
AGENDA
Bend Metropolitan Planning Organization
Technical Advisory Committee Meeting

Date: October 4, 2023
Time: 10:00 – 11:30 am
Location: **Hybrid meeting**

In-Person Location: Bend City Hall, Awbrey Butte Room (2nd floor), 710 NW Wall Street, Bend

Virtual Option: Register for the meeting using the following link:
<https://bendoregon.gov.zoom.us/j/84513950388?pwd=bmZodDJZTm9tUGE4TmhqRVY5NFU0UT09>
Webinar ID: 845 1395 0388; Passcode: bendmpo

YouTube: <https://youtube.com/live/2vd7Yyzbcz0?feature=share>

Phone Option: 1-888-788-0099; Passcode: 845 1395 0388##

Contact: Tyler Deke, BMPO Manager (541) 693-2113 (office), (541) 633-9298 (mobile) or tdeke@bendoregon.gov

1. Call Order & Introductions Tyler Deke
2. Hybrid Meeting Guidelines Tyler Deke
3. Public Comment Tyler Deke

Action Items

4. Meeting Summary Tyler Deke

Review and approved the September 6, 2023, Technical Advisory Committee meeting summary (**Attachment A**).

Recommended Language for Motion: I move approval of the September 6, 2023, meeting summary as presented.

Informational Items

5. Bend La Pine Schools 2022 Sites and Facilities Plan Sharon Smith

Background: Bend La Pine Schools maintains and regularly updates a Sites and Facilities Plan to guide maintenance of existing facilities and development of new facilities. The most recent plan was completed in 2022 identifies needs through 2042. Sharon Smith will provide an overview of the plan.

Attachments: None. The plan is posted on the following site:
https://www.bend.k12.or.us/download_file/view/15998/4096

Action Requested: None. Information item.

6. US97 at Reed Market Rd Safety & Operations Study Tyler Deke

Background: The Bend TSP and the US 97 Parkway Plan identified Reed Market Road as a critical bottleneck with several safety issues and include concept level improvements. This study refined those project concepts, updated cost estimates, and prioritizes the projects to align with existing funding. Staff will review the study outcomes and discuss next steps.

Attachments: Executive Summary (**Attachment B**) and public summary (**Attachment C**). Study information and materials are posted on the following site:
<https://www.oregon.gov/odot/projects/pages/project-details.aspx?project=00005>

Action Requested: None. Information item.

7. CET Update Eric Lint

Background: Eric Lint will provide an overview of a new CET fixed-route that will serve SE Bend, a new mobility hub proposed in southern Bend, and a review of new summer service (Transit to Trails) launched earlier this year.

Attachments: Route 9 poster (**Attachment D**). Information about the Transit to Trails service is available on the following link:
<https://cascadeseasttransit.com/transittotrails/>

Action Requested: None. Information item.

8. Member & Guest Roundtable TAC members

Time for TAC members to provide updates on current projects and planning efforts.

9. Public Comment Tyler Deke

10. Next TAC meeting

The next meeting of the Bend MPO TAC is scheduled for November 1, 2023, at 10 a.m.

11. Adjournment



Accessible Meeting Information

This meeting event and location are accessible. Sign language, interpreter service, assistive listening devices, materials in alternate format, such as Braille, large print, electronic formats, or any other accommodations are available upon advance request. Please contact Kelli Kennedy at (541) 693-2122 or kkennedy@bendoregon.gov. Providing at least 3 days' notice prior to the event will help ensure availability.



BMPO Bend Metropolitan Planning Organization

Technical Advisory Committee

Draft Meeting Summary

September 6, 2023

Bend City Hall, Awbrey Butte Room (2nd Floor)
710 NW Wall Street, Bend, Oregon

Link to meeting: <https://youtube.com/live/01r6psm9LtU?feature=share>

1. Call to Order and Introductions

Mr. Deke called the regular meeting of the Bend Metropolitan Planning Organization (BMPO) Technical Advisory Committee (TAC) to order at 10:10 a.m., Wednesday, September 6, 2023, with a quorum of members present (9 of 12). Present during the meeting were:

TAC Voting Members

1. Bend Park and Recreation District (BPRD)..... Henry Stroud
2. Cascades East Transit (CET) Eric Lint
3. Commute Options..... Brian Potwin
4. Deschutes County Bike/Pedestrian Advisory Committee Dave Thomson
5. Oregon Department of Transportation (ODOT) David Amiton
6. Citizen (resident) Greg Bryant
7. Citizen (resident) Liza Hamada
8. Bend La Pine School District..... Sharon Smith
9. Deschutes County Tarik Rawlings
10. *Central Oregon Community College (COCC): Joshua Clawson absent*
11. *City of Bend: Robin Lewis absent*
12. *Oregon State University – Cascades Campus: Casey Bergh absent*

Ex Officio (nonvoting) Members

BMPO Manager..... Tyler Deke
 Oregon Department of Land Conservation & Development (DLCDC)..... Angie Brewer
Federal Highway Administration (FHWA): absent
Federal Transit Administration (FTA): absent

BMPO Staff

Andrea Napoli, *Senior Planner*
 Kelli Kennedy, *MPO Staff*

Guests

Chris Maciejewski, *DKS Associates*
 Joel McCarroll, *DKS Associates*

(Agenda items appear in discussion order. The 3 digits after a motion title show the number of members voting in favor/opposed/abstaining.)

2. Hybrid Meeting Guidelines

Mr. Deke reviewed the meeting guidelines.

3. Public Comment

None.

ACTION ITEMS

4. **Review and Approve June 7, 2023, Draft Meeting Summary** (Agenda Attachment A)

Motion 1 (8/0/0): Mr. Bryant moved approval of the June 7, 2023, meeting summary as presented. Mr. Thomson seconded the motion, which passed unanimously.

INFORMATIONAL ITEM

5. Metropolitan Transportation Plan (MTP) Update Overview- Joel McCarroll, DKS Associates

Background: The MPO will be utilizing consultant assistance to complete the federally required 5-year update of the MTP, the MPO's long-range transportation plan. An overview of the current project schedule will be provided, along with what future input will be requested of the TAC and when that should occur.

Attachments: MTP schedule (**Attachment B**)

Action Requested: None. Information item.

Mr. McCarroll and Mr. Maciejewski, also of DKS Associates, presented the MTP Update via PowerPoint, reviewing the project objectives; key scope elements, which included outreach and engagement; additional elements being scoped; the project team, which included staff from Kittleson & Associates and EcoNorthwest; the project schedule, and the TAC's role throughout the MTP Update process. To meet the Federal Highway deadline, the final MTP would be completed and adopted/approved by the end of August or in September.

The consultants addressed comments and concerns regarding active transportation, its integration in road plans initially, and as a key way to leverage funding as a carbon reduction project; addressing Climate-Friendly and Equitable Communities (CFEC) rules and Climate-Friendly Area (CFAs) designations, which could result in amending the MTP after adoption, however, the full project list would likely only be impacted by prioritization at the regional level.

Additional comments regarded the importance of ensuring County Transportation System Plan (TSP) projects impacting Tumalo and area extending south receive appropriate attention; that the engagement plan would include utilizing the City's existing events for outreach and that TAC would receive monthly updates on the MTP Update due to the compressed timeline.

6. Bend MPO Boundary Adjustments - Tyler Deke

Background: After each Census, the Census Bureau adjusts the Urbanized Area Boundary (UZA) and Federal Aid Urban Boundary (FAUB) for every City to reflect population growth and land use changes. The state then makes any adjustments to the FAUB to incorporate local conditions. The MPO boundary must include all areas identified within the FAUB. It should also include areas that may become urbanized over the next 20 years. The Policy Board recently amended the MPO boundary to include new FAUB lands identified through the 2020 Census and future growth areas identified in the City of Bend planning documents. MPO staff will review the new FAUB areas and changes to the MPO boundary.

Attachments: Policy Board Memo (**Attachment C**) and Frequently Asked Questions

(Attachment D)

Action Requested: None. Information item.

Mr. Deke and Ms. Napoli reviewed the background, requirements, and recent history regarding the FAUB and MPO boundary adjustments via PowerPoint, as well as the existing Bend MPO Boundary, 2020 Census Changes, and Staff's recommended changes, as well as actions and next steps. The most recent updates to the FAUB and corresponding changes to the MPO boundary were presented via an online mapping tool, which now included a draft alignment of the US97/Baker Rd interchange, the required Solar farm area and the eastern half of Stevens Rd area. The Policy Board had adopted the revised MPO boundary at the August 18th meeting to meet ODOT's September 1st deadline and further adjustments might be needed at the October meeting. There may be further consideration of the MPO boundary in the Tumalo area, and that would involve a public process that could begin in fall 2024.

Mr. Deke confirmed the US 97 right-of-way should not impact any zoning issues with the trail, the focus was on ensuring the area was in the UZA and MPO boundaries to possibly provide opportunities for some additional funding, particularly federal funding resources. Population increase with increased boundary has not yet been determined.

7. Oregon Travel Study - Tyler Deke

Background: Household travel data is an essential building block for travel models and helps us understand how travel patterns and choices change over time. In Oregon, the most recent studies were conducted between 2008-2011, roughly coinciding with the 2010 Census. The next statewide study is underway with data collection scheduled for fall 2023 and spring 2024. Staff will provide an overview of the study.

Attachments: Travel survey briefing (**Attachment E**). Additional information is available on the following website: <https://oregontravelstudy.com/about/>

Action Requested: None. Information item.

Mr. Deke overviewed the Oregon Travel Study via PowerPoint, describing its nature, purpose, funding sources, and the current timeline of the study, as well as the efforts made to gather data from a broad range of respondents, including underrepresented populations using various collection methods.

Mr. Deke responded to questions from the TAC and provided comments as follows:

- He clarified how the smart phone app would be used to gather additional details about daily trips, noting that all personal identifying information is stripped in the process. Better data is expected on bike and pedestrian trips than in the past, in addition to data on e-bikes, electric vehicles, and online shopping.
- All the collected data will be available to ODOT and all the MPOs, and most anyone who wants access to it. The data will be used over the next three to four years to develop completely new transportation models throughout the state, moving to an entirely different platform that will be better at capturing and estimating bike, ped, and transit trips and more useful in working with some of the climate-rule areas.
- The resulting transportation models would be used for long-range planning and big

ODOT planning projects, but also for local project development efforts, such as helping with design decisions and detour planning on GO bond projects. The new data collection tool will be better at providing finer types of analyses, like how lane reductions might increase walking and biking due to better, safer facilities.

- The BMPO contributed more than \$200,000 while the overall cost across the state is \$1.5 million to \$2 million for this significant study, which is why it is only conducted every 10 years.
- Based on the pilot survey, at least 20,000 requests would need to be sent out in the Bend/Redmond area to reach the target number of 1,200 completed surveys out of the 130,000 population.
- Mr. Deke would also be meeting with RSG to discuss the cost of doing a detailed, on-board rider survey of Cascades East Transit (CET) riders to greatly improve that part of Bend's travel model.
- The smartphone app would not stay active to identify any travel changes beyond the survey timeline. The seven-day survey would adequately capture the travel fluctuations of a typical person. Larger urban areas are considering annual surveys to better track travel trends since so much has changed over the last 5 or 6 years, but funding is a big issue. All the MPOs in ODOT have discussed the possibility of annual surveys eventually, but an ongoing funding stream would be needed.

8. Member & Guest Roundtable- TAC Members

TAC members and guests updates on current projects and planning efforts:

- Bend-La Pine School District: Ms. Smith updated on the Bend High School Modernization and Upgrade Project, noting a pre-application public meeting will be held September 19th at 5:15 pm at the Bend High School Library. A 5-year, phased plan for the modernization and renovation of the Bend High campus will be submitted in October.
- Cascades East Transit: Mr. Lint updated that Route 9 is anticipated to launch in October and highlighted its route, noting a route map will be shared this Friday at the State of the City community gathering.
- Deschutes County BPAC: Mr. Thomson shared that at the County's draft TSP hearing before the Planning Commission a couple weeks ago, a lot of public comments were received about the TSP's new bike-pedestrian project. The Planning Commission will deliberate on October 12th to make a recommendation to Board of County Commissioners. The annual Central Oregon Bicycle and Pedestrian Summit will be held in Sunriver on October 26th where Representative Levy would talk about the changes in laws around e-bikes.
 - Mr. Rawlings added the controversy mainly regarded aspirational connections between communities which did not involve any actual routes, plans, or costs. About 80% of the oppositional public comments regarded a specific proposed connection between Sisters and Black Butte Ranch and were mostly from Black Butte Ranch residents primarily concerned about the trail funneling trespassers into their community. Some Black Butte residents supported the connection. Other peripheral discussions regarded things like wildlife fragmentation as well as calling for a countywide prohibition on trails of any kind, mostly for wildlife habitat considerations.
- Deschutes County: Mr. Rawlings added the County requested that the FAUB border align with the unincorporated community boundary of both the Tumalo and Terrebonne communities.

- Commute Options: Mr. Potwin announced Commute Options was hosting an e-bike law webinar tonight at 5:00 pm which will be recorded. Chris Thomas, an attorney based in Portland and expert in the field, would discuss the legal aspects of riding an e-bike in Oregon and create an ongoing resource on the Commute Options website.
- Oregon Department of Transportation: Mr. Amiton announced ODOT's online open house that is open until this Friday for the US 20 Facility Plan that goes from Third Street east into county lands as far as Powell Butte Highway. The focus of the open house is on alternatives proposed for key intersections on Highway 20. Participants are encouraged to provide open-ended feedback about the cross-sections.
- Bend MPO: Mr. Deke announced that the findings and recommendations of the US 97 at Reed Market Road Safety & Operations Study would be presented at the next MPO Policy Board meeting next week and then at the TAC meeting next month.
- Bend Park & Recreation District (BPRD): Mr. Stroud updated that all active construction had been completed on the Deschutes River Trail projects, which had been ongoing. The undercrossing of Portland Avenue and connection to Pacific Park were opened and well-received by the community while minor detail work on the boardwalk will be ongoing throughout the fall. Work on trail resurfacing and access points on the Riverbend Park Trail is also complete.
 - The BPRD also has a joint project with the City of Bend to redesign and rebuild Riverfront Street. The City completed the initial selection process and is currently in cost negotiation with a contractor. The BPRD received some MPO-Surface Transportation Block Grant (STBG) funding for redesigns of the Gilchrist Bridge between Columbia Park and Riverfront Street and is already in the final stages of completing an intergovernmental agreement (IGA) with the City which is expected to be completed in the next couple weeks.
- Central Oregon Community College: No report.
- City of Bend: No report.
- OSU-Cascades: No report.
- Citizen (Liza Hamada): No report.
- Oregon Department of Land Conservation and Development: No report.

9. Public Comment

None.

10. Next TAC Meeting

October 4, 2023, at 10 am (1st Wednesday)

11. Adjournment

There being no further business, Mr. Deke adjourned the meeting at 11:23 am.

US 97 AT REED MARKET ROAD OPERATIONS AND SAFETY STUDY – EXECUTIVE SUMMARY

SEPTEMBER 8, 2023

PREPARED FOR:

OREGON DEPARTMENT OF TRANSPORTATION

CITY OF BEND

EXECUTIVE SUMMARY

PROJECT PURPOSE

Reed Market Road is a critical east-west travel corridor and a priority for addressing mobility during the most recent Bend Transportation System Plan/Metropolitan Transportation Plan (TSP/MTP) update. As one of the few crossings of the Deschutes River and US 97, Reed Market Road is heavily relied upon for access to much of southern Bend, as well as popular destinations such as the Old Mill District, riverfront, Mount Bachelor, and Cascade Lakes Scenic Byway. The corridor has multiple operations and safety deficiencies that compound to create a significant east-west bottleneck. Furthermore, one of the key findings from the US 97 Parkway Plan is that Reed Market Road congestion limits the ability of any interchange improvements to function adequately, leading to queue spillback and one of the most critical bottlenecks on the Parkway.

As a result of these earlier planning efforts, the Oregon Department of Transportation and the City of Bend partnered to identify and fund concept-level improvement projects in the Reed Market Road corridor between Bond Street/Brookwood Boulevard and 4th Street through the City's Capital Improvement Program (CIP) and general obligation (GO) bonds. However, further project refinement and development of a coordinated plan were needed to support implementation. Therefore, the purpose of this study was to:

- Refine a set of complementary projects in the Reed Market Road study corridor between Brookwood Boulevard/Bond Street and 4th Street.
- Reduce congestion.
- Improve safety for all users.
- Align project cost with available and reasonably anticipated funding.

SYSTEMWIDE BENEFITS OF PROPOSED PROJECTS

The construction of the recommended projects will result in significant safety improvements, reductions in overall congestion, and lower levels of traffic stress for people walking and biking along the Reed Market Road corridor and surrounding Key Routes. The projects will also relieve one of the most critical long-range bottlenecks on the US 97 Parkway, which will have significant regional mobility benefits. While congestion will be reduced, it will still be pronounced in this corridor. Therefore, other systemwide improvements will be needed to reduce the demand on Reed Market Road, such as a new south river crossing or encouraging less travel by automobile.

Some of the systemwide benefits of the proposed projects include the following:

- The number of vehicle hours of delay experienced during the peak afternoon two-hour period on an average weekday will decrease by about 60 percent.
- Three street crossings on Key Routes will be improved to provide more protection for people walking and biking, improving safety for these vulnerable travelers and resulting in a lower level of traffic stress.
- Shorter vehicle queues and a new traffic signal will significantly improve safety for all users.

- Access to transportation options for low-income residents in the area will be improved with more comfortable walking and biking facilities along and across Reed Market Road and improved access to existing and future transit stops.

PREFERRED ALTERNATIVES

Figure 1 shows the study area and improvement locations. Figures and more details about the preferred alternatives are included in Attachment A – *Prospectus Sheets*. The text on the following pages summarizes the recommended intersection improvements, benefits, challenges, and cost.

This study also identified limited opportunities for people walking and biking to cross US 97 in the vicinity of the Reed Market Road overcrossing. While Reed Market Road is not a designated low-stress route, the City of Bend’s standard requires low-stress walking and biking facilities when a street is reconstructed. Providing low-stress walking and biking facilities along Reed Market Road would require reconstruction to widen the overall cross section. However, there are currently no planned or funded projects to do this. Therefore, this study includes several long-term cross section designs that may be considered in the future as opportunities arise (see Chapter 4). These designs generally consist of replacing on-street bike lanes with multiuse paths along Reed Market Road. The recommended intersection improvements listed below could be designed to support either the existing on-street bike lanes or a future multiuse path.

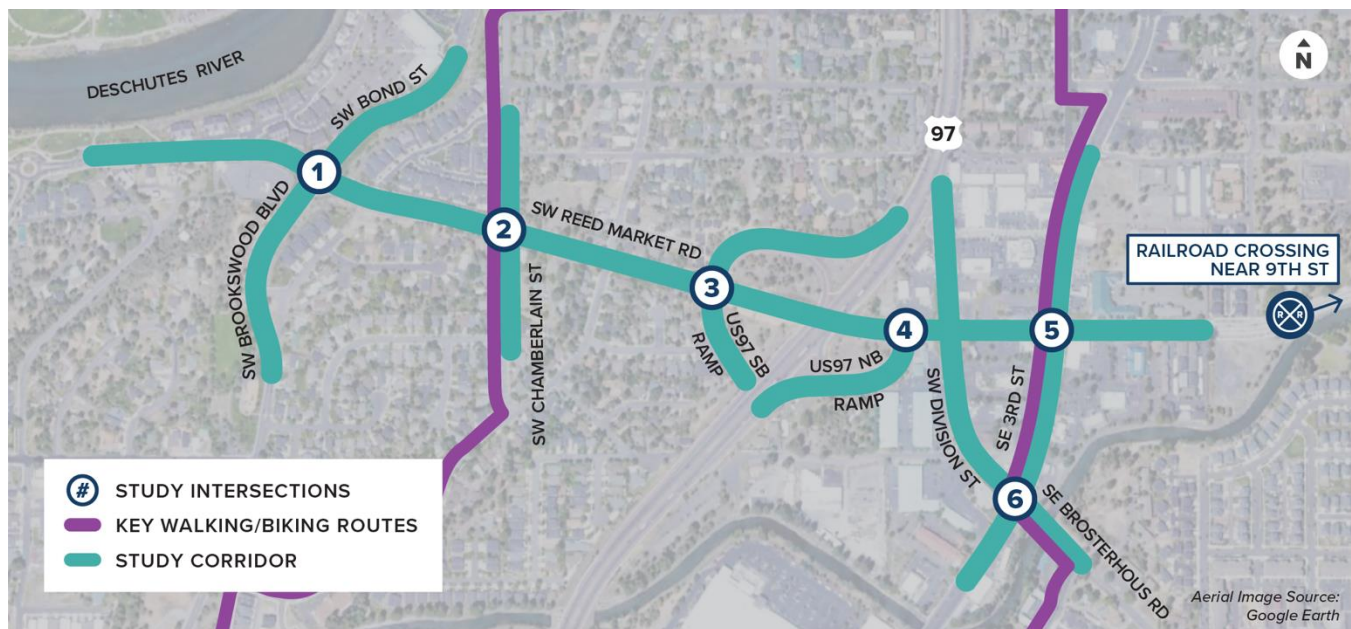


FIGURE 1. STUDY AREA AND IMPROVEMENT LOCATIONS

1. REED MARKET ROAD/BROOKSWOOD BOULEVARD/BOND STREET

Improvements

- Phase 1 - \$4 million
 - Add northbound and southbound left-turn lanes and eastbound and westbound right-turn lanes.
- Phase 2 (unfunded future phase) - \$700,000
 - Add metering signals to help balance long vehicle queues when congestion is heavy.

Benefits

- Reduces overall delay by more than 80 percent.
- Reduces the length of westbound queues and keeps them from blocking the US 97 interchange ramp intersections.
- Metering signals provide the ability to balance vehicle queues on approaches during peak times (Phase 2).
- Metering signals can provide a green light to help approaching emergency vehicles pass through the roundabout more quickly (Phase 2).

Challenges

- The metering signals will require further development of operational logic and queue detection strategies.

2. REED MARKET ROAD/CHAMBERLAIN STREET

Improvements - \$250,000

- Install a pedestrian crossing on the east approach and additional median cutouts and green pavement markings for people biking.
- Install wayfinding and warning signs for people walking and biking.
- Remove vegetation and enhance illumination for better visibility.
- Preserve space for future bus stops.

Benefits

- Improves safety and comfort for people walking and biking on the Chamberlain Street Key Route crossing Reed Market Road.

3. REED MARKET ROAD/US 97 SOUTHBOUND RAMPS

Improvements - \$5.7 million

- Construct a separate southbound right-turn lane.
- Shift the westbound bike lane adjacent to the curb and add a bike signal at the intersection.

Benefits

- Reduces conflicts between people biking and westbound right-turn vehicles.

- Improves safety by reducing the risk of vehicle queues spilling back onto the US 97 Parkway.

Challenges

- Adding a southbound right-turn lane would require widening along the US 97 off-ramp.
- Concept elements may require ODOT approval prior to implementation.
- Constructing a southbound right-turn lane could impact traffic during construction.

4. REED MARKET ROAD/US 97 NORTHBOUND RAMPS/DIVISION STREET

Improvements

- Phase 1 - \$4 million
 - Construct a traffic signal at the US 97 northbound ramp terminal and provide a northbound bike signal to provide extra protection for people biking.
 - Convert Division Street to allow only right-in and right-out movements at Reed Market Road.
 - Consider property access modifications at the north end of Division Street to increase the acceleration distance for the US 97 entrance ramp.
- Phase 2 (unfunded future phase) - \$9.4 million in total if done concurrently with Phase 1
 - Separate the northbound entrance ramp from Division Street and align the new entrance ramp with the Reed Market Road/US 97 northbound ramp signalized intersection.

Benefits

- Reduces overall delay by as much as 86 percent.
- Enhances safety for people walking and biking and reduces high-severity angle crashes by 67 percent.
- Fewer conflicting turns between Division Street and the US 97 northbound ramps could reduce overall crashes by 45 percent.
- The Phase 2 ramp realignment improves the acceleration distance for safer merging onto US 97.

Challenges

- The existing driveway access on Reed Market Road will need to be evaluated and coordinated during design.
- Concept elements may require ODOT approval prior to implementation.
- Phase 2 will require a high right-of-way cost and result in the acquisition of up to two properties.

5. REED MARKET ROAD/3RD STREET

Improvements - \$10.3 million

- Construct protected intersection treatments to improve safety for people walking and biking.
- Construct separate eastbound and westbound left-turn lanes.

Benefits

- The addition of separate left-turn lanes reduces overall delay by nearly 60 percent.

- Slows right-turning traffic, reduces pedestrian crossing distances, and protects bicycle crossings at this high-traffic intersection on the 3rd Street Key Route.
- Reduces crashes involving people walking and biking by more than 35 percent.

Challenges

- Right-of-way is constrained, with buildings present in all quadrants and overhead utilities running along the south and east sides of the streets.
- The protected intersection design will be more challenging to maintain, particularly with respect to snow removal.
- Design refinements will be needed to reduce anticipated construction costs to be more in line with available funding.

6. 3RD STREET/BROSTERHOUS ROAD

Improvements

- Phase 1 - \$130,000
 - Restripe bike lanes to reduce conflicts.
 - Improve the eastbound right-turn lane striping and signing.
 - Install lighting and reflectors.
 - Change signal timing to remove conflicts for eastbound and westbound left turns.
 - Redirect people walking and biking on the canal trail to use the traffic signal to cross Brosterhous Road.
- Phase 2 (unfunded future phase) – no cost estimate available, assumed to be \$5 to \$10 million
 - Construct protected intersection treatments to improve safety for people walking and biking.
 - Construct separate eastbound and westbound left-turn lanes.
 - Construct an eastbound right-turn lane.

Benefits

- Slows right-turning traffic, reduces pedestrian crossing distances, and protects bicycle crossings at this high-traffic intersection on the 3rd Street Key Route.
- Reduces left-turning crashes by up to 99 percent.
- Reduces eastbound vehicle queues and keeps them from spilling back to Reed Market Road.

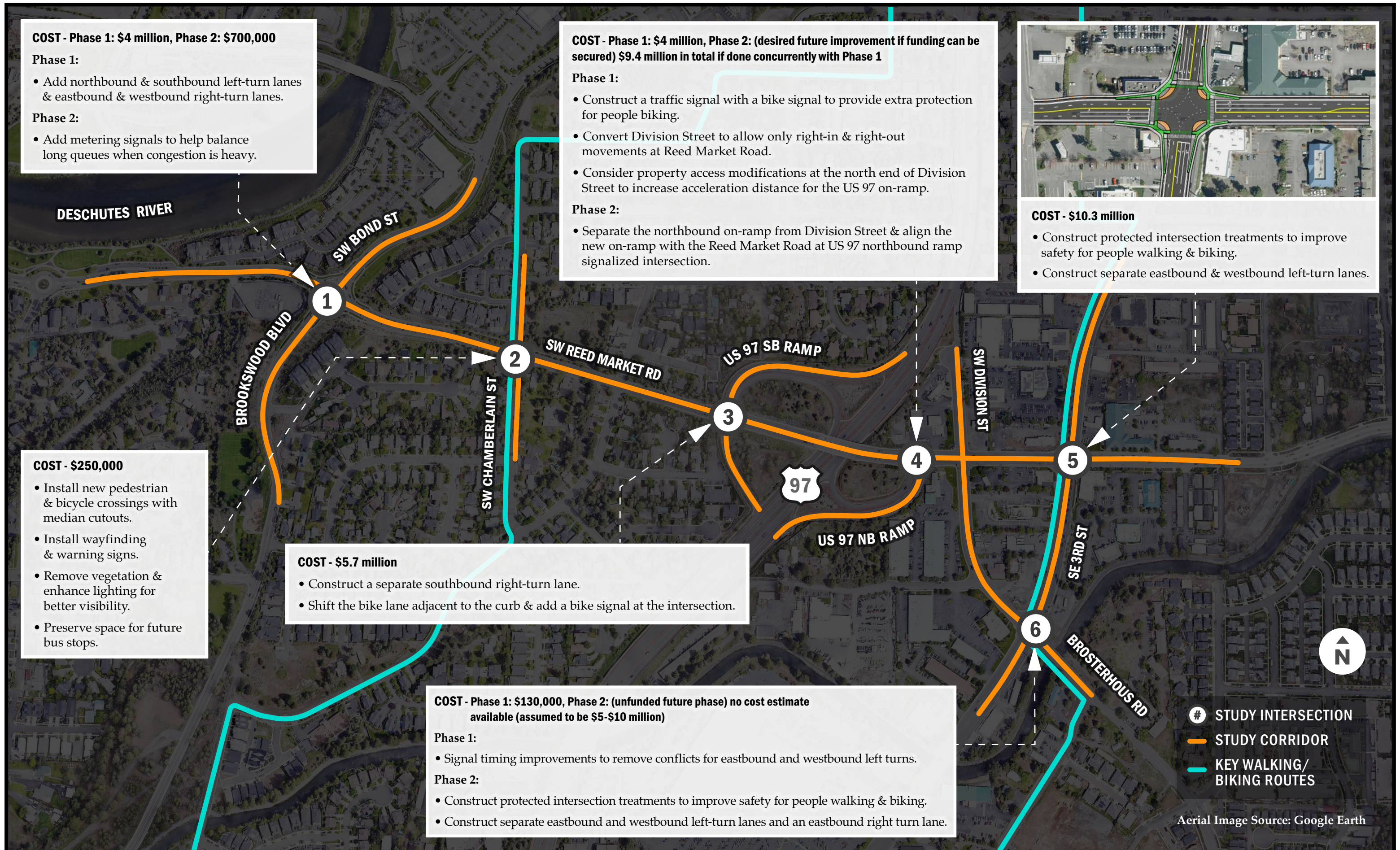
Challenges

- Phase 2 will require a full rebuild of the intersection, and given there was no funding allocated for a long-term enhancement at the intersection, this alternative would greatly exceed expected funding.
- The protected intersection design will be more challenging to maintain, particularly with respect to snow removal.

NEXT STEPS

Now that the concepts from the Bend TSP/MTP and US 97 Parkway Plan have been refined, they can be advanced to engineering design and construction as funding becomes available. Some of the City projects are already included in the CIP and Neighborhood Street Safety Program and have approved funding. This will allow improvements at the Bond Street/Brookwood Boulevard roundabout, Chamberlain Street, and Reed Market Road at 3rd Street to advance to design as early as 2024. Phase 1 of improvements on 3rd Street at Brosterhous Road may be completed by the end of 2023.

ODOT has not yet committed funding for the improvements at the US 97 ramp intersections. Next steps include seeking funding for scoping and construction through upcoming Statewide Transportation Improvement Program (STIP) cycles.



COST - Phase 1: \$4 million, Phase 2: \$700,000

Phase 1:

- Add northbound & southbound left-turn lanes & eastbound & westbound right-turn lanes.

Phase 2:

- Add metering signals to help balance long queues when congestion is heavy.

COST - Phase 1: \$4 million, Phase 2: (desired future improvement if funding can be secured) \$9.4 million in total if done concurrently with Phase 1

Phase 1:

- Construct a traffic signal with a bike signal to provide extra protection for people biking.
- Convert Division Street to allow only right-in & right-out movements at Reed Market Road.
- Consider property access modifications at the north end of Division Street to increase acceleration distance for the US 97 on-ramp.

Phase 2:

- Separate the northbound on-ramp from Division Street & align the new on-ramp with the Reed Market Road at US 97 northbound ramp signalized intersection.



COST - \$10.3 million

- Construct protected intersection treatments to improve safety for people walking & biking.
- Construct separate eastbound & westbound left-turn lanes.

COST - \$250,000

- Install new pedestrian & bicycle crossings with median cutouts.
- Install wayfinding & warning signs.
- Remove vegetation & enhance lighting for better visibility.
- Preserve space for future bus stops.

COST - \$5.7 million

- Construct a separate southbound right-turn lane.
- Shift the bike lane adjacent to the curb & add a bike signal at the intersection.

COST - Phase 1: \$130,000, Phase 2: (unfunded future phase) no cost estimate available (assumed to be \$5-\$10 million)

Phase 1:

- Signal timing improvements to remove conflicts for eastbound and westbound left turns.

Phase 2:

- Construct protected intersection treatments to improve safety for people walking & biking.
- Construct separate eastbound and westbound left-turn lanes and an eastbound right turn lane.

STUDY INTERSECTION
 — STUDY CORRIDOR
 — KEY WALKING/BIKING ROUTES

Aerial Image Source: Google Earth

US 97 AT REED MARKET ROAD OPERATIONS & SAFETY STUDY



Project Purpose

The Bend Transportation System Plan/Metropolitan Transportation Plan (TSP/MTP) update and the US 97 Parkway Plan identified Reed Market Road as a critical bottleneck in the transportation system with several safety deficiencies. Both studies identified conceptual projects to improve conditions, and the City of Bend committed funding for several of them through the City's Capital Improvement Program (CIP) and general obligation (GO) bonds. However, further refinement of those concepts was needed before they could advance to engineering design and construction. Therefore, the purpose of this study was to:

- Refine a set of complementary projects in the Reed Market Road corridor from Brookwood Boulevard/Bond Street to 4th Street
- Align project costs with available and reasonably anticipated funding
- Improve safety for all users
- Reduce congestion

Next Steps

Now that the concepts from the Bend TSP/MTP and US 97 Parkway Plan have been refined, they can be advanced to engineering design and construction as funding becomes available. Some of the City projects are already included in the CIP and Neighborhood Street Safety Program and have approved funding. This will allow improvements at the Bond Street/Brookwood Boulevard roundabout, Chamberlain Street, and Reed Market Road at 3rd Street to advance to design as early as 2024. The first phase of improvements on 3rd Street at Brosterhous Road may be completed by the end of 2023. ODOT has not yet committed funding for the improvements at the US 97 ramp intersections. Next steps include seeking funding for scoping and construction through upcoming Statewide Transportation Improvement Program cycles.

Benefits of Proposed Projects

The construction of the recommended projects will result in significant safety improvements, reductions in overall congestion, and lower levels of traffic stress for people walking and biking along the Reed Market Road corridor and surrounding Key Routes. The projects will also relieve one of the most critical future bottlenecks on the US 97 Parkway, which will have significant regional mobility benefits.

Systemwide Benefits

- The number of vehicle hours of delay experienced during the peak afternoon two-hour period on an average weekday will decrease by about 60 percent.
- Three street crossings on Key Routes will be improved, making it safer to walk and bike and easier to access transit service.
- Shorter vehicle queues and a new traffic signal will significantly improve safety for all users.

Benefits at Intersections

1 Reed Market Rd/Bond St/ Brookwood Blvd

- Reduces overall delay by more than 80 percent.
- Reduces the length of westbound queues & keeps them from blocking the US 97 interchange ramp intersections.



2 Reed Market Rd/Chamberlain St

- Improves safety & comfort for people walking & biking on the Chamberlain Street Key Route.



3 Reed Market Rd/US 97 SB Ramps

- Reduces conflicts between people biking & westbound right-turn vehicles.
- Improves safety by reducing the risk of vehicle queues spilling back onto the US 97 Parkway.



6 3rd St/Brosterhous Rd

- Slows right-turning traffic, reduces pedestrian crossing distances, & protects bicycle crossings at this high-traffic intersection on the 3rd Street Key Route.
- Reduces left-turning crashes by up to 99 percent.
- Reduces eastbound vehicle queues & keeps them from spilling back to Reed Market Road.



5 Reed Market Rd/3rd St

- Reduces overall delay by nearly 60 percent through the addition of separate left turn lanes.
- Slows right-turning traffic, reduces pedestrian crossing distances, & protects bicycle crossings at this high-traffic intersection on the 3rd Street Key Route.
- Reduces crashes involving people walking & biking by over 35 percent.



4 Reed Market Rd/US 97 NB Ramps/Division St

- Reduces overall delay by as much as 86 percent.
- Enhances safety for people walking & biking & reduces high-severity angle crashes by 67 percent.
- Reduces overall crashes by up to 45 percent by reducing left turning movement conflicts between Division Street & the US 97 northbound ramps.
- The Phase 2 ramp realignment improves the acceleration distance for safer merging onto US 97.

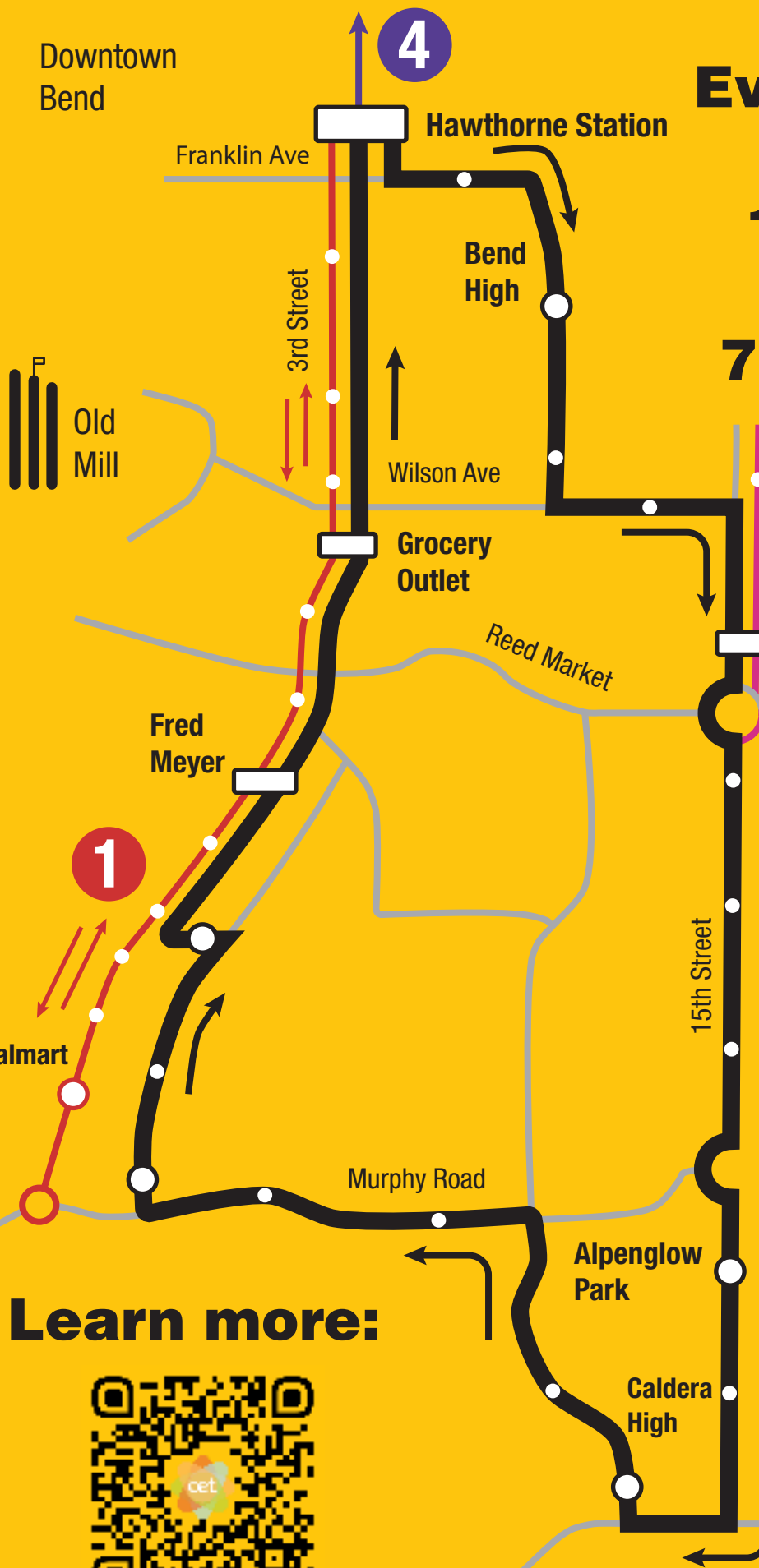


COMING SOON

Attachment D

Route 9

15th Street / Murphy Road



Every 45 minutes

14 trips per day

7:30am - 6:00pm

9.43 miles

20 stops

Within 1/3 mile:

12,000 people

5,000 homes

10% car free

Learn more:



Times and stops subject to change

