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CHAPTER 01

NORTHWEST PORTLAND TODAY & TOMORROW

What is Northwest in Motion, what are the plan's goals, and why is this plan needed? Also, a neighborhood profile and a snapshot of transportation patterns and issues that exist today.
What is Northwest in Motion?

Northwest in Motion is a five-year implementation strategy that has identified, prioritized, and developed a set of feasible projects in Northwest Portland. These projects aim to make walking, biking, and riding public transit safer and more comfortable options for traveling to, from, and within the district.

Why Northwest? Why now?

Inner Northwest is a rapidly growing area of Portland, and given its density and proximity to the Central City, more people travel by car today than would be expected. If the current levels of car use keep increasing along with jobs and housing growth, there will be increased pressure on the City’s limited roadway network and parking supply. For this reason, projects are needed in the near-term to make other modes of travel more attractive options.

One contributing factor to high car usage, even for relatively short trips, may be the high number of gaps and deficiencies in the walking, biking, and transit networks. Such deficiencies include the network of Neighborhood Greenways, none of which meet the City’s guidelines for low-stress bikeways. Walking can also be difficult, especially when crossing busy streets. The bus system can be difficult to access and suffers from traffic delay issues. By addressing these issues, people traveling to or from the area will have more options to get around in a more space-efficient way so that roadway and parking space is available for those who most need it.

PROJECT AREA DESCRIPTION

The core project area includes the inner Northwest neighborhoods roughly bounded by Hwy 30, I-405, W Burnside St, and the West Hills. Located on the west side of the Willamette River, the project area is within one mile of downtown Portland. The area is home to some of the oldest and most densely populated portions of the city with a mix of single family homes and apartments, commercial, residential, and industrial uses, as well as numerous regionally important religious and community organizations. The heart of the neighborhood is the Alphabet District, a local and national historic area centered around NW 23rd Avenue, a major shopping and dining destination for the region. While the area shown here is the focus of this plan’s recommendations, some recommended projects stretch into surrounding areas including the Pearl District, King’s Hill, and Hillside neighborhoods.
PROJECT GOAL

Develop a feasible, near-term implementation strategy to make walking, bicycling, and riding transit safer and more attractive options in and around the fast-growing Northwest District Town Center.

MAJOR OUTCOMES OF NORTHWEST IN MOTION INCLUDE:

- A prioritized list of walking, bicycling, and transit projects to guide investment of parking revenue and other funding
- A feasible strategy for upgrading existing neighborhood greenways in NW to meet established neighborhood greenway guidelines
- Changes to street classifications and designs to clarify modal priorities and support the overall goals of the project

PROJECT TIMELINE
Northwest Planning Context & History

1966: Adoption of Portland’s first Comprehensive Development Plan, which shows the I-505 freeway along Thurman St and a Marshall/Lovejoy couplet to Cornell.

1973: Neighborhood opposition leads to cancellation of I-505 freeway project. Shorter Hwy 30 connection north to Yeon is constructed instead.

1982: The Northwest Transportation Study is completed, with a focus on reducing regional cut-through traffic and improving neighborhood livability.

2003: Adoption of the Northwest District Plan, a neighborhood plan covering land use, transportation, parks, housing, and other issues. Transportation recommendations include a strong focus on walking, biking, and transit.
**2009: Portland Streetcar System Concept Plan** includes potential new lines through the NW District area, including an extension to Montgomery Park.

**2012: Conway Master Plan** developed to guide large redevelopment area in northern part of NW District. Includes new street and pedestrian only connections, lighting, signals, and other transportation improvements.

**2012: NW District Parking Management Plan** is adopted to address growing pressure on parking supply. Includes new meters and permit zones, and a policy that some net revenue should be used to address transportation needs in the district.

**2015: Portland’s Neighborhood Greenways Assessment Report** finds that neighborhood greenways in NW Portland all fail to meet guidelines for traffic speeds and volumes.
NORTHWEST TODAY
How do people get around?

As expected from a dense, mixed-use district close to downtown, a relatively high share of trips to or from the NW District are short (less than 3 miles), and 38% of these under-3-mile trips are by automobile. Trips of 3 miles or less are considered an optimal length for walking and biking, so improvements to active transportation infrastructure in Northwest could be very effective in shifting those trips to other modes. Public transit is typically used for longer trips elsewhere in the city, but given the proximity of downtown, improving transit also should be expected to encourage people to switch away from driving for some trips. Currently, 44% of commuters in the NW District drive alone to work. While this is better than the citywide rate, it is higher than we would expect from such a close-in neighborhood with high-density jobs and housing, and is much higher than our citywide goal of 30%. Given the high number of short driving trips in NW, there is a high potential for people to switch to walking, driving, and taking public transit. This will reduce household transportation costs, reduce pressure on limited roadway space and parking supply, and reduce greenhouse gas emissions.

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<th>TRIP DISTANCE (MILES)</th>
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37% of auto trips in Northwest Portland are less than 3 miles long.
How does this plan support equity?

The NW District has a high diversity of income distribution, with higher-income households mainly concentrated east of 18th Ave and west of 23rd Ave, and lower-income households mainly concentrated in the middle of the neighborhood between 18th and 23rd. That area has a high number of rent-subsidized affordable housing buildings as well as older studio and one-bedroom rental buildings that are relatively affordable. This type of housing makes that part of the NW District a popular landing area for new Portlanders, including college students looking for an affordable studio apartment.

The NW District is less diverse in terms of race, with most of the district at or below the citywide average for percent people of color. However, census tracts with the highest percentage of people of color are located in the center of the neighborhood, to the east of 23rd and west of 18th. This area in the center of the neighborhood also has higher than the citywide average of households with limited English proficiency.

These are most likely a correlation with the income demographics, since a higher percentage of people of color and people of low English proficiency are lower-income and more likely to live in rental housing or subsidized housing.

Providing low-cost transportation options such as walking, biking, and transit is especially important in low-income areas and places that attract new residents, because these are the people who will find the most benefit from not having to own a car, and the most likely to change travel habits if they are moving to a new location. Similarly, people of color and low-English proficiency households tend to see greater benefit from healthier and lower-cost active transportation and transit options. For many households, car ownership is their highest household cost after housing, and for some it is even higher. Reducing or eliminating the need to own and operate a car can provide a significant boost to household income and wealth for the people who most need it.

The central area of the Northwest in Motion study area has a higher share of people of color than the rest of Northwest Portland. Additionally, this area has a concentration of renter households with lower incomes.
The number of households and jobs in the NW District area are expected to grow significantly over the next 20 years, and it is important to make sure the limited roadway network can handle the additional trips generated by this growth. If new residents and employees drive at the current rates over the next 20 years, there will be extremely high pressures on road space and parking supply with the additional cars on the road.

To address this growth, trips need to shift to more space-efficient travel modes, particularly walking, biking, and public transit. These modes can transport more people in less space, freeing up valuable roadway space for those who truly need to drive for their livelihoods. They also reduce pressure on parking supply, since people walking and taking transit don't need parking at all, and many bikes can be parked in the same space as a single car. The alternatives to this approach, such as widening roads or building parking garages, would be extremely expensive to construct, would have negative impacts on safety and livability, and would be contrary to adopted city policies to reduce greenhouse gas emissions and drive-alone rates.

Unique within the City of Portland, the Northwest District has a high concentration of both households and jobs. These numbers are expected to increase by about 50% over the next 15 years.
A foundational, but deficient active transportation network

CROSSING GAPS IN THE PEDESTRIAN NETWORK

Street segment does not meet PeddPDX crossing spacing guidelines (>530ft)

INCOMPLETE & DEFICIENT GREENWAY NETOWRK

Low Stress Biking Network
Moderately Stressful Biking Conditions
Very Stressful Biking Conditions

BUSES DELAYED AND STUCK IN TRAFFIC

High Level of Transit Delay
Moderate Level of Transit Dealy

The NW District has a nearly-complete network of sidewalks, which contributes to the high level of walkability found in the area. However, it can still be difficult to cross busy streets in many places due to a lack of safe and comfortable crossings. While some streets have marked crosswalks every two or three blocks called for in the PedPDX plan, many still have longer distances between marked crossings that meet PBOT safety guidelines. As traffic volumes have increased, it can be harder and harder to find gaps, and yielding behavior tends to decline as traffic levels increase.

While the NW District has several neighborhood greenways marked by sharrows on the pavement, none of them meet PBOT guidelines for traffic speeds and volumes. They do not qualify as low-stress or “all ages and abilities” bikeways. The neighborhood greenways also lack safe and comfortable crossings at busy streets, and are missing many of the common features of a neighborhood greenway like speed bumps, wayfinding signage, and diverters. These deficiencies limit the number of people in the area who are willing to ride a bike, since most people have a low tolerance for feeling unsafe or uncomfortable while riding on city streets.

As traffic congestion has grown over time in the NW District, it has had an increasingly negative impact on transit speed and reliability. Buses and streetcars are stuck in traffic like everyone else, and are experiencing high levels of delay. The most severe transit delay is found on the approach to busy intersections, especially when the bus is making a turn, because sometimes the traffic volumes are too high for the signal to handle and buses can find it hard to find a gap when turning. Transit delay can be a strong disincentive for people to ride transit, and those who do choose to ride transit have to deal with a great deal of uncertainty about when they will reach their destination.
Chapter 2 provides an overview of how this plan was made, including a look at who was consulted along the way and how community input shaped this plan. *Northwest in Motion* was shaped by community input and consultation throughout the life of the planning process, through various outreach and engagement methods.

**PROJECT TIMELINE & OUTREACH PHASES**

- **Existing Conditions**
- **Deficiencies + Gap Analysis**
  - Prioritization Criteria
  - Classifications Analysis
- **Needs Inventory**
- **Prioritize Projects**
- **Investment Strategy + Project Refinement**
- **Draft Plan Production + Public Review Period**
- **City Council Adoption Process**

**PHASES**

- **Phase 2**
- **Phase 3**
- **Phase 4**
Existing Conditions & Needs Analysis
Spring - Summer 2018

1 Project Overview Video

2 Community Advisory Group (CAG) Meetings:
   • #1- May 2018: Project Overview
   • #2- July 2018: Existing Conditions and Needs Analysis

2 Meetings with Northwest and Pearl District Business Associations

2 Meetings with Northwest and Pearl District Neighborhood Associations

1 Online Open House
   • June 6th to August 10th, 2018: to gather feedback on transportation needs
   • Comment map with drop pins to comment on specific locations
   • Survey question about how people get around NW
   • Promoted through fliers, social media and interested parties email
     96 people participated
     150 unique comments

3 Community Bike Rides
   • 2 Pedalpalooza bike rides
   • 1 Green Loop Sunday Parkways bike ride
Project Identification and Prioritization
Fall 2018 - Winter 2019

Community Advisory Group (CAG) Meetings:
• #3- October 2018: Project Identification and Classification Updates
• #4- January 2019: Prioritized Project List

Focus Group #1
• Fall 2018: Home Forward Affordable Housing Focus Group

Neighborhood Association Workshop (focus on NW Overton with PDNA)

Open House
• November 15, 2018: Open House focused on projects and classifications

Online Open House
• November 15 to December 14, 2018: Online Open House

502 people visited
57 people answered at least 1 question
Project Development & Refinement
Spring - Summer 2019

1. **Online Open House**
   - June 2019: Online Open House
   - 1255 unique visitors
   - 984 comments

2. **Pedalpalooza Bike Rides**

5. **Tabling Events**
   - “Office Hours” Tabling Events with Area Businesses
   - 29 participants left comments

12. **Sidewalk Decals**
   - Placed around the neighborhood with QR codes to access specific project details and survey questions
   - 109 comments from decals

**Additional Outreach**
- Released Design Concepts Overview
- Additional outreach with NW Parking SAC, NWDA, PDNA, businesses & condo boards

**Community Advisory Group (CAG) Meetings**
- #5- April 2019: Early Design Concepts Review
- #6- July 2019: Revised Design Concepts

**Focus Group #2**
- Summer 2019: Home Forward Affordable Housing Focus Group

**Tabling Events**
- “Office Hours” Tabling Events with Area Businesses
  - 29 participants left comments

**Pedalpalooza Bike Rides**

**Sidewalk Decals**
Implementation Strategy & Draft Plan Review
Fall 2019 - Winter 2020

Community Advisory Group (CAG) Meetings
• #7- October 2019: Early Review Draft Plan

Open House
• November 14, 2019: Open House to get feedback on Public Review Draft
+120 open house attendees

Online Open House
• November to mid-December 2019: Online Open House to get feedback on Public Review Draft

Additional Outreach (pending):
• January 2020: Recommended Draft
• February 2020: Public Testimony
• March 2020: City Council Hearing
During the *Northwest in Motion* planning process, projects were identified and then prioritized using a set of evaluation criteria to divide them into Tier 1 and Tier 2 projects.

**Tier 1 projects are considered the highest priorities for funding and implementation** in the next five years, and are the projects that have been developed to a higher level of readiness through the Northwest in Motion Plan.

**Tier 2 projects are still recognized as needs, but are lower priorities** and will not be actively developed or targeted for funding in the next five years unless there is a significant financial leverage opportunity. These projects are not detailed in this chapter.

**Northwest in Motion Projects are divided into two project types:**

**NG Neighborhood Greenways**
Low-stress neighborhood streets that are great places to walk, bike, roll, play, and just be.

**CI Corridor Improvements**
Safer crossings, bikeway, transit and streetscape improvements on Northwest’s busiest streets.

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**Small Changes, Big Impacts**

*Northwest in Motion* takes an approach of maximizing impact with a limited resources. The guiding principles below helped to share our project development strategy:

**Lower Cost Interventions**
Emphasize the use of small, low-cost improvements that have high benefits for the cost, rather than more expensive projects.

**Strategic Investments**
Targeted, strategic improvements rather than broad-brush, which saves resources for where they are most needed.

**Interim Phasing**
Initial implementation using temporary materials to inform final design and make sure long-term investments are in the right locations.
**TIER 1 PROJECTS**

**NG Neighborhood Greenways**

**NG.1 NW Johnson St**
Retrofit existing neighborhood greenway to meet established guidelines for traffic speed and volume.

**NG.2 NW Marshall St**
Retrofit existing neighborhood greenway from NW 9th to NW 16th to meet established guidelines for traffic speed and volume. Extend neighborhood greenway west to NW 20th Ave.

**NG.3 NW Pettygrove / NW Overton St**
Design and implement a new neighborhood greenway on NW Pettygrove St that meets established guidelines for traffic speed and volume. Add a bikeway connection to NW 9th Ave via NW 11th Ave and NW Overton St.

**NG.4 NW Savier St**
Design and implement a new neighborhood greenway that meets established guidelines for traffic speed and volume, with connections north to Vaughn and Nicolai employment areas.

**NG.5 NW 24th Ave**
Retrofit existing neighborhood greenway to meet established guidelines for traffic speed and volume. Extend bikeway to NW Flanders St Neighborhood Greenway.

**CI Corridor Improvements**

**CI.1 NW 25th Ave / Westover Rd**
Calm traffic along NW 25th Ave and NW Westover Rd by adding traffic slowing devices and enhanced pedestrian/bicycle crossings.

**CI.2 NW 23rd Ave**
Improve the safety and asset condition of the northern section of NW 23rd Ave by reconstructing the roadway, rebuilding an aging signal, improving pedestrian crossings, and enhancing transit stops.

**CI.3 NW 18th / 19th Ave**
Provide improved crossings, transit islands, and reduced bike/bus conflicts on NW 18th/19th to serve the Line 24 Extension.

**CI.4 NW Everett / Glisan St**
Improve safety along the NW Everett/Glisan couplet by adding crossing improvements and reducing traffic speeds. Improve bus stop accessibility and reduce transit delay on the Line 77 from NW District to the Pearl District and Old Town / Chinatown.

**CI.5 NW Vaughn St**
Improve safety along NW Vaughn St and NW Wardway by adding improved crossings, bikeway enhancements, and transit priority treatments.

**TIER 2 PROJECTS** (see pages 60-61 for descriptions)

**NG.6 NW Couch St**
**NG.7 NW 22nd Ave / Marshall Extension**
**NG.8 NW Westover Rd / Macleay Park Circulation**

**CI.6 NW Hoyt St**
**CI.7 NW Raleigh St**
**CI.8 NW Thurman St**
NORTHWEST IN MOTION PROJECTS

Neighborhood Greenways
- Tier 1
- Tier 2

Corridor Safety Projects
- Tier 1
- Tier 2
Neighborhood Greenways

Northwest in Motion’s Tier 1 Neighborhood Greenways expand and upgrade existing neighborhood greenways to create a district-wide low-stress walking and biking network.

Once fully implemented, these projects will have a transformational effect on Northwest Portland allowing people of all ages and abilities access to safe and comfortable routes to get around the neighborhood.

WHAT ARE NEIGHBORHOOD GREENWAYS?

Neighborhood greenways are calm streets designed to create a safe and comfortable biking and walking experience. They allow people of all ages and abilities to use low-volume, low-speed neighborhood streets rather than busy arterials.

Neighborhood greenways typically feature a shared street environment rather than separated bike lanes, and use elements such as speed bumps, traffic diverters, enhanced crossings, and way-finding to ensure that the street is clearly prioritized for people walking and biking while preserving local motor vehicle access. Neighborhood greenways are also great walking routes, providing an alternative to walking along traffic-heavy streets.

KEY DESIGN ELEMENTS

Neighborhood greenways are intentionally designed to be low-stress streets that are great places for walking, biking, and rolling.

Slow Speeds
Traffic calming tools including speed bumps, curb extensions, and median islands help keep vehicles moving at slow speeds.

Low Vehicle Volumes
Some streets require traffic pattern changes to discourage cut-through traffic and keep traffic volumes low. These changes can be achieved through physical barriers (diverters) or through signage.

Safer Crossings
Some streets require traffic pattern changes to discourage cut-through traffic and keep traffic volumes low. These changes can be achieved through physical barriers (diverters) or through signage.

Placemaking and Wayfinding
Neighborhood greenways often connect key neighborhood destinations like parks and schools. Project designs look for opportunities to create new and great places in Northwest Portland.
Neighborhood Greenways Strategy in Northwest Portland

Northwest in Motion recommends a context-sensitive, phased approach to neighborhood greenway implementation in Northwest Portland.

Neighborhood greenways use a variety of design tools to achieve a low-stress environment for walking and biking. Some of these tools include interventions like speed bumps to keep speeds slow so that people can comfortably use the full lane when biking or scooting. **Traffic calming tools can be used to reduce illegal speeding and keep speeds at or below 20mph.** When a street becomes too busy with vehicle traffic it is necessary to **strategically change traffic patterns to limit vehicle volumes.** PBOT’s guidelines recommend that neighborhood greenways are designed to carry less than 1,000 vehicles per day, with a maximum acceptable limit of 2,000 vehicles.

Northwest in Motion recommends a phased implementation approach including a defined traffic and impacts monitoring period. This incremental approach allows for accountability by assessing whether the project meets its intended targets for speeds and traffic volume. If during the monitoring period, the project is shown to not be meeting established guidelines, additional traffic calming and traffic pattern changes would be recommended. However, if the project is successful in sufficiently addressing vehicles speeds and volumes, no further changes would be recommended. **This approach allows PBOT to minimize impacts to neighborhood circulation without compromising the neighborhood greenway network.**

**NW IN MOTION NEIGHBORHOOD GREENWAY IMPLEMENTATION STRATEGY**

**IMPLEMENT “PHASE 1” DIVERSION**

- Measure traffic volumes & speeds.  
  *Does the neighborhood greenway meet standards for traffic speeds and volumes?*
  *Yes.* Enjoy your new low-stress walking and biking route and continue to monitor.

- **No.** Proceed to “Phase #2”

**ENGAGE NEIGHBORS TO DEVELOP AND IMPLEMENT “PHASE 2” DIVERSION**

- Measure traffic volumes & speeds.  
  *Does the neighborhood greenway meet standards for traffic speeds and volumes?*
  *Yes.* Enjoy your new low-stress walking and biking route and continue to monitor.

- **No.** Consider additional diversion as required to meet Neighborhood Greenway performance guidelines.
Northwest is a dense, mixed use district of small streets bounded by busy regional corridors. These boundaries serve as ‘edges’ that define the scale, character, and urban form of the interior neighborhood streets. The Northwest in Motion Neighborhood Greenways Strategy considers these natural edges and utilizes a consistent, district-wide approach to building out a network of low-stress walking and biking streets.

These connections provide comfortable options for moving to important destinations within the neighborhood without using a car. Crossing improvements at the edges provide safe points of access when traveling to other neighborhoods.

This approach seeks to ‘reinforce existing edges’ by focusing interventions at the periphery of the neighborhood. The intention is to discourage cut-through traffic and direct longer trips onto busier streets that are designed to handle larger volumes of vehicles as a first step before considering circulation changes internal to the neighborhood.

#1 Reinforce existing edges.
I-405, W Burnside St, NW Vaughn St, and NW Cornell Rd define the edges of Northwest. These natural edges can be strengthened to redirect through traffic to collectors, traffic calm the neighborhood as a whole, and support the neighborhood greenway network.

#2 Strategically consider additional traffic pattern changes.
If the initial diverters are insufficient, it may be necessary to implement additional traffic diverters to direct neighborhood vehicle trips away from the greenways network. These changes would be pursued after a clear period of traffic monitoring and community engagement.
**Neighborhood Greenway Phase 1 Implementation**

To reduce traffic volumes on existing and proposed neighborhood greenways in the NW in Motion project area, temporary diverters will be used around the edges of the neighborhood.

Once implemented, PBOT will monitor the changes in traffic volumes approximately one year later, to give adequate time for traffic patterns to adjust. If traffic volumes at that point have fallen to acceptable levels, the temporary diverters will be replaced with permanent diverters and no additional diverters will be added. However, if traffic volumes remain at unacceptable levels or if the diverter locations have resulted in unacceptable impacts on other streets, PBOT will reassess the locations and number of diverters and will develop a new diversion plan for the neighborhood greenways.
Neighborhood Greenway Phase 2 Strategy

If Phase 1 implementation is unsuccessful in achieving acceptable traffic volumes on the proposed neighborhood greenways, PBOT will design and implement a Phase 2 diversion strategy, focusing additional diversion in the center of the neighborhood to reduce vehicle trips within the neighborhood. This will include additional public outreach to ensure the opportunity for feedback on these circulation changes.
**NW Johnson Neighborhood Greenway**

**Project Description**
Calm traffic and upgrade neighborhood greenway by adding speed bumps, turning stop signs, and updating signage on NW Johnson St from 9th to 25th. Incorporate diverters to reduce traffic volumes to acceptable levels. Improve crossings at busy streets to enhance pedestrian safety and comfort. Remove rails at 15th & Johnson intersection and repave segments of Johnson to improve riding comfort.

**Project Goal:**
- Provide a low-stress walking and biking route on NW Johnson St.

**Key Considerations:**
- Diversion strategy between NW 12th and 18th Ave may require out of direction travel for people driving. Diverters may increase traffic volumes on parallel local streets like NW Kearney St.

**Permitted auto movements at intersection with restrictions**
- Contraflow bike lane (no auto traffic in this direction)
- Scooter & bike parking hub
- Remove old rail tracks
- Speed bump
**DESIGN CONCEPT DETAIL:**

**NW Johnson | NW 14th to NW 17th**
NW Johnson St near I-405 carries the highest traffic volumes along the entire neighborhood greenway route. The crossings at 14th and 16th are also difficult for pedestrians and bicyclists. This concept design addresses these issues by making certain blocks of Johnson from 12th to 18th one-way for cars but two-way for bikes, and adding median islands to shorten crossing distance and improve visibility. These improvements also help to protect the bike lanes on 14th and 16th.

**DESIGN CONCEPT DETAIL:**

**NW Johnson | NW 14th Ave**
This rendering shows how the proposed crossing of 14th Ave at Johnson St would improve safety and comfort for bicyclists riding along both 14th Ave and Johnson St. Pedestrians would also benefit by being able to cross the bike lane first, then the motor vehicle travel lane.
**NG.2 NW Marshall Neighborhood Greenway**

**Project Description**
Calm traffic and upgrade neighborhood greenway by updating marked crosswalks, sharrows, and signage from 9th to 16th and extending to 20th. Incorporate diverters to reduce traffic volumes to acceptable levels.

**Project Goal:**
- Extend and improve the existing NW Marshall neighborhood greenway to provide a direct connection to the NW 20th Ave neighborhood greenway.

**Key Considerations:**
- Diversion strategy will likely increase traffic volumes on NW Lovejoy St and NW Northrup St.

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**Legend:**
- New and existing striped crosswalks
- Median refuge between bike and auto lane
- Permitted auto movements at intersection with restrictions
- New and existing diverters
- Area of potential future traffic diversion (if required)
- Contraflow bike lane (no auto traffic in this direction)
- Permitted auto movements (one-way street)

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Full diverter at west side of NW Marshall St and NW 15th Ave allows full access for people walking and biking. (see detail on next page)

Bikes behind crossing island and improved curb extension at northeast corner.
DESIGN CONCEPT DETAIL:

Scooter Parking Hub
Designated scooter parking hubs are recommended at the intersection of neighborhood greenways and major commercial nodes and main streets throughout Northwest Portland. Analysis of scooter riding data suggests that users prefer to use low-stress routes when riding, such as neighborhood greenways or bikeways to access these popular destinations.

DESIGN CONCEPT DETAIL:

NW Marshall | NW 15th Ave
The Pearl District Access and Circulation Plan, adopted in 2012, recognized that the diverter at 10th & Marshall might not be sufficient to address cut-through traffic issues on the Marshall Neighborhood Greenway, and recommended consideration of an additional diverter at 15th & Marshall to prevent through traffic under I-405. Recent traffic counts confirm that NW Marshall St currently has traffic volumes that greatly exceed the recommended guidelines for a neighborhood greenway, so it would be appropriate to implement this. Portland Streetcar has also indicated that closing this segment of Marshall to through car traffic at 15th Ave, while maintaining employee access from 16th Ave, would improve their maintenance operations.
NW Pettygrove Neighborhood Greenway

Project Description
Calm traffic and provide a low-stress neighborhood greenway by adding speed bumps and sharrows, turning stop signs, and installing signage on NW Pettygrove St from 11th Ave to Chapman Elementary. Incorporate diverters on Pettygrove to reduce traffic volumes to acceptable levels. Improve crossings at busy streets to enhance pedestrian safety. Remove rails from 15th & Pettygrove intersection to improve riding comfort. Add a bikeway connection to 9th Ave at the east end via 11th Ave and Overton St. After implementation, remove sharrows from Overton St west of 14th Ave.

Project Goal:
• Provide a low-stress walking and biking connection through NW Portland, connecting Wallace Park to NW Naito / NW 9th Ave.

Key Considerations:
• On-street parking removed from one side of Overton St from 9th Ave to 11th Ave, and adjacent to new park at NW Pettygrove & NW 20th Ave
**DESIGN CONCEPT DETAIL:**

**NW Overton | NW 9th to NW 11th**

NW Overton St is meant to be a local access street, but it is also a major emergency response route and is one of the few ways to access Naito Pkwy from the west. This design concept preserves eastbound through traffic and provides a protected bike lane. In the westbound direction, a diverter would allow only bike access from 9th Ave, with a shared street environment west of the diverter. This concept preserves on-street parking on the north side of Overton St, and adds turn pockets approaching 9th Ave to give traffic more options in case of train blockages.

**DESIGN CONCEPT DETAIL:**

**NW Pettygrove Green Street Treatments**

The River District Right-of-way Standards were amended in 2012 to add an innovative “green street” design for NW Pettygrove St from 11th Ave to 15th Ave. This standard requires new developments to provide an expanded planting strip, with optional parking bays, to provide more space for wide-canopy trees and other greenery. The design also helps to calm traffic by narrowing the roadway. The upcoming new park at 20th & Pettygrove offers a clear opportunity to apply this green street design further west, at the intersection of two neighborhood greenways. This concept shows how this could look applied to the new park site, facing east from a new mid-block crossing and looking toward the 20th Ave intersection.
NW Savier Neighborhood Greenway

Project Description
Calm traffic and provide a low-stress neighborhood greenway by adding speed bumps and sharrows, turning stop signs, and installing signage on NW Savier St from 14th Ave to 28th Ave, with connections to Vaughn and Nicolai. Incorporate diverters to reduce traffic volumes to acceptable levels. Improve crossings at busy streets to improve pedestrian safety. Remove rails from Savier St & 15th Ave intersection to improve riding comfort. Convert one-way half-street sections to bike-only as an interim measure until streets are widened with redevelopment. After implementation, remove sharrows from Raleigh.

Project Goals:
• Create a low-stress walking and biking connection, taking advantage of existing lower-volume streets.

Key Consideration:
• The interim two-way connection between NW 19th and NW 20th Ave should be made permanent with adjacent redevelopment.
**DESIGN CONCEPT DETAIL:**

**NW Savier | 19th Ave to 20th Ave**

A portion of NW Savier St in the Slabtown area has a limited public right-of-way that only contains a single westbound travel lane and a sidewalk on the north side. Where the rest of the street should be on the south side, the space is currently private property, mostly used for parking. As properties redevelop, they will be required to dedicate this space as public right-of-way and build the rest of the street and sidewalk, but the pace of development is slowing and it may be many years before all of Savier is dedicated and constructed. This design concept shows a potential “interim” design for the narrow section of Savier with no driveways between 19th and 20th, turning the single travel lane into a two-way bike path.

**DESIGN CONCEPT DETAIL:**

**NW Wilson and NW 29th Ave**

The existing diverter at Wilson & 29th is effective at eliminating cut-through traffic from Nicolai to Thurman, but the design is not ideal for bike travel. It has a single opening for bikes, off to one side, that is obscured by vegetation. This concept design shows a improved bicycle path through the diverter to make this an attractive route for bicyclists who want to travel between the residential and industrial areas of NW Portland.
**Design Concept Detail:**

**NW Savier Phasing**

Currently NW Savier St has a limited right-of-way from 21st to 20th, and for a portion of the block from 20th to 19th, with a sidewalk on the north side and only enough roadway space for a single westbound travel lane. There is one driveway access on this segment of Savier St, on the western half of the block from 21st to 20th.

As redevelopment of adjacent parcels occurs, the Conway Master Plan requires that the property owners dedicate enough space for a standard 60-foot right-of-way, which would be typically built out with a 36-foot-wide roadway (two lanes with parking on both sides) and two 12-foot sidewalk corridors. Based on redevelopment permits that have been submitted, we anticipate that the properties will redevelop over time from west to east along the south side of Savier St.

**In Phase 1**, the property on west half of the block from 21st to 20th will redevelop and a full two-way street will be constructed for that half-block. At this point, the driveway will be able to be accessed from the 21st Ave side, and PBOT will be able to turn the remaining one-way segments of Savier St into the proposed interim two-way bike path.

**In Phase 2**, the property on the east half of the block from 21st to 20th will redevelop, and the rest of that block will be constructed as a typical two-way street. This portion will be converted to a neighborhood greenway, while the interim two-way bike path will remain on the block east of 20th Ave.

**In Phase 3**, the final property will redevelop on the block east of 20th Ave. When this property is redeveloped, they will still be required to dedicate enough property for a 60-foot right-of-way, but PBOT will work through the development process to ensure that the space is constructed as a pedestrian and bicycle street with no motor vehicle access (except emergency vehicles). This redesign could also include place-making elements.
Northwest in Motion imagines a long-term vision of a multi-use path connection on NW Savier St between NW 19th Ave and NW 20th Ave. This trail-like connection would leverage a high level of urban design and include elements to strengthen the social element of the street such as small plazas, seating, and lush greenery.
NW 24th Ave Neighborhood Greenway

Project Description
Calm traffic and provide a low-stress neighborhood greenway by adding speed bumps, turning stop signs, and updating signage on NW 24th Ave from Flanders to Vaughn. Incorporate diverters to reduce traffic volumes to acceptable levels. Provide enhanced crossings of busy streets to improve pedestrian safety.

Project Goals:
• Provide a low-stress option for people accessing destinations on NW 23rd Ave and NW 25th Ave.

Key Considerations:
• Proposed traffic pattern changes will address cut-through traffic but will also require out of direction travel for some local residents.

Legend:
- Enhanced crossing
- New and existing striped crosswalks
- Median refuge between bike and auto lane
- Permitted auto movements at intersection with restrictions
- Permitted auto movements (one-way street)
- New and existing diverters
- Speed bump

Full traffic closure of NW 24th Ave at NW Westover Rd / Flanders St preserves local access and creates a low-stress connection between two great bikeways.
DESIGN CONCEPT DETAIL:

NW 24th Ave at Westover Rd / Flanders St

Traffic counts indicate that high volumes of peak-hour commuters are driving on 24th Ave northbound from Westover to access Lovejoy St. The intersection of 24th Ave, Westover Rd, and Flanders St is also confusing and complex, with safety issues because it is hard to tell whether drivers are going to continue north on Westover Rd or veer onto 24th Ave. This would become even more of a safety issue with the introduction of bikes in both directions on 24th Ave from Flanders to Glisan. To address these concerns, we propose closing this block of 24th Ave to through traffic with a diverter at Westover, and adding bike lanes in both directions. Access to the single driveway on the block would be maintained via Glisan St, but on-street parking on one side would be removed. This design concept shows an example of how this improvement could enhance the streetscape environment.
Corridor Improvements

Busy traffic streets are the places where crossing improvements and other roadway improvement projects can have the biggest benefit for the safety and comfort of people walking, biking, or accessing transit.

Corridor improvements are mainly focused on providing safe crossings of busy streets at regular intervals, but also includes improvements such as traffic calming, signal upgrades, pavement reconstruction, transit improvements, and bike lane enhancements.

**TIER 1 PROJECTS DETAIL**

**Enhanced Crossings**
These design elements help shorten the crossing distance or allow people walking to only have to navigate one lane of traffic at a time.

**Curb Extensions**
Curb extensions help improve the visibility of people walking and can help improve yielding compliance by people driving. They can also be used to provide accessible, in-lane transit stops.

**Transit Improvements**
Unsignalized left turns on busy streets pose a safety risk and can increase transit delay. Separate signal phases can help reduce conflicts and improve transit speed and reliability. Bus-only lanes can give transit a way to bypass traffic congestion.

**KEY DESIGN ELEMENTS**

Corridor improvement projects are located on Northwest Portland’s busiest streets. While these streets carry higher volumes of vehicles, these projects use design tools to address conflicts between roadway users and improve transit.

**Enhanced Crossings**
These design elements help shorten the crossing distance or allow people walking to only have to navigate one lane of traffic at a time.

**Curb Extensions**
Curb extensions help improve the visibility of people walking and can help improve yielding compliance by people driving. They can also be used to provide accessible, in-lane transit stops.

**Transit Improvements**
Unsignalized left turns on busy streets pose a safety risk and can increase transit delay. Separate signal phases can help reduce conflicts and improve transit speed and reliability. Bus-only lanes can give transit a way to bypass traffic congestion.
NW 25th Ave / Westover

Project Description
Calm traffic and improve pedestrian safety by adding speed bumps and enhanced crossings. Realign and enhance the skewed intersection of Johnson/Westover/25th to improve safety and reduce confusion. Remove the traffic circle at NW Quimby and replace with median islands to reduce conflicts and enhance visibility for people walking to Wallace Park & Chapman Elementary. Adjust traffic circulation at 23rd & Westover to reduce transit delay and enhance the pedestrian environment.

Project Goals:
- Eliminate conflicts between different roadway users and improve visibility for people crossing NW 25th Ave and Westover Rd.
- Reduce traffic speeds along NW 25th Ave to make it easier for people of all ages and abilities to cross the street.

Key Considerations:
- One traffic circle to be removed and replaced with median islands.
- Median islands will have a small impact on on-street parking, and may present challenges for larger vehicles while turning.
DESIGN CONCEPT DETAIL:

NW 25th Ave at NW Quimby St
Community stakeholders have brought up concerns about pedestrian safety at the traffic circle at 25th & Quimby. This is a popular pedestrian entrance to Wallace Park, and is also on a designated Safe Routes to School route to Chapman Elementary. This concept would remove the traffic circle and replace it with median refuge islands and marked crosswalks. The islands would achieve a similar traffic calming effect as the traffic circle, but with this design people will be much more visible as they cross the street and will only have to cross one lane at a time, and drivers will more intuitively yield to people with crosswalks present.

DESIGN CONCEPT DETAIL:

NW Westover Rd / Johnson St / 25th Ave
The skewed intersection of Westover, Johnson, and 25th has long been a significant safety concern for the surrounding community. This proposal would realign the intersection with curb extensions in a way that would bring the stop bars closer to the intersection and into greater alignment with each other, improving visibility and safety for all modes of travel. Marked crosswalks would further improve pedestrian safety and visibility, and reduce the tendency for drivers to roll through the stop signs. Initial implementation would include temporary “interim” materials such as painted curb extensions and vertical delineators. Future funding would need to be secured to realize an upgraded version using permanent, higher-quality materials.
DESIGN CONCEPT DETAIL

**NW Westover & NW Everett Circulation**

TriMet data analysis shows a high amount of delay for the Line 15 bus southbound on 23rd Ave approaching Westover and Burnside, especially in the morning peak hours. Much of this delay is due to significant traffic on Westover Rd in the morning that fills up the left turn lanes from 23rd to Burnside. Because Westover is stop-controlled, this flow of traffic arrives randomly and negatively impacts transit reliability and overall signal progression on 23rd Ave.

This proposal would close off traffic access on the section of Westover Rd just west of 23rd Ave to address the transit delay and pedestrian safety issues at that intersection. Through traffic would use Everett St to 23rd Ave (or 24th Place) to access Burnside, while drivers could still access the shopping center via Westover Rd from the north or 23rd Place from the south. To mitigate the impact of additional traffic on Everett, this proposal adds a right-turn pocket to Everett St approaching 23rd Ave.

By closing off a short segment of Westover Rd to car traffic, this option provides a great opportunity to create an attractive pedestrian entrance to the shopping center that would also enhance the main street feel of 23rd Ave. Because the street is sloped, this area could eventually have a stairway with terraced plantings to go along with the ramped sidewalks on each side.
A full closure of NW Westover Rd at NW 23rd Ave would provide an opportunity to re-imagine the space as a pedestrian plaza and gateway to the Uptown Shopping Center.

As a first step towards implementation, PBOT could create a simple, yet inviting plaza using temporary interim materials. To better support these first steps, Northwest in Motion recommends adding new strategies and materials to our existing tools for temporary installations (see page 69).
Cl.2 NW 23rd Ave

Project Description
Improve the roadway surface for buses and other vehicles through full pavement reconstruction from Lovejoy to Vaughn. Improve pedestrian safety by adding additional curb extensions with marked crosswalks at Marshall, Overton, Quimby, Pettygrove, and Savier. Address identified sidewalk accessibility and turning radius issues at Raleigh signal. Improve transit reliability and pedestrian safety at Thurman by upgrading signal and adding protected left turns.

Project Goals:
- Address long-deferred roadway and signal maintenance needs along the corridor.
- Improve the pedestrian realm by upgrading and providing new curb extensions throughout the corridor.

Key Considerations:
- Roadway reconstruction and signal replacement trigger stormwater improvements and buried trolley track removal
- Some on-street parking spaces might be impacted to provide space for new crossing improvements.

- Enhanced crossing
- New protected left at signal

Full signal rebuild to include protected left turn phase and leading pedestrian interval.

Full reconstruction of NW 23rd Ave from NW Lovejoy St to NW Vaughn St.

Wide curb extension at NW Marshall to facilitate crossing near the hospital entrance.
DESIGN CONCEPT DETAIL:

NW 23rd Ave at NW Marshall St
At “T” intersections, there is an opportunity to provide longer curb extensions with more greenery along the length of the intersection. This prioritizes pedestrians, provides a nicer place to be, and lowers traffic speeds by narrowing the roadway temporarily. 23rd & Marshall is one example in NW Portland where this kind of design treatment could be deployed.

DESIGN CONCEPT DETAIL:

Protected Left Turn Signal Phase
By adding a protected signal phase, vehicles turning left are given a dedicated time to make the otherwise difficult left turn. The signal phase would be coordinated with the pedestrian walk signal to eliminate ‘permissive’ left turns and reduce/eliminate conflicts between people walking and people driving. Protected left turns also help buses and other motor vehicles find gaps in traffic to make turns.

SIGNAL PHASE A:
While left hand vehicle movements are permitted, pedestrians are not permitted to cross the street.

SIGNAL PHASE B:
While the pedestrian crossing phase is activated, vehicles are prohibited from turning left.
**NW 18th Ave & NW 19th Ave**

**Project Description**
Improve transit speed and reliability and reduce bus/bike conflicts by installing transit platforms with bikes behind at 18th & Marshall, 19th & Marshall, 18th & Flanders, and 19th & Flanders. Improve pedestrian safety along the corridor by marking crosswalks at regular intervals.

**Project Goals:**
- Minimize bus and bike conflicts and improve pedestrian safety
- Improve bus service by allowing the bus to serve stops in the travel lane without having to pull over to the curb.

**Key Considerations:**
- Some parking may need to be shifted where transit platforms are installed.
- Interim modular transit platforms would be installed as a near-term improvement, and could be replaced with permanent concrete islands at a later time.

![Map with project enhancements](image)
**DESIGN CONCEPT DETAIL:**

**Bus Behind Transit Platform**
TriMet recently extended the Line 24 bus from NE Portland across the Fremont Bridge and down the 18th and 19th Ave couplet to Providence Park. While this new bus line provides a great new transit connection for people traveling to and from NW Portland, the combination of curb-side bus stops and bike lanes result in bus/bike conflicts and transit delay, as buses have to cross over the bike lane twice whenever serving a stop.

To address this issue, this design concept shows floating transit platforms with the bike lane shifting to curb-side temporarily to go around the platform. The bus would stop in the travel lane, which is preferred because it reduces the transit delay associated with pulling in and out of traffic and across bike lanes. There would be no conflict between bikes and buses at these stops, and the transit platforms will also provide pedestrians with a refuge that shortens the crossing distance and improves visibility.
Project Description
Improve pedestrian safety and calm traffic by providing enhanced crossings at 20th and 22nd and by improving safety at existing signals along the Everett/Glisan couplet. Improve transit reliability and accessibility along the corridor by improving stops, easing turns to and from 21st Ave, and providing a pro-time bus lane on Everett St.

Project Goals:
- Address safety concerns by upgrading and establishing new pedestrian crossings
- Reduce transit delay and accessibility issues through spot improvements

Key Considerations:
- On-street parking will be impacted in some locations for transit improvements and enhanced crossings

Curb extensions, bus stop improvements, and changes to on-street parking to facilitate bus turning movements and stop accessibility

Signal modification adding protected left turn to improve transit reliability

Curb extensions with improved bus stops to facilitate accessible boarding

- Enhanced crossing
- New and existing striped crosswalks
- Permitted auto movements at intersection with restrictions
- New protected left at signal
- Improvement to signalized intersection (see page x) for details
- Transit priority lane
**DESIGN CONCEPT DETAIL:**

**NW Glisan St at NW 22nd Ave**
This concept shows curb extensions that improve safety for pedestrians by shortening the crossing distance, improving visibility, and slowing down traffic. Pedestrian scale lighting is also added to improve visibility in low-light conditions. A similar treatment could be applied to other unsignalized crossings of Everett St and Glisan St.

**DESIGN CONCEPT DETAIL:**

**NW 21st Ave at NW Everett St**
TriMet data analysis shows a high amount of delay for the Line 77 bus turning left from 21st Ave southbound to Everett St eastbound. Because this is a permissive left turn at a traffic signal, bus drivers must yield to oncoming traffic on 21st Ave and have a difficult time finding a gap to make the turn. This issue could be solved using a “protected-permissive” signal that would provide a protected left turn after a period of time if there are cars or buses still waiting to make the turn. This is an especially good solution where a two-lane street intersects with a one-lane street, since there are no left turns in the opposite direction. Another advantage of this design is that it does not require removal of on-street parking to install turn pockets. This type of signal can be found elsewhere in NW Portland, for example at 23rd & Everett and at 23rd & Raleigh.
NW Glisan at NW 21st Ave
The intersection of NW 21st Ave & Glisan St is one of most active business nodes in the Northwest in Motion project area, with all four corners occupied by active ground-floor restaurant uses and high levels of pedestrian activity at all times of day. Other nearby businesses and destinations like Trader Joe’s, Metropolitan Learning Center, Couch Park, and Cinema 21 all contribute to pedestrian volumes as well as motor vehicle traffic, on-street parking and loading, and bus ridership.

The Line 77 bus, planned for an upgrade to frequent service in the coming years, is well-used at this location but suffers from a lack of accessibility at the southbound bus stop due to on-street parking. It also has a very difficult turning radius for buses turning right from Glisan to 21st. This can lead to delay and general traffic issues at the intersection because the bus has to swing wide into adjacent and oncoming lanes to make the turn.

This plan proposes curb extensions into Glisan St at the west side of the intersection to provide more pedestrian-oriented space and slow down turning traffic where it will have the most benefit, and also proposes re-striping and some on-street parking removal to fully address the bus turning radius issue and provide an accessible bus stop at the northwest corner. A double curb extension could also be added at the southeast corner of the intersection if funding allows.
DESIGN CONCEPT DETAIL:

NW Everett | NW 21st Ave to NW 19th Ave

Throughout the Northwest in Motion process, community members have brought up concerns about traffic flow issues on NW Everett St west of 19th Ave, where the street has one eastbound motor vehicle travel lane and high levels of peak-hour traffic. Additionally, TriMet has identified significant and growing transit delay issues for the Line 77 bus on Everett. Recent and upcoming projects, including the 20th Ave and Flanders neighborhood greenways as well as proposed Northwest in Motion projects, are expected to further increase pressure on Everett St over time and could contribute to signal progression and transit delay issues along the corridor.

Northwest in Motion proposes to address these issues through a near-term redesign of NW Everett St from 21st Ave to 19th Ave to provide greater bus and traffic capacity during peak hours. Specifically, this redesign would add a full-time bus and turn lane from 21st Ave to 20th Place, a pro-time bus and turn lane from 20th Place to 20th Ave, and a pro-time general purpose lane from 20th Ave to 19th Ave. The pro-time lanes would allow parking on weekends and during off-peak hours on weekdays, but would not allow parking during morning and afternoon weekday peak hours. This redesign will add capacity where and when it is most needed, limiting parking impacts to peak commuting hours and retaining the eastbound bike lane.

Longer-term, PBOT will monitor bike usage, transit delay, and traffic volumes and delays along the corridor, especially after the Flanders project is complete, to see if traffic patterns and mode choices change enough to warrant a further redesign of the roadway to address any issues that may arise.
**C1.5 NW Vaughn St**

**Project Description**
Improve pedestrian safety by adding and enhancing crossings. Improve safety of existing bikeway along Vaughn by providing conflict markings through intersections. Address transit delay issues by adding an eastbound bus lane approaching 23rd Ave.

**Project Goals:**
- Improve safety for people biking along and across NW Vaughn St.
- Improve the safety and comfort of people crossing at minor intersections.
- Reduce transit delay through spot improvements

**Key Considerations:**
- Restricted movements at NW 24th Ave may require people driving to use the nearest signal instead.
**DESIGN CONCEPT DETAIL:**

**NW Vaughn St at NW 24th Ave**

A combination median island and traffic diverter across NW Vaughn St provides a range of benefits for multiple roadway users. For people walking or biking, the median island shortens the crossing distance and allows them to only have to navigate one travel lane at a time. For people driving, they are redirected to nearby signalized intersections which provide safer left turn opportunities. The median also acts as a diverter, reducing cut-through traffic on the NW 24th Ave Neighborhood Greenway.

Southbound turning vehicle movements from NW Vaughn St would be prohibited.

Median island makes crossing this busy street safer and more comfortable for people walking.

**PRELIMINARY DESIGN CONCEPT: 24TH AND VAUGHN**

**DESIGN CONCEPT DETAIL:**

**NW Vaughn St at NW 25th Ave**

To address a documented safety issue of left-turning vehicles conflicting with oncoming bikes, this concept shows green bike boxes and conflict markings to better warn drivers to watch out for bikes and yield to them when turning. High-visibility crosswalks can also be added to improve pedestrian safety while crossing.

“Bike Boxes” improve visibility and safety for people bicycling.

**PRELIMINARY DESIGN CONCEPT: 25TH AND VAUGHN**
TIER 2 PROJECTS DETAIL

Neighborhood Greenways

NG.6 | NW Couch St
Bikeway connection over I-405 including enhanced crossings and a combination of bike lanes and shared roadway treatments.

NG.7 | NW 22nd Ave & NW Marshall St Extension
Closing a gap in the neighborhood greenway network and providing a connection to Legacy Good Samaritan Campus.

NG.8 | NW Westover Rd / Macleay Park Circulation
Speed bumps, shared lane markings and improvements to existing diverters to provide a connection between Hillside and Northwest neighborhoods.
Corridor Improvement Projects

**Cl.6 | NW Hoyt St**
Add marked crosswalks and curb extensions at intersections with major streets.

**Cl.7 | NW Raleigh St**
Add curb extensions, marked crosswalks, and improvements to support future transit service.

**Cl.8 | NW Thurman St**
Improve pedestrian safety along main street portion of Thurman by adding curb extensions and marked crosswalks at all-way stops. Consider climbing bike lane from NW 28th Ave across the Thurman Street Bridge.
In addition to projects, *Northwest in Motion* includes a series of program and policy-based recommendations. These include 10 program recommendations to be applied broadly through the district as well as updates to bicycle, transit and traffic street classifications.
Program Recommendations

Northwest in Motion contains a series of programmatic recommendations that are distinct from individual projects. These recommendations are intended to be applied throughout the district - both in places where recommended projects exist, but also more broadly and comprehensively.

Distilled to ten thematic elements, they are meant to synthesize key themes from our public engagement process, complement projects outlined in the previous chapter, and support the plan's overall goals. Some of the ideas contained in this chapter draw on existing or recent planning efforts such as PedPDX, Portland’s recently adopted Pedestrian Master Plan.

There are also some new ideas to consider that draw on case studies from cities throughout North America and Europe. Some of these require collaboration with other transportation agencies such as TriMet while others will be best implemented local businesses, resident advocates, or through private development.

LIST OF PROGRAM RECOMMENDATIONS

1. Make Improvements to Street Lighting
2. Improve Visibility at Intersections
3. Explore Opportunities for Innovative Crossing Treatments
4. Invest in Main Street Improvements
5. Invest in Green Street Improvements
6. Invest Better in Transit Stops
7. Improve ADA Access
8. Develop Better Tactical Urbanism Tools
9. Improve Safety at Signalized Intersections
10. Lower Speeds Throughout the District
PROGRAM RECOMMENDATION #1

Make Improvements to Street Lighting

During the Northwest in Motion planning process, community members consistently brought up concerns about inadequate street lighting throughout the district, especially for pedestrians who are not always visible to motor vehicle drivers. Streets and intersections are typically lit by cobra-head lights that mainly illuminate the roadway, rather than the sidewalks and corners where pedestrians are walking and trying to cross the street. The Northwest District area also features a dense tree canopy, which is generally praised as a great feature of the area but has a downside of darker sidewalks and intersections. These issues combine to make pedestrians more vulnerable in low-light conditions.

One way to address these issues is to include pedestrian-scaled lighting where needed as a part of capital projects like enhanced pedestrian crossings. PBOT has a standard practice to evaluate pedestrian light levels at all new or upgraded enhanced pedestrian crossings (for example, curb extension or median island crossings), and add pedestrian-scale light poles at those locations. This practice has already led to more pedestrian-scale lighting in the area, and as Northwest in Motion projects are built out more will be added over time.

To address lighting concerns in other areas of the district that are not on the project list, this Plan recommends an additional proactive evaluation of lighting levels at existing intersections and crossings, to develop an inventory of lighting needs. PBOT should identify and allocate ongoing funding for infill lighting to address the needs found in the lighting evaluation, prioritizing first the designated main streets, neighborhood greenways, and safe routes to school in the area. This Plan also recommends incorporating needed pedestrian lighting into the required frontage improvements constructed by new developments, where feasible and appropriate, as is currently the practice in the Conway Master Plan area. Finally, this Plan recommends more proactive tree maintenance in the right-of-way to address the concerns of existing lighting being blocked by large trees.

RECOMMENDED ACTIONS

- Develop an inventory of lighting needs and deficiencies throughout the district.
- Identify a funding strategy to address a prioritized list of lighting needs.
- Incorporate lighting requirements into frontage requirements for new development.
- Develop a strategy to proactively maintain trees impacting street lighting levels.
PROGRAM RECOMMENDATION #2

Improve Visibility at Intersections

Throughout the City of Portland, vehicles have historically been allowed to park right up to the edge of the street corner - encroaching on the pedestrian zone and limiting the field of vision for all roadway users. Notably, Oregon state law and the Oregon Driver Manual specifically states that parking is prohibited within 20 feet of a marked or unmarked crosswalk or intersection, unless a local jurisdiction has different regulations. In the past, the City of Portland has often permitted parking adjacent to an intersection or crosswalk. This regulatory situation is uncommon in most major American cities and creates a stressful and unsafe condition for people walking, biking and driving - especially in denser areas of the city with more pedestrian activity.

During the summer of 2019, Portland City Council unanimously adopted PedPDX, the City of Portland’s update to the 1998 Pedestrian Master Plan. In addition to a bold and robust inventory of needs and a prioritized framework for investing in sidewalks and crossings, PedPDX contains the “PedPDX Implementation Toolbox” which outlines many strategies and actions to improve walking in Portland. Key among these recommendations is to implement new ‘vision clearance’ guidelines as part of new PBOT capital projects, development review, and paving projects. As a default strategy for new projects, this recommended action recommends creating a 20 foot parking setback on the approaches of all marked and unmarked crosswalks to improve visibility at intersections. Further, the plan recommends the additional action of identifying key intersections for retroactive vision clearance implemented by programs such as Safe Routes to School, Neighborhood Greenways, Vision Zero and Pedestrian Network Completion Programs.

Northwest in Motion intends to build upon this prior planning work by recommending vision clearance guidelines be applied on: 1) all new and existing Neighborhood Greenways; 2) all Major City Walkways (the district’s busiest commercial and transit streets); and 3) on all identified Safe Routes to School routes within Northwest Portland. Furthermore, Northwest in Motion recommends that a formal study be conducted by PBOT in collaboration with the Northwest Parking Stakeholder Advisory Committee to understand the benefits and impacts of district-wide application of vision clearance at all intersections.

PedPDX recommends a 20 ft setback approaching all marked crossings.
Implement intersection daylighting on all new NWIM recommended projects.

Identify funding to apply retroactive intersection daylighting, as well as for providing bicycle parking, parklets, or other amenities in the setback area.

Conduct a study to assess the parking impacts of district-wide intersection daylighting.

Removing street parking from intersections allows space for important transportation-related amenities like improved transit stations, Biketown and shared scooter parking, and bicycle corrals.

One advantage of setting back parking is that it creates extra space in the right-of-way for other amenities. These spaces at intersections could be used for things like curb extensions, bike corrals, Biketown stations, e-scooter parking zones, street seats, community parklets, transit platforms, benches, or wayfinding kiosks. Some of these improvements would be more expensive, requiring concrete construction, but others can be constructed using low-cost materials without having to move curbs. Bike parking, e-scooter parking, and street seats in particular would be effective and affordable choices for spaces adjacent to main streets, since there is a high need for bike parking and sidewalk seating in the commercial districts.
Throughout this planning process, community members have expressed significant concerns about how the high volumes of both pedestrians and motor vehicle traffic can lead to conflicts along busy pedestrian corridors. At intersections, pedestrians typically have to leave the sidewalk to cross the street, even a minor side street, and people driving have a tendency to turn in front of pedestrians on and off these side streets.

**RAISED SIDE-STREET CROSSINGS**

One tool used in many cities to emphasize pedestrian priority along main streets is the “raised side street crossing.” This consists of extending the sidewalk through the intersection along the main street and designing the side street entrance more like a driveway, with pedestrians staying at sidewalk level and cars traveling up and over the sidewalk to access the side street. This provides a clear design cue that cars are “guests” in this space and pedestrians have priority over motor vehicles. It slows down traffic making turns and encourages them to wait for pedestrians to clear before turning. This design also provides much better accessibility for people with disabilities, since it keeps the sidewalk level and does not require curb ramps.

*PROGRAM RECOMMENDATION #3*

Explore Opportunities for Innovative Crossing Treatments

*A raised crosswalk on a busy main street in Stockholm, Sweden. This design prioritizes people walking by offering a continuous, accessible pedestrian experience. Vehicles entering the space must travel up to sidewalk level when entering the street, which improves yielding behavior and encourages slower turning speeds.*
PBOT is currently developing standard designs for side street crossings to ensure they work for various types of vehicles and hopes to begin deploying them where feasible and affordable as part of streetscape projects in the future. Because this treatment can be costly, requiring full reconstruction of a leg of an intersection and changes to stormwater management, the most common application would likely be in conjunction with major capital projects that already include a great deal of civil improvements such as ADA curb ramp construction. Given this, the most promising applications in the NW in Motion area are along NW 23rd Ave in conjunction with the future roadway reconstruction project, and in the Conway Master Plan area as new streets are constructed along with private redevelopment projects.

**MID-BLOCK CROSSINGS**

Mid-block crossings are another type of improvement that could be incorporated into roadway projects, implemented along with redevelopment projects, or built in a programmatic way around the district. The clearest opportunity for mid-block crossings in the NW District area is on the east-west “long blocks” west of 19th Ave. These blocks are twice as long as typical Portland blocks, and in some cases would benefit from a mid-block crossing to calm traffic and make it easier to cross the street as a pedestrian. However, implementation of mid-block crossings can be challenging due to the placement of driveways, utilities, and other obstructions, and they typically require building new curb ramps and additional lighting. An alternative approach to curb ramps would be to build raised mid-block crosswalks on top of speed tables, but this is only permitted on Minor Emergency Response Routes. Rather than incorporate new mid-block crossings into projects by default the Northwest in Motion Plan recommends that are included where feasible and where they would provide particular benefit. The Plan also recommends they be incorporated into large redevelopment projects where feasible, similar to the approach found in the Conway Master Plan, and that PBOT work with the community in the future to identify top priority locations for new mid-block crossings.

**RECOMMENDED ACTIONS**

- **Develop an approved design for a raised sidewalk crossing for consideration in future capital projects on Portland’s commercial main streets, such as 23rd Ave or Thurman St.**

- **Conduct a cost comparison study for constructing two ADA curb ramps versus a raised side street crossing, to determine if there is a significant cost difference between the two.**

Examples of raised crosswalk intersection designs from North American cities, including a retrofit design (left - Victoria, BC) and a major re-design of Bell St in Seattle, WA.
One common theme in both public outreach and staff analysis during the Northwest in Motion planning process was the need for main street improvements in the project area.

The analysis found that main street commercial corridors such as NW 21st Ave, NW 23rd Ave, and NW Thurman St are often lacking in adequate pedestrian through zones and frontage zones, to the extent that large volumes of pedestrians can have difficulty navigating along these busy streets. Some of this is due to lack of right-of-way, as older buildings were constructed closer to the roadway. In these cases, the typical approach is to wait for properties to redevelop, at which time more right-of-way will be dedicated, and wider sidewalks will be constructed. However, given the high number of historic properties that are unlikely to redevelop anytime soon, the Northwest in Motion Plan recommends that PBOT partner with business and neighborhood organizations to identify opportunities to strategically expand the pedestrian realm into the roadway in places where it will make the most positive difference.

This could be done using street seats, where parking spaces are instead used for outdoor seating, through putting planters or trees between parked cars, or by replacing parking spaces with bike corrals. All these tools move certain functions into the curb zone and out of the limited pedestrian corridor where pedestrian movement should be prioritized.

Even where pedestrian corridors are considered adequate, they don’t function properly because of A-boards, outdoor seating, and bus shelters intruding into the pedestrian through zones. To address this, the Northwest in Motion Plan recommends that PBOT undertake a more proactive effort to enforce A-board placement and outdoor seating permits, ensuring that minimum pedestrian through zones are maintained at all times. The Plan also recommends that TriMet re-evaluate bus shelter placement to address locations where bus shelters are located within the pedestrian through zone and move them to a more appropriate location where feasible.

- Develop partnerships between PBOT and local businesses to identify opportunities to expand the pedestrian through zone.
- Maintain adequate pedestrian through zones through better regulation of outdoor seating, A-boards, and other potential obstructions.
- Partner with TriMet to re-evaluate bus stop locations within the pedestrian through zone.
PROGRAM RECOMMENDATION #5

Invest in Green Street Improvements

Another theme that came up during public outreach was a general desire for more “green street” treatments along certain streets. A typical green street includes wider-than-usual planting strips to accommodate larger-canopy trees or bioswales that bump out into the roadway to manage stormwater. These elements give the street a “greener” feeling but also are more environmentally beneficial uses of the right-of-way.

NW Pettygrove Street is the most common candidate for this treatment, because it was identified as such in the Northwest District Plan, and has already mostly been implemented as a green street in the Pearl District segment. That portion was constructed as a green street as redevelopment occurred because of the 2012 amendment to the River District Right-of-way Standards document, which offered developers three options for their required frontage improvements, with varying amounts of on-street parking but always including wider planting strips with more space for trees and other vegetation.

To continue this treatment through the Northwest District, the Northwest in Motion Plan recommends future development of a similar right-of-way standard for NW Pettygrove Street west of I-405, or potentially for the entire district to incorporate other types of streets. The Plan also recommends coordination with BES to consider bioswale treatments in the Northwest District as part of capital projects, especially along neighborhood greenways and main streets.

Another promising way to provide more greenery along streets in Northwest Portland is to consider planting trees within the curb-to-curb space in situations where there is an insufficient furnishing zone width or where there are conflicts such as driveways or utilities. A recent BES project on Hawthorne Boulevard planted trees between on-street parking stalls as a way to absorb stormwater and provide more tree canopy in an area with narrow sidewalks. Many parts of the Northwest District could benefit from this kind of approach.

RECOMMENDED ACTIONS

• Develop a future green street right-of-way standard for NW Pettygrove St and potentially other streets within Northwest.

• Coordinate with BES to consider bioswale or other stormwater treatments when developing capital projects.

• Explore opportunities to plant trees within the curb-to-curb roadway in cases where trees are unable to be planted in the furnishing zone.
**PROGRAM RECOMMENDATION #6**

**Invest in Better Transit Stops**

Throughout this planning process, the public expressed a need for more and better bus stop amenities such as shelters, benches, and trash cans, in addition to the need for fully accessible stops, especially from people with physical disabilities who rely on transit.

TriMet generally owns and maintains bus stop amenities, though in some cases adjacent businesses or property owners agree to maintain some elements. TriMet has established objective criteria for placement of shelters and other amenities, and PBOT does not have the ability to mandate these amenities. All of this considered, Northwest in Motion recommends that TriMet evaluate the existing amenities in Northwest to see if there are locations that now meet the criteria for amenities to be added and if there are locations where amenities are deficient and could be improved to meet current guidelines. PBOT and TriMet should work together with private developers to maximize the opportunities for improved transit stops with redevelopment projects.

PBOT does have a great deal of control over whether or not bus stops are accessible, through roadway design and bus stop design. The most common reason for bus stops being inaccessible to people with disabilities is on-street parking blocking the bus from being able to pull over to the curb. There are a variety of solutions available, ranging from parking removal to curb extensions to stop location changes.

The Northwest in Motion Plan recommends that PBOT work collaboratively with TriMet to implement accessible stops using these and any other available tools to ensure that no one is prevented from being able to access the transit system.

**RECOMMENDED ACTIONS**

- Conduct an inventory of current amenities at bus stops throughout Northwest.
- Work with TriMet and private developers to maximize the opportunity for improved transit stops.
- Work with TriMet to implement accessible stops through parking removal, curb extensions, or stop relocations.
PROGRAM RECOMMENDATION #7

Improve ADA Access

During the Northwest in Motion process, community members brought up concerns about the accessibility of the transportation system for people with disabilities. The most common issues raised were the lack of ADA ramps at pedestrian crosswalks and the poor condition of the sidewalk in many areas.

The issue of corners missing ADA-standard ramps is being addressed in several ways. First, PBOT has an ongoing ADA program that pro-actively builds ADA curb ramps every year. Second, PBOT upgrades all corner ramps any time a street is being paved or otherwise upgraded. Third, PBOT has a “curb ramps by request” program in which community members can request specific routes to be upgraded. Finally, many capital improvement projects such as enhanced pedestrian crossings must include ADA curb ramp upgrades. Through these various programs and efforts, PBOT has committed to building at least 1500 curb ramps per year. The Northwest in Motion Plan does not recommend any changes to these programs, but it does include capital projects in the plan area that will include ADA upgrades.

The issue of sidewalks in poor enough condition to pose accessibility concerns is especially acute in areas of the Northwest District with mature trees whose roots lift the sidewalks on a regular basis. The typical practice is to wait for complaints, then send property owners notice that they must pay for sidewalk repair since they are responsible for maintenance of the sidewalk corridor. However, this practice sometimes leads to long delays in repairs being performed, because complaints may take some time to be sent to the City and property owners may not make the repairs right away. There are also equity concerns because some property owners may have a hard time paying for such repairs. The Northwest in Motion Plan recommends funding a small, ongoing program for proactive sidewalk repair, targeting locations where there have been persistent delays or where property owners have difficulty paying for the repairs.

NEW ADA-COMPLIANT CURB EXTENSIONS IN NORTHWEST PORTLAND.

RECOMMENDED ACTIONS

• Develop a small, on-going program for sidewalk maintenance and repair.

• Continue seeking ADA improvements with new projects and through the ‘curb-ramps-by-request’ program.
PROGRAM RECOMMENDATION #8

Develop Better Tactical Urbanism Tools

What is Tactical Urbanism?

Street murals, parklets, street seats, painted curb extensions, and temporary pedestrian plazas are all local examples of tactical urbanism in Portland. Tactical urbanism can be defined as “an approach to neighborhood building and activation using short-term, low-cost, and scalable interventions and policies.” In many ways, a city’s streets are its most valuable public spaces as they are a place where neighbors interact, socialize, connect and build new bonds with one another. Tactical urbanism is a strategy to strengthen these bonds and allow for new possibilities for place-making and social activity within the right-of-way.

Within this plan there are multiple projects that contain elements of placemaking and support the social life of the street. While this plan is limited by a short-term implementation window, there are a number of opportunities to invest in and create opportunities for great places to come to fruition later down the road.

A scan of best practices reveal that most of the required elements of tactical urbanism are relatively inexpensive, simple, and common. Under the leadership of Commissioner Janette Sadik-Khan, the New York City Department of Transportation undertook a number of transformational projects which fully re-imagined auto-oriented spaces throughout New York City and created a series of adored pedestrian plazas and public spaces of all sizes. These big projects often started small. With the delineation of space with striping and posts, application of epoxy gravel or paint in the roadway, and a few movable planters and tables, Sadik-Khan’s DOT could easily establish interim plazas which would create the opportunity for community-led refinement, programming, and implementation of more permanent investments.

PBOT’s Portland in the Streets program already possesses a range of program areas supportive of these goals. Northwest in Motion recommends that PBOT adopt new tools such as the use of epoxy gravel, planters, and movable street furniture to support better implementation of interim public spaces and active transportation investments.

The evolution of a plaza from interim design (above) to permanent investment (below) at Fowler Square in Brooklyn, NY.
Decorative planters help reinforce the edge of the pedestrian realm while improving the beauty and general aesthetics of the interim plaza.

Move-able street furniture and protection from the elements help activate this space and encourage people to use it.

Clearly delineated edge-line marking with traditional striping. These marking can be further reinforced with posts in higher conflict areas.

Sand-colored epoxy gravel helps create an attractive, durable and people-friendly surface.

RECOMMENDED ACTION

- Expand the set of approved tools available for interim plazas and treatments in the right-of-way to include the use of epoxy gravel, street planters, and movable street furniture.
PROGRAM RECOMMENDATION #9

Make Safety Improvements at Signalized Intersections

Leading Pedestrian Interval
Conflicts between motor vehicles and pedestrians at signalized intersections have been a growing concern in the NW in Motion project area. The biggest issues are found where motor vehicle traffic is allowed to turn right or left concurrently with the pedestrian walk phase, which is the case at most traffic signals in the area. Drivers often turn as soon as the signal turns green, and do not always see pedestrians trying to cross at the same time.

One effective tool in addressing this conflict is to provide a “leading pedestrian interval”, starting the walk phase 3 to 10 seconds before the signal turns green for motor vehicle traffic. This gives pedestrians a head start and they will often clear the intersection before traffic starts turning. PBOT is moving towards making these leading pedestrian intervals the normal practice at all signals citywide, but it will take time and funding to readjust the signals. The Northwest in Motion Plan recommends starting with Pedestrian Districts, including the ones in the project area, to ensure this change is benefiting the areas with the most pedestrians.

Protected Turn Phasing
Another way to address conflicts between turning vehicles and pedestrians is to provide protected turn phasing. The PedPDX plan established new guidelines and practices for protected turn phasing, making it more of a typical practice at new or upgraded traffic signals on major roadways. In many cases, older traffic signals are unable to provide protected turn phasing, so this is more of a long-term series of improvements that will occur over time as aging signals are replaced. However, the Northwest in Motion Plan recommends that PBOT look for opportunities to retrofit existing signals where feasible to provide greater separation of phases to reduce conflicts.

Turning Movement Traffic Calming
PBOT has recently begun piloting a series of low-cost intersection treatments designed to slow down traffic as they turn left or right at signalized intersections. These usually take the form of modular speed bumps or traffic separators that encourage slow turns and a narrower turning radius, which reduces the risk of a fatal or serious injury crash. Some of these have been installed along West Burnside within the project area. The initial results have been encouraging enough that PBOT plans to deploy these solutions in more locations and will continue to monitor their effectiveness in improving safety. The Northwest in Motion Plan recommends that these treatments be installed at signals in the project area that show pedestrian crash history or risk factors.
No Turn On Red
PBOT has received feedback from the public through multiple planning processes, including the Transportation System Plan (TSP), Vision Zero Action Plan, PedPDX, and Northwest in Motion, that motor vehicle “turns on red” have become a growing problem for pedestrian comfort and safety throughout the City and especially in high-volume pedestrian areas.

Additionally, research has shown that restricting turns on red has a demonstrated crash reduction factor for all modes, but especially for vehicle/bicycle and vehicle/pedestrian crashes.

Given these factors, a “no turn on red” pilot program is recommended for the Northwest Pedestrian District, which encompasses most of the Northwest in Motion project area.

**Recommended Actions**

- Develop and implement a ‘No-Turn-On-Red” pilot program in the Northwest Pedestrian District.

- Seek opportunities for signal improvement and modifications to eliminate permissive left turns.

- Retrofit all existing signalized intersections within the Northwest Pedestrian District to have a leading pedestrian interval.

- Implement ‘turn calming’ at intersections with safety concerns or a history of crashes.
At the beginning of 2018, Portland City Council approved a local ordinance lowering the speed limit on all residential streets within the City of Portland to 20mph. This action was in support of the City’s commitment to Vision Zero, an international movement of cities dedicated to eliminating all transportation related deaths and serious injuries. Speed is one of the most important factors determining the severity of a crash. As people in vehicles travel fast, the risk of death or serious injury rises dramatically. A person walking who is stuck by a vehicle at 20mph an hour faces a 10% likelihood of death or serious injury. When speeds increase to 30mph, this likelihood increases to 40%. At 40mph, it doubles to 80%. Lower speeds are a crucial strategy in improving safety of all roadway users - especially those who are most vulnerable.

In the project area, only a handful of streets have their speed limit set above 20mphs. These include: NW Vaughn St, NW Lovejoy St, NW Glisan St, NW Everett St, W Burnside St, NW 19th Ave, NW 18th Ave, NW 16th Ave, and sections of NW Thurman St, NW Cornell Rd, and NW Westover Rd. Northwest in Motion recommends that, with the exception of W Burnside St and NW Vaughn St, all of these streets have their speed limit lowered to 20mph. Doing so would create a large continuous 20mph urban district in Northwest Portland, supportive of the areas dense pedestrian oriented development and busy social street-life.

As a complementary future strategy, Northwest in Motion recommends that PBOT consider ways to further strengthen the district’s identity as places with slow speeds and strong pedestrian and social activity.

One way of achieving this is through the adaptation of a “Home Zone” program to Northwest based on successful case studies of this applied strategy in the UK, Germany, and New York City. While implementation varies from city to city, a shared characteristic of Home Zones are intensely traffic calmed streets where the street is shared amongst all users. They are places where people walking, playing and engaging in social activity are prioritized above the speed and circulation of private vehicles.

Custom signage and distinct sub-district home zone boundaries are initial steps the bureau can take for future refinement and exploration of this concept. Additional tools, such as further speed reductions, seasonal play and social infrastructure, or reallocation of street space can be useful tools for future consideration.
RECOMMENDED ACTIONS

Custom signage, such as the concept mock-up above, should be placed at the edges of the home zone, to inform people of the slow, shared characteristics of the street.

• Continue to lower speed limits in Northwest to create a continuous 20mph district in the area bounded by between I-405, NW Vaughn St, W Burnside St, and NW Cornell St.

• Explore the feasibility of implementing a ‘home zone’ traffic calmed neighborhood in Northwest Portland.
Recommended Bicycle Classifications Updates

The Northwest in Motion Plan process included an analysis of bicycle classifications to see if updates were needed to support the plan’s goals and recommended projects. This analysis primarily looked at the spacing of current and future bicycle priority streets (City Bikeways and Major City Bikeways), aiming for the Bicycle Plan for 2030 recommendation of a bikeway roughly every 800 feet. The analysis found that planned east-west bikeways are too closely-spaced, with so many parallel routes that they fail to give clear guidance on which streets should be prioritized for bikes. It found that north-south bikeways were well-spaced and did not require any changes. The project team also found that some classifications need to be adjusted based on the recommended project alignments.

To address these issues, the Northwest in Motion Plan recommends changes to bicycle classifications as displayed on the map on the opposite page. A full detailed list of recommended changes is included at the end of this chapter on page 66.
BIKE CLASSIFICATION

- **Major City Bikeway**
- **City Bikeway**
- **Local Service Bikeway**
- **Proposed change from Local Service to City Bikeway**
- **Proposed change from City Bikeway to Local Service**
Recommended Transit Classifications Updates

The Northwest in Motion Plan process included an analysis of transit classifications to see if updates were needed to support the plan’s goals and recommended projects. The analysis primarily focused on whether the classifications were consistent with TriMet’s planned transit network and service levels, to ensure that PBOT appropriately prioritizes and designs streets for transit over time. The primary findings were that the Line 77 route should be changed to a higher classification to reflect the planned upgrade to Frequent Service levels in the coming years, and that the future Line 10 extension route in the north end of the Pearl needs to be adjusted to reflect the most up-to-date street plans for the area.

To address these issues, the Northwest in Motion Plan recommends changes to transit classifications as displayed on the map on the opposite page. A full detailed list of recommended changes is included at the end of this chapter on page 67.
Recommended Traffic Classifications Updates

The Northwest in Motion Plan process included an analysis of traffic classifications to see if updates were needed to support the plan’s goals and recommended projects. The analysis primarily focused on whether there was a sufficient number of neighborhood collector streets and spacing between them to address traffic distribution needs. The analysis found that the one-way couplets (Everett/Glisan and 18th/19th) in the plan area are already functioning as collector streets and meet the typical criteria to be classified as collectors. By changing these streets to Neighborhood Collector, PBOT can offer more guidance on modal priorities, and give traffic a clear alternative to using neighborhood greenways. The analysis also found that 25th and Westover, while currently functioning as collector streets, could feasibly be classified as Local Service in the TSP to reflect neighborhood desires for a long-term reduction in through traffic.

To address these issues, the Northwest in Motion Plan recommends changes to traffic classifications as displayed on the map on the opposite page. A full detailed list of recommended changes is included at the end of this chapter on page 77.
Further refinement of classifications in this area depend on findings from Montgomery Park to Hollywood Streetcar Study.

**TRAFFIC CLASSIFICATION**
- Major City Traffic Street
- Neighborhood Collector
- Traffic Access
- Local Service
- Change from Local Service to Neighborhood Collector
- Change from Neighborhood Collector to Local Service
## RECOMMENDED BICYCLE CLASSIFICATIONS UPDATES

<table>
<thead>
<tr>
<th>STREET NAME(S)</th>
<th>CURRENT CLASSIFICATION</th>
<th>UPDATED CLASSIFICATION</th>
<th>RATIONALE FOR CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW 22nd Ave (Everett - Davis) NW Davis St (22nd - King) NW/ SW King Ave (Davis - Park)</td>
<td>Local Service Bikeway</td>
<td>City Bikeway</td>
<td>Provides extension of planned 22nd Ave Neighborhood Greenway across W Burnside St to King’s Hill area.</td>
</tr>
<tr>
<td>NW Davis St (13th - 14th)</td>
<td>Local Service Bikeway</td>
<td>City Bikeway</td>
<td>Provides a connection for northbound bicyclists on 14th to the planned Davis Neighborhood Greenway in the Central City.</td>
</tr>
<tr>
<td>NW Johnson St (24th - 25th) NW Westover Rd (25th - Cornell)</td>
<td>Local Service Bikeway</td>
<td>City Bikeway</td>
<td>Provides a low-stress parallel route to NW Cornell Rd and is needed to support the recommended Westover Neighborhood Greenway in the Hillside neighborhood.</td>
</tr>
<tr>
<td>NW 28th Ave (Savier - Upshur) NW 27th Ave (Upshur - Vaughn)</td>
<td>Local Service Bikeway</td>
<td>City Bikeway</td>
<td>Needed to support the recommended connections from the Savier Neighborhood Greenway to employment areas north of Vaughn and Nicolai.</td>
</tr>
<tr>
<td>NW 29th Ave (Savier - Upshur) NW Upshur St (27th - 28th) NW 27th Ave (Raleigh - Savier)</td>
<td>City Bikeway</td>
<td>Local Service Bikeway</td>
<td>Adjustments based on recommended connections from the Savier Neighborhood Greenway to employment areas north of Vaughn and Nicolai.</td>
</tr>
<tr>
<td>NW Lovejoy St (23rd - 24th)</td>
<td>City Bikeway</td>
<td>Local Service Bikeway</td>
<td>Low feasibility due to streetcar tracks at 23rd &amp; Lovejoy, and lacks connectivity to surrounding bike network.</td>
</tr>
<tr>
<td>NW Westover Rd (23rd Ave - 23rd Place)</td>
<td>City Bikeway</td>
<td>Local Service Bikeway</td>
<td>Recommended closure of Westover Rd at 23rd Ave will make this a pedestrian priority zone rather than a main bike or traffic route.</td>
</tr>
<tr>
<td>NW Overton St (11th - Cornell)</td>
<td>City Bikeway</td>
<td>Local Service Bikeway</td>
<td>Reflects recommended replacement of existing Overton neighborhood greenway with a new Pettygrove neighborhood greenway. Connection on Overton from 11th to 9th is still maintained.</td>
</tr>
<tr>
<td>NW Raleigh St (13th - 29th)</td>
<td>City Bikeway</td>
<td>Local Service Bikeway</td>
<td>Reflects recommended replacement of existing Raleigh neighborhood greenway with a new Savier neighborhood greenway.</td>
</tr>
<tr>
<td>NW Thurman St (20th - 28th) NW 22nd Ave (Savier - Thurman)</td>
<td>City Bikeway</td>
<td>Local Service Bikeway</td>
<td>Reflects recommended Savier neighborhood providing parallel route to Thurman, and prioritizes curb access needs along main street portion of Thurman.</td>
</tr>
</tbody>
</table>
### RECOMMENDED TRANSIT CLASSIFICATIONS UPDATES

<table>
<thead>
<tr>
<th>STREET NAME(S)</th>
<th>CURRENT CLASSIFICATION</th>
<th>UPDATED CLASSIFICATION</th>
<th>RATIONALE FOR CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW Thurman St (21st - 23rd)</td>
<td>Transit Access Street</td>
<td>Major Transit Priority Street</td>
<td>Reflects planned upgrade of Line 77 to Frequent Service levels in the coming years.</td>
</tr>
<tr>
<td>NW 21st Ave (Thurman - Everett)</td>
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<tr>
<td>NW Everett St (6th - 21st)</td>
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</tr>
<tr>
<td>NW Glisan St (6th - 21st)</td>
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<td></td>
</tr>
<tr>
<td>NW Overton St (14th - 16th)</td>
<td>Local Service Transit Street</td>
<td>Transit Access Street</td>
<td>Serves recommended alignment for Line 10 extension due to recent changes in the street plan for the North Pearl.</td>
</tr>
<tr>
<td>NW 16th Ave (Raleigh - Overton)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NW Raleigh St (12th - 14th)</td>
<td>Transit Access Street</td>
<td>Local Service Transit Street</td>
<td>Serves recommended alignment for Line 10 extension due to recent changes in the street plan for the North Pearl.</td>
</tr>
<tr>
<td>NW 12th Ave (Raleigh - Northrup)</td>
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<tr>
<td>NW 9th Ave (Lovejoy - Northrup)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hwy 30 Frontage Road (22nd - 20th)</td>
<td>Transit Access Street</td>
<td>Local Service Transit Street</td>
<td>Reflects recently constructed roadway realignment that closed frontage road.</td>
</tr>
</tbody>
</table>

### RECOMMENDED TRAFFIC CLASSIFICATIONS UPDATES

<table>
<thead>
<tr>
<th>STREET NAME(S)</th>
<th>CURRENT CLASSIFICATION</th>
<th>UPDATED CLASSIFICATION</th>
<th>RATIONALE FOR CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW 18th Ave (Burnside - Thurman)</td>
<td>Local Service Traffic Street</td>
<td>Neighborhood Collector</td>
<td>One-way couplet currently functions as a neighborhood collector and provides traffic an alternative to neighborhood greenways. Provides adequate spacing between collector streets.</td>
</tr>
<tr>
<td>NW 19th Ave (Burnside - Thurman)</td>
<td></td>
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</tr>
<tr>
<td>NW Glisan St (16th - 23rd)</td>
<td>Local Service Traffic Street</td>
<td>Neighborhood Collector</td>
<td>One-way couplet currently functions as a neighborhood collector and provides traffic an alternative to neighborhood greenways. Provides adequate spacing between collector streets.</td>
</tr>
<tr>
<td>NW Everett St (16th - 23rd)</td>
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</tr>
<tr>
<td>NW 16th Ave (Burnside - Couch)</td>
<td>Local Service Traffic Street</td>
<td>Neighborhood Collector</td>
<td>Reflects upcoming roadway realignment that will keep traffic on 16th to Burnside rather than cutting over to 15th.</td>
</tr>
<tr>
<td>NW 25th Ave (Lovejoy - Johnson)</td>
<td>Neighborhood Collector</td>
<td>Local Service Traffic Street</td>
<td>Functions as a collector currently but is largely redundant to 23rd Ave, is relatively short, and has limited connectivity to the north or south. Has long-term potential to transition to more of a local function.</td>
</tr>
<tr>
<td>NW Westover Rd (Johnson - 23rd)</td>
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</tbody>
</table>
## RECOMMENDED TRANSPORTATION SYSTEM PLAN PROJECT UPDATES

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Project Location</th>
<th>Project Description</th>
<th>Estimated Cost</th>
</tr>
</thead>
</table>
| Northwest in Motion Neighborhood Greenways | NW Johnson St (9th - 24th)  
NW Marshall St (9th - 20th)  
NW Overton/11th/Pettygrove (9th - Cornell)  
NW Savier St (14th - 28th)  
NW 27th Ave (Savier - Vaughn)  
NW 28th/Upshur/29th (Savior - Nicolai)  
NW 24th Ave (Flanders - Vaughn) | Upgrade and expand the low-stress neighborhood greenway network in the Pearl District and NW District areas through traffic calming, traffic diversion, crossing enhancements, and other improvements as recommended in the Northwest in Motion Plan. | $2,500,000 |
| Northwest in Motion Corridor Improvements | NW 25th/Westover (Vaughn - 23rd)  
NW 18th/19th Ave (Thurman - Burnside)  
NW Everett/Glisan St (14th - 23rd)  
NW Vaughn St (23rd - 27th) | Improve pedestrian safety, calm traffic, enhance bikeways, and improve transit accessibility and reliability on busy streets in the NW District area as recommended in the Northwest in Motion Plan. | $2,500,000 |
| NW 23rd Ave Reconstruction Project | NW 23rd Ave (Lovejoy - Vaughn) | Reconstruct deteriorated roadway from Lovejoy to Vaughn, rebuild aging traffic signal at 23rd & Thurman and include protected left turns, and add additional curb extensions and other pedestrian enhancements to the main street corridor, as recommended in the Northwest in Motion Plan. | $10,000,000 |
This section looks at the overall system-wide transportation benefits and impacts of the recommendations included in *Northwest in Motion*, including a detailed look walking, biking, transit, parking, traffic, and general travel behavior.
Summary of Benefits and Impacts

Pedestrian
Fills 75% of pedestrian crossing gaps identified on busy streets
Dozens of intersections with new parking setbacks to improve sightlines and pedestrian crossing safety

Bicycle
Builds 5 new low stress Neighborhood Greenways and upgrades existing Neighborhood Greenways
All of Northwest In Motion plan area will be within 800 feet of a low-stress bikeway
4 new bus stops that remove conflict between bicyclists and buses

Transit
3 TriMet bus Lines improved
2 new transit-only lanes approaching intersections
4 intersections reconfigured for transit speed and reliability

Parking
56 parking spaces removed
16 parking spaces added

Traffic
5 new traffic-calmed Neighborhood Greenways that preserve neighborhood circulation
Regional traffic trips shifted from local streets to regional roads
In 2018, Portland City Council adopted PedPDX, Portland’s Pedestrian Master Plan. PedPDX identified crossing gaps across the City. In Pedestrian Districts like Northwest, this includes stretches of street network with more than 530 feet between safe. Northwest in Motion aims to fill crossing gaps on collectors, arterials, and other busy streets.

Today in Northwest, there are 196 block faces along busy streets that are further than 530 feet from a safe crossing. Following implementation of the Tier 1 Northwest in Motion recommended projects, there will only be 50 block faces that are further than 530 feet from a safe crossing.

**75% of crossing gaps on busy streets closed with Northwest in Motion Tier 1 Projects**

**Remaining crossing gaps**
Northwest in Motion Tier 1 bike network improvement projects are focused on providing better active transportation connections from Northwest to other districts and expanding access to comfortable bike facilities within Northwest.

Today, most of Northwest is without access to low stress bikeways; though there are several neighborhood greenways in this district, the Greenways reaching deepest into Northwest do not meet City guidelines for a low-stress bikeway.

With the construction of the Tier 1 & 2 neighborhood greenways, all of the plan area will be within 800 feet of a neighborhood greenway.
PLAN BENEFITS AND IMPACTS

Transit network

**Line 15**
Today, Line 15 is characterized by its high-quality stops on NW 23rd Ave and by some significant delays near Burnside and Thurman. Tier 1 projects will decrease peak hour transit delay by strategically targeting areas where the highest amount of delay is currently observed.

**Line 24**
Today, the Line 24 bus dips in and out of bike lanes on NW 18th/19th Ave to serve bus stops. New floating island bus stops along NW 18th/19th Ave will eliminate most bus-bike conflicts.

**Line 77**
Line 77 has minor delays approaching NW 21st & Glisan and NW 21st & Everett and some stops with poor all ages and abilities accessibility. Tier 1 projects will improve accessibility on this route with curb extensions and stop consolidation and enhancements.
On-Street Parking

The Northwest in Motion Plan is intended to complement the NW District Parking Management Plan by providing clear alternatives to driving to and from the district to reduce pressure on the parking supply. Because on-street parking supply is limited and is still needed to support businesses and other employers in the area, this plan has been crafted to reduce the impacts to parking supply. This context-sensitive approach helps to balance the need for better walking, biking, and transit routes with the reality that some businesses and individuals will still rely on driving for at least some of their trips, for example people who live far from their jobs or businesses that rely on truck deliveries to serve their needs.

By focusing bikeway improvements on the neighborhood greenway network, there is a reduced impact on parking supply because most of this network consists of shared streets with on-street parking unaffected. The only recommended conversion of on-street parking to other uses, such as bike lanes in very short segments, is only where a neighborhood greenway was not a feasible solution. Even on segments with diverters and contra-flow bike lanes, on-street parking on both sides of the street is typically preserved.

On corridor improvement projects, parking is converted only in short segments when and where needed to address transit or traffic needs, for example to allow bus turning movement, or to provide a right-turn pocket in a location where more traffic is expected.

There may also be opportunities to add parking where it is currently prohibited, as a way to mitigate for the parking that is proposed for removal, such as on the Everett and Glisan structures over I-405, because on-street parking is provided on similar structures over I-405 south of Burnside.

PBOT has received feedback to avoid traffic diversion on neighborhood greenways and the resulting traffic impact by striping separated bike lanes on bikeway routes rather than using the neighborhood greenway design. Nearly all the streets in the project area are 36 feet wide curb-to-curb, so adding bike lanes and maintaining two-way automobile traffic would require removing all on-street parking from these routes.

An analysis of the impact to on-street parking was run, in which the proposed neighborhood greenways were replaced with bike lanes, to compare it with the parking impact of the recommended neighborhood greenway approach. The results were a reduction of 1,231 parking spaces in the plan area, which would have significant negative impact on residents and businesses by dramatically reducing the available parking supply.

While PBOT is planning for a future that is less reliant on on-street parking than today, this change must be gradual to allow residents and businesses to adapt to these changes. Based on this analysis, the Northwest in Motion Plan recommends the neighborhood greenway approach because the impact of proposed traffic diversion to be much less than the impact of removing 1,231 parking spaces.
<table>
<thead>
<tr>
<th>ID</th>
<th>Project Name</th>
<th># of Spaces</th>
<th>Details / Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>NW Pettygrove St Neighborhood Greenway</td>
<td>- 26</td>
<td>Remove some parking on NW Overton between NW 9th and NW 11th to facilitate a safe connection to the NW 9th Ave railroad crossing. Limit new parking stalls on NW Pettygrove just west of NW 20th as part of a ‘green street’ treatment.</td>
</tr>
<tr>
<td>B</td>
<td>NW 24th Ave Neighborhood Greenway</td>
<td>- 7</td>
<td>Remove parking on NW 24th Ave between NW Flanders and NW Glisan to make a better bikeway connection between two neighborhood greenways.</td>
</tr>
<tr>
<td>C</td>
<td>NW 25th / Westover Rd Corridor Improvements</td>
<td>- 11</td>
<td>Remove parking on NW Westover at NW 23rd as part of an intersection simplification and new pedestrian walkway. Remove parking on NW Everett to permit space for a right turn pocket onto NW 23rd Ave.</td>
</tr>
<tr>
<td>D</td>
<td>NW Everett / Glisan St Corridor Improvements</td>
<td>- 12*</td>
<td>Remove parking on NW 21st and NW Glisan to facilitate better bus turning movements. Add pro-time lane on Everett from 21st to 19th. *Note: an additional 20 spaces would be restricted during weekday morning and evening peak hours.</td>
</tr>
<tr>
<td>E</td>
<td>NW Everett / Glisan St Corridor Improvements</td>
<td>+ 16</td>
<td>Potential to add back metered parking on the I-405 bridges on both NW Everett and NW Glisan.</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL PARKING IMPACT</strong></td>
<td>- 40*</td>
<td>*Note: does not include incidental parking removal for sight visibility or other safety reasons at pedestrian crosswalks or traffic diverters.</td>
</tr>
</tbody>
</table>
Traffic Impacts

As the plan recommends traffic circulation changes to support the recommended projects, the Northwest in Motion planning team analyzed potential traffic impacts to better understand and communicate the level of change that people can expect on streets throughout the district.

A travel demand model was used to simulate a reduction in capacity on the street segments recommended for diverters and analyzed the predicted impacts on other streets in the network. Because the mode has limited accuracy when applied to a fine-grained local street network, the project team refined the results by looking at measured traffic volumes and traffic patterns to predict how people might intuitively change their routes based on these changes.

The Northwest in Motion Plan area has a very good grid of both local and collector streets that can absorb the additional traffic without overly burdening any single street. Even the street with the highest predicted percent increase in volumes, NW Kearney St near I-405, is projected to still carry volumes in line with a typical local street in the project area. Some streets, like NW 24th Ave, carry a high amount of regional cut-through traffic that would be expected to stay on the regional network if through access is restricted.

Overall, findings were that even in a worst case scenario, in which 100% of the diverted traffic still travels by car and uses the nearest available routes, the traffic impact in most cases is predicted to be low and unlikely to cause significant traffic issues compared to how the system operates today.

In reality, some percentage of people will travel by entirely different routes far from the diverter location or will switch mode of travel (to walking, biking, or transit) in response to these changes. To analyze the impact of potential mode shift, the model was run again but with an adjusted bicycle mode commute mode share from 7% (the current mode share in northwest) to 14% (the average mode share of inner east-side neighborhoods with a robust bikeway network similar to what is recommended for Northwest).

The results were very encouraging—the model predicted a peak hour reduction of about 1,200 automobile trips, which could translate to a daily reduction of 12,000 vehicles. To put this in context, 1,200 vehicles is roughly the amount of traffic driving westbound on W Burnside St during the PM peak.
Moving regional traffic off of NW 24th Avenue

What if through traffic couldn’t drive on NW 24th Avenue between Vaughn and Lovejoy?

Today, a high amount of traffic during commute hours cuts through the NW District to reach the west side of the region. This cut through traffic is a result of other congested regional routes over the West Hills, namely OR 26, OR 30, and W Burnside St. Regional traffic tends to cut through Northwest District, first filling up NW 23rd and NW 25th Avenues. Since those streets already fill up during rush hour with NW District traffic, regional traffic begins using NW 24th Ave as well. This regional cut through traffic contributes to NW 24th Avenue carrying high traffic volumes.

The proposed Tier 1 project NG-5 on NW 24th Avenue proposes to retrofit the existing neighborhood greenway so it meets City guidelines of less than 1,000 vehicles a day. In an effort to create a low-stress street for people to walk and bike, the NW 24th Ave project would include diverters to keep through traffic off the street. While some diverted traffic may switch to 23rd and 25th, because they are already congested, much of the traffic would likely travel by different routes (i.e., stay on the regional system), travel at different times (off-peak instead of peak), switch modes (transit or bike), or simply not take the trip. This phenomenon is sometimes known as “traffic evaporation,” in which peak-hour motor vehicle trips seemingly disappear in response to reductions in capacity on a constrained corridor. In reality, this happens because of many people making rational choices based on changing traffic conditions.
Moving inter-district trips off of NW Johnson St

Today, people drive on NW Johnson St for many trips for which there are more appropriate route alternatives. Neighborhood greenway enhancements on NW Johnson St will move many of these trips from NW Johnson St onto alternate routes better designed and able to carry those trips.
NW Everett St & NW Glisan St will continue to be busy streets in the neighborhood and will absorb small marginal traffic increases from NW Flanders St and NW Johnson St Neighborhood Greenways.

Recommended diversion on NW Johnson St carries the risk of increased diversion onto NW Kearney St. While volumes are likely to increase, traffic on NW Kearney will be within normal range for a residential street in Northwest Portland.

NW Marshall, NW Pettygrove, and NW Savier Neighborhood Greenways will only have slight impact on overall traffic patterns in Northwest. Some streets might experience small increases in traffic, but overall, the system will function more or less as it does today.
A breakdown of the plan’s phased implementation strategy as well as a general overview of how PBOT will monitor and report plan progress and individual project implementation. Also included is an overview of the various funding sources supporting *Northwest in Motion*. 
Northwest in Motion outlines a phased implementation strategy for the ten Tier 1 Projects only. Projects are generally implemented in a four-year ‘wave’, which allows for quick interim implementation, a period of monitoring and additional outreach before permanent materials are used. This plan recommends three overlapping implementation phases which are detailed in the following pages.
**WAVE ONE PROJECTS**

These three projects were chosen as part of the first implementation wave as they share a few notable characteristics including project goals, funding sources, and implementation strategy.

First, each of these projects strengthen existing bikeways in Northwest. NW Marshall and NW Johnson Neighborhood Greenways expand and upgrade existing biking routes in Northwest by reducing speeds and volumes on these routes, and build on the upcoming Flanders Bridge and Bikeway project nearby. NW 18th & 19th Corridor Improvements reduces bike and bus conflicts through the use of floating transit islands on the newly established Line 24 bus route.

Secondly, all three of these projects have received some funding through PBOT's Quick Build Program which received an infusion of funds through the HB 2017 legislative measure.

Lastly, these three projects are easily implementable with the use of interim materials. This allows crossing, bikeway and transit improvements to be made quickly and efficiently using less expensive interim materials. These interim versions allow PBOT traffic engineers and planners to assess the effectiveness of these interventions in meeting the project goals before investing in more costly, permanent civil construction.
This collection of projects were chosen to be a part of the second implementation wave as they are designed to reinforce one another and mitigate traffic impacts caused by circulation changes caused by upcoming or ongoing projects in Northwest.

Before implementing the NW 24th Ave Neighborhood Greenway, PBOT would like to evaluate the impacts on traffic circulation of a recent signal improvement project at NW 23rd Ave & Vaughn St. Furthermore, specific elements contained in the NW 25th Ave / Westover Corridor Improvement project and NW Vaughn St Corridor Improvement project will both reinforce and mitigate any traffic diversion impacts. For example, speed bumps should ideally be added to 24th Ave and 25th Ave at the same time, so that one street is not being improved at the expense of the other.

NW Everett/Glisan (CI.4) was chosen to fall in this wave as it will compliment and respond to traffic pattern changes associated with the NW Flanders Neighborhood Greenway and Flanders Bridge.

These projects have also been identified as high priorities by various community stakeholders and have no major feasibility issues in the near term. To note, this is an ambitious schedule and PBOT may need to readjust over time based on staff capacity and funding availability.
WAVE THREE PROJECTS

This final wave of projects was chosen because they either rely on development agreements for key elements of implementation or do not at the time of this plan have a secure funding source for full implementation.

The Savier Neighborhood Greenway depends on the redevelopment of a parcel on the south side of the street between 20th Ave and 21st Ave. Until this redevelopment and resulting right-of-way dedication occurs, we would not be able to create the planned two-way bikeway connection without cutting off driveway access for a major office building. Therefore, we are waiting until we expect the properties in question to redevelop. Based on building permit submissions, we estimate this will take at least two years from adoption of this Plan.

For the NW 23rd Ave Corridor Improvement project, initial cost estimates place the full cost of pavement reconstruction, traffic signal replacement, and crossing improvements combined at roughly $10,000,000 – a figure that far exceeds the entire budget of all other projects included in Northwest in Motion. In order for this project to be successfully implemented in Northwest in Motion’s short-term implementation window, additional funding would need to be secured from a new revenue source such as the Build Portland program. Even then, it may be that only design work could be completed within the five-year window, with construction in later years.
Interim Implementation Strategy

During the first phase of implementation, *Northwest in Motion* Tier 1 Projects will utilize interim materials such as planters, temporary curb extensions, signing and striping. These temporary investments will allow planners and project managers to confirm that the interventions are working and meeting the project’s goals. If further adjustments are required, additional public engagement will be conducted to improve and refine the project.

During the second phase, these temporary improvements can be upgraded using higher-quality, permanent materials. These enhancements can include other improvements to the public realm as well.
Project monitoring schedule
To understand if the neighborhood greenways in Northwest Portland are performing as intended, PBOT needs to collect traffic data before and after the Northwest in Motion neighborhood greenway phases.

PBOT’s Neighborhood Greenway Assessment Report provides the following guidelines for neighborhood greenway performance:

- **Volumes of 1000 to 2000 cars per day; (or 50 to 100 in the peak-hour, peak-direction)**
- **85th percentile speeds at or under 20 mph**

At right are the locations for pre- and post-project data collection. PBOT selected segments of the proposed neighborhood greenways network where there are known car speed and volume concerns today or anticipated fluctuations in the future.
To understand if the corridor improvements in Northwest Portland are performing as intended, PBOT needs to collect traffic and transit data before and after the Northwest in Motion corridor improvement projects are implemented.

Several projects intend to reduce traffic speeds on busy streets, aiming for 85th percentile speeds of 20 mph (the posted speed limit). These streets will be monitored to see if the improvements are having the intended effect.

Other projects are meant to reduce transit delay. TriMet will measure before and after delay to buses to determine the effectiveness of these interventions.

Finally, in the case of Everett and Glisan it will be important to understand the effect of the Flanders Bikeway and other projects in the area on bicycle usage, transit delay, and traffic flow along the corridor. Measuring these changes will help inform future decisions about these streets.
Near-Term Project Costs

Nine out of the ten recommended Northwest in Motion Tier 1 Projects consist of relatively low-cost capital improvements such as signage and striping, speed bumps, curb extensions, median islands, and modifications to existing signals, that can be fully designed and constructed in the near term using available resources.

We have prepared planning-level cost estimates for these projects using best available costs of similar past projects, and even with a 50% contingency added to the construction costs to cover soft costs and unanticipated costs, we anticipate these nine projects add up to less than $5 million. Since Northwest in Motion is meant to be a five-year implementation strategy, this results in a funding need of roughly $1,000,000 per year for these projects. We anticipate that a combination of parking revenue, system development charges, and general transportation revenue will be enough to fund this set of projects.
Funding Sources for Near-Term Implementation

Northwest in Motion should draw from a variety of funding sources to realize the project and program recommendations. The largest pool of funding comes from money generated within the district, specifically from NW District parking/permit revenue and contributions from developers. Some additional funding comes from ongoing citywide programs.

Parking and Permit Revenue
A portion of the parking and permit revenue from the NW District Parking Management Plan area must be spent on projects and programs within the area that reduce demand for parking. Some of that portion is expected to be dedicated to Northwest in Motion Plan implementation, primarily the Tier 1 capital projects but also for programmatic investments. Based on revenue projections and recent discussions with PBOT staff, we expect that roughly $1.5 million of parking and permit revenue may be available for Northwest in Motion, at least initially. PBOT would match this with other funding. This funding has not yet been formally requested or allocated, but for planning purposes we are expecting this level of revenue would be available.

Potential funding available:
$1,500,000 initially (over five years) with additional funding potentially available in future years if rates increase or funding priorities change

Ongoing Quick Build funding:
Quick Build program funding is a bucket of General Transportation Revenue (combination of gas tax and citywide parking revenue) that PBOT uses for quick deployment of low-cost transportation improvements. This funding must be requested on an annual basis.

Potential funding available:
$275,000 already approved in year one and approximately $200,000 per year expected thereafter

Transportation System Development Charges
Whenever a new building is constructed in Portland, including a home, store, office, etc., the developer pays Transportation System Development Charges (TSDC). The fee covers part of the cost of building transportation facilities to serve development—things like roads, sidewalks and other facilities that get people to where they need to go. PBOT typically only uses these funds to leverage other funding to get more out of each dollar.

Potential funding available:
$1,500,000 already approved, but eligible for up to $5,000,000 if more match funding is secured
NW 23rd Ave Project Costs

The NW 23rd Ave project is a much more expensive and difficult capital project than the other Northwest in Motion projects, so it must be considered as a somewhat longer-term project that will need significant additional funding to become feasible.

NW 23rd Ave from Lovejoy to Vaughn has deteriorated so much that it needs full reconstruction to address the pavement issues. This would be expensive enough by itself, but it also triggers utility relocations, removal of buried historic streetcar tracks, and stormwater upgrades. Roadway reconstruction is estimated to cost roughly $8 million. Adding in the cost of the Thurman signal upgrade and the missing curb extensions along the corridor, the cost goes up to roughly $10 million. This far exceeds the cost of all other Northwest in Motion Tier 1 projects, and will require a great deal of new funding to design and construct.

Initial cost estimates for a complete reconstruction of NW 23rd Ave are close to $10 million. This is more than twice as much as remaining Northwest in Motion Tier 1 Projects combined.
Funding Sources for NW 23rd Ave

PBOT has an ongoing paving program, but with limited resources has chosen to direct nearly all of it to preventative maintenance, in other words projects that extend the life of an asset that has not yet failed. Very little funding is available for major reconstruction projects where the pavement has already failed, so it is necessary to use outside funding sources. Unfortunately, many grant programs do not pay for maintenance. For this reason, Build Portland is the main potential source of funding for this project.

Build Portland

Several years ago, Portland created a new Build Portland program to fund major deferred maintenance projects that have no other ready source of funding. The program takes expiring Urban Renewal Area property tax revenue, which would normally be returned to the General Fund each year, and borrows against it to fund major maintenance projects. In the last round, $50 million was available across multiple bureaus and PBOT received about $36 million for a variety of road and bridge projects. PBOT applied for NW 23rd Ave at the time, but it was not selected. However, the next round is expected in 2021 or 2022, and is expected to have roughly $200 million available. NW 23rd Ave would likely be a good candidate for that next round of Build Portland, especially if a “local match” could be identified.

Potential funding available:
Could potentially fund entire $10 million project, but more likely to fund 80 to 90 percent of the cost, with a local match covering the rest, given many priorities around the city.