



Active Transportation & Complete Streets Projects

Name of Project Highway 43 Multimodal Transportation Project

(project name will be adjusted to comply with ODOT naming convention if necessary)

Project application

The project application provides in depth process, location and project definition details and serves as the nomination form for project funding consideration. **Project applications should be kept to 12 pages total per project.** The application form is available electronically at: <http://www.oregonmetro.gov/rffa>. Please complete the following:

Project Definition

Project Description

- **Facility or area: street(s), intersection(s), path or area:** Highway 43 (aka OR 43/Willamette Drive)
- **Beginning facility or milepost:** MP 8.03 (OR 43 at north City limits)
- **Ending facility or milepost:** MP 9.07 (OR 43 at Mary S. Young State Park)
- **Provide a brief description of the project elements:**

This project will greatly enhance bike, pedestrian, transit, and vehicular mobility along State Highway 43 (OR 43) from the southern city limits of the City of Lake Oswego through the City of West Linn south to Mary S. Young State Park. The result will be uninterrupted protected bicycle paths (cycle tracks) and sidewalks in this corridor with a consistent three lane vehicle cross section connecting Mary's Woods retirement community and Marylhurst University to Mary S. Young State Park through the Robinwood commercial area (see attached plans). Included in the project is the removal of the existing traffic signal at Cedaroak Dr./Hwy 43 and installation of innovative protected intersections at Marylhurst Dr./Hwy 43 and Hidden Springs Rd./Hwy 43, including signal improvements such as countdown pedestrian signals and transit prioritization to improve safety and traffic efficiency. Protected intersections will incorporate raised corner bike refuge islands, multiuse marked crossings, and other bicyclist and pedestrian safeguards. The project will infill key missing sidewalk sections between residential, commercial, park, and transit areas, add ADA accessibility, improve transit stops, and improve lighting.

In order to improve problems associated with existing signals being too closely spaced causing traffic issues in the Robinwood commercial area, the existing traffic signal at Cedaroak Drive and Highway 43 is planned to be removed, with Old River Drive realigned to Highway 43 and Hidden Springs Road. This eliminates two poorly functioning signalized three-way intersections and replaces them with an improved single four-way signalized multimodal protected intersection. The planned improvements will improve access to the existing TriMet park and ride facility at this location. This will be a significant improvement for transit users in the area who are often seen walking along the edge of the Highway and crossing dirt and grass areas to get from the bus to the park and ride lot.

As Phase I of the multimodal transportation improvements planned for the entire length of Highway 43 in West Linn, the project provides a complete solution by connecting transit and neighborhood commercial centers with residential areas, a university, and senior facilities. Project funding will complete construction of all Phase I improvements. The City has already been awarded \$1.1M in state Enhance grant funding for design of the project.

- **City(ies):** West Linn (connecting work in Lake Oswego)
- **County(ies):** Clackamas

Base project information

- **Corresponding RTP project number(s) for the nominated project:** #10127
- **Public Engagement and Non-discrimination checklist (Appendix A) — *Checklist Attached***

APPENDIX A, ITEM #2: Summary of non-discriminatory engagement:

Public engagement took place frequently throughout the development of the 2016 Highway 43 Conceptual Design Plan, the guiding document to this proposal. The project team drew first on documented public input from the 2008 Highway 43 Conceptual Design Plan and public involvement for the City Council-adopted 2016 Transportation System Plan Update which included ongoing Technical and Citizen Advisory Committee meetings, community-wide public open houses (including online public open houses), and continuous web-based and email communications with residents. A separate online virtual open house was held for the 2016 Highway 43 plan, engaging over 150 people to provide input. In addition, meetings with the adjacent Robinwood and Bolton neighborhood associations, a joint Planning Commission/City Council public meeting, and regular public meetings of the City's Transportation Advisory Board have been part of the 2016 Highway 43 Conceptual Plan process. Bilingual (Spanish/English) fliers were posted at the local Food Pantry, Adult Community Center, and Library with direct mailings to low income residents in West Linn and to all residents along the Highway 43 Corridor inviting public participation at public meetings to submit input on the plan. Social media (NextDoor community forum, Twitter, Facebook), City newsletter updates, and articles in the local newspaper were provided at key points throughout the development of the 2016 TSP and 2016 Highway 43 Plan to ensure timely public participation. Public input gathered highlighted the importance of creating safe multimodal connections through the Highway 43 Corridor with improved traffic operations at key intersections. Public comments were documented for both the TSP and Highway 43 Plans and were used to finalize the content and design concepts therein.

As the first cycle track design in the state with protected intersections on a regional throughway, it is expected that this project will create a lot of media attention. Public engagement through the City's website, social media, newsletters, newspapers, public meetings, mailers, as well as through ODOT public notice channels will continue during final project design, construction, and completion. Nearing and following completion, it is anticipated that City, ODOT, and Metro staff will meet to discuss and implement further efforts to increase public education and awareness of the project.

- **Purpose and need statement (The purpose and need statement should address the criteria as they apply to the project):**

The goal of multimodal improvements to Highway 43 in West Linn is to improve active transportation options for all types and abilities of users while optimizing traffic flow on a busy regional throughway that is currently deficient in accessible sidewalks, lacks safe bike lanes, and suffers from long traffic congestion delays while addressing safety concerns for all users.

- **Active Transportation Design checklist (Appendix C) – Checklist attached**

- **Description of post implementation measurement of project effectiveness:**

Success of the project can be measured through analysis of various data sources, including improved operational conditions (level of service, volume to capacity ratio, average delay, etc.) from updated traffic studies, reduction in severe crashes (especially pedestrian/bicycle-related), comparing existing to follow-up counts of bicyclist and walker numbers, and comparison of TriMet ridership data before and after the project. This project should also result in the removal of the Hidden Springs Road area from the ODOT-identified Safety Priority Index System (SPIS) list. Improvement in the future Bicycle Level of Traffic Stress (LTS) and the Pedestrian Qualitative Multi-modal Level of Service (QMMLOS), as documented in the City's TSP, would prove progress as would expansion of the population, including the transportation-disadvantaged population, that is within a 20 minute walk, bike, or public transit ride of key destinations based on Metro Transportation Analysis Zone (TAZ), census, and GIS data.

Project Cost and Funding Request Summary

- Attach a completed Cost Methodology workbook (Appendix E) or alternative cost methodology. Describe how the project cost estimate was determined, including details on project readiness and ability for project funding to be obligated within the 2019-21 timeframe. Reference availability of local match funds, status of project development relative to the requirements of federal-aid projects, and indicators of political and community support.

See cost methodology workbook attached following Metro guidelines.

The need for improvements to Highway 43 has been at the forefront of West Linn's City Council goals and planning efforts for many years and were identified as a highest priority in the recently updated 2016 City Transportation System Plan. The City has all local matching funds in place and is prepared to front load the City match to accelerate the project in advance of the 2019-2021 obligation timeframe, thus ensuring project readiness and adherence to timeline commitments. Project cost estimates were composed using standard Metro pricing/methodology and verified against recently awarded similar projects, with quantities derived from the scaled Highway 43 concept design plans already developed by the City. The project is scheduled to receive \$1.1M in Enhance grant funds as part of the Statewide Transportation Improvement Program (STIP) with the remainder of the local match to RFFA funds from existing City of West Linn System Development Charge (SDC) Funds and local streets funds currently on hand at the City and dedicated to the project.

There is significant positive citizen and political support to improve the Highway 43 Corridor in West Linn and City staff are fully prepared to support design, funding, and construction of the project. As previously

identified, local matching fund reserves are already available for this project and will be budgeted if this project receives RFFA funding, including the ability to advance local funding ahead of the 2019-2021 timeframe. Public support of enhancement in the area is well documented in West Linn's Transportation System Plan and Highway 43 Concept Plan, which guided the development of this proposal.

- Total project cost
(Include and describe any cost elements beyond those funded by the request + match):
\$3,400,000 RFFA grant request
\$1,100,000 State Enhance funding
\$1,310,000 West Linn local SDC & street funding
\$5,810,000 total project cost
- RFFA funding request by project phase:
It is anticipated that all RFFA funds (\$3,400,000) will be used during the construction phase of the project.
- Local match or other funds (minimum match = 10.27% of funds requested + match):
The local match is well beyond the minimum match with State Enhance and local funds accounting for 41.5% of the estimated total project cost.

Map of project area

- Provide a map of the project consistent with GIS shapefile standards found in Appx. B – *Shapefile attached*

Project sponsor agency

- Contact information (phone # & email) for:
- **Application lead staff:** Lance Calvert P.E., 503-722-5516, lcalvert@westlinnoregon.gov;
Dylan Digby, 503-722-5503, ddigby@westlinnoregon.gov
- **Project Manager (or assigning manager):** Lance Calvert P.E., 503-722-5516, lcalvert@westlinnoregon.gov
- **Project Engineer (or assigning manager):** Lance Calvert P.E., 503-722-5516, lcalvert@westlinnoregon.gov
- **Describe the agencies record in delivering federal aid transportation projects on time and budget or whether the lead agency has failed to deliver a federal aid transportation project and if so, why.**
This project is on a state facility and thus will require participation from both ODOT and the City of West Linn. West Linn successfully completed its only federal aid transportation project, an ARRA transportation project on Salamo Road in 2010. West Linn has never failed to deliver a federal aid transportation project.
- **Describe how the agency currently has the technical, administrative and budget capacity to deliver the project, with an emphasis on accounting for the process and requirements of federal aid transportation projects.**

As a state facility, this project will require participation by both ODOT and the City of West Linn. The City of West Linn Project Manager/Engineer has extensive knowledge of the technical, administrative, and financial requirements to successfully complete a federal aid transportation project. West Linn is not a certified local agency and thus will partner with ODOT and/or a certified local agency to complete the project. West Linn currently has the budgetary reserves to fund the local match.

Highest priority criteria

- 1. What communities will the proposed project serve? What are the estimated totals of low-income, low-English proficiency, non-white, elderly and young, and persons with disabilities populations that will benefit from this project, and how will they benefit?**

As a regional corridor, this project will serve communities from Oregon City through West Linn and Lake Oswego all the way to Portland. The primary underrepresented populations in directly adjacent communities are those too old or young to drive. The areas around Highway 43 in the project area, in addition to most of West Linn, Oregon City, and Lake Oswego have an above average percentage of seniors as reported in the Regional Equity Atlas. The north side of the Highway directly adjacent to the project in West Linn and just north into Lake Oswego has a high 34.8% elderly population per the 2013 American Community Survey (ACS) US Census data. West Linn's disabled population is also centered in the project area with an estimated 26-30% of the population categorized as such along Hwy 43 in our Transportation System Plan (TSP). West Linn's newly updated TSP shows a 10-15% minority population on the south side of the Highway in the project area and 11-25% of our population in poverty within the project area, the highest level within West Linn.

All transportation-disadvantaged populations will benefit greatly from improved walking, bicycling, and public transit access to key destinations. This is accomplished by sealing gaps in the pedestrian network, improving ADA accessibility (removing barriers, installing curb ramps, etc.), making bicycling safer and more inviting with innovative bike lanes separated from the roadway and safeguarded through intersections, improved transit facilities, and better transit reliability through enhancements such as transit signal prioritization.

- 2. What safety problem does the proposed project address in an area(s) with higher-than-average levels of fatal and severe crashes? How does the proposed project make people feel safer in an area with high walking and bicycling demand by removing vehicle conflicts?**

Overall efficiency and safety of the Highway 43 Corridor transportation system is enhanced by this proposal through both vehicular and active transportation means. This project will improve the cross-modal safety of the transportation system greatly along Highway 43, especially where sidewalk and clear bicycle lanes are currently lacking. Currently pedestrians and bicyclists are sharing the edge of the existing roadway in many places with fast moving vehicles, sidewalks are missing or narrow (3' in some areas), and obstructions exist in sidewalk areas forcing users into the street. New sidewalk and an improved protected design bicycle facility (cycle tracks) will provide a designated family-safe area for both uses where all levels of users will feel secure along this busy highway. Sidewalks and bike lanes will be separated from the high volume (~21,000 vehicle trips/day) roadway by a curb and planter strip, creating a safe and inviting active transportation space. Having the sidewalk and bike path adjacent to each other will create a large clear vision area to ensure walkers and bicyclists are visible to motorists.

Protected intersection designs to be installed on Highway 43 at Marylhurst Drive and at Hidden Springs Drive are intended to extend the safe environment for bicyclists and pedestrians through use of raised corner islands, forward stop bars for bicyclists, and well defined marked crossings. These defenses make it clear to all users where bicyclists are, provide physical protection in the queuing area, and further increase bicyclist visibility by allowing them early entry into the intersection ahead of right turning vehicles.

Pedestrian crossings and sidewalks will be made ADA accessible and improved lighting at key locations will improve night visibility for all users. The implementation of a consistent third center turn lane, added right turn lanes, and improvements to intersection design will further motor vehicle safety as well.

Highway 43 is a hotspot in West Linn for serious “injury A” crashes (ODOT classification for incapacitating/broken bone type incidents), with six of West Linn’s total fifteen incidents classified as such in the five year period of 2009-2014. Seven of nineteen total crashes involving pedestrians and bicyclists in West Linn over the five year period occurred on OR 43 and two of West Linn’s three fatal crashes occurred on OR 43, one involving a bicyclist. Additionally, ODOT identified the segment of OR 43 between Hidden Springs Road and Cedaroak Drive, a congested section of OR 43 with the highest frequency of crashes in West Linn, an area in need of safety improvements based on crash frequency and severity in its 2014 Safety Priority Index System (SPIS) List. OR 43 has three SPIS locations within West Linn. This project would address the SPIS location in its boundary with planned improvements from Cedaroak Drive to Hidden Springs Drive.

Improvements to Highway 43 are planned to reduce severe injury and fatal crashes and reduce the number of high collisions at locations with known safety risks in West Linn’s current 2016 Transportation System Plan.

3. What priority destinations will the proposed project serve? How will the proposed project improve access to these destinations?

Highway 43 is a State facility that connects multiple jurisdictions and communities including Oregon City, West Linn, Lake Oswego, and Portland. The project area alone contains various residential, commercial, healthcare, grocery, retail, park, school, transit centers, and key commercial destinations that will be better connected. Marylhurst University and the Mary’s Woods retirement community in Lake Oswego, are directly adjacent to the northern project boundary and will be linked to services in West Linn. Major public spaces like Mary S. Young State Park and the only park and ride TriMet transit facility in West Linn will be more accessible. This corridor is also a key connection to the Willamette Falls heritage area.

Optimized traffic flow and a greatly improved uninterrupted multimodal transportation network will improve access to essential destinations for all users, especially the transportation-disadvantaged. Obstructions and barriers to accessibility (e.g. lack of ADA curb ramps, insufficient clearance around utility structures, etc.) will be eliminated and lighting will be improved. Pedestrians and bicyclists will be much better served and linked to the transit system for alternate commuting options. Sidewalk will be installed where none currently exists along the TriMet park and ride facility, which is also a key commercial area. Sidewalk and bicycle facilities separated both horizontally and vertically from the roadway, in addition to protected intersection features, will provide a safe and inviting space for all levels of bicyclists and walkers, including families with children, and will create a new environment for transportation access to destinations along the Highway 43 Corridor.

4. How will the proposed project support the existing and planned housing/employment densities in the project area?

The proposed project is outlined in West Linn’s Highway 43 Concept Plan and takes into account 2040 growth projections and future traffic volumes in its design to meet future operational standards. Analyses show that 2040 conditions without proposed improvements will exceed intersection operational standards during one or both of the peak hours. Metro classifies Highway 43 as a regional street that connects Metro-designated Town Centers on OR 43 in Lake Oswego and West Linn and to a Regional Center in Oregon City. According to Metro base year 2010 and forecast year 2040 land use data, population and households in West Linn will see a 23% increase over that 30 year period, whereas employment will see 63% in growth. This significant increase in employment relative to household growth changes land uses in proportion to one another and will shift the overall operation of the transportation system. These changes are anticipated and reflected in our Highway 43 plan and this proposal. Designs increase the demand for active transportation while decreasing motor vehicle use, particularly single occupancy vehicle trips, while reducing delays and optimizing the efficiency of vehicle flow in the corridor through improved signalization, removed access conflicts, and added refuge and turn lanes.

Higher priority criteria

5. How does the proposed project complete a gap or improve a deficiency in the Regional Active Transportation network? (See Appendix 1 of the Regional ATP: Network Completion, Gaps and Deficiencies).

Highway 43 is classified in Metro’s 2014 Regional Transportation Plan (RTP) and Regional Active Transportation Plan (RATP) as a regional pedestrian parkway and a regional bicycle parkway, both of which are the highest functional class pedestrian and bicycle functional routes in the regional active transportation network, providing the spine of the pedestrian and bicycle networks. Pedestrian and bike facilities in the project area are defined as substandard or incomplete in the ODOT Active Transportation Needs Inventory, the 2014 Metro RTP and RATP, as well as in West Linn’s TSP and Highway 43 Plan. The project is listed on the financially constrained “federal system” project list in the RTP (#10127) and also as a financially constrained project in West Linn’s TSP and Highway 43 Concept Plan as a highest priority project to create a complete and inviting active transportation network. The RTP lists improvements to OR 43 as a corridor strategy that fits the 2040 investment strategy for Mobility Corridor #21 (Portland Central City to Oregon City/West Linn) to complete gaps in pedestrian and bicycle facilities.

Completion of a safe and uninterrupted pedestrian and bicycle path along Highway 43 from Lake Oswego to Mary S. Young Park fills a major gap in the Regional Active Transportation network and, while it is phase one of improvements along Highway 43, still provides a complete solution linking residents to many key destinations.

6. What design elements of the proposed project will lead to increased use of Active Transportation modes by providing a good user experience/increasing user comfort? What barriers will be eliminated or mitigated?

The fundamental objective of this project is to create an inviting and comfortable active transportation environment for users of all abilities, including youth, seniors, and people with disabilities. The Highway 43 Corridor through West Linn is significantly lacking in accessible sidewalks and safe bike lanes. The majority

of the project area does not have sidewalk on both sides of the Highway, one-third of the area has no sidewalk at all, and curb tight sidewalk adjacent to the busy roadway is prevalent. Sidewalk is missing along the only area park and ride transit facility, which is also a key commercial center. Design plans include elimination of these barriers by installation of a cycle track bikeway separated from the high traffic volume on the Highway with a vegetated planter strip, and an uninterrupted, grade-separated pedestrian sidewalk beyond the cycle track. Buffering of walking and bicycling from the roadway and improved connectivity to destinations increases the attractiveness of active transportation, including access to transit facilities. Currently, many transit stops suffer with limited or no sidewalk connectivity.

Bicyclists will benefit from preferential treatments and an innovative protected intersection design that provides raised corner refuge island security, a forward stop bar for increased visibility, early entry into intersections, and free right turns. Bicycle paths and sidewalks will be grade separated and built with different materials and wayfinding signs/stenciling so users stay distinct and clear. Existing limited bike lanes that often share space with the emergency shoulder and/or on-street parking create an ambiguous space subject to conflict with vehicles; this will be replaced with a clear, separated, protected facility for bicycles and users of all abilities.

New opportunities for pedestrian crossing enhancements will be reviewed with ODOT and pedestrian countdown timers will be added to traffic signals to enhance the pedestrian experience. ADA accessibility will be achieved by removal of obstructions in the sidewalk (e.g. utility poles and boxes), installation of curb ramps, and replacement of narrow curb-tight sidewalk (sometimes only 3'). Transit signal prioritization will improve TriMet consistency of service, and bus stop amenities including benches, bike racks, and shelters will add to the appeal of transit use. Lighting and aesthetic improvements, such as introducing landscaping to the streetscape, further enrich the active transportation environment.

7. How does the proposed project complete a so-called 'last-mile' connection between a transit stop/station and an employment area(s)?

The final connection between transit and employment will be enhanced through completion of absent or substandard sidewalk and bicycle lanes surrounding bus stops, as well as by improved transit stop spacing and amenities. Closing gaps in the sidewalk network and creating a safe bicycling environment will allow users safe and comfortable access to transit facilities for residents commuting to work in Lake Oswego, Oregon City, and Portland areas as well as for incoming transit users to reach employment destinations within West Linn. This project creates a complete connection between Lake Oswego, the Marylhurst University area, residential areas in both West Linn and Lake Oswego, numerous business and commercial centers, transit stops, and a TriMet park and ride facility.

Infill of missing sidewalk surrounding the Trimet park and ride facility will be a major improvement to commuting transit users that can often be found walking along the Highway shoulder, as will completion of limited or absent sidewalk surrounding current TriMet transit facilities. Transit amenities such as bicycle parking, benches, and shelters will make linking biking, walking and transit easier for commuters.

Priority criteria

- 8. How will the public be engaged relative to the proposed project? Include description of engagement during project development and construction, as well as demand management efforts to increase public awareness and utilization of the project post-construction. (Metro Regional Travel Options staff is available to help design an effective and appropriate level of education and marketing for your project nomination).**

Public engagement with the Highway 43 Project has been ongoing and documented since the Highway 43 Concept Plan in 2008. New public involvement opportunities from virtual open houses, in-person neighborhood meetings, advisory board meetings, publicly noticed Planning Commission/City Council meetings, mailers to low-income and project area residents, fliers posted at community facilities, social media (NextDoor community forum, Twitter Facebook), newsletters/emails, websites, and newspaper articles, played a major role in shaping the updated 2016 Highway 43 Conceptual Design Plan. The proposed project follows the new Highway 43 Plan.

During construction plan design, the City will be working closely with ODOT staff, Metro staff, elected leaders, and City residents to ensure project goals are met and community input continues to be reflected in the final design details for the benefit of the public. Constant feedback from the public has and will continue to influence the project to build a successful final product that has the support and backing of the community-at-large. Public engagement will continue before as well as during active construction with ongoing social media updates, fliers, website information, project updates to a defined email list, detailed mailers sent to those in construction areas, project signage, newspaper articles, doorhangers, and City newsletters, keeping all stakeholders and the public aware of the project progress. As a project on a State-owned Highway, regional and state media agencies and outlets will similarly inform the public of project details. Community kickoff meetings with maps, plans, and other visual aids are also projected to prepare businesses and the public for the project. It is anticipated due to the project scope and multi-jurisdictional nature that regular community meetings may also be held to discuss project progress and resolve issues. These public awareness tools have been used successfully by City citizen-engagement staff for many large City projects.

Traffic studies, baseline and follow-up counts of the number of walkers and bicyclists, as well as review of TriMet data on ridership can be used to evaluate the effectiveness of the project and guide additional public awareness efforts to increase demand and use of the new facilities. Pedestrian and bicycle scale wayfinding signs, pavement markings, and/or path materials will help to guide and entice active transportation in the area. Nearing and following project completion, City, ODOT, and Metro staff will meet to discuss and implement further efforts to increase public education and awareness, including the health and cost benefits of using alternative transportation.

- 9. What additional sources of funding, and the amounts, will be leveraged by an investment of regional flexible funds in the proposed project?**

West Linn is positioned to receive \$1.1M in funding in State Enhance Funds for this phase of Highway 43 improvements. The City of West Linn is fully committed to this project and will provide an additional \$1.31M toward project completion in addition to City staff time and resources.

10. How will the proposed project provide people with improved options to driving in a congested corridor?

Enhanced active transportation mobility is fundamental to this proposal to encourage people to use alternative transportation. Pedestrians and bicyclists will see significant improvements in connectivity to transit, commercial, residential, school, and park facilities along this busy regional corridor (~21,000 ADT) that are expected to increase active transportation use significantly. Large sections of missing sidewalk will be infilled and many areas of non-compliant or obstruction-laden sidewalk (e.g non-ADA curb ramps, insufficient clearance around utility poles/boxes) will be made ADA compliant. Safe, grade-separated, bicycle cycle tracks and protected intersections will further universal access between important residential, commercial, and transit centers in the area. Infill of missing sidewalk surrounding transit stops, including the TriMet park and ride facility will be a major improvement to transit users, as will improved transit stop spacing and accessibility improvements at transit facilities at other locations within the project boundaries.

Creation, through buffering, separation, and landscaping, of this attractive and inviting family-safe active transportation environment provides new transportation opportunities for users of all levels to link to transit, retail, healthcare, restaurants, school, employment, and recreational destinations throughout the area.

Process

- **Describe the planning process that led to the identification of this project and the process used to identify the project to be put forward for funding consideration. (Answer should demonstrate that the process met minimum public involvement requirements for project applications per Appendix A)**

Planning for improvements to Highway 43 in West Linn has been ongoing for many years, most recently with the 2008 and 2016 Highway 43 Concept Plans, as well as within the 2008 and 2016 Transportation System Plans. The 2016 update to the Highway 43 Plan built upon work done for the 2008 Plan, documenting existing conditions along the corridor, identifying policies that affect the OR 43 Corridor, reviewing comprehensive plan goals for the area, assessing environmental conditions, and evaluating transportation needs, constraints, and adjacent land uses. Traffic volume data was analyzed and forecast to compare expected future traffic conditions with and without improvements. The 2016 Highway 43 Plan update process occurred over the course of a year and engaged stakeholders from ODOT, Metro, Tualatin Valley Fire & Rescue, TriMet, Portland General Electric, Clackamas County, and the cities of Oregon City and Lake Oswego, in addition to the public. Stakeholders held multiple meetings to review and revise the updated Plan in addition to attending a “corridor audit” where project members from the City, ODOT, and Metro walked, bicycled, and drove throughout the corridor to observe morning, afternoon, and night conditions and assess the viability of different design options.

Public involvement plans were created and both the Highway 43 and TSP plans went through considerable public notification and involvement processes to ensure widespread community acceptance of the designs therein. Regular public meetings of the City’s Transportation Advisory Board, an online virtual open house (in which over 150 people provided input), meetings with the adjacent Robinwood and Bolton neighborhood associations, continuous web-based and email communications, and a joint Planning Commission/City Council public meeting have been part of the 2016 Highway 43 Plan public involvement process in addition to bilingual (Spanish/English) informational/notice fliers posted at our Food Pantry,

Adult Community Center, and Library. These fliers were also mailed to low income residents in addition to all residents along the Highway 43 Corridor inviting public input. Fliers included notices of non-discrimination and meeting notices reminded citizens that accessibility accommodations are available. Social media (Twitter, Facebook, NextDoor), City newsletter updates, and articles in the local newspaper were provided at key points throughout the development of the 2016 Highway 43 Plan to ensure full engagement of the community. Comments from the community were documented and summarized and trends were incorporated into the Plan.

Improvements to Highway 43 have long been desired by the City and are always part of ongoing discussions by Council and management. Highway 43 enhancement has been a major objective on the City Council's annual goal list in multiple past years. Pursuing funding for Highway 43 is specifically listed on this year's 2016 City Council goal list, a document that is built by Council, staff, and the community following extensive public meetings that guides the City annually.

- **Describe how you coordinated with regional or other transportation agencies (e.g. Transit, Port, ODOT, Metro, Freight Rail operators, ODOT Region 1, Regional Safety Workgroup, and Utilities if critical to use of right-of-way) and how it impacted the project location and design.**

Planning efforts were coordinated with representatives from key stakeholders at ODOT, Metro, TriMet, Clackamas County, Portland General Electric, Tualatin Valley Fire and Rescue, West Linn Police Department, the City of Lake Oswego, and the City of Oregon City, with the support of local transportation experts (Kittelson and Associates) and our local Transportation Advisory Board. Stakeholders met multiple times to review, provide feedback, and refine the community desire for separated bicycle facilities, sidewalks, crossings, transit stop enhancements, traffic control upgrades, and streetscape improvements. Design options were provided and feedback from the stakeholders was incorporated into the final Highway 43 Plan. The project team also conducted a "corridor audit" in which stakeholders from the City, ODOT, and Metro walked, bicycled, and drove throughout the corridor during morning, afternoon, evening, and after dark hours to observe differing peak/off-peak and night/day conditions and assess the viability of different design options. As OR 43 is currently owned and maintained by ODOT, ongoing input from an ODOT project team was invaluable to ensuring plans would meet ODOT standards and goals.

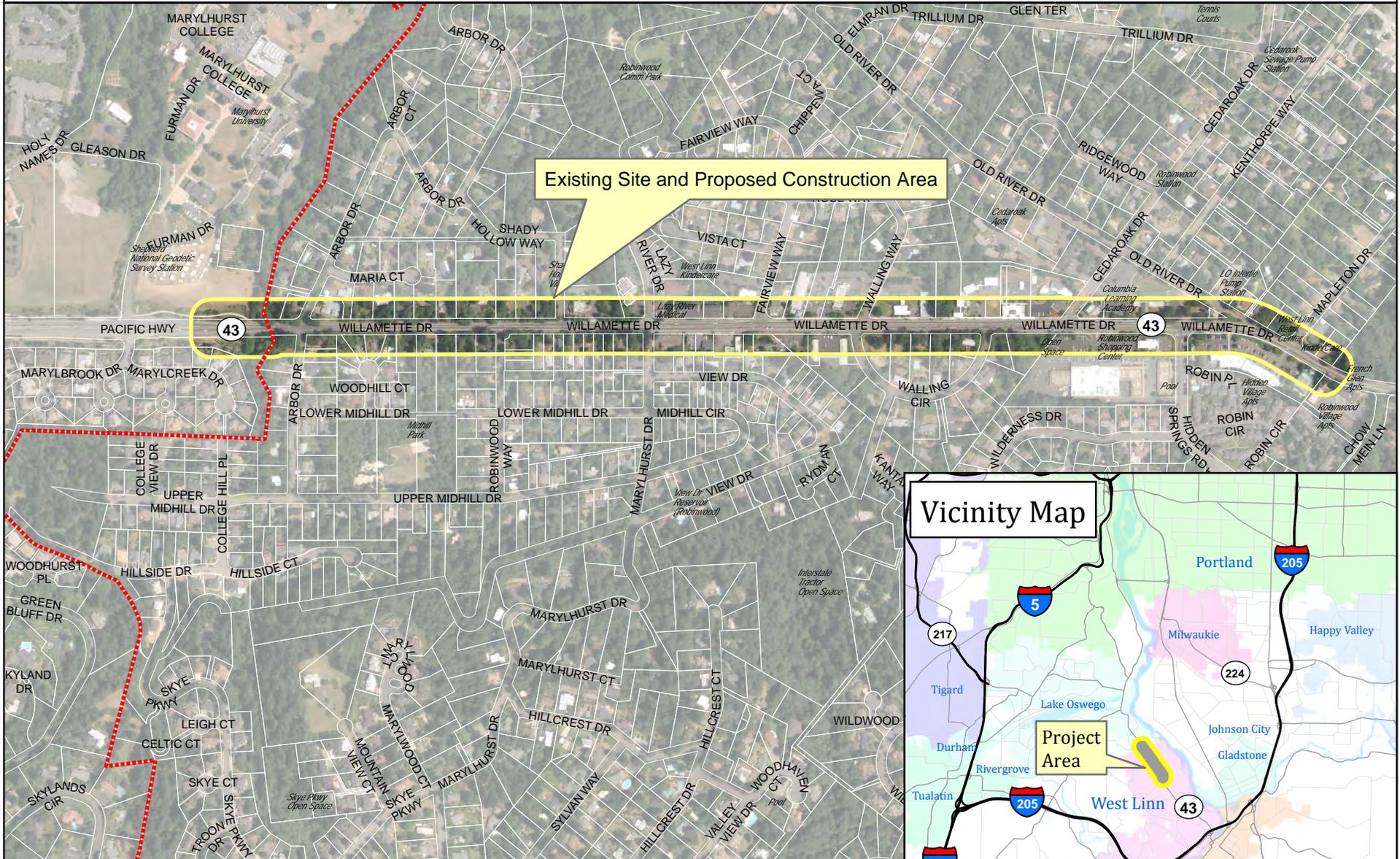
Attachments: (Total pages with application=36, plus Appendix B Shapefiles)

1. Overview Map (1 pg.)
2. Cross section drawings (1 pg.)
3. Protected intersection drawing (1 pg.)
4. Plan detailed drawings (8 pgs., 11x17)
5. West Linn Council letter of support (1 pg.)
6. Appendix A (4 pgs.)
7. Appendix B Shapefiles
8. Appendix C (2 pgs.)
9. Appendix E, Cost Estimate spreadsheets (7 pgs., 11x17)



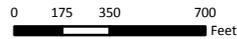
Highway 43 Multimodal Transportation Project Area Map

NOVEMBER 2015



Map & Overlays Provided by West Linn GIS Tax Lot Base Map: Clackamas County

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

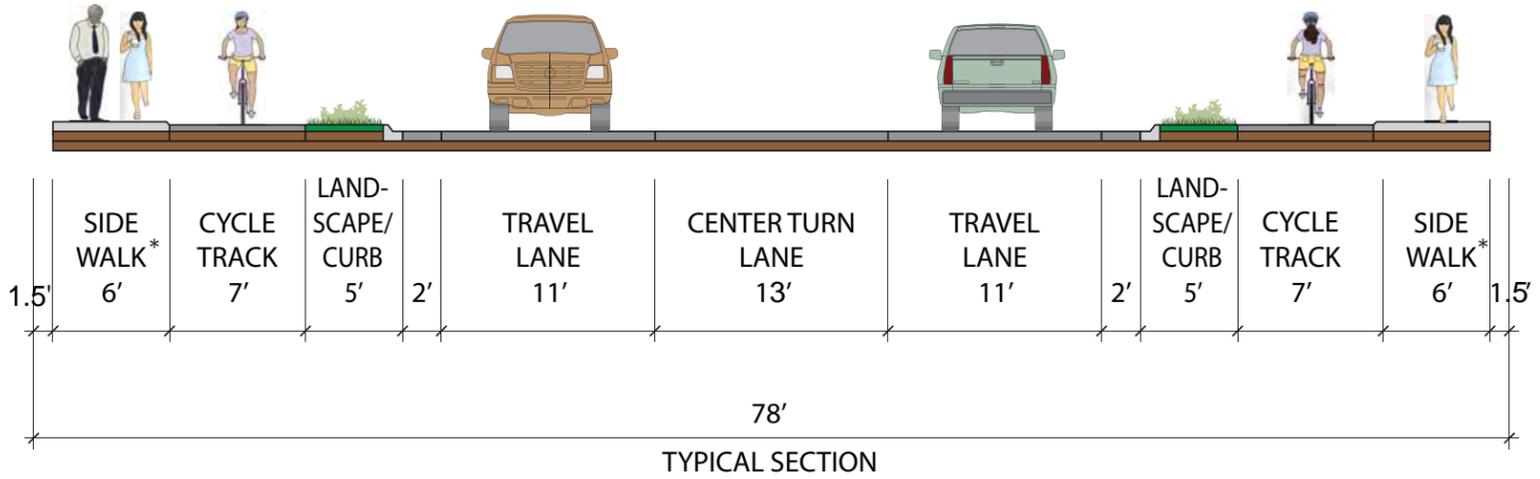


Map Created: 11/19/2015, 9:05 AM
GIS Data Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
LOC: G:\PROJECTS\GIS\RIGHT_OF_WAY\HWY43_STIP_APP_MAP_SITE_MAP.MXD | KAH

Street Cross Sections

Typical Cross Section

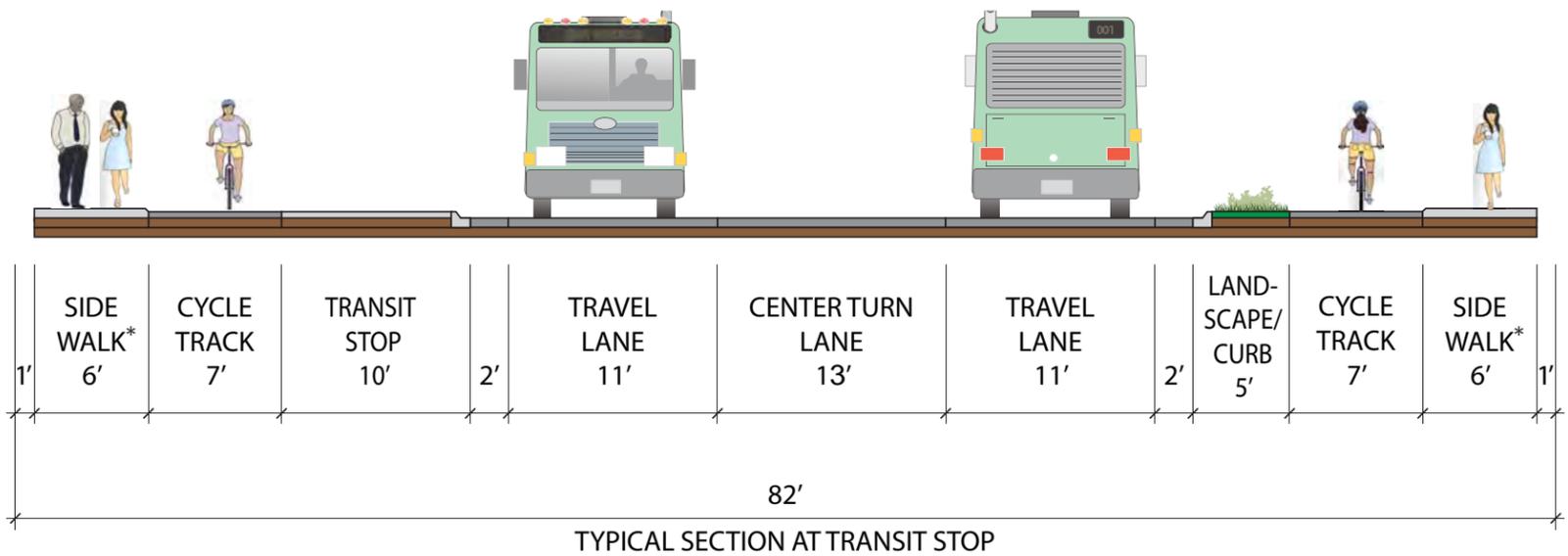
The typical cross section includes sidewalks, protected bike facilities (cycle tracks), a landscape buffer, one motor vehicle travel lane in each direction, and a center turn lane. This cross section is the preferred cross section throughout the corridor and is applied in locations not limited by extreme topography or potential building impacts.



* In commercial areas with zero-setback buildings, sidewalk widths may be expanded to provide additional pedestrian space.

Transit Stop Cross Section

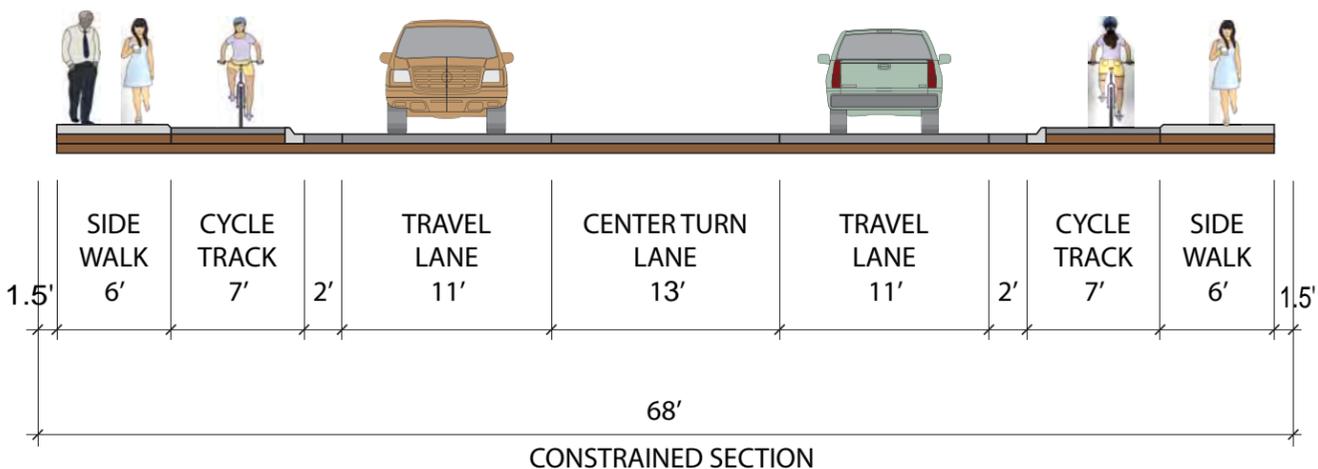
The transit stop cross section is very similar to the typical cross section, but it replaces the landscape buffer with a slightly wider transit stop platform to allow for accessible boarding and alighting of the transit vehicles in a location separated from the bicycle facility.



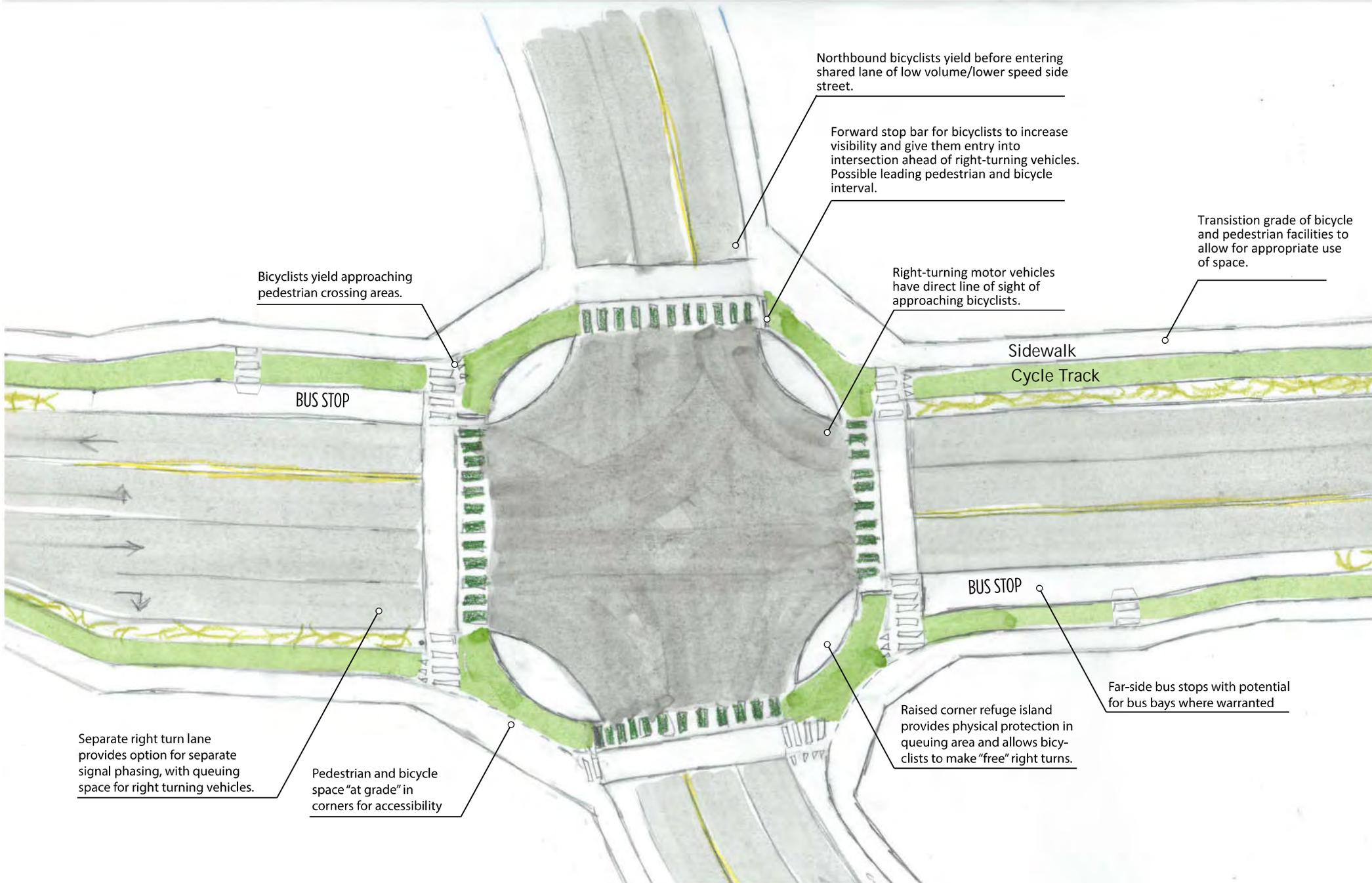
* In commercial areas with zero-setback buildings, sidewalk widths may be expanded to provide additional pedestrian space.

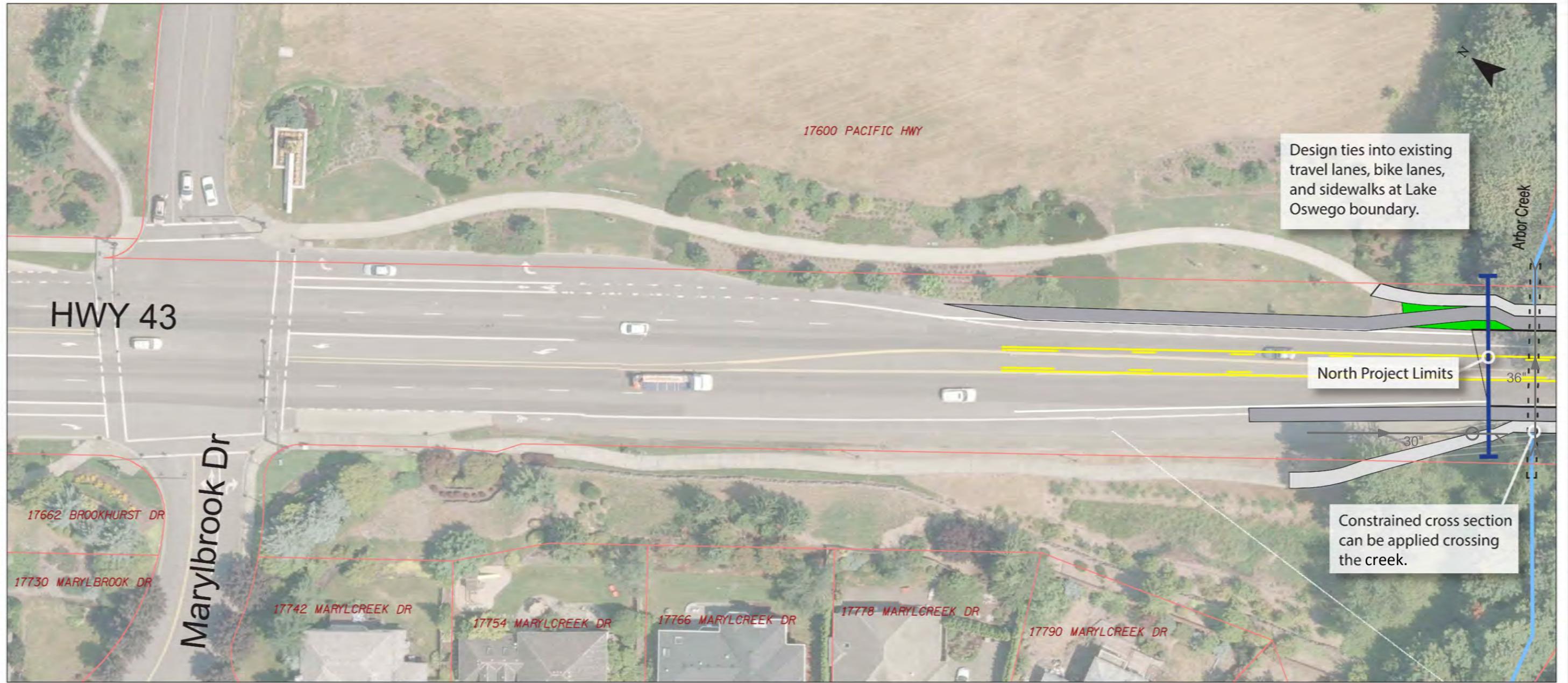
Constrained Cross Section

The constrained cross section is similar to the typical cross section, but it removes the landscape buffers between the bicycle facility and the motor vehicle travel lane. The constrained cross section is applied on one or both sides of the roadway in locations where topography, other natural features, or building impacts limit the total roadway width.



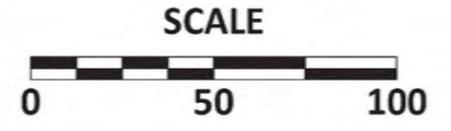
Protected Intersection Design





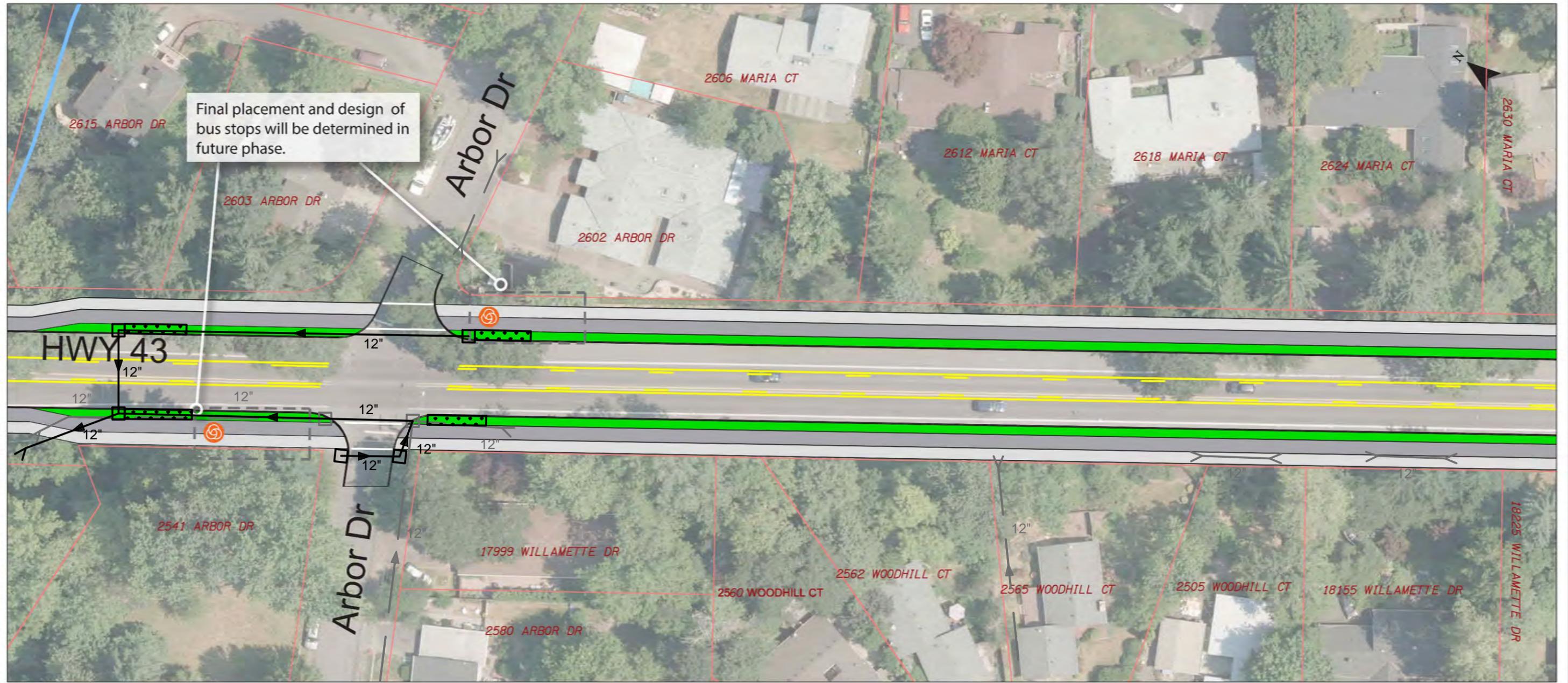
- Sidewalk
- Protected Bike Facility
- Buffer/Landscape
- TriMet Bus Stop Location¹
- Signalized Intersection²
- Potential Right-of-way Impacts³

¹ Bus stop locations are preliminary based on existing stop locations and potential stop consolidation. Final stop locations will be determined in the design phase of the project.
² Signalized Intersection design will be refined in the next design phase of the project. Signalized intersections will be designed to provide a high level of comfort and protection to bicyclists, pedestrians, and transit riders, utilizing design elements shown in the 'Signalized Intersection Concept'.
³ Potential Right-of-way impacts are estimated and not based on survey. Actual right-of-way impacts will be determined in the next phase after acquiring survey data and refinement of the design to account for vertical grading, stormwater retention and utility relocation.



- Transit stop locations shown in concepts are approximate and will be revised in the design phase. In conjunction with transit stops, additional signing, striping, beacons and/or signals will be added to pedestrian crossings where warranted.
- EXISTING INLET
 - EXISTING MANHOLE
 - EXISTING STORM LINE
 - PROPOSED INLET
 - PROPOSED MANHOLE
 - PROPOSED STORM LINE
 - PROPOSED RAIN GARDEN

West Linn, Oregon **Figure 1**



- Sidewalk
- Protected Bike Facility
- Buffer/Landscape
- TriMet Bus Stop Location¹
- Signalized Intersection²
- Potential Right-of-way Impacts³

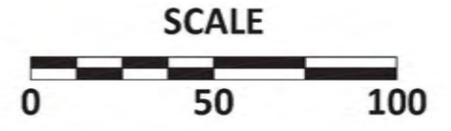
¹ Bus stop locations are preliminary based on existing stop locations and potential stop consolidation. Final stop locations will be determined in the design phase of the project.

² Signalized Intersection design will be refined in the next design phase of the project. Signalized intersections will be designed to provide a high level of comfort and protection to bicyclists, pedestrians, and transit riders, utilizing design elements shown in the 'Signalized Intersection Concept'.

³ Potential Right-of-way impacts are estimated and not based on survey. Actual right-of-way impacts will be determined in the next phase after acquiring survey data and refinement of the design to account for vertical grading, stormwater retention and utility relocation.

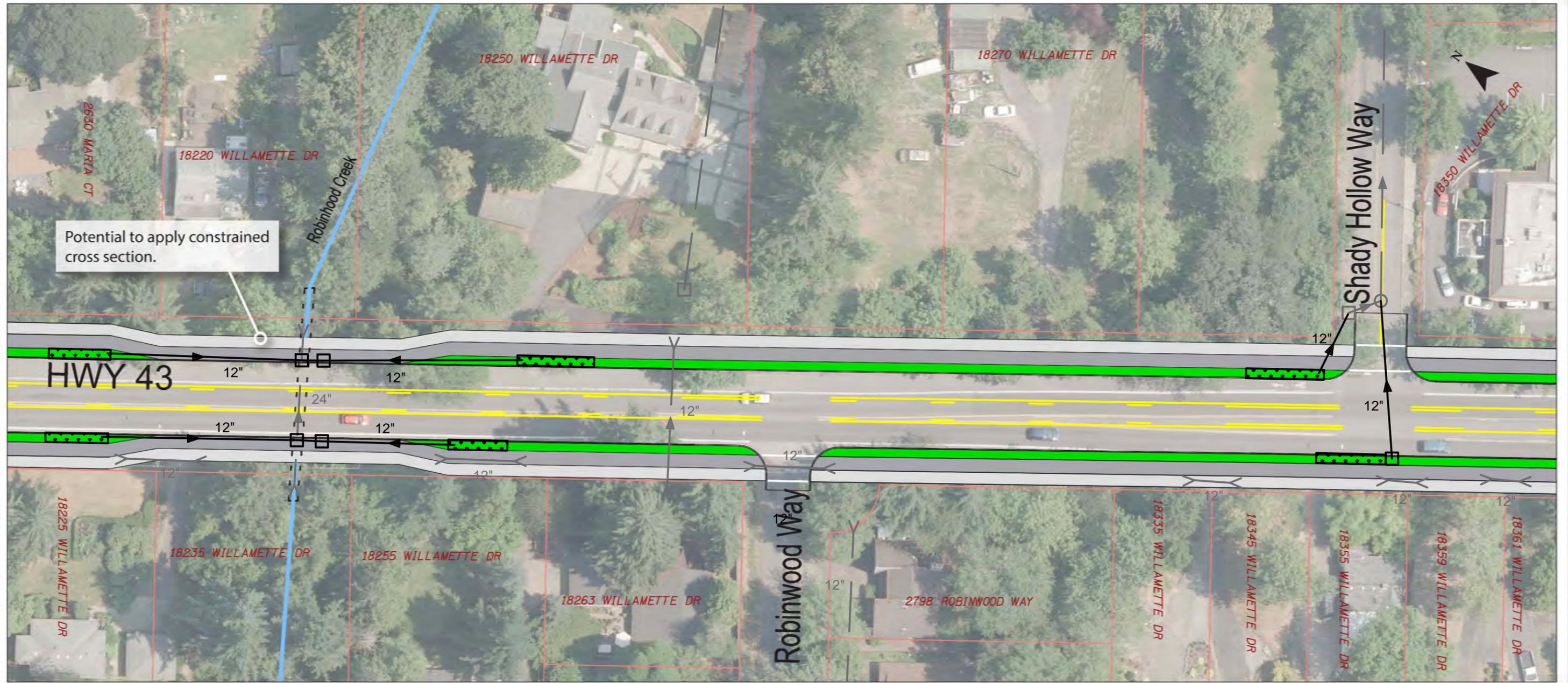


- EXISTING INLET
- EXISTING MANHOLE
- EXISTING STORM LINE
- PROPOSED INLET
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED RAIN GARDEN



West Linn, Oregon

Figure 2



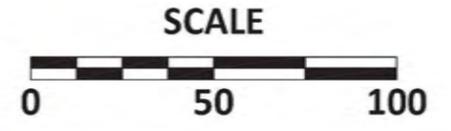
Potential to apply constrained cross section.

- Sidewalk
- Protected Bike Facility
- Buffer/Landscape
- TriMet Bus Stop Location¹
- Signalized Intersection²
- Potential Right-of-way Impacts³

¹ Bus stop locations are preliminary based on existing stop locations and potential stop consolidation. Final stop locations will be determined in the design phase of the project.
² Signalized Intersection design will be refined in the next design phase of the project. Signalized intersections will be designed to provide a high level of comfort and protection to bicyclists, pedestrians, and transit riders, utilizing design elements shown in the 'Signalized Intersection Concept'.
³ Potential Right-of-way impacts are estimated and not based on survey. Actual right-of-way impacts will be determined in the next phase after acquiring survey data and refinement of the design to account for vertical grading, stormwater retention and utility relocation.

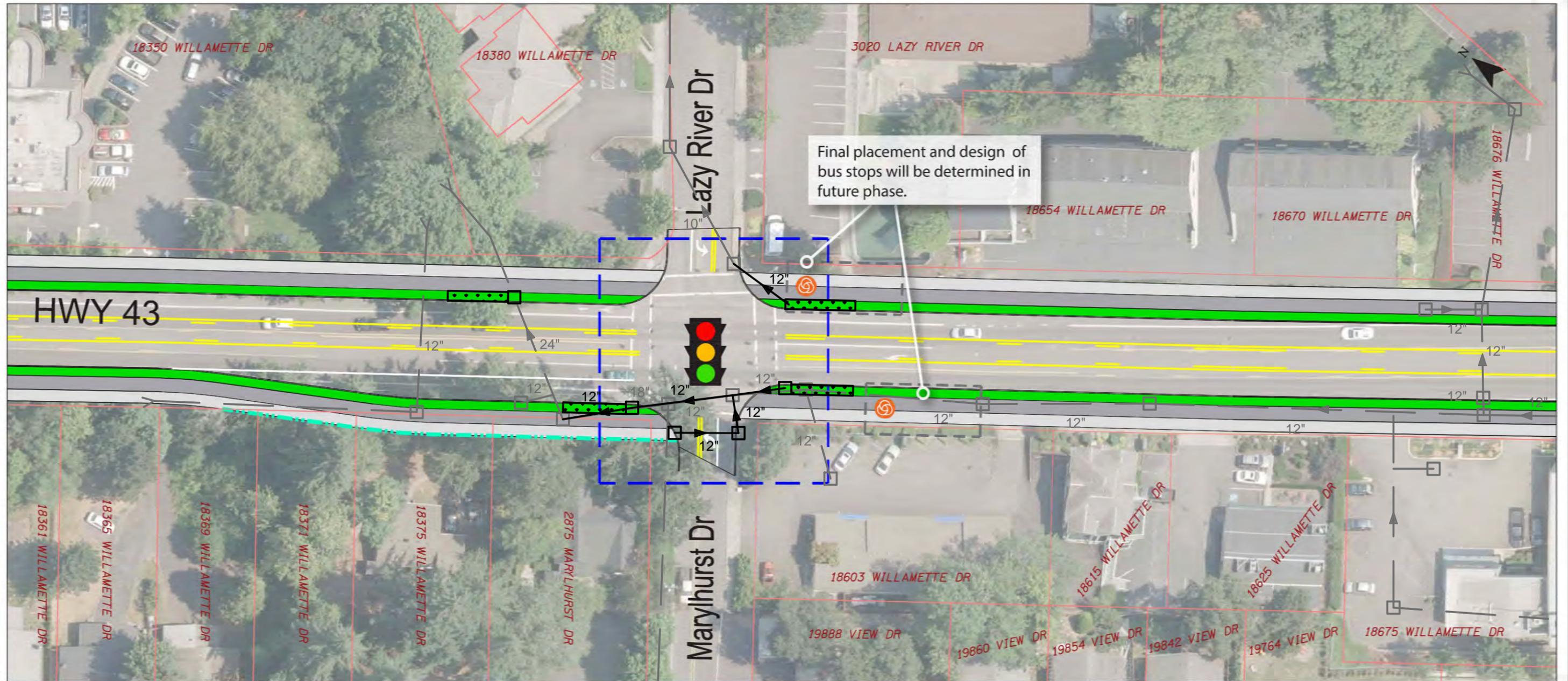


- EXISTING INLET
- EXISTING MANHOLE
- EXISTING STORM LINE
- PROPOSED INLET
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED RAIN GARDEN



West Linn, Oregon

Figure 3



- Sidewalk
- Protected Bike Facility
- Buffer/Landscape
- TriMet Bus Stop Location¹
- Signalized Intersection²
- Potential Right-of-way Impacts³

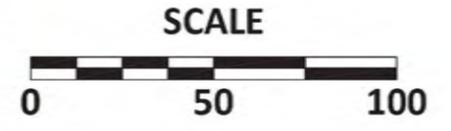
¹ Bus stop locations are preliminary based on existing stop locations and potential stop consolidation. Final stop locations will be determined in the design phase of the project.

² Signalized Intersection design will be refined in the next design phase of the project. Signalized intersections will be designed to provide a high level of comfort and protection to bicyclists, pedestrians, and transit riders, utilizing design elements shown in the 'Signalized Intersection Concept'.

³ Potential Right-of-way impacts are estimated and not based on survey. Actual right-of-way impacts will be determined in the next phase after acquiring survey data and refinement of the design to account for vertical grading, stormwater retention and utility relocation.

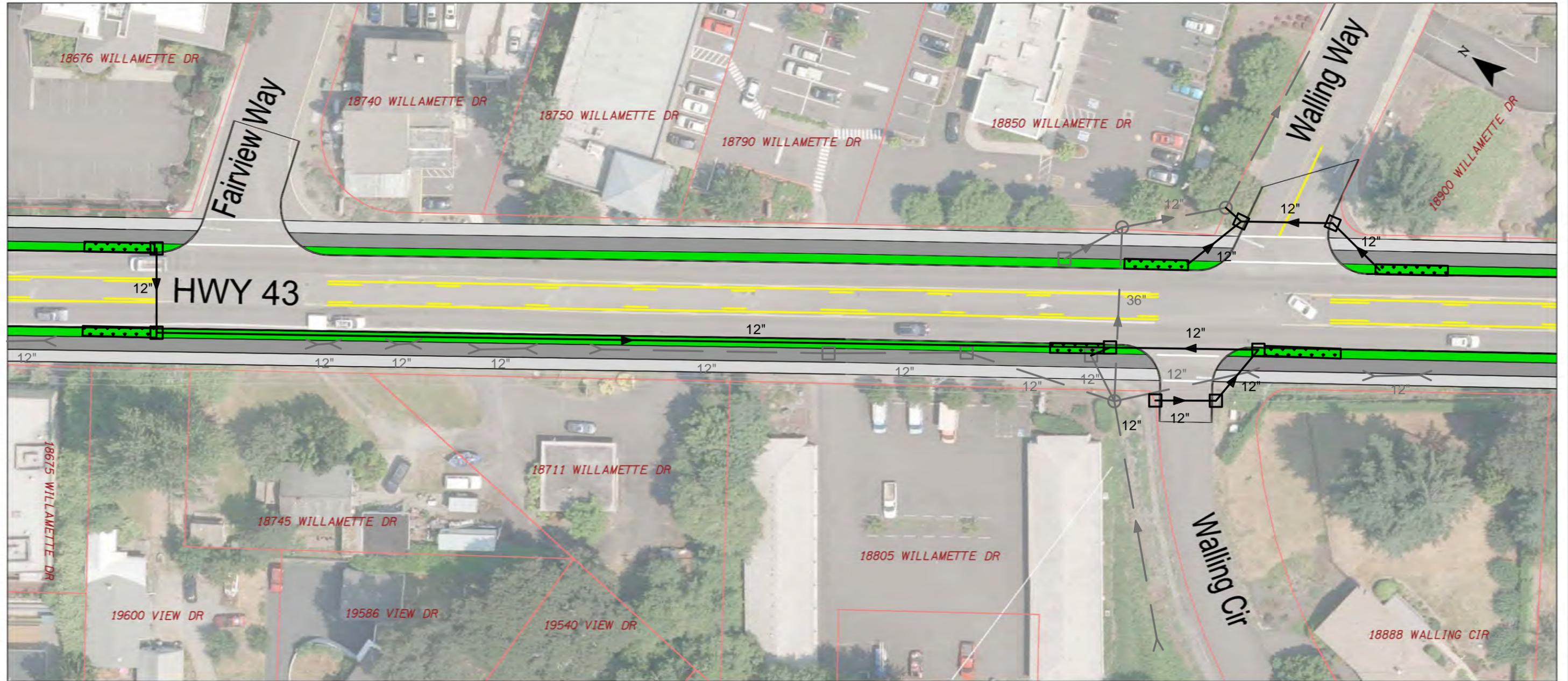


- EXISTING INLET
- EXISTING MANHOLE
- EXISTING STORM LINE
- PROPOSED INLET
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED RAIN GARDEN

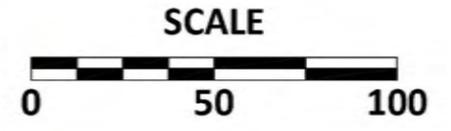


West Linn, Oregon

Figure 4



-  Sidewalk
-  Protected Bike Facility
-  Buffer/Landscape
-  TriMet Bus Stop Location¹
-  Signalized Intersection²
-  Potential Right-of-way Impacts³



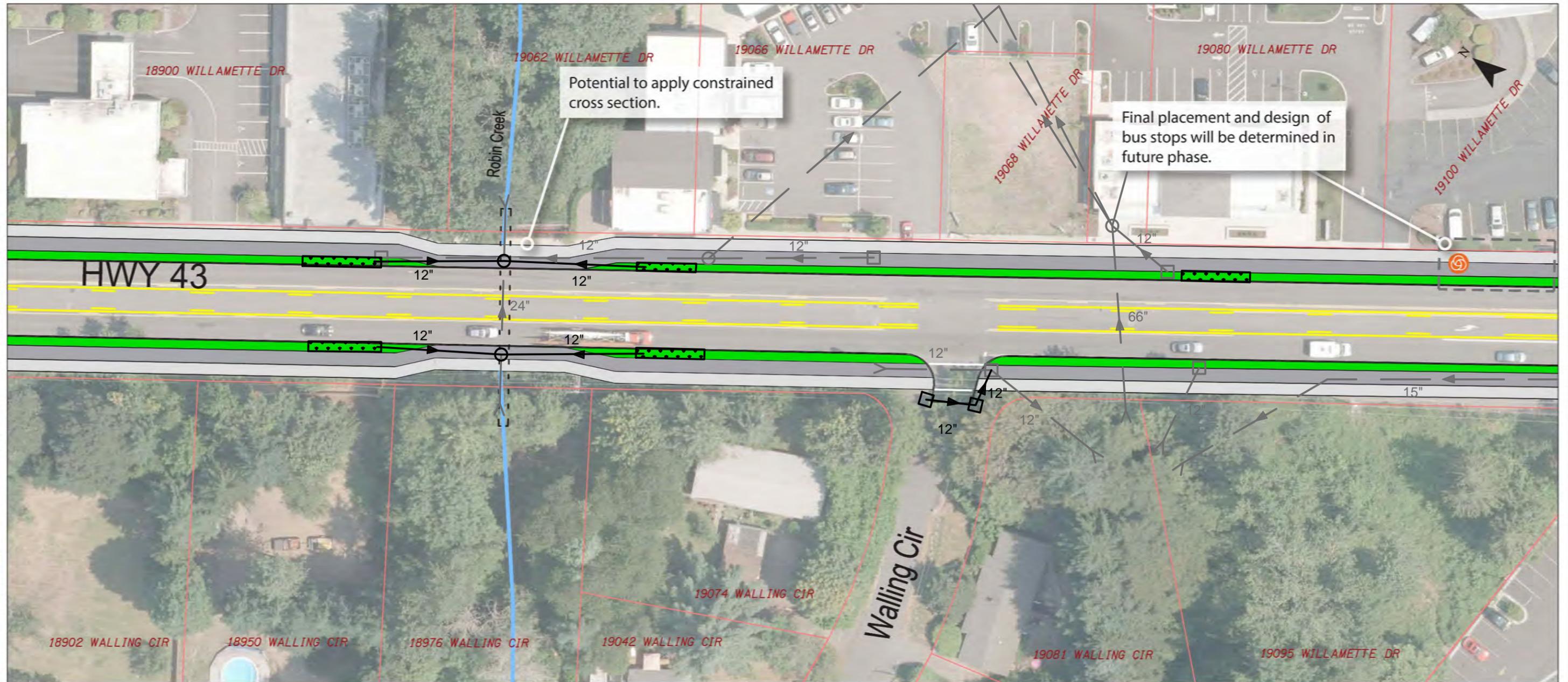
-  EXISTING INLET
-  EXISTING MANHOLE
-  EXISTING STORM LINE
-  PROPOSED INLET
-  PROPOSED MANHOLE
-  PROPOSED STORM LINE
-  PROPOSED RAIN GARDEN

¹ Bus stop locations are preliminary based on existing stop locations and potential stop consolidation. Final stop locations will be determined in the design phase of the project.

² Signalized Intersection design will be refined in the next design phase of the project. Signalized intersections will be designed to provide a high level of comfort and protection to bicyclists, pedestrians, and transit riders, utilizing design elements shown in the 'Signalized Intersection Concept'.

³ Potential Right-of-way impacts are estimated and not based on survey. Actual right-of-way impacts will be determined in the next phase after acquiring survey data and refinement of the design to account for vertical grading, stormwater retention and utility relocation.

West Linn, Oregon **Figure 5**



- Sidewalk
- Protected Bike Facility
- Buffer/Landscape
- TriMet Bus Stop Location¹
- Signalized Intersection²
- Potential Right-of-way Impacts³

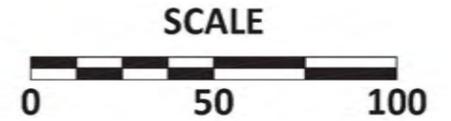
¹ Bus stop locations are preliminary based on existing stop locations and potential stop consolidation. Final stop locations will be determined in the design phase of the project.

² Signalized Intersection design will be refined in the next design phase of the project. Signalized intersections will be designed to provide a high level of comfort and protection to bicyclists, pedestrians, and transit riders, utilizing design elements shown in the 'Signalized Intersection Concept'.

³ Potential Right-of-way impacts are estimated and not based on survey. Actual right-of-way impacts will be determined in the next phase after acquiring survey data and refinement of the design to account for vertical grading, stormwater retention and utility relocation.

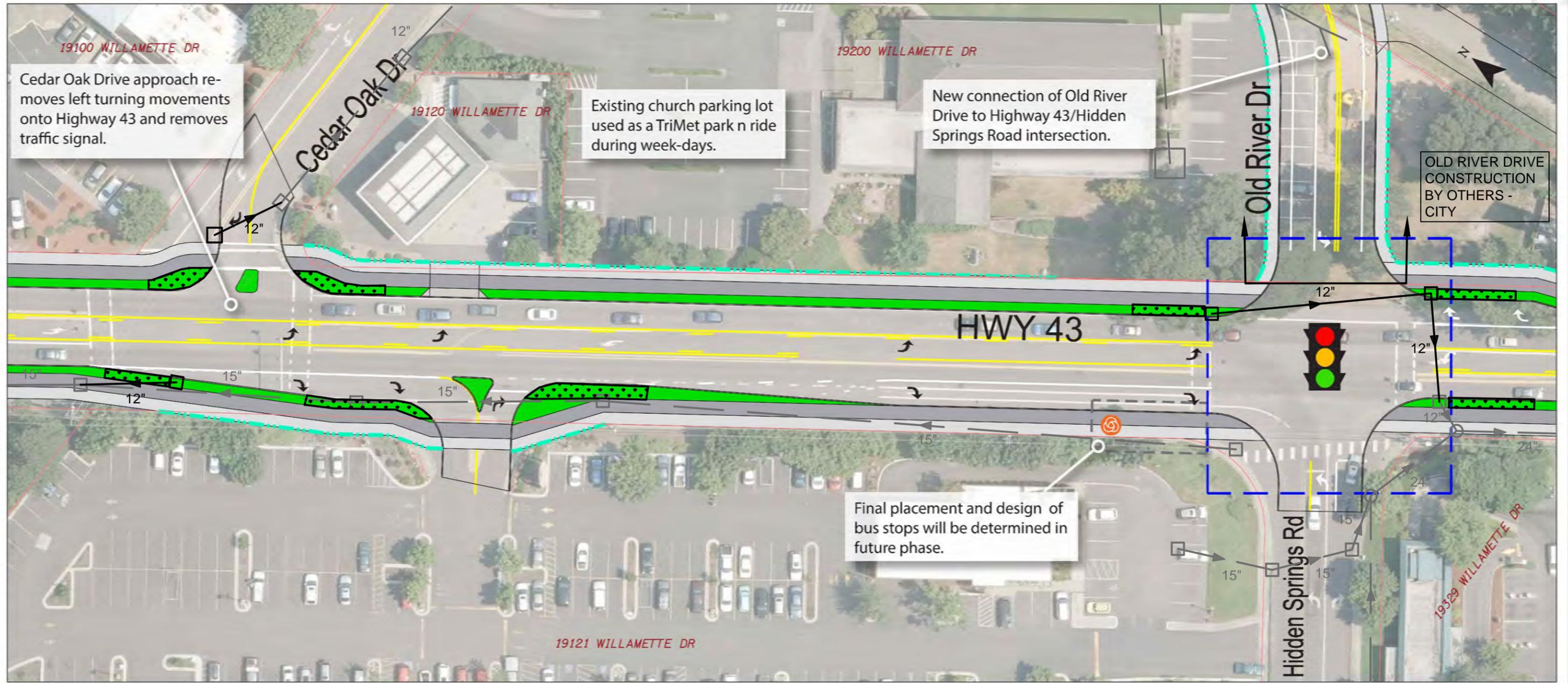


- EXISTING INLET
- EXISTING MANHOLE
- EXISTING STORM LINE
- PROPOSED INLET
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED RAIN GARDEN



West Linn, Oregon

Figure 6



- Sidewalk
- Protected Bike Facility
- Buffer/Landscape
- TriMet Bus Stop Location¹
- Signalized Intersection²
- Potential Right-of-way Impacts³

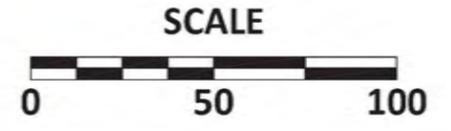
¹ Bus stop locations are preliminary based on existing stop locations and potential stop consolidation. Final stop locations will be determined in the design phase of the project.

² Signalized Intersection design will be refined in the next design phase of the project. Signalized intersections will be designed to provide a high level of comfort and protection to bicyclists, pedestrians, and transit riders, utilizing design elements shown in the 'Signalized Intersection Concept'.

³ Potential Right-of-way impacts are estimated and not based on survey. Actual right-of-way impacts will be determined in the next phase after acquiring survey data and refinement of the design to account for vertical grading, stormwater retention and utility relocation.

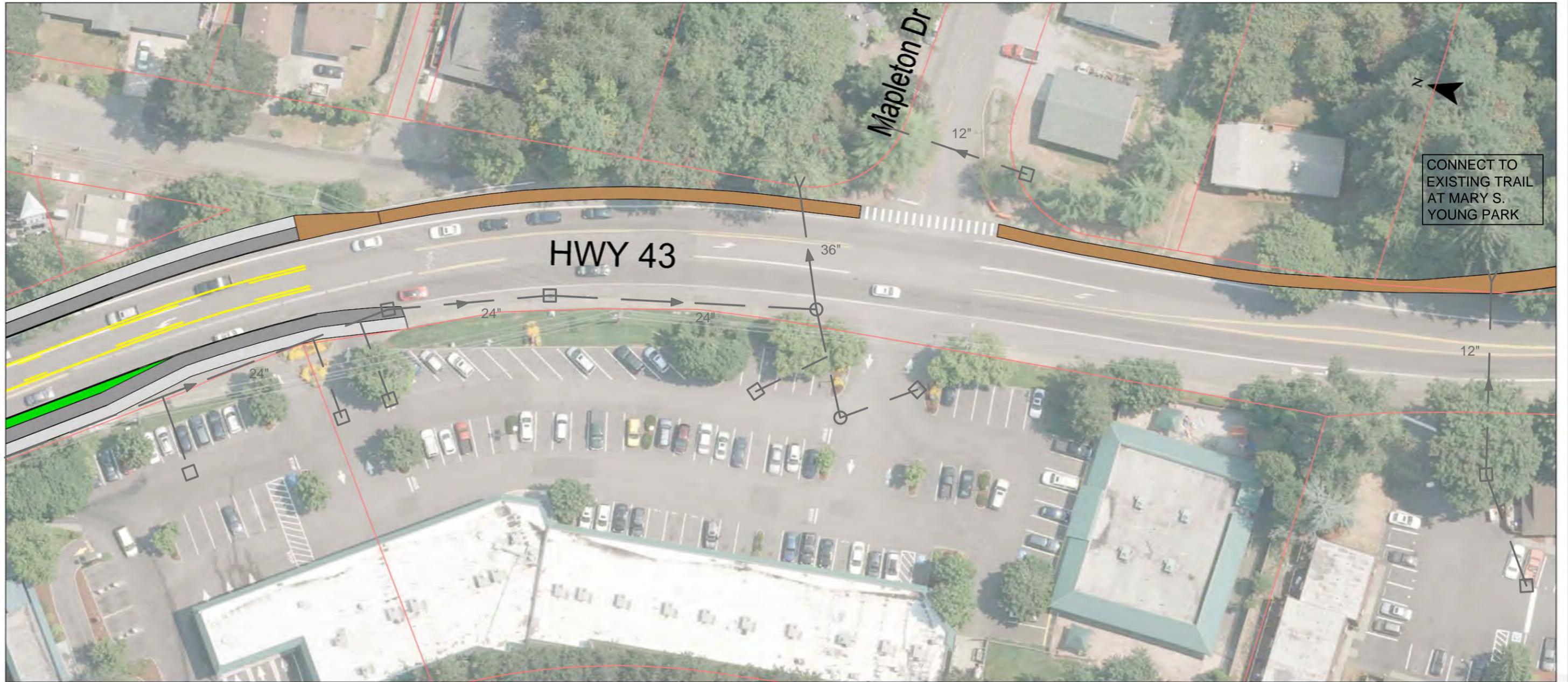


- EXISTING INLET
- EXISTING MANHOLE
- EXISTING STORM LINE
- PROPOSED INLET
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED RAIN GARDEN



West Linn, Oregon

Figure 7

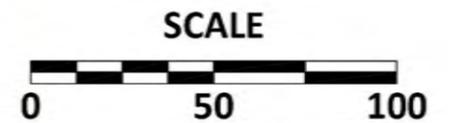


CONNECT TO EXISTING TRAIL AT MARY S. YOUNG PARK

- Sidewalk
- Multi-use Path
- Protected Bike Facility
- Signalized Intersection¹
- Buffer/Landscape
- Potential Right-of-way Impacts²

¹ Signalized Intersection design will be refined in the next design phase of the project. Signalized intersections will be designed to provide a high level of comfort and protection to bicyclists, pedestrians, and transit riders, utilizing design elements shown in the 'Signalized Intersection Concept'.

² Potential Right-of-way impacts are estimated and not based on survey. Actual right-of-way impacts will be determined in the next phase after acquiring survey data and refinement of the design to account for vertical grading, stormwater retention and utility relocation.



Note: Transit stop locations and marked pedestrian crossing locations are included at all signalized intersections. Additional stop locations and crossings will be incorporated following input from Trimet and members of the public in December 2015.

- EXISTING INLET
- PROPOSED INLET
- EXISTING MANHOLE
- PROPOSED MANHOLE
- EXISTING STORM LINE
- PROPOSED STORM LINE
- PROPOSED RAIN GARDEN

West Linn, Oregon **Figure 8A**



City of West Linn

August 8, 2016

Dear Metro Council,

It is with great enthusiasm that the West Linn City Council supports the Highway 43 Multimodal Transportation Project Regional Flexible Fund Allocation (RFFA) application. Construction of a multimodal corridor along Highway 43 will greatly increase safe active transportation options for all levels of users in addition to optimizing traffic flow on a congested State highway of regional significance.

Highway 43 contains only intermittent or substandard pedestrian/bike facilities and suffers from a lack of ADA accessibility, traffic congestion delays, and safety issues. This project is a needed improvement that focuses on the safety of all users of the road with an emphasis on those who walk, ride bikes, and use public transit. West Linn is committed to a Vision Zero goal to make our transportation system the safest possible.

Improvements to Highway 43 have long been a part of West Linn's master planning efforts and are a priority to citizens in West Linn, surrounding communities, and the region to ensure that State and local transportation facilities are operating at optimal levels to ensure livability, safety, economic, and sustainability goals are met.

West Linn is positioned to receive approximately \$1.1 million in State Enhance grant funding from the 2018-2021 STIP for design of improvements for this project. RFFA funding in combination with the City's local match would provide for construction of this section of the Highway 43 corridor. This phase of the project supports our long term goal to provide safe multimodal transportation on Highway 43 from Oregon City to Lake Oswego. Please help us leverage these State Enhance funds and the local funding we are committed to providing to fully deliver a final project to the public.

Sincerely,

Russ Axelrod, West Linn Mayor
On behalf of the West Linn City Council

APPENDIX A – ENVIRONMENTAL JUSTICE COMPLIANCE

Public engagement and non-discrimination certification

Regional flexible funds 2019-21

Background and purpose

Use of this checklist is intended to ensure project applicants have offered an adequate opportunity for public engagement, including identifying and engaging historically underrepresented populations. Applications for project implementation are expected to have analyzed the distribution of benefits and burdens for people of color, people with limited English proficiency and people with low income compared to those for other residents.

The completed checklist will aid Metro in its review and evaluation of projects.

Instructions

Applicants must complete this certification, including a summary of non-discriminatory engagement (see Section B), for projects submitted to Metro for consideration for 2019-21 regional flexible funding.

Project sponsors should keep referenced records on file in case of a dispute. Retained records do not have to be submitted unless requested by Metro.

Please forward questions regarding the public involvement checklist to regional flexible funds allocation project manager Dan Kaempff at daniel.kaempff@oregonmetro.gov or 503-813-7559.

1. Checklist

Transportation or service plan development

- ✓ At the beginning of the agency's transportation or service plan, a public engagement plan was developed to encourage broad-based, early and continuing for public involvement.
Retained records: *public engagement plan and/or procedures*
- ✓ At the beginning of the agency's transportation or service plan, a jurisdiction-wide demographic analysis was completed to understand the location of communities of color, limited English proficient and low-income populations, disabled, seniors and youth in order to include them in engagement opportunities.
Retained records: *summary of or maps illustrating jurisdiction-wide demographic analysis*
- ✓ Public notices included a statement of non-discrimination (Metro can provide a sample).
Retained records: *public engagement reports including/or dated copies of notices*
- ✓ Throughout the process, timely and accessible forums for public input were provided.
Retained records: *public engagement reports including/or descriptions of opportunities for ongoing engagement, descriptions of opportunities for input at key milestones, public meeting records, online or community survey results*

- ✓ Throughout the process, appropriate interested and affected groups were identified and contact information was maintained in order to share project information, updates were provided for key decision points, and opportunities to engage and comment were provided.
***Retained records:** public engagement reports including/or list of interested and affected parties, dated copies of communications and notices sent, descriptions of efforts to engage the public, including strategies used to attract interest and obtain initial input, summary of key findings; for announcements sent by mail or email, documented number of persons/groups on mailing list*
- ✓ Throughout the process, focused efforts were made to engage underrepresented populations such as communities of color, limited English proficient and low-income populations, disabled, seniors and youth. Meetings or events were held in accessible locations with access to transit. Language assistance was provided, as needed, which may include translation of key materials, using a telephone language line service to respond to questions or take input in different languages and providing interpretation at meetings or events.
***Retained records:** public engagement reports including/or list of community organizations and/or diverse community members with whom coordination occurred; description of language assistance resources and how they were used, dated copies of communications and notices, copies of translated materials, summary of key findings*
- ✓ Public comments were considered throughout the process, and comments received on the staff recommendation were compiled, summarized and responded to, as appropriate.
***Retained records:** public engagement reports or staff reports including/or summary of comments, key findings and final staff recommendation, including changes made to reflect public comments*
- ✓ Adequate notification was provided regarding final adoption of the plan or program, at least 15 days in advance of adoption, if feasible, and follow-up notice was distributed prior to the adoption to provide more detailed information. Notice included information and instructions for how to testify, if applicable.
***Retained records:** public engagement reports or final staff reports including/or dated copies of the notices; for announcements sent by mail or email document number of persons/groups on mailing list*

Project development

This part of the checklist is provided in past tense for applications for project implementation funding. Parenthetical notes in future tense are provided for applicants that have not completed project development to attest to ongoing and future activities.

- ✓ At the beginning of project development, a public engagement plan was (is budgeted to be) developed to encourage broad-based, early and continuing opportunity for public involvement.
***Retained records:** public engagement plan and/or procedures*
- ✓ At the beginning of project development, a demographic analysis was (is budgeted to be) completed for the area potentially affected by the project to understand the location of

communities of color, limited English proficient and low-income populations, disabled, seniors and youth in order to include them in engagement opportunities.

Retained records: *summary of or maps illustrating demographic analysis*

- Throughout project development, project initiation and requests for input were (will be) sent at least 15 days in advance of the project start, engagement activity or input opportunity.

Retained records: *public engagement reports including/or dated copies of notices*

- Throughout project development, public notices included (will include) a statement of non-discrimination.

Retained records: *public engagement reports including/or dated copies of notices*

- Throughout project development, timely and accessible forums for public input were (will be) provided.

Retained records: *public engagement reports including/or descriptions of opportunities for ongoing engagement, descriptions of opportunities for input at key milestones, public meeting records, online or community survey results*

- Throughout project development, appropriate interested and affected groups were (will be) identified and contact information was (will be) maintained in order to share project information, updates were (will be) provided for key decision points, and opportunities to engage and comment were (will be) provided.

Retained records: *public engagement reports including/or list of interested and affected parties, dated copies of communications and notices sent, descriptions of efforts to engage the public, including strategies used to attract interest and obtain initial input, summary of key findings; for announcements sent by mail or email, documented number of persons/groups on mailing list*

- Throughout and with an analysis at the end of project development, consideration was (will be) given to the benefits and burdens of the project for people of color, people with limited English proficiency and people with low income compared to those for other residents, as identified through engagement activities.

Retained records: *staff reports including/or description of identified populations and information about benefits and burdens of the project for them in relation to other residents;*

- There was a finding of inequitable distribution of benefits and burdens for people of color, people with limited English proficiency and people with low income

Submitted records: *for a finding of inequitable distribution of benefits and burdens, attach analysis, finding and documentation justifying the project and showing there is no less discriminatory alternative.*

- Public comments were (will be) considered throughout project development, and comments received on the staff recommendation were (will be) compiled, summarized and responded to, as appropriate.

Retained records: public engagement reports or staff reports including/or summary of comments, key findings and final staff recommendation, including changes made to reflect public comments

- ✓ Adequate notification was (will be) provided regarding final adoption of the plan, at least 15 days in advance of adoption, if feasible, and follow-up notice was distributed prior to the adoption to provide more detailed information. Notice included (will include) information and instructions for how to testify, if applicable.

Retained records: public engagement reports or final staff reports including/or dated copies of the notices; for announcements sent by mail or email document number of persons/groups on mailing list

2. Summary of non-discriminatory engagement

Attach a summary (1-2 pages) of the key elements of the public engagement process, including outreach to communities of color, limited English and low-income populations, for this project or transportation or service plan. **Provided in application packet under "Base project information."**

3. Certification statement

_____ The City of West Linn _____ (agency) certifies adherence to engagement and non-discrimination procedures developed to enhance public participation and comply with federal civil rights guidance.

As attested by:



(signature)

Lance Calvert, P.E., Public Works Director/City Engineer

(name and title)

8/26/16

(date)

APPENDIX C – ACTIVE TRANSPORTATION DESIGN GUIDELINES

The following checklist items are street design elements that are appropriate and desirable in regional mobility corridors. Trail projects should use the *Off-Street and Trail Facilities* checklist (item D) at the end of this list. All other projects should use items A – C.

Use of federal transportation funds on separated pathways are intended for projects that primarily serve a transportation function. Pathways for recreation are not eligible for federal transportation funding through the regional flexible fund process. Federal funds are available from other sources for recreational trails. To allow for comfortable mixing of persons on foot, bicycle and mobility devices at volumes expected to be a priority for funding in the metropolitan region, a 12-foot hard surface with shoulders is a base design width acceptable to FHWA Oregon. Exceptions to this width for limited segments is acceptable to respond to surrounding context, with widths less than 10-feet subject to a design exception process. Wider surfaces are desirable in high volume locations.

A. Pedestrian Project design elements – check all that apply ***Design elements emphasize separating pedestrians from auto traffic with buffers, increasing the visibility of pedestrians, especially when crossing roadways, and make it easier and more comfortable for people walking to access destinations.***

For every element checked describe existing conditions and proposed features:

- Add sidewalks or improve vertical delineation of pedestrian right-of-way (i.e. missing curb)
- Add sidewalk width and/or buffer for a total width of 17 feet (recommended), 10 feet minimum; buffer may be provided by parking on streets with higher traffic volumes and speeds (over 35 mph, ADT over 6,000)
- Add sidewalk width and/or buffer for a total width of 10 feet (recommended), 8 feet minimum on streets with lower traffic volumes and speeds (ADT less than 6,000 and 30 mph or less); Buffer may be provided by parking, protected bike lane, furnishing zone, street trees/planting strip
- Sidewalk clear zone of 6 feet or more
- Remove obstructions from the primary pedestrian-way or add missing curb ramps
- Add pedestrian crossing at appropriate location **TBD during final design**
- Re-open closed crosswalks
- Raised pedestrian refuge median or raised crossing, required if project is on a roadway with 4 or more lanes
- Reduced pedestrian crossing distance
- Narrowed travel lanes
- Reduced corner radii (e.g. truck apron)
- Curb extensions
- Rectangular Rapid Flashing Beacon (RRFB) or pedestrian signal **TBD during final design**
- Lighting, especially at crosswalks – pedestrian scale (10-15 feet), preferably poised over sidewalk
- Add countdown heads at signals
- Shorten signal cycle lengths of 90 seconds or less – pedestrian friendly signal timing, lead pedestrian intervals **TBD during final design**
- Access management: minimize number and spacing of driveways **TBD during final design**
- Arterial traffic calming: Textured intersections, gateway treatments, raised medians, road diets, roundabouts
- Wayfinding
- Benches

- Transit stop amenities or bus stop pads
- Add crosswalk at transit stop **TBD during final design**
- Pedestrian priority street treatment (e.g. woonerf) on very low traffic/low volume street

B. Bicycle Projects design elements

Design elements emphasize separating bicycle and auto traffic, increasing visibility of bicyclists, making it easier and more comfortable for people traveling by bicycle to access routes and destinations.

For every element checked describe existing conditions and proposed features:

- On streets with higher traffic volumes and speeds (over 35 mph, ADT over 6,000): Buffered bicycle lane, 6 foot bike lane, 3 foot buffer; Protected bikeway with physical separation (e.g. planters, parking); Raised bikeway
- Separated multi-use trail parallel to roadway
- Bike priority treatments at intersections and crossings (i.e. advance stop lines, bike boxes, signals, high-intensity activated crosswalk (HAWK) signals, user-activated signals)
- Medians and crossing treatments
- Wayfinding, street markings
- Lighting at intersections
- Bicycle boulevard treatment where ADT is less than 3,000 per day: Buffered bicycle lane, 6 foot bike lane, 3 foot buffer

C. Other Complete Street Features

For every element checked describe existing conditions and proposed features:

- Turning radius improvements (freight route only)
- Gateway feature
- Street trees
- ITS elements (i.e. signal timing and speed detection)

D. Off-Street and Trail Facilities **N/A**

For every element checked describe existing conditions and proposed features:

- Minimum 12' trail width (plus 2' graded area each side)
- Always maintains minimum 5' separation when adjacent to street **or** never adjacent to street
- All on-street segments include improvements beyond bike lanes (item C, above) **or** no on-street segments
- All street crossings include an appropriate high-visibility crosswalk treatment
- All 4-lane street crossings include appropriate refuge island **or** no 4-lane street crossings
- Frequent access points (generally every ¼-mile)
- All crosswalks and underpasses include lighting
- Trail lighting throughout
- Trailhead improvements
- Rest areas with benches and wheelchair spaces
- Wayfinding or interpretive signage
- Signs regulating bike/pedestrian interaction (e.g. bikes yield to pedestrians)
- Trail priority at all local street/driveway crossings

Instructions for Using This Workbook

Password for locking/unlocking this sheet is 'metro'. All other sheets have no password.

Purpose:

This workbook provides a methodology for planning-level cost estimating for transportation infrastructure projects. Alternative methodology of similar or better detail is acceptable.

Where agencies propose cost methodology significantly different from this methodology, documentation should be provided.

This includes unit costs which vary significantly from that specified here. Consistency of such costs between projects is desirable in that it allows for equitable comparison of projects.

Instructions:

This workbook or a comparable cost estimate must be completed for each project submitted.

Complete the project information below and in Sheets 1 through 5. Worksheets are accessed by tabs at the bottom of the window. Sheet 6 summarizes total estimated cost of the project.

Input cells are shaded light blue, and should be filled in by the user (where applicable). Other cells are locked and should not be changed.

<sample>

← Appearance of input cells used throughout this workbook.

Locked cells can be unlocked by selecting Review > Unprotect Sheet. This is not recommended in most cases. Password is 'metro'.

Questions about completing the workbook should be directed to Anthony Buczek, Transportation Engineer with Metro.

Feedback and comments about this workbook are encouraged, and will help to improve it for future updates.

phone: 503-797-1674

e-mail: anthony.buczek@oregonmetro.gov

These cells are shaded light blue, which means they should be filled in.

Project Information:

Fill in all of the information below for your project.

Funding year:	PE	2018
	ROW	2018
	Const	2019
Project name:	Highway 43 Multimodal Transportation Project	
Corridor and endpoints:	MP 8.03 (OR 43 at north City limits) to MP 9.07 (OR 43 at Mary S. Young State Park)	
Project description:	Enhancements to pedestrian and bicycle travel along the Highway 43 corridor	
Local plan project #:		
RTP project #:	10127	
Submitting agency:	City of West Linn	
Agency contact:	Lance Calvert	
Contact phone:	503-722-5516	
Contact e-mail:	lcalvert@westlinnoregon.gov	

Proceed to Sheet 1 when the above is completed.

Unit costs year: 2007

Escalation rate	Used in Calculations	Default	Override
2007 - 2008	100.38%	100.38%	
2008 - 2009	84.72%	84.72%	
2009 - 2010	96.78%	96.78%	
2010 - 2011	101.04%	101.04%	
2011 - 2012	105.05%	105.05%	
2012 - 2013	97.86%	97.86%	
2013 - 2014	100.79%	100.79%	
2014 - 2015	100.71%	100.71%	
2015 - 2016	104.00%	104.00%	
2016 - 2017	104.00%	104.00%	
2017 - 2018	104.00%	104.00%	
2018 - 2019	104.00%	104.00%	
2019 - 2020	104.00%	104.00%	
2020 - 2021	104.00%	104.00%	

Do not override these unless better escalation factors are identified.
 2007 - 2015 based on FHWA NHCCI
 2016 - 2021 based on ODOT inflation assumptions

Escalation Lookup Table

v From \ To >	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
2007	100.00%	100.38%	85.04%	82.30%	83.16%	87.36%	85.49%	86.16%	86.78%	90.25%	93.86%	97.61%	101.52%	105.58%	109.80%
2008	---	100.00%	84.72%	81.99%	82.84%	87.03%	85.17%	85.84%	86.45%	89.91%	93.50%	97.24%	101.13%	105.18%	109.38%
2009	---	---	100.00%	96.78%	97.79%	102.72%	100.53%	101.32%	102.04%	106.12%	110.37%	114.78%	119.37%	124.15%	129.11%
2010	---	---	---	100.00%	101.04%	106.14%	103.87%	104.69%	105.43%	109.65%	114.04%	118.60%	123.34%	128.28%	133.41%
2011	---	---	---	---	100.00%	105.05%	102.80%	103.61%	104.35%	108.52%	112.86%	117.38%	122.07%	126.96%	132.04%
2012	---	---	---	---	---	100.00%	97.86%	98.63%	99.33%	103.31%	107.44%	111.74%	116.21%	120.85%	125.69%
2013	---	---	---	---	---	---	100.00%	100.79%	101.51%	105.57%	109.79%	114.18%	118.75%	123.50%	128.44%
2014	---	---	---	---	---	---	---	100.00%	100.71%	104.74%	108.93%	113.29%	117.82%	122.53%	127.43%
2015	---	---	---	---	---	---	---	---	100.00%	104.00%	108.16%	112.49%	116.99%	121.67%	126.53%
2016	---	---	---	---	---	---	---	---	---	100.00%	104.00%	108.16%	112.49%	116.99%	121.67%
2017	---	---	---	---	---	---	---	---	---	---	100.00%	104.00%	108.16%	112.49%	116.99%
2018	---	---	---	---	---	---	---	---	---	---	---	100.00%	104.00%	108.16%	112.49%
2019	---	---	---	---	---	---	---	---	---	---	---	---	100.00%	104.00%	108.16%
2020	---	---	---	---	---	---	---	---	---	---	---	---	---	100.00%	104.00%
2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100.00%

Workbook revision date: June 27, 2016 (metro)

1. Construction Highway 43 Multimodal Transportation Project
 Sections A through E must be completed. Complete Sections F and/or G if applicable. MP 8.03 (OR 43 at north City limits) to MP 9.07 (OR 43 at Mary S. Young State Park)
 Projects will not include all elements below, but most will include elements from multiple sections. City of West Linn
 Enter quantities only for elements actually included in your project.

1.A - Road Construction, Reconstruction, or Resurfacing

Item	Unit	Quantity	Unit cost	Total	Description
Road - new/reconstruct (incl. curb, sidewalk, drainage)	SF	0.0	\$15	\$0	Specify SF of pavement, not including sidewalks and curbs (these are assumed in unit cost).
Road - resurface	SF	208,658.0	\$4	\$834,632	
Specify length and typical width of project					For documentation of assumptions used.
		Length = 1.04 mile (5491 feet), Width = 38 feet			
Section 1.A Subtotal				\$834,632	

Assumptions:

Reposition of Old River Road will be paid with local funds
 5491' total length x 38' pavement width (from cross-section)
 From MP 8.03 to MP 9.07

1.B - Addition of Roadway Elements to Existing Roadway

Item	Unit	Quantity	Unit cost	Total	Description
Minor widening, no curbs	SF	0.0	\$15	\$0	Used for bike lanes, other minor widening. Does not include curbs, sidewalks, or drainage.
Remove pavement	SF	0.0	\$0.75	\$0	
Curb only	LF	32,486.0	\$16	\$519,776	For new curb installation. Does not include drainage.
Remove curb	LF	3,640.0	\$6	\$21,840	
Median in existing lane no drainage	LF	0.0	\$86.50	\$0	Includes pavement removal, curbs, landscaping for a 12' median in 14' lane. No drainage included.
Landscaping only - medians and bulbouts	SF	10,500.0	\$4	\$42,000	Install 18" topsoil plus plants
Drainage system - both sides	LF	0.0	\$115	\$0	For new installations. Length is overall project length where drainage is added.
Bridge - new or replace	SF	0.0	\$250	\$0	
Specify length and width of bridge					For documentation of assumptions used.
Street trees with tree grates	LF	0.0	\$40	\$0	Per side.
Irrigation system		Provide estimate		\$0	For irrigation of medians and bulbouts. Specific estimate required if used (describe in Section 1.G).
Signing/markings	LF	16,473.0	\$2	\$32,946	Use when new pavement markings are to be installed (per line).
Clearing	SF	0.0	\$0.06	\$0	Used for new alignments.
Grading	CY	0.0	\$17.50	\$0	Provide an estimate of grading and describe assumptions in Section 1.G.
Retaining walls (by wall area)	SF	0.0	\$55	\$0	Use SF of walls if known. If not, estimate length of walls and describe assumptions in Section 1.G.
Retaining walls (by length)	LF	0.0	\$250	\$0	
Section 1.B Subtotal				\$616,562	

No widening is proposed, existing road varies from 45' wide near Arbor Drive to 60' wide near Hidden Springs Road, proposed driving lanes cross section is 38' wide
 Pavement resurfacing included above
 Three curbs on either side: road-planter, planter-cycle track, cycle track-sidewalk; 6 lanes x 5491' total length; in constrained cross-section only 4 curbs used
 Estimated length of existing sidewalk with curb; (2700'+1400'+450'), estimated 20% of this will be salvaged
 N/A
 Estimated area for proposed rain gardens based on stormwater concept design
 Cost is itemized in other section
 N/A
 N/A
 N/A
 N/A
 OR43 striping: center left turn lane (2 full and 2 partial lines) for 5491' total length; Cedar Oak Road and Old River Road striping will be paid with local funds
 Any clearing associated with Old River Road realignment will be paid with local funds
 Old River Road grading and construction will be paid with local funds
 N/A
 N/A

1.C - Addition of Pedestrian Elements to Existing Roadway

Item	Unit	Quantity	Unit cost	Total	Description
Sidewalk, no curb	SF	56,760.0	\$10	\$567,600	Includes curb ramps.
Remove sidewalk	SF	11,375.0	\$1.25	\$14,219	
Shared-use path	SF	66,560.0	\$5	\$332,800	Includes curb ramps.
Street furniture - bench	EA	0	\$2,275	\$0	
Street furniture - bike rack	EA	0	\$330	\$0	
Street furniture - trash can	EA	0	\$1,350	\$0	
Section 1.C Subtotal				\$914,619	

9460' estimated length x 6' wide sidewalk
 Estimated length of existing sidewalk and curb (2700'+1400'+450'), assume 5 foot width, assume 50% of sidewalk salvaged
 10240' estimated length from concept plan, 6.5' paved width
 N/A
 N/A
 N/A

1.D - Utilities

Item	Unit	Quantity	Unit cost	Total	Description
Utility burial		Provide estimate		\$0	If utility burial is included, provide a detailed cost from the appropriate utility.
Utility relocation		Provide estimate		\$0	Describe what utilities will or may be relocated. Provide cost estimate and describe assumptions.
Description: Existing franchise agreements require utility relocation. There are no planned utility burials.					
Railroad impacts					
Summary: Summarize impacts Describe potential impacts to railroads in project area.					
There are no railroad impacts associated with this project.					
Section 1.D Subtotal				\$0	

N/A
 N/A
 N/A
 N/A

1.E - Traffic Signals and Lighting

Item	Unit	Quantity	Unit cost	Total	Description
Traffic signals (4-lanes or more)	EA	0	\$150,000	\$0	Use where at least one roadway is 4 lanes or more.
Traffic signals (less than 4-lanes)	EA	2	\$105,000	\$210,000	Use where both roadways are 3 lanes or less.
Street lighting - per side	LF	0.0	\$80	\$0	install street lighting at 100' spacing per side.
Section 1.E Subtotal				\$210,000	

N/A
 Two signals: Marylhurst/Lazy River and Hidden Springs
 N/A

1.F - Associated Costs

Item	Unit	Quantity	Unit cost	Total	Description
Mobilization, staging, traffic control			10%	\$257,581	
Erosion control - enter value to override fixed 1.5%	\$	\$27,500.00	Estimate	\$27,500	Use 1.5% of construction costs, or provide a cost estimate and describe assumptions.
Description: Mobilization changed to 10% to more closely align with the City's concept plan cost estimate					
Erosion control estimate includes a pollution control plan, as estimate as part of City's concept plan cost estimate					
Section 1.F Subtotal				\$285,081	

1.G - Additional Information

Use the space below to provide additional information, including items not listed above, or to expand on assumptions used.
 Stormwater/drainage cost breakdown: 2530 LF of 12" reinforced concrete pipe @ \$60/LF; 1 sloped end section @ \$700/EA; 2 concrete storm manholes @ \$3000/EA; 29 concrete storm inlets @ \$1500/EA. Stormwater quantities based on concept plans and preliminary engineering design. Many existing structures will be kept.

Other Expected Costs	Provide estimate	\$202,000
Section 1.G Subtotal		\$202,000

SUMMARY

Total of sections A through G **\$3,062,894** Section 1 Total

2. Environmental Impact and Mitigation

Highway 43 Multimodal Transportation Project

Sections A and B must be completed. Complete Section C if applicable. Contact Metro if information for 2.B is needed.

MP 8.03 (OR 43 at north City limits) to MP 9.07 (OR 43 at Mary S. Young State Park)

City of West Linn

2.A - Status and Information

Please place an 'X' in the appropriate box.

EA not completed; an EIS IS expected.	<input type="checkbox"/>
EA not completed; an EIS is NOT expected.	<input checked="" type="checkbox"/>
EA not completed; unknown whether EIS is expected.	<input type="checkbox"/>
EA has been completed; an EIS IS required.	<input type="checkbox"/>
EA has been completed; an EIS is NOT required.	<input type="checkbox"/>
Both an EA and an EIS have been completed.	<input type="checkbox"/>

Describe expected environmental impacts, assumptions, and unknowns.

Description: Environmental mitigation is not expected.

2.B - Environmental Impacts and Mitigation

Item	Unit	Quantity	Unit cost	Total	Description
Estimate acreage of impact/mitigation	ACRE	0.00	\$150,000	\$0	
Section 2.B Subtotal				\$0	

2.C - Additional Information

Use the space below to provide additional information, including items not listed above, or to expand on assumptions used.

Other Expected Costs Provide estimate →

Section 2.C Subtotal **\$0**

SUMMARY

Total estimate for environmental mitigation **\$0** Section 2 Total

3. Right-of-Way Cost Estimation

Highway 43 Multimodal Transportation Project

Use either Method 'A' or Method 'B'. Method 'A' is preferred. Complete Section C if applicable.

MP 8.03 (OR 43 at north City limits) to MP 9.07 (OR 43 at Mary S. Young State Park)

City of West Linn

Where the exact SF of ROW is unknown, an estimate must be made. At the most simplistic level, this estimate can be made by calculating the difference between the proposed cross-section width and the existing ROW width, multiplied by the project length. Where ROW width cannot be determined, it should be assumed to be the width of the existing roadway including sidewalks.

3.A - Method 'A' (moderate confidence)

Item	Unit	Quantity	Unit cost	Total	Description
Estimate area (SF) of ROW taking	SF	14440.0			
Describe assumptions used in calculating area:					
Estimate unit cost (per SF) of taking	\$	\$20.00			
Describe assumptions used in calculating unit cost(s):					
The concept design indicates which parcels may be affected by the road widening. Area was measured between existing ROW and proposed edge of road/sidewalk. All properties assumed to be "developed" ROW taking for cost estimate. This cost is consistent with the City's recent appraisals and acquisition in other locations.					
Estimated total cost of taking				\$288,800	Estimated area multiplied by estimated unit cost.
Number of affected parcels:	EA	8	\$10,000	\$80,000	Reflects administrative costs of property acquisition.
Section 3.A Subtotal				\$368,800	

3.B - Method 'B' (low confidence)

Item	Unit	Quantity	Unit cost	Total	Description
Estimate square-feet of high-value ROW taking	SF		\$30	\$0	Use in urban areas and moderate to high-priced neighborhoods.
Estimate square-feet of developed ROW taking	SF		\$20	\$0	Use in other established neighborhoods.
Estimate square-feet of undeveloped ROW taking	SF		\$15	\$0	Use in undeveloped areas.
Describe assumptions used in calculating area:					
Estimated total cost of taking				\$0	Estimated area multiplied by estimated unit cost.
Number of affected parcels:	EA		\$10,000	\$0	Reflects administrative costs of property acquisition.
Section 3.B Subtotal				\$0	

3.C - Additional Information

Use the space below to provide additional information, including items not listed above, or to expand on assumptions used.

SUMMARY

Method 'A' Right-of-Way estimate (moderate confidence)	\$368,800	Section 3 Total (moderate confidence)
Method 'B' Right-of-Way estimate (low confidence)	\$0	Section 3 Total (low confidence)

4. Design and Administration Costs

Highway 43 Multimodal Transportation Project

Complete input cells in Sections A and B if applicable. Default markup values can be overridden.

MP 8.03 (OR 43 at north City limits) to MP 9.07 (OR 43 at Mary S. Young State Park)

City of West Linn

4.A - Design

Construction Costs (from Section 1):

\$3,062,894

Environmental Impact Costs (from Section 2):

\$0

Item

Base Cost	Markup	Total
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Description

Surveying, design, coordination

\$3,062,894	20%	\$612,579
-------------	-----	-----------

(Default 30%) Typically included in the professional engineering contract

Construction Engineering

\$3,062,894	12%	\$367,547
-------------	-----	-----------

(Default 20%) Engineering services during construction

Other Expected Costs

Provide estimate	→	
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Description of other expected costs:

Survey, design, coordination and construction engineering markups reduced to 20% and 12% because the preliminary layout and significant planning have been completed. City staff to provide assistance throughout the project at no additional cost.
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Section 4.A Subtotal

\$980,126

4.B - Administration

Project Administration will be applied throughout project.

Administration

\$3,062,894	10%	\$306,289
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(Default 35%) Project overhead

Section 4.B Subtotal

\$306,289

4.C - Additional Information

Use the space below to provide additional information, including items not listed above, or to expand on assumptions used.

Administration markup reduced to 10%. Reasons include: preliminary design has been completed and project has clear direction due to public input during development process, local staff time will be funded by the City and not included in grant funds, administration for environmental aspects are expected to be minimal as the majority of work is within existing right-of-way and contained within existing paved surfaces.

SUMMARY

Total of all above items

\$1,286,415 Section 4 Total

5. Contingency and Risk

Highway 43 Multimodal Transportation Project

Complete input cells in Section A if applicable. Default markups can be overridden. Section B must be completed.

MP 8.03 (OR 43 at north City limits) to MP 9.07 (OR 43 at Mary S. Young State Park)

City of West Linn

5.A - Contingency

Item

Section Total	Markup	Contingency \$	Description
\$3,062,894	20%	\$612,579	(Default 20%)
\$0	20%	\$0	(Default 20%)
\$368,800	40%	\$147,520	(Default 40%)
\$0	50%	\$0	(Default 50%)
\$980,126	20%	\$196,025	(Default 20%)
\$306,289	No contingency on Administration		
Other Expected Costs	Provide estimate	→	

Description of other expected costs:

Section 5.A Subtotal

\$956,124

5.B - Risk

Describe project components, impacts, or unknowns that are uncertain in scope at this point. Items might include:

- environmental issues
- nearby historic or cultural resources
- railroad or utility work
- bridge work
- agency approvals
- existing deficient infrastructure
- complex or untested components
- other unique elements

Description of these items is not intended to affect project selection, but rather to identify and document key issues that need refinement.

6. Project Summary Sheet

Highway 43 Multimodal Transportation Project

MP 8.03 (OR 43 at north City limits) to MP 9.07 (OR 43 at Mary S. Young State Park)

Enhancements to pedestrian and bicycle travel along the Highway 43 corridor

City of West Linn

6.A - Cost Summary in 2007\$

Preliminary Engineering (PE)

Surveying, design, coordination

Contingency at 20%

Administration at 10%

	Item Total	Phase Total
		\$796,352
	\$612,579	
	\$122,516	
	\$61,258	

Right-of-Way (ROW)

Right-of-Way (moderate confidence)

Contingency at 40%

Right-of-Way (low confidence)

Contingency at 50%

		\$516,320
	\$368,800	
	\$147,520	
	\$0	
	\$0	

Construction (Const)

Construction (Section 1)

Contingency at 20%

Environmental (Section 2)

Contingency at 20%

Construction Engineering

Contingency at 20%

Administration at 10%

		\$4,459,574
	\$3,062,894	
	\$612,579	
	\$0	
	\$0	
	\$367,547	
	\$73,509	
	\$343,044	

Total

\$5,772,246

6.B - Funding Summary by Year of Expenditure

Phase		2007 Dollars	YOE Year	Escalation	YOE Cost
Preliminary Engineering	PE	\$ 796,352	2018	-2.39%	\$ 780,000
Right-of-Way	ROW	\$ 516,320	2018	-2.39%	\$ 500,000
Construction	Const	\$ 4,459,574	2019	1.52%	\$ 4,530,000
	Total	\$ 5,772,246			\$ 5,810,000