

# NE 102nd AVE SAFETY PROJECT

## PILOT EVALUATION

The NE 102nd Ave Safety Project will be built as a pilot in spring 2019. Data regarding the operations and safety of the corridor and neighborhood streets will be collected in fall 2019 or several months after implementation, and compared with baseline data collected mostly in fall 2018 to evaluate the success of the pilot.

### Project Goals

- Reduce crashes
- Reduce vehicle speeds
- Improve pedestrian crossings
- Improve access to transit
- Create bicycle facilities that serve all ages and abilities

The NE 102nd Ave safety project strives to achieve these goals without causing major disruptions to transit service, nearby neighborhoods, or other uses of the street.



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Fall 2018 - 1

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### Data for Safety and Operations on NE 102nd Ave

Four measures will be used to evaluate safety and operations on 102nd Ave: crashes, vehicle speeds, transit delay, and peak travel. PBOT has established results that would reflect the desired outcome, an acceptable outcome, a cause for concern, and a call to action. If the results flag a “cause for concern,” next steps may include minor interventions to address concern or continued monitoring. If the results flag a “call to action,” next steps will include more substantial interventions to mitigate the issues identified.

#### Crashes

Crashes are a difficult measure for a pilot. Complete crash data is typically available a year-and-a-half after the calendar year is completed.



Crashes as an evaluation measure will include all pedestrian and bicycle crashes, and deadly and serious injury vehicle crashes, in line with the Vision Zero methodology. Current annual crash rates on NE 102nd Ave make it difficult to understand crash trends without several years of data. After one year, a shift in crashes may reflect circumstance or bad luck as much as it may reflect improvements or problems with infrastructure.

A further concern with using raw crash numbers is that infrastructure improvements may result in more people walking and biking. Therefore even if the number of crashes increases, the crash rate may decrease. PBOT collected some bicycle and pedestrian count data to account for potential increase in usage, but exact rates will not be available.

NO NECESSARY INTERVENTION	<b>DESIRED OUTCOME</b> No pedestrian, bicycle, serious injury or fatal crashes on NE 102nd during the pilot.
POSSIBLE INTERVENTION	<b>ACCEPTABLE OUTCOME</b> The number of bicycle, pedestrian, serious injury, and fatal crashes during the pilot period stay the same or decrease compared with baseline data.

POSSIBLE INTERVENTION	<b>CAUSE FOR CONCERN</b> The number of bicycle, pedestrian, serious injury, and fatal crashes increase somewhat compared with baseline data.
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SIGNIFICANT INTERVENTION	<b>CALL TO ACTION</b> The number of bicycle, pedestrian, serious injury, and fatal crashes increase significantly compared with baseline data.
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### Vehicle Speeds

The evaluation used 85th percentile speed – meaning 85% of vehicles travel at that speed or slower. This is the most common measure used by traffic engineers to establish the prevailing speed on a given road.



Baseline speeds on NE 102nd Ave were collected in 2017.

NO NECESSARY INTERVENTION	<b>DESIRED OUTCOME</b> 85th percentile speed drop to within a few miles of the speed limit. Less than 1% top-end speeders.
	<b>ACCEPTABLE OUTCOME</b> 85th percentile speeds decrease somewhat when compared with baseline data.

CAUSE FOR CONCERN POSSIBLE INTERVENTION	85th percentile speed stays about the same when compared with baseline data.
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CALL TO ACTION SIGNIFICANT INTERVENTION	85th percentile speed increases noticeably when compared with baseline data.
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### DEATH AND INJURY DUE TO SPEED



10% LIKELIHOOD OF FATALITY OR SEVERE INJURY

40% LIKELIHOOD OF FATALITY OR SEVERE INJURY

80% LIKELIHOOD OF FATALITY OR SEVERE INJURY

U.S. DEPARTMENT OF TRANSPORTATION, LITERATURE REVIEWED ON VEHICLE TRAVEL SPEEDS AND PEDESTRIAN INJURIES. MARCH 2000.

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### Transit Delay

Transit delay is a useful proxy for congestion. Furthermore, one of the greatest concerns with increased congestion is that it will have a detrimental impact on transit times.



Measures to improve transit delay may be different from measures to address congestion overall.

NO NECESSARY INTERVENTION	<b>DESIRED OUTCOME</b>	Transit delay is reduced in some spots when compared with baseline data.
	<b>ACCEPTABLE OUTCOME</b>	Transit delay does not change, or new incidents of delay are offset by reduced delay in other areas.

<b>CAUSE FOR CONCERN</b> POSSIBLE INTERVENTION	Transit delay emerges in new spots or longer delays occur at existing problem areas.
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<b>CALL TO ACTION</b> SIGNIFICANT INTERVENTION	Increased transit delay causes significant disruptions to transit service.
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### Peak Travel

There are different ways to measure corridor travel time. One measure is the duration and frequency of travel time peaks — periods during the day when travel time measurably increases due to congestion. Currently there is an increase in travel time during some evening peak hours, especially traffic traveling in the northbound direction at locations north of Fremont and north of Prescott.



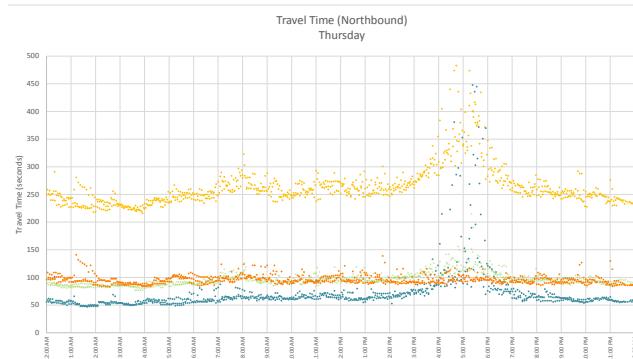
One concern is the emergence of new travel time peaks, either at other times of day or at different locations along the corridor, suggesting new congestion issues. Another possible concern is that the existing travel time peaks become larger, suggesting worse levels of congestion.

Average travel time for the whole corridor is expected to increase if speeds are successfully lowered. This number is not instructive of success or failure and will not be used.

NO NECESSARY INTERVENTION	<b>DESIRED OUTCOME</b> No new travel time peaks. The PM peak north of Fremont and/or Prescott stays about the same or shrinks.
	<b>ACCEPTABLE OUTCOME</b> Existing travel time peaks are slightly larger or more frequent.

CAUSE FOR CONCERN POSSIBLE INTERVENTION	New peaks emerge in other parts of the corridor or at other times of day and existing peaks become much larger or much more frequent.
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<b>CALL TO ACTION</b> SIGNIFICANT INTERVENTION	Many more peaks emerge at other times or at other locations along the corridor and existing peaks become much larger and much more frequent.
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# NE 102nd AVE SAFETY PROJECT

## PILOT EVALUATION

### Data for Safety and Operations on Neighborhood Streets

Speed and volumes will be measured on neighborhood streets that have been identified as at risk of impacts. This includes most streets that connect to NE 102nd Ave between NE Wielder St and NE Sandy Blvd, as well as a number of streets that connect to NE Prescott St or NE Sandy Blvd.

PBOT will monitor these streets for any significant increases in speed or volume. If a significant increase is found, PBOT will implement mitigation measures on the specific street to address the concern.

Mitigation measures always impact local residents as well. The most appropriate mitigation measure will depend on the nature of the problem it is trying to solve, the traffic pattern in the area, alternative routes, and desires of people living on a specific street. Therefore, specific mitigation measures will not be decided ahead of time, but will be determined as needed on a case by case basis. Examples of traffic calming mitigation measures include speed bumps, stop signs, partial road closure, and preventing certain turn movements. A more comprehensive list of measures that may be used can be found in Appendix C of the [2015 Neighborhood Greenways Assessment Report](#).



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### Active Transportation Improvements

The NE 102nd Ave Safety project includes a number of improvements for people walking, taking transit, and biking. These improvements cannot be measured by gathering data. Rather PBOT will conduct a survey of improvements and determine how well the corridor aligns with current policy and guidelines once the project is completed.

#### Enhanced Crossings

Does the corridor adhere to PBOT's marked crossing spacing guidelines?

Crossings that are no more than 800 ft apart for the NE 102nd Ave corridor.



Do all marked crossings meet or exceed PBOT's [crossing design guidelines](#)?

Marked crossing with enhanced/active warnings at all crossing locations are recommended for NE 102nd Ave.

Do all marked crossings meet or exceed PBOT's street lighting recommendations?

Adequate pedestrian level lighting at all crossings. Specific guidelines are in development as part of the [PedPDX](#).

#### Access to Transit

Do all transit stops have a marked crossing within 100 ft?



#### Bicycle Facilities

Are there bicycle facilities throughout the entirety of the corridor?

What is the [Level of Traffic Stress](#) of the bicycle facilities?

