



- **Board of Directors**  
***One Water and Stewardship Committee***

8/20/2024 Board Meeting

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9-2

## Subject

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Update on proposed agreements with the Plumas Community Protection I Forest Resilience Bond LLC, North Feather I Forest Resilience Bond LLC, and Upper Butte Creek I Forest Resilience Bond LLC to establish watershed partnerships and forest health pilot investigations in the Northern Sierra Nevada; each agreement will not exceed \$200,000 per year for a maximum of two years

## Executive Summary

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Staff proposes that Metropolitan enter agreements with Plumas Community Protection I Forest Resilience Bond (FRB) LLC, North Feather I FRB LLC, and Upper Butte Creek I FRB LLC (LLCs) in amounts not to exceed \$200,000 per year each for a maximum of two years. These agreements would be funded from the approved FY 2024/25-FY 2025/26 Bay-Delta Initiatives Grant/Donation budget.

Staff has been exploring upper Bay-Delta watershed partnerships in support of Metropolitan's One Water approach and Bay-Delta Policies to improve water supply resiliency in the face of climate change. Supplies from the Bay-Delta watershed are integral to implementing Metropolitan's water supply portfolio and Metropolitan's One Water approach. Impacts of climate change include changes in hydrology (wetter and drier periods than experienced historically) and wildfire risk threatening water supply reliability and water quality that Metropolitan relies upon. Investments in watershed health in the Bay-Delta watershed could help to protect or enhance, inform and improve water source resilience for the State Water Project, along with other source supplies from the Bay-Delta watershed that Metropolitan relies upon, such as critical dry year supplemental supplies (e.g. Yuba Accord transfer water).

Metropolitan staff, consistent with the Board's adopted Bay-Delta Policies, has advanced efforts to participate in three distinct and complimentary watershed partnerships to assess the potential water supply and water quality benefits of various watershed management techniques (pilot investigations). The proposed pilot investigations would be facilitated by Blue Forest, a 501(c)(3) nonprofit and developer of the FRB conservation finance model. Metropolitan would enter into agreements with LLCs which are subsidiaries of Blue Forest and were developed to finance portions of larger watershed programs and projects being led by the U.S. Department of Agriculture (USDA Forest Service). The primary purpose of the proposed programs and projects led by the USDA Forest Service is to reduce the risk of wildfire impacts to communities and critical infrastructure (including State Water Project infrastructure). Metropolitan staff and Blue Forest have identified a suite of potential water supply and water quality benefits that could accrue once the programs and projects have been implemented. Metropolitan's investment at this time would ensure that the programs and projects, subject to the agreements, would be implemented such that the potential water supply and water quality benefits would be assessed and reported. Evaluating the potential water supply and water quality benefits of watershed health treatments over the next two years would provide valuable information to guide: Metropolitan's future policies, potential and existing investments related to the State Water Project or supplemental water supplies, future legislative and regulatory development by state and federal administrations and agencies. Other funding partners are specific to each LLC and are listed below. Blue Forest has successfully implemented similar watershed partnerships in the upper Yuba and Mokelumne watersheds in the past.

- Upper Butte Creek I FRB LLC - up to \$200,000 per year in FY 2024/25 and FY 2025/26
- North Feather I FRB LLC - up to \$200,000 per year in FY 2024/25 and FY 2025/26
- Plumas Community Protection I FRB LLC – up to \$200,000 per year in fiscal year (FY) 2024/25 and FY 2025/26

The key deliverable for each agreement will be an Annual Impact Report. These reports will summarize pilot investigation outcomes, including those associated with water supply and other key information. In addition, these pilot investigations will create opportunities for additional science, foster collaborative relationships in the upper watersheds, and establish a methodology for valuing ecosystem services to help inform Metropolitan’s potential future participation in upper watershed health initiatives to help inform Metropolitan’s future policies, potential and existing investments related to the State Water Project or supplemental water supplies, future legislative and regulatory development by state and federal administrations and agencies. Staff plans to bring the proposed agreements for the watershed pilot investigations to the Board for approval in September 2024.

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### **Fiscal Impact**

If the Board approves the agreements, the total fiscal impact would be \$1.2 million over the term of the biennial budget; \$200,000 per year, per agreement, for two years. These funds were included in the approved FY 2024/25-FY 2025/26 Bay-Delta Initiatives Grant/Donation budget and therefore would not require a budget adjustment.

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### **Applicable Policy**

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

Metropolitan Water District Administrative Code Section 8140: Competitive Procurement

By Minute Item 53012, dated October 11, 2022, the Board adopted the revision and restatement of Bay-Delta Policies.

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### **Related Board Action(s)/Future Action(s)**

Staff plans to bring the three proposed agreements for watershed pilot investigations to the Board for approval in September 2024.

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### **Details and Background**

#### **Background**

Over the past few years, staff has been exploring upper watershed partnerships in support of Metropolitan’s One Water approach and Bay-Delta Policies to improve water supply resiliency in the face of climate change. Staff has kept the Board apprised of developments related to watershed health and watershed partnerships. In September and October 2022, these concepts were discussed as part of the Revision and Restatement of Bay-Delta Policies process. In January 2023, Yuba Water Agency General Manager Willie Whittlesey presented on their North Yuba Forest Partnership Resilience Bond investments at One Water and Stewardship Committee. And in March 2023, staff provided an update at One Water and Stewardship Committee seeking direction from the Board to pursue pilot investigations in the Northern Sierra Nevada. The three proposed agreements funding pilot investigations represent a first step towards building better relationships in the upper watersheds, furthering science related to quantifying the benefits of forest management actions and valuing the potential benefits to Metropolitan of investments that promote improved forest health in the upper watersheds of the Bay-Delta.

#### ***Overview of Importance/Relevance of Watershed Health***

State Water Project supplies and water transfers from the Bay-Delta watershed are integral to implementing Metropolitan’s One Water approach. Such supplies are foundational to the One Water approach as they meet demands in Metropolitan’s service area, help ensure drought resilience in conjunction with Metropolitan’s storage portfolio and provide a high level of water quality that supports salinity management goals and the production of key local supply sources in the region. With much of the state’s water supply originating in the mountains, the

health and management of the upper watersheds are critically important to California's water quality and water supply.

Metropolitan's water supplies from the Bay-Delta watershed are already facing increasing pressures from the impacts of climate change, including reduced snowpack, increased drought severity and frequency, changing precipitation patterns, degradation of habitat and ecosystems, and sea level rise. In addition, wildfires in the Western United States are becoming more frequent, larger, and more severe due to a combination of climate change and overly dense forest conditions resulting from modern forest management and fire suppression practices. Over the last decade, major catastrophic wildfires including the Camp Fire (2018), North Complex Fire (2020), Dixie Fire (2021) and Beckwourth Complex Fire (2021) have burned more than 1.5 million acres of land in the Feather River Watershed, which is more than 65 percent of the watershed. Investments in watershed health in the Northern Sierra Nevada that reduce the risk of catastrophic wildfire may contribute to improved imported water source resilience for the State Water Project and sources of water transfers. Potential benefits of investments in upper watershed health include:

- Resilience to Climate Variability – Healthy forests are more resilient to climate extremes, such as droughts and heavy rains, ensuring more stable and reliable water supplies.
- Enhanced Water Supply – Forests regulate the flow of water by absorbing rainfall, reducing runoff, and increasing groundwater recharge. This helps maintain water supplies during dry periods.
- Improved Water Quality – Healthy forests filter pollutants, reduce sedimentation, and enhance water quality.
- Biodiversity and Ecosystem Services – Forests support diverse ecosystems that provide essential services, such as cold-water habitats for temperature-sensitive aquatic species.
- Carbon Sequestration – Forests act as carbon sinks, capturing CO<sub>2</sub> from the atmosphere and helping to mitigate climate change impacts.
- Fire Risk Reduction - Healthy, well-managed forests are less susceptible to catastrophic wildfires, which can damage watersheds and infrastructure, leading to costly repairs and water contamination.

### ***Metropolitan's Guiding Policies***

The proposed watershed partnerships and associated pilot investigations support several elements of Metropolitan's Bay-Delta Policy Objectives and Framework that were adopted by the Board in October 2022 include:

- Promoting a sustainable Bay-Delta within Metropolitan's One Water approach.
- Addressing the risks associated with climate change.
- Protecting and restoring aquatic species and habitats based on best available science.
- Partnering in watershed-wide approaches to develop comprehensive solutions.
- Maintaining and pursuing cost-effective financial investments.
- Fostering broad and inclusive engagement of Delta interests and beneficiaries.
- Promoting innovative and multi-benefit initiatives.

### ***Overview of Funding***

Metropolitan has the opportunity to participate in three distinct and complimentary watershed partnerships. Funding would come from Bay-Delta Initiatives' Grant/Donation Expense funds, which were approved under the current biennial budget. This budget category is intended for cost-share contributions through collaborative partnerships with other agencies and academic institutions that pursue studies that are of interest to Metropolitan.

The proposed pilot investigations would be facilitated by Blue Forest, a 501(c)(3) nonprofit and developer of the FRB. The FRB is a conservation finance model specifically designed to add new revenue streams to fund forest

restoration and finance project costs. The three partnerships would be contracted through sole-source agreements with three different FRB LLCs. Each is a separate and distinct subsidiary of Blue Forest.

- Upper Butte Creek I Forest Resilience Bond LLC – The pilot Upper Butte Creek I FRB LLC will be launched in early 2025, contingent upon a signed National Environmental Policy Act (NEPA) record of decision for the Upper Butte Creek Forest Health Initiative. Funding would be provided by Metropolitan to the Upper Butte Creek I FRB LLC to support financing of the Upper Butte Creek I FRB. Metropolitan’s maximum funding contribution would be \$400,000 over FY 2024/25 and FY 2025/26, and the Upper Butte Creek I FRB would finance up to \$5 million of initial work on the landscape. Upon success, this initial investment could unlock further opportunities within the Upper Butte Creek Watershed. A scaled FRB could finance up to \$40 million to restore and protect 20,000 acres. Other potential FRB financing partners currently include the Wildlife Conservation Board, CalFire, the National Fish and Wildlife Foundation, and the Sierra Nevada Conservancy. As the project is implemented, Metropolitan would work with Blue Forest to assess the potential water flow, water quality and aquatic ecosystem benefits and economic impacts within the Upper Butte Creek Watershed.
- North Feather I Forest Resilience Bond LLC – The pilot North Feather I FRB LLC will be launched in late 2024 or early 2025, contingent upon a signed NEPA record of decision for the North Fork Forest Recovery Project. Funding would be provided by Metropolitan to the North Feather I FRB LLC to support financing of the North Feather I FRB. Metropolitan’s maximum funding contribution would be \$400,000 over FY 2024/25 and FY 2025/26. While funding commitments are still being finalized, we expect The North Feather I FRB would leverage public and private funds to finance up to \$3.5 million of initial work on the landscape. Upon success, this initial investment could unlock further opportunities within the Feather River Watershed. A scaled FRB could finance up to \$50 million of restoration activities to restore up to 12,000 priority acres within the 167,000-acre North Fork Forest Recovery Project. Other potential FRB financing partners currently include USDA Forest Service - Plumas National Forest, Cal Fire, Sierra Institute, Pacific Gas & Electric Company (PG&E), and the California Department of Water Resources (DWR). As the project is implemented, Metropolitan would work with Blue Forest to conduct pilot investigations to assess the potential water supply and quality benefits and economic impacts within the Feather River Watershed.
- Plumas Community Protection I Forest Resilience Bond LLC– The pilot Plumas Community Protection I FRB LLC will be launched in late 2024 or early 2025, contingent upon a signed NEPA record of decision. Funding would be provided by Metropolitan to the Plumas Community Protection I FRB LLC to support financing of the Plumas Community Protection I FRB. Metropolitan’s maximum funding contribution would be \$400,000 over FY 2024/25 and FY 2025/26. Similar to the other two pilot projects, a pilot Plumas Community Protection I FRB would finance critical restoration and protection work on the landscape. While pilot footprint and funding commitments are still being finalized, it is estimated the Plumas Community Protection I FRB could finance the restoration activities to protect 9,000 to 39,000 acres within the 240,000-acre Plumas Community Protection Project. Other potential FRB financing partners currently include the USDA Forest Service Wildlife Crisis Strategy, PG&E, and DWR. As the project is implemented, Metropolitan would work with Blue Forest to conduct pilot investigations to assess the potential water supply and quality benefits and economic impacts within the Feather River Watershed.

Although there was a structured decision-making process used to select these specific partnership opportunities, these contracts would be made through sole-source agreements per Administrative Code Section 8140(1)(d). As described in Section 8140(1)(d), Metropolitan may enter sole-source agreements “[i]f competitive procurement could not produce an advantage, or it is impracticable to obtain what is required subject to the competitive procurement provisions because of the unique, exploratory, or experimental nature of the work.” Blue Forest created the FRB financing model and is the only entity currently facilitating this type of investment in the Northern Sierra Mountains.

### ***The Forest Resilience Bond Model***

To launch an FRB, Blue Forest partners with communities, land managers, governments and nonprofits to develop a finance plan and facilitate the development of an implementation team to manage the work on the ground that will ultimately improve forest and watershed health. Blue Forest also works with beneficiaries to evaluate the benefits of a potential project and uses this information to establish an economic, social and environmental case for funding. The FRB is then brought to private investors, like foundations and institutional asset managers, who provide capital to finance the project work. This means critical financing is available up-front for restoration projects, enabling them to happen at a faster pace and larger scale. The primary goals of the FRB model are to:

- Provide up-front funding needed for project work to enable faster implementation.
- Smooth cash flows to enable consistent and ongoing work.
- Blend public and private funding sources to streamline administration.
- Quantify ecosystem benefits to attract new, flexible funding streams for the implementation of forest and watershed restoration projects.
- Develop long-term contracts that support local restoration economies.
- Leverage federal and state funding sources.

The use of the FRB financing model to implement large-scale forest health initiatives has been increasing, with several projects completed, underway, and under development in California, Oregon, and Washington. For example, the Yuba I and Yuba II FRBs helped catalyze the formation of the North Yuba Forest Partnership, a partnership of nine federal, Tribal, state, local government agencies, and nonprofits focused on forest restoration across 275,000 acres of public and private lands in the North Yuba River Watershed. The Yuba I FRB was launched in 2018, and restoration work was completed in 2023. The Yuba I FRB protected and restored 15,000 acres in the upper headwaters of the North Yuba River Watershed. Building on the success of the Yuba I FRB, the Yuba II FRB was launched in 2021 and finances an additional 28,000 acres of treatment activities such as thinning, prescribed burning, hardwood regeneration, invasive species removal, and other forms of ecological restoration.

### ***Proposed Pilot Investigations***

The selection of these watershed partnership opportunities was facilitated through a structured decision-making process (**Attachment 1 and Attachment 2**). Each partnership targets different aspects of potential watershed management activities that could improve water supply resiliency of supplies from the Bay-Delta watershed, including conditions for anadromous fish, water quality, water supply and improved forest health.

#### ***Upper Butte Creek I Forest Resilience Bond LLC***

Funding would be provided by Metropolitan to the Upper Butte Creek I FRB LLC to support financing of the Upper Butte Creek I FRB. As the project is implemented, Metropolitan would work with Blue Forest to conduct pilot investigations to assess the potential benefits of the project to Metropolitan. Butte Creek supports the largest self-sustaining, naturally spawning, wild population of spring-run Chinook salmon in the Central Valley. This investment would also complement past investments made by Metropolitan and others to improve fish passage on lower Butte Creek.

The Upper Butte Creek Forest Health Initiative will restore and protect 20,000 acres within the Upper Butte Creek Watershed. The Upper Butte Creek Watershed was specifically chosen because this area has high biodiversity values, proximity to communities, committed partnership opportunities, and risk of severe wildfire. Other potential FRB financing partners include the Wildlife Conservation Board, CalFire, the National Fish and Wildlife Foundation, and the Sierra Nevada Conservancy. Potential local partners include the Lassen National Forest, the South Lassen Watershed Group and the Butte County Resource Conservation District.

Forest health treatments planned through the Upper Butte Creek I FRB include general forest thinning, prescribed fire, meadow and aspen restoration, and trail development. A quarter of the project area will restore and reforest areas burned by the 2021 Dixie Fire. These treatments yield numerous benefits to the Lassen National Forest and nearby communities by restoring overly dense forests to a resilient state, encouraging a more natural fire return interval, protecting water supply and increasing carbon sequestration.

#### *North Feather I Forest Resilience Bond LLC*

Funding would be provided by Metropolitan to the North Feather I FRB LLC to support financing of the North Feather I FRB. As the project is implemented, Metropolitan would work with Blue Forest to conduct pilot investigations to assess the potential benefits of the project to Metropolitan.

The North Fork Recovery Project will restore and protect up to 12,000 acres as part of the 167,000-acre North Fork Forest Recovery Project. This project provides an opportunity to accelerate post-Dixie Fire recovery to build resilience for the landscape and surrounding communities. Other potential FRB financing partners include USDA Forest Service - Plumas National Forest, Cal Fire, Sierra Institute, PG&E and DWR. Potential local partners include the Sierra Institute and the Plumas National Forest.

Forest health treatments planned through the North Feather I FRB include general forest thinning, prescribed fire, fuels reduction, reforestation, invasive species management, stream restoration, and recreation improvements. These treatments yield numerous benefits to the Plumas National Forest and nearby communities by restoring overly dense forests to a resilient state, encouraging a more natural fire return interval, protecting water supply, and increasing carbon sequestration. The post-fire nature of this project makes it vital for activities to happen as quickly as possible, making funding available to speed along implementation even more critical than in some other projects.

#### *Plumas Community Protection I Forest Resilience Bond LLC*

Funding would be provided by Metropolitan to the Plumas Community Protection I FRB LLC to support financing of the Plumas Community Protection I FRB. As the project is implemented Metropolitan would work with Blue Forest to conduct pilot investigations to assess the potential benefits of the project to Metropolitan. As the source of much of State Water Project water supplies, the Feather River Watershed is of significant importance to Metropolitan's current and future water supplies.

At its full scale, the FRB would finance the restoration and protection of up to 39,000 acres within the total 240,000-acre Plumas Community Protection Project. In addition to directly supporting long-term reliability of the State Water Project, the Feather River Watershed was specifically chosen as this area has high biodiversity values, proximity to communities, committed partnership opportunities, and risk of severe wildfire. Potential FRB financing partners include PG&E and DWR. In addition, the Plumas National Forest has received Wildfire Crisis Strategy funding for the Plumas Community Protection Project, and there is \$278 million in federal funding that requires a 5 percent match to deploy. Potential local partners include the National Forest Foundation, the Feather River Resource Conservation District, the Mule Deer Foundation and the Plumas National Forest.

Forest health treatments planned through the Plumas Community Protection I FRB include general forest thinning, prescribed fire, meadow and aspen restoration, and trail development. These treatments yield numerous benefits to the Plumas National Forest and nearby communities by restoring overly dense forests to a resilient state, encouraging a more natural fire return interval, protecting water supply, and increasing carbon sequestration.

***Benefits to Metropolitan***

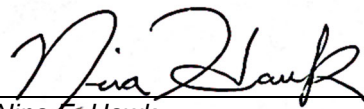
The deliverables for each cost-share agreement will be a FRB Annual Impact Report developed by Blue Forest. These Reports will summarize pilot investigation outcomes, including those associated with water supply and other key information. For each pilot investigation, Blue Forest will analyze and report in the FRB Annual Impact Report the annual and cumulative quantities of:

- Water supply protected.
- Contributions to local economic growth and job creation.
- Contributions to local community protection.
- Plant and animal species protected.
- Land area of forest, meadow, and invasive plant treatments implemented.
- Terrestrial ecosystems restored and protected.

In addition, these pilot investigations will create opportunities for additional science, foster collaborative relationships in the upper watersheds, and establish a methodology for valuing ecosystem services to help inform Metropolitan’s potential future participation in upper watershed health initiatives.

***Project Milestones***

The FRB Annual Impact Report for each pilot investigation will be provided to Metropolitan annually beginning in 2025.

  
 \_\_\_\_\_ 7/31/2024  
 Nina E. Hawk Date  
 Chief, Bay-Delta Resources

  
 \_\_\_\_\_ 8/7/2024  
 Deven Upadhyay Date  
 Interim General Manager

**Attachment 1 – Project Decision-Making Memo**

**Attachment 2 – Benefit Analysis Results**

Ref# eo12699486

## Memo: Project Decision Making Process Utilized on August 16, 2023

*Created by Blue Forest for Metropolitan Water District*

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Blue Forest developed a decision-making process to help Metropolitan Water District (Met Water) members narrow down the list of potential projects to consider funding through a Forest Resilience Bond (FRB). Seven projects were initially considered based on their proximity to the State Water Project and potential impacts on the Bay Delta. Met Water worked with Blue Forest to prioritize four projects for further consideration and analysis using a number of materials, including a spreadsheet of information about each project as well as maps depicting the wildfire hazard potential and water benefits on each project's landscape.

This memo details this process and the rationale behind the selection of the four projects about which Met Water and Blue Forest will continue discussions.

### **Step One: Determining Criteria Importance**

In the spring of 2023, Met Water and Blue Forest discussed various components of restoration projects that might make a project a funding priority for Met Water. Eight criteria were identified through these discussions: Primary Benefits to Met Water, Collaboration, Terrestrial Species Benefitted, ESA-listed Salmonids, Tributaries, Service Area Connection, Other Project Benefits, and Timeline.

The first step of the decision-making process utilized on August 16 was for Met Water members to consider the relative importance of each of these project criteria, culminating in an assignment of scores ranging from 1-3 for each criterion (with 3 being assigned to the criteria of most importance, and 1 to the criteria of least importance). Met Water staff assigned the following weights to each of the eight criteria: 3 to the Primary Benefits to Met and ESA-listed Salmonids criteria, 2.5 to Collaboration, 2 to Service Area Connection and Other Project Benefits, 1.5 to Timeline, and 1 to Terrestrial Species Benefitted. The Tributaries category was not weighted (and therefore discarded as a criterion), as the information conveyed by this criterion was already captured by the ESA-listed Salmonids criterion.

### **Step Two: Identifying Projects That Best Meet Criteria**

Each Met Water member individually considered the spreadsheet of information and maps of water benefits and wildfire hazard potential provided by Blue Forest for each project area to narrow down the top two projects that they believed best met each criterion.

These decisions were visually depicted through colored-coded sticky notes: each Met Water member received 14 sticky notes, with two of each color according to the seven criterion (again, Tributaries was no longer being used as a criterion). In each color pair, one sticky note had a "1" on it (indicating best), and the other had a "2" on it (indicating second-best). Eight sticky notes, each with a project name on it, had been set up by Blue Forest on a wall of the conference room, and Met Water members put sticky notes under the projects corresponding to what they believed were the best and second-best project for



meeting each of the seven criteria. A picture of this process can be seen in *Appendix A: Sticky Note Activity*.

Four projects (West Lassen Headwaters, Upper Butte Creek Forest Health Initiative, West Shore Community Protection Project, and Plumas National Forest Community Protection Project) dominated in terms of the numbers of sticky notes corresponding with them — meaning that these four were the most preferred according to the seven criterion.

Met Water members discussed their choices for each project criterion. Following this discussion, it was unanimously agreed that the three projects that had *not* received the majority of sticky note votes would no longer be considered. The few votes cast for these projects were then reassigned to the top four projects (for example, the “1” that the Texas Vegetation Management/Nyack project received in the “Other Project Benefits” category was reassigned to a different project, in this case the Plumas National Forest Community Protection Project). The completion of this vote reassignment resulted in six votes *per criterion* across the top four projects, with three votes designating projects that best met the criterion, and three votes designating projects that second best met the criterion. This can be seen in *Appendix B: Results of Sticky Note Activity*.

### **Step Three: Scorecard Ranking Activity**

Each of the voting assignments were converted into a score. Votes of 1 (best) were assigned a score of 2, and votes of 2 (second-best) were assigned a score of 1, such that higher scores indicated better-ranked projects. Following this conversion, the scores in each box of the matrix were added up (for example, three sticky notes labeled “1” would translate to a combined score of 6), resulting in a matrix in which each of the four projects was given a score for how well it met each criterion, with higher scores indicating a project that better met a certain criterion.

These scores were then multiplied by the criterion weighting assigned in step 1, and these products were summed, to determine a final score for each of the projects, again with higher scores indicating better projects. As shown in *Appendix C: Final Scores Matrix*, Upper Butte Creek Forest Health Initiative scored the highest, with Plumas National Forest Community Protection Project coming in second, West Lassen Headwaters a close third, and West Shore Community Protection Project coming in a rather distant fourth.

### **Step Four: Final Scores Discussion**

Met Water members agreed with the scores and project rankings given their thinking around how well each project met the different criteria. To get a better sense of how criterion weighting affected these scores, the criterion weights were toggled to perform a sensitivity analysis (for example, Service Area Connection being bumped from a 2 to a 3), and results consistently indicated that the Plumas Community Protection Project, Upper Butte Creek, and West Lassen Headwaters were all the most-preferred, although toggling the scores sometimes switched the order of first, second, and third place ranking among these projects.

The initial intention of the exercise was to determine the top two or three projects for Met Water to consider for contributing funding. However, although the West Shore Community Protection Project was ranked lower than all the others, after some discussion it was decided that this project would continue to be considered as well as the other three. This decision was made for three reasons:

1. The project performed well in meeting some of the most important criteria, as evidenced by the fact that toggling of criteria importance decreased the gap in scores between this project and the other projects.
2. Given the smaller size of the project, Met Water's potential funding contribution to the project could close a larger portion of the funding gap compared to some of the other larger projects.
3. The project is already in implementation whereas the other three projects won't begin implementation until late 2024 or early 2025.

The decision-making activities resulted in four projects that Met Water will further consider for potential funding contributions. With this narrowed-down list, Blue Forest will now provide Met Water with more detailed scientific and economic analyses to help determine which one or two of these projects might best meet Met Water's financial, ecological, and other organization goals.

## Appendix

### Appendix A: Sticky Note Activity



**Appendix B: Results of Sticky Note Activity (Screenshot)**

	A	B	C	D	E	F	G	H
1	<i>Weighting</i>	2	3	2.5	1	3	2	1.5
2		<b>Other Project Benefits</b>	<b>Primary Benefits to Met</b>	<b>Collaboration</b>	<b>Species Benefitted</b>	<b>ESA-Listed Salmonids</b>	<b>Service Area Connection</b>	<b>Timeline</b>
3	<b>West Lassen Headwaters</b>	2,2	1,2	2,2	2,2,2	1,2,2	2	
4	<b>Upper Butte Creek Forest Health Initiative</b>	2		1,1	1,1,1	1,1,2		1 2,2
5	<b>West Shore Community Protection Project</b>			1, 2	2		1,1	1,1
6	<b>Community Protection Project</b>	1,1,1	1,2		1		1 2,2	2

**Appendix C: Final Scores Matrix (Screenshot)**

	A	B	C	D	E	F	G	H	I
1	<i>Weighting</i>	2	3	2.5	1	3	2	1.5	
2		<b>Other Project Benefits</b>	<b>Primary Benefits to Met</b>	<b>Collaboration</b>	<b>Species Benefitted</b>	<b>ESA-Listed Salmonids</b>	<b>Service Area Connection</b>	<b>Timeline</b>	<b>Score</b>
3	<b>West Lassen Headwaters</b>	2	3	2	3	4	1		<b>35</b>
4	<b>Upper Butte Creek Forest Health Initiative</b>	1		4	6	5		4	<b>39</b>
5	<b>West Shore Community Protection Project</b>		3	1			4	4	<b>25.5</b>
6	<b>Community Protection Project</b>	6	3	2			4	1	<b>35.5</b>

# Benefit Analysis Results

*Created by Blue Forest for Metropolitan Water District*

*July 2024*

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## Overview of Modeling and Analysis

Blue Forest's analysis focused on three benefits associated with the planned activities of each project: water volume (via reduced evapotranspiration), water quality (via reduced sedimentation risk), and decreased risk of high-severity wildfire. Analysis activities were completed using the Natural Climate Solutions (NCS) Toolbox developed by the [Center for Ecosystem Climate Solutions](#) (CECS). See Appendix 1 for more information about the NCS Toolbox.

The tables in the following section summarize contextual information about each project and benefit analysis results. Please note that, while the models used are built on sophisticated and rigorous research, the actual benefit values that result from project implementation may vary from the values presented in this document.

### Summary of Benefits Analyzed:

- **Water Volume:** increased water yield as measured by decreased evapotranspiration.
- **Water Quality:** the decrease in sediment deposition in bodies of water, which in turn affects infrastructure that processes and intakes water. The tool has some limitations and these numbers should only be used as a comparative metric between projects. See Appendix 1 for more information.
- **Flame Length:** a metric that informs the wildfire hazard potential (WHP) and rate of spread from a potential wildfire. Decreased flame length indicates a lower WHP and rate of spread.

### Project Profiles and Analysis Results

Upper Butte Creek Forest Health Initiative (Lassen National Forest)		
Basic information	<ul style="list-style-type: none"> <li>• 20,079 acres in the Lassen NF</li> <li>• Forest thinning, prescribed fire, meadow/aspen restoration, trail development</li> <li>• A quarter of the project area will restore and reforest areas burned by the 2021 Dixie Fire</li> <li>• NEPA decision expected spring 2025, implementation can begin soon thereafter</li> </ul>	
Notable details	<ul style="list-style-type: none"> <li>• This project scored the highest during the August 16, 2023 Met prioritization exercise</li> </ul>	
Funding and collaboration	<ul style="list-style-type: none"> <li>• <u>Current funder(s)</u>: Wildlife Conservation Board Forest Conservation Program, Dept of Conservation Forest Health Watershed Coordinator funding, private foundations, National Fish and Wildlife Foundation CA Forests &amp; Watersheds Program, seeking additional funding from Sierra Nevada Conservancy</li> <li>• <u>Local partners</u>: South Lassen Watershed Group, Butte County RCD</li> </ul>	
Salmonids & habitat impact	<ul style="list-style-type: none"> <li>• Additional water flows and water quality protection for ecological purposes (largest self-sustaining, naturally spawning, wild population of spring-run Chinook salmon in the Central Valley)</li> <li>• <a href="#">TNC's Salmonscape map</a> shows that the Butte Creek watershed is a high priority for salmonid conservation, particularly the northeastern portion of the watershed (adjacent to the Lower Feather watershed)</li> <li>• Protected spotted owl and goshawk habitat</li> </ul>	
Estimate of Benefits		
Wildfire Benefits	Average Flame Length Reduction (percent): 77%	
Water Benefits	Volume: 2,500 acre feet (AF) of reduced evapotranspiration (0.12 AF/acre)	Quality: 37% decrease in post-fire sedimentation risk

<b>North Fork Forest Recovery Project (Plumas National Forest)</b>	
Basic information	<ul style="list-style-type: none"> <li>• 166,889 acres in the Plumas NF</li> <li>• Post-fire restoration activities: prescribed fire, thinning, hazard tree removal, reforestation, invasive species management, and hydrological improvements</li> <li>• Within the Feather River Watershed</li> <li>• NEPA decision expected in spring 2025, implementation to begin soon thereafter</li> </ul>
Notable details	<ul style="list-style-type: none"> <li>• This project is almost entirely comprised of post-fire restoration activities, following the 2021 Dixie Fire</li> </ul>
Funding and collaboration	<ul style="list-style-type: none"> <li>• <u>Current funders</u>: FS Wildfire Crisis Strategy funding, CALFIRE</li> <li>• <u>Local partners</u>: Sierra Institute</li> <li>• Other potential beneficiaries have expressed interest in this project, including PG&amp;E and CA DWR</li> </ul>
Salmonids & habitat impact	<ul style="list-style-type: none"> <li>• <a href="#">TNC's Salmonscape map</a> shows a portion of the Lower Feather watershed along the Sacramento River as high priority for salmonid conservation</li> </ul>
<b>Estimate of Benefits</b>	
Wildfire Benefits	Average Flame Length Reduction: 9.18%
Water Benefits	Volume: 26,317 AF of reduced evapotranspiration (0.16 AF/acre)

Plumas Community Protection Project (Plumas National Forest)		
Basic information	<ul style="list-style-type: none"> <li>• 250,000 acres in the Plumas NF</li> <li>• Focused on reducing the potential for extreme fire behavior in the wildland urban interface and improving road systems for community egress</li> <li>• Implementation will begin in 2025</li> </ul>	
Notable details	<ul style="list-style-type: none"> <li>• Acreage will be further refined over time, likely larger than 250k when the Forest finalizes planning</li> </ul>	
Funding and collaboration	<ul style="list-style-type: none"> <li>• <u>Current Funders:</u> Plumas NF has \$278M in federal funds that will require a 5% match to deploy</li> <li>• PG&amp;E is also considering funding contributions on this landscape</li> <li>• Adding resources would help leverage an already well-funded project</li> </ul>	
Salmonids & habitat impact	<ul style="list-style-type: none"> <li>• <a href="#">TNC's Salmonscape map</a> shows portions of the Lower Feather, Battle, Paynes, Singer, and Big Chico watersheds as high priority for salmonid conservation (steelhead and Chinook salmon)</li> </ul>	
Estimate of Benefits		
Wildfire Benefits	Average Flame Length Reduction: 80%	
Water Benefits	Volume: 36,400 AF of reduced evapotranspiration (0.48 AF/acre)	Quality: 4% decrease in post-fire sedimentation risk



## Appendix 1: Information and Resources about the CECS Tool<sup>1</sup>

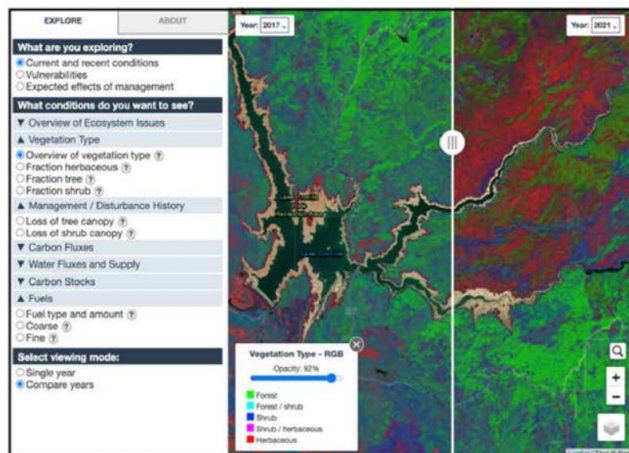


Figure 2: The DataAtlas tool visualizes CECS-original data.

The DataAtlas is an online visualization tool that displays select ecosystem data at 30-m resolution statewide. Every data layer within this tool is an original CECS product, and was created using the DataEngine. The DataAtlas allows users to get an overview of ecosystem conditions, compare years, forecast general outcomes of potential management, and identify areas of interest for further analysis using the DataBridge.

View the DataAtlas here:  
<https://cecs.ess.uci.edu/data-atlas/>

The DataBridge tools allow a user to select and export ecosystem data from the DataEngine to a user's preferred analysis software. Users select data based on their needs, including for planning, prioritization, or monitoring. Data files can be statewide or for a specific area. The DataBridge creates formatted tables, time series, or shapefiles that can be imported into software such as ArcGIS, QGIS, Excel, R, or ForSys. This tool is best for advanced users with working knowledge of one of these software tools, as well as experience in landscape. Contact CECS for more information.

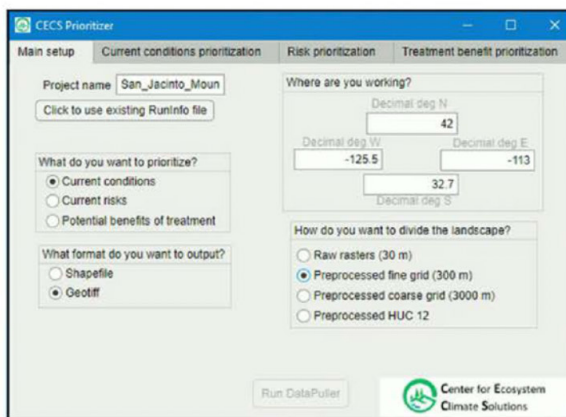


Figure 3: The DataBridge tool extracts data based on a user's needs.

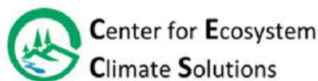


**We'd like to collaborate!**  
**Please reach out with your input and ideas.**

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