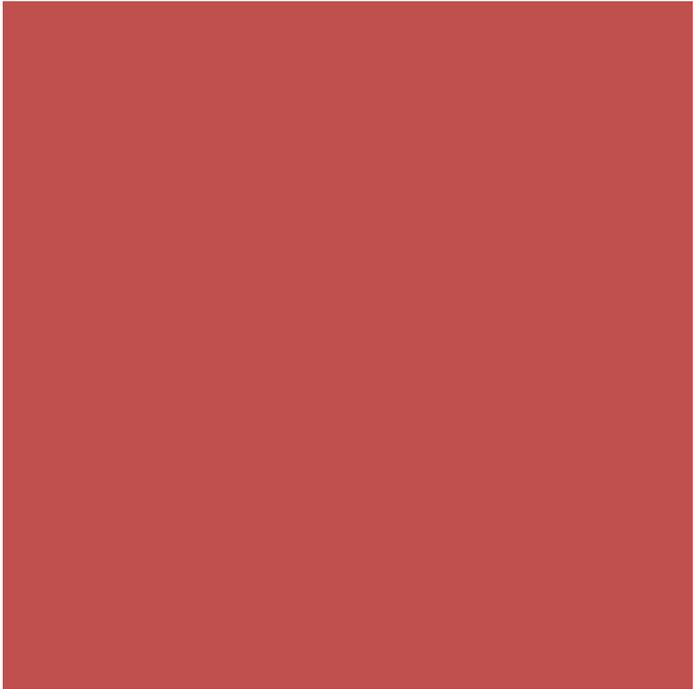




# Marymoor Subarea Infrastructure Planning Report

City of Redmond, Washington

Adopted by City Council on June 6, 2017



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- Appendix 3 – 5% Design
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- Appendix 5 – Cost Estimate Summary by Street Segment

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# INTRODUCTION

## OVERVIEW

### **Purpose**

The purpose of the Marymoor Subarea Infrastructure Planning Study is to prepare an interdisciplinary infrastructure plan that includes the types, conceptual design for, and conceptual locations of transportation, water/sewer, stormwater and park and trail infrastructure needed to serve future growth, as called for in the Southeast Redmond Neighborhood Plan adopted in October 2014.

### **Study Area**

The Marymoor Subarea is bounded by SR 520 on the north, Marymoor Park on the west and south, and the East Lake Sammamish Trail, East Lake Sammamish Parkway and Redmond Way on the east. The study area is shown in Figure 1.

### **Intended Outcome**

The intended outcome is to have an infrastructure plan including a water and sewer system build-out plan, land use strategies, and tools for addressing stormwater in the public and private realms that are consistent with the subarea vision and provide clear guidance to City staff, property owners, and developers as the City processes redevelopment applications and makes capital investment decisions.



Figure 1. Study Area

## RELATIONSHIP TO OTHER PLANS

There are several planning studies that have been previously prepared by others and have influenced the development of the Marymoor subarea planning study. These reports are briefly mentioned in this section and highlighted in Figures 2 – 6.

### Redmond Comprehensive Plan

“The Comprehensive Plan is a broad statement of the community’s vision for the future and contains policies primarily to guide the physical development of the city as well as certain aspects of its social and economic character.” The Southeast Redmond Neighborhood Plan is part of the Comprehensive Plan and forms the principal policy basis for this work.

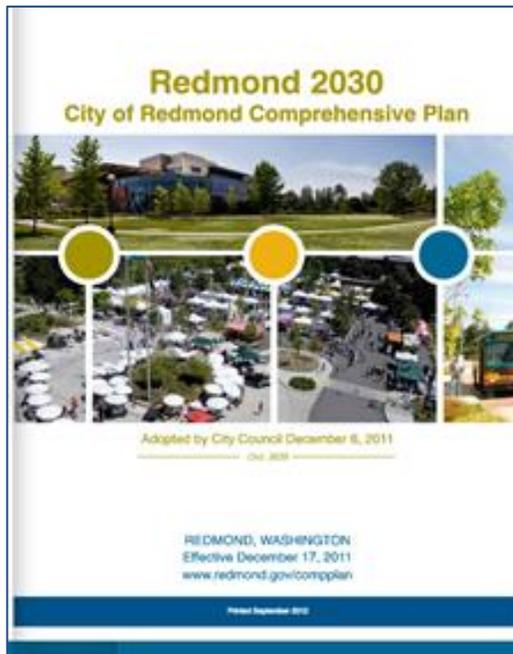


Figure 2. Redmond Comprehensive Plan

### Sound Transit East Link Extension

As part of ST3, Sound Transit plans to extend light rail between Overlake and downtown Redmond, with a stop in the Marymoor Subarea.

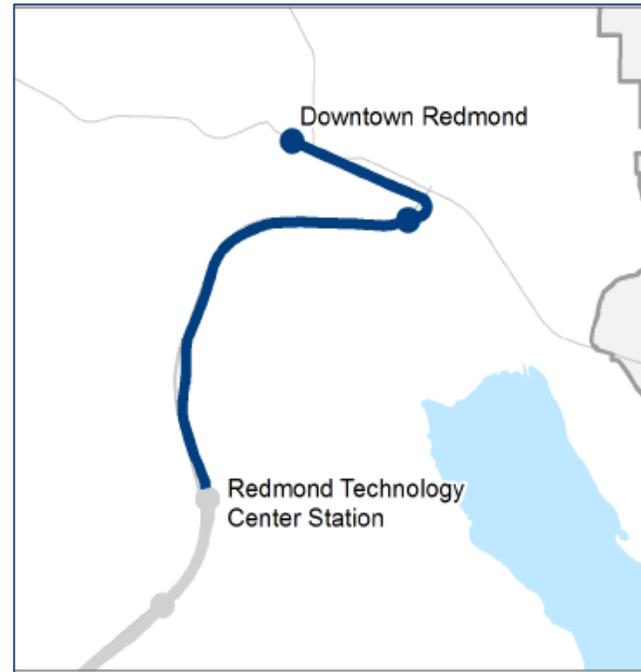


Figure 3. Sound Transit East Link Extension

### Redmond Transportation Master Plan

The 2013 Transportation Master Plan presents a strategic framework that is guiding transportation decisions and investments for the next 18 years in support of Redmond’s long-term vision. It includes strategies to prepare for light rail, improve travel choices and mobility, and increase neighborhood connections, among others.

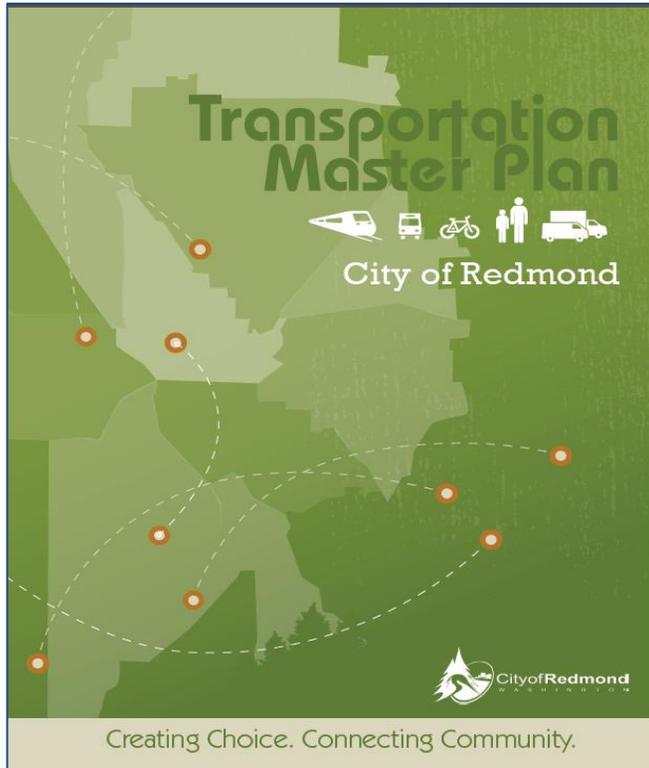


Figure 4. Redmond Transportation Master Plan

### Redmond Water Resources Strategic Plan

The Water Resources Strategic Plan defines and communicates the City’s approach to water resources protection for surface water, groundwater and stormwater. It lays out the mission, goals, objectives, strategies and tactics for water resources efforts in the city and how they support the overall City vision and other City functional areas. It includes a 3-year action plan.

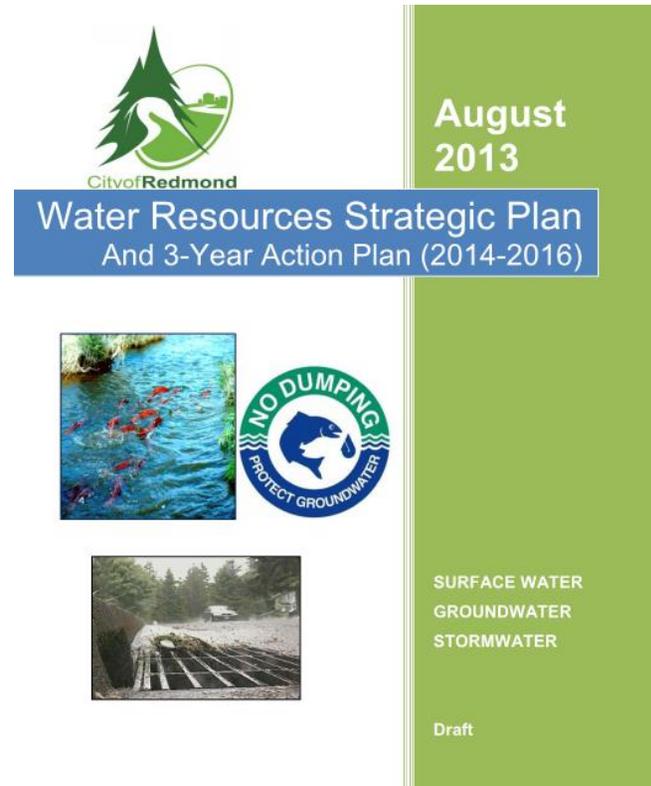


Figure 5. Redmond Water Resources Strategic Plan

### Redmond Sewer Plan

The Redmond Sewer Plan is a plan to upgrade and expand the city's sewer system to support growth in the next 20 years. The Sewer Plan covers capital improvement projects, development projects, and neighborhood sewer replacement projects.

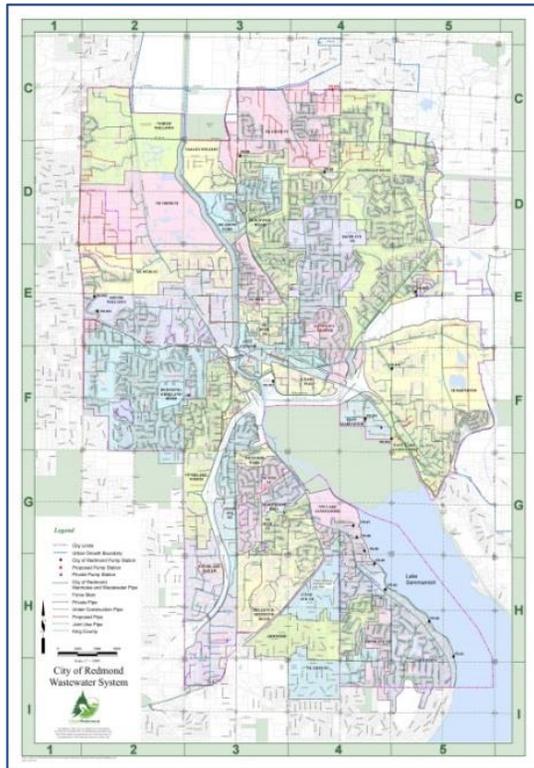


Figure 6. Redmond Sewer Plan

### Redmond Water System Plan

The Redmond Water System Plan identifies capital improvements needed to resolve deficiencies, to support continued system maintenance, and to supply future growth within the water service area.

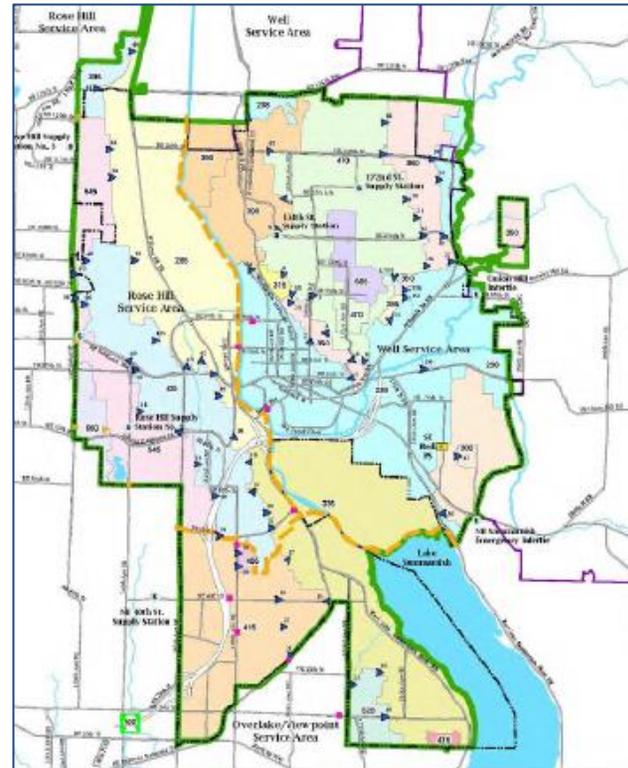


Figure 7. Redmond Water System Plan

## MARYMOOR SUBAREA VISION

The Marymoor Subarea vision is established in the Southeast Redmond Neighborhood Plan and is described below and illustrated in Figure 8.

Marymoor Subarea Vision: “A walkable, denser subarea that features opportunities for living, employment, community gathering, education, shopping, and traveling to other Redmond and central Puget Sound destinations.”



Figure 8. Marymoor Subarea Vision

## MARYMOOR SUBAREA CHARACTER

Options for neighborhood street characteristics were discussed and illustrated during stakeholder meetings, an open house, and an online questionnaire during the course of this study. The photos in Figure 9 are representative of the curvilinear, landscape-intensive neighborhood character that stakeholders preferred for the Marymoor Subarea streetscape design.

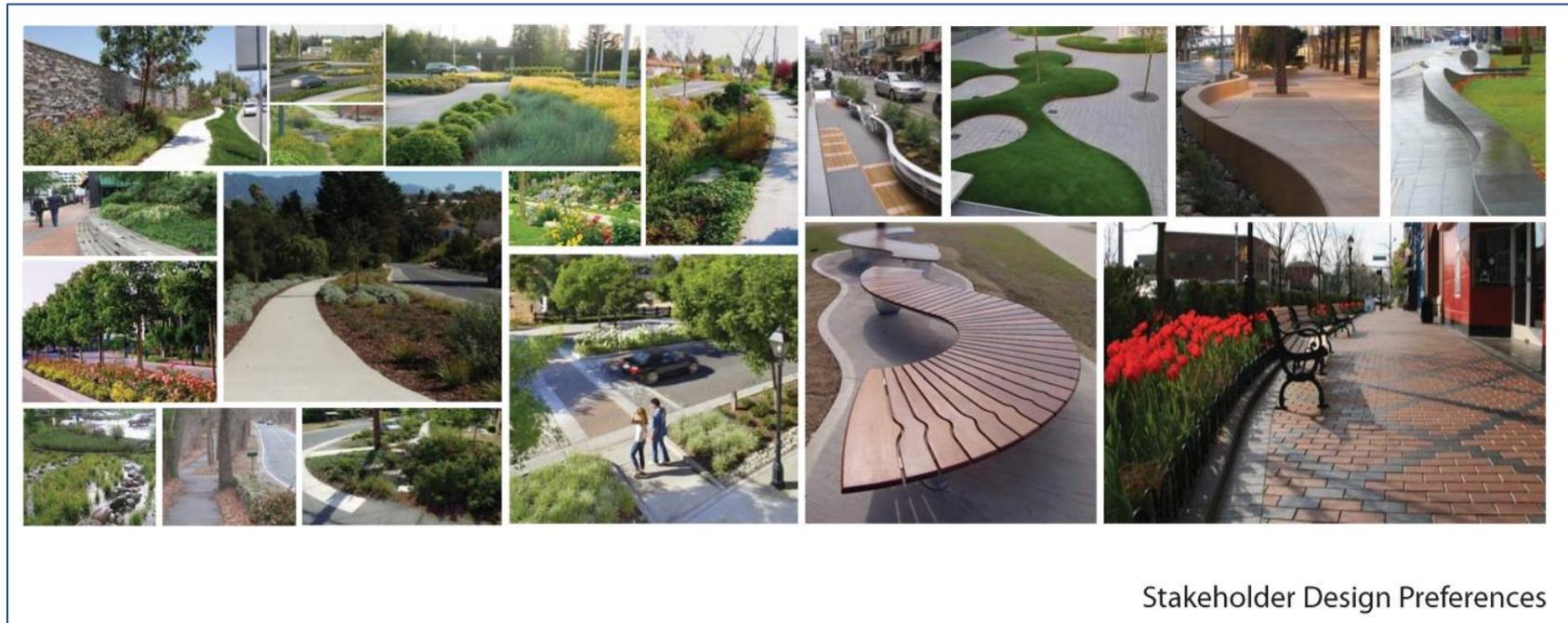


Figure 9. Marymoor Subarea Character

# FRAMEWORKS

## INFRASTRUCTURE PLAN PRINCIPLES

The project team and stakeholders developed the following infrastructure plan principles during the initial stages of this planning study as a guide to develop the infrastructure plan and implementation strategy.

- The Marymoor Subarea is home to diverse land uses that coexist for the benefit of all who spend time there.
- Infrastructure design and quality supports the vision for the Marymoor Subarea as a walkable, denser subarea that features opportunities for living, employment community gathering, recreating, education, shopping, and traveling to other Redmond and central Puget Sound destinations.
- Infrastructure investments are coordinated in time and space with other City investments and the investments of other jurisdictions and private development in support of the vision.
- Streets, pathways, stormwater facilities, and local and regional parks, trails and open spaces are integrated and connected to one another and nearby places.
- The stormwater system protects groundwater and surface water quality and replenishes the drinking water aquifer to the extent feasible.
- The stormwater strategy should eliminate existing flooding issues and accommodate flows from elsewhere in the basin.
- The stormwater system adds to green elements in the subarea.
- The water and sewer systems support the land use vision and are coordinated with other infrastructure systems.
- The transportation network design and street cross sections prioritize pedestrian and bicyclist safety and comfort.
- Street cross sections provide space for wet and dry utilities.
- The transportation network supports access for all modes, including freight and delivery.
- The transportation system conveniently connects people to the Southeast Redmond light rail station and parking facilities.
- The transportation network provides comfortable and convenient non-motorized connections within the Marymoor Subarea and to/from Marymoor Park, the rest of Southeast Redmond, and Downtown Redmond.
- Parking is flexibly managed to serve multiple needs and supports the City's goals and vision for the Marymoor Subarea, including support for use of alternative modes of transportation.

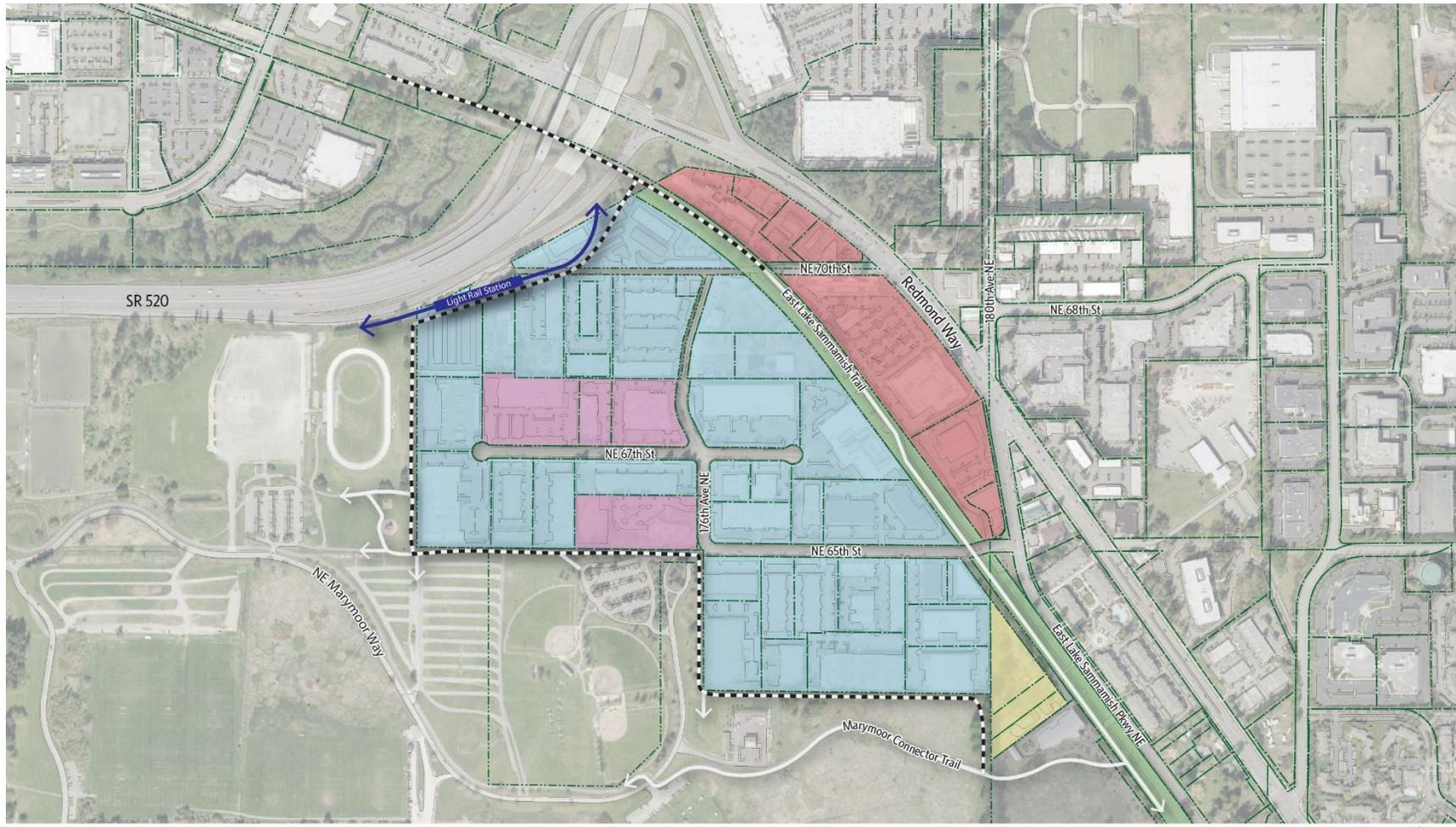
## LAND USE

The Marymoor Subarea is home to a wide variety of uses including high-tech manufacturing, graphics production, schools and colleges, video game research and development, catering, breweries, fitness centers, and religious facilities. It also is a low-lying area close to Bear Creek and Lake Sammamish, creating opportunities to embrace the natural environment and redevelopment challenges due to high groundwater.

The area's proximity to Marymoor Park combined with the extension of light rail will create pressure for change. The light rail will bring increased local and regional transportation options and opportunities for transit-oriented development. The subarea vision sets the direction for change over time and is supported by the infrastructure plan principles noted previously and the future land use and circulation concept described and shown below.

Land use changes will create opportunities for people to live, work, and shop near transit. Recognizing that, the land use plan for the Marymoor Subarea emphasizes supporting businesses as they grow and change, including space for artists, and creating opportunities for new housing near Marymoor Park.

Current land use conditions are shown in Figure 10 and planned future land use conditions are shown in Figure 11.

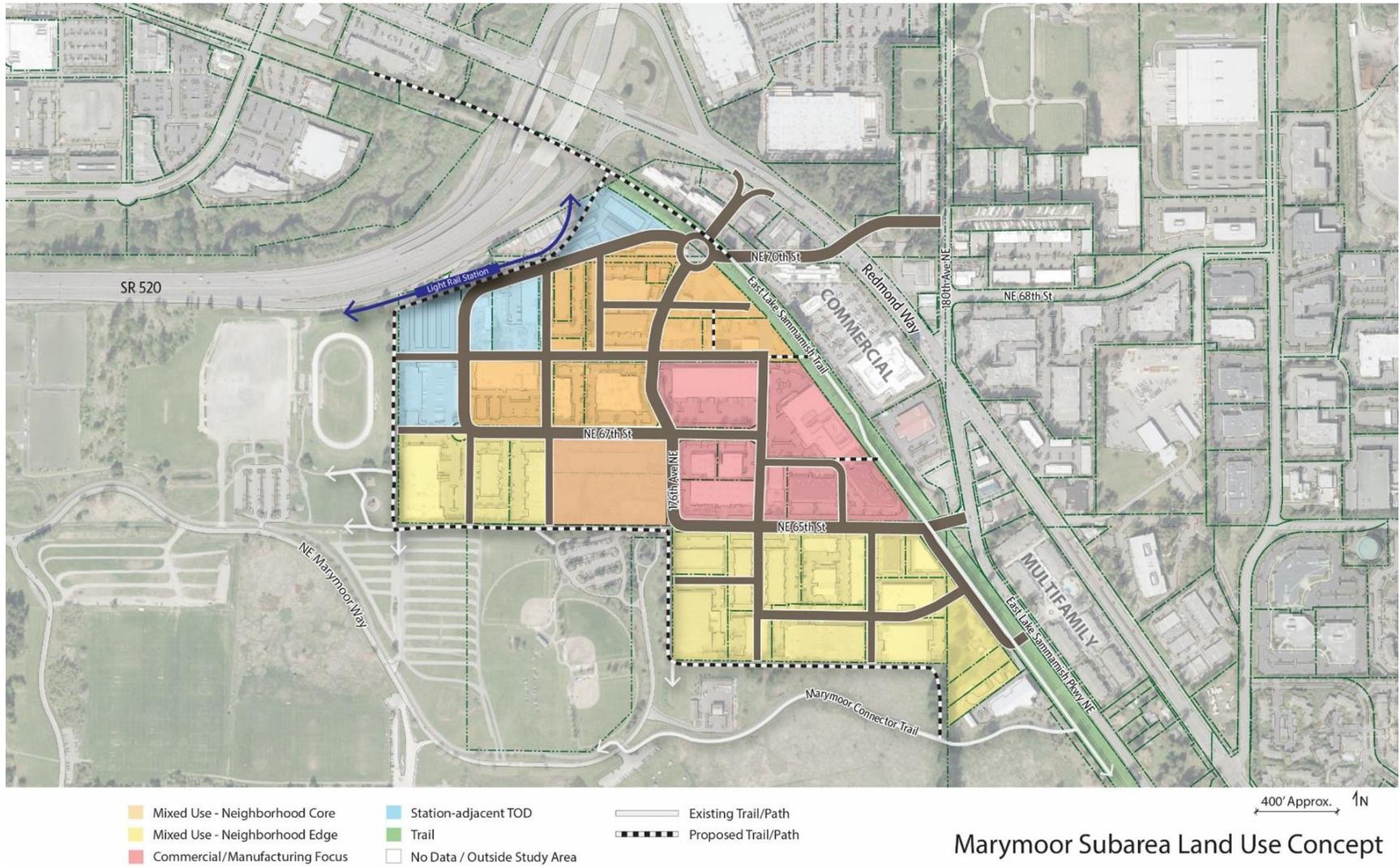


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|---|--|---|
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| <span style="color: red;">■</span> Commercial     | <span style="color: green;">■</span> Trail                                     | <span style="border-bottom: 1px solid black;">   </span> Existing Trail/Path  |
| <span style="color: blue;">■</span> Manufacturing | <span style="border: 1px solid black;">   </span> No Data / Outside Study Area | <span style="border-bottom: 2px dashed black;">   </span> Proposed Trail/Path |

400' Approx. ↑N

Marymoor Subarea Current Land Use

Figure 10. Current Land Use



**Figure 11. Planned Land Use**

## CIRCULATION

The circulation framework shown in Figure 12 reflects Southeast Redmond Neighborhood Plan policies to guide development in the Marymoor subarea. The circulation framework accommodates future land use conditions based on 2030 traffic projections including the planned light rail station and 1,400-stall garage for park & ride use. The circulation framework objectives include:

- Providing safe, convenient access into and out of the subarea
- Facilitating multimodal circulation
- Supporting mobility, safety, and comfort for all modes of travel
- Accommodating seamless connections between travel modes
- Promoting non-motorized access to Marymoor Park, the East Lake Sammamish Trail, and light rail

Proposed vehicular circulation provides sufficient roadway capacity within the Marymoor Subarea for the anticipated land use densities based on traffic analysis results. Mobility into and out of the subarea during peak periods will be constrained by congestion along the Redmond Way and East Lake Sammamish Parkway corridors. Potential projects to improve mobility along these corridors were not evaluated as part of this study.

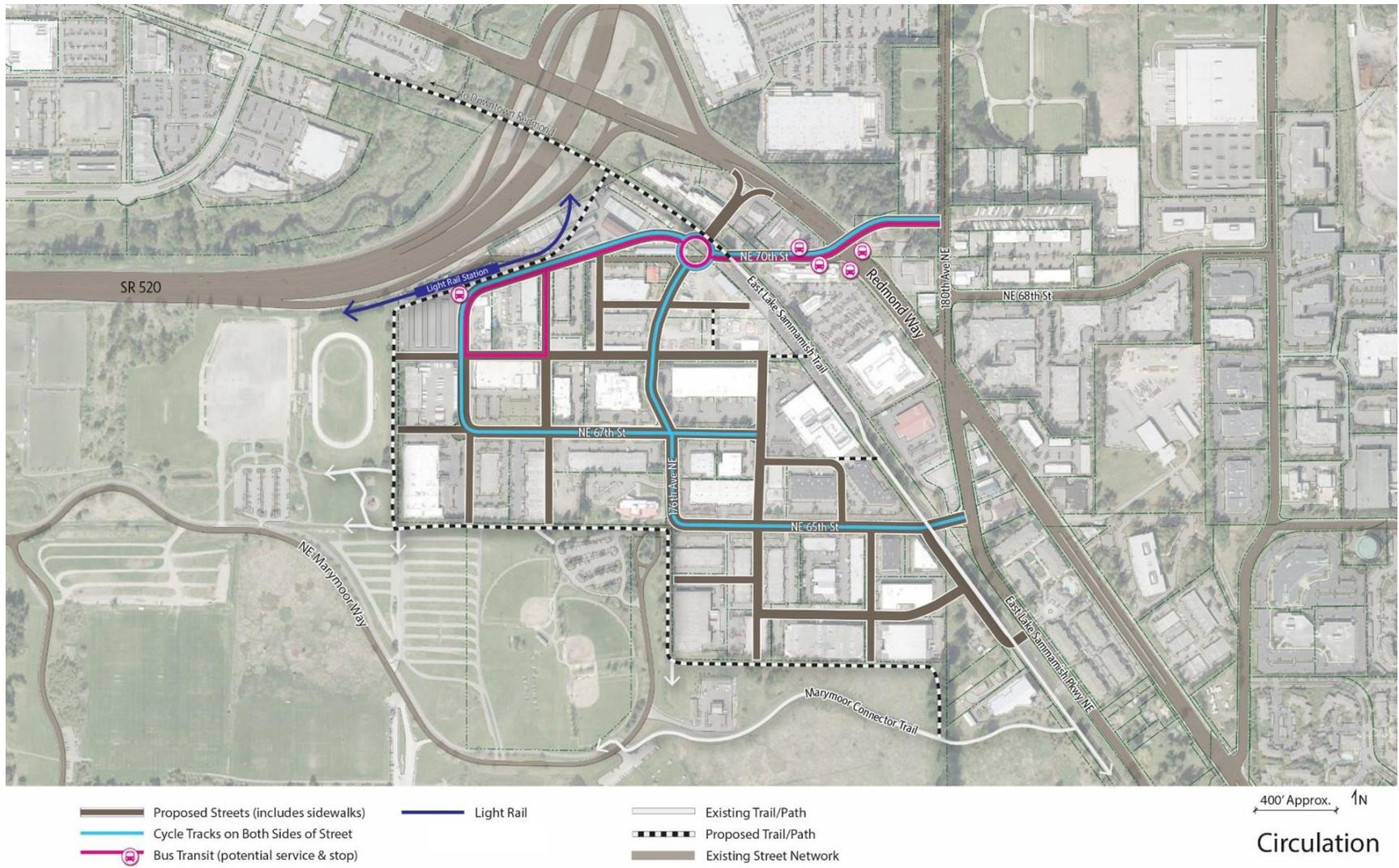


Figure 12. Circulation

# STREET REQUIREMENTS

## OVERVIEW

Street Requirements is a guide to the horizontal layout of the various roadway features contained within the public right-of-way for each of the different street types in the Marymoor Subarea. These features are described below and illustrated in Figures 13 – 19 in this section.

The street requirements apply to the following areas:

### **Right-of-Way**

Right-of-way is the publicly owned area between private property lines. It includes transportation infrastructure for pedestrian, bicycle, and transit vehicle circulation. Some pedestrian infrastructure may also be accommodated in easements instead of right-of-way depending on site-specific characteristics.

### **Roadway**

The roadway is measured from face-of-curb to face-of-curb within the right-of-way. It includes travel and turn lanes and may include curbside parking and striped bike lanes or cycle tracks. For Woonerf streets, a curb may not separate the roadway from the sidewalk. In this case, the transition between the two areas will generally be marked by other features such as bollards, different hardscape surface materials, or in other ways.

### **Landscape/Bioretenention**

The landscape/bioretenention area is located between the curb and sidewalk and may include traditional landscaping, bioretention cells or a combination of the two.

### **Sidewalks**

Sidewalks are measured from development property line to edge of landscape strips/bioretenention zones within the right-of-way. Sidewalks and landscape strips/bioretenention areas may also be located partially or entirely within easements depending on site-specific characteristics. Sidewalks are provided on both sides of Type I and II streets. Type III streets maintain a 4-foot ADA-compliant pedestrian walk route and a 20-foot shared use space for pedestrians, bicyclists and vehicles for property and service access.

## STREET TYPES

Each street within the Marymoor Subarea is assigned a street type. Each street type reflects the street's intended character, transportation function, and adjacent land uses. Figure 13 illustrates the preferred street network in the Marymoor subarea and highlights the different street types as discussed below.

### **Type I Street**

Type I streets are shown in green and provide primary circulation within the subarea for all modes of transportation.

### **Type II Street**

Type II streets are shown in blue and provide secondary circulation within the subarea and property access. Dedicated bicycle facilities and transit vehicles are not intended on Type II streets.

### **Type III Street**

Type III streets are shown in purple and provide property and service access. They are intended primarily for non-motorized uses. Several Type III Streets provide pedestrians and bicyclists with direct connections between the Marymoor Subarea and Marymoor Park.

### **Multi-purpose Trails**

Proposed multi-purpose trails are shown as black and white dashed line segments and provide bicycle and pedestrian connections to local and regional facilities. The multi-purpose trails will provide pedestrian and bicycle connections between Marymoor Park, the East Lake Sammamish Trail and the Southeast Redmond light rail station. These facilities will also be connected to the Bear Creek and Redmond Central Connector trail systems on the west side of SR 520.



**Figure 13. Street Network Concept**

## TYPE I STREETS

### **Type I Street Description**

Type I streets provide one travel lane in each direction to accommodate motor vehicle circulation within the subarea. In-street cycle tracks are provided on both sides of the street to allow safe and convenient bicycle mobility. Parking is accommodated on one side of the street between the general purpose lane and cycle track. Stormwater is managed with Filterra-type treatment cells located in the landscape strips/bioretention areas. ADA-compliant sidewalks are placed behind the landscape strips/bioretention areas. The Type I street standard section and typical block plan are shown in Figures 14 and 15, respectively.

### Type I Street Standard Section

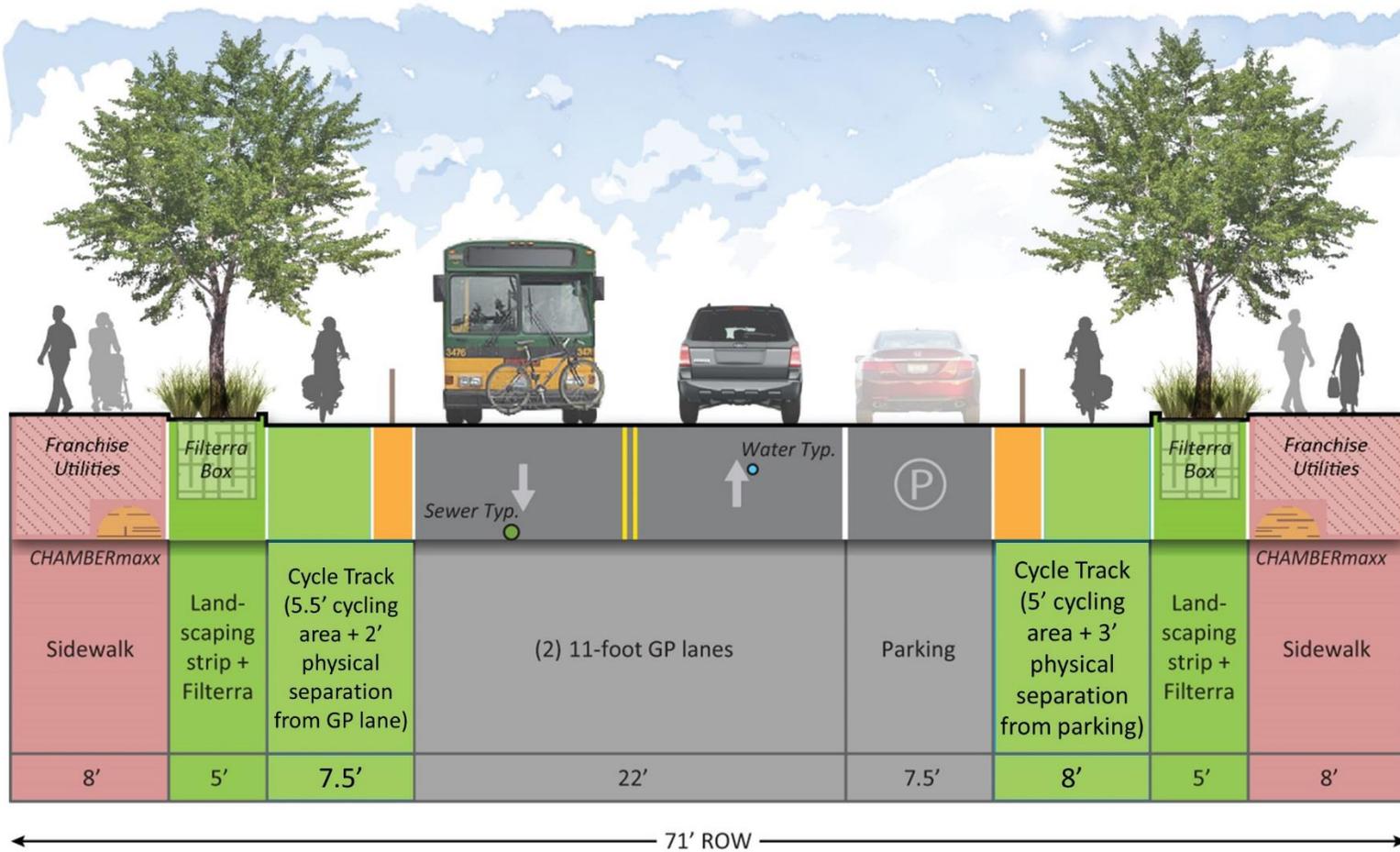


Figure 14. Type I Street Standard Section

## **Standard Section Notes**

1. Type I street sections are based on collector arterial standards found in RZC Appendix 2.
2. Water and sewer services are shown in standard locations for streets 34 feet wide and wider per City of Redmond Design Requirements for Water and Wastewater System Extensions.
3. The only typical block is on 173rd Avenue NE between NE 70th Street and NE 67th Street.
4. Other blocks are atypical in order to retrofit improvements or transition to existing streets.
5. Saves existing trees if present, leading to wide landscape strips in most segments.
6. Widens most existing sidewalks to the 8-foot City standard.

## **Variations from the Standard**

The Type I street section varies from the standard everywhere except along 173rd Avenue NE. This variation from the standard occurs for the following key reasons:

- The City of Redmond prefers to maximize the use of existing infrastructure in lieu of comprehensive reconstruction. Consequently, it is planned that existing streets will be retrofitted to reflect Type I standards where feasible. This generally entails keeping the wide landscape strips that exist in many locations and widening existing sidewalks to 8 feet. Proposed street sections for existing streets are contained in Appendix 2.
- A majority of new Type I streets provide access into the subarea from principal arterials on the east margin of the subarea. They also provide direct access and circulation to and from the light rail station and park & ride garage. These streets require a wider than standard roadway section to accommodate heavier volumes of peak period traffic and to transition from the principal arterials and through the two-lane roundabout at the intersection of 176th Avenue NE and NE 70th Street. Five percent level design plans showing the street network in the Marymoor Subarea are contained in Appendix 3.

## Type I Street Typical Block Plan

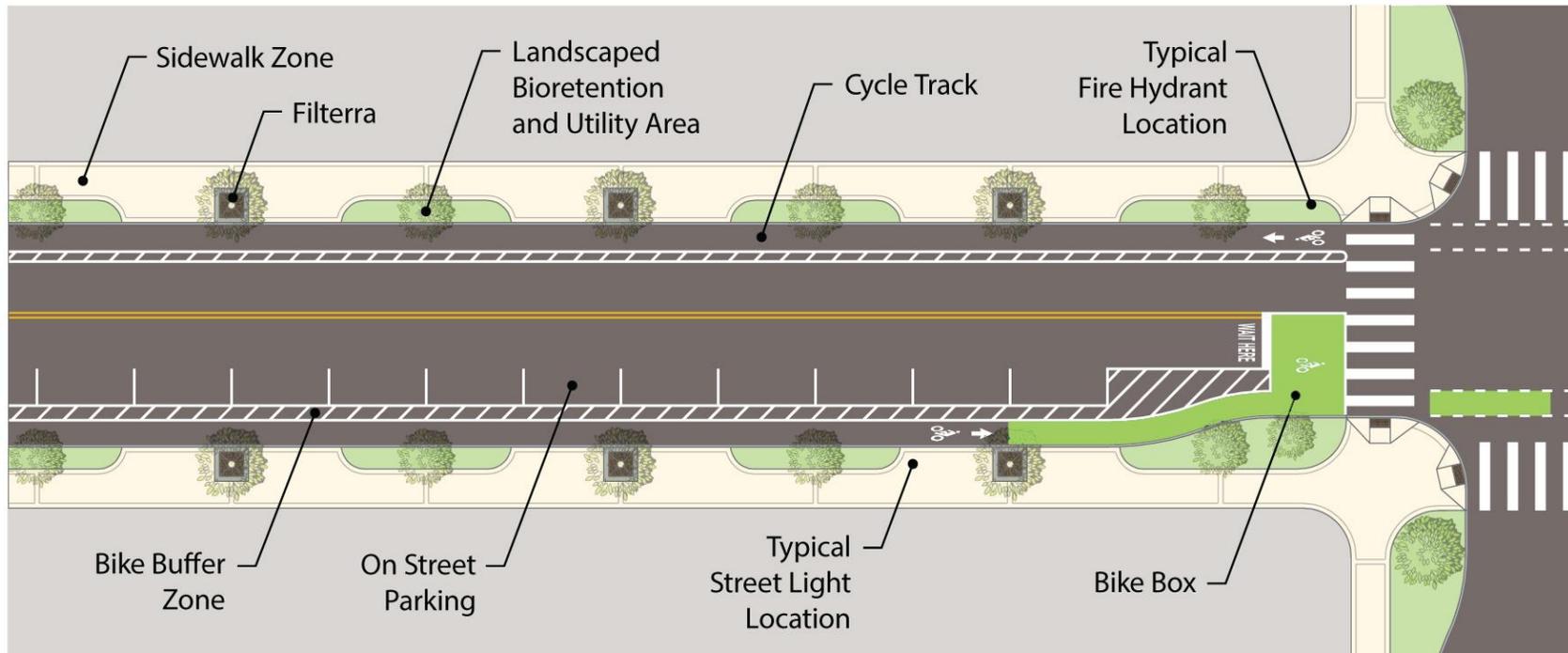


Figure 15. Type I Street Typical Block Plan

# TYPE II STREETS

## Type II Street Description

Type II streets contain one general purpose lane in each direction with curbside parking allowed on both sides of the street. Stormwater is managed with a variety of bioretention treatments located in an 8-foot landscape strip/bioretention area. ADA compliant sidewalks are placed behind the landscape strips/bioretention areas. Type II streets are either connector streets with parking on both sides of the street or local streets with parking on one side only. For conceptual design purposes the connector street is assumed and shown in this report. The Type II street standard section and typical block plan are shown in Figures 16 and 17, respectively.

## Type II Connector Street Standard Section

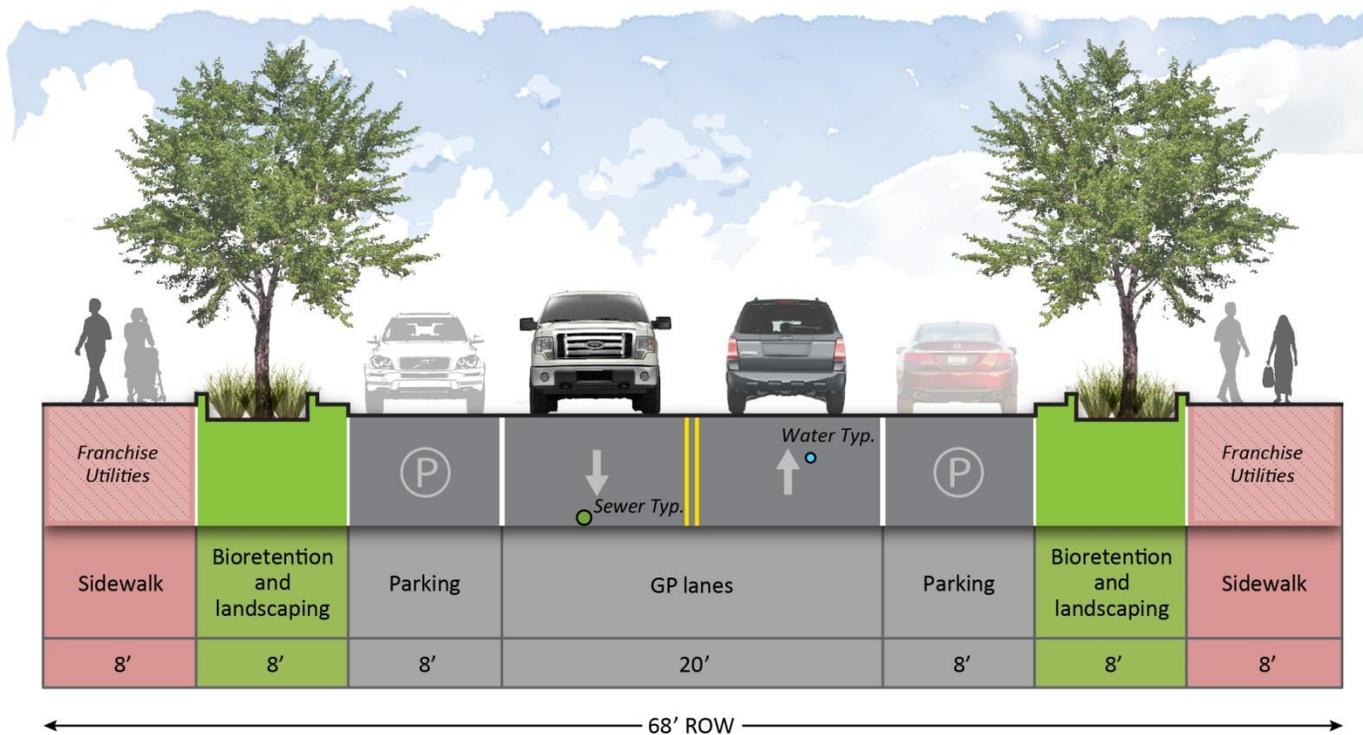


Figure 16. Type II Connector Street Standard Section

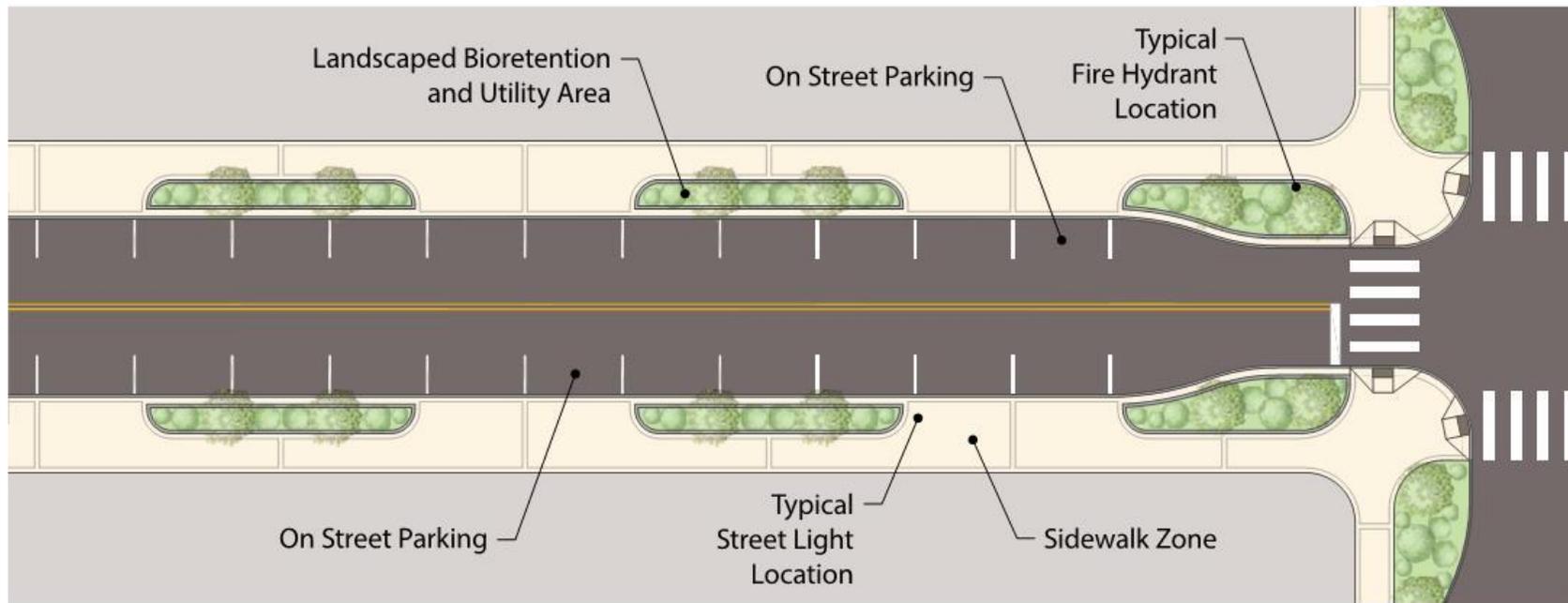
### **Standard Section Notes**

1. Based on connector arterial and local access street standards found in RZC Appendix 2.
2. Water & sewer services shown in standard locations for streets 34 feet wide or wider per City of Redmond Design Requirements for Water and Wastewater System Extensions

### **Variations from the Standard**

The Type II Street sections are all shown as connector streets in the 5% design. There are no Type II streets that vary from the standard. When Type II streets are constructed there may be some locations that are more appropriate for the local street standard. Type II streets that are to be constructed using the local street standard or that deviate from the connector or local street standards will be determined in conjunction with development. Five percent level design plans showing the street network in the Marymoor Subarea are contained in Appendix 3.

**Type II Street Typical Block Plan (Connector Street)**



**Figure 17. Type II Street Typical Block Plan (Connector Street)**

## TYPE III STREETS

### **Type III Street Description**

Type III streets are “woonerf”-like streets. “Woonerf” is a Dutch term that describes a circulation facility that can serve a number of different functions usually with narrower space requirements. Type III streets contain a 40-foot shared space intended principally for local non-motorized uses and limited underground utilities. The surface and subsurface are configured to accommodate shared vehicle and pedestrian space, an ADA-compliant walk route, emergency access, loading/unloading areas that do not impede emergency access, stormwater management, water and wastewater pipes (if necessary), dry utilities (if necessary), lighting, and hydrants (if necessary). Stormwater is managed using a variety of bioretention treatments located in 8-foot-wide and variable length bioretention areas. Type III streets can provide access for vehicles and pedestrians and can function like an alley for service, delivery, and parking access, or like a plaza primarily used for pedestrian activity. Many Type III streets provide direct connections to the Marymoor Park perimeter trails.

### **Type III Street Standard Section**

There is no standard section defined for the Type III street; each section will be designed according to its unique context in order to facilitate placemaking and experiences unique to that specific Type III street. Street elements will be designed to create the envisioned shared space environment. Type III streets should avoid three linear strips of space (car, bioretention, pedestrian) and may see traditional surface elements rearranged, such as a fountain in the middle of the shared space with the vehicle path chicaning around it. A hypothetical block plan for Type III streets is shown in Figure 18. The specific design details will be determined in conjunction with future redevelopment. The 40-foot standard may be reduced on a site-specific basis, at the discretion of the City, if an applicant demonstrates that all necessary elements can be accommodated in less than 40 feet.

## Type III Street Hypothetical Block Plan

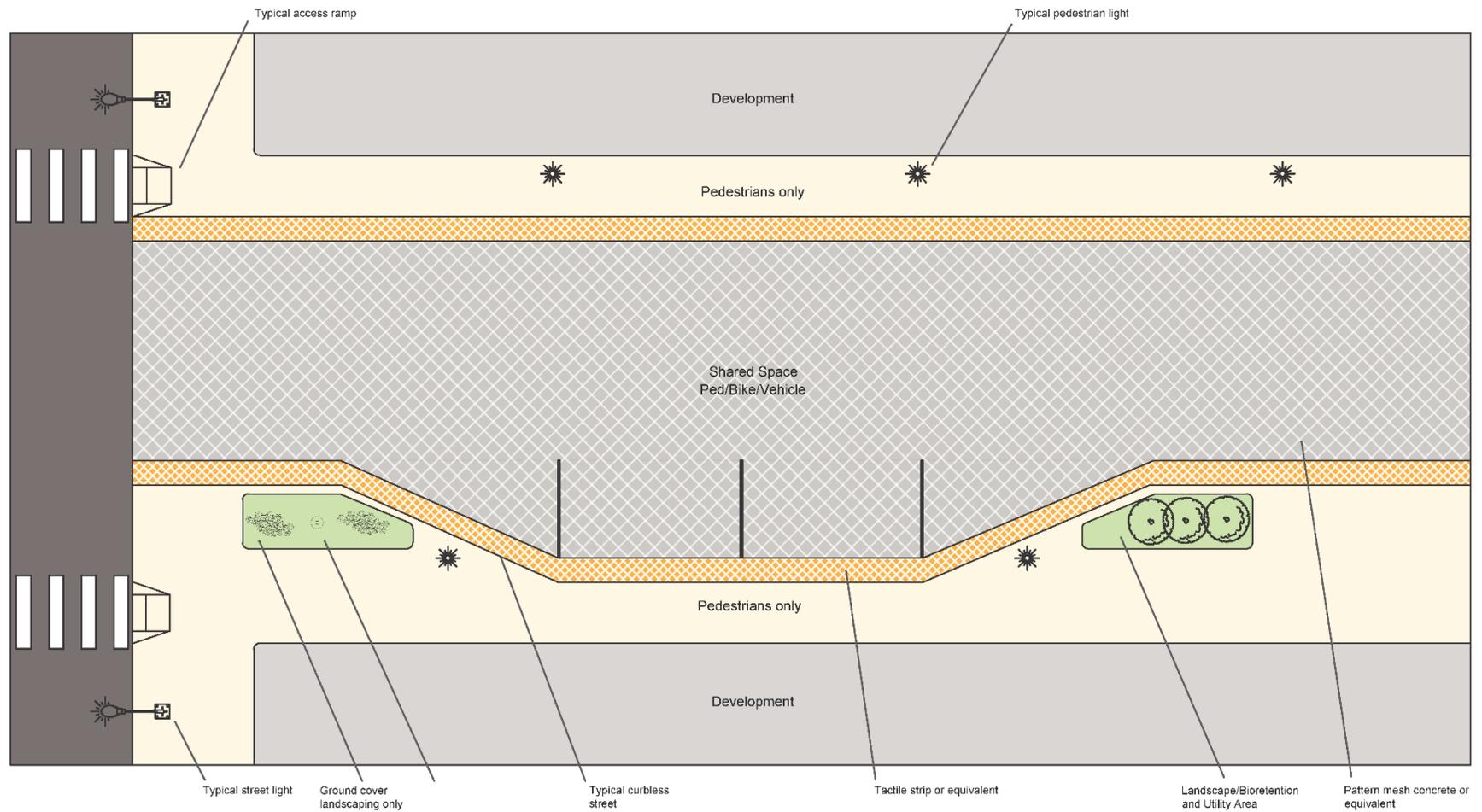


Figure 18. Type III Street Hypothetical Block Plan

### Type III Street Hypothetical Street Sections

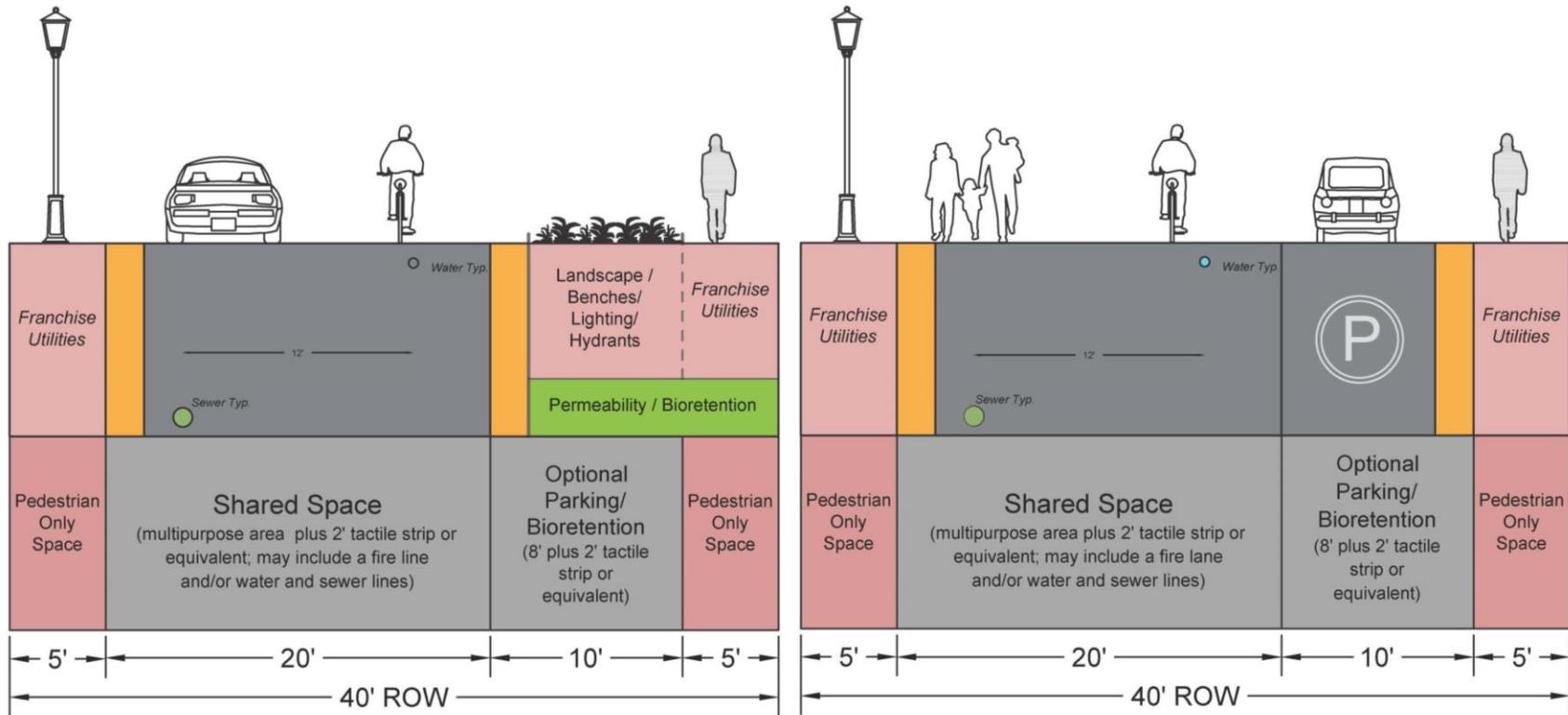


Figure 19. Type III Street Hypothetical Street Sections

## MULTI-PURPOSE TRAILS

### **Multi-Purpose Trails Description**

New multi-purpose trails are provided at the perimeter of the Marymoor Subarea to facilitate non-motorized access to Marymoor Park, the East Lake Sammamish Trail, the Southeast Redmond light rail station, and other regional trail facilities. Trail alignments shown in this report are conceptual and may change considerably as preliminary and final designs are prepared for the Sound Transit light rail station and parking garage and for NE 70<sup>th</sup> Street including the roundabout at 176<sup>th</sup> Avenue NE.

Standard trail sections for perimeter trails are per the 2009 King County Regional Trails System Draft Development Guidelines. The Marymoor Subarea utilizes a variation on the King County RTS Section 2 and RTS Section 3 standard trail cross sections as described in the notes for each trail section type. The RTS Section 2 standard trail (see Figure 19) extends to the north and east from the intersection of the north/south and east/west trending perimeter trail segments. It provides connections to the SE Redmond light rail station and East Lake Sammamish Trail. The RTS Section 3 standard trail (see Figure 20) extends east from this same intersection of the two perimeter trail segments to the west edge of the planned Marymoor Park Apartments development site. It then turns south connecting to the Marymoor Central Connector trail (see Figure 13). For perimeter trails the shy distance for signs could be reduced or eliminated in certain areas through further design. The goal is to only take that space where necessary, such as at decision points (trail intersections).

The standard trail section for non-perimeter trails is per the City's regional trail standard as shown in Figure 21. This trail section allows for flexibility in providing a paved and soft surface trail or just a paved trail, but provides a minimum of 22 feet for a regional trail with shoulders and clear zones. Stormwater associated with multi-purpose trails will be infiltrated, possibly in the shoulder areas.

## RTS Section 2 Standard

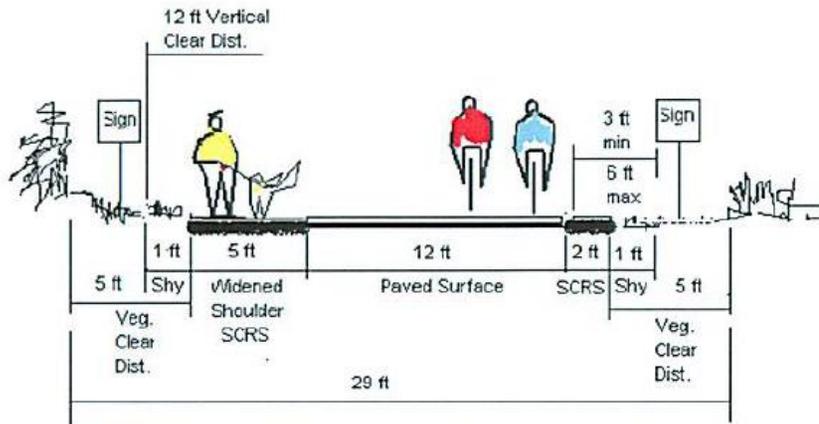


Figure 20. RTS Section 2 Standard

## RTS Section 2 Notes

1. Multi-purpose trails are assumed to be outside the Marymoor Park boundary pending future discussions with King County.
2. Non-motorized connections to Marymoor Park assumed to be built by King County.
3. Section will have a 14 foot concrete surface with signature design treatment.
4. 6-foot adjacent soft-surface path on park side (where adjacent to park).
5. All shoulders not adjacent to park are hard surface.

### RTS Section 3 Standard

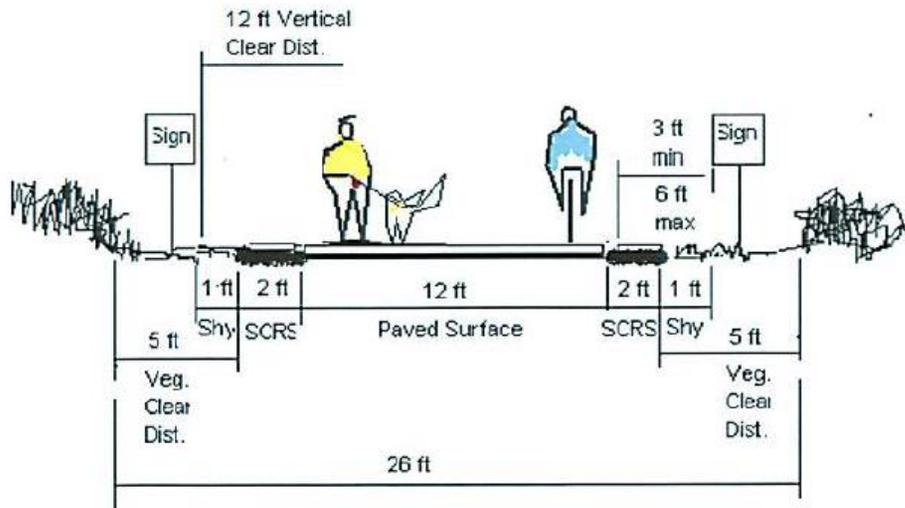


Figure 21. RTS Section 3 Standard

### RTS Section 3 Notes

1. Multi-purpose trails are assumed to be outside the Marymoor Park boundary pending future discussions with King County.
2. Non-motorized connections to Marymoor Park assumed to be built by King County.
3. Section will have a 12-foot asphalt paved surface with hard surface shoulders.

## City Regional Trail Standard

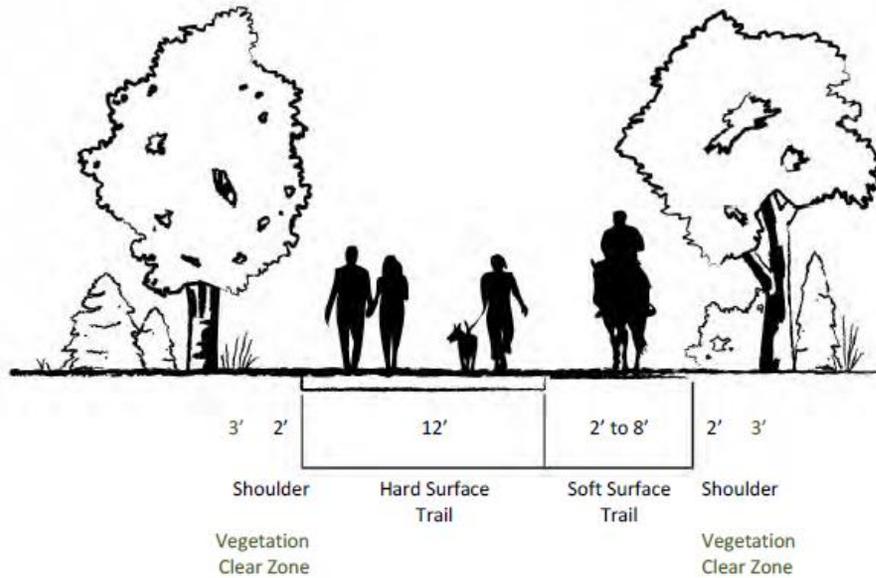


Figure 22. City Regional Trail Standard

### Variations from the Standard

The RTS Section 2 Trail varies from the standard as noted in items 4 and 5 in the RTS Section 2 Trail notes listed above (all trail shoulders to be hard surface except the shoulder on the park side of the trail immediately adjacent to Marymoor Park). The RTS Section 3 Trail varies from the standard as noted in item 3 in the RTS Section 3 Trail notes listed above (trail shoulders to be hard surface versus soft). Variations from the City Regional Trail standard are to be determined during future phases of design.

# INFRASTRUCTURE PLAN

## RIGHTS-OF-WAY

The typical mid-block rights-of-way have been sized to provide adequate capacity for all modes of travel and to accommodate sufficient space for landscaping, bioretention, and street furniture.

Right-of-way widths are sized to accommodate the function and character of each street and to minimize the reconstruction of existing streets to the greatest extent possible. The typical mid-block right-of-way widths for the various street types are reflected in Figure 22.

At the time of future design it may be determined that some functions will be accommodated in easements rather than right-of-way.

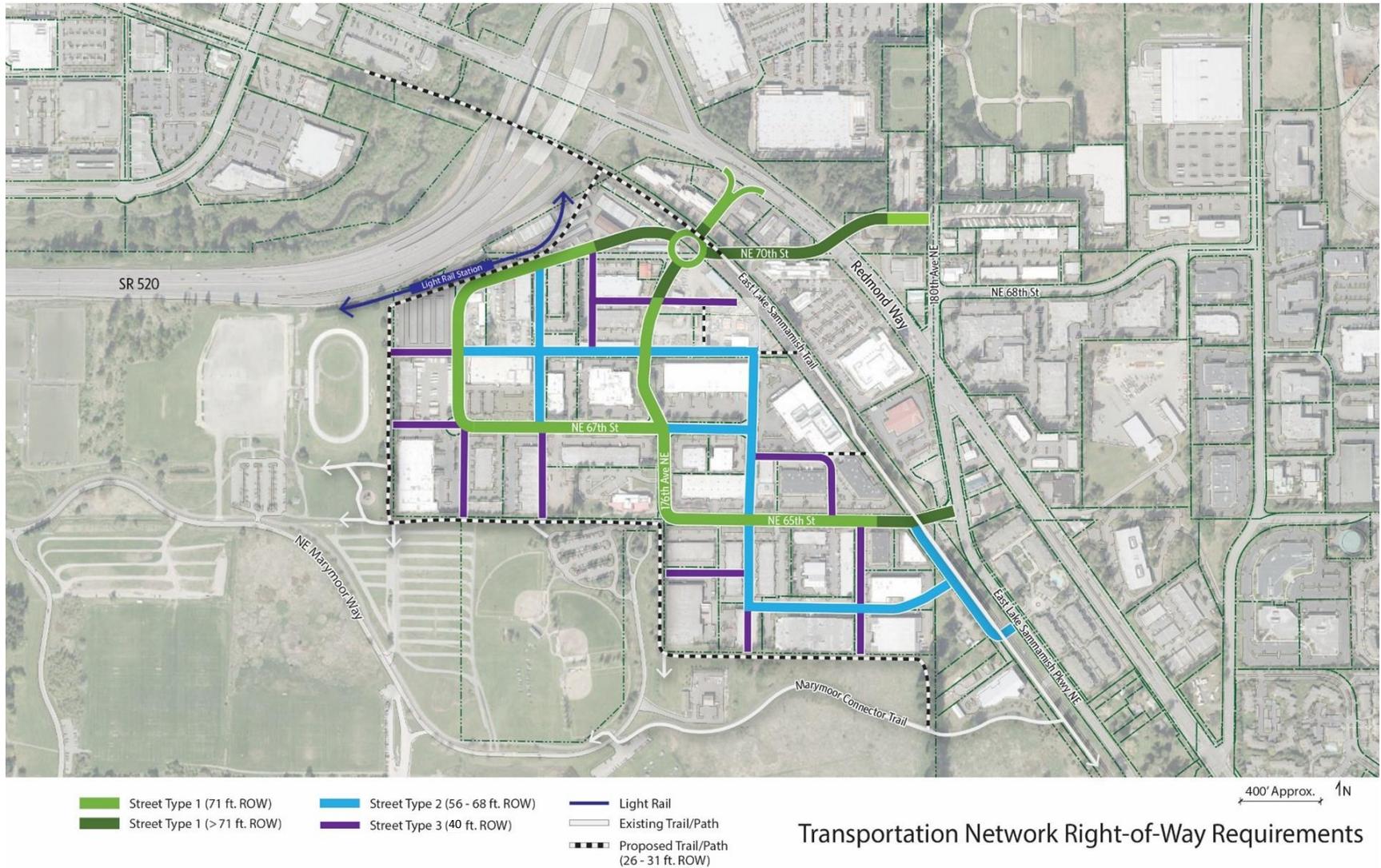


Figure 23. Rights-of-Way

## CHANNELIZATION AND INTERSECTION CONTROL

The roadway channelization and traffic control devices shown in Figure 23 are supported by the traffic analysis based on 2030 forecasted traffic volumes and land use conditions.

The roundabout shown at the intersection of 176th Avenue NE and NE 70th Street will facilitate heavy peak period traffic flows anticipated to and from the Sound Transit parking garage and will help avoid gridlock between this intersection and Redmond Way. The 5% design of the roundabout indicates there are several geometric challenges that will have to be resolved during preliminary and final design.

Roadway geometry, channelization and intersection control on NE 70th Street, 172nd Avenue NE, and NE 68th Street in the vicinity of the Sound Transit station will depend largely on final design details for the Sound Transit light rail station, station plaza, and parking garage. The light rail station and parking garage are only at a conceptual design stage and are subject to change during future phases of design.

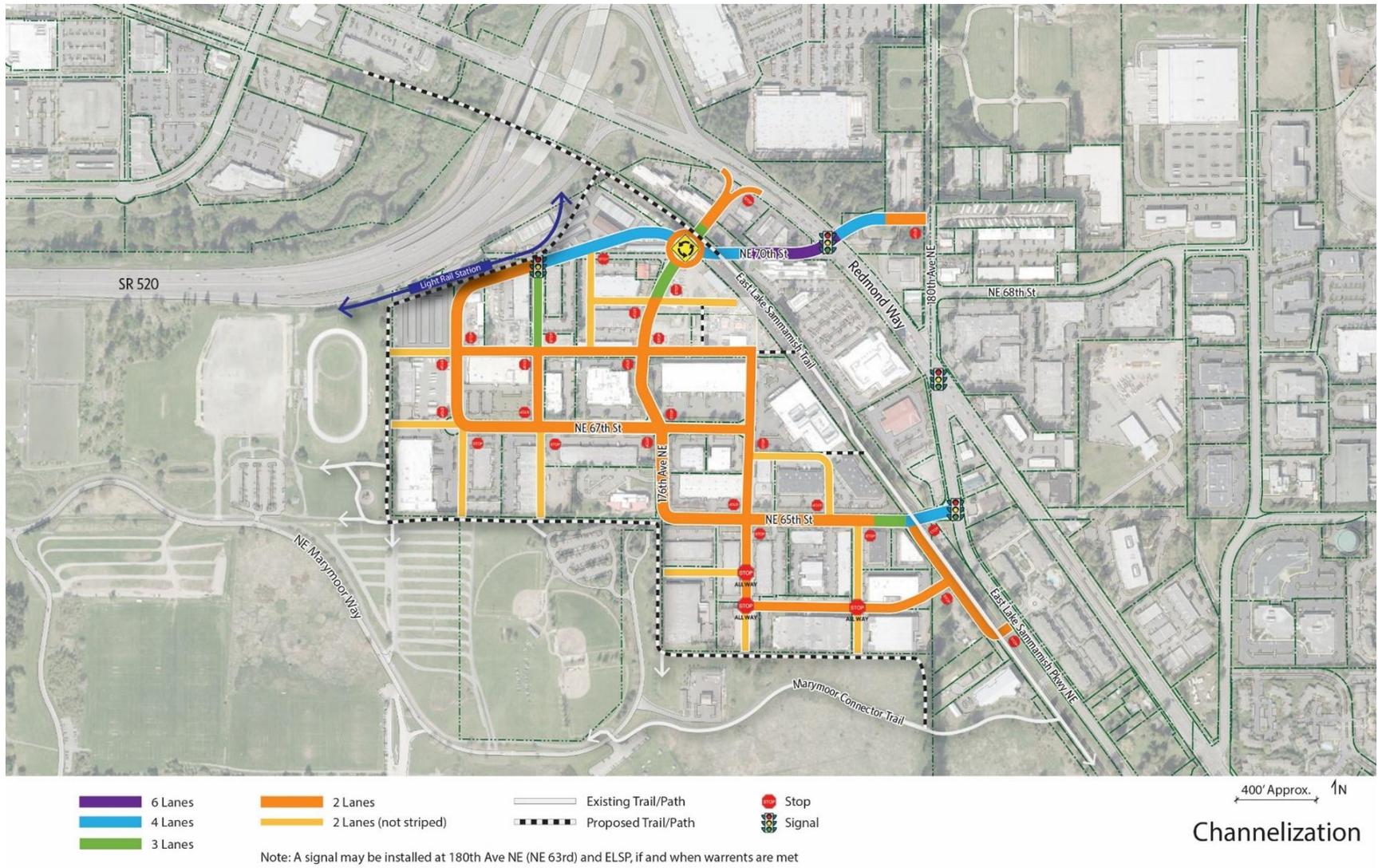


Figure 24. Channelization and Intersection Control

## CURBSIDE PARKING

Curbside parking is planned on one side of Type 1 streets, and one or two sides of Type II streets. Curbside Parking is not allowed on Type III streets.

Curbside parking is preferred along all parcels where ground-floor pedestrian-oriented uses or residential uses are required.

Short-term parking is preferred in close proximity to ground-floor pedestrian-oriented uses. Loading zones will be planned in future phases to accommodate the needs of surrounding development, including transit patron drop-offs.

Type III streets can accommodate load/unload zones where such zones do not conflict with emergency access needs.

Locations where curbside parking is allowed on streets within the Marymoor Subarea are shown in Figure 24.

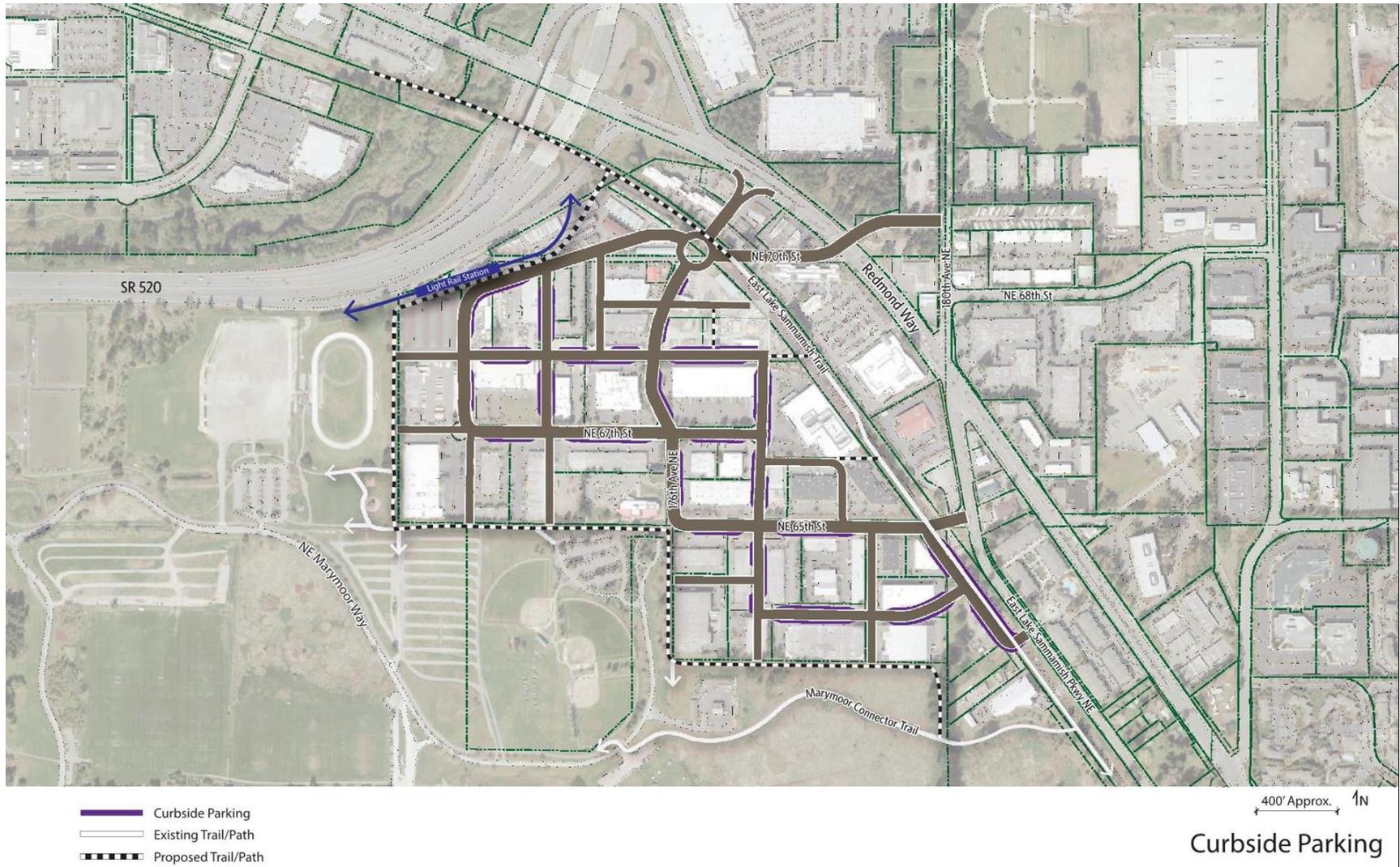


Figure 25. Curbside Parking

## VEHICULAR ACCESS AND LOADING ZONES

Figure 25 shows which block faces permit vehicle access and loading zones. Where vehicle access is shown as “limited,” vehicle driveways shall be permitted only if the City determines that no other vehicle access is feasible or a vehicle access point is required for emergency response or traffic circulation purposes. In the event of required emergency access, access shall be limited to emergency response vehicles unless needed for general traffic circulation purposes. Unless otherwise indicated, primary vehicle access shall be from lowest-classification street (see RZC 21.52.030.E).

Vehicular access to development sites is prohibited along most Type I streets to reduce conflicts between automobiles, pedestrians, and bicyclists, creating a safer and more pleasant experience for walking and biking.

Curb-cuts along Type I streets are generally prohibited.

Vehicular access and loading zones should occur along Type II or Type III streets to the greatest extent possible.

Loading zones can be accommodated on Type III streets where such zones do not conflict with emergency access needs.

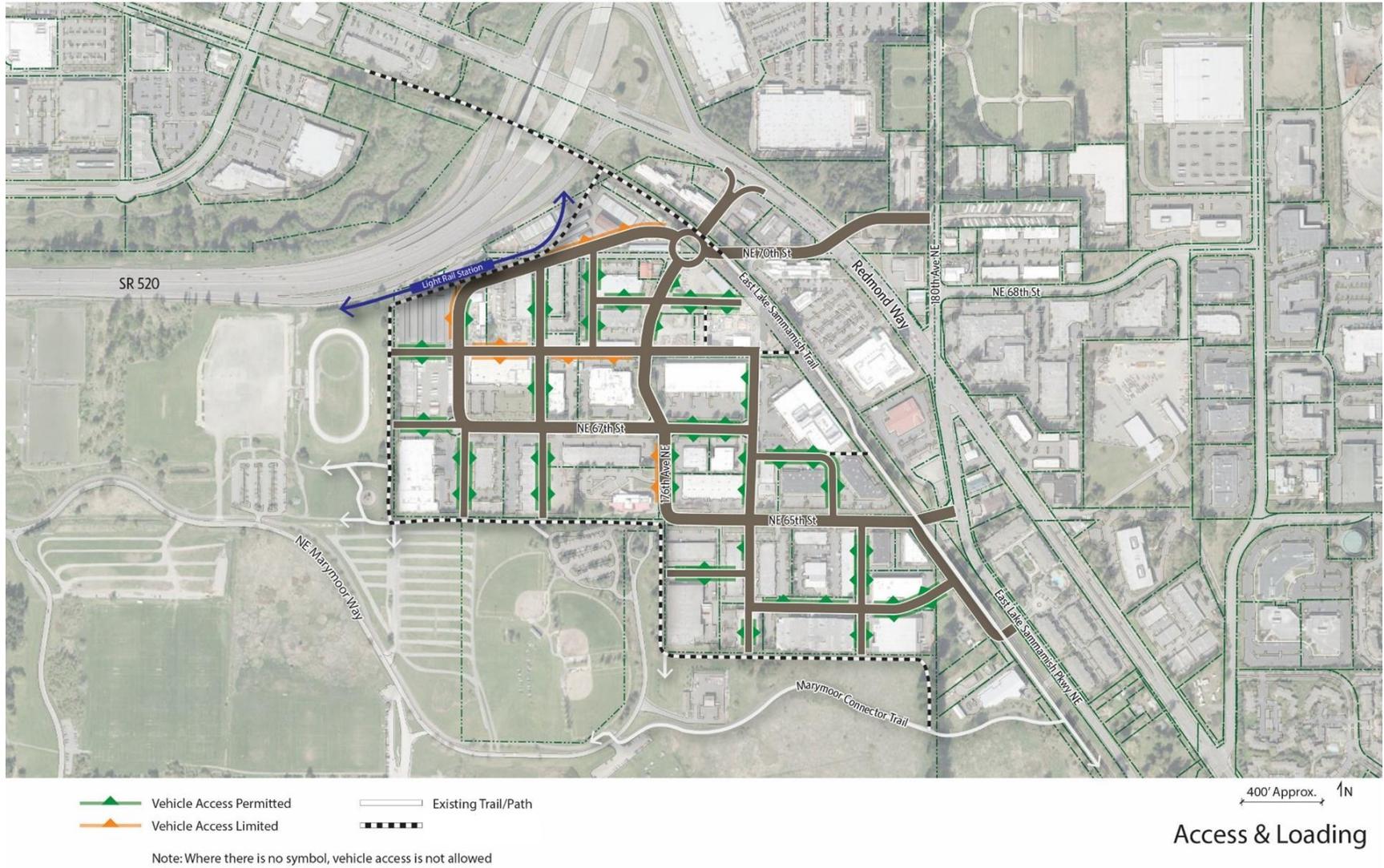


Figure 26. Vehicular Access and Loading Zones

## TRANSIT

The Marymoor Subarea will benefit from light rail and bus transit service as described below and shown in Figure 26.

### **Sound Transit**

Sound Transit's East Link light rail will serve the Marymoor Subarea as part of the Sound Transit 3 (ST3) phase of regional system expansion. The Southeast Redmond light rail station will include a park & ride structure with approximately 1,400 spaces. The final location of the parking structure will be determined through the Southeast Redmond station design process. The East Link Final Environmental Impact Statement concept design locates the garage on the south side of NE 70th Street just south of the station.

### **King County Metro Transit**

The Marymoor Subarea is expected to be served by local and regional bus transit connecting to the Southeast Redmond light rail station. Specific bus service to and from the subarea and light rail station has not yet been identified. Potential bus transit circulation serving the Marymoor Subarea is shown on Figure 26.

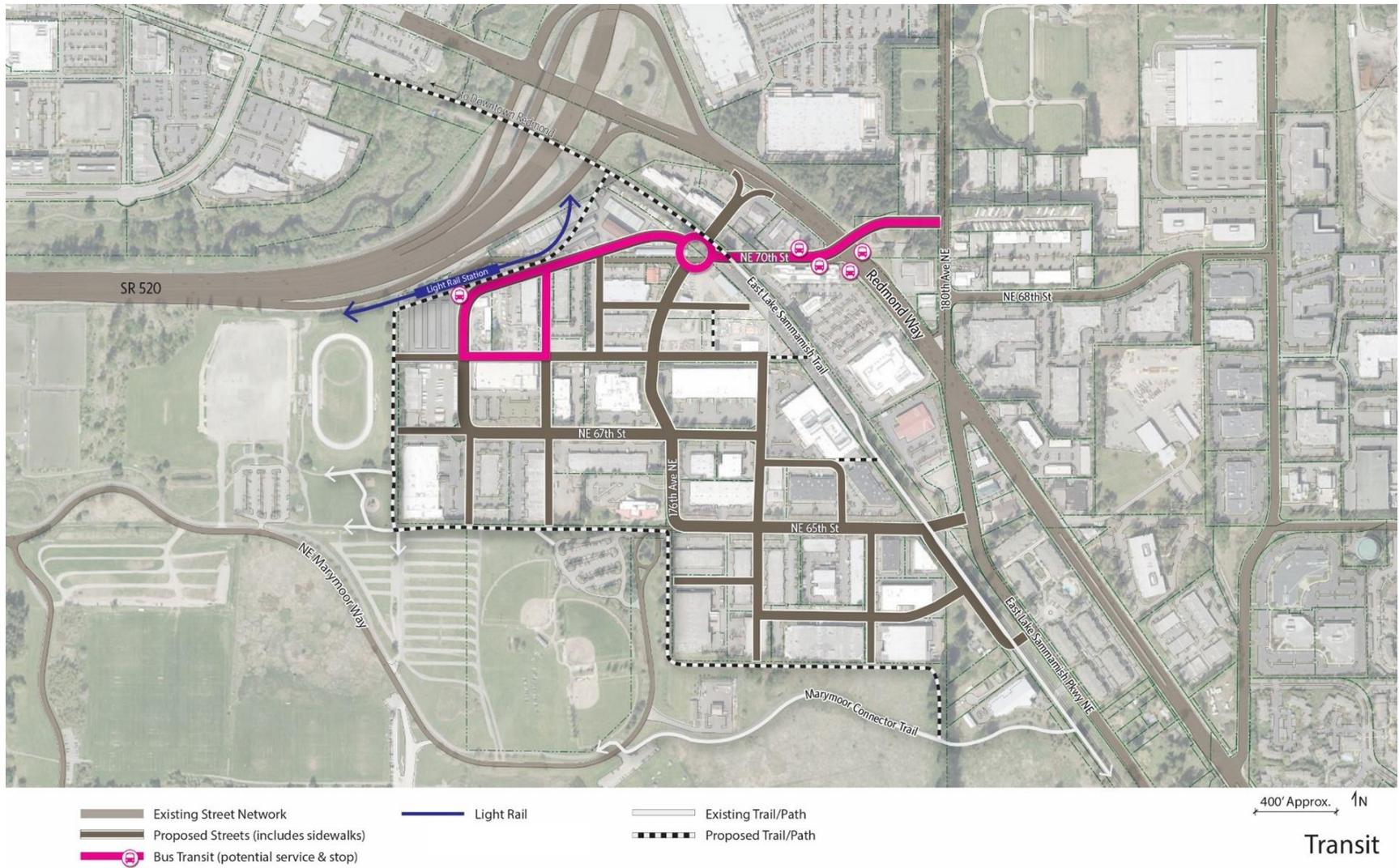


Figure 27. Transit

## BICYCLE

Bicycle facilities are provided for safe and convenient bicycle circulation within the subarea. New and expanded multi-use pathways and trails will provide bicyclists with regional connections to Marymoor Park, the Southeast Redmond light rail station and Downtown Redmond. Bicycle accommodations are shown in Figure 27 and discussed briefly below.

### **Type I Streets**

In-street cycle tracks protected from general purpose traffic by buffer zones are provided on most Type I streets.

### **Multi-Purpose Trails**

There is strong support for three multi-purpose trail projects to accompany construction of the Southeast Redmond light rail station and park & ride garage. These trail projects will enhance local and regional bicycle and pedestrian circulation and connections:

- A multi-purpose trail from the light rail station to the Marymoor Connector Trail
- A multi-purpose trail from the light rail station to the East Lake Sammamish Trail
- Extension of the East Lake Sammamish Trail across SR 520 to the Redmond Central Connector

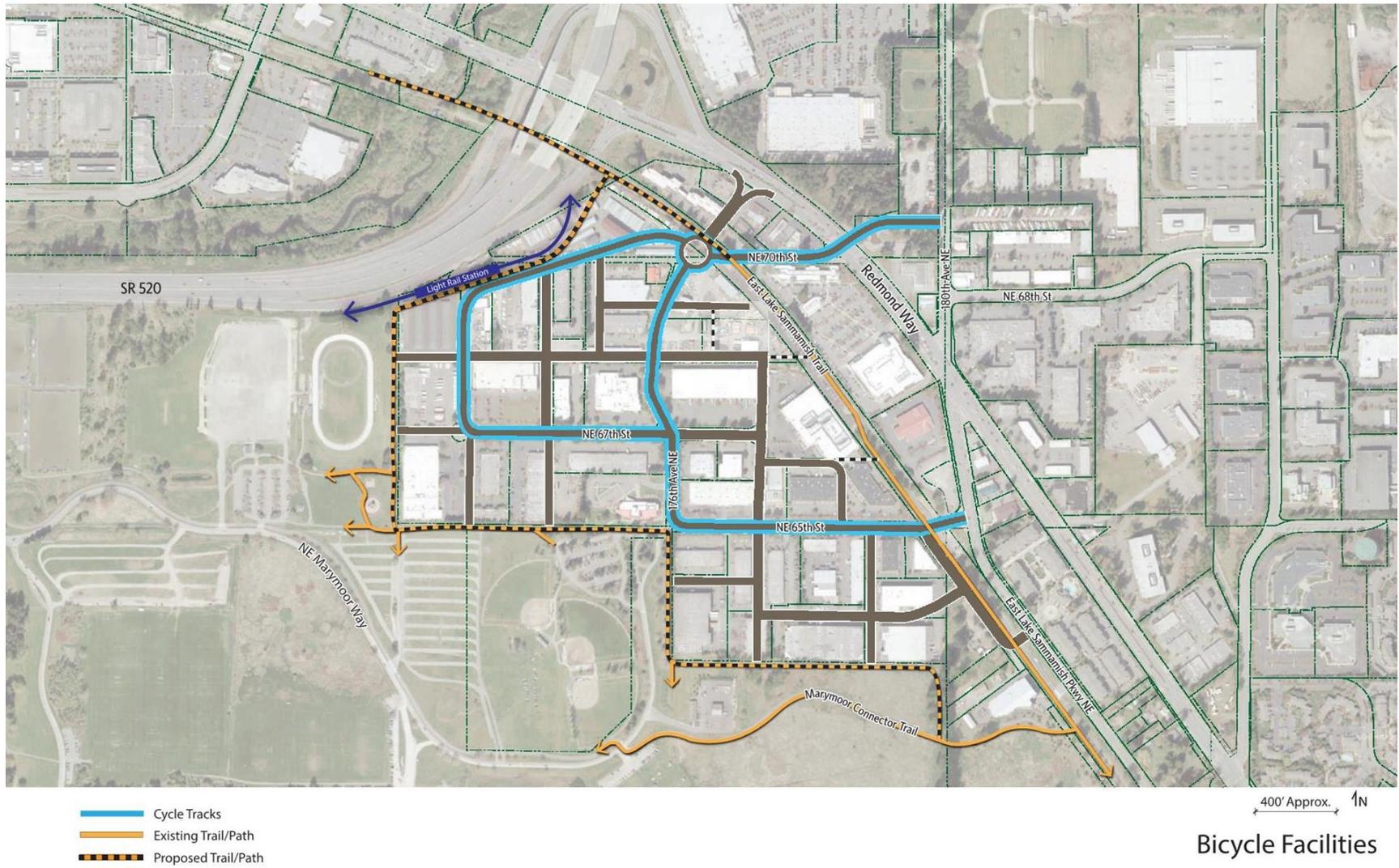


Figure 28. Bicycle Facilities

## PEDESTRIAN

All streets within the subarea will contain ADA compliant sidewalks and curb ramps for safe, convenient pedestrian mobility. New and expanded multi-use pathways and trails will provide pedestrians with regional connections to Marymoor Park, the Southeast Redmond light rail station and Downtown Redmond. Pedestrian accommodations are shown in Figure 28 and discussed briefly below.

### **Type I and Type II Street**

Type I and Type II streets will include ADA compliant sidewalk facilities on both sides of the street.

### **Type III Streets**

Type III streets include a 20-foot shared space designed predominately for non-motorized uses and a separate 4-foot ADA compliant pedestrian walk route in a shared use environment.

### **Multi-Purpose Trails**

There is strong support for three multi-purpose trail projects to accompany construction of the Southeast Redmond light rail station and park & ride garage that will enhance local and regional pedestrian and bicycle connections:

- A multi-purpose trail from the light rail station to the Marymoor Connector Trail
- A multi-purpose trail from the light rail station to the East Lake Sammamish Trail
- Extension of the East Lake Sammamish Trail across SR 520 to the Redmond Central Connector

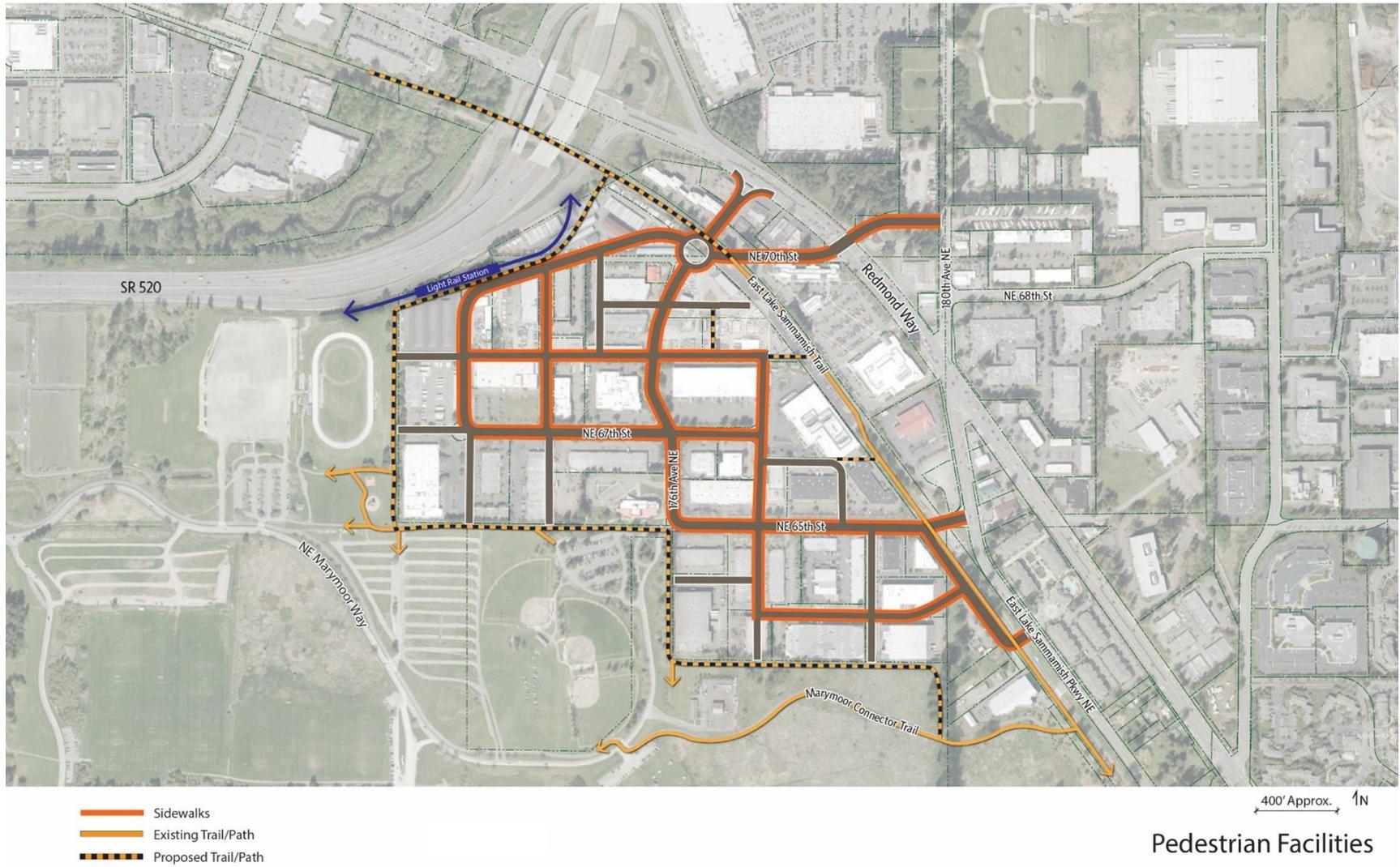


Figure 29. Pedestrian Facilities

## STORMWATER

The Marymoor Subarea has no natural stormwater outfall and only a rudimentary stormwater conveyance system. As a consequence, most sites currently infiltrate all stormwater, which is possible because the soils are very favorable toward infiltration. In addition, the Marymoor Subarea is in an environmentally significant area being in close proximity to Bear Creek and wetlands related to Lake Sammamish and on top of a part of Redmond's drinking water aquifer. For those reasons the stormwater management strategy for the Marymoor Subarea is to continue infiltrating stormwater, both from streets and sidewalks and private development. This strategy is meant to meet the following objectives:

- Comply with state and city requirements for stormwater management
- Protect surface water quality
- Address local flooding
- Protect and recharge groundwater
- Provide landscaping amenities to street

### **Stormwater Management for Streets and Sidewalks**

Stormwater from major public and private streets will be infiltrated using bioretention systems. Bioretention systems are engineered facilities sized for specific water quality treatment and flow control objectives that include a storage component, plants, and a specialized soil. Bioretention systems can come in a variety of configurations (cells, swales, or planters) and provide a green amenity to the surroundings. Bioretention systems are sized and spaced to ensure they can effectively infiltrate stormwater draining to them from the surrounding land area. To achieve this goal in the Marymoor Subarea, each bioretention system would need to occupy an area representing approximately 7 percent of the total land area that drains to it.

On streets where space is a constraining factor, Filterra systems would be used instead of bioretention cells. Filterra systems are similar to bioretention systems, but are solely used for water quality treatment. Filterra systems can take on multiple configurations and are typically located in landscaped areas, parking lots, or streetscapes. Water is treated within the Filterra system using a specialized filter media and then discharged into a shallow infiltration facility below the sidewalk (e.g., a ChamberMaxx system). Similar to bioretention systems, the spacing of Filterra systems along the street would be dictated by how much land area each associated shallow infiltration system can infiltrate.

Figure 29 shows which streets would use standard bioretention and Filterra systems. Figures 30 and 31 show typical configurations for bioretention and Filterra systems, respectively.

### **Stormwater Management for Private Development**

Most stormwater from private development will be infiltrated using bioretention systems. In order to successfully infiltrate stormwater, each development site will be required to set aside approximately 7 percent of land area for bioretention systems. Land set aside for bioretention systems can serve multiple purposes, such as landscaping or open space. In some cases infiltration can occur under impervious surfaces, like surface parking lots. Green roofs can also be used as a stormwater management technique (Figure 32).

Green roofs create green space for tenants, reduce stormwater runoff volume through evapotranspiration, provide peak flow rate attenuation, increase building insulation, increase the roof lifespan, create wildlife habitat and provide an aesthetic amenity.

A detailed description of the stormwater analysis and design considerations for the Marymoor Subarea is contained in the stormwater report located in Appendix 4.





**Figure 31. Typical Bioretention System Configurations**



Figure 32. Typical Filterra System Configuration



**Figure 33. Typical Green Roof System Configuration**

## WATER AND WASTEWATER

This section summarizes the methodology used to determine water and wastewater demands for the Marymoor Subarea. Proposed street layouts were used as the basis for future redevelopment in the subarea. Initially, TAZ data for the area was used to size the water and wastewater system, however it was later determined that the TAZ did not fully represent the potential population of the Marymoor area at full build out. Instead of using the TAZ data, the assumption of 4-story buildings with multifamily housing above commercial and/or retail on the ground floor was made to estimate the number of inhabitants and/or employees for the build out of each future parcel. This assumption is a more accurate representation of the full build out population. It is consistent with the current development plans for a few parcels in the subarea. The number of inhabitants and/or employees per square foot is described in Table 1 below.

**Table 1. Subarea Distribution**

Type of Use	Distribution per Acre
Multi-Family Units	55 Units/Acre
Retail/Commercial Area	13,666 SF/Acre

After calculating the number of inhabitants and/or employees within each future parcel, the water and wastewater demands for each parcel were determined using the values shown in Table 2.

**Table 2. Subarea Demands**

Type of Use	Demand (Water and Sewer)	Source
Single Family Residence	177 Gal/Day	“City of Redmond 2011 Water System Plan”
Multi-Family Residence	126 Gal/Day/Household	“City of Redmond 2011 Water System Plan”
Retail Commercial Areas	2,000 Gal/Acre/Day	“City of Redmond Design Requirements Water and Wastewater System Extensions”
Industrial	2,000 Gal/Acre/Day	“City of Redmond Design Requirements Water and Wastewater System Extensions”
I/I	1,100 Gal/Acre/Day	“City of Redmond Design Requirements Water and Wastewater System Extensions”

### **Existing Wastewater System**

The existing wastewater system in the Marymoor Subarea includes two publicly owned pump stations, PS 12 and PS 13. PS 13 collects the wastewater for the majority of the Marymoor Subarea. The properties in the southeast corner of the Marymoor Subarea have a lower elevation than PS 13, so the wastewater from those parcels is conveyed to PS 12. Both pump stations discharge from the Subarea via an 8-inch forcemain along NE 65th Street. The 8-inch forcemain connects into a 24-inch gravity sewer at existing MH 984 located at the intersection of NE 65th Street and E Lake Sammamish Parkway NE. Existing sewer system piping is shown on Figure 33.

### **Proposed Wastewater System**

Sewer lines were laid out in the proposed street layout such that every parcel in the Marymoor Subarea had at least one sewer line adjacent to the parcel. If the proposed parcel could feasibly tie into more than one of the proposed sewer lines, the parcel's proposed sewer demand was divided among the potential sewer lines for pipe sizing. Per the City of Redmond's request, HDR designed the proposed wastewater system to consist of only one pump station located in an existing 50'x50' easement on the Lake Washington Institute of Technology's property. See Figure 33 for the proposed pump station location. It was determined that the proposed pump station flows could discharge into the existing 8-inch forcemain out of the Marymoor Subarea.

The southeast tip of the Marymoor Subarea flows could not be feasibly redirected to the proposed pump station, so a gravity line to serve this area may need to be placed on 180th Place NE and tie into a 21-inch gravity sewer at existing MH 978 located at the intersection of 180th Place NE and E Lake Sammamish Parkway NE. That gravity line is not shown in the proposed layout or included in estimates.

### **Existing Water System**

The Marymoor Subarea existing water system consists of 12-inch and smaller waterlines that serve the existing parcels. There are 12-inch mains in portions of 176th Avenue NE, NE 70th Street, NE 67th Street, NE 63rd Street, and NE 65th Street. All other waterlines are a smaller diameter pipe for servicing parcels. All waterlines in the Marymoor Subarea are owned by the City of Redmond. Existing water system piping is shown on Figure 34.

### **Proposed Water System**

The proposed water system is comprised of 12-inch waterlines laid out in each proposed street in the Marymoor Subarea. Twelve-inch waterlines are required due to commercial area fire flow design requirements in the City of Redmond. Where there are already 12-inch waterlines located in the proposed ROW (portions of 176th Avenue NE, NE 70th Street, NE 65th Street, etc.), the waterlines are not assumed to be replaced. See Figure 34 for the proposed water system layout in the Marymoor Subarea.

**Proposed Water and Wastewater System Costs**

The opinion of probable construction costs for the Marymoor Subarea water and wastewater systems was broken up by street section. The estimate only includes the costs for the water and wastewater system improvements (including appurtenances) and does not account for the costs associated with street improvements. Tabula was used as a basis for all estimates. However, our experience is that Tabula underestimates pump station costs, so we estimated the cost for a pump station based on recent pump station estimates from other projects of similar size rather than using Tabula. For a summary of cost assumptions made for the Marymoor Subarea water and wastewater improvements, see Table 3 below.

**Table 3. Cost Assumptions**

<b>Material/Improvement</b>	<b>Estimated Cost</b>
8" Gravity Sewer	\$400/LF
10" Gravity Sewer	\$410/LF
12" Gravity Sewer	\$430/LF
15" Gravity Sewer	\$470/LF
Pump Station	\$5.00M
12" Waterline	\$250/LF

After applying these cost assumptions to the proposed Marymoor Subarea improvements, an opinion of probable construction cost was completed for each street section. See Table 4 for the total combined construction cost estimate for the Marymoor Subarea water and wastewater improvements.

**Table 4. Opinion of Probable Construction Costs for Water and Wastewater Improvements in Marymoor Subarea**

<b>Improvement Type</b>	<b>Estimated Cost</b>
Water System	\$3.16M
Wastewater System	\$8.26M

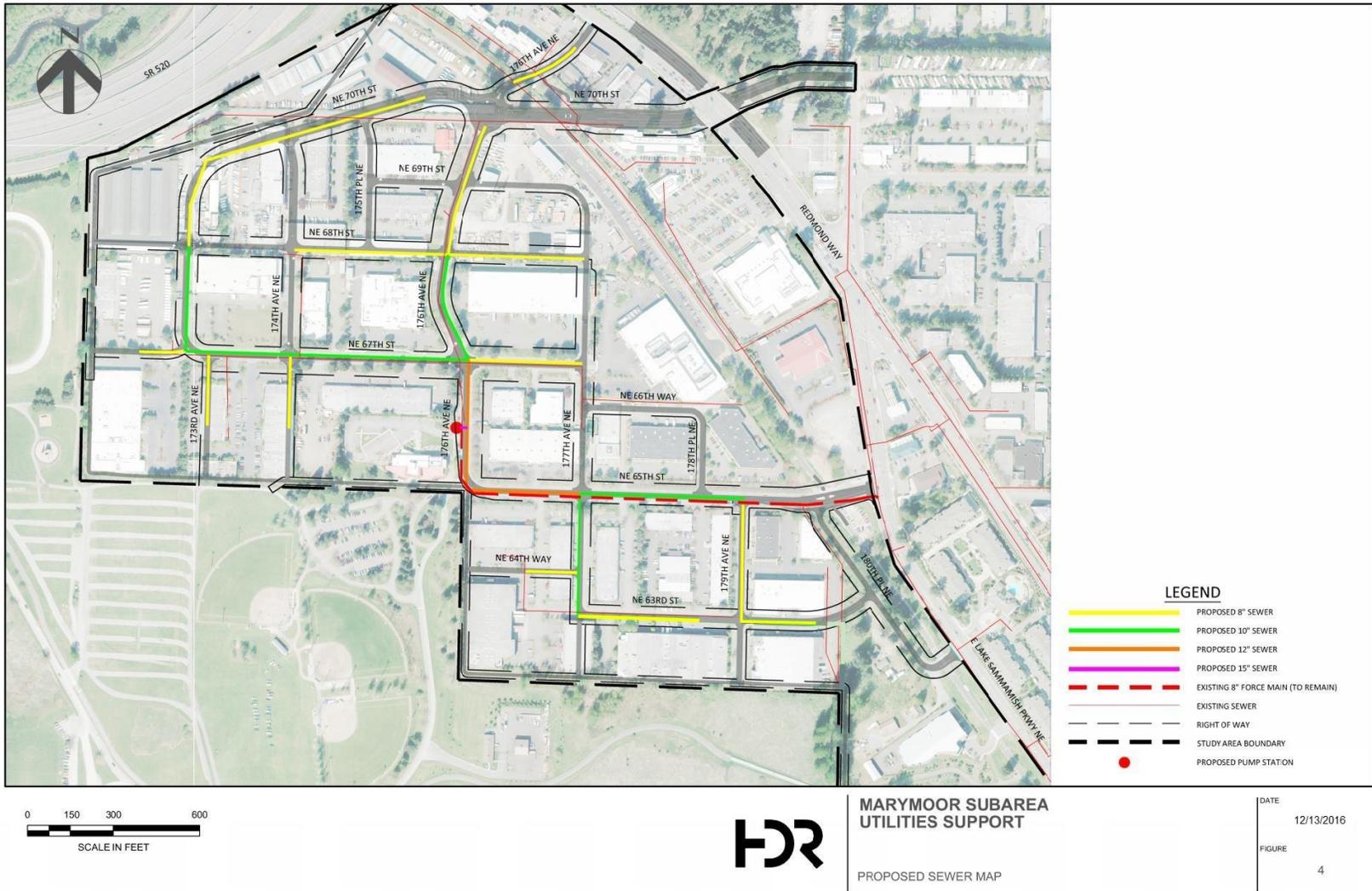


Figure 34. Proposed Sanitary Sewer System Layout

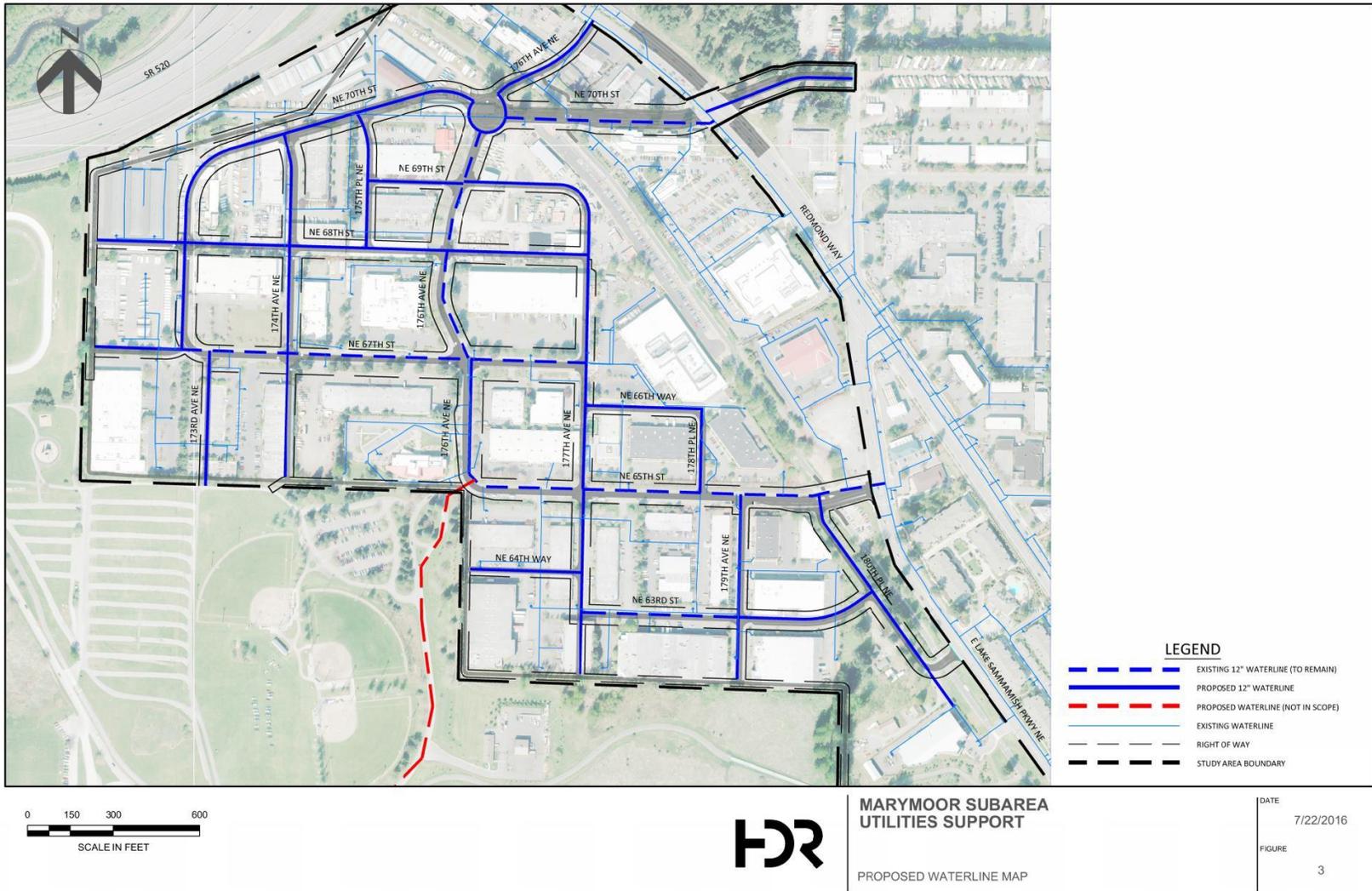


Figure 35. Proposed Water System Layout

# DESIGN GUIDANCE

## OVERVIEW

This section provides design guidance to the City of Redmond and developers for streetscape elements within the public rights-of-way for the various street and trail types that make up the preferred circulation network within the Marymoor Subarea. The goal is to create a consistent look and feel along subarea streets and trails that are reflective of the subarea vision and character using approved City design criteria to the greatest extent possible. Approved design criteria are contained in the following documents:

- WSDOT Standard Specifications for Road, Bridge, and Municipal Construction
- City of Redmond Standard Specifications and Details
- Redmond Zoning Code (RZC)
  - RZC 21.17 Adequate Public Facilities and Undergrounding of Utilities
  - RZC 21.52 Transportation Standards
  - Article III Design Standards (21.58 to 21.62)
  - RZC Appendix 2 Construction Specifications and Design Standards for Streets and Access
  - RZC Appendix 3 Design Requirements for Water and Wastewater Extensions
- Transportation Master Plan
  - Street System Plan (Chapter 4.1)
  - Transit System Plan (Chapter 4.2)
  - Pedestrian System Plan (Chapter 4.3)
  - Bicycle System Plan (Chapter 4.4)
- Bicycle Facilities Design Manual Guidelines
- Illumination Design Manual
- Roundabout Design Manual
- Traffic Signal Design Manual
- King County Regional Trails System Draft Development Guidelines

In most cases, the street type standard sections and variations on the standard sections described in this report combined with City approved standards listed above will provide sufficient design guidance. However, design practices and technologies are rapidly evolving for bicycle facilities and traffic signal systems which will require more flexibility in the application of standards over the long term planning horizon. Further design guidance related to certain specific elements of the public realm is provided below:

### **Roadways & Sidewalks**

Roadways and sidewalks for new Type I and Type II streets should use the standard sections and typical block plans illustrated in this document for guidance on roadway and sidewalk widths and placement of other features within the roadway and sidewalk zones including channelization, bike lanes, cycle tracks, utilities, parking and bioretention or landscaping features.

### **Lighting**

The City of Redmond Illumination Design Manual should be used for illumination design requirements on all streets. However, since Type III streets are not specifically addressed in the Illumination Design Manual, illumination design decisions on Type III streets will be based on the context of each particular street.

For all street types a cobra head fixture mounted on a round steel pole is standard. Illumination on Type I and II streets will typically be owned and maintained by the City. Illumination on Type III streets will typically be owned, installed and maintained by PSE.

### **Landscaping**

Wherever possible, existing mature trees should remain in place. Future street design will incorporate and/or enhance existing tree canopy to the extent possible. New streets will incorporate landscaping and new trees as part of an overall network of landscaping that is designed per the context and desired theme of the existing neighborhood.

Landscaping themes associated with future streets should be considered based on maximizing orientation of shade and weather protection and developing a street tree planting theme. The theme should consider community preference and should blend in with any naturally existing species palette associated with the natural system of wetland and other natural features associated within and surrounding the project area.

Landscaping and bioretention should be integrated as part of an overall planting and landscape theme for the area, and landscaping associated with bioretention features should be part of, and associated with, an overall planting palette that's consistent with existing ecosystems of the area.

Landscaping associated with bioretention systems should be consistent with the overall landscape theme and should reflect the ideal planting palette and mix that is closely associated with native and existing plantings and natural systems in the area.

The planting plan and landscaping theme should convey the community's preference for a "natural" landscape that reflects a less formal and naturalistic palette for planting and materials. The arrangement of plants, trees and construction of man-made features should reflect a concept of curvilinear and natural looking themes reminiscent of a less "built" environment instead of something that is an "urban" version of the natural environment.

### **Bioretention facilities**

Plant selection for bioretention areas will consist predominantly of Pacific Northwest Native plant species appropriate for stormwater facility hydrology and soil conditions. The native plant palette will be supplemented with horticultural plant varieties proven resilient to environmental conditions within urban bioretention facilities. The planting design will be based on the following criteria:

- Native vegetation should make up a minimum of 50% of the facility plant palette.
- Plants should require minimal maintenance after initial establishment.
- Plant groupings will be allowed to grow into massings and not require continual pruning.
- Plant selection should represent year-round color and interest for pedestrians.
- Bioretention within the right-of-way (ROW) will consist of trees, low-growing shrubs, and groundcovers in areas where sight distances need to be preserved. ROW planters where sight distances do not need to be preserved will incorporate medium-sized shrubs to add landscape variety, provide strategic screening, and shelter the sidewalk environment from traffic.
- Bioretention facilities should be blended into surrounding landscaped areas whenever possible. Gradual slopes and transitional plant palettes will be used to integrate facilities into adjacent landscapes.
- Planting stock and material should consist of stock with healthy, well-developed roots. Grasses, sedges, and rushes can be grown in 10-cubic-inch containers that will establish more deeply and quickly than small plugs. Shrubs and trees will need to follow size requirements for street trees and shrubs within the subarea plans.

### **Curb returns**

Curb returns will follow City standards including the use of Federal Yellow detectable warning surfaces for ADA ramps per WSDOT standard plan F-45.10. Representative images of the detectable warning surfaces are shown in Figure 35 below.

### **Utilities**

Water and sewer pipes will be placed in the roadway at a distance of 6 feet from the roadway centerline as approximately shown in the standard sections for Type I & II streets. Water should generally be north and east of centerline and sewer south and west of centerline.

Meter boxes will typically be placed in the space between bioretention areas. Street lights will also typically be placed in the space between bioretention areas at a minimum 2-ft setback from the face of the curb per City standards. Street light conduit runs will typically be located further away from the curb to avoid conflicts with bioretention areas. Fire hydrants will typically be placed in the landscaped bioretention area at setbacks from the curb specified by City standards. Franchise utilities will typically be placed in the sidewalk behind the landscaped bioretention area and ideally away from the Chambermaxx units on Type I streets to minimize potential conflicts. Franchise utilities may also be placed behind the 8' sidewalk in easement areas if available. Because of the intermittent nature of bioretention areas, utility conflicts with Filterra and CHAMBERMaxx infrastructure is not expected to be a problem.



**Figure 36. Detectable Warning Surface (Federal Yellow)**

## **Bicycle Facilities**

Bicycle facilities should be designed using the City of Redmond's Bicycle Facilities Design Manual Guidelines as a starting point. Other guidelines should also be considered and discussed with City staff for applicability to specific situations and to make sure the latest best practices for bicycle facility design are being used as appropriate. Other guidelines to consider include:

- NACTO Urban Bikeway Design Guide
- AASHTO Guide for the Development of Bicycle Facilities
- FHWA Separated Bike Lane Planning & Design Guide

In addition, there are many other resources available. A more comprehensive list of resources has been compiled by the Washington State Department of Transportation at: <http://www.wsdot.wa.gov/bike/designing.htm>.

## **Multi-purpose Trails**

Multi-purpose trails shall conform to the applicable RTS Section 2, RTS Section 3 and City Regional Trail standard sections and notes contained in this document. All multi-purpose perimeter trails within the Marymoor Subarea vary from the standard sections as described in the notes associated with the standard section. In addition, for perimeter trails the shy distance for signs could be reduced or eliminated in certain areas through further design. The goal is to only take that space where necessary, such as at decision points (trail intersections). Variations from the City Regional Trail standards for non-perimeter trails will be determined in future phases of design.

For RTS Section 2 trails, variations from the standard include:

- Section will have a 14-foot concrete surface with signature design treatment versus 12-foot asphalt surface with no design treatment.
- 6-foot adjacent soft-surface path on park side (where adjacent to park) versus 5-foot soft-surface.
- All shoulders not adjacent to park are hard surface versus soft-surface.

For RTS Section 3 trails, variations from the standard include:

- Section will have hard-surface shoulders versus soft-surface shoulders.

# IMPLEMENTATION STRATEGY

The implementation strategy provides the City and property owners with guidance about what gets built in what order by whom and how it is likely to be funded. The strategy is based on a set of principles developed by the City as outlined below:

How infrastructure is built:

- Phases are built around priority projects and logical dependencies are clearly identified
- Phases are somewhat flexible to allow for changes in market conditions
- Infrastructure is developed efficiently (e.g., when surface infrastructure is built, the below-ground infrastructure is also built)

How infrastructure is paid for:

- City funds, contributes to, or provides credits against transportation impact fees for projects that have system-wide benefit, and/or are critical to unlocking redevelopment potential
- Developers fund or contribute to projects that have mostly private/local benefit
- Cost sharing for impact-fee-eligible infrastructure is consistent with citywide growth-pays-for-proportionate-share-of-growth policy
- Cost sharing aligns with findings of economic analysis
- Utility reimbursement agreements are available to use in order to proportionately share costs of developer-funded utility projects

## OVERVIEW

### **Sound Transit Mitigation**

Sound Transit identified transportation mitigation projects in the East Link FEIS associated with the Southeast Redmond light rail station. As part of this infrastructure planning process for the Marymoor Subarea, the City has determined that those mitigation needs would be better met with a different set of station access projects. These projects include: providing station access via an improved NE 70th St, a new 173rd Ave NE, the extension of 176th Ave NE, constructing a roundabout at the intersection of 176th Ave NE and NE 70th St, and partnering with the City, King County and others to extend the East Lake Sammamish Trail across SR 520 into downtown Redmond and rechannelizing southbound 180th Ave NE at Redmond Way (outside subarea). In addition to the typical transportation system improvements located at the street surface such as roadways, curbs, gutters, sidewalks, signal and lighting systems, signage, landscaping and street furniture, the mitigation improvements include the underground electrical infrastructure feeding power to the signal and lighting systems as well as the publicly owned infrastructure making up the stormwater, water, and sewer systems.

## **Priority Projects**

Priority projects have been identified which will “unlock” redevelopment potential, stimulate subarea investment, and support development over time. Priority projects will be constructed in a phased approach and may include both public and private funding and partnerships.

Three priority projects, including sub-projects, have been identified for the Marymoor Subarea. They are shown in Figure 36 and listed below:

1. Station Area and Access
2. NE 70th Street Extension
3. Type I Street Enhancements

The remaining streets within the Marymoor Subarea will be privately funded and constructed by owners and developers of adjacent properties. The new pump station cost is likely to be the responsibility of the first development project south of NE 65<sup>th</sup> Street or the city may wish to contribute to the cost of the pump station as an incentive to development, or it could be funded through a local improvement district, reimbursement agreement, or other cost-sharing mechanism.

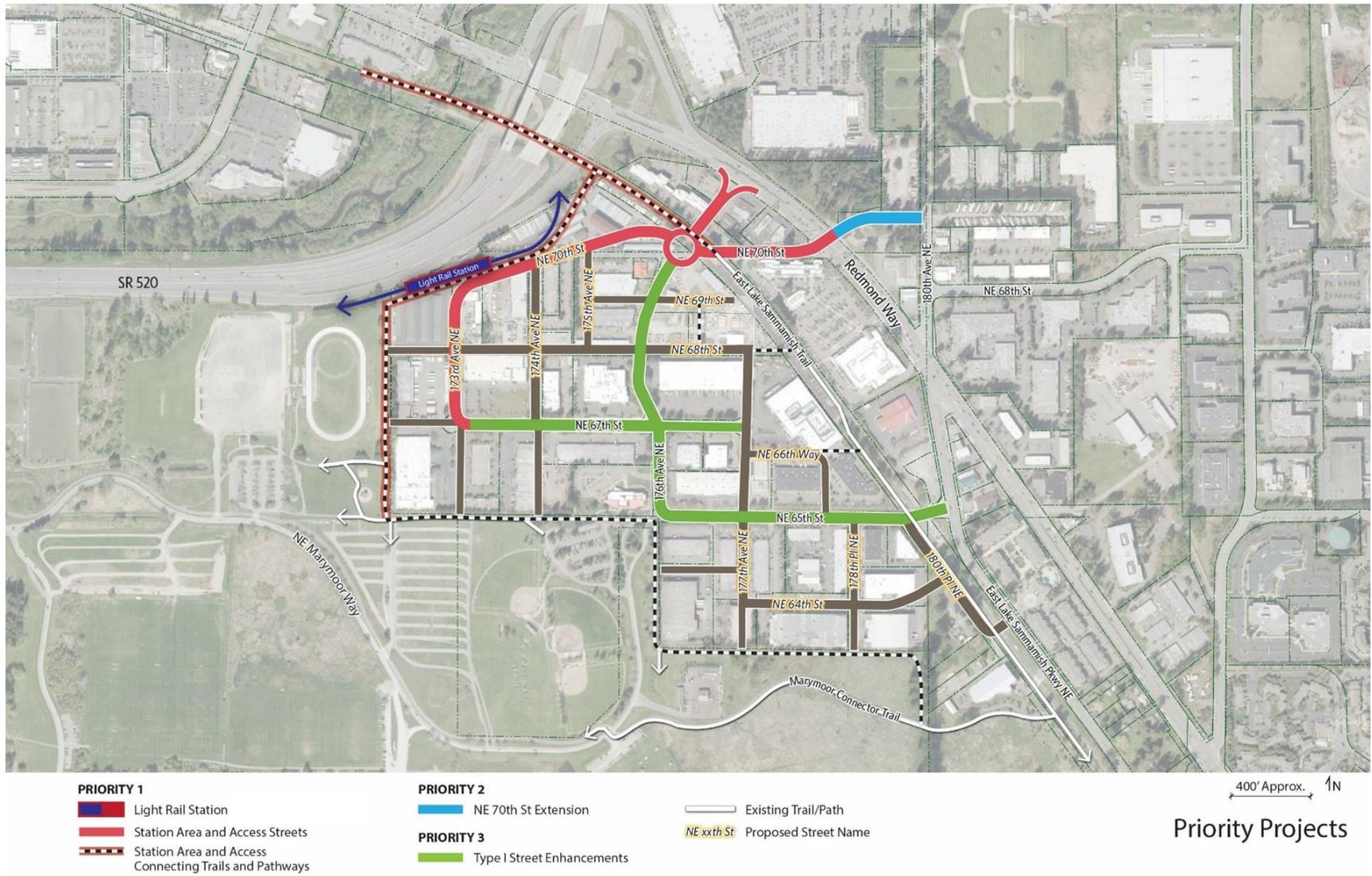


Figure 37. Priority Projects Overview

## STATION AREA AND ACCESS PROJECT

The Station Area and Access project includes the Southeast Redmond light rail station and park and ride garage and those street and trail improvements necessary to support an interconnected multi-modal station environment.

### **Project Description**

The Station Area and Access project consists of the four sub-projects listed below which should be integrated and closely coordinated during design and construction:

- Light Rail Station
- Park & Ride Garage
- Access and Circulation Streets and Associated Utilities
- Multi-Purpose Trails

### **Light Rail Station**

The Southeast Redmond station is included in the ST3 ballot measure scheduled to go before the voters in November 2016. The station concept design locates a station at the northeast end of Marymoor Park on the south side of the SR-520 and SR-202 interchange as shown in Figure 36. The station design is at a conceptual level and is subject to change during future phases of design.

### **Park & Ride Garage**

A park & ride garage with approximately 1,400 spaces is included as part of the Southeast Redmond station. The East Link FEIS locates the garage on the south side of NE 70th Street just south of the station. The FEIS garage footprint is positioned between the east end of the station platform and 175th Avenue NE on the west and east and between NE 70th and NE 69th Streets on the north and south. The FEIS concept has one entry/exit for the garage at NE 70th Street and a small turnaround for passenger drop off in front of the station platform. The parking structure location and design is subject to change through the Southeast Redmond station design process.

### **Access and Circulation Streets and Associated Utilities**

The access and circulation streets and associated utilities represent the minimum infrastructure network anticipated to adequately support access to and from the light rail station and park & ride garage based on 2030 estimated peak period traffic volumes per the traffic analysis study. The access and circulation streets include the following streets and their associated utilities:

- NE 70th Street: Redmond Way to the station platform
- 176th Avenue NE Extension: Redmond Way to the roundabout

- The roundabout
- 173rd Avenue NE: NE 70th Street to NE 67th Street

The sewer plan shows sewer lines extending from the station area south via the new 173<sup>rd</sup> Ave NE and then east along NE 67<sup>th</sup> St and south along 176<sup>th</sup> Ave NE to reach the future Pump Station 13 located on the Lake Washington Institute of Technology site. Existing sewer lines would need to be reconstructed deeper to enable gravity flow from the station to the future Pump Station 13. Sound Transit must design its infrastructure according to the City’s adopted infrastructure plans, and as a consequence may be responsible for laying sewer pipes to the future Pump Station 13 and building Pump Station 13.

### **Multi-purpose Trails**

The three multi-purpose trail projects listed below are critical to effective integration of multi-modal mobility and connectivity within the Marymoor Subarea:

- Extending the East Lake Sammamish Trail across SR-520 from its current northern terminus and connecting into the Bear Creek Trail and Redmond Central Connector.
- Constructing a new multi-purpose trail between the East Lake Sammamish Trail, the light rail station and park & ride garage, and Marymoor Park.
- Constructing a new multi-purpose trail connecting the light rail station to the Marymoor Connector Trail at the southeast corner of the Marymoor Subarea.

### **Project Phasing**

Construction of the light rail station is likely to have the greatest impact on future development within the Marymoor Subarea. The station and park & ride garage are expected to be built together and should be designed and constructed in conjunction with the multi-purpose trails and access and circulation streets. This allows the greatest degree of design integration and construction flexibility and ensures the trails and access and circulation streets will be ready for use when light rail service begins. Constructing the street and trail systems ahead of light rail construction may cause them to have a decreased service life due to the excessive wear and tear from heavy equipment used during light rail construction.

### **Project Cost Estimate and Funding**

Table 5 lists each Station Area and Access sub-project and identifies an estimated project cost and likely funding source for each component. A more detailed estimate of each sub-project is contained in Appendix 5. Estimated costs are not provided for the light rail station or park & ride garage which comprise elements of the ST3 extension of East Link from the Redmond Technology Center station in Overlake to Downtown Redmond. The estimate for this extension as of March 2016 was \$1.1 billion including the Southeast Redmond station and park & ride garage near Marymoor Park.

**Table 5. Station Area and Access Project: Cost Estimate and Funding**

<b>Project Component</b>	<b>Estimated Cost w/out ROW</b>	<b>Estimated ROW Cost</b>	<b>Total Estimated Cost</b>	<b>Principal Funding Sources</b>
Light Rail Station	N/A	N/A	N/A	Sound Transit
Park & Ride Garage	N/A	N/A	N/A	Sound Transit
NE 70th Street	\$24M	\$15M	\$39M	Sound Transit, City of Redmond, Grants
173rd Avenue NE	\$4M	\$3M	\$7M	Sound Transit, City of Redmond, Grants
176th Avenue NE Extension	\$3M	\$3M	\$6M	Sound Transit, City of Redmond, Grants
Connecting Trails & Pathways	\$10M	\$22M	\$32M	Sound Transit, King County, City of Redmond, Grants

Notes:

1. Estimates are escalated from year 2016 at 3% per year to 2025.
2. Estimates are rounded to the nearest \$1M.
3. New water and wastewater system costs are included in the estimates and incorporate a 10% sales tax.
4. Planning, design and construction engineering and administration costs are included in estimates.
5. NE 70th Street estimates include the roundabout.
6. The connecting trails and pathway estimate assumes all trail segments are at-grade including the trail across SR-520.

## NE 70TH STREET EXTENSION PROJECT

The NE 70th Street Extension project will provide an additional direct point of access to the Marymoor Subarea and light rail station from areas north and east of Redmond Way.

### Project Description

The NE 70th Street Extension will provide a direct east/west connection from 180th Avenue NE to Redmond Way and across Redmond Way to the existing NE 70th Street which will be reconstructed and extend from Redmond Way to the light rail station. Constructing the NE 70th Street Extension will significantly improve multimodal circulation and mobility along the primary arterials providing access into the Marymoor subarea from the east.

### Project Phasing

The NE 70th Street Extension project should be constructed ahead of Sound Transit construction if funding becomes available. This connection would improve mobility and safety within the Redmond Way and East Lake Sammamish corridors on the east margin of the Marymoor subarea with or without light rail operating. Having this connection in place when light rail service begins would substantially alleviate circulation and mobility issues caused by increased traffic heading into and out of the Marymoor Subarea at that time. Construction related traffic impacts might also be substantially reduced if the NE 70th Street Extension was constructed ahead of or concurrently with Sound Transit construction.

### Project Cost Estimate and Funding

Table 6 identifies an estimated project cost and likely funding source for the NE 70th Street Extension project. A more detailed estimate is contained in Appendix 5.

**Table 6. NE 70th Street Extension Project: Cost Estimate and Funding**

Project Component	Estimated Cost w/out ROW	Estimated ROW Cost	Total Estimated Cost	Principal Funding Sources
NE 70th Street Extension	\$5M	\$3M	\$8M	City of Redmond, developer contributions

Notes:

1. Estimates are escalated from year 2016 at 3% per year to 2025.
2. Estimates are rounded to the nearest \$1M.
3. New watermain is included in estimate and incorporates a 10% sales tax. New wastewater is not required.
4. Planning, design and construction engineering and administration costs are included in estimate.

## TYPE I STREET ENHANCEMENTS PROJECT

The Type I Street Enhancements reflect limited and low cost enhancements to Type 1 streets to improve bicycle circulation within the subarea at a relatively low capital cost.

### Project Description

The Type I Street Enhancements project would only provide the channelization along NE 65th Street, NE 67th Street and 176th Avenue NE to accommodate separated bicycle facilities. This is a relatively low cost improvement that will significantly improve bicycle circulation and mobility within the subarea.

### Project Phasing

The Type I Street Enhancements project should be constructed as soon as funding becomes available. This work is not contingent upon any other work.

### Project Cost Estimate and Funding

Table 7. Type I Street Enhancements Project: Cost Estimate and Funding

Project Component	Estimated Cost w/out ROW	Estimated ROW Cost	Total Estimated Cost	Principal Funding Sources
Type I Street Enhancements	\$130,000	\$0	\$130,000	City of Redmond, Grants

Notes:

1. Estimates are escalated from year 2016 at 3% per year to 2025
2. Estimates are rounded to the nearest \$10k
3. Planning, design and construction engineering and administration costs are included in estimate.

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# APPENDICES

# APPENDIX 1 – East Link Extension to Downtown

## APPENDIX 2 – Sections for Existing Type I Streets

## APPENDIX 3 – 5% Design

# APPENDIX 4 – Stormwater Infrastructure Report

# APPENDIX 5 – Cost Estimate Summary by Street Segment