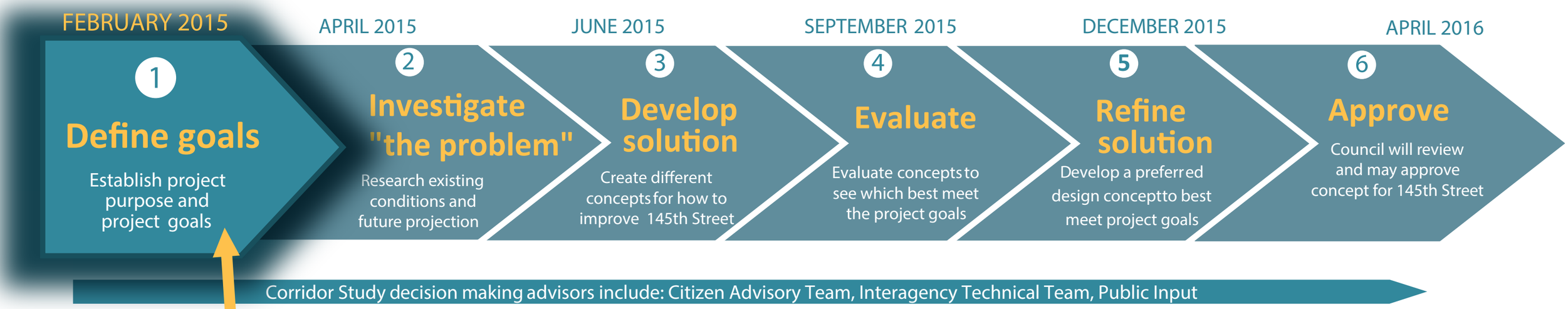
Where do you live and work?

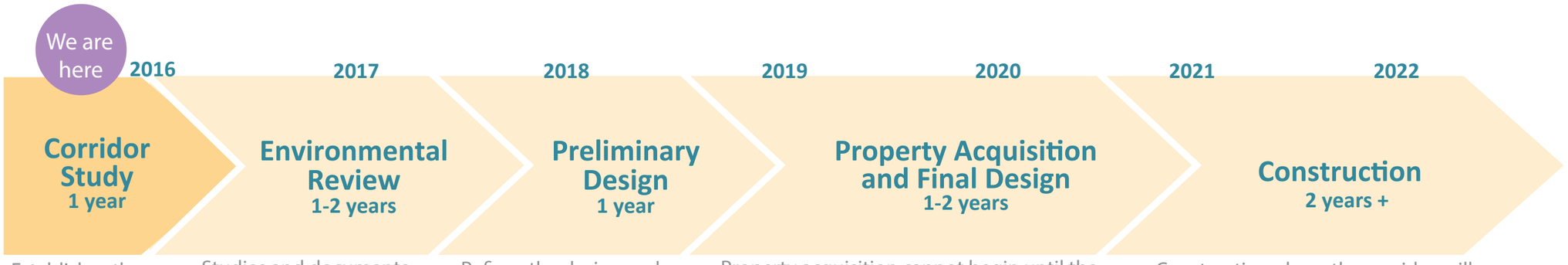
145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

Project Development Process



View information on project background, goals, and partners



145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

Orientation Boards

145th Street Multimodal Corridor Study

145th Street is a key regional connection to I-5, Lake City Way (SR522), and Aurora (SR99) in North King County and cities to the north via SR522.

With a light rail station coming, the need for safe and reliable travel in the corridor becomes even more critical.

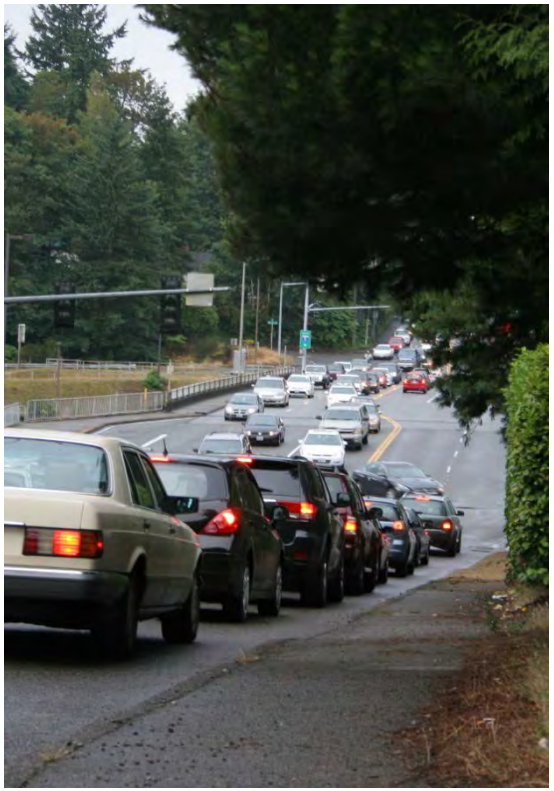
145th Street is also a principal arterial connecting Shoreline and Seattle neighborhoods, businesses, parks and services.

145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

What's the problem?

- Bad and deteriorating traffic congestion
- Deficient pedestrian and bike environment
- Few buses (few bus routes exist on the corridor due to congestion and poor pedestrian facilities)
- Light rail station coming but people can't get there easily
- Collision records show unsafe conditions for cars, bikes, and pedestrians



What's the problem?

Bad and deteriorating traffic congestion / deficient pedestrian and bike environment

Non-ADA accessible pathways / many pedestrian barriers

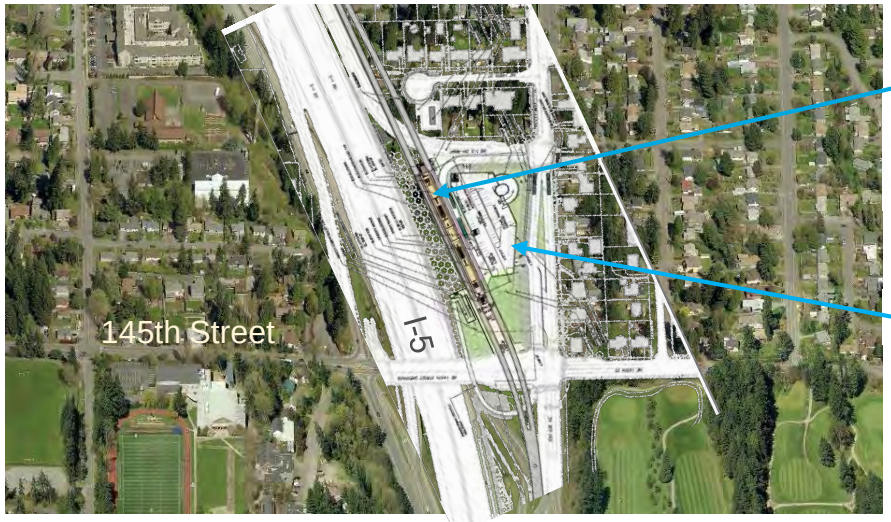
Lack of transit and bus stop facilities due to congestion and poor pedestrian facilities

Poor sight distance and lack of left-turn management contribute to safety concerns

145TH STREET
Multimodal Corridor Study

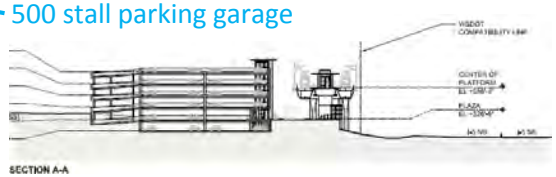
CITY OF SHORELINE

What's the problem?



Station with 6,000 weekday boardings

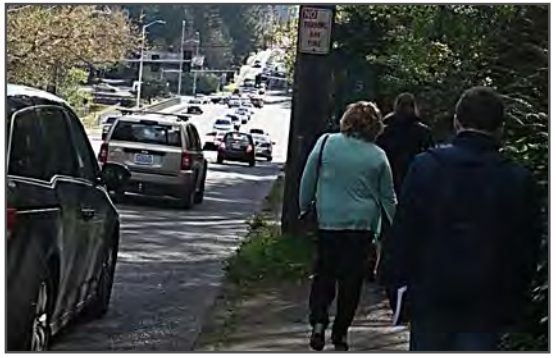
500 stall parking garage



Light rail station coming to 145th Street, but people can't get there easily

One of 300 poles centered in sidewalks on 145th Street

Pedestrians walking along 1st Ave NE – a roadway without pedestrian or bike facilities within a block of the 145th station



Pedestrians walking along 145th Street

145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

What are the main goals for the project?

Ensure we can walk, bike, bus, access transit and drive safely and reliably along and across the corridor.

And:

Develop transportation improvements that:

- Support the local economy
- Protect the environment
- Support a vibrant community

What are the main goals for the project?

Evaluation criteria define how improvement concepts are measured against other concepts

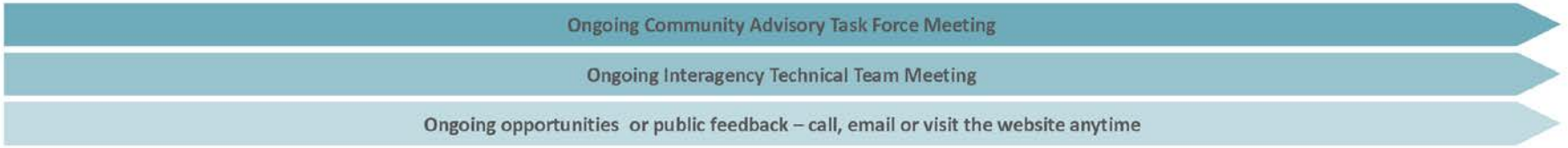
How well does the alternative …

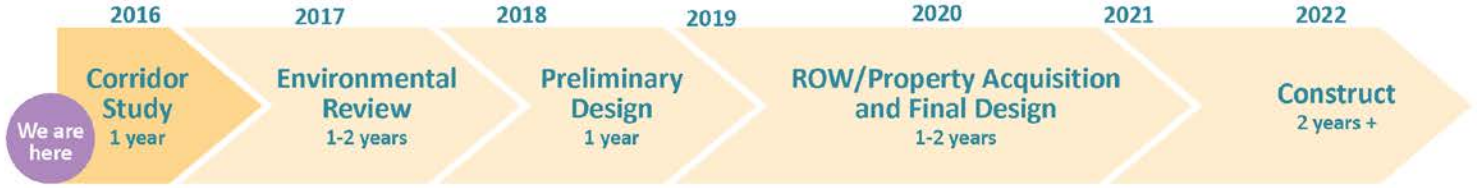
- support safer travel by all modes and alleviate existing problems?
- improve transit performance in the corridor?
- support pedestrian and bike connectivity?
- improve traffic flow?
- provide benefits to freight-related system users?
- integrate with other capital projects including the proposed light rail station and future improvements to the I-5 interchange?
- provide for opportunities to upgrade facilities to manage stormwater runoff and upgrade stormwater quality?
- support the community's vision for adjacent neighborhoods?

How well does the alternative …

- provide for opportunities to improve existing utilities?
- minimize impacts to critical areas or mitigate unavoidable impacts?
- reduce air pollutants including greenhouse gas emissions and other pollutants?
- encourage and support private reinvestment in the corridor through improvements such as landscaping, upgraded utilities and enhanced aesthetics?
- minimize impacts to property and business owners?
- support the ability to compete for grant funding or secure direct funding?

What's the process to get there?





145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

Project Partners

WSDOT

SoundTransit

City of Seattle

King County

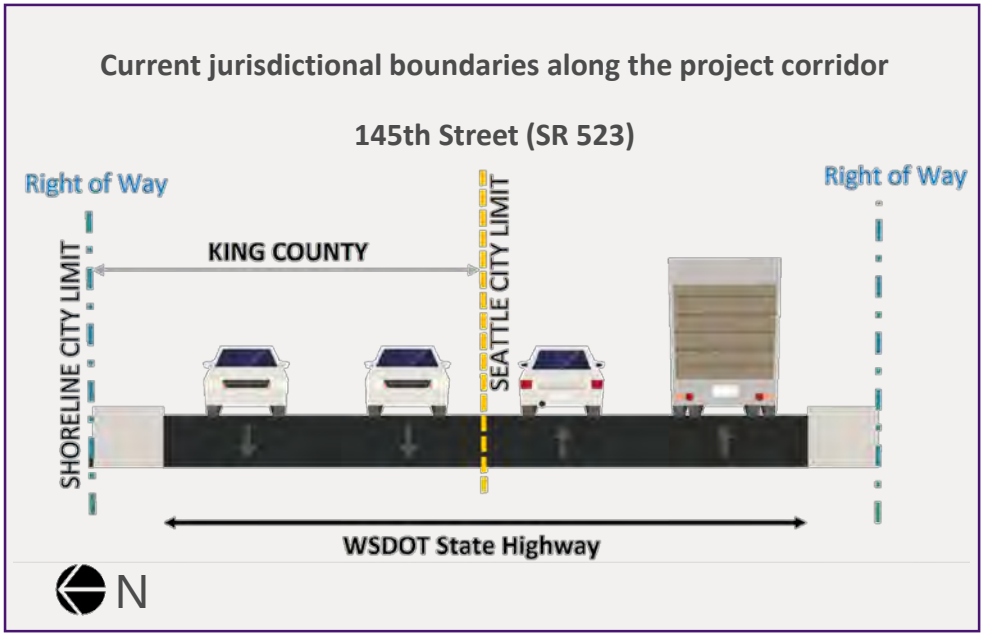
Puget Sound Regional Council
PSRC

Kenmore By the Lake

City of Bothell

Lake Forest Park
Washington

City of Shoreline



145TH STREET
Multimodal Corridor Study

City of Shoreline

Project Development Process

FEBRUARY 2015

1

Define goals

Establish project purpose and project goals

APRIL 2015

2

Investigate "the problem"

Research existing conditions and future projection

JUNE 2015

3

Develop solutions

Create different concepts for how to improve 145th Street

SEPTEMBER 2015

4

Evaluate

Evaluate concepts to see which best meet the project goals

DECEMBER 2015

5

Refine solutions

Develop a preferred design concept to best meet project goals

APRIL 2016

6

Approve

Council will review and may approve concept for 145th Street

Corridor Study decision making advisors include: Citizen Advisory Team, Interagency Technical Team, Public Input

View information on the need for the project, present and future

We are here

2016 Corridor Study — 1 year

Establishes the vision for the corridor

2017 Environmental Review — 1-2 years

Studies and documents environmental affects of the proposed project

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Refines the design and confirms the project footprint and costs

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2021 2022 Construction — 2 years +

Construction along the corridor will likely occur in phases, depending on funding and priorities

145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

Existing Conditions

Example conditions for pedestrians on 145th Street

Lack of ADA curb ramps

Narrow pathways

Non-accessible pathways

Lack of ADA curb ramps

Narrow sidewalks adjacent to traffic

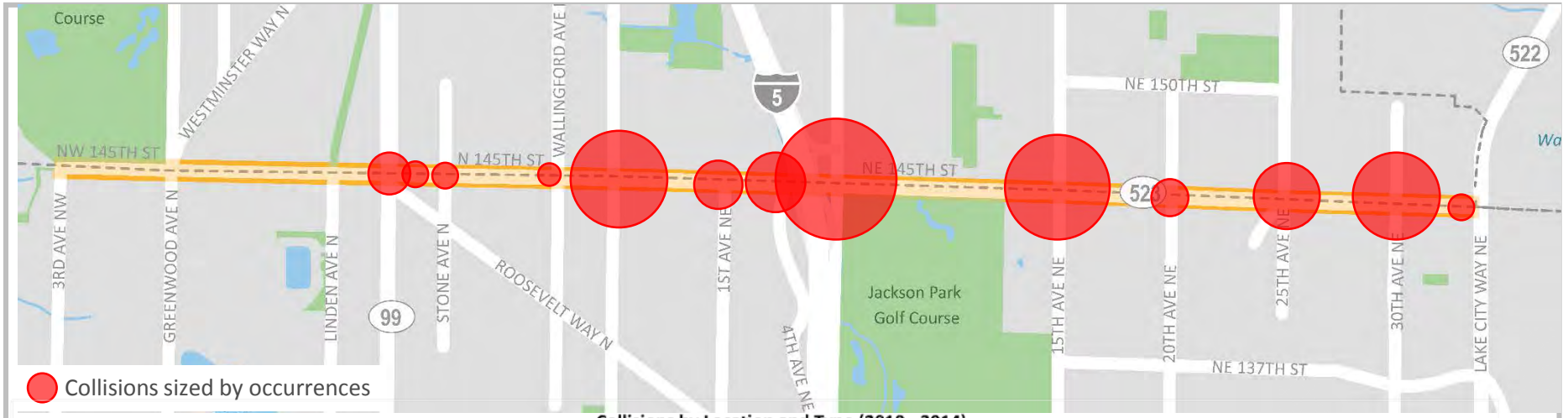
Unmarked crosswalks at I-5

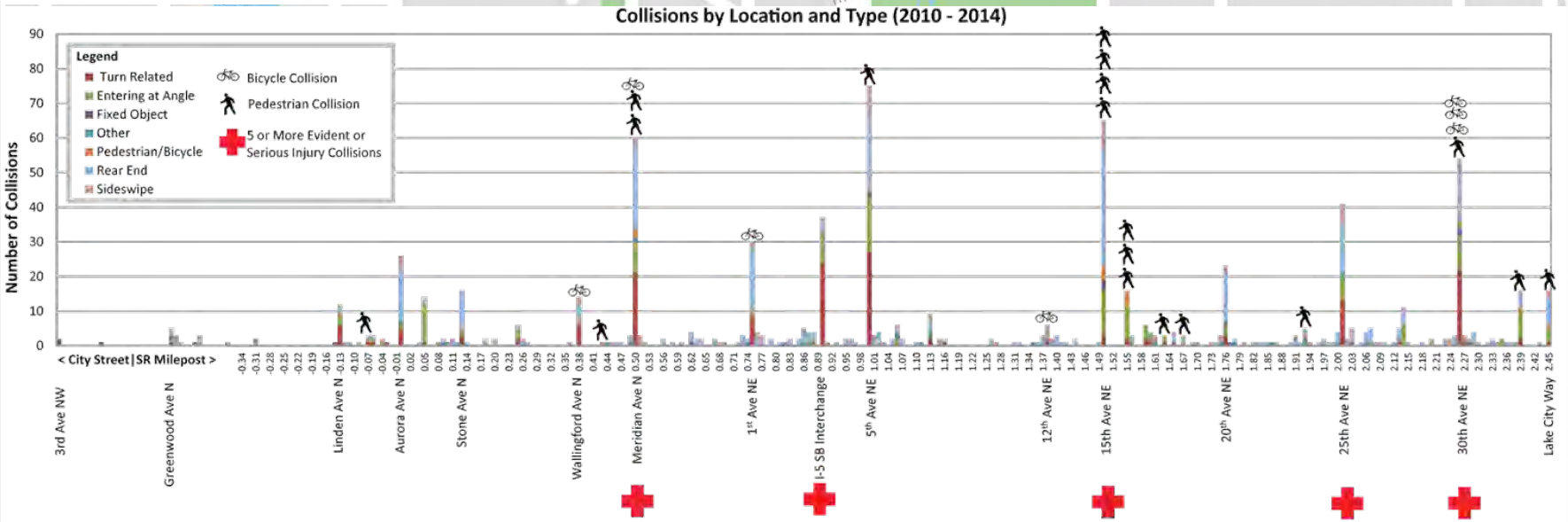
Utility poles block access

Crosswalks

145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

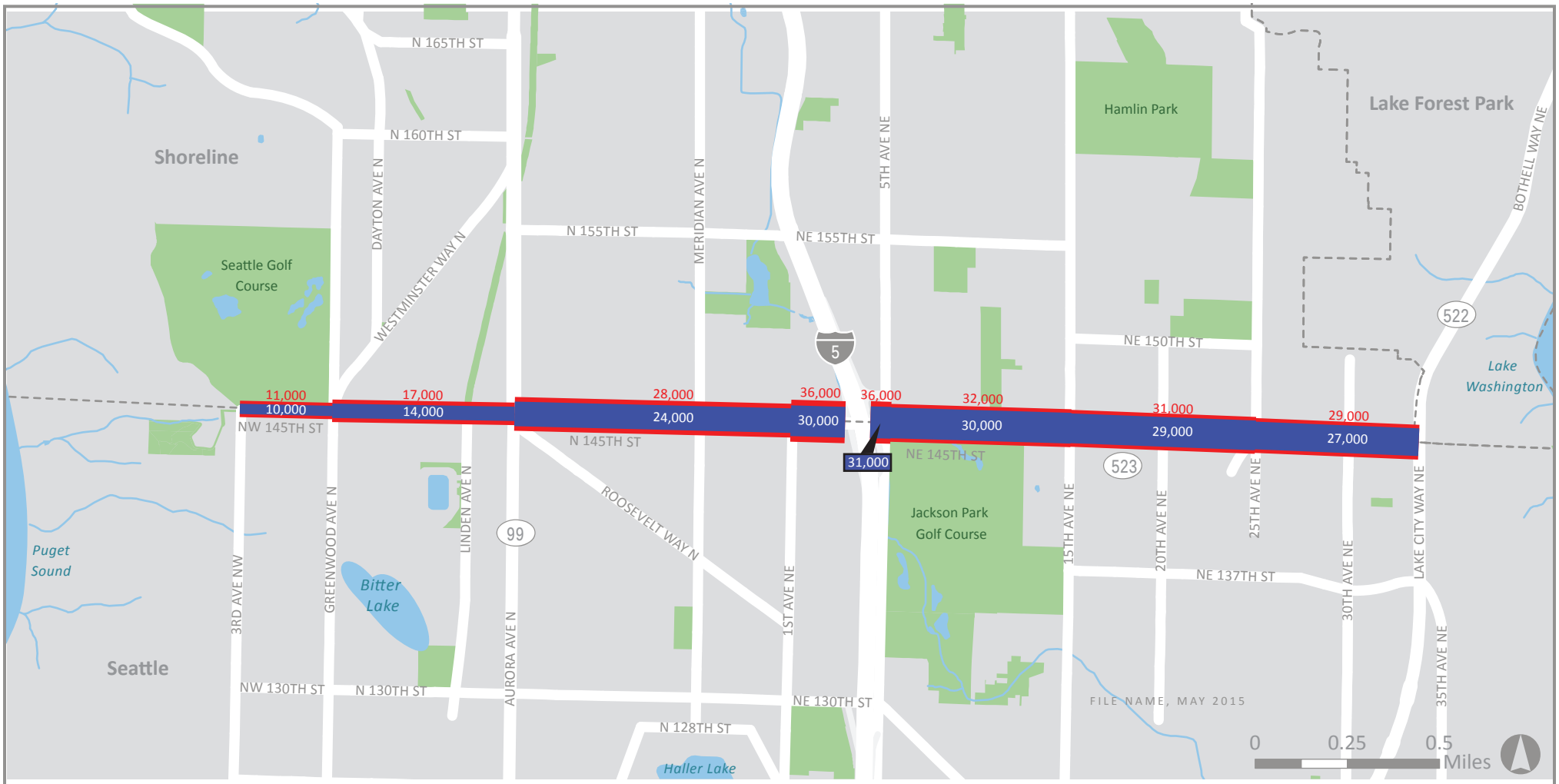




COLLISION HISTORY 2010-2014

145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE



Waterbody

Park

City Boundary

2015 Average Daily Traffic Volumes (Per Segment Location)

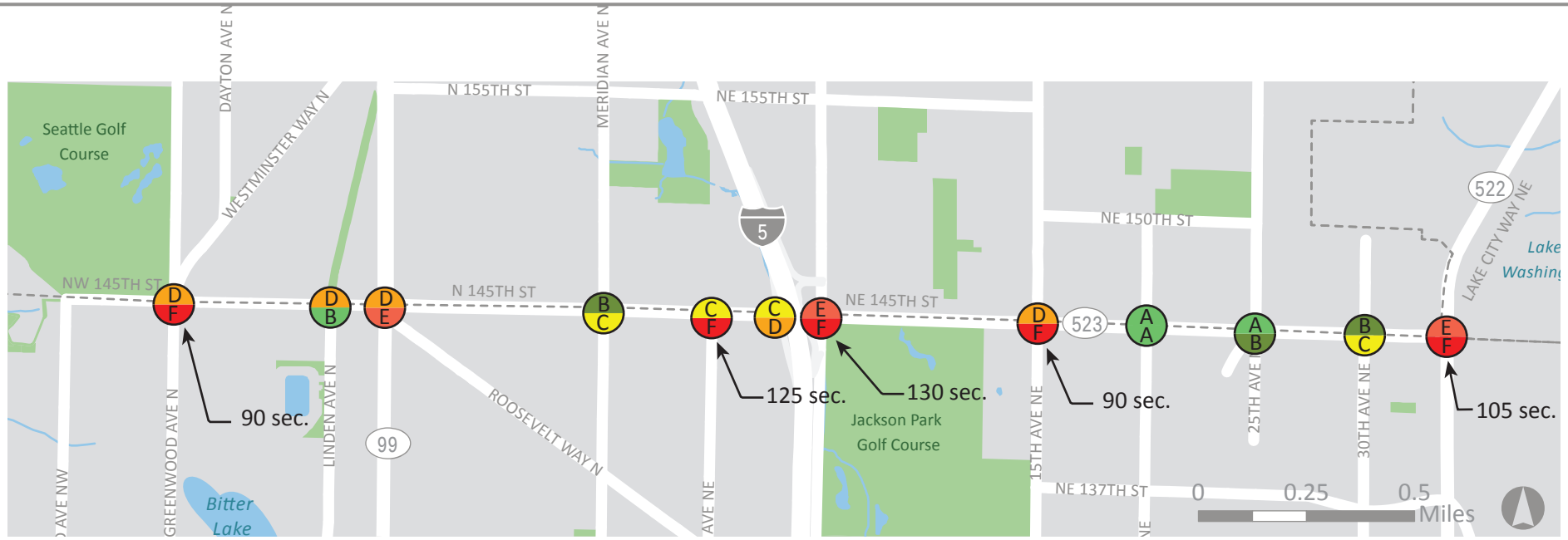
2035 Average Daily Traffic Volumes (Per Segement Location)

AVERAGE DAILY TRAFFIC VOLUMES

145TH STREET Multimodal Corridor Study

CITY OF SHORELINE

MAY 2015



Waterbody

Park

City Boundary

A C — 2015 Existing LOS / 2035 No Build LOS

XX sec. — Average vehicle delay at LOS F locations

The City of Shoreline adopted Level of Service standard is to maintain LOS D or better at signalized intersections.

PM PEAK HOUR LEVEL OF SERVICE SIGNALIZED INTERSECTIONS

145TH STREET Multimodal Corridor Study

CITY OF SHORELINE

MAY 2015

Level of service (LOS) examples

LOS A:

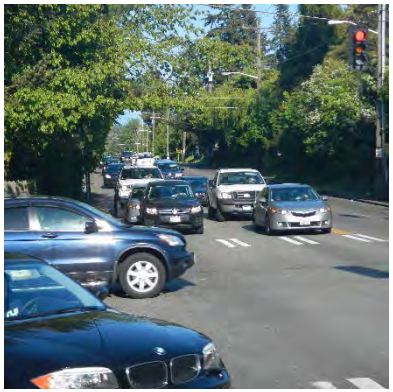
Free flow traffic.
Average delay < 10 seconds

LOS B:

Stable flow, light delay.
Average delay 11 - 20 seconds

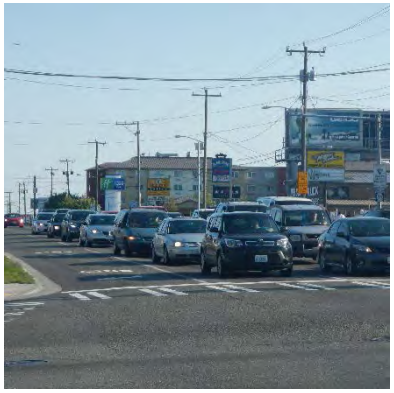
LOS C:

Stable flow with acceptable delay.
Average delay 21 - 35 seconds



LOS D:

Approaching unstable flow, speeds reduced, more vehicles stop and may wait through more than one signal cycle.
Average delay 36 - 55 seconds

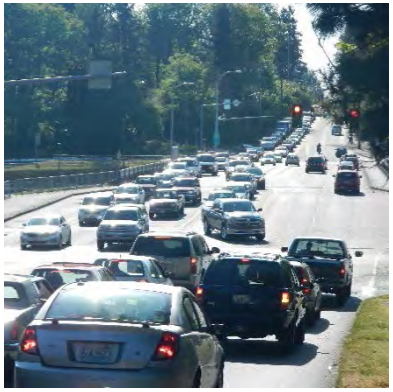


LOS E:

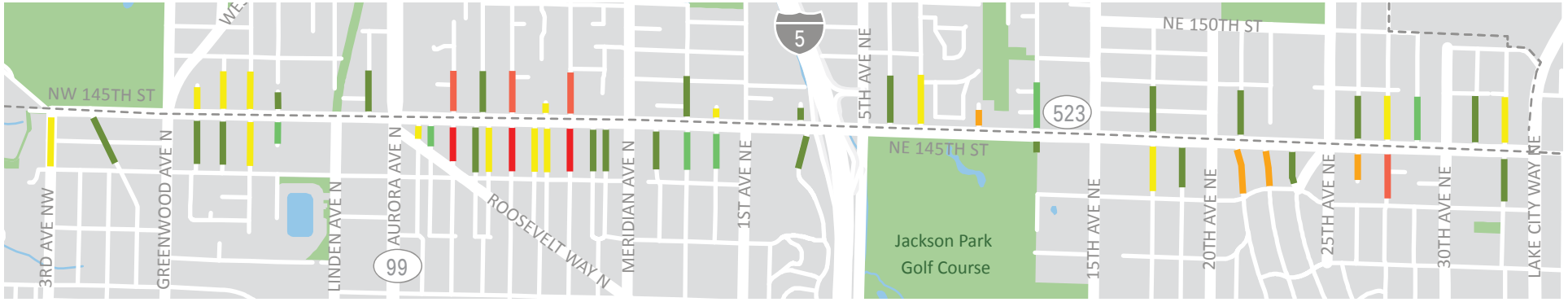
Unstable flow, speeds reduced and highly variable, many vehicles have to wait through more than one signal cycle.
Average delay 56 - 80 seconds

LOS F:

Forced flow, jammed conditions. Long queues occur that do not clear, most vehicles wait through multiple signal cycles.
Average delay > 80 seconds



EXISTING CONDITIONS



2035 NO BUILD

Park
Waterbody
City Boundary

LOS A
LOS B
LOS C
LOS D
LOS E
LOS F

0 0.25 0.5 Miles

PM PEAK HOUR
LEVEL OF SERVICE
UNSIGNALIZED INTERSECTIONS

145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

MAY 2015

Example of bus stop conditions on 145th Street

Non-ADA accessible zones

Some shelters with lack of ADA accessibility

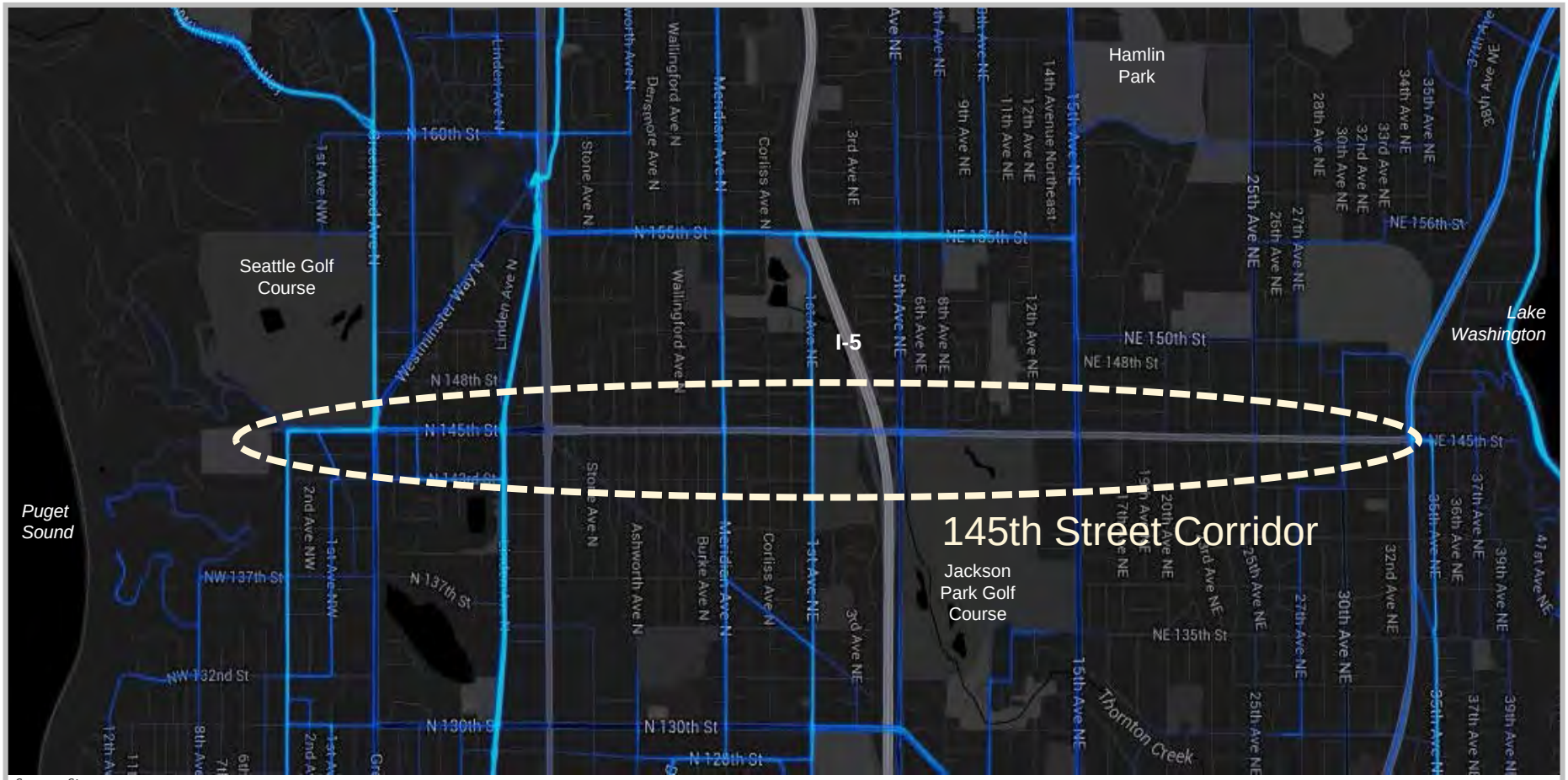
Narrow zones with no amenities

Poor lighting of transit zones

Bus stop near I-5, lack of shelters and pedestrian lighting

Some shelters

Limited ADA lift space



Source: Strava.com

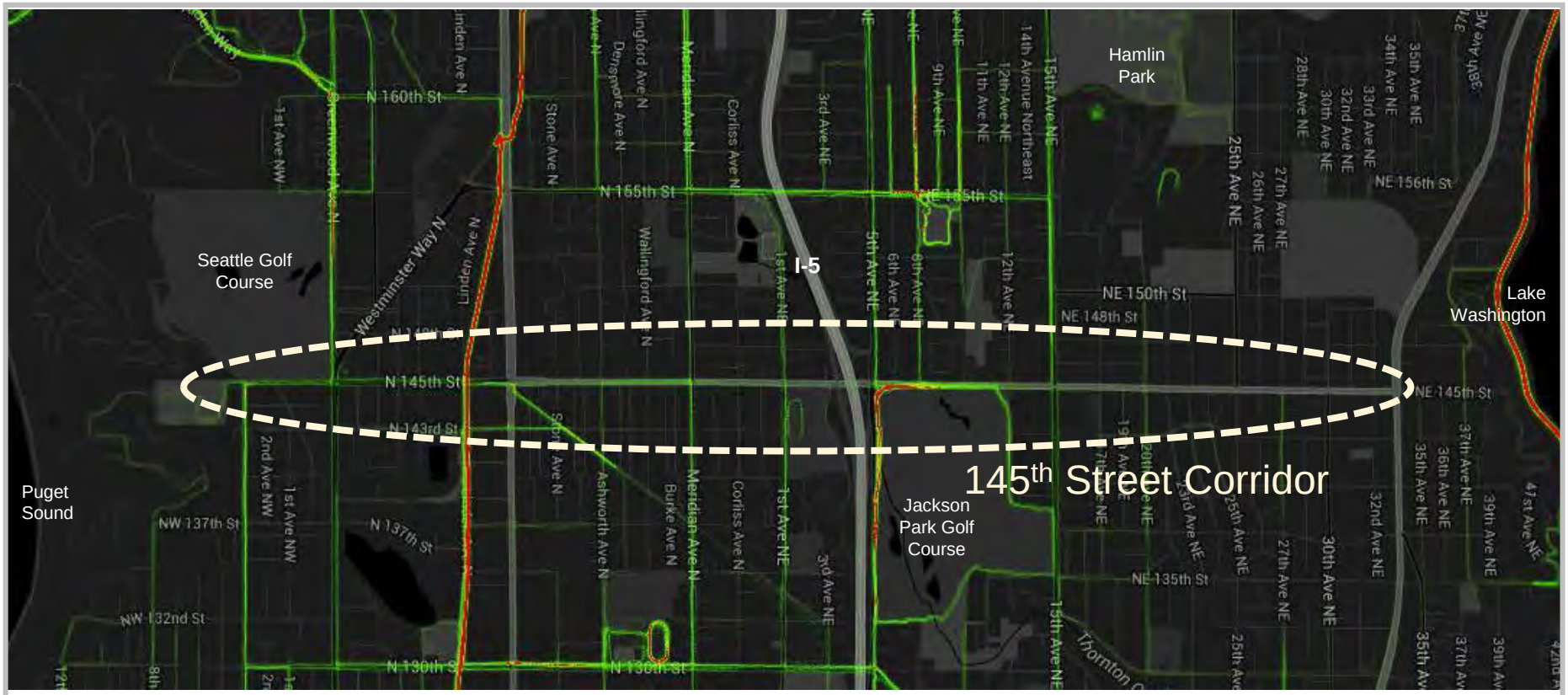
LEGEND – BIKE ACTIVITY

LESS — MORE

BIKING ACTIVITY MAP

145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE



Source: Strava.com

LEGEND – JOGGING ACTIVITY

LESS — MORE

PEDESTRIAN ACTIVITY: JOGGING/RECREATION INTENSITY

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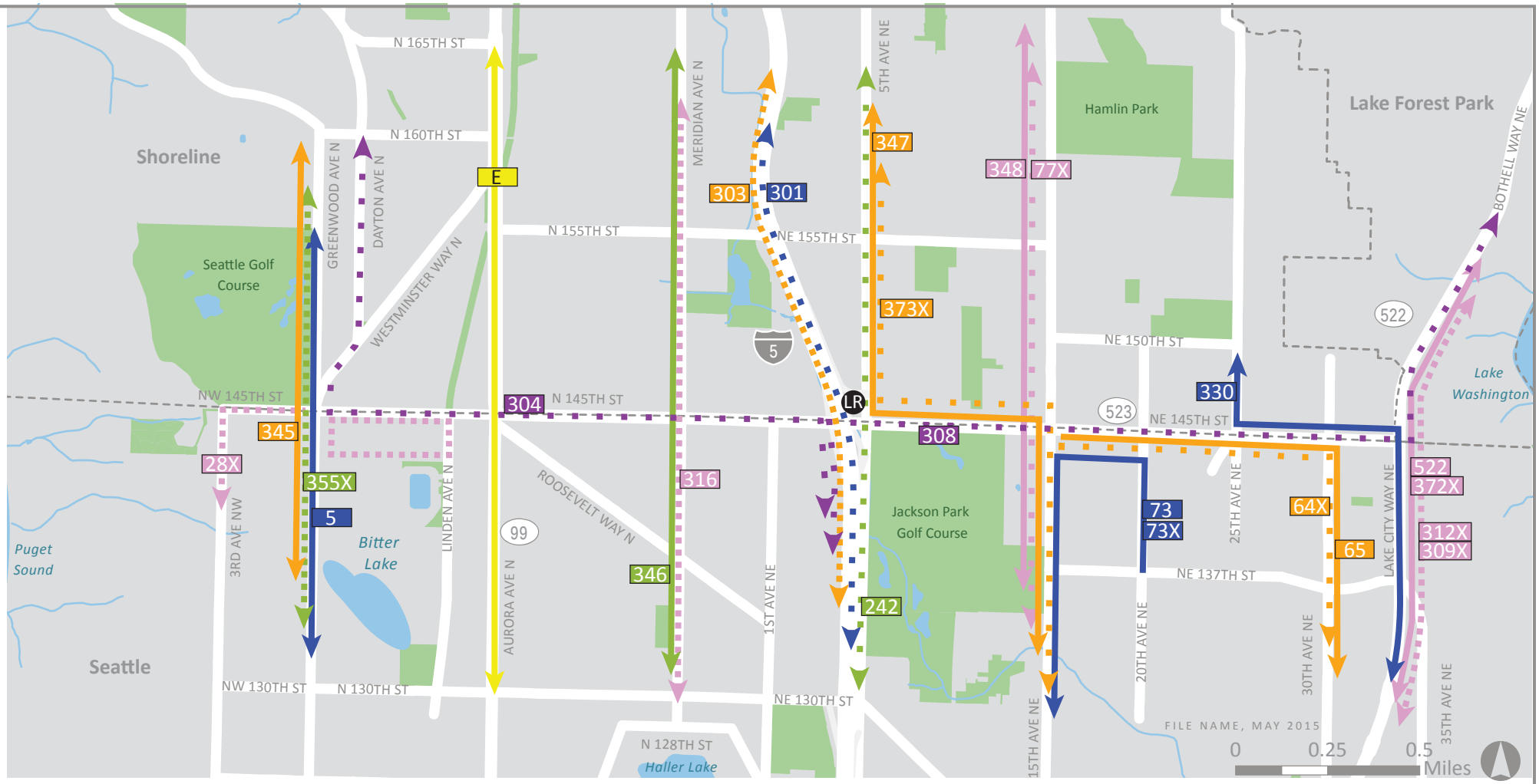
CITY OF SHORELINE



Waterbody

Park

City Boundary

LR Link Light Rail Station

000 Transit Route Number

Transit Routes

All Day Service

Peak Period Service ≤ 15min. headways

Peak Period Service > 15min. headways

EXISTING TRANSIT ROUTES

145TH STREET
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MAY 2015

CRITICAL AREAS

145TH STREET
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Project Development Process

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View information on the range of concepts studied to address the project goals

We are here

2016 Corridor Study — 1 year

Establishes the vision for the corridor

2017 Environmental Review — 1-2 years

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Construction along the corridor will likely occur in phases, depending on funding and priorities

145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

CONCEPT 1, NO CHANGE: LOOKING WEST

- 4 Travel lanes
- No bus lanes
- Non-accessible sidewalks
- No bike facilities
- Utility poles exist on both sides of roadway

CONCEPT 2: LOOKING WEST

- 4 Travel lanes
- Intersection upgrades
- Minimum standard sidewalks, will vary based on presence of utility pole
- Restricting left turns and u-turns for greater vehicular efficiency
- No bus lanes
- Off-corridor bike facilities, “Greenway”
- Utility poles on both sides of roadway

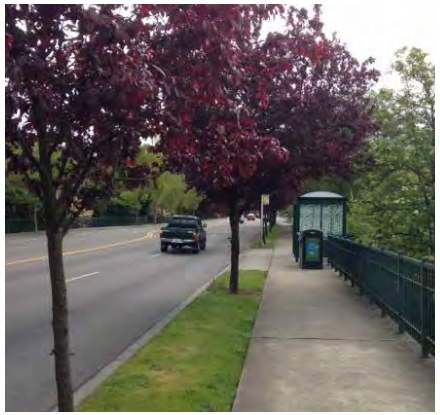
CONCEPT 3: LOOKING WEST

- 4 Travel lanes with two-way left turn lane
- No bus lanes
- 5’ Amenity zones/planter
- 13’ Sidewalks includes 5’ striped directional bike lane each side
- Utility poles in amenity zone (relocated at intersections)

CONCEPT 4: LOOKING WEST

- 4 Travel lanes
- Restricting left turns and u-turns for greater vehicular efficiency
- Bus lanes / right turn lanes
- 8’ Sidewalks with 5’ amenity zones/planter on one side
- Shared bicycle and pedestrian path on one side
- Utility undergrounding

Sidewalks



Bus Stop Enhancements

Grade-Separated Crossing

Pedestrian Refuge Islands

PEDESTRIAN FACILITIES TOOLBOX

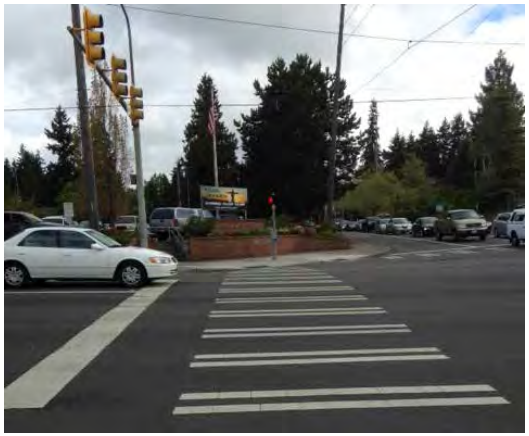
145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

ADA Curb Ramp

Curb Extensions

High-Visibility Crosswalks



Mid-Block Crossing

Enhanced Pedestrian Signals

PEDESTRIAN FACILITIES TOOLBOX

145TH STREET
Multimodal Corridor Study

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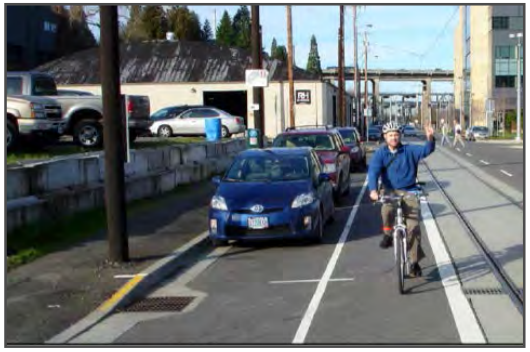
Shared Lane Marking

Bike Lane



Buffered Bike Lane

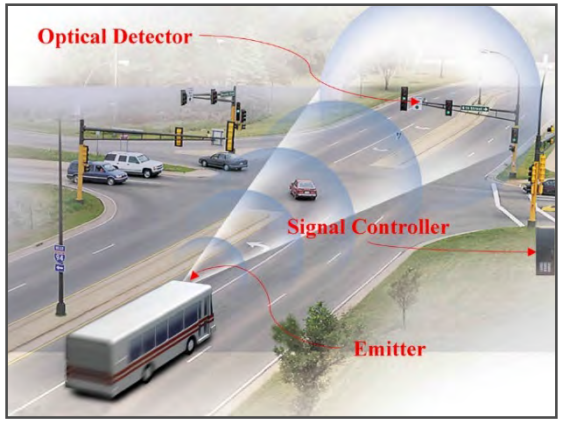
Cycle Track at Grade

Buffered Bike Lane with Sidewalk

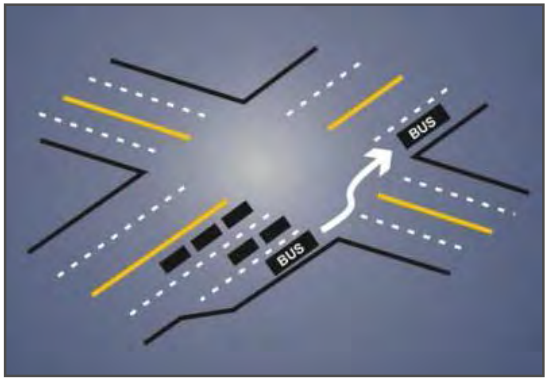
Multi-Use Trail

BIKE IMPROVEMENTS TOOLBOX

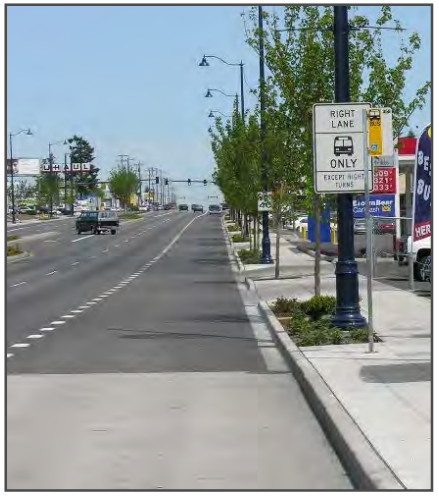
Transit Signal Priority



Queue Jump



BAT Lanes



Off-Board Fare Collection

Bus Stop Amenities

Lighting

TRANSIT IMPROVEMENTS TOOLBOX

Rain Gardens

Swales

Porous Concrete

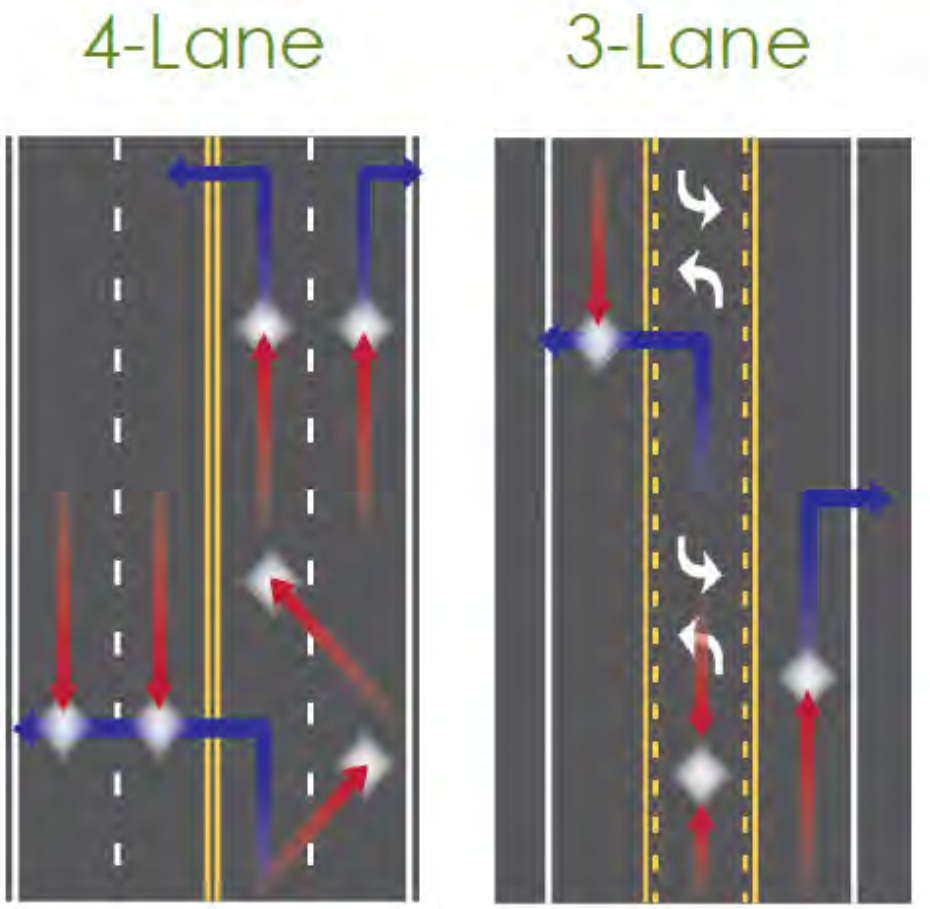
Permeable Pavers

Silva Cells

STORMWATER IMPROVEMENTS TOOLBOX

“Road Diet” - converting from 4 lanes to 3 lanes

- **Safer for cars** – reduction in turning conflict points. Studies show 19 – 47% collision reduction.
- **Safer for pedestrians** – fewer lanes for pedestrians to cross and an opportunity to install pedestrian refuge islands.
- **Safer for bikes** - Extra space can be used for bikes and creates more room between vehicular traffic and pedestrians.
- Less right-of-way required.
- **Can improve traffic flow** – left turn lane eliminates weaving behavior. Can work for roadways with Average Daily Traffic volumes of **up to 25,000 vehicles per day**.



145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

Why other modes of travel are important…

- Providing pedestrian, bicycle and transit infrastructure **allows people to choose how they want to travel.**
- Buses, sidewalks, and bicycles are necessary modes of transportation for those who can't drive, or who can't afford to. **Lack of transportation choices creates an inconvenient and socially unjust barrier to mobility**.
- Pedestrian, bicycle and transit infrastructure improves a community's livability, encourages healthier behavior, and can reduce green house gas emissions.
- Even if you travel by car, providing the opportunity for others to walk, bike or ride the bus benefits you by taking cars off the road.

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View information on the Preferred Concept

We are here

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Establishes the vision for the corridor

2017 — Environmental Review (1-2 years)

Studies and documents environmental affects of the proposed project

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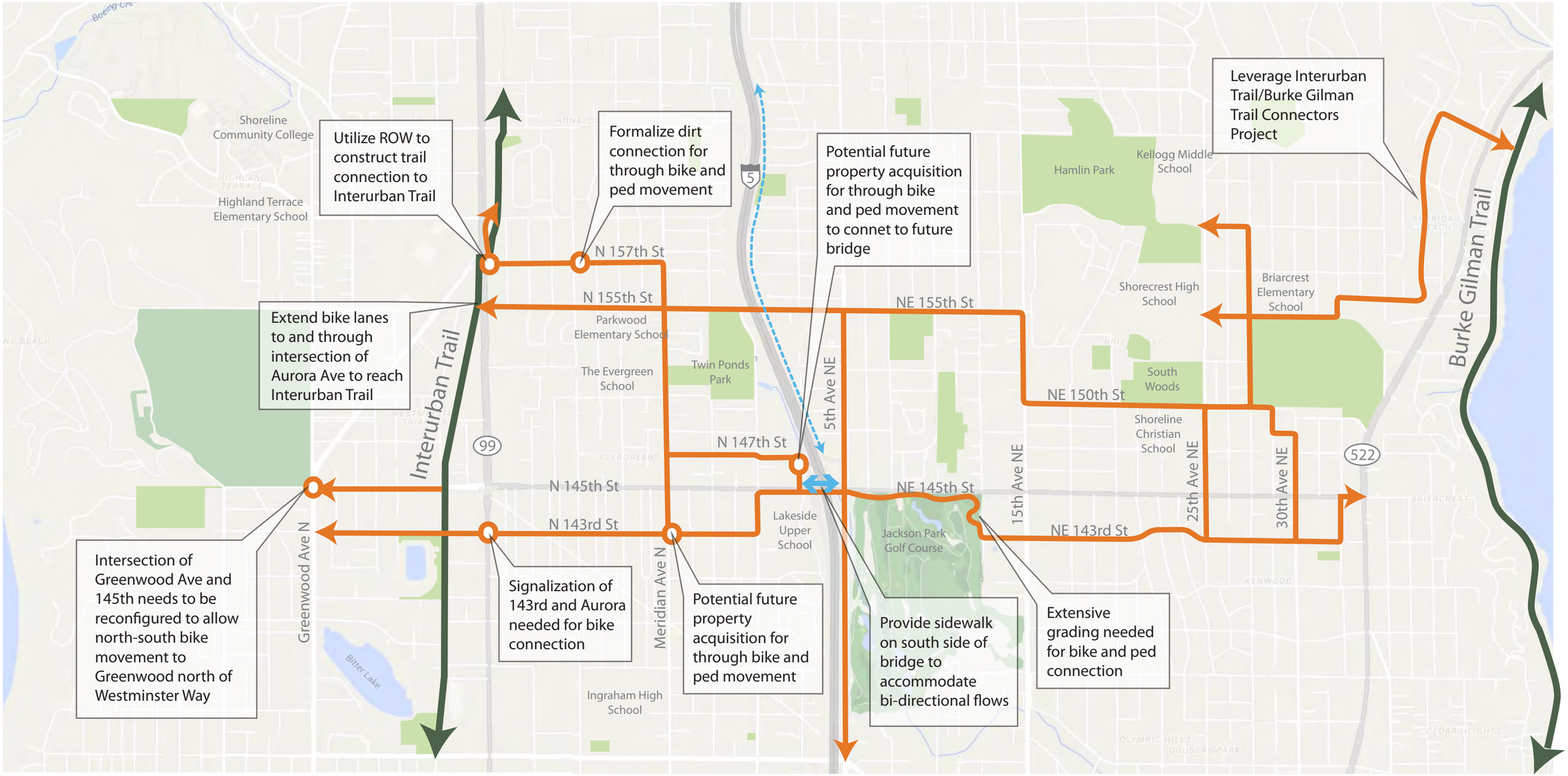
145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE



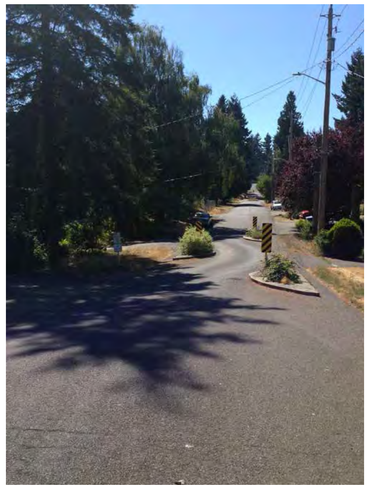
145TH STREET Multimodal Corridor Study

CITY OF SHORELINE

OFF CORRIDOR BIKE NETWORK PREFERRED CONCEPT

Speed and Volume Management

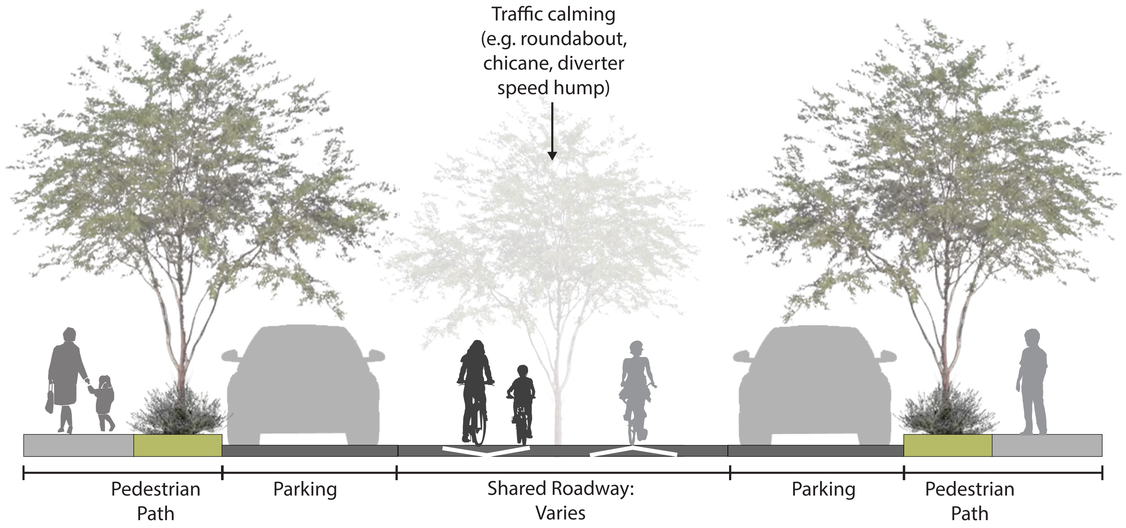
Chicanes



Median Diverters

Speed Humps

Roundabouts



Intersection Crossing Improvements

Bicycle Signals

Bicycle-Level Push Buttons

Advanced Stop Bars

Crossbikes

Loop Detectors

Wayfinding

Branded Sign Families

Sign Toppers

Custom Pavement Markings

Greenway Counters

Stormwater Infrastructure

Bicycle Leaning Rails

145TH STREET
Multimodal Corridor Study

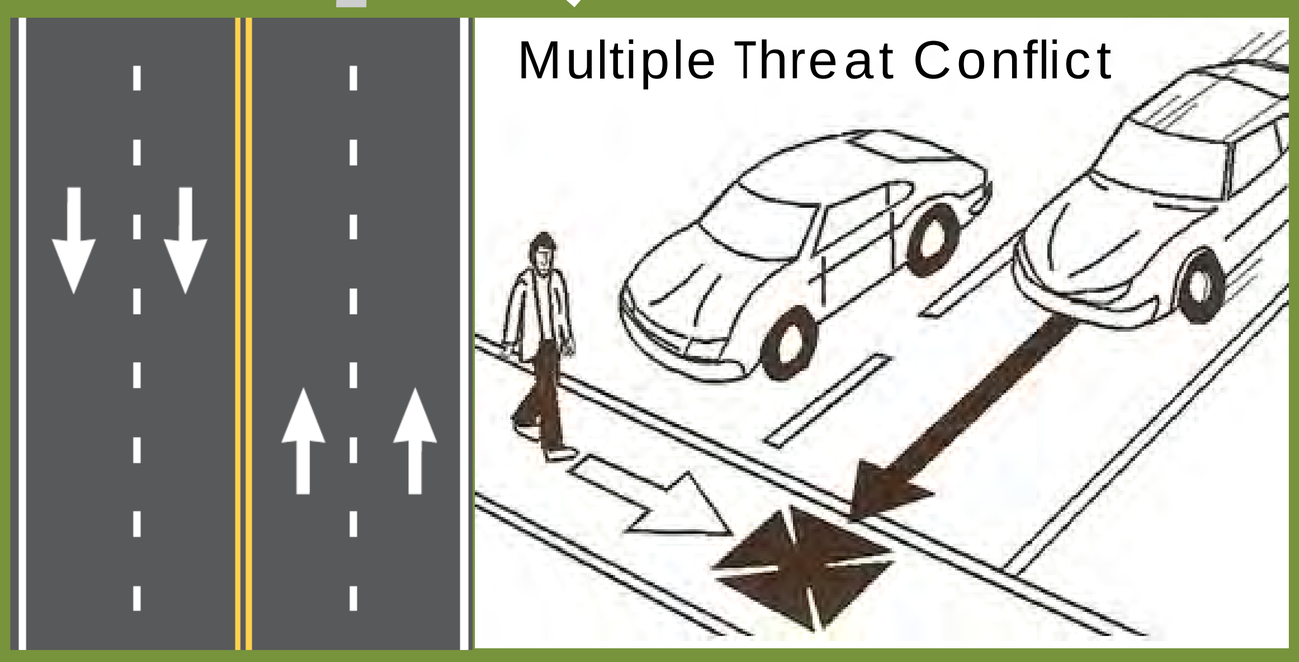
Options for Greenway Treatments

Shoreline, WA

CITY OF SHORELINE

BENEFITS OF RESTRIPING FROM 4 LANES TO 3

Before



After

REDUCES DELAYS

Dedicated turn lanes get turning vehicles out of the through lane, reducing friction and improving traffic flow.

IMPROVES SAFETY

A comprehensive federal study showed a 29% reduction in total crashes. Factors influencing this include:

- Reduced pedestrian crossing distance and ability to provide pedestrian refuge
- Reduced pedestrian multiple threat conflict
- Fewer conflict points for turning, crossing, and through moving traffic
- Improved sight lines
- Increased distance between pedestrians and moving vehicles
- Reduced differential speeds

IMPROVES MOBILITY

Extra space can be used for bike lanes. Increased safety leads to better walkability.

Example 3 Lane Rechannelizations – Similar Volumes

N 205th Street: Average Daily Traffic Volume 14,000 Vehicles

N 155th Street: Average Daily Traffic Volume 13,000 Vehicles

From I-5 to Lake City Way

Less Important to Me.
I don't feel that this is worth cost or property impacts.

More Important to Me.
I feel strongly that this is needed, even if it impacts cost or property.

Improving Pedestrian Walkability is...

Sidewalks, landscape buffers, ADA accessibility, wheelchair ramps, crosswalks and pedestrian signals

Improving Bus Transportation is...

Frequency of bus service, travel speed through the corridor, can count on my bus to be on-time, ease of use

Improving Bike Facilities is...

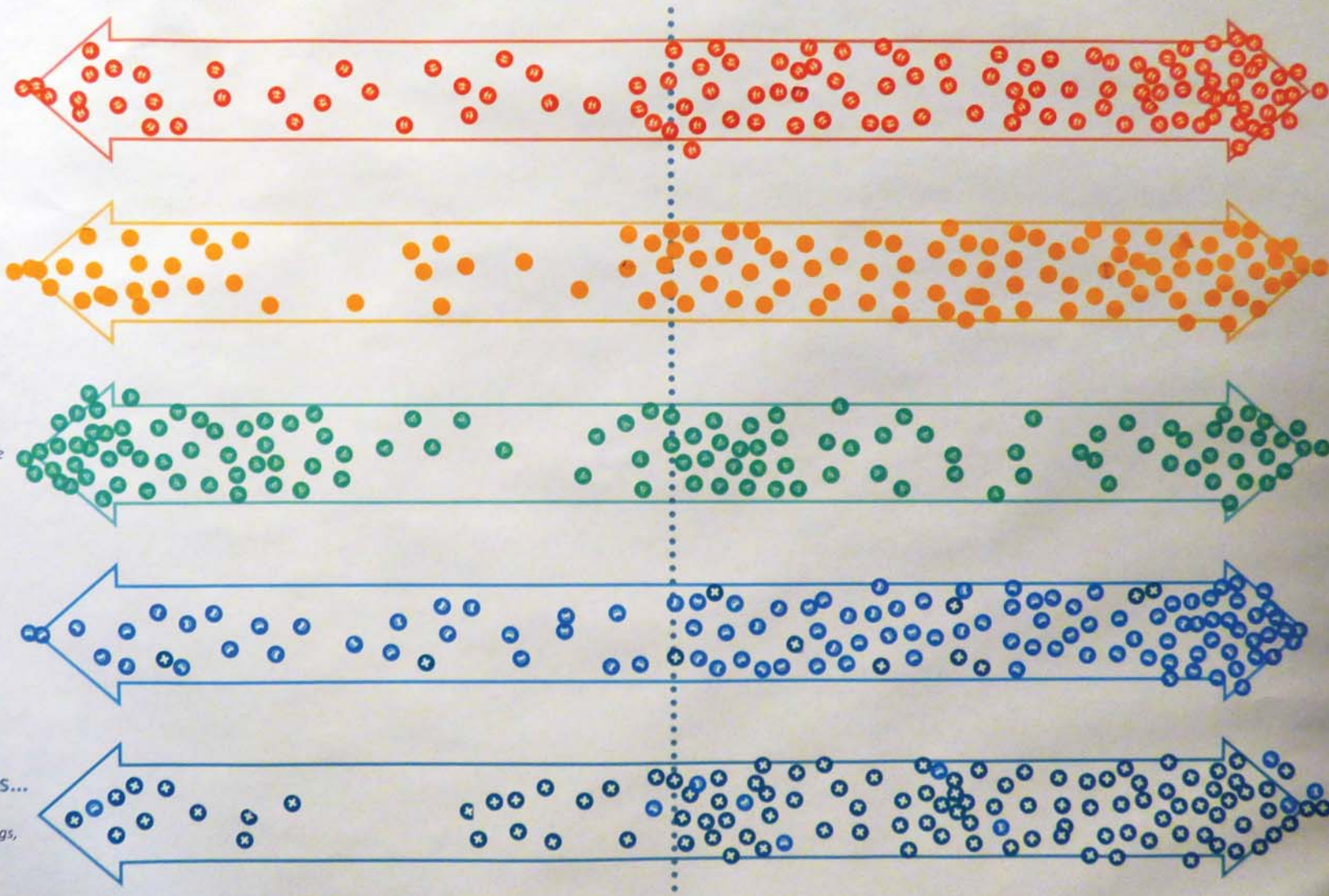
Continuous bike pathways through the corridor, safe separation from vehicle traffic, proximity to the 145th Street corridor

Improving Flow of Traffic is...

Reducing congestion through the corridor, ability to make turns safely

Improvements to Transportation Safety is...

Controlling speeds, reducing turn conflicts, mid-block pedestrian crossings, improving sight lines



145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

From I-5 to Lake City Way

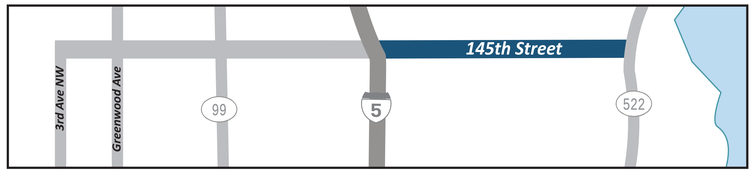
LEGEND:
○ Least or worst ● Most or best

	Study Concept 1 No Action	Study Concept 2 4 Lanes, Bikes Off-Corridor	Study Concept 3 5 Lanes with Two-Way LTL	Study Concept 4 6 Lanes with BAT Lanes	PREFERRED DESIGN CONCEPT Q-jumps / BAT Lanes
BENEFITS MEASURES	**I-5 to Lake City Way (SR 522)**				
1 **IMPROVED PEDESTRIAN SAFETY AND ACCESS** How well does the study concept improve safety, mobility, accessibility for Pedestrians	- Several barriers for pedestrian travel remain	- Removes existing sidewalk barriers, keeps poles in sidewalk - 6' sidewalk, does not meet City standard - No buffer provided between pedestrians and vehicles - 5-6 lane crossing distance at signalized intersections	- New sidewalks, removes pedestrian barriers - 13' sidewalk, meets City Standard - 5' to 10' separation with vehicles creates safe buffer and comfort for pedestrians - 5 - 6 lane crossing distance at signalized intersections	- New sidewalks, removes pedestrian barriers - 13' sidewalk, meets City Standard - 5' separation with vehicles creates safe buffer and comfort for pedestrians - 7 lane crossing distance at signalized intersections	- New sidewalks, removes pedestrian barriers - 13' sidewalk, meets City Standard - 5' separation with vehicles creates safe buffer and comfort for pedestrians - 5 to 7 lane crossing distance at signalized intersections
2 **IMPROVED TRANSIT SPEED, RELIABILITY, AND QUALITY** How well does the study concept improve Transit performance in the corridor?	- Lack of transit zones and transit service - 9.5 minute estimated transit travel time thru section - Most bus stops are not wheelchair accessible	- Minimal transit zone enhancements - 25% reduction in transit travel time - Buses can get trapped in bus pull-outs	- Wide sidewalks provide comfortable environment for transit users - 25% reduction in transit travel time - In-lane bus stops	- Transit zone enhancements and wide sidewalks provide comfortable environment - 38% reduction in transit travel time (best) - BAT lanes provide in-lane bus stops - Transit benefits are provided regardless of congestion in general purpose lanes	- Transit zone enhancements and wide sidewalks provide comfortable environment - 36% reduction in transit travel time (best) - BAT lanes and queue jumps - Transit benefits are provided regardless of congestion in general purpose lanes
3 **IMPROVED BIKE SAFETY AND MOBILITY** How well does the study concept improve safety, mobility, accessibility for bike riders?	- No bike facilities through the corridor	- Off-corridor bike facilities through green network provides pathways on lower speed streets - No on-corridor bike pathways - Shoreline side routing is indirect, up to several blocks from the 145th corridor	- Buffered directional bike lanes on corridor provides separation from vehicles - Intersection designed to reduce bike-vehicle conflicts at intersections - Bike lanes are one-way, both sides of roadway, requiring crossing of 145th to access lanes	- Multi-use trail along the corridor - Shared path, one side of roadway, could present bike-pedestrian conflicts - Bike pathway is two-way	- Off-corridor bike facilities through green network provides pathways on lower speed streets - No on-corridor bike pathways - Shoreline side routing is indirect, up to several blocks from the 145th corridor
4 **IMPROVED VEHICLE SAFETY AND MOBILITY** How well does the study concept improve safety and mobility for vehicles and freight?	- No mobility improvements - No safety improvements - Does not meet LOS standards	- Signal timing and intersection capacity are improved - Meets LOS standards - Access management - c-curb, provides improved safety for turning conflicts	- Signal timing and capacity improvements - Meets LOS standards - Two-way left turn lane does not resolve mid-block turning conflicts, collisions	- Signal timing and capacity improvements - Meets LOS standards - BAT lanes increase roadway capacity - Access management and u-turns privided, improves safety for turning conflicts	- Signal timing and capacity improvements - Meets LOS standards - BAT/Right turn lanes increase roadway capacity - Access management and u-turns privided, improves safety for turning conflicts
5 **CONSISTENCY WITH REGIONAL PLANS** How well does the study concept integrate with other capital projects including the proposed light rail station and future improvements to the Interstate-5 interchange?	- Not improving the corridor is not consistent with plans for the LRT station as well as the City of Shoreline Comp Plan goals.	- Improves non-motorized access to station - Consistent with SDOT Bike Master Plan - Does not meet City standards for sidewalks	- Integration with ST LRT Station - Aesthetic improvements consistent with neighborhood character - Integration with bike master plans	- Integration with ST LRT Station - Integration with ST and KCM long range plans - Highest level of landscaping/urban design elements and utilty undergrounding consistent with neighborhood character - Integration wth modal plans for Seattle and Shoreline	- Integration with ST LRT Station - Integration with ST and KCM long range plans - Landscaping/urban design elements and utilty undergrounding consistent with neighborhood character - Integration wth modal plans for Seattle and Shoreline
6 **OPPORTUNITIES FOR ENVIRONMENTAL ENHANCEMENT** How well does the study concept enhance the environment and mitigate impacts to critical areas? How well does the study concept provide for opportunities to upgrade stormwater quality?	- No impacts to existing critical areas - Does not improve or enhance	- Potential to minimize impacts to critical areas	- Potential for low impact development (LID) - Potential for stormwater improvements - Potential to enhance critical areas - Adds trees and landscaping	- Potential for low impact development (LID) - Potential for stormwater improvements - Potential to enhance critical areas - Adds trees and landscaping	- Potential for low impact development (LID) - Potential for stormwater improvements - Potential to enhance critical areas - Adds trees and landscaping
7 **SUPPORTS ECONOMIC DEVELOPMENT** How well does the study concept encourage and support private reinvestment in the corridor through improvements such as transit, upgraded utilities and enhanced aesthetics?	- No improvements	- Improves traffic capacity - Improves access to transit	- Improves roadway frontages with sidewalk and landscaping - Maintains neighborhood character - Improves traffic capacity and non-motorized mobility - Improves access to transit	- Highest quality landscaping/urban design improvements including utility undergrounding - Highest potential for transit oriented development, supportive of high capacity transit in corridor - Highest increase in traffic capacity	- Opportunity for landscaping/urban design improvements including utility undergrounding - Highest potential for transit oriented development, supportive of high capacity transit in corridor - Increase in traffic capacity
8 **FUNDING FEASIBILITY** How well will the study concept support the ability to compete for grant funding or secure direct funding? How well do the improvement elements align with grant funding criteria, such as multimodal improvements, transit, and livability?	-N/A	- Lowest cost alternative - Provides some mobility improvements for pedestrians - Does not provide significant transit benefits	-Higher cost than Concept 2, lower than Concept 4 - Improves safety and mobility for pedestrians and bikes - Does not provide significant transit benefits	- Highest cost of alternatives - Improves local and regional mobility - Improves safety for all users - Provides most opportunity for funding partnerships	-Lower cost than Concept 4 - Improves local and regional mobility - Improves safety for all users - Provides most opportunity for funding partnerships
TRADE OFFS					
8 **PROPERTY IMPACTS** How well does the study concept minimize impacts to property and business owners by limiting right-of-way acquisition, avoiding existing structures and improvements or maintaining access?	- No property impacts	- Affects up to 68% of parcels along the corridor	- Affects up to 100% of parcels along the corridor	-Affects up to 100% of parcels along the corridor - Highest area of right of way required	-Affects up to 83% of parcels along the corridor.
9 **CAPITAL COST** What is the relative capital cost?	- No implemenation costs - On-going maintenance costs	- Lowest cost of the study concepts	- Higher cost than Concept 2, lower than Concept 4	- Highest cost of alternatives	-Lower cost than Concept 4 and Concept 3, higher than Concpet 2

145TH STREET Multimodal Corridor Study

CITY OF SHORELINE

From I-5 to Lake City Way



TOO LITTLE

The preferred concept does not provide enough improvements for this segment.

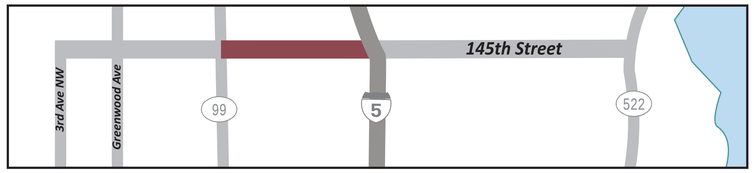
JUST RIGHT

The preferred concept is the right amount of improvements for this segment.

TOO MUCH

The preferred concept provides too many improvements for this segment.

From Aurora Ave. N to I-5



TOO LITTLE

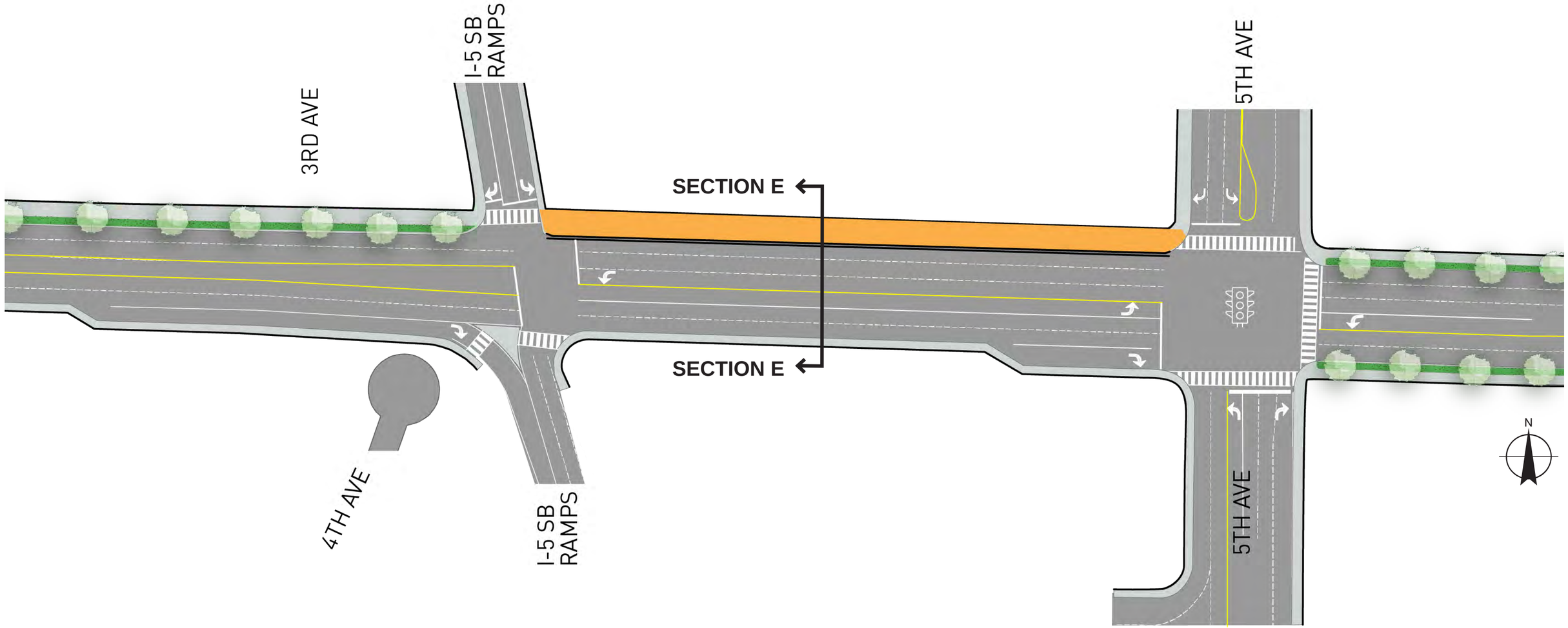
The preferred concept does not provide enough improvements for this segment.

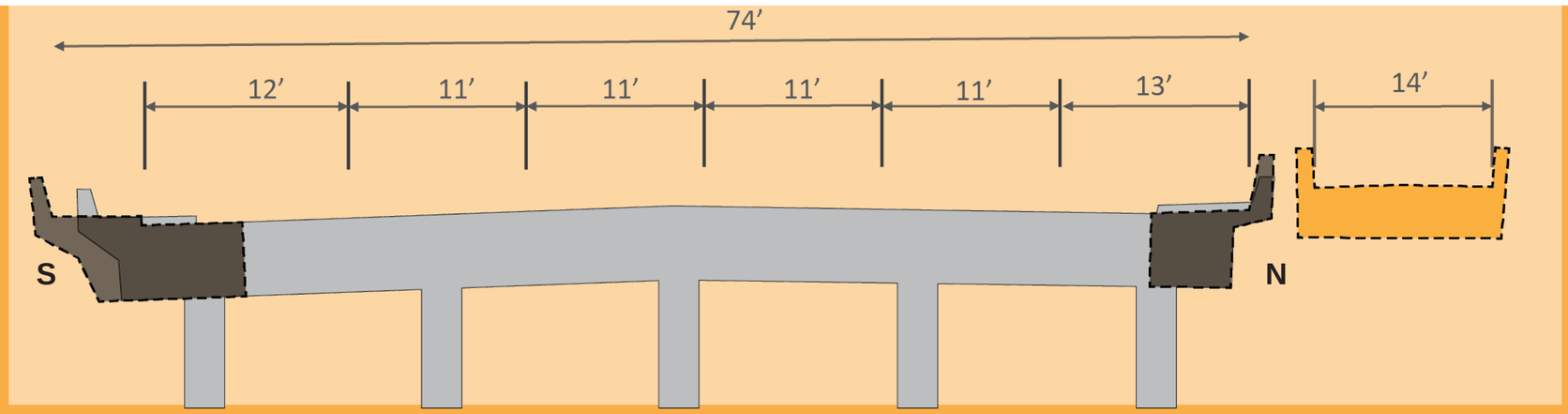
JUST RIGHT

The preferred concept is the right amount of improvements for this segment.

TOO MUCH

The preferred concept provides too many improvements for this segment.





I-5 INTERCHANGE

From Aurora Ave. N to I-5

Less Important to Me.
I don't feel that this is worth cost or property impacts.

More Important to Me.
I feel strongly that this is needed, even if it impacts cost or property.

Improving Pedestrian Walkability is...

Sidewalks, landscape buffers, ADA accessibility, wheelchair ramps, crosswalks and pedestrian signals

Improving Bus Transportation is...

Frequency of bus service, travel speed through the corridor, can count on my bus to be on-time, ease of use

Improving Bike Facilities is...

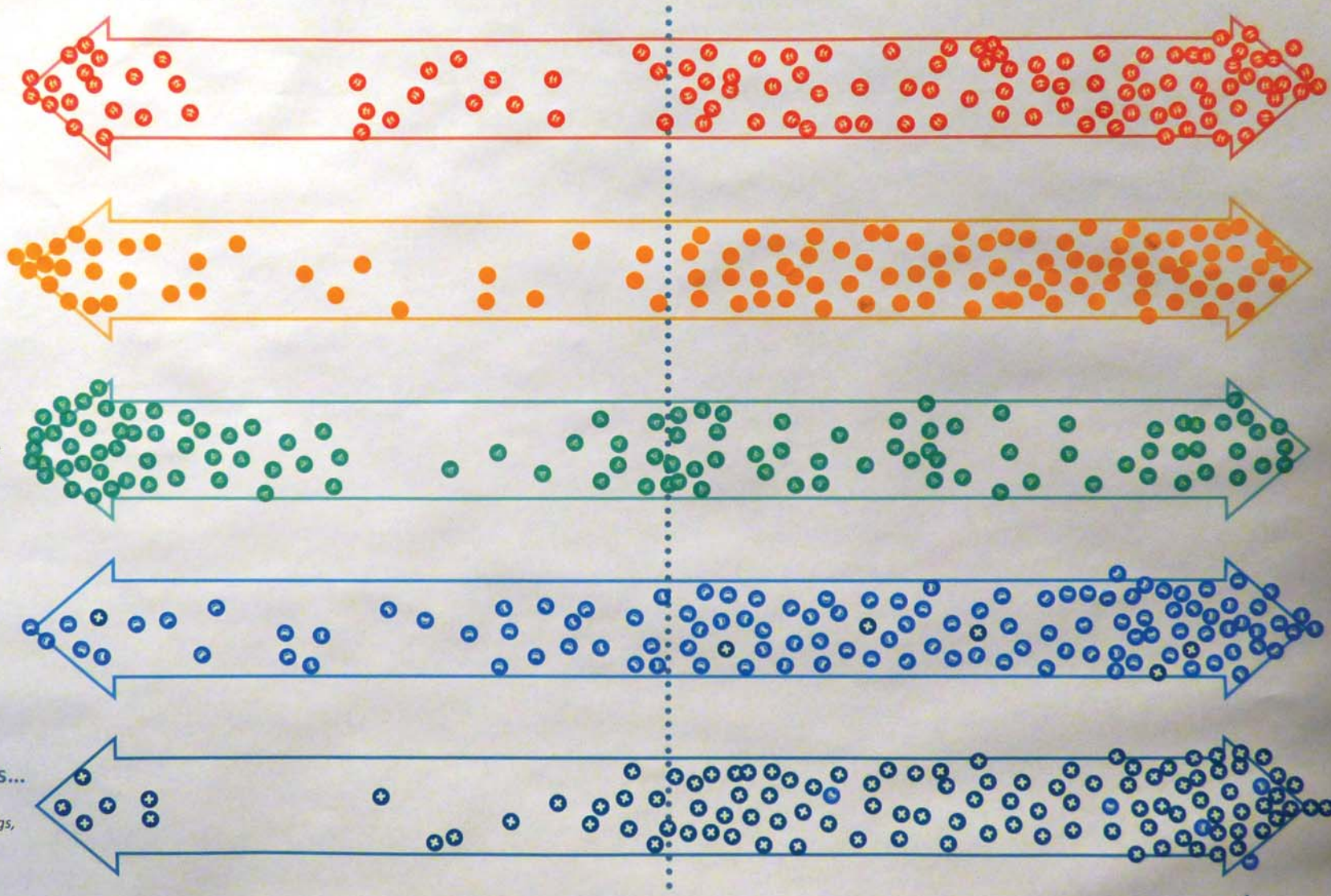
Continuous bike pathways through the corridor, safe separation from vehicle traffic, proximity to the 145th Street corridor

Improving Flow of Traffic is...

Reducing congestion through the corridor, ability to make turns safely

Improvements to Transportation Safety is...

Controlling speeds, reducing turn conflicts, mid-block pedestian crossings, improving sight lines



145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

From Aurora Avenue to I-5

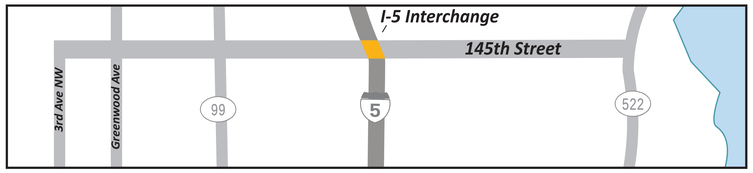
LEGEND:
○ Least or worst
● Most or best

BENEFITS MEASURES	Study Concept 1 No Action	Study Concept 2 4 Lanes, Bikes Off-Corridor	Study Concept 3 5 Lanes with Two-Way LTL	Study Concept 4 6 Lanes with BAT Lanes	PREFERRED DESIGN CONCEPT Intersections, Traffic Signals, Sidewalk
	Aurora Avenue (SR 99) to I-5				
1 **IMPROVED PEDESTRIAN SAFETY AND ACCESS** How well does the study concept improve safety, mobility, accessibility for Pedestrians	○ - Several barriers for pedestrian travel remain	◔ - Removes existing sidewalk barriers, keeps poles in sidewalk - 6' sidewalk, does not meet City standard - No buffer provided between pedestrians and vehicles - 5-6 lane crossing distance at signalized intersections	● - New sidewalks, removes pedestrian barriers - 13' sidewalk, meets City Standard - 5' to 10' separation with vehicles creates safe buffer and comfort for pedestrians - 5 - 6 lane crossing distance at signalized intersections	◔ - New sidewalks, removes pedestrian barriers - 13' sidewalk, meets City Standard - 5' separation with vehicles creates safe buffer and comfort for pedestrians - 7 lane crossing distance at signalized intersections	◑ - New sidewalks, removes pedestrian barriers - 13' sidewalk north side, meets City Standard - 5' separation with vehicles creates safe buffer and comfort for pedestrians - 5 lane crossing distance at signalized intersections
2 **IMPROVED TRANSIT SPEED, RELIABILITY, AND QUALITY** How well does the study concept improve Transit performance in the corridor?	○ - Lack of transit zones and transit service - 7.3 minute estimated transit travel time thru section - Most bus stops are not wheelchair accessible	◑ - Minimal transit zone enhancements - 28% reduction in transit travel time - Buses can get trapped in bus pull-outs	◑ - Wide sidewalks provide comfortable environment for transit users - 38% reduction in transit travel time - In-lane bus stops	◔ - Transit zone enhancements and wide sidewalks provide comfortable environment - 49% reduction in transit travel time (best) - BAT lanes provide in-lane bus stops - Transit benefits are provided regardless of congestion in general purpose lanes	◑ - Transit zone enhancements and wide sidewalks provide comfortable environment - 25% reduction in transit travel time - In-lane bus stops
3 **IMPROVED BIKE SAFETY AND MOBILITY** How well does the study concept improve safety, mobility, accessibility for bike riders?	○ - No bike facilities through the corridor	◑ - Off-corridor bike facilities through green network provides pathways on lower speed streets - No on-corridor bike pathways - Shoreline side routing is indirect, up to several blocks from the 145th corridor	● - Buffered directional bike lanes on corridor provides separation from vehicles - Intersection designed to reduce bike-vehicle conflicts at intersections - Bike lanes are one-way, both sides of roadway, requiring crossing of 145th to access lanes	◔ - Multi-use trail along the corridor - Shared path, one side of roadway, could present bike-pedestrian conflicts - Bike pathway is two-way	◑ - Off-corridor bike facilities through green network provides pathways on lower speed streets - On-corridor bike pathways, 1st Ave to I-5 - Shoreline side routing is indirect, up to several blocks from the 145th corridor
4 **IMPROVED VEHICLE SAFETY AND MOBILITY** How well does the study concept improve safety and mobility for vehicles and freight?	○ - No mobility improvements - No safety improvements - Does not meet LOS standards	◔ - Signal timing and intersection capacity are improved - Meets LOS standards - Access management - c-curb, provides improved safety for turning conflicts	◔ - Signal timing and capacity improvements - Meets LOS standards - Two-way left turn lane does not resolve mid-block turning conflicts, collisions	◔ - Signal timing and capacity improvements - Meets LOS standards - BAT lanes increase roadway capacity - Access management and u-turns privided, improves safety for turning conflicts	◔ - Signal timing and capacity improvements - Meets LOS standards - Access management - c-curb, provides improved safety for turning conflicts
5 **CONSISTENCY WITH REGIONAL PLANS** How well does the study concept integrate with other capital projects including the proposed light rail station and future improvements to the Interstate-5 interchange?	○ - Not improving the corridor is not consistent with plans for the LRT station as well as the City of Shoreline Comp Plan goals.	◔ - Improves non-motorized access to station - Consistent with SDOT Bike Master Plan and Shoreline greenway network - Does not meet City standards for sidewalks	◔ - Integration with ST LRT Station - Sidewalk/aesthetic improvements consistent with neighborhood character goals - Integration with bike master plans for Seattle and Shoreline	◔ - Integration with ST LRT Station - Highest level of landscaping/urban design elements and utilty undergrounding consistent with neighborhood character - Integration wth modal plans for Seattle and Shoreline	◑ - Integration with ST LRT Station - Iintegration with I5 Interchange improvements - Sidewalk improvements meet City standards - Integration with bike master plans for Seattle and Shoreline
6 **OPPORTUNITIES FOR ENVIRONMENTAL ENHANCEMENT** How well does the study concept enhance the environment and mitigate impacts to critical areas? How well does the study concept provide for opportunities to upgrade stormwater quality?	○ - No impacts to existing critical areas - Does not improve or enhance	◔ - Potential to minimize impacts to critical areas	● - Potential for low impact development (LID) - Potential for stormwater improvements - Potential to enhance critical areas - Adds trees and landscaping	◔ - Potential for low impact development (LID) - Potential for stormwater improvements - Potential to enhance critical areas - Adds trees and landscaping	● - Potential for low impact development (LID) - Potential for stormwater improvements - Potential to enhance critical areas - Adds trees and landscaping
7 **SUPPORTS ECONOMIC DEVELOPMENT** How well does the study concept encourage and support private reinvestment in the corridor through improvements such as transit, upgraded utilities and enhanced aesthetics?	○ - No improvements	◑ - Improves traffic capacity - Improves access to transit	◔ - Improves roadway frontages with sidewalk and landscaping - Maintains neighborhood character - Improves traffic capacity and non-motorized mobility - Improves access to transit	◔ - Highest quality landscaping/urban design improvements including utility undergrounding - Highest potential for transit oriented development, supportive of high capacity transit in corridor - Highest increase in traffic capacity	◔ - Improves some roadway frontages with sidewalk and landscaping - Improves traffic capacity and non-motorized mobility - Improves access to transit
8 **FUNDING FEASIBILITY** How well will the study concept support the ability to compete for grant funding or secure direct funding? How well do the improvement elements align with grant funding criteria, such as multimodal improvements, transit, and livability?	◑ -N/A	◑ - Lowest cost alternative - Provides some mobility improvements for pedestrians - Does not provide significant transit benefits	◔ -Higher cost than Concept 2, lower than Concept 4 - Improves safety and mobility for pedestrians and bikes - Does not provide significant transit benefits	◔ - Highest cost of alternatives - Improves local and regional mobility - Improves safety for all users - Provides most opportunity for funding partnerships	◔ -Lowest cost of alternatives - Improves local and regional mobility - Improves safety and mobility for peds and bikes - Provides most opportunity for funding partnerships
TRADE OFFS					
8 **PROPERTY IMPACTS** How well does the study concept minimize impacts to property and business owners by limiting right-of-way acquisition, avoiding existing structures and improvements or maintaining access?	● - No property impacts	◑ - Affects up to 66% of parcels along the corridor	◔ - Affects up to 100% of parcels along the corridor	○ - Affects up to 100% of parcels along the corridor - Highest area of right of way required	◔ - Affects up to 42% of parcels along the corridor
9 **CAPITAL COST** What is the relative capital cost?	● - No implemenation costs - On-going maintenance costs	◑ - Lowest cost of the study concepts	◔ - Higher cost than Concept 2, lower than Concept 4	○ - Highest cost of alternatives	◔ -Lower cost than Study Concepts 2, 3, 4

145TH STREET Multimodal Corridor Study

CITY OF SHORELINE

I-5 Interchange



TOO LITTLE

The preferred concept does not provide enough improvements for this segment.

JUST RIGHT

The preferred concept is the right amount of improvements for this segment.

TOO MUCH

The preferred concept provides too many improvements for this segment.

3rd Ave. NW to Greenwood Ave. N

Less Important to Me.
I don't feel that this is worth cost or property impacts.

More Important to Me.
I feel strongly that this is needed, even if it impacts cost or property.

Improving Pedestrian Walkability is...

Sidewalks, landscape buffers, ADA accessibility, wheelchair ramps, crosswalks and pedestrian signals

Improving Bus Transportation is...

Frequency of bus service, travel speed through the corridor, can count on my bus to be on-time, ease of use

Improving Bike Facilities is...

Continuous bike pathways through the corridor, safe separation from vehicle traffic, proximity to the 145th Street corridor

Improving Flow of Traffic is...

Reducing congestion through the corridor, ability to make turns safely

Improvements to Transportation Safety is...

Controlling speeds, reducing turn conflicts, mid-block pedestian crossings, improving sight lines

145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

Greenwood Ave. N to Aurora Ave. N

Less Important to Me.
I don't feel that this is worth cost or property impacts.

More Important to Me.
I feel strongly that this is needed, even if it impacts cost or property.

Improving Pedestrian Walkability is...

Sidewalks, landscape buffers, ADA accessibility, wheelchair ramps, crosswalks and pedestrian signals

Improving Bus Transportation is...

Frequency of bus service, travel speed through the corridor, can count on my bus to be on-time, ease of use

Improving Bike Facilities is...

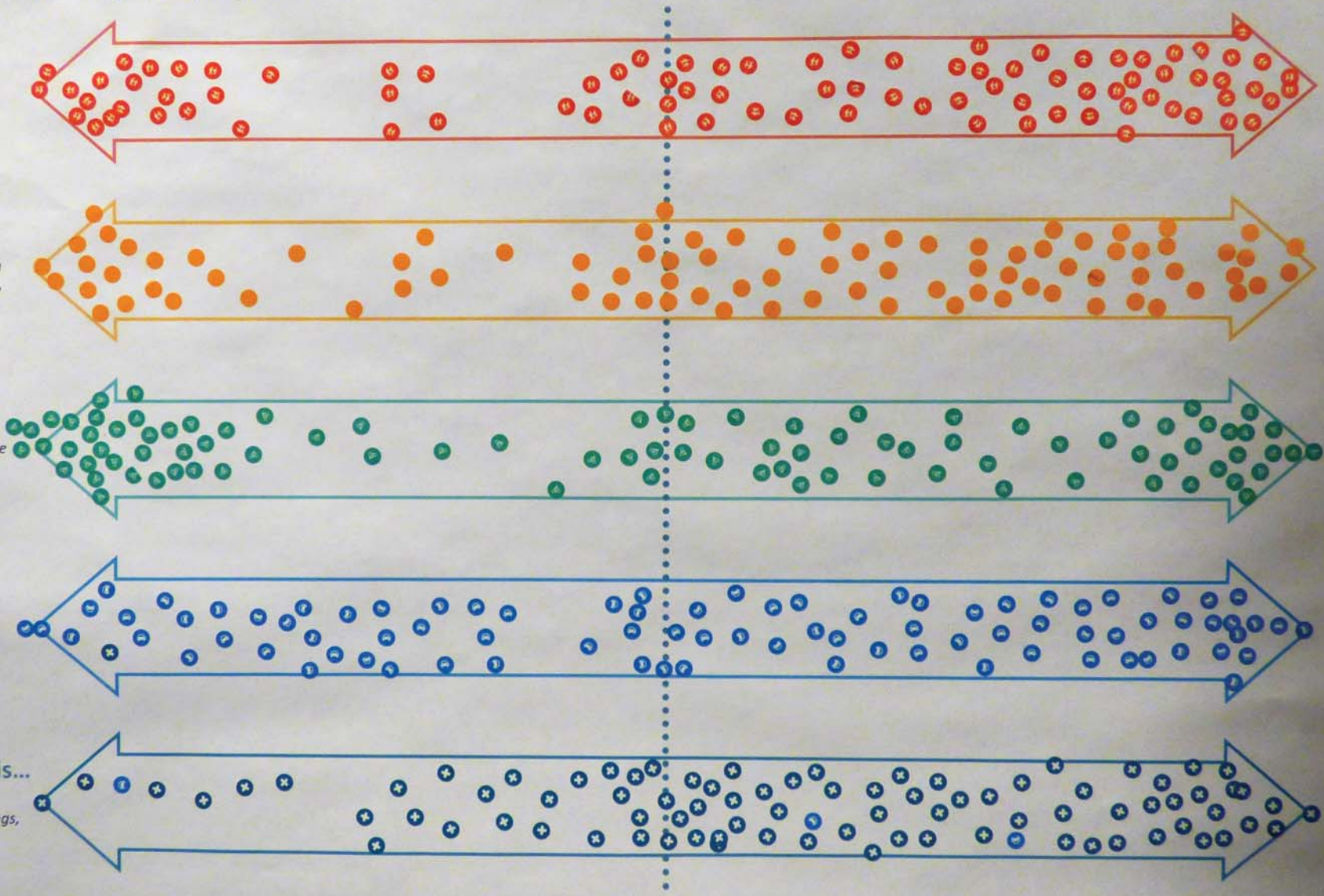
Continuous bike pathways through the corridor, safe separation from vehicle traffic, proximity to the 145th Street corridor

Improving Flow of Traffic is...

Reducing congestion through the corridor, ability to make turns safely

Improvements to Transportation Safety is...

Controlling speeds, reducing turn conflicts, mid-block pedestrian crossings, improving sight lines



145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE

3rd Avenue NW to Aurora Avenue N

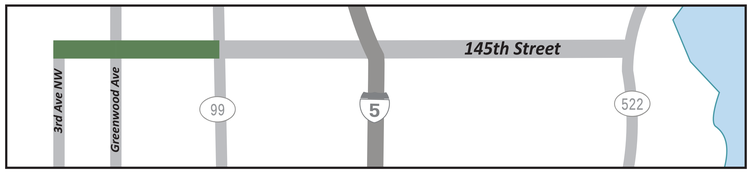
LEGEND:
○ Least or worst ● Most or best

	Study Concept 1 No Action	Study Concept 2 4 Lanes, Bikes Off-Corridor	Study Concept 3 3 Lanes with Two-Way LTL	Study Concept 4 5 Lanes with Two-Way LTL	PREFERRED DESIGN CONCEPT 3 Lanes with Intersection Capacity
BENEFITS MEASURES	**3rd Ave NW to Aurora Avenue (SR99)**				
1 **IMPROVED PEDESTRIAN SAFETY AND ACCESS** How well does the study concept improve safety, mobility, accessibility for Pedestrians	○ - Several barriers for pedestrian travel remain	◔ - Removes existing sidewalk barriers, keeps poles in sidewalk - 6' sidewalk, does not meet City standard - No buffer provided between pedestrians and vehicles - 4-5 lane crossing distance at signalized intersections	● - New sidewalks, removes pedestrian barriers - 13' sidewalk, meets City Standard - 5' to 10' separation with vehicles creates safe buffer and comfort for pedestrians - 3- 4 lane crossing distance at signalized intersections	◕ - New sidewalks, removes pedestrian barriers - 13' sidewalk, meets City Standard - 5' separation with vehicles creates safe buffer and comfort for pedestrians - 5 lane crossing distance at signalized intersections	◑ - Removes existing sidewalk barriers, keeps poles in sidewalk - 6' sidewalk, does not meet City standard - Buffer provided between pedestrians and vehicles - 4-5 lane crossing distance at signalized intersections
2 **IMPROVED TRANSIT SPEED, RELIABILITY, AND QUALITY** How well does the study concept improve Transit performance in the corridor?	○ - Lack of transit zones and transit service - 4.1 minute estimated transit travel time thru section - Most bus stops are not wheelchair accessible	◑ - Minimal transit zone enhancements - 22% travel time savings	◑ - Wide sidewalks provide comfortable environment for transit users - 30% transit travel time savings	◕ - Transit zone enhancements and wide sidewalks provide comfortable environment - 48% transit travel time savings	◑ - Minimal transit zone enhancements - 22% travel time savings
3 **IMPROVED BIKE SAFETY AND MOBILITY** How well does the study concept improve safety, mobility, accessibility for bike riders?	○ - No bike facilities through the corridor	◑ - Off-corridor bike facilities through green network provides pathways on lower speed streets - No on-corridor bike pathways - Shoreline side routing is indirect, up to several blocks from the 145th corridor	◔ - Buffered directional bike lanes on corridor provides separation from vehicles - Intersection designed to reduce bike-vehicle conflicts at intersections - Bike lanes are one-way, both sides of roadway, requiring crossing of 145th to access lanes	◔ - Multi-use trail along the corridor - Shared path, one side of roadway, could present bike-pedestrian conflicts - Bike pathway is two-way	◔ - Buffered directional bike lanes on corridor provides separation from vehicles - Bike lanes are one-way, both sides of roadway, requiring crossing of 145th to access lanes - Improved connection with Interurban Trail
4 **IMPROVED VEHICLE SAFETY AND MOBILITY** How well does the study concept improve safety and mobility for vehicles and freight?	○ - No mobility improvements - No safety improvements - Does not meet LOS standards	◑ - Signal timing and intersection capacity are improved - Meets LOS standards - Access management - c-curb, provides improved safety for turning conflicts	◕ - Signal timing and capacity improvements - Meets LOS standards - Two-way left turn lane does not resolve mid-block turning conflicts, collisions	● - Signal timing and capacity improvements - Meets LOS standards - Two-way left turn lane does not resolve mid-block turning conflicts, collisions	◕ - Signal timing and capacity improvements - Meets LOS standards - Two-way left turn lane does not resolve mid-block turning conflicts, collisions
5 **CONSISTENCY WITH REGIONAL PLANS** How well does the study concept integrate with other capital projects including the proposed light rail station and future improvements to the Interstate-5 interchange?	○ - Not improving the corridor is not consistent with plans for the LRT station as well as the City of Shoreline Comp Plan goals.	◑ - Improves non-motorized access to station - Consistent with SDOT Bike Master Plan and Shoreline greenway network - Does not meet City standards for sidewalks	◕ - improves non-morotized connectivity to LRT - Sidewalk/aesthetic improvements consistent with neighborhood character goals - Integration with bike master plans for Seattle and Shoreline	◕ -Improves non-morotized connectivity to LRT - Highest level of landscaping/urban design elements and utilty undergrounding consistent with neighborhood character - Integration wth modal plans for Seattle and Shoreline	◑ - Improves non-motorized access to station - Consistent with SDOT Bike Master Plan and Shoreline greenway network - Does not meet City standards for sidewalks
6 **OPPORTUNITIES FOR ENVIRONMENTAL ENHANCEMENT** How well does the study concept enhance the environment and mitigate impacts to critical areas? How well does the study concept provide for opportunities to upgrade stormwater quality?	◔ - No impacts to existing critical areas - Does not improve or enhance	◔ - Potential to minimize impacts to critical areas	◑ - Potential for low impact development (LID) - Potential for stormwater improvements - Adds trees and landscaping	◑ - Potential for low impact development (LID) - Potential for stormwater improvements - Adds trees and landscaping	◑ - Potential for low impact development (LID) and some locations - Potential for stormwater improvements - Adds trees and landscaping near intersections
7 **SUPPORTS ECONOMIC DEVELOPMENT** How well does the study concept encourage and support private reinvestment in the corridor through improvements such as transit, upgraded utilities and enhanced aesthetics?	○ - No improvements	◔ - Improves traffic capacity	◑ - Improves roadway frontages with sidewalk and landscaping - Maintains neighborhood character - Improves traffic capacity and non-motorized mobility	◕ - Highest quality landscaping/urban design improvements including utility undergrounding - Highest increase in traffic capacity - Most property impacts	◑ - Improves traffic capacity - Improves non-motorized mobility - Improves access to transit
8 **FUNDING FEASIBILITY** How well will the study concept support the ability to compete for grant funding or secure direct funding? How well do the improvement elements align with grant funding criteria, such as multimodal improvements, transit, and livability?	◑ -N/A	◑ - Lowest cost alternative - Provides some mobility improvements for pedestrians - Does not provide significant transit benefits	◔ -Higher cost than Concept 2, lower than Concept 4 - Improves safety and mobility for pedestrians and bikes - Provides most opportunity for funding partnerships	◔ - Highest cost ofStudy Concepts - Improves mobility - Improves safety for all users	◔ -Lowest cost of Study Concepts - Improves local non-motorized mobility - Improves safety for all users
TRADE OFFS					
8 **PROPERTY IMPACTS** How well does the study concept minimize impacts to property and business owners by limiting right-of-way acquisition, avoiding existing structures and improvements or maintaining access?	● - No property impacts	◔ - Impacts up to 74% of parcels along the corridor	◑ - Impacts up to 100% of parcels along the corridor	○ - Impacts up to 100% of parcels along the corridor - Highest area of right of way required	● - Affects up to 5% of parcels along the corridor
9 **CAPITAL COST** What is the relative capital cost?	● - No implemenation costs - On-going maintenance costs	◑ - Lowest cost of the study concepts	◑ - Slightly higher cost than Concept 2, lower than Concept 4	○ - Highest cost of alternatives	◔ -Lower cost than Study Concepts 2, 3, 4

145TH STREET Multimodal Corridor Study

CITY OF SHORELINE

3rd Ave. NW to Aurora Ave. N



TOO LITTLE

The preferred concept does not provide enough improvements for this segment.

JUST RIGHT

The preferred concept is the right amount of improvements for this segment.

TOO MUCH

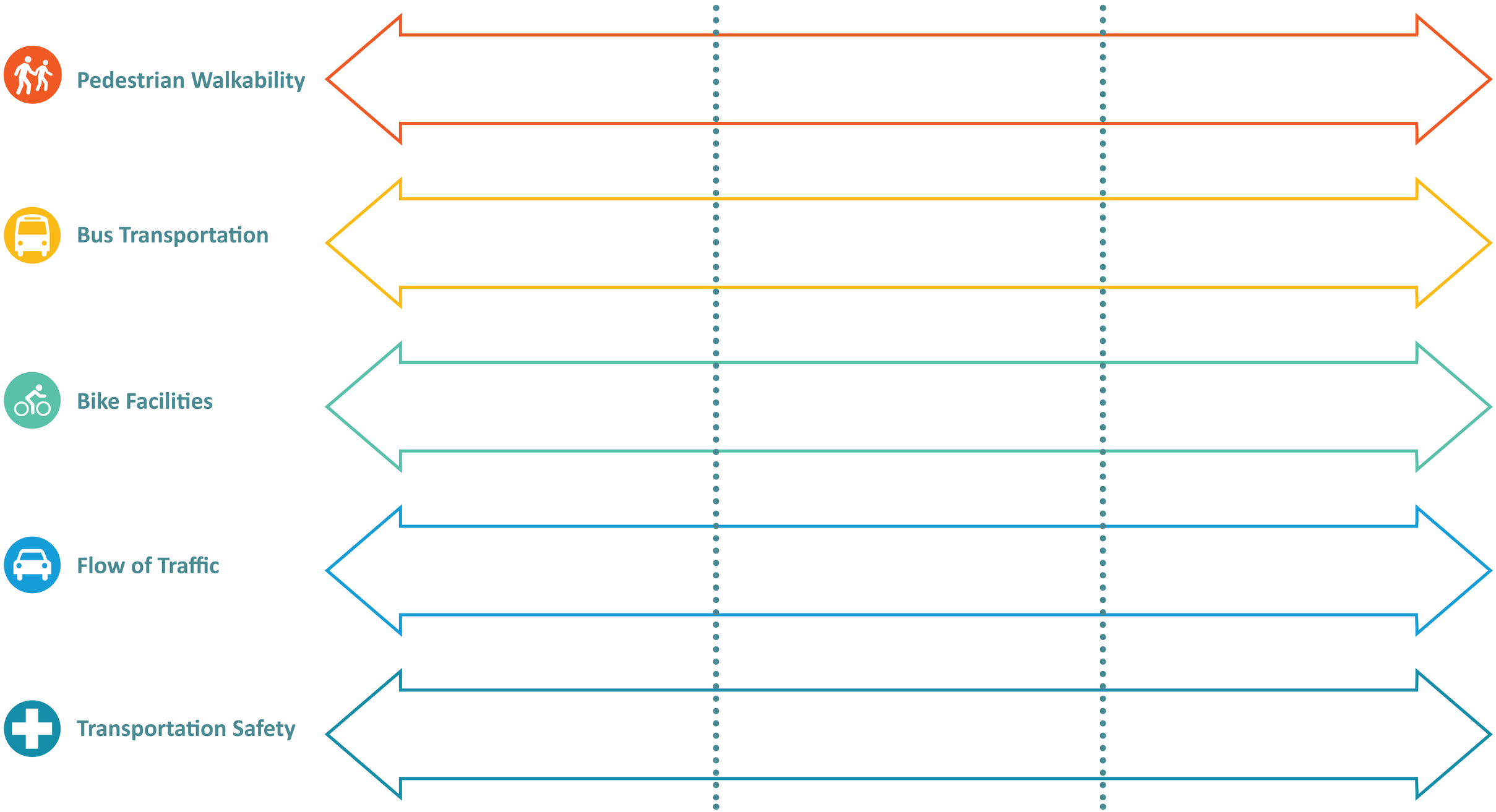
The preferred concept provides too many improvements for this segment.

What do you think of the preferred concept along the entire corridor?

TOO LITTLE
The preferred concept does not do enough for:

JUST RIGHT
The preferred concept does the right amount for:

TOO MUCH
The preferred concept does too much for:



145TH STREET
Multimodal Corridor Study

CITY OF SHORELINE