



**DEPARTMENT OF
NATURAL RESOURCES**


Forest Practices Division
1111 Washington St SE
Olympia, WA 98504

360-902-1400
FPD@DNR.WA.GOV
WWW.DNR.WA.GOV

MEMORANDUM

July 30, 2020

TO: Forest Practices Board

FROM: Mark Hicks, Adaptive Management Program Administrator 

SUBJECT: Proposed 21-23 Master Project Schedule and Budget

This memo presents the recommended Master Project Schedule (MPS) and associated budget for the 21-23 biennium. The MPS represents a consensus product from the Timber Fish and Wildlife (TFW) Policy Committee.

This has been a particularly challenging biennium for managing the MPS. At the end of February 2019 TFW Policy was poised to recommend a MPS for the Board's May meeting that was focused on using projected surplus funds to move ahead on numerous project issues. By late-March, however, TFW Policy participants learned that a problem with our funding had not been resolved during the legislative session. This resulted in the Adaptive Management Program (AMP) needing to cut \$1.911 million from our previously approved 19-21 biennium MPS. Those reductions were approved by the Board in May 2020. However, those adjustments to the MPS did not resolve substantial deficits predicted for future biennia. As a result, TFW Policy, with assistance from the AMP Project Managers, CMER Science Staff, and others, began working on possible solutions that would bring projected out-year biennia expenditures in balance as well. What I am presenting to you today is the result of the considerable effort by many people who worked as a team to find the best overall solution for addressing a serious problem.

Overview of the Master Project Schedule for the 21-23 Biennium

This overview of the proposed 21-23 biennia MPS and budget separates the MPS into five categories of expenditures for discussion:

- 1) Administrative and staffing needs
- 2) Research projects that are ongoing and funded

- 3) Research projects that are ongoing but unfunded
- 4) Delayed research projects affected by inadequate funding
- 5) Projects that will be completed before the 21-23 biennium

1) **Administrative and staffing needs**

- **Rows 7-9: Administrative and Project Manager Positions.** All positions are filled.
- **Rows 10-11: CMER Science Staff.** Science staff and contractors do most of the science work in the program. We have three staff working currently, but due to the 19-21 biennial budget shortfall we are holding two CMER Scientist positions vacant through FY21. Funding is provided to hire one of these staff in FY22 and the other in FY26.
- **Row 12: Independent Peer Review (ISPR).** Costs were higher than normal in the 19-21 biennium, but are expected to return to more historic levels in 21-23 biennium.
- **Row 13: Information Management System.** This is where CMER project data and reports are stored. There is a backlog of information to be added and user-end improvements to be made to the system. The MPS begins regular infusions of funds every biennium beginning in FY23.
- **Row 14: CMER Science Conference.** The conference is used to communicate CMER research to other professionals and to cooperators. Funding is provided for a conference every other year beginning in FY23.
- **Row 15: Contingency Fund.** This is used to cover unexpected and necessary project costs and the MPS provides \$100,000 per biennium.
- **Row 16: TFW Policy Committee Facilitation.** Facilitation is not funded as a default line item going forward to avoid leaving unspent money in years when facilitation is not needed. Contingency funds can be used for this purpose as well. It is recommended this line item be deleted from the MPS.
- **Row 17: Technical Editor.** Not generally needed and leaving money earmarked leaves money unspent at the end of the year/biennium. It is recommended this line item be deleted from the MPS.

Summary: Staffing is effectively provided in Rows 7-17 to adequately meet all of the program needs expressed in the prioritized projects in the MPS. However given the importance of CMER Staff Scientists for doing the detailed science work, filling the remaining staff scientist vacancy should occur earlier than planned if our funding situation improves.

2) **Research projects that are ongoing and funded**

- **Row 23: Hard Rock Lithology- Type N Experimental Buffer Treatment Project – Completion of Phase II study.** Authors are currently responding to a first round of ISPR comments. Final Product expected by the end of FY22; however, a small amount of funds are set aside to cover end of project costs such as providing presentations to Policy.
- **Row 27: Unstable Slopes Criteria - Object-based Landform Mapping.** This is the critical first project in a series and will test if specific geologic features can be identified automatically using machine learning with LiDAR data sets.
- **Row 28: Unstable Slopes Criteria - Shallow Landslide Susceptibility.** This project applies empirical methods to characterize susceptibility for initiation of shallow landslides with respect to both rule identified landforms and non-rule identified landforms.
- **Row 29: Unstable Slopes Criteria - Shallow Landslide Runout.** This project is aimed at identifying the landform characteristics downslope of landslide initiation locations associated with delivery of landslide sediment to streams. This will help to expand the characterization of rule identified landforms to better determine likelihood of delivery.
- **Row 30: Unstable Slopes Criteria - Management Susceptibility Modeling.** This project is planned for the 23-25 biennium. This project will utilize dynamic modeling techniques to develop predictions of landslide initiation probability for specific landforms and predictions for the effects of forest management on landslide initiation probability for specific landforms.
- **Row 31: Eastside Type N Riparian Effectiveness (ENREP).** This study tests the Eastside riparian rule buffers on Type Np streams. It is well into field implementation which is expected to continue through FY28.
- **Row 32: Westside Type F Riparian Prescription Monitoring (Pilot Study).** This study is being used to design a statistically robust Before, After, Control, Impact (BACI) study that will examine the effectiveness of select Type F riparian management zones on the Westside. This pilot study report is being finalized in FY21.
- **Row 33: Road Prescription-Scale Effectiveness Monitoring.** This study is examining select road BMPs on main-stem haul roads and attempting to produce a model that can be used to evaluate additional BMPs in the future. It is in active implementation which is expected to continue through 2029. Due to the budget shortfall some of the model parametrization experiments were delayed until FY21 but this is not expected change the expected completion date.
- **Row 34: Deep Seated Research Strategy -- Mapping Objectives.** Create a GIS database of Streamlined Landslide Inventory Protocol (SLIP-mapped) deep-seated landslides including additional key attributes that are relevant to forest practices and known geotechnical investigations of the site.

- **Row 35: Deep Seated Research Strategy -- Pilot Classification.** Augments an existing GIS database for selected DSL with field and remotely sensed attributes including verified or revised stratigraphy and activity levels. Do detailed analyses using both field evidence and aerial photo assessment to correlate movement to potential environmental or land use influences.
- **Row 36: Deep Seated Research Strategy -- Toolkit Development.** The toolkit would provide simple GIS-based tools to assess attributes of landslides that are likely related to slope stability, including tools to help identify and classify the groundwater recharge area.
- **Row 37: Deep Seated Research Strategy -- Groundwater Modeling.** Pilot will develop a conceptual model for hydrologic processes in deep-seated landslides by looking at one hillslope and geologic setting and begin modeling of recharge, storage and drainage of a representative landslide.
- **Row 38: Deep Seated Research Strategy -- Physical Modeling.** Constructs calibrated physical models or techniques to link surface water, groundwater, and associated slope stability processes. Uses these to conduct scenario modeling of potential changes in geometry, climate or land-use.
- **Row 39: Deep Seated Research Strategy -- Landslide Monitoring.** Uses a combination of remote sensing and field measurements to quantitatively measure changes in landslide activity for a population of landslides as a result of changes in hydrology or slope geometry.
- **Row 47: Riparian Characteristics and Shade Response.** This study examines the effect on stream shade from using three different widths of no-harvest zones used alone and in combination with two intensities of adjacent thinning areas within riparian zones.
- **Row 48: Forested Wetlands Effectiveness Study.** A study design has been approved to begin on a pilot study to examine the effect of harvesting on forested wetlands in Western Washington.

Summary: Sixteen research projects that are ongoing and funded in the 19-21 biennium are recommended for continued funding under the 21-23 biennium MPS being presented to the Board. These projects, in combination with ongoing but unfunded projects described in the following list, represent the current AMP research priorities.

3) Research projects that are ongoing but unfunded

- **Row 25: Soft Rock Lithology -Type N Experimental Buffer Treatment Project - Extended monitoring through FY21.** It is anticipated that this work will be completed before FY22, but any final work beyond this date can be covered through participation agreement funds to Ecology who employs the Principal Investigator.

- **Row 41: Eastside Timber Harvest Types Evaluation Project (ETHEP).** This project is being developed using Science Staff and cooperator resources, but will need contract dollars to implement. No money is currently allocated for implementation but implementation beginning in FY23 or FY24 is projected.
- **Row 42: Water Typing Strategy (PHB Validation, Physicals, LiDAR Model Map).** This project is being developed using Science Staff and cooperator resources, but will need contract dollars to implement. No money is currently allocated for implementation but implementation beginning in FY23 or FY24 is projected.

Summary: Though these are Board priorities, no funding is included in the recommended 21-23 biennium MPS to implement them once they have been designed using internal staff and cooperator resources. The water typing studies are expected to be particularly costly (approximately a million dollars per year). The current MPS budget will not show sufficient funds to implement these in the next two biennium; therefore, existing funded projects will need to be stopped or new special funding requested in order to carry these out within the next 2-4 years.

4) Delayed research projects affected by inadequate funding

- **Row 26: Extensive Riparian Status and Trends Monitoring -- Vegetation, Type F/N - Westside (Remote Sensing) Transferability Report.** Study is developing methodology and testing the feasibility of using LiDAR to monitor riparian forest stands. This work has been put on indefinite hold due to the lack of funds.
- **Row 32: Westside Type F Riparian Prescription Monitoring (BACI Study).** This study will examine effectiveness of select Type F riparian management zones on the Westside. Currently, the pilot study report is being finalized and will be used to design this more robust study. Due to the budget shortfall this project will be delayed 4 years.
- **Row 49: Wetlands Management Zone Effectiveness Monitoring**
- **Row 27: Unstable Slopes Criteria - Object-based Landform Mapping.** Short term work is being done without planned contractor assistance slowing the project down.
- **Row 40: Amphibians in discontinuously flowing Np reaches.** Funded only through the study scoping stage after which it will be place on hold until there is sufficient budget.
- **Row 44: Riparian Literature Synthesis Project.** This was intended to help CMER by ensuring it has a synthesis of the available literature ready to assist in designing riparian studies. It is recommended this project be removed from the MPS due to funding shortfall and its relatively moderate program value.
- **Row 50: Wetlands Intensive Monitoring.** This is a cumulative effects study and has been moved out to FY29 due to delays in precursor studies. Delay in wetland precursor

studies are being magnified by the budget shortfall which created a need to push the Wetland Management Zone study further out in time.

- **Row 51: Road Sub-Basin-Scale Effectiveness Monitoring -- Resample (Re-scoping).** This is a status and trends monitoring study, but was move out in time after the first sample due to the 2009 budget crisis and a decision to just wait until the Road Maintenance, Abandonment, and Planning (RMAP) requirements had been fully implemented by landowners. It is now being moved out to FY29 to make use of any improved road erosion models created through the current Road Prescription Monitoring study.
- **Row 52: Watershed Scale Assessment of Cumulative Effects (roads and riparian) -- post Effectiveness Monitoring.** This is a cumulative effects study and has been moved out to FY29 due to delays in precursor riparian studies, as well as in recognition of the lack of a sufficient research budget until at least FY28.

5) Projects that will be completed before the 21-23 biennium

- **Row 19: Type Np Workgroup.**
- **Row 20: AMP Principals Facilitation.**
- **Row 22: Hard Rock Lithology- Type N Experimental Buffer Treatment Project - Temperature Monitoring (Report extended data).**
- **Row 24: Soft Rock Lithology -Type N Experimental Buffer Treatment Project - (1) Monitoring ends fall 2017, 2-yr post-harvest**
- **Row 45: Wetlands Intrinsic Potential (WIP) Tool**
- **Row 46: Literature Review -- Forested Wetlands (Updated; WetSAG)**
- **Row 53: Eastside Modeling Evaluation Project (EMEP).** This project is in its final stage of ISPR. It models current riparian stand conditions to compare with the eastside riparian objectives.

Summary: Projects in the MPS that are scheduled to be completed in the 19-21 biennium are proceeding on schedule and should require no further funds in the 21-23 biennium.

Summary and Recommendations

The total funding need for all of the components of the Adaptive Management Program for the 21-23 biennium is \$15,610,312 (details are provided in the attached Master Project Schedule budget). Of this total, 27% funds Administration and Science Staff, 29.5% directly funds the Research Projects, and 43.5% funds Participation Grants.

On behalf of the TFW Policy Committee, I am requesting the Board's approval of the proposed 21-23 biennium MPS budget and its use as the basis for a legislative funding request. I am further recommending the Board request \$7,008,162 in supplemental funding during this upcoming legislative session to make up the difference in what we need (shown as GF-S money on line 56). This recognizes funding from the Forest and Fish Support Account and from the GF-S AMP Base Carry Forward (lines 54 and 55) is not sufficient to cover needed expenditures in the 21-23 biennium.

Beginning in the 23-25 biennium, we project that we will be in a position where several projects being developed internally are ready for field implementation and our projected budget will be markedly insufficient to cover their costs. These projects include the Eastside Timber Habitat Effectiveness Project (ETHEP), and at least two of the three water typing studies (Potential Habitat Break Validation, Default Physical Criteria, and the LiDAR Model Map). At that time we will need additional supplemental funding over what the AMP has characteristically needed if we are not going to stop other ongoing priority research efforts to pay for them. Such a request could take the form of bridge-funding to see us productively to FY28 after which point the project load will decrease and we will return to more historic funding needs.

If you have any questions, please feel free to contact me (mark.hicks@dnr.wa.gov, 360-902-1909).

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FY2032	Revised FY2032	FY2033	Revised FY2033	FY2034	Revised FY2034	FY2035	Revised FY2035
375,332	375,332	375,332	375,332	382,839	382,839	382,839	382,839
106,323	106,323	106,323	106,323	108,449	108,449	108,449	108,449
680,335	680,335	680,335	680,335	693,941	693,941	693,941	693,941
778,058	816,150	778,058	830,433	793,619	844,965	793,619	859,752
195,533	195,533	195,533	195,533	199,443	199,443	199,443	199,443
80,599	80,599	80,599	80,599	83,016	83,016	83,016	83,016
4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
100,000	100,000	0	0	100,000	100,000	0	0
	25,000						
	100,000		45,000				
200,000	200,000						
250,000	250,000						
	340,000		340,000		340,000		100000
2,770,179	3,273,271	2,220,179	2,657,554	2,365,309	2,756,655	2,265,309	2,431,441
4,068,656	4,068,656	4,068,656	4,068,656	4,068,656	4,068,656	4,068,656	4,068,656
0	0	1,298,477	795,385	0	0	1,703,347	1,312,001
1,298,477	795,385	3,146,954	2,206,487	1,703,347	1,312,001	3,506,695	2,949,216
375,332	375,332	375,332	375,332	382,839	382,839	382,839	382,839
5,677,000	4,000,000	5,677,000	4,000,000	5,677,000	4,000,000	5,677,000	4,000,000
1,857,000	3,429,824	1,857,000	3,429,824	1,857,000	3,422,317	1,857,000	3,422,317
7,805,156	7,805,156	7,805,156	7,805,156	7,805,156	7,805,156	7,805,156	7,805,156
2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
537,332	537,332	518,093	518,093	537,332	537,332	518,093	518,093
367,990	367,990	367,990	367,990	367,990	367,990	367,990	367,990
94,500	94,500	94,500	94,500	94,500	94,500	94,500	94,500
166,610	166,610	166,610	166,610	166,610	166,610	166,610	166,610
3,736,500	3,736,500	3,736,500	3,736,500	3,736,500	3,736,500	3,736,500	3,736,500
7,805,156	7,805,156	7,805,156	7,805,156	7,805,156	7,805,156	7,805,156	7,805,156
2,770,179	3,273,271	2,220,179	2,657,554	2,365,309	2,756,655	2,265,309	2,431,441
3,736,500	3,736,500	3,736,500	3,736,500	3,736,500	3,736,500	3,736,500	3,736,500
1,298,477	795,385	1,848,477	1,411,102	1,703,347	1,312,001	1,803,347	1,637,215
		3,146,954	2,206,487			3,506,695	2,949,216