

GNB

GRAY NOTEBOOK

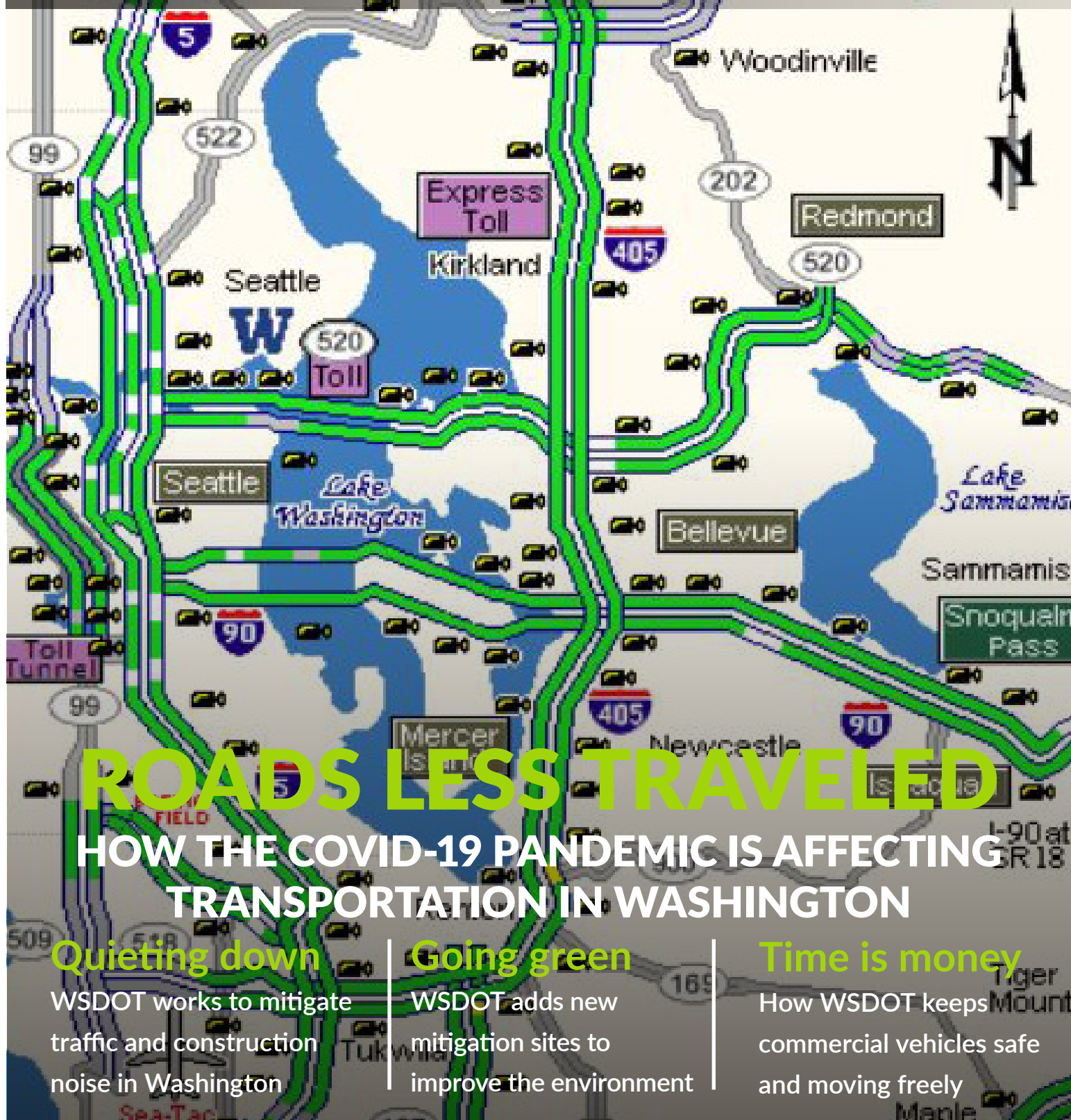


Washington State
Department of Transportation

Quarterly performance analysis of WSDOT's
multimodal systems and programs

Roger Millar, Secretary of Transportation, PE, FASCE, FAICP

Edition 77 March 2020



ROADS LESS TRAVELED

HOW THE COVID-19 PANDEMIC IS AFFECTING TRANSPORTATION IN WASHINGTON

Quieting down

WSDOT works to mitigate
traffic and construction
noise in Washington

Going green

WSDOT adds new
mitigation sites to
improve the environment

Time is money

How WSDOT keeps
commercial vehicles safe
and moving freely

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The Gray Notebook team

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PERFORMANCE HIGHLIGHTS reported for the quarter ending March 31, 2020

SIX SITES
that included
8 ACRES
added to WSDOT's
WETLAND & STREAMS
inventory in 2019

99.3
PERCENT
of **WSF's**
scheduled
trips were
completed during
the third quarter of
FY2020

18
traffic noise
studies for upcoming
transportation projects
conducted between
April 2018 and March
2020

383
of 421 projects
completed
with **Nickel** or
Transportation
Partnership
Account funds

\$19
MILLION
in operating costs
avoided by the
trucking industry in
2019 due to WSDOT's
electronic
screening system

63%
decrease in the volume of vehicles
traveling on state highways March 28
and 29, 2020 compared to those dates
in 2019 due to Washington's response
to **COVID-19**

\$22.2
MILLION
in economic benefit
provided by WSDOT's
Incident Response
teams clearing
13,168 incidents
during the quarter

6.3%
increase in ticket
revenues by
Amtrak Cascades
in 2019 compared
to 2018

52
of 82 WSDOT
Pre-existing Funds
projects advertised
during the quarter

On the cover: A snapshot of WSDOT's Seattle Traffic and Cameras page during the morning peak travel period (7:35 a.m. on April 14, 2020).

77 COVID-19 EFFECTS ON STATE TRANSPORTATION AND WSDOT

Transportation in state sees the most dramatic declines in history during COVID-19 pandemic

When COVID-19 first hit Washington in late January 2020, no one could have foreseen the ripple effect it would have on the state as a whole. As the number of cases increased and the death toll rose, views on the disease quickly shifted and steps to reduce its spread became more drastic. A few months after the initial outbreak everything had changed.

Schools were out, businesses that were deemed non-essential were closed. People were using social distancing to temper the spread of the disease, and Gov. Jay Inslee issued an executive order that went into effect March 25, telling residents to stay home. While use of some modes (highways, transit, ferries, Amtrak Cascades and aviation) declined, walking and biking increased.

WSDOT is tracking the impacts of COVID-19 and the measures taken to combat it on multimodal transportation system performance through an interactive online dashboard. For more information, visit the COVID-19 Multimodal Transportation System Performance Dashboard at <https://bit.ly/COVID19dash>.

Compared to corresponding days in 2019, the largest single-day changes for some of the transportation modes highlighted in the dashboard include:

-63%

Highway travel - With businesses and schools closed, construction projects halted, and a stay at home order in place, vehicle volumes on state highways dropped by 63% on March 28 and 29

-80%

Tolling - Washington's five tolled facilities saw an average of 80% less usage on March 28 due to decreased travel on state highways

-87%

Washington State Ferries - In response to COVID-19 and resulting decrease in ridership on all routes—which bottomed out at 87% on March 28— WSF implemented a reduced service schedule

-77%

Transit - Reduced travel coupled with social distancing—maintaining a physical distance of six feet from other people to limit the spread of COVID-19—resulted in an average decline in ridership of 77% at 10 of Washington's largest transit agencies on April 22

-98%

Amtrak Cascades - Percentage-wise, travel by train was the hardest hit in the state, and from March 26 to May 4, Amtrak Cascades ridership was between 96% to 98% lower than the same days in 2019

Notable results

- WSDOT's permanent counters showed that compared to the corresponding days in 2019, average pedestrian travel was up 323% on April 9 while average bicyclist travel saw a 201% increase on April 17
- WSDOT reported approximately 2,900 employees teleworking daily during the COVID-19 pandemic, roughly 41% of its workforce

WSDOT's online dashboard tracks changes in travel

In addition to analyzing the data and showing the trends for state highways, tolling, WSF, transit and passenger rail, WSDOT's COVID-19 dashboard also provides daily updates on Freight, Active Transportation and Safety, as well as Aviation data and traffic data from participating counties.

Compared to corresponding days in 2019, the largest single-day or monthly changes for individual aspects of the transportation system include:

- **Freight** - As businesses were closed around the state and restaurants limited to take-out only, the number of freight trucks decreased accordingly. WSDOT tracked truck travel on multiple highways in six counties in western Washington and noted that, unlike other highway travel, trucking saw the majority of its large drops in April. Decreases showed:

Snohomish (-77% on April 12)

King (-70% on April 12)

Pierce (-55% on March 28, April 5)

Thurston (-41% on April 28)

Lewis (-65% on March 29, April 4)

Clark (-63% on April 4)

- **Active Transportation** - With stay-at-home orders and social distancing guidelines in place, many Washingtonians headed out on walks and bike rides, resulting in huge upswings. WSDOT counters at 31 locations in 12 counties saw very large peak average increases with pedestrian

counts up 323% on April 9 and bicyclists counts increasing 201% on April 17. WSDOT is keeping all trails that it manages open for use as essential transportation connections.

- **Safety** - The rate for fatality crashes per million vehicle miles traveled on all roads—including state highways, county roads and city streets—declined from 0.9 in March 2019 to 0.7 in March 2020.
- **Aviation** - In April 2020, 93.1% fewer domestic passengers and 97.1% fewer international passengers traveled through Seattle-Tacoma International Airport than in April 2019.

WSDOT promotes teleworking, physical distancing during COVID-19

As soon as it was determined that COVID-19 was a serious health concern for all Washingtonians, WSDOT quickly began taking measures to ensure its workers were safe. The agency already had robust teleworking plans ready to implement, and started putting them to the test in mid-March as more and more office employees worked from home. Teleworking has been critical in WSDOT's ability to continue its operations.

Starting Monday, March 23—and every Monday, Wednesday and Friday since—WSDOT has released an Emergency Response Situational Report to its employees. In addition to information on the agency-wide steps that are being taken to reduce the disease's effects, the report provides detailed updates on the experiences and responses of each of

the agency's six geographical regions and select divisions.

The report also provides updates on how many WSDOT employees who have reported possible exposure to COVID-19 as well as the number of positive and negative laboratory tests. In addition, it tracks certain items (hand sanitizer, disinfectant and N-95 masks) as well as IT usage (including remote users and connections being used for teleworking)

To ensure its workforce remains as healthy as possible, WSDOT started having its employees complete a daily online COVID-19 health survey on May 1. The daily health checks provide the agency with information about employees' work site for the day (teleworking, field or office), whether employees have been in contact with anyone diagnosed with COVID-19 in the previous 14 days, and whether employees have any signs of the disease themselves.

WSDOT plans for COVID-19 related revenue shortfalls

Due to reduced travel associated with COVID-19, which translates to less gas tax revenues, WSDOT is planning for approximately \$100 million in revenue shortfalls each month. In response the agency is:

- Deferring both permanent and non-permanent new hires,
- Discontinuing out-of-state travel,
- Suspending new consultant contracts and task orders, and
- Suspending all Transportation Equipment Fund and other major purchases.

77 STRATEGIC PLAN

WSDOT's Strategic Plan has three goals, Inclusion, Practical Solutions and Workforce Development. This plan continues WSDOT's focus on how the agency makes investments and delivers projects with limited resources.

The agency has an online interactive strategic plan dashboard, which can be accessed at <http://www.wsdot.wa.gov/about/secretary/strategic-plan/>. The dashboard contains leading indicators for the plan's 15 strategies—five for each goal—and details progress on the plan's work.

Under the strategic plan, WSDOT's Inclusion efforts ensure it engages its employees, communities and partners as the agency collaboratively delivers the program. Practical Solutions allows WSDOT to leverage finite funding to get the most capacity and safety out of the entire multimodal transportation system. WSDOT's focus on Workforce Development ensures the agency attracts and retains a quality workforce to meet its legislative, regulatory, service and public expectations.

Recent editions of the Gray Notebook have featured articles on Inclusion, Workforce Development and Practical Solutions efforts at WSDOT. See [Gray Notebook 75, pp. 45-49](#) for the Inclusion Annual Report, [Gray Notebook 74, pp. 28-30](#) for the Workforce Development Annual Report and [Gray Notebook 72, pp. 33-35](#) for the Practical Solutions Annual Report.

WSDOT's Vision

Washington travelers have a safe, sustainable and integrated multimodal transportation system.

WSDOT's Mission

We provide safe, reliable and cost-effective transportation options to improve communities and economic vitality for people and businesses.

WSDOT's Values

- Safety
- Engagement
- Innovation
- Integrity
- Leadership
- Sustainability



■ Inclusion Goal

Strengthen commitment to diversity and engagement in every aspect of our work.

■ Practical Solutions Goal

Prioritize innovative, timely and cost-effective decisions, with our stakeholders and partners.

■ Workforce Development Goal

Be an employer of choice by hiring, training and retaining skilled workers to meet Washington's transportation needs.



STATEWIDE TRANSPORTATION POLICY GOALS DASHBOARD

| Statewide policy goal/ WSDOT performance measure | Previous period | Current period | Goal | Goal met | Five-year trend (unless noted) | Desired trend |
|---|----------------------|----------------------|--------------------|-------------|-----------------------------------|------------------|
| Safety | | | | | | |
| Rate of traffic fatalities per 100 million vehicle miles traveled statewide (Annual measure: calendar years 2017 & 2018) | 0.92 | 0.88 | <1.00 ¹ | ✓ | | ↓ |
| Rate of recordable incidents for every 100 full-time WSDOT workers (Annual measure: calendar years 2018 & 2019) | 5.0 | 4.7 | <5.0 | ✓ | | ↓ |
| Preservation | | | | | | |
| Percentage of state highway pavement in fair or better condition by vehicle miles traveled (Annual measure: calendar years 2017 & 2018) | 91.8% | 91.4% | ≥ 90% | ✓ | | ↑ |
| Percentage of state bridges in fair or better condition by bridge deck area (Annual measure: fiscal years 2018 & 2019) | 92.5% | 92.9% | ≥ 90% | ✓ | | ↑ |
| Mobility² (congestion relief) | | | | | | |
| Highways: Vehicle Miles Traveled (VMT) on state highways (Annual measure: calendar years 2017 & 2018) | 34.6 billion | 35.4 billion | * | N/A | | Not applicable |
| Highways: Average incident clearance times for all Incident Response program responses (Calendar quarterly measure: Q1 2019 & Q1 2020) | 12.5 minutes | 13.5 minutes | * | N/A | | ↓ |
| Ferries: Percentage of trips departing on time ³ (Fiscal quarterly measure: year to year Q3 FY2019 & Q3 FY2020) | 93.7% | 95.3% | ≥ 95% | ✓ | | ↑ |
| Rail: Amtrak Cascades on-time performance ⁴ (Annual measure: calendar years 2018 & 2019) ⁵ | 50% | 58% | ≥ 88% | — | | ↑ |
| Environment | | | | | | |
| Number of WSDOT stormwater management facilities constructed (Annual measure: fiscal years 2018 & 2019) | 78 | 66 | * | N/A | | Not applicable |
| Cumulative number of WSDOT fish passage improvement projects constructed (Annual measure: calendar years 2017 & 2018) | 330 | 345 | * | N/A | | ↑ |
| Stewardship | | | | | | |
| Cumulative number of Nickel and TPA projects completed⁶ and percentage on time⁷ (Biennial quarterly measure: Q2 2019-2021 & Q3 2019-2021, trendline for percentage on time) | 383/ 86% | 383/ 86% | ≥ 90% on time | — | (Five-quarter trend) | ↑ |
| Cumulative number of Nickel and TPA projects completed⁶ and percentage on budget⁷ (Biennial quarterly measure: Q2 2019-2021 & Q3 2019-2021, trendline for percentage on budget) | 383/ 91% | 383/ 91% | ≥ 90% on budget | ✓ | (Five-quarter trend) | ↑ |
| Variance of total project costs ⁶ compared to budget expectations⁷ (Biennial quarterly measure: Q2 2019-2021 & Q3 2019-2021) | Under budget by 1.5% | Under budget by 1.5% | On or under budget | ✓ | (Five-quarter trend) | Not applicable |

Data source: WSDOT Transportation Safety & Systems Analysis.

Notes: (*) = goal has not been set. Dash (—) = goal was not met in the reporting period. **1** The Statewide Transportation Policy Goal for this performance measure is different than the federal MAP-21 goal for the same measure. **2** Mobility does not yet include goals for people walking/biking for transportation. **3** Washington State Ferries' on-time departures include any trip recorded by automated tracking as leaving the terminal within 10 minutes of scheduled time. **4** Amtrak Cascades' on-time performance includes any trip arriving within 10 or 15 minutes, depending on the route, of scheduled arrival time. **5** Previous editions of the Gray Notebook reported this measure for the fiscal year. **6** Construction projects only. **7** Projects are on time if they are completed within the quarter planned in the last approved schedule, and on budget if costs are within 5% of the budget set in the last approved state transportation budget.

77 MOVING AHEAD FOR PROGRESS IN THE 21ST CENTURY

FHWA set to make determination on WSDOT MAP-21 highway safety performance

In March 2020, the Federal Highway Administration will provide its first determinations of whether WSDOT has made significant progress toward achieving its 2018 Moving Ahead for Progress in the 21st Century targets for highway safety (also referred to as PM1). WSDOT reported its MAP-21 highway safety targets for 2019 to the FHWA on August 31, 2018. FHWA will inform WSDOT whether significant progress has been made on those targets in March 2021.

On May 20, 2018, WSDOT established its federally-required MAP-21 targets for bridges and pavement (also referred to as PM2), and highway system performance, freight, and Congestion Mitigation and Air Quality (also referred to as PM3). Like the PM1 targets, WSDOT needs to show significant progress toward meeting PM2 and PM3 targets. These targets were established collaboratively by WSDOT and Metropolitan Planning Organizations.

WSDOT and state MPOs submitted MAP-21 targets for PM2 and PM3 to the FHWA's Washington state division office in the Baseline Performance Report on October 1, 2018, and the targets were recommended for acceptance to the FHWA national headquarters office. This begins a four-year reporting cycle for PM2 and PM3 performance measures, which includes WSDOT producing a Mid-Performance Period Progress Report (due by October 1, 2020) and a Full-Performance Period Progress Report (due by October 1, 2022). When WSDOT and MPOs report on their progress toward achieving PM2 and PM3 targets in the 2020 mid-performance period progress report, they will provide updates on two-year condition/performance and investment strategy discussions as well as target adjustment discussions.

MAP-21 safety reporting on an annual cycle

Targets for the highway safety rules (included in PM1) are on an annual reporting cycle, which differs from the two-year and four-year reporting cycles for PM2 and PM3. The safety targets established for 2019 represent the second annual reporting cycle since the initial reporting of MAP-21 safety targets for 2018.

| MAP-21 performance measures by program area | | 2019 target | Penalty ¹ |
|--|--|----------------------|----------------------|
| Highway Safety (PM1) 23 CFR Part 490 ID No. 2125-AF49 | | | |
| Number of traffic fatalities on all public roads ² | | ≤ 489.2 | Yes |
| Rate of traffic fatalities per 100 million vehicle miles traveled (VMT) on all public roads ² | | ≤ 0.813 | Yes |
| Number of serious traffic injuries on all public roads ² | | ≤ 1,855.0 | Yes |
| Rate of serious traffic injuries per 100 million VMT on all public roads ² | | ≤ 3.068 | Yes |
| Number of non-motorist ³ traffic fatalities plus serious injuries | | ≤ 511.8 | Yes |
| MAP-21 Special Rules (Safety) | | | |
| Rate of per capita traffic fatalities for drivers and pedestrians 65 or older | | Show yearly progress | No |
| Rate of fatalities on high-risk rural roads ² | | Show yearly progress | Yes |
| Highway-railway crossing fatalities ³ | | Show yearly progress | No |

Data source: WSDOT Transportation Safety & Systems Analysis.

Notes: The PM1 targets for 2019 were submitted on August 31, 2018, using 2013-2017 for current baseline data. ¹ Penalties will not be assessed if WSDOT shows significant progress on four of five PM1 targets. Significant progress is achieved if the five-year rolling average is less than or equal to the target or less than or equal to the baseline level. ² Performance metric includes all individuals (for example, pedestrians and bicyclists) who died or were seriously injured as a result of a crash with a motorist in Washington. ³ Includes bicyclists and pedestrians.

WSDOT and MPOs can also adjust their four-year targets at that time, but must explain the basis for the changes and how adjusted targets support expectations documented in longer-range plans.

improvements on certain targets. While not showing significant progress toward targets triggers a penalty—and requires an explanation of what WSDOT will do to make future progress or require additional

reporting—specific measures in PM1 and PM2 invoke financial penalties if targets are not met. These penalties require redistributing federal monies to help ensure significant progress toward specific targets in the future.

In 2022, FHWA will use the full-performance period progress report to determine whether WSDOT has made significant progress toward its PM2 and PM3 targets. WSDOT may face penalties (see table below) if it does not show necessary

MAP-21 folios helping MPOs, stakeholders

WSDOT has developed informational folios to ensure the agency and its partners are aligned as MAP-21 work progresses. For links to WSDOT-specific MAP-21 folios, visit www.wsdot.wa.gov/Accountability/MAP-21.

| MAP-21 performance measures by program area | | Current data | 2-year target ^{1,2} | 4-year target ^{1,2} | Penalty |
|--|--|--------------------|------------------------------|------------------------------|---------|
| Pavement and Bridges (PM2) 23 CFR Part 490 ID No. 2125-AF53 | | | | | |
| Pavement | | | | | |
| Percent of Interstate pavement on the NHS in good condition | | 32.5% ³ | N/A | 30% | No |
| Percent of Interstate pavement on the NHS in poor condition | | 3.6% ³ | N/A | 4% ⁴ | Yes |
| Percent of non-Interstate pavement on the NHS in good condition | | 18% ³ | 45% | 18% | No |
| Percent of non-Interstate pavement on the NHS in poor condition | | 5% ³ | 21% | 5% | No |
| Bridges | | | | | |
| Percent of NHS bridges classified in good condition (weighted by deck area) | | 32.8% | 30% | 30% | No |
| Percent of NHS bridges classified in poor condition (weighted by deck area) | | 7.8% | 10% | 10% ⁴ | Yes |
| Highway System Performance, Freight, and Congestion Mitigation & Air Quality (PM3) 23 CFR Part 490 ID No. 2125-AF54 | | | | | |
| Highway System Performance (Congestion) | | | | | |
| Percent of person-miles traveled on the Interstate System that are reliable | | 73% | 70% | 68% | No |
| Percent of person-miles traveled on the Non-Interstate NHS System that are reliable | | 77% | N/A | 61% | No |
| National Freight Movement Program | | | | | |
| Truck Travel Time Reliability (TTTR) Index | | 1.63 | 1.70 | 1.75 | No |
| Congestion Mitigation & Air Quality Program | | | | | |
| Non-Single Occupancy Vehicle (SOV) travel in Seattle urbanized area (NHS) | | 32% | 32.8% | 33.2% | No |
| Peak hours of Excessive Delay per capita in Seattle urbanized area (NHS) | | 23 | N/A | 28 | No |
| All Pollutants (kg/day) ² | | 1,658.640 | 366.285 | 658.300 | No |
| Carbon Monoxide (CO) (kg/day) ² | | 313.160 | 309.000 | 309.060 | No |
| Particulate Matter less than 10 microns (PM ₁₀) (kg/day) ² | | 435.690 | 0.305 | 224.000 | No |
| Particulate Matter less than 2.5 microns (PM _{2.5}) (kg/day) ² | | 36.820 | 2.100 | 8.700 | No |
| Nitrogen Oxides (NOX) (kg/day) ² | | 872.970 | 54.880 | 116.540 | No |

Data sources: WSDOT Bridge and Structures Office, WSDOT Pavement Office, WSDOT Strategic Assessment Office, WSDOT Rail, Freight, and Ports Division, WSDOT Environmental Services Office.

Notes: Federal rule allows state and MPOs to adjust four-year targets during the mid-performance period progress report. **1** Two-year and four-year reports for PM2 and PM3 are due October 1, 2020, and October 1, 2022. **2** Base emissions are for the four-year period 2013-2016 as reported in the CMAQ Public Access System. **3** PM2 "Current data" is relative to four-year pavement targets only. **4** The National Highway Performance Program (NHPP) targets require the percent of Interstate pavement on the NHS in poor condition not exceed 5% and the percent of NHS bridges classified in poor condition (weighted by deck area) not exceed 10%.

77 INCIDENT RESPONSE QUARTERLY UPDATE

WSDOT Incident Response teams help improve driver safety at 13,168 incidents

WSDOT's Incident Response teams assisted at 13,168 incidents during the first quarter (January through March) of 2020. On average, the IR teams responded to an incident scene every nine minutes and 57 seconds during the quarter. There were 3,842 (22.6%) fewer incidents during the first quarter of 2020 compared to the same quarter in 2019 (17,010). This reduction is likely the result of less traffic during March as the result of COVID-19. To learn more about how the pandemic affected travel during the quarter, visit <https://bit.ly/COVID19dash>.

Average clearance times increase slightly over the past five years

First quarters; 2016 through 2020; Number of incident responses in thousands; Clearance times in minutes



Data source: Washington Incident Tracking System.

Notes: The data above only accounts for incidents to which an IR unit responded. IR data reported for the current quarter (Q1 2020) is considered preliminary. In the previous quarter (Q4 2019), WSDOT responded to 14,335 incidents, clearing them in an average of 14 minutes. Data for Q4 2019 has been confirmed and finalized.

On average, IR teams cleared each of the 13,168 incidents in 13 minutes and 30 seconds. This is one minute (8.0%) slower than the average incident clearance time for the same quarter in 2019.

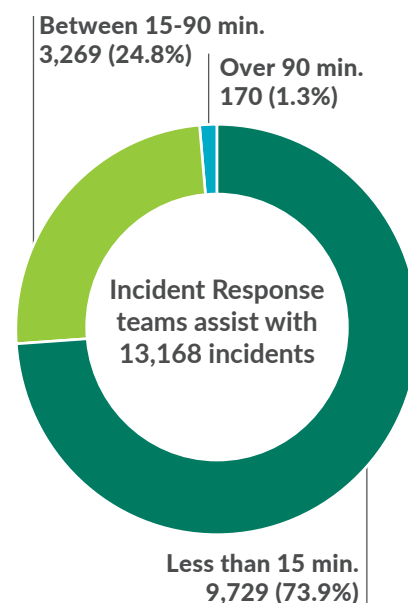
Of the 13,168 total incidents, 9,729 (73.9%) lasted less than 15 minutes, 3,269 (24.8%) lasted 15-90 minutes and 170 (1.3%) incidents lasted more than 90 minutes. During the first quarter of 2020, compared to the same quarter in 2019, there was a 10.5% decrease in the number of incidents lasting more than 90 minutes, while there were 14.1% fewer incidents lasting 15-90 minutes, and 25.3% fewer incidents lasting less than 15 minutes.

Notable results

- WSDOT responded to 13,168 incidents during the first quarter of 2020, 3,842 (22.6%) fewer than during the same quarter in 2019
- WSDOT cleared incident scenes in an average of 13 minutes and 30 seconds during the first quarter of 2020, one minute (8.0%) slower than the same quarter in 2019
- In the first quarter of 2020, IR teams provided an estimated \$22.2 million in economic benefit by reducing the effects of incidents on drivers
- For every \$1 spent on WSDOT's IR program, \$14.77 was provided back in economic benefit to the traveling public

WSDOT clears majority of traffic incidents in 15 minutes or less

First quarter 2020; Times to clear incidents; Number and percentage of incidents



Data source: Washington Incident Tracking System.

Incident Response helps reduce congestion

The mission of WSDOT's Incident Response program is to clear traffic incidents safely and quickly, minimizing congestion and the risk of secondary incidents. The statewide program has a biennial budget of \$12 million, about 59 full-time equivalent positions and 69 dedicated vehicles. Teams are on-call 24/7 and actively patrol approximately 1,300 centerline miles (3,400 lane miles) of highway on major corridors around the state during peak traffic hours. This covers approximately 18% of all state-owned centerline miles.

WSDOT teams respond to 170 over-90-minute incidents

IR teams assisted at the scene of 170 incidents that lasted more than 90 minutes during the first quarter of 2020. This is 20 fewer incidents—a 10.5% decrease—than the same quarter in 2019. While these over-90-minute incidents accounted for 1.3% of all incidents, they resulted in 17.0% of all incident-related delay costs (see chart on p. 11).

Five of the 170 over-90-minute incidents took six hours or more to clear (referred to as extraordinary incidents). This is five fewer extraordinary incidents than the same quarter in 2019. Each of the five extraordinary incidents in first quarter of 2020 took an average of six hours and 25 minutes to clear, accounting for 7.8% of all incident-induced delay costs for the quarter.

The average incident clearance time for all over-90-minute incidents was two hours and 34 minutes. This is about 26 minutes faster than the same quarter in 2019. Excluding the five extraordinary incidents, WSDOT's average clearance time for over-90-minute incidents was two hours and 26 minutes.

WSDOT focuses on safety when clearing incidents, working to reduce incident-induced delay as well as the potential for secondary incidents. Secondary incidents occur in the congestion resulting from a prior incident and may be caused by distracted driving, unexpected slowdowns or debris in the roadway.

WSDOT's Incident Response teams provide an estimated \$22.2 million in economic benefit

First quarter 2020; Incidents by duration in minutes; Time in minutes; Costs and benefits in millions of dollars

| Incident duration | Number of incidents ¹ | Percent blocking ² | Average incident clearance time ³ (all incidents) | Cost of incident-induced delay | Economic benefits from IR program ⁴ |
|---|----------------------------------|-------------------------------|--|--------------------------------|--|
| Less than 15 min. | 9,729 | 18.2% | 4.9 | \$12.1 | \$5.6 |
| Between 15 and 90 min. | 3,269 | 56.3% | 31.1 | \$29.6 | \$12.9 |
| Over 90 min. | 170 | 83.3% | 153.8 | \$8.5 | \$3.6 |
| Total | 13,168 | 28.7% | 13.5 | \$50.3 | \$22.2 |
| Percent change from the first quarter of 2019 | ↓22.6% | ↑3.0% | ↑8.0% | ↓16.4% | ↓16.6% |

Data source: Washington Incident Tracking System.

Notes: Some numbers do not add up to 100% due to rounding.

¹ Teams were unable to locate 734 of the 13,168 incidents. Because an IR team attempted to respond, these incidents are included in the total incident count. Other performance measures do not include incidents that were not located.

² An incident is considered blocking when it shuts down one or more lanes of travel.

³ Incident clearance time is the time between an IR team's first awareness of an incident and when the last responder has left the scene.

⁴ Estimated economic benefits include benefits from delay reduction and prevented secondary incidents. See [WSDOT's Handbook for Corridor Capacity Evaluation, 2nd edition, pp. 45-47](#) for the IR program's methods for calculating benefits.

IR program provides \$22.2 million in economic benefit during the quarter

The IR teams help alert drivers about incidents and clear the roadway to reduce the likelihood of new incidents. WSDOT's assistance at incident scenes provided an estimated \$22.2 million in economic benefit during the first quarter of 2020 by reducing the impacts of incidents on drivers. This benefit is provided in two ways:

- WSDOT reduces the time and fuel motorists waste in incident-induced traffic delay by clearing incidents quickly. About \$12.6 million of IR's economic benefit for the quarter result from reduced traffic delay.
- WSDOT helps prevent secondary incidents by proactively managing traffic at incident scenes. About

\$12.6 million of IR's economic benefits results from preventing an estimated 2,487 secondary incidents and resulting delay. This figure is based on Federal Highway Administration data that estimates 20% of all incidents are secondary incidents.

Based on WSDOT's budget for IR, every \$1 spent on the program during the first quarter of 2020 provided drivers \$14.77 in economic benefit.

Incident numbers do not correlate with the cost of incident induced delay

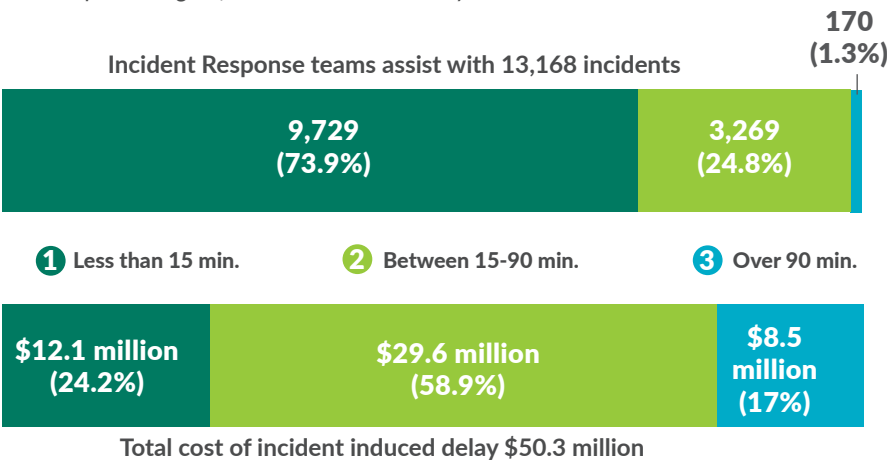
The 13,168 incidents during the quarter had a total incident-induced delay cost of \$50.3 million. Incidents lasting less than 15 minutes accounted for 73.9% of total incidents but only 24.2% of total costs. Incidents lasting 15-90 minutes accounted for 24.8% of all

incidents, but 58.9% of total costs. Incidents lasting more than 90 minutes made up 1.3% of all incidents for the quarter but accounted for 17% of total costs (see below bar charts for ratio).

Performance data reported in this article is from WSDOT's Washington Incident Tracking System, which tracks incidents to which a WSDOT IR team responded. For more information on how WSDOT calculates these figures and all IR performance metrics, see [WSDOT's Handbook for Corridor Capacity Evaluation, 2nd edition, pp. 45-47.](#)

Contributors include Vince Fairhurst, Tony Leingang, Ron Vessey, Michele Villnave, Takahide Aso and Dustin Motte

Cost of incident-induced delay not proportional to response numbers
First quarter 2020; Number and percentage of incidents; Time to clear incidents; Cost and percentage of incident-induced delay



Data source: Washington Incident Tracking System.

Customer feedback:

- "I don't know of improvements, because AJ pulled up behind me only a few minutes after I called 911. He kindly asked about my problem and got me back on the road with gas."
- "No improvements! Mark went beyond in my opinion getting my car going and I was able to cancel the AAA call. Thank You so much!"
- "Thank you Nick for the unexpected help! You saved me a ton of time and stress!"

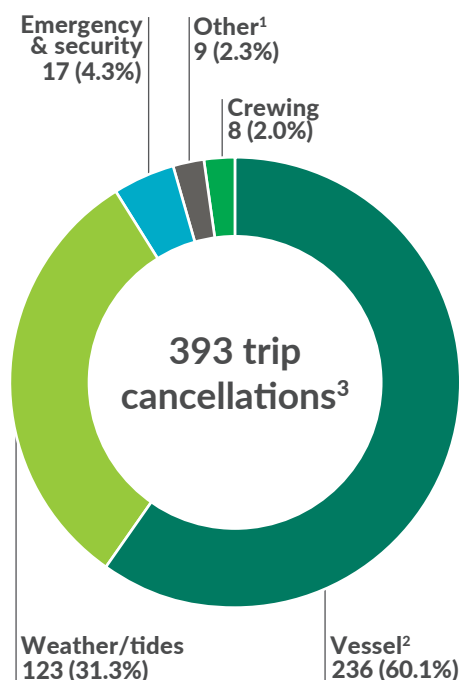
77 WASHINGTON STATE FERRIES QUARTERLY UPDATE

Notable results

- WSF completed 38,632 (99.3%) of its 38,921 regularly scheduled trips in the third quarter of fiscal year 2020
- WSF ridership was approximately 4.1 million in the third quarter of fiscal year 2020, which was 716,000 (14.9%) less than the corresponding quarter in FY2019

Vessel mechanical issues cause most cancellations for the quarter

Third quarter (January - March) FY2020;
Number of cancellations and percentage
of total cancellations per category



Data source: Washington State Ferries.

Notes: Fiscal years run from July 1 through June 30. As a result, January through March 2020 represents the third quarter of FY2020.

¹ The category for "Other" includes issues at terminals, and events like disabled vehicles, environmental reasons and incidents that can impact operations. ² The category "Vessel" refers to cancellations due to mechanical issues. ³ WSF replaced 104 of the 393 canceled trips for a total of 289 net missed trips.

WSF service reliability remains above goal

There were 38,921 regularly scheduled ferry trips during the third quarter of fiscal year 2020 (January through March 2020). Washington State Ferries completed 99.3% (38,632) of these trips. This exceeds the annual service reliability performance goal of 99% by 0.3 percentage points and is 0.1 percentage points higher than the same quarter in FY2019 (see table below).

In the third quarter of FY2020, WSF canceled 393 trips and was able to replace 104 of them, resulting in 289 net missed trips. This was four fewer net missed trips than the 293 missed during the same quarter in FY2019. WSF's service reliability remained high during the quarter despite a significant snowstorm in January.

Of the 393 total canceled trips for the quarter, the majority (236) were due to mechanical problems on various vessels, primarily those on the Fauntleroy/Vashon/Southworth route. Normally this route operates with three boats, but if one vessel breaks down, the route becomes a two-boat operation with additional sailings added to mitigate the net loss of trips. On this route, the M/V Kittitas had two mechanical issues (an engine failure and a fire main leak) in January and March, resulting in 107 total cancellations and 37 replacement trips. In February, the M/V Issaquah had a problem with oil pressure leading to 95 canceled trips, of which 56 were replaced by going to a two-boat schedule. Mechanical issues also led to 34 cancellations on the Domestic San Juan route in February and March, none of which were replaced.

The second most common cause of cancellations was tides and weather, with 123 canceled trips, none of which were replaced. There were 64 cancellations

WSF service reliability consistently meets goal in five-year trend

Third quarters; Fiscal years 2016 through 2020; Percentage of scheduled ferry trips completed



Data source: Washington State Ferries.

Notes: Fiscal year = July 1 through June 30. As a result, January through March 2020 represents the third quarter of FY2020.

WSF on-time performance and reliability up in the third quarter of fiscal year 2020

January through March, FY2019 and FY2020; Annual on-time goal = 95%; Annual service reliability goal = 99%

| Route | On-time performance (third quarter) | | | | Service reliability (third quarter) | | | |
|---|-------------------------------------|--------------|-------------|----------|-------------------------------------|--------------|-------------|----------|
| | FY2019 | FY2020 | Status | Trend | FY2019 | FY2020 | Status | Trend |
| San Juan Domestic | 84.8% | 82.6% | -2.2% | ↓ | 99.8% | 99.4% | -0.4% | ↓ |
| Anacortes/Friday Harbor/Sidney, B.C. ¹ | 83.3% | 100% | 16.7% | ↑ | 100% | 100% | 0% | ↔ |
| Edmonds/Kingston | 98.2% | 99.3% | 1.1% | ↑ | 99.9% | 99.9% | 0% | ↔ |
| Fauntleroy/Vashon/Southworth | 93.3% | 96.8% | 3.5% | ↑ | 98.1% | 98.9% | 0.8% | ↑ |
| Port Townsend/Coupeville | 95.0% | 98.2% | 3.2% | ↑ | 96.4% | 93.5% | -2.9% | ↓ |
| Mukilteo/Clinton | 98.9% | 99.2% | 0.3% | ↑ | 99.7% | 99.9% | 0.2% | ↑ |
| Point Defiance/Tahlequah | 98.6% | 99.2% | 0.6% | ↑ | 100% | 99.9% | -0.1% | ↓ |
| Seattle/Bainbridge Island | 90.0% | 95.3% | 5.3% | ↑ | 99.9% | 99.9% | 0% | ↔ |
| Seattle/Bremerton | 94.1% | 95.7% | 1.6% | ↑ | 99.7% | 100% | 0.3% | ↑ |
| Total system | 93.7% | 95.3% | 1.6% | ↑ | 99.2% | 99.3% | 0.1% | ↑ |

Data source: Washington State Ferries.

Notes: FY = fiscal year (July 1 through June 30). As a result, January through March 2020 represents the third quarter of FY2020. A trip is considered delayed when a vessel leaves the terminal more than 10 minutes after the scheduled departure time. Numbers shown in the table have been rounded to the tenth. ¹ WSF operates 10 routes but combines the Anacortes/Friday Harbor route with the San Juan Interisland route as the San Juan Domestic for on-time performance and service reliability. Due to unique fare collection methods in the San Juan Islands, and similar origin and destination legs on both routes, some statistics cannot be separated between the two routes. The Anacortes/Friday Harbor – Sidney, B.C. route has a low number of trips, so changes in on-time performance and trip reliability result in large percentage values.

for high winds and 55 due to tides on the Pt. Townsend/Coupeville route. Four trips were canceled on the Domestic San Juan route due to snow.

Other cancellations on various routes included 17 for medical emergencies, eight for crewing problems, and nine for miscellaneous reasons.

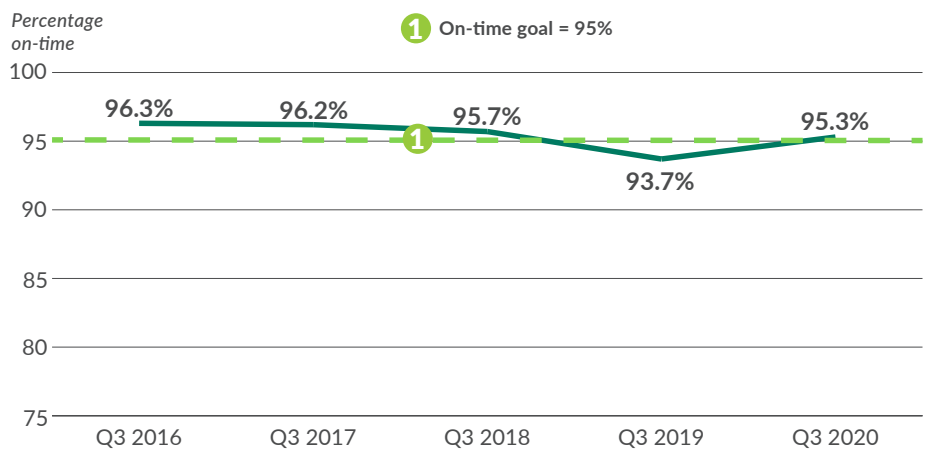
WSF achieves on-time performance goal

On-time performance was 95.3% in the third quarter of FY2020, 1.6 percentage points higher than the same quarter in FY2019, and above WSF's annual on-time performance goal of 95%.

On-time performance increased on eight of nine routes compared to the third quarter of FY2019. On average,

On-time performance for WSF down slightly in five-year trend

Third quarters; Fiscal years 2016 through 2020; Percentage of ferry trips reported as on-time¹



Data source: Washington State Ferries.

Notes: Fiscal year = July 1 through June 30. As a result, January through March 2020 represents the third quarter of FY2020. ¹ A trip is considered delayed when a vessel leaves the terminal more than 10 minutes after the scheduled departure time.

4.7% (1,795) of trips did not leave the terminal within 10 minutes of the scheduled departure time.

The San Juan Domestic route had 82.6% on-time performance, a decrease of 1.3 percentage points

from 84.8% during the same quarter last year.

The largest increase in on-time performance was on the Anacortes/Friday Harbor/Sidney, B.C. route, which increased 16.7 percentage points—from 83.3% to 100%—compared to the same quarter last year. The low number of sailings makes small numeric changes result in large percentage changes. In FY2019, there were two late sailings out of 12 total, resulting in on-time performance of 83.3%.

The second largest increase in on-time performance was 5.3% on the Bainbridge Island/Seattle route, which increased from 90% in FY2019 to 95.3% in FY2020—primarily caused by unusually low on-time performance in March 2019 due to construction at Colman Dock.

Ridership decreases in third quarter of FY2020

WSF ridership was approximately 4.1 million during the third quarter of FY2020. This was about 716,000 (14.9%) fewer passengers than the corresponding quarter in FY2019.

Ridership during the third quarter of FY2020 decreased on all nine WSF routes. In January, a winter snowstorm caused a drop in ridership, but the quarterly decrease is mainly due to very low ridership in March as a result of the COVID-19 pandemic. Gov. Jay Inslee issued the "Stay Home, Stay Healthy" proclamation on March 23, 2020 that limited travel to essential trips. In March, ridership was 992,865 which was 938,333 (48.6%) below the projected ridership of 1,931,198.

The routes with the smallest decrease in ridership as compared to the same period in FY2019 were Point Defiance/Tahlequah at 91.6% and Fauntleroy/Vashon/Southworth at 91.4%. Both routes provide service to Vashon Island, which can only be accessed by ferry or private boat. The route with the largest decrease was the international route between Anacortes and Sidney, B.C. at 64%. This decrease was primarily due to the COVID-19 related extension of the winter season sailing schedule at the end of March, which meant that—unlike in March 2019—there was no international service in March 2020. For more information about how COVID-19 has affected transportation in Washington, please visit: <https://bit.ly/COVID19dash>.

Revenue follows ridership, trends down for the quarter

Farebox revenue came in at about \$33.2 million for the third quarter of FY2020. Farebox revenue was almost \$3.5 million (9.6%) less than in the same quarter in FY2019, and about \$7.6 million (18.7%) below projections of \$40.8 million. March farebox revenues, which totaled \$8,775, 297, were 41.3% below the projected revenue of \$14,957,169.

Passenger injuries decrease, employee injuries increase

The rate of passenger injuries per million riders decreased from 2.5 in the third quarter of FY2019 to 1.96 in the third quarter of FY2020. The passenger injury rate during the quarter missed WSF's goal of one or fewer injuries per million riders.

The rate of Occupational Safety and Health Administration recordable

Customer feedback: WSF goes above and beyond

"Please thank the crew on the 9:15 AM, Saturday February 8, Lopez to Anacortes run for doing their very best to load the ferry. As the last car on, I truly appreciate their effort! They are professionals!"

crew injuries per 10,000 revenue service hours increased from 5.0 in the third quarter of FY2019 to 6.3 during the same period in FY2020. This represents four more injuries than in the same quarter in FY2019, but met WSF's annual goal of fewer than 7.6 crew injuries per 10,000 revenue service hours.

Passenger complaints decrease for the quarter

There were 305 complaints during the third quarter of FY2020, down 46% from 565 in the same quarter last year. The category with the largest number of complaints in both years was employee behavior, with 87 complaints in FY2020 as compared to 125 complaints in the third quarter last year. The category that improved the most was on-time performance, with 18 complaints in the third quarter of FY2020 compared to 145 in the same quarter of FY2019.

Contributors include Matt Hanbey, Donna Thomas, Joe Irwin and Dustin Motte



The online version of this article links to an interactive map at bit.ly/GNBferriesmap.

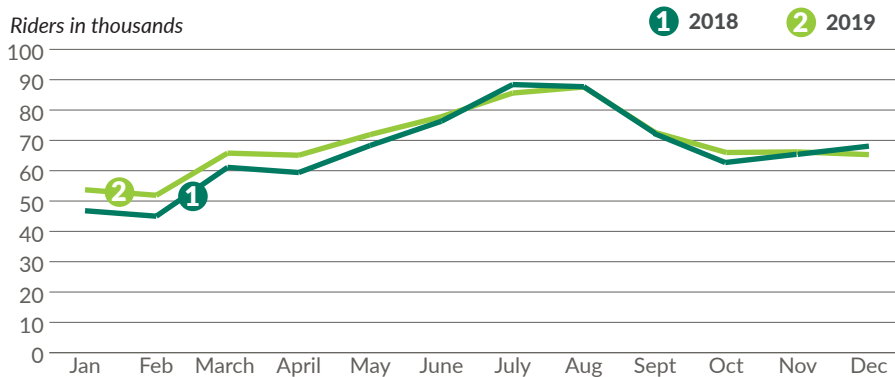
77 AMTRAK CASCADES ANNUAL REPORT

Amtrak Cascades sees higher ridership in 2019

A total of 829,000 people rode Amtrak Cascades trains in 2019—over 27,000 (about 3.4%) more than in 2018. Promotions to encourage travel in the slower months of January through May generated increases in ridership in each of those months (see chart below). The months of January and February saw particularly high increases of 14.8% and 15.4% respectively. This represents nearly 14,000 more riders in just those two months. A portion of this increase is attributable to the lower ridership levels in January and February of 2018 immediately following the derailment of an Amtrak Cascades train in DuPont, Washington.

The two busiest stations on the corridor—King Street Station in Seattle and Union Station in Portland—both served more passengers in 2019 than in 2018, with approximately 4% and 3% more ons and offs respectively (see chart at the bottom of the page).

Amtrak Cascades ridership higher in 2019 than in 2018 for most of the year Amtrak Cascades monthly ridership; 2018 and 2019



Data source: WSDOT Rail, Freight and Ports Division.

Notable results

- Amtrak Cascades ridership reached a seven-year high of 829,000 passengers in 2019
- On-time performance improved from 50% in 2018 to 58% in 2019, but was below the target of 88%
- Amtrak Cascades ticket revenue increased 6.3% from \$31.3 million in 2018 to \$33.2 million in 2019

Measuring station use

Passenger use at each station is measured by “on-offs,” or the number of riders who get on or off trains at a given station. For example, someone who rides Amtrak Cascades from Kelso to Seattle is counted as one passenger using the Kelso station and as one passenger using the Seattle station.

Total number of passengers getting on or off trains at Amtrak Cascades stations increases from 2018 to 2019

Passengers getting on or off trains, rounded to the nearest thousand; 2018 and 2019

| Station | 2018 | 2019 | Change | Station | 2018 | 2019 | Change |
|-----------------|---------|---------|--------|--------------------------|------------------|------------------|-------------|
| Vancouver, B.C. | 164,000 | 169,000 | 3% | Centralia | 21,000 | 22,000 | 5% |
| Bellingham | 50,000 | 54,000 | 8% | Kelso | 27,000 | 26,000 | -4% |
| Mount Vernon | 16,000 | 16,000 | 0% | Vancouver, WA | 76,000 | 78,000 | 3% |
| Stanwood | 5,000 | 6,000 | 20% | Portland ¹ | 409,000 | 420,000 | 3% |
| Everett | 22,000 | 23,000 | 5% | Oregon City ¹ | 12,000 | 13,000 | 8% |
| Edmonds | 22,000 | 22,000 | 0% | Salem ¹ | 36,000 | 36,000 | 0% |
| Seattle | 492,000 | 510,000 | 4% | Albany ¹ | 19,000 | 20,000 | 5% |
| Tukwila | 33,000 | 35,000 | 6% | Eugene ¹ | 46,000 | 46,000 | 0% |
| Tacoma | 83,000 | 85,000 | 2% | Other ² | 17,000 | 21,000 | 24% |
| Olympia | 53,000 | 55,000 | 8% | Total | 1,603,000 | 1,657,000 | 3.4% |

Data source: WSDOT Rail, Freight and Ports Division.

Notes: ¹ Station located in Oregon. ² Other includes RailPlus passengers, riders whose origin and destination was unknown, and passengers who deferred their trip to another day.

Amtrak Cascades

Amtrak Cascades is an intercity passenger rail service that operates between Vancouver, B.C. and Eugene, Oregon.

The service is jointly funded and managed by WSDOT and the Oregon Department of Transportation. WSDOT oversees the portion of the Amtrak Cascades corridor between Vancouver, B.C. and Portland, Oregon, while ODOT has primary responsibility for service between Portland and Eugene. WSDOT and ODOT pay Amtrak to operate the service.

Amtrak Cascades operates on privately owned tracks; BNSF owns the tracks in Washington and British Columbia, and Union Pacific owns the tracks in Oregon. Dispatching services are provided by BNSF in Washington, Union Pacific in Oregon and Canadian National in British Columbia. Stations along the Amtrak Cascades route are owned by a variety of entities, including cities, transit agencies, and railroads.

Ticket revenue rises 6.3% to \$33.2 million in 2019

Amtrak Cascades ticket revenue totaled \$33.2 million in 2019, up 6.3% from \$31.3 million in 2018 (see chart on p. 17). This increase was primarily due to the same promotions that led to increased ridership during off-peak periods. Sales of higher-priced business class tickets also contributed to the increase in revenue, with a 13.8% increase in business class tickets sold in 2019.

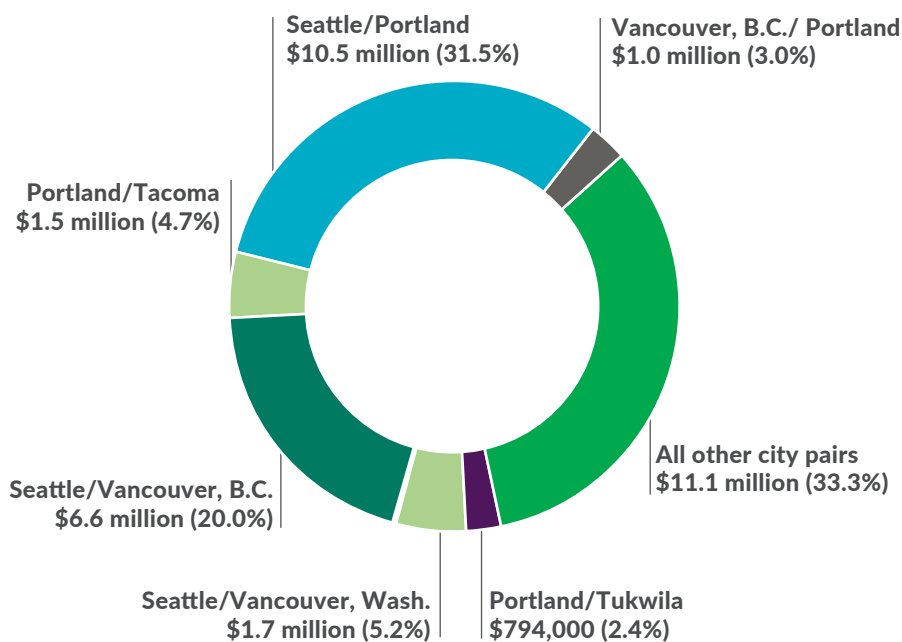
The Seattle-to-Portland travel segment accounted for the largest share of ticket revenue at \$10.5 million, up nearly \$550,000 over sales in 2018. Ticket sales between

Seattle and Vancouver, B.C. also saw a \$600,000 increase over 2018, with a total of \$6.6 million in 2019 (see chart below).

The WSDOT-sponsored section of the Amtrak Cascades corridor accounted for \$33.2 million in ticket sales, representing 94% of revenue for the entire Amtrak Cascades corridor. This segment also generated an additional \$2 million in revenue through food and beverage sales and other fees. The segment's total 2019 revenue of \$35.2 million was 6.3% higher than 2018's total revenue of \$33.1 million.

Amtrak Cascades ticket revenue reaches \$33.2 million in 2019

2019; Dollar value and percent of total dollar value by segment

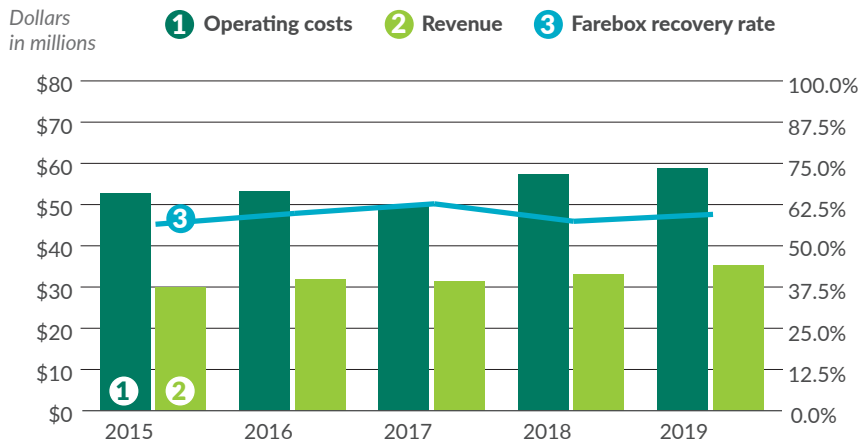


Data source: WSDOT Rail, Freight and Ports Division.

Notes: Amtrak Cascades runs 467 miles from Vancouver, B.C. to Eugene, Oregon. Percentages may not add to 100 due to rounding.

Amtrak Cascades revenue, costs and farebox recovery rate all increase

2015 through 2019; Amtrak Cascades annual operating costs and revenues in dollars; Amtrak Cascades annual farebox recovery rate



Data source: WSDOT Rail, Freight and Ports Division.

Notes: Previous editions of the Gray Notebook reported Amtrak Cascades operating costs, revenue and farebox recovery rate on the fiscal year.

Farebox recovery rate rises in 2019

Total revenue (tickets, food and beverage, and other fees) covered 59.8% of WSDOT-funded Amtrak Cascades' \$58.9 million total operating costs in 2019. This was an increase of 2.1 percentage points from 57.7% in 2018. This percentage, called the farebox recovery rate, is the ratio between total revenue and total operating costs.

Revenue was higher in 2019 than in 2018, but operating costs also increased by \$4.9 million over the same period. This increase in operating costs is primarily due to additional costs for use and maintenance of Amtrak-owned equipment. Using Amtrak-owned equipment has been necessary because of the loss of the WSDOT-owned locomotive and trainset in the

2017 derailment in DuPont. When insurance reconciliations related to the derailment are finalized, WSDOT will be able to recover these costs.

Amtrak Cascades' on-time performance misses goal

Washington's Amtrak Cascades trains were on time 58% of the time in 2019, up from 50% in 2018 (see chart on p. 18). In 2018, Amtrak Cascades' on-time performance goal was changed from 80% to 88%. This goal was contractually negotiated by WSDOT, Amtrak, and BNSF.

Amtrak Cascades trains between Portland, Oregon and Vancouver, British Columbia (the portion of the Amtrak Cascades corridor which WSDOT oversees) experienced 133,312 minutes (over 2,221 hours) of delay in 2019, which negatively

WSDOT tracking effects of COVID-19 pandemic

WSDOT has developed an interactive online dashboard to keep Washington citizens informed about the impacts pandemic-related closures are having on multimodal transportation statewide—including the impacts to the Amtrak Cascades passenger rail service. This dashboard is updated daily.

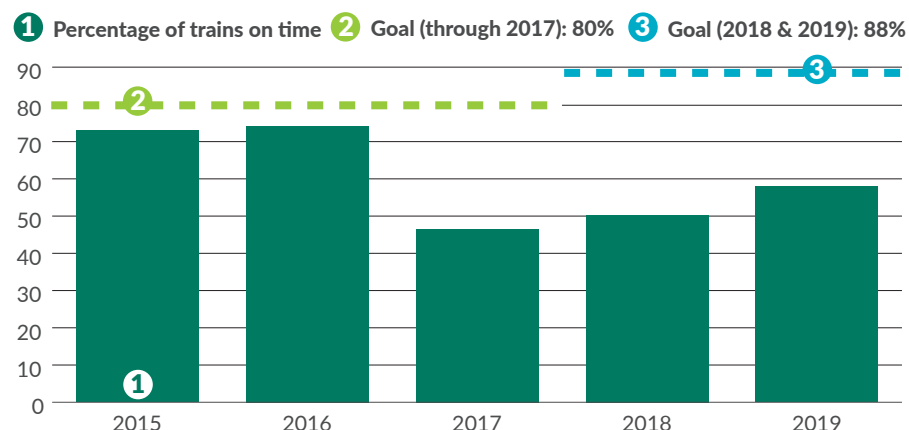
To view WSDOT's COVID-19 Multimodal Transportation System Performance Dashboard, visit <https://bit.ly/COVID19dash>.

Train interference delays

Train interference delays occur when two trains try to use the same section of track, forcing one train to slow or wait on a siding (a short piece of track off the main line) while the other train passes. Additionally, when one train is delayed and operating outside its allotted time slot, it can affect other trains operating on the corridor.

Amtrak Cascades on-time performance improves in 2019

2015 through 2019; Percentage of trains on time



Data source: WSDOT Rail, Freight and Ports Division.

Note: Data is for trains on Washington segments only. For 2015-2017, trains operating on the Vancouver, British Columbia to Seattle and Seattle to Portland segments were considered on time if they arrived within 10 minutes of scheduled arrival, while trains operating on the Vancouver, British Columbia to Portland segment were considered on time if they arrived within fifteen minutes of scheduled arrival. Beginning in 2018, all trains overseen by WSDOT are considered on time if they arrive within 10 minutes of scheduled arrival.

impacted on-time performance. Although each minute of delay fell into one of 25 separate categories, more than 50% of delay minutes were due to three causes:

- Slow speed restrictions due to track conditions including congestion, raised bridges and weather caused more than 18.7% (24,876 minutes) of delay;
- Freight train interference (see box at left) caused 15.3% (20,439 minutes) of delay; and
- Passenger train interference accounted for 12.9% (17,246 minutes) of the delay.

The on-time reliability goal of 88% is being tracked and enforced in

accordance with contracts that WSDOT negotiated with BNSF, Amtrak and Sound Transit. The agencies use a shared database system to report delays, assign responsibility, and indicate that corrective actions are required if the goal is not reached.

Because BNSF dispatchers in Fort Worth, Texas determine the movement of both freight and passenger trains along the Amtrak Cascades corridor, the company is tasked with minimizing delays due to train interference. In keeping with contractual commitments, WSDOT requires BNSF to submit corrective action plans for mitigating these and other delays that are under its purview.

Contributors include Janet Matkin, Cara Motte, Helen Goldstein and Lisa Mikesell

77 NOISE QUALITY BIENNIAL REPORT

WSDOT completes 18 noise studies for new construction projects

WSDOT completed 18 traffic noise studies for new construction transportation projects between April 1, 2018 and March 31, 2020. The studies collected noise measurements and traffic counts to help predict future noise levels for each project.

WSDOT builds noise walls and earthen berms to mitigate noise and improve the quality of life for residents living near major roadways across the state. WSDOT categorizes its noise quality projects as either Type 1 or Type 2, depending on the origin of the project (see box at right for more details).

In addition to the 18 Type 1 projects involving new construction, WSDOT currently has 55 Type 2 retrofit projects eligible for construction. The agency reprioritized the Type 2 project list in June 2015 based on population density, area noise levels and project costs in communities built prior to noise level requirements. The state Legislature selects projects from this list for completion. WSDOT will reprioritize the Type 2 project list again in 2020 to comply with federal regulations.

New project reduces traffic noise along I-205 corridor

WSDOT constructed 0.5 miles of new Type 1 noise walls along I-205 in Clark County and 0.9 miles of new Type 1 berms along SR 500 in Clark County between April 2018 and March 2020. These concrete noise walls and earthen berms were part of the I-205 Mill Plain Interchange Project. The noise wall on I-205 in Clark County had an allowable cost of \$708,480, which was calculated using the expected increase in noise level as a result of the project for 16 residences that would be affected. The estimated cost of the noise wall was \$615,000, allowing construction to move forward (see p. 20 for more information on how WSDOT calculates noise wall feasibility). Overall, WSDOT has constructed approximately 96 miles of noise barriers since 1963.

WSDOT tests underwater noise levels from ferry vessels

In 2019, WSDOT worked with consultants to collect underwater source noise levels for all seven ferry vessel classes and 33 operating conditions in Puget Sound. This study supports Gov. Jay Inslee's Southern Resident Killer Whale Recovery Task Force efforts, which directed WSDOT to develop strategies for quieting ferry vessels. The results of this study helped WSDOT identify the sources of the loudest noises, allowing the agency to start developing strategies for quieter ferry operations.

The study indicated that the primary source of noise from all vessel classes was collapsing bubbles in low pressure areas on propellers as they churned through the water. This noise can be mitigated through new propeller designs, but this could come with a trade-off of reduced power.

Notable results

- *WSDOT conducted 18 traffic noise studies between April 2018 and March 2020 for upcoming transportation projects*
- *WSDOT constructed approximately 96 miles of noise walls since 1963, including 0.5 miles between April 2018 and March 2020*

WSDOT evaluates noise for two project types

WSDOT conducts noise studies for two types of projects:

- **Type 1** projects involve new construction projects which could potentially increase traffic noise for nearby residents.
- **Type 2** projects are retrofits for existing high-traffic roadways near residential areas that were constructed before 1976—the first year that noise evaluations were required for highway projects. WSDOT maintains a prioritized list of eligible Type 2 projects to be considered for construction by the Legislature.

For both types of projects, WSDOT evaluates how it can cost-effectively reduce noise and seeks input from affected communities before taking any noise-reducing action (like constructing a noise wall).

Other sources of underwater vessel noise include engines and mechanical equipment transferring noise through the hull. These noise sources can be mitigated by installing equipment mountings that reduce vibrations. In the future, WSDOT will use the information from this report to inform vessel architects in the design of new vessels and look at possible changes in current vessel operations to reduce noise levels.

WSDOT updates noise policies and procedures

In March 2020, WSDOT finalized the update to its 2011 Noise Policies and Procedures manual to streamline the noise analysis process and comply with federal regulations. The largest change was simplified definitions for “feasibility” and “auxiliary lanes,” which will eliminate the need to conduct noise wall analyses for single homes and short segments of new lanes that do not affect the overall noise environment.

WSDOT utilizes noise variance permits in construction work

WSDOT obtained 70 noise variance permits from local jurisdictions across the state between April 1, 2018 and March 31, 2020. These permits allow work crews to produce more noise than is generally acceptable at night, which allows construction work to be completed on time in areas with heavy traffic and safety concerns during the day.

Contributors include Jim Laughlin, Joe Irwin and Lisa Mikesell

WSDOT requires noise walls to meet two criteria

WSDOT evaluates noise walls using two criteria. These criteria are based on federal standards for noise barriers.

First, WSDOT analyzes the feasibility of noise walls by determining how effectively they block noise in communities with high noise levels. In order to be constructed, the wall must provide the homes behind it at least 5 decibels of noise reduction. An example of this is the decrease in sound between a garbage disposal (80 decibels) and an average dishwasher (75 decibels) when the listener is standing in the kitchen.

Secondly, WSDOT estimates the costs associated with building the noise barrier. The agency compares the allowed cost per resident with an estimated cost per resident. This allowable cost takes into consideration the number of homes that will benefit from noise reduction. If the estimated cost is less than or equal to the allowable cost, then WSDOT recommends the noise wall for construction.

77 WETLANDS PROTECTION ANNUAL REPORT

WSDOT adds eight acres of wetland and stream mitigation sites in 2019

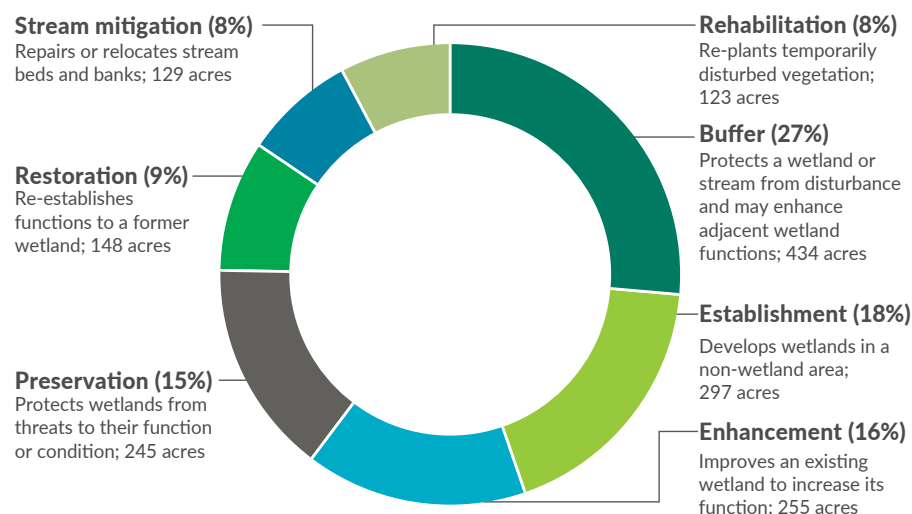
WSDOT began monitoring six new compensatory mitigation sites on eight acres in 2019, bringing the total to 306 compensation sites on 1,631 acres. The agency started to issue monitoring reports on compensation sites in 1988 and has since transferred 176 sites to long-term stewardship with WSDOT partners—including local government agencies—which monitor the sites after initial permit requirements are met. WSDOT will continue to monitor the remaining 130 sites on 1,208 acres until initial permit requirements are met.

WSDOT's statewide inventory of 306 mitigation sites includes:

- 84 compensation sites currently in the 10-year monitoring period;
- One site past the initial 10-year monitoring period that has not yet met all permit requirements;
- 39 sites being evaluated by the U.S. Army Corps of Engineers and Washington State Department of Ecology for completion of their permit requirements;
- Six compensatory mitigation banks; and
- 176 sites in long-term stewardship that have met their permit requirements.

WSDOT's mitigation inventory reaches 130 sites on 1,631 acres in 2019

Total acreage (and percentage of total) of replacement wetlands and stream mitigation sites by type



Data source: WSDOT Environmental Services Office.

Notes: Percentages may not total 100 due to rounding.

Notable results

- WSDOT added six new wetland and stream mitigation sites on eight acres in 2019, bringing the total to 306 sites on 1,631 acres
- WSDOT completed monitoring work at six mitigation sites on 64.4 acres at the end of their 10-year monitoring periods
- WSDOT's mitigation banks earned 2.86 credits and provided agency transportation projects 0.12 credits in 2019

How mitigation banks work for WSDOT

The Environmental Protection Agency and Army Corps of Engineers' guidance on compensatory mitigation for construction projects recommends mitigation banking. Mitigation banking can be thought of as a type of "savings account" for WSDOT's future capital projects and mitigation needs. Mitigation banks create credits based on the number of acres and their value. These credits can be withdrawn from the account (or used) by projects as compensation for unavoidable wetland impacts within the bank's specified service area.

For more information about mitigation banks, visit <http://bit.ly/wsdotmitigation>.

WSDOT actively monitors 130 mitigation sites in 2019

From 2001 through 2019, the number of WSDOT-monitored compensation sites increased by 141% (54 to 130) and total acreage increased by 467% (213 to 1,208). These increases are primarily a result of construction projects funded by the 2003 Nickel and the 2005 Transportation Partnership Account revenue packages (see graph above). To ensure these sites meet permit requirements, WSDOT monitors hydrology, vegetation, and wildlife as they develop—typically for 10 years—before transferring them to agency partners for long-term stewardship.

WSDOT strives to meet completion requirements for mitigation sites

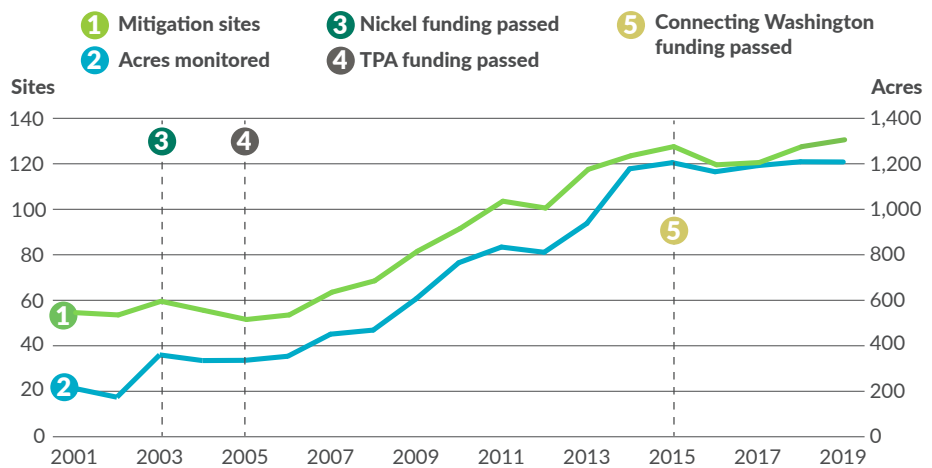
WSDOT completed monitoring work at six compensation sites (64.4 acres) where permit requirements were met by the end of the monitoring period. WSDOT will request concurrence from regulating agencies that these be closed out in 2020.

WSDOT mitigation sites provide benefits such as water quality improvement, wildlife and pollinator habitat, and storage areas for floodwater.

Two compensation sites were past the initial monitoring period in 2019, but not yet transferred to long-term stewardship with WSDOT partners. One site (5.76 acres) has not yet met all final-year permit requirements, but was replanted in 2018 and again in 2019. It will be monitored again in 2020. The other site (0.45 acres) met permits requirements in 2019.

WSDOT's monitored mitigation site acreage increases to 1,208 in 2019

2001 through 2019; Number of sites and acres monitored



Data source: WSDOT Environmental Services Office.

Notes: Of the 130 sites above, WSDOT has 84 active mitigation sites, 39 sites submitted for closeout that are being evaluated, one site beyond the initial monitoring period and six mitigation banks.

Wetland mitigation sites help reduce climate impacts

WSDOT wetland mitigation sites not only compensate for the effects of transportation projects, but can also mitigate climate change impacts.

Wetland mitigation sites protect infrastructure assets by storing floodwater and improve the quality of water by filtering stormwater. They also absorb and store excess carbon from the atmosphere (for more information, visit <http://bit.ly/WSDOTclimate>). WSDOT's wetland mitigation sites in or near estuaries buffer coastlines from extreme weather events.

Mitigation options help WSDOT and the environment

WSDOT's six mitigation bank sites earned 2.86 credits and debited 0.12 credits to transportation projects in 2019.

Mitigation banks preserve, enhance, restore, or create wetlands to offset impacts on existing wetlands from future construction projects. WSDOT mitigation banks efficiently meet future project needs and maximize environmental benefits. They do this by replacing ecological functions—like creating amphibian habitat and providing a storage area for floodwater—prior to any damage that transportation projects would cause to those ecological functions. The agency's mitigation banks save time and money by consolidating work efforts and banking credits for future projects.

WSDOT programs support Practical Solutions and Workforce Development

Drone monitoring

WSDOT began using drones to conduct complementary monitoring for wetland compensation sites in 2019. Many wetlands formed dense native vegetation that grew vigorously within the 10-year monitoring period. Photos taken from the ground often show walls of vegetation and lack the appropriate perspective to show regulators or report reviewers the true development of the vegetation on the site.

Fifteen sites were selected for a pilot program that set permanent, repeatable photo points from the sky with drones. Oblique aerial

photos—taken at a precise angle from designated points in the sky—give a perspective showing plant growth and vertical layering of plants for monitoring reports. This practical solution provides higher quality data with a fraction of the effort, uses low-cost technology, and is easy to repeat in future iterations.

Sustainability in Prisons Project

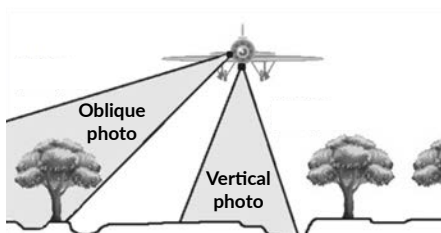
In 2019, WSDOT continued to partner with The Evergreen State College and the Washington State Department of Corrections to create and deliver environmental workshops to incarcerated individuals through the Sustainability in Prisons Project.

WSDOT provided training workshops to incarcerated

individuals to highlight career opportunities related to wetland ecology and stormwater in support of workforce development. During these workshops, agency representatives highlighted how to navigate the state hiring process and gave tips on completing resumes and interviews.

Three workshops were held at Mission Creek Corrections Center for Women and three were held at Cedar Creek Corrections Center. These workshops support successful reentry to communities for formerly incarcerated individuals and cultivate a new pool of qualified workers for WSDOT's workforce.

Contributors include Tony Bush, Jennie Husby, Helen Goldstein and Dustin Motte



Above: Oblique aerial photographs are taken from precise points in the sky and result in repeatable, low-cost and high-quality data.

At right: A vertical aerial photograph of a WSDOT project site.

Below and below right: Oblique aerial photographs of the same project site, gathered using drones.



WSDOT achieves no net loss of wetlands

WSDOT's environmental policies—in accordance with Washington State Executive Order 89-10—ensure it protects and preserves wetlands and streams by not allowing agency projects to cause any net loss of wetland acreage or function. WSDOT designs and builds transportation projects to avoid or minimize disturbance to wetlands and streams. When construction impacts cannot be avoided, the agency designs and builds wetland and stream mitigation sites as compensation. Refer to [Gray Notebook 53, p. 20](#) for a description of the life of a typical WSDOT wetland mitigation site.

Notable results

- *WSDOT's Innovative Technology Deployment program helped the trucking industry avoid 153,000 travel hours and \$19 million in operating costs in 2019*
- *WSDOT received the highest possible rating on its Innovative Technology Deployment data systems from the Federal Motor Carrier Safety Administration*

WSDOT screens commercial vehicles

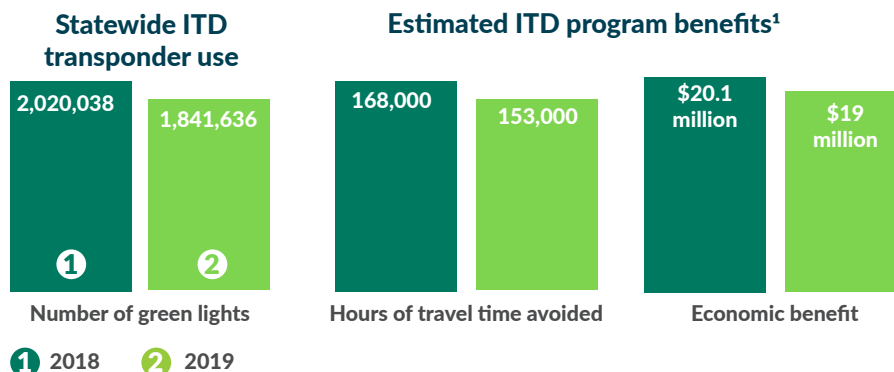
The Innovative Technology Deployment program (formerly known as Commercial Vehicle Information Systems and Networks) designs, implements and maintains the electronic screening systems used by the Washington State Patrol for commercial vehicle enforcement. The program uses technology along state highways to identify, weigh, and examine vehicles for violations while in motion to assist officers with targeted enforcement of high-risk carriers.

Restricting vehicles pulling into weigh stations to primarily high risk carriers increases the likelihood of WSP finding the vehicles that need to be put out of service. It also saves both time and money for safe and legal carriers who are required to stop less frequently.

Weigh station bypasses provide approximately \$19 million in economic benefit in 2019

Weigh station bypasses (green lights) created roughly \$19 million in economic benefit in 2019 by saving an estimated 153,000 hours of travel time and an estimated one million gallons of diesel fuel. On average, each green light/bypass saved carriers five minutes and \$10.36 in operating and fuel costs. The reduced diesel usage from the bypasses cut carbon dioxide emissions by approximately 22.7 million pounds in 2019.

WSDOT's Innovative Technology Deployment program gave commercial trucks equipped with transponders the green light to bypass open weigh stations approximately 1.8 million times in 2019. This was about 9% fewer than the two million green lights given in 2018 (see chart below).



Data source: WSDOT Commercial Vehicle Services Office.

Notes: A truck's transponder is read each time it nears an open weigh station.

¹ WSDOT's Innovative Technology Deployment (ITD) program assumes five minutes and 0.55 gallons of fuel saved per bypass (up from .4 gallons in 2018) providing an economic benefit of \$9.95 in 2018 and \$10.36 in 2019 per bypass based on 2007 report.

WSDOT looking into options to replace and improve aging self-serve permit program

WSDOT is investigating options for replacing its outdated self-serve permit program for oversize and overweight vehicles. In 2019, WSDOT became eligible for a federal grant to support the project and identified two options to replace the existing system:

Option 1: Buying a customizable-off-the-shelf product to operate internally

WSDOT estimates the initial costs to obtain a customizable-off-the-shelf (COTS) product to handle permitting, carrier validation, routing and restriction management to be between \$1.4 and \$3.2 million, with an additional annual maintenance cost between \$150,000 - \$250,000. In 2019, WSDOT became eligible for technology grants and submitted a grant application in 2020 to the Federal Motor Carrier Safety Administration. The

grant will cover initial costs and three years of annual maintenance costs. If WSDOT is awarded the grant in summer 2020, the agency will still be required to pay 15% of the overall cost.

Option 2: Contracting with a company to enhance the current permit program

A company that builds COTS systems approached WSDOT with a second option that provides a self-serve permit product at no cost to the agency. To pay for the program, the company would charge a service fee—typically between \$5 and \$15 per permit—to cover their costs and any credit card fees.

The challenge with this second option is that state law sets the permit fees, which do not include

the transaction costs associated with credit cards. WSDOT may request a modification to the law that would allow charging an administrative fee to cover costs and collecting credit card fees when selling oversize/overweight permits. This would be similar to the Washington State Department of Licensing's online licensing system.

WSDOT will have a plan in place by the end of 2021 to replace or enhance the oversize/overweight permit program.

WSDOT's current permit system not designed for public use

WSDOT is currently using a web-based permit program named "Electronic System Network for Oversize/Overweight Permit Information," or E-SNOOPI, which

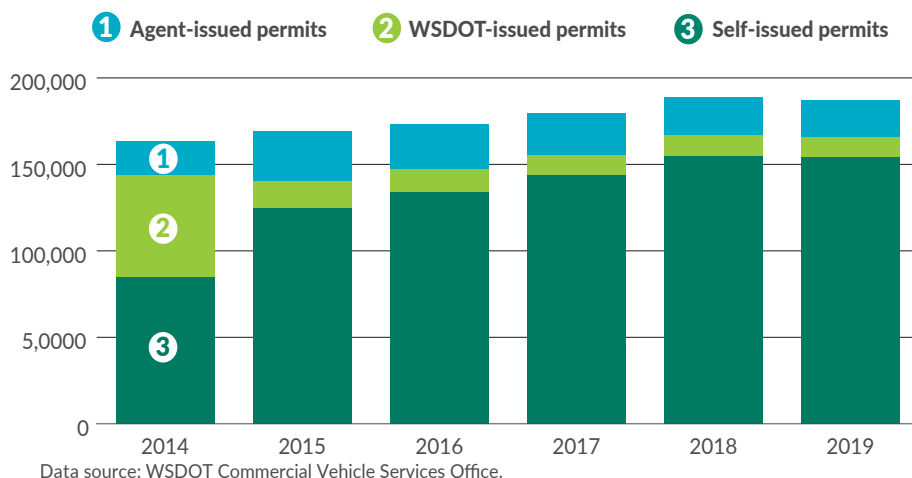
was designed in 1999 by WSDOT staff. E-SNOOPI was designed for internal use by experts familiar with transportation industry rules and regulations. In past years, WSDOT permit experts would receive applications by fax, validate the information, contact the customer for corrections, and send back a valid permit. In 2007, WSDOT upgraded E-SNOOPI to allow the public to self-issue permits online in addition to working with in-house experts.

New financial security regulations went into effect in 2015, preventing WSDOT staff from issuing most permits by fax or email and required customers to apply in person at a WSDOT office, pay fees to a third party agent or self-issue permits online. As a result of these regulations, WSDOT staff issued 6% (11,025 of 186,859) of these permits in 2019, compared to 36% (58,824 of 163,232) in 2014 (see chart below). WSDOT experts issue the more complex permits and assist walk-in customers. The remainder are electronically issued without WSDOT staff assistance using a system that was not designed for public use, and which can result in user errors.

E-SNOOPI lacks automated routing, which has become the national standard. Additionally, the Federal Motor Carrier Safety Administration (FMCSA) recommends states do not issue permits to commercial carriers that have been placed out of service, but E-SNOOPI lacks the ability to check other databases to determine this designation.

Use of WSDOT-issued permits declines due to financial security restrictions

2014 to 2019; Number of permits issued by group



WSDOT receives highest possible marks in federal compliance review

The Federal Motor Carrier Safety Administration gave WSDOT its highest possible marks with no areas for improvement after their December 2019 on-site review of WSDOT's Innovative Technology Deployment systems. To achieve this, WSDOT had to meet requirements in the four categories reviewed:

1. Data Quality Performance Measures,
2. Certification and Recertification,
3. Production Operations, and
4. Programmatic Requirements.

Representatives of WSDOT, the Department of Licensing, Washington State Patrol and FMCSA attended the on-site review.

FMCSA also publishes monthly state data quality evaluation results that measure baselines, timeliness, completeness, accuracy and validity of commercial vehicle data.

Washington is consistently a national leader in data quality and received a perfect score every month from January 2018 to October 2019 in the monthly data evaluations.

For more information visit:
https://bit.ly/FMCSA_ITD

Weigh station strategic plan emphasizes partnership with WSP and guides commercial vehicle operations

The Commercial Vehicle Enforcement Systems Strategic Plan—created in partnership with the Washington State Patrol—presents Washington's approach for continuing effective and efficient commercial vehicle enforcement. The plan provides for safe highway operations, protects basic highway infrastructure and promotes the economic vitality of freight movement in the state.

WSDOT works with WSP in developing and maintaining a commercial vehicle enforcement system that helps the ever-increasing commercial vehicle operations by:

- Identifying high risk commercial carriers;
- Protecting basic highway infrastructure by screening for overweight commercial vehicles; and
- Maintaining a system that allows safe and legal carriers the opportunity to bypass a weigh station after successfully passing an electronic screening.

Superload permits see 58% increase in 2019

In 2019, WSDOT's Commercial Vehicle Services Division issued 2,562 superload permits, a 59% increase from the 1,616 issued in 2018. Superload applications increased 22% from 1,124 (which included 918 regular permits and 206 project permits) in 2018 to 1,370 (1,090 regular and 280 project) in 2019. Regular superload permits include single loads, such as an excavator or bulldozer, while project permits can include multiple larger loads, like girders, refineries or windmill components. From 2014 to 2019, superload permit applications increased by 12%, from 1,219 to 1,370, while superload permits issued increased 9%, from 2,360 to 2,562 (see table below).

Loads exceeding 125 feet long, 16 feet wide, 16 feet high, or 200,000 pounds are considered superloads. Because of their size and the effect these loads can have on state highways and traffic, superloads require special analysis and time to review and their approvals include specific travel conditions.

Contributors include Sonja Clark, Justin Heryford, Angela Ranger, Kevin Zeller, Lisa Mikesell and Dustin Motte

WSDOT issues an increasing number of superload permits over five years

2014 to 2020; Number of superload applications by type and permits issued

| Applications | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Regular | 950 | 993 | 870 | 981 | 918 | 1,090 |
| Project | 269 | 323 | 343 | 205 | 206 | 280 |
| Total | 1,219 | 1,316 | 1,213 | 1,186 | 1,124 | 1,370 |
| Permits¹ | 2,360 | 1,596 | 2,036 | 1,495 | 1,616 | 2,562 |

Data source: WSDOT Commercial Vehicle Services Office.

Note: ¹ Some applications result in multiple permits.



CAPITAL PROJECT DELIVERY PROGRAMS QUARTERLY UPDATES

WSDOT does not complete any new Nickel, TPA or CW projects during the quarter

WSDOT did not complete any new Nickel, Transportation Partnership Account or Connecting Washington projects during the third quarter of the 2019-2021 biennium.

WSDOT has completed a total of 383 Nickel and TPA construction projects since July 2003, with 86% on time and 91% on budget. The cost at completion for the 383 Nickel and TPA construction projects was approximately \$10.3 billion, 1.5% less than the baseline cost of \$10.5 billion. The agency currently has four Nickel and TPA projects underway (see p. XX for additional information).

Nickel and Transportation Partnership Account funding continues to be lower than original projections

Fuel tax collections show 2003 and 2005 revenue forecasts, which were used to determine project lists, could not anticipate how the economic recession that began in 2007 would affect fuel tax revenues. The 2003 Nickel and 2005 TPA gas taxes that fund projects are based on a fixed tax rate per gallon. As such, reduced gasoline and diesel consumption and sales lead to reduced tax revenue.

Fuel tax funding from the 2005 TPA package has been lower than the original March 2005 projection. The original projection for the TPA account was \$4.9 billion over a 16-year period from 2005 through 2021. Current TPA projections through 2021 are \$4.0 billion, roughly \$930 million (18.8%) less than the original 2005 projection. The 2003 Nickel transportation package was originally a 10-year plan, with revenues forecasted to total \$1.9 billion from 2003 through 2013. Fuel tax revenues collected during this period were 10.2% lower than the original March 2003 projection.

Nickel and TPA gas tax revenues are used to pay the debt on the bonds sold to finance planned projects. Once all the bonds are sold, revenues collected will be used to pay the debt.

Beige Page contributors include Mike Ellis, Penny Haeger, Heather Jones, Thanh Nguyen, Aaron Ward, Dan Wilder, Joe Irwin and Lisa Mikesell

Notable results

- *WSDOT has completed 383 Nickel and TPA projects since 2003, with 86% on time and 91% on budget*
- *WSDOT advertised 52 of 82 Pre-existing Funds projects during the third quarter of the 2019-2021 biennium*

WSDOT's Watch List projects available online:

To streamline work and ensure accuracy and consistency, the Watch List is no longer featured in the quarterly Gray Notebook. It is now reported monthly at <http://bit.ly/ProjectDeliveryReports>. This change helps the Gray Notebook better align with WSDOT's Capital Program Development and Management Office and its monthly online Watch List of projects that have or may have significant changes in scope, schedule or budget.

CURRENT LEGISLATIVE EVALUATION & ACCOUNTABILITY PROGRAM QUARTERLY UPDATE

| Combined Nickel & Transportation Partnership Account Status of projects to date; 2003 through March 31, 2020; Dollars in millions | Number of Projects | Value of Program |
|---|---|-----------------------|
| Subtotal of completed construction projects ¹ | 383 | \$10,485.5 |
| Non-construction projects that have been completed or otherwise removed from Nickel/TPA lists ^{2,3} | 9 | \$205.0 |
| Projects included in the current transportation budget but not yet complete | 11 | \$4,989.7 |
| Projects that have been deferred indefinitely or deleted and removed from Nickel/TPA lists ^{3,4} | 13 | \$499.2 |
| Projects now funded by Connecting Washington and removed from Nickel/TPA lists (see GNB 63, p. 35) | 5 | \$103.3 |
| Total number of projects ⁴ in improvement and preservation budget | 421 | \$16,282.7 |
| Schedule and budget summary Nickel & TPA combined: Results of completed construction projects in the current Legislative Transportation Budget and prior budgets; Dollars in millions | Completed in 2019- 2021 Biennium Budget | Cumulative Program |
| Total number of projects completed | 1 | 383 |
| Percent completed early or on time | 0% | 86% |
| Percent completed under or on budget | 100% | 91% |
| Baseline cost at completion | \$564.9 | \$10,485.5 |
| Current cost at completion | \$564.5 | \$10,330.3 |
| Percent of total program over or under budget | 0.1% under | 1.5% under |
| Advertisement record: Results of projects entering the construction phase or under construction | Combined Nickel & TPA | |
| Total current number of projects in construction phase as of March 31, 2020 | 4 | |
| Percent advertised early or on time | 100% | |
| Total number of projects advertised for construction during the 2019-2021 biennium (July 1, 2019 through June 30, 2021) | 1 | |
| Percent advertised early or on time | 0% | |
| Projects to be advertised: Results of projects now being advertised for construction or planned to be advertised | Combined Nickel & TPA | |
| Projects being advertised for construction (April 1, 2020 through September 30, 2020) | 1 | |
| Percent on target for advertisement on schedule or early | 0% | |
| Budget status for the 2019-2021 biennium; Dollars in millions | WSDOT biennial budget | |
| Budget amount for 2019-2021 biennium | \$556.4 | |
| Actual expenditures in 2019-2021 biennium to date | \$205.5 | |
| Total 2003 Transportation Funding Package (Nickel) expenditures | \$8.2 | |
| Total 2005 Transportation Partnership Account expenditures | \$147.3 | |
| Total Pre-existing Funds expenditures | \$50.0 | |

Data source: WSDOT Capital Program Development and Management.

Notes: Numbers have been rounded. This chart was updated in GNB 63 to reflect reconciled Nickel and TPA project counts, and as a result it does not exactly match Current Legislative Evaluation and Accountability Program charts from editions prior to GNB 63. **1** Cumulative projects completed from July 1, 2003 to March 31, 2020. **2** Non-construction projects include commitments for engineering and right of way work. **3** Projects that have been deferred indefinitely or deleted include projects that have no funding available, projects that have been halted by the Legislature and those for which other entities (e.g., cities and counties) are now serving as the lead agency. **4** The project total has been updated to show "unbundled" projects which may have been previously reported in programmatic construction groupings (such as Roadside Safety Improvements or Bridge Seismic Retrofit). See [Gray Notebook 38, p. 55](#) for more details.

77 ADVERTISEMENT RECORD QUARTERLY UPDATE

| Connecting Washington Account projects in construction ¹ Through March 31, 2020; (County); Dollars in millions | Schedule status | Completion date | Total project cost |
|--|--------------------|-----------------|-----------------------|
| I-5/Joint Base Lewis-McChord Corridor Improvements (Pierce) | | | |
| I-5/Steilacoom-DuPont Rd. to Thorne Ln. - Corridor Improvements | On schedule | Apr-2021 | \$332.5 |
| SR 167/SR 509 Puget Sound Gateway (multiple counties) | | | |
| SR 509/SeaTac Stage 1 Elements (WSDOT Contribution) | Advanced | Nov-2022 | \$49.3 |
| SR 167/I-5 to SR 509 - Stage 1A | On schedule | Jun-2021 | \$57.4 |
| I-405/Renton to Bellevue - Corridor Widening (King) | | | |
| I-405/Renton to Bellevue - Corridor Widening & ETL (Stage 2) | Delayed | Dec-2024 | \$876.0 |
| Land Mobile Radio Upgrade (multiple counties) | | | |
| Wireless Communication | Delayed | Nov-2021 | \$37.0 |
| SR 520 Seattle Corridor Improvements - West End (King) | | | |
| SR 520/Montlake to Lake Washington - Interchange and Bridge Replacement | Delayed | Apr-2023 | \$628.1 |
| US 395 North Spokane Corridor (Spokane) | | | |
| US 395/North Spokane Corridor BNSF - Second Railroad Alignment | Delayed | Oct-2021 | \$77.9 |
| I-5/Marvin Road/SR 510 Interchange (Thurston) | | | |
| I-5/SR 510 Interchange - Reconstruct Interchange | Delayed | Sep-2020 | \$46.2 |
| I-82/ Eastbound/ Westbound On- and Off-Ramps (Yakima) | | | |
| I-82/South Union Gap Interchange - Construct Ramps | Advanced | Jun-2020 | \$22.9 |
| US 2 Highway Safety (Snohomish) | | | |
| US 2/Corridor Improvements | Delayed | Jul-2020 | \$2.0 |
| SR 107/Chehalis River Bridge (S. Montesano Bridge) Approach & Rail Repair (Grays Harbor) | | | |
| SR 107/Chehalis River Bridge - Structural Rehabilitation | Delayed | Jul-2020 | \$21.9 |
| I-90/Medical Lake & Geiger Interchanges (Spokane) | | | |
| I-90/Medical Lake Interchange to Geiger Field Interchange - Reconstruction | On schedule | Oct-2020 | \$16.0 |
| US 395/Safety Corridor Improvements (Spokane) | | | |
| US 395/Safety Corridor Improvements | Delayed | Sep-2020 | \$13.6 |
| I-90/Eastgate to SR 900 - Corridor Improvements (King) | | | |
| I-90/Eastgate to SR 900 - Corridor Improvements | Delayed | Oct-2021 | \$73.0 |
| US 12/Walla Walla Corridor Improvements (Walla Walla) | | | |
| US 12/Nine Mile Hill to Frenchtown Vicinity - Build New Highway | Delayed | Jul-2022 | \$160.7 |
| SR 240/Richland Corridor Improvements (Benton) | | | |
| SR 240/Duportail Rd. Intersection Improvements | On schedule | May-2021 | \$2.5 |

Data source: WSDOT Capital Program Development and Management.

Note: 1 Connecting Washington advertisements show projects currently in construction, and do not represent a comprehensive list of completed Connecting Washington projects.

| Nickel & TPA projects in construction Through March 31, 2020; (County); Dollars in millions | Fund type | Advertised on time | Ad date | Operationally complete date | Award amount |
|---|------------|--------------------|----------|-----------------------------|--------------|
| SR 99 Alaskan Way Viaduct Replacement (King) | Nickel/TPA | | | | |
| SR 99/South King Street Vicinity to Roy Street – Viaduct Replacement | Nickel/TPA | ✓ | May-2010 | Feb-2021 | \$1,089.7 |
| The SR 99 Tunnel opened to traffic in February 2019. The award amount is for the SR 99 Tunnel contract. The Viaduct Demolition, Battery Street Tunnel Decommissioning and Surface Street Improvements are in process. | | | | | |
| SR 99/Alaskan Way and Elliot Ave Surface Street Restoration | Nickel/TPA | ✓ | Nov-2018 | Jan-2023 | \$153.0 |
| The City of Seattle is the lead on this project. | | | | | |
| I-5/Tacoma HOV Improvements (Pierce) | Nickel/TPA | | | | |
| I-5/Portland Ave to Port of Tacoma Rd. - Northbound/Southbound HOV | Nickel/TPA | Late | Jan-2018 | Oct-2023 | \$152.6 |
| I-90/Concrete Rehabilitation (multiple counties) | Nickel | | | | |
| I-90/Bullfrog Rd. Vicinity to Cle Elum Vicinity - Replace/Rehabilitate Concrete | Nickel | N/A | Jan-2019 | Nov-2020 | \$8.2 |
| SR 290/Spokane River E. Trent Bridge - Replace Bridge (Spokane) | TPA | | | | |
| SR 290/Spokane River E Trent Bridge - Replace Bridge | TPA | Late | Dec-2019 | Oct-2022 | \$20.1 |

Data source: WSDOT Capital Program Development and Management.

WSDOT has seven change orders of \$500,000 or more during the quarter

WSDOT had seven change orders of \$500,000 or more during the quarter ending March 31, 2020. **1)** The I-5 Steilacoom-DuPont Rd. to Thorne Lane - Corridor project required a \$1.5 million change order. The change order was a combination of smaller change orders for work to improve traffic flow, provide signage, and complete additional widening. **2)** The SR 99, Bored Tunnel Alternative Design-Build project required a \$2 million change order as final compensation for outstanding issues. **3)** The US 101, West Jefferson County Remove Fish Barriers project required a \$631,000 change order because building a separate detour bridge was needed during construction. **4)** The SR 99, George Washington Bridge Painting & Paving project required a \$1.1 million change order because there was more rust than expected on the structure, requiring additional time and materials. **5)** The SR 20, Deception Pass and Canoe Pass Bridges project required a \$1.5 million change order due to ongoing negotiations as a "good faith" payment. **6)** The US 101, North of SR 107 Stabilize Slope project required a \$787,000 change order due to obstructions encountered while drilling shafts. **7)** The SR 99/AWV Demolition, Decommissioning and Surface Street Project required a \$850,000 change order because of accelerated demolition activity near S. Dearborn Street, which required overtime and weekend work.

After extensive reviews—which can involve subject matter experts, contract specialists and other outside stakeholders—WSDOT sometimes changes its engineers' original plans and specifications in order to complete projects. When this occurs, WSDOT issues a formal modification (or change order) to the contract containing a description of the change and details about how or if the contractor may be compensated for it. Each month, WSDOT posts all change orders estimated to cost \$500,000 or more online at <http://bit.ly/WSDOTchangeorders>.

77 PRE-EXISTING FUNDS QUARTERLY UPDATE

WSDOT advertises 52 Pre-existing Funds projects in the third quarter of the biennium

WSDOT advertised 52 of 82 Pre-existing Funds projects in the third quarter of the 2019-2021 biennium (January through March 2020). Of the 52 total projects advertised, 29 were on time, 13 were emergent, one was advertised early and nine were late. An additional 29 projects—originally scheduled to be advertised during the quarter—were delayed within the biennium, and one project was deleted.

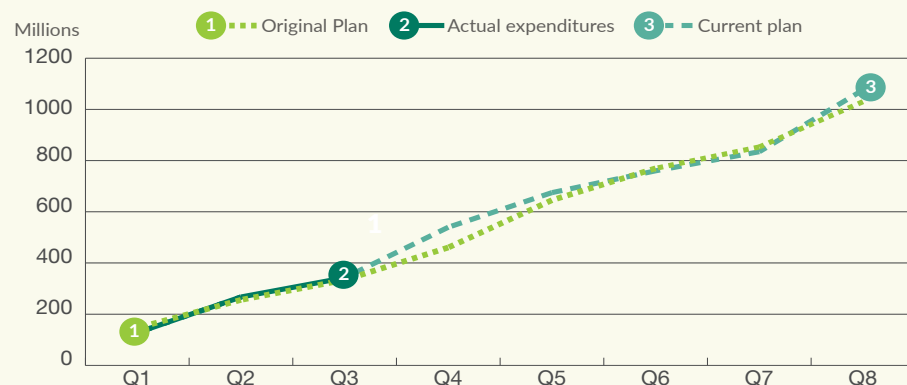
At the beginning of the 2019-2021 biennium, WSDOT's current cost to complete the 115 planned PEF projects advertised during the quarter was about \$308.3 million, approximately \$10.3 million (3.5%) more than the original value of \$298.0 million. See chart at right for additional information.

Cash flows currently higher than original projections

WSDOT originally planned to have \$333.7 million in cumulative combined PEF improvement and preservation cash flows at the end of the third quarter of the 2019-2021 biennium, but had \$342.4 million (approximately \$8.7 million, 2.6% more). Current cash flows can vary from originally planned cash flows due to a number of reasons. For example, emergent projects may add cash flow to the current reporting quarter, whereas project deletions can remove cash flow. The original plan—which is the 2019 delivery plan—will remain the same for the first four quarters of the biennium. It may be updated in the fifth quarter to reflect any revisions in the 2020 delivery plan. As the biennium continues, the agency will use these original plans as goals to achieve while working to meet projections set forth in the current plan. The current plan is more fluid and reflects quarterly changes in response to projects being emergent, delayed, deferred, advanced and deleted.

Cumulative Pre-existing Funds improvement and preservation combined cash flows during the 2019-2021 biennium slightly higher than planned

Quarter ending March 31, 2020; Planned vs. actual expenditures and current plan; Dollars in millions



Data source: WSDOT Capital Program Development and Management.

Note: Q3 refers to the third quarter (January through March 2020) of the 2019-2021 biennium, which runs from July 2019 through June 2021.

Current cost to complete actual PEF advertisements \$10.3 million more than original value

2019-2021 biennium (July 2019 through June 2021); Third quarter (ending March 31, 2020); Dollars in millions

| | Number of projects | Original value | Current cost to complete |
|---|--------------------|----------------|--------------------------|
| Total PEF advertisements planned for the 2019-2021 biennium | 276 | \$1,671.5 | \$1,677.8 |
| Actual PEF advertisements third quarter | 115 | \$298.0 | \$308.3 |

Data source: WSDOT Capital Program Development and Management.

WSDOT advertises 115 PEF projects during the 2019-2021 biennium

| Advertisement status | Quarter ¹ | Cumulative ² |
|----------------------------------|----------------------|-------------------------|
| Advanced ³ | 0 | 0 |
| On time | 29 | 85 |
| Emergent ⁴ | 13 | 17 |
| Early ⁵ | 1 | 3 |
| Late | 9 | 12 |
| Total projects advertised | 52 | 115 |
| Delayed within the biennium | 29 | 65 |
| Deferred out of the biennium | 0 | 0 |
| Deleted | 1 | 4 |

Data source: WSDOT Capital Program Development and Management.

Notes: **1** Quarter refers to January through March 2020. **2** Cumulative refers to July 2019 through June 2021. **3** Advanced refers to projects that were moved up from future quarters. **4** Emergent refers to emergency or unanticipated projects. **5** Early refers to projects planned for the quarter that were advertised in a previous quarter.

WSDOT advertises 29 Pre-existing Funds projects on time during the third quarter of the 2019-2021 biennium January through March 2020

| On time (29) | |
|--|--|
| I-5/Northbound Ramp to SR 526/SR 527 - Sign Structure Replacement | US 12/Vansycle Canyon Vicinity to Nine Mile Creek Vicinity - Chip Seal |
| I-5/Northbound 118th St. SW Vicinity - Variable Message Sign Replacement | US 12/White Pass Vicinity - Major Drainage Phase 3 |
| I-5/Padden Creek - Fish Passage | US 12/N Shore Rd. to Vansycle Canyon - Chip Seal |
| SR 11/Padden Creek - Fish Passage | US 97/Dry Creek to Pumphouse Rd. Vicinity - Chip Seal |
| I-90/E Fork Issaquah Creek to Snoqualmie Valley Trail Bridge - Seismic | SR 225/Karen Ave. to SR 240 - Chip Seal |
| SR 203/Loutsis Creek - Fish Passage | SR 823/N Wenas Wye to SR 821 - Chip Seal |
| SR 526/Seaway Blvd. Vicinity - Sign Structure Replacement | Eastern Region Shoulder Rumble Strip Installation 2019-2021 |
| North Central Region 2019-2021 Weathering Steel Guardrail Rehabilitation | US 2 and US 395 Safety Improvements - Shoulder Repair |
| SR 162/96th St. E to Orville Rd. E - Paving | US 2/SR 21 to Creston - Chip Seal |
| SR 162/96th St. E to Orville Rd. E - ADA | SR 23/Lords Creek Rd. to SR 28 - Chip Seal |
| SR 410/East of Main Ave. to West of 166th Ave. E - Install Cable Barrier | SR 27/Rockford to Freeman - Chip Seal |
| SR 4/US 101 to Kandoll Rd. Vicinity - Chip Seal | I-90/Salnavé Rd. to BNSF Railroad Bridge - Paving |
| SR 6/Two Tributaries to Chehalis River - Fish Passage | SR 231/Fisher Rd. to US 395 - Chip Seal |
| SR 401/US 101 to SR 4 - Chip Seal | US 395/Franklin County Line to Lee Rd. - Southbound Lanes - Paving |
| 2019-2021 South Central Region - Regionwide Basic Safety - Signing | |
| Emergent (13) | |
| I-5/Federal Way Weigh Station Sign Replacement | I-5/0.5 Mile North of Interstate Bridge to NE 99th St. Southbound - Bus Lane |
| I-5/Northbound Slide Repair at MP 244.8 | SR 401/2 Miles East of Astoria-Megler Bridge - Culvert Replacement |
| SR 18/Westbound Holder Creek - Unstable Slope (479) | US 12/Vansycle Canyon Creek Bridge - Deck Preservation |
| I-90/Lewis Creek - Culvert Repair | SR 410/Miner Creek Vicinity - Emergency Repairs |
| SR 530/Sauk River Roadway Washout - Stabilize Roadway and River Bank | SR 823/Yakima River Bridge - Deck Preservation |
| SR 706/East of Ashford - Stabilize Slope | Eastern Region 2020 Strategic Pavement Preservation - Crack Seal |
| SR 4/0.4 Miles West of Bjornsgard Rd. - Emergency Slope Stabilization | |
| Early (1) | |
| Southwest Region/Regionwide Shoulder Rumble Strip Installation 2019-2021 | |
| Late (9) | |
| SR 11/Hoag's Creek - Fish Passage | US 101/Siebert Creek - Remove Fish Barrier |
| North Central Region Sign Update 2017-2019 | US 101/Bagley Creek - Remove Fish Barrier |
| North Central Region Sign Update 2019-2021 | I-5/Woodland Vicinity at Horseshoe Lake - Upgrade Pump System |
| I-90/Silica Rd. to Adams County Line - Cable Barrier Upgrades | SR 240/Columbia Center Blvd. - Pedestrian Facility Improvement |
| US 12/Anderson Rd. to Moon Rd. - Safety Improvement | |
| Data source: WSDOT Capital Program Development and Management. | |

WSDOT delays 29 Pre-existing Funds projects during the third quarter of the 2019-2021 biennium

January through March 2020

| Delayed (29) | |
|---|---|
| I-5/Smokey Point Safety Rest Area Northbound & Southbound - Sewer Rehabilitation - Northwest Region | SR 6/Chehalis River Riverside Bridge - Deck Overlay |
| US 2/Bickford Ave to SR 9 Vicinity - Median Barrier (Phase 2) | US 97/Satus Creek Bridge - Bridge Replacement |
| SR 18/Weyerhaeuser Way Vicinity to SR 164 Vicinity - Barrier Replacement | SR 141/Bingen to White Salmon - ADA Compliance |
| SR 164/Pussyfoot Creek - Fish Passage | SR 141/Bingen to White Salmon - Paving |
| SR 513/Montlake Bridge - Mechanical Rehabilitation | SR 501/I-5 to SW 26th St Ext Vic Including Couplet - ADA Compliance |
| North Central Region 2017-2019 Regionwide Curve Warning Sign Update | SR 501/I-5 to SW 26th St Ext Vic Including Couplet - Paving |
| US 101/Sol Duc River to Bear Creek - Special Repair | SR 503/Marble Creek - Culvert Rehabilitation |
| US 101/Southeast of Johnson Rd. to West of Indian Creek - Chip Seal | I-90, US 97 & SR 970 Ellensburg Vicinity - Chronic Environmental Deficiency Planning and Mitigation |
| US 101/Elwha River Bridge - Bridge Replacement | US 12/Whetstone Creek Bridge - Replace Bridge |
| SR 161/SR 7 to North of W Clear Lake Rd. E - Chip Seal | I-90/Canyon Rd. Interchange - Eastbound Ramp Terminal Improvements |
| SR 161/SR 7 to North of W. Clear Lake Rd. E - Americans with Disabilities Act (ADA) Compliance | US 395/Pasco - Flamingo Mobile Home Park Noise Walls |
| SR 161/31st Ave. SW Overpass - Improvements | I-90/Lincoln Co to Salnavé Rd. - Roadside Improvements |
| I-5/Cowlitz River Bridges - Painting | I-90/Salnavé Rd. to BNSF Railroad Bridge - Roadside Improvements |
| SR 6/Chehalis River Bridge to I-5 - ADA Compliance | SR 261/McElroy Coulee Crossing - Replace Drainage Structure |
| SR 6/Chehalis River Bridge to I-5 - Pavement Rehabilitation | |
| Deleted (1) | |
| SR 401/2 miles E of US 101 - Culvert Replacement | |
| Data source: WSDOT Capital Program Development and Management. | |

STATEWIDE TRANSPORTATION POLICY GOALS & GRAY NOTEBOOK INFORMATION GUIDE

Statewide transportation policy goals

Laws enacted in 2007 established policy goals for transportation agencies in Washington (RCW 47.04.280). Throughout its editions, WSDOT's Gray Notebook reports on progress toward the six statewide transportation policy goals that include:

- **Safety:** To provide for and improve the safety and security of transportation customers and the transportation system;
- **Preservation:** To maintain, preserve, and extend the life and utility of prior investments in transportation systems and services;
- **Mobility:** To improve the predictable movement of goods and people throughout Washington, including congestion relief and improved freight mobility;
- **Environment:** To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment;
- **Economic Vitality:** To promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy; and
- **Stewardship:** To continuously improve the quality, effectiveness, and efficiency of the transportation system.

Gray Notebook edition archives available online

Readers can access past GNB editions online. The GNB archives include every GNB published to date. Online versions might include corrections and may not exactly match print versions.

GNB reporting periods

WSDOT programs report their performance data during different periods to best fit the work they do. For example, a program that receives substantial federal funds may report performance based on the federal fiscal year (see charts below).

GNB credits

The GNB is developed and produced by members of the WSDOT Transportation Safety & Systems Analysis Division's Performance Management and Strategic Management offices, and articles feature bylines indicating key contributors from dozens of WSDOT programs. The GNB and GNB Lite are printed in-house by Ronnie Jackson, Trudi Phillips, Talon Randazzo, Andrew Schoen and Larry Shabler. WSDOT's Headquarters Graphics Division (Marci Mill, Erica Mulherin and Steve Riddle) provides creative assistance, and WSDOT program staff and communicators take the photographs in each edition.

Calendar, state fiscal and federal fiscal quarters

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--------------|------------|-----|-----|------------|-----|-----|------------|-----|-----|------------|-----|-----|
| | GNB 77 | | | GNB 78 | | | GNB 79 | | | GNB 80 | | |
| Calendar | Q1 2020 | | | Q2 2020 | | | Q3 2020 | | | Q4 2020 | | |
| State Fiscal | Q3 FY2020 | | | Q4 FY2020 | | | Q1 FY2020 | | | Q2 FY2021 | | |
| Fed. Fiscal | Q2 FFY2020 | | | Q3 FFY2020 | | | Q4 FFY2020 | | | Q1 FFY2021 | | |

2019-2021 biennial quarters (used by Legislature)

| Period | Quarter | Period | Quarter |
|----------------|---------|----------------|---------|
| Jul – Sep 2019 | Q1 | Jul – Sep 2020 | Q5 |
| Oct – Dec 2019 | Q2 | Oct – Dec 2020 | Q6 |
| Jan – Mar 2020 | Q3 | Jan – Mar 2021 | Q7 |
| Apr – Jun 2020 | Q4 | Apr – Jun 2021 | Q8 |

The Gray Notebook is prepared by:
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