

# WELCOME

## North Williams Traffic Operations Safety Project

The Portland Bureau of Transportation is exploring options that will make travelling on North Williams Avenue between Weidler Street and Killingsworth Street safer and more comfortable for all users.



With the advice of a Stakeholder Advisory Committee formed for this project, City staff have prepared alternative designs for your consideration. These designs include potential transportation changes to reduce conflicts and improve operation of the bike lane, auto lanes, bus stops, and crosswalks.

Here's how you can provide your input:

- Talk with staff
- Place comments on the map provided
- Answer questions at stations labelled "Input Required"
- Provide written comment
- Submit comments on project website:  
[www.portlandonline.com/transportation/williams](http://www.portlandonline.com/transportation/williams)

For more information, please visit the website or contact the Project Manager:

Ellen Vanderslice  
503-823-4638  
[ellen.vanderslice@portlandoregon.gov](mailto:ellen.vanderslice@portlandoregon.gov)

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## Why Williams?

The City of Portland designated North Williams Avenue a "major city bikeway" in the Portland Bicycle Plan last year. This means North Williams Avenue will become one of the best and busiest bike routes in the bike network, the same way "major city traffic streets" (like NE MLK Blvd.) are designed to be the best and busiest car routes.

Why was North Williams Avenue designated a "major city bikeway"? And why are so many people already biking on North Williams Avenue?

### ① Crossings and Continuity:

The side streets west of Williams don't go through, and the major east-west streets are hard to cross because they carry heavy auto traffic from I-5.

### ② NE MLK Boulevard:

MLK is designated a "major city traffic street" for cars and is not a designated bikeway. Some people therefore use North Williams Avenue to bike to destinations on or near MLK Boulevard.

### ③ Connections:

Of all the possible northbound bikeways for this area, North Williams Avenue is the only one with direct connections to the Broadway and Steel Bridge bike paths.



### ④ Comfort and Connections:

NE 7th Avenue carries a lot of car traffic, with no room for bike lanes. Plus, it ends just after NE Alberta Street.

### ⑤ Continuity:

Side streets east of North Williams Avenue don't go through.

### ⑥ Destinations:

North Williams Avenue is a busy place, and many of the people biking on the street live, work, eat, shop, or visit on North Williams.

### ⑦ The Numbers:

More than 3,000 people bike up North Williams Avenue each day in the warm months. In the evening, the street moves about 400 bikes and 800 motor vehicles per hour in the section north of Russell Street.

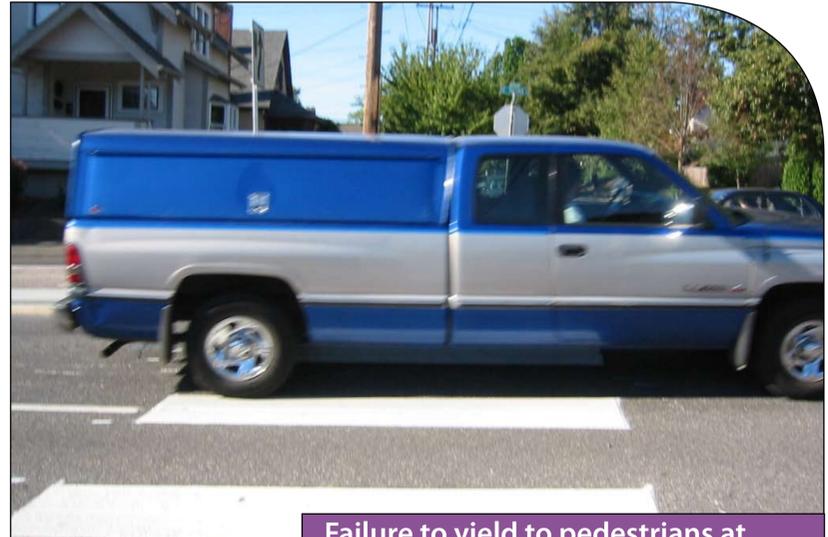
# FOUR MAJOR PROBLEMS

## North Williams Traffic Operations Safety Project

These are the concerns that we have heard most often from the residents, businesses and visitors of N Williams Avenue.

## Crosswalk Safety

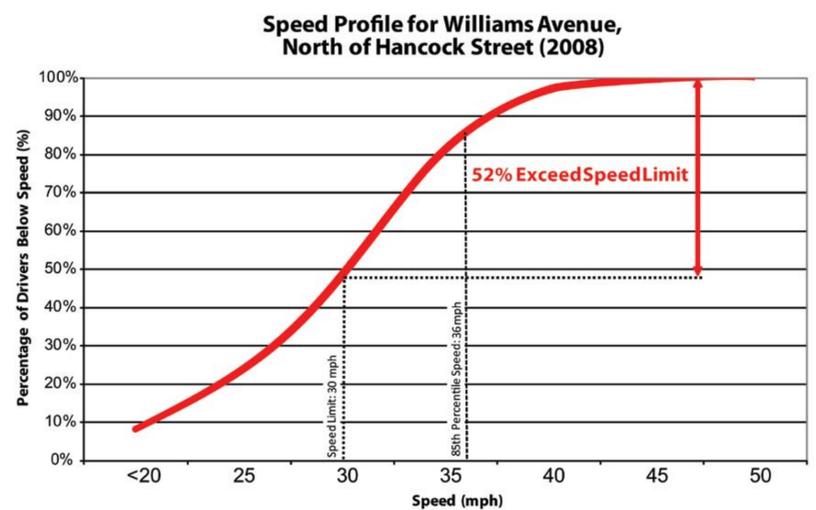
People are concerned about the ease and safety of walking across N Williams. With two auto lanes and one bike lane to cross, and fast-moving car traffic, using even a well-marked crosswalk can be unnerving. North Williams is a place where many children and people with disabilities walk and use transit, so crosswalks need to be safe and easy to use.



Failure to yield to pedestrians at crosswalks is a common complaint

## Auto Speeds

We have heard concerns about speeding on every segment of N Williams. Between Broadway and Russell, 52% of cars exceed the 30 mph speed limit. Multiple lanes give motorists ample opportunity to pass, which makes it easier to exceed the speed limit.



## Bus/Bike Conflicts

Ten years ago when there were just a few hundred people biking up N Williams each day, pulling a bus into the bike lane to drop off and pick up passengers worked fine. But now that there are more than 3,000 cyclists a day in warm months, it doesn't work well and feels stressful and dangerous to everyone involved.

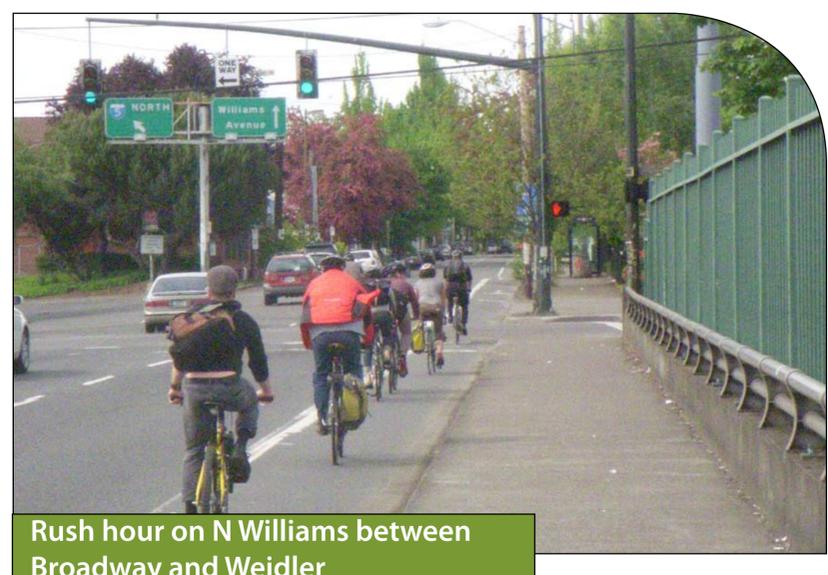


photo: Jonathan Maus

A TriMet bus stops in the bike lane to pick up/drop off passengers

## Bikeway Capacity

The bike lane on N Williams moves nearly 400 people per hour at its busiest location (compare that to about 800 cars in the two auto lanes at the same location). But some of those people are actually riding in the auto lane at times to pass slower cyclists or the stopped bus. While this is legal, it is not comfortable for most cyclists or drivers, especially in places where auto speeds are high.



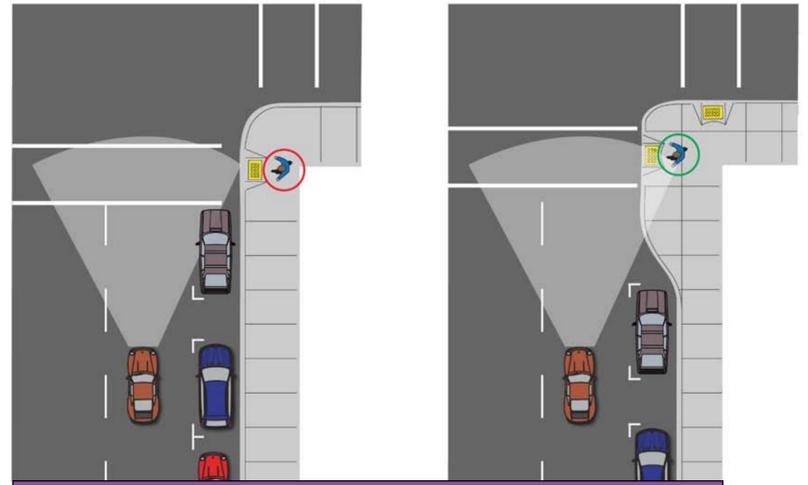
Rush hour on N Williams between Broadway and Weidler

# CROSSWALK SAFETY STRATEGIES

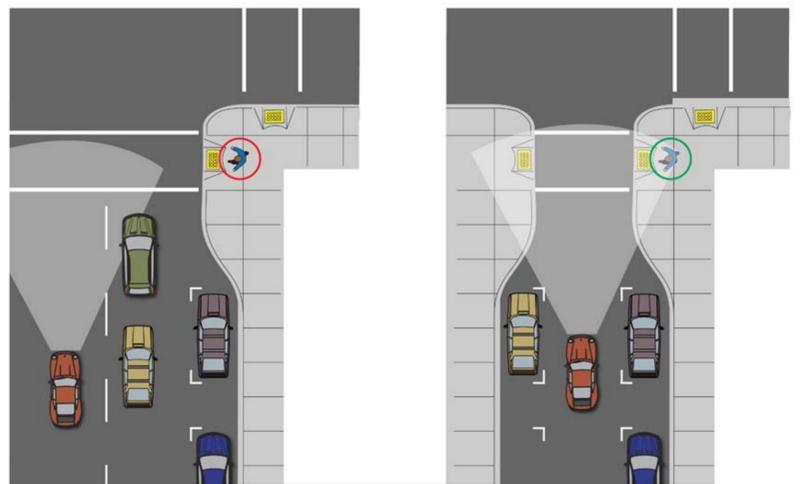
## North Williams Traffic Operations Safety Project

Providing safe and comfortable travel for pedestrians using North Williams Avenue is one of the highest priorities for this project. The potential strategies for improving the pedestrian environment includes:

- Reducing the number of auto lanes in certain locations to slow traffic and allow drivers to better see pedestrians
- Provide high-visibility or signalized crosswalks at strategic locations
- Provide curb extensions to allow pedestrians and drivers to see one another
- Manage conflicts with bicyclists



Curb extensions decrease crossing distances and improves the visibility of pedestrians



Providing only one travel lane improves visibility of pedestrians to drivers



Providing only one travel lane allows pedestrians to identify safe gaps and eliminates "multiple threat"



High-visibility crossings at mid-block and intersection locations with high pedestrian activity provide priority to pedestrians



Reducing auto speed allows drivers to stop in a shorter distance and reduces injury risk



Signals at a number of key intersections will provide safe crossings

# SPEED REDUCTION STRATEGIES

North Williams Traffic Operations Safety Project



## REDUCE TO ONE TRAVEL LANE

Providing a single travel lane generally reduces vehicle speeds as vehicles travel behind other slower-moving vehicles, e.g. North Vancouver Avenue.

## USE SIGNAL TIMING TO PROGRESS TRAFFIC AT SLOWER SPEEDS

Signals can be timed to move traffic at a certain speed. For example, signal timing along Broadway Avenue (Downtown) allows traffic to move at 12 mph.



## VISUALLY NARROW THE STREET

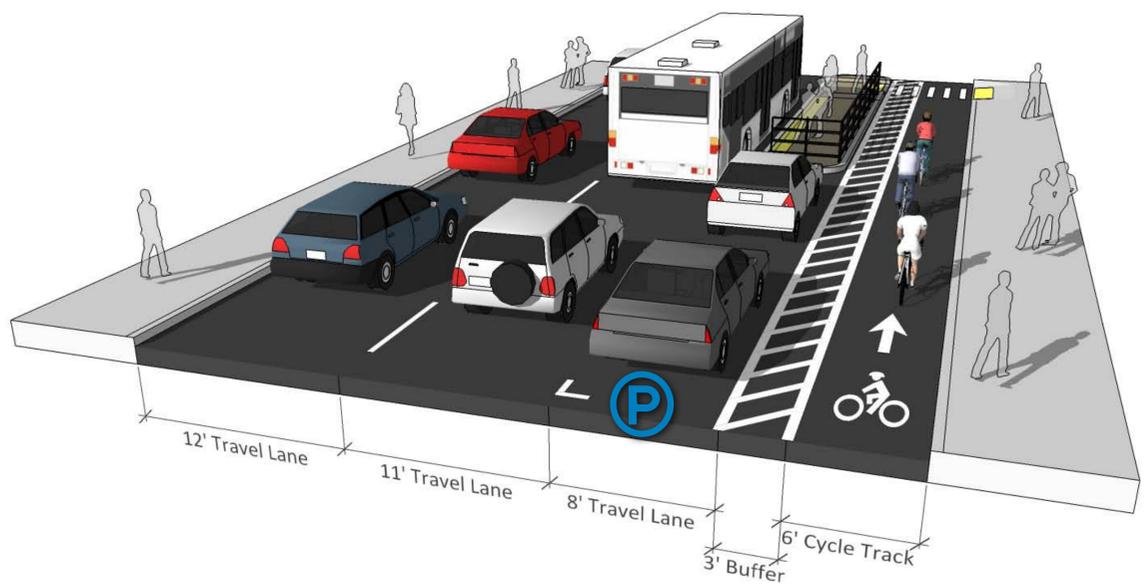
Curb extensions, pedestrian crossings, and other street treatments visually change the street for drivers - tending to slow travel speeds.

# BUS/BIKE CONFLICT STRATEGIES

North Williams Traffic Operations Safety Project

## CYCLE TRACK

Divert bicyclists behind bus stops so they do not have to interact with buses. This treatment requires managing conflicts between bus passengers and the cycle track.

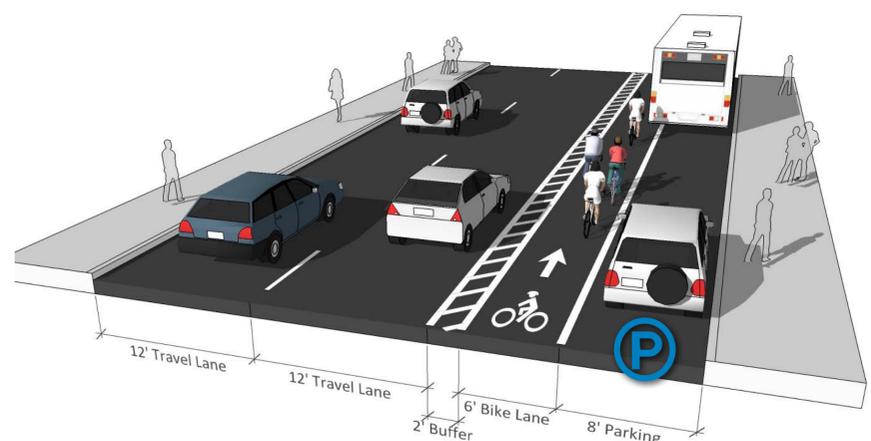


## SEPARATE BUSES AND CYCLISTS IN TIME

Separate signal phases can be used to separate buses and bikes, e.g. buses could be allowed to travel forward prior to cyclists (and cars) at signals - or vice versa.

## MANAGE CROSSING OF BIKE LANE

Although buses would still have to cross a buffered bike lane, the additional width allows easier passing while the bus is stopped.



## LEFT-SIDE BIKEWAY

Moving cyclists to the left side of the street removes the bus/bike conflict. (Note: there are other difficulties associated with left-side bikeways.)

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• Removes Bus/Bike Conflict</li> <li>• Drivers can see cyclists in side mirror (eliminates blind spot)</li> <li>• Removes conflicts with right-turning traffic</li> <li>• Easier for cyclists to turn left</li> <li>• Fewer door openings on passenger side</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to transition from right-side bikeway</li> <li>• Drivers expect cyclists on their right - increased risk of crashes</li> <li>• Introduces conflicts with left-turning traffic</li> <li>• More difficult for cyclists to turn right</li> <li>• Cyclists placed next to "fast" traffic lane</li> </ul>

# BIKEWAY CAPACITY STRATEGIES

North Williams Traffic Operations Safety Project

The North Williams corridor is one of the most popular bikeways in Portland. This can lead to crowded conditions where faster cyclists try to pass slower cyclists. Providing more space, so bicyclists do not encroach into traffic lanes when passing, will create a more comfortable cycling environment and be able to carry even more cyclists in the future. Some potential bikeway enhancements are described below.

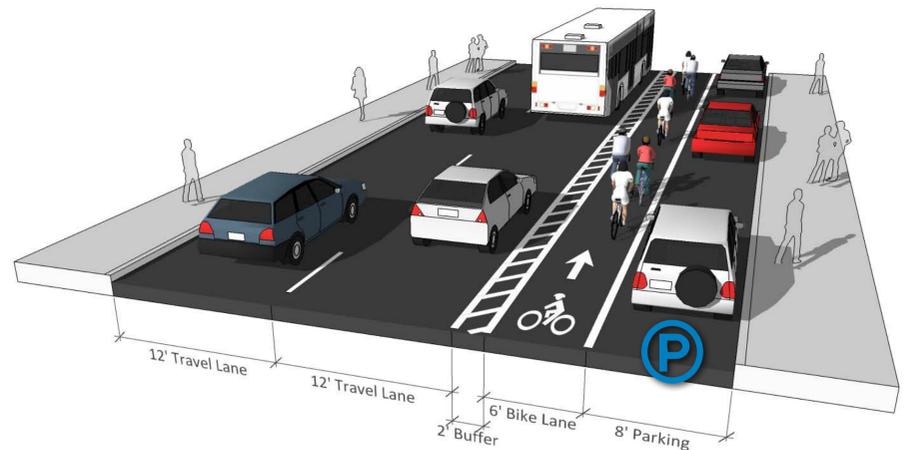
## WIDE BIKE LANE



### BENEFITS:

- Existing bike lanes are 5' to 6'. A wide bike lane increases width to 7'
- Increases distance between motorists and cyclists compared to a conventional bike lane
- Enables cyclists to pass one another without encroaching into the travel lane

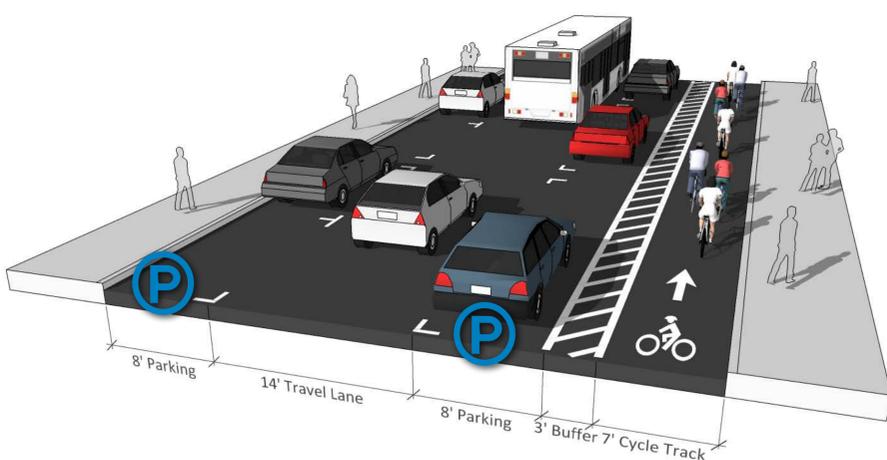
## BUFFERED BIKE LANE



### BENEFITS:

- Provides cushion between cyclists and motor vehicles, particularly on streets with fast moving traffic
- Allows bicyclists to pass one another or avoid obstacles without encroaching into the travel lane
- Reduces risk of being struck by a car door

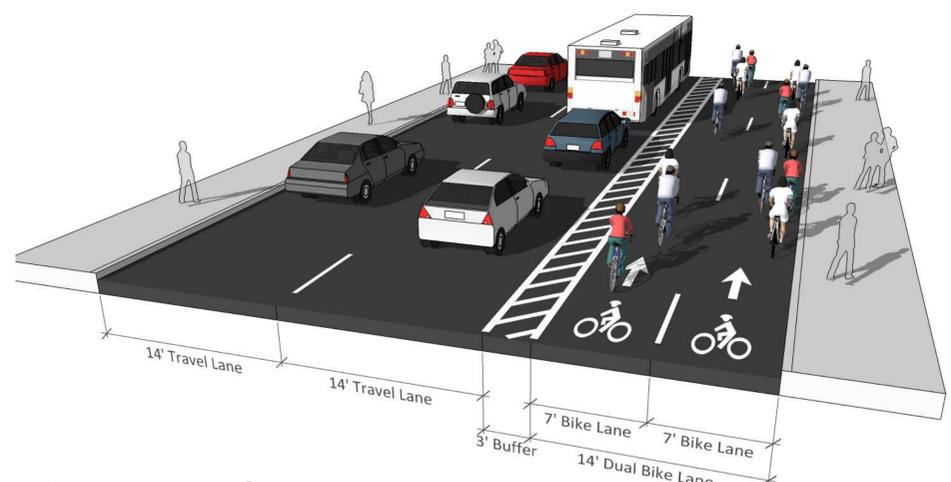
## CYCLE TRACK



### BENEFITS:

- Separates cyclists from parking and moving motor vehicle traffic
- Uses parked vehicles and a painted buffer to protect bicyclists - improving cyclist comfort
- Significantly reduces the threat of being struck by a car door

## DUAL BIKE LANE

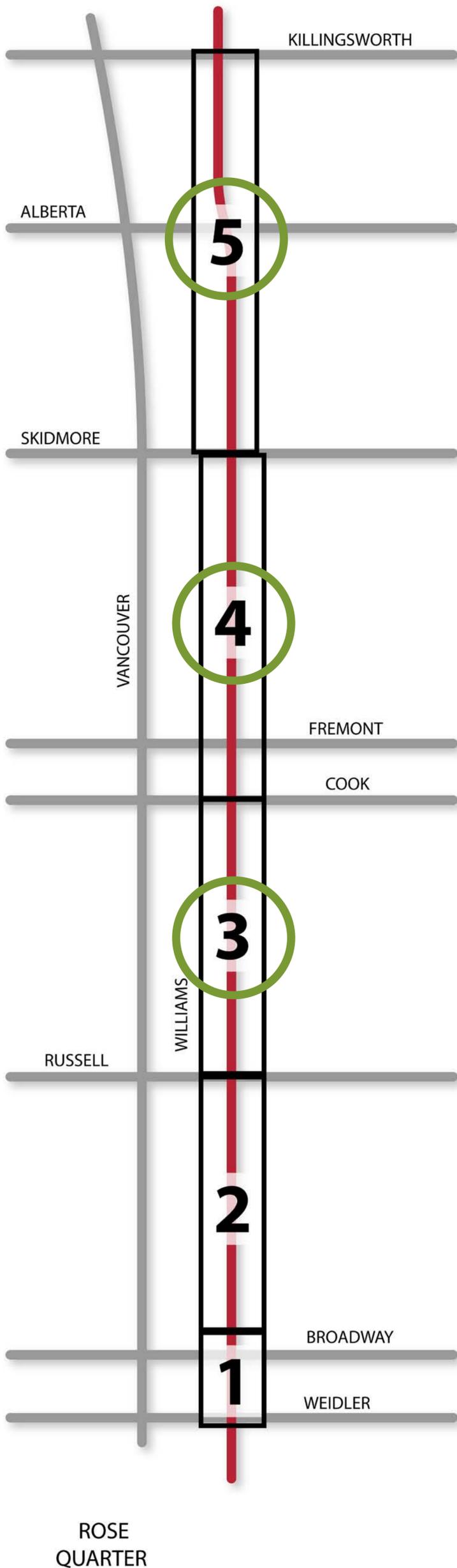


### BENEFITS:

- Provides a dedicated passing lane for faster cyclists to pass slower cyclists
- Allows faster cyclists to move off quicker at signals

# NORTH WILLIAMS SEGMENTS 5 - 3

North Williams Traffic Operations Safety Project



## 5 SKIDMORE TO KILLINGSWORTH

- Approximately 700 to 850 motor vehicles during peak hour
- No bicycle count data available
- Light bus stop activity; some conflicts (Alberta)
- Neighbors concerned about speeding (no speed data available)
- Crosswalks are used by vulnerable pedestrians
- Moderate parking demand



**OPPORTUNITY:** Remove a travel lane on the west side of the street and shift lanes to create space for an enhanced bikeway

## 4 COOK TO SKIDMORE

- 950 to 1,100 motor vehicles during peak hour
- 230 to 390 bicyclists during peak hour
- Light bus stop activity
- 31% of vehicles exceeding speed limit
- Busy crosswalks, especially at Failing
- Moderate to heavy parking demand
- OPPORTUNITY:** Add signals and use signal timing to slow traffic

## 3 RUSSELL TO COOK

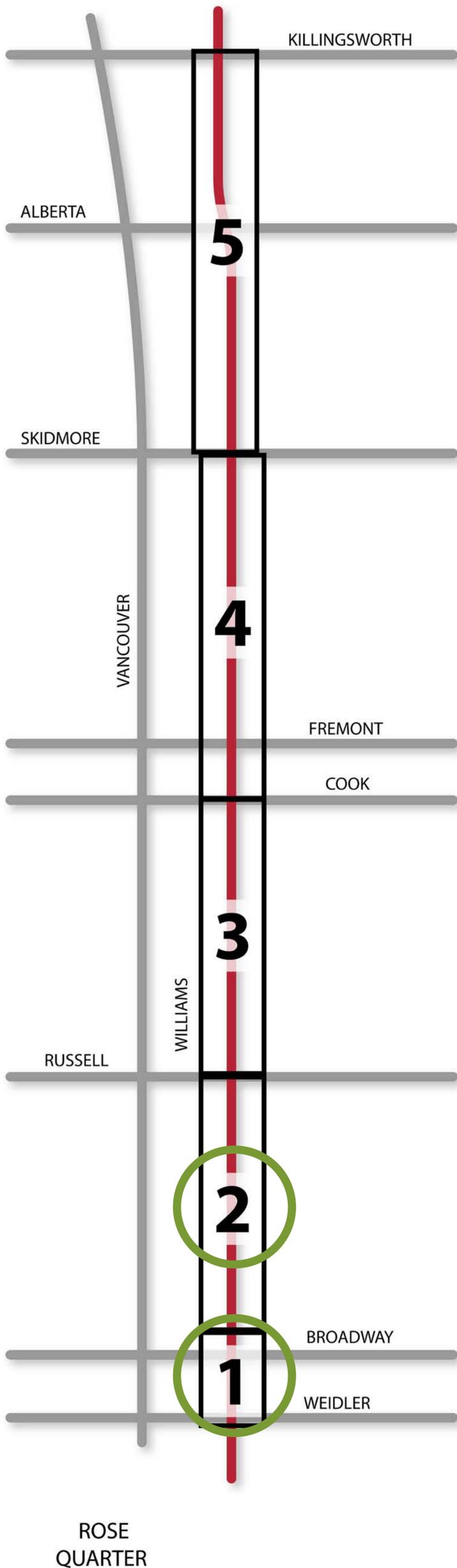
- 800 motor vehicles during peak hour
- Approximately 380 bicyclists during peak hour
- Heavy bus stop activity (some bus/bike leapfrogging)
- Light to moderate parking demand



**OPPORTUNITY:** Remove parking on the west side of the street and shift lanes to create space for an enhanced bikeway

# NORTH WILLIAMS SEGMENTS 2 - 1

North Williams Traffic Operations Safety Project



## 2 I-5 ON-RAMP TO RUSSELL



Approximately 700 motor vehicles during peak hour



Approximately 300 bicyclists during peak hour



Moderate bus stop activity – bus/bike leapfrogging



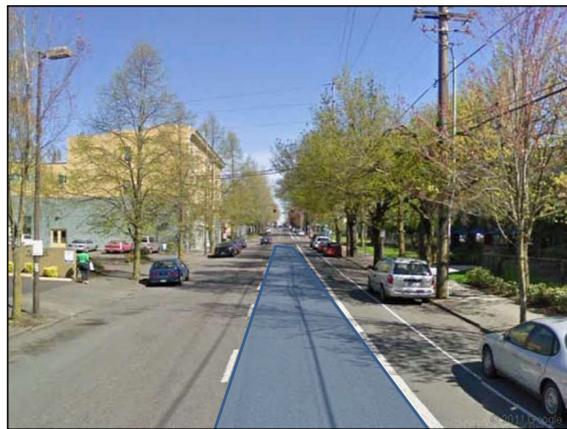
52% of vehicles exceed the speed limit, many neighbor complaints



Tillamook and Page used by vulnerable pedestrians



Light to moderate parking demand



### OPPORTUNITY:

Convert an auto travel lane into an enhanced bikeway

## 1 WEIDLER TO I-5 ON-RAMP



Approximately 1,550 motor vehicles during peak



Approximately 240 bicyclists during peak hour



Key transit connection from Rose Quarter



No parking in this segment



### OPPORTUNITY:

Convert one of three travel lanes into bus/bike space.

# SIGNAL PROGRESSION

## North Williams Traffic Operations Safety Project

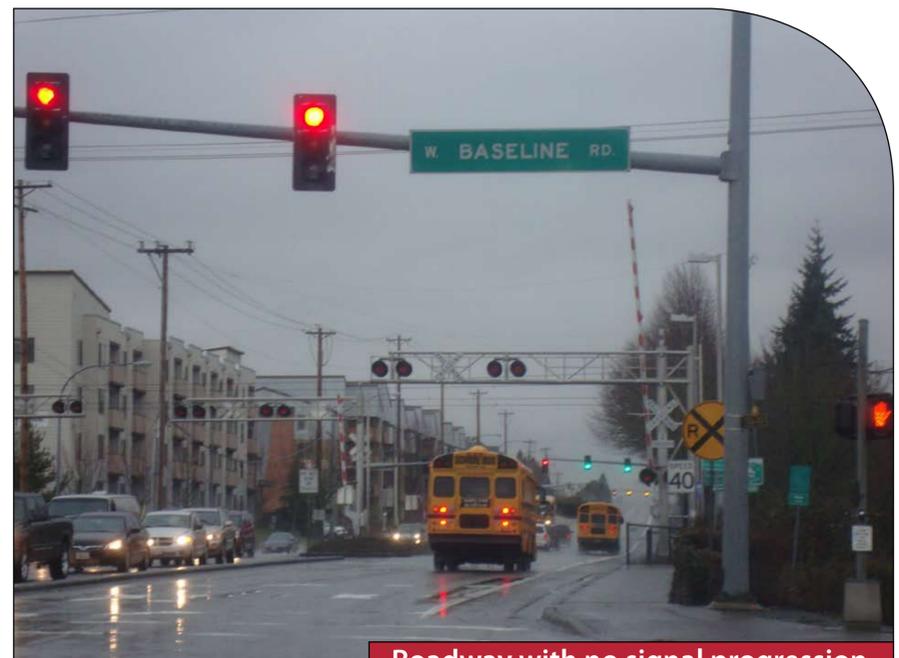
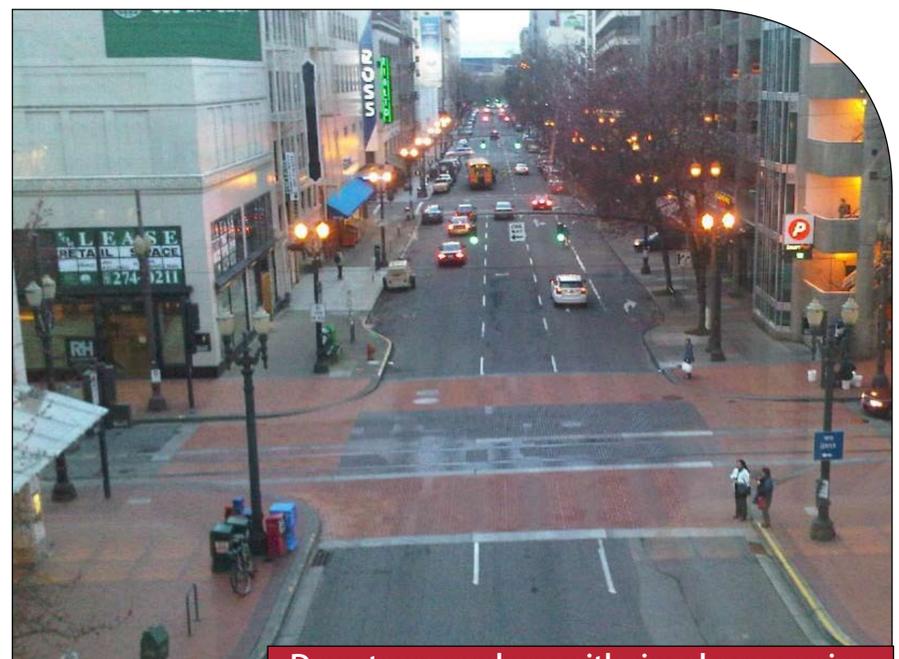
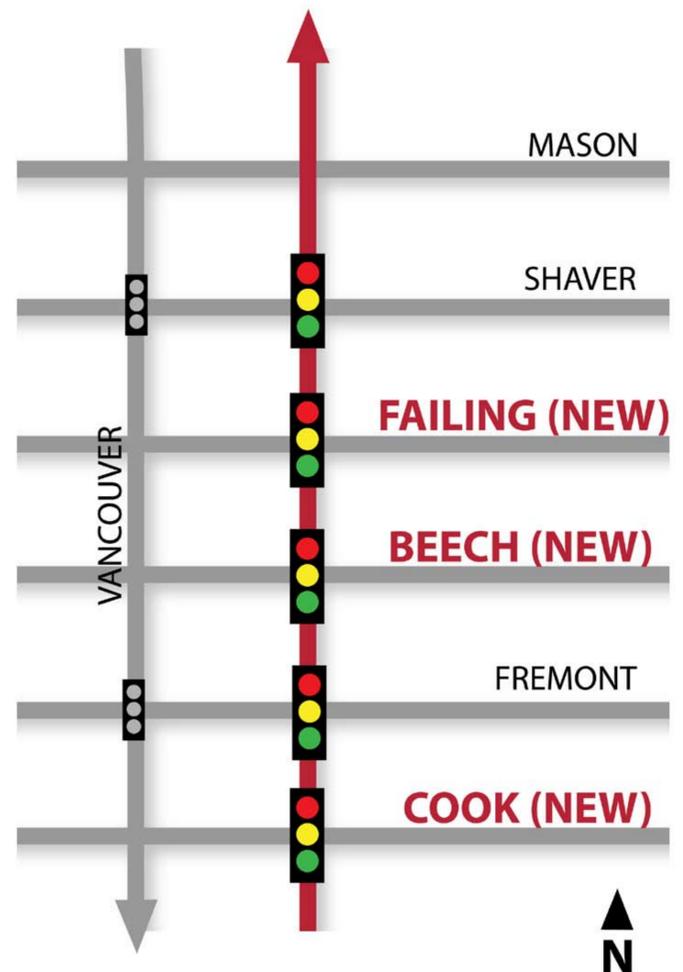
Ever notice that if you go the right speed along Grand Avenue (30 mph) or Broadway in Downtown (12 mph) you get all green lights? Traffic engineers adjust the timing of these signals so that the traffic progresses at these speeds. The same technique can be used on North Williams Avenue to better manage vehicle speeds.

However, providing a “green wave” requires a close and regular spacing of signals that does not currently exist on North Williams Avenue. It is proposed that speeds be better managed in the commercial district between Cook Street and Shaver Street by adding signals at:

- Failing Street
- Beech Street
- Cook Street

Other benefits from these signals include:

- Safer pedestrian crossings
- Safer passage for vehicles crossing or turning onto North Williams Avenue
- The possibility of timing the signals to allow bicyclists to travel through without stopping (“bicycle green wave”)



# LANE CONFIGURATION

North Williams Traffic Operations Safety Project

## One Lane or Two?

A single motor vehicle lane on North Williams Avenue can carry approximately 850 vehicles per hour. Two lanes can carry approximately 1,700 vehicles per hour. Peak hour traffic does not exceed the one lane capacity in a number of segments and existing traffic may be accommodated with a single lane.

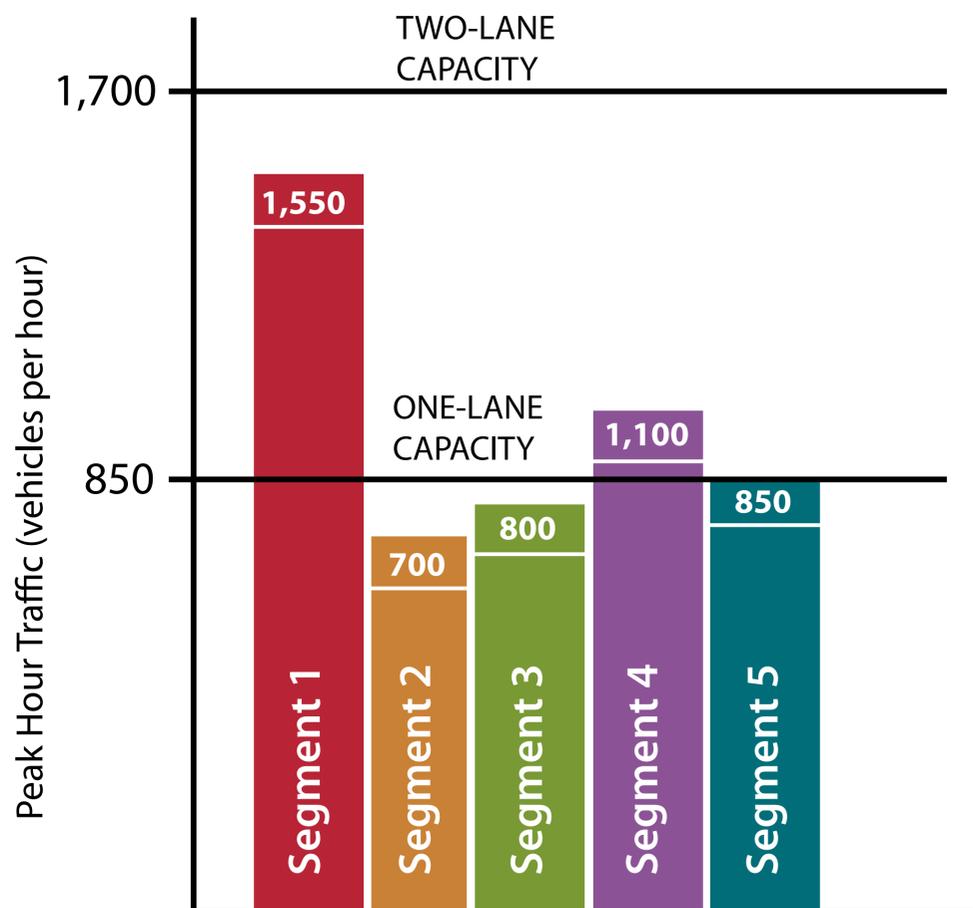
In segments 2 and 5, it is proposed that one of the motor vehicle travel lanes be converted to provide space for an enhanced bikeway and bus operating space. The benefits of a single travel lane arrangement include:

- Lower traffic speeds
- Easier for drivers to see pedestrians
- Shorter crossing distance for pedestrians
- Easier for pedestrians to identify safe crossing gaps in traffic stream

Issues that will need to be considered during design include:

- Additional delay to vehicles
- Emergency vehicle and bus operations

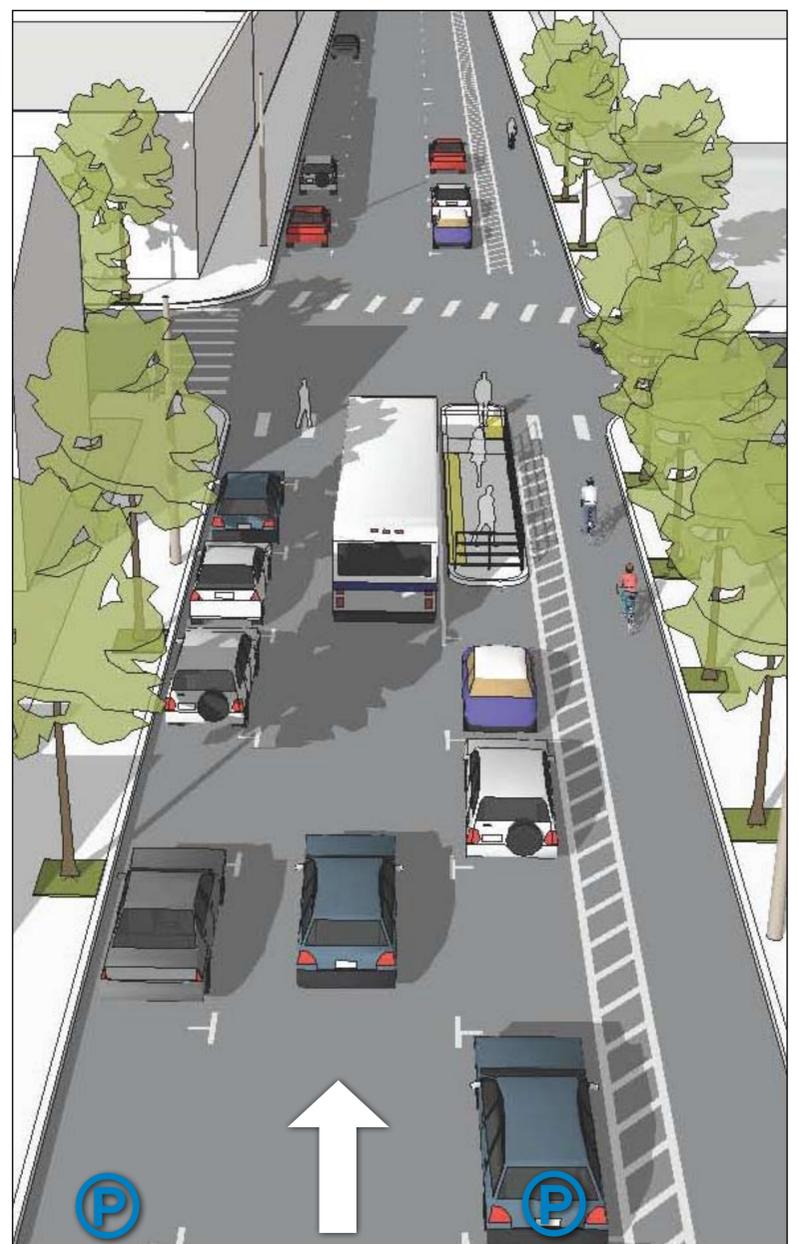
Weekday PM Peak Hour Motor Vehicle Traffic Volumes on North Williams Avenue



North Williams Street Segment



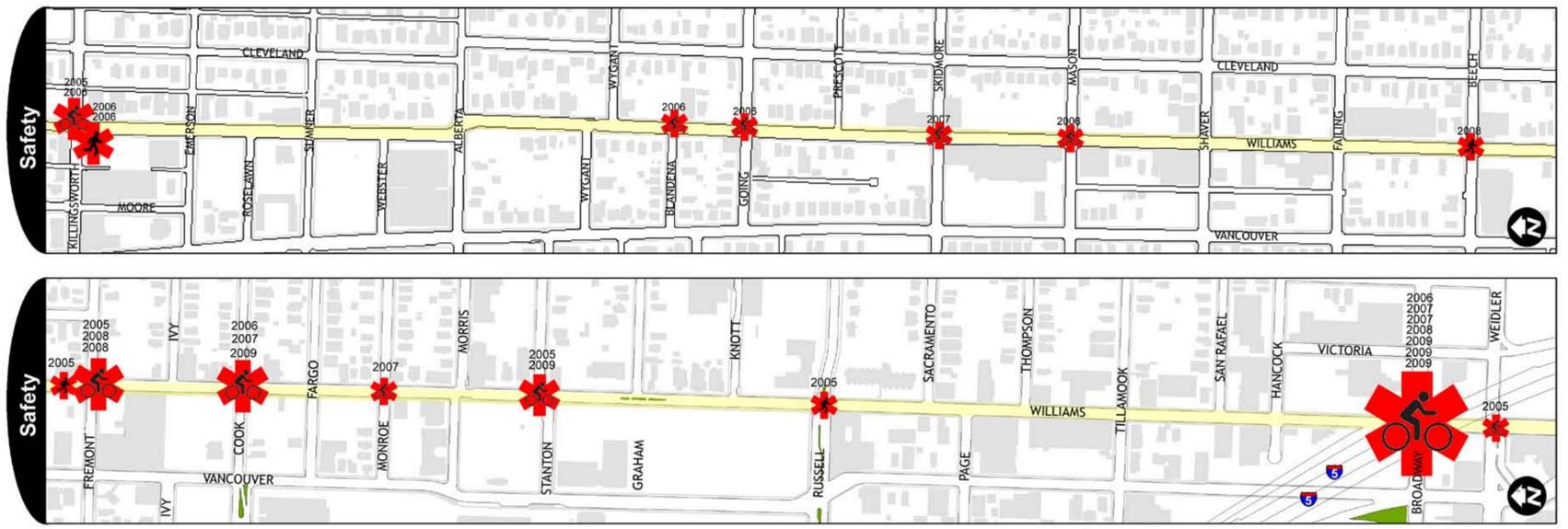
LEFT, existing roadway conditions at North Williams Avenue and Tillamook Street. RIGHT, enhanced bikeway treatment



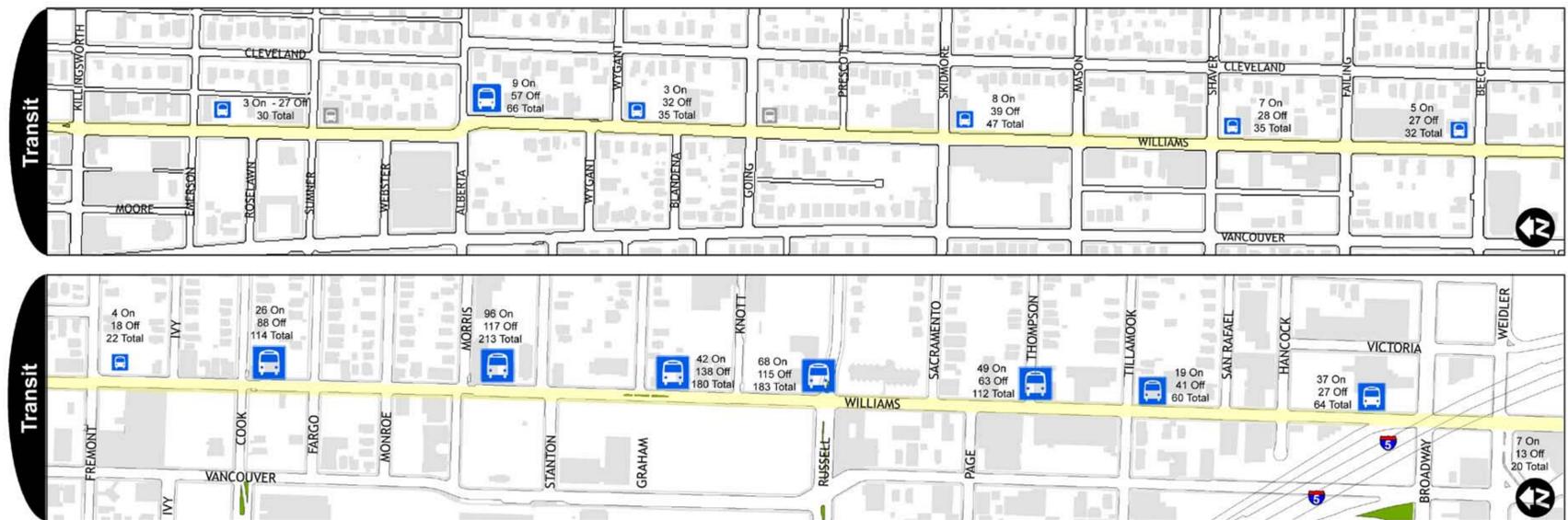
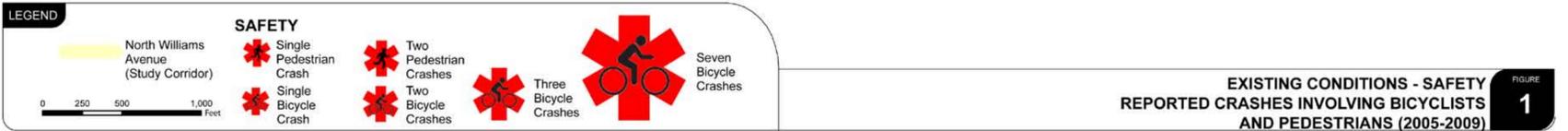
# EXISTING CONDITIONS

## North Williams Traffic Operations Safety Project

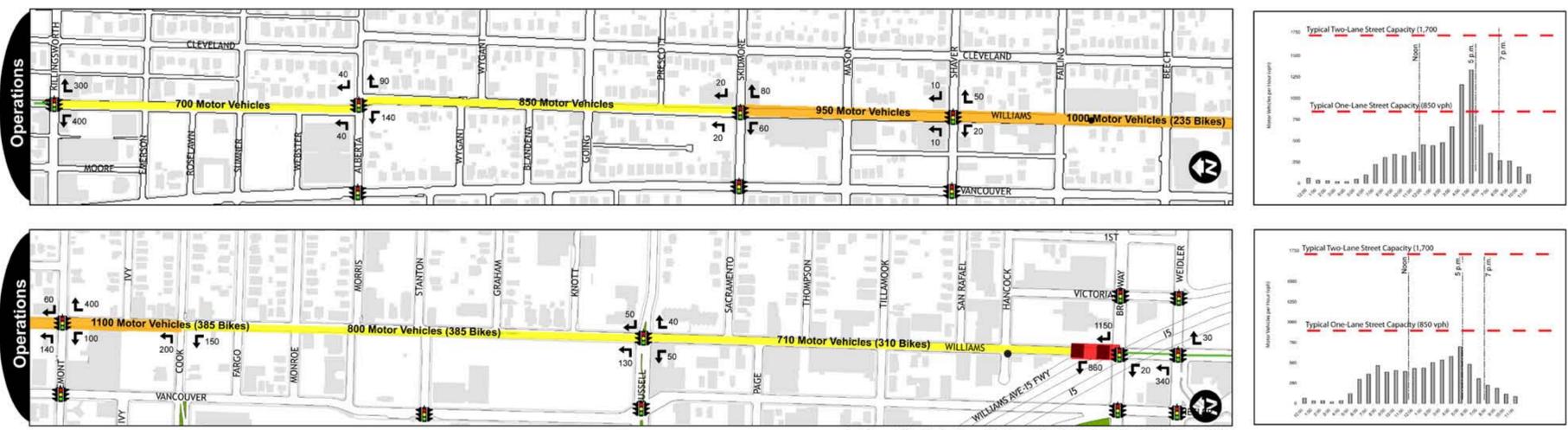
For more information see the North Williams Existing Conditions Report at [www.portlandonline.com/transportation/williams](http://www.portlandonline.com/transportation/williams)



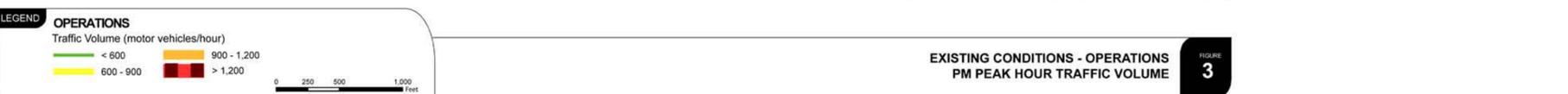
Data Source: Portland Department of Transportation, 2005-2009



Data Source: TriMet, Spring 2010



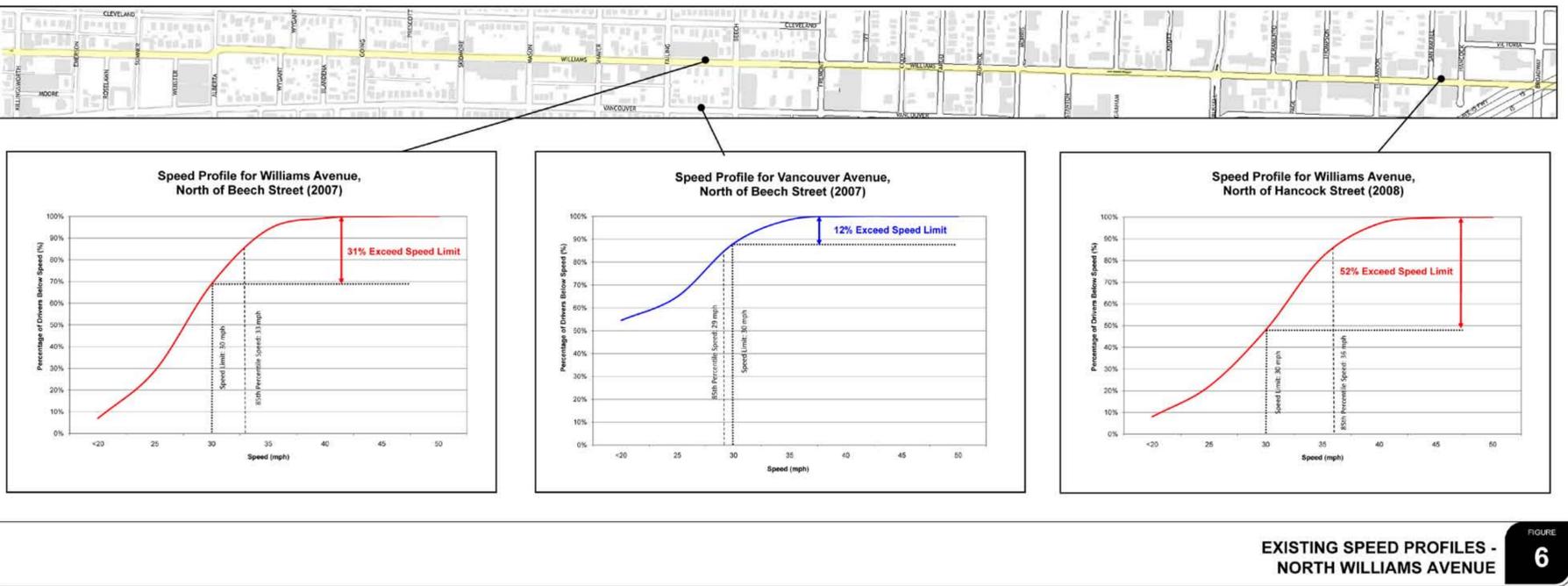
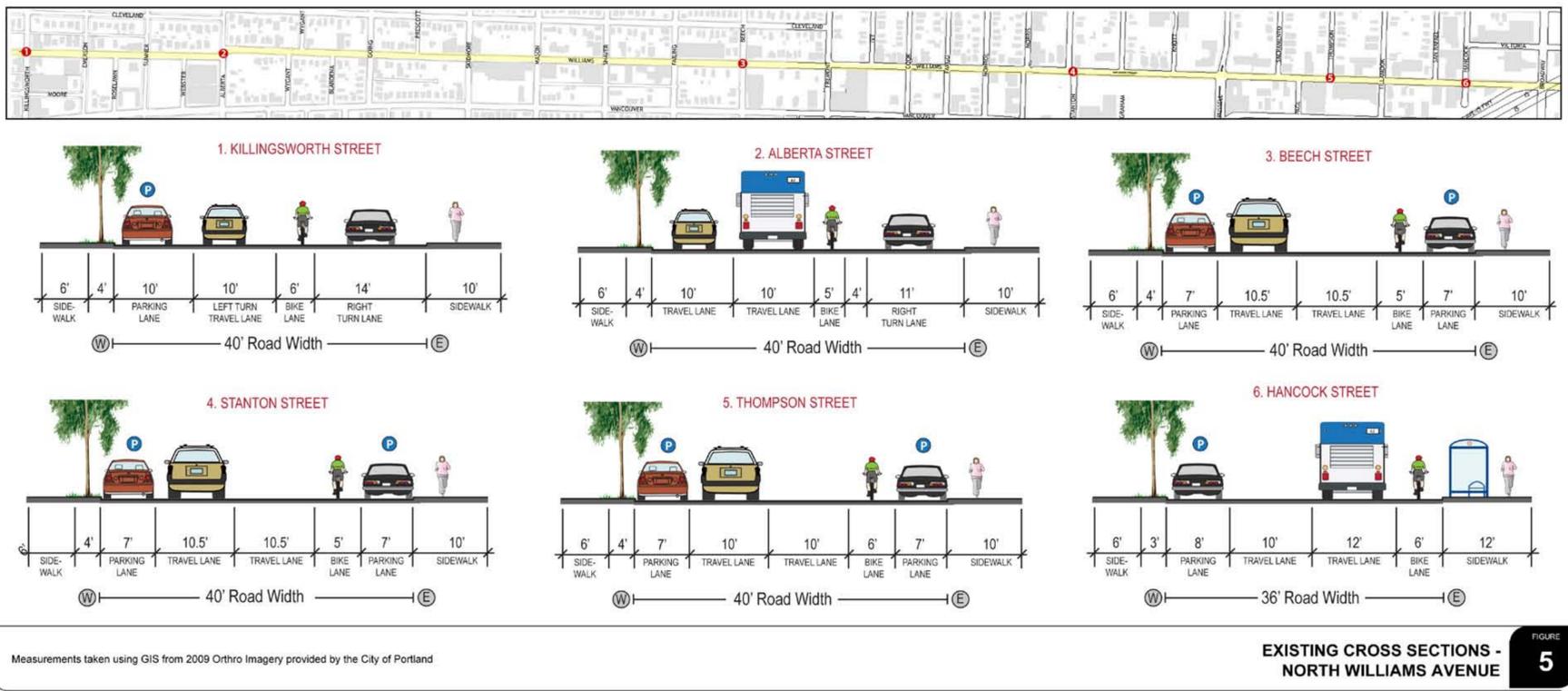
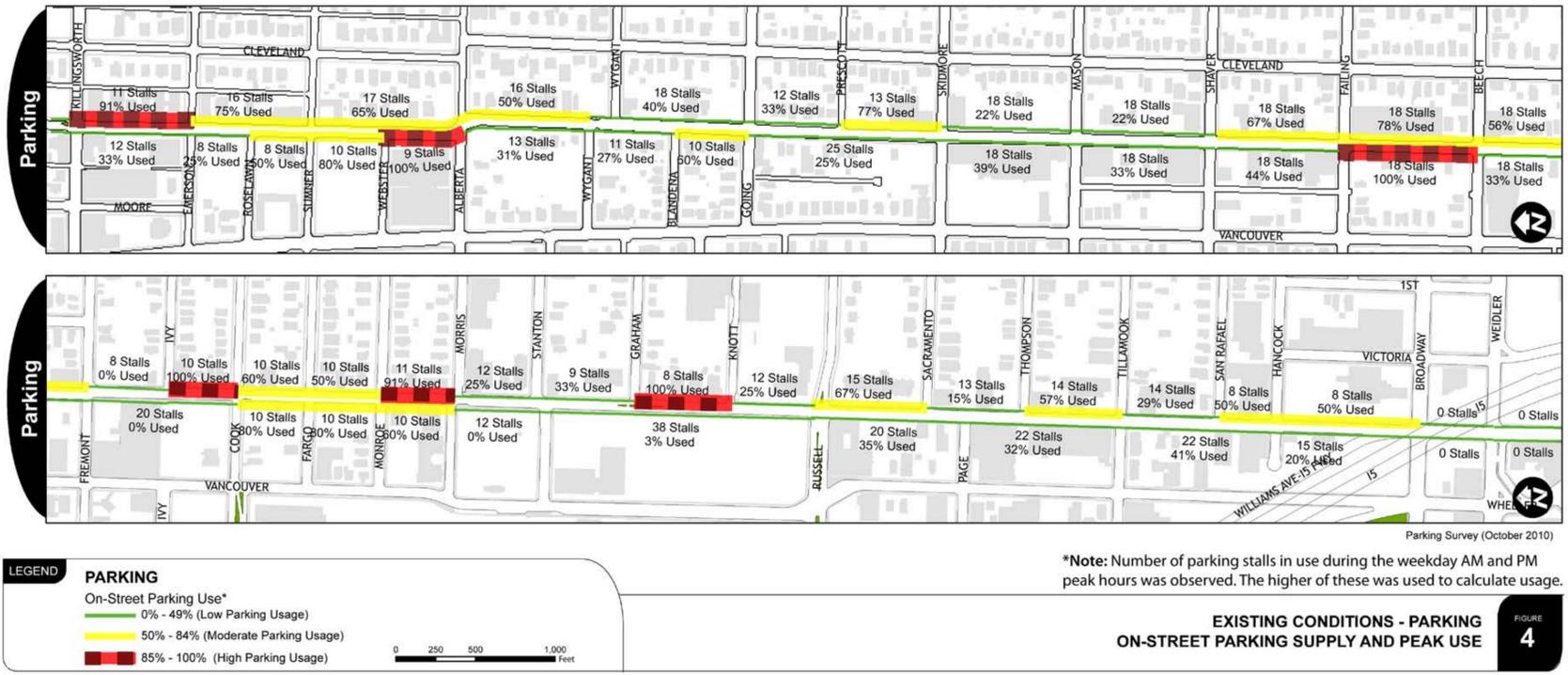
Data Source: City of Portland Annual Bike Count (2010), Quality Counts Bike & Vehicle Counts (2011)



# EXISTING CONDITIONS

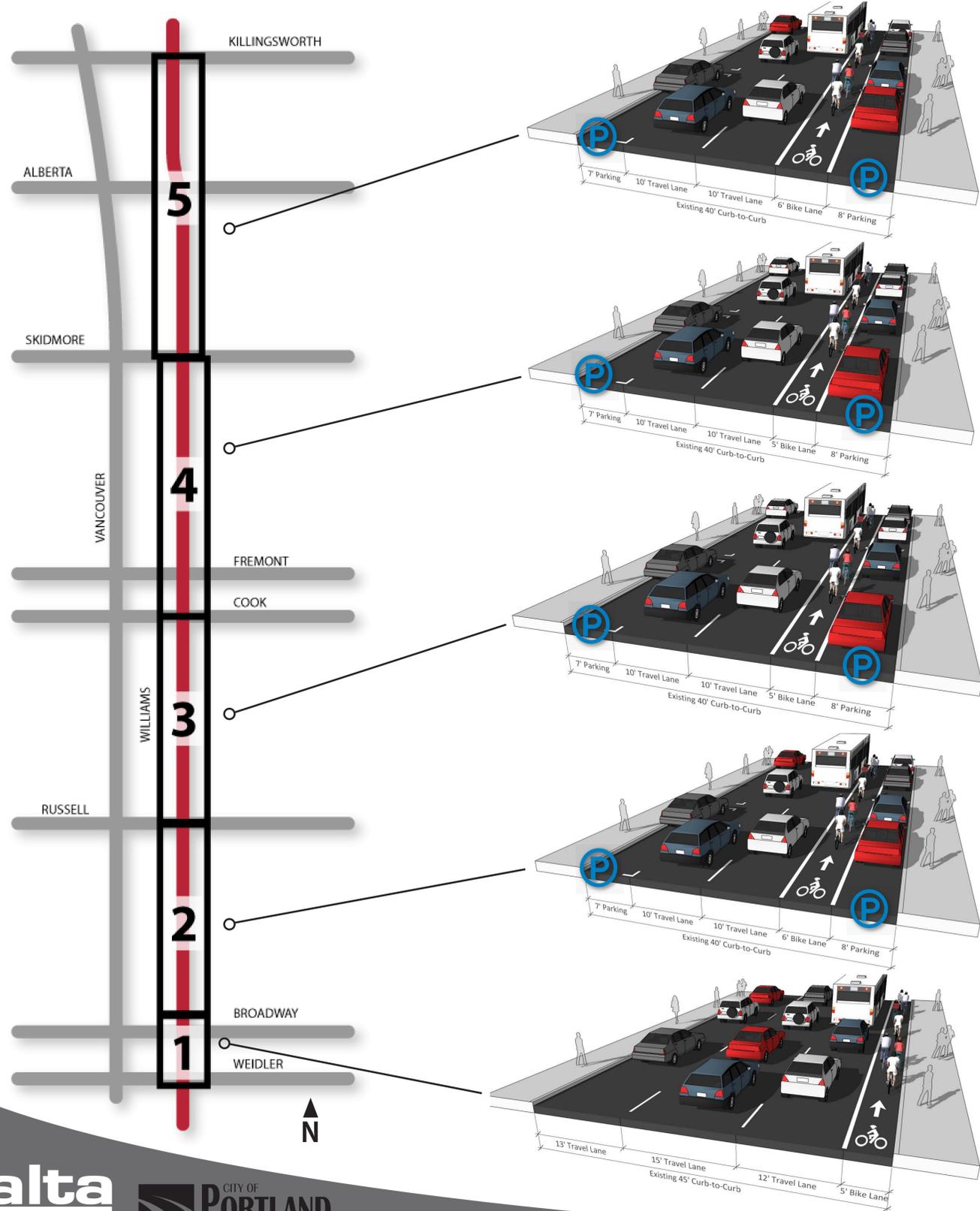
## North Williams Traffic Operations Safety Project

For more information see the North Williams Existing Conditions Report at [www.portlandonline.com/transportation/williams](http://www.portlandonline.com/transportation/williams)



# NORTH WILLIAMS POTENTIAL BIKEWAY ENHANCEMENTS

## EXISTING CONDITIONS



## PROPOSED ALIGNMENT OPTIONS

### CYCLE TRACK

### ENHANCED BIKE LANE

