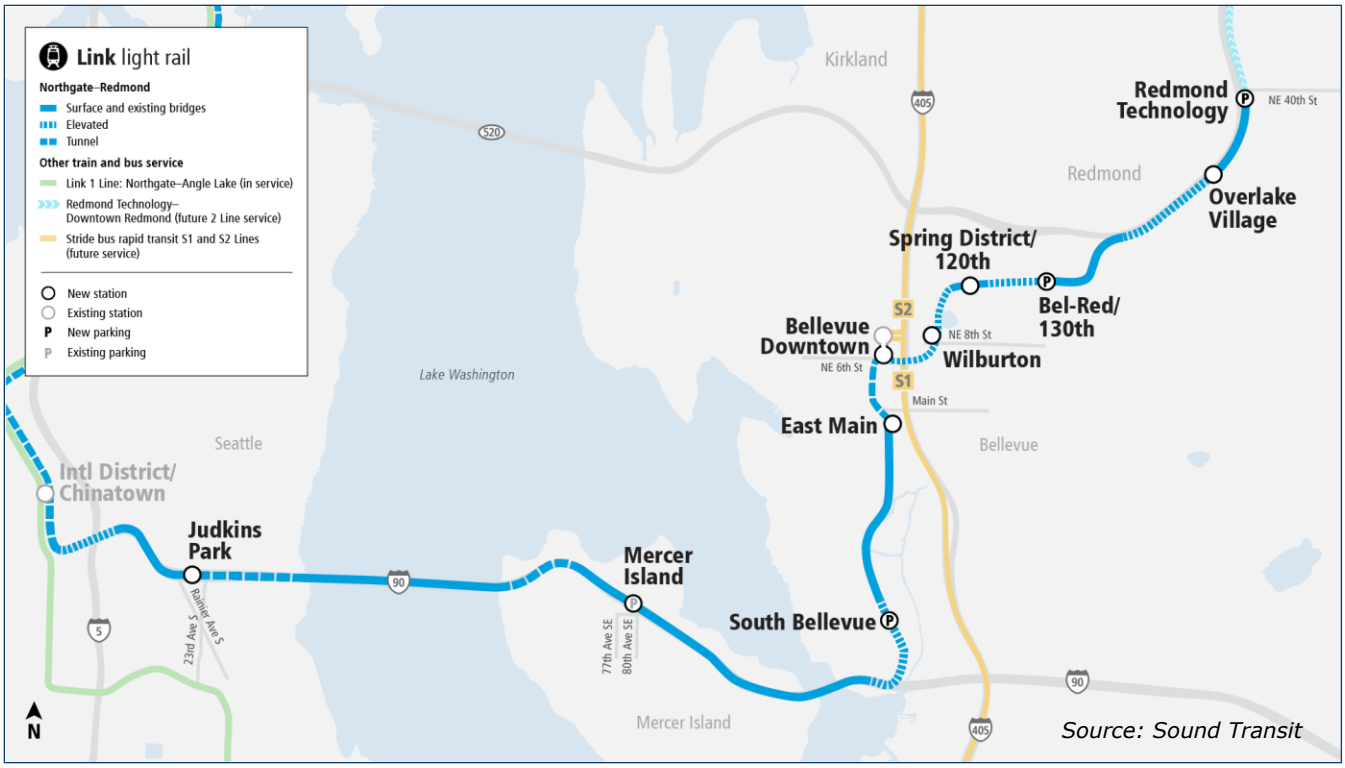



FIGURE 8: SOUND TRANSIT LINK LIGHT RAIL 2025

**LOCAL**

With the East Link Connection Project, Transit will run along the same alignment within Sammamish (Issaquah-Pine Lake Road SE, 228th Avenue NE, and Sahalee Way NE), but route 269 will have some changes. Route 269 will connect to the Marymoor Village light rail station in Redmond and to the Mercer Island light rail station through Sammamish and Issaquah. This route is planned to run with 15-minute headways during the weekday peak, 30-minute headways during the rest of the weekday, and weekend service with 30-minute headways from 5am to 7pm. These changes represent a considerable increase in frequency during the weekday in addition to the first ever weekend fixed-route transit service in Sammamish.

Route 554, operated by Sound Transit, will continue to operate with limited service in Sammamish, however, instead of providing service into downtown Seattle, route 554 will terminate at the Bellevue Transit Center in downtown Bellevue and serve as another connection point to the light rail system. Figure 9 shows the planned 2025 transit network in Sammamish.

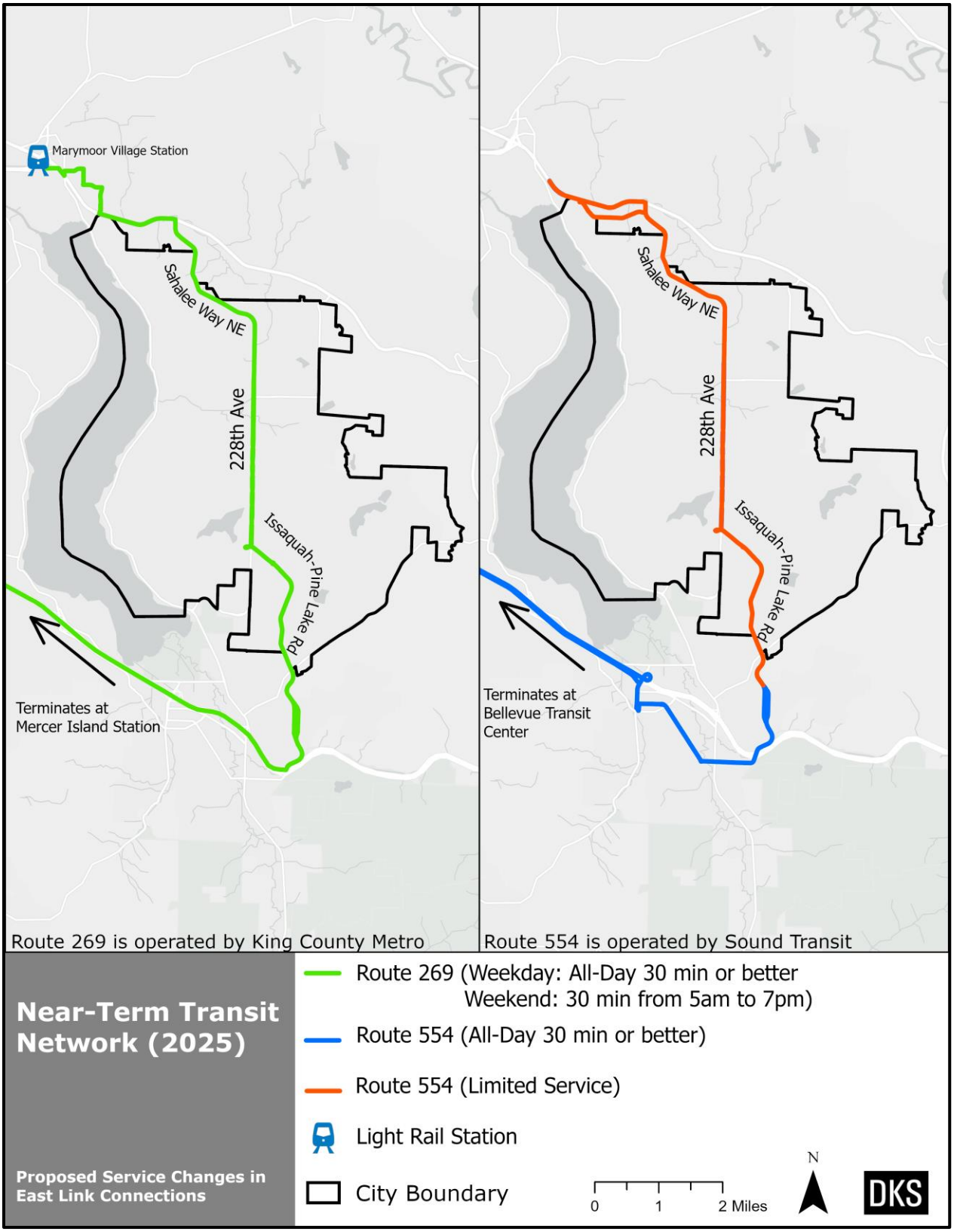



FIGURE 9: PLANNED 2025 TRANSIT MAP

## PLANNED TRANSIT NETWORK CHANGES – LONG TERM (2028-2044)


FIGURE 10: SOUND TRANSIT LINK LIGHT RAIL 2044

The Link light rail 4 Line, which connects south Kirkland to Issaquah, generally following the alignments of I-90 and I-405, is currently expected to be complete in 2041 or 2044, depending on funding availability. For the purposes of this document, we will assume an opening year of 2044. This new light rail service is planned to serve Issaquah with six-minute headways during peak periods and a single station in Central Issaquah which would serve as the end of the line.

With the light rail opening, some service changes to King County Metro and Sound Transit operated bus routes are anticipated with the intent to improve transit connections to the new light rail service. However, the extent of these service changes and details such as the stop locations and potential rerouting are unknown at this time. It is expected that residents of Sammamish will be able to access the new light rail station in Issaquah via a bus or driving to the proposed Park and Ride to be located at the station. According to Sound Transit's ST3 Plan, the new station in Issaquah is expected to have 500 parking spaces.


FIGURE 11: SOUND TRANSIT BRT 2028

Three Sound Transit Bus Rapid Transit (BRT) lines, which is bus service typically characterized by high frequencies, increased stop spacing, and transit priority infrastructure such as bus lanes, are planned to open in 2027 and 2028. These new routes will connect Bellevue to Lynnwood to the north and Burien to the south as well as connecting Shoreline to Bothell. A transfer to these BRT routes can take riders to Kirkland, Woodinville, Bothell, Lynnwood, Burien, Tukwila, Renton, Shoreline, Lake Forest Park, Seattle, and Kenmore. These were identified as top destinations in the Future Conditions Gaps Analysis (Appendix C). However, depending on destination and the availability of a vehicle to use the Park and Rides, these trips may require two to three transfers. While the new service provides a benefit to Sammamish, the requirement for multiple transfers may still be considered a service deficiency for Sammamish.

# Chapter 3: Transit Level of Service Guidelines

As part of the Sammamish Transit Plan, Transit Level of Service Guidelines were developed to track the effectiveness of the transit system in Sammamish. The full Transit Level of Service Guidelines document is available as Appendix D to this Plan.

The document presents options for the transit-related level of service (LOS) guidelines for the City of Sammamish to consider incorporating into its current policies and procedures. These options are organized into three areas: transit operations, access, and rider comfort. The guidelines presented in the memo are intended for use by City staff for planning purposes and would not apply to transportation concurrency standards for new development.

Transit operations LOS would be based on transit travel time compared to auto travel time. A passing score indicates that a bus trip has a comparable travel time to a private auto trip. The access LOS analysis evaluates the presence and quality of pedestrian and bicycle facilities near transit stops. A passing access LOS indicates that the non-motorized network is connected to the transit facilities within the bikeshed and walkshed. The rider comfort LOS analysis is based on amenities available at bus stops. A passing rider comfort LOS indicates that there are multiple amenities at the bus stop.

The measures evaluated align with the transportation goals set forth in the City's Comprehensive Plan. It is intended that Sammamish will evaluate its transit system on an annual basis using the evaluation criteria listed in the guidelines.

# Chapter 4: Project Development and Public Outreach

The primary objective of the Transit Plan was to develop a list of implementable projects aimed at enhancing transit access, speed and reliability, and safety. To ensure alignment with community objectives, an extensive public outreach initiative was completed. This involved gathering public input through diverse channels, including a dedicated project website, a statistically valid survey, a public workshop, tabling at Sammamish Farmer's Market and other City events such as the Earth Day Event and Sammamish Block Party, and the active involvement of a Community Advisory Committee (CAC) and TAC. Summaries of each public engagement initiative can be found in the sections below.

The final compilation of transit projects was developed based on input from the community. The project website was a crucial tool for keeping the community informed about project progress. Regular updates and finalized reports, along with avenues for contributing ideas, were made available on the website. Both the project website and the public workshop were promoted on the City's official social media pages and newsletters, as well as at various community events such as farmers markets and the City's Earth Day celebration. Ultimately, public input played a pivotal role in shaping the project list. Below describes key public outreach efforts in more detail.


FIGURE 12: PUBLIC OUTREACH FLYER WITH LINK TO PROJECT WEBSITE

## STATISTICALLY VALID TRANSIT SURVEY

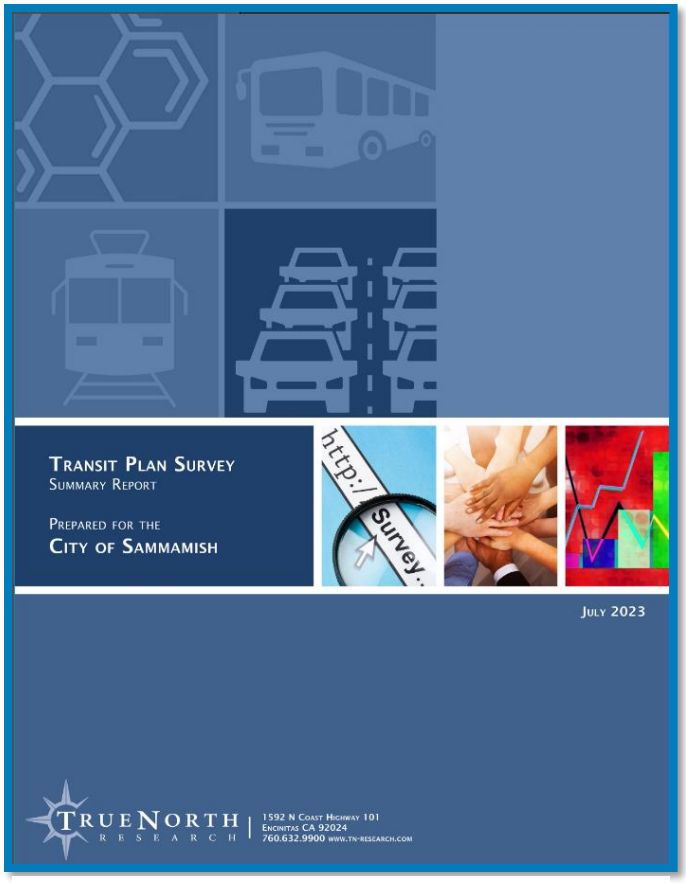



FIGURE 13: TRANSIT PLAN SURVEY

A statistically valid survey was conducted between June 22 and June 27, 2023. The purpose of the survey was to provide objective, statistically reliable measures of residents' experiences, opinions, and preferences as they pertain to transit services in the City of Sammamish. The results of the survey was combined with information gathered through other public input methods to help the staff and the City's consulting team develop the Transit Plan.

The survey was designed to:

- Profile current travel characteristics including trip frequency, duration, purposes, and mode.
- Gauge how often Sammamish residents use local transit services—including the bus, Metro-flex shuttle, and Community Van—and their experiences doing so.
- Explore perceptions of bus service in Sammamish, residents' willingness to use the service under the right conditions, and ways to make the service more attractive.
- Gather relevant demographic and household information.

The survey team had a target of 400 completed surveys to meet the statistically valid threshold. Ultimately, the survey received 935 responses, which resulted in a margin of error of +/- 3.2 percent at a 95% level of confidence.

Feedback from the survey played a significant role in development of the project list. Some key feedback is summarized below:

- 60% of respondents would be more likely to ride the bus if the bus stations had real-time information about pick-up and drop-off
- 51% of respondents would be more likely to ride the bus if there were continuous sidewalks, bike lanes, and crosswalks from the bus stops to their final destination
- 49% of respondents would be more likely to ride the bus if the bus stops felt safer.

A detailed summary of the survey, including methodology and results, are available as Appendix E.

In addition to the statistically valid survey, a copy of the survey was available online for any community member to take. The online version of the survey received 127 responses.

## PUBLIC WORKSHOP


On June 29th, 2023, the City of Sammamish held a public workshop with the objective to introduce the Transit Plan and elicit valuable feedback. Approximately 10 community members attended and participated in the workshop. The workshop aimed to provide attendees with an in-depth understanding of the project background, existing demographics, commuting patterns within the region, and how to give feedback. The workshop also served as a platform to recruit members for the Community Advisory Committee.

The workshop began with a presentation that covered the current demographics and commuting trends, laying the groundwork for informed discussions. The heart of the workshop involved soliciting input from the public regarding their ideas and expectations for the Sammamish Transit Plan. Attendees were encouraged to share their insights, preferences, and suggestions to ensure that the plan accurately reflected the community's needs and desires. Live polling was integrated into the workshop to keep the public engaged. Attendees were prompted with targeted questions, fostering real-time engagement and ensuring that the community's perspective played a central role in shaping the Transit Plan.

A demonstration was provided on how attendees could contribute their ideas to the project's website using Social Pinpoint. This user-friendly approach aimed to enhance accessibility and encourage a diverse range of opinions.

In summary, the Sammamish Transit Plan public workshop successfully engaged the attendees. Through an informative presentation, interactive discussions, and live polling, the workshop achieved its goal of gathering valuable insights from the community, ultimately steering the transit plan towards a more inclusive and community-driven future. This workshop was recorded and made available for viewing on the Transit Plan project webpage located on the City's website.

## PROJECT WEBSITE INTERACTIVE MAP

An interactive mapping feature called Social Pinpoint was incorporated into the project webpage on the City's website, offering a user-friendly platform for community engagement. This map enabled community members to easily provide feedback and share project ideas. In total, the interactive map garnered 25 unique comments, reflecting a diverse range of perspectives and suggestions from the community. The feedback received through Social Pinpoint encompassed valuable insights on improving transit services and enhancing access to public transportation.

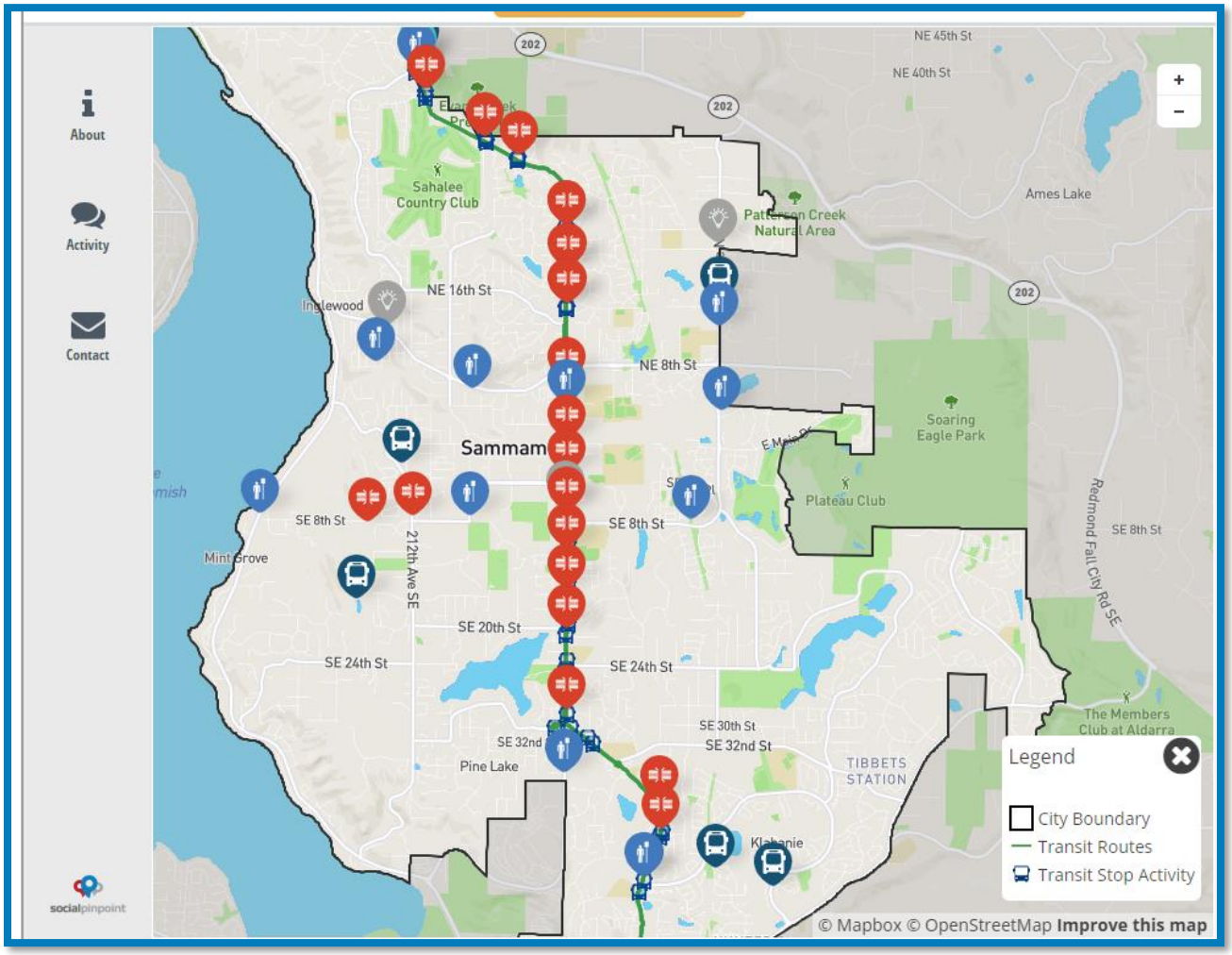



FIGURE 14: SOCIAL PINPOINT MAP ON PROJECT WEBSITE FOR PUBLIC COMMENTS

## COMMUNITY ADVISORY COMMITTEE


FIGURE 15: CAC MEETING PRESENTATION

The Sammamish Transit Plan established a four-person Community Advisory Committee (CAC). Following an invitation at the public workshop and targeted emails to key community groups, individuals interested in contributing to the planning process were invited to join the CAC. The CAC was engaged throughout the project with two meetings, email updates, and draft copies of reports to provide feedback before finalization.

The first CAC meeting on August 18th, 2023, introduced the CAC to the Transit Plan. The committee members were provided with an overview of the plan, and some ideas for transit capital projects were presented. As part of this meeting, a workshop session was held where the CAC provided their own project ideas. This collaborative approach aimed to incorporate diverse perspectives and ensure the Transit Plan resonated with the community's vision.

At the second CAC meeting on September 29th, 2023, results from a statistically valid survey were presented, offering data-driven insights into community preferences and needs, and a high-level project list was shared. The meeting facilitated a dynamic exchange of ideas and feedback between the committee and the project team. Throughout the entire project timeline, the CAC remained an integral part of the decision-making process.

## OTHER SUPPORT: TECHNICAL ADVISORY COMMITTEE

In addition to public outreach, the Technical Advisory Committee (TAC) provided support throughout the project. The TAC was comprised of transportation planners and engineers from the following organizations and jurisdictions:


- Sound Transit
- King County Metro
- City of Issaquah
- Puget Sound Regional Council (PSRC)

The TAC's responsibilities included a thorough review of both the Existing Conditions Report and the Future Conditions Gaps Analysis Report, providing a valuable external perspective on the project. Their feedback was incorporated, enhancing the overall quality and accuracy of the information presented. Their review played a vital role in shaping the Sammamish Transit Plan.

# Chapter 5: Final Project List

### 1. CROSSWALK STUDY

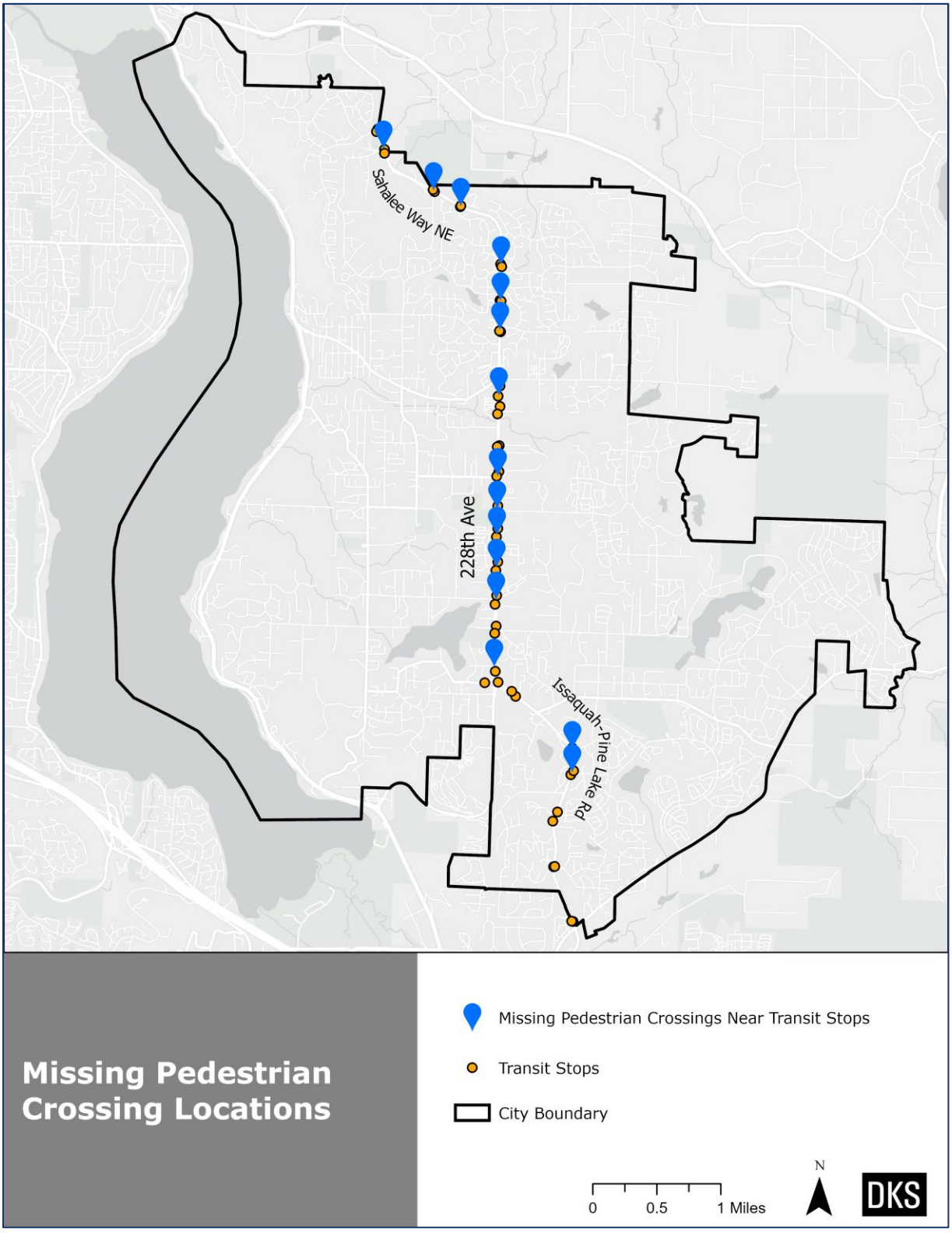
| | | |
|---|---|---|
| | **Short-Term** | **1-5 years** |
| | **Low** | **$40,000-$80,000** |
| **LOS** | **Primary LOS Guideline** | **Access** |

Except for transit trips using a park & ride, all transit riders begin and end their trip as a pedestrian or bicyclist. Therefore, an effective transit system includes a safe and connected network of sidewalks, trails, and bicycle facilities near transit stops. Furthermore, it is important that a transit rider with an origin or destination on one side of the street can safely and efficiently access a bus stop on the other side of the street. It was noted in the existing conditions analysis that there are gaps in the sidewalks network along the city's transit route and long distances between marked crossings.

This project consists of a Crosswalk Study to evaluate and recommend new pedestrian crossings along the transit route in Sammamish. As seen in Figure 16, the transit route today has few marked pedestrian crossings within 300 feet of bus stops, and many transit riders need to cross the arterial road without the safety benefit of a marked crosswalk. The study will determine which bus stops and neighborhoods would benefit most based on safety, equity, connectivity, and transit ridership demand. Ultimately, the study will recommend the locations and types of crossings, such as rectangular rapid-flashing beacons (RRFB) or pedestrian signals.

The Crosswalk Study will include analysis of sight distance and crash history. Equity analysis, including existing and future land use, and potential connections to pedestrian generators should be a key part of this evaluation. Proposed crosswalks should also be placed in areas where they have the potential to safely serve the greatest number of pedestrians. An initial list of potential crosswalk locations is included as Appendix F to this Plan.

New crossings along the transit route will improve safety and access to transit and may increase ridership. Over 50% of survey respondents stated they would be more likely to ride transit if there were continuous sidewalks, bike lanes, and crosswalks connecting to bus stops.




**Missing Pedestrian Crossing Locations**

**FIGURE 16: TRANSIT STOPS MISSING A MARKED PEDESTRIAN CROSSING WITHIN 300 FEET**

## 2. BUS STOP AMENITY PROGRAM

| | | |
|---|---|---|
| | **Short-Term** | **1-5 years** |
| | | **$274,000** |
| | **Medium** | 7 unique bus stops to be improved<br>18 total bus stop amenity improvements |
| **LOS** | **Primary LOS Guideline** | **Rider Comfort and Access** |

*Source: SDOT*

The cost associated with the program would be used to fund the amenities at the prioritized stops listed below. The stops are prioritized based on need, benefit, and current ridership. These amenities can help riders feel comfortable and safe while waiting for the bus and getting off the bus. In addition to providing safety for current transit riders, this project may increase ridership. 48% of survey respondents said they would be more likely to ride transit if the bus stops were safer. The amenities of lighting and landing areas or short sidewalk improvements will improve safety at the bus stops. Many of the bus stops lack a proper waiting area, and transit riders must wait in the shoulder, which can feel unsafe.

A full list of stops that could benefit from each amenity is included as Appendix G to this Transit Plan. Table 2 displays a summary of prioritized bus stop amenities by bus stop.

TABLE 2: SUMMARY OF BUS STOP AMENITIES

| BUS STOP | AMENTIY IMPROVEMENTS |
|---|---|
| 228TH AVENUE NE AND NE 25TH WAY, NORTHBOUND | Pedestrian Lighting |
| ISSAQUAH PINE-LAKE ROAD SE AND SE KLAHANIE BOULEVARD, NORTHBOUND | Pedestrian Lighting |
| 228TH AVENUE NE AND NE 4TH STREET, NORTHBOUND | Landing area, Trash can, Bench, Arrival display board, Shelter footing |
| 228TH AVENUE NE AND NE 8TH STREET, NORTHBOUND | Landing area, Trash can, Bench, Shelter footing |
| 228TH AVENUE NE AND NE 4TH STREET, SOUTHBOUND | Landing area, Bike rack, Trash can, Bench, Shelter footing |
| 228TH AVENUE SE AND SE 10TH STREET, NORTHBOUND | Bike rack |
| SOUTH SAMMAMISH PARK AND RIDE | Arrival display board |

### LIGHTING ($21,000 EACH)

Despite the presence of street lighting for vehicular traffic, some bus stops in Sammamish lack sufficient pedestrian-scale lighting for transit users. The region's often overcast and dark weather conditions, especially during the winter months, can create a sense of vulnerability for transit users waiting at bus stops. The City of Sammamish can add pedestrian scale lighting to bus stops to help improve visibility, personal security, and accessibility. Improved lighting locations were prioritized based on existing light levels, ridership, and public input.

Prioritized stops for lighting:

- 228th Avenue NE and NE 25th Way, Northbound
- Issaquah Pine-Lake Road SE and SE Klahanie Boulevard, Northbound

### LANDING AREAS AND SHORT SIDEWALK IMPROVEMENTS ($5,000 PER 10'X10' LANDING AREA)

The Americans with Disability Act (ADA) requires a 5-foot by 8-foot landing pad at the bus stop with access to the bus door. Many bus stops in Sammamish, particularly in the north part of the transit route, are missing waiting areas and sidewalks altogether. This project is costed to assume a 10-foot by 10-foot paved area added to the bus stop. This could be a sidewalk extension or an ADA landing area depending on the bus stop location. Landing area improvement locations were prioritized based on ridership.

Prioritized stops for landing areas:

- 228th Avenue NE and NE 4th Street, Northbound
- 228th Avenue NE and NE 8th Street, Northbound
- 228th Avenue NE and NE 4th Street, Southbound

### BIKE RACKS ($1,500 EACH)

Safe bike parking at a bus stop provides several advantages, enhancing overall transportation accessibility and sustainability. First, it encourages a multimodal connection, allowing commuters to transition between biking and public transit. It also promotes last-mile connectivity, enabling individuals to efficiently complete their journeys from the bus stop to their final destinations using bicycles. Safe bike parking gives transit users the option to leave their bikes behind rather than bringing the bike on the bus. Bike rack locations were prioritized based on ridership, proximity to schools, and public input.

Prioritized stops for bike racks:

- 228th Avenue NE and NE 4th Street, Southbound
- 228th Avenue SE and SE 10th Street, Northbound

### TRASH CANS ($4,000 EACH)

Over 40% of survey respondents stated that would be more likely to ride transit if the bus stops were cleaner. Adding a trash can to high ridership bus stops could help improve the cleanliness of bus stops. Sammamish would have to consider maintaining and emptying new trash facilities before implementation. Trash can locations were prioritized based on ridership.

Prioritized stops for trash cans:

- 228th Avenue NE and NE 4th Street, Northbound
- 228th Avenue NE and NE 8th Street, Northbound
- 228th Avenue NE and NE 4th Street, Southbound

### BENCHES ($3,500 EACH):

Benches can provide comfort and accessibility at bus stops. Only five bus stops in Sammamish currently provide seating for transit users and pedestrians. Benches are not only convenient but can also provide accessibility accommodations for individuals with mobility challenges such as the elderly, pregnant women, and people with disabilities. Bench locations were prioritized based on ridership.

Prioritized stops for benches:

- 228th Avenue NE and NE 4th Street, Northbound
- 228th Avenue NE and NE 8th Street, Northbound
- 228th Avenue NE and NE 4th Street, Southbound

### REAL-TIME ARRIVAL DISPLAY BOARDS ($95,000 EACH)


Over 60% of survey respondents stated that they would be more likely to ride transit if they had real-time accurate information about when the bus would pick them up and when they would arrive at their destination. While real-time arrive boards will not show when they would arrive at their destination, the additional arrival information would be a major benefit for transit users. Due to the high-cost of this amenity, it is only recommended at two locations. Real-time arrival board locations were prioritized based on ridership and potential future ridership.

Prioritized stops for a real-time arrival display board:

- 228th Avenue NE and NE 4th Street, Northbound
- South Sammamish Park and Ride

### SHELTER FOOTINGS ($500 EACH)

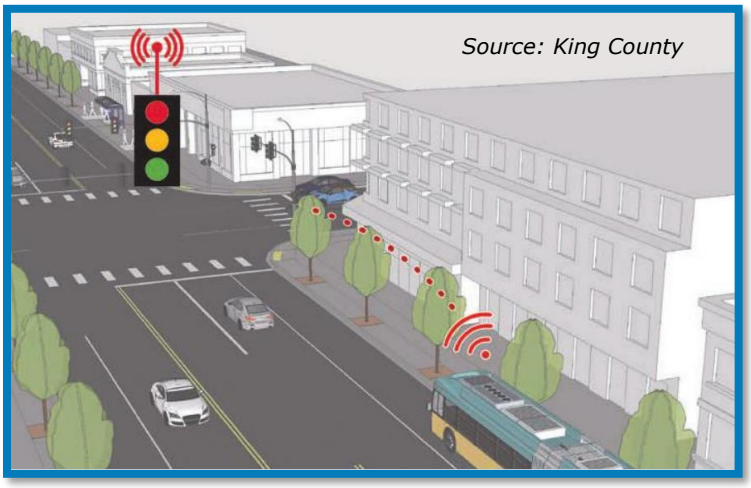
Shelter footings help King County Metro prioritize bus stops for shelters. Shelter footings are flush to the ground and allow Metro to easily install a new shelter. Metro prioritizes stops for shelters based on ridership and existing shelter footings. Shelters are a great amenity for transit users during inclement weather. Shelter footing locations were prioritized based on ridership. Note that the city can install its own shelters, however, these would not receive routine maintenance and cleaning from Metro. Therefore, shelter footings with have been prioritized for this project list.

Prioritized stops for shelter footings:

- 228th Avenue NE and NE 4th Street, Northbound
- 228th Avenue NE and NE 8th Street, Northbound
- 228th Avenue NE and NE 4th Street, Southbound

## 3. TRANSIT SIGNAL PRIORITY (TSP)

| | | |
|---|---|---|
| | **Short-Term** | **1-5 years** |
| | **Medium** | **$78,00 for implementation and $39,000 annually for maintenance**<br>Per intersection:<br>$6,000 for implementation and<br>$3,000 annually for maintenance |
| **LOS** | **Primary LOS Guideline** | **Transit Operations** |




TSP will allow buses to have priority while traveling through signals, reducing signal delay at intersections and improving transit speed and reliability. King County Metro is transitioning to a NextGen TSP system that provides predictive bus arrival travel time estimates to deliver a more effective and reliable TSP system benefit. The NextGen TSP system requires Advanced Traffic Controllers (ATCs) and reliable communications with low latency.

The City of Sammamish has the infrastructure to implement TSP at all 13 signalized intersections along the transit route, with fiber installed for Econolite Cobalt controllers. An Intergovernmental Agreement (IGA) is typically required to define communications and operations between the City and King County Metro. The NextGen TSP system requires an initial setup cost by the vendor to configure the system and then an annual maintenance fee per traffic signal. In addition to the TSP vendor fees, TSP timing plans will need to be developed in coordination with King County Metro by City staff or consultants. TSP signal timing plans will need to provide a balance of benefits for the transit system and impacts to critical movements for motor vehicles and active transportation. The implementation cost estimates assume both the TSP vendor fees and the signal timing configuration and implementation costs. Installing TSP and therefore improving transit operations could encourage more transit riders. 18% of survey respondents stated one reason they don't take transit is because the bus takes too long.

Before implementing TSP, the City should complete a cost-benefit analysis to assess the delay reduction benefit to bus routes in comparison to the impact on traffic movement and intersection Level of Service (LOS). This analysis will be used to determine if the benefits of transit priority outweigh any potential vehicle traffic delays.

## 4. TRANSIT OPERATION IMPROVEMENT

| | | |
|---|---|---|
| | **Mid-Term** | **5-10 years** |
| | **High** | **$5.6 Million**<br>For three transit intersection improvements and two bus stop relocations |
| **LOS** | **Primary LOS Guideline** | **Transit Operations** |

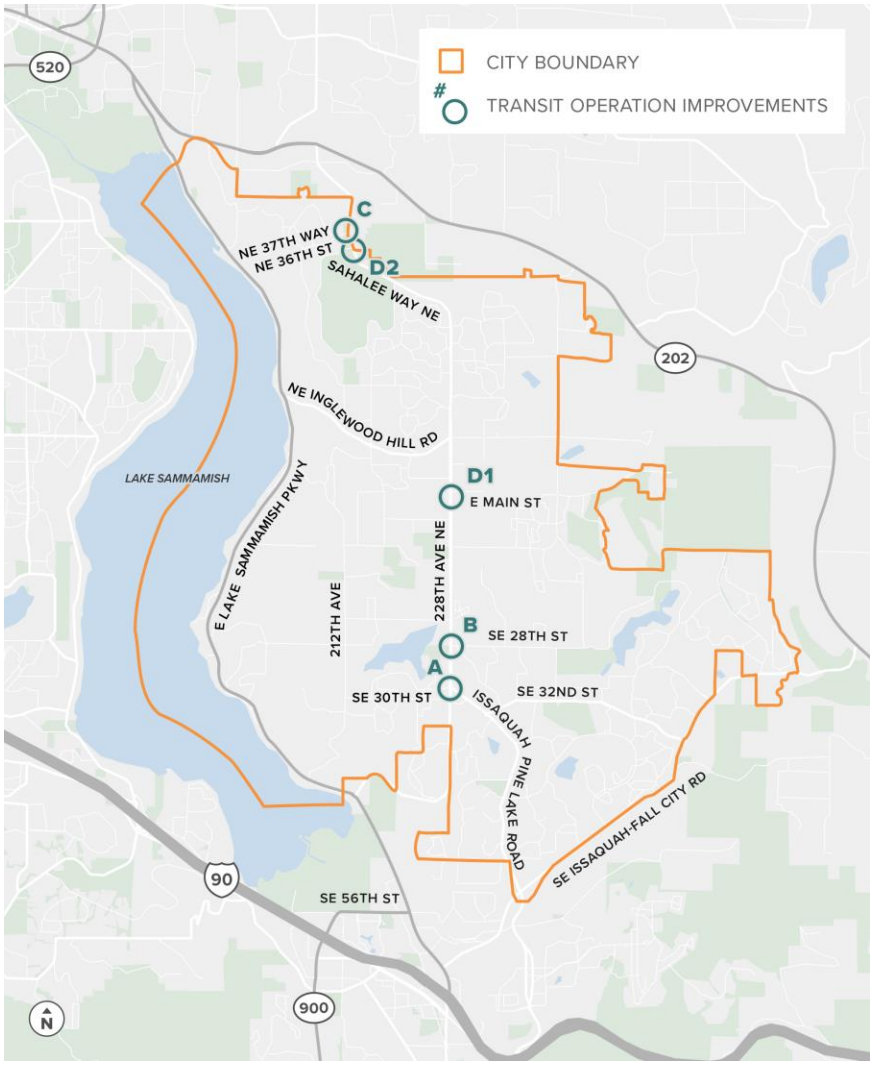



FIGURE 17: MAP OF TRANSIT OPERATION IMPROVEMENT PROJECTS

This set of projects consists of five projects with specific improvements to be made at intersections and bus stops along the transit route. These transit operation improvement projects will help improve speed and reliability of transit in Sammamish. 18% of survey respondents stated one reason they don't take transit is because the bus takes too long. Improving transit operations could encourage more transit riders. These projects are not expected to have negative impacts to general purpose traffic, and in some cases are expected to improve general purpose traffic operations. The cost listed with each project is a planning level cost estimate. Further traffic operations analysis should be completed at each location to confirm the need and benefit and/or to determine additional needs. This analysis may result in changes to the scope of the projects and, in turn, the cost estimates. Figure 17 provides a map of the projects.

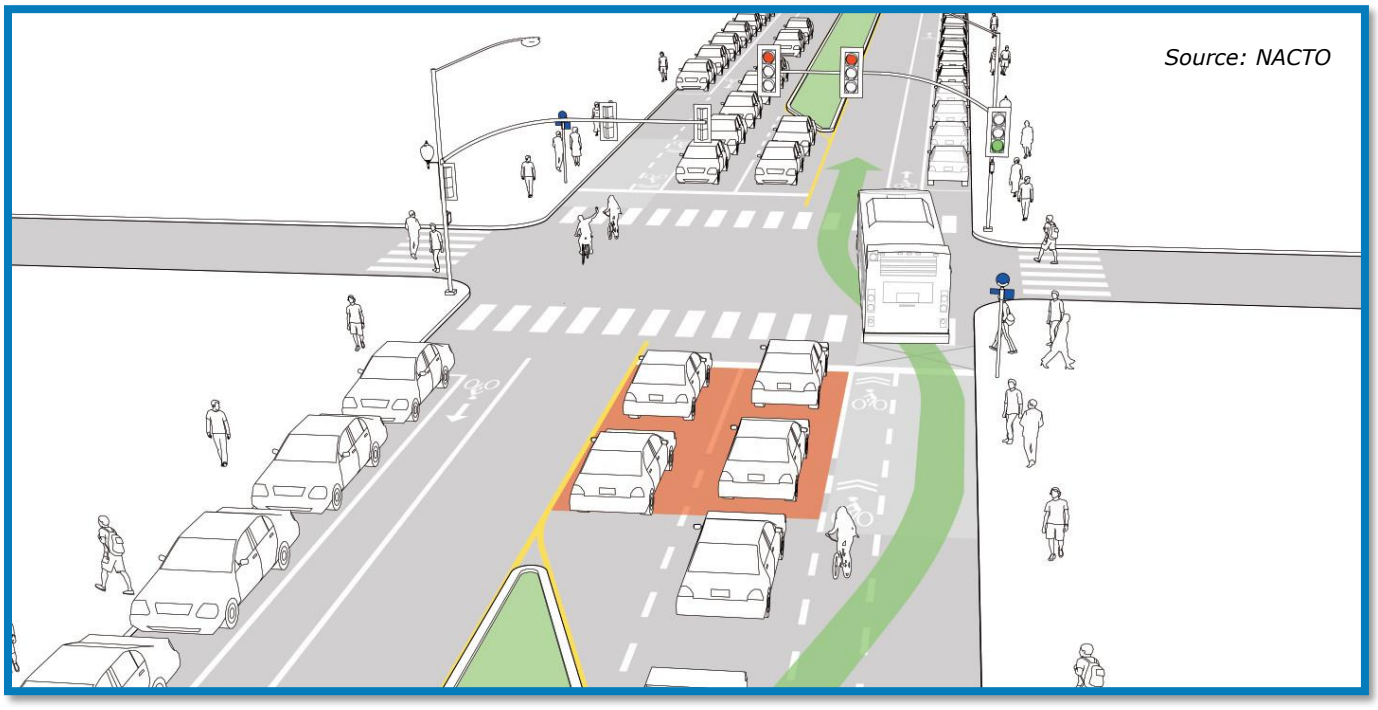
### A. SE 30TH STREET/ISSAQUAH-PINE LAKE ROAD AND 228TH AVENUE SE: RIGHT-TURN OVERLAP PHASE, $5,000-10,000

The new overlap phase will allow the southbound right turn into the South Sammamish Park and Ride to move through the intersection at the same time as the westbound left turn thus reducing transit delay at the intersection. This would require a new southbound right turn signal head, mounted to the existing signal pole, and modifications to the signal timing.

### B. SE 24TH STREET AND 228TH AVENUE SE: BUS QUEUE JUMP, $541,000

This project would add a queue jump for the northbound buses. The northbound bus stop would move to the near-side of the intersection, and the bus would stop in the right-turn lane. The queue jump would allow buses to travel through the intersection with the northbound right turners and before the through movement in order to reduce transit delay approaching the intersection. This project would require infrastructure improvements and signal timing modifications. This project cost assumes some right-of-way acquisition and a 100-foot long extension of the northbound right-turn lane to accommodate the near-side bus stop and better bypass existing northbound through queues.

Further traffic analysis, not included in the cost estimate, should be completed to determine possible alternatives and the best project for this intersection. This project was assumed to be a higher cost option. Another option could be keeping the bus stop on the far-side of the intersection but using transit signal priority (TSP) to give the bus priority at this intersection.



### C. NE 37TH WAY AND SAHALEE WAY NE: CONTINUOUS GREEN T, $4.5M

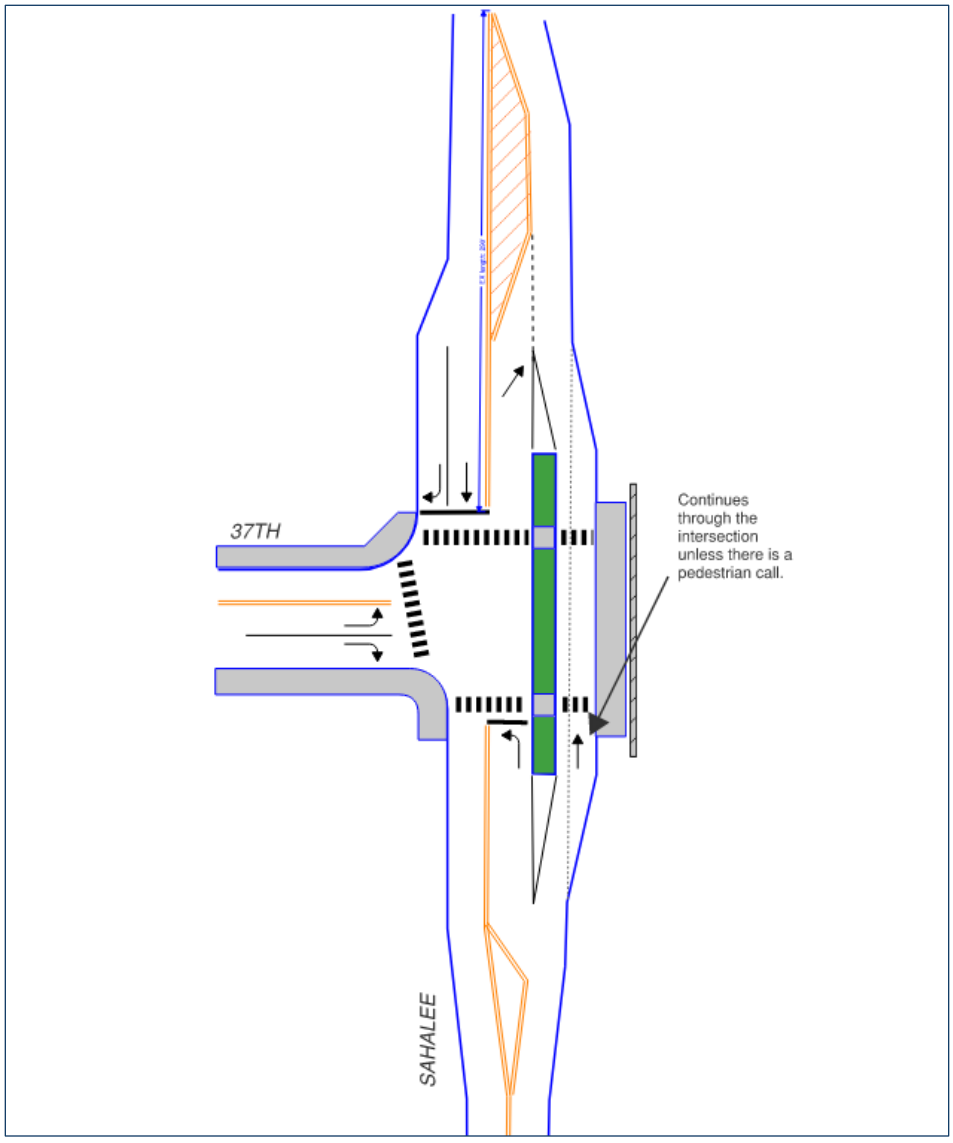



**FIGURE 18: NE 37TH WAY AND SAHALEE WAY NE: CONTINUOUS GREEN T**

*Source: Perteet*

This project would allow the northbound through movement to continue through the intersection while the eastbound movement is served. The northbound movement can always stay green, except for when there is a pedestrian call at the signal. This project would reduce northbound transit and general purpose traffic delay at the intersection. It would require a new eastbound left turn receiving lane on the north side of the intersection, with a hard barrier separating it from the northbound through receiving lane. The sidewalk on the east side of Sahalee Way NE would be extended to the bus stop, and the bus would stop in lane.

This project could be incorporated into the City's Sahalee Way Corridor Study for consideration into through the Alternatives Analysis and Project Phasing Approaches associated with a long-term Sahalee Way Corridor Improvement project. One way to reduce the cost of this project would be to reduce the speed limit on Sahalee Way, because the speed limit controls the length of the merge for the receiving lanes.

### D. NEAR-SIDE/FAR-SIDE STOP RELOCATION AT THE FOLLOWING BUS STOPS, $1,000-$5,000 EACH

Bus stops at intersections can be near-side or far-side. Near-side stops are located on the side of the road closest to the approaching bus, meaning the bus reaches the bus stop before the intersection. Far-side bus stops are located beyond the intersection, meaning the bus reaches the bus stop after the intersection. This is illustrated in Figure 19. This is particularly important at signalized intersections, where far-side stop location is generally better for transit speed and reliability as it provides greater flexibility when operating transit signal priority.

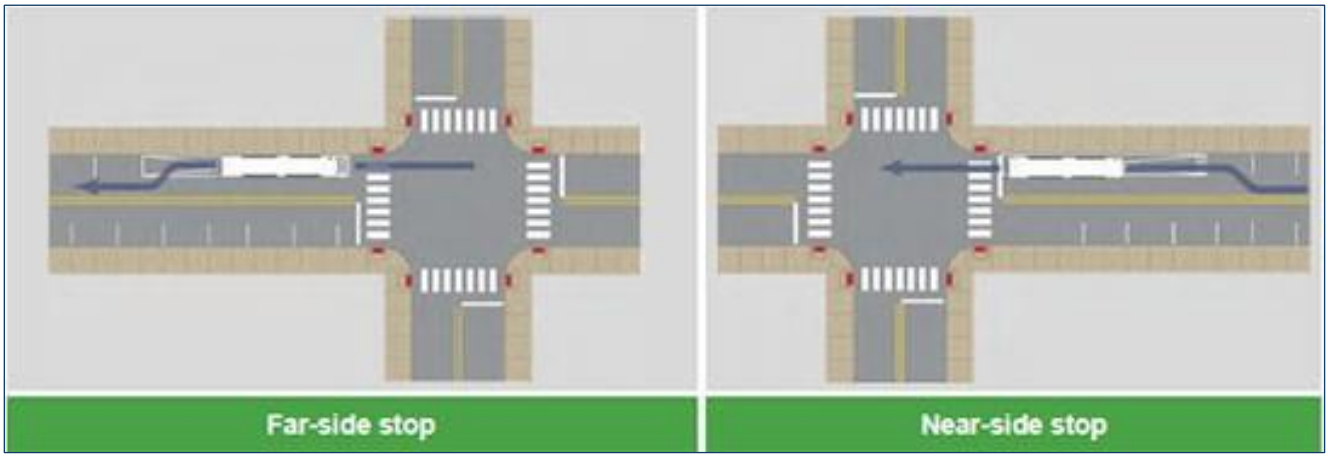



**FIGURE 19: FAR-SIDE BUS STOP AND NEAR-SIDE BUS STOP**

*Source: Skagit Transit*

1. E Main Street and 228th Avenue SE: move northbound stop to far-side. There is an existing crosswalk on the far-side. Since this is a signalized intersection, the far-side stop location can help with transit speed and reliability. This intersection is expected to be modified in the future with Town Center development.

2. NE 36th Street and Sahalee Way NE: move southbound stop to near-side of this unsignalized intersection. This will move the stop closer to the park and better align the stop pair for a potential crosswalk.

   **Two bus stop relocations to be considered as part of the Sahalee Way Corridor Improvement project. These costs are not included in the total cost of Project 4.**

3. NE 14th Street and 228th Avenue NE: At this location, there is currently no sidewalk or waiting area for the northbound bus stop. If sidewalk is added to the east side of 228th Avenue NE, this bus stop should be moved to the far-side of the intersection to avoid utility conflicts.

4. NE 22nd Street and 228th Avenue NE: At this location, there is currently no sidewalk or waiting area for the northbound bus stop. If sidewalk is added to the east side of 228th Avenue NE, this bus stop should be moved to the far-side of the intersection to better connect to the neighborhood.

## 5. MOBILITY HUB

| | | |
|---|---|---|
| | **Long-Term** | **10-20 years** |
| | **High** | **$10,000-$100,000 per smaller mobility hub**<br>**$200,000-$10 Million per larger mobility hub**<br>Depending on size, location, and amenities. Additional cost may be needed for right-of-way acquisition. |
| **LOS** | **Primary LOS Guideline** | **Access** |

A mobility hub is a space that connects a variety of transportation options, providing a more attractive connection to transit. King County Metro is in the process of developing a Mobility Hub Framework to work with jurisdictions in the development of mobility hubs. Larger mobility hubs should include parking and electric vehicle charging. King County Metro will prioritize these locations at existing or planned Park and Rides. However, there is also the option for smaller mobility hubs featuring multimodal connections other than parking. By creating these hubs, the City is responding to the growing demand for sustainable and efficient transportation options.

Sammamish could benefit from a new facility in a central location that includes some of the "larger mobility hub" amenities listed above. As part of the ST3 package, Sound Transit identified a North Sammamish Park and Ride, which consist of a 200-stall Park and Ride facility in Sammamish along the transit corridor, north of SE 8th Street. However, this facility now has an expected opening year of 2045. In making the decision to build a larger mobility hub, the City should coordinate with South Transit in their efforts to build the new North Sammamish Park and Ride. Some options for how to partner on this are described below.

In Sammamish, the larger mobility hubs could be developed by enhancing the existing South Sammamish Park and Ride, or by creating a new mobility hub near Town Center, north of SE 8th Street. Options for the new mobility hub near Town Center include:

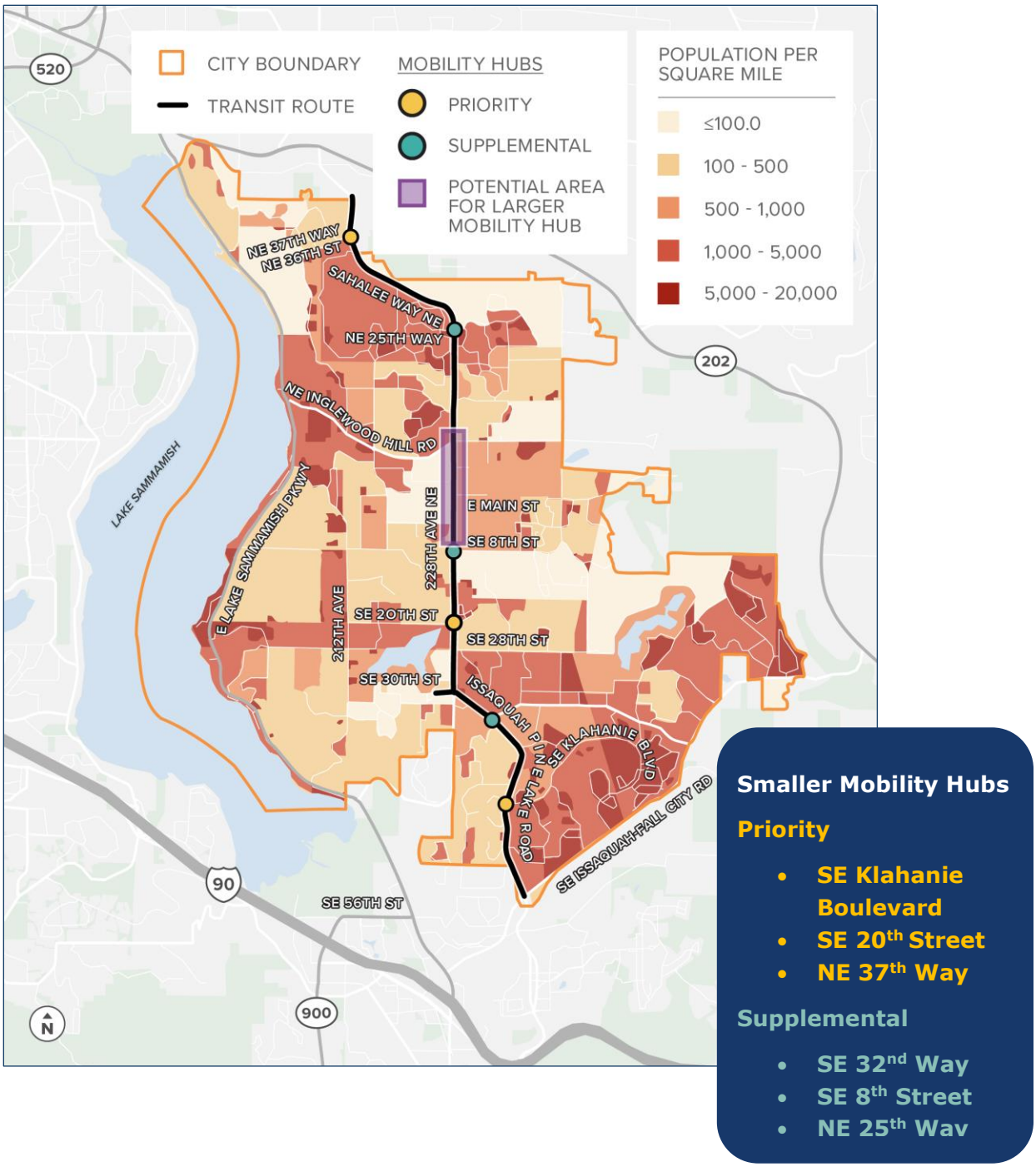
- 50-200 parking spaces
- Any range of amenities from Table 3
- Options for completion:
  - City works with Sound Transit to create a mobility hub with an opening year of 2045
  - City funds as a separate project from the Sound Transit Park and Ride, with fewer parking spaces and in a smaller space, mobility hub opens sooner than 2045
  - City works with Sound Transit to create a smaller mobility hub with parking, that Sound Transit can convert to a larger mobility hub in 2045

In the long term, one to two larger mobility hubs and three to six smaller mobility hubs would help Sammamish achieve a transit-friendly vision.

Table 3 contains options for Sammamish when considering features for future mobility hubs.

**TABLE 3: MOBILITY HUB AMENITY OPTIONS**

| AMENITY DESCRIPTION | LARGER, PARK AND RIDE MOBILITY HUB | SMALLER, LOCAL MOBILITY HUB |
|---|---|---|
| ACCESSIBLE LOCATION | Key Feature | Key Feature |
| VEHICLE PARKING | Key Feature | n/a |
| COORDINATE WITH KING COUNTY METRO | Key Feature | Key Feature |
| ELECTRIC VEHICLE CHARGING | Key Feature | n/a |
| TRANSIT CONNECTIONS | Key Feature | Key Feature |
| WAYFINDING | Key Feature | Key Feature |
| BIKE AND SCOOTER LOCKERS | Key Feature | Key Feature |
| E-BIKE AND E-SCOOTER CHARGING | Optional feature | Optional feature |
| PICK-UP AND DROP-OFF ZONES | Key Feature | Optional feature |
| REAL-TIME ARRIVAL INFORMATION | Optional feature | Optional feature |
| E-BIKE AND E-SCOOTER RENTALS OR SHARING PROGRAM | Optional feature | Optional feature |
| CARSHARE, SUCH AS ZIPCAR AND/OR GIG CAR | Optional feature | Optional feature |
| CONNECT TO CIRCULATING SHUTTLE, SEE PROJECT 6 | Key Feature | Key Feature |




**Smaller Mobility Hubs**

**Priority**

- **SE Klahanie Boulevard**
- **SE 20th Street**
- **NE 37th Way**

**Supplemental**

- **SE 32nd Way**
- **SE 8th Street**
- **NE 25th Wav**

**FIGURE 20: SMALLER MOBILITY HUB PROPOSED LOCATIONS**

Figure 20 shows proposed locations for priority and supplemental smaller mobility hubs. These mobility hubs can have any range of amenities shown in Table 2. The priority locations provide distinct areas of Sammamish with a welcoming way to connect to multimodal facilities. They are located near high-density neighborhoods and spaced out along the transit route. The other three locations are supplemental and would provide transit users in Sammamish with more options.

## 6. NEIGHBORHOOD CIRCULATING SHUTTLE

| | | |
|---|---|---|
| | **Long-Term** | **10-20 years** |
| | **High** | **$500,000-$1 Million annually**<br>Not including start-up costs |
| **LOS** | **Primary LOS Guideline** | **Access** |

The Neighborhood Circulating Shuttle would create a City-owned and operated shuttle system to connect the residential areas of the City to the transit network without having to walk or bike long distances or use a private vehicle. This shuttle would be separate from the King County Metro-operated Metro Flex program. Ideally, these vehicles would be 5-10 passenger electric vehicles, consistent with the City's Climate Action Plan. Figure 21 shows one option for a shuttle route that connects the transit route to Sammamish's higher density neighborhoods.


The proposed shuttle route connects to the mobility hubs proposed in Project 5. The proposed shuttle route is about 31 miles and takes approximately 60 minutes to travel without traffic or stopping to pick up passengers. With passenger stops and traffic, it could take up to two hours to complete the route. Therefore, 4-5 shuttles circulating during peak hours, and 2-3 shuttles circulating during off-peak hours are recommended.

The City may explore alternative routes, for example connecting directly to the light rail station in Redmond. This option may result in higher ridership, but a high cost and travel time.

Next steps for this project include further development of the shuttle route, talking with vehicle vendors and potential teaming partners, developing detailed cost estimates, and public outreach. Further analysis and discussion with vendors will be needed to determine the electric range requirement and passenger capacity of each shuttle.

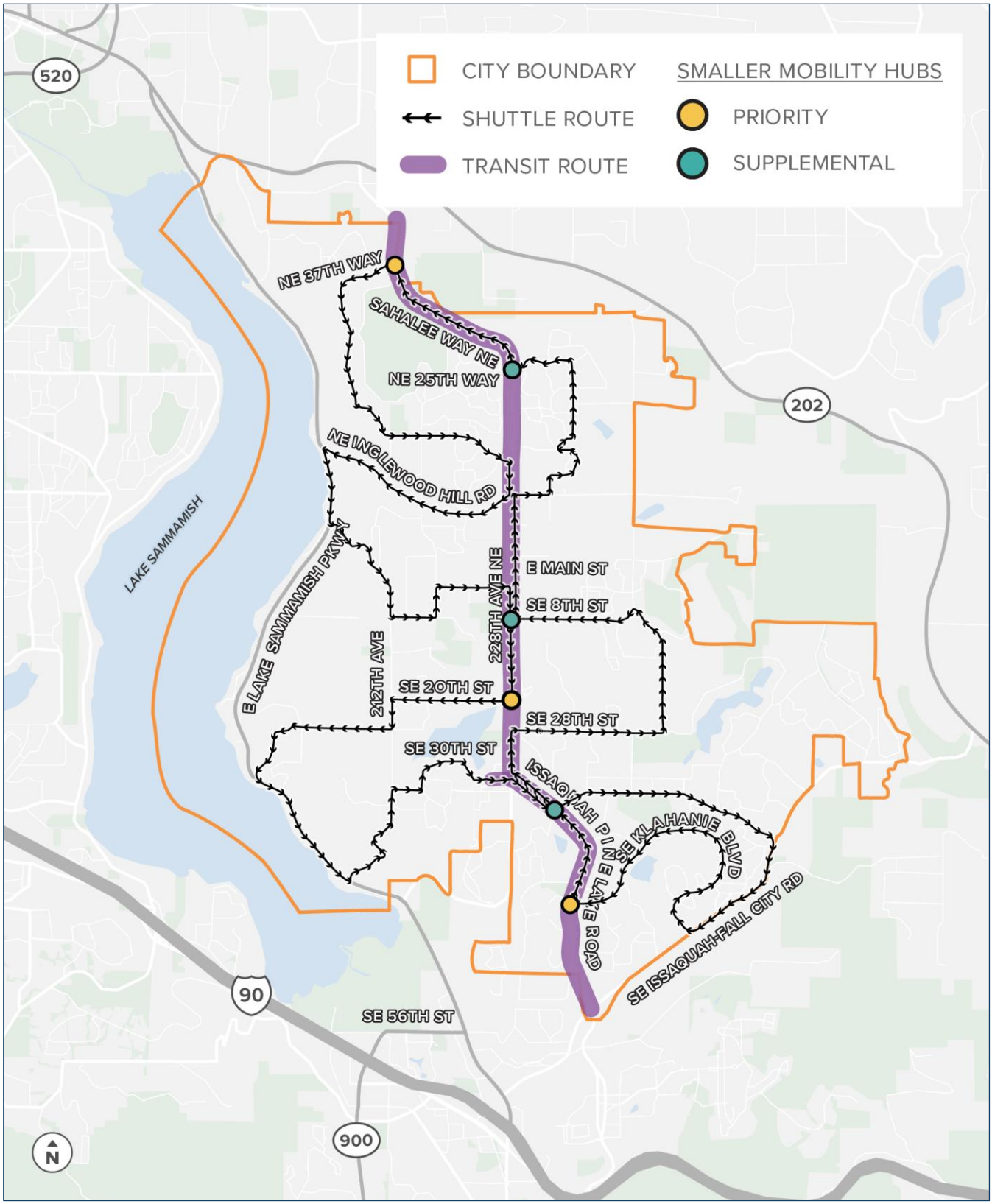



**FIGURE 21: CIRCULATING SHUTTLE PROPOSED ROUTE**

# Chapter 6: Next Steps

As the City adopts the Transit Plan and moves towards funding and implementing the project list outlined in Chapter 5, next steps must be evaluated.

In the immediate future, the City can begin funding and implementing shorter-term projects. Projects 1 through 3, the crosswalk study, bus stop amenities, and transit signal priority, are short-term projects which can begin once funded. These projects address the immediate needs and enhance the overall transit experience for residents. TSP and bus stop amenity improvements will require coordination with King County Metro, while the crosswalk study can be fully developed by City staff or with consultant input.

Project 4, the transit operation improvement consists of five discreet projects that are mid-term and are expected to take 5-10 years for analysis, design, and funding before implementation. A more comprehensive traffic analysis should be completed for each proposed project to fully develop and compare alternatives for these five projects. Some of these projects can also be evaluated as part of other planning or design projects, such as the City's upcoming Sahalee Way NE Widening project.

The long-term vision involves the development of projects that align with future needs and advancements in transit technology. These may take 10-20 years to fully develop, fund, and implement. Projects 5 and 6, the circulating shuttle and the mobility hubs, are positioned as visionary projects that will contribute to the city's transit landscape in the years to come. These initiatives require a forward-looking perspective, ensuring that they integrate with other planning efforts of the City and the larger region.

In order to keep this plan current and active, it should be updated every five years. Each update should include a description of changes to the regional and local transit system, a reevaluation of project needs, and an update on project costs.

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City of Sammamish Washington

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# APPENDIX A

## EXISTING CONDITIONS REPORT


# SAMMAMISH TRANSIT PLAN

## EXISTING CONDITIONS REPORT

JUNE 2023

PREPARED FOR:

**CITY OF SAMMAMISH**

DKS

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## DOCUMENT DESCRIPTION

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## PREPARED FOR CITY OF SAMMAMISH


## PREPARED BY DKS ASSOCIATES

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## GLOSSARY

### ALIGHTING

Dismounting from a vehicle

### HEADWAY

The average time between buses on the same route

### RIDERSHIP

The average number of passengers using a route

## INTRODUCTION

The purpose of the report is to document and analyze the existing conditions within Sammamish to establish an understanding of how the current public transportation network is serving the public. This report provides data and analysis related to transportation, demographics, regional travel patterns, the transit services currently available, and how those services operate and perform.

First, the project team reviewed previously published plans from the City of Sammamish, King County Metro, Sound Transit, and Puget Sound Regional Council (PSRC) to gain an understanding of forthcoming projects and stated policy goals as it relates to transit. Next, demographic and commute trends such as mode share were evaluated using publicly available Census data. Finally, the existing transit network was analyzed with regards to existing coverage, ridership, performance, and access.

## EXISTING PLANS

The project team studied existing plans from the City, King County Metro, Sound Transit, and PSRC to review upcoming projects, future planned changes in transit service within Sammamish and the surrounding region, stated policy goals related to transit performance, and previously completed analysis of the existing and future network. A summary of relevant information from these plans is presented below.

- City of Sammamish Transportation Improvement Plan (TIP)
    - The City's TIP includes several planned transportation projects along existing transit corridors. These projects include:
        - Issaquah-Pine Lake Road Widening – The existing two-lane cross-section will be widened to allow for an urban three-lane cross section with curb, gutter, sidewalks, bike lanes, landscape strips, center turn lanes, and raised landscaped center median in certain locations. The project also includes a new signal with crosswalk at SE 37th Place. The limits of the project are from SE 32nd Way to SE 44th Street. Design for this project is expected to be completed in 2029.
        - Sahalee Way Widening – The existing two-lane cross-section will be widened to allow for a three-lane street section with one travel lane in each direction, center median island or turn lanes, bike lanes, planter strips, and sidewalks. Signalization is also being considered for NE 28th Place at 223rd Avenue NE and Sahalee Way at NE 36th Street. The limits of the project are from SE 25th Way to the northern city boundary. 30% design for this project is expected to be completed in 2024.
- PSRC Regional Transportation Plan

- The Puget Sound Regional Transportation Plan (RTP) was adopted by the General Assembly on May 26, 2022. The RTP sets forth the framework for achieving the policy goals detailed in the VISION 2050. Selected regional modeling outputs for the 2050 horizon year related to transit include:
    - 59% of households will be within ½ mile of an integrated high-capacity transit (HCT) system, and transit ridership is expected to more than triple by 2050.
    - Areas with higher concentrations of people of color and people with low incomes will have higher rates of access to high-capacity transit (82% and 79% respectively) compared to the regional average (59%).
    - Households on average will experience a 15% reduction in annual vehicle hours of delay from 2018.
    - Average household vehicle miles traveled (VMT) are reduced by 23%.
    - Growth in transit trips will be 82% between 2018 and 2050.
    - The average person in the region is forecast to spend about 34 minutes each day traveling, a 15% reduction compared to 2018.
    - Single-occupancy vehicle (SOV) mode shares to work are forecast to decrease from approximately 65% in 2018 to approximately 52% from 2018.
    - Walking, biking, and transit will constitute 32% of all work trips, an increase from 17% in 2018.
- In 2018, 83% of trips accessing transit did so through non-motorized modes travel (biking or walking). Furthermore approximately 25% of people in the region lived within ½ mile of a high-capacity transit station.
- High-capacity transit modes provided approximately 25% of the region's transit boardings in 2018.
- PSRC's regional plan for growth, VISION 2050, calls for attracting 65% of the region's residential growth and 75% of its employment growth to regional geographies that are centered upon high-capacity transit station areas. This is referred to as transit-oriented developed (TOD).
- The Coordinated Mobility Plan constitutes Appendix B of PSRC's RTP. This plan provides a planning framework and implementation strategy for the development of transportation services for people with special transportation needs. Specific groups include older adult and youth populations, people with disabilities, and low-income households. This plan includes an inventory of existing specialized transportation services such as ADA Paratransit, Non-Emergency Medical Transportation, and Travel Training. The Coordinated Mobility Plan also includes several strategies for targeting mobility and access improvements for those with special transportation needs

including the expansion of paratransit and other on-demand services, building more ADA-compliant infrastructure, and enhancements to regional coordination across various organizations.

- Appendix D2 of the RTP is the Regional Capacity Project List. Included in this document are two transportation improvement projects within Sammamish which are labeled as "candidate" which means they have not yet been approved within the Metropolitan Transportation Plan (MTP). The two projects are as follows:
    - 228th Ave SE Capacity Improvements – This project includes widening 228th Ave SE to five lanes along with adding striped or buffered bike lanes, curb, gutter and sidewalk/boardwalk, intersection improvements at SE 40th St, and signalization of the Providence Heights Loop intersection. The Regional Capacity List estimates that the project will be completed in 2026, but project scoping, timing, and budget have not yet been determined.
    - Sahalee Way NE Capacity Improvements – This project includes widening Sahalee Way NE to three to five lanes along with adding buffered bike lanes, curb, gutter, sidewalk, intersections improvements, and signalization of the NE 28th Place intersection. It is estimated that the project will be completed in 2030. This project is also included in the City's TIP. A corridor study is planned for 2024 to allow the City to determine the improvements necessary for this corridor.

- King County Metro's Metro Connects
    - Metro Connects, adopted in January 2017 and updated in November 2021, is King County Metro's long-range plan for system improvement and expansion for 2050. The plan, which is not fully funded, calls for a more than 70 percent increase in service by 2050. If fully implemented, the plan projects a 15-20% reduction in per capita VMT throughout the region.
        - The plan calls for target time savings goals categorized by type of service. These goals are as follows:
            - New RapidRide – 20%+ time savings
            - Existing RapidRide – 10-15% time savings
            - Frequent – 10-15% time savings
            - Express – 5-10% time savings
            - Local – 3-5% time savings
        - Travel time reductions can be achieved through infrastructure investments such as Business Access and Transit (BAT) lanes and transit signal priority and through technology such as more efficient fare payment systems.

        - The plan supports transit-oriented communities (TOCs) and transit-oriented development (TODs) to support transit use through higher density development patterns.
        - Metro has identified key performance measures to assess its service and align with their strategic vision. These include but are not limited to ridership, ORCA transfers, proximity to transit, and VMT.

- Sound Transit's ST3 Plan
    - Sound Transit's Regional Transit System Plan for the Central Puget Sound region was first completed in June 2016 and was subsequently revised in a realignment plan which was adopted in August 2021. The ST3 plan proposes an expansion and improvement of Sound Transit's existing service.
        - Light Rail
            - Extend light rail from S Kirkland to Issaquah.
            - Extend light rail from Kent/Des Moines to Federal Way.
            - Extend light rail from Angle Lake to Kent/Des Moines.
            - Extend light rail from Federal Way to Tacoma and between downtown Seattle to West Seattle.
            - Extend light rail between downtown Seattle and Ballard.
            - Extend light rail from Lynnwood to Everett via the Southwest Everett Industrial Center.
            - Extend light rail from Tacoma Link to Tacoma Community College.
            - Extend light rail on the Eastside connecting Redmond, Bellevue, south Kirkland, and Issaquah to each other and the rest of the light rail network.
        - Bus Rapid Transit (BRT)
            - Establish BRT service on the I-405 from the Lynnwood Transit Center to the Tukwila International Boulevard light rail station, and from there via SR 518 to the Burien Transit Center.
            - A new transit center will be added in south Renton.
            - BRT service using BAT lanes on SR 522, connecting Link light rail station in Shoreline and I-405 BRT service near University of Washington Bothell.

- Other bus improvement investments such as traffic signal and bus priority improvements on Madison Street BRT.
- Commuter Rail
    - Extend Sounder commuter rail service during peak hours from Lakewood to new stations at Tillicum and DuPont.
- North Sammamish Park and Ride
    - The project is intended to provide up to 200 parking spaces
    - The Park and Ride is expected to be located in the northern part of the City of Sammamish.
    - The total budget for this project is $20M, which includes all phases of the project from planning, design, property acquisition, construction and administrative costs.
    - On August 5, 2021, the Sound Transit Board delayed the opening of the park and ride to 2045.

## DATA COLLECTION AND VISUALIZATION

The project team utilized two data collection tools in this report. The first is data from the King County Metro Speed and Reliability dashboard which aggregates existing transit performance measures such as passenger delay within King County across multiple transit routes. The second data source is MySidewalk, a platform which allows publicly available data such as the US Census to be easily visualized across selected geographies.

- King County Metro Speed and Reliability Planning Dashboard
    - King County Metro developed an analytic dashboard to help diagnose speed and reliability issues throughout the bus system and evaluate the benefits and costs of various bus speed and reliability investments. Data from this dashboard was used to provide metrics such as bus delay and passenger delay that are presented in this report.
- MySidewalk
    - MySidewalk is a platform which pulls together publicly available data such as the US Census and the American Community Survey (ASC) to produce tables and visualizations for specific geographies. The ACS is an ongoing survey conducted by the Census Bureau. The survey continues all year, every year with randomly sampled addresses in every state. Relevant survey questions include demographic data and journey to work data. The project team used MySidewalk to analyze

demographic trends for Sammamish, at the census block group level where appropriate and feasible.

# EXISTING CONDITIONS ANALYSIS

This section covers the analysis of existing demographics and commute patterns of Sammamish. In addition, this section includes an analysis of current transit operations, access to transit, travel time competitiveness as it relates to mode choice, equity considerations, and operational performance.

## COVID-19 IMPACTS ON SAMMAMISH TRANSIT

The COVID-19 pandemic had significant impacts on transportation within Sammamish. This report explores existing conditions, and that is generally defined as 2021-2023, depending on available data. COVID-19 had significant impacts on transit ridership in the Puget Sound region, including Sammamish. As seen in Figure 17, transit ridership in Sammamish was about 50% higher in 2019 compared with 2022. In 2020, King County Metro permanently suspended Route 219, and added the Community Ride service in Sammamish, now known as Metro Flex. Metro Flex is discussed in detail later in this report. The decrease in ridership trend is also shown in the South Sammamish Park and Ride occupancy data. In 2019, the park and ride was about 54% full on the average weekday, and it reduced to only 2% in 2021. The share of workers who worked from home in Sammamish increased during this time from 9.7% in 2019 to 24.6% in 2021.

## EXISTING DEMOGRAPHICS

This section provides an overview of the current demographic characteristics in Sammamish. US Census and ACS data was pulled from the MySidewalk platform to gain an understanding of both people-centered demographic attributes such as race/ethnicity and income level and transportation-related attributes including modal split and average commute times. This analysis will allow for a deeper understanding of how the existing transportation network is serving the community in an equitable manner.

### KEY TAKEAWAYS- EXISTING DEMOGRAPHICS

There were 66,531 people living in Sammamish as of 2021. Figure 1 shows that most of Sammamish has less than 5,000 people per square mile. The areas of highest population density are generally located in the Klahanie neighborhood. The Klahanie neighborhood is bound by Issaquah-Pine Lake Road SE and SE 32$^{nd}$ Street in the southeast corner of the City.

Figure 2 shows a breakdown of the percentage of the total population by self-reported ethnicity. In summary, 54.5% of the total population is White. For comparison, in King County as a whole, 63.5% of the total population is White. The second largest ethnic group in Sammamish is Asian at 33.3%, followed by two or more races at 5.9%. As shown in Figure 3, people of color are most concentrated in a block group at the northernmost portion of the city. People of color are well distributed across the city, with most block groups having at least 30% people of color.

Figure 4 illustrates that the majority of block groups in Sammamish have less than 5% of the population qualifying as low-income, which is defined by the federal poverty level[1]. The area of highest concentration of people with low income is the Klahanie neighborhood. Overall, 3.1% of Sammamish is considered to be in poverty, compared with 9.3% overall in King County.

Sammamish tends to have a younger population with more families than King County on average. Figure 5 shows that 6.1% of the population in Sammamish are children under the age of 5, compared with 5.2% for King County overall. In Sammamish, 29.6% of the population are under the age of 18, compared with 19.2% in King County overall. As depicted in Figure 6, 7.8% of the population of Sammamish is aged 65 years or older, compared with 14.2% of the population of King County. The percentage of the population over the age of 65 has more than doubled in the past two decades, as shown in Figure 7.

As shown in Figure 8, citywide, the proportion of households with one available vehicle is 11.6%, while 87.2% of households have two or more available vehicles. For comparison, in King County, on average 27.9% of households have one vehicle available, while 66.1% of households have two or more available vehicles. Zero vehicle households comprise 1.2%, compared with 6% county-wide. In Sammamish, these households are most concentrated in a block group at the northernmost portion of the city as shown in Figure 9; however, there are some of these households in most census block groups within the city. It is important to note that the geographic distribution of zero vehicle households does not have a strong correlation with the distribution of low-income populations.

Figure 10 shows where the highest concentration of low-paying jobs is within the city. These areas coincide with the three retail shopping centers within Sammamish – Sammamish Highlands, Pine Lake Village, and Klahanie.

[1] https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines

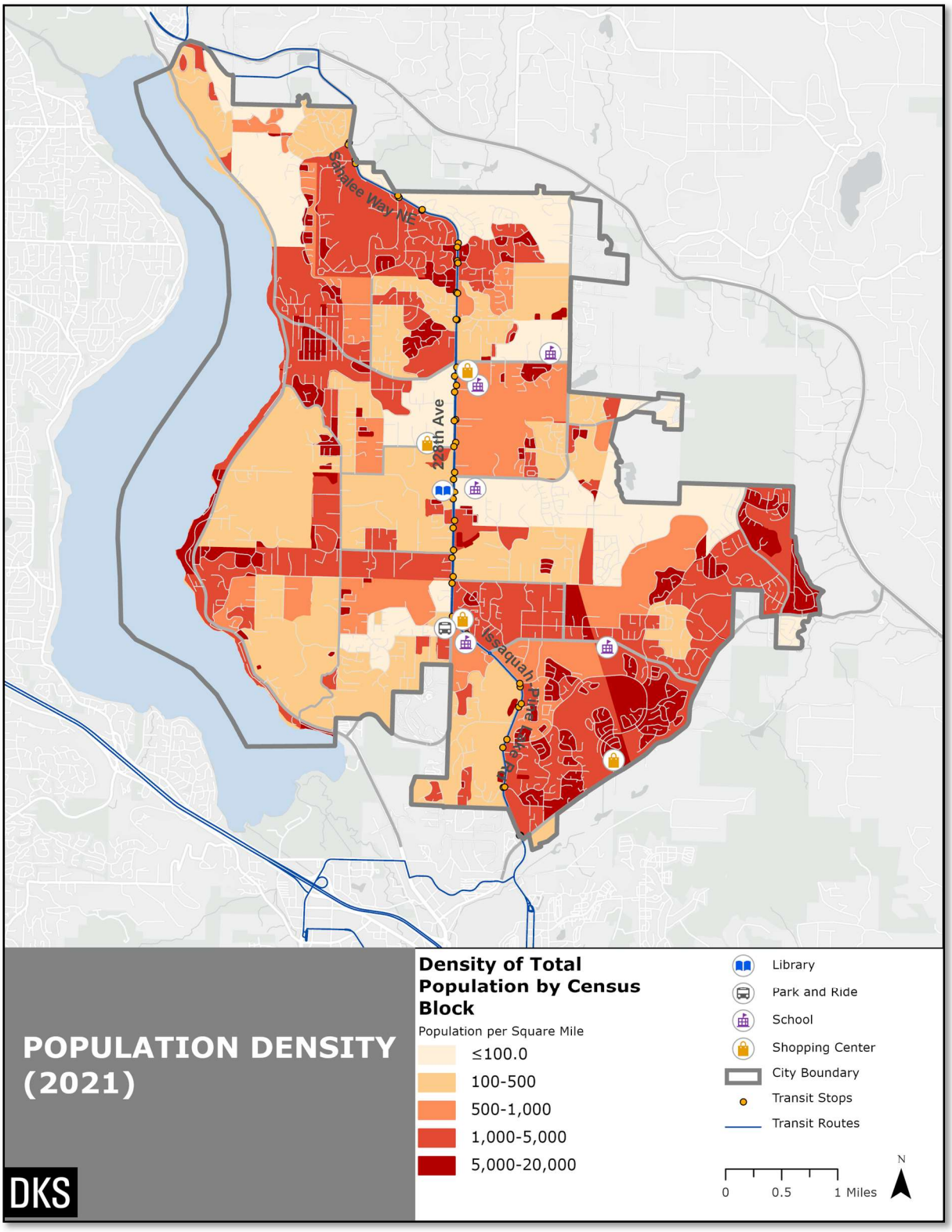


**FIGURE 1: GEOGRAPHIC DISTRIBUTION OF TOTAL POPULATION BY BLOCK**

*Source: US Census 2021*

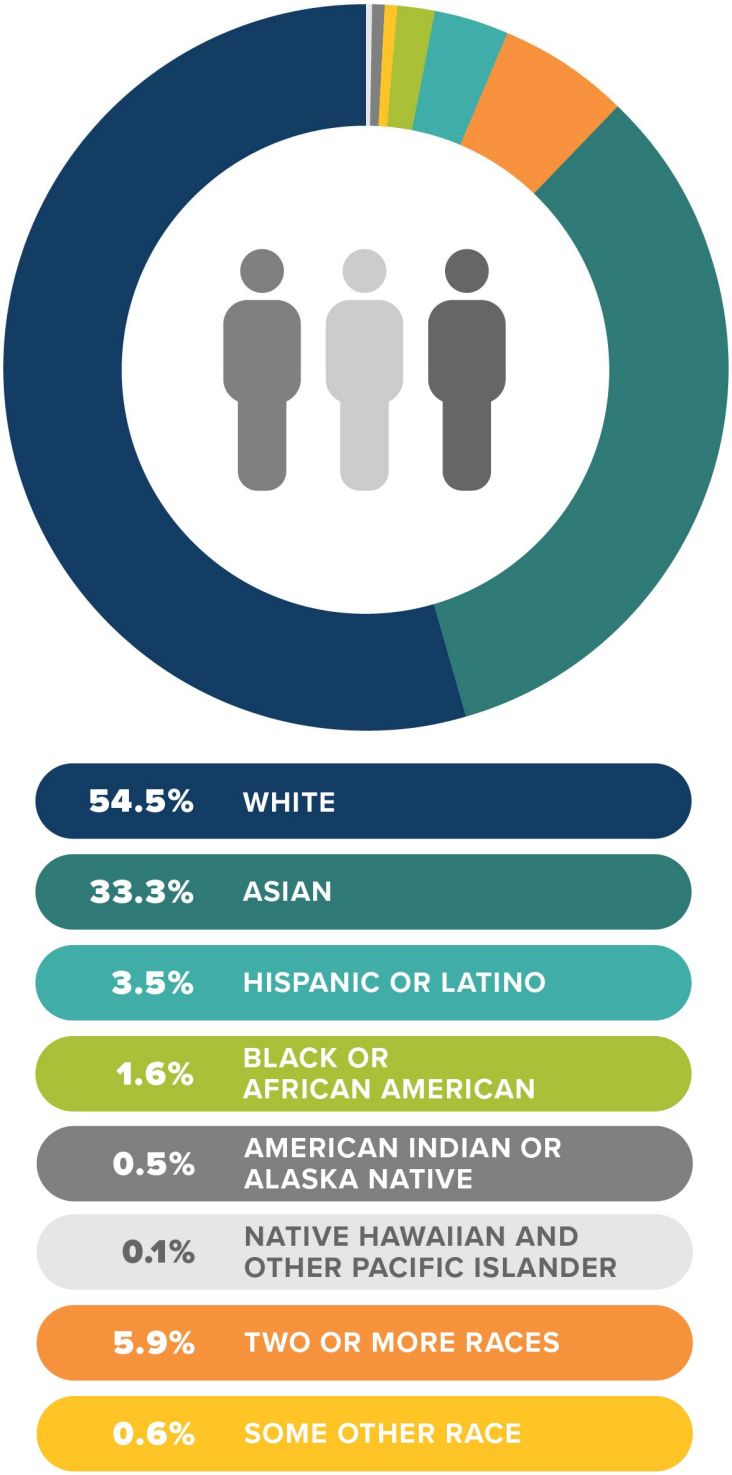


**FIGURE 2: RACE/ETHNICITY BREAKDOWN IN SAMMAMISH**

*Source: US Census 2021*

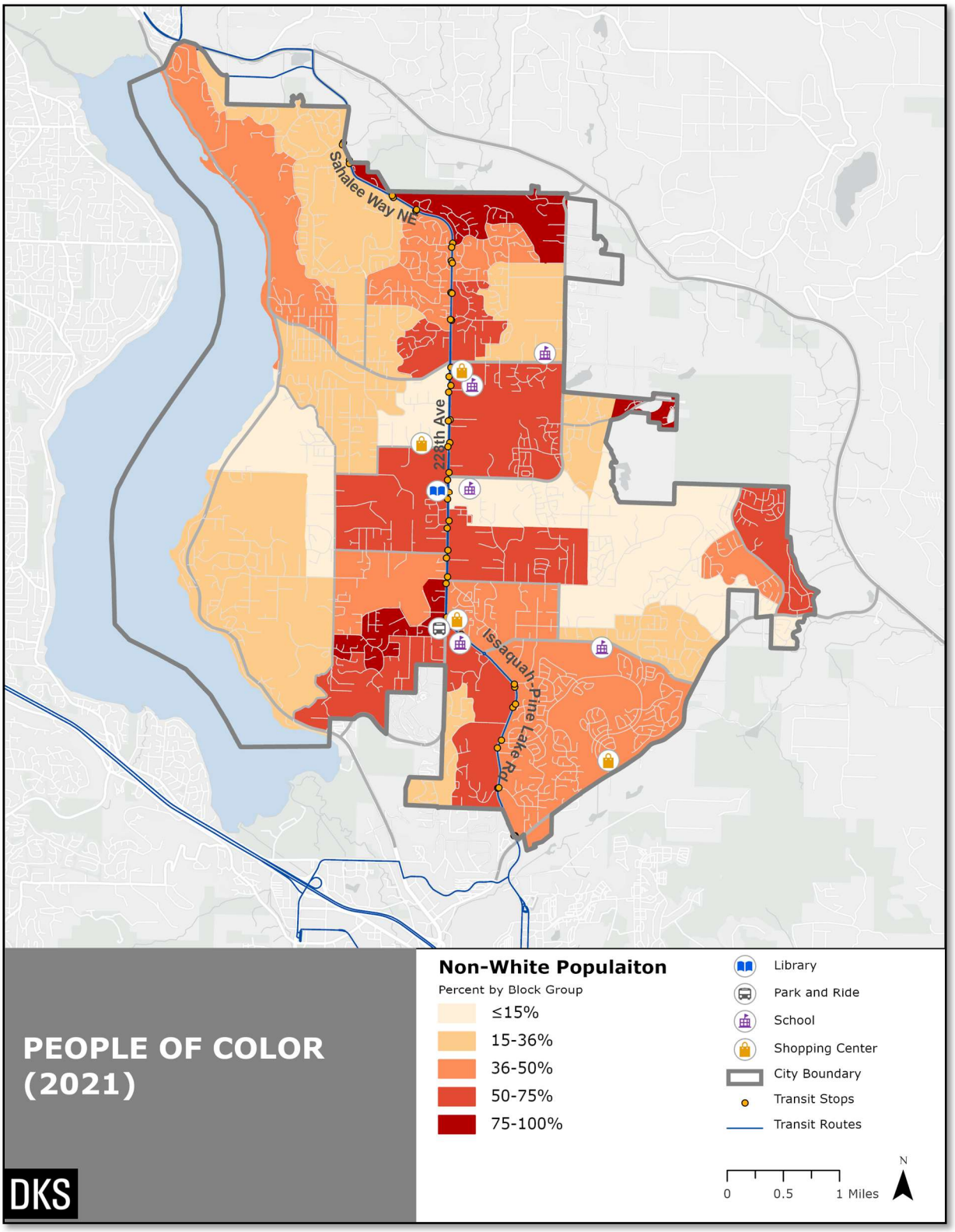


**FIGURE 3: GEOGRAPHIC DISTRIBUTION OF RACIAL DIVERSITY BY BLOCK**

*Source: US Census 2021*

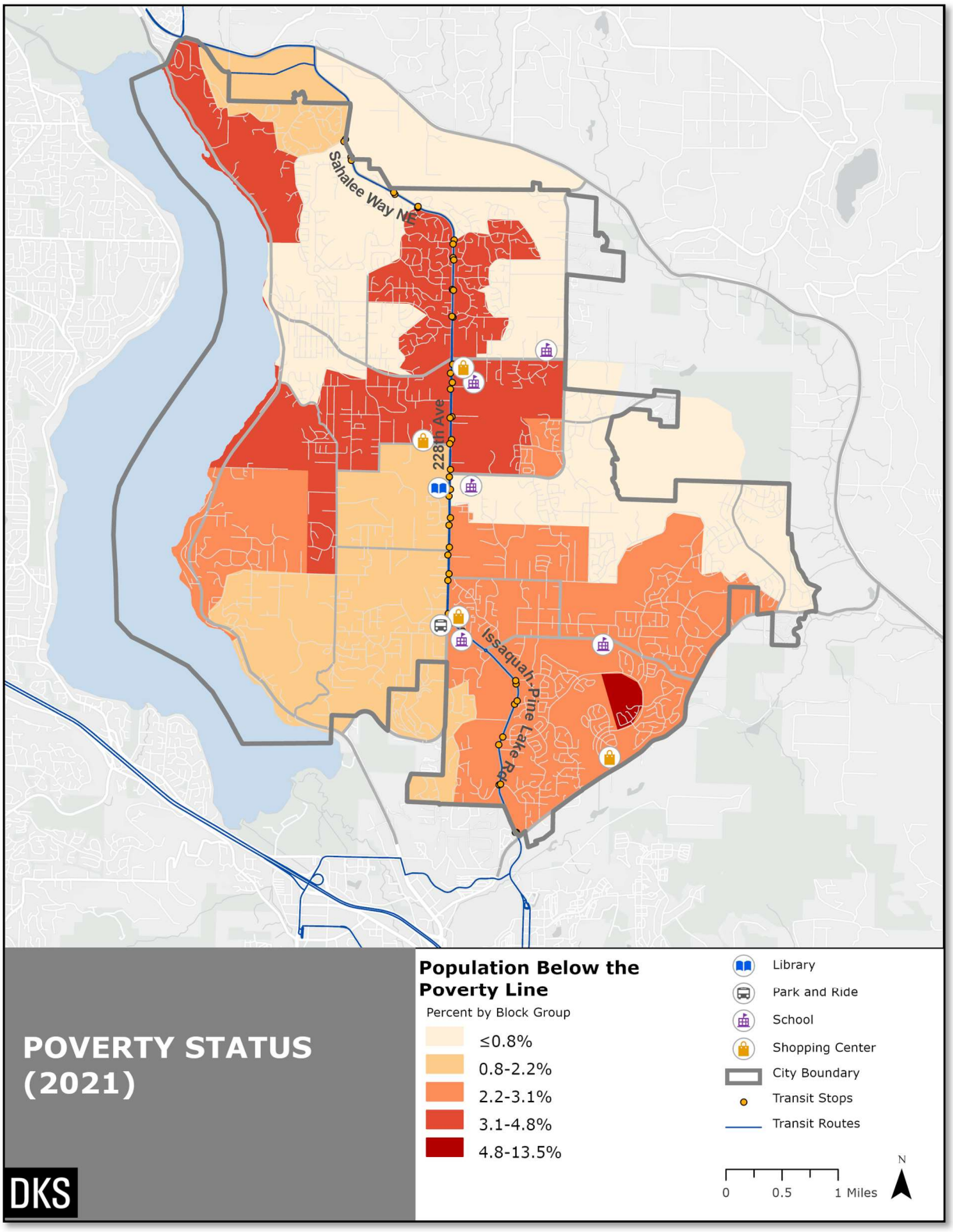


**FIGURE 4: GEOGRAPHIC DISTRIBUTION OF LOW-INCOME POPULATION BY BLOCK GROUP**

*Source: US Census 2021*

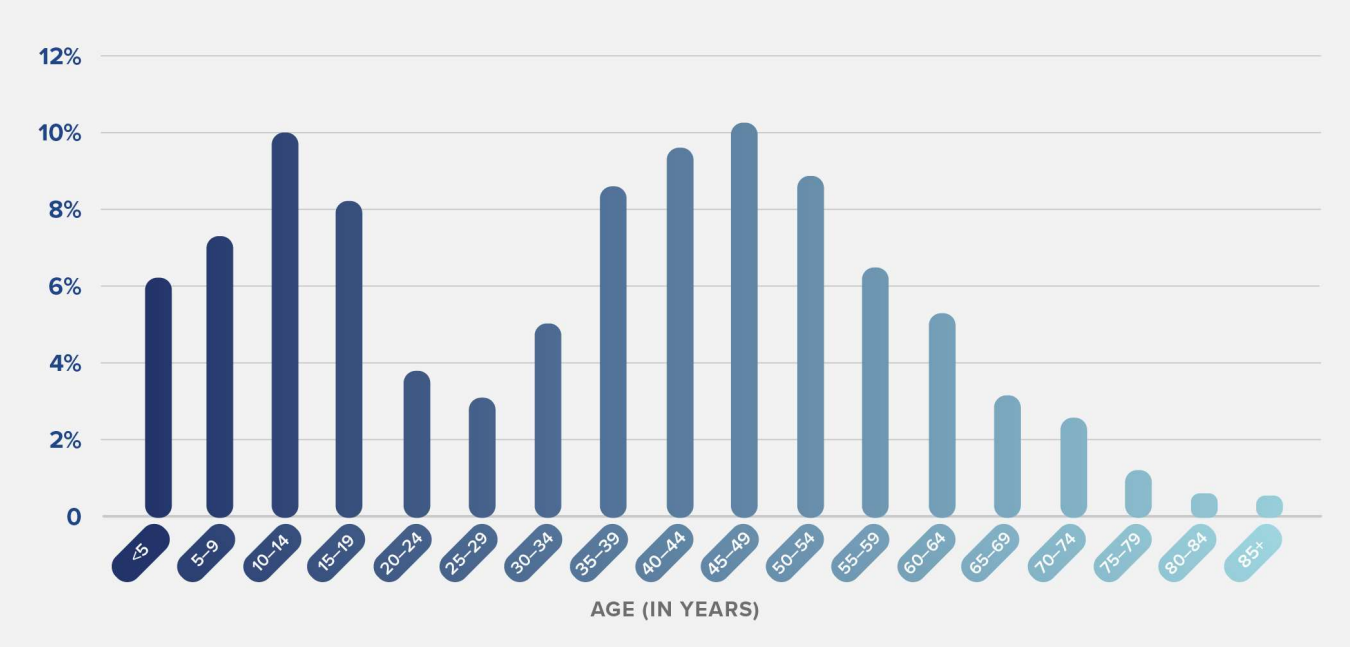


**FIGURE 5: AGE BREAKDOWN OF SAMMAMISH POPULATION**

*Source: US Census 2021*

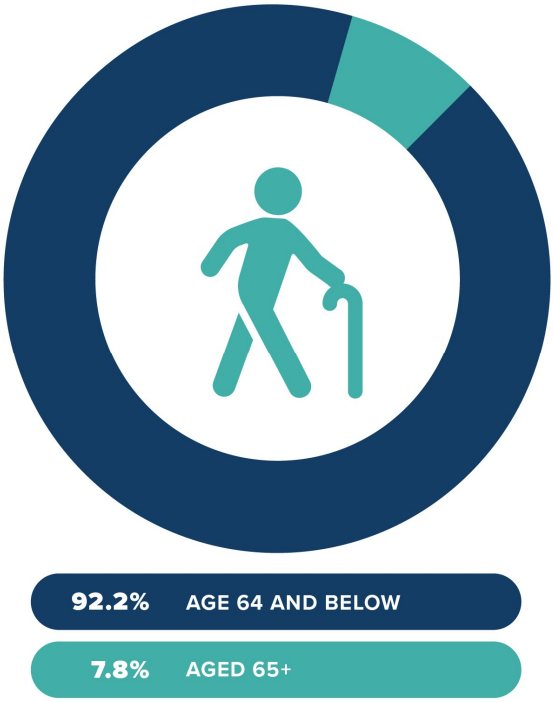


**FIGURE 6: SENIORS 65+ LIVING IN SAMMAMISH**

*Source: US Census 2021*

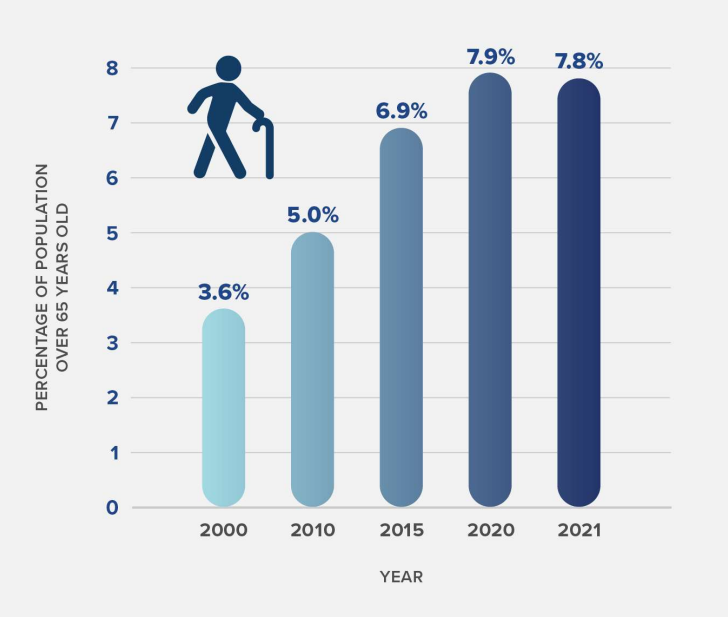


**FIGURE 7: SENIOR 65+ SAMMAMISH POPULATION OVER TIME**

*Source: US Census 2021*

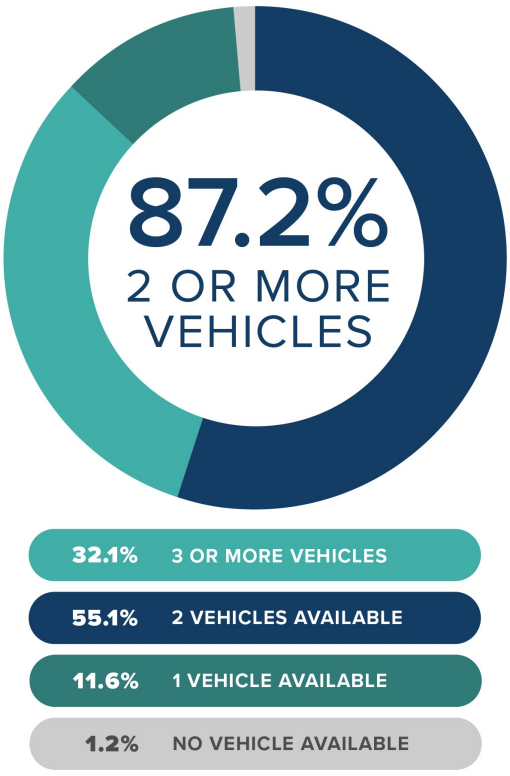


**FIGURE 8: AVAILABLE VEHICLES PER OCCUPIED HOUSING UNIT IN SAMMAMISH**

*Source: US Census 2021*

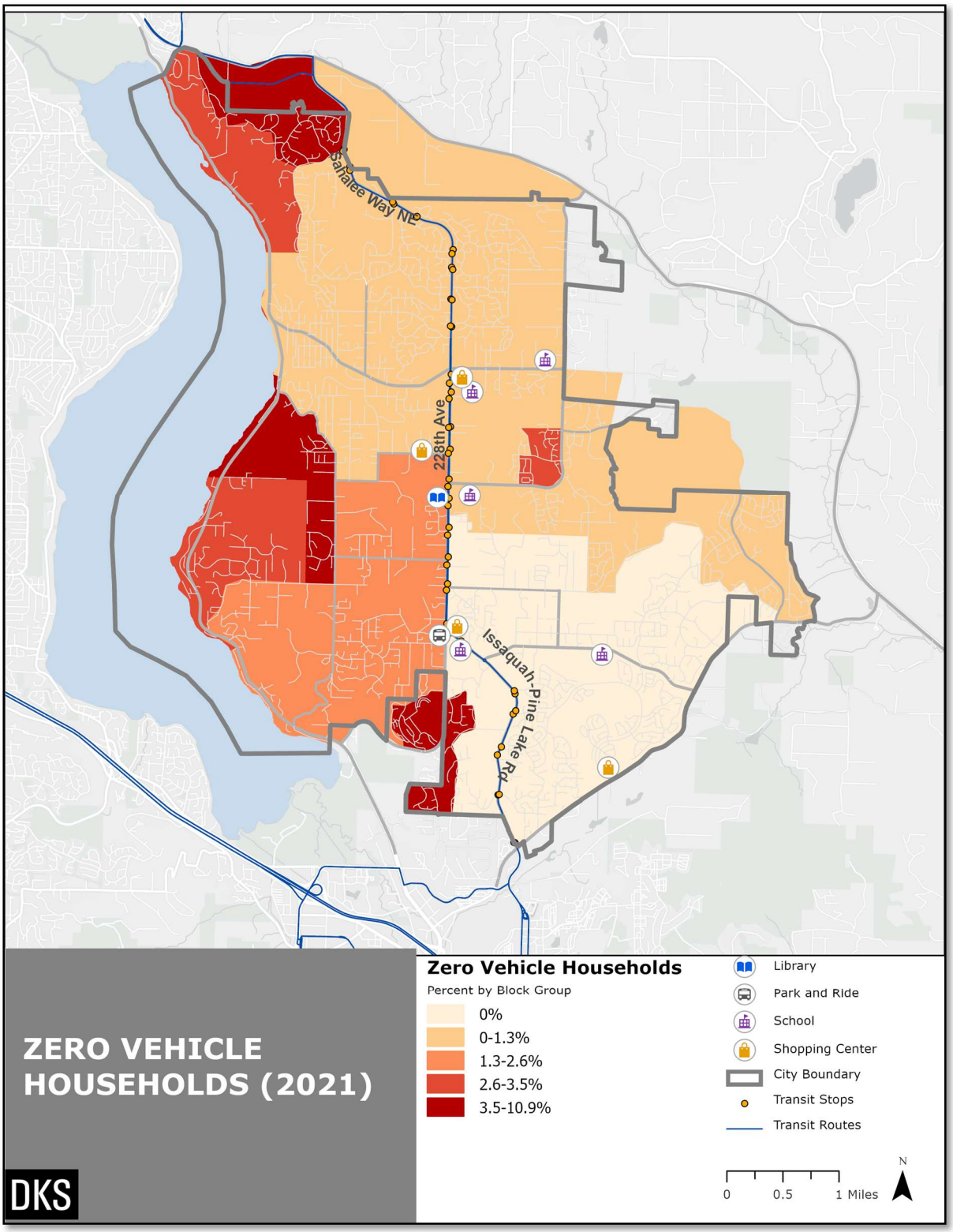


**FIGURE 9: GEOGRAPHIC DISTRIBUTION OF ZERO VEHICLE HOUSEHOLDS BY BLOCK GROUP**

*Source: US Census 2021*

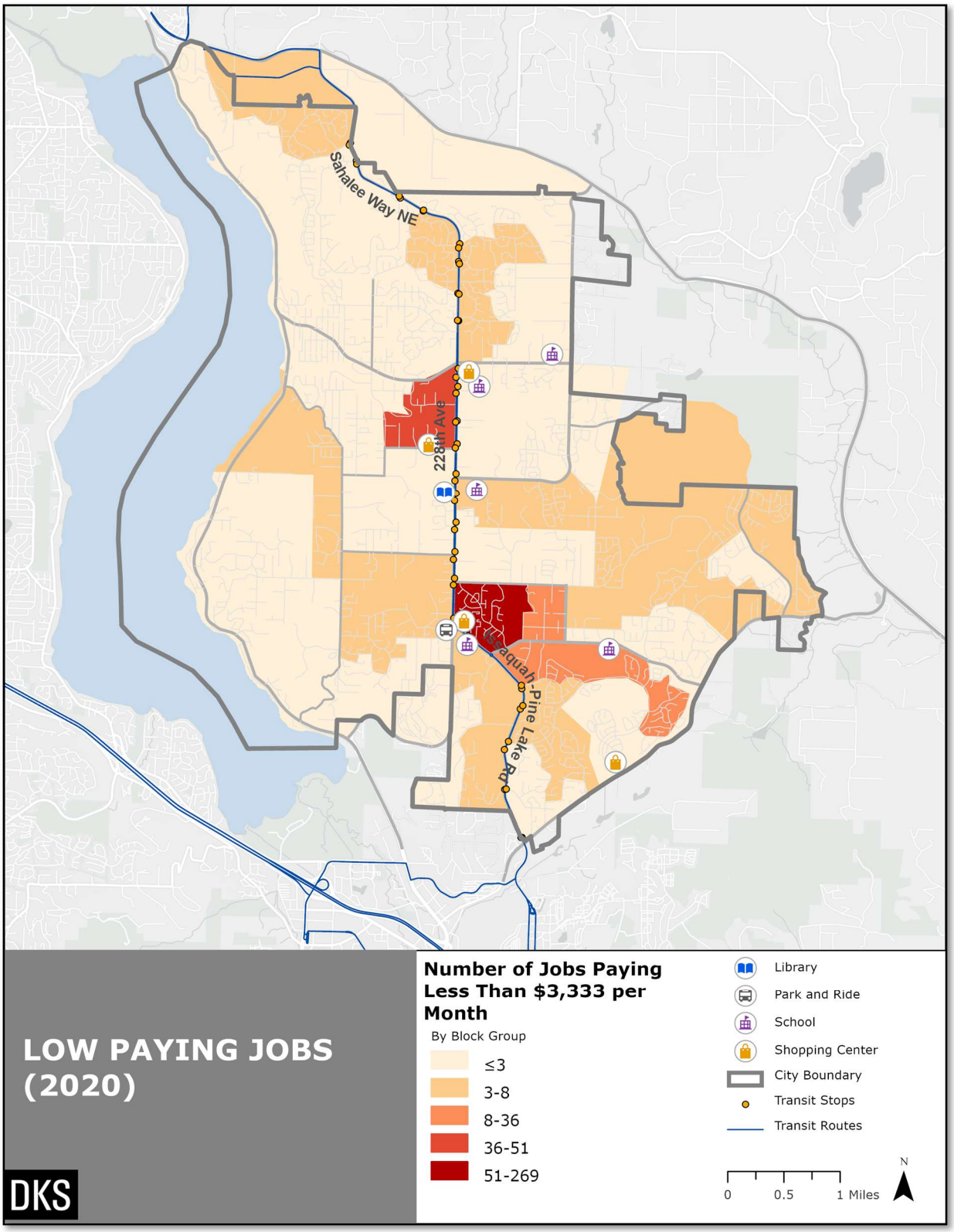


**FIGURE 10: GEOGRAPHIC DISTRIBUTION OF JOBS BY BLOCK GROUP**

*Source: US Census 2020*

## KEY TAKEAWAYS- EXISTING COMMUTE PATTERNS

US Census and ACS data was used to analyze transportation-related characteristics of those living in Sammamish. As shown in Figure 11, for commute trips, the majority of people drive alone at 60%. The next highest commute mode choice is work from home at 24.6%. These workers do not use transportation services for regular commuting. Figure 11 also shows the commute mode share excluding people who work from home. It is notable that the drive alone proportion increases to 79.6% once non-commuters are removed. Figure 12 shows the average commute time for workers living in Sammamish by commute mode. Of all those commuting to work, 12.4% of workers have a commute longer than an hour. This number increases significantly to 64% for public transit commuters. The data shows that no public transit commuters in Sammamish have computers less than 35 minutes. Generally, those who carpool are more likely to have a longer commute than those who drive alone.

Figure 13 shows that walking, biking, and transit comprise 9% of Sammamish commute trips when excluding those who work from home. Transit commute trips are most numerous in Census blocks groups surrounding the intersection of 228$^{th}$ Avenue and NE 8th Street, as illustrated in Figure 14. This area of Sammamish is directly adjacent to the Sammamish Highlands shopping center on the east side of 228$^{th}$ Avenue as well as a condominium development on the west side of 228$^{th}$ Avenue. Other pockets of relatively high public transit usage for commuting includes the Klahanie neighborhood and a block group at the southwest area of town despite these locations not having adjacent access to transit stops.

At the Census block group level, the highest levels of commuting by transit (Figure 14) have the strongest correlation with low-paying jobs. The highest levels of commuting by transit also correlated with being close to a transit stop. Commuting by transit was not especially related to other demographic characteristics including population density, racial/ethnic minorities, people with low incomes, and zero vehicle households.

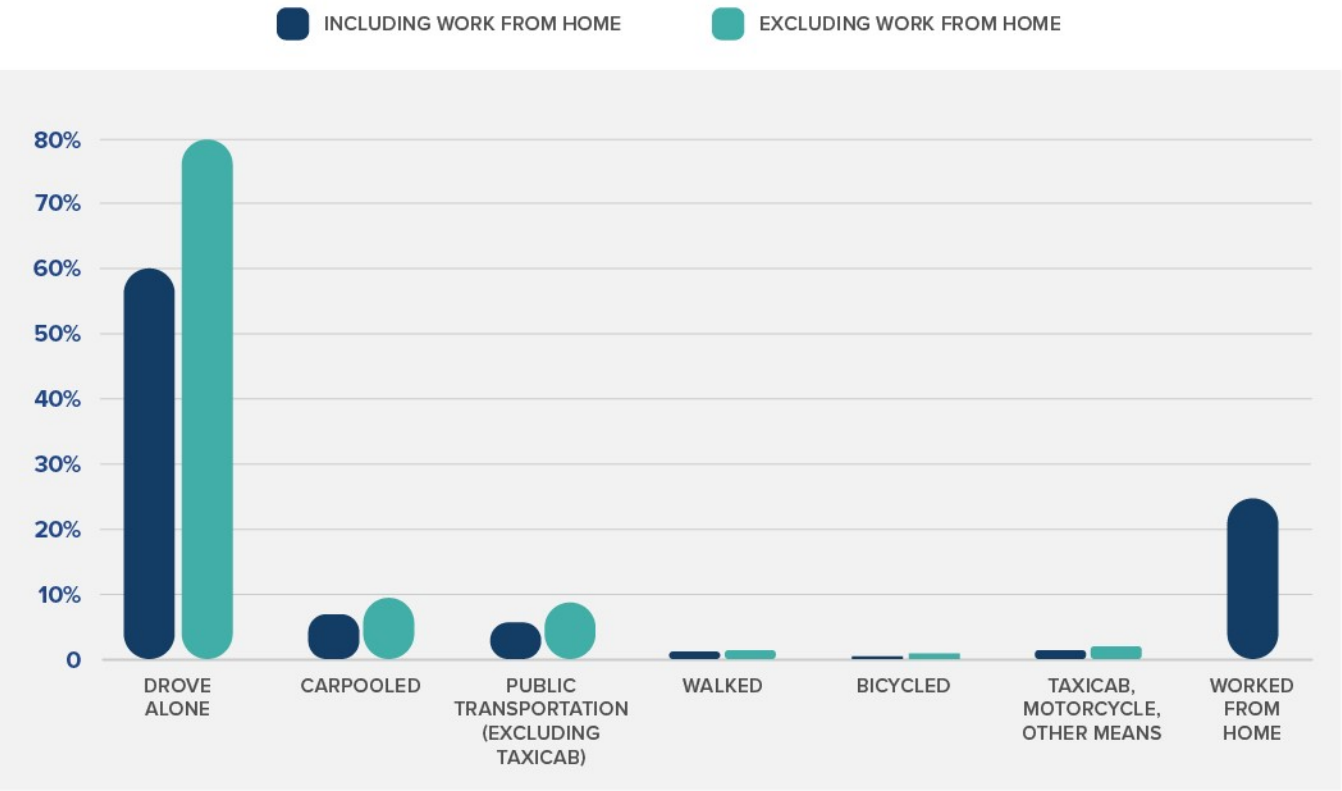


**FIGURE 11: COMMUTE MODE SHARE WITHIN SAMMAMISH (INCLUDING AND EXCLUDING WORK FROM HOME)**

*Source: US Census 2021*

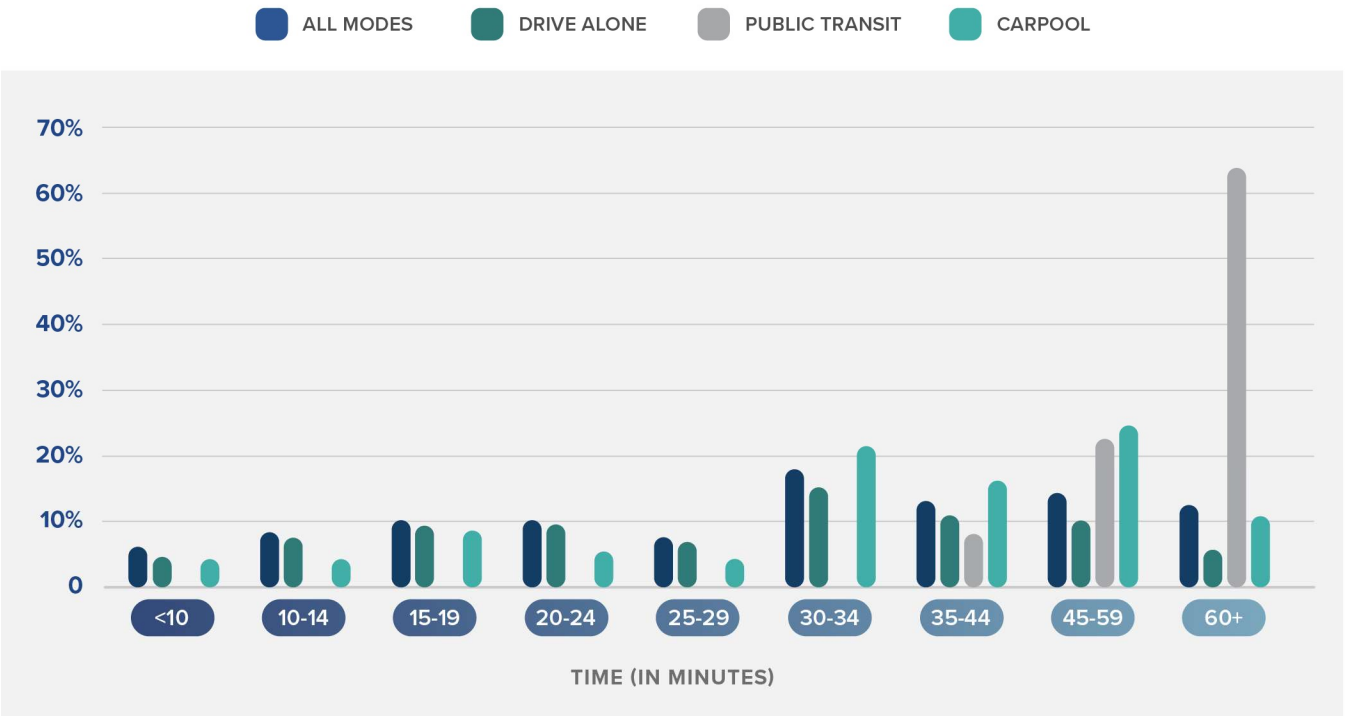


**FIGURE 12: COMMUTE TRAVEL TIME BY MODE FOR WORKERS LIVING IN SAMMAMISH**

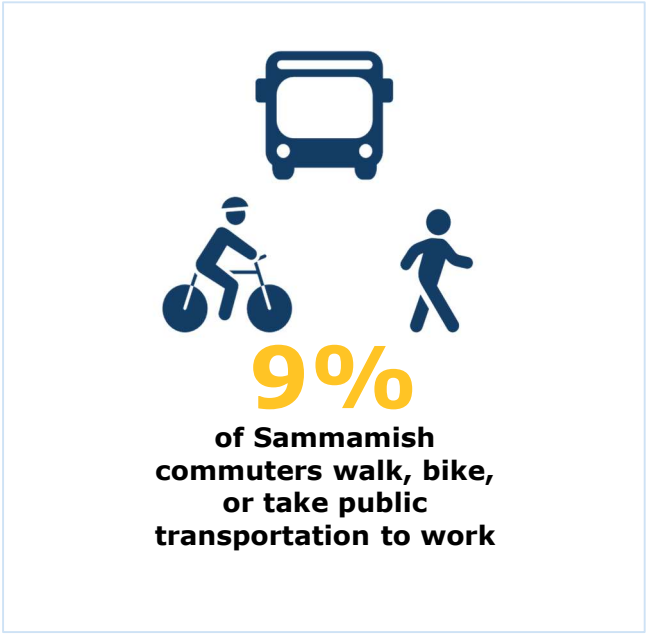


**FIGURE 13: COMMUTERS WALKING, BIKING, OR USING PULBLIC TRANSIT IN SAMMAMISH (EXCLUDING WORK FROM HOME)**

*Source: US Census 2021*

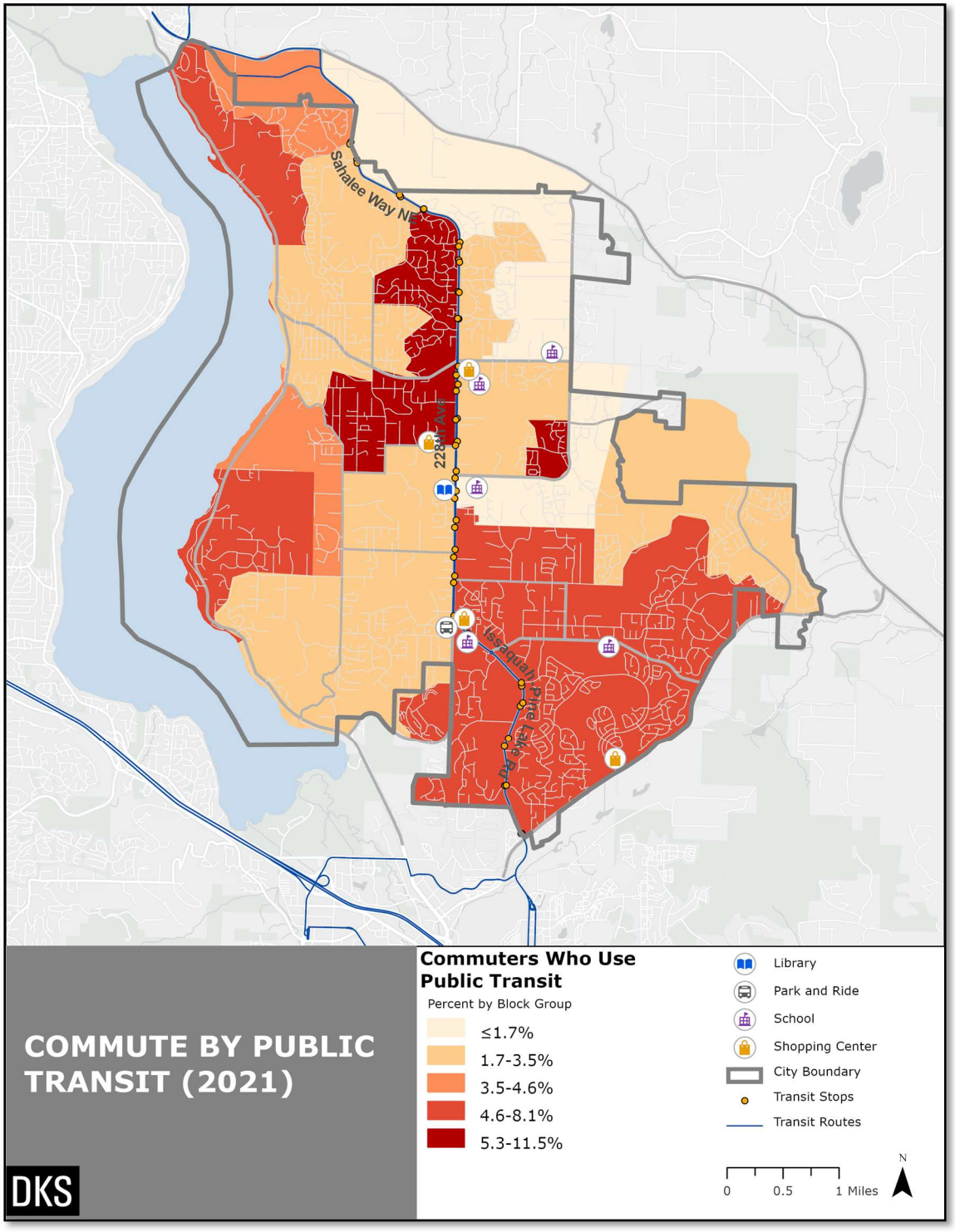


**FIGURE 14: GEOGRAPHIC DISTRIBUTION OF COMMUTERS TAKING PUBLIC TRANSIT BY BLOCK GROUP**

*Source: US Census 2021*

### VANPOOLS AND OTHER ALTERNATIVES

King County Metro runs a vanpool service for commuters. This service is similar to a carpool, with King County Metro providing the van and a website to connect with other commuters. The service allows commuters to join an existing vanpool or create their own with a minimum of three members. Each commuter pays a fare which includes the van, gas, insurance, maintenance, roadside assistance, and a guaranteed ride home.

There are over 70 different vanpool routes with an origin in Sammamish. Many of these vanpools travel to downtown Seattle to employers such as Amazon, Expedia, F5, and Starbucks. Other destinations include T-Mobile in Bellevue and Microsoft in Redmond. No vanpools currently have Sammamish as a destination.

Other non-fixed route service options include Metro Flex, formerly known in Sammamish as Community Ride. Metro Flex is a service provided by King County Metro through a contractor, Via, that provides on-demand neighborhood transit service in a limited area. More information on Metro Flex is provided later in this report.

King County Metro also runs Access Transportation, which provides direct door-to-door service for those who qualify for the Americans with Disability Act (ADA) Paratransit Program. Within the City of Sammamish, there were 939 trips taken by 27 unique riders between January 1, 2022 and July 10, 2023. This equates to about 50 trips per month within Sammamish.

## EXISTING TRANSIT NETWORK

As of Fall 2022, Sammamish is served by three bus routes that provide connections within east King County and to Seattle. One metro bus line, Route 219 was previously suspended in 2020 due to impacts from COVID-19. Another metro bus line, Route 216 will be suspended indefinitely in Fall 2023. Below is a summary of metro bus lines including recently suspended routes:

- **One all-day route (269)** that operates every 30 minutes or more often. This route provides connection from Issaquah to the Redmond area, with several stops in Sammamish.
- **One peak-only, peak-direction route (216)** that connects to downtown Seattle and to the Bear Creek Park & Ride in Redmond. This route is currently planned to be indefinitely suspended by King County Metro starting with the Fall 2023 Service Revision.
- **One previously suspended peak-only, peak-direction route (219)** that was in operation until Spring 2020 and suspended due to impacts from the COIVID-19 pandemic. Prior to being suspended, the route ran from Redmond to Seattle.
- **One limited-service route (554)** that is operated by Sound Transit. Route 554 is an express route with all-day 30-minute or better service between Seattle and Issaquah. The route extends from Issaquah, through Sammamish, and to Redmond for five trips in the northbound direction during the evening and late night and two trips in the southbound direction during the early morning.

Figure 15 illustrates current transit service in Sammamish.

Table 1 summarizes service characteristics of each route on weekdays as of Fall 2022. The table highlights service changes since Fall 2019 in which King County Metro suspended Route 219 due to low ridership during the pandemic.

In Fall 2016, there were 66 weekday transit trips serving Sammamish. In Fall 2019, prior to the COVID-19 pandemic, there were 91 daily weekday transit trips serving Sammamish. In Fall 2022, there were 64 daily weekday transit trips, following service reductions due to the pandemic.

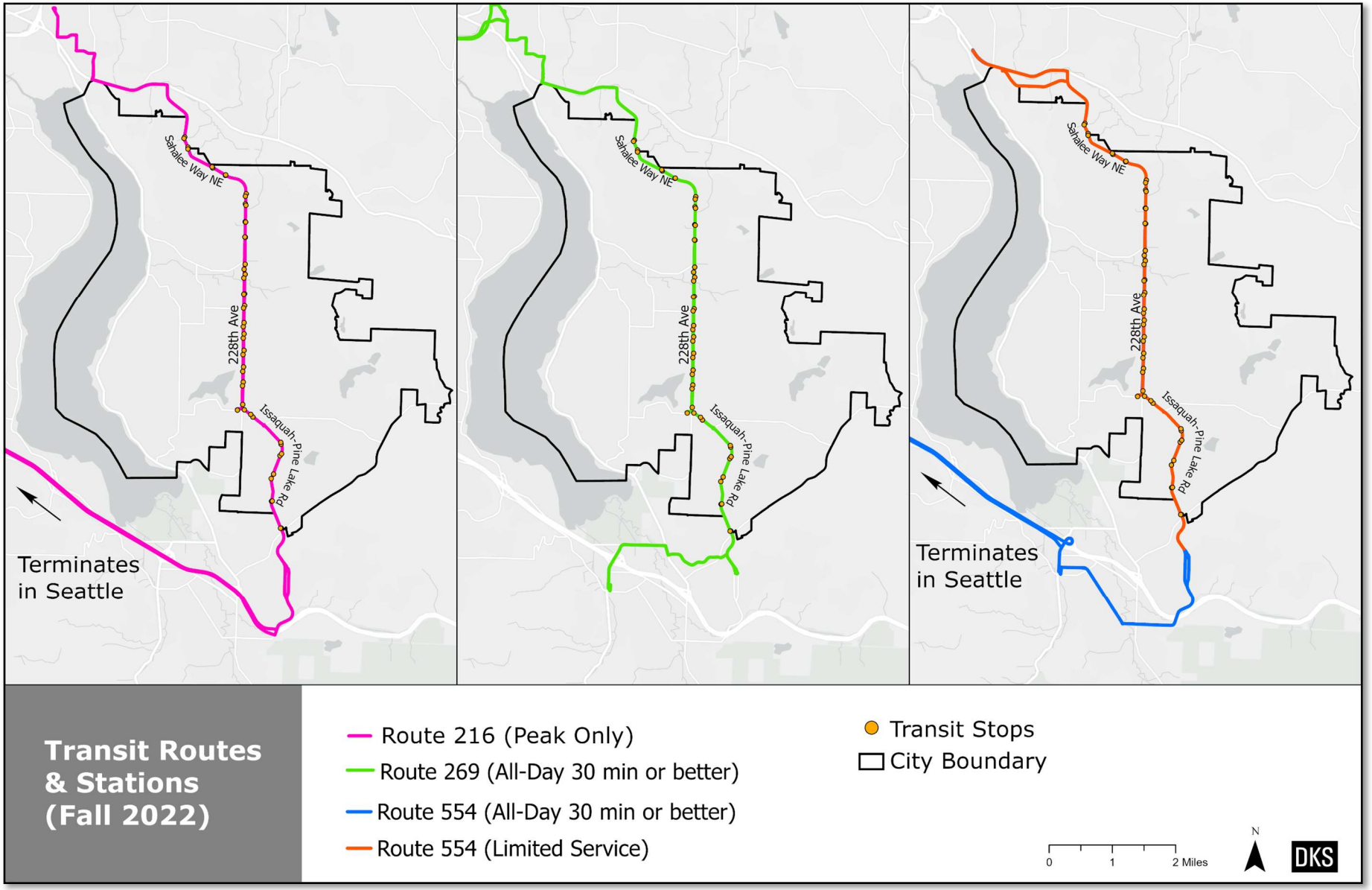


**FIGURE 15: BUS ROUTES BY TYPE AND STATION LOCATIONS, FALL 2022**

**TABLE 1 WEEKDAY TRANSIT ROUTES OVERVIEW, FALL 2016, 2019 AND 2022**

| Route | Route Description | Service Type (Sammamish) | Weekday Service Span (Sammamish) | Weekday Headway | | | | # of Weekday Daily Trips | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AM Peak | Mid-day | PM Peak | Eve | Fall 2016 | Fall 2019 | Fall 2022 | |
| 216 | Bear Creek / Issaquah Highlands / Eastgate / Downtown Seattle | Peak-Only | 6:54 AM to 6:10 PM | 45 | - | 30 | - | 13 | 14 | 7 | [1] |
| 219 | Redmond / Issaquah Highlands / Downtown Seattle | Peak-Only | 6:26 AM to 6:54 PM (Fall 2019) | 30 | - | 30 | - | 15 | 15 | - | [2] |
| 269 | Issaquah TC / North Issaquah / Issaquah Highlands / Bear Creek / Overlake | All-Day (30 min or better) | 6:23 AM to 7:39PM | 30 | 30 | 30 | 45 | 31 | 55 | 50 | |
| 554 | Redmond / Issaquah Highlands / Issaquah TC/ Downtown Seattle | Peak-Only | 4:38 AM to 11:41 PM | - | - | - | 120 | 7 | 7 | 7 | [3] |

Notes: Rows in gray represent routes which have been suspended since Spring 2020. Service span was based on the first and last stops within Sammamish. Headway was based on trips serving Sammamish and was generally categorized using the following ranges: 30=16-30 min, 45=31-45 min, 120=61-120 min. These ranges were adjusted, simplified, or reported as a range or average to reflect the irregular frequency of some routes that serve Sammamish. [1] Service in peak direction only. [2] Route 219 was indefinitely suspended during the COVID-19 pandemic. [3] Route 554 only serves stops in Sammamish for select trips throughout the day: 5 trips northbound in the evening/late night and 2 trips southbound in the early morning.

## WEEKEND SERVICE

While weekday transit service typically provides for the needs of typical peak-period commuters, weekend service is also an important resource for carrying out the tasks of everyday life. A robust transit network provides weekend service which allows its riders to reach a variety of destinations, facilitates a car-free or "car-light" lifestyle, and aligns well with transit-oriented development (TOD) land-use strategies. As of Fall 2022, there is no fixed route service in Sammamish on either weekend day. Route 554 does run on the weekend; however, the end of the route is at the Issaquah Highlands Park & Ride and does not continue through Sammamish to Redmond.

## SHORT-TERM TRANSIT NETWORK CHANGES (2025)

King County Metro is finalizing their recommended service network for the East Link Connections project prior to the opening of the Link 2 Line. This project, which is expected to be completed in 2025, includes re-routing many of the existing transit routes in King County as well as the addition of several new routes and the elimination of several others. Table 2 describes the anticipated changes to service in Sammamish in 2025.

**TABLE 2 ANTICIPATED 2025 SERVICE CHANGES IN SAMMAMISH**

| Route | Route Description | Proposed Changes in East Link Connection Project |
|---|---|---|
| **216** | Bear Creek / Issaquah Highlands / Eastgate / Downtown Seattle | To be eliminated in Fall 2023. In 2025, it will be replaced by revised Routes 218 and 269 along the same alignment within Sammamish. |
| **269** | Issaquah TC / North Issaquah / Issaquah Highlands / Bear Creek / Overlake | Re-routes service along I-90 to terminate at Mercer Island Link Station. No alignment changes in Sammamish.<br><br>More frequent service, with 15-minute headways during the weekday peak, and 30-minute headways during the rest of the weekday. Added weekend service with 30-minute headways from 5am to 7pm. |
| **554** | Redmond / Issaquah Highlands / Issaquah TC/ Downtown Seattle | No alignment changes within Sammamish; will truncate in Bellevue at the South Bellevue Station when the full Link 2 Line opens. This route continues to have limited service through Sammamish. |

## RIDERSHIP

Figure 16 illustrates boarding and alightings in Sammamish for Fall 2022, which are concentrated at Sammamish Highlands Shopping Center (228th Avenue NE between NE 4th Street and NE 8th Street) and at South Sammamish Park & Ride. These locations include or are adjacent to retail, employment, and medical destinations.

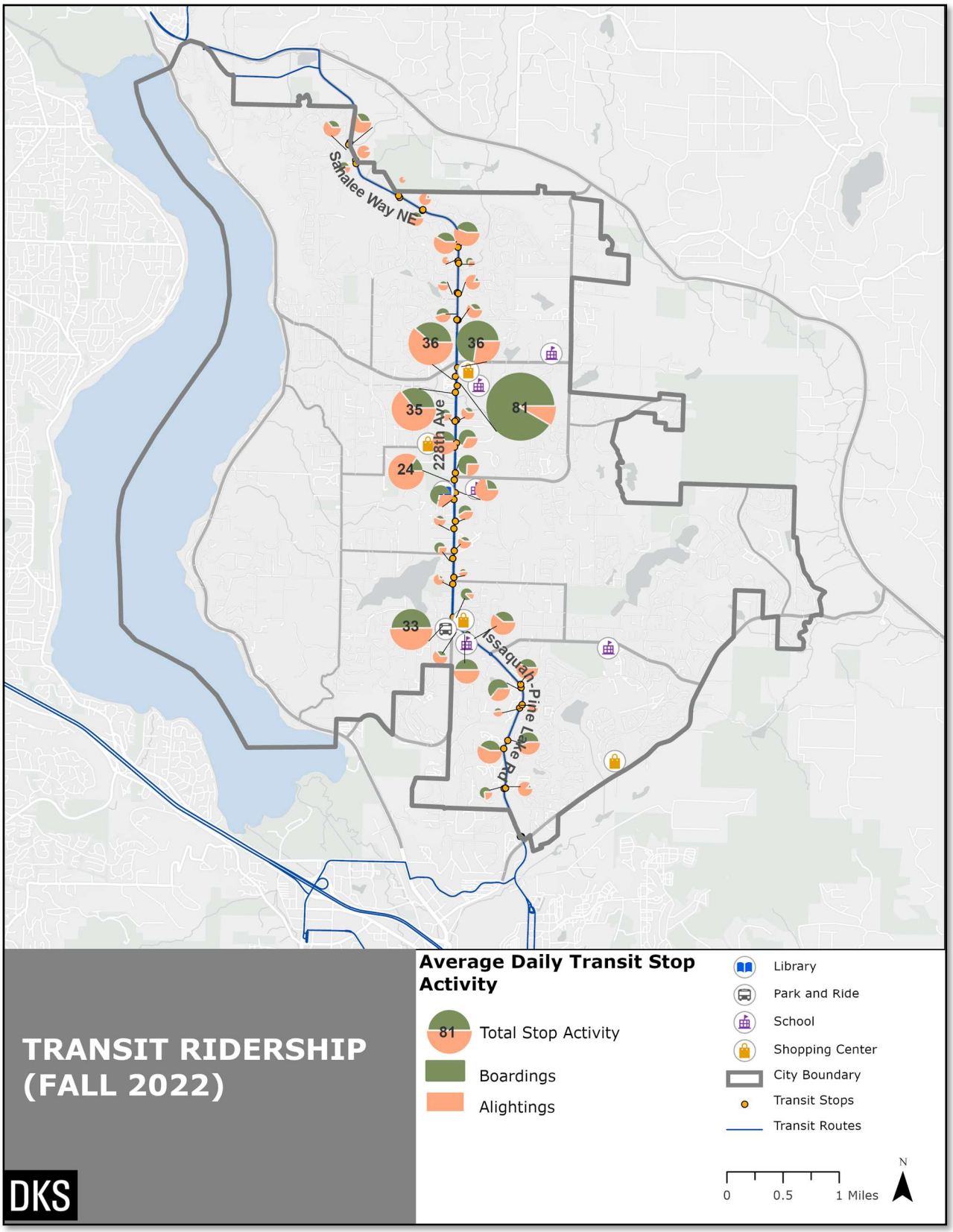


**FIGURE 16: TRANSIT RIDERSHIP WITHIN SAMMAMISH**

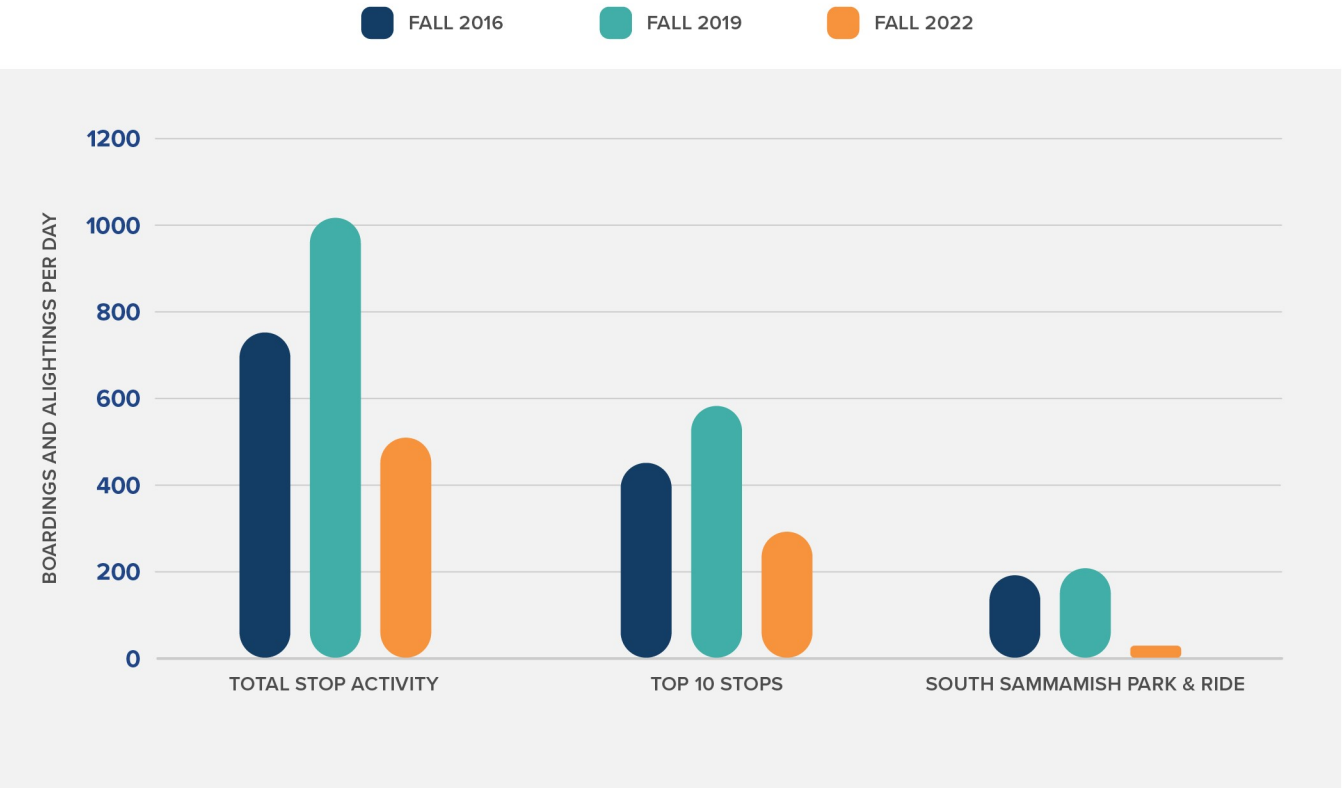


**FIGURE 17: TRANSIT RIDERSHIP BY YEAR**

Figure 17 compares transit ridership between Fall of 2016, 2019, and 2022 within Sammamish. Transit ridership increased between 2016 and 2019, which represents the peak. Total stop activity (boardings + alightings) decreased 35% between 2019 and 2022. The South Sammamish Park and Ride was the highest stop activity in Sammamish stop in 2016 and 2019 with a total daily activity level of 192 and 212, respectively. In 2022, the total activity level at the Park and Ride dropped to 33 and was the stop with the fifth highest stop activity. This decrease may be indicative of post-COVID work from home patterns in which there is less demand to use transit to travel between Sammamish and regional employment centers.

## METRO FLEX

Metro Flex is a service provided by King County Metro through a contractor, Via, that provides on-demand neighborhood transit service for the same cost as a bus trip. This service is provided for trips beginning and ending in a certain area of Sammamish between 7am and 6pm Monday through Friday and between 9am and 6pm on Saturdays. Figure 18 shows the Metro Flex service area for Sammamish. In April 2023, Metro Flex in Sammamish had an average of 78 daily rides.

Metro Flex was introduced in March 2023. Prior to this, King County Metro ran a similar service known in Sammamish as Community Ride for about three years. Metro Flex uses a van, whereas Community Ride used a shuttle, and Metro Flex may require users to walk a short distance, whereas Community Ride was a door-to-door service.

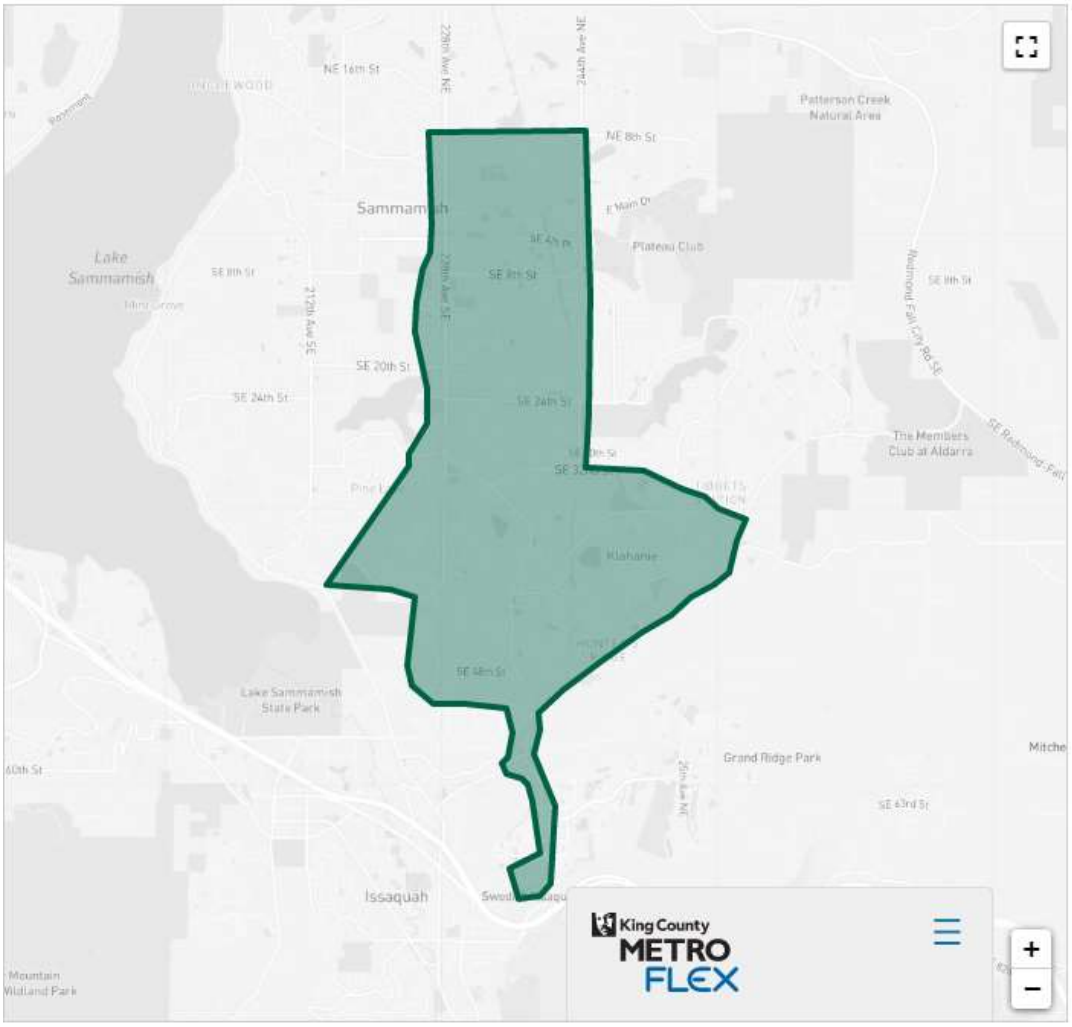


**FIGURE 18: METRO FLEX SERVICE AREA IN SAMMAMISH**

## KEY TAKEAWAYS– EXISTING TRANSIT NETWORK

The fixed route bus transit service in Sammamish provides service along 228th Ave SE and Issaquah-Pine Lake Road. This is a major arterial in the City. There is no fixed-route transit service in the neighborhoods or on other arterials. Three bus routes serve Sammamish on weekdays only. Of these routes, only Route 269 provides all-day service. This route connects Sammamish with Redmond and Issaquah, where riders can transfer to other transit routes. Direct service to other key destinations such as Seattle is only provided during the peak hour. There are 64 weekday transit trips that serve Sammamish as of Fall 2022, which is 27 fewer than in Fall 2019. Metro Flex fills a gap by providing on-demand service to an area of Sammamish that includes Pine Lake Village, Sammamish Highlands, and Sammamish Town Center commercial areas as well as the South Sammamish Park and Ride.

## EXISTING ACCESS TO TRANSIT

A rule-of-thumb is that people are willing to walk approximately 5 to 10 minutes to a transit stop, which generally equates to a ¼ to ½ mile walk. These thresholds were determined through empirical research presented in the Transit Capacity and Quality of Service Manual, 3rd Edition[2]. On average, 75% to 80% of people walk ¼ mile or less to a transit stop. One factor that is a significant determinant in the distance one is willing to walk to a transit stop is the grade of the pedestrian environment. Research shows that once grades exceed 5%, the distance one is able to walk in 5 to 10 minutes diminishes. Sammamish is a hilly city with significant grades and elevation changes both along the bus routes and in the residential areas. These grades were not analyzed for impact on walking and biking distances. For reference, a contour map is provided as Figure 20.

Both ½ mile and ¼ mile walking distances are analyzed in this report. Table 3 summarizes demographics within ¼ and ½ mile access of bus stops in Sammamish. Approximately 6% of Sammamish's population lives within ¼ mile walking distance of a bus stop, and approximately 14% live within a ½ mile walking distance (see Table 3 and Figure 19). Transit access within ¼ and ½ mile of a bus stop for people of color, low-income people, and people who do not own a vehicle is similar to the overall population.

Bicycle access to transit peaks at 1 to 1.25 miles which approximately equals a 5-minute bike ride[1]. However, this distance can increase or decrease based on environmental factors such as weather and grade. As mentioned above, grade and hills play a role in a users decision to walk or bike, as well as the distance one is able walk or bike in 5 to 10 minutes. For the purposes of this report, a 1-mile bike trip distance is used as a conservative estimate of bicycle catchment area. About 35% of the City is within a 1-mile biking distance of a transit stop (see Figure 21).

Park and Ride facilities should be located within a 2.5-mile radius of population centers to best maximize facility usage[3]. About 37% of the City is within a 2.5-mile driving distance of South Sammamish Park and Ride (see Figure 22).

A relatively small share of the city's jobs is within walking distance of a bus stop—11% within ¼ mile and 26% within ½ mile. The share of low to moderate wage jobs within either ¼ mile-radius and ½ mile-radius of a bus stop is slightly higher at 14% and 33%, respectively.

[2] National Academies of Sciences, Engineering, and Medicine. 2013. *Transit Capacity and Quality of Service Manual, Third Edition*. Washington, DC: The National Academies Press. https://doi.org/10.17226/24766

[3] *Park and Ride Planning and Design Guidelines* (Spillar, 1997),

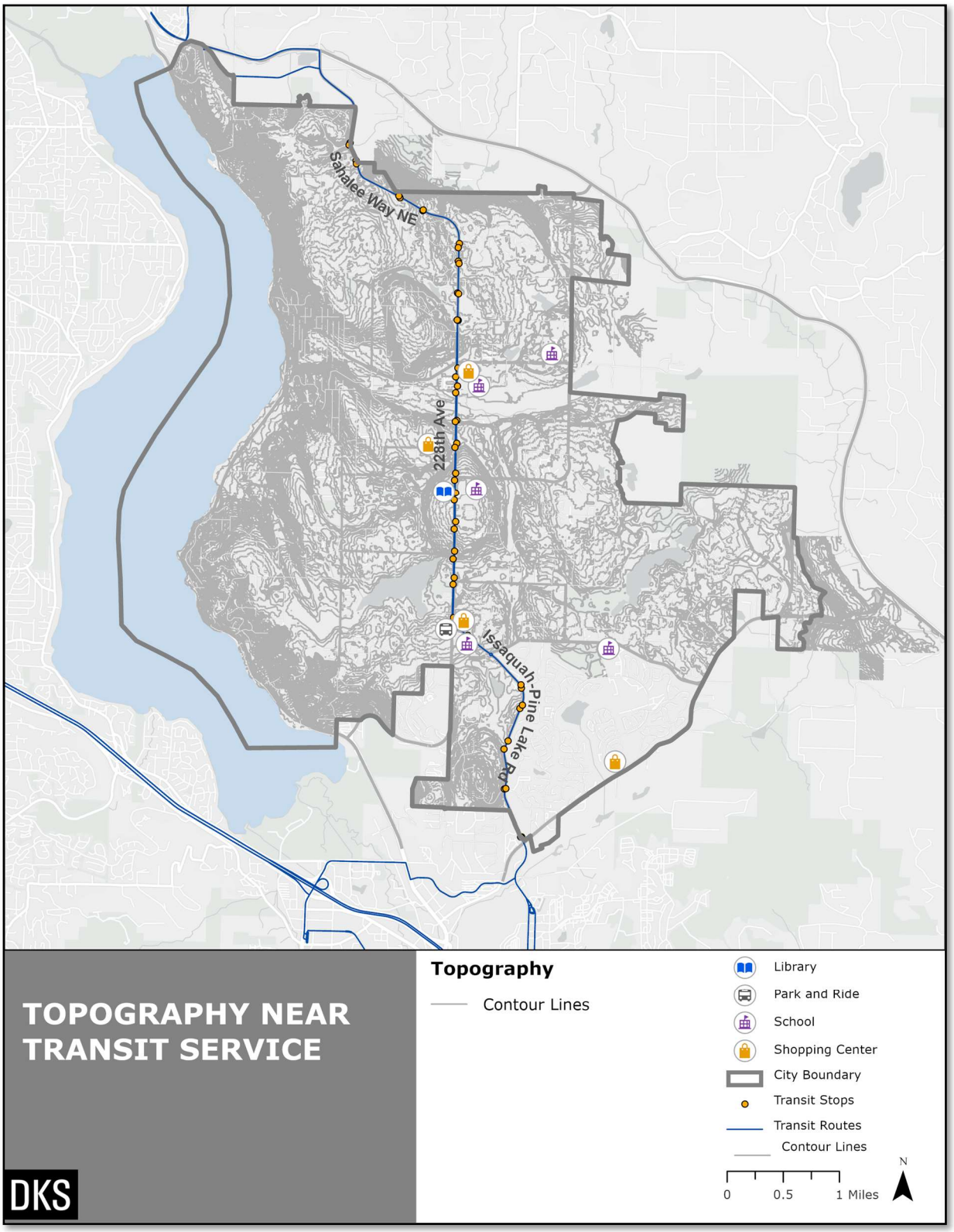


**FIGURE 19: TOPOGRAPHICAL FEATURES NEAR TRANSIT SERVICE IN SAMMAMISH**

Note: Topography data is missing for the Klahanie neighborhood

**TABLE 3 WALKSHED DEMOGRAPHICSAND JOBS DATA (2020)**

| Access to Transit | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Area [1]** | | Total Population (2020) | Persons of Color (2020) | Low-Income Population [2] (2020) | Zero Car Households (2020) | Total Jobs (2020) | Low/Mod Income Jobs (2020) [3] |
| **Total City** | | **67,455** | **30,690** | **2,047** | **575** | **1,209** | **485** |
| **¼-Mile Walkshed** | # | 4,110 | 1,750 | 155 | 35 | 136 | 67 |
| | % | 6.1% | 5.7% | 7.6% | 6.1% | 11.2% | 13.8% |
| **½-Mile Walkshed** | # | 9,675 | 4,940 | 360 | 82 | 316 | 160 |
| | % | 14.3% | 16.1% | 17.6% | 14.2% | 26.1% | 33.0% |

Notes: [1] Demographics and jobs with ¼ or ½ mile access transit were calculated with an area-weighted sum of walksheds and Census block groups. [2] Low-Income population is based on the federal poverty line. [3] Low/moderate income jobs are based on monthly pay of up to $3,333. [3]
Source: Population and demographics are from the American Community Survey, 2016-2020 Five-Year Estimates. Jobs are from the US Census Longitudinal Household Employer Dynamics (LEHD), 2020.

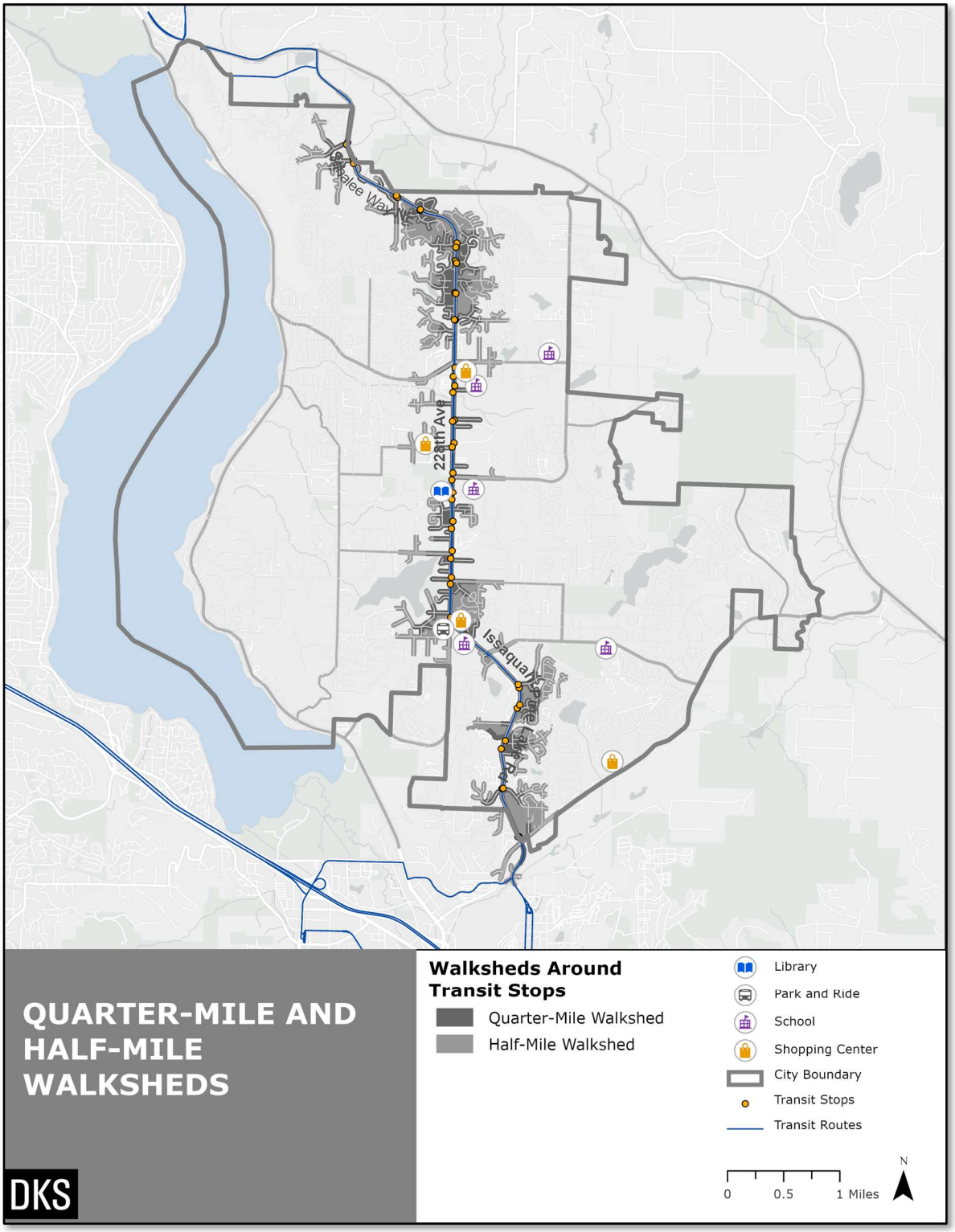


**FIGURE 20: TRANSIT STOPS WITH ¼ MILE AND ½ MILE WALKSHED**

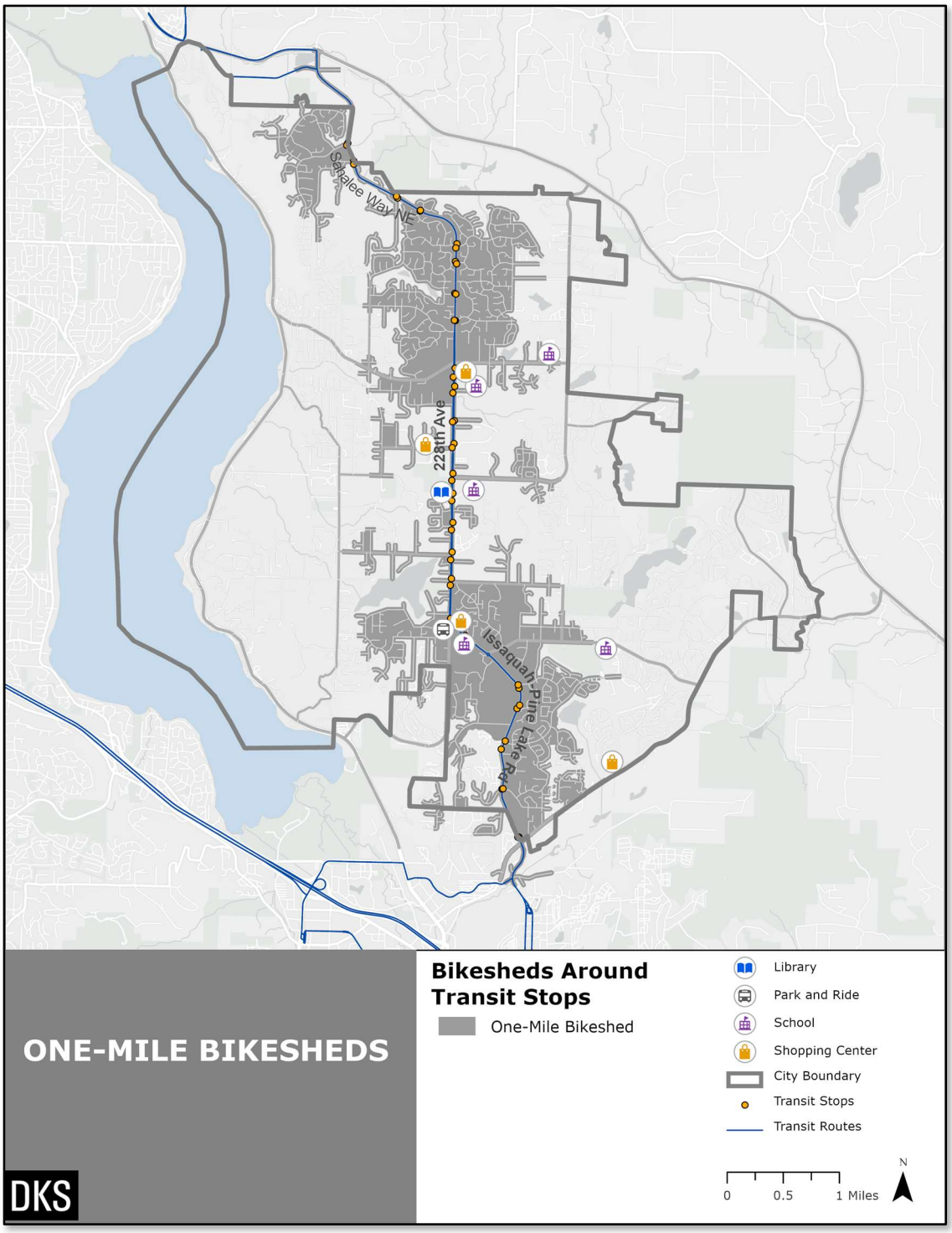


**FIGURE 21: TRANSIT STOPS WITH 1-MILE BIKESHED**

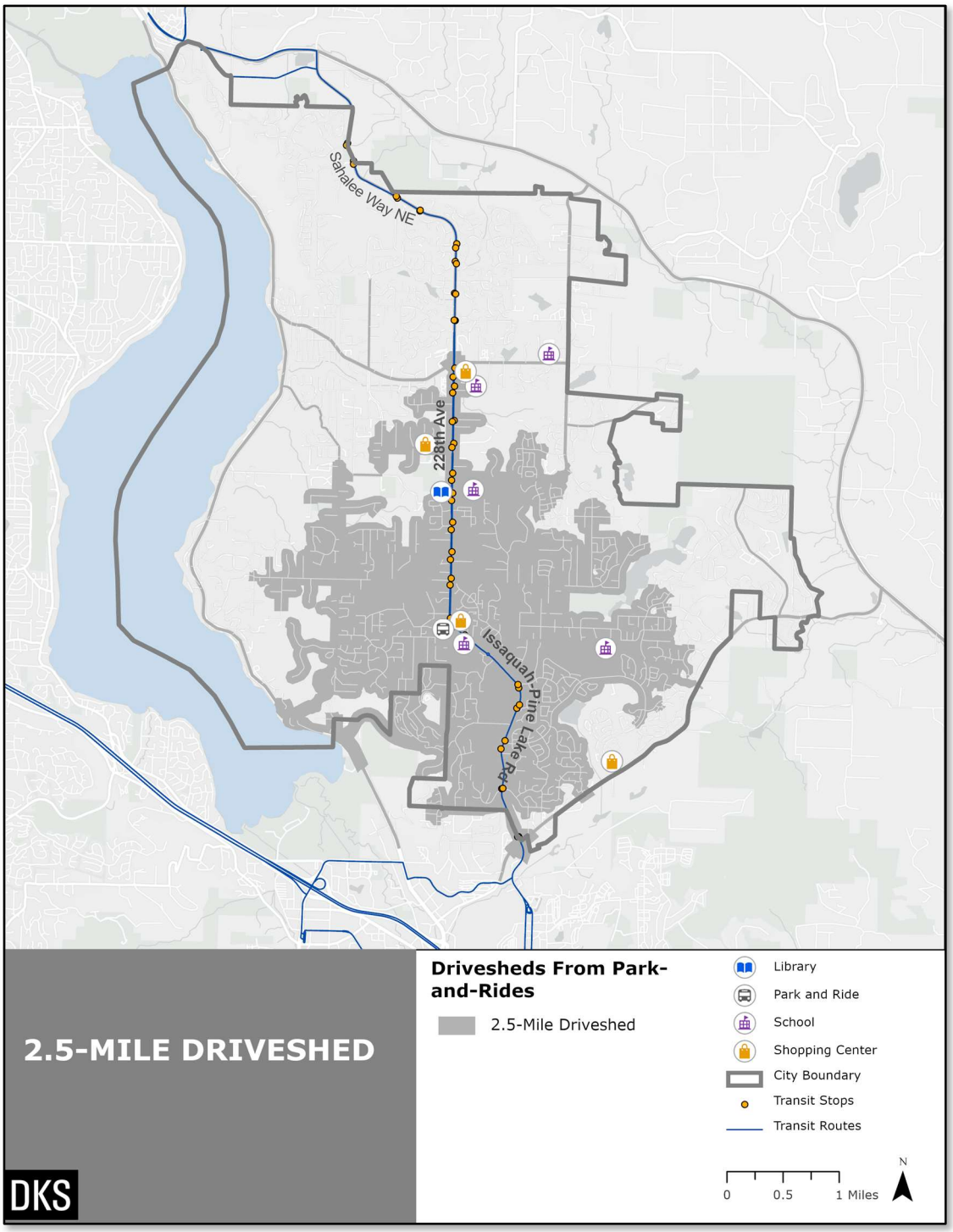


**FIGURE 22: PARK AND RIDE WITH DRIVESHED**

Park and Ride vehicle parking occupancy data was collected from the Puget Sound Regional Council (PSRC) data dashboard. The South Sammamish Park and Ride, which serves all three Sammamish transit routes, has 265 available spaces. In 2021, the average daily occupancy was only 6, equivalent to 2% occupancy. This was down significantly from 2019, where it was typically 54% full and 2016, where it was typically 48% full.

Although not shown in Figure 22, the Issaquah Highlands Park and Ride, which is located less than one mile south of the Sammamish city limits, may be used by Sammamish residents. The majority of Sammamish residents live more than a 2.5-mile drive from this Park and Ride. This Park and Ride provides service to King County Metro Routes 216, 218, 269, and Sound Transit Route 554. This may be especially competitive for Sammamish residents who take Sound Transit Route 554, as this Park and Ride provides all day, 30-minute service, whereas the South Sammamish Park and ride provides only peak hour service. The Issaquah Highlands Park and Ride has 1,010 available parking spaces and was typically 8% occupied in 2021.

Both Park and Rides also have BikeLink on-demand lockers available for secure bike parking. BikeLink is a long-term bike parking company which allows transit users to electronically reserve a bike storage locker on-demand on a first come, first served basis. Rental cost is 5 cents per hour. The parking is for customers' personal bikes and scooters when connecting to transit, and not for long-term storage.

### KEY TAKEAWAYS – ACCESS TO TRANSIT

Throughout Sammamish, most residents do not live within walking distance of a bus stop. Most jobs in Sammamish are not located within walking distance of a bus stop, although jobs are more likely than households to be close to transit. About 35% of the population live within a comfortable biking distance of a bus stop. About 37% of the population lives within a 2.5-mile drive of the South Sammamish Park and Ride. The South Sammamish Park and Ride typically has significant capacity available. The Issaquah Highlands Park and Ride is also an option for Sammamish residents, and typically has significant capacity available.

The shares of people of color, low-income people, and zero-vehicle households are fairly evenly spread out throughout the City. Therefore, these minority groups are not more or less likely to live within walking distance of transit than the population overall, as shown in Table 3.

## TRANSIT AND AUTO TRAVEL TIME COMPARISONS

Google Maps was used to understand travel time between different regional and local activity centers within Sammamish. Travel time between transit and driving was compared, which helps understand how attractive transit would be for trips to and from Sammamish, as well as within Sammamish. Travel time was sampled for a typical Tuesday at 4 pm for local trips and regional trips to Sammamish. Regional trips from Sammamish were sample for a typical Tuesday at 7 am. The times were chosen to represent a typical peak hour commute. Note that transit time includes walking time from the origin/destination to the stops and includes transfer times (if required); origin and destination points were selected to be relatively close to a transit stop near each activity center, to the extent possible.

It is important to note that trips to and from the Providence Point senior center include a walking time of 23 minutes between the approximate center of Providence Point and the closest transit stop which is the South Sammamish Park & Ride. However, while this walking distance is technically feasible, it requires walking along roadways that do not have sidewalks and therefore pose potential safety risks, and pedestrians are unlikely to walk this route. Despite these conditions, the travel time analysis below for transit trips to and from Providence Point is presented using this 23 minute walking time to highlight that the Providence Point community is not well served by fixed route bus service as compared with personal vehicle trips.

The transit-auto travel time ratio metric is calculated by dividing the transit travel time by the auto travel time for a given origin-destination pair. These ratios are shown in Table 4 for regional trips, and color coded in Table 5 for local trips. Generally, a ratio of 1.5 is tolerable for choice riders and anything above 2.0 is tedious for all riders[4].

### REGIONAL TRIPS

Figure 23 and Table 4 summarize average and maximum transit/auto travel time ratio as well as travel time between ten local activity centers or neighborhoods within Sammamish and 11 regional activity centers. Although the transit travel times do not include waiting time, the map illustrates the average headway to indicate how long a passenger who did not consult a schedule or bus arrival information could have to wait.

For the regional trips that were sampled:

- The average regional transit trip takes 2.5 times longer than driving.
- The average regional transit trip to Sammamish takes at least 1.3 times longer than driving and takes at most 4.4 times longer (for trips from Providence Point to North Bend Park & Ride).
- The average regional transit trip from Sammamish takes at least 1.7 times longer than driving and takes at most 6.5 times longer (for trips from Providence Point to North Bend Park & Ride).
- Note that trips to and from Providence Point include an approximate 23-minute walk to/from the South Sammamish Park & Ride. This route lacks sidewalks in some areas and is not considered feasible. This data is included to show that the route is not competitive with driving.

[4] National Academies of Sciences, Engineering, and Medicine. 2013. *Transit Capacity and Quality of Service Manual, Third Edition*. Washington, DC: The National Academies Press. https://doi.org/10.17226/24766

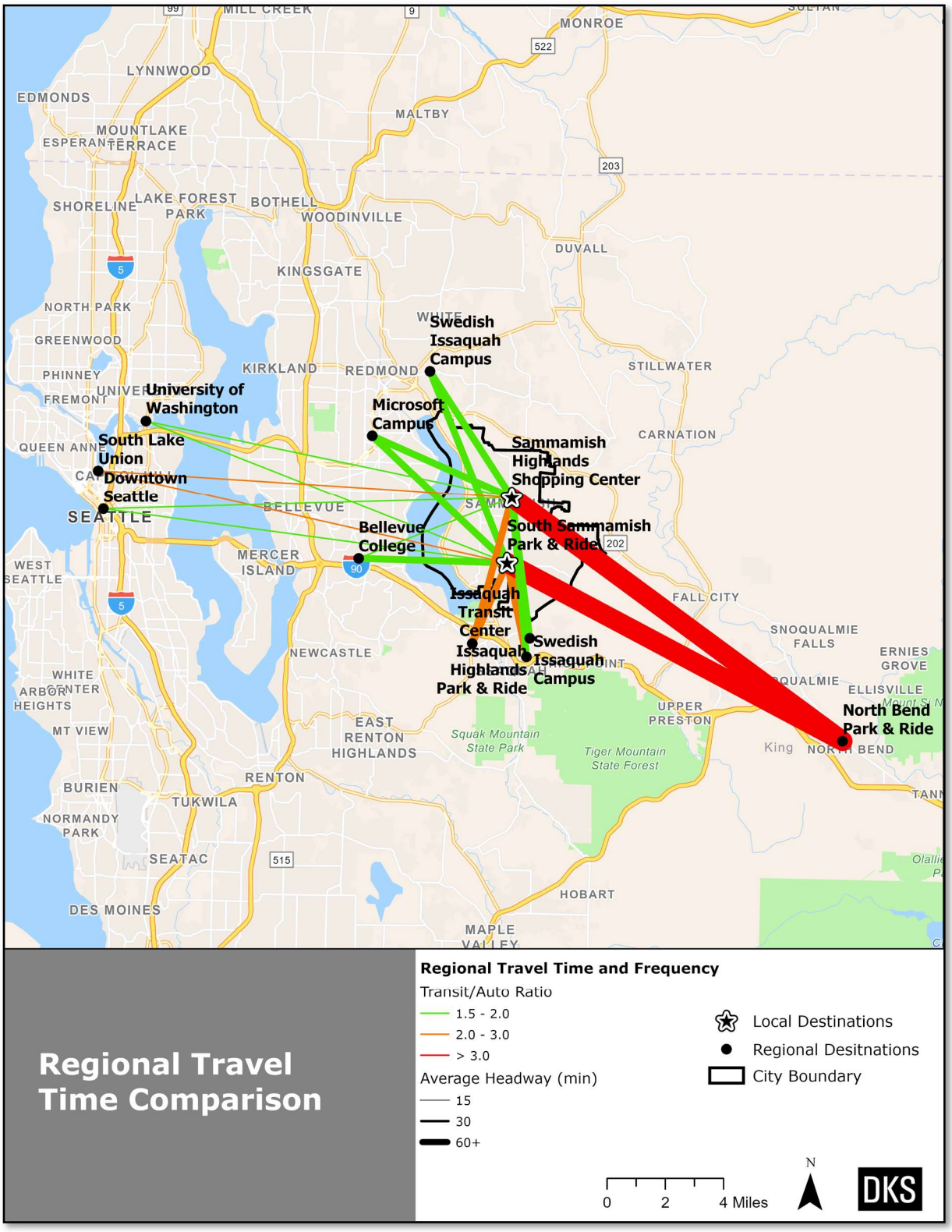


**FIGURE 23: TRAVEL TIME COMPARISONS FOR SAMPLE REGIONAL TRIPS TO/FROM SAMMAMISH, RATIO OF SCHEDULED TRANSIT TO PROJECTED AUTO TIME AT TUESDAY, 7 AM FROM SAMMAMISH 4 PM TO SAMMAMISH BASED ON GOOGLE TRIP PLANNER**

**TABLE 4 REGIONAL TRANSIT AND AUTO TRAVEL TIME COMPARISONS**

| | From Regional Location to Sammamish (4 pm) | | | | From Sammamish to Regional Location (7 am) | | | |
|---|---|---|---|---|---|---|---|---|
| **Regional Activity Center** | Avg Transit - Auto Travel Time Ratio | Max Transit-Auto Travel Time Ratio | Avg Auto Travel Time (Min) | Avg Transit Travel Time (Min) | Avg Transit - Auto Travel Time Ratio | Max Transit-Auto Travel Time Ratio | Avg Auto Travel Time (Min) | Avg Transit Travel Time (Min) |
| **Issaquah Highlands P&R** | **2.3** | 3.9 | 12 | 26 | **2.7** | 4.2 | 11 | 28 |
| **Issaquah Transit Center** | **2.3** | 4.0 | 16 | 35 | **3.3** | 4.9 | 14 | 43 |
| **Swedish Medical Center - Issaquah** | **2.1** | 3.1 | 15 | 32 | **2.6** | 4.0 | 14 | 36 |
| **North Bend P&R** | **3.3** | 4.4 | 29 | 92 | **5.3** | 6.5 | 28 | 143 |
| **Bellevue College** | **1.7** | 2.6 | 24 | 39 | **2.5** | 3.9 | 18 | 43 |
| **Redmond Microsoft Campus** | **1.8** | 2.3 | 25 | 45 | **2.2** | 3.1 | 21 | 47 |
| **Swedish Medical Center – Redmond** | **1.9** | 2.5 | 19 | 37 | **2.2** | 3.1 | 18 | 41 |
| **Downtown Seattle (3rd Ave & Madison St)** | **1.7** | 2.4 | 36 | 59 | **2.1** | 2.9 | 31 | 63 |
| **Seattle U District** | **1.7** | 1.9 | 46 | 78 | **2.3** | 3.1 | 36 | 85 |
| **South Lake Union (Westlake Ave N & Mercer St)** | **2.9** | 3.2 | 31 | 89 | **2.4** | 3.3 | 33 | 77 |

*Source: Travel times from Google Maps trip planner for a typical Tuesday at 7am for trips from Sammamish and 4pm for trips to Sammamish*

### LOCAL TRIPS

Figure 24 and Table 5 represent transit travel times between four different locations within Sammamish (and Providence Point in Issaquah) using a map and an origin-destination matrix, respectively. Although the transit travel times do not include waiting time, the map illustrates the average headway to indicate how long a passenger who did not consult a schedule or bus arrival information could have to wait.

For the local transit trips that were sampled within Sammamish, the average transit trip takes 2.4 times longer than driving.

- Transit trips to/from Providence Point, have comparatively high transit-to-auto travel time ratios (3.0–4.4) as these trips include an approximate 23-minute walk to/from the South Sammamish Park & Ride. This route lacks sidewalks in some areas and is not considered feasible. This data is presented to show that the route is not competitive with driving.

- For all trips between origins and destinations not including Providence Point, transit travel times were less than twice as long as driving.

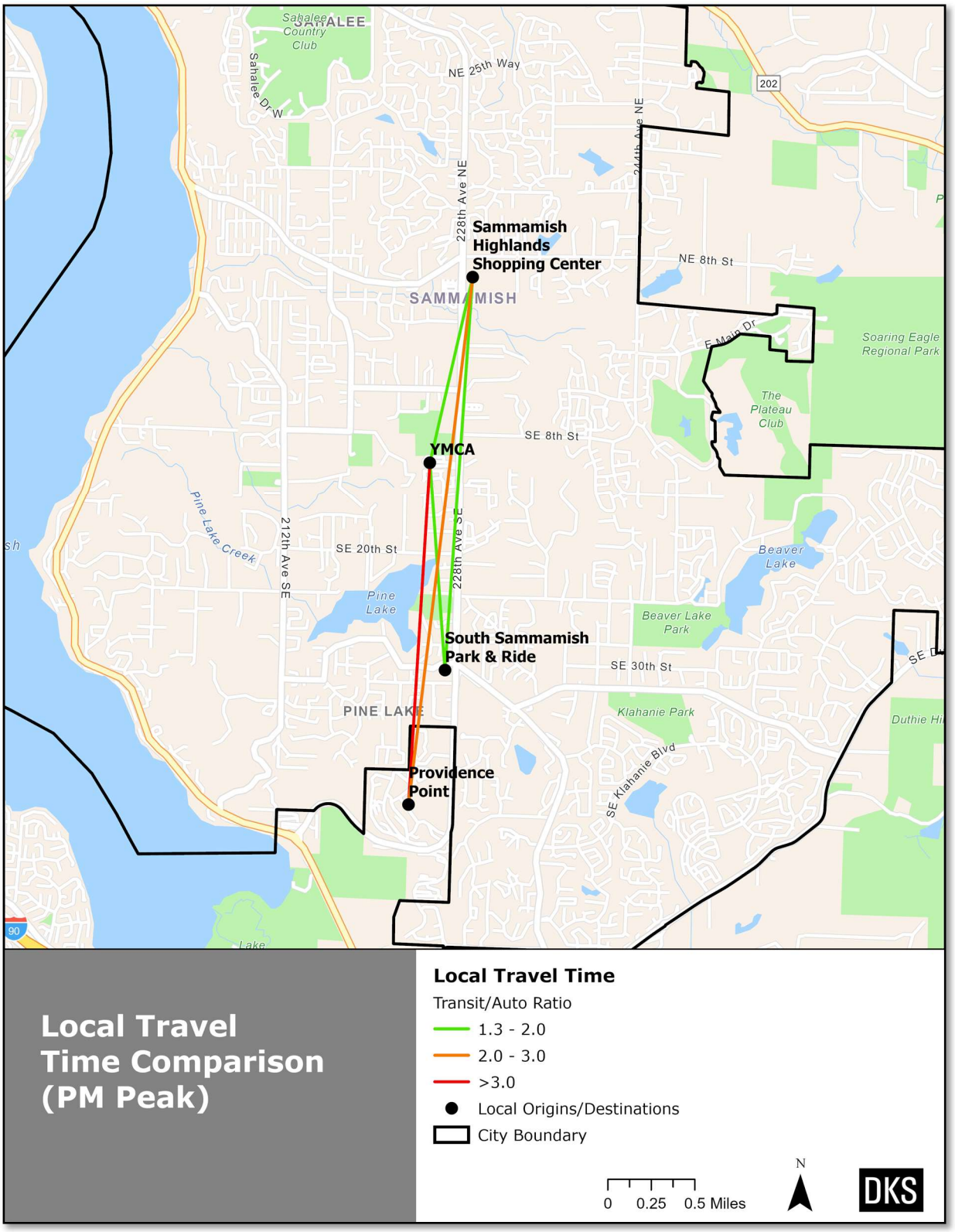


**FIGURE 24: TRAVEL TIME COMPARISONS FOR SAMPLE LOCAL TRIPS WITHIN SAMMAMISH, RATIO OF SCHEDULED TRANSIT TO PROJECTED AUTO TIME AT TUESDAY, 4 PM BASED ON GOOGLE TRIP PLANNER**

Tables 5 shows various transit-auto travel time ratios using the color-coded scale below:

| CATEGORY | COLOR CODED RANGE |
|---|---|
| GOOD | <= 1.5 |
| ACCEPTABLE | >1.5 AND <=2.0 |
| MODERATELY HIGH | >2.0 AND <=3.0 |
| HIGH | >3.0 AND <=4.5 |

The values in Table 5 represent transit travel time in minutes between origin and destination pairs. The colors in Table 5 correspond to transit to auto travel time ratios according to the above key.

**TABLE 5 TRANSIT TRAVEL TIMES BETWEEN ORIGIN-DESTINATION PAIRS, TRANSIT TRAVEL TIME AND TRANSIT-TO-AUTO TRAVEL TIME RATIO**

| Destination / Origin | South Sammamish P&R | YMCA | Providence Point[1] | Sammamish Highlands shopping mall |
|---|---|---|---|---|
| South Sammamish P&R | - | 10 | N/A | 12 |
| YMCA | 9 | - | 32 | 6 |
| Providence Point[1] | N/A | 33 | - | 34 |
| Sammamish Highlands shopping mall | 13 | 11 | 36 | - |

*Notes: The values in the table represent transit travel time in minutes between origin and destination pairs. The colors correspond to transit to auto travel time ratios according to the key above. Connections identified as N/A and highlighted in gray indicate a trip in which there is no feasible transit route between the origin-destination pair. 1: Providence Point does not have a transit route. This travel time includes a 23-minute walk to the South Sammamish Park and Ride on a route lacking sidewalks, which is not considered feasible. This data is presented to show that the route is not competitive with driving.*

### KEY TAKEAWAYS – TRANSIT TRAVEL TIME

- Traveling to and from regional destinations on transit can take significantly longer than driving depending on your origin and destination.
- The most competitive transit trips in the afternoon were from Bellevue College, Swedish Medical Center – Redmond, and downtown Seattle (1.7-1.9 times longer on transit, on average). The least competitive trips are those from North Bend Park & Ride (3.3 times longer, on average).
- In the morning, trips tend to take 2-3 times longer from Sammamish to regional locations. North Bend is an outlier and tends to take significantly longer than driving (5.5 times longer on average). Transit headways to and from North Bend are generally more than 60 minutes. Various other destinations like Issaquah Transit Center or the Microsoft Redmond Campus took 2 to 3 times longer in most cases.
- Because the majority of primary destinations within Sammamish are along corridors which have existing bus service, transit travel times between some local origins and destinations can be relatively short – 10 to 15 minutes – and may take only 1.5 times longer than driving. Trips to and from Providence Point had the highest transit-auto travel time ratios due to the long walking time needed to access the nearest transit stop. It is important to note that this walking trip between Providence Point and South Sammamish Park & Ride is likely prohibitively unsafe for the majority of residents due to the lack of sidewalks along the roadways which connect them. Therefore, fixed route bus service is virtually unreachable by walking for those living within Providence Point.

## TRANSIT OPERATIONAL PERFORMANCE

The following measures were used to assess transit speed and reliability for transit service in Sammamish. Because all trips are outside of the peak hour in the early morning or late evening, Route 554 showed little to no delay in Sammamish and is excluded from this analysis.

- **Bus Segment Delay** measures travel time variability, or the additional time a transit trip takes beyond a free-flow speed. There may be various causes for delay, including traffic congestion. Bus delay is estimated based on travel time statistics collected by Metro across a sample of all bus trips within a service period (in this case, Fall 2021). Dwell time, or the time buses spend picking up and dropping off passengers, is excluded from delay statistics.
- **Passenger Delay** measures the total delay experienced by people riding transit. It is calculated by multiplying the delay on each bus trip by the number of people on board the bus and helps understand where delay impacts the most people.

Figures 25 and 26 illustrate total daily bus delay per mile for Routes 216 and 269, respectively, on different segments of the bus network in Sammamish. The measure is based on delay for all bus

trips that serve each segment, normalized for distance to allow comparison across different segments. The delay scales of the two figures are the same for easy comparison.

Figures 27 and 28 illustrate total daily passenger delay per mile for Route 216 and 269 respectively, on different segments of the bus network in Sammamish. The measure is similar to bus delay but delay is weighted by the number of people onboard each bus on each segment, that experience the delay. The delay scales of the two figures are the same for easy comparison.

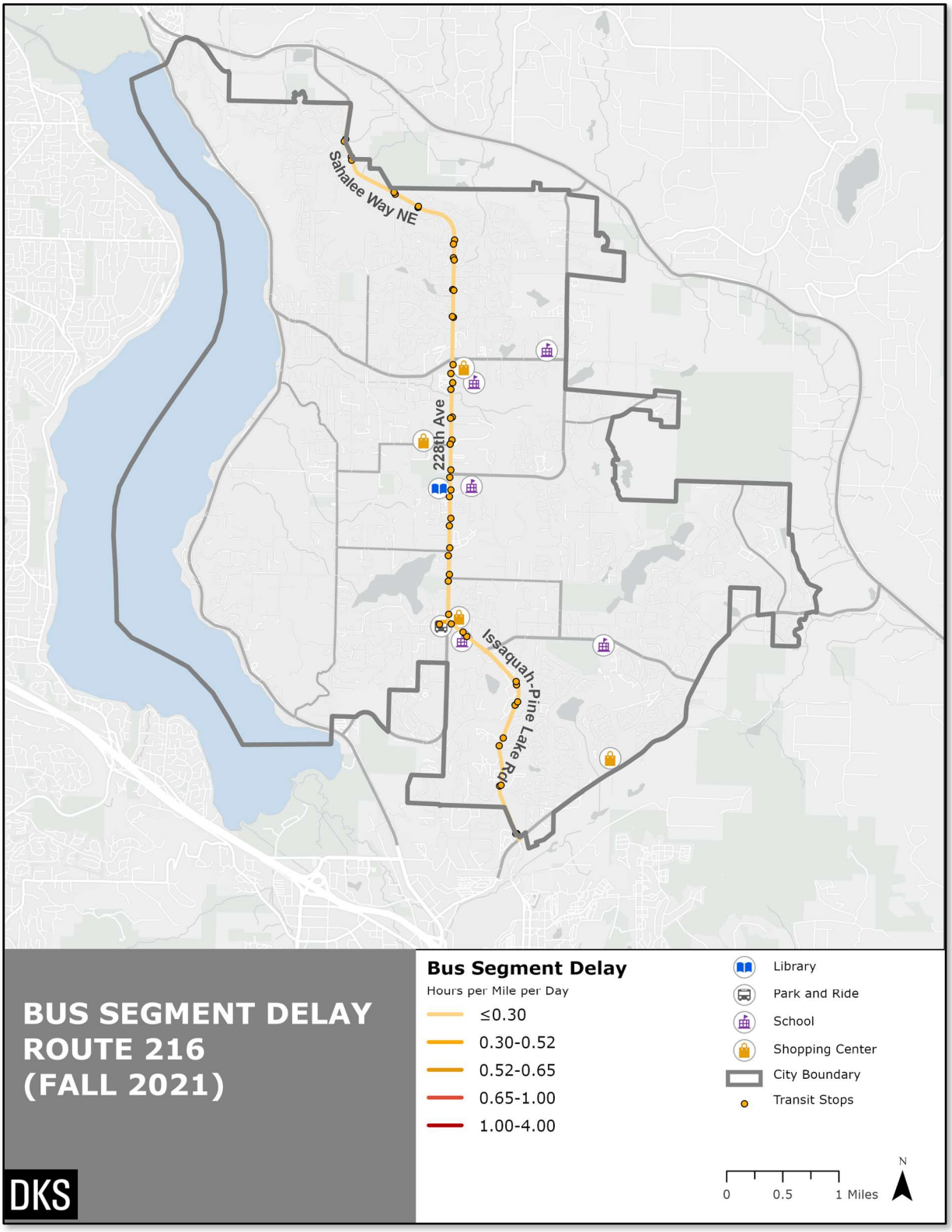


**FIGURE 25: MAP OF BUS SEGMENT DELAY ROUTE 216**

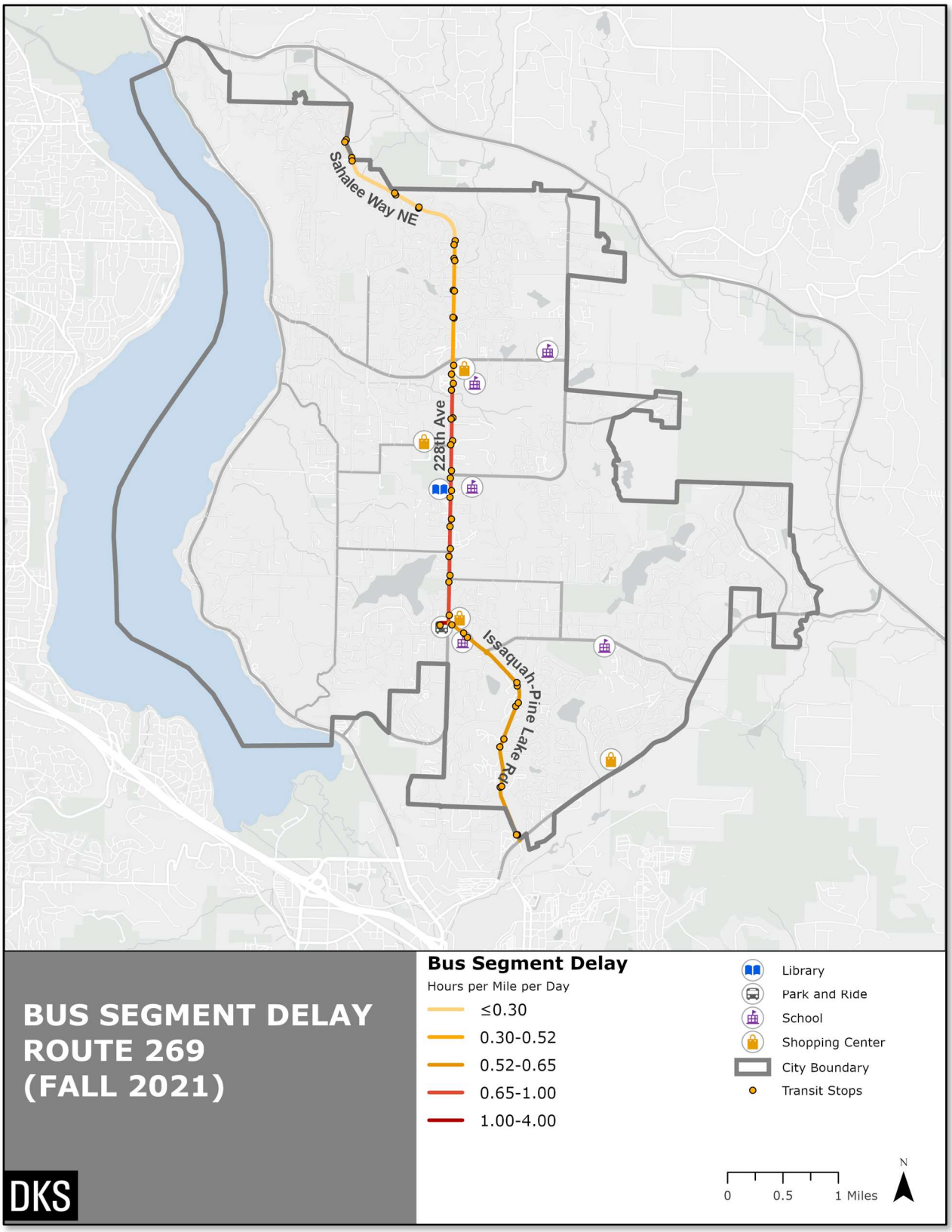


**FIGURE 26: MAP OF BUS SEGMENT DELAY ROUTE 269**

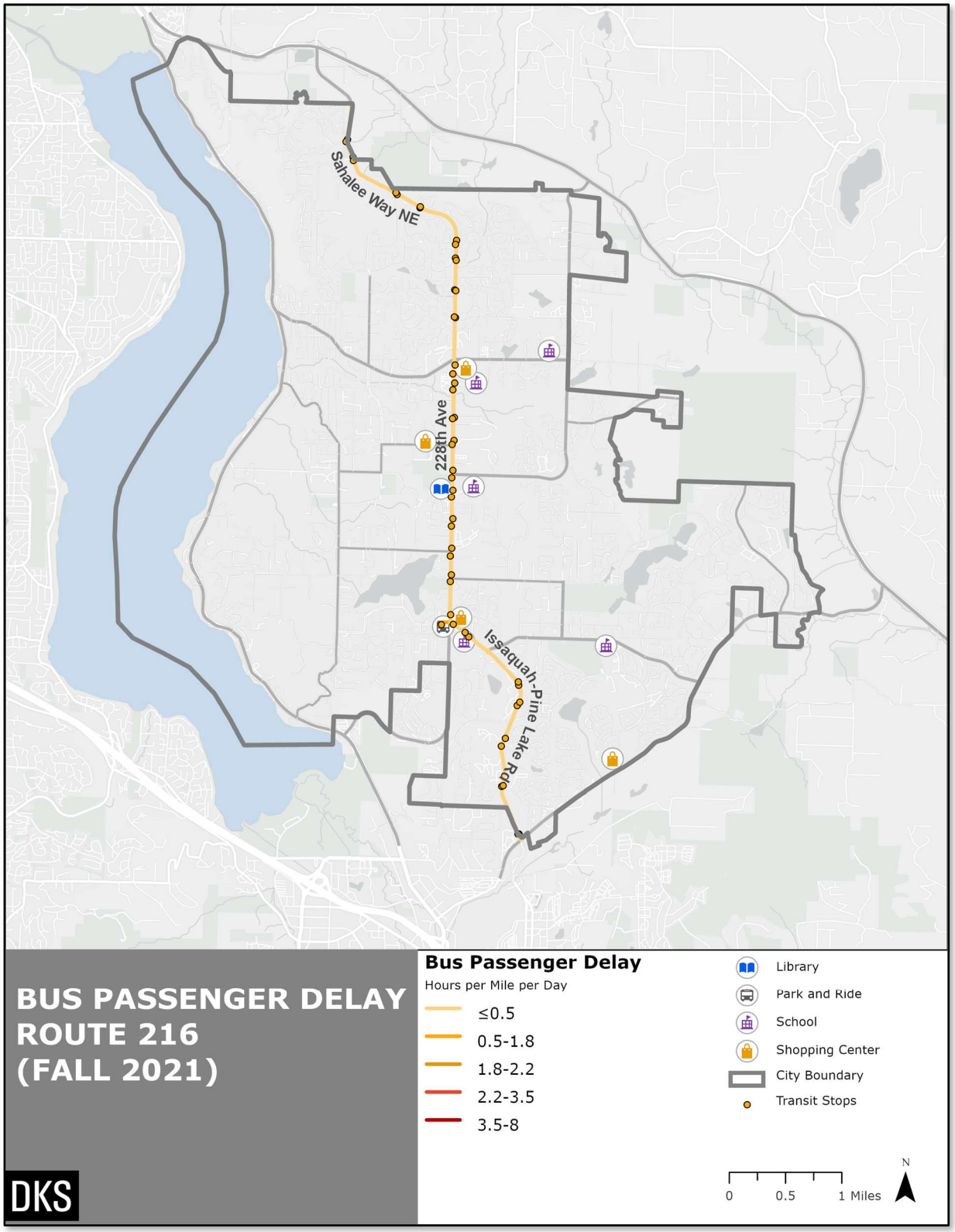


**FIGURE 27: MAP OF PASSENGER DELAY ROUTE 216**

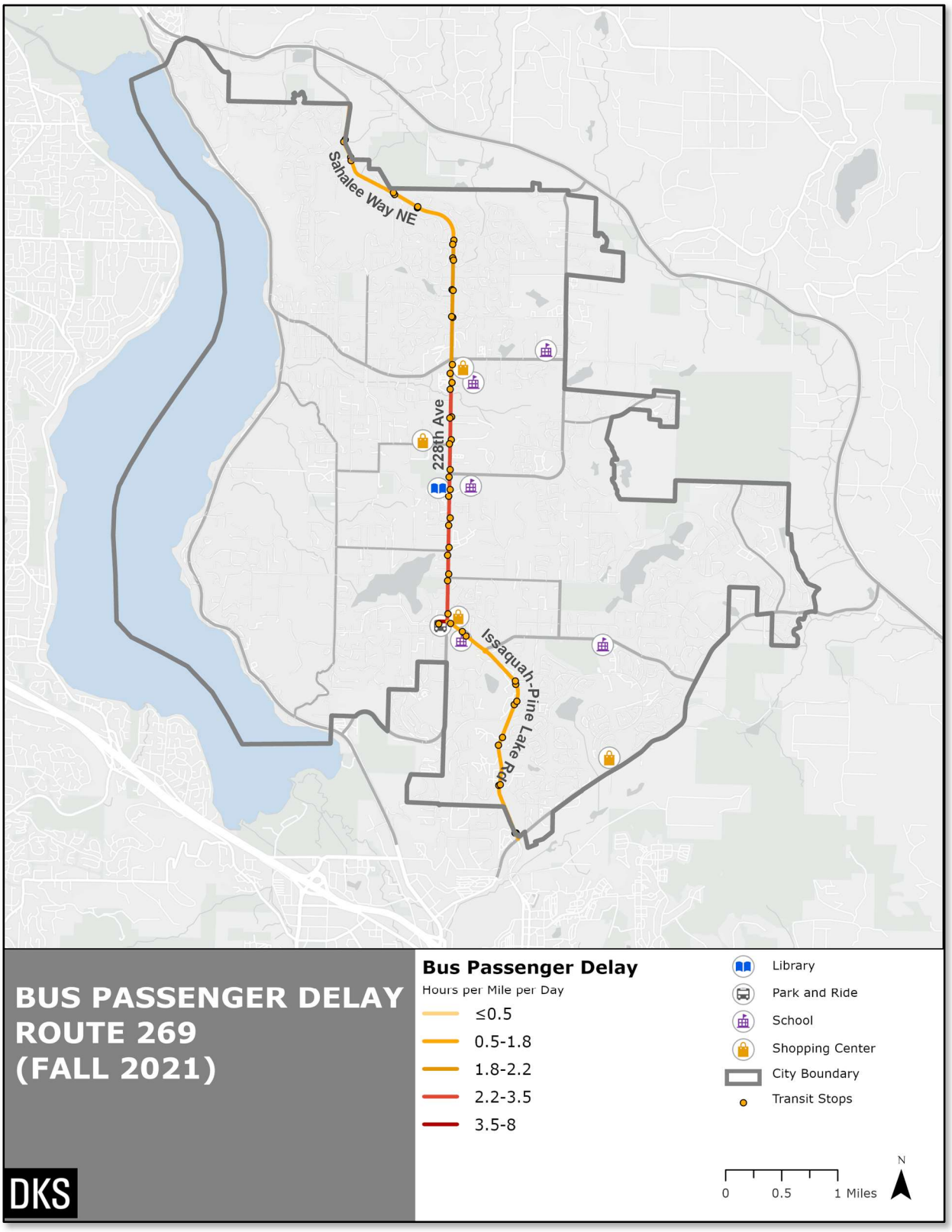


**FIGURE 28: MAP OF PASSENGER DELAY ROUTE 269**

### KEY TAKEAWAYS – TRANSIT OPERATIONAL PERFORMANCE

Route 216 showed little delay compared to Route 269. Route 269 runs more often than Route 216 and tends to experience more delay when compiled throughout the typical day. The most delay tends to come from circulating the South Sammamish Park and Ride. Additional delay occurs on 228th Avenue SE between the Park and Ride and NE 8th Street. This area of 228th Avenue NE is generally the most congested area of Sammamish, as it is the only north-south connecting arterial in the City.

## CONCLUSION

The extent of fixed-route transit in Sammamish is three bus routes along 228th Avenue SE and Issaquah-Pine Lake Road, each with varying levels of frequency. Route 216, which provides service to Seattle and Redmond, operates only during the peak hours and only in the peak direction. Route 269, which provides service to Issaquah and Redmond, operates with 30 to 45 minute headways throughout the day. Route 269 could be used to connect to other transit routes that provide service to Seattle and other key destinations. Route 554 is operated by Sound Transit and has all-day service from Seattle to Issaquah but only has limited service in the evening, late night, and early morning through Sammamish. Excluding work from home, about 7.5 percent of Sammamish commuters use transit to get to work. There is currently no fixed route bus service on weekends in Sammamish. In addition to fixed route service, Metro Flex provides on-demand rides within a certain area of Sammamish on weekdays and Saturdays. This service could be used to make local trips, or it could be used as a first-last mile connection to the South Sammamish Park and Ride. Metro Flex had 78 average daily rides in April 2023.

In 2022, there was an average of 278 weekday boardings on fixed-route service in Sammamish. The busiest transit stops are located near the intersection of 228th Ave SE and NE 8th Street. This is located near Eastlake High School and Sammamish Highlands shopping center. The most recently available Park and Ride data from 2021 showed very low occupancy (2%) at the South Sammamish Park and Ride. There was a significant decrease in both ridership and Park and Ride occupancy between 2019 and 2022 due to the COVID-19 pandemic.

While there is a market for transit in Sammamish, some obstacles exist. Nearly 25% of Sammamish workers work from home. Currently, nearly 80% of non-work from home workers drive alone to their jobs. A major obstacle is access to transit. Only about 6% of the population lives within a quarter mile of a bus stop, although 37% are within a 2.5-mile drive of the South Sammamish Park and Ride. Demographic data show that low-income residents, people of color, and zero-car households have about the same likelihood of being within a quarter mile of transit as compared with the overall population.

Another obstacle is travel time. Transit trips among destinations within Sammamish tend to take at least 1.5 times longer than driving. The majority of the destinations analyzed are along the bus routes. However, for regional trips, transit tends to take longer than driving, generally about 2-3 times longer depending on the location and time of day, which may discourage some users.

# APPENDIX B

## EQUITY ANALYSIS MEMO

# EQUITY ANALYSIS MEMO

DATE: September 1, 2023

TO: Lindsey Channing | City of Sammamish

FROM: Sarah Keenan, PE | DKS Associates,
Ben Wallach, PE, PTOE | DKS Associates

SUBJECT: Sammamish Transit Study – Equity Analysis

The purpose of this memo is to identify the existing and future underserved communities in Sammamish and provide recommendations related to public transit. The Existing Conditions document reviewed demographic data from the most recent census and American Communities Survey (ACS). The Future Conditions document reviewed planned growth for Sammamish, which is in the process of being finalized at the time of this memo and may change.

## EXISTING AND FUTURE DEMOGRAPHICS

### EXISTING DEMOGRAPHICS

The Existing Conditions document has details about existing demographics within Sammamish. As of 2020, there were 67,455 people living in Sammamish with 22,544 total housing units[1]. Sammamish is among the wealthiest communities in King County, with a median household income of $201,370, compared with $110,586 for King County as a whole[2]. Sammamish has a home-ownership rate of 83.3%, compared with 64% county-wide[3]. Over 90% of homes in Sammamish are worth more than half a million dollars, with 41.5% worth more than one million dollars[4]. Sammamish has a median home value of $939,600, compared with $651,900 county-wide[5]. About 2.5% of Sammamish residents live in poverty, compared with 9.4% county-wide[6]. In addition, 2.5% of Sammamish residents live without healthcare, compared with 5.2% county-wide[7]. Only 1.1% of Sammamish households have no vehicle available, compared with 10.4% county-wide[8].

[1] 2020 Decennial Census

[2] 2021 American Community Survey, 1-Year Estimates

[3] 2021 American Community Survey, 1-Year Estimates

[4] 2021 ACS 5-Year Estimates Data Profiles

[5] 2021 ACS 5-Year Estimates Data Profiles

[6] 2021 American Community Survey, 1-Year Estimates

[7] 2021 American Community Survey, 1-Year Estimates

[8] 2021 ACS 5-Year Estimates Data Profiles

Sammamish has a higher percentage of Foreign-Born population than King County as a whole, with 36.3% Foreign-Born, compared to 25.0% county-wide[9]. In Sammamish, 35.2% of households speak a language other than English at home, compared to 29.9% county-wide[10]. Sammamish has 7.8% of residents over the age of 65, compared with 13.7% county-wide[11].

Overall, Sammamish has a higher income, home-ownership rate, and home value than King County as a whole. Sammamish also has a lower rate of poverty, zero-vehicle households, residents without healthcare, and population over the age of 65. Sammamish has a higher rate of Foreign-Born population and those who speak a language other than English at home, compared to King County as a whole.

### FUTURE DEMOGRAPHICS

The trends seen under existing conditions are expected to continue in the future. Sammamish is expected to remain among the wealthiest cities in King County, with high average income, property value, and home-ownership rates. However, the City should continue to understand the location of elderly residents and low-income households in order to ensure that these populations have access to public transit. The percentage of the population over the age of 65 has more than doubled in the past 20 years (3.6% in 2000 to 7.8% in 2021), and this trend may continue. As the population continues to age, alternative transportation options will be important to continue to ensure mobility for all.

The City is currently working on affordable housing targets, including zoning goals related to more dense housing and affordable housing. This process is expected to result in affordable housing planned along the transit corridor on 228th Avenue NE near the existing commercial centers at NE 8th Street, Town Center, and Issaquah-Pine Lake Road SE.

## PUBLIC TRANSIT EQUITY

King County Metro and Sound Transit run buses along 228th Avenue NE. King County Metro also runs Metro Flex, which provides on-demand transit service for a certain area of Sammamish (shown in Figure 1). This area will expand to include parts of Issaquah in October 2023.

Analysis shows that 7.6% of the low-income population and 13.8% of the low- or moderate-income jobs are within a quarter mile walk of a fixed-route transit stop. These numbers increase to 16.1% and 33.0% for a half mile walk of a transit stop, respectively. This data is shown in Table 1, along with the analysis for total population and total jobs. More low-income households and low- or moderate-income jobs are within the existing Metro Flex service area, as shown in Figure 1 and Figure 2.

[9] 2021 American Community Survey, 1-Year Estimates

[10] 2021 American Community Survey, 1-Year Estimates

[11] 2021 US Census, 1-Year Estimates

**TABLE 1 WALKSHED DEMOGRAPHICS AND JOBS DATA (2020)**

| Access to Transit | | | | | |
|---|---|---|---|---|---|
| **Area [1]** | | Total Population (2020) | Low-Income Population [2] (2020) | Total Jobs (2020) | Low/Mod Income Jobs (2020) [3] |
| **Total City** | | **67,455** | **2,047** | **1,209** | **485** |
| **¼-Mile Walkshed** | # | 4,110 | 155 | 136 | 67 |
| | % | 6.1% | 7.6% | 11.2% | 13.8% |
| **½-Mile Walkshed** | # | 9,675 | 360 | 316 | 160 |
| | % | 14.3% | 17.6% | 26.1% | 33.0% |

Notes: [1] Demographics and jobs with ¼ or ½ mile access transit were calculated with an area-weighted sum of walksheds and Census block groups. [2] Low-Income population is based on the federal poverty line. [3] Low/moderate income jobs are based on monthly pay of up to $3,333. [3]
Source: Population and demographics are from the American Community Survey, 2016-2020 Five-Year Estimates. Jobs are from the US Census Longitudinal Household Employer Dynamics (LEHD), 2020.

Figure 1 shows the City's low-income population by block group with the fixed-route transit service and the existing Metro Flex service area. There are some areas of the City with low-income households that are not served by Metro Flex and that are not within a comfortable walking distance of transit. Future land use plans are expected to add more affordable housing close to the transit route and within the Metro Flex service area. Figure 2 shows the City's low- and moderate-paying jobs by block group with the fixed-route transit service and the existing Metro Flex service area. The majority of the low-paying jobs in the City are either within a comfortable walking distance of transit or within the Metro Flex service area.

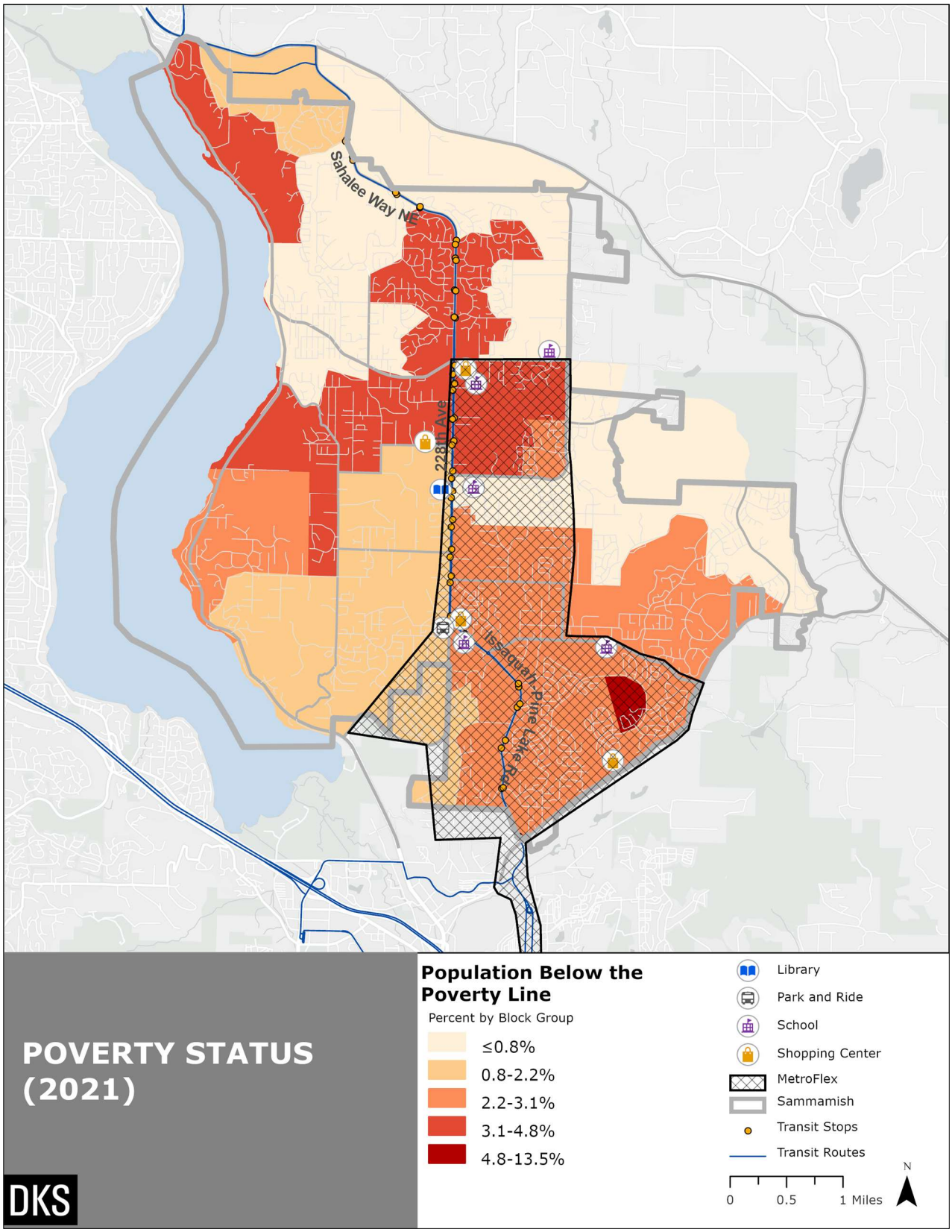


**FIGURE 1: LOW INCOME POPULATION, TRANSIT STOPS, AND METRO FLEX**

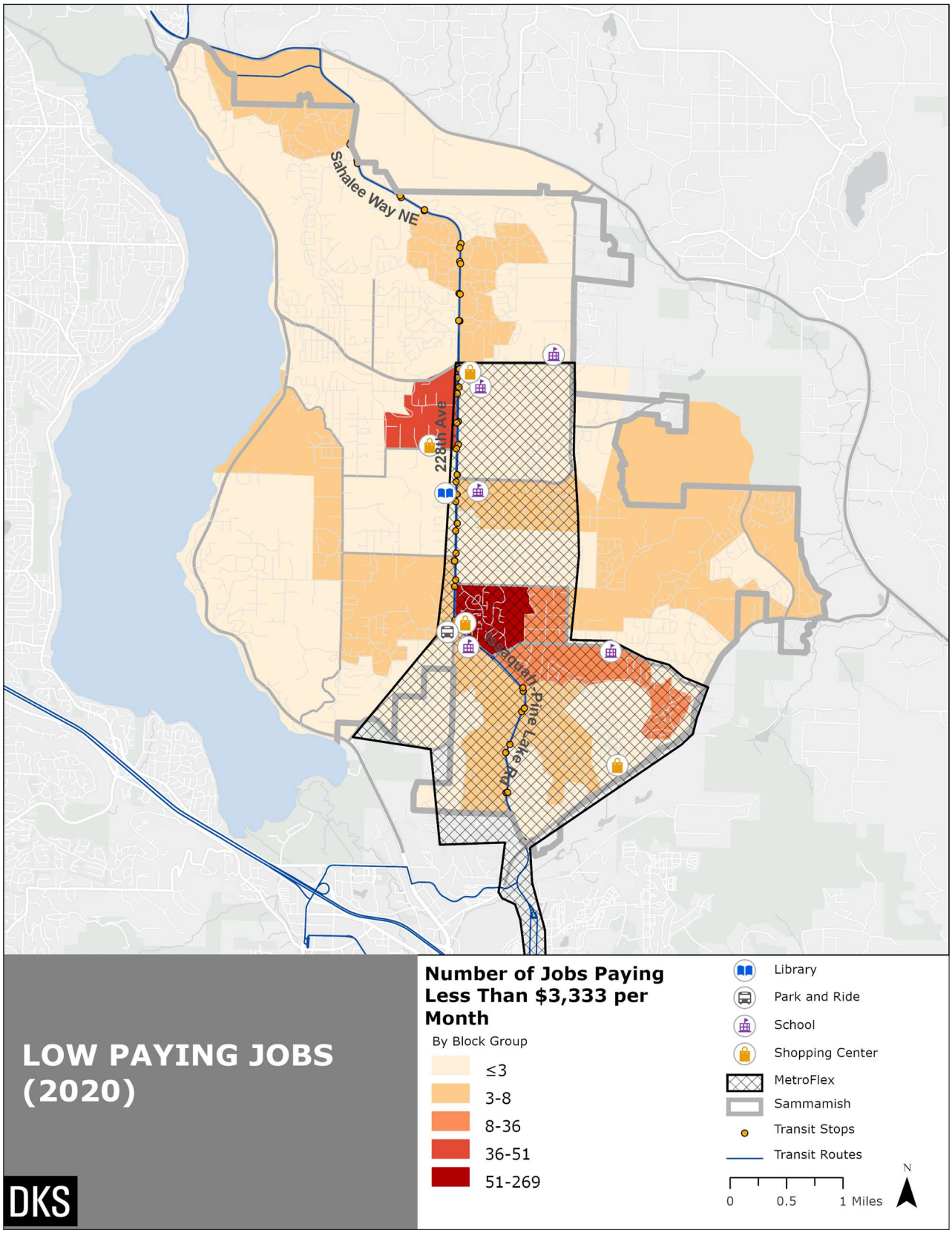


**FIGURE 2: LOW- AND MODERATE-PAYING JOBS, TRANSIT STOPS, AND METRO FLEX**

## CONCLUSION

Sammamish is among the wealthiest communities in King County, however there are still equity concerns related to public transit. A small percentage of the population (2.5%) live in poverty, and the population continues to age. Currently, about 17.6% of the low-income population live within a half mile walk of a transit stop. Some of the low-income population, particularly in Klahanie and the area on the east side of 228th Avenue NE near NE 8th Street, is covered by the Metro Flex service area. Other areas with low-income populations that may not have great access to fixed-route transit or Metro Flex include the northwest corner of the City and areas around Louis Thompson Road SE. The majority of low paying jobs have good access to either fixed-route transit or Metro Flex.

Sammamish is currently in the process of adopting future land use, including affordable housing targets. Affordable housing is expected to be planned along the transit route near the commercial areas near NE 8th Street, near Town Center along 228th Avenue, and near Issaquah-Pine Lake Road.

The following are recommendations to enhance transit related equity in Sammamish:

- Sammamish should continue to plan dense housing, affordable housing, and mixed-use development near the transit route to provide this population with alternative transportation options.
- Sammamish should work with schools and employers to share information on Metro Flex and Transit. These programs could be advertised in schools, in Senior housing, in low-income or affordable housing, community gathering areas such as the King County Library and the YMCA, and at neighborhood pop-ups. The advertisements should be available in multiple languages. Some options that are already available that would benefit potential riders are:
    - Move Ahead Washington: This is a program, more commonly referred to as "Youth Ride Free", that allows those under the age of 18 to ride transit for free. This includes all King County Metro and Sound Transit routes in Sammamish.
    - ORCA LIFT: ORCA LIFT is a transit card that provides low-income users a reduced fare.
    - Regional Reduced Fare Permit: This program allows those over 65 years old and those with certain disabilities to ride transit at a reduced fare.
    - Information on Metro Flex.
- Sammamish should prioritize non-motorized investments such as sidewalks, crosswalks, and bicycle lanes in neighborhoods with higher than average low-income households and low-paying jobs.

# APPENDIX C

## FUTURE CONDITIONS TRANSIT GAPS ANALYSIS


# SAMMAMISH TRANSIT PLAN

## FUTURE CONDITIONS TRANSIT GAPS ANALYSIS

OCTOBER 2023

PREPARED FOR:

**CITY OF SAMMAMISH**

DKS

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## DOCUMENT DESCRIPTION

| | |
|---|---|
| CLIENT | City of Sammamish |
| DKS Project / Proposal Number | 23045-000 |
| Project / Proposal Name | Sammamish Transit Plan |
| Document Name | Future Conditions Transit Gaps Analysis |
| Date Document Issued | October 13, 2023 |

## VERSION CONTROL

| VERSION NUMBER | DATE | DESCRIPTION OF CHANGE | AUTHOR |
|---|---|---|---|
| 0-1 | 8/11/2023 | Initial Document | S Keenan |
| 1-1 | 10/13/2023 | Final Document | S Keenan |
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## INTRODUCTION

The purpose of this report is to present transit-related gaps in the City of Sammamish under future conditions. This will start with a summary of the planned future year growth, anticipated travel patterns, the planned transit network, and the future transportation network, including Capital Improvement Projects that may impact access to transit. With an understanding of the planned future conditions, this report will highlight gaps related to transit service and access to transit service. Additionally, this report will present strategies to improve transit access and service. The findings from this report will serve to inform the Capital Improvements Project list and planned updates to the transit-specific goals and policies in the City of Sammamish Comprehensive Plan.

## AVAILABLE DATA

Data used to analyze planned growth, travel patterns, and walksheds, bikesheds, and drivesheds came from the Puget Sound Regional Council 4k travel demand model. This model assumed completion of the Kirkland to Issaquah Link light rail extension for the future year.

The travel pattern data from the PSRC 4k trip-based travel demand model includes a base year and a future year. The base year is used to represent existing conditions, while the future year represents 2044. A select link analysis was completed for zones within the City of Sammamish to get origin-destination data for both base year and future year during the PM peak hour. This data was interpreted to represent typical evening travel data for residents of Sammamish.

Some data used for existing conditions analysis is not available for the future conditions analysis. This includes demographic data on race, vehicle availability, and income. The City of Sammamish has not yet adopted growth targets for 2044. Accordingly, this report uses high-level assumptions for where increases in population density are expected.

Data for future year transit service is limited to routing and anticipated frequencies. By 2025, King County Metro will revise service in Sammamish under the "East Link Connections" project, scheduled along with the opening of the Link Light Rail 2 Line connecting Downtown Seattle to Downtown Redmond through Mercer Island and Bellevue. The only major change to routing expected for service in Sammamish is the removal of Route 216 and increased frequency (including weekend service) of Route 269. Route 269 will be modified slightly outside of Sammamish City limits to connect to Mercer Island Station and Marymoor Village station in Redmond. Modification of bus stop locations within the City limits is possible, but are not known at this time.

## PLANNED GROWTH

The City of Sammamish is in the process of updating its Comprehensive Plan which includes future land use designations. As part of this update process, there are several areas near the existing transit alignment along 228th Avenue that have been identified by the City for urban residential and mixed-use development. These land use types have higher housing and commercial densities than neighborhood residential and therefore are more supportive of frequent fixed-route transit service.

Urban residential and mixed-use locations are planned along 228th Avenue between Issaquah-Pine Lake Road SE and NE 8th Street, particularly surrounding the Town Center near the intersection with 4th Street or near the South Sammamish Park & Ride. Higher-density land uses along the 228th Avenue corridor can be expected to increase the city's transit ridership.

## EXISTING AND FUTURE TRAVEL PATTERNS

Understanding existing and future travel patterns can help identify gaps in transit service. Existing and future travel patterns were analyzed using the Puget Sound Regional Council (PSRC) 4k travel demand model. To simplify travel pattern analysis, the Puget Sound region was divided into the following subareas:

- Sammamish
- Issaquah
- Bellevue
- Renton
- Redmond Microsoft
- Other Redmond
- North Bend and Snoqualmie
- Downtown Seattle
- Other Seattle
- Eastside North
- Eastside South
- South
- East
- North
- West

These regions are displayed in Figure 1.

**TAZ PARTITIONS**

**SAMMAMISH CITYWIDE TRANSIT STUDY**
**TRANSPORTATION ANALYSIS ZONES**

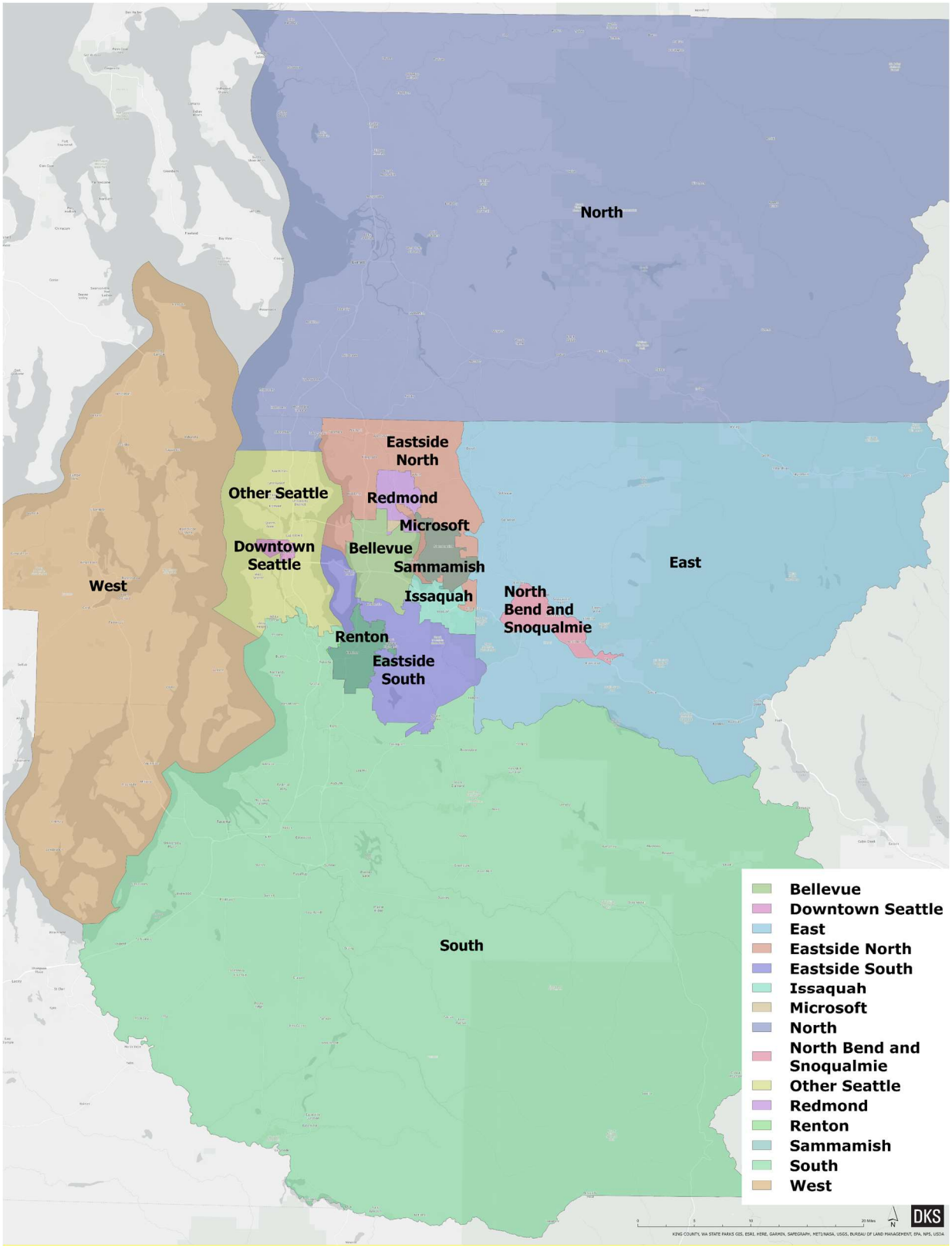



**FIGURE 1: TRAVEL PATTERN SUBAREAS**

Existing and future travel patterns are displayed in Figures 2 and 3. This analysis was completed for the model base year and future year. These years represent existing conditions and 2044 conditions, respectively.  The maps display the origin of trips ending in the City of Sammamish during the PM peak hour. The displayed travel patterns are meant to represent typical evening weekday travel patterns for Sammamish residents.

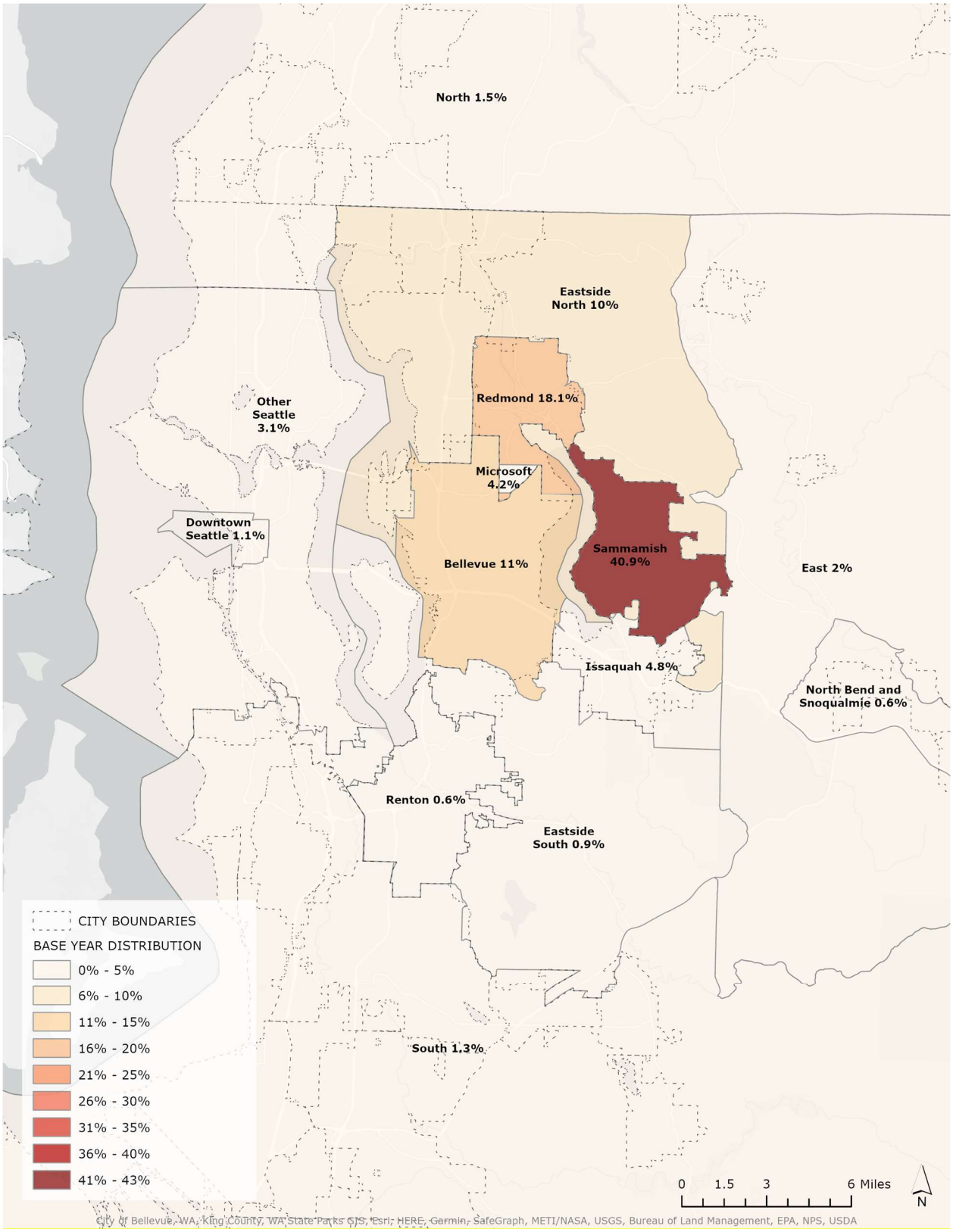



**FIGURE 2: BASE YEAR PSRC MODEL PM TRAVEL PATTERN – SUBAREA ORIGINS DESTINED FOR SAMMAMISH**

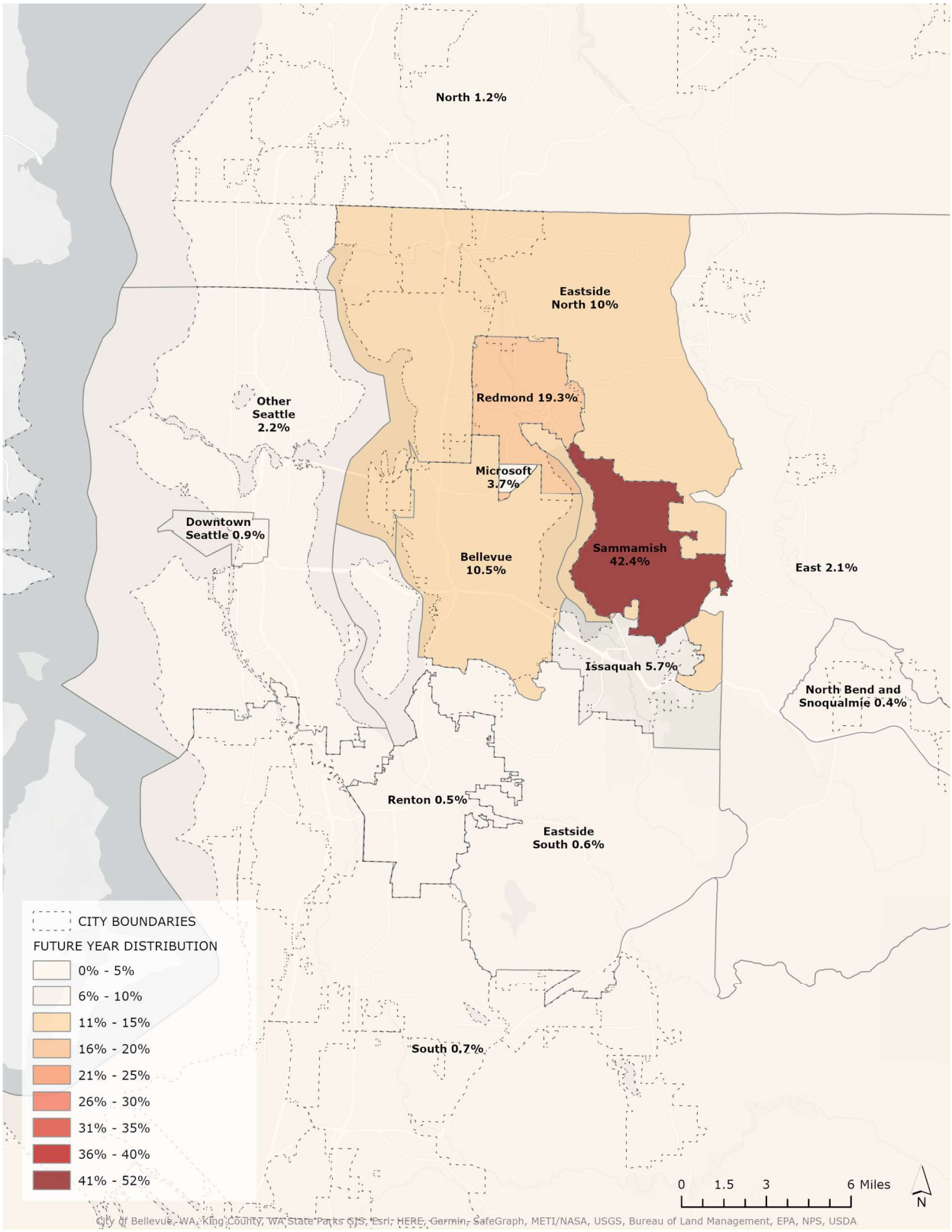



**FIGURE 3: FUTURE YEAR PSRC MODEL PM TRAVEL PATTERN – SUBAREA ORIGINS DESTINED FOR SAMMAMISH**

The base year and future year travel patterns are similar, with the majority of PM peak hour trips occurring within Sammamish. Outside of Sammamish the most popular trip origins are Redmond, Bellevue, Eastside North, and Issaquah. Eastside North includes Kirkland, Bothell, Kenmore, Woodinville, and unincorporated King County north of Sammamish. The future year travel patterns from the PSRC travel demand model can be used to approximate the anticipated travel patterns in 2044, which is the horizon year for Sammamish's Comprehensive Plan update. A summary of these trips is also shown in Table 1.

**TABLE 1: BASE YEAR AND FUTURE YEAR PM PEAK TRAVEL PATTERNS- SHARE OF TRIPS DESTINED FOR SAMMAMISH**

| Origin | Base Year % of Total Trips | Future Year % of Total Trips |
|---|---|---|
| **Sammamish** | 41% | 42% |
| **Redmond Other** | 18% | 19% |
| **Bellevue** | 11% | 11% |
| **Eastside North** | 10% | 10% |
| **Issaquah** | 5% | 6% |
| **Redmond Microsoft** | 4% | 4% |
| **Other Seattle** | 3% | 2% |
| **East** | 2% | 2% |
| **North** | 2% | 1% |
| **South** | 1% | 1% |
| **Downtown Seattle** | 1% | 1% |
| **Eastside South** | 1% | 1% |
| **North Bend and Snoqualmie** | 1% | 0% |
| **Renton** | 1% | 0% |
| **West** | 0% | 0% |

## PLANNED TRANSIT SERVICE

Existing transit service, including walksheds, bikesheds, and drivesheds, is summarized in the Existing Conditions Report, which also includes an equity analysis based on low-income and zero-vehicle households. This analysis cannot be fully duplicated for the future conditions due to limited data availability for future land use and future demographics. This section focuses on the planned transit network in the short term (2025) and long term (2044) and identifies anticipated deficiencies in transit service based on planned growth and forecasted travel patterns.

### PLANNED TRANSIT NETWORK CHANGES – NEAR TERM (2025)

#### REGIONAL

King County Metro is finalizing their recommended service network for the East Link Connections project prior to the opening of the Link 2 Line. The Link 2 Line will connect light rail from Seattle to Downtown Redmond with stops in Mercer Island, Bellevue, and Redmond Technology Center. The associated East Link Connections Project includes re-routing many of the existing bus routes serving eastside communities as well as the addition of several new routes and the elimination of others. Several other routes are planned for increased frequencies to enhance overall transit service.

#### LOCAL

Although the transit will run along the same alignment within Sammamish (Issaquah-Pine Lake Road SE, 228th Avenue, and Sahalee Way NE), there are two significant changes to transit service in Sammamish included in the East Link Connections project. The first is the elimination of Route 216, which is already planned for removal in September 2023. The second is an increase in frequency of Route 269, which will run along I-90 and terminate at Mercer Island Station. It will also connect to Marymoor Village Station in Redmond. This route is planned to run with 15-minute headways during the weekday peak, 30-minute headways during the rest of the weekday, and weekend service with 30-minute headways from 5am to 7pm. Route 269 will connect to the Marymoor Village light rail station and to Mercer Island Station through Sammamish and Issaquah. Route 554, operated by Sound Transit, will continue to operate with limited service in Sammamish. Figure 4 shows the planned 2025 transit network in Sammamish.

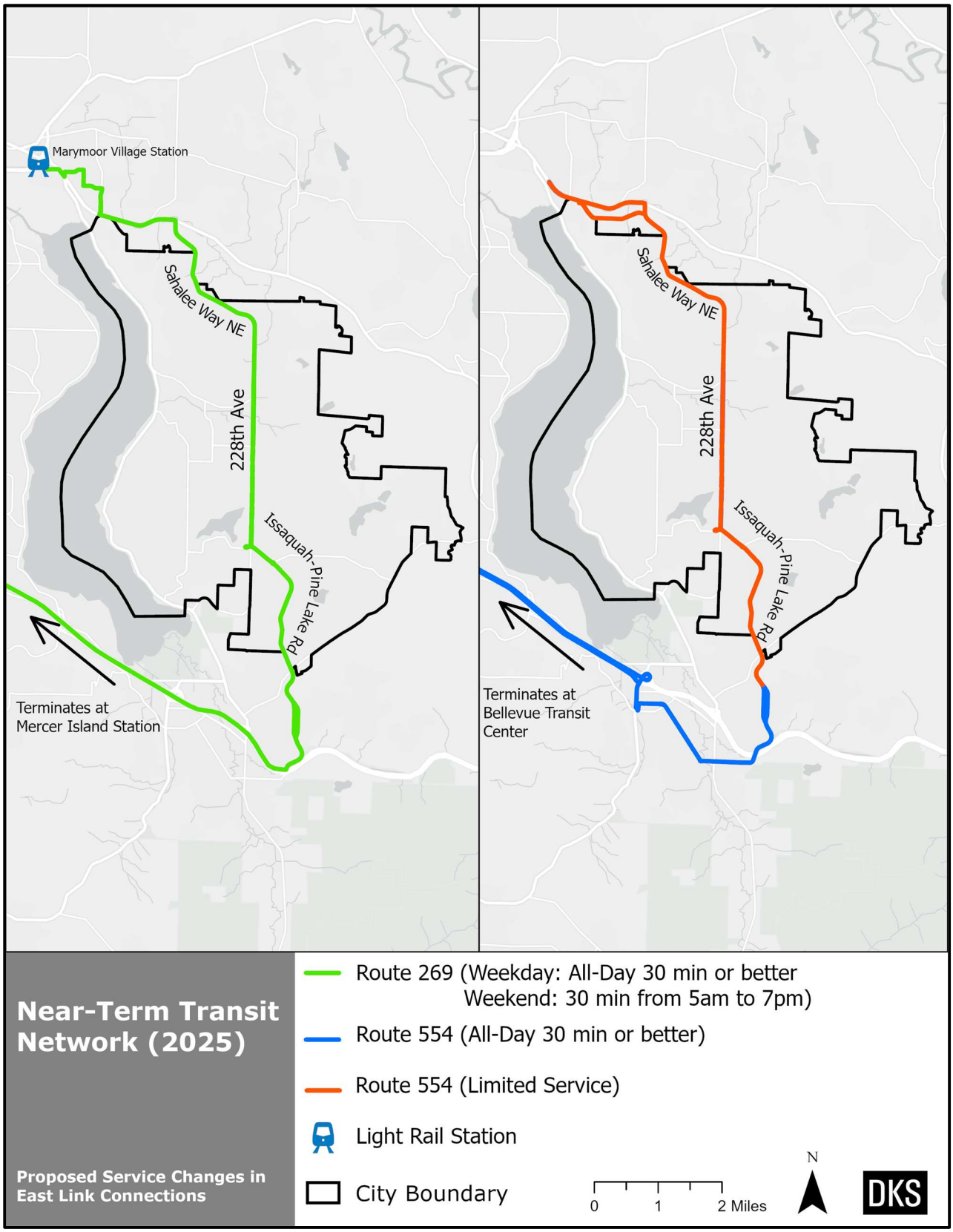



**FIGURE 4: PLANNED 2025 TRANSIT MAP**

## PLANNED TRANSIT NETWORK CHANGES – LONG TERM (2044)

The Link Light rail 4 Line, which connects Kirkland to Issaquah, generally following the alignments of I-90 and I-405, is currently expected to be complete in 2041 or 2044, depending on funding availability. For the purposes of this document, we will assume an opening year of 2044. This new light rail service is planned to serve Issaquah with six-minute headways during peak periods and a single station in Central Issaquah which would serve as the end of the line.

With the light rail opening, some service changes to King County Metro and Sound Transit operated bus routes are anticipated with the intent to improve transit connections to the new light rail service. However, the extent of these service changes and details such as the stop locations and potential rerouting are unknown at this time. It is expected that residents of Sammamish will be able to access the new light rail station in Issaquah via a bus or driving to the proposed park & ride. According to Sound Transit's ST3 Plan, the new station is expected to have 500 parking spaces.

## BEYOND FIXED-ROUTE TRANSIT

Options beyond fixed-route transit that are available today are still anticipated to be available in both the near term (2025) and long term (2044). Today, Sammamish residents have access to Metro Flex and vanpools. Metro Flex is an on-demand neighborhood transit service that allows community members to ride anywhere in their service area for the same cost as a bus trip. Beginning in October 2023, King County Metro will initiate a pilot expansion of Metro Flex which will connect to the existing Sammamish service and extend into Issaquah. The pilot expansion will be evaluated at a later date to determine if the expansion will continue after 2025. For those who qualify under the Americans with Disability Act (ADA), Metro also provides the paratransit service known as Access Transportation.

These services are anticipated to continue to support residents in the future, though funding availability is a consideration. More information on each of these services is available in the Existing Conditions Report.

## ANTICIPATED DEFICIENCES IN TRANSIT SERVICE

### NEAR-TERM 2025

Travel pattern data shows that Redmond and Bellevue, along with other Eastside communities such as Kirkland, Kenmore, and Bothell are the most common origins of travelers to Sammamish in the evening peak hour.

The added link light rail service with connections via Route 269 will improve regional transit accessibility from Sammamish. Link light rail will run every 8 minutes during peak hours. Many Sammamish trips come from and go to Redmond and Bellevue. This connection may allow these trips to be made via public transportation.

While parts of Kirkland, Bothell, and Kenmore may be accessible via bus, two or more transfers will be required. This may be considered a deficiency in transit service for Sammamish.

### LONG-TERM 2044

The opening of Link Light Rail Line 4 in 2044 will provide Sammamish residents options for reaching Bellevue or Seattle. Bellevue will be accessible via the light rail from Issaquah, or via the light rail from Redmond. Seattle will be accessible via the light rail from Redmond, or via a transfer from the light rail line in Issaquah. The light rail station in Issaquah is anticipated to be accessible from Sammamish via bus or driving to the park & ride.

Three Sound Transit Bus Rapid Transit (BRT) lines, which is bus service typically characterized by high frequencies, increased stop spacing, and transit priority infrastructure such as bus lanes, are planned to open in 2028 and 2029 connecting Bellevue to Lynnwood and Shoreline to Bothell. A transfer to these BRT routes can take riders to Kirkland, Woodinville, Bothell, Lynnwood, Burien, Tukwila, Renton, Shoreline, Lake Forest Park, Seattle, and Kenmore. However, depending on destination and the availability of a vehicle to use the park & rides, these trips may require two to three transfers. While the new service provides a benefit to Sammamish, the requirement for multiple transfers may sill be considered a service deficiency for Sammamish.

## TRANSIT ACCESS

Non-motorized forms of transportation, such as walking and cycling, play a critical role in providing first and last-mile connections to public transit, but often face access gaps in the form of inadequate pedestrian crosswalks, sidewalks, and bicycle facilities. To address these gaps, an analysis was conducted to identify potential areas for improvements for non-motorized infrastructure elements, with a focus on enhancing accessibility to existing and future public transit stops. Access to transit also includes park & ride availability, capacity, and occupancy. Many commuters who do not have easy non-motorized access to transit stops opt to drive to a park & ride instead.

### CAPITAL IMPROVEMENT PROJECTS

The City of Sammamish's Transportation Improvement Project (TIP) identifies some projects that will improve access to transit. One TIP project is the Sidewalk Gap and Non-Motorized Program. The program is funded at $200,000 per year. Projects are prioritized based on several criteria, one being proximity to a transit stop. The program's intent is to provide or enhance pedestrian and multi-modal connectivity within the community. Identified projects near the transit routes include paving a gravel path on the north side of SE 30$^{th}$ Street from 228$^{th}$ Avenue SE to 224$^{th}$ Avenue SE and constructing a sidewalk and bike lane on the south side along NE 22$^{nd}$ Street from 228$^{th}$ Avenue SE to 229$^{th}$ Avenue NE.

Some additional projects identified in the TIP that will improve access to transit are the following:

- Sahalee Way NE: City Limits to 28th Pl / 223rd Ave NE (TR-115(05)): will improve Sahalee Way NE from the City Limits to 28th Pl / 223rd Ave NE to a three-lane road section with a bike lane, curb, gutter, and sidewalk on the west side and shoulder on the east side. Bus pullouts and sidewalk for transit stops are also planned.

- Issaquah-Pine Lake Rd: SE 44th – SE 32nd, PH. 1 (TR-02): will aim to improve traffic flow, non-motorized uses, and safety for all users along Issaquah-Pine Lake Road SW from SE 32nd Way to SW 44th St.

A separate deliverable for this Transit Study will supplement this list with potential transit-supportive CIP projects with specific locations and planning level cost estimates. This list will include both access to transit and speed and reliability projects. Recommended projects for the CIP list deliverable will be informed by the analysis completed in this report.

While not directly related to transit access, potential TIP projects can also improve transit speed and reliability. Some of these project types may include installing roundabouts and improving intersection capacity. These additional projects identified in the TIP that are expected to improve transit speed reliability are the following:

- [WSDOT] SR202 / Sahalee Way NE Intersection (TR-19): will install a metered roundabout at the SR202 and Sahalee Way NE intersection to manage traffic congestion.

- [Issaquah] Issaquah-Pine Lake Road (IPLR) Ph. 3-48th to Issaquah-Fall City Roard (IFCR) (TR-27): will improve capacity of the corridor and intersection along Issaquah-Pine Lake Rd between SE 48th St to SE Issaquah-Fall City Rd.

- [King County] Sahalee Way – SR202 to North City Limits (TR-48): will widen Sahalee Way from SR202 to North City Limits to improve capacity.

Please note that the three projects listed above are regional improvements that will not be funded by the City. Partnerships and coordination with several agencies and stakeholders will be required to develop and construct these projects.

## CROSSINGS

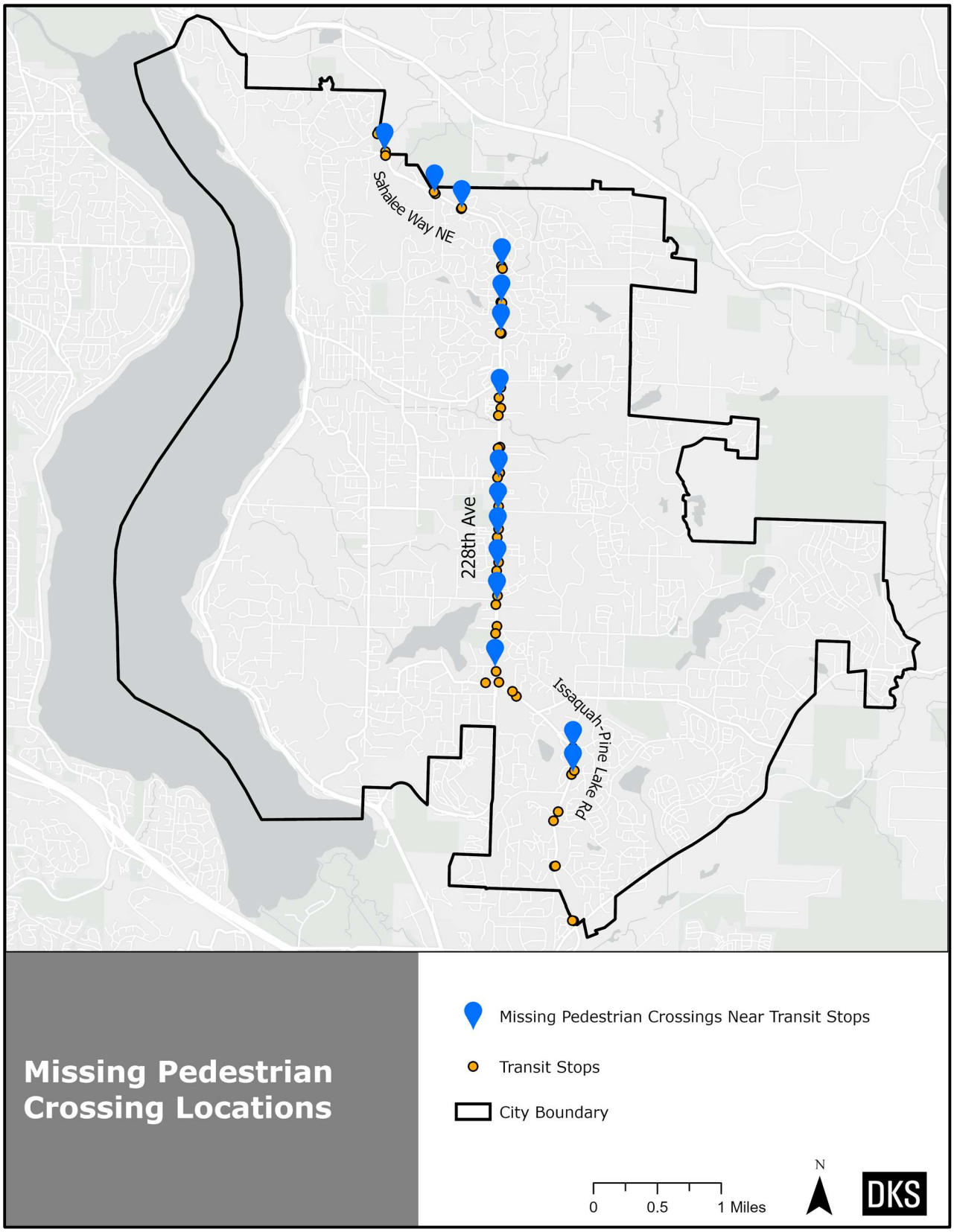
Appropriate street crossings play a vital role in ensuring safe and convenient access to public transit. Pedestrian infrastructure such as crosswalks and signals improve pedestrian safety and reduce the time required for passengers to access transit stops, promoting transit ridership and improving access to essential services. Therefore, investment in appropriate street crossings is critical for promoting equitable and sustainable transit service.

The assessment of crossings along existing and future transit corridors was based on three key criteria: distance from transit stops, length of crossing across corridor right-of-way, and sight distance for oncoming vehicles. Distances exceeding 300ft from a transit stop were deemed excessive and closer crossing locations are recommended. Long crossings across wide arterial streets can create unsafe conditions for pedestrians and require protection from vehicular traffic. Vehicular sight distance is critical in ensuring drivers have enough time to yield to pedestrians

using marked crosswalks. Based on these criteria, the analysis identified the following locations as transit stops that are missing marked pedestrian crossings:

- Issaquah-Pine Lake Road SE at Bus Stops 81735 and 81737 (no crosswalk pavement markings and no curb ramps on the northbound side)
- Issaquah-Pine Lake Road SE at Bus Stops 81847 and 81738 (no crosswalk pavement markings)
- 228th Avenue SE at Bus Stop 81714 (midblock stop more than 300 feet from a crossing location)
- 228th Avenue SE at Bus Stop 81678 (no pedestrian crossing on the south leg of the intersection with SE 20th Street)
- 228th Avenue SE at Bus Stop 81674 (no pedestrian crossing on the south leg of the intersection with SE 16th Street)
- 228th Avenue SE at Bus Stop 81703 (no pedestrian crossing on the south leg of the intersection with SE 10th Street)
- 228th Avenue SE at Bus Stop 81687 (no pedestrian crossing on the north leg of the intersection with SE 8th Street)
- 228th Avenue SE at Bus Stops 81672 and 81724 (no pedestrian crossing on the north leg of the intersection with SE 4th Street / Crusader Way)
- 228th Avenue SE at Bus Stops 81670 and 81726 (no pedestrian crossing on the south leg of the intersection with E Main Street)
- 228th Avenue SE at Bus Stop 81677 (midblock stop more than 300 feet from a crossing location)
- 228th Avenue SE at Bus Stops 81880 and 81760 (no pedestrian crossing at NE 14th Street)
- 228th Avenue SE at Bus Stops 81870 and 81871 (no pedestrian crossing at NE 18th Place)
- 228th Avenue SE at Bus Stops 81825 and 81861 (no pedestrian crossing at NE 22nd Street)
- Sahalee Way NE at Bus Stops 81840 and 81842 (no pedestrian crossing at NE 28th Place)
- Sahalee Way NE at Bus Stops 81810 and 81852 (no pedestrian crossing at Sahalee Drive E)
- Sahalee Way NE at Bus Stops 81800 and 81790 (no pedestrian crossing at NE 36th Street)

These locations should be further studied to determine if a crossing is appropriate. The locations of these missing crossings are shown in Figure 5.




**Missing Pedestrian Crossing Locations**

**FIGURE 5: EXISTING BUS STOPS WITH MISSING PEDESTRIAN CROSSING**

## SIDEWALKS

Sidewalks are crucial in facilitating transit service, as they can provide a safe non-motorized route to the transit stop. They offer a safe and convenient way for residents to reach transit stops, leading to increased ridership and improved accessibility. They also provide a waiting zone for riders waiting for the bus. The speed limit along Sammamish's transit corridor ranges from 35-45 miles per hour, a speed that would make most pedestrians uncomfortable standing in the shoulder. Therefore, investing in sidewalks is essential for ensuring equitable access to transit and fostering healthy and vibrant communities.

The arterial that carries the transit route In Sammamish, Sahalee Way NE/ 228th Ave NE/ Issaquah-Pine Lake Road, has sidewalk on at least one side of the road south of NE 25th Way. It is completely lacking sidewalks on Sahalee Way north of NE 25th Way. Some bus stops are in a location with a narrow shoulder and no amenities, see Figure 6. South of NE 25th Way, some areas have narrow sidewalks lacking a full pedestrian access area, see Figure 7. Some areas have comfortable sidewalks with an amenity area, see Figure 8.


**FIGURE 6: NO SIDEWALK AT THE BUS STOP AT SAHALEE WAY AND NE 28TH PL/223RD AVE NE**


**FIGURE 7: NARROW SIDEWALK AT THE BUS STOP AT 228TH AVE NE/NE 25TH WAY**


**FIGURE 8: SIDEWALK ON ONE SIDE OF THE ROADWAY AT THE BUS STOP AT 228TH AVE NE/NE 14TH STREET**

On 228th Ave NE north of NE 11th Pl and on Issaquah-Pine Lake Road, south of SE 32nd Way, sidewalk is only present on one side of the roadway. The CIP TR-02 covers the area of Issaquah-Pine Lake Road. The existing condition can be seen in Figure 7, where the northbound bus stop has no waiting area. Generally, between NE 11th Pl and SE 32nd Way, the transit route has good quality sidewalks on both sides of the street. Much of this route also has a landscaped buffer area separating the pedestrians from the roadway.

Sidewalk improvements are planned for Sahalee Way from the City Limits to NE 28th Pl, but only for one side of the roadway. Additionally, this project will not address a sidewalk gap on Sahalee Way between NE 28th Pl and NE 25th Way. Figure 9 shows existing and planned sidewalks along the transit corridor. Details of the planned sidewalks, such as which side of the roadway, are not known at this time.

In addition to sidewalk gaps on the transit route, many local roadways are missing sidewalks that could provide a convenient and safe way to access transit.

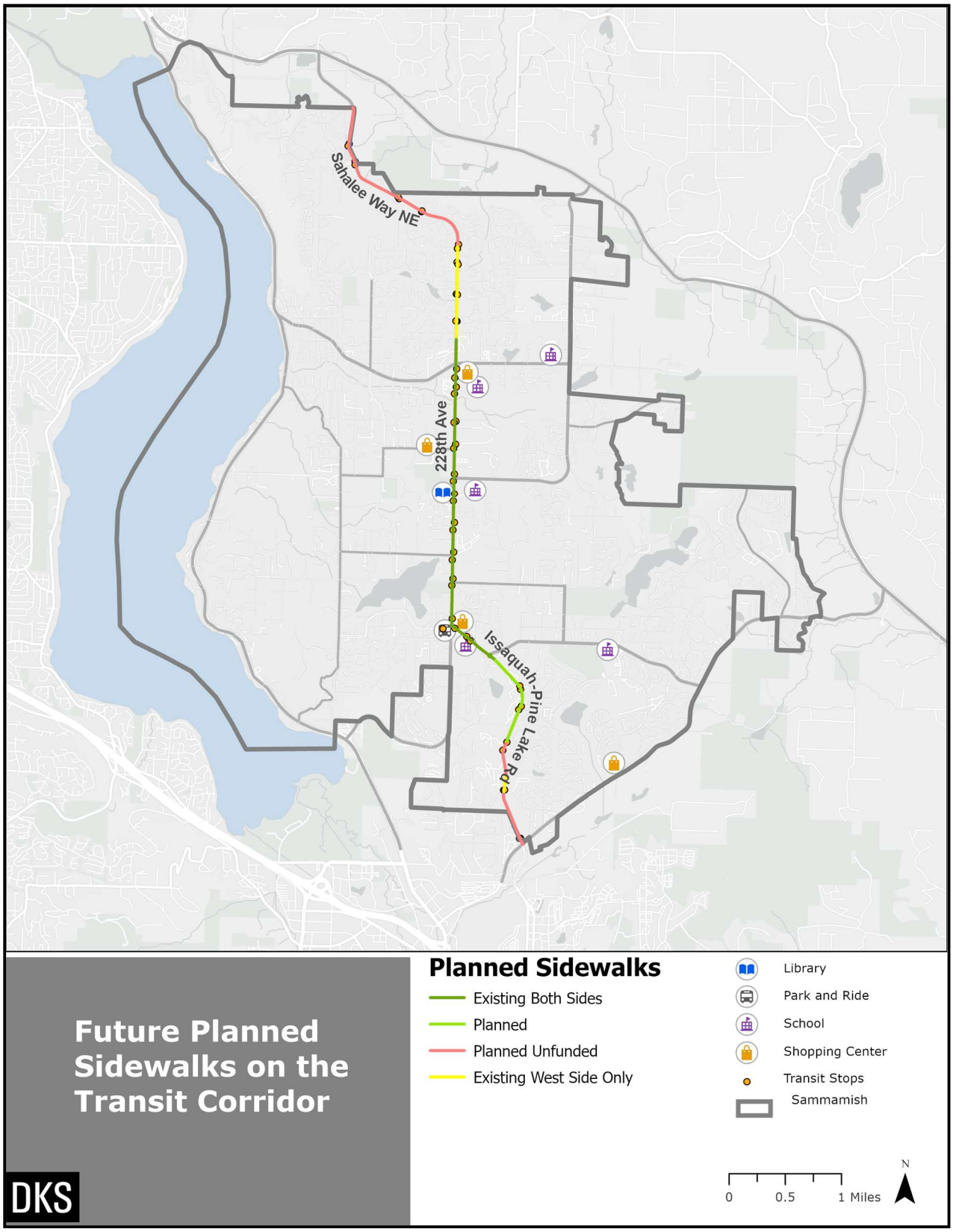



**FIGURE 9: EXISTING AND PLANNED SIDEWALKS ALONG THE TRANSIT CORRIDOR**

## BIKE FACILITIES

Improving bicycle access to transit stops is important in enhancing last-mile connections and promoting sustainable transportation. One major barrier to biking is Sammamish's mountainous geographical location. In Sammamish, there are significant grades on many streets that may discourage commuters from biking. Although roadway grades are unlikely to change, it is important to consider when analyzing the bike network. The Existing Conditions Report has more information on Sammamish topology. Bicycles which are partially powered by electric motors, referred to as ebikes, can help mitigate the barrier to biking posed by steep grades. Many jurisdictions across the country are implementing ebike rebate programs to accelerate their adoption. Washington State Legislature recently approved up to $1,200 for ebike rebates for qualifying individuals based on income. The proposed law also grants $2 million for municipalities, businesses, tribes, and nonprofits to create ebike lending programs[1]. This is a strategy which the City may consider to facilitate bike-to-transit trips and to generally improve mobility.

Most of Sammamish's local, collector, and arterial streets lack bicycle facilities. While there are bike lanes on some sections of 228th Ave SE, the high speeds and high traffic volume can be stressful for the average rider.

In addition to roadway infrastructure such as bicycle lanes, parking facilities for bicycles are important for supporting bicycle to transit connections. Currently, King County Metro provides four on-demand BikeLink lockers for secure bicycle storage at the South Sammamish Park & Ride, as shown in Figure 9. BikeLink is a bike parking company which allows transit users to electronically reserve a bike storage locker on-demand on a first come, first served basis. As Sammamish adds density along the 228th Avenue corridor, additional lockers may be needed at South Sammamish Park & Ride and a new locker facility may be warranted near Town Center. These additions would require coordination between City of Sammamish and King County Metro.

[1] https://wabikes.org/index.php/2023/04/26/electric-bike-rebates-coming-to-washington-state/


**FIGURE 10: BIKELINK BICYCLE STORAGE AT THE SOUTH SAMMAMISH PARK & RIDE**

## PARK & RIDE

With increased higher density planned along the transit route, it can be expected that a higher percentage of Sammamish residents will be within a reasonable walkshed of a transit stop by 2044 when compared with today. However, most Sammamish neighborhoods will not have the high density that may warrant frequent transit, and many residents will not be within a reasonable walking distance to a transit stop. One option to access fixed route transit is to drive to a park & ride. The Existing Conditions Report documented existing park & ride capacity and peak hour occupancy at the South Sammamish Park & Ride. Occupancy at the park & ride is currently very low but was significantly higher prior to the COVID-19 pandemic. Park & ride occupancy should continue to be monitored in order to understand if expansion is necessary.

Sound Transit plans to construct a second park & ride with up to 200 parking spaces in the northern part of Sammamish. Originally this facility was expected to be open in 2024. However, the project has been postponed as part of Sound Transit's ST3 realignment which was adopted in 2021. The ST3 realignment set the new target year for this project as 2045.

Sound Transit is also planning a new park & ride for Issaquah with the 2044 Link light rail extension. The exact location of this 500-stall facility is unknown at this time.

## STRATEGIES TO IMPROVE TRANSIT ACCESS

Improving transit access may result in an increase in ridership. Many Sammamish neighborhoods lack easy access to transit. This section will provide some high-level strategies for improving access to transit. A separate deliverable will identify specific goals and polices for incorporation into Sammamish's Comprehensive Plan, as well as capital projects that will improve accessibility, speed, and reliability of transit to be included in the CIP.

### FIRST AND LAST MILE MOBILITY

One option to improve access to transit is providing additional first and last mile mobility options. This could be bikeshare or scootershare options. The City of Seattle partners with Lime and other private motorized bike and scooter companies to provide free floating last mile solutions. These micro-mobility options are motorized to provide hill-climb assist. This decision would need a study and policy adoptions before implementation. In addition, the success of a micro-mobility solution would depend on the continued development of the City's bike and trail network.

For the lower density neighborhoods that lack easy access to transit, a neighborhood circulator may provide improved connection to transit stops. A circulator may also provide an improved option for travel within the city which was identified as the most common PM peak travel pattern. These circulating shuttles could be partnered with transit agency or City operated.

MetroFlex is popular with Sammamish residents. However, it covers a limited part of the City. Expanding MetroFlex to include more of the City could allow for accessibility for all residents. However, MetroFlex service cannot be expanded through City investment alone as it primarily depends on meeting the requirements of King County Metro.

### TRANSIT STOP AMENITIES

While transit stop amenities will not improve access to transit, they can make riding transit more comfortable for users. These amenities may include:

- Bus shelters
- Seating at bus stops
- Real time bus arrival data
- Lighting

Typically, these amenities are provided by King County Metro, and they have policies around where to provide them, including a minimum of 25 daily boardings.

Sammamish may be able to work with King County Metro and fund some of these amenities through the City's Capital Improvement Plan, such as lighting or benches. The City may opt to install bus shelter footings, which may increase the likelihood of Metro installing a bus shelter.

Additionally, the City may consider stop consolidation, which would increase the chances of an individual stop meeting the minimum boardings requirement.

### INFORMATION SHARING

Some Sammamish residents, visitors, and employees might avoid riding transit due to lack of information. The City and transit agencies can work together to spread the word about transit options. These programs could be advertised in schools, at farmers markets, at the Senior Center, in Senior housing, in low-income housing, and at neighborhood pop-ups. Some options that are already available that would benefit potential riders are:

- Youth Ride Free: This is a program funded by the Move Ahead Washington transportation funding package that allows those aged 18 and younger to ride transit for free. This includes all King County Metro and Sound Transit routes in Sammamish.
- ORCA LIFT: ORCA LIFT is a transit card that provides low-income users a reduced fare.
- Regional Reduced Fare Permit: This program allows those over 65 years old and those with certain disabilities to ride transit at a reduced fare.

### INTERAGENCY PARTNERSHIPS

The City of Sammamish does not have full control over the location of transit stops. However, the City could work with King County Metro and Sound Transit to ensure bus stops are located at key destinations. These may include shopping, education, medical or social services. King County Metro typically has goals regarding the spacing of transit stops but is open to input from Cities and transit riders around the locations. Additionally, partnering with other jurisdictions in King County can help with coordinating transit improvements. This will be particularly important with the expanding transit service in the near- and long-term future. Furthermore, engagement with King County, Sound Transit, PSRC, WSDOT, and FHWA can help Sammamish understand available grants. For example, a Local Road Safety Plan can help the City qualify for safety grants which can fund sidewalks and crossings.

## CONCLUSION

The City of Sammamish is planning for some areas of increased housing density around the transit network, with mixed-use and urban development planned along 228$^{th}$ Ave NE between NE 8$^{th}$ Street and SE 8$^{th}$ Street and around the intersection with Issaquah-Pine Lake Road. However, without specific land use targets adopted, a detailed walkshed analysis cannot be completed around transit stops. It can be expected that with higher density housing near the transit route, there will be an increase in the share of the City's households within a comfortable walking distance of a transit stop.

In the future, regional changes to transit will result in Sammamish being a more transit-friendly community. In 2025 during the peak hours, 15-minute bus service will provide Sammamish

residents access to Mercer Island Station and Marymoor Village Station, which will both connect to Bellevue and Seattle via 8-minute headway light rail service. In 2044, along with higher density housing and mixed-use development planned for Sammamish, another option for transit service will open with Issaquah light rail line, which will connect to South Kirkland. The Issaquah line is expected to be accessible via bus or driving to the park & ride.

However, despite these improvements, some transit related gaps and barriers will still exist within Sammamish:

**Access related to distance to a stop, steep grades, and lack of pedestrian and bicycle facilities**

- Most of the City is made up of neighborhoods and communities of residential development that do not have easy access to transit. These communities are more than a half mile away from a transit route, lack sidewalk and bicycle facilities, and may have significant grades that create a barrier. These communities also lack the density that may warrant transit routes. Even if sidewalks were to be completed in these areas, the distance and grades would be a barrier for most to walk to transit. Instead, a robust network of first and last mile solutions, including completed sidewalks, bike- and scooter-share options, expanded MetroFlex options (dependent on coordination with King County Metro), and neighborhood circulators, could create opportunities for transit access in these areas.

**Comfort and access at transit stops due to lack of safe crossings, amenities, sidewalks, and waiting areas**

- Even with the planned CIP projects, some areas of Sahalee Way NE, 228th Ave NE, and Issaquah-Pine Lake Road will still be missing sidewalk on at least one side of the street, or have a narrow sidewalk lacking necessary pedestrian access area. Sidewalks provide a comfortable waiting area for transit riders and allow the potential for benches and shelters. The speed limit along transit route ranges from 35-45 miles per hour, a speed that most pedestrians would feel unsafe standing in the shoulder. Additionally, most of the transit stops in Sammamish lack safe crossings within 300 feet.

- Currently a very small proportion of the City's roadway network, including its transit route, has dedicated bicycle lanes, which may discourage bicycle-to-transit trips. King County Metro currently provides a secure locker with space for four bikes at the South Sammamish Park & Ride. Increasing the number of lockers at this location and at other candidate locations within the city can make biking to transit a more feasible option.

**Improvement, but potential gaps in service**

- Analysis using the PSRC 4k travel demand model showed that the most common trip locations outside of Sammamish include Redmond, Bellevue, and other eastside communities such as Kirkland, Bothell, Kenmore, and Woodinville. In 2025 and 2044, there will be high-frequency transit service to Redmond and Bellevue, where riders can transfer to Seattle and other regional destinations. However, even with the added BRT routes planned for 2028-2029, two or more transfers will be required to reach the served areas of Kirkland.

Transit access to the other eastside communities could be considered a transit gap in the future.

Several strategies to improve transit access have been identified. Sammamish should explore expanding policies to support these strategies. As part of this project, a separate deliverable will identify goals and polices for the Comprehensive Plan around improving access to transit. Additionally, this project will explore specific CIP projects to improve access to transit and speed and reliability of transit.

# APPENDIX D

## TRANSIT LEVEL OF SERVICE GUIDELINES

# TRANSIT LEVEL OF SERVICE GUIDELINES MEMO

DATE: September 8, 2023

TO: Lindsey Channing | City of Sammamish

FROM: Ben Wallach, PE, PTOE | DKS Associates,
Sarah Keenan, PE | DKS Associates

SUBJECT: Sammamish Transit Study – Transit Level of Service Guidelines

The purpose of this memo is to present options for the transit-related level of service (LOS) guidelines for the City of Sammamish to consider incorporating into its current policies and procedures. First, best practices from peer cities in Washington are reviewed and summarized. Next, options are presented for transit-related LOS guidelines in Sammamish, which are organized into three areas: transit operations, access, and rider comfort., The guidelines presented in this memo are intended for use by City staff for planning purposes and would not apply to transportation concurrency standards for new development.

## BEST PRACTICES

Several peer communities in Washington have developed standards and guidelines for evaluating the quality of their transit-related infrastructure. A summary of these efforts is presented below:

**Bellevue** published its Multi-modal LOS (MMLOS) Metrics, Standards & Guidelines final report in April 2017[1]. This document outlines standards and guidelines for each travel mode separately including vehicle, pedestrian, bicycle, and transit. The report includes two performance measures related to transit. The first is Passenger Amenities which evaluates the amenities at transit stops including weather protection, seating, paved bus door passenger zone, wayfinding, and bicycle parking. The second is Transit Speed which is measured between identified activity centers.

As part of its 2016 Comprehensive Plan, **Bellingham** has a multimodal transportation concurrency policy which divides the city into separate concurrency service areas depending on land use context[2]. Within each service area, LOS is calculated according to several performance measures

[1] https://bellevuewa.gov/sites/default/files/media/pdf_document/Bellevue_MMLOS%20FINAL.pdf

[2] https://cob.org/wp-content/uploads/2016-multimodal-transportation.pdf

across all travel modes. The LOS for the transit mode is based on transit capacity, transit route frequency, and transit ridership.

**Redmond** published its Multimodal Plan-Based Concurrency System Administrative Guidelines in September 2014[3]. This report documents a program which defines LOS by translating a city-wide person-miles traveled value to "mobility units". Redmond tracks the supply of mobility units, i.e., transportation infrastructure investments, against the expected changes in demand resulting from new development. While Redmond's guidelines do not specifically cover transit operations, transit trips are captured as part of the "mobility units" value and therefore transit is captured in the LOS calculation.

Bellingham and Redmond incorporate transit Level of Service into the concurrency program with a multimodal concurrency system. Overall, these concurrency programs take transit into account by using person trips to evaluate concurrency. They also allow developers to fund transit projects as part of transportation mitigation. Bellevue uses transit LOS to track the two different metrics of the transit system, rather than incorporating it into concurrency directly.

## PROPOSED GUIDELINES

It is recommended that Sammamish uses a method similar to Bellevue, which allows the City to track the effectiveness of the transit system without tying it to the concurrency system. Some ways to track transit effectiveness are described below, and are grouped into three categories: operations, access, and rider comfort.

### TRANSIT OPERATIONS

The first measure relates to transit operations. Transit services within Sammamish are operated by two regional agencies, King County Metro and Sound Transit, which control route, stop location, and frequency. Therefore, it is best to avoid a level of service policy that uses metrics such as headways and frequencies, which are outside of the City's direct control. Bellingham includes transit headway as part of the transit LOS to ensure developers consider nearby transit routes. Since Sammamish's recommended policy is not tied to concurrency, it is better to track metrics the City has more control over.

Instead, transit to auto travel time ratio, described below, relies on how quickly and reliably buses can traverse the city's roadway network compared to general purpose motor vehicle traffic. This metric would require both transit and general purpose motor vehicle travel time data.

> **Transit to auto travel time ratio**: This is the ratio of transit travel time to auto travel time for specific origin-destination pairs with at least one trip end within Sammamish, or along shorter roadway segments. This measure provides an indication of how competitive the transit

[3] https://www.redmond.gov/DocumentCenter/View/2466/Exhibit-Z-31-PDF

mode is compared to private automobiles in terms of travel time. Typically, a ratio of 1.5 or lower represents a "competitive" transit option.

Options are available for travel time data. The simplest and most cost-effective option for calculating this metric would be regularly tracking Google Maps travel time data. Google Maps data provides a range of travel times based on time of day and day of the week based on mode of travel, in this case personal vehicle and public transit. The data should be tracked for the same time period (for example, Thursdays at 4pm) quarterly to understand how transit operations change.

Another option for collecting travel time data is through acquiring data from a vendor, such as INRIX or Streetlight. Purchased data may provide more metrics and a deeper understanding of traffic patterns. However, this option may be cost prohibitive. Data directly from the vendor is typically raw and would need to be aggregated and analyzed. Many consulting firms have contracts with these data vendors and can acquire and analyze the data at a lower cost than directly from the data vendor. The details of the contract would need to be scoped but could range from $8,000- $30,000 for annual or quarterly review of origin-destination pairs.

Another option for transit travel time data is King County Metro's Speed and Reliability Planning Tool. The City would need to have access to data from King County's Speed and Reliability Planning Tool to obtain the necessary transit travel time data for calculating transit to auto travel time ratios. For this option, the City would need to pursue an agreement with King County Metro to regularly obtain segmented transit travel times along the City's transit network.

Regardless of data sources, the proposed LOS standard is shown in Table 1. The values shown here are based on values presented in Exhibit 5-24 of the *Transit Capacity and Quality Service Manual, 3rd Edition*, which categorizes transit to auto travel time ratios by how tolerable they are to transit riders and operators. Again, these ratios would be measured along specific origin-destination pairs with at least one trip end within Sammamish, or along smaller roadway segments.

**TABLE 1: PROPOSED LEVEL OF SERIVCE STANDARD FOR TRANSIT OPERATIONS**

| LEVEL OF SERVICE | TRANSIT TO AUTO TRAVEL TIME RATIO (MIN/MIN) |
|---|---|
| GREEN | <1.25 |
| YELLOW | 1.25-2.0 |
| RED | >2.0 |

## ACCESS

Access refers to the experience of using transit from the time one leaves their point of origin until they are riding on a transit vehicle. Typically, this involves walking or biking to a transit stop or

driving to a park & ride facility. The access-related performance measures track how comfortable, safe, and convenient it is to use transit within the City.

Access-related measures would be applicable to pedestrian and bicycle facilities within designated walksheds and bikesheds. The walkshed is the portion of the City's transportation network that is within a ¼-mile or ½-mile of a transit stop. This proportion increases to a 1-mile distance for the bikeshed. These areas are shown in Figure 1 and Figure 2.

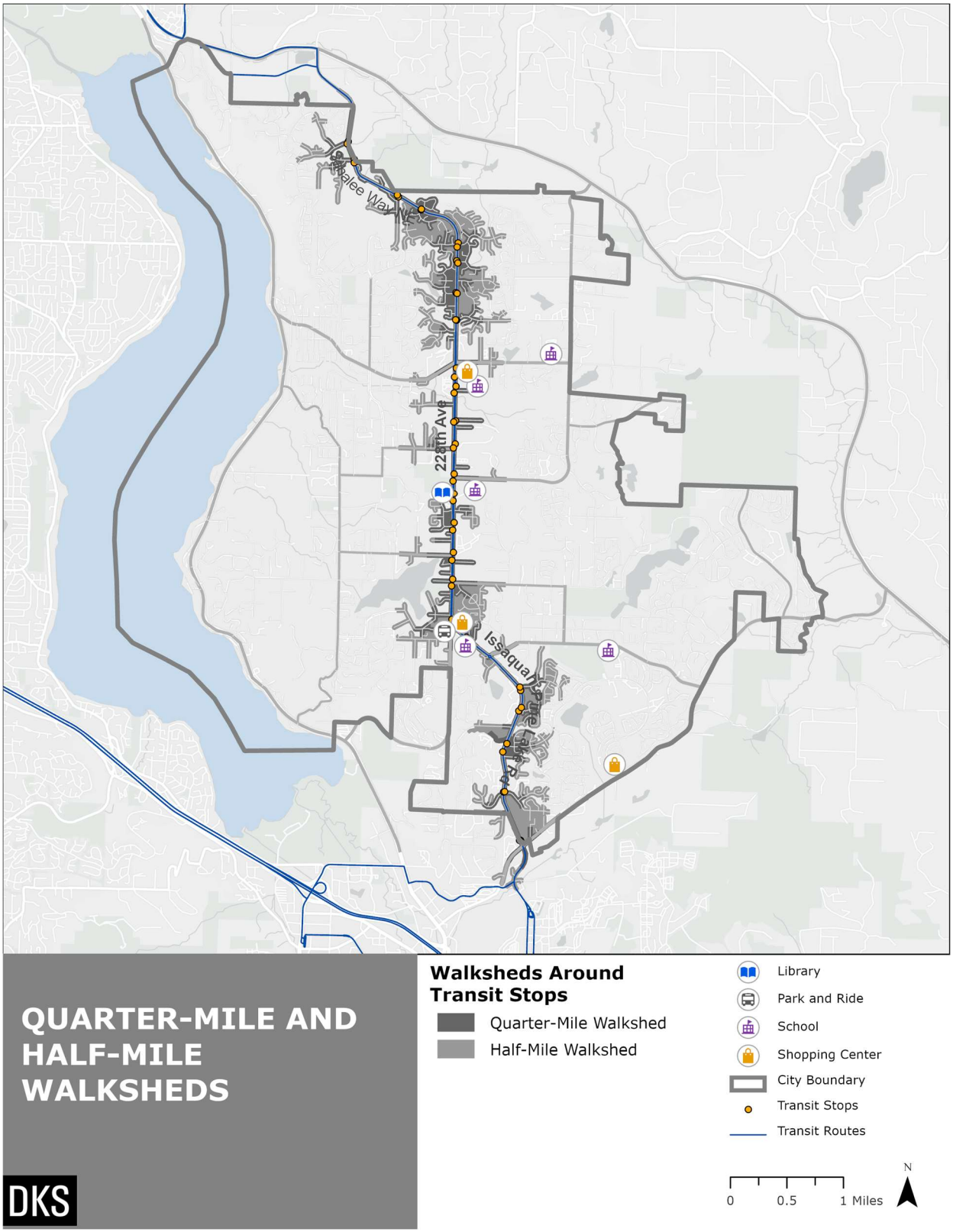



**FIGURE 1: TRANSIT STOPS WITHIN A ¼-MILE AND ½-MILE WALKSHED**

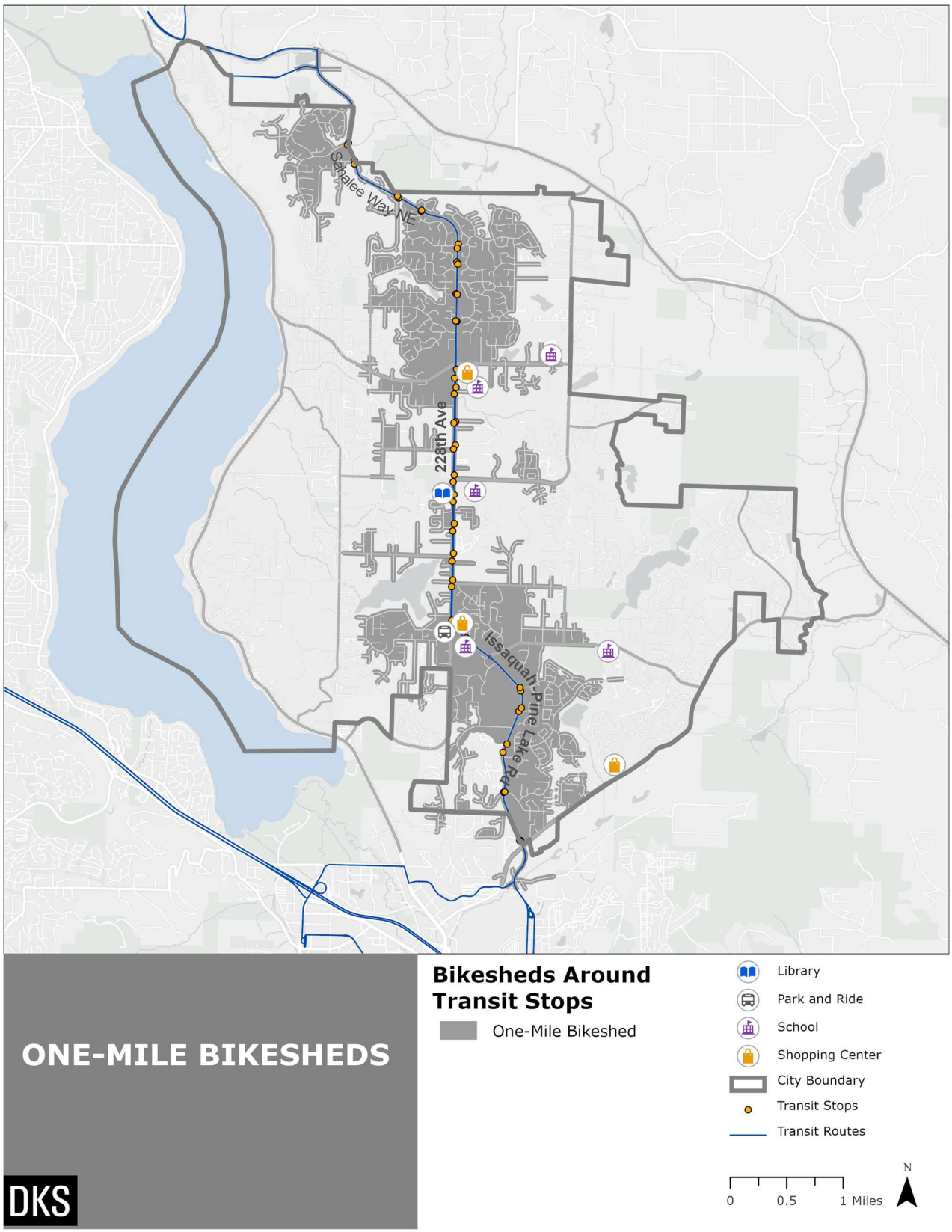



**FIGURE 2: TRANSIT STOPS WITHIN A 1-MILE BIKESHED**

Proposed measures for determining the LOS for transit access are defined below:

**Sidewalk completeness in walksheds:** This is the percent completeness of the sidewalk network within the walk sheds of the City's transit stops. Calculating this metric requires a GIS database of the City's sidewalk facilities.

**Sidewalk quality in walksheds:** This measure describes the condition of the sidewalks within the walk sheds of the City's transit stops. There are several ways to categorize sidewalk quality. Attachment A includes Exhibit 14-20 of the Oregon DOT's Analysis Procedures Manual which shows a sidewalk rating system using a scale of Good, Fair, Poor, Very Poor, and No Sidewalk. It is important to note that the initial categorization of all the City's sidewalks within specified walk sheds would be an intensive data collection effort.

**Bike facility completeness in bikesheds:** This is the percent completeness of the bicycle network within the bike sheds of the City's transit stops. Calculating this metric requires a GIS database of the City's bicycle facilities. This is incorporated into the bicycle level of stress measurement.

**Bike facility level of traffic stress (LTS) in bikesheds:** This is a measure of bicycle facility quality ranges from LTS 1 through LTS 4. LTS 1 represents low stress, which indicates that all ages and abilities would feel comfortable riding. LTS 4 represents high stress, which indicates only skilled cyclists would attempt riding. An accessible transit network has low-stress bike facilities surrounding the stops to facilitate multi-modal trips. Bike LTS calculations include bike lane width, separation type, speed and traffic volume of adjacent roadway, and intersection crossing elements[4]. It is important to note that the initial categorization of all the City's bike facilities within specified bike sheds would be an intensive data collection effort.

**Distance to nearest marked or protected crossing:** This is a measure of how close transit stops are to designated roadway crossings. It is vital that transit users can safely cross the street when accessing or leaving a transit stop. For example, the City of Austin has used a three-tiered criteria with the categories being more than 500 feet from crossing, between 300 and 500 feet from crossing, and less than 100 feet from crossing. A GIS layer of all protected crossings, ideally categorized by crossing type such as signalized, pedestrian hybrid beacon, and rectangular rapid-flashing beacon, is required for tracking this measure.

The proposed guidelines related to transit access are as follows:

- **Guideline 1:** Every roadway within ½-mile of a transit stop should have a sidewalk on at least one side. Arterial streets should have sidewalks on both sides of the roadway. Evaluation is based on review of all roadways in the ½ mile walkshed of transit, as shown in Figure 1:

[4] https://bpb-us-w2.wpmucdn.com/sites.northeastern.edu/dist/e/618/files/2014/05/LTS-Tables1.pdf

    - Percent of roadway-miles with a sidewalk on at least one side, or for arterials with sidewalk on both sides
- **Guideline 2:** All sidewalks within a ½-mile of a transit stop should be in Fair condition or better. Evaluation is based on review of all roadways in the ½ mile walkshed of transit, as shown in Figure 1:
    - Percent of sidewalks-miles in Fair condition or better
- **Guideline 3:** Every roadway within 1-mile roadway of a transit stop should have a bicycle level of stress of 3 or better. Evaluation is based on the LTS of roadways within a 1-mile radius of a transit stop:
    - Percent of roadway-miles with LTS 3 or better

The guidelines proposed are recommended to apply to all roadways in either the walkshed or bikeshed throughout the city. Furthermore, it is recommended that the same level of requirement is applied equally for all roadways throughout the walkshed and bikeshed unless otherwise noted (Guideline 1 differentiates between arterials and non-arterials). The calculation of bicycle level of stress includes inputs related to roadway context such as adjacent street width, traffic volume, and speed limit. The guidelines are proposed to be used as a planning-level assessment of pedestrian and bicycle infrastructure near transit and inform the development of capital projects. For each of these guidelines, a Level of Service can be evaluated based on how well the guideline is met, as described above.

**TABLE 3: PROPOSED LEVEL OF SERIVCE FOR TRANSIT ACCESS**

| LEVEL OF SERVICE | % MEETING GUIDELINE |
|---|---|
| GREEN | >66% |
| YELLOW | 34-66% |
| RED | <34% |

## RIDER COMFORT

Rider comfort captures the quality of amenities at transit stops. This includes the presence of shelters, benches, and trash receptacles. In addition, this category can also include the presence of travel information systems such as screens which display real time arrive times. A database of existing stop amenities is required to accurately track this measure. While King County Metro typically provides bus shelters and real-time information displays, local jurisdictions can provide and maintain trash receptacles and benches.

Table 3 shows a draft rider comfort scoring criteria applied to a hypothetical bus stop with only a trash receptacle and bench. Table 5 shows the proposed LOS guideline based on the described methodology as applied in Table 4.

**TABLE 4: EXAMPLE APPLICATION OF RIDER COMFORT SCORING CRITERIA**

| Amenity Type | Score | Present at Bus Stop |
|---|---|---|
| Sidewalk or Landing Area at Stop | 5 points | Yes |
| Trash Receptacle | 1 point | Yes |
| Bench | 3 points | Yes |
| Shelter | 4 points | No |
| Real-time information display | 2 points | No |
| **Total Rider Comfort Score for Example Bus Stop = 9 points** | | |

**TABLE 5: PROPOSED LEVEL OF SERIVCE STANDARD FOR TRANSIT OPERATIONS**

| LEVEL OF SERVICE | RIDER COMFORT SCORE |
|---|---|
| GREEN | >10 |
| YELLOW | 6-10 |
| RED | <6 |

## CONCLUSION

Several peer communities measure transit-related LOS as part of their multimodal planning efforts. Sammamish transit LOS guidelines will be based on access and amenities. Service frequency and reliability could be used with data from King County Metro The measures presented align with the transportation goals set forth in the City's Comprehensive Plan. It is intended that Sammamish will evaluate its Transit system on an annual basis using the evaluation criteria listed in this memo.

# ATTACHMENT A: SIDEWALK QUALITY RATING EXAMPLE

**Exhibit 14-20 Sidewalk Condition Rating**

| Rating | Facility Properties | Example |
|---|---|---|
| **Good** | • No minor cracking<br>• No patching or raveling and has a very smooth surface<br>• No faulting<br>• New construction |  |
| **Fair** | • Minor cracking (generally hairline)<br>• Minor patching and possibly some minor raveling evident. Surface is generally smooth<br>• Minor faulting (less than ¼") |  |
| **Poor** | • Minor cracking in several locations<br>• Rough areas present but not extensive<br>• Faulting may be present but less than ½" (No major faulting) |  |
| **Very Poor** | • Major cracking patterns<br>• Rough conditions (major deterioration, raveling, loose aggregate, missing pavement, etc.)<br>• Faulting greater than ½" |  |
| **No sidewalk** | • No solid and smooth surface is present on the side of the roadway. Pedestrians use the travel lane, paved shoulder, or soil shoulder to travel along the roadway. |  |

# APPENDIX E

## TRANSIT PLAN SURVEY SUMMARY REPORT

# Transit Plan Survey
## Summary Report

Prepared for the
**City of Sammamish**


July 2023

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# Introduction

In March 2023, the City of Sammamish began the process of developing it's first *Transit Plan*, which will help guide the city's future transportation investments to facilitate the safe and efficient movement of people, accommodate anticipated growth, be environmentally and fiscally sustainable, and expand neighborhood access to transit services and improve non-motorized access to transit facilities. Although City Council, staff, and consultants will play an important role in gathering data, conducting technical analyses, organizing the process, and assisting in the production of related documents, residents and stakeholders in Sammamish will be the true inspiration and authors of the plan. Through their enthusiastic participation in workshops and community surveys, they will help to ensure the creation of a *Transit Plan* that is consistent with their values, priorities and concerns for the City of Sammamish and its future.

**PURPOSE OF SURVEY** The purpose of the survey described in this report was to provide objective, *statistically reliable* measures of residents' experiences, opinions, and preferences as they pertain to transit services in the City of Sammamish. The results of the survey will be combined with information gathered through other public input methods to help the City Council, staff, and the City's consulting team develop the *Transit Plan*.

Briefly, the survey was designed to:

- Profile current travel characteristics including trip frequency, duration, purposes, and mode.
- Gauge how often Sammamish residents use local transit services—including the bus, Metroflex shuttle, and Community Van—and their experiences doing so.
- Explore perceptions of bus service in Sammamish, residents' willingness to use the service under the right conditions, and ways to make the service more attractive.
- Gather relevant demographic and household information.

**OVERVIEW OF METHODOLOGY** A full description of the methodology used for this study is included later in this report (see *Methodology* on page 42). In brief, a total of 935 randomly selected adult residents in the City of Sammamish participated in the survey between June 22 and June 27, 2023. The survey followed a mixed-method design that employed multiple recruiting methods (email, text, and telephone) and multiple data collection methods (telephone and online). The interviews averaged 16 minutes in length and were conducted in English and Spanish.

**ORGANIZATION OF REPORT** This report is designed to meet the needs of readers who prefer a summary of the findings as well as those who are interested in the details of the results. For those who seek an overview of the findings, the section titled *Key Findings* is for you. It provides a summary of the most important factual findings of the survey in a Question & Answer format. For the interested reader, this section is followed by a more detailed question-by-question discussion of the results from the survey by topic area (see *Table of Contents*), as well as a description of the methodology employed for collecting and analyzing the data. And, for the truly ambitious reader, the questionnaire used for the interviews is contained at the back of this report (see *Questionnaire & Toplines* on page 45), and a complete set of crosstabulations for the survey results is contained in Appendix A.

**ACKNOWLEDGEMENTS** True North thanks the City of Sammamish for the opportunity to conduct the study and for contributing valuable input during the design stage of this study. The collective experience, insight, and local knowledge provided by city representatives and staff improved the overall quality of the research presented here. A special thanks also to Kendall Flint (DKS Associates) for contributing to the design of the study.

**DISCLAIMER** The statements and conclusions in this report are those of the authors (Dr. Timothy McLarney and Richard Sarles) at True North and not necessarily those of the City of Sammamish. Any errors and omissions are the responsibility of the authors.

**ABOUT TRUE NORTH** True North is a full-service survey research firm that is dedicated to providing public agencies with a clear understanding of the values, perceptions, priorities, and concerns of their residents and customers. Through designing and implementing scientific surveys, focus groups, and one-on-one interviews, as well as expert interpretation of the findings, True North helps its clients to move with confidence when making strategic decisions in a variety of areas—such as planning, policy evaluation, performance management, establishing fiscal priorities, passing revenue measures, and developing effective public information campaigns.

During their careers, Dr. McLarney (President) and Mr. Sarles (Principal Researcher) have designed and conducted over 1,200 survey research studies for public agencies—including more than 400 studies for California municipalities and special districts.

# Key Findings

As noted in the *Introduction*, this study was designed to provide the City of Sammamish with statistically reliable information regarding residents' experiences, opinions, and preferences as they pertain to transit services in the City of Sammamish. Whereas subsequent sections of this report are devoted to conveying the detailed results of the survey, in this section we attempt to 'see the forest through the trees' and note how the collective results of the survey answer some of the key questions that motivated the research.

*What are Sammamish residents' travel patterns?*

To understand the potential market for bus service in Sammamish, it's helpful to first profile the travel patterns of Sammamish residents. How often do they travel outside their home? Do they tend to visit places in Sammamish or outside the city? What modes do they use when traveling, and what are the purposes of the trips they take?

Overall, nearly half of Sammamish residents reported visiting zero (1%), one (12%), or two (33%) **destinations** outside their home in a typical day, with the remainder being divided among those visiting three (25%), four (15%), or five or more (12%) destinations. A significant share of the destinations visited by residents are located outside the City of Sammamish, as when asked to isolate the number of destinations they visit *within* the City on a typical day, 16% indicated that they visit zero (0) places in Sammamish, with the remainder indicating they visit one (41%), two (28%), three (10%), four (2%), or at least five places (3%) within the City of Sammamish daily.

When asked how much total **time** they spend traveling between destinations in a typical day, half of respondents reported that they spend 10 minutes or less (11%) or between 11 and 25 minutes (39%) traveling in a typical day. Approximately 29% indicated they spend 26 to 45 minutes traveling daily, 17% offered a typical daily travel time of 46 to 90 minutes, while the remainder (5%) stated they typically spend more than 90 minutes each day in transit.

The most common **types of trips** made *weekly* by Sammamish residents are for shopping/running errands (average 3.99 trips), recreation or social visits (3.79), and work (3.05). Respondents reported making an average of less than three trips weekly for kid's activities (2.56), school (2.56), and medical appointments (0.59), respectively.

In terms of **how they travel**, driving alone is the dominant mode among Sammamish residents (primary mode for 82% of respondents), followed by riding with others/carpooling (14%). Approximately 2% indicated active transportation (walking/bicycling) was their primary mode, while just 1% mentioned the bus (King County Metro/Sound Transit), and less than 1% indicated they primary travel using Metroflex (King County Metro's on-demand shuttle). Even when expanded to include *any* trips

taken by transit in the past month, less than one-in-ten respondents indicated they rode the bus (9%), Metroflex shuttle (2%), or Metro Community Van (<1%) during the period of interest. For more details on how the travel characteristics of Sammamish residents vary by subgroup, see *Travel Patterns & Modes* on page 7.

*How well does the current transportation system meet residents' needs?*

Residents of Sammamish were decidedly mixed in their assessments of how well the transportation system in their area meets their needs. Approximately one-in-five rated the transportation system's performance in this respect as excellent (6%) or good (16%), one quarter as fair (24%), while four-in-ten provided a rating of poor (18%) or very poor (22%). An additional 14% were unsure or unwilling to share their opinion (see *Rating of Transportation System* on page 19).

Traffic congestion appeared to be a driving force behind respondents' poor or luke-warm assessments of how well the transportation system meets their needs (see *Traffic Congestion* on page 22). Approximately two-thirds of respondents viewed traffic congestion as either a big (22%) or medium problem (46%) when they travel in the Sammamish area, while 24% viewed it as a small problem and 8% did not perceive traffic congestion to be a problem at all. Keeping traffic congestion from getting worse was also viewed as the most important issue facing the community—more important than protecting the environment, improving the quality of education in public schools, repairing/maintaining local streets, and other benchmark issues (see *Importance of Issues* on page 6).

*How easy or difficult is it to use different modes?*

Understanding how individuals view different modes is key to identifying the potential or latent market for bus services. In particular, how easy or difficult do they feel it is to get to the places they need or want to go when using a particular mode? When it comes to this core performance metric, driving a car was (as expected) widely perceived to be the easiest option, with 93% of respondents providing a rating of very easy or somewhat easy. Approximately one-quarter of respondents also thought it was very or somewhat easy to reach the places they need or want to go by walking (26%) and biking (26%). With respect to transit, however, few felt they can easily get to the places they need or want to go using a bus (7%), the King County Metro Community Van (3%), and on-demand Metroflex shuttle (3%). For details on how perceptions varied by subgroup, see *Rating Modes* on page 21.

As noted above, very few Sammamish residents (less than 10%) reported that they occasionally ride transit when making trips in the area. When those who don't ride transit were asked in an open-ended manner to describe their reasons, responses ranged from it's inconvenient (25%), takes too long (18%), has infrequent schedules/lack of routes (17%), or issues with the accessibility of transit/availability of stops nearby (16%).

Other commonly mentioned reasons included they have their own transportation/prefer to drive (17%) and/or they see no reason to use it (12%).

*To what extent are residents open to riding the bus, and what would make it a more attractive option?*

To gauge the potential market for bus service in Sammamish, the survey sought to distinguish between individuals who would only ride the bus if they had no other options versus those who would do so under the right conditions. Approximately half of respondents (49%) indicated they would ride the bus at least once per week *under the right circumstances*, whereas the rest indicated they would only ride the bus if they had no other options (48%) or preferred not to answer the question (3%).

What are those *right* circumstances? Naturally, it varies from individual to individual, and some elements are things that are beyond transit operators to influence—such as daycare hours, a need to drop children at school, or the location of an individual's employer. That said, the survey explored the changes that could be made to make the bus a more attractive option. Common themes included having more routes available, buses running more frequently, having accurate real-time information about bus pick-up times and arrival times, ensuring that there are continuous sidewalks, bike lanes, and crosswalks from the bus stop to their destination so they can walk or bike safely after departing the bus, and improving the safety of buses, bus stops, and stations. Under the scenario that improvements were made on *all* of these fronts, 16% of respondents indicated they would definitely ride the bus on a weekly basis, while an additional 26% indicated they would probably do so. For more specifics on improvements that would make the bus a more attractive travel option, and how the patterns vary across subgroups, see *Bus Improvements* on page 25.

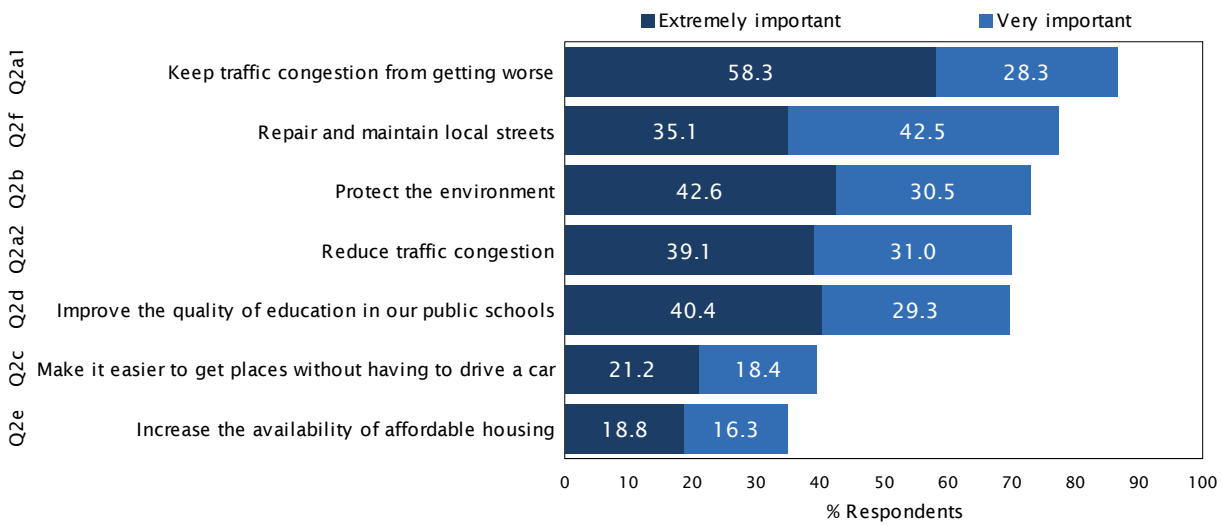
# Importance of Issues

The first substantive question of the survey presented respondents with several issues facing their community and asked them to rate the importance of each issue. Because the same response scale was used for each issue, the results provide an insight into how important each issue is on a scale of importance *as well as* how each issue ranks in importance relative to the other issues tested. To avoid a systematic position bias, the order in which the issues were presented was randomized for each respondent.

Figure 1 presents the issues tested, as well as the importance assigned to each by survey participants, sorted by order of importance.[1] Overall, keeping traffic congestion from getting worse received the highest percentage of respondents indicating that the issue was either extremely or very important (87%), followed by repairing and maintaining local streets (78%), protecting the environment (73%), and *reducing* traffic congestion (70%). Given the purpose of this study, it is instructive to note that making it easier to get places without having to drive a car was ranked lower than most of the other issues tested, but it was still rated as extremely or very important by 40% of respondents. This finding also suggests some residents don't readily perceive the connection between improved transit services and the widely held goals of protecting the environment and keeping traffic congestion from getting worse.

**Question 2** *As you look to the future of your community, how important is it to: _____? Would you say it is extremely important, very important, somewhat important, or not at all important?*

**Figure 1 Importance of Issues**




1. Issues were ranked based on the percentage of respondents who indicated that the issue was either *extremely* important or *very* important.

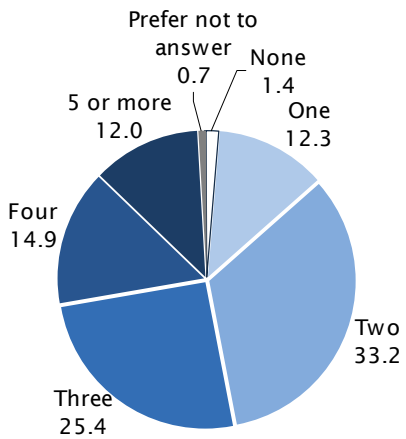
# Travel Patterns & Modes

Having warmed-up the respondent by asking about local issues, the survey transitioned to profiling their *current* travel behavior including the frequency, duration, purposes, and modes of their trips.

**TRIP FREQUENCY** The first question in this series simply asked respondents to indicate how many different places they travel to outside their home in a typical day. Overall, nearly half of respondents reported visiting zero (1%), one (12%), or two (33%) destinations outside their home in a typical day, with the remainder being divided among those visiting three (25%), four (15%), or five or more (12%) destinations. Approximately 1% of respondents preferred to not answer the question (Figure 2).

**Question 3** *In a typical day, how many different places do you travel to outside of your home?*

**Figure 2 Places Traveled to Outside Home in Typical Day**




Figures 3-5 show how the number of destinations respondents reported visiting outside their home in a typical day varied by length of residence, employment status, primary mode of travel, household income, age, homeownership status, and ethnicity. When compared to their respective counterparts, residents who have lived in Sammamish between five and nine years, stay-at-home parents/caregivers, those who rideshare, and individuals between 34 and 55 years of age were the most likely to report visiting three or more destinations outside their home in a typical day.

**Figure 3 Places Traveled to Outside Home in Typical Day by Years in Sammamish & Employment Status**

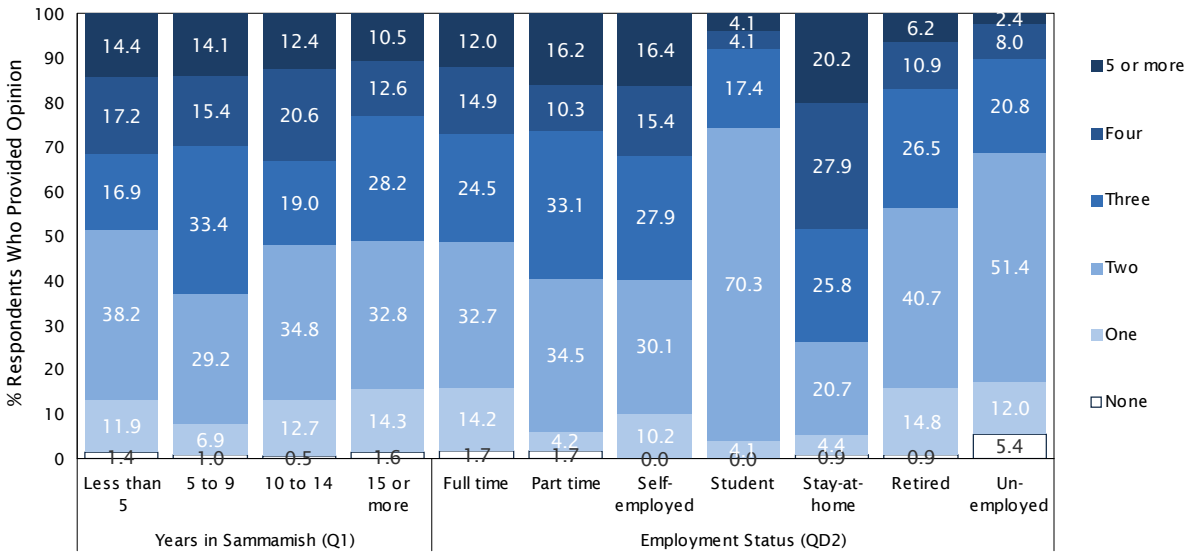


**FIGURE 4 PLACES TRAVELED TO OUTSIDE HOME IN TYPICAL DAY BY PRIMARY MODE & HSLD INCOME**

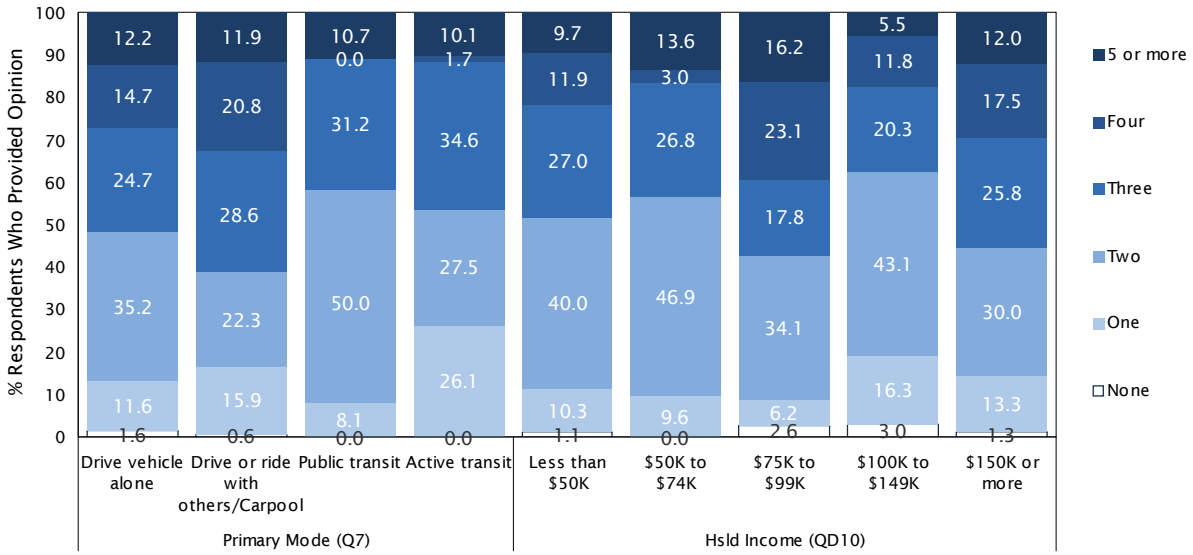
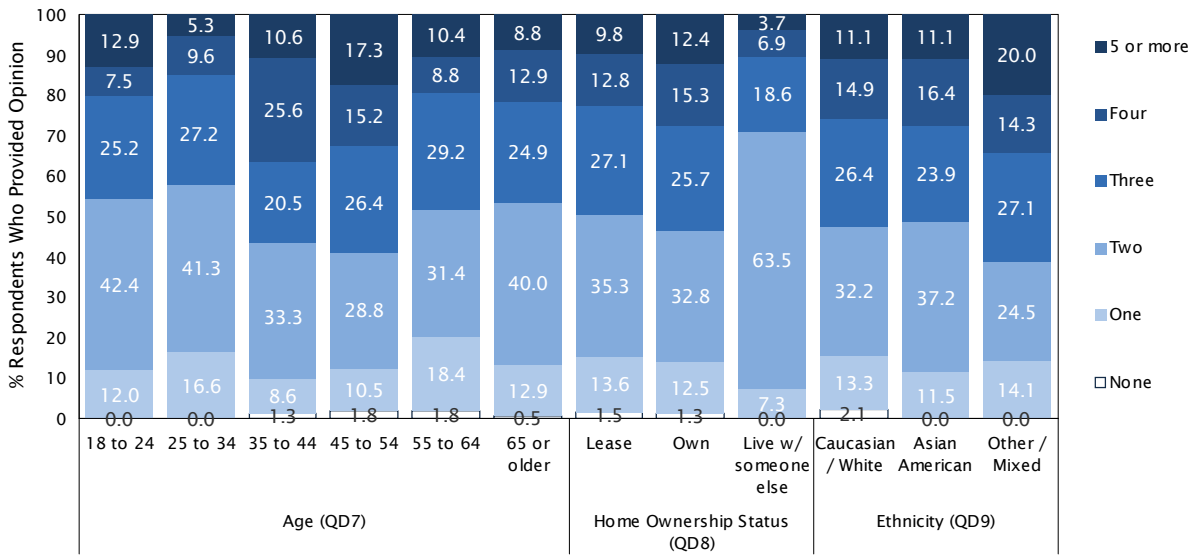



**FIGURE 5 PLACES TRAVELED TO OUTSIDE HOME IN TYPICAL DAY BY AGE, HOME OWNERSHIP STATUS & ETHNICITY**




**HOW MANY PLACES DO YOU VISIT WITHIN THE CITY OF SAMMAMISH?** Having established how may *total* places a respondent visits outside their home in a typical day, Question 4 inquired as to how many of these places are located within the City of Sammamish. As shown in Figure 6 on the next page, 16% indicated that they visit zero (0) places in Sammamish in a typical day, with the remainder indicating they visit one (41%), two (28%), three (10%), four (2%), or at least five places (3%) within the City of Sammamish daily. Figures 7-9 show how the number of places outside the home respondents reported visiting within the City of Sammamish in a typical day varied across key subgroups.

**Question 4** *Of the <insert # from Q3> places you visit in a typical day, how many of these places are within the City of Sammamish?*

**FIGURE 6 PLACES VISITED IN A TYPICAL DAY WITHIN CITY**

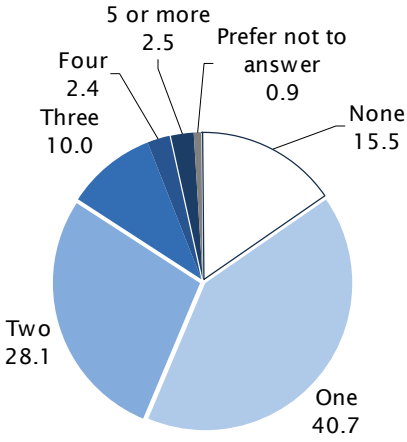



**FIGURE 7 PLACES VISITED IN A TYPICAL DAY WITHIN CITY BY YEARS IN SAMMAMISH & EMPLOYMENT STATUS**

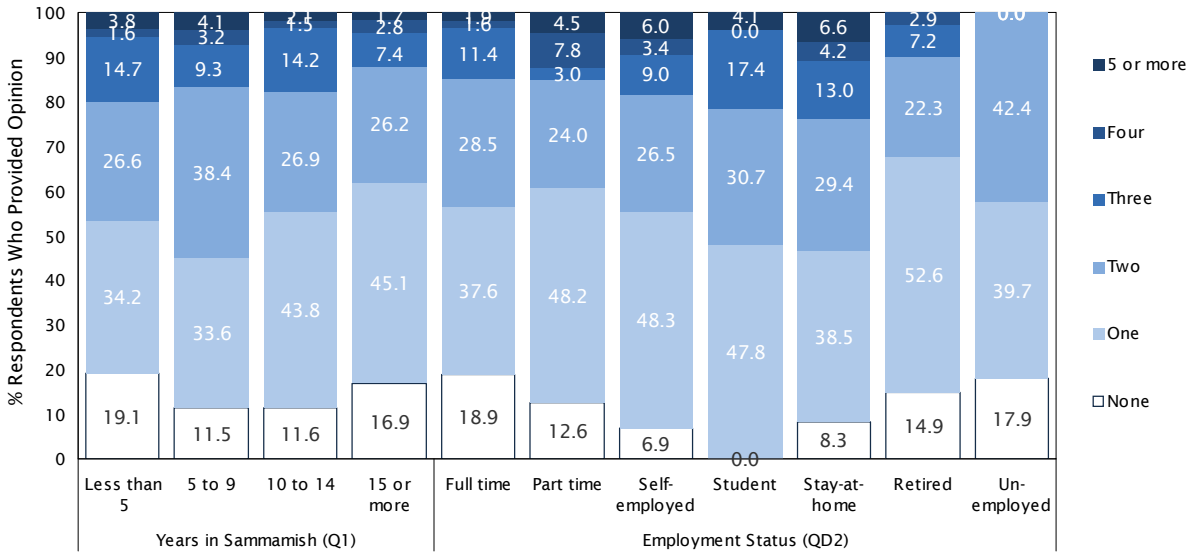


**FIGURE 8 PLACES VISITED IN A TYPICAL DAY WITHIN CITY BY PRIMARY MODE & HSLD INCOME**

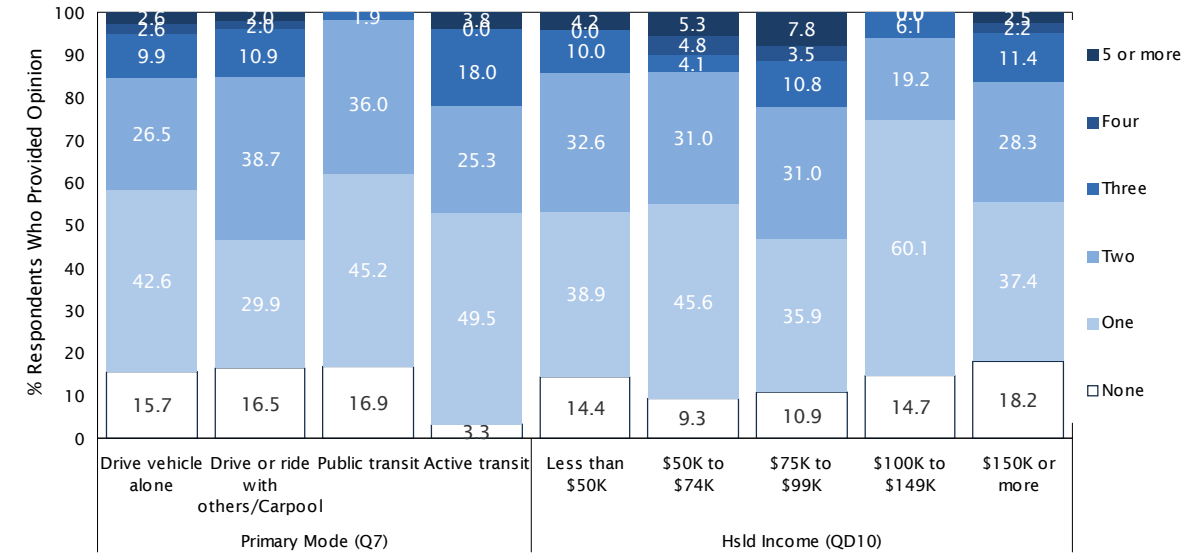
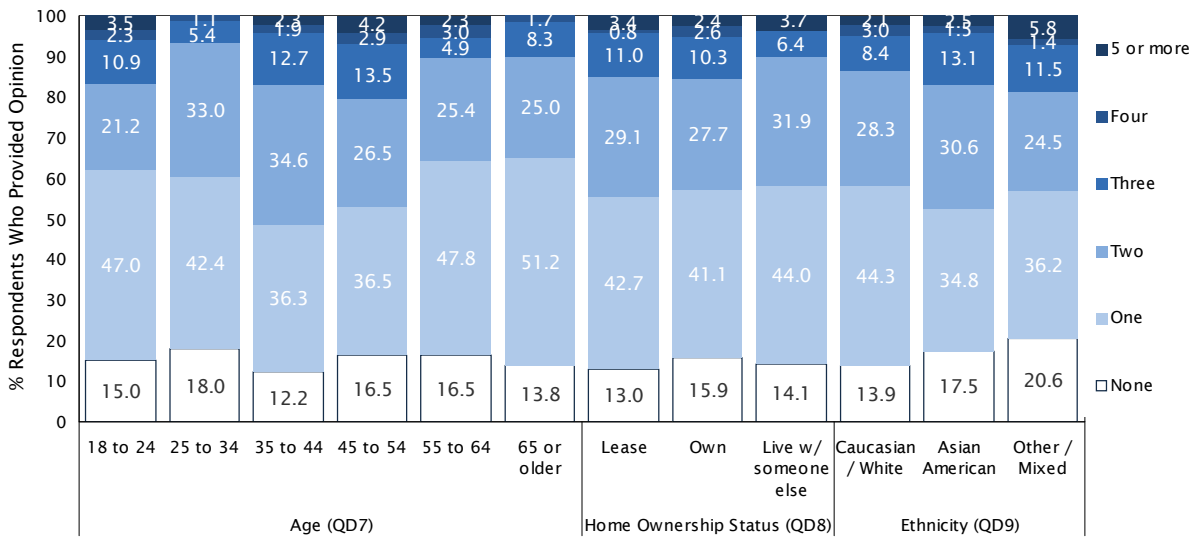



**FIGURE 9 PLACES VISITED IN A TYPICAL DAY WITHIN CITY BY AGE, HOME OWNERSHIP STATUS & ETHNICITY**




**DAILY TRAVEL TIME** When asked how much total time they spend traveling between destinations in a typical day, half of respondents reported that they spend 10 minutes or less (11%) or between 11 and 25 minutes (39%) traveling in a typical day. Approximately 29% indicated they spend 26 to 45 minutes traveling daily, 17% offered a typical daily travel time of 46 to 90 minutes, while the remainder (5%) stated they typically spend more than 90 minutes each day in transit (Figure 10). Interestingly, subgroups who were among those with the fewest destinations visited in a typical day (e.g., students, those living rent-free in someone else's home, and users of public transit) were also those reporting the longest duration of travel in a typical day, which likely reflects the destination (college/university) and/or mode of travel (see Figures 11-13).

**Question 5** *In a typical day, how much total time do you spend traveling between destinations?*

**FIGURE 10 TIME SPENT TRAVELING BETWEEN DESTINATIONS**

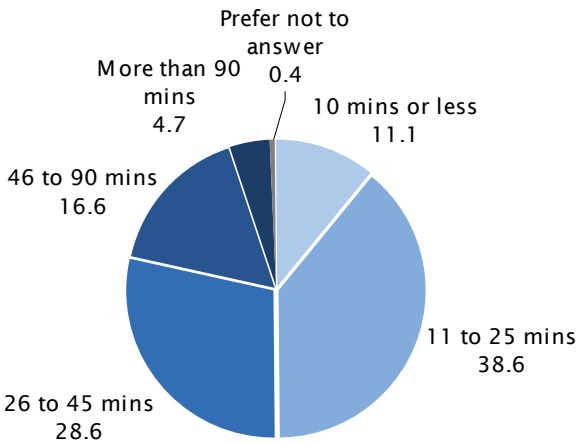



**FIGURE 11 TIME SPENT TRAVELING BETWEEN DESTINATIONS BY YEARS IN SAMMAMISH & EMPLOYMENT STATUS**

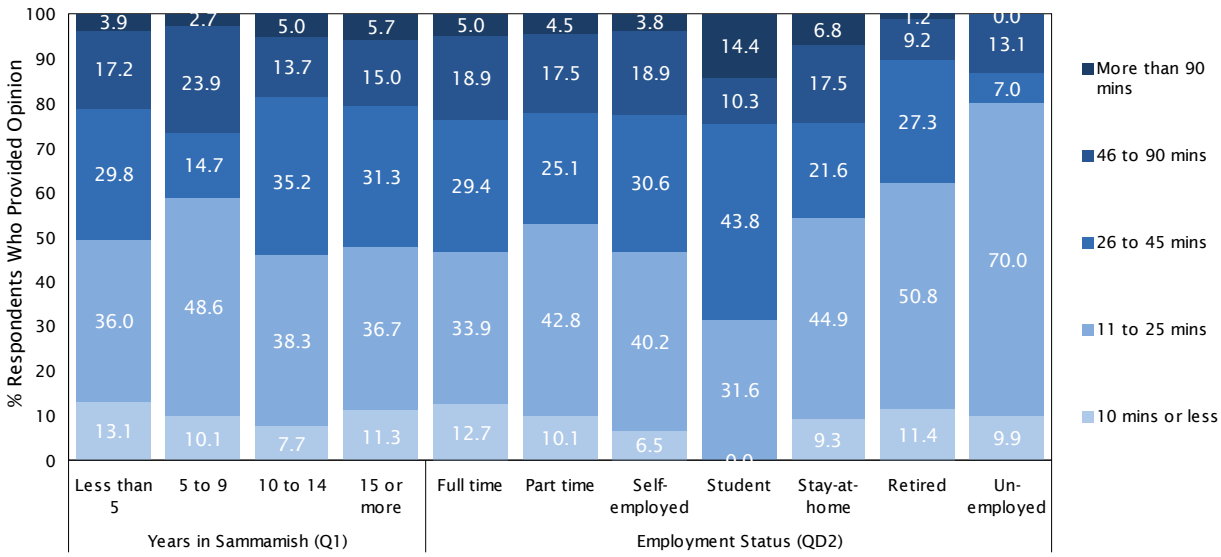


**FIGURE 12 TIME SPENT TRAVELING BETWEEN DESTINATIONS BY PRIMARY MODE & HSLD INCOME**

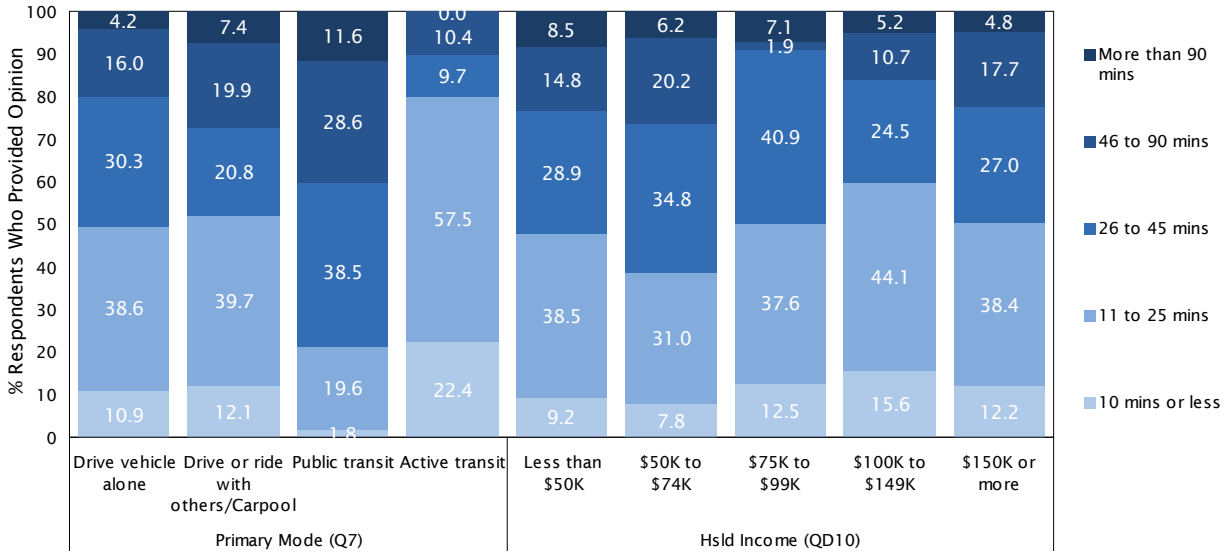
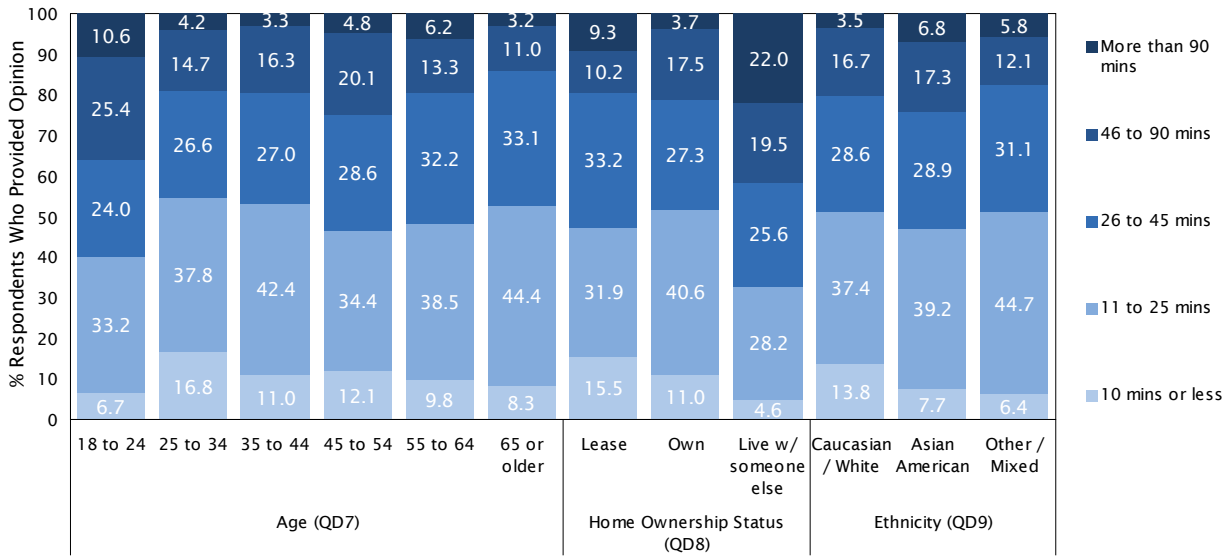



**FIGURE 13 TIME SPENT TRAVELING BETWEEN DESTINATIONS BY AGE, HOME OWNERSHIP STATUS & ETHNICITY**




**PURPOSE** Having measured daily trip frequency and time spent traveling, the survey transitioned to trip *purpose* by asking respondents how many trips they make for specific purposes during a typical week. As shown in Figure 14 on the next page, the most common types of trips made *weekly* were for shopping/running errands (average 3.99 trips), recreation or social visits (3.79), and work (3.05). Respondents reported making an average of less than three trips weekly for kid's activities (2.56), school (2.56), and medical appointments (0.59), respectively. Figures 15-17 present the *average* trips reported per week, by purpose, across a range of demographic subgroups. Notable outliers included individuals who are stay-at-home parents/caregivers and those 35 to 44 years of age who reported kid's activities and school as the most common types of trips they take.

**Question 6** *In a typical week, how many trips do you make for: _____?*

**FIGURE 14 WEEKLY TRIPS BY PURPOSE**

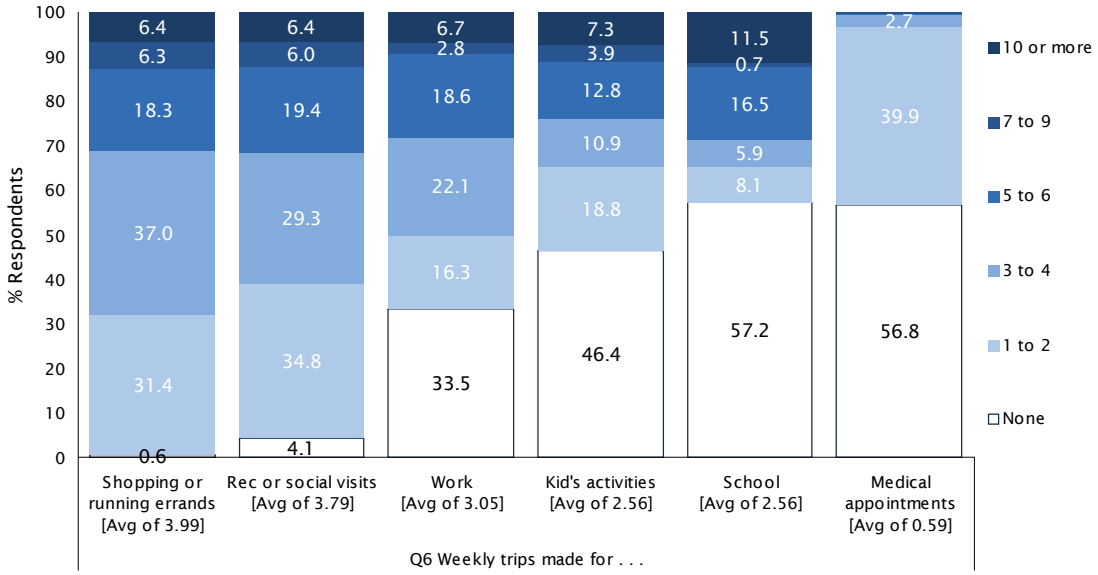



**FIGURE 15 WEEKLY TRIPS BY PURPOSE BY YEARS IN SAMMAMISH & EMPLOYMENT STATUS**

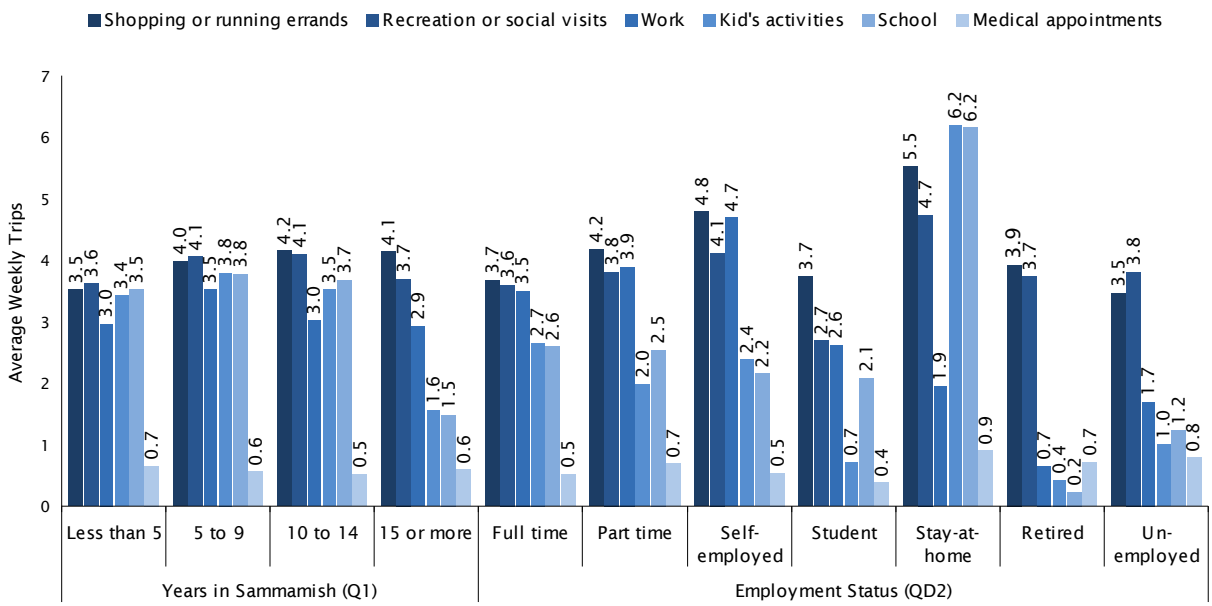


**FIGURE 16 WEEKLY TRIPS BY PURPOSE BY PRIMARY MODE & HSLD INCOME**

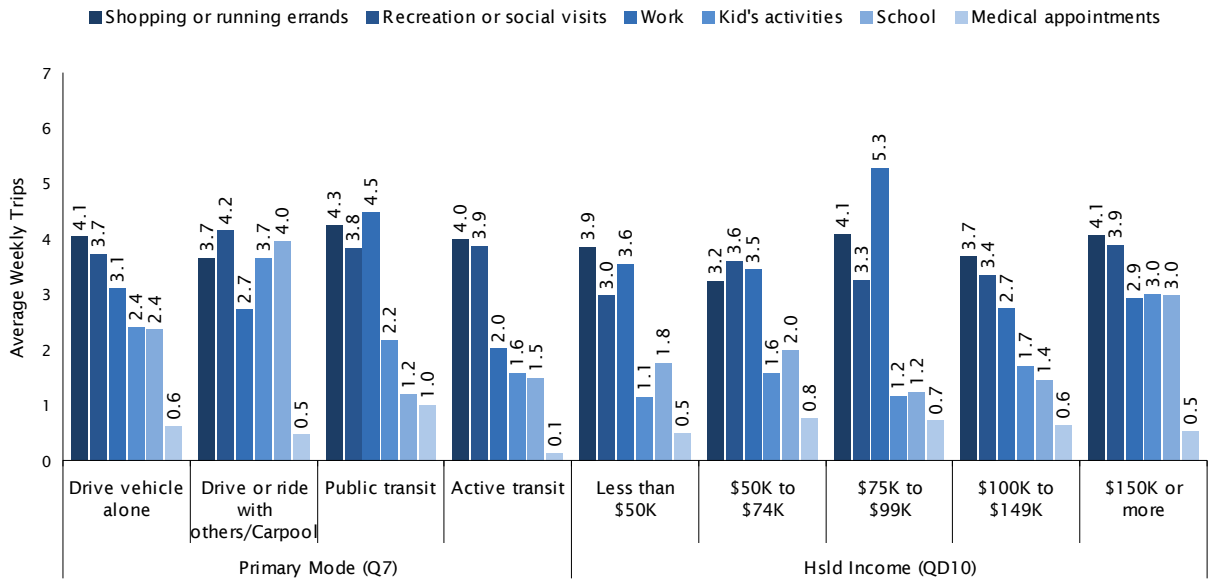
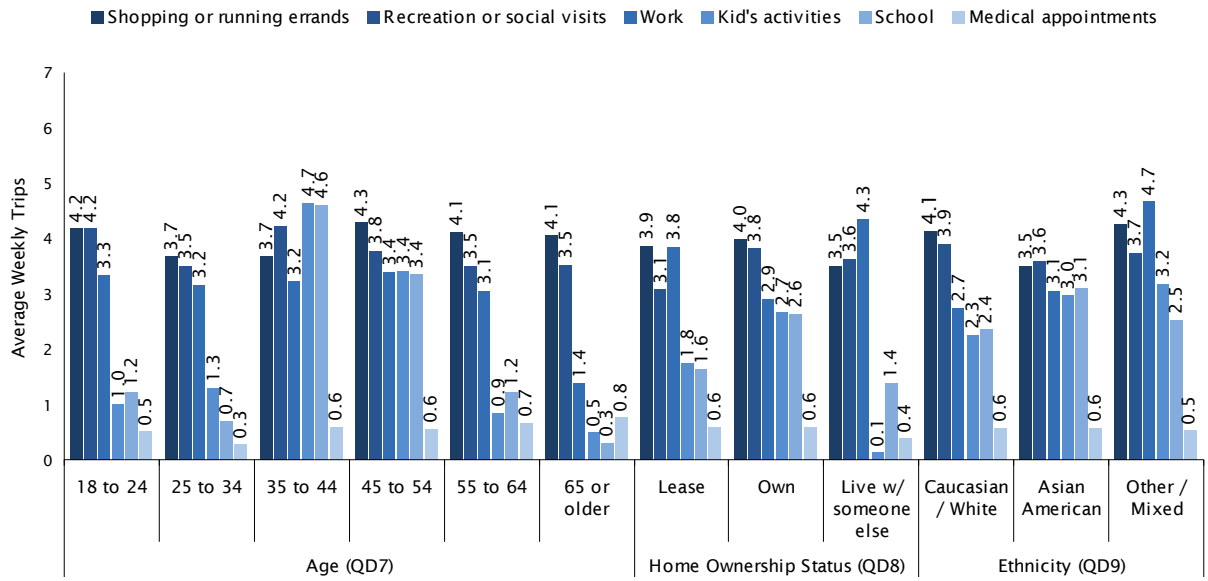


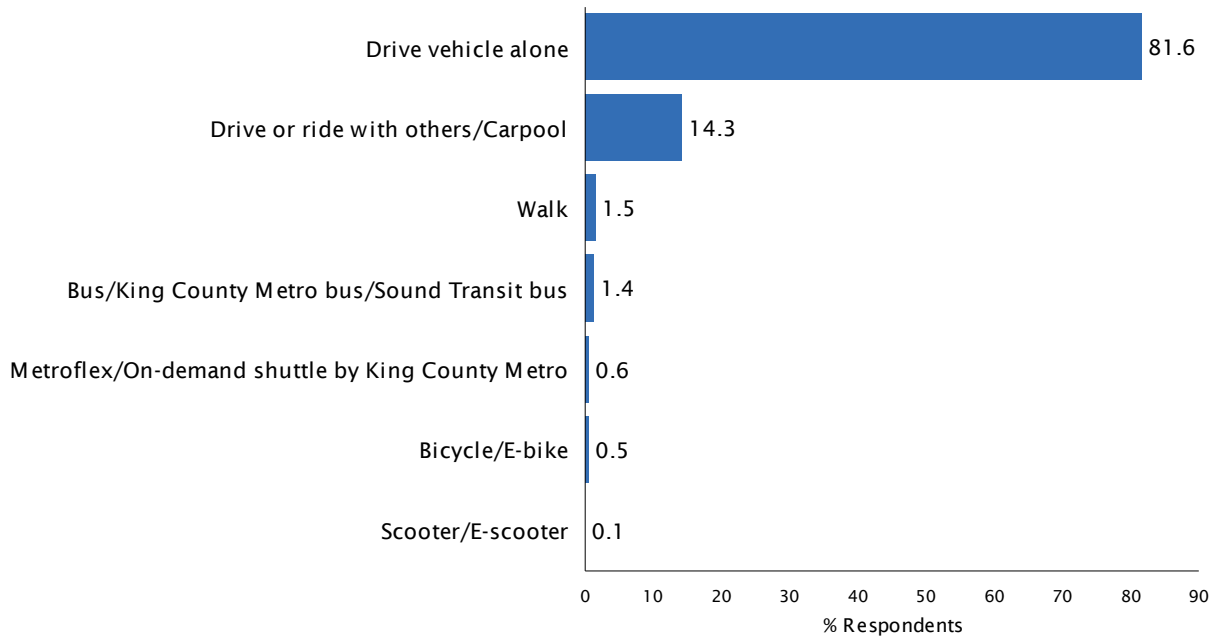

**FIGURE 17 WEEKLY TRIPS BY PURPOSE BY AGE, HOME OWNERSHIP STATUS & ETHNICITY**




**PRIMARY MODE** Shifting gears to *how* respondents travel, Question 7 inquired as to the method of transportation they use most often when traveling in their area. More than three-quarters of survey participants (82%) indicated that they primarily drive alone by vehicle, while an additional 14% indicated that they primarily ride with others/carpool. Approximately 2% indicated active transportation (walk/bicycle) was their primary mode, 1% mentioned the bus (King County Metro/Sound Transit), and less than 1% indicated they primary travel using Metroflex/ King County Metro's on-demand shuttle.

**Question 7** *What method of transportation do you use most of the time when traveling in your area?*

**FIGURE 18 METHODS OF TRANSPORTATION USE WHEN TRAVELING**




When compared to their respective counterparts, students, individuals under 25 years of age, those living rent-free in someone else's home, and Asian Americans were the most likely to report that their primary mode of travel is public transit (see Tables 1-3).

**TABLE 1 METHODS OF TRANSPORTATION USE WHEN TRAVELING BY OVERALL & EMPLOYMENT STATUS**

| | | Employment Status (QD2) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Overall | Full time | Part time | Self-employed | Student | Stay-at-home | Retired | Un-employed |
| Drive vehicle alone | 81.6 | 81.3 | 85.0 | 84.2 | 78.5 | 86.5 | 84.1 | 61.4 |
| Drive or ride with others/Carpool | 14.3 | 14.6 | 12.0 | 10.9 | 4.1 | 10.9 | 13.5 | 31.9 |
| Active transit | 2.1 | 1.7 | 3.0 | 5.0 | 7.1 | 0.0 | 1.1 | 6.7 |
| Public transit | 2.0 | 2.4 | 0.0 | 0.0 | 10.3 | 2.6 | 1.4 | 0.0 |

**TABLE 2 METHODS OF TRANSPORTATION USE WHEN TRAVELING BY HSLD INCOME & AGE**

| | Hsld Income (QD10) | | | | | Age (QD7) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Less than $50K | $50K to $74K | $75K to $99K | $100K to $149K | $150K or more | 18 to 24 | 25 to 34 | 35 to 44 | 45 to 54 | 55 to 64 | 65 or older |
| Drive vehicle alone | 85.3 | 79.3 | 87.0 | 81.1 | 83.1 | 73.8 | 88.9 | 76.8 | 84.5 | 83.4 | 84.0 |
| Drive or ride with others/Carpool | 10.4 | 14.2 | 11.2 | 11.6 | 13.5 | 15.9 | 7.2 | 21.4 | 10.8 | 12.2 | 12.1 |
| Active transit | 0.6 | 3.1 | 0.0 | 3.4 | 1.6 | 4.4 | 2.8 | 1.2 | 2.0 | 2.4 | 2.4 |
| Public transit | 3.7 | 3.3 | 1.8 | 3.9 | 1.8 | 5.9 | 1.1 | 0.6 | 2.7 | 1.9 | 1.4 |

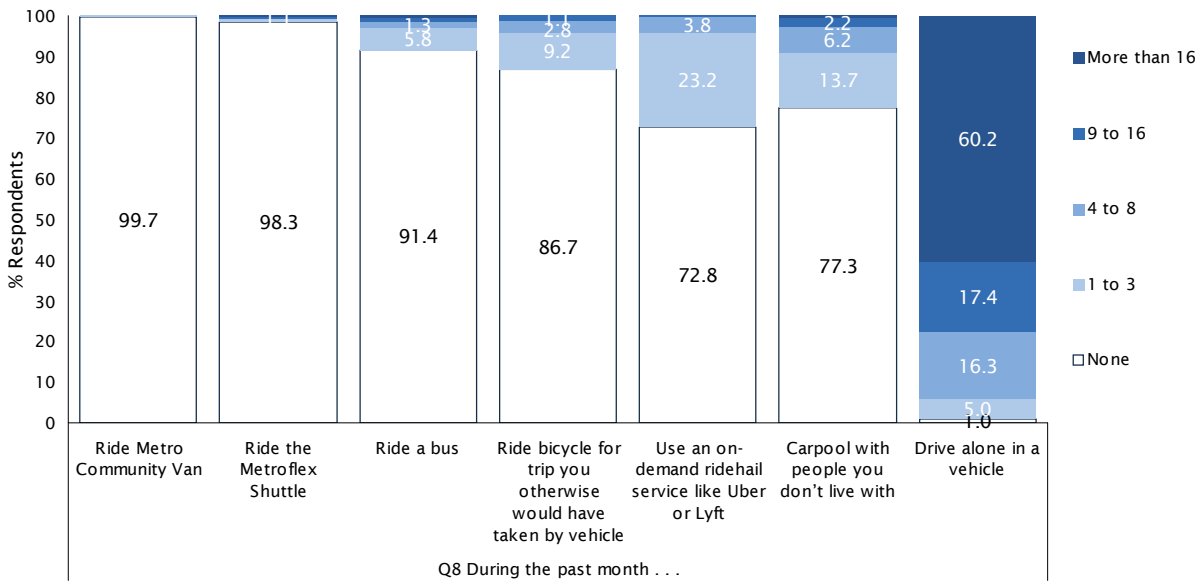
**TABLE 3 METHODS OF TRANSPORTATION USE WHEN TRAVELING BY HOME OWNERSHIP STATUS, ETHNICITY & YEARS IN SAMMAMISH**

| | Home Ownership Status (QD8) | | | Ethnicity (QD9) | | | Years in Sammamish (Q1) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Lease | Own | Live w/ someone else | Caucasian / White | Asian American | Other / Mixed | Less than 5 | 5 to 9 | 10 to 14 | 15 or more |
| Drive vehicle alone | 84.5 | 82.0 | 67.0 | 84.3 | 76.8 | 81.2 | 72.1 | 84.7 | 84.3 | 82.9 |
| Drive or ride with others/Carpool | 14.2 | 14.2 | 3.7 | 12.3 | 17.8 | 14.6 | 24.2 | 10.9 | 13.6 | 12.2 |
| Active transit | 1.3 | 2.1 | 6.4 | 2.4 | 0.7 | 4.3 | 1.6 | 4.2 | 0.0 | 2.2 |
| Public transit | 0.0 | 1.7 | 23.0 | 1.0 | 4.7 | 0.0 | 2.1 | 0.2 | 2.1 | 2.6 |

**FREQUENCY OF USING MODES** Whereas Question 7 captured respondents' *primary* mode of travel, Question 8 asked respondents to indicate how many days they used each of the modes shown in Figure 19 during the past month. As shown in the figure, driving alone in a vehicle was by far the dominant mode of travel, with 99% indicating they used this mode at least once during the prior month, and 60% reporting they drove alone at least 16 days during this period. Approximately one-quarter of respondents indicated they took a least one trip carpooling with someone they don't live with (23%) and used an on-demand ridehail service (27%), while approximately one-in-ten respondents rode a bicycle for a trip they would otherwise have taken by car (13%) and rode a bus (9%). Less than 2% of respondents indicated they rode the Metroflex shuttle and Metro Community Van during the period of interest.

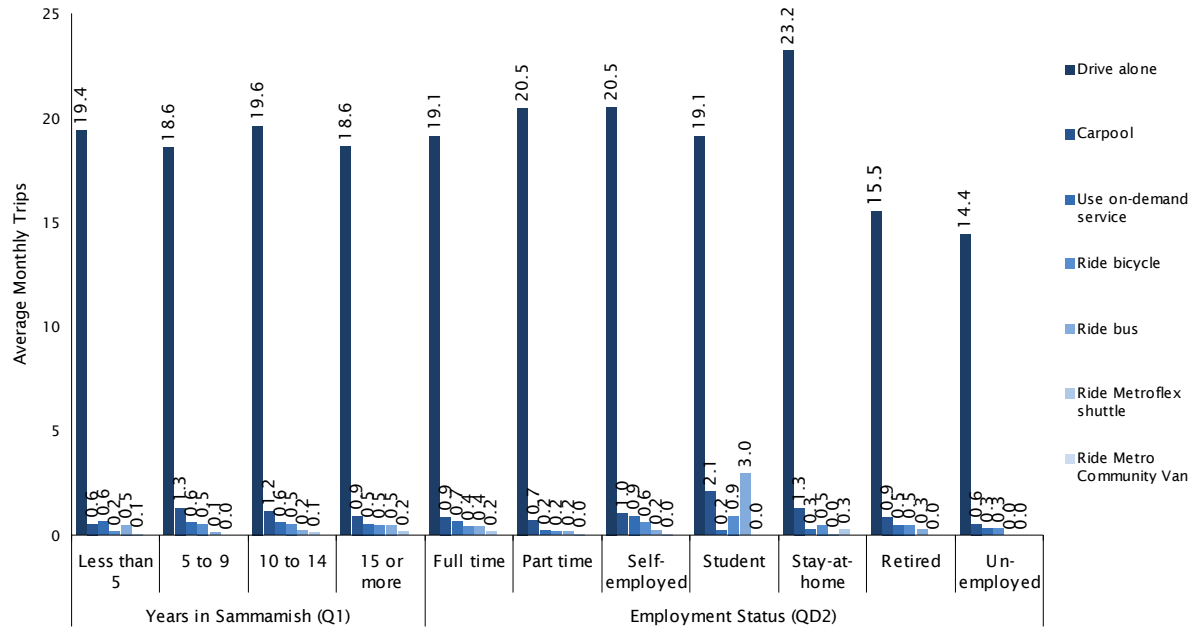
**Question 8** *During the past month, how many days did you: _____?*

**FIGURE 19 MONTHLY TRIPS**




Figures 20-22 on the next page present the *average* number of days respondents used each mode of transportation in the month preceding the interview by subgroup. Although driving alone was clearly the dominant mode of travel among all identified subgroups, here again we see that students and those who rely on public transit as their primary mode were outliers when it came to the frequency with which they use the bus.

## FIGURE 20 MONTHLY TRIPS BY YEARS IN SAMMAMISH & EMPLOYMENT STATUS




## FIGURE 21 MONTHLY TRIPS BY PRIMARY MODE & HSLD INCOME

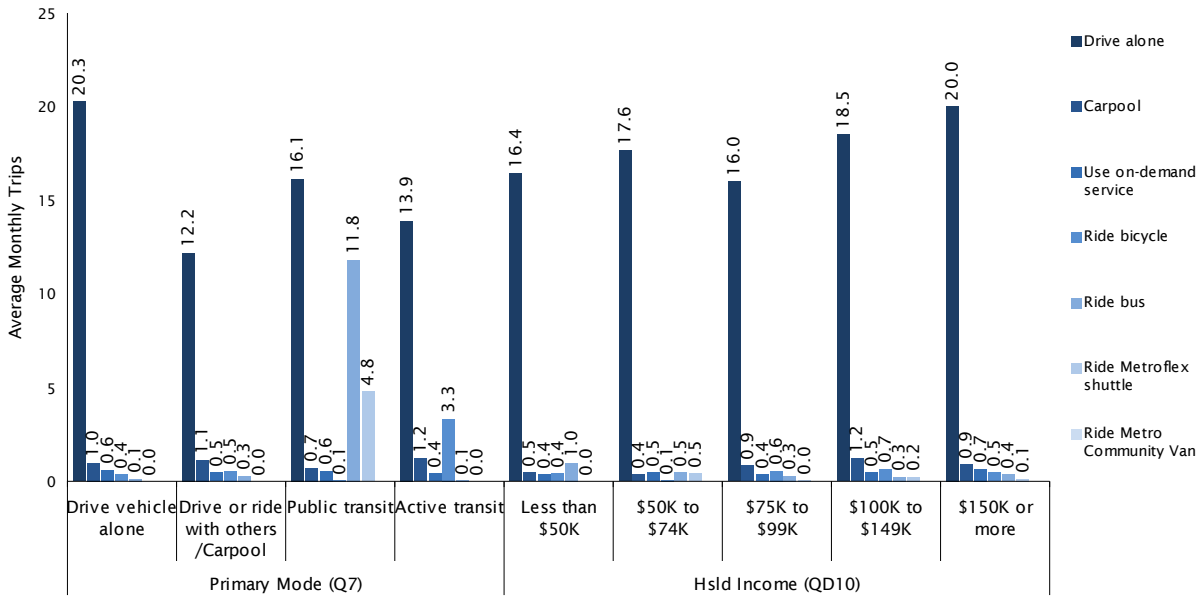
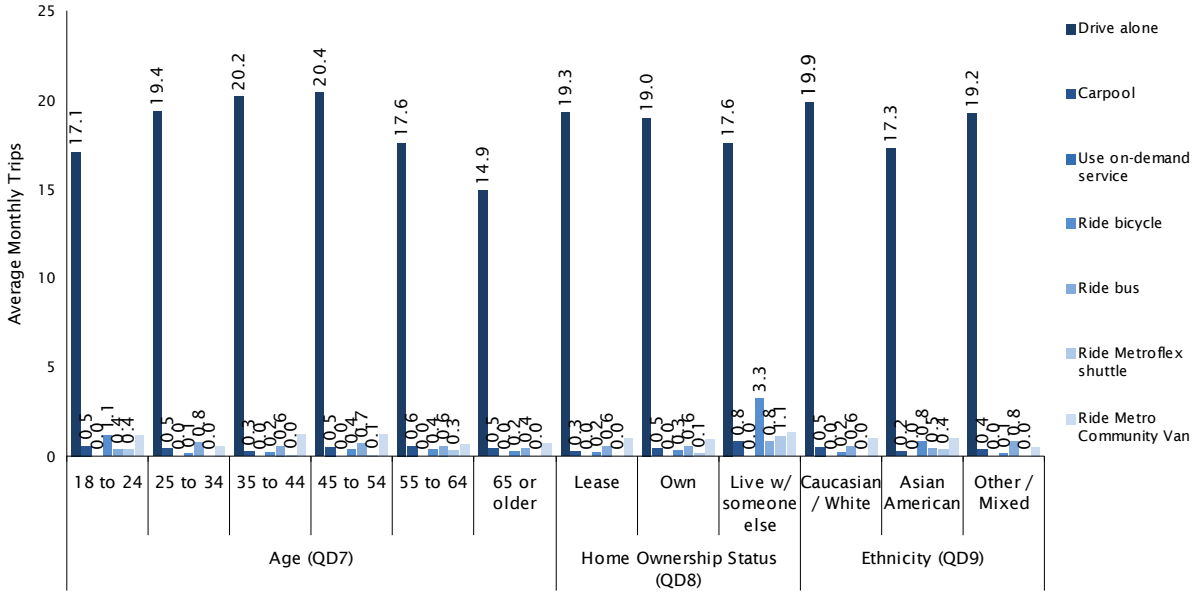


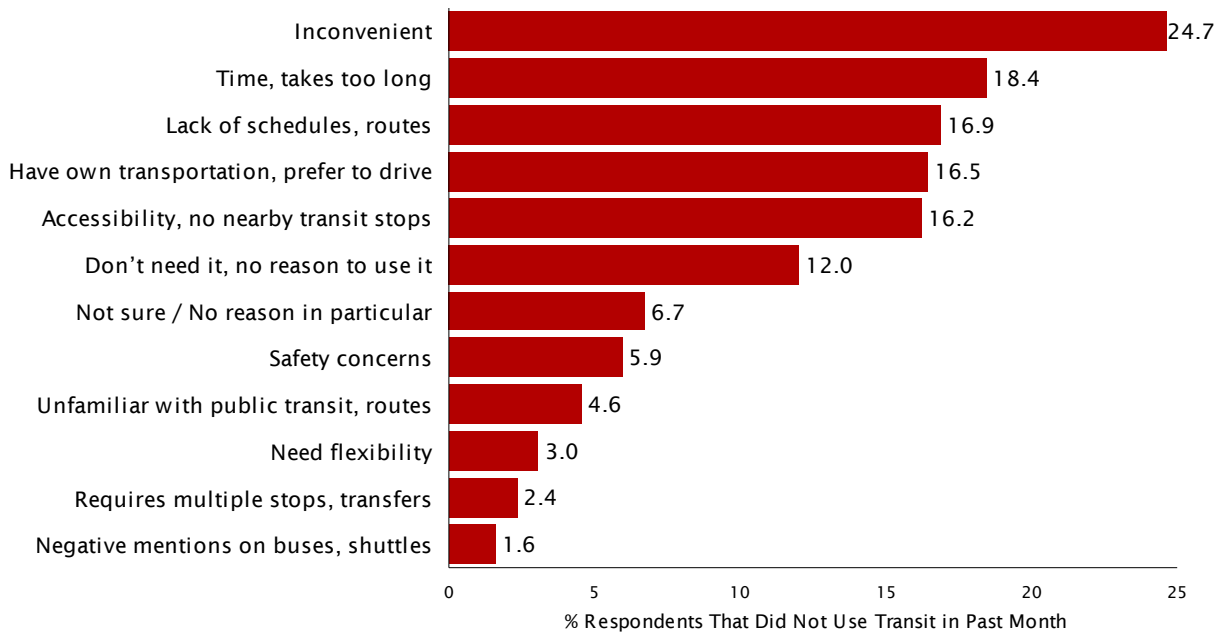
**FIGURE 22 MONTHLY TRIPS BY AGE, HOME OWNERSHIP STATUS & ETHNICITY**




**WHY NOT RIDE TRANSIT?** Respondents who indicated they did *not* use transit during the month preceding the interview were subsequently asked in an open-ended manner to describe their reasons (Figure 23). The most common responses were that transit is inconvenient (25%), takes too long (18%), and has infrequent schedules/lack of routes (17%). Other commonly mentioned reasons included they have their own transportation/prefer to drive (17%), issues with the accessibility of transit/availability of stops nearby (16%), and they see no reason to use it (12%).

**Question 9** *What would you say is the main reason why you haven't ridden the bus or King County Metroflex shuttle or Community Van during the past month?*

**FIGURE 23 REASONS FOR NOT RIDING BUS, KING COUNTY METROFLEX SHUTTLE, COMMUNITY VAN**



# Transportation System

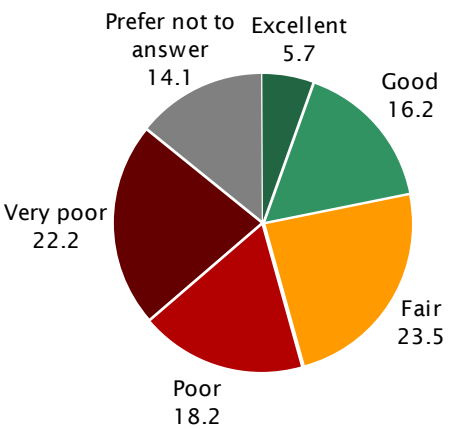
Having profiled respondents' typical travel behavior and their use of various modes, the survey transitioned to measuring respondents' assessments of the transportation system in Sammamish, the utility of different modes, and traffic congestion in their area.

## RATING OF TRANSPORTATION SYSTEM

The first question in this series simply asked respondents to rate how well the transportation system in Sammamish meets their travel needs using a five-point scale of excellent, good, fair, poor, or very poor. As shown in Figure 24 below, respondents provided a mix of opinions, with one-in-five rating the transportation system's performance as excellent (6%) or good (16%), one quarter as fair (24%), and four-in-ten providing a rating of poor (18%) or very poor (22%). An additional 14% were unsure or unwilling to share their opinion.

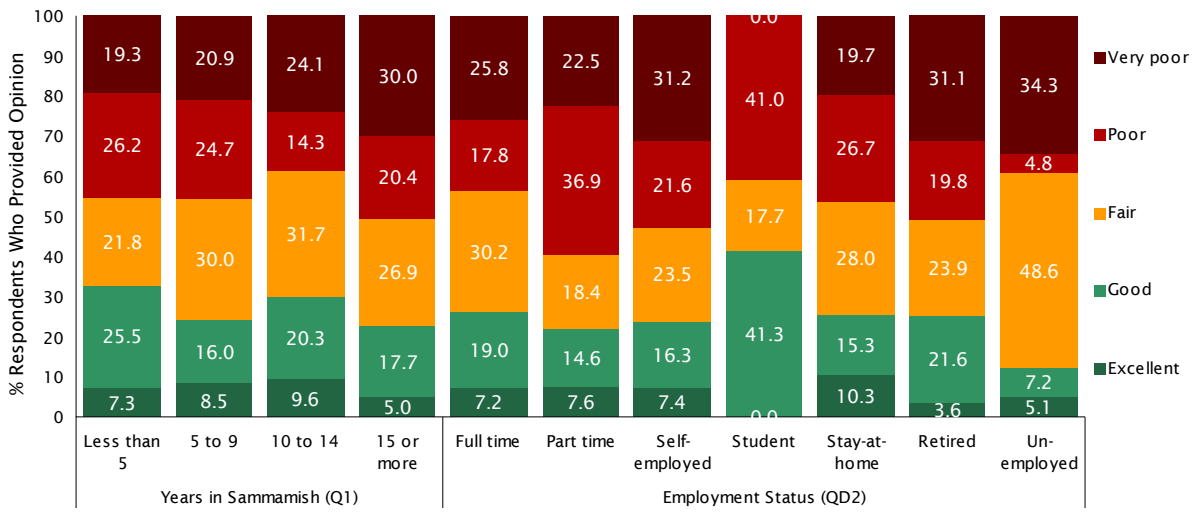
**Question 10** *Overall, how well does the transportation system in Sammamish meet your travel needs? Would you say it does an excellent, good, fair, poor, or very poor job in meeting your travel needs?*

**FIGURE 24 OPINION OF TRANSPORTATION SYSTEM**

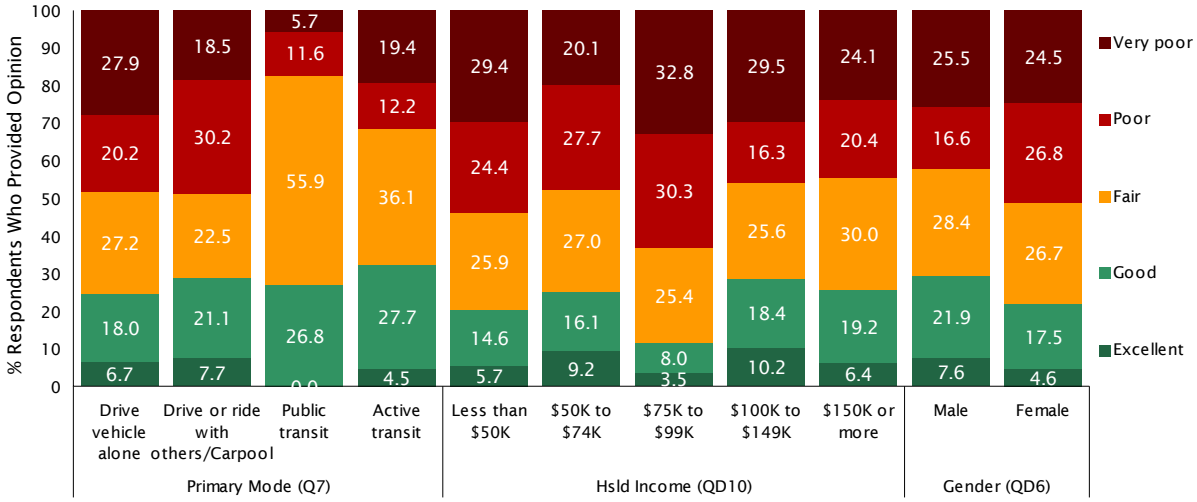



Figures 25-28 show how ratings of the transportation system's performance in meeting their travel needs varied across a range of respondent subgroups. When compared to their respective counterparts, part-time employees, those who primarily drive alone or carpool, individuals from households earning $75,000 to $99,999 annually, home owners, and those who don't ride public transit at least once per month were the most likely to rate the transportation system as doing a poor or very poor job in meeting their needs.

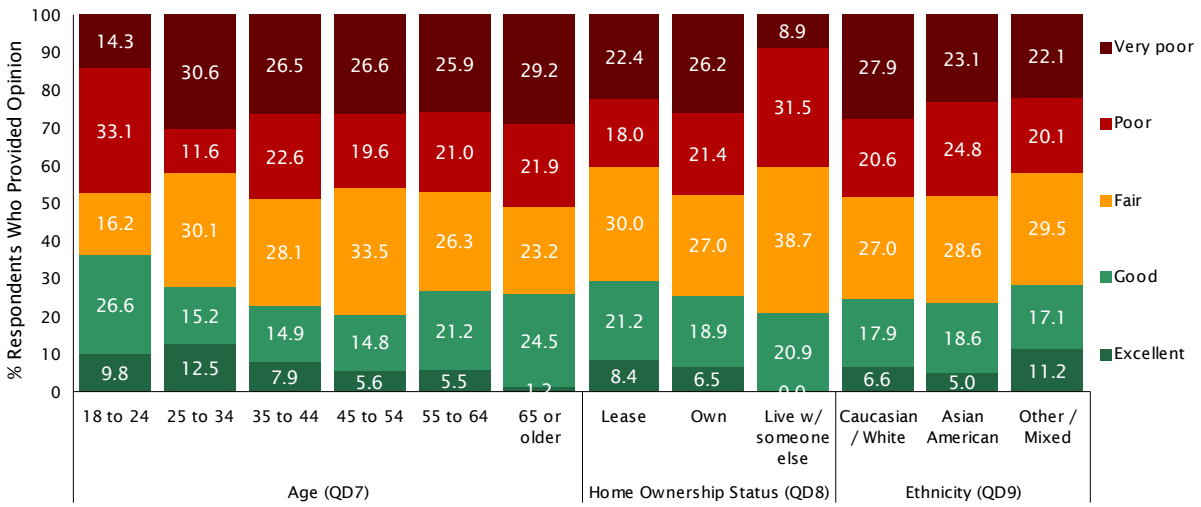
**FIGURE 25 OPINION OF TRANSPORTATION SYSTEM BY YEARS IN SAMMAMISH & EMPLOYMENT STATUS**



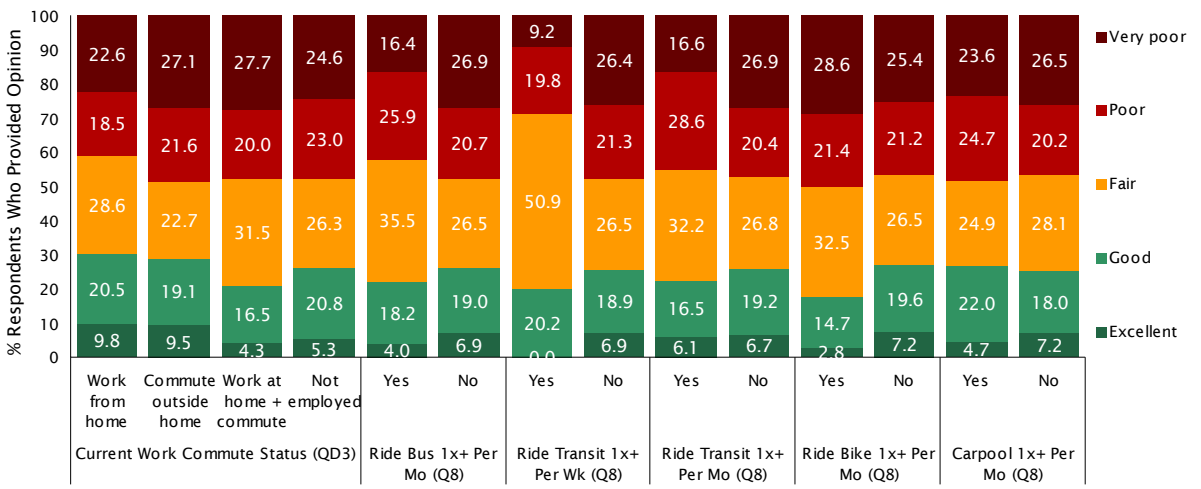
## FIGURE 26 OPINION OF TRANSPORTATION SYSTEM BY PRIMARY MODE, HSLD INCOME & GENDER




## FIGURE 27 OPINION OF TRANSPORTATION SYSTEM BY AGE, HOME OWNERSHIP STATUS & ETHNICITY




## FIGURE 28 OPINION OF TRANSPORTATION SYSTEM BY CURRENT WORK COMMUTE STATUS, RIDE BUS 1X PER MONTH, RIDE TRANSIT 1X PER WEEK, RIDE TRANSIT 1X PER MONTH, RIDE BIKE 1X PER MONTH & CARPOOL 1X PER MONTH



**RATING MODES** Understanding how individuals view different modes is key to identifying the potential or latent market for different transit services. When it comes to how easy it is to get to places they need or want to go, driving a car was (as expected) widely perceived to be the easiest option, with 93% of respondents providing a rating of very easy or somewhat easy. Approximately one-quarter of respondents also thought it was very or somewhat easy to reach the places they need or want to go by walking (26%) and biking (26%). With respect to transit, however, few felt they can easily get to the places they need or want to go using a bus (7%), the King County Metro Community Van (3%), and on-demand Metroflex shuttle (3%).

Tables 4-6 show how ratings of each mode varied by primary mode, whether they are currently making at last one work trip per week, and whether they have ridden the bus at least once per week, transit at least once per week, transit at least once per month, a bicycle at least once per month, and carpool at least once per month.

**Question 11** *In general, how easy is it to get to the places you need or want to go: _____? Would you say it is very easy, somewhat easy, somewhat difficult, or very difficult?*

**FIGURE 29 HOW EASY IT IS TO GET TO LOCATIONS BY MODE**

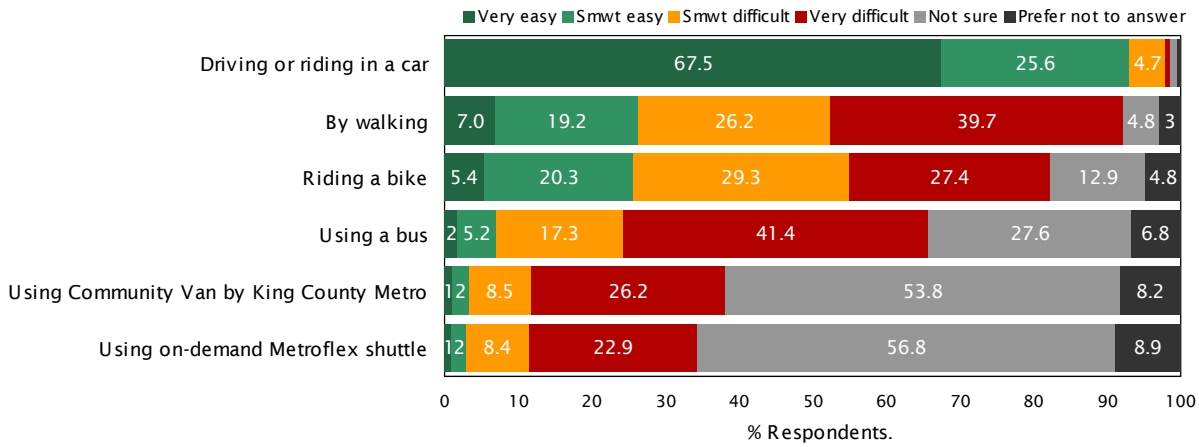



**TABLE 4 HOW EASY IT IS TO GET TO LOCATIONS BY MODE BY PRIMARY MODE & MAKE 1+ WORK TRIPS PER WEEK (SHOWING % VERY & SOMEWHAT EASY)**

| | Primary Mode (Q7) | | | | Make 1+ Work Trips Per Wk (Q6a) | |
|---|---|---|---|---|---|---|
| | Drive vehicle alone | Drive or ride with others/Carpool | Public transit | Active transit | Yes | No |
| Driving or riding in a car | 91.7 | 99.0 | 100.0 | 100.0 | 92.5 | 94.3 |
| By walking | 25.1 | 27.2 | 33.4 | 54.1 | 25.6 | 27.3 |
| Riding a bike | 24.7 | 22.8 | 49.4 | 57.1 | 26.8 | 23.2 |
| Using a bus | 5.7 | 6.3 | 51.4 | 15.0 | 7.7 | 5.4 |
| Using the Community Van by King County Metro | 3.1 | 1.3 | 11.6 | 17.1 | 4.0 | 2.0 |
| Using the on-demand Metroflex shuttle | 2.5 | 1.5 | 29.8 | 7.9 | 3.2 | 2.7 |

**TABLE 5 HOW EASY IT IS TO GET TO LOCATIONS BY MODE BY RIDE BUS 1X PER MONTH, RIDE TRANSIT 1X PER WEEK & RIDE TRANSIT 1X PER MONTH (SHOWING % VERY & SOMEWHAT EASY)**

| | Ride Bus 1x+ Per Mo (Q8) | | Ride Transit 1x+ Per Wk (Q8) | | Ride Transit 1x+ Per Mo (Q8) | |
|---|---|---|---|---|---|---|
| | Yes | No | Yes | No | Yes | No |
| Driving or riding in a car | 99.0 | 92.6 | 100.0 | 92.9 | 97.3 | 92.7 |
| By walking | 23.6 | 26.4 | 33.1 | 26.0 | 24.6 | 26.4 |
| Riding a bike | 34.9 | 24.7 | 44.4 | 25.0 | 34.2 | 24.7 |
| Using a bus | 21.7 | 5.5 | 41.1 | 5.8 | 19.6 | 5.6 |
| Using the Community Van by King County Metro | 6.6 | 3.0 | 7.3 | 3.2 | 6.0 | 3.0 |
| Using the on-demand Metroflex shuttle | 10.0 | 2.4 | 21.8 | 2.4 | 9.8 | 2.3 |

**TABLE 6 HOW EASY IT IS TO GET TO LOCATIONS BY MODE BY RIDE BIKE 1X PER MONTH & CARPOOL 1X PER MONTH (SHOWING % VERY & SOMEWHAT EASY)**

| | Ride Bike 1x+ Per Mo (Q8) | | Carpool 1x+ Per Mo (Q8) | |
|---|---|---|---|---|
| | Yes | No | Yes | No |
| Driving or riding in a car | 93.5 | 93.1 | 94.3 | 92.8 |
| By walking | 34.8 | 24.9 | 27.7 | 25.8 |
| Riding a bike | 54.4 | 21.2 | 29.5 | 24.5 |
| Using a bus | 4.7 | 7.3 | 8.2 | 6.6 |
| Using the Community Van by King County Metro | 1.6 | 3.6 | 4.8 | 2.9 |
| Using the on-demand Metroflex shuttle | 0.7 | 3.4 | 3.3 | 2.9 |

## TRAFFIC CONGESTION

Traffic congestion often rates among the most important issues that residents would like local leaders to address, and it can play an important role in mode choice for certain types of trips. Accordingly, Question 12 asked respondents to identify how big of a problem traffic congestion generally is when they travel in Sammamish and neighboring areas. Figure 30 demonstrates that most respondents viewed traffic congestion as either a big (22%) or medium problem (46%) when they travel in the Sammamish area, while 24% viewed it as a small problem and 8% did not perceive traffic congestion to be a problem at all. The most striking pattern at the subgroup level is that individuals who had lived in the City of Sammamish at least 10 years and those who don't currently ride transit at least occasionally were much more likely than their counterparts to rate traffic congestion in the area as a big or moderate problem (see figures 31-34).

**Question 12** *When you travel in Sammamish and in neighboring areas, would you say traffic congestion is generally a big problem, a medium problem, a small problem, or not a problem?*

**FIGURE 30 RATING TRAFFIC CONGESTION**

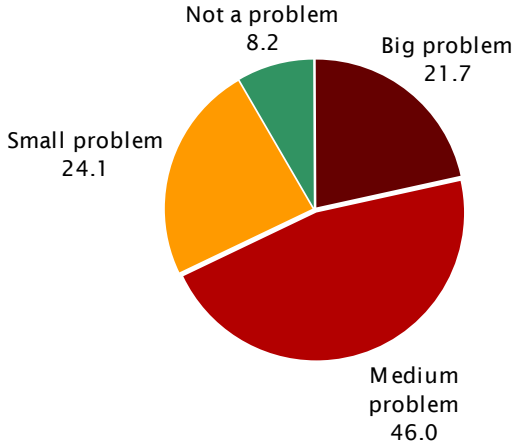


**FIGURE 31 RATING TRAFFIC CONGESTION BY YEARS IN SAMMAMISH, MAKE 1+ WORK TRIPS PER WEEK & MAKE 1+ SCHOOL TRIPS PER WEEK**

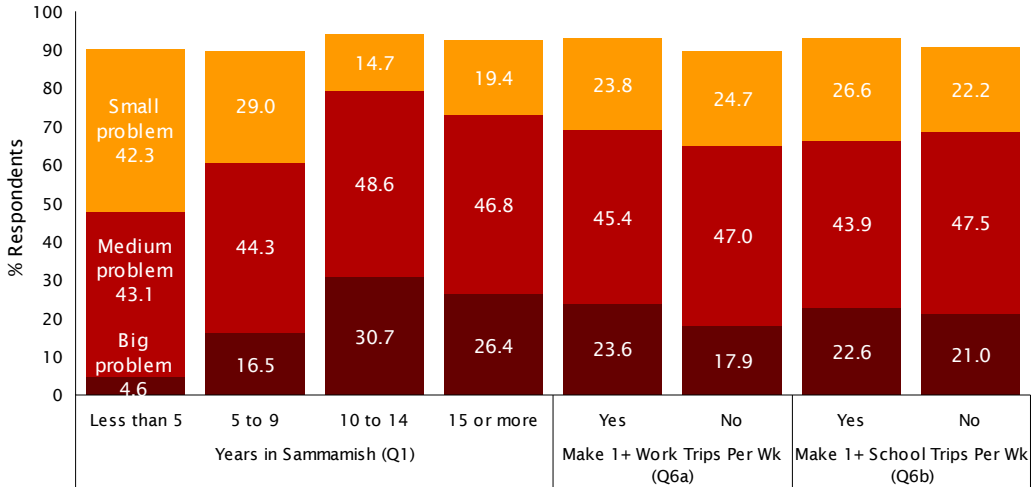



**FIGURE 32 RATING TRAFFIC CONGESTION BY PRIMARY MODE & TOTAL TRIPS IN TYPICAL WEEK**

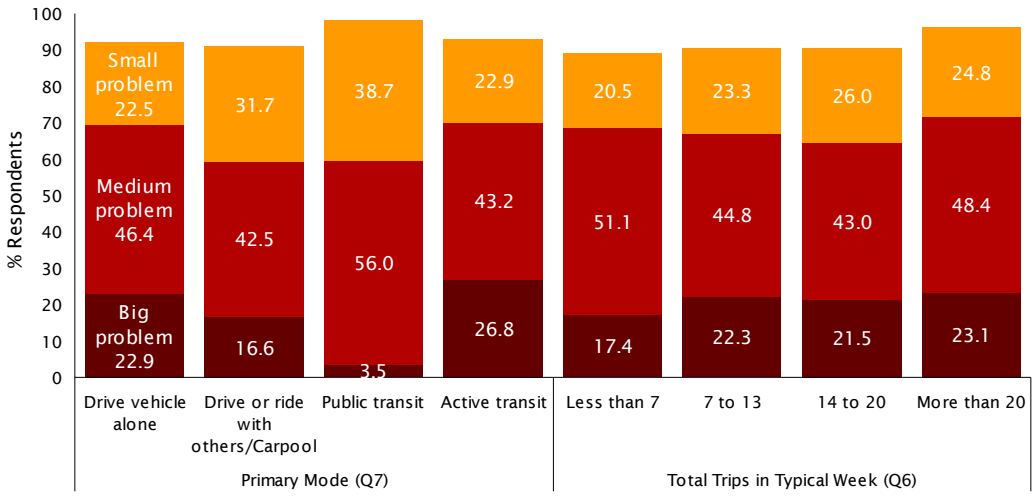



**FIGURE 33 RATING TRAFFIC CONGESTION BY PLACES TRAVELED OUTSIDE HOME IN TYPICAL DAY & EMPLOYMENT STATUS**

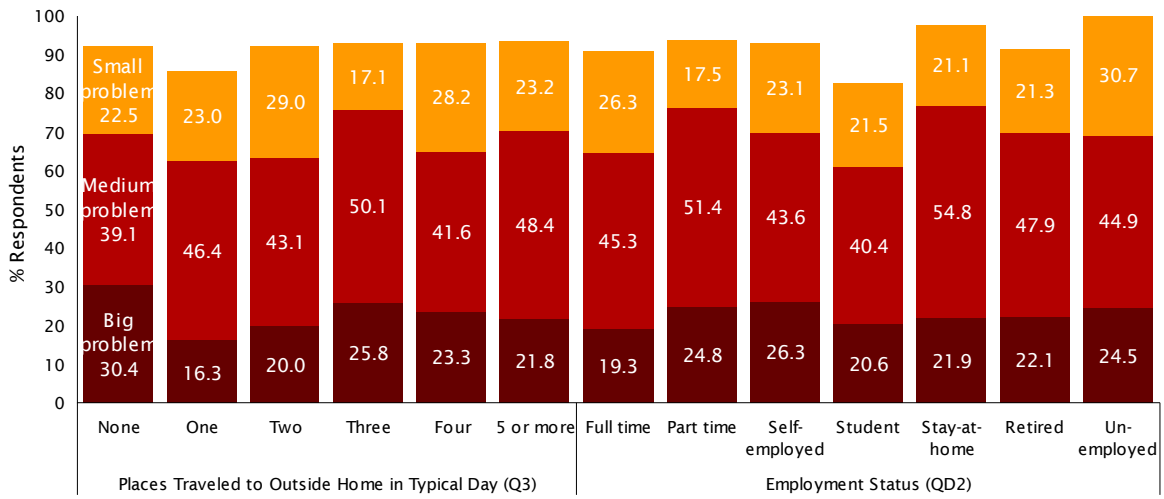
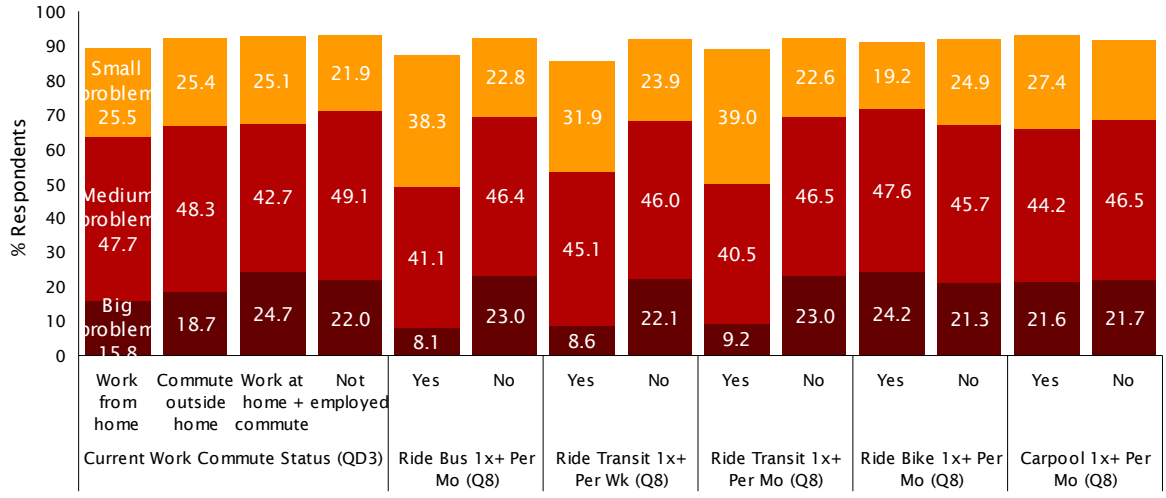


**FIGURE 34 RATING TRAFFIC CONGESTION BY CURRENT WORK COMMUTE STATUS, RIDE BUS 1X PER MONTH, RIDE TRANSIT 1X PER WEEK, RIDE TRANSIT 1X PER MONTH, RIDE BIKE 1X PER MONTH & CARPOOL 1X PER MONTH**



# Bus Improvements

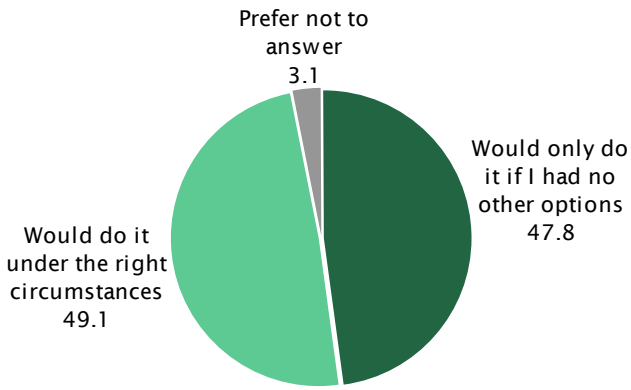
Whereas prior questions were purposely *inclusive* in addressing travel behaviors and assessments across a wide range of modes, the final substantive section of the survey narrowed to respondents' perceptions of the bus. Specifically, under what conditions would they ride the bus at least once per week, and what would make it more attractive for them to do so?

## ATTITUDE ABOUT RIDING BUS

Recognizing that some respondents may have no interest in riding the bus under any circumstances, Question 13 sought first to distinguish between individuals who would only ride the bus if they had no other options versus those who would do it under the right conditions. Approximately half of respondents (49%) indicated they would ride the bus at least once per week under the right circumstances (Figure 35), whereas the rest indicated they would only ride the bus if they had no other options (48%) or preferred not to answer the question (3%).

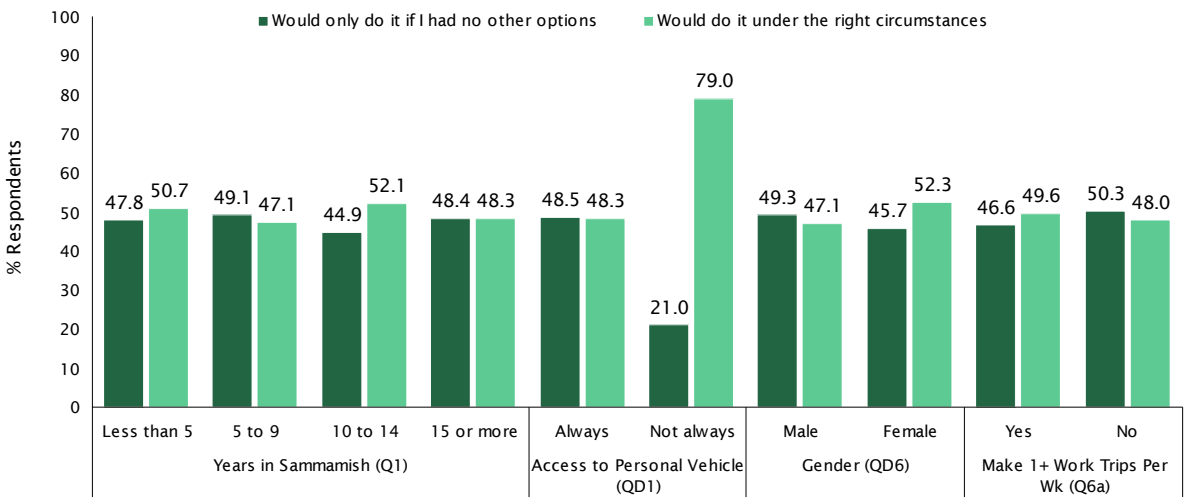
**Question 13** *Which of the following statements best matches your attitude about riding the bus at least once per week? _____ OR _____?*

**Figure 35 Opinion of Riding The Bus Once Per Week**

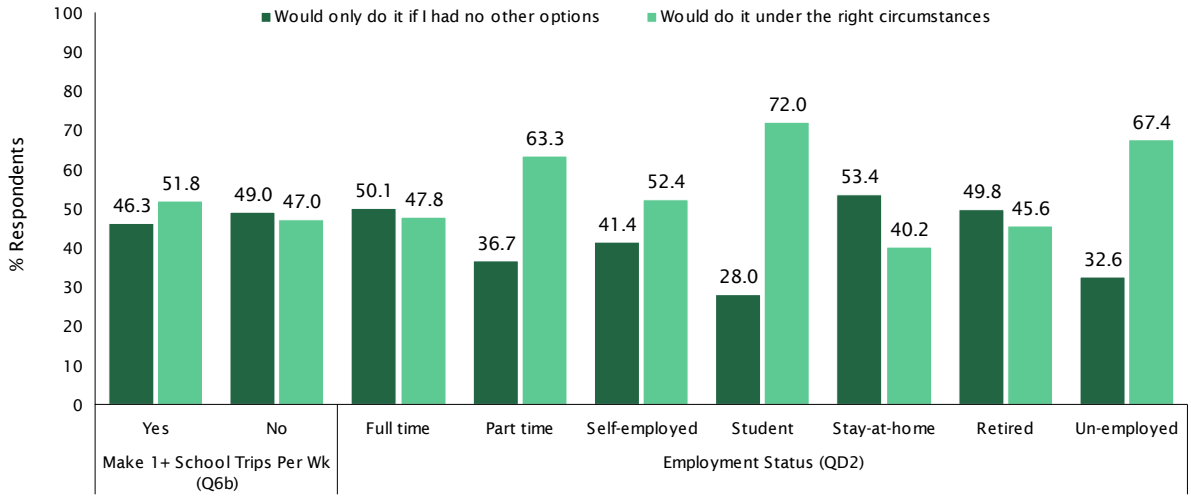



Figures 36-40 show that the even balance in responses to Question 13 exhibited in the aggregate was mirrored among most subgroups. That said, when the balance is uneven (e.g., see those who don't always have access to a personal vehicle, part-time employees, students, and unemployed individuals), it is typically in the direction of a greater willingness to ride the bus under the right circumstances.

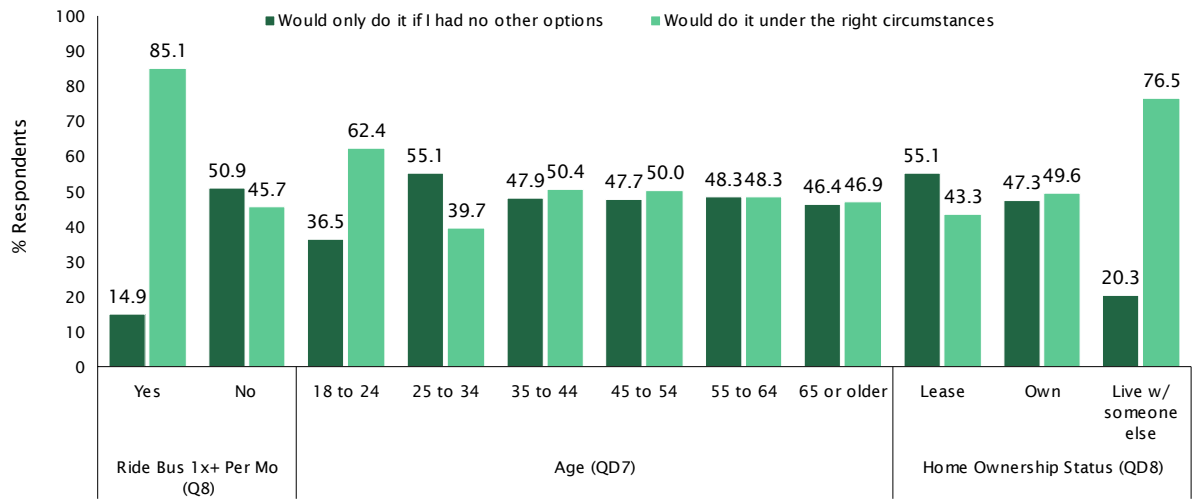
**Figure 36 Opinion of Riding The Bus Once Per Week Years in Sammamish, Access to Personal Vehicle, Gender & Make 1+ Work Trips Per Week**



## FIGURE 37 OPINION OF RIDING THE BUS ONCE PER WEEK BY MAKE 1+ SCHOOL TRIPS & EMPLOYMENT STATUS




## FIGURE 38 OPINION OF RIDING THE BUS ONCE PER WEEK BY RIDE BUS 1X PER MONTH, AGE & HOME OWNERSHIP STATUS




## FIGURE 39 OPINION OF RIDING THE BUS ONCE PER WEEK BY ETHNICITY, HSLD INCOME & RIDE TRANSIT 1X+ PER WEEK

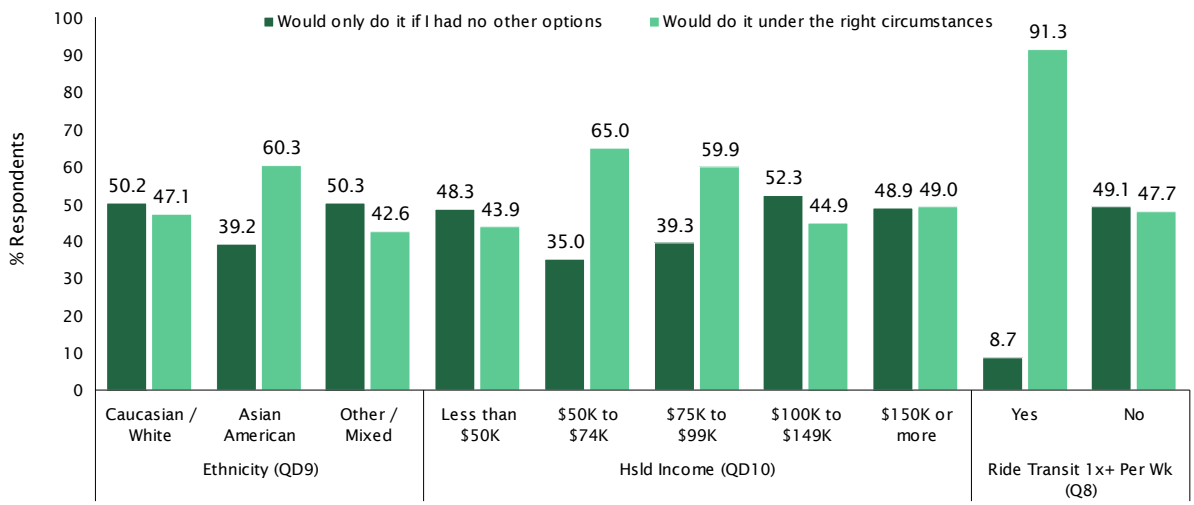
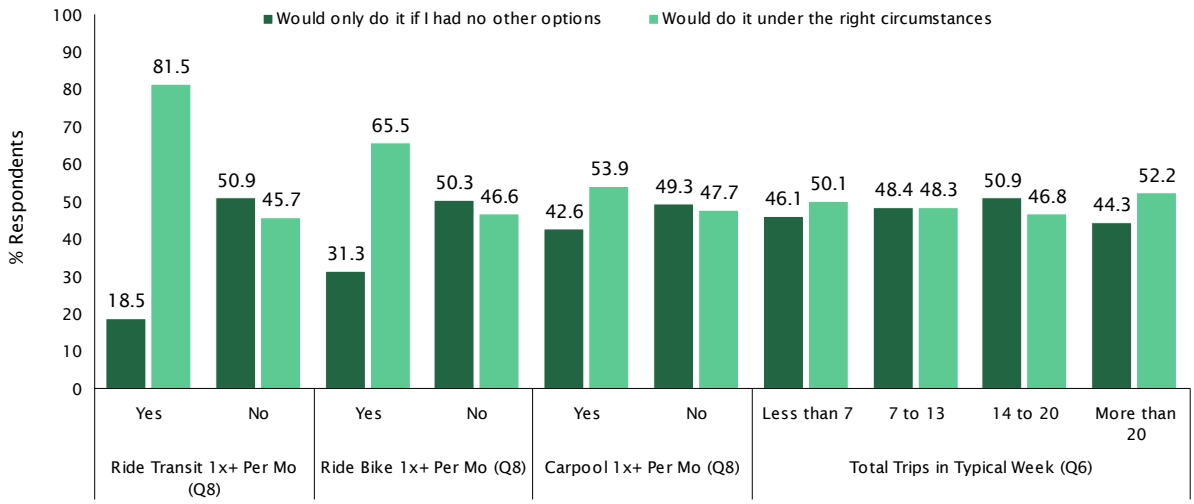


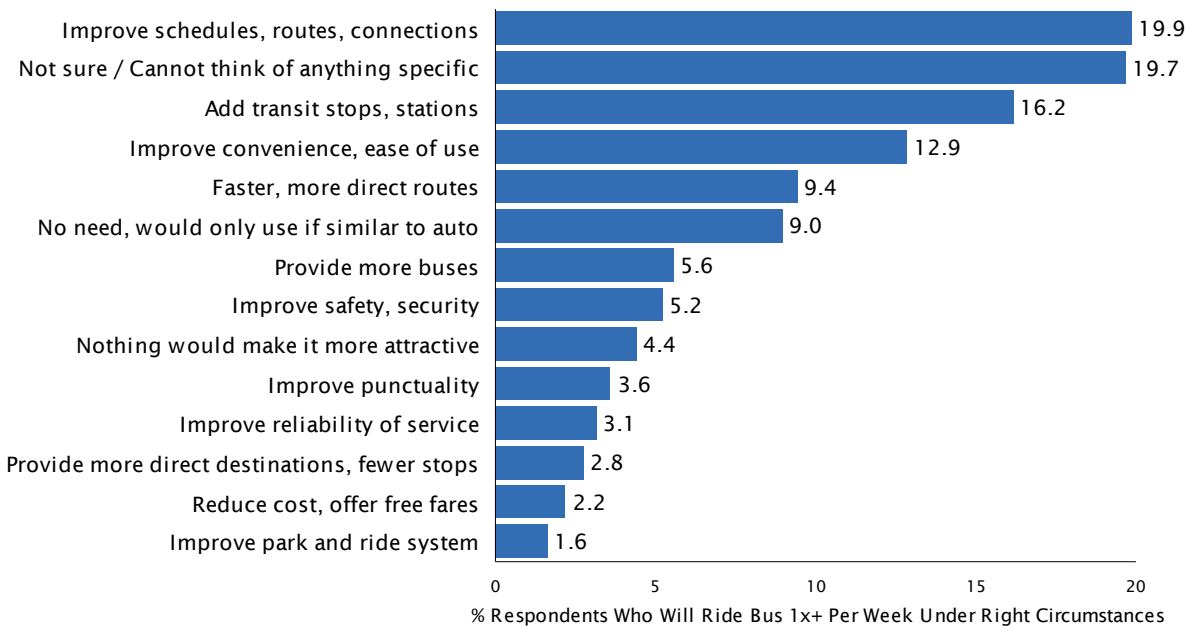
**FIGURE 40 OPINION OF RIDING THE BUS ONCE PER WEEK BY RIDE TRANSIT 1X+ PER MONTH, RIDE BIKE 1X+ PER MONTH, CARPOOL 1X+ PER MONTH & TOTAL TRIPS IN TYPICAL WEEK**




**WHAT WOULD MAKE THE BUS A MORE ATTRACTIVE OPTION?** Regardless of their general attitude about riding the bus as measured in Question 13, all respondents were subsequently asked to describe what would make the bus a more attractive travel alternative for them. Question 14 was presented in an open-ended manner to allow respondents the freedom to mention any improvements or aspects that came to mind. True North later reviewed the verbatim responses and grouped them into the categories shown in Figure 41.

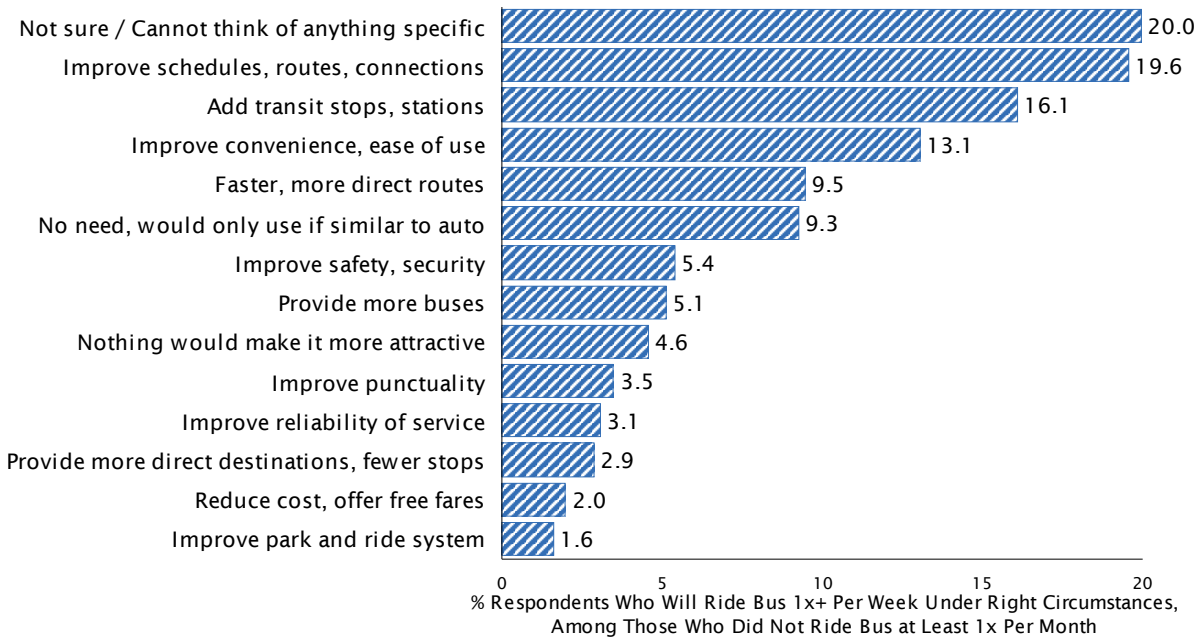
**Question 14** *What would make it more attractive for you to ride the bus at least once per week? Please be as specific as you can in your response.*

**FIGURE 41 IMPROVEMENTS TO RIDE BUS AT LEAST ONCE PER WEEK**



Approximately 20% of respondents indicated they could not think of any specific improvements that would make the bus a more attractive travel option. Among the remaining respondents, improving schedules, routes, and/or connections (20%), adding transit stops or stations (16%), improving the convenience/ease of use for the bus (13%), and offering faster, more direct routes (9%) were the most frequently offered suggestions. For the interested reader, Figure 43 shows the responses to Question 14 among those reporting they currently do *not* ride the bus at least once per month.

**FIGURE 42 IMPROVEMENTS TO RIDE BUS AT LEAST ONCE PER WEEK BY RIDE BUS 1X PER WEEK UNDER RIGHT CIRCUMSTANCES**

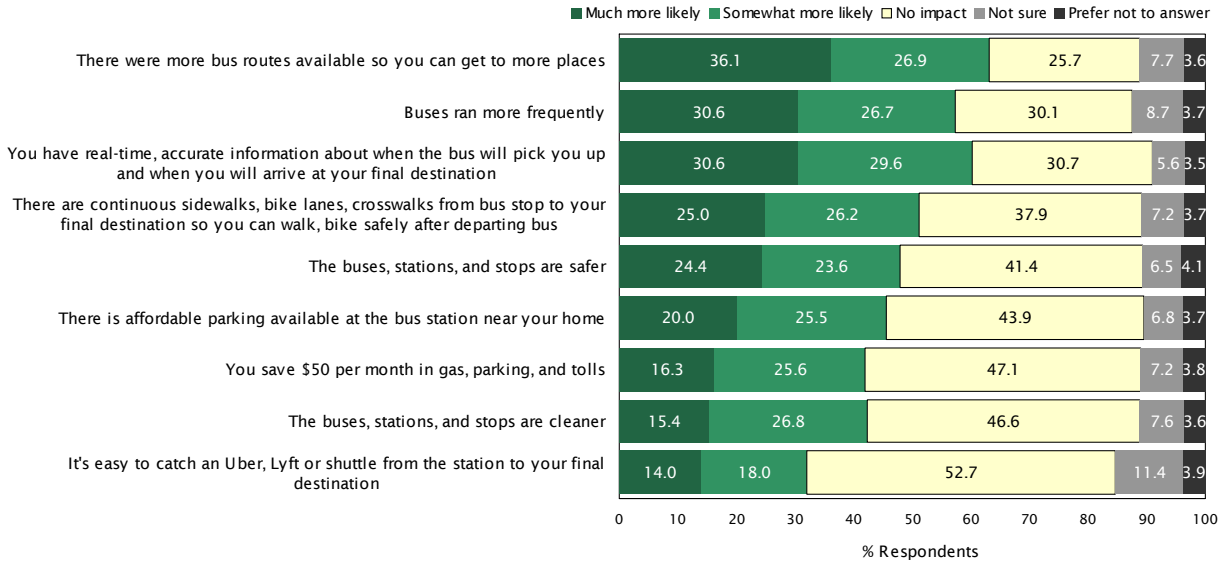



**SPECIFIC LIST OF IMPROVEMENTS** Having received respondents' top-of-mind suggestions for how to make the bus a more attractive travel option, the survey next presented a list of specific improvements and amenities to gauge which appear to have the greatest positive impact on respondents' willingness to use the bus on a weekly basis. The improvements and amenities tested, as well as respondents' reactions to the items, are presented in Figure 43 on the next page.

Overall, the most compelling improvements were having more routes available (36% much more likely to ride), buses running more frequently (31%), having accurate real-time information about bus pick-up times and arrival times (31%), ensuring that there are continuous sidewalks, bike lanes, and crosswalks from the bus stop to their destination so they can walk or bike safely after departing the bus (25%), and improving the safety of buses, bus stops, and stations (24%). For the interested reader, Figure 44 shows the ratings among Sammamish residents who don't currently ride the bus at least once per month, while Figure 45 presents the same information among those who indicated they would ride the bus at least once per week under the right circumstances.

**Question 15** *As I read the following items, I'd like to know whether it would make you more likely to use the bus at least once per week.*

### FIGURE 43 LIKELY TO RIDE BUS AT LEAST ONCE PER WEEK




### FIGURE 44 LIKELY TO RIDE BUS AT LEAST ONCE PER WEEK BY CURRENTLY DON'T RIDE BUS AT LEAST 1X PER MONTH

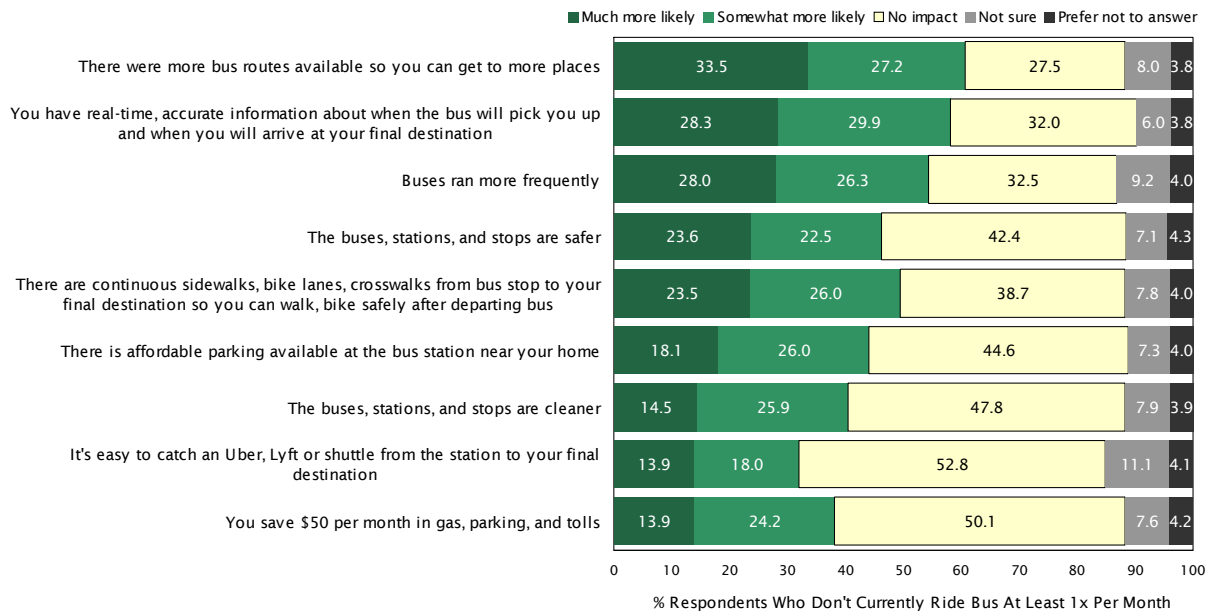
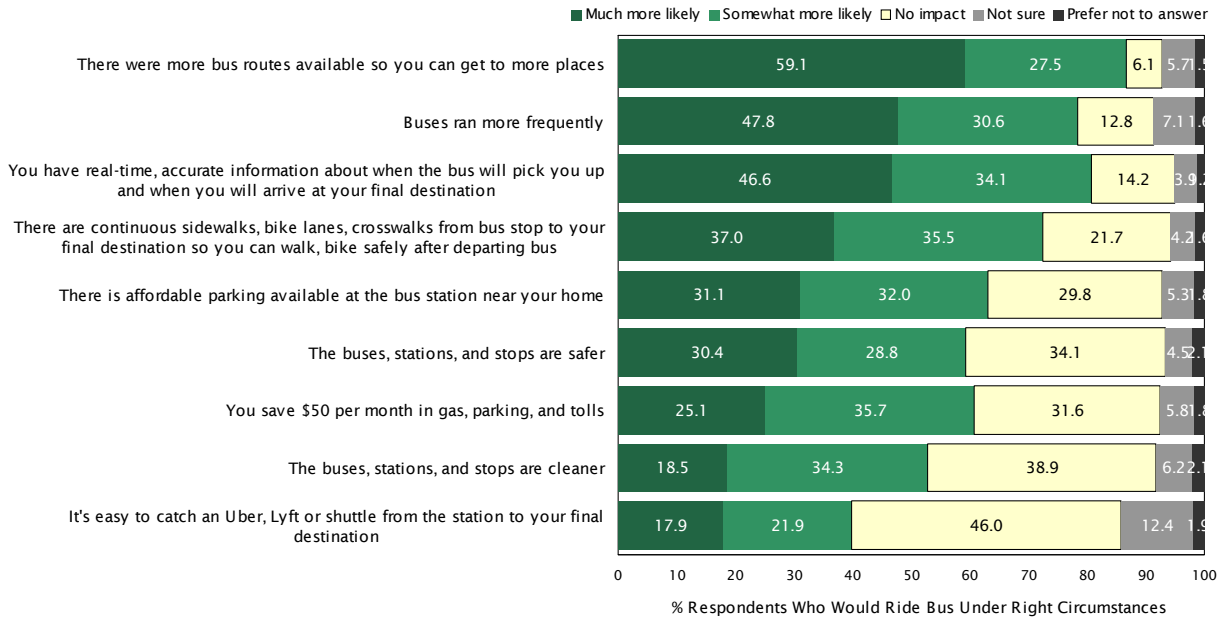


**FIGURE 45 LIKELY TO RIDE BUS AT LEAST ONCE PER WEEK BY WOULD RIDE BUS AT LEAST ONCE PER WEEK UNDER RIGHT CIRCUMSTANCES**

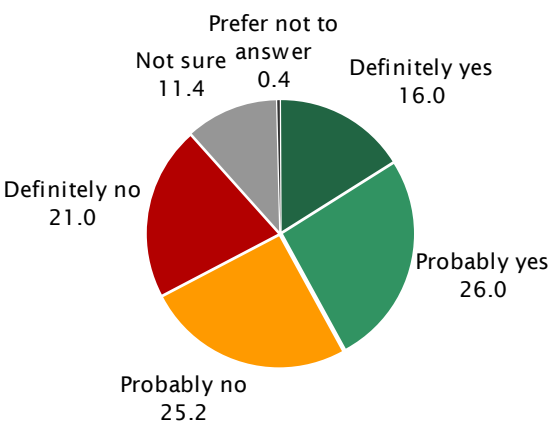



## IMPACT OF FULL SUITE OF IMPROVEMENTS

The next question in this series was designed to assess the impact that a full suite of transit improvements, offered in concert, would have on respondents' willingness to use the bus on a weekly basis. After presenting respondents with the list of improvements tested in Question 15, the survey asked respondents whether—realistically—they would ride the bus at least once per week if *all* of the improvements were implemented. Figure 46 presents the results in the context of *all* respondents, including those who had previously indicated that they would only ride the bus on a weekly basis if they had no other options.

**Question 16** *What if all of the items we just discussed were true? Realistically, would you ride the bus at least once per week?*

**FIGURE 46 IF ALL ITEMS WERE TRUE, WOULD RIDE THE BUS**




Although about half of respondents (49%) previously indicated they would ride the bus on a weekly basis under the right circumstances, even with all of the improvements tested in Question 16 in effect, a significant percentage of respondents were still reluctant to commit to riding the bus. Overall, 16% of respondents indicated they would definitely ride the bus on a weekly basis if all of the improvements were put in place, while 26% offered they would probably do so. Approximately 46% of respondents indicated that even with the full suite of improvements, they would probably or definitely not ride the bus weekly, and 12% were unsure or unwilling to answer.

Figures 47-50 show how the percentage of respondents willing to ride the bus weekly if the full suite of improvements were implemented varied by subgroup. When compared to their respective counterparts, students, those who currently use public transit as their primary mode, those from households earning between $75,000 and $99,999 annually, younger individuals (under 25), those living rent-free in someone else's home, Asian Americans, those working a hybrid work schedule, individuals who currently ride the bus or transit at least once per month, and those who don't always have access to a personal vehicle were the most willing to ride the bus on a weekly basis with the full suite of improvements in place.

**FIGURE 47 IF ALL ITEMS WERE TRUE, WOULD RIDE THE BUS BY YEARS IN SAMMAMISH & EMPLOYMENT STATUS**

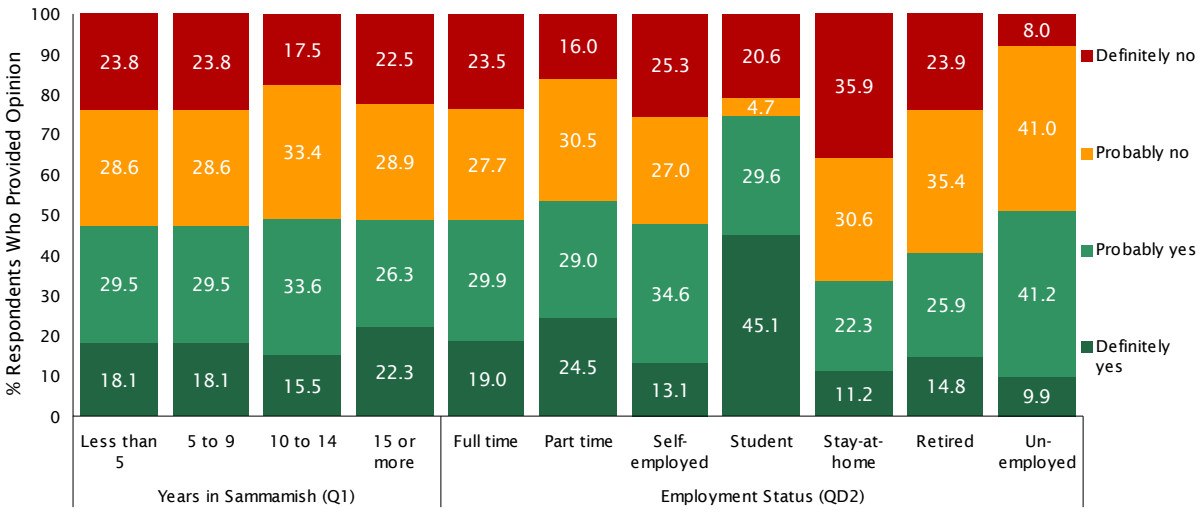



**FIGURE 48 IF ALL ITEMS WERE TRUE, WOULD RIDE THE BUS BY PRIMARY MODE, HSLD INCOME & GENDER**

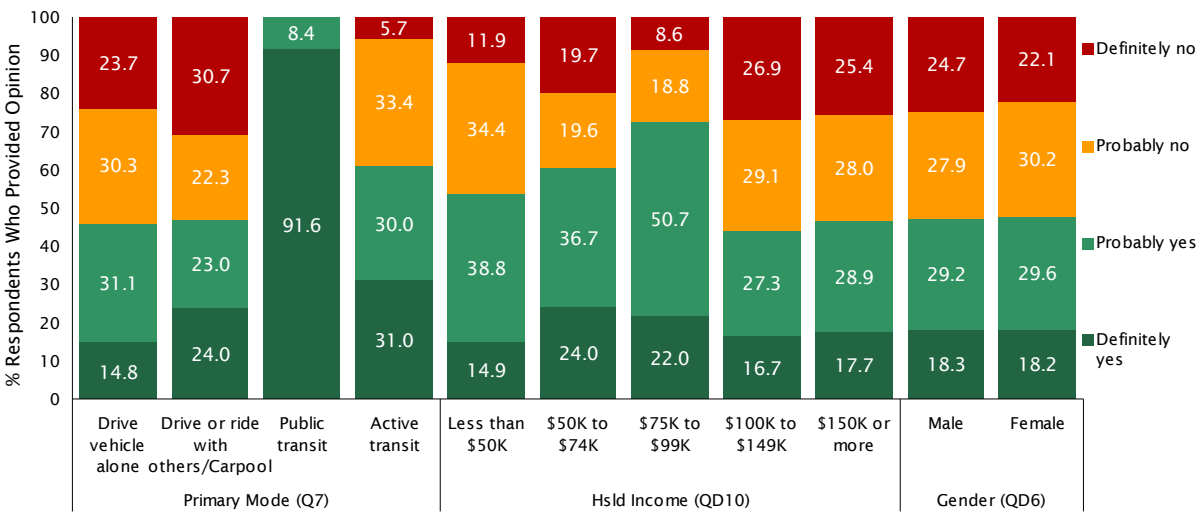


FIGURE 49 IF ALL ITEMS WERE TRUE, WOULD RIDE THE BUS BY AGE, HOME OWNERSHIP STATUS & ETHNICITY

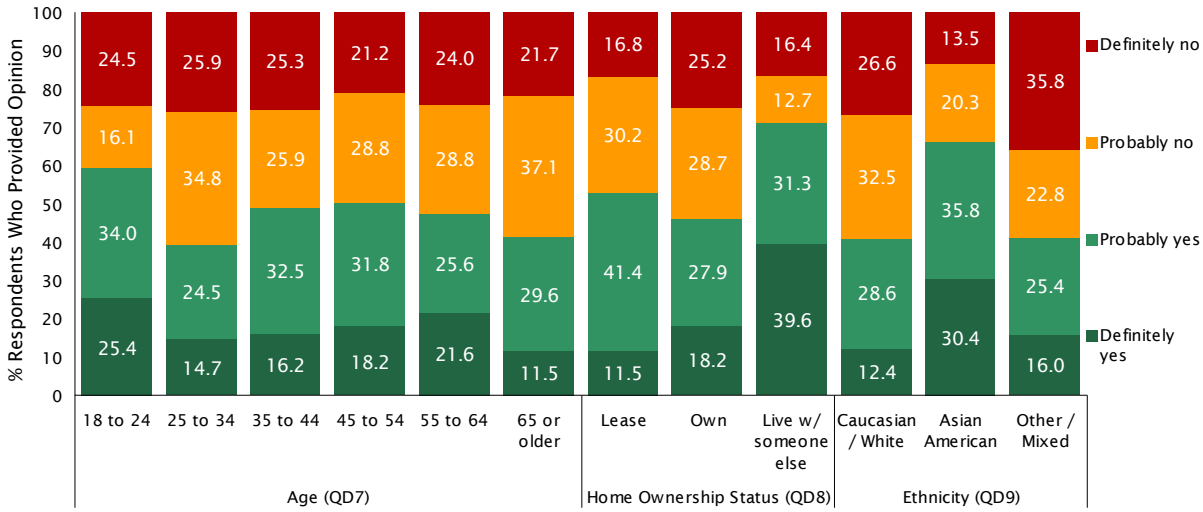
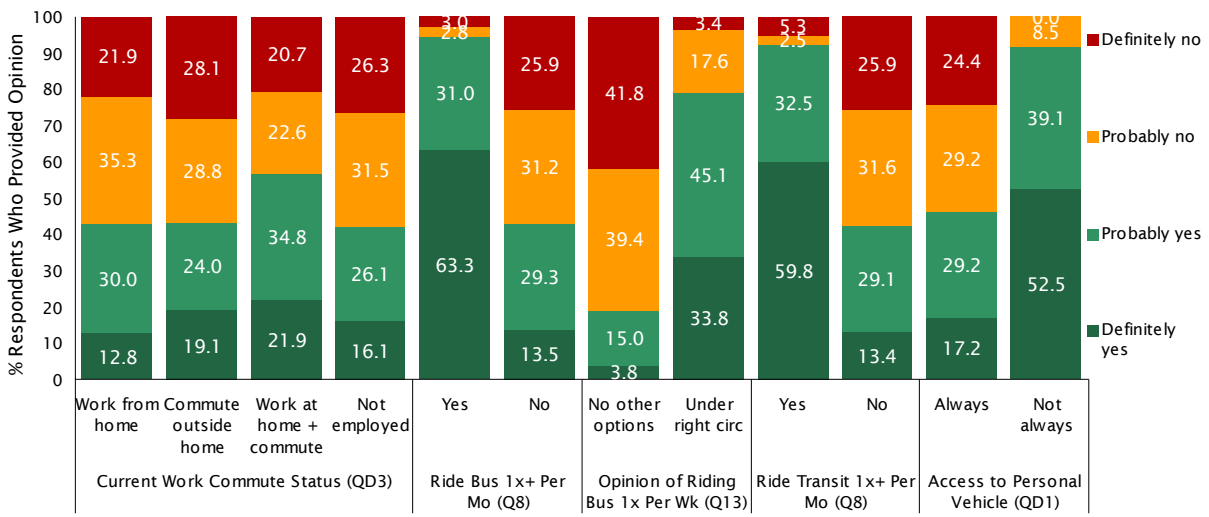



FIGURE 50 IF ALL ITEMS WERE TRUE, WOULD RIDE THE BUS BY CURRENT WORK COMMUTE STATUS, RIDE BUS 1X+ PER MONTH, OPINION OF RIDING BUS 1X PER WEEK, RIDE TRANSIT 1X+ PER MONTH & ACCESS TO PERSONAL VEHICLE




**HAVE YOU USED LIGHT RAIL IN SEATTLE METRO AREA?** Shifting gears, the survey next asked respondents about their use of light rail in the Seattle metro area during the six months prior to the survey. As shown in Figure 51 on the next page, approximately 13% of residents indicated that they have used light rail in the Seattle metro area during the period of interest. Use of light rail in the Seattle metro area was most commonly reported by those who have lived in Sammamish less than five years, students, individuals who rely on public transit as their primary mode, those living in households earning $50,000 to $74,999 annually, respondents between 24 and 34 years of age, individuals who live rent-free in someone else's home, and those who reported they currently ride transit at least once per month (see figures 52-55).

**Question 17** *In the past six months, have you used light rail in the Seattle metro area?*

**FIGURE 51 USE LIGHT RAIL IN PAST 6 MONTHS**

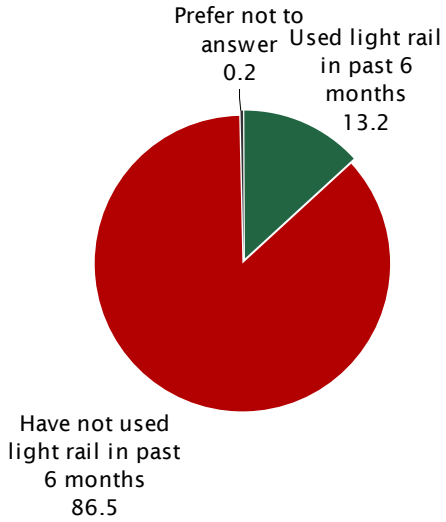



**FIGURE 52 USE LIGHT RAIL IN PAST 6 MONTHS BY YEARS IN SAMMAMISH & EMPLOYMENT STATUS**

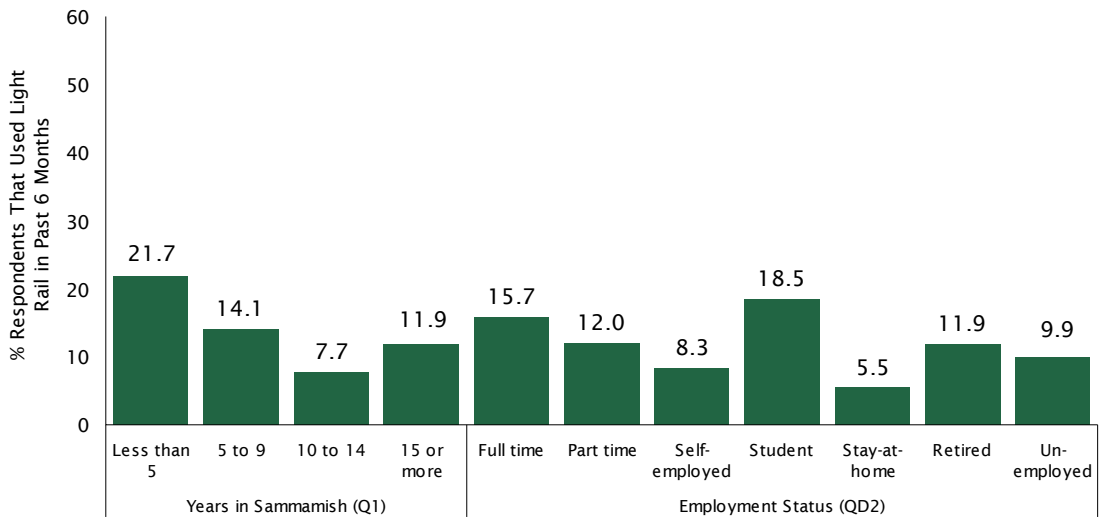


**FIGURE 53 USE LIGHT RAIL IN PAST 6 MONTHS BY PRIMARY MODE, HSLD INCOME & GENDER**

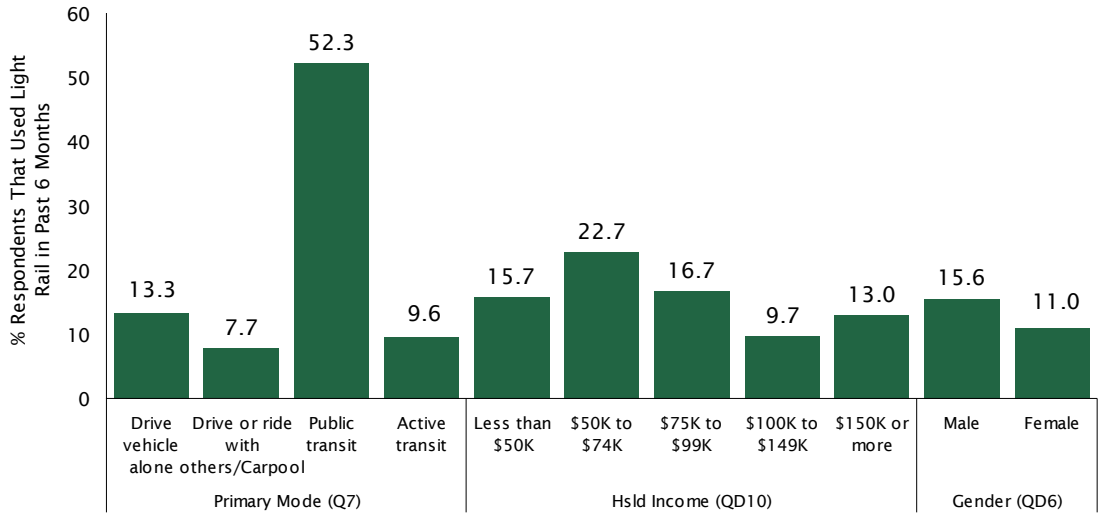



**FIGURE 54 USE LIGHT RAIL IN PAST 6 MONTHS BY AGE & HOME OWNERSHIP STATUS & ETHNICITY**

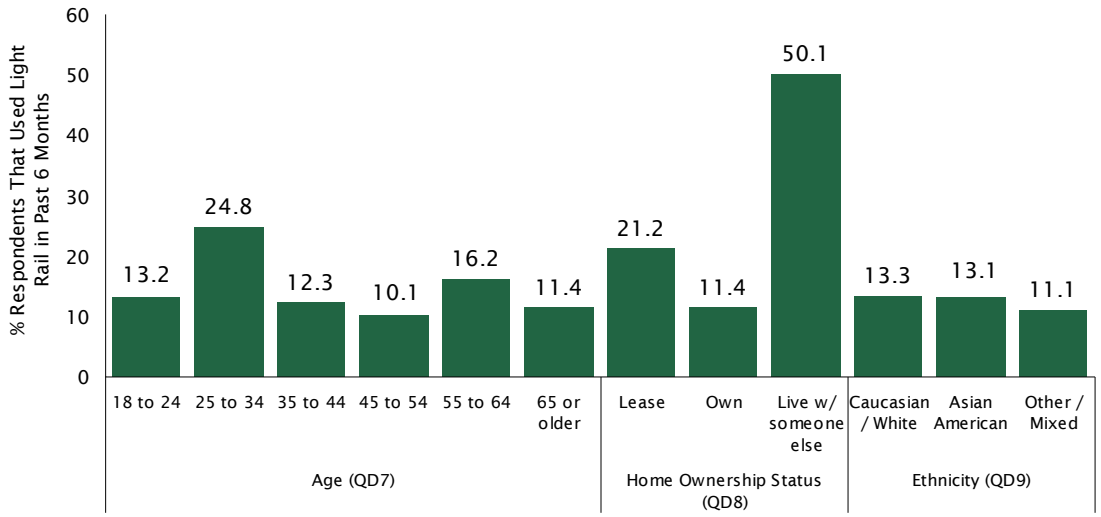
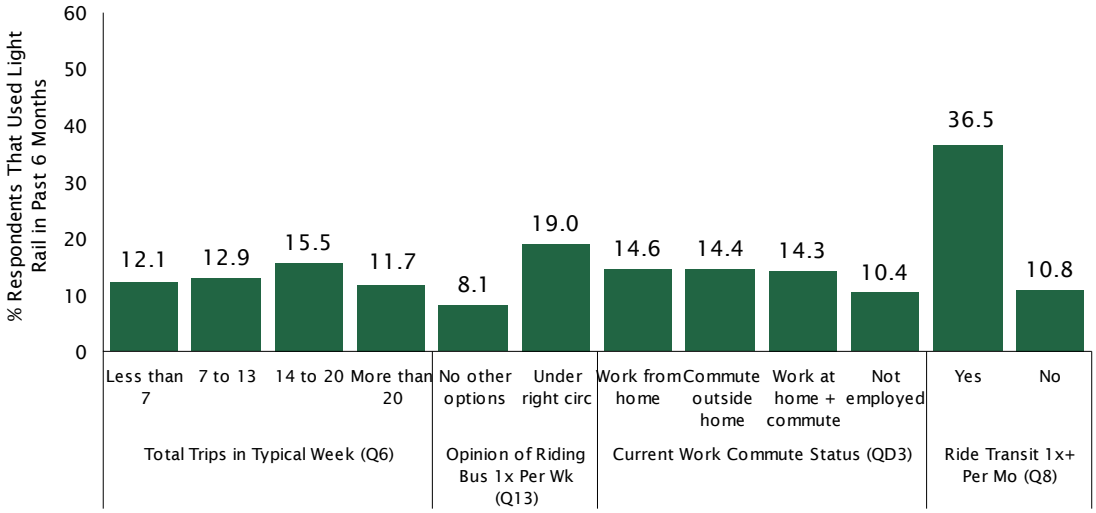


**FIGURE 55 USE LIGHT RAIL IN PAST 6 MONTHS BY TOTAL TRIPS IN TYPICAL WEEK, OPINION OF RIDING BUS 1X PER WEEK, CURRENT WORK COMMUTE STATUS & RIDE TRANSIT 1X+ PER MONTH**




**ANTICIPATED USE OF REDMOND LIGHT RAIL STATION** Sound Transit is in the process of expanding light rail service out to the City of Redmond, with a light rail station expected to open in that city in 2025. Once the Redmond station is open, approximately 45% of Sammamish residents surveyed anticipated using light rail at least once per month (Figure 56). Expected use of light rail once the Redmond station is open ranged from a low of 30% to a high of 85% across subgroups, being highest among those who currently rely on public transit or active transportation as their primary mode, individuals who live rent-free in someone else's home, and those who currently ride transit at least once per month (see figures 57-60).

**Question 18** *Sound Transit is in the process of expanding light rail service out to the City of Redmond. It is expected that the Redmond light rail station will open in 2025. When that happens, do you think you'll use light rail at least once per month?*

**FIGURE 56 RIDE REDMOND LIGHT RAIL**

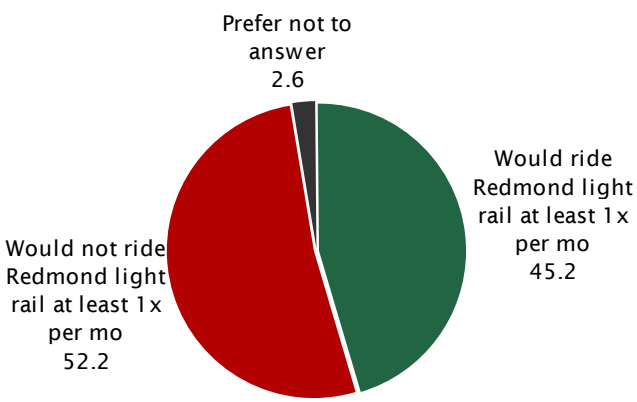


**FIGURE 57 RIDE REDMOND LIGHT RAIL BY YEARS IN SAMMAMISH & EMPLOYMENT STATUS**


**FIGURE 58 RIDE REDMOND LIGHT RAIL BY PRIMARY MODE, HSLD INCOME & GENDER**

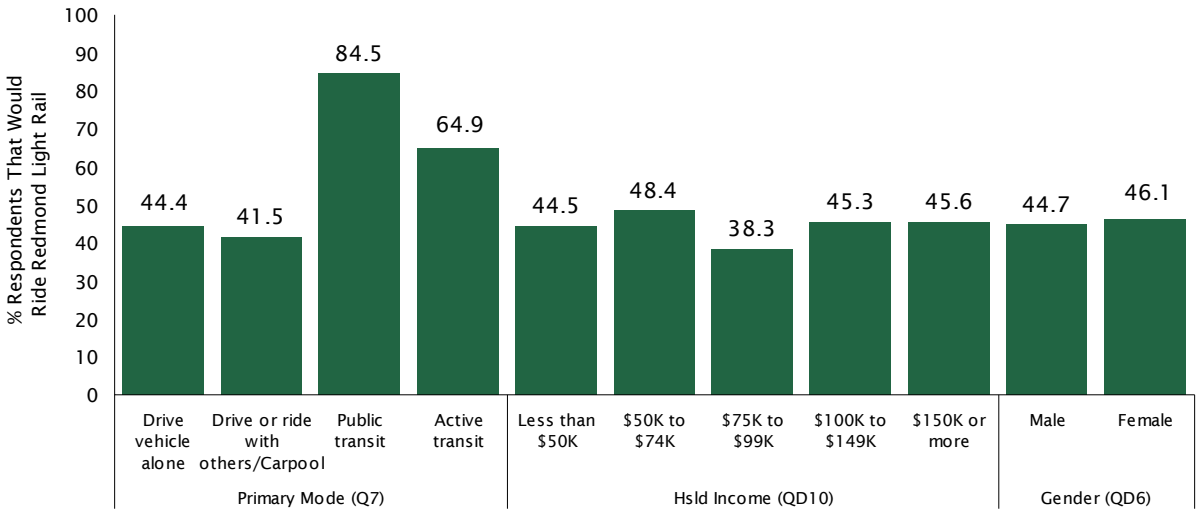


**FIGURE 59 RIDE REDMOND LIGHT RAIL BY AGE, HOME OWNERSHIP STATUS & ETHNICITY**

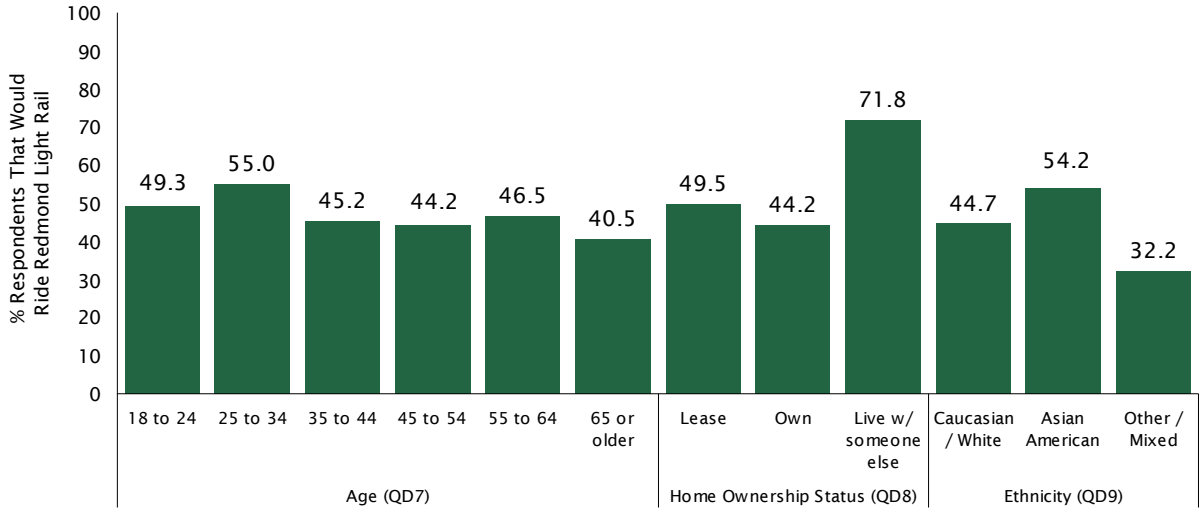
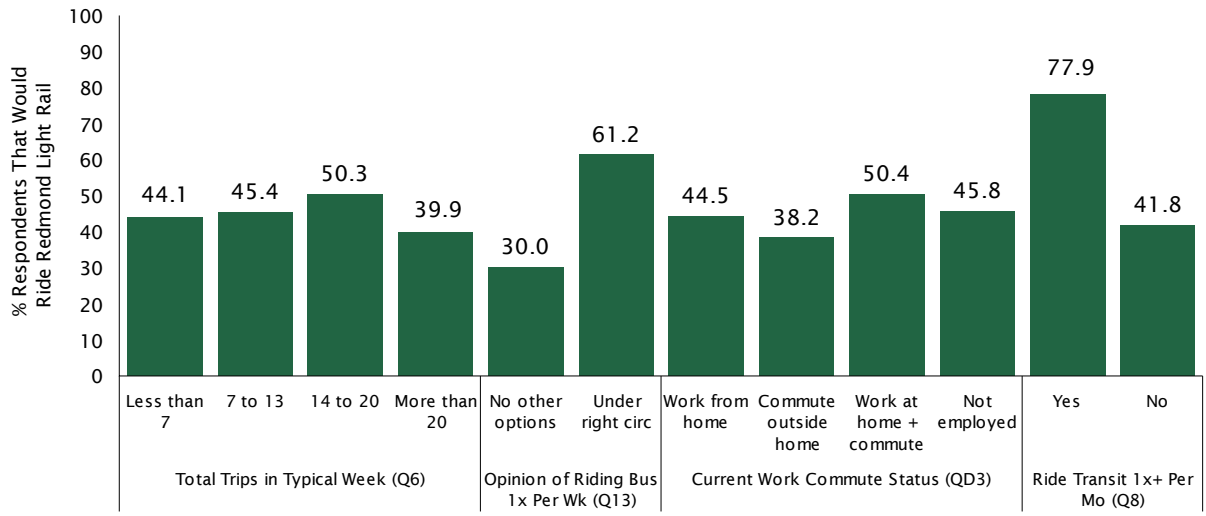



**FIGURE 60 RIDE REDMOND LIGHT RAIL BY TOTAL TRIPS IN TYPICAL WEEK, OPINION OF RIDING BUS 1X PER WEEK, CURRENT WORK COMMUTE STATUS & RIDE TRANSIT 1X+ PER MONTH**




**BUS SERVICE TO LIGHT RAIL IN REDMOND** The final substantive question of the survey asked respondents who anticipated using light rail once the Redmond station is open if they would take the bus to connect to light rail in Redmond if there were frequent bus service from Sammamish. Figure 61 on the next page presents the results of Question 18 in the context of all respondents. Overall, 35% of those surveyed anticipated that they would take the bus to connect to light rail in Redmond, whereas 9% expected to use light rail but not take the bus to Redmond, and 4% preferred to not answer the question. The remaining 52% did not anticipate using light rail once the Redmond station is open and thus weren't asked Question19. Students, those relying on public transit or active transportation as their primary mode, individuals living rent-free in someone else's home, Asian Americans, and those who currently ride transit at least once per month were the most likely to anticipate taking a bus from Sammamish to connect to light rail in Redmond (see figures 62-65).

**Question 19** *If there were frequent bus service from Sammamish to Redmond, do you think you would take the bus to connect to light rail in Redmond?*

**FIGURE 61 WOULD RIDE REDMOND LIGHT RAIL**

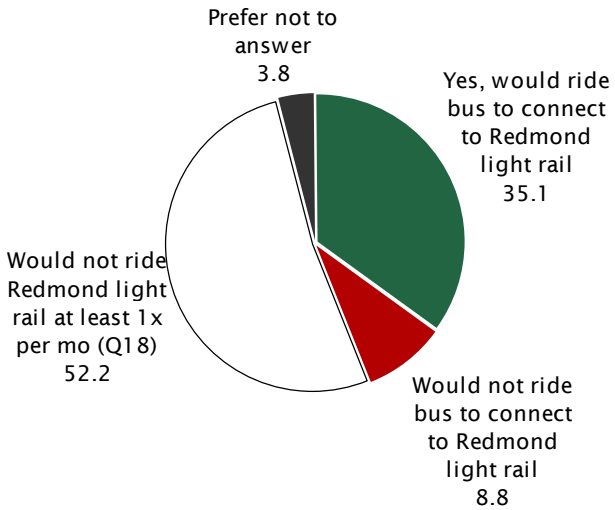



**FIGURE 62 WOULD RIDE REDMOND LIGHT RAIL BY YEARS IN SAMMAMISH & EMPLOYMENT STATUS**

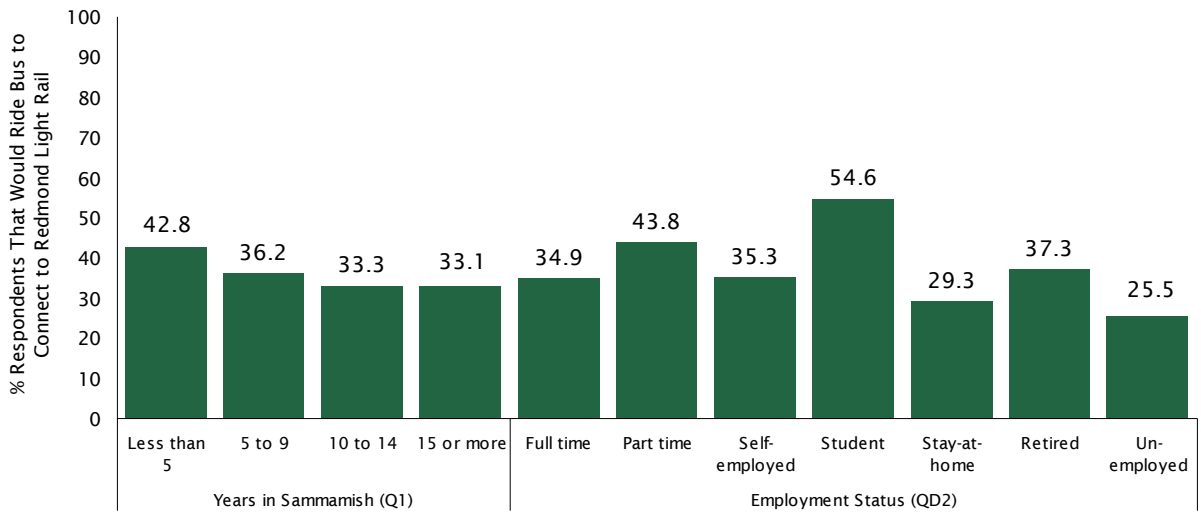


**FIGURE 63 WOULD RIDE REDMOND LIGHT RAIL BY PRIMARY MODE, HSLD INCOME & GENDER**

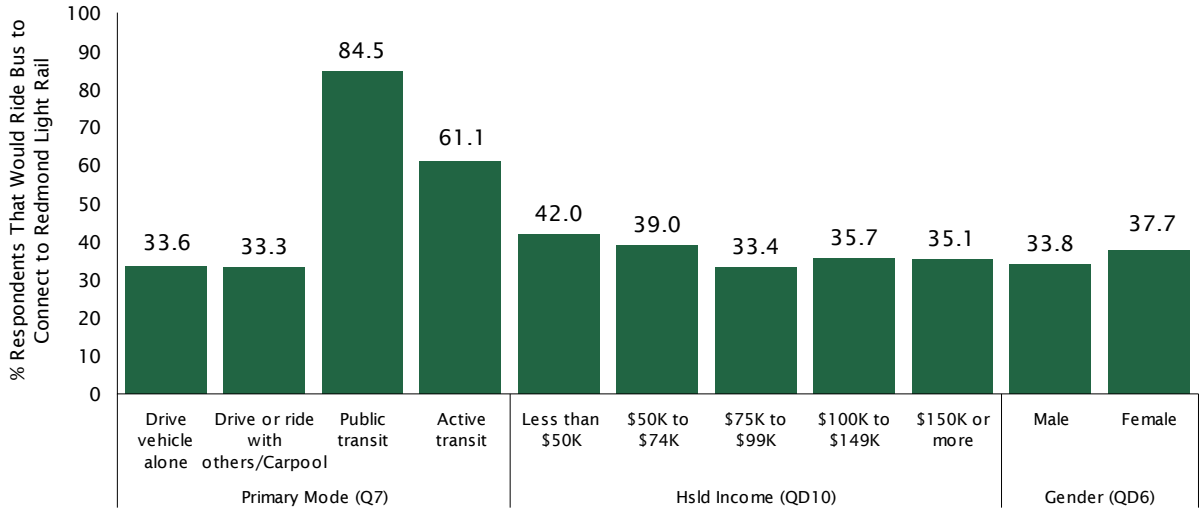



**FIGURE 64 WOULD RIDE REDMOND LIGHT RAIL BY AGE, HOME OWNERSHIP STATUS & ETHNICITY**

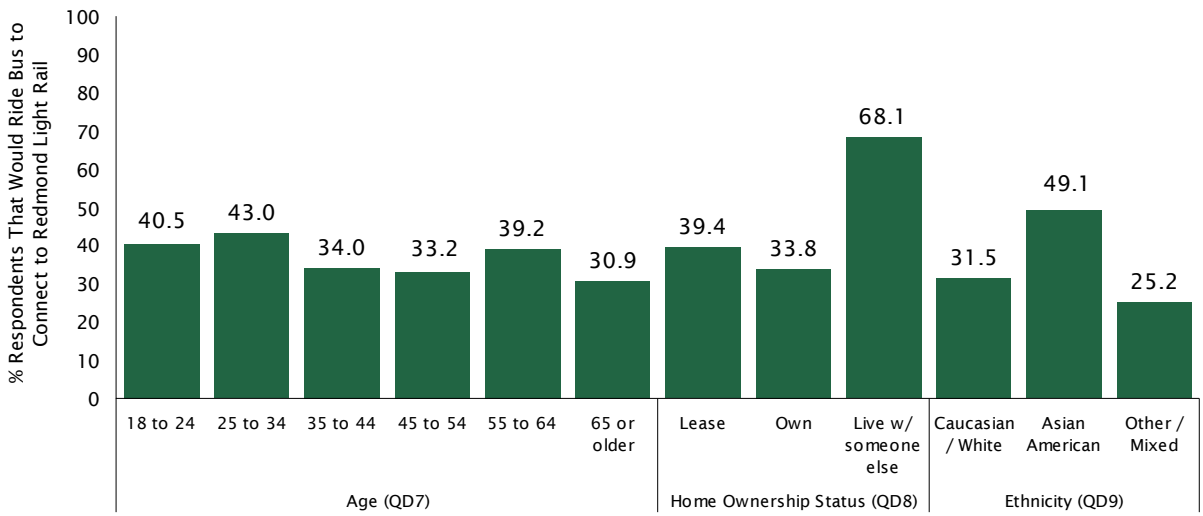
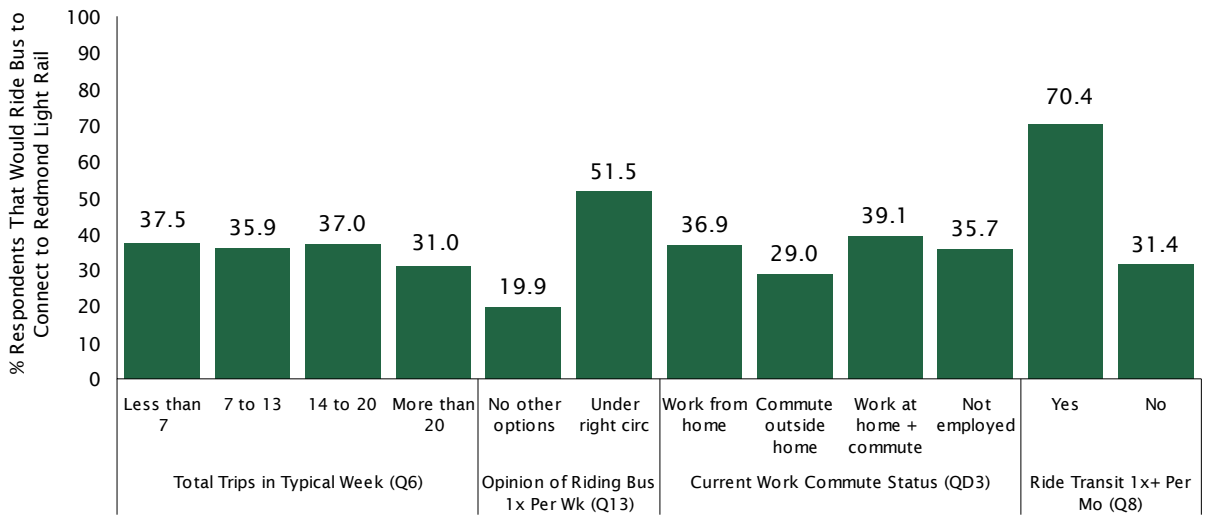


**FIGURE 65 WOULD RIDE REDMOND LIGHT RAIL BY TOTAL TRIPS IN TYPICAL WEEK, OPINION OF RIDING BUS 1X PER WEEK, CURRENT WORK COMMUTE STATUS & RIDE TRANSIT 1X+ PER MONTH**



# Background & Demographics

**Table 7 Demographics of Sample**

| *Total Respondents* | *935* |
|---|---|
| Years in Sammamish (Q1) | |
| Less than 5 | 17.3 |
| 5 to 9 | 16.8 |
| 10 to 14 | 15.5 |
| 15 or more | 49.8 |
| Prefer not to answer | 0.5 |
| Access to Personal Vehicle (QD1) | |
| Always | 96.8 |
| Not always | 3.0 |
| Prefer not to answer | 0.2 |
| Employment Status (QD2) | |
| Full time | 58.5 |
| Part time | 6.5 |
| Self-employed | 8.0 |
| Student | 2.3 |
| Stay-at-home | 7.5 |
| Retired | 13.3 |
| Unemployed | 1.6 |
| Prefer not to answer | 2.2 |
| Current Work Commute Status (QD3) | |
| Work from home | 19.7 |
| Commute outside home | 20.4 |
| Work at home + commute | 32.6 |
| Not employed | 24.8 |
| Prefer not to answer | 2.5 |
| Gender (QD6) | |
| Male | 46.6 |
| Female | 47.1 |
| Non-binary | 0.3 |
| Other | 0.6 |
| Prefer not to answer | 5.4 |
| Age (QD7) | |
| 18 to 24 | 8.0 |
| 25 to 34 | 7.5 |
| 35 to 44 | 26.1 |
| 45 to 54 | 28.2 |
| 55 to 64 | 17.8 |
| 65 or older | 7.4 |
| Prefer not to answer | 4.9 |
| Home Ownership Status (QD8) | |
| Lease | 10.8 |
| Own | 83.8 |
| Live w/ someone else | 2.6 |
| Prefer not to answer | 2.9 |
| Ethnicity (QD9) | |
| Caucasian / White | 50.3 |
| Asian American | 30.0 |
| Other / Mixed | 9.9 |
| Prefer not to answer | 9.8 |
| Hsld Income (QD10) | |
| Less than $50K | 6.4 |
| $50K to $74K | 7.1 |
| $75K to $99K | 4.6 |
| $100K to $149K | 9.2 |
| $150K or more | 52.9 |
| Prefer not to answer | 19.8 |

Table 7 presents the key demographic information collected during the survey. Although the primary motivation for collecting the background and demographic information was to provide a better insight into how the results of the substantive questions of the survey vary by demographic characteristics, it was also a means to ensure that the resulting sample matched the profile of Sammamish's population on key characteristics according to the latest Census estimates.

# METHODOLOGY

The following sections outline the methodology used in the study, as well as the motivation for using certain techniques.

## QUESTIONNAIRE DEVELOPMENT

Dr. McLarney of True North Research worked closely with the City of Sammamish and DKS Associates to develop a questionnaire that covered the topics of interest and avoided many possible sources of systematic measurement error, including position-order effects, wording effects, response-category effects, scaling effects, and priming. Several questions included multiple individual items. Because asking items in a set order can lead to a systematic position bias in responses, the items were asked in a random order for each respondent.

Some questions asked in this study were presented only to a subset of respondents. For example, only respondents who indicated they intended to use light rail once the Redmond station is opened in 2025 (Question 18) were subsequently asked about their intended use of the bus to connect from Sammamish to the light rail station in Redmond (Question 19). The questionnaire included with this report (see *Questionnaire & Toplines* on page 45) identifies the skip patterns used during the interview to ensure that each respondent received the appropriate questions.

## PROGRAMMING, PRE-TEST & LANGUAGE TRANSLATION

Prior to fielding the survey, the questionnaire was CATI (Computer Assisted Telephone Interviewing) programmed to assist interviewers when conducting the telephone interviews. The CATI program automatically navigates the skip patterns, randomizes the appropriate question items, and alerts interviewers to certain types of keypunching mistakes should they happen during the interview. The survey was also programmed into a passcode-protected online survey application to allow residents who preferred to complete the survey online the opportunity to do so. The integrity of the questionnaire was pre-tested internally by True North and by dialing into random homes in the City prior to formally beginning the survey. The final questionnaire was also professionally translated into Spanish to allow for data collection in English or Spanish according to the preference of the respondent.

## SAMPLE, RECRUITING & DATA COLLECTION

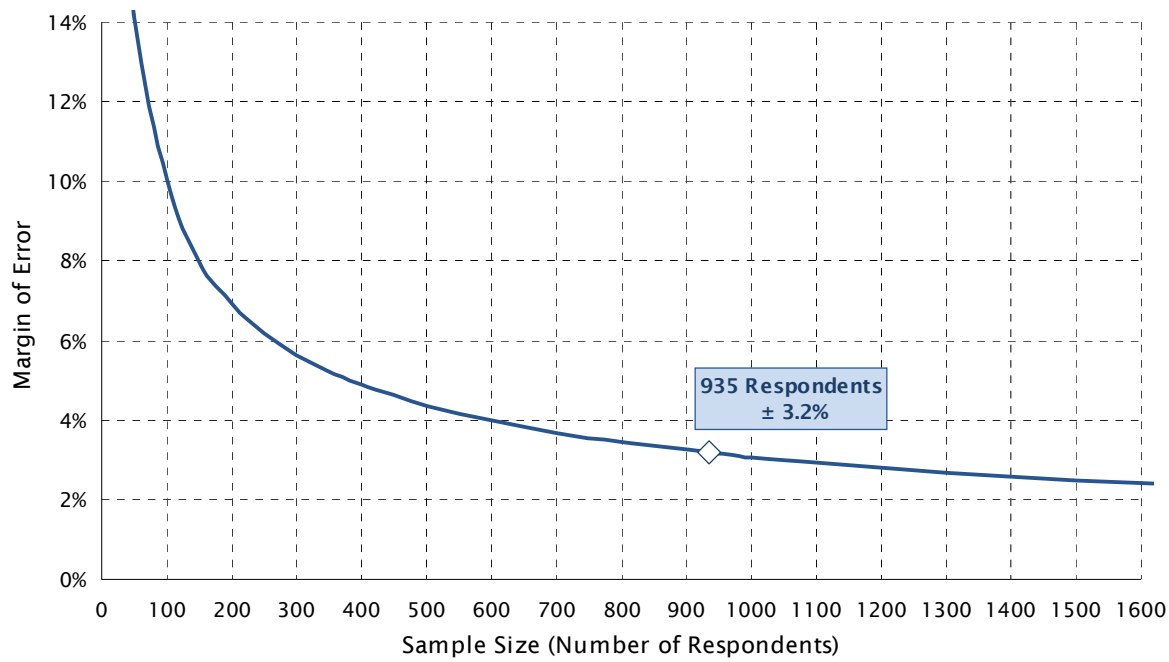
After compiling a database of adult residents in Sammamish using public and private sources, respondents were selected from the database using stratified random sampling. Contact information was appended to each record including email address (when available) and telephone number. Individuals were subsequently recruited to participate in the survey through multiple recruiting methods. Using a combination of email and text invitations, sampled residents were initially invited to participate in the survey online at a secure, passcode-protected website designed and hosted by True North. Each individual was assigned a unique passcode to ensure that only Sammamish residents who received an invitation could access the online survey site, and that the survey could be completed only one time per passcode. An email reminder notice was also sent to encourage participation among those who had yet to take the survey. Following a period of online data collection, True North placed telephone calls to land lines and cell phone numbers of sampled residents that had yet to participate in the online survey or for whom only telephone contact information was available.

Telephone interviews averaged 16 minutes in length and were conducted during weekday evenings (5:30PM to 9PM) and on weekends (10AM to 5PM). It is standard practice not to call during the day on weekdays because most working adults are unavailable and thus calling during those hours would bias the sample. A total of 935 completed surveys were gathered online and by telephone between June 22 and June 27, 2023.

**MARGIN OF ERROR DUE TO SAMPLING** The results of the survey can be used to estimate the opinions of all adult residents in the City. Because not every adult resident of the City participated in the survey, however, the results have what is known as a statistical margin of error due to sampling. The margin of error refers to the difference between what was found in the survey of 935 adult residents for a particular question and what would have been found if all of the estimated 46,941 adult residents[2] of Sammamish had been interviewed.

Figure 66 provides a plot of the *maximum* margin of error in this study. The maximum margin of error for a dichotomous percentage result occurs when the answers are evenly split such that 50% provide one response and 50% provide the alternative response. For this survey, the maximum margin of error is ± 3.2% for questions answered by all 935 respondents.

**FIGURE 66 MAXIMUM MARGIN OF ERROR**




Within this report, figures and tables show how responses to certain questions varied by demographic characteristics such as length of residence, age of the respondent, primary mode, and other dimensions. Figure 66 is thus useful for understanding how the maximum margin of error for a percentage estimate will grow as the number of individuals asked a question (or in a particular subgroup) shrinks. Because the margin of error grows exponentially as the sample size decreases, the reader should use caution when generalizing and interpreting the results for small subgroups—such as students, those who don't always have access to a personal vehicle,

2. Source: U.S. Census Bureau, 2021 American Community Survey 1-Year Estimates.

and households earning less than $50,000 annually —as the margin of error for small subgroups can be ± 15% or more.

**DATA PROCESSING & WEIGHTING** Data processing consisted of checking the data for errors or inconsistencies, coding and recoding responses, categorizing verbatim responses, and preparing frequency analyses and cross-tabulations. The final data were weighted to balance the sample by key demographics according to Census estimates.

**ROUNDING** Numbers that end in 0.5 or higher are rounded up to the nearest whole number, whereas numbers that end in 0.4 or lower are rounded down to the nearest whole number. These same rounding rules are also applied, when needed, to arrive at numbers that include a decimal place in constructing figures and tables. Occasionally, these rounding rules lead to small discrepancies in the first decimal place when comparing tables and charts for a given question.

TRUE NORTH RESEARCH

*Sammamish Transit Survey*
*Final Toplines (n=935)*
*June 2023*

| *Section 1: Introduction to Study* |
|---|
| Hi, may I please speak to: _____? Hi, my name is _____ and I'm calling from TNR on behalf of the City of Sammamish (Suh-MA'AM-ish)*. The City is conducting a survey of residents on important local issues and would like to get your opinions. Your answers will be confidential.<br><br>**Sounds like yes **Ma'am**.* |
| *If needed:* I'm not selling anything and I won't ask for a donation.<br>*If needed:* Your answers will be completely confidential.<br>*If needed:* The survey should take about 12 minutes to complete.<br>*If needed:* If now is not a convenient time, can you let me know a better time so I can call back? |

| *Section 2: Importance of Issues* | | | |
|---|---|---|---|
| Q1 | To begin, how long have you lived in Sammamish (Suh-MA'AM-ish). | | |
| | 1 | Less than 1 year | 2% |
| | 2 | 1 to 4 years | 16% |
| | 3 | 5 to 9 years | 17% |
| | 4 | 10 to 14 years | 16% |
| | 5 | 15 years or longer | 50% |
| | 99 | Prefer not to answer | 1% |

| Q2 | As you look to the future of your community, how important is it to: _____? Would you say it is extremely important, very important, somewhat important, or not at all important? | | | | | |
|---|---|---|---|---|---|---|
| | *Randomize. Split sample A1/A2 using odd/even PINS* | Extremely Important | Very Important | Somewhat Important | Not at all Important | Not sure |
| A1 | Keep traffic congestion from getting worse | 58% | 28% | 11% | 2% | 0% |
| A2 | Reduce traffic congestion | 39% | 31% | 24% | 5% | 1% |
| B | Protect the environment | 43% | 31% | 21% | 5% | 0% |
| C | Make it easier to get places without having to drive a car | 21% | 18% | 30% | 29% | 1% |
| D | Improve the quality of education in our public schools | 40% | 29% | 21% | 7% | 2% |
| E | Increase the availability of affordable housing | 19% | 16% | 29% | 34% | 2% |
| F | Repair and maintain local streets | 35% | 43% | 19% | 3% | 0% |

| Section 3: Travel Patterns & Modes | | | |
|---|---|---|---|
| Next are a few questions about how you travel in the area. This information will help the City plan and make improvements to the local transportation system. | | | |
| Q3 | In a typical **day**, how many different **places** do you travel to outside of your home? *If says it varies, ask them to estimate an average number of places.* | | |
| | None | | 1% |
| | 1 | | 12% |
| | 2 | | 33% |
| | 3 | | 25% |
| | 4 | | 15% |
| | 5 or more | | 12% |
| | Prefer not to answer | | 1% |
| Q4 | Of the **<insert # from Q3>** places you visit in a typical day, how many of these places are **within** the City of Sammamish? *If says it varies, ask them to estimate an average number of places.* | | |
| | None | | 15% |
| | 1 | | 41% |
| | 2 | | 28% |
| | 3 | | 10% |
| | 4 | | 2% |
| | 5 or more | | 2% |
| | Prefer not to answer | | 1% |
| Q5 | In a typical **day**, how much total time do you spend traveling between destinations? | | |
| | 1 | 10 minutes or less | 11% |
| | 2 | 11 to 25 minutes | 39% |
| | 3 | 26 to 45 minutes | 29% |
| | 4 | 46 to 90 minutes | 17% |
| | 5 | More than 90 minutes | 5% |
| | 99 | Prefer not to answer | 0% |

| Q6 | In a typical **week**, how many trips do you make for: _____? | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | *Read in Order* | *Average Trips* | None | 1 to 2 | 3 to 4 | 5 to 6 | 7 to 9 | 10 or more |
| A | Work | *3.05* | 33% | 16% | 22% | 19% | 3% | 7% |
| B | School | *2.56* | 57% | 8% | 6% | 17% | 1% | 12% |
| C | Recreation or social visits | *3.79* | 4% | 35% | 29% | 19% | 6% | 6% |
| D | Medical appointments | *0.59* | 57% | 40% | 3% | 0% | 0% | 0% |
| E | Kid's activities | *2.56* | 46% | 19% | 11% | 13% | 4% | 7% |
| F | Shopping or running errands | *3.99* | 1% | 31% | 37% | 18% | 6% | 6% |

| Q7 | What method of transportation do you use most of the time when traveling in your area?<br><br>*If says **driving**, ask:* Would that be driving alone, or do you usually drive with others in the vehicle?<br><br>*If says **public transit**, ask:* What form of public transit do you use most often? | |
|---|---|---|
| 1 | Drive vehicle alone | 82% |
| 2 | Drive or ride with others/Carpool | 14% |
| 3 | Vanpool (ride together with others in a vehicle owned by a private company or a school) | 0% |
| 4 | Motorcycle/Moped | 0% |
| 5 | On-demand ridehail service like Uber or Lyft | 0% |
| 6 | Taxi | 0% |
| | Public Transit | |
| 7 | **Bus**/King County Metro bus/Sound Transit bus | 1% |
| 8 | **Metroflex**/On-demand **shuttle** by King County Metro | 1% |
| 9 | Community **Van**/King County Metro | 0% |
| 10 | Other public transit | <1% |
| 11 | Bicycle/E-bike | <1% |
| 12 | Scooter/E-scooter | 0% |
| 13 | Walk | 1% |
| 14 | Other | 0% |
| 99 | Prefer not to answer | 0% |

| Q8 | During the past **month**, how many days did you: _____? | | | | | | |
|---|---|---|---|---|---|---|---|
| | *Read in Order* | *Average Days* | None | 1 to 3 | 4 to 8 | 9 to 16 | More than 16 |
| A | Ride a bus | *0.38* | 91% | 6% | 1% | 1% | 1% |
| B | Ride the Metroflex shuttle provided by King County Metro | *0.12* | 98% | 1% | 0% | 0% | 0% |
| C | Ride the Community Van provided by King County Metro | *0.01* | 100% | 0% | 0% | 0% | 0% |
| D | Ride a bicycle for a trip you otherwise would have taken by vehicle | *0.45* | 87% | 9% | 3% | 1% | 0% |
| E | Use an on-demand ridehail service like Uber or Lyft | *0.57* | 73% | 23% | 4% | 0% | 0% |
| F | Drive alone in a vehicle | *18.89* | 1% | 5% | 16% | 17% | 60% |
| G | Carpool with people you don't live with | *0.98* | 77% | 14% | 6% | 2% | 1% |

*Ask Q9 if (Q8A=0, Q8B=0, and Q8C=0). Otherwise skip to Q10.*

| Q9 | What would you say is the **main** reason why you haven't ridden the bus or King County Metroflex shuttle or Community Van during the past month? Verbatim responses recorded and later grouped into categories shown below. | |
|---|---|---|
| | Inconvenient | 25% |
| | Time, takes too long | 18% |
| | Lack of schedules, routes | 17% |
| | Have own transportation, prefer to drive | 16% |
| | Accessibility, no nearby transit stops | 16% |
| | Don't need it, no reason to use it | 12% |
| | Not sure / No reason in particular | 7% |
| | Safety concerns | 6% |
| | Unfamiliar with public transit, routes | 5% |
| | Need flexibility | 3% |
| | Negative mentions in general | 2% |
| | Requires multiple stops, transfers | 2% |

| Section 4: Mode Assessments | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Q10 | Overall, how well does the **transportation system** in Sammamish (Suh-MA'AM-ish) meet your travel needs? Would you say it does an excellent, good, fair, poor, or very poor job in meeting your travel needs? | | | | | | | |
| | 1 | Excellent | 6% | | | | | |
| | 2 | Good | 16% | | | | | |
| | 3 | Fair | 24% | | | | | |
| | 4 | Poor | 18% | | | | | |
| | 5 | Very poor | 22% | | | | | |
| | 99 | Prefer not to answer | 14% | | | | | |
| Q11 | In general, how easy is it to get to the places you need or want to go: _____? Would you say it is very easy, somewhat easy, somewhat difficult, or very difficult? | | | | | | | |
| | *Randomize* | | Very Easy | Somewhat Easy | Somewhat Difficult | Very Difficult | Not Sure | Prefer not to answer |
| A | Using a bus | | 2% | 5% | 17% | 41% | 28% | 7% |
| B | Using the on-demand Metroflex shuttle | | 1% | 2% | 8% | 23% | 57% | 9% |
| C | Using the Community Van by King County Metro | | 1% | 2% | 9% | 26% | 54% | 8% |
| D | Riding a bike | | 5% | 20% | 29% | 27% | 13% | 5% |
| E | By walking | | 7% | 19% | 26% | 40% | 5% | 3% |
| F | Driving or riding in a car | | 68% | 26% | 5% | 1% | 1% | 1% |
| Q12 | When you travel in Sammamish (Suh-MA'AM-ish) and in neighboring areas, would you say traffic congestion is generally a big problem, a medium problem, a small problem, or not a problem? | | | | | | | |
| | 1 | Big problem | 22% | | | | | |
| | 2 | Medium problem | 46% | | | | | |
| | 3 | Small problem | 24% | | | | | |
| | 4 | Not a problem | 8% | | | | | |
| | 99 | Prefer not to answer | 0% | | | | | |

| Section 5: Bus Improvements | | | |
|---|---|---|---|
| Q13 | Which of the following statements best matches your attitude about riding the **bus** at least once per week? _____ OR _____? | | |
| *Randomize options 1 & 2* | | | |
| | 1 | I would only do it if I had no other options | 48% |
| | 2 | I would do it under the right circumstances | 49% |
| | 98 | Prefer not to answer | 3% |

| | | |
|---|---|---|
| Q14 | What would make it more attractive for you to ride the **bus** at least once per week? Please be as specific as you can in your response. Verbatim responses recorded and later grouped into categories shown below. | |
| | Improve schedules, routes, connections | 20% |
| | Not sure / Cannot think of anything specific | 20% |
| | Add transit stops, stations | 16% |
| | Improve convenience, ease of use | 13% |
| | Faster, more direct routes | 9% |
| | No need, would only use if similar to auto | 9% |
| | Provide more buses | 6% |
| | Improve safety, security | 5% |
| | Nothing would make it more attractive | 4% |
| | Improve punctuality | 4% |
| | Improve reliability of service | 3% |
| | Provide more direct destinations, fewer stops | 3% |
| | Reduce cost, offer free fares | 2% |
| | Improve park and ride system | 2% |

Q15: As I read the following items, I'd like to know whether it would make you more likely to use the bus at least once per week.

Here is the (first/next) one: _____. Realistically, would this make you more likely to use the bus at least once per week, or would it have no impact? *If says 'more likely', ask:* Would that be much more likely, or somewhat more likely?

| | *Randomize* | Much More likely | Some what More Likely | No Impact | Not Sure | Prefer not to Answer |
|---|---|---|---|---|---|---|
| A | Buses ran more frequently | 31% | 27% | 30% | 9% | 4% |
| B | There were more bus routes available so you can get to more places | 36% | 27% | 26% | 8% | 4% |
| C | It's easy to catch an Uber, Lyft or shuttle from the station to your final destination | 14% | 18% | 53% | 11% | 4% |
| D | You save $50 per month in gas, parking, and tolls | 16% | 26% | 47% | 7% | 4% |
| E | There is affordable parking available at the bus station near your home | 20% | 26% | 44% | 7% | 4% |
| F | The buses, stations, and stops are **cleaner** | 15% | 27% | 47% | 8% | 4% |
| G | The buses, stations, and stops are **safer** | 24% | 24% | 41% | 7% | 4% |
| H | You have *real-time*, accurate information about when the bus will pick you up and when you will arrive at your final destination | 31% | 30% | 31% | 6% | 3% |
| I | There are continuous sidewalks, bike lanes, and crosswalks from the bus stop to your final destination so you can walk or bike safely after departing the bus | 25% | 26% | 38% | 7% | 4% |

| | | | | |
|---|---|---|---|---|
| Q16 | What if **all** of the items we just discussed were true? Realistically, would you ride the bus at least once per week? *Get answer, then ask:* Would that be definitely (yes/no) or probably (yes/no)? | | | |
| | 1 | Definitely yes | 16% | |
| | 2 | Probably yes | 26% | |
| | 3 | Probably no | 25% | |
| | 4 | Definitely no | 21% | |
| | 98 | Not sure | 11% | |
| | 99 | Prefer not to answer | 0% | |
| Q17 | In the past **six months**, have you used light rail in the Seattle metro area? | | | |
| | 1 | Yes | 13% | |
| | 2 | No | 87% | |
| | 99 | Prefer not to answer | 0% | |
| Q18 | Sound Transit is in the process of expanding light rail service out to the City of Redmond. It is expected that the Redmond light rail station will open in 2025. When that happens, do you think you'll use light rail at least once per month? | | | |
| | 1 | Yes | 45% | *Ask Q19* |
| | 2 | No | 52% | *Skip to D1* |
| | 99 | Prefer not to answer | 3% | *Skip to D1* |
| Q19 | If there were frequent bus service from Sammamish (Suh-MA'AM-ish) to Redmond, do you think you would take the **bus** to connect to light rail in Redmond? | | | |
| | 1 | Yes | 78% | |
| | 2 | No | 20% | |
| | 99 | Prefer not to answer | 3% | |

| ***Section 6: Background & Demographics*** | | | | |
|---|---|---|---|---|
| I have just a few more background questions for statistical purposes. | | | | |
| D1 | How would you describe your access to a personal vehicle? Would you say you always have access, sometimes have access, rarely have access, or never have access to a personal vehicle? | | | |
| | 1 | Always | 97% | |
| | 2 | Sometimes | 3% | |
| | 3 | Rarely | 0% | |
| | 4 | Never | <1% | |
| | 99 | Prefer not to answer | 0% | |

| | | | | |
|---|---|---|---|---|
| D2 | Which best describes your current employment status? Are you employed full-time, employed part-time, self-employed, a student, a stay at home parent or caregiver, retired, or unemployed? | | | |
| | 1 | Employed full-time | 58% | *Ask D3* |
| | 2 | Employed part-time | 6% | *Ask D3* |
| | 3 | Self-employed | 8% | *Ask D3* |
| | 4 | Student | 2% | *Skip to D6* |
| | 5 | Stay at home parent or caregiver | 8% | *Skip to D6* |
| | 6 | Retired | 13% | *Skip to D6* |
| | 7 | Unemployed | 2% | *Skip to D6* |
| | 99 | Prefer not to answer | 2% | *Skip to D6* |
| D3 | Currently, do you work from home, commute to a work location outside of your home, or a mixture of both? | | | |
| | 1 | Work from home | 27% | *Skip to D6* |
| | 2 | Work at a location outside your home | 28% | *Ask D4* |
| | 3 | Mixture of both | 45% | *Ask D4* |
| | 99 | Prefer not to answer | 0% | *Skip to D6* |
| D4 | In a typical week, how many days do you commute to a work location outside your home? | | | |
| | 0 | Zero/None | 2% | |
| | 1 | One | 8% | |
| | 2 | Two | 15% | |
| | 3 | Three | 26% | |
| | 4 | Four | 15% | |
| | 5 | Five or more | 33% | |
| | 99 | Prefer not to answer | 1% | |
| D5 | When you commute to a work location outside your home, approximately how many miles do you travel one-way? | | | |
| | Less than 5 | | 7% | |
| | 5 to 9 | | 7% | |
| | 10 to 19 | | 48% | |
| | 20 to 29 | | 26% | |
| | 30 to 39 | | 6% | |
| | 40 to 49 | | 2% | |
| | 50 or more | | 3% | |
| | Prefer not to answer | | 1% | |

| | | | |
|---|---|---|---|
| D6 | What is your gender? | | |
| | 1 | Male | 47% |
| | 2 | Female | 47% |
| | 3 | Non-binary | <1% |
| | 4 | Other | 1% |
| | 99 | Prefer not to answer | 5% |
| D7 | In what year were you born? Year recoded into age groups shown below. | | |
| | 18 to 24 | | 8% |
| | 25 to 34 | | 8% |
| | 35 to 44 | | 26% |
| | 45 to 54 | | 28% |
| | 55 to 64 | | 18% |
| | 65 or older | | 7% |
| | Prefer not to answer | | 5% |
| D8 | Do you lease or own your residence? | | |
| | 1 | Lease | 11% |
| | 2 | Own | 84% |
| | 3 | Live rent free in home owned by someone else | 3% |
| | 99 | Prefer not to answer | 3% |
| D9 | What ethnic group do you consider yourself a part of or feel closest to*? Read list if respondent hesitates* | | |
| | 1 | Caucasian/White | 50% |
| | 2 | Latino/Hispanic | 3% |
| | 3 | African-American/Black | 2% |
| | 4 | American Indian or Alaskan Native | 1% |
| | 5 | **Asian** -- Korean, Japanese, Chinese, Vietnamese, Filipino or other Asian | 30% |
| | 6 | Pacific Islander | <1% |
| | 7 | Middle Eastern | 1% |
| | 8 | Mixed Heritage | 3% |
| | 98 | Other | 1% |
| | 99 | Prefer not to answer | 10% |

| | | | |
|---|---|---|---|
| D10 | I have just one more question for you for statistical reasons. I am going to read some income categories. Please stop me when I reach the category that best describes your total household income. | | |
| | 1 | Less than $25,000 | 3% |
| | 2 | $25,000 to less than $50,000 | 3% |
| | 3 | $50,000 to less than $75,000 | 7% |
| | 4 | $75,000 to less than $100,000 | 5% |
| | 5 | $100,000 to less than $150,000 | 9% |
| | 6 | $150,000 or more | 53% |
| | 99 | Prefer not to answer | 20% |
| Those are all of the questions that I have for you! Thanks very much for participating. | | | |

# APPENDIX F

## LIST OF POTENTIAL NEW PEDESTRIAN CROSSINGS NEAR TRANSIT

Sammamish Transit Plan
Draft Prioritized Crossing Locations

| Crossing Number | Project Location | 2016 ADT | Posted Speed limit | Number of lanes | Stop Pair Average daily boardings Fall 2022 | Potential Type of Crossing | Notes |
|---|---|---|---|---|---|---|---|
| 1 | Sahalee Way NE and NE 36th St | 19,120 | 45 mph | 3 | 3.9 | PHB or full ped signal | no existing sidewalk; northbound left turn lane and acceleration lane; also move southbound stop to near side; see Stop Improvements worksheet |
| 2 | Sahalee Way NE and Sahalee Dr E | 19,120 | 45 mph | 3 | 0.2 | PHB or full ped signal | no existing sidewalk; northbound left turn lane and acceleration lane |
| 3 | Sahalee Way NE and NE 28th Pl | 19,120 | 45 mph | 3 | 2.9 | PHB or full ped signal | no existing sidewalk |
| 4 | 228th Ave SE and NE 22nd St | 16,960 | 45 mph | 3 | 2.2 | PHB or full ped signal; Add sidewalk to NE corner | Supported by resident; also move northbound stop to far side; see Stop Improvements worksheet |
| 5 | 228th Ave SE and NE 18th Pl | 16,960 | 45 mph | 3 | 2.3 | PHB or full ped signal; Add sidewalk along E Leg | potential to add median refuge; cross existing TWLT also move northbound stop to far side; see Stop Improvements worksheet |
| 6 | 228th Ave SE and NE 14th St | 18,720 | 45 mph | 3 | 5.2 | PHB or full ped signal; Add sidewalk to NE corner | would cross existing southbound left turn lane; also move northbound stop to far side; see Stop Improvements worksheet |
| 7 | 228th Ave SE and NE 8th St | 24,920 | 35 mph | 4 | 40.2 (southbound only 13.7) | PHB or full ped signal | closer to southbound stop; mid-block; existing median |
| 8 | 228th Ave SE and SE 4th St | 24,920 | 40 mph | | 10.1 | Existing Signal | no crossing on north leg |
| 9 | 228th Ave SE and SE 8th St | 26,650 | 40 mph | | 11.9 | Existing Signal | no crossing on north leg |
| 10 | 228th Ave SE and SE 10th St | 29,750 | 40 mph | | 11.5 | Existing Signal | no crossing on south leg |
| 11 | 228th Ave SE and SE 16th Pl | 29,750 | 40 mph | | 5 | Existing Signal | no crossing on south leg |
| 12 | 228th Ave SE and SE 20th St | 31,680 | 40 mph | | 5.1 | Existing Signal | no crossing on south leg |
| 13 | 228th ave SE and SE 29th St | 31,680 | 40 mph | 4 | northbound only 4.5 | PHB | existing median |
| 14 | Issaquah-Pine Lake Rd SE and SE 37th Pl | 16,870 | 35 mph | 3 | 11.7 | RRFB or PHB | curb ramp on SB side of IPLR |
| 15 | Issaquah-Pine Lake Rd SE and SE 40th Pl | 16,870 | 35 mph | 3 | 1.8 | RRFB or PHB | curb ramp on SB side of IPLR |

| Roadway Configuration | Posted Speed Limit and AADT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Vehicle AADT <9,000 | | | Vehicle AADT 9,000–15,000 | | | Vehicle AADT >15,000 | | |
| | ≤30 mph | 35 mph | ≥40 mph | ≤30 mph | 35 mph | ≥40 mph | ≤30 mph | 35 mph | ≥40 mph |
| **2 lanes** (1 lane in each direction) | ● 2 4 5 6 | ● 5 6 7 9 | ○ 5 6 ● 9 | ● 4 5 6 | ● 5 6 7 9 | ○ 5 6 ● 9 | ● 4 5 6 7 9 | ○ 5 6 7 9 | ○ 5 6 ● 9 |
| **3 lanes with raised median** (1 lane in each direction) | ● 2 3 4 5 | ● 5 7 9 | ○ 5 ● 9 | ○ 3 4 5 7 9 | ○ 5 ● 9 | ○ 5 ● 9 | ○ 4 5 7 9 | ○ 5 ● 9 | ○ 5 ● 9 |
| **3 lanes w/o raised median** (1 lane in each direction with a two-way left-turn lane) | ● 2 3 4 5 6 7 9 | ● 5 6 7 9 | ○ 5 6 ● 9 | ○ 3 4 5 6 7 9 | ○ 5 6 ● 9 | 5 6 ● 9 | ○ 4 5 6 7 9 | 5 6 ● 9 | ○ 5 6 ● 9 |
| **4+ lanes with raised median** (2 or more lanes in each direction) | ● 5 7 8 9 | ● 5 7 8 9 | ○ 5 8 ● 9 | ○ 5 7 8 9 | ○ 5 ● 8 9 | 5 ● 8 9 | ○ 5 ● 7 8 9 | 5 ● 8 9 | ○ 5 ● 8 9 |
| **4+ lanes w/o raised median** (2 or more lanes in each direction) | ● 5 6 7 8 9 | ○ 5 ◐ 7 8 9 | ○ 5 ◐ 8 ● 9 | 5 ◐ 7 8 9 | ○ 5 ◐ ● 8 9 | 5 ◐ 8 ● 9 | ○ 5 ◐ 7 8 9 | 5 ◐ 8 ● 9 | ○ 5 ◐ 8 ● 9 |

Given the set of conditions in a cell,

\# Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.

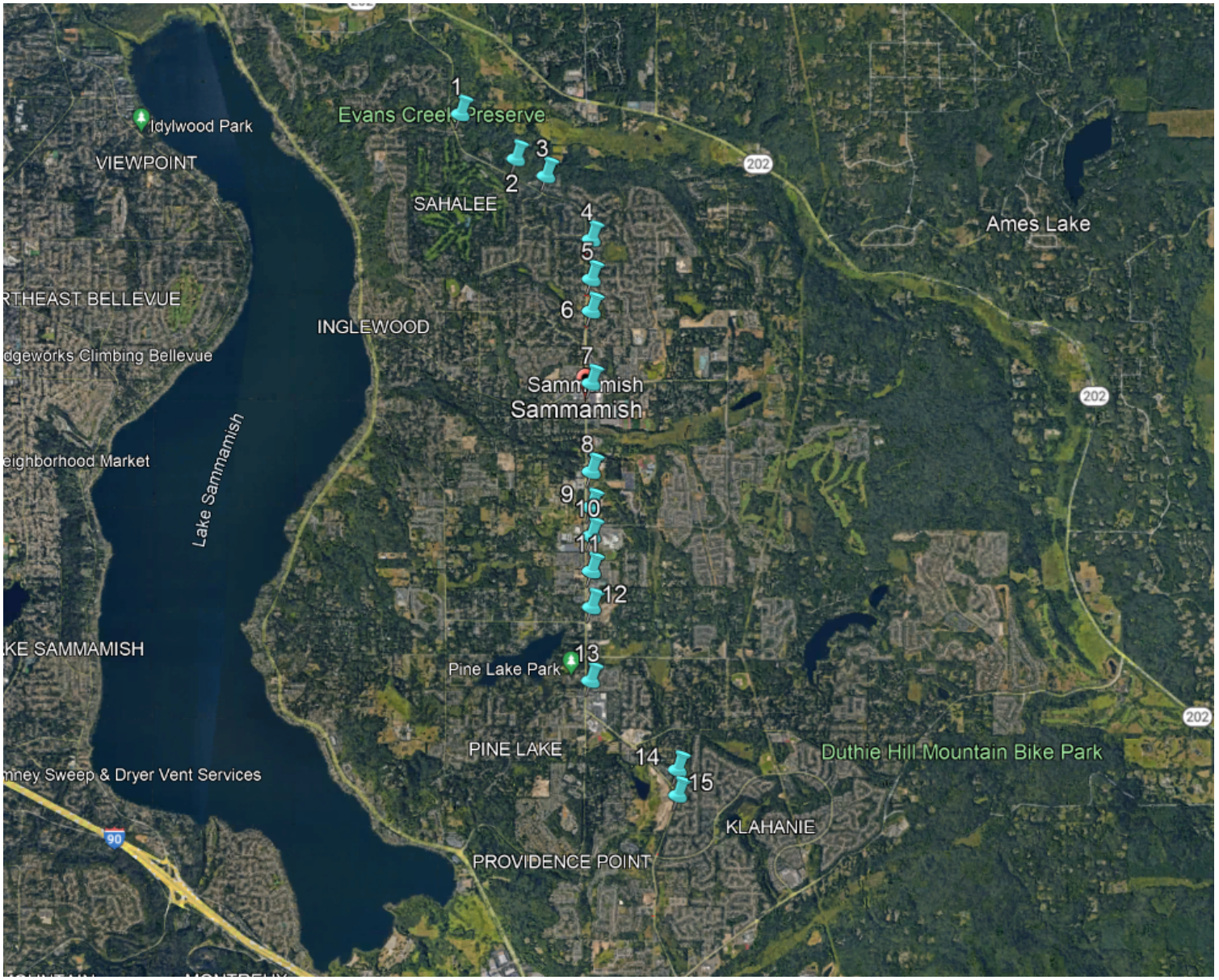
● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.

○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
2 Raised crosswalk
3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
4 In-Street Pedestrian Crossing sign
5 Curb extension
6 Pedestrian refuge island
7 Rectangular Rapid-Flashing Beacon (RRFB)**
8 Road Diet
9 Pedestrian Hybrid Beacon (PHB)**

source: https://safety.fhwa.dot.gov/ped_bike/step/resources/docs/fhwasa18018.pdf


1
Evans Creek Preserve
Idylwood Park
VIEWPOINT
2
3
SAHALEE
202
Ames Lake
4
5
6
INGLEWOOD
RTHEAST BELLEVUE
dgeworks Climbing Bellevue
7
Sammamish
Sammamish
202
8
eighborhood Market
Lake Sammamish
9
10
11
12
KE SAMMAMISH
13
Pine Lake Park
202
PINE LAKE
14
Duthie Hill Mountain Bike Park
15
mney Sweep & Dryer Vent Services
90
KLAHANIE
PROVIDENCE POINT

# APPENDIX G

## PRIORITIZED LIST OF BUS STOPS FOR AMENITY IMPROVEMENTS

| Stop ID | Direction | Stop Name | Avg Fall 2022 Ridership (per day) | Sidewalk Present | Existing Amenities (excluding sign post) | Proposed Improvements |
|---|---|---|---|---|---|---|
| 81728 | NB | 228th Ave NE & NE 4th St | 81 | Yes | | Add waiting area, trash can, bench, shelter footings, and real-time arrival display |
| 81665 | NB | 228th Ave NE & NE 8th St | 37 | Yes | | Add waiting area, trash can, bench, and shelter footings |
| 81677 | SB | 228th Ave NE & NE 8th St | 36 | Yes | Bench, shelter, trash can | |
| 81668 | SB | 228th Ave NE & NE 4th St | 35 | Yes | | Add waiting area, trash can, bench, shelter footings, and bike rack |
| 81684 | EB | S Sammamish P&R AcRd & SE 30th St | 33 | Yes | Bench, shelter, trash can, bicycle locker | Add real-time arrival display |
| 81685 | SB | 228th Ave SE & SE 8th St | 24 | Yes | Shelter, trash can | |
| 81731 | SB | Issaquah Pine Lake Rd SE & 231st Ln SE | 14 | Yes | | Add bench |
| 81775 | NB | 228th Ave NE & NE 25th Way | 14 | Yes | | Add bench, lighting |
| 81733 | NB | Issaquah Pine Lake Rd SE & 230th Ln SE | 13 | Yes | | Add waiting area and bench |
| 81672 | SB | 228th Ave NE & SE 4th St | 13 | Yes | Bench, shelter | |
| 81739 | SB | Issaquah Pine Lake Rd SE & SE Klahanie Blvd | 13 | No | | |
| 81741 | NB | Issaquah Pine Lake Rd SE & SE Klahanie Blvd | 12 | No | | Extend the existing sidewalk to the bus stop and add lighting, bench, trash can |
| 81703 | SB | 228th Ave SE & SE 10th St | 12 | Yes | Bench, shelter, trash can | |
| 81681 | NB | 228th Ave SE & SE 10th St | 12 | Yes | | Add waiting area, trash can, bench, shelter footings, and bike rack |
| 81847 | SB | Issaquah Pine Lake Rd SE & SE 37th Pl | 12 | Yes | | Add waiting area, bench, and trash can |
| 81820 | SB | 228th Ave NE & NE 25th Way | 11 | Yes | | Add waiting area, trash can, bench, and shelter footings |
| 81687 | NB | 228th Ave SE & SE 8th St | 11 | Yes | | Add waiting area, trash can, bench, and shelter footings |
| 81738 | NB | Issaquah Pine Lake Rd SE & SE 37th Pl | 10 | No | | Extend existing sidewalk to stop |
| 81794 | NB | Sahalee Way NE & NE 37th Way | 9 | No | | |
| 81724 | NB | 228th Ave SE & SE 4th St | 9 | Yes | Trash can | Add second landing area for rear door |
| 81845 | SB | Sahalee Way NE & NE 37th Way | 7 | No | | Extend existing sidewalk to stop |
| 81722 | NB | 228th Ave SE & SE 16th St | 6 | Yes | Bench | Expand waiting area and add shelter footings |
| 81880 | SB | 228th Ave NE & NE 14th St | 6 | Yes | | Remove driveway for improved landing area, add waiting area and bench |
| 81760 | NB | 228th Ave NE & NE 14th St | 6 | No | | Option 1: Move stop to far-side of intersection, add new sidewalk at bus stop<br>Option 2: Keep current stop location and extend existing sidewalk to the stop |
| 81840 | SB | Sahalee Way NE & NE 28th Pl | 5 | No | | Extend existing sidewalk to stop |
| 81871 | NB | 228th Ave NE & 18th Pl NE | 5 | No | | Add landing area |
| 81714 | NB | 228th Ave SE & Issaquah Pine Lake Rd SE | 5 | Yes | | Add waiting area, bench, and trash can |
| 81713 | NB | Issaquah Pine Lake Rd SE & 228th Ave SE | 5 | Yes | | |
| 81745 | NB | Issaquah Pine Lake Rd SE & SE 47th Way | 5 | Yes | | |
| 81743 | SB | Issaquah Pine Lake Rd SE & SE 47th Way | 5 | No | | Extend the existing sidewalk to the bus stop |
| 81678 | SB | 228th Ave SE & SE 20th St | 5 | Yes | | Add bench |
| 81800 | SB | Sahalee Way NE & NE 36th St | 4 | No | | Move stop the near-side and extend existing sidewalk to the stop |
| 81726 | NB | 228th Ave SE & E Main St | 4 | Yes | | Move stop to far-side of intersection, add waiting area and bench |
| 81718 | NB | 228th Ave SE & SE 20th St | 4 | Yes | | Add bench |
| 81670 | SB | 228th Ave NE & E Main St | 4 | Yes | | Add landing area |
| 81790 | NB | Sahalee Way NE & NE 36th St | 4 | No | | Add lighting and landing area |
| 81842 | NB | Sahalee Way NE & 223rd Ave NE | 4 | No | | Extend existing sidewalk to stop, add lighitng |

Sammamish Transit Plan
Full List of Potential Bus Stop Amenity Improvements

| Stop ID | Direction | Stop Name | Avg Fall 2022 Ridership (per day) | Sidewalk Present | Existing Amenities (excluding sign post) | Proposed Improvements |
|---|---|---|---|---|---|---|
| 81674 | SB | 228th Ave SE & SE 16th St | 3 | Yes | | Add bench |
| 81680 | SB | 228th Ave SE & SE 24th St | 3 | Yes | | Add concrete landing area |
| 81870 | SB | 228th Ave NE & NE 18th Pl | 3 | Yes | | |
| 81861 | NB | 228th Ave NE & NE 22nd St | 3 | No | | Add landing area |
| 81735 | SB | Issaquah Pine Lake Rd SE & SE 40th Pl | 3 | Yes | | Add bench |
| 81716 | NB | 228th Ave SE & SE 24th St | 2 | Yes | | Add bench |
| 81737 | NB | Issaquah Pine Lake Rd SE & SE 40th Pl | 2 | Yes | | |
| 81825 | SB | 228th Ave NE & NE 22nd St | 1 | Yes | | Add second landing area for rear door |
| 81852 | NB | Sahalee Way NE & Sahalee Dr E | 1 | No | | Add landing area |
| 81810 | SB | Sahalee Way NE & Sahalee Dr E | 0.1 | No | | Add landing area |

# APPENDIX H

## DETAILED COST ESTIMATES

801 2nd Avenue, Suite 302, Seattle, WA 98104 | P 206.436.0515

**DRAFT PLANNING LEVEL OPINION OF COST SUMMARY**

| | | | |
|---|---|---|---|
| Project Description: | Sammamish Transit Study | Client: | City of Sammamish |
| Corridor Section: | 228th Avenue SE and SE 24th Street | Date: | 12/12/2023 |
| Location: | City of Sammamish | Date of Cost Index: | 2023 |
| | | Calculated By/Entered By: | MEW |
| | | Checked By: | RDC |

**Sammamish Transit Study - 228th Avenue SE and SE 24th Street**

| | | ITEM | UNIT | ESTIMATED UNIT | QTY | COST |
|---|---|---|---|---|---|---|
| **I.** | | **RIGHT OF WAY** | | | | |
| | | RIGHT OF WAY (urban undeveloped) | SF | $5 | 2,200 | $11,000 |
| | | TEMPORARY CONSTRUCTION EASEMENTS (urban undeveloped) | SF | $1 | 1,000 | $1,000 |
| | | ADMINISTRATION (titles, appraisals, negotiations consultant, etc.) | EA | $15,000 | 1 | $15,000 |
| | | **RIGHT OF WAY TOTAL** | | | | **$27,000** |
| | | | **Inflation** | **ROW Year** | **Cost Index** | **Future Cost** |
| | | **FUTURE ROW COST BASED ON INFLATION RATE** | **5%** | **2026** | **2023** | **$32,000** |
| **II.** | | **CONSTRUCTION** | | | | |
| **1** | | **PREPARATION/GRADING/DRAINAGE** | | | | |
| | **1.1** | **PREPARATION** | | | | |
| | | CLEAR & GRUB,DEMO | ACRE | $10,000 | 0.1 | $1,000 |
| | | REMOVING EXISTING PAVEMENT | SY | $50 | 220 | $11,000 |
| | | REMOVAL STRUCTURES & OBSTRUCTIONS | LS | $5,000 | 1 | $5,000 |
| | | TREE REMOVAL (ESTIMATED) | EA | $1,200 | 70 | $84,000 |
| | **1.2** | **EARTHWORK** | | | | |
| | | ROADWAY EXCAVATION INCL. HAUL | CY | $75 | 70 | $5,250 |
| | | STRUCTURE EX. CL. A INCL. HAUL | CY | $65 | 20 | $1,300 |
| | | BORROW INCL. HAUL | TON | $60 | 190 | $11,400 |
| | **1.3** | **STORMWATER MITIGATION** | | | | |
| | | DETENTION AND TREATMENT | SF | $30 | - | $0 |
| | **1.4** | **STORM SEWER** | | | | |
| | | CATCH BASIN TYPE 1 | EA | $2,250 | 1 | $2,250 |
| | | SCHEDULE A STORM SEWER PIPE 12 IN. DIAM. | LF | $160 | 100 | $16,000 |
| **2** | | **STRUCTURE** | | | | |
| | | RETAINING WALLS (STRUCTURAL EARTH WALL) | SF | $80 | 170 | $13,600 |
| **3** | | **SURFACING** | | | | |
| | | HOT MIX ASPHALT | TON | $250 | 90 | $22,500 |
| | | CRUSHED SURFACING | TON | $75 | 70 | $5,250 |
| **4** | | **ROADSIDE DEVELOPMENT** | | | | |
| | | SEEDING, MULCHING & FERTILIZING | ACRE | $8,000 | 0.1 | $800 |
| | | TEMP. WATER POLLUTION & EROSION CONTROL (2%) | LS | $6,000 | 1 | $6,000 |
| | | LANDSCAPING | LS | $8,300 | 1 | $8,300 |
| **5** | | **TRAFFIC** | | | | |
| | | SIGNAL SYSTEMS | LS | $5,000 | 1 | $5,000 |
| | | ILLUMINATION | LS | $22,880 | 1 | $22,880 |
| | | SIGNING | LS | $900 | 1 | $900 |
| | | STRIPING | LF | $4 | 240 | $960 |
| | | CURBS | LF | $65 | 230 | $14,950 |
| | | SIDEWALKS | SY | $120 | 140 | $16,800 |
| | | ADJUST MANHOLE OR CATCH BASIN | EA | $1,200 | 5 | $6,000 |
| | | TRAFFIC CONTROL (10%) | LS | $26,000 | 1 | $26,000 |

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**DRAFT PLANNING LEVEL OPINION OF COST SUMMARY**

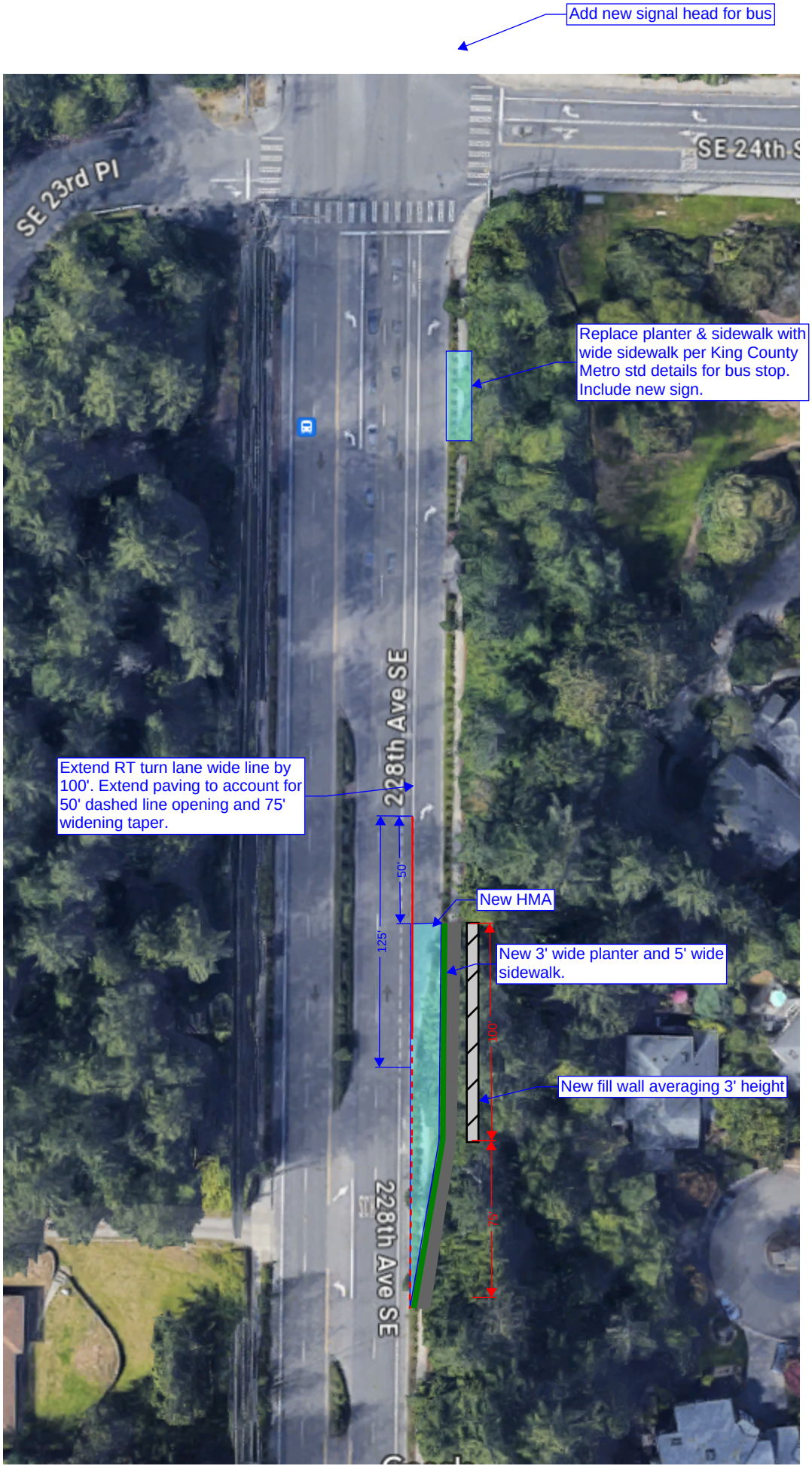
| | | | |
|---|---|---|---|
| Project Description: | Sammamish Transit Study | Client: | City of Sammamish |
| Corridor Section: | 228th Avenue SE and SE 24th Street | Date: | 12/12/2023 |
| Location: | City of Sammamish | Date of Cost Index: | 2023 |

| | | | | | |
|---|---|---|---|---|---|
| **6** | **OTHER ITEMS** | | | | |
| | SURVEYING (2%) | LS | $6,000 | 1 | $6,000 |
| | SPECIAL ITEMS | EST | $0 | 1 | $0 |
| **7** | **SUBTOTAL (ITEMS 1 THRU 6)** | | | | **$293,140** |
| **8** | **MOBILIZATION (9%)** | | | | |
| | 9% OF ITEM 7 | EST | $26,400 | 1 | $26,400 |
| **9** | **CONSTRUCTION SUBTOTAL (ITEMS 7 & 8)** | | | | **$319,540** |
| **10** | CONTINGENCY (30% OF ITEM 9) | EST | $95,900 | 1 | $95,900 |
| **11** | **CONSTRUCTION SUBTOTAL (ITEMS 9 & 10)** | | | | **$415,440** |
| | | **Inflation** | **Const. Year** | **Cost Index** | **Future Cost** |
| **12** | **FUTURE CN COST BASED ON INFLATION RATE** | **4%** | **2026** | **2023** | **$468,000** |
| **13** | **CONSTRUCTION ADMINISTRATION** | | | | |
| | CONSTRUCTION ENGINEERING (15% OF ITEM 11) | EST | $62,400 | 1 | $62,400 |
| | | **Inflation** | **Const. Year** | **Cost Index** | **Future Cost** |
| **14** | **FUTURE CN ADMIN COST BASED ON INFLATION RATE** | **5%** | **2026** | **2023** | **$73,000** |
| **III.** | **PRELIMINARY WORK** | | | | |
| | PRELIMINARY ENGINEERING (20.0% OF ITEM 11) | EST | $84,000 | 1 | $84,000 |
| | ENVIRONMENTAL PERMITS/DOCUMENTS | EST | $15,000 | 1 | $15,000 |
| | | **Inflation** | **Design Year** | **Cost Index** | **Future Cost** |
| | **FUTURE PE COST BASED ON INFLATION RATE** | **5%** | **2025** | **2023** | **$110,000** |
| **IV.** | **TOTAL ESTIMATED COST (ITEMS I, 12, 14, & III)** | | | | |
| | **TOTAL PROJECT COST (BASED ON INFLATION RATE)** | | | | **$683,000** |

| **SUMMARY** (Including inflation) | |
|---|---|
| **Right of Way** | **$32,000** |
| **Design Engineering, Administration, Environmental Permitting (Item III)** | **$110,000** |
| **Construction Contract (Incl. Administration)** | **$541,000** |

## Assumptions

- The above opinion of cost is a planning level estimate only. It is based on best available information and scope at the time, not on the results of a detailed engineering study, and is supplied as a budgeting guide only. Perteet Inc. does not guarantee or warrant the accuracy of this planning level estimate.
- The above opinion of cost assumes that the project will be funded entirely with local funds, no federal or TIB funds. If federal or TIB funds are obtained for construction of this project, additional project elements required by those funding sources (i.e. stormwater treatment and environmental permitting and documentation) would result in in an increase in project design and construction costs.
- Environmental permits included in this opinion of cost are limited to SEPA and 2 local permits.


Add new signal head for bus
SE 23rd Pl
SE 24th S
Replace planter & sidewalk with wide sidewalk per King County Metro std details for bus stop. Include new sign.
228th Ave SE
Extend RT turn lane wide line by 100'. Extend paving to account for 50' dashed line opening and 75' widening taper.
50'
125'
New HMA
New 3' wide planter and 5' wide sidewalk.
100'
New fill wall averaging 3' height
228th Ave SE

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**DRAFT PLANNING LEVEL OPINION OF COSTS**

| | | | |
|---|---|---|---|
| Project Description: | Sammamish Transit Study | Client: | City of Sammamish |
| Program: | Bus Stop Amenity Program | Date: | 12/8/2023 |
| Location: | City of Sammamish | Date of Cost Index: | 2023 |
| | | Calculated By/Entered By: | RDC |
| | | Checked By: | BMP |

**Sammamish Transit Study - Bus Stop Amenity Program**

| ITEM | UNIT | ESTIMATED UNIT COST |
|---|---|---|
| BIKE RACK | EA | $1,500 |
| PEDESTRIAN LEVEL LUMINAIRE - NON-DECORATIVE (INCL. WIRING, JUNCTION BOX, ETC.) | EA | $21,000 |
| SIDEWALK (10'x10' INCL. EXCAVATION & SURFACING) | 10'x10' AREA | $5,000 |
| TRASH CAN | EA | $4,000 |
| BENCH | EA | $3,500 |
| REAL-TIME ARRIVAL DISPLAY BOARD | EA | $95,000 |
| BUS SHELTER FOOTING | SY | $500 |

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**DRAFT PLANNING LEVEL OPINION OF COST SUMMARY**

| | | | |
|---|---|---|---|
| Project Description: | Sammamish Transit Study | Client: | City of Sammamish |
| Corridor Section: | Sahalee Way NE and NE 37th Way | Date: | 12/12/2023 |
| Location: | City of Sammamish | Date of Cost Index: | 2023 |
| | | Calculated By/Entered By: | MEW |
| | | Checked By: | RDC |

**Sammamish Transit Study - Sahalee Way NE and NE 37th Way**

| | | ITEM | UNIT | ESTIMATED UNIT | QTY | COST |
|---|---|---|---|---|---|---|
| **I.** | | **RIGHT OF WAY** | | | | |
| | | ADMINISTRATION (titles, appraisals, negotiations consultant, etc.) | EA | $15,000 | - | $0 |
| | | **RIGHT OF WAY TOTAL** | | | | **$0** |
| | | | **Inflation** | **ROW Year** | **Cost Index** | **Future Cost** |
| | | **FUTURE ROW COST BASED ON INFLATION RATE** | **5%** | **2026** | **2023** | **$0** |
| **II.** | | **CONSTRUCTION** | | | | |
| **1** | | **PREPARATION/GRADING/DRAINAGE** | | | | |
| | **1.1** | **PREPARATION** | | | | |
| | | CLEAR & GRUB,DEMO | ACRE | $5,000 | 0.7 | $3,500 |
| | | REMOVING EXISTING PAVEMENT | SY | $35 | 2,400 | $84,000 |
| | | REMOVAL STRUCTURES & OBSTRUCTIONS | LS | $10,000 | 1 | $10,000 |
| | | TREE REMOVAL (ESTIMATED) | EA | $1,200 | 250 | $300,000 |
| | **1.2** | **EARTHWORK** | | | | |
| | | ROADWAY EXCAVATION INCL. HAUL | CY | $60 | 1,100 | $66,000 |
| | | STRUCTURE EX. CL. A INCL. HAUL | CY | $55 | 100 | $5,500 |
| | | BORROW INCL. HAUL | TON | $45 | 1,100 | $49,500 |
| | **1.3** | **STORMWATER MITIGATION** | | | | |
| | | DETENTION AND TREATMENT | SF | $30 | 29,700 | $891,000 |
| | **1.4** | **STORM SEWER** | | | | |
| | | CATCH BASIN TYPE 1 | EA | $2,000 | 11 | $22,000 |
| | | SCHEDULE A STORM SEWER PIPE 12 IN. DIAM. | LF | $150 | 300 | $45,000 |
| **2** | | **STRUCTURE** | | | | |
| | | RETAINING WALLS (Structural Earth Wall) | SF | $70 | 640 | $44,800 |
| **3** | | **SURFACING** | | | | |
| | | HOT MIX ASPHALT | TON | $160 | 1,550 | $248,000 |
| | | CRUSHED SURFACING | TON | $65 | 750 | $48,750 |
| **4** | | **ROADSIDE DEVELOPMENT** | | | | |
| | | SEEDING, MULCHING & FERTILIZING | ACRE | $7,000 | 0.4 | $2,800 |
| | | TEMP. WATER POLLUTION & EROSION CONTROL (2%) | LS | $43,000 | 1 | $43,000 |
| | | LANDSCAPING | LS | $11,300 | 1 | $11,300 |
| **5** | | **TRAFFIC** | | | | |
| | | GUARDRAIL | LF | $80 | 575 | $46,000 |
| | | SIGNAL SYSTEMS | LS | $85,000 | 1 | $85,000 |
| | | ILLUMINATION | LS | $17,000 | 1 | $17,000 |
| | | SIGNING | LS | $3,000 | 1 | $3,000 |
| | | STRIPING | LF | $3 | 5,200 | $15,600 |
| | | CURBS | LF | $45 | 2,010 | $90,450 |
| | | CURB RAMP | EA | $2,500 | 5 | $12,500 |
| | | SIDEWALKS | SY | $115 | 110 | $12,650 |
| | | ADJUST MANHOLE OR CATCH BASIN | EA | $1,000 | 10 | $10,000 |
| | | TRAFFIC CONTROL (10%) | LS | $213,000 | 1 | $213,000 |

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**DRAFT PLANNING LEVEL OPINION OF COST SUMMARY**

| | | | |
|---|---|---|---|
| Project Description: | Sammamish Transit Study | Client: City of Sammamish | |
| Corridor Section: | Sahalee Way NE and NE 37th Way | Date: 12/12/2023 | |
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| | | | | | |
|---|---|---|---|---|---|
| **6** | **OTHER ITEMS** | | | | |
| | SURVEYING (2%) | LS | $43,000 | 1 | $43,000 |
| | SPECIAL ITEMS | EST | $0 | 1 | $0 |
| | UTILITY RELOCATIONS | EST | $3,000 | 1 | $3,000 |
| **7** | **SUBTOTAL (ITEMS 1 THRU 6)** | | | | **$2,426,350** |
| **8** | **MOBILIZATION (9%)** | | | | |
| | 9% OF ITEM 7 | EST | $218,400 | 1 | $218,400 |
| **9** | **CONSTRUCTION SUBTOTAL (ITEMS 7 & 8)** | | | | **$2,644,750** |
| **10** | **AGREEMENTS (Utilities, WSP, etc.)** | EST | $0 | 1 | $0 |
| **11** | **SUBTOTAL (ITEMS 9 THRU 10)** | | | | **$2,644,750** |
| **12** | CONTINGENCY (30% OF ITEM 11) | EST | $793,500 | 1 | $793,500 |
| **13** | **CONSTRUCTION SUBTOTAL (ITEMS 11 & 12)** | | | | **$3,438,250** |

| | | Inflation | Const. Year | Cost Index | Future Cost |
|---|---|---|---|---|---|
| **14** | **FUTURE CN COST BASED ON INFLATION RATE** | **4%** | **2026** | **2023** | **$3,868,000** |

| | | | | | |
|---|---|---|---|---|---|
| **15** | **CONSTRUCTION ADMINISTRATION** | | | | |
| | CONSTRUCTION ENGINEERING (15% OF ITEM 13) | EST | $515,800 | 1 | $515,800 |

| | | Inflation | Const. Year | Cost Index | Future Cost |
|---|---|---|---|---|---|
| **16** | **FUTURE CN ADMIN COST BASED ON INFLATION RATE** | **5%** | **2026** | **2023** | **$598,000** |

| | | | | | |
|---|---|---|---|---|---|
| **III.** | **PRELIMINARY WORK** | | | | |
| | PRELIMINARY ENGINEERING (14.0% OF ITEM 13) | EST | $482,000 | 1 | $482,000 |
| | ENVIRONMENTAL PERMITS/DOCUMENTS | EST | $20,000 | 1 | $20,000 |

| | | Inflation | Design Year | Cost Index | Future Cost |
|---|---|---|---|---|---|
| | **FUTURE PE COST BASED ON INFLATION RATE** | **5%** | **2025** | **2023** | **$554,000** |

| | | |
|---|---|---|
| **IV.** | **TOTAL ESTIMATED COST (ITEMS I, 14, 16, & III)** | |
| | **TOTAL PROJECT COST (BASED ON INFLATION RATE)** | **$5,020,000** |

| **SUMMARY** (Including inflation) | |
|---|---|
| **Right of Way** | **$0** |
| **Design Engineering, Administration, Environmental Permitting (Item III)** | **$554,000** |
| **Construction Contract (Incl. Administration)** | **$4,466,000** |

## Assumptions

- The above opinion of cost is a planning level estimate only. It is based on best available information and scope at the time, not on the results of a detailed engineering study, and is supplied as a budgeting guide only. Perteet Inc. does not guarantee or warrant the accuracy of this planning level estimate.
- The above opinion of cost assumes that the project will be funded entirely with local funds, no federal or TIB funds. If federal or TIB funds are obtained for construction of this project, additional project elements required by those funding sources (i.e. stormwater treatment and environmental permitting and documentation) would result in in an increase in project design and construction costs.
- Environmental permits included in this opinion of cost are limited to SEPA and 2 local permits.

Lane schematic only. Turn lane lengths are not to scale.