

Background

The 2021 Project Delivery Plan (“Plan”) is a six-year list of projects that are prioritized and programmed for delivery. The investment strategies for the six-year list of projects are based on performance-based analyses within Programs and Sub-Programs with a ten-year planning horizon. The Plan aligns with WSDOT’s performance-based approach to transportation decision-making. The Plan is published on the department’s website for use by the public, OFM, Legislature, and local jurisdictions.

The Capital Program Development and Management (CPDM) Division is responsible for ensuring the projects in the plan: (1) address high priority needs; (2) meet Executive, Legislative and Federal expectations; and (3) are successfully and efficiently delivered. To this end, units in CPDM collaborate with asset stewards and technical experts to facilitate the development of a ranked list of needs by asset class, issue project scoping instructions to propose transportation projects to address the needs, which are in turn prioritized by CPDM for inclusion in the Project Delivery Plan. This framework provides asset stewards with an opportunity to provide input into the policies and investment strategies that result in capital solutions that are intended to achieve lowest lifecycle cost. CPDM’s prioritization process recognizes other pressures exist within and between asset classes such as Executive and Legislative intent, court decision, political and litigation risk, consistency with statewide plans, etc. This framework allows the highest priority needs to be programmed for funding in the Project Delivery Plan and is subsequently used to inform WSDOT’s capital budget proposal submitted to the Governor and Legislature for the 2022 budget.

Legislative Session Budget Outcome

The Legislature passed the 2021 Transportation Budget (SSB 5165)¹, which was signed into effect by Governor Inslee on May 18th, 2021. This budget adjusts the spending for the remaining 19-21 biennium to anticipated spending levels and for the 2021-23 budget provides additional fish funding investment. It does not address cost increases for the Connecting Washington revenue package projects that were identified in the 2021 Governor’s budget proposal and also did not include the additional preservation funding.

Delivery Plan Update

The Delivery Plan Update Process begins in the fall of each year with an update to the set of financial assumptions used in the previous Plan Update Process, which includes the latest legislative intent expressed in the enacted transportation budget, WSDOT’s capital budget proposal, adjustments in WSDOT’s financial plans, and changes in the federal forecast. Financial adjustments are applied to the individual investment categories or asset classes. Asset Stewards and technical experts are consulted to determine the impacts from expected investment levels. These assumptions are shared with the Executive Leadership Team for review and revision.

Throughout the year, CPDM works with asset stewards to develop scoping instructions to detail the project delivery plan for programmatic investments funded by the legislature. Once scoping instructions are issued, regions and modes have until the end of January to update existing projects or propose new projects that address the asset needs. In the first part of each year, CPDM prioritizes the Highway Improvement and Preservation scoped projects within each investment category based on investment strategies and project solutions. Once prioritization is completed in early spring, CPDM provides a recommended program of projects as the draft Project Delivery Plan for review by region Program

¹ [5165-S.PL.pdf \(wa.gov\)](#)

Management staff. Regions review the draft Project Delivery Plan to determine their ability to deliver their program, including the impacts to state workforce and the contracting community. CPDM incorporates feedback from this review and develops a final plan for review and approval by the Executive Leadership Team. The Plan presented to the Executive Leadership Team may include an assumed amount of “over-scoping” to facilitate subsequent trade-off discussions. The Plan is scheduled to be completed in July each year and is used to inform the department’s capital budget proposal.

Baseline Assumptions

The Plan Update is being developed using the following baseline assumptions:

- The 2021 Plan update is a six-year detailed plan (SFY 2022 through SFY 2027). Six-year investments are focused on the 2021-23 through 2025-27 biennia. The investment strategies for the six-year list of projects are based on performance-based analyses within Programs and Sub-Programs with a ten-year planning horizon. Additionally, the Plan will:
 - Include detailed information about line-item project investments, which most align with regionally significant projects. Regionally significant projects benefit from a longer than six-year planning period and are also of primary interest to our external stakeholders.
 - Include some detail for key programmatic plans as available, such as our plan for fish passage injunction compliance through 2030.
 - Include detail for major bridge replacement projects as applicable, which may be regionally significant.
- The investment needs at the asset class level generally align with the level of funding appropriated and allocated in the 2021 Transportation Budget (SSB 5165).
- Preservation funding is at critically low levels. Preservation performance issues are further negatively impacted because the first two years of funding are substantially lower than ten-year needs averages indicate. The Preservation funding gap is large, and action needs to be taken in the near-term to address it. WSDOT communicates this funding gap annually to the Washington State Legislature both as a key part of the State of Transportation and through the agency budget proposal. WSDOT estimates a \$18.15 billion preservation and maintenance need for all modes for the next ten years, of which approximately \$9.25 billion or 51% is unfunded. This amount is not to achieve excellent condition, but for acceptable performance at the lowest practicable cost, or lowest life cycle cost – consistent with investment mandated by RCW 47.05, Priority Programming for Highway Development².

² <https://app.leg.wa.gov/rcw/default.aspx?cite=47.05>

| Asset Category | Replacement Value | Average Annual Need | Current plan annual average spending | Average annual funding shortfall |
|--|-------------------|---------------------|--------------------------------------|----------------------------------|
| Highways | \$123,435 | \$1,005 | \$580 | \$425 |
| Multimodal (i.e. Aviation, Public Transportation, Rail) | \$710 | \$115 | \$25 | \$90 |
| Intra-Agency (i.e. IT, Facilities, Fleet, Real Estate) | \$67,085 | \$185 | \$80 | \$105 |
| Ferries | \$5,145 | \$510 | \$205 | \$305 |
| TOTAL | \$196,365 | \$1,815 | \$890 | \$925 |

Bridge and pavement assets are currently meeting their performance targets and are anticipated to do so over the next two years. However, based on future condition modeling, WSDOT anticipates that conditions for bridges and pavements will drop below the target levels by the ten-year mark if funding levels are not increased. In ten years, the expected result is 30% of roads predicted to be in Poor condition, and 10% of bridges, along with an unknown number of closed, load posted, and load restricted bridges.

The funding provided will lead to rough roads, reduction in speed limits, load posted or load restricted bridges, closed bridges, and failed roadways. It will cost three to five times more to restore failed assets than to have preserved them. The many urgent preservation needs for the State Highways include:

- 3,600 lane miles of pavement that are past due for preservation, and another 4,700 are due for preservation.
- 12 bridges need replacement, 18 need major rehabilitation.
- 47 steel bridges are past due for painting, and an additional 59 steel bridges are due for painting.
- 37 concrete bridge decks are past due for repair, and 68 more are due.
- Hundreds of feet of guardrail that is either dilapidated or has been hit, with no funds for replacement.
- Dozens of unstable slopes with high risks are unable to be mitigated, and existing slope mitigation assets are beginning to fail.
- Only signs critical to safe operation of highways are able to be replaced. Thousands of signs with poor visibility will not be able to be replaced.
- WSDOT will continue to experience roadway failures due to drainage systems that are many decades old.

Although the 2021 Legislative Budget does not include additional preservation funding that was include in the Governor’s budget proposal, the delivery plan assumes that federal and state new revenue discussions will continue and include additional funding for preservation. Moreover, SHB 1137³ has amended [RCW 47.04.280](#) to put Preservation and Safety as a priority policy goal. Finally, [RCW 47.05](#) already states that the “The priority programming system **must** ensure the preservation of the existing state highway system...”.

Therefore, this delivery plan begins to ramp up to deliver Preservation of the existing transportation system even though the 2021 budget is at critically low levels. In practice, this means WSDOT is substantially over-programming 21-23 and 23-25 biennium in order to ensure projects are “shovel-ready” for when funding becomes available due to new state or federal revenue, favorable bids, the continued receipt of federal funds redistribution, and as a strategy if other projects are delayed.

- For the fish passage program, programs projects assuming Legislative intent to comply with the injunction, even though budgeted amounts in 23-25 through 29-31 do not currently align with WSDOT estimates for compliance.
- Programs the first projects related to WSDOT’s updated Practical Solution approaches for stormwater retrofit for priority urban-fringe sections. Additionally, fish passage projects must review all fish barrier corrections for stormwater retrofit in conjunction with addressing the fish barrier. Finally, preparations are beginning to expand to urban locations in addition to urban-fringe locations.
- We are looking for ways to incorporate considerations from the recently published Active Transportation Plan, including:
 - Developing a scoping and cost/benefit approach for Vulnerable Users in sections that are state responsibility, which is already included as a general strategy in Getting to Zero, WSDOT’s Highway Safety Improvement Program Implementation Plan.
 - Considering pedestrian and bicycle Level of Stress when prioritizing pavement preservation projects for sections of state highway with speed limits less than 45 MPH.
- WSDOT is committed to dismantling racism in our agency’s practices and policies and to addressing the disparate environmental and health impacts of state-owned transportation facilities. Among other actions, WSDOT is working to address environmental justice by:
 - Begin work to implement E2SSB 5141⁴, a bill focused on reducing environmental and health disparities. This work will occur over the next several years, but WSDOT will incorporate as much as possible as strategies and objectives are developed. The bill requires WSDOT to:
 - Adopt an environmental justice implementation plan to be included in the agency’s strategic plan.
 - Update our community engagement plan.
 - Conduct environmental justice assessments when considering significant agency actions (including for all transportation projects over \$15 million).
 - Incorporate environmental justice principles into decision-making processes for budget development, expenditures, and granting or withholding benefits.

³ [1137-S.SL.pdf \(wa.gov\)](#)

⁴ [5141-S2.PL.pdf \(wa.gov\)](#)

- Prepare and publish lists of agency actions, track progress, and produce other reports.
 - Participate on the Environmental Justice Council and interagency workgroup created by the bill.
 - Reviewing prioritization principles based on strategies in the Smart Growth America report *The State of Transportation and Health Equity*⁵.
 - Explicitly incorporating equity into the agency's processes and tools used to provide feedback on budget decisions.
- State funding assumptions:
 - Expenditures for Nickel, TPA, and CW Account consistent with the legislative expectations reflected in SSB 5165.
 - Expenditures from the Motor Vehicle Account will be consistent with assumptions in ESHB 2322, primarily used for match to federally funded projects.
 - Coronavirus Response and Relief Supplemental Appropriations Act (CRSSA) and American Rescue Plan Act (ARPA) Federal Funds intended for the Fish Barrier Removal investment are planned to be treated as state funds because eligibility requirements will be met through non-traditional means. Therefore, these projects will not require federal aid agreements to be developed that are typically required by traditional federal formula funds in order to receive federal reimbursement.
- The federal funding levels are based on the Transportation Revenue Forecast Council's June 2021 Federal Forecast⁶. Federal program eligibility and penalty provisions will be considered when programming projects, which may result in the selection of lower priority projects to avoid the loss of federal funds. The current forecast is based on the "Continuing Appropriations Act, 2021 and Other Extensions Act", which includes a one-year FAST Act⁷ Extension, which expires September 30th, 2021. The federal funding assumptions will likely change as a new federal reauthorization act is passed and the federal split between state and locals is determined. This will impact the assumptions in future plans.

⁵ [The-State-of-Transportation-and-Health-Equity_FINAL-PUBLIC.pdf \(smartgrowthamerica.org\)](#)

⁶ <https://www.ofm.wa.gov/budget/budget-instructions/transportation-revenue-information>

⁷ <https://www.fhwa.dot.gov/fastact/>

2021 Project Delivery Plan Targets – This is the baseline for the 2021 Project Delivery Plan update. Ten-year target indicates 2021-23 through 2029-31 biennia. Stand-alone projects are specific projects budgeted by the Legislature and are programmed based on provisions directed by the Legislature.

| | 10-Year Target |
|--|----------------|
| I1 Mobility (All Stand Alone Projects) | 7,646 |
| I2 Safety | 556 |
| <i>Safety Stand Alone Projects</i> | 151 |
| <i>Collision Prevention</i> | 271 |
| <i>Collision Reduction</i> | 134 |
| I3 Economic Vitality (All Stand Alone Projects) | 423 |
| I4 Environmental | 3,430 |
| <i>Fish Passage Barrier*</i> | 3,369 |
| <i>Noise Wall & Noise Mitigation Improvements</i> | 4 |
| <i>Stormwater & Mitigation Site Improvements</i> | 25 |
| <i>Chronic Environmental Deficiency Improvements</i> | 32 |
| Improvement Totals | 12,055 |

| | 10-Year Target |
|---|----------------|
| PX – Highway System Preservation** | 794 |
| P1 - Roadway | 1,731 |
| P2 – Bridges & Structures | 1,441 |
| P3 – Other Highway Assets | 447 |
| <i>Unstable Slopes Preservation</i> | 57 |
| <i>Major Electrical Preservation</i> | 59 |
| <i>Major Drainage Preservation</i> | 75 |
| <i>Rest Areas Preservation</i> | 12 |
| <i>Weigh Stations Preservation</i> | 25 |
| <i>Safety Preservation Features</i> | 137 |
| Preservation Totals | 3,787 |

* This target represents WSDOT’s estimate to comply with the injunction through 2030, and not the amount in the 2021 Transportation budget.

** The Highway System Preservation is appropriated with a P1 sub-program, but all Highway Preservation activities are eligible. The exact distribution across programs will vary by biennium based on the budgeted amount in the investment areas. The highest priority is bridge preservation, which are critical to the operation of the state highway system. After bridges, critical investments in the P1 and P3 programs for the safe operation of the state highway system take the highest priority, such as addressing high-risk slopes, failed drainage systems, electrical equipment such as signals and ITS infrastructure, and continued advancement of the WSDOT ADA Transition plan.

2021 Project Delivery Plan Update – Needs, Prioritization, and Trade-Offs

Subject matter experts are accountable for needs identification and ranking. CPDM is accountable for investment areas, project prioritization methodologies and lists, and trade-off analysis. However, due to the technical nature of these items, it is essential that CPDM work with subject matter experts to ensure that needs are provided in a way that highly ranked needs are scoped into proposed projects for prioritization. Finally, CPDM is responsible for incorporating executive direction and state and federal requirements in these processes.

A transportation need is an assessment that an investment can work towards achieving and sustaining a state of good repair or improve performance of some aspect of the transportation system towards agency, state or federal transportation goals. Activities associated with achieving and sustaining a state of good repair are most often budgeted through the Preservation program, while performance-based improvements are most often budgeted through the Improvement program. The amount provided for an investment area is determined through budget deliberations and budget adoption. Some investment areas are grouped for budget purposes. For example, pavement preservation has three investment areas: asphalt, chip seal and concrete.

The prioritization methodology describes the key considerations for what is included in the Project Delivery Plan update within an investment area. This is based on the needs ranking, life cycle cost considerations, cross-asset delivery efficiencies, executive and legislative direction, and state and federal requirements. While previous efforts have focused on providing numbered lists, complicating factors in each sub-program make this approach impractical. For the I4 – Environmental sub-program, it is the complicated timing and construction efficiencies created by bundling the removal of multiple fish barriers into a single project. For the I2 - Safety sub-program, there is continued efforts to define and normalize the cost/benefit analysis across all of the safety investment areas. For the Preservation sub-programs, the chronic funding gap is forcing WSDOT to switch from an effort to hold the entire system together, to an approach where WSDOT strategically preserves only specific assets based on mitigating the overall impacts to the transportation system. Finally, the chronic funding gap is reducing the life cycle of ferry vessels requiring replacement vessels sooner than would normally be expected.

Trade-off analysis is distributing funds across two or more investment areas based on decision analysis. This trade-off analysis can occur at several agency levels. Trade-offs that are based on limitations in the budget occurs primarily at the executive level since budgetary action is required. Trade-off decisions within a sub-program is often managed by the asset stewards with executive oversight of the assumptions used to make the decision. For example, CPDM works with WSDOT safety subject matter experts to develop investment strategies and specific projects for Collision Prevention and Collision Reduction programmatic investments. This document only addresses trade-offs within a sub-program, not trade-offs between budget sub-programs. Trade-offs between budget sub-programs as associated with the annual budget deliberation process and would be incorporated into the Project Delivery Plan if acted upon by the Legislature.

Safety Investments (I2)

Safety activities are categorized into two major categories: (1) Collision Reduction; and (2) Collision Prevention. Both national and WSDOT analysis indicate that taking systemic, preventive approach to safety investments is the most effective approach to achieve WSDOT's role in Target Zero. Based on this

analysis, the 2021 update to the Project Delivery Plan, and the 2021 Transportation Budget that it is based on, target 30% for Collision Reduction and 70% for Collision Prevention.

Capacity will be left throughout the plan while WSDOT continues to improve its safety analyses and identify projects in accordance with strict adherence to safety scoping processes.

Collision Reduction

Needs Identification - The Collision Reduction program focuses on Collision Analysis Locations (CALs), Collision Analysis Corridors (CACs), and Intersection Analysis Locations (IALs). These locations are identified and ranked based on crash type and frequency. Region Traffic Engineers review each location and develop documentation for possible safety responses, and screen the list(s) for locations for further review of countermeasures. When alternatives are developed that require a capital project, these alternatives are vetted through a Safety Panel that reviews and approves the project scope to be considered for prioritization and programming as capital projects.

CAL/CAC/IAL – The Traffic Division has developed a list of segments and intersections for Region Traffic to screen into final CAL/CAC and IAL lists, respectively. That list will be returned by the end of May 2021 and will be finalized into CAL/CAC and IAL lists. These lists will be used to develop Collision Reduction projects for consideration into future plans.

Prioritization Methodology – Programmed projects that were previously approved by the Safety Panel based on 2016 IAL or 2017 CAL/CAC list or prior lists and have a benefit cost ratio greater than 1 were kept in the program. These projects are still anticipated to be delivered based on their previously identified schedule.

Collision Prevention

Needs Identification - Collision Prevention projects are activities intended to reduce crash potential. There are several activities related to this:

- Intersection System Safety – Typically, these are intersections have a configuration that allows for an installation of a compact roundabout. The first statewide intersection list of potential compact roundabout locations has been developed, ranked and screened for feasibility. Candidate locations met this screening criteria:
 - Had a recent five-year crash history of an annual excess crash frequency of 0.5 or more for fatal and all injury crashes per the Highway Safety Manual methodology
 - Had space for an approximately 90-foot inscribed circle diameter center island
 - Categorized as a stop-controlled intersections
 - Intersections within cities having over 27,500 people are excluded per RCW 47.24.

Locations that are feasible for a compact roundabout are programmed within the safety program according to rank and other considerations, such as AADT, posted speed limit, biennial funding available, and other projects being delivered.

- Rumble Strips – Locations for rumble strips are identified according to standards in the WSDOT Design Manual. Programming of rumble strips is guided based on by the Interactive Highway Safety Design Model (IHSDM) analysis of societal benefit compared to site-specific installation costs. The IHSDM analysis was completed in March 2020 and will be incorporated into the fall scoping instructions. This process has identified a few new locations for rumble strips.
- Roadside Safety Hardware
 - Breakaway Cable Terminals (BCT) – All known Interstate BCTs have been or are programmed to be replaced. Additionally, all locations with freeway characteristics have been scoped and programmed for replacement in the 21-23 biennium. BCTs on remaining routes are expected to be incorporated into future plan updates.
 - Guardrail retrofit – Replacing weathering steel guardrail that has deteriorated is focused on Blewett Pass and I-90. While smaller efforts at replacing weathering steel have occurred in the I2 – Safety sub-program, the 2021 Project Delivery Plan incorporates weathering steel into its I2 – Safety investments as well.
- Corridors
 - Median Cross-Over Protection – The primary median cross-over prevention that has been implemented by WSDOT in a systemic, collision prevention approach is cable median barrier. Guidance for cable median barrier was for full access control sections, speed limits of 45 mph or higher, no other type of existing barrier (e.g. guardrail, concrete), and have median widths of 50 ft. or less. Based on recent analysis by the Department’s Development Division, there are no remaining sections that meet the criteria for new cable median barrier installation.

There has also been an effort to convert existing three strand cable median barrier to four strand cable median barrier. Approximately 50% of the existing three strand has been converted to four strand. However new starts will not happen until there is further analysis that the remaining three strand sections are not performing as designed.

- Vulnerable Users
 - Pedestrian and Bicycle – There are no specific safety investments that are based on a systemic pedestrian or bicycle safety assessment. However, there are Americans with Disabilities Act (ADA) investments shown in the I2 – Safety sub-program for those that were already underway until the shift to put ADA investments in P3 – Other Facilities sub-program that was approved in the 2019 Legislative Session. Additionally, Project Delivery Memo 19-03 was issued that directs all Highway projects to perform a scalable multimodal analysis.

Additionally, WSDOT continues work on developing a scoping and cost/benefit approach for Vulnerable Users in sections that are state responsibility, which is already included as a general strategy in Getting to Zero, WSDOT's Highway Safety Improvement Program Implementation Plan.

Prioritization Methodology – As the safety analyses continue to develop, priority will be given to work with:

1. A demonstrable history of high benefit/cost analysis (e.g. rumble strips),
2. The results of the safety scoping process once the most recent CAL/CAC/IAL lists are finalized.
3. Results of the analysis related to Vulnerable Users once finalized.
4. Meet agency direction for systemic replacement (e.g. replacement of BCTs on freeway facilities), and/or
5. Have strong ties to preservation work (e.g. replacement of deteriorated weathering steel guardrail). The key assumption here is that ensuring our existing safety assets aligns with Executive and Legislative intent.

Environment (I4)

There are several investment areas within the I4 – Environmental Retrofit sub-program. Each of these investment areas is managed separately, but there is a contextual review of stormwater retrofit and habitat connectivity for fish passage work. Unless specified, there is only one investment area for each of these items, and therefore there is also no specified trade-off analysis.

Fish Barrier Removal

Needs Identification - Fish passages are surveyed by the Washington Department of Fish and Wildlife (WDFW), which establishes barrier status and habitat gain. The Environmental Services Office (ESO) then evaluates this WDFW survey data, and each fish barrier is given a priority rank amongst all other identified barriers not yet replaced. The priority rank is established in consideration with habitat gain, tribal interest, upstream and downstream barriers, and some construction efficiencies if barriers need to be addressed simultaneously, which aligns with direction from the injunction.

Prioritization Methodology - The priority rank methodology is used to prioritize and program stand-alone fish barrier projects. When fish barriers are in the vicinity of other transportation projects, the fish barrier is assessed by several criteria. If the fish barrier exceeds a threshold score, then it is to be included in the scope of the transportation project.

Compliance with the federal court injunction is a top priority for WSDOT, the Governor's Office and the Legislature. A key part of compliance is opening 90% of the potential habitat for barriers with significant reach by March 2030. The approximate dividing line for injunction barriers expected to be a part of this 90% is having 1,000 m or more of potential, incremental habitat gain. Therefore, adjusting the timing of specific barrier corrections based on construction or traffic management efficiencies is considered, as long as the action is perceived not to jeopardize compliance with the injunction.

When a culvert has failed and is a fish barrier relevant to the injunction, WSDOT is also required to remove the barrier. Resulting projects are programmed based on the amount of time from failure identification until the fish passage design process from Preliminary Hydraulic Design (PHD) through design can be completed. They are all evaluated to ensure that the failure has reached a critical point and deferral results in unacceptable risk for loss of roadway or other issues. Fish barriers that are not relevant to the injunction follow similar criteria, based on federal environmental regulations.

Chronic Environmental Deficiency

Needs Identification - Chronic Environmental Deficiencies (CEDs) are preliminarily identified by WSDOT, WDFW, Tribes, or other concerned parties. The CED coordinator in the Environmental Services Office receives these identified sites for further screening towards development of a project.

CED locations typically meet these two criteria:

1. Maintenance has been conducted on the site three times in the last ten years and
2. The maintenance activities have a negative impact on fish habitat.

However, the CED coordinator makes the final determination about what qualifies as a CED. The CED coordinator ranks CED sites based on maintenance cost and impact to fish habitat.

Prioritization Methodology – CPDM uses the ranking provided by ESO to prioritize projects. Deviations from the ranking occur primarily because the identified solution is very costly, and sections with lower capital costs produce more perceived benefit than mitigating a single high-cost site. Funding capacity exists in the outer years of the ten-year program because high-ranking sites may not have an associated capital solution scoped.

Stormwater Runoff

Needs Identification - The Environmental Services Office identifies and ranks all segments of highway for stormwater retrofit need. Stormwater runoff needs are now identified statewide, rather than being restricted to the Puget Sound Basin as in the past. These ranked needs

Prioritization Methodology - The ranked needs are used to prioritize stormwater retrofit activities. In preparation for the 2020 Project Delivery Plan, the Department's Priority Programming unit worked with ESO to provide more site-specific scoping instructions along with methodology to make a parametric cost estimate.

The three highest ranked sites were scoped and two of the sites will be programmed as part of the plan. The third site is in the vicinity of fish passage work, and must wait for that work to be completed to ensure the stormwater retrofit is compatible with the fish passage solution. Funding capacity exists in the 2020 Project Delivery Plan for additional sites to be scoped, and more specific scoping guidance can be issued (i.e. use of parametric placeholders in the outer years of the plan).

Fish passage projects without approved Project Summaries that are in design as of February 2020 and that have medium or high ranked stormwater needs in the vicinity are to be assessed

for stormwater retrofit features. These will also have a priority for funding in conjunction with the fish barrier corrections.

Noise Reduction

Needs Identification - Noise Reduction needs are evaluated for neighborhoods built prior to May 14, 1976, before traffic noise was evaluated and are included on a ranked list of noise barriers maintained by ESO. These noise barriers are referred to as retrofit noise barriers. Noise Reduction projects need to meet the following criteria:

1. Homes must have been built prior to May 14, 1976.
2. Noise barriers to be funded should be selected from the Tier 1 ranked list of retrofit noise barriers.
3. A formal noise study will need to be conducted during design of the noise barrier to evaluate whether the homes still exist in criteria 1 above and to more accurately model the length and height of the noise barrier.

Prioritization Methodology - ESO provides a ranking, based on the three criteria above to CPDM, which uses this ranking to prioritize noise reduction projects. The 2020 Project Delivery Plan is fully programmed for noise reduction.

Pavements (P1)

Needs Identification - Needs are initially identified based on annual condition surveys, which are input and analyzed in the Washington State Pavement Management System (WSPMS). Sections that do not have sufficient cracking assessment (chip seals or inside lanes) are assessed based on field reviews and pavement age. Pavement deterioration models and activities based on lowest life cycle cost management are the foundation of needs assessment. Regions then use the information to scope projects and enter into CPMS with a parametric cost for all identified needs.

Roadway preservation investments are grouped based on primary material type used to preserve the roadway and includes three areas: asphalt, chip seal, and concrete. Strategic maintenance is reported as part of the asphalt investment. Chip seal over asphalt is reported as part of the chip seal investment area. Crack, seal and overlay with asphalt is reported as part of the concrete investment area.

| Investment Area | Primary Activities |
|-----------------|---|
| Asphalt | Asphalt Resurfacing; Strategic Maintenance; Asphalt Reconstruction |
| Chip Seal | Chip Seal Resurfacing; Chip Seal Conversion (Chip Seal on Asphalt) |
| Concrete | Diamond Grinding; Select Panel Replacement, Concrete Reconstruction; Crack, Seal and Overlay with Asphalt |

For all pavement preservation project proposed for programming as part of the 2021 Project Delivery Plan, the Pavements Office has assigned a “Preferred Paving Year”. The Preferred Paving Year is an assessment of the most cost-effective year to complete the typical lowest life cycle cost activity for the project. It includes an assumptions for strategic preservation that has been applied, or is expected to be applied based on best practice for cost-effectiveness. This year will be used for three primary activities:

1. Ensure the project is programmed at or within a year of the Preferred Paving Year to ensure we are not paving too early or too late.
 - a. Deviations from this will be documented. Deviations are only allowed for sections on the Prioritized Projects criteria noted below in the following Prioritization Methodology subsection.
2. Set expectations for what strategic preservation can achieve.
3. Set expectations for when a section is no longer eligible for strategic preservation.

Prioritization Methodology – The 2021 Project Delivery Plan recognizes the funding identified by the 2021 Transportation budget is well short of the needs to preserve pavements. Additionally, it also recognizes that State law mandates preservation of the existing state highway system, not just a portion. This is further underscored by the 2021 Legislative session amending state law to make Preservation a priority.

WSDOT intends to work with its partners, stakeholders and the Legislature to deliver on this expectation. With this in mind, WSDOT continued to implement a priority approach focusing on cost-effectively preserving high freight and high-speed routes. The plan also expands on that approach to all high-speed routes. It also allows for exceptions precipitated by previous funding limitations. Finally, WSDOT is preparing to take a prioritized approach for the remaining routes ensuring a multi-modal approach with an emphasis on active transportation users.

In the near-term, WSDOT is able to balance the expectation to preserve the existing state highway system in the context of a budget that does not support it through over-programming. Over-programming allows WSDOT to resource the design phase of projects while the construction phase, which occurs one to two years after design completes, to get more funding certainty. If that funding certainty never materializes, then the design must be shelved and the consequences of not moving forward with the construction may be actualized. In other words, if the budget remains unaligned with preserving the whole state highway system, at some point some routes must deteriorate to a point of lower speed limits or closing the route entirely.

Structures (P2)

Needs Identification - WSDOT identifies needs through an ongoing inspection program that follows specific federal regulations. Washington State bridges undergo rigorous, routine inspections. In general, the inspection of each bridge on the state system occurs every two years. In some cases, annual inspections are made, such as underwater diving inspections of floating bridges or for bridge components that exhibit advanced deterioration. Bridges with moveable spans receive a special in-depth inspection once every five years. The condition and age of bridge components are used to create several ten-year needs list. These needs are ranked based on condition, age and traffic levels. Needs lists are grouped by activity and include:

1. Replace or Major Rehabilitation
2. Expansion Joints
3. Concrete Decks
4. Bridge Painting
5. Scour
6. Miscellaneous Repair
7. Moveable Bridge Repair

Needs on border bridges are discussed and agreed to by each state.

Seismic Need Identification - Seismic needs are identified separately from condition. Seismic need is based on an assessment of the bridge in a 1,000 year event and does not account for liquefaction or a Cascadia Subduction Zone (CSZ) event. Both a statewide seismic needs estimate and a subset of these called “seismic lifeline” have been defined. WSDOT is using the seismic retrofit funding identified by the Washington State Legislature to address seismic needs along the seismic lifeline.

Investment Areas - There are four major investment areas:

1. Bridge Repairs – This investment area includes concrete deck resurfacing, miscellaneous repair, expansion joint replacement, moveable bridge repair and bridge painting.
2. Bridge Replacement – Projects for major rehabilitation (deck replacement, super-structure replacement) or full replacement are included in this investment area.
3. Scour - Bridge foundations experience “Scour” when high volumes of water remove soil from bridge foundations. WSDOT evaluates bridges showing signs of scouring and develops a mitigation strategy.
4. Seismic - Work to minimize and avoid catastrophic bridge failures by strengthening bridges and structures to better withstand earthquakes.

Prioritization Methodology - The 2021 Project Delivery Plan recognizes the funding identified by the 2021 Transportation budget is well short of the needs to preserve bridges. Additionally, it also recognizes that State law mandates preservation of the existing state highway system, not just a portion. This is further underscored by the 2021 Legislative session amending state law to make Preservation a priority.

WSDOT intends to work with its partners, stakeholders and the Legislature to deliver on this expectation. With this in mind, WSDOT continued to implement a priority approach focusing on cost-effectively preserving high freight and high-speed routes. The plan also expands on that approach to all high-speed routes. It also allows for exceptions precipitated by previous funding

limitations. Finally, WSDOT is preparing to take a prioritized approach for the remaining routes ensuring a multi-modal approach with an emphasis on active transportation users.

In the near-term, WSDOT is able to balance the expectation to preserve the existing state highway system in the context of a budget that does not support it through over-programming. Over-programming allows WSDOT to resource the design phase of projects while the construction phase, which occurs one to two years after design completes, to get more funding certainty. If that funding certainty never materializes, then the design must be shelved and the consequences of not moving forward with the construction may be actualized. In other words, if the budget remains unaligned with preserving the whole state highway system, at some point some routes must deteriorate to a point of lower speed limits or closing the route entirely.

Unstable Slopes

Needs Identification – Unstable Slopes are identified as part of the Unstable Slopes Management System (USMS). Slopes are ranked based on a rating system where higher numbers indicate a higher risk should the slope fail, and the amount of Maintenance resources that are required when those issues occur.

Prioritization Methodology – Slopes are programmed based on a practical solutions approach to mitigation and balanced by a benefit/cost analysis. Partial mitigation, with activities such as rock scaling, typically have higher priorities because they have high benefit costs. In the 2021 Project Delivery Plan, preserving existing geotechnical assets, such as dowels or fencing, that has reached the end of its useful life is also a priority.

Major Electrical

Needs Identification - Major Electrical assets are tracked in the SiMMS (Signal Maintenance & Management System) database. These assets are reviewed by Region Traffic office and bundled into preliminary groups referred to as “projects”.

Prioritization Methodology - Region personnel identify systems in need of replacement, and simultaneously size and scope projects to fit within the expected program funding available. CPDM prioritizes these proposed projects according to the following methodology, which was developed in collaboration with the Traffic Operations Division:

1. Separate projects by type of System
 - a. If a project has multiple system types and/or multiple installations of the same type of system (e.g. 3 traffic signals, 5 services, 4 CCTV camera poles installed at different points in time), each System is evaluated independently.
 - b. Signals / Ramp Meters / Flashing Beacons
 - c. Illumination
 - d. Intelligent Transportation System (ITS)
 - e. Communications
 - f. Electrical Service / Power Supply
2. Determine the age of Select System Subcomponents
 - a. Each system considered for replacement is broken into groups of subcomponents for determining hardware age. The oldest component age for each subsystem type is used for scoring.

3. Repair History / Condition of Systems
 - a. System failures can result from other issues beyond the age of the system. Even systems with components well within their life expectancies can fail without warning. Failures could be a result of third party damage, software, manufacturing, installation, weather, etc. Score is assigned based on total repairs and cost for each system as tracked in the SiMMS database.
4. Risk Assessment
 - a. As the systems age there is increased potential for partial or complete system failure. Risk potential varies depending upon the type of system, location of system and a number of other variables.
5. Final Evaluation and Ranking
 - a. The results from assessments 2-4 were assigned to each project and input into a Decision Lens Portfolio for Major Electrical. Weights were assigned based on technical expert input and results of the prioritization were used to program projects in the latter half of the Project Delivery Plan, while the near term projects were minimally adjusted based on investment levels and established schedules.

Changing intersection control type from a traffic signal (currently in need of rehabilitation) to a roundabout is possible within the P3 Other Facilities sub-program, provided the following is true:

- The project cost for the signal rehabilitation has been vetted with the technical specialist
- The project cost to convert to a roundabout is:
 - At or less to the amount to the signal rehabilitation project cost
 - Within 125% of the signal rehabilitation project cost are likely to be approved
 - Higher cost conversions will require further vetting and discussion

The annual preservation need for major electrical assets has been estimated at approximately \$80 million annually. This is based on average service life for major electrical assets at approximately 28 years. Major electrical is funded at approximately \$6 million annually, or less than 10% of the identified need. CPDM continues to work with the Traffic Operations Division to understand when widespread failure should be expected, and what investment strategies are necessary given the preservation funding gap.

Preparation for Additional Preservation Funding - In addition to the prioritized approach above, WSDOT has taken an interim approach to over-program major electrical preservation. This means WSDOT is designing many more preservation projects than funding levels in the 2021 Transportation Budget because they are needed to ensure the preservation of the state highway system as stated in RCW 47.05 and confirmed as an agency priority, Governor's priority, and Legislative expectation.

In the Major Electrical investment area, WSDOT is extending the time between larger investments in traffic signals by performing statewide controller and cabinet replacements for assets beyond their service life and requiring increased levels of reactive maintenance.

Major Drainage

Needs Identification - Needs are identified based on assessments of existing drainage features by Region personnel. This primarily occurs via Level 1 inspections by maintenance personnel. If the Level 1 inspection flags something in a deteriorated state, region hydraulic personnel perform a comprehensive Level 2 inspection. Needs are then prioritized by the Region Hydraulics engineers. The number of projects scoped is based on expected funding levels and prioritization of the needs by the region.

Starting with the 2019 Project Delivery Plan, a Level 2 inspection is required as part of the Project Summary. This allows extra review between region hydraulics, headquarters hydraulics, and CPDM.

Prioritization Methodology - There is no additional prioritization applied to major drainage. The top priority from each region is funded, and then the next priority from each region, and so, until the identified funds are exhausted.

Preparation for Additional Preservation Funding - Where WSDOT has hydraulic inspections indicating the culvert failure is imminent, WSDOT has programmed these projects to ensure that the roadway does not fail. This occurs beyond the region prioritization, which may be due to number of maintenance activities or water over roadway events.

Rest Areas

Needs Identification - WSDOT performs building and site condition assessment biennially to identify functional component deficiencies. This assessment results in a numerical rating based on criteria for each functional component (e.g. roof, wall tiles, etc.), and also critical functional components have a weighted multiplier in the overall evaluation. The combined total building and site ratings are used to define each facility's overall condition.

Prioritization Methodology - The safety rest area program has three primary deficiency groups. Emphasis is placed on utility (sewer, water, and electrical) needs first, then buildings second and site work last. Maintenance and operational costs and the number of visitors are also factors in the prioritization process. There are three categories of rest area preservation: major rehabilitation, minor rehabilitation and RV dump preservation.

Safety rest areas are prioritized by the Facilities Division. CPDM reviews all Project Summaries for safety rest areas.

Weigh Stations

Needs Identification - Needs are identified based on coordination between the Washington State Patrol (WSP) and WSDOT. In early 2018, the Commercial Vehicle Enforcement System Strategic Plan was finalized, which categorized weigh station Improvement and Preservation activities into two separate lists.

Since then, WSDOT has continued to coordinate with the WSP and the needs list has been updated. The 2021 Plan is programmed based on the updated needs list.

Prioritization Methodology - The Strategic Plan includes the prioritization methodology that accounts for both a criticality rating, condition rating and functional rating. More information is contained in the Strategic Plan.

The first version Strategic Plan did not provide direction on prioritizing between Preservation and Improvement. Additionally, after evaluating several sites the WSP has determined that many can be decommissioned. The Traffic Division worked on an update to the Strategic Plan needs list and also documenting the ranking between Preservation, Site Removal, and Improvement. The 2021 Plan is programmed based on the updated list.

Basic Safety - Signing

Needs Identification – Overall needs are tracked in the Traffic Signs Management System (TSMS). TSMS tracks the type of sign, attributes about the sign, and whether or not the sign does not meet retro reflectivity inspection standards. Signs that do not meet retro reflectivity inspection standards are flagged in Poor condition.

Prioritization Methodology – Due to the critical Preservation funding levels, only critical signs in Poor condition and with specific fabrication numbers are being replaced. These include stop, do not enter, one way, yield, and wrong way signs.

Basic Safety - Guardrail

Needs Identification - Needs are identified by each Region. Where an inventory of system condition is not available, a prospective list may be compiled based on documented discussions with region Maintenance or other knowledgeable staff.

Prioritization Methodology – Select projects were discussed with region staff and the Development division for programming, based on the needs identification approach provided by the region, and the level of traffic or route classification. Only a few projects were programmed on the basis of being on the Interstate or a high freight route.

The Development Division is working on updated guidance, and this guidance will be incorporated into future plans.

Americans with Disabilities Act (ADA) Retrofits

Needs Identification - Needs are identified based on region review of the companion pavement preservation (P1) project. If a P1 pavement preservation project alters a crosswalk, that crosswalk (which includes curb ramps if a sidewalk is present) must be ADA compliant when the pavement project is operationally complete. This applies whether the sidewalk is state jurisdiction or local jurisdiction. ADA needs are addressed according to legal obligations defined by the United States Department of Transportation (USDOT) and the United States Department of Justice (USDOJ), as well as the approved [WSDOT ADA Transition Plan](#).

Due to the decision to no longer pave state routes with speed limits of 40 mph or less, many sections that would have been retrofitted for ADA work are not required to be as part of those projects. An additional needs framework is proposed in the WSDOT ADA Transition Plan, and WSDOT is reviewing how to implement it, and incorporate this framework into its processes.

Prioritization Methodology - ADA Retrofit work occurs in conjunction with (or in advance of) paving work, as per federal regulations. CPDM works with region staff to determine whether the previously planned ADA retrofit work should continue based on engineering judgment which includes assumptions about minimizing rework and any known information related to the types of considerations in the framework.

Preparation for Additional Preservation Funding - In addition to the prioritized approach above, WSDOT has taken an interim approach to over-program ADA preservation. This means WSDOT is designing many more preservation projects than funding levels in the 2021 Transportation Budget because they are needed to ensure the preservation of the state highway system as stated in RCW 47.05 and confirmed as an agency priority, Governor's priority, and Legislative expectation.

For ADA retrofit program, WSDOT is focused on a statewide effort to improve all intersections with Accessible Pedestrian Signals (APS). WSDOT has identified approximately 760 intersections that could be upgraded with APS. The first step is to categorize these intersections into the following categories:

- APS Only upgrade (no intersection upgrades needed) – (\$2,000/intersection)
- Minor intersection upgrades likely delivered by state forces – (\$40,000/intersection)
- Intersection upgrades needed likely delivered by contract – (\$200,000/intersection)
- If there is a PIN that is already performing work at the intersection location and could or is planned to deliver this work, this will also be noted separately

The results of this effort will be incorporated into future plans.

Other Modes Capital Programs

Ferries Program

The Ferries Program consists of Terminals and Vessels with \$505 million in projects identified for the 2021-23 biennium with \$127 million in federal funding, \$312 thousand in local funding and \$378 million in state funding. The Terminals program has 10 years of detailed projects and the Vessels program currently has 2 years of detailed projects and is still working towards developing 4+ years worth of detailed project lists that can be incorporated in the Project Delivery Plan.

Several large projects use a majority of the funding including the Seattle Terminal Replacement project (\$100 million), a new diesel/electric hybrid vessel (\$152 million) and a conversion of a diesel Jumbo Mark II ferry to an electric hybrid (\$25 million).

The remainder of the funding is predominately for vessel and terminal preservation. Terminal preservation needs are prioritized using a model that incorporates asset condition, economic life and risks to establish project priorities. Vessel preservation needs are prioritized using life cycle cost models to define needs with inspections and SME's providing information to narrow the

possible projects within available funding. The vessel program is reaching a crisis in keeping the fleet in operation with the average age of a ferry is approximately 40 years old and not enough vessels to allow for the needed time out of service to preserve the vessels adequately.

Traffic Program

The Traffic Capital program delivers smaller (usually less than \$1 million) stand-alone projects that increase the efficiency of the multimodal transportation system. The project list is for \$14.9 million. Projects include:

- Re-striping to add additional capacity such as turn lanes
- Adding cameras to provide traffic information to the public and traffic engineers to manage the system from the Transportation Management Centers
- A virtual coordination center in the greater Seattle area with partners such as SDOT, KCDOT, Sound Transit, etc. to quickly communicate blockages to the public and direct resources quickly to address the blockage.
- Adding ramp meters to increase the flow of traffic on the interstates
- Adding variable message signs to provide information about traffic ahead
- Traffic signal enhancements

The Traffic Program has 6 years of detailed projects with \$10.3 million in reserves beyond the 6 years. The \$10.3 million consists of \$4.2 million in anticipated, but unidentified federal grant funding, \$500,000 in local contributions, and \$5.6 million in state motor vehicle funds. The Traffic Program utilizes state funds to leverage grant opportunities that support operational strategies that improve safety or reduce congestion on the highway system.

Rail Program

The rail project list details \$129.7 million in projects for the 2021-23 biennium. The Rail program has 2 years of detailed projects with grant reserves, slide mitigation reserves and PCC preservation reserves accounting for most of out-biennia project information. Ongoing improvements and maintenance to the passenger rail corridor in the 2021-2023 biennium will be primarily state-funded. WSDOT will pursue grant opportunities as they become available. WSDOT has already been successful in procuring grants for replacing rail trainsets, slide mitigation, and for increased preservation on the PCC rail system owned by the State.

In addition to the legislatively directed projects, the Freight Rail Capital Program provides grant (\$7 million per biennium) and loan assistance (\$5 million per biennium) to railroads, port districts and local governments to keep freight rail services viable throughout the state. Examples include funding track repairs and enhancing business access to rail service. These projects are selected through a legislatively directed competitive selection process each biennium. The program also has funding to mitigate slides which closes the tracks. Working with Burlington Northern-Santa Fe (BNSF), sites are selected for mitigation efforts to keep slides

from impacting service. The program is currently working with Amtrak to procure trainsets to replace the aging Talgo fleet.

Facilities Program

The Facilities Program has a 10 year detailed plan funded from motor vehicle funds and Connecting Washington funds. In accordance with their asset management plan, priorities are driven by life-safety, code compliance, asset preservation and mission support needs. Opportunities to consolidate geographically, to move closer to operational centers, and collocate with others are also considerations. Financial analysis models are used to assist in making long-term decisions.

Capital Facilities major replacement projects are prioritized considering support of strategic goals of the organization, impact on operations, impact on building condition and project success factors, feasibility and opportunities. Capital Facilities minor projects are currently prioritized using condition assessment data identifying building system and structural repair, roofing, paving, siding, lighting and electrical replacement, and other improvement and preservation deficiencies.

For the 2021 – 23 biennium, the legislature did not fund requested furniture or 2021-23 project costs for the Dayton Ave remodel project. These costs will be covered by the minor preservation funding leaving almost no funding for preservation in 21-23.

Local Programs

Local Programs coordinates with the Active Transportation Office as they prioritize new Pedestrian Safety/Safe Routes to School grant projects that will reduce fatalities, increase biking and walking, and increase the number of children walking and biking to school safely. In addition, local investments continue for Connecting Washington and local priority projects established in the 2017- 19 Transportation budget for specific improvements in communities throughout the state.

2021-23 Biennium Local Investments:

- \$123.3 million for legislatively identified Connecting Washington projects
- \$6.6 million for legislatively identified Pedestrian and Bicycle Tiered projects
- \$23.4 million for the Pedestrian and Bicycle Safety Program
- \$24.2 million for the Safe Routes to School Program
- \$26.6 million for other legislatively identified projects

The project list totals \$271.5 million for the 21-23 biennium. The Legislature also funded additional projects:

- \$5 million for Klickitat County for preliminary engineering and financial analysis for replacement of the Hood River bridge.
- \$6 million for the Orting Pedestrian bridge on SR 162.

- Reallocated \$6.5 million from a canceled Edmonds project to another Edmonds project, SR 99 Revitalization in Edmonds.
- Reduced the Pedestrian and Bicycle Safety grant program by \$10 million from the Governor's request.