Outer Division Safety Project

Evaluation Report

PBOT
PORTLAND BUREAU OF TRANSPORTATION

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OUTER DIVISION SAFETY PROJECT

PBOT
PORTLAND BUREAU OF TRANSPORTATION

Outer Division Safety Project evaluation

June 2024 (updated August 2025)

Outer Division Safety Project

The Outer Division Safety Project implemented critical multi-modal safety fixes on SE Division Street between 80th and 174th avenues to help prevent deaths and serious injuries resulting from traffic crashes on this high crash corridor. The improvements included:

- installing additional street lighting,
- infilling missing sidewalk,
- rebuilding corner ramps,
- enhancing the existing bike lanes,
- adding more frequent and safer signalized pedestrian crossing opportunities, and
- installing continuous raised center medians to help reduce turning movement crashes.

Before construction of this project, PBOT reduced the speed limit to 30 mph and installed speed safety cameras and speed reader boards.

Concurrent with this project, TriMet constructed the Division Transit Project, which improved transit and safety features along the corridor.

Project timeline

Community Engagement 2016-2024
Design 2017-2020
Construction 2021-2023

Project goals

- Improve safety for all modes and reduce potential for fatal and serious injury crashes.
- Improve lighting level and increase visibility for people using all modes.
- Improve access and accessibility for people walking along and across SE Division Street.
- Achieve PedPDX crossing spacing guidelines for enhanced signalized crossings.
- Improve safety for people biking on the corridor through separated and protected bike lanes.

Project budget

$11 million from the City of Portland general fund, Fixing Our Streets, HB 2017, transportation system development charges, and cannabis tax.

Learn more about the project and what's coming next by visiting the project website.

Outer Division Safety Project - portlandoregon.gov/transportation/outer-division-safety

EVALUATION

The Outer Division Safety Project was constructed from summer 2021 to early 2023. PBOT staff collected data before and after the project construction to evaluate changes to crashes, speed, transit operations, emergency vehicle travel time, U-turn execution, and compliance with active transportation guidelines.

The crash and injury section of the report will be updated once more post-project crash data is available.

RESULTS

The evaluation shows the project achieved some desirable outcomes in-line with the project goals with minimal undesirable side effects.

Safety: Crashes went down across all categories, especially where raised center medians were installed. Speed decreased in many places along SE Division Street. Further project improvements are planned for 2025 where speed did not go down.

Pedestrian Access: Thanks to seventeen new pedestrian crossings on SE Division Street there is an enhanced crossing for pedestrians nearby almost everywhere in the project area.

Bicycle Safety: The new protected bike lane, with bike signals and protected intersection designs at some intersections, and transit platforms to avoid bus incursion into the bike lane, mean the street now meets national guidelines for all ages and abilities bike facilities.

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KEY FINDINGS

- **Crashes where raised center medians were installed decreases dramatically,** nearly 2.5 times more than crashes at all locations.
- **Pedestrian crashes decreased substantially** even after accounting for area trends.
- **Median speed, prevailing speed, and top-end speeding** decreased west of SE 130th Avenue.
- **Prevailing speed and top-end speeding** increased east of SE 130th Avenue.
- **Transit travel time** became three and a half minutes faster from 7 a.m. to 7 p.m. (20% decrease) after the projects on SE Division Street were completed.
- **Transit on-time arrival** improved by nearly 50% (47% to 70% on-time arrivals) in the eastbound direction.
- **Emergency vehicle travel time** on SE Division Street decreased slightly all day and in the evening peak period.
- **U-turns** were functioning as intended at 16 observed locations. At seven locations PBOT has made adjustments.
- After 17 new crossings were built on this five-mile stretch, **an additional one and a half-miles of SE Division Street meets the crossing spacing guidelines.**
- After the new crossings were built, **29 of the 30 bus stops are now within 200 feet of an enhanced crosswalk.**
- The project upgraded the infrastructure to a **protected bike lane, with bike signals and protected intersection designs at some intersections, and transit platform to avoid bus incursion into the bike lane.**

PRELIMINARY CRASH ANALYSIS ON SE DIVISION STREET

Key findings: **Crashes decreases dramatically in segments where raised center medians were installed, nearly 2.5 times more than at all locations.**

Pedestrian crashes decreased substantially even after accounting for area trends.

The deadly and serious injury crash rate is lower after accounting for area trends.

PBOT staff focus on six key crash categories:

- Deadly and serious injury crashes
- Pedestrian crashes
- Bicycle crashes
- Vision Zero focus crashes: crashes where a pedestrian or person biking is injured or where anyone is killed or seriously injured
- All crashes

Raised center medians were one of the most important safety elements installed as part of the Outer Division Safety project, therefore staff analyzed crashes along segments where they were added. Results are on the following page.

The Outer Division Safety Project is big enough and busy enough that after only one year of post-project data, staff is able to run a comparative analysis for multiple crash categories. A comparative analysis for bicycle crashes will be available in 2027.

The deadly and serious injury crash rate increased. However, 2023 was one of the worst years for deadly and serious injury crashes on record. Once accounting for area trends, the deadly and serious injury crash rate went down on SE Division Street in 2023.

See the appendix for more details.

Crashes on SE Division Street
Annual average crashes from SE 80th to 174th avenues

Crash Category	Pre-project (2015 - 2019)	Post-project (2023)
Deadly and serious injury*	11.4	13.0
Pedestrian	14.6	5.0
Bicycle	4.6	1.0
Vision Zero focus	26.2	15.0
All	307.4	146.0

Comparative analysis of crashes on SE Division Street
Change in crash rates from SE 80th to 174th avenues

Crash Category	Before 2015 - 2019	After 2023	Change	Citywide and District change	Relative Change
Deadly and serious injury	11.4	13.0	+14%	+53%	-26%
Pedestrian	14.6	5.0	-66%	-51%	-30%
Vision Zero focus	26.2	15.0	-43%	-12%	-35%
All	307.4	146.0	-53%	-37%	-24%

**The deadly crash rate went from 2.4 to 3.0, the serious injury crash rate went from 9.0 to 10.0*

Preliminary Crash Analysis on SE Division Street segments with raised center medians

Over three miles of raised center medians were built along five miles of SE Division Street. In the pre-project data, crashes in segments where medians were added accounted for 33% - 42% of all crashes in the project area. With a smaller subset of crashes, staff will only be able to provide a comparative analysis for deadly and serious injury crashes and for bicycle crashes in 2027.

Crashes where raised center medians were added decreased by 58% after accounting for area trends, compared with a decrease of 24% throughout the whole project area.

Vision Zero focus crashes also decreased more sharply in areas where raised center medians were installed compared with the rest of the project area. Pedestrian crashes decreased in segments where raised center medians were installed, although not as much as in the project area as a whole. However, these two categories still have a relatively small amount of data, which may explain the discrepancy. The trends will become clearer as more data becomes available.

Specific methodology considerations, including which segments were listed as having a raised center median and which were not, are included in the appendix.

Crashes on SE Division Street segments with raised center medians
Annual average crashes from SE 80th to 174th avenues where raised center medians were added

Crash Category	Pre-project (2015 - 2019)	Post-project (2023)
Deadly and serious injury*	3.8	4.0
Pedestrian	6.2	3.0
Bicycle	1.8	0.0
Vision Zero focus	10.4	5.0
All	116.0	29.0

Comparative analysis of crashes on SE Division Street segments with raised center medians
Change in crash rates from SE 80th to 174th avenues where raised center medians were added

Crash Category	Before 2015 - 2019	After 2023	Change	Citywide and District change	Relative Change
Pedestrian	6.2	3.0	-52%	-45%	-13%
Vision Zero focus	10.4	5.0	-52%	-5%	-49%
All	116.0	29.0	-75%	-41%	-58%

*The deadly crash rate went from 0.6 to 2.0, the serious injury crash rate went from 3.2 to 2.0

SE 92nd Avenue

Car crash causing a serious injury

A northbound driver hit an eastbound driver who was eluding police and ran the signal. The driver of the eastbound vehicle was seriously injured. The other driver and four passengers, including two children, suffered moderate injuries.

West of SE 103rd Avenue

Pedestrian crash causing a serious injury

An eastbound driver was speeding and hit a driver backing out of a driveway. The collision pushed the vehicle into a pedestrian in the bike lane. The pedestrian was seriously injured.

SE 92nd Avenue

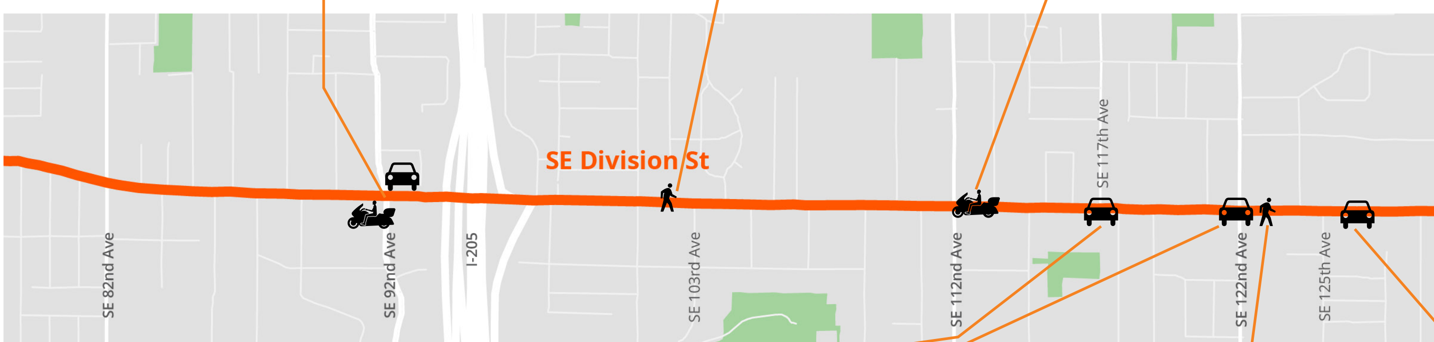
Motorcycle crash causing a serious injury

A southbound motorcyclist was driving fast and recklessly and rear-ended a vehicle stopped at the light. The motorcyclist suffered a serious injury.

East of SE 112th Avenue

Motorcycle crash causing a serious injury

A westbound driver turned left to enter a driveway. There are concrete separators that block this left turn. They hit an eastbound motorcyclist, causing a serious injury.



SE 117th Avenue

Car crash causing a serious injury

A westbound driver shifted lanes into another westbound driver, seriously injuring them. The first driver and a passenger suffered minor injuries.

East of SE 122nd Avenue

Pedestrian crash causing a deadly injury

An eastbound driver crashed into and killed a pedestrian that was in the roadway. It is unknown what the pedestrian was doing in the roadway.

SE 122nd Avenue

Car crash causing a serious injury

A westbound driver ran the signal and crashed with a northbound driver. The westbound driver was seriously injured, the northbound driver and passenger suffered minor injuries.

East of SE 125th Avenue

Car crash causing a serious injury

A driver was turning right out of a driveway on the north side of the street and crashed into a westbound driver, seriously injuring them.

East of SE 135th Avenue

Pedestrian crash causing a deadly injury

A westbound driver crashed into and killed a pedestrian who was in the roadway. It is unknown what the pedestrian was doing in the roadway.

SE 136th Avenue

Bicycle crash causing a minor injury

An eastbound driver disregarded the signal and made a right turn across the bike lane where a cyclist was riding eastbound.

SE 141st Avenue

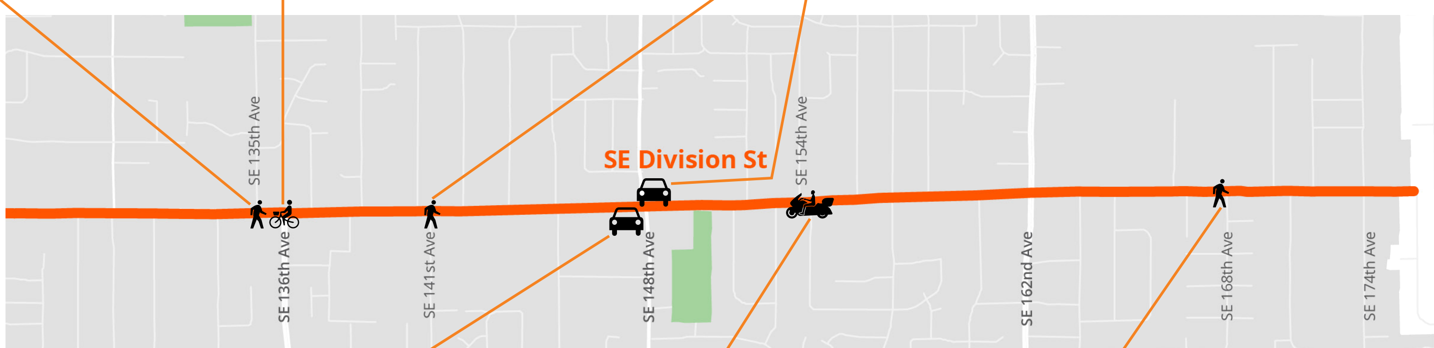
Pedestrian crash causing a minor injury

A northbound driver was using their cellphone and ran a stop sign while making a right turn onto SE Division Street. They hit and caused a minor injury to a pedestrian crossing SE 141st Avenue westbound.

SE 148th Avenue

Car crash causing a serious injury

A westbound driver crashed into a southbound driver making a right turn onto SE Division Street. One of the drivers disregarded the signal but it is unknown which one. One driver suffered serious injuries and the other moderate injuries.



SE 148th Avenue

Car crash causing serious injuries

An eastbound driver was eluding police and driving recklessly when they ran the red light and hit a northbound driver, causing serious injuries to the driver and passenger. The first driver suffered moderate injuries.

SE 154th Avenue

Motorcycle crash causing a serious injury

A speeding westbound motorcyclist crashed into an eastbound driver turning left onto SE 154th Avenue. The motorcycle rider suffered serious injuries. An upcoming project is adding a median here that blocks this left turn movement.

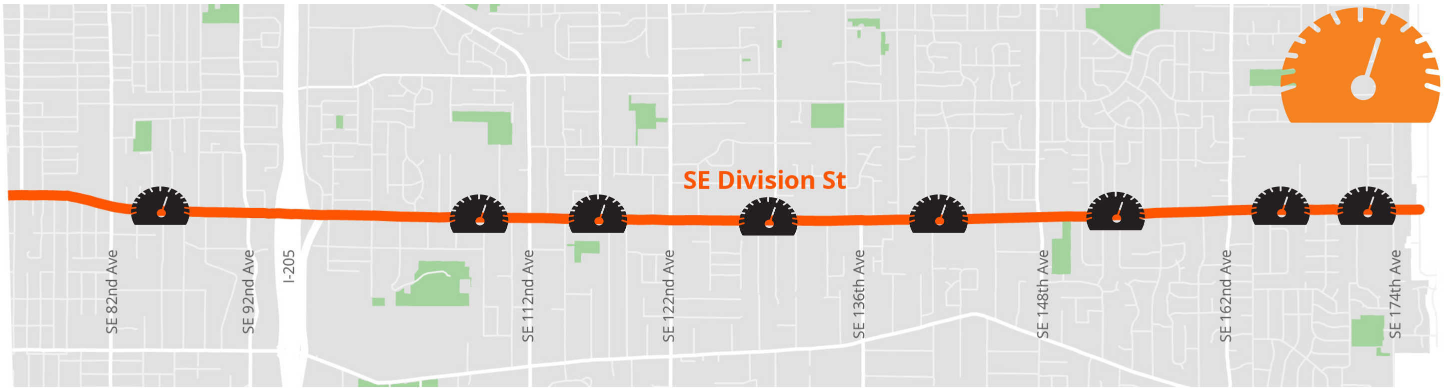
SE 168th Avenue

Pedestrian crash causing a deadly injury

A speeding eastbound driver crashed into and killed a pedestrian that was crossing SE Division Street southbound. The pedestrian disregarded the signal.

Summary

Ten of the 15 crashes include egregious behavior that is difficult to design against such as reckless driving, signal disregard, and pedestrians standing in the roadway. Two of the remaining crashes involve left turns, one where PBOT already prevents left turns with concrete, and another where PBOT will be preventing the left turn soon. Staff will continue to monitor crashes for possible improvements in the future.



SPEED ON SE DIVISION STREET

Key findings: **All three speed measures decreased at almost all locations in the western half of the project area.**

Prevailing speed and top-end speeding increased in the eastern half of the project area. Median speed depended on location.

Most speed changes were very small. However there was a substantial decrease (-24%) in top-end speeding west of SE 130th Avenue, and a substantial increase (+82%) in top-end speeding at SE 165th Avenue.

Reducing vehicle speed was not a specific goal of the Outer Division Safety Project. However, reducing vehicle speed, particularly top-end speeding, is a powerful tool for improving safety. Therefore, PBOT staff included vehicle speed analysis in this evaluation report.

PBOT measured speed at eight locations on SE Division Street: at 84th/90th, 109th, 116th, 129th, 141st/142nd, 152nd, 165th, and 171st avenues. The speed limit on SE Division Street was 30 mph for pre- and post-project counts.

Because there were so many count locations and because results were different on different ends of the corridor, the analysis looked at the project average as well as the western and eastern halves independently, split at SE 130th Avenue.

Three speed measures were evaluated:

- Median speed (50th percentile)
- Prevailing speed (85th percentile)
- Top-end speeders and top-end speeding

This evaluation report cannot definitively explain the reasons why speed increased or decreased where it did. Below are some project and environmental elements to consider.

The COVID-19 pandemic coincides with an increase in speeding nationwide and citywide. There are many hypotheses for why, including lower traffic volumes and degraded mental and societal health, but no definitive explanations. Speed counts on SE Stark Street did not follow a similar pattern to SE Division Street. However, PBOT added a speed safety camera to SE Stark Street which may have skewed the results.

Raised center medians and protected bike lanes create vertical barriers and visually narrow the roadway which can lower speeds. The Division Safety Project did not install a raised center median between SE 152nd and 174th avenues.

Count locations were slightly different before and after at two locations (SE 84th/ 90th and 141st/ 142nd avenues) which may have introduced discrepancies.

See the appendix for more details on the speed analysis.

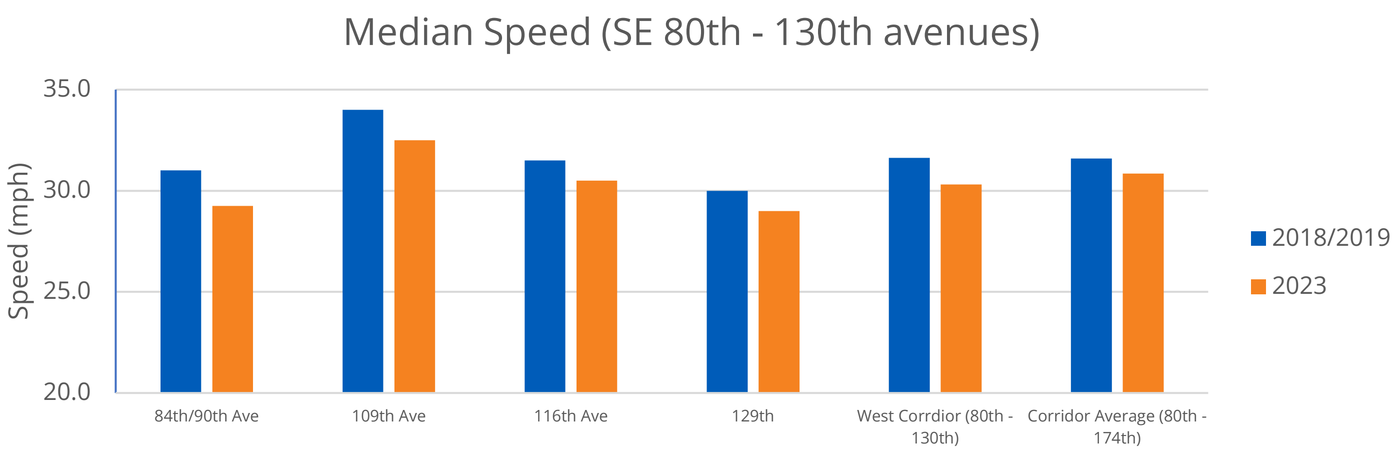
CHANGE IN SPEED ON SE DIVISION STREET

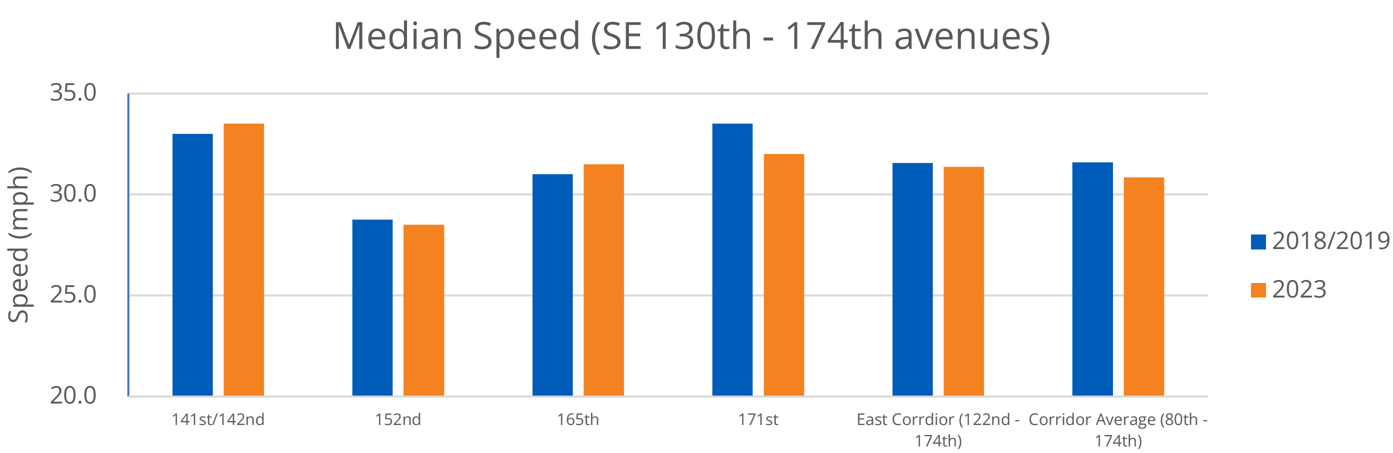
	Median Speed	Prevailing Speed	Top-End Speeders	Top-End Speeding
SE 84th/ 90th avenues	-5.6% ↓	-4.9% ↓	-51% ↓	-39% ↓
SE 109th Avenue	-4.4% ↓	-3.8% ↓	-44% ↓	-31% ↓
SE 116th Avenue	-3.2% ↓	0%	-18% ↓	4.4% ↑
SE 129th Avenue	-3.3% ↓	-2.9% ↓	-38% ↓	-19% ↓
SE 141st/ 142nd avenues	1.5% ↑	2.7% ↑	5.6% ↑	42% ↑
SE 152nd Avenue	-0.9% ↓	0.8% ↑	-1% ↓	32% ↑
SE 165th Avenue	1.6% ↑	4.1% ↑	38% ↑	82% ↑
SE 171st Avenue	-4.5% ↓	1.3% ↑	-9.9% ↓	14% ↑
West Corridor (SE 80th - 130th avenues)	-4.2% ↓	-2.9% ↓	-39% ↓	-24% ↓
East Corridor (SE 130th - 174th avenues)	-0.6% ↓	2.2% ↑	5.9% ↑	38% ↑
Corridor average (SE 80th - 174th avenues)	-2.4% ↓	-0.3% ↓	-19% ↓	7.3% ↑

CHANGE IN MEDIAN SPEED ON SE DIVISION STREET

Median speed decreased in most locations across the corridor, the exceptions being at SE 141st/ 142nd and 165th avenues. The median speed decreased on both western and eastern halves of the SE Division Safety Project, although the change was much more pronounced on the western half.

In most cases median speed did not change substantially. Median speed decreased by two or more mph at SE 84th/ 90th, 109th, and 171st avenues, but only in the eastbound direction. At SE 116th Avenue, median speed decreased by two mph in the west bound direction, and at SE 165th Avenue median speed increased by two mph in the eastbound direction.

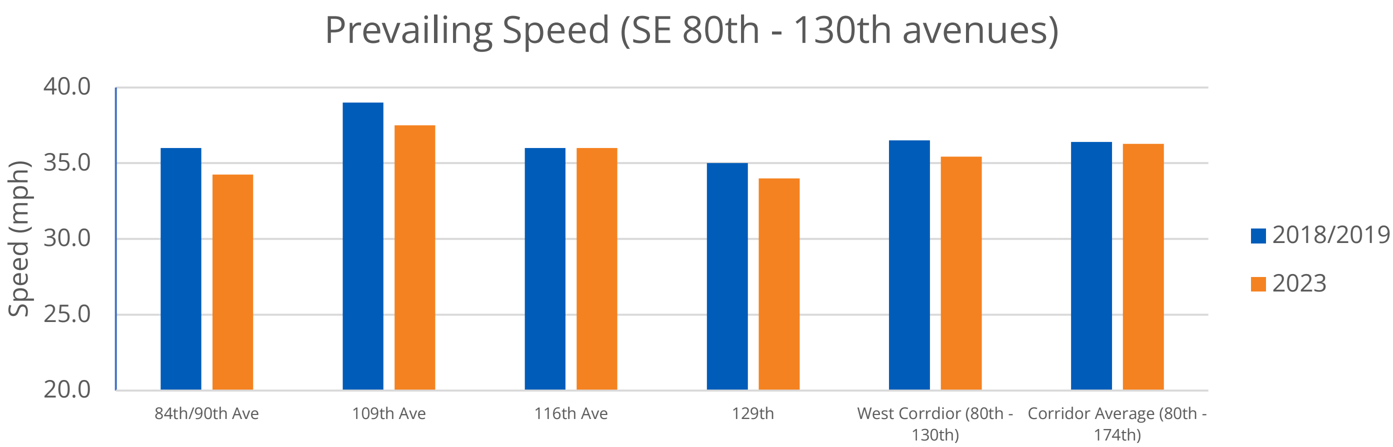


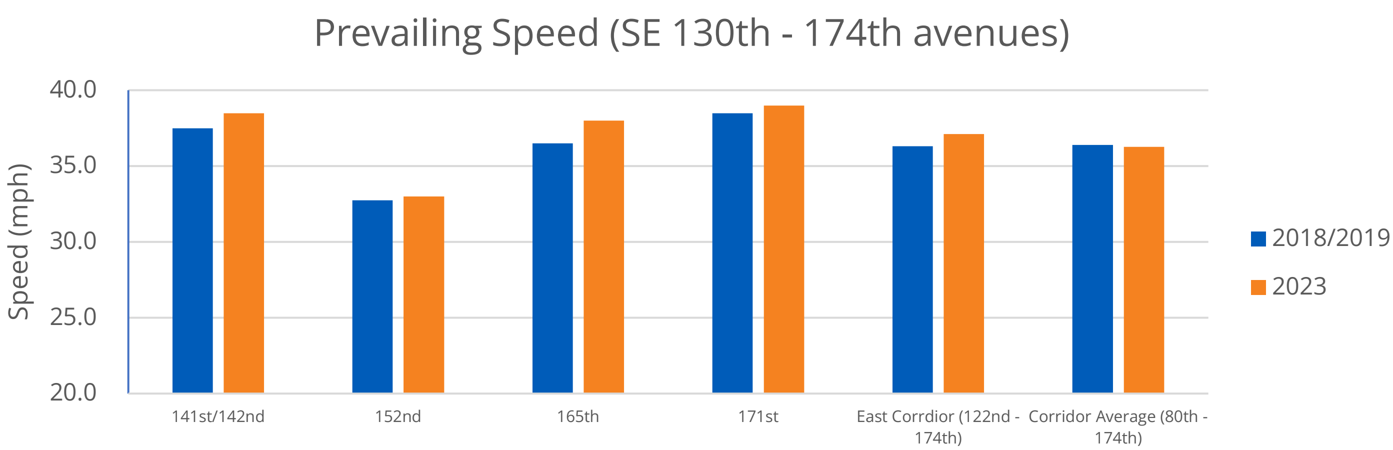


CHANGE IN PREVAILING SPEED ON SE DIVISION STREET

Prevailing speed decreased in locations on the western half of the SE Division Safety Project but increased on locations in the eastern half of the project. On average, the 85th percentile driver on SE Division Street was driving 36 mph before and after the project.

In most cases prevailing speed did not change substantially. Prevailing speed decreased by two or more mph at SE 84th/ 90th and 109th avenues, but only in the eastbound direction. Prevailing speed increased by two or more mph at SE 141st/ 142nd and 165th avenues, but also only in the eastbound direction.



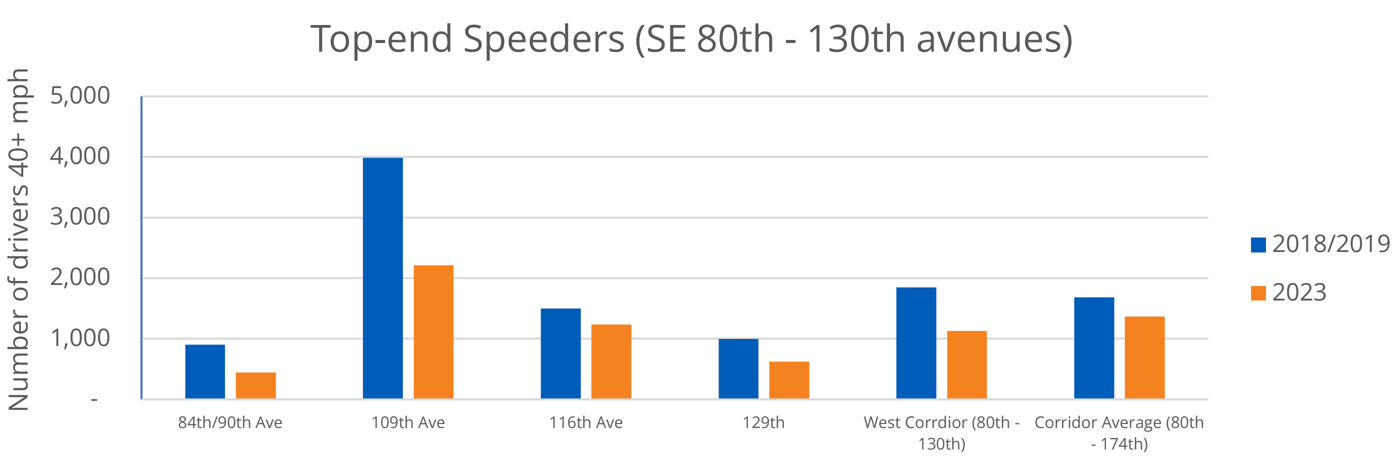


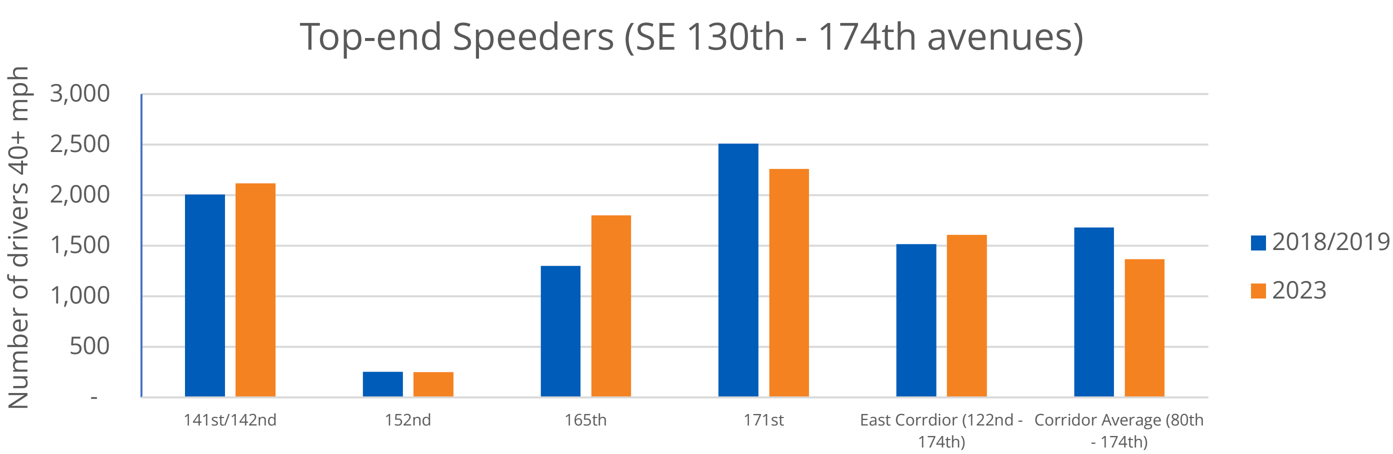
CHANGE IN TOP-END SPEEDERS ON SE DIVISION STREET

The number of top-end speeders decreased in most locations across the corridor, the exceptions being at SE 141st/ 142nd avenues and at SE 165th Avenue. The number of top-end speeders decreased substantially in the western half of the Outer Division Safety Project, dropping by nearly 40%. That means that every day there were 700 fewer drivers who were speeding by more than ten mph. The number of top-end speeders decreased slightly east of SE 130th Avenue, but only in the eastbound direction.

SE 84th/ 90th and 109th avenues had the most pronounced drops in the number of top-end speeders, with a drop of nearly 2,000 drivers per day driving more than ten mph over the speed limit at SE 109th Avenue. There were an additional 500 top-end speeders at SE 165th Avenue, entirely due to drivers traveling in the eastbound direction.

Top-end speeding is particularly low near SE 152nd Avenue, likely because a speed safety camera was installed near that location in 2017, before pre- and post-project counts.

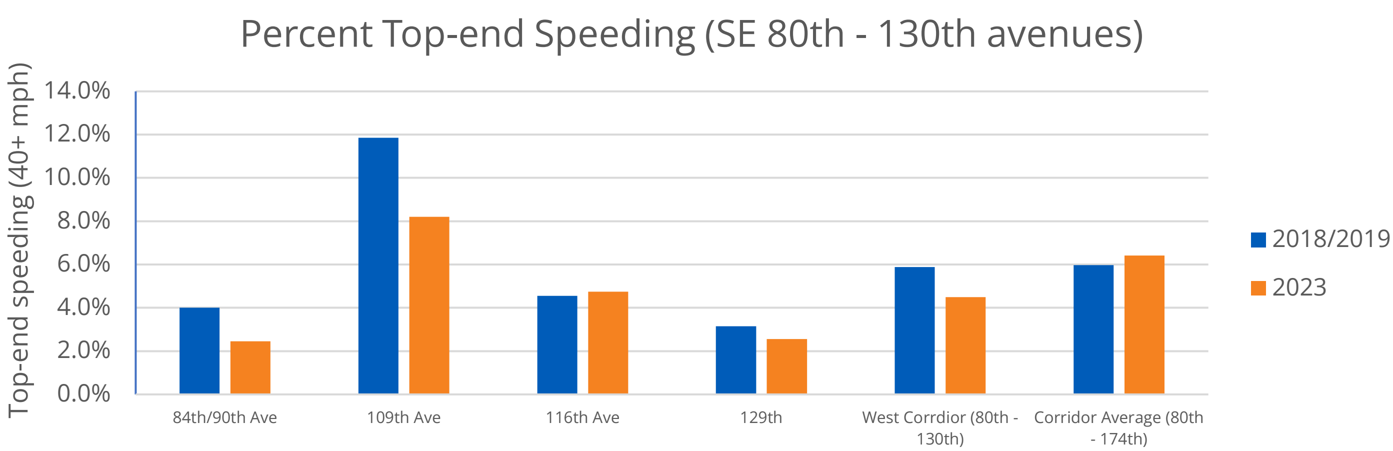


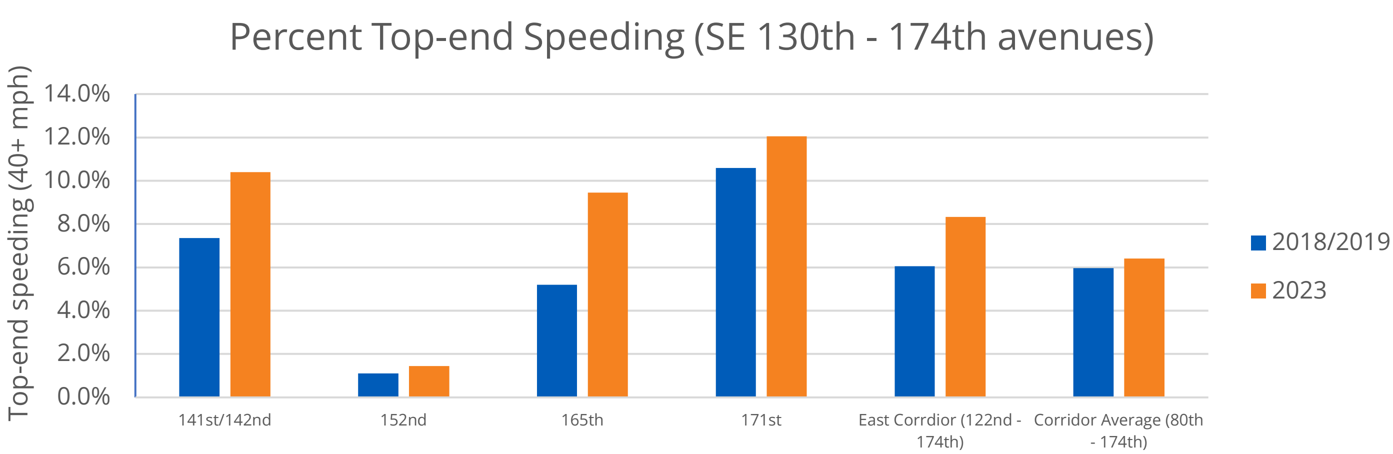


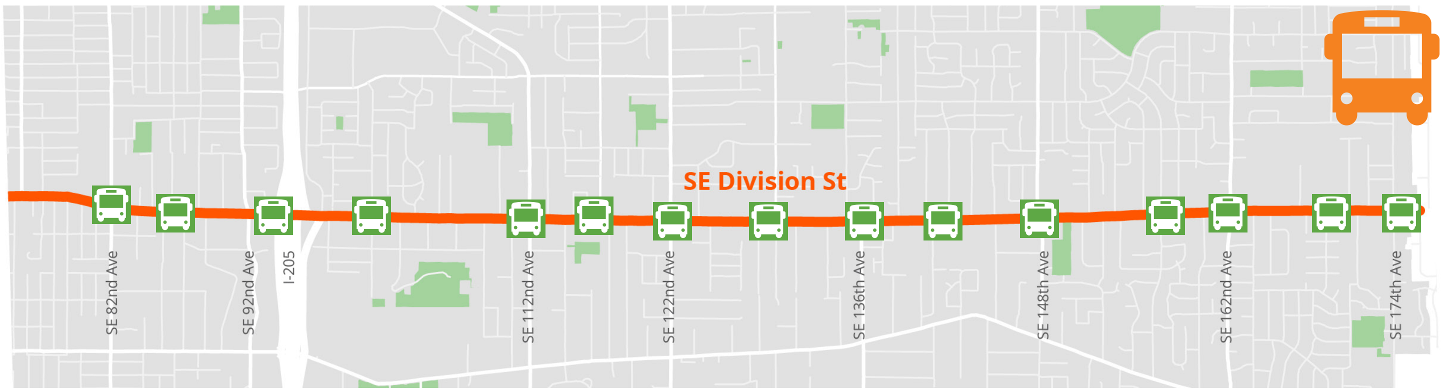
CHANGE IN TOP-END SPEEDING ON SE DIVISION STREET

The number of top-end speeders is an important metric for measuring the risk of exposure to particularly dangerous speeding conditions. However, when traffic volumes shift substantially, the number of top-end speeders does not offer a full picture of speeding trends. Traffic volumes decreased on SE Division Street by over 20%, leading to almost 6,000 fewer drivers everyday. Top-end speeding, the percentage of people driving more than ten mph over the speed limit offers additional information on speeding patterns.

Most of the results about top-end speeders still apply when analyzing top-end speeding. However, at SE 116th and 171st avenues, the percentage of people driving more than ten mph over the speed limit increased even though the number of top-end speeders went down. The top-end speeding percentage increased slightly over the length of the project, despite the number of top-end speeders declining. The increase in top-end speeding was much more prominent than the increase in top-end speeders at SE 141st/ 142nd avenues and on average on the eastern half of the project area, going up by roughly 40%.







TRANSIT TRAVEL TIME AND RELIABILITY

Key findings: **Transit travel time became three and a half minutes faster from 7 a.m. to 7 p.m., a 20% decrease, after the projects on SE Division Street were completed.**

Trip variability went down by about one minute, an 18% decrease.

On time arrival improved by nearly 50%, shifting from 47% to 70% on time arrivals, in the eastbound direction.

The Outer Division Safety Project was built alongside TriMet's Division Transit Project. The Division Transit Project included many improvements to transit operations and rider experience including:

- segments of bus-only lanes,
- transit signal priority,
- station enhancements,
- all door, near-level boarding and payment at all doors, improving efficiency and accessibility, and
- longer buses with more seating, standing capacity, room for bikes, and wheelchair securement options.

TriMet analyzed data before and after the project. Additionally, TriMet and PBOT worked with Kittelson & Associates, Inc. to develop an in-depth evaluation of the Transit Signal Priority (TSP) system, comparing bus travel times with and without the system running in May and June 2023. Both evaluations reviewed the entirety of SE Division Street but also reported data on the segment from SE 82nd to 162nd or 174th avenues.

This evaluation will focus on three metrics from TriMet's evaluations

- **Transit travel time**: How long it takes the bus to travel from one end of the segment to the other on average.
- **Trip variability:** How much bus trip travel times deviate from the average travel time.
- **On time arrival**: How often the bus arrives to a station between one minute early and five minutes late.

TRANSIT TRAVEL TIME AND RELIABILITY (FULL PROJECT)

Average travel times during moderate/significant traffic congestion (7 a.m. – 7 p.m.)

	Inner SE Portland	Outer SE Portland	Gresham
Line 2	17.3 min	19.0 min	13.0 min
FX2	14.4 min	15.3 min	11.1 min
Percent less travel time	**17%**	**20%**	**14%**

Travel time, variability during moderate/significant traffic congestion (7 a.m. – 7 p.m.)

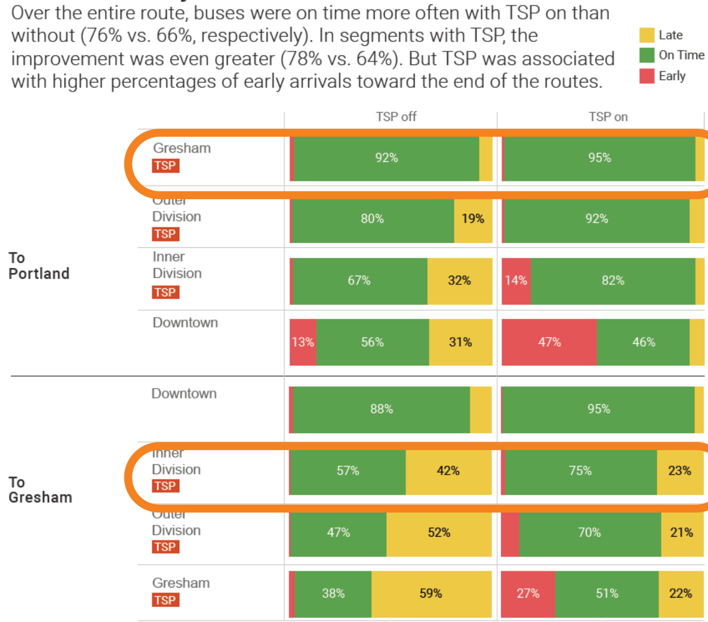
	Inner SE Portland	Outer SE Portland	Gresham
Line 2	17.3 ± **4 min**	19.0 ± **5.5 min**	13.0 ± **5.5 min**
FX2	14.4 ± **4.5min**	15.3 ± **4.5 min**	11.1 ± **3.5 min**
Difference in variability	**0.5 min more**	**1.0 min less**	**2.0 min less**

Line 2 Before **FX2** **Outer SE Portland** SE 82nd to 174th avenues

TRANSIT ON TIME ARRIVAL (TRANSIT SIGNAL PRIORITY ONLY)

Effect on daily transit timeliness

Over the entire route, buses were on time more often with TSP on than without (76% vs. 66%, respectively). In segments with TSP, the improvement was even greater (78% vs. 64%). But TSP was associated with higher percentages of early arrivals toward the end of the routes.



Note: there are no timepoints on the Crossing segment for which to report on-time performance.

On time arrival

Buses arrived on time more often after the signal modifications, especially in the eastbound direction.

Direction	Before	After	Change	Change (%)
East	47%	70%	+23%	+48.9%
West	80%	92%	+12%	+15%

EMERGENCY VEHICLE TRAVEL TIME

Key findings: Emergency vehicle travel time on SE Division Street decreased slightly all day and in the evening peak period.

Emergency vehicle travel time followed similar patterns on SE Stark Street.

PBOT staff, community members, and emergency responders questioned how the Outer Division Safety Project would impact emergency response because the raised center median limits the ability of emergency vehicles to use the center turn lane to bypass congestion. These considerations led to design modifications so the raised center median is mountable and can be accessed by first responders in an emergency.

The Bureau of Emergency Management shared a database of emergency vehicles GPS data with PBOT staff to evaluate the impact the project had on emergency response. The dataset includes GPS pings from emergency vehicles including emergency medical response, Portland Fire & Rescue, and Portland Police Bureau. The dataset does not include information on whether the vehicle was on a call or whether sirens were activated. The evaluation includes all emergency vehicles traveling in the SE Division Street project area that were sharing their location.

PBOT staff included all trips from March to May in 2021 and 2023 where an emergency vehicle traveled in the project area on SE Division Street for at least half a mile and calculated the minutes per mile travel time.

The evaluation looks at differences between months of the same year to validate the data and compares the months between years to evaluate change. Numbers in the table average out the results across the three months for each year.

Two metrics were analyzed

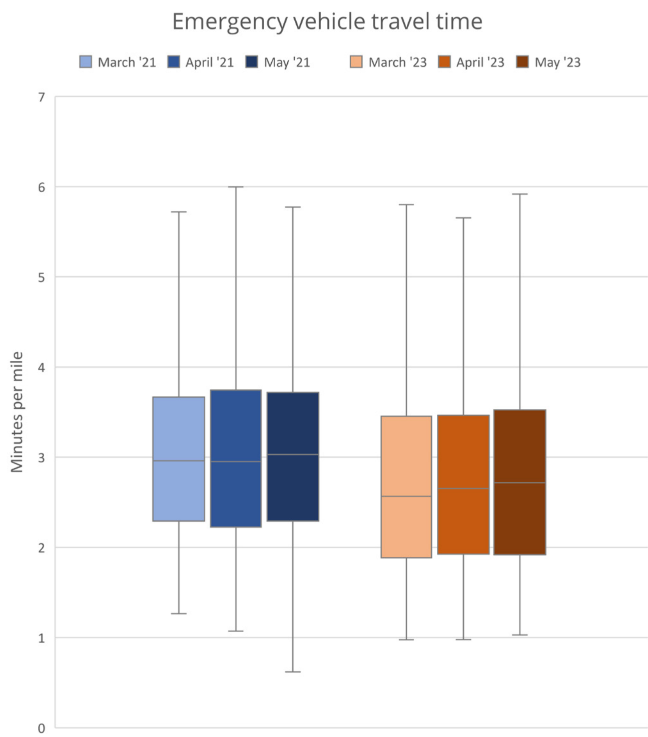
- **Median travel time**: Travel time in minutes per mile for the average emergency vehicle trip.
- **Ninetieth percentile travel time**: Only 10% of emergency vehicle trips were slower than this time reported in minutes per mile.

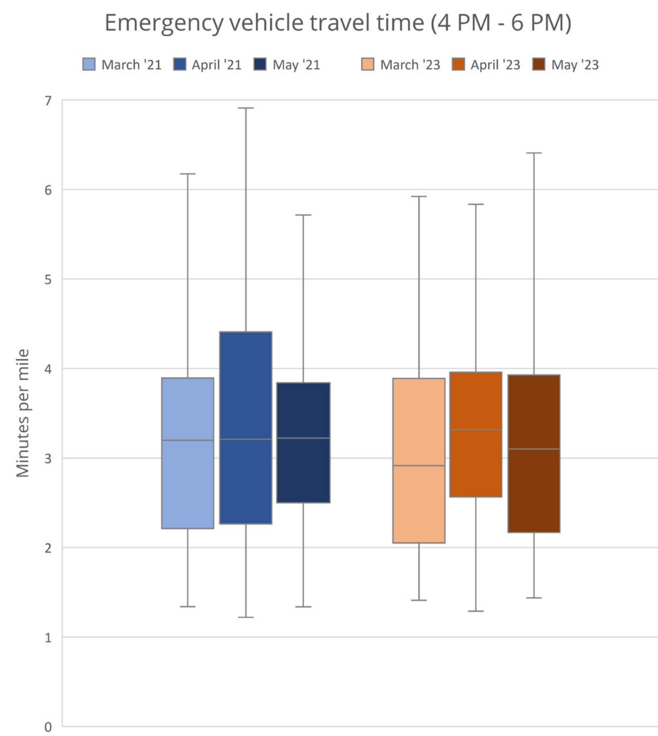
The number of emergency vehicle trips on this portion of SE Division Street decreased by 26% from 2021 to 2023. By contrast, the number of emergency vehicle trips on SE Stark Street from 108th to 162nd avenue increased by 22%. Both changes represent roughly a thousand trips. This suggests some emergency service providers may have shifted from using SE Division Street to using SE Stark Street, but there may be other factors affecting this change.

EMERGENCY VEHICLE TRAVEL TIME

The box and whisker plots and tables below show that the median travel time for emergency vehicles on SE Division Street was fairly consistent between months in 2021 and in 2023, but decreased by about 20 seconds from 2021 to 2023. The boxes, representing the middle 50% of emergency vehicle trips, show that the spread of vehicle trip speeds was about the same, but slightly faster in 2023 than 2021.

The evening peak period results are less consistent, in part because the number of trips is so much smaller than the number of trips all day (about 100 trips per month vs about 1,000 trips per month). The table below shows that median travel time stayed about the same from 2021 to 2023 and 90th percentile travel time dropped more than 45 seconds.





All day	2021 (min/mi)	2023 (min/mi)	Change (sec)	Change (%)
Median	02:58	02:39	-19.8	-11%
90th percentile	05:08	04:41	-26.8	-9%

PM peak	2021 (min/mi)	2023 (min/mi)	Change (sec)	Change (%)
Median	03:12	03:08	-4.5	-2%
90th percentile	05:42	04:54	-47.8	-14%

U-TURNS

Key findings: PBOT engineers observed U-turn operations at 23 locations.

At four locations where U-turns are not permitted, the project team added signage to clarify that U-turns are illegal, reducing illegal U-turns by 47%.

At three locations where U-turns are permitted, the project team adjusted bike lane separators and signals to make U-turns easier, reducing unsuccessful U-turns by 81%.

One of the key safety elements of the Outer Division Safety Project is a raised center median. The median restricts left turns to and from driveways and low volume, local neighborhood streets, because these movements were a leading contributor to fatal and serious injury crashes. To help people reach their destinations, the project includes opportunities for U-turns at regular intervals.

PBOT staff heard from community members that some U-turn locations were not working as intended. From July through October 2023, PBOT engineers observed 23 locations along SE Division Street (east of 82nd Avenue) for U-turn operations. Staff observed locations that were designed for U-turns as well as locations where there are openings in the raised center median that were not designed to accommodate U-turns. Based on the observations, 16 locations were operating properly, and seven locations needed mitigation.

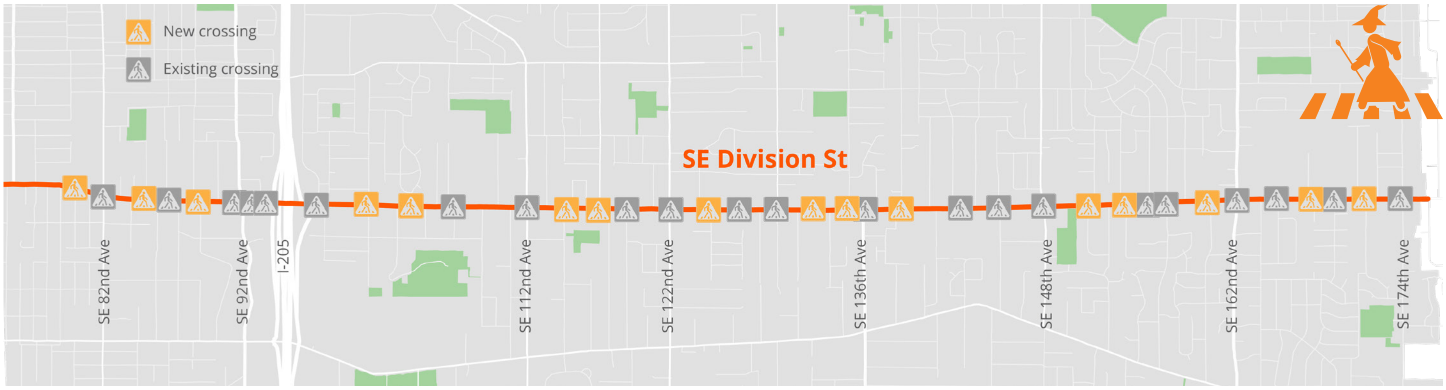
At four locations along the project people were trying to make U-turns where U-turns are prohibited. The project team added more signage to clarify that U-turns are prohibited at these locations. The locations are: SE 87th (both directions), a driveway west of 133rd, and 139th avenues.

At three locations along the project the observations revealed there was not enough room to comfortably make a U-turn. The project team made some modifications to the bike lane separators at those locations and some signal adjustments to make U-turns easier to complete. The locations are: SE 84th, 106th, and 117th avenues.

PBOT implemented the mitigation measures in 2024 and 2025 and conducted follow up U-turn observations at all the locations where changes were made. The changes resulted in a 47% decrease in illegal U-turns and an 81% decrease in unsuccessful U-turns.

The mitigation measures at SE 117th Avenue and west of SE 133rd Avenue were less effective than at other locations. Staff will continue to observe these location in case other mitigations are needed. With those two locations omitted, the results show a 71% reduction in illegal U-turns and a 92% decrease in unsuccessful U-turns.

See the appendix for more data from the follow-up observations.



ACTIVE TRANSPORTATION IMPROVEMENTS

Crossing Spacing

[PedPDX,](PedPDX) Portland's citywide pedestrian plan, offers recommended guidelines for crossing spacing.

These guidelines represent an ideal outcome against which we can measure, but even PedPDX states that "the exact location of marked crossings should be context-driven, and will be determined based on pedestrian crossing demand, specific land use generators, sight distance needs, proximity to traffic signals, existing pedestrian crossings, and engineering judgment."

This portion of SE Division Street has an incomplete street grid. A single block is often longer than the recommended guideline, or a block will have a small, dead end, unimproved street that does not warrant a full crossing. The Outer Division Safety Project was reviewed by the project engineer and PBOT's pedestrian coordinator who determined the project met pedestrian crossing needs. No new crossings are anticipated on SE Division Street.

Crossing gaps can be identified by finding segments between crossings that don't meet guidelines, as shown on PBOT's PedPDX online map. They can also be identified by finding areas that are more than half the guideline distance from the nearest crossing.

After 17 new crossings were built on this five mile stretch, an additional one and a half miles of SE Division Street meets the crossing spacing guidelines.

Portion of SE Division Street (80th-174th Ave) within desired distance of nearest crossing

	Before	After
Percent	56%	90%
Miles	2.66	4.29

Portion of SE Division Street (80th-174th Ave) meeting PedPDX crossing spacing guidelines

	Before	After
Percent	20%	53%
Miles	0.93	2.54

See the appendix for more details on calculating crossing spacing.

Transit Access Guidelines

PedPDX, Portland's citywide pedestrian plan, recommends that all transit stops have a crossing within 100 feet.

There are 30 bus stops on SE Division Street between 80th and 174th avenues. Before the project, only 20 of those stops had a crossing within 100 feet. After the new crossings were built, 24 stops are within 100 feet of a crossing.

In some cases, bus stops are more than 100 feet from a crossing because of street design or operational constrains. To address these limitations, PBOT staff also analyzed which bus stops are within 200 feet of a crossing, which does not strictly meet spacing guidelines, but indicates crossing proximity. **After the new crossings were built, 29 of the 30 bus stops are now within 200 feet of an enhanced crosswalk.**

Bus stops within 100 feet of a crossing

	Before	After
Percent	67%	80%
# of bus stops	20	24

Bus stops within 200 feet of a crossing

	Before	After
Percent	77%	97%
# of bus stops	23	29

Bicycle Infrastructure

The Outer Division Safety Project made significant upgrades to the bicycle infrastructure.

Before the project, people biking had a narrow striped bike lane running along the door zone of parked vehicles. The project upgraded the infrastructure to a **protected bike lane, with bike signals and protected intersection designs at some intersections, and transit platforms to avoid bus incursion into the bike lane.** Raised center medians also project people biking from drivers turning left into or out of driveways or small neighborhood streets.

The upgrade designates the current bike facilities as appropriate for all ages and abilities according to city and national guidance. See the appendix for details.

Shared Micromobility Ridership

E-scooter ridership increased on some portions of the Outer Division Safety Project and decreased on others. Similar trends were seen on SE Powell Boulevard and SE Stark Street.

On average, shared e-scooter ridership increased by 37% on SE Division Street. Because of large variability along SE Division Street and in comparison with SE Powell Boulevard and SE Stark Street, this finding can't be tied directly to the Outer Division Safety Project.

PBOT has limited data about the volumes of people walking or biking. However, PBOT staff has detailed data of where people were riding shared e-scooters. Data is aggregated to street segments using the Ride Report data tool.

PBOT staff did not report on BIKETOWN ridership for this report because large sections of the project are not in the BIKETOWN service area, and a significant portion was added to the BIKETOWN service area during project construction.

PBOT staff looked at all shared e-scooter trips between June 1st and September 30th in 2021 and 2023. Staff recorded trip volumes at half mile spacing at 11 locations along the project area. Ridership increased substantially east of I-205, increased more modestly in other parts of the project area, and decreased modestly between SE 130th and 148th avenues. PBOT staff observed similar trends on SE Powell Boulevard and SE Stark Street.

EQUITY

Transportation is responsible for 44% of Portland's carbon emissions according to the Climate Emergency Dashboard. Improving active transportation infrastructure like the **new and improved crossings, better bus stops, more efficient bus operations, and safer protected bike lanes** in this project is a key tool to convert car trips to walking, biking, and transit trips and reducing Portland's carbon emissions.

Communities of color and low-income households are disproportionately impacted by traffic violence. Air pollution is worse in communities of color and low-income communities, frequently spurred by vehicle exhaust. Many of Portland's poorest community members and community members with disabilities can't afford or are unable to drive a car. Improving safety on our streets and comfort of getting around without a car supports PBOT's equity goals by disproportionately improving safety and mobility for people of color and community members living on a low income.

PBOT uses a tool called the Equity Matrix to determine geographic prioritization of projects. The PBOT Equity Matrix assigns a score (between 2 and 10) to every census tract using the demographic variables of race, ethnicity, and income. Race and ethnicity are combined for a rating on the index from 1 to 5. For the race and ethnicity score, the higher the percentage of residents who self-identified in the U.S. Census as people of color or Latinx (of any race) in a census tract, the higher the score. Income is also ranked from 1 to 5. The lower the median income in a census tract, the higher the score.

The Outer Division Safety Project spans 13 census tracts, with an average equity score of 9.3.

CONCLUSIONS

The Outer Division Safety Project made important improvements to active transportation access and safety. The project, in conjunction with the Division Transit Project, helped the bus run faster and more reliably and boosted ridership. The project added 17 new pedestrian crossings, making it easier and safer for people to get across the street. The bike lanes are now physically protected, and people biking have extra protection at some larger intersections along the project.

Currently available data does not show that the project interfered substantially with other operations on the street. There was little impact to vehicle travel time and to emergency vehicle travel time.

Initial crash data shows crashes have gone down for all crash types, especially in areas where raised center medians were installed. Speed data suggests people are driving at a safer speed. Although the speed data is mixed, the overall corridor average shows that speeds have slowed down, and the areas where speeds have increased have more improvements coming in 2025.

NEXT STEPS

Crash Evaluation

The Oregon Department of Transportation (ODOT) releases full crash data in calendar year batches with a two-year delay. At the time of writing this report, PBOT staff only have access to one year of crash data. This report will be updated in 2027 and 2029 to evaluate crash impacts once the data is published.

Further Improvements and Modifications

Additional bike symbols and no-parking signage were added along the corridor in 2024 to help prevent people from parking in the bike lane. Raised reflective pavement markers were added to the corridor in Fall 2023 on the center median islands and along the bike lane to increase visibility of lane shifts.

PBOT has a project to add more street lighting through the All Roads Transportation Safety (ARTS) lighting infill project. That project is expected to begin construction in late 2025.

PBOT is conducting outreach on a project to add additional raised center medians on SE Division Street between 152nd and 160th avenues and between 166th and 174th avenues as part of an ARTS project. The project will also include an upgraded signal at SE 157th Avenue, which will allow left turns to and from SE Division Street. PBOT and TriMet did not install medians in these sections as part of the original projects. Construction of these medians should happen in 2026.

Questions?

PBOT's Vision Zero Contact
visionzero@portlandoregon.gov

APPENDIX - ANALYSIS METHODOLOGY

The Vision Zero evaluation webpage has an Evaluation Methodology Appendix that offers more details on how staff conduct evaluation analysis for crashes, speed, vehicle travel time, and active transportation improvements.

This appendix includes values used in the evaluation that are specific to the Outer Division Safety Project.

Crashes

Based on the threshold analysis described in the methodology appendix, the following number of years of post-project crash data are needed for comparative analysis by crash category:

	Pre-project crash rate (full project)	Number of years (full project)	Pre-project crash rate (median segments)	Number of years (median segments)
Deadly and serious injury crashes	11.4	1 year	3.8	3 years
Pedestrian crashes	14.6	1 year	6.2	1 year
Bicycle crashes	4.6	3 years	1.8	3 years

The Outer Division Safety Project is almost entirely in District 1, therefore District 1 crash data is used for establishing the normalization coefficient in the comparative analysis. The following values were used to calculate relative change.

Citywide and district change for full corridor analysis	Citywide change (2015 - 2019 v 2023)	District 1 change (2015 - 2019 v 2023)	Average
Deadly and serious injury crashes	+51%	+56%	+53%
Pedestrian crashes	-50%	-51%	-51%
Vision Zero focus crashes	-21%	-4%	-12%
All crashes	-36%	-39%	-37%

This evaluation includes an analysis of crashes along segment where raised center medians were built. These are locations where any left turns or through movements were prevented using a physical barrier. Staff looked at non-intersection crashes to establish the citywide and district normalization coefficient.

Citywide and district change for raised center median analysis	Citywide change (2015 - 2019 v 2023)	District 1 change (2015 - 2019 v 2023)	Average
Pedestrian crashes	-41%	-48%	-45%
Vision Zero focus crashes	-7%	-3%	-5%
All crashes	-38%	-44%	-41%

The following locations were coded as having a median or not having a median for this analysis:

Location	Median	Location	Median
SE 80th Avenue	No	SE 125th Avenue	No
SE 80th to 82nd avenues	Yes	SE 125th to 130th avenues	Yes
SE 82nd Avenue	No	SE 130th Avenue	No
SE 82nd to 87th avenues	Yes	SE 130th to 136th avenues	Yes
SE 87th Avenue	No	SE 136th Avenue	No
SE 87th to 92nd avenues	Yes	SE 136th to 139th avenues	Yes
SE 92nd Avenue	No	SE 139th Avenue	No
SE 92nd Avenue to I-205 ramps	Yes	SE 139th to 145th avenues	Yes
I-205 ramps to SE 103rd Avenue	No	SE 145th Avenue	No
SE 103rd to 112th avenues	Yes	SE 145th to 148th avenues	Yes
SE 112th Avenue	No	SE 148th Avenue	No
SE 112th to 117th avenues	Yes	SE 148th to 152nd avenues	Yes
SE 117th Avenue	No	SE 152nd to 154th avenues	No
SE 117th to 119th avenues	Yes	SE 154th Avenue	Yes
SE 119th Avenue	No	SE 154th to 160th avenues	No
SE 119th to 122nd avenues	Yes	SE 160th to 162nd avenues	Yes
SE 122nd Avenue	No	SE 162nd Avenue	No
SE 122nd to 125th avenues	Yes	SE 162nd Avenue to 166th Place	Yes
		SE 166th Place to 174th Avenue	No

Speed

This report used the following speed counts:

- East of SE 84th Avenue: pre-project July 2017, post-project June 2023
- West of SE 94th Avenue: pre-project July 2017, post-project July 2023
- West of SE 109thth Avenue: pre-project April 2018, post-project June 2023
- East of SE 116th Avenue: pre-project April 2018 and October 2019, post-project June 2023
- West of SE 129th Avenue: pre-project May 2018, post-project June 2023
- East of SE 141st Avenue: pre-project April 2018
- West of SE 142nd Avenue: post-project June 2023
- East of SE 152nd Avenue: pre-project April 2018 and April 2019, post-project May 2023
- West of SE 165th Avenue: pre-project April 2018, post-project May 2023
- West of SE 171st Avenue: pre-project August 2017, post-project May 2023

Below are the average changes in speed metrics along the entire project area split up by direction.

	Median Speed	Prevailing Speed	Over the Speed limit (%)	More than 10 mph over speed limit (%)	More than 10 mph over speed limit (#)
Eastbound	-2.4%	-0.2%	-12.5%	+6.7%	-19.8%
Westbound	-2.4%	-0.5%	-11.9%	+7.8%	-17.8%
Average	-2.4%	-0.3%	-12.2%	+7.3%	-18.7%

U-turns

The 16 locations where U-turn operations were observed but where adjustments are not needed are: SE 82nd, 103rd, midblock between 107th and 109th, 119th, 121st, 122nd, 125th, 130th, 131st, 136th, 141st, 143rd, 145th, 148th, 154th, and 162nd avenues.

PBOT staff observed the following results at locations where U-turns are not permitted and additional signage was added to clarify the restriction.

	Reduction in illegal U-turns
SE 87th Avenue WB to EB	-71%
SE 87th Avenue EB to WB	-88%
Driveway west of SE 133rd Avenue EB to WB	0%
SE 139th Avenue EB to WB	-50%
All locations	-47%

PBOT observed the following results at location where the street was modified to make U-turn movements easier to complete successfully.

	Before mitigation: unsuccessful U-turns	After mitigation: unsuccessful U-turn	Reduction
SE 84th Place WB to EB	50%	0%	-100%
SE 106th Avenue EB to WB	27%	13%	-54%
SE 117th Avenue EB to WB	14%	10%	-33%
All locations	29%	5%	-81%

Active transportation improvements

This project is in a pedestrian district along SE Division Street from 80th to past 92nd avenues, from 112th to past 131st avenues, and from 157th to past 168th avenues.