Model Watershed Final Proposal
Long Tom Watershed Council

Abstract

The Long Tom Watershed Council proposes a Model Watershed Partnership with Meyer Memorial Trust and Bonneville Environmental Foundation to develop a long-term, science based restoration model to advance an adaptive and accountable restoration strategy in 3 tributary watersheds. Over time, the Council will broaden the use of the model to other sub-watersheds with the ultimate goal of addressing and restoring watershed-scale processes (to the extent possible) and native biota at the watershed scale. Since 1998 the Long Tom Watershed Council has been assessing and monitoring the watershed, securing the support of the community and funders, and implementing both restoration projects and education programs. Accomplishments include 7 years of monitoring data, over 30 restoration projects, and landowner involvement in all 10 sub-watersheds. The organization has been consistent and resilient with over 67 alumni board members, 5 staff, a growth in annual revenue from $134,000 to $445,000, and healthy partnerships with area organizations. The reputation and momentum is strong, yet the Council needs a new infusion of investment and partnership to get to the next level in making and measuring progress on the threats the watershed faces. An investment and partnership with Meyer Memorial Trust and BEF will increase the pace, scope and effectiveness of restoration by adding capacity and a significant monitoring, learning and stewardship component.

Background and Watershed Information

Physical and biological watershed information

The Long Tom Watershed is a replica of the Willamette Basin in diversity of land use – agriculture (31%), woodland and forestry (46%), urban and rural (8% and 9% respectively) – as well as land ownership with 90% in private hands and smaller parcels typical of the west side. The population is roughly 140,000 people and includes part of the City of Eugene as well as surrounding small towns and rural areas. The Long Tom Watershed is also host to a wide diversity of habitats and is considered an anchor area by USFWS for the recovery of species dependent on wet prairie, oak woodland and savannah. The Long Tom River and its tributaries are home to three life histories of the native Willamette Coastal Cutthroat trout (resident, fluvial, adfluvial), the anadromous Pacific lamprey, resident brook lamprey and other native aquatic species. The lower river provides winter rearing habitat for juvenile Spring Chinook and

has hundreds of acres of historic floodplain prioritized by Hulse and Gregory for high ecological value and low social constraints.

The Long Tom Watershed drains 410 square miles of land at the southern end of the Willamette Valley. The headwaters of the Long Tom originate on the eastern side of the Coast Range and flow south through forested hills and small farms until reaching Noti where the river veers east near its confluence with Elk and Noti Creek. Coyote Creek, which drains the southern portion of the basin, and upper Amazon Creek, which drains the eastern portion, both merge with the upper Long Tom near what is now Fern Ridge Reservoir. The lower Long Tom starts at the spillway of the reservoir and flows north approximately 25 miles before its confluence with the Willamette River. Bear and Ferguson Creek, which drain from the Coast Range, and lower Amazon Creek are the major tributaries entering the lower Long Tom River.

The Long Tom Watershed contains four ecoregions: Valley Foothills, Mid-Coastal Sedimentary, Prairie Terraces and Willamette River and Tributaries Gallery Forest. The Valley Foothills and Mid-coastal Sedimentary Ecoregions are within the foothills of the Coast Range. Near headwaters, stream channels are confined within steep, narrow valleys, becoming more sinuous downstream where the valleys widen. The underlying geology is mostly sedimentary rock with some igneous rock. The combination of soft sedimentary rock and relatively high precipitation rates contributes to higher erosion rates. Native vegetation in these ecoregions includes western hemlock, western red cedar, Douglas fir, grand fir, big leaf maple, and red alder.

The Prairie Terraces Ecoregion covers most of the low gradient valley lands except for the Long Tom River north of Monroe, which is part of the Willamette River and Tributaries Gallery Forest Ecoregion. Historically, streams in these regions meandered across the valley floor and larger streams were deeply entrenched in the thick sedimentary clay soils deposited by the Missoula floods thousands of years ago. The native vegetation within the Prairie Terraces Ecoregion includes white oak, ash, and a variety of shrubs, grasses, sedges, rushes, and forbs. Vegetation of the Willamette River Gallery Forest includes cottonwood, alder, ash, bigleaf maple and Douglas fir.

Most of the water use in the watershed is from surface water, and a large percentage of this is stored in Fern Ridge Reservoir and other small, private reservoirs and ponds around the watershed. Approximately 98% of water rights are used for irrigation of crops and pastures, 1.5% is used for industrial purposes, and the remaining fraction goes to rural residential landowners. Of the percentage of water rights used for irrigation, 67% is used in the lower Long Tom and lower Amazon sub-watersheds where farmers have access to water stored in Fern Ridge Reservoir. Monroe, Junction City, and Veneta acquire their drinking water from municipal wells, although the City of Monroe recently requested a permit to withdraw water from the Long Tom as a secondary drinking water source. There are no instream water rights in the Long Tom Watershed. This means that no minimum flow is required for the protection of fish and

other aquatic organisms. Typically, this has not led to streams going completely dry in the summer, but water withdrawals appear to have had an increasingly significant impact on summer water levels.

The Long Tom Watershed is home to a variety of fish and wildlife that rely on its network of streams, lakes and wetlands. Some of these species, particularly native fish, are particularly sensitive to water quality conditions such as water temperature, dissolved oxygen, and sediment levels. Native fish include cutthroat trout, Pacific lamprey, Western brook lamprey, paiute sculpin, riffle sculpin, torrent sculpin, reticulate sculpin, redside shiner, and mountain whitefish (BLM,1998 and Thieman, 2000). In addition, Native amphibian species that are sensitive to poor water quality include red legged frog, southern seep salamander, and tailed frog. Local fish biologists consider the Long Tom River below Monroe as important winter rearing habitat for juvenile Spring Chinook (Taylor, Pers.comm). Currently, no fish species that spawn in the Long Tom Watershed are on the federal list of Threatened and Endangered Species. Historically, Oregon chub inhabited the watershed, and this species is currently listed. It is possible that Juvenile Winter steelhead also use the lower Long Tom River for winter rearing (ODFW, 1990).

Life histories and habitat requirements for native fish species

Cutthroat Trout – There are 3 distinct life histories of coastal cutthroat trout (*Oncorhyncus clarki clarki)* in the Long Tom Watershed, described below. All require cool water with high levels of dissolved oxygen. They spawn in $1^{st}/2^{nd}$ order streams with substrate 0.25-2 inches in diameter (Scott & Crossman 1973). They also require complex instream habitat with abundant cover (e.g. LWD, undercut banks, boulders, deep water, or surface turbulence) to help them avoid predators. Cutthroat trout are carnivorous, feeding on macroinvertebrates and smaller fishes.

- Resident – Resident cutthroat live their entire lives in relatively small stretches of streams (Aho 1977). They may migrate between tributaries in headwater systems in search of appropriate spawning habitat or to locate more abundant food or habitat resources. Resident cutthroat are found in Bear, Coyote, and Ferguson Creeks.
- Fluvial – There is a fluvial population of cutthroat trout that spends most of the year in the Willamette River and migrates into the Ferguson and Bear Creek sub-basins to spawn sometime between late fall and early summer (Hooton 1997). They are blocked from migrating to the upper watershed, including Coyote Creek, by Fern Ridge Dam. The migrations of fluvial cutthroat trout in the Long Tom River basin are poorly understood and could greatly benefit from a telemetry project to characterize the timing and specific locations of spawning activities.
- Adfluvial – Adfluvial cutthroat trout in the Long Tom Watershed inhabit Fern Ridge Reservoir for parts of the year before migrating upstream into tributaries such as Coyote Creek or the upper Long Tom River in late July or early August to spawn

(Moring and Youker 1977). Further detail on this migration is poorly known and would also benefit from telemetry.

Cutthroat trout from the Long Tom subbasin have been noted for their unusual ability to survive in warm water (Hutchison et al. 1966a) and their unusual silvery, "sea-run" coloration (Moring and Youker 1979).

Spring Chinook Salmon – Juvenile spring Chinook (*Oncorhyncus tshawytscha),* part of the upper Willamette ESU, use the Long Tom River below Monroe for winter rearing habitat. (Taylor, pers. comm.). There is a drop structure that is currently impassable to juvenile fish at Monroe. It is unclear how much more of the Long Tom River or its tributaries the Chinook would utilize if they could navigate or bypass this barrier.

Pacific Lamprey – Surveys performed by the BLM in 1998 found Pacific Lamprey (*Lampetra tridentate)* in both Bear and Ferguson sub-watersheds. Pacific Lamprey have a very unique life history; they spend their adult lives in the ocean living as parasites on larger fish before returning to freshwater to spawn. They have similar spawning requirements as cutthroat in terms of substrate size (~1 inch diameter; Stone 2006). Larvae are hatched 1-2 weeks after spawning with warmer water temperatures shortening incubation time (Morrow 1980). The larvae then burrow into soft sediments and feed on decaying organic matter. They stay in similar sediments for 3-6 years, only occasionally moving to different locations before migrating out to the ocean and adopting their adult parasitic lifestyle.

Limiting ecological conditions: what are they and how were they determined

There are numerous ecological conditions that are limiting factors to the overall health of the Long Tom Watershed. These have become the focus of the Council's work in recent years and represent the basis for our long-term monitoring and assessment efforts. The four primary limiting factors below were originally identified by the Long Tom Watershed Assessment (Thieman, 2000), then refined to match the Draft Willamette Sub-basin Plan (NWPCC, 2004), and finally chosen by the Technical Team and Council staff due to the likelihood that restoration activities would improve the situation.

Fish Passage Barriers limit access to habitat and refuge areas - Undersized, improperly installed culverts and dams across the watershed have reduced access to historic spawning and rearing areas for both Cutthroat Trout and Spring Chinook. Spawning and rearing habitat for fluvial cutthroat trout moving between the Willamette and Long Tom Rivers has been reduced by 70% due to lack of fish passage at Fern Ridge dam and check dams along the lower Long Tom River. Winter rearing habitat for juvenile Spring Chinook has been further reduced because it appears that they cannot pass the fish ladder at Monroe which is 10 miles upstream of the Long Tom's confluence with the Willamette. Barriers have negatively affected productivity of all life-stages of resident Cutthroat, which need to move up and down the system in response to seasonal and life cycle changes. Specifically, trout need to reach the upper portions of the watershed to

spawn in gravel-bottomed streams between November and May, and then again to find cool water in late summer.

Water Quality and Riparian Zone Conditions are degraded- Documented water quality problems in the Long Tom Watershed include: 1) high summer water temperatures and low dissolved oxygen levels in most streams within the mid and lower portions of the watershed, 2) high *E. coli* levels in the upper Amazon, Ferguson, and Bear Creek basins, 3) high nutrient levels in streams running through the urban and heavily irrigated agricultural lands, and 4) high turbidity levels in the Long Tom River below Fern Ridge Reservoir, portions of Coyote Creek, and upper Amazon Creek. The Long Tom River and its tributaries are included in the recent Willamette Basin TMDL developed for temperature, bacteria, and mercury. 5) A Groundwater Management Area was designated for nitrate in the Southern Willamette Valley, which includes Monroe and Junction City in the Council's area.

High water temperature and low dissolved oxygen are likely the primary limiting factors for summer rearing of cutthroat trout in the watershed. This is coupled with many passage barriers that prevent trout from moving farther upstream into cooler water during the summer. Loss of riparian zone trees and shrubs has led to insufficient shade and bank stability and has significantly contributed to the high temperatures. Along many mid to low elevation streams, grazing in riparian areas and the removal of woody vegetation for pasture or farming has kept many sections unshaded. Fern Ridge Reservoir has a significant impact on summer temperatures in the lower Long Tom River. The reservoir covers 9,300 acres with an average depth of 4-6 feet, creating a heat sink during the summer when it is used for boating and irrigation. Combined with a lack of downstream shade this makes the lower Long Tom uninhabitable for cutthroat trout in summer and has a substantial impact on temperatures in the Willamette. The shallow reservoir also contributes turbidity from wind and wave action.

The Hydrologic Regime is altered in the lower part of the watershed, and Instream Habitat and Wetlands have been reduced in quality and extent - Re-routing, straightening, and subsequent down-cutting of many valley bottom streams has disconnected streams from their floodplains, leading to greater scouring of channel bottoms during flood events and less deposition of gravel and fine sediment. Wetland prairie historically covered an estimated 34,500 acres in the Long Tom Watershed. Over the past 150 years these wetlands have been converted and filled (which reduces flooding and draining functions), overgrown by wetland trees and shrubs due to fire suppression, or altered to other wetland types. Today there are approximately 1,000 acres of remnant wetland prairie in the Long Tom Watershed, approximately 200 of which are in the West Eugene Wetlands. Significantly, the wetland acreage in the Long Tom probably represents more than half of what exists in the entire Willamette Valley

today. This network of wetlands provides an important hub for restoring a connected matrix of wet prairie, and is considered an anchor area in the USFWS Recovery Plan for this habitat. Perennial oxbow ponds and slow-moving backwaters were much more common historically in the watershed. Many were filled for farming, and the meandering paths of lowland streams were straightened to provide quicker evacuation of high flows. These development patterns have reduced habitat for Oregon chub (historically present), Western Pond Turtle, and Red-legged Frog, and others.

Upland Habitats are threatened in extent and quality- Upland prairie and oak savanna are the rarest habitat types in the Long Tom Watershed and were historically a significant component here and in the Willamette Valley. Oregon white oak savanna is among the 21 most endangered ecosystems in the U.S (USGS, 1995). The loss of this habitat type is mainly due to fire suppression, which has allowed shrubs, trees, and non-native invasive species to colonize these sites. Conversion to urban and agricultural land sometimes preserves the large oaks but significantly changes the understory community. Only 1% of these habitats remain in the Valley, and experts indicate a majority remains in the Long Tom on both public and private land. Approximately 200 species depend wholly or partially on oak habitat or upland prairie, including 45 species designated as "at-risk" by USFWS or ODFW. An estimated 75-90% of these at-risk species occur in the Long Tom, reflecting a significant conservation opportunity. Oak woodland was also widespread in the watershed historically, covering much of the Coast Range foothills. A significant amount of these woodlands have been lost by conversion or invasion as well. Oak woodlands provide habitat for a particularly diverse assemblage of species such as Acorn Woodpecker, Chipping Sparrow, Western Wood-pewee, Whitebreasted Nuthatch, Sharptail Snake, and others.

Watershed scale context and interdependency of proposed program
How will the proposed work reinforce restoration efforts and goals across the larger Willamette, and how are conditions across the larger Willamette integral to achieving your restoration goals.

The Long Tom Watershed and the program we are proposing represents a unique laboratory for restoration in the Willamette Basin and will likely have both broad-level and specific applications at the basin scale for the following reasons:

- The Long Tom Watershed is a replica of the Willamette Basin in its diversity of ecoregions, land use, and land ownership. The large percentage of private land mirrors the challenge of private land restoration throughout the basin.
- The threats and challenges facing the Long Tom River watershed echo that of the Willamette Basin, chief among them human population growth and urban-rural interfaces such as where Eugene and small but growing towns abut productive rural areas.

- The Coyote, Bear and Ferguson Creek tributaries selected for the program are templates for similar tributaries in the Willamette. Our restoration monitoring results will be especially applicable for west side tributaries.
- The Long Tom contains low-gradient, high-productivity areas for winter rearing of juvenile Spring Chinook and fluvial cutthroat trout in the lower portion of the watershed. Bear and Ferguson Creek are just upstream of this zone, which contain potential spawning habitat in their headwaters.
- When water quality conditions on the mainstem Willamette are poor, Ferguson and Bear Creek have the potential to offer summer refuge.
- Although not well studied, we suspect that the Long Tom may be important habitat for Pacific lamprey.
- The Long Tom Watershed is an important anchor for the recovery of several species in the Willamette Valley that are dependent on upland prairie, oak savanna, and wet prairie (e.g., Willamette daisy, Kincaid's lupine, Bradshaw's lomatium, Fender's blue butterfly)

Bringing this approach and involvement to the basin would be the final link to designing and undertaking the evaluation of ecological effects of restoration. The Council seeks to share this learning regionally and beyond and has a history of doing so.

Watershed maps

Please see maps and photos for each proposed subwatershed attached to this proposal.

Watershed Council and Partnership History

Watershed Council background

Council history and philosophy. The Long Tom Watershed Council formed in 1997, was formally recognized by the Commissioners of Benton and Lane County in 1998 and has been in operation for over 11 years. A historical timeline, mission and goals and activity flowchart are provided as attachments to this proposal. Tag lines like "action through understanding" make it clear the Council believes that once people have information and support they will act for watershed health. There is a long-standing spirit of two-way communication and learning and there has never been any blame or finger-pointing. The stated spirit behind the Subwatershed Enhancement Program echoes these principles:

> *People can think about the whole watershed once in a while, but most easily understand their small creek basin and how to act on their own property. We are thankful for each person who is willing to take a step toward making their creek healthier. If there is any singling out, it is to say thank you.*

Currently, involved members want to increase the pace, make significant progress, and measure it. They want room for creative approaches, entrepreneurial ideas e.g. – scientists and farmers talking about methods to approach water and wildlife in an agricultural setting or ranchers who've done a project making a video to tell that story to fellow ranchers. They want to highlight watershed industry, see trout back in the streams, and do their part to achieve water quality. They want to see what we can do next.

Staff and Board membership. The Board is a subset of the larger Council. Board members (12-20) are elected to represent the diversity of interests in the watershed. The Board meets monthly to address the fiscal and business obligations of the Council and to discuss issues, make policies, and take action. Standing committees include: Executive, Personnel, and Nominating. The Executive Committee is comprised of the 5 Officers: President, Vice –President, Treasurer, Corporate Secretary, and Recording Secretary. They are authorized to conduct business in-between Board meetings but cannot hire/fire the Executive Director or dissolve the corporation. The Personnel Committee is comprised of members of the Board and reviews the Executive Director. The Nominating Committee operates annually to recruit and train new Board members, and ensure diversity on the Board. Other Ad-Hoc committees form and dissolve as needed for education projects, the annual meeting, and other endeavors.

The Technical Team is comprised of one Board member and staff from agencies, municipalities and corporations. They recommend and adjust restoration priorities, review and prioritize projects, and provide technical assistance for projects. They work closely with and are supported by Council staff who also design and implement projects and provide broad technical support and education to landowners. Please find the biographies for Steering Committee (a.k.a. Board of Directors), as well as the Technical Team Profile and selected additional Technical Team member biographies, attached to this proposal.

Council staffing consists of a full-time Executive Director, two full -time employees in the restoration program, one employee focused on stewardship, outreach and education, and one part-time employee in charge of fiscal and administrative duties. These staff members are committed to the quality and longevity of the Council's programs and bring a strong scientific and results-based approach to their work. Please find biographies for these individuals attached to this proposal.

Describe the community support/engagement that allows the council to address issues at a broad, watershed scale. Provide specific evidence of community support for restoration. The process of long-term watershed restoration can only be a product of significant community engagement and as such we have taken a long-term approach to

our work in the last 10 years. This has been based in a philosophy of building the reputation of and trust in the council, collecting scientifically rigorous but meaningful data and sharing results, taking measured action based on priorities and evaluating progress toward long-term goals.

What is unique about the Long Tom Watershed is the fabric of the watershed council community – its diversity, strength and commitment. The strength is in the open-minded, common-sense, and science-based approach that our diverse watershed sectors have come to embrace in the last ten years. Commitment shows in collaborative behavior and donations, and when project landowners conduct Council tours and give slideshows, or testify to why they appreciate monitoring data and have adjusted their management practices. Diversity shows when community members from every sector attend council meetings, tours and panel discussions – the database and invitation list is over 900 people that are included by request only. At the Annual Meeting and Celebration, 70-110 people self-select and attend from every sector to learn, laugh, thank each other and hear about the Council's accomplishments and next year's goals. In voting for the Board, paying for their ticket and celebrating project results they affirm the worth of the restoration goals and actions to the community.

Deeper involvement and traction in key areas comes via the Sub-watershed Enhancement Program. Specific invitations are issued and meetings co-hosted in landowner living rooms. After data sharing, sub-watershed restoration goals and objectives are discussed and tours are held to explore and select projects. The Council has conducted these in Ferguson and Upper Long Tom sub-watersheds with multiple restoration actions resulting, and has funding for Bear and Coyote Creek this coming year. These contacts and momentum in key areas will allow us to address increasingly important sites and address broader-scale functions.

Commitment from major sectors of the watershed is enhanced by the dedication of staff, Board members, and formal partnerships. Our three core staff members have both physical and social science backgrounds. Board members are elected, with each slate balanced for diversity in geography and perspective, and rotate every three years. 62 alumni in the community can discuss the need for watershed restoration intelligently, communicate to the Council what they hear, and testify to the inclusiveness, fairness, and quality data the Council operates with. We believe these elements combine to create a social traction and trust essential to address challenges, commit to larger solutions, and sustain monitoring, learning and management over the long term.

Perhaps the ultimate measure of support is investment. In the past 10 years, $416,000 local cash and $1.3 million in-kind match has leveraged $2.2 million grant investment from public and private sources. This investment has been utilized to support

restoration work of many different kinds, with a diversity of landowners and on a diversity of habitats and land types. The Council uses its biennial support proposal to communicate restoration goals and plans and gain support pledges from private individuals, organizations, and industry such as Lane County Small Woodland Owners, Oregon Country Fair, Monroe Telephone Company and SureCrop Farm Service. Support is also gained from public entities, often in formal agreements for Council partnership such as those with BLM, Benton and Lane Counties, East Lane SWCD, City of Eugene, and US Army Corps. The Council's membership in the West Eugene Wetlands Partnership completes a local collaboration with some aforementioned organizations plus McKenzie River Trust, USFWS, Willamette Resource and Education Network (WREN), and Oregon Youth Conservation Corps.

What critical skills/tools/attributes will (or does) the council use to effect a long-term, adaptive, and watershed-scale restoration strategy?

The Long Tom Watershed Council will use the following skills and attributes to effect the proposed strategy:

- commitment and skills of our Board, alumni, members
- engagement, skills and funding of our partners
- interdisciplinary staff
- diverse and locally-knowledgable Technical Team
- ideas and willing partnership of land owners and managers
- GIS
- Scientific finding and monitoring data
- forward-thinking approach, and
- ability to sustain funds for community-based watershed restoration.

Long-term - To address the long-term nature of watershed restoration the Council recognizes it takes both education to update stewardship practices and affect the vastness of the landscape challenge at hand, and active restoration projects to change conditions and demonstrate feasibility and methodology. Within the Model Watershed Program, the Council will increasingly be able to:

- seek and work with landowners who can make long-term commitments as appropriate to restoration projects,
- employ long-term monitoring including project effectiveness,
- focus on long-term partnerships and synergies with fellow organizations,
- leverage increasingly significant funding in diversity and amount, and
- address increasingly complex issues that threaten watershed function.

Watershed Scale - The Council's attempts to address restoration needs across the entire watershed ecosystem shows in the following approaches:

- Focus on assessment and monitoring before action,
- Strong understanding of local priorities in a regional context including discussions with regional entities to correctly tier priorities and engage partnerships (e.g. fish passage barriers prioritized across Lane County in collaboration with neighboring watersheds),
- Wide range of project objectives and types undertaken to address watershed processes and habitats representing the local ecosystem (e.g. upland, instream and riparian work),
- Use of partners and interdisciplinary technical team in evaluating proposed actions,
- Understanding the importance of protection, reconnection, and restoring natural process and function over site-specific habitat,
- Collection and sharing of pre and post project results with a mind for how that information can be used to assess issues at larger scales,
- Building connections regionally to be able to address larger-scale issues such as floodplain restoration and conservation in the future, and
- Problem solving that involves landowners and managers in watershed-level thinking.

In our Restoration Priorities the Council addresses limiting factors by describing priority functions and habitats in a spatially explicit manner. Because the sources of funding remain largely limited to project-specific action, we think about the ecological objectives for each with a watershed perspective and, when feasible, establish monitoring parameters that can be compared.

Adaptive - The Council adjusts watershed restoration strategies to the best of our current ability based on project results, current science, and learning shared by other practitioners, scientists and landowners. We could realize significantly more of the potential to do so in a partnership with BEF due the increased capacity in dollars and scientific direction that would bring. At some sites we have collected pre and post project data including: water quality, stream habitat, avian surveys, amphibian egg masses, vegetation growth, and photo-monitoring. We have an offer from Army Corps to partner on a cutthroat trout tagging and tracking project, and are also interested in assessing lamprey populations. However, these endeavors exceed our current staff and funding capacity. A BEF partnership would help us capitalize on these types of opportunities. We often phase projects in order to review initial results and apply learning as soon as possible. As an example, we are working with the City of Eugene to restore upland prairie and oak savanna. Results of weed eradication techniques from

the first and second phase of the project are allowing us to restore more ground with less money in the proposed third phase. We often apply for technical assistance funds before conducting more complex projects in order to be thorough in our approach. Our record of grant awards (over 90%) is testament to this thorough nature in selecting projects and methodologies.

Describe any partnerships that will enhance your efforts to successfully design and sustain this 10 year program -

Partnerships have and will continue to be one of the driving forces behind successful long-term watershed restoration in the Long Tom Watershed. Many organizations are committed to the similar biological objectives in the watershed and are actively partnering with the Council to achieve these. Partner organizations report that the Long Tom Watershed Council is important to their work for some key reasons:

- The Council expands possible approaches to private landowners via community base nature and reputation
- The nature and pedigree of the Council's board membership and alumni
- The Council increases base of people educated in watershed topics and serves as "feeder" for private landowners into the conservation system (e.g. potential landowner pool for T&E work)
- The Council's staff are a source of creativity, skill, grant funding

Several partners will be key to the specific sub-watersheds outlined in this proposal. Specific partners for the model watershed areas are outlined here:

<u>Coyote Creek/Spencer Creek/WEW Portfolio</u>

- The Nature Conservancy - has included a portion of Coyote Creek in one of their portfolio sites for oak habitat, stream and wetland conservation and enhancement. The Long Tom WS Council participated in developing the Conservation Action Plan for this portfolio site, brought unique aquatic knowledge, and will be a partner in helping implement the plan.
- US Fish and Wildlife Service – Active partner in development of restoration and enhancement projects.
- Oregon Department of Fish and Wildlife – Active partner in development of restoration and enhancement projects.
- National Fish and Wildlife Foundation – partner in mission and funding support

<u>Bear Creek and Ferguson Creek</u>

- US Fish and Wildlife Service – Active partner in development of restoration and enhancement projects.
- Oregon Department of Fish and Wildlife – Active partner in development of restoration and enhancement projects.

When considering the partnership of these entities it is important to understand that their commitment to the Long Tom Watershed and Community extends beyond their significant involvement with the Long Tom Watershed Council. This enables a broad and deep strength for the efforts in the area, which many capabilities for leadership, creativity, and production capacity. For example, here is a sampling of the biological commitment of other organizations to the area:

- USFWS – recovery of wetland, prairie, oak species
- ACE – shading, floodplain improvement
- City – habitats, shading, open space and rec in urban area and surrounds
- TNC – West Eugene/ Spencer Ck Conservation Action Plan
- LCOG, City, - Ridgeline Open Space Vision and Action Plan
- West Eugene Wetlands and public lands - BLM, City, TNCs + 7 others incl. MRT
- DEQ, cities – TMDL plans
- Upper Willamette: Synthesis area, ODFW CS, OWEB SIP and Federal floodplain focus, etc.

<u>Please describe how the opportunity to embark on a 10 year model watershed partnership is fundamental to the council's vision, goals and/or philosophy.</u>

In its vision and goals, the Council discusses sustainable systems and populations. The length, scope and approach of this Meyer/BEF/Council partnership is the best way to make a solid attempt at those high-level goals and demonstrate what can be done. It is a big undertaking and the Council is deeply engaged with this idea for some of the reasons stated below:

- The Long Tom Watershed is a tough place to work actually, due to the fairly conservative nature of the community and sheer number and amount of land parcels in private hands. Perhaps everyone agrees that the Council, due to its reputation thus far, and its partners, stand the best chance that's come along to make headway.
- Conditions at this time are ripe in terms of council experience and landowner connections, partner skill and interest, existing plans, funding and focus. We feel it's important to make a solid attempt at this time and see what can be done.
- Importantly, we've been building momentum and are really game to take this on right now.
- As opposed to a sole focus on biology, this area brings along with biological importance a strong theme of social change and of engagement with communities of interest. That is the Council's approach as well. LTWC is making real change happen in the minds of key stakeholders in terms of what restoration and environmental stewardship mean and how they can be practiced.
- The Council has always been open to sharing its "lessons learned".

Landowners want this partnership and expect it to continue participation and spread the word to increase the acceptance, speed, quantity and quality of restoration. This partnership aligns

directly with staff goals to get to the next level of effort and strategic implementation – this is what will help them stay committed to this watershed and community – the potential to make an impact.

Science

Completed scientific assessments used to evaluate or assess any or all of the following: basin-wide ecological conditions, lifecycle needs of target species, limiting conditions, restoration priorities.

The following are assessments used by Council staff and Technical Team members to inform their thinking for restoration in the Long Tom Watershed. The list is not exhaustive.

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Summary of publications & assessments produced by the Long Tom Watershed Council

- Long Tom Watershed Assessment (2000)
- Long Tom Stream Health and Water Quality Report (2001, 2003, 2005, 2007)

- Long Tom Restoration Priorities for Aquatic and Terrestrial areas (2005, update 2009 in progress)
- LTWC Subwatershed Profiles for 10 sub-basins (2001, various updates 2005 - 2008)
- LTWC Watershed Action Plan and Council Work Plan (1999, 2001, 2003, 2005, 2007, 2009)
- Long Tom Fish Barrier Inventory (2009, in progress)

Describe the council's commitment to use a scientific basis to guide ongoing restoration planning and action.

The Council has taken a methodical and scientific approach to prioritizing and guiding restoration actions over the past 8 years, using information from the watershed assessment, monitoring data and local experts. The inter-disciplinary Technical Team and Restoration and Monitoring Director lead the effort in restoration prioritization and project selection from a chiefly ecological standpoint.

After completing a watershed assessment in 2000, the Council began educational programs based on the findings. Next we conducted a water quality monitoring program to collect baseline data from 1999 to 2006. Results were analyzed and reported every two years which allowed for refinement of objectives and sampling strategy. An assessment of stream health using macroinvertebrate data from 90 randomly selected sites throughout the watershed was conducted from 2004 to 2006.

The Technical Team includes scientists from USFS PNW Research Station, EPA, UO, DEQ, ODFW, and other entities mentioned above. Sub-committees meet to provide assistance with data analysis and review monitoring findings, develop restoration objectives, and provide input on project design and implementation.

The Council has identified priority habitats to restore, geographically specific areas for water quality improvement, and developed and implemented over 30 restoration projects. Currently, we are conducting a fish barrier assessment to prioritize habitat reconnection projects in the basin. Involving landowners in data collection and review and presenting draft findings for their consideration has built significant trust in the Council, its data quality, and its intentions.
Our criteria for prioritizing and seeking funding for a project include: relative ecological impact of project (e.g., location in watershed; project size), number of habitat and water quality objectives addressed, likelihood of restoration success, landowner commitment to long-term goals and match, and potential for a project to influence neighboring landowners.

Describe the councils (and or community's) commitment/desire to adapt and improve strategies based on measured results.

The Council adjusts watershed restoration strategies to the best of our current ability based on project results, current science, and learning shared by other practitioners, scientists and landowners. At some sites we have collected pre and post project data including: water quality, stream habitat, avian surveys, amphibian egg masses, vegetation growth, and repeat photo points. We have an offer from Army Corps to partner on a cutthroat trout tagging and tracking project, and are also interested in assessing lamprey populations. However, these endeavors exceed our current staff and funding capacity. We believe a Meyer/BEF partnership would help capitalize on these types of opportunities and that bringing this approach and involvement to the basin would be the final link to designing and undertaking the evaluation of ecological effects of restoration. The Council would like to conduct and utilize this monitoring in way that uses the weight of evidence to decide strategy and demonstrate effectiveness, while not waiting for perfect data in a complex system that may not provide it. The Council seeks to share the lessons learned regionally and beyond and has a long track record of doing so.

Problem Definition and Justification

Describe challenges/conditions that currently limit your ability to develop and implement a long-term, scientific, results-based approach

Broader challenges within the local restoration and watershed council environment -- The urge for action in the face of significant ecological degradation is great, and the specter that funds may be inefficiently spent looms large. So funding to approach the problem as holistically as it was created, and to sort out if progress is being made, seems limited from every angle. Monitoring funds seem to be important but not urgent – while action is so satisfying to the human need to "do something". Funding for people is called "operations" and the term has taken on a dismissive tone– so that a UO study by Mike Hibbard in 2006 found that council staff have an average 18-month turnover. Project effectiveness monitoring is hard to achieve scientifically, even with the funding, let alone with the coordination, time and thoroughness to get the answers necessary to learn from results and adapt the next actions appropriately. Science is fairly disconnected from land and water management and restoration action because science is as complex as the natural world itself, results and publications move slowly, and scientists are asked to speak to policy makers and students in formalized settings, not to active land owners in the field making decisions with equipment, inputs, animals, land and water allocation. Finally, our heritage of natural resources management – command and control, tragedy of the commons, and crisis-orientation – as well as human nature itself - leads us to pursue the most threatening issues at the time, or the ones we chose to recognize. For the Long Tom Watershed, this has resulted in significant vulnerability due to inattention such as no

instream water rights and no prioritized funding because of the lack of spawning habitat for commercially significant threatened and endangered fish species.

Organization-specific challenges – The staffing capacity of the Long Tom Watershed Council has remained steady but small. This was intentional as some important individuals in the community wanted to ensure the Council did not take a radical one-size-fits-all, blame-intensive approach. Some was just lack of funding and sheer frugality married with over-achieving sensibilities. At this point however, our knowledge of what needs to be done and our capability to achieve it using our skills and contacts far outstrips our organizational capacity to do it if we want to hang in there for the long term and really see this effort through to a level where impact is clear. Chiefly this is in the ability to stop scrambling for each and every grant and to be more thorough, integrate what we're doing with the outcomes we see from it, retain quality staff and board members, and maximize their contacts and knowledge to integrate funding, jobs, social capital, into the restoration effort. We've piloted endeavors on all these goals so we know we likely are able to achieve it – we've just never had a chance to approach it programmatically and thoroughly.

How does this limit the effectiveness of your restoration work

Our restoration work will be more effective if we can learn from projects that have been implemented here and elsewhere. This would include monitoring and upgrading our existing projects, having time for technical staff to be part of restoration practitioners' peer-learning communities and attend conferences that blend new research on achieving conservation strategically with reports on field methods, contracting, and other tactical challenges. The Council also wishes to review progress periodically and more thoroughly in order to spot gaps, potential efficiencies, learn from mistakes, and address the long-term stewardship and protection needs at each site.

Explain the Council's intent to incorporate the following into your proposed model watershed restoration program:

> ***Watershed-scale strategy*** – Our intent is based on our history. From the beginning, the Council chose to strategize at a watershed scale and complete a Watershed Assessment and begin a Water Quality Monitoring Program before conducting any projects. This does not mean that there were not obvious improvements that could be made for water quality and habitat, and many participants urged the Council toward that path. However a more data-intensive and thoughtful process emerged. The Council managed not to stray too far into the endless unknowns that could beset an organization charged with achieving restoration in the context of diverse stakeholder consensus approval and community involvement on a shoestring budget. The Council's first projects were fairly opportunistic, yet they were part of other entities' priorities. The Council was clear that

people needed to see demonstration projects completed in order to build and leverage our reputation to achieve larger projects and impact conditions at the watershed scale. The Council is excited to collaborate with two foundations who will take the big picture view yet value and support the capacity of work done locally. This combination is one we can continue to learn from and use to adapt to the many challenges ahead.

Monitoring-intensive approach that evaluates outcomes - The Long Tom Watershed Council desires to monitor and evaluate the ecological effects of restoration actions and overall watershed condition over the long-term and has put in place the baseline information and trajectory of learning crucial to being able to do so. Baseline monitoring data include macroinvertebrate results, water chemistry and physical stream habitat. The next round of monitoring should enable the first trend analysis. In terms of community traction, it is interesting to note how effectiveness monitoring and adaptive management are ways to maintain credibility with our more conservative landowners who can understand the subtlety and complexity of ecosystems and restoration more than not setting goals and tracking them. Further, with a proximate and growing human population (Veneta, Junction City, Eugene) it could be beneficial to use monitoring, such as a regular state of the watershed report, to inform development and land use management decisions toward a goal of having humans and healthy ecosystems coexist. Our effort to build toward full watershed ecosystem monitoring includes:

- attending seminars on the subject,
- learning the TNC CAP method of identifying threats, establishing targets, tiering actions, and identifying monitoring and feedback loops, and
- regularly working with a suite of practitioner and science partners, many of whom could be important to such an effort.

Adaptive management/results-based approach - The Council intends to fortify and increase its already existing results-based approach by adopting this model watershed approach and program. Our inclination toward adaptive management is demonstrated in the way we've collected monitoring data and used it in developing our Restoration Priorities for both aquatic and terrestrial ecosystems, our 7-year baseline of monitoring such that the next round of data collection will create trend lines, our incorporation of new plans and information as it comes out (recovery and conservation strategies), and the type of practical-minded individuals (namely, farmers and ranchers) that now choose to attempt restoration work with the Council as their lead partner and supporter.

Demonstrate accountability, results to stakeholders, supporters, funders – The Council has a long history of transparency, inclusiveness and information sharing, whether it be with financial reports, deliberations and decision-making, or draft results of our watershed assessment. We will share reports, give presentations, and make news as

appropriate to the goals of the watershed, the program, and the individuals and organizations involved.

Ensure sustained application of integrated, scientific, and results-based strategy – to the extent such insurance is possible, the Long Tom Watershed Council has built processes toward the sustained application of work like this and intends to continue and expand that commitment and practice. This is evidenced by:

- Sharing of data so that other organizations and individuals have the information we have and can work in parallel or in place of us
- Retaining staff that represent a range of talents and skills – an integrated and interdisciplinary team
- Hiring new staff with an eye on succession so that skilled people who have the relationships and knowledge needed to carry on the work would be present even if the Council's principle staff were not here
- The inclusion of an outstanding Technical Team from a diversity of organizations and disciplines such that project knowledge and funding possibilities flow freely
- Allowing staff creativity and flexibility, and endeavoring to pay them a competitive salary and benefits package so that they remain dedicated to the Long Tom River watershed as long as possible in their careers
- Our consistent building and maintenance of a network of former Steering Committee and Council members, as well as key landowners and land managers, that hold knowledge and watch social and scientific trends so that we can anticipate, keep pace with and sometimes be the agent for change that affects the watershed
- Our informal "Idea Bank" that includes things like a Watershed Summit that gathers principles in watershed management and restoration in the Long Tom River basin for peer-learning, challenging each other to do more in their area of influence, and to find synergies and coordinate workplans, budgeting, policy approaches. A Watershed Summit approach includes a parallel for private landowners and citizens to gather and learn directly the intent, values, goals and results behind the work, get to know the people doing it better, and challenge themselves to take another step from where they are now. An example of this event is our Water Quality Monitoring Summit in 2007, and our Annual Celebrations.

One of the greatest challenges will be if the Oregon Watershed Enhancement Board does not retain funding from a reauthorized Measure 66 for Parks and Salmon. The Council is doing its best to diversify and increase its base, and to grow steadily but only when the growth can be sustained. The Council intends to analyze and implement as many new and different funding approaches as it is able. Thus far the number of

funders and amount of funding has increased steadily, and that is in the face of the Long Tom Watershed not being an automatically favored watershed biologically.

Absent support for a long-term, model watershed strategy, please describe the risks that you believe could limit the effectiveness of your work.

Without the support for this model watershed strategy, and this improved approach there are significant risks to the ecological conditions of the Long Tom River Watershed. The lack of an adaptive, science based approach would limit the ability of restoration to truly impact limiting factors. There would be an inability to document change or success due to lack of long term monitoring in which trends became evident, and an inability to notice gaps slipping by uncovered and threats going unanswered.

This strategy is significant for the Long Tom Watershed as much of the restoration funding and attention favors commercial fish species with federal status. As a western Willamette tributary, with many low-lying areas and low-gradient streams, there is a tendency for the Long Tom Watershed to be overlooked for cold spawning streams. Yet the slow moving, cool streams are the bread basket for many aquatic species and home to three life-histories of cutthroat trout. Further, the watershed holds some of the last and best native prairie, wetland and floodplain habitats that are now extremely rare and ever-more critical to the native animals that depend on them.

Proposed Solution – Develop and establish a 10 year model watershed restoration partnership with MMT/BEF:

Describe a long-term restoration vision (goals) and identify primary threats to achieving this vision.

The Long Tom Watershed Council is committed to the vision of:

> *A healthy watershed, including supportive social and economic systems, that together provide the habitat conditions and ecological functions necessary to support excellent water quality and self-sustaining populations of the Long Tom Watershed's native biota, with sustainable economic activity for the whole community.*

Specific goals and threats are detailed in the matrix attached to this proposal. The fundamental basis for these threats stems from a history of landscape alteration without knowledge of or care for historic habitats, an increasing human population, and lack of political will and community engagement. Remedies for this include increased funding for conservation education, restoration projects, and monitoring and adaptive management.

Discuss your proposed long-term, coordinated, and monitoring-intensive strategy that will a) identify priority restoration areas based on completed scientific assessments, b) prioritize long-term restoration actions to address identified limiting conditions, and c) monitor and evaluate outcomes and threats and improve ongoing strategies based on measured results.

The Council's long-term restoration strategy will include: 1) identifying high priority areas for conservation, 2) working to protect these high quality habitats (with McKenzie River Trust and NRCS), 3) reconnecting areas of existing high quality habitat, and 4) restoring ecological functions and habitats at sites where multiple limiting factors can be remedied.
We will identify high priority conservation areas based on our staff and Technical Team's knowledge of the watershed, existing water quality and macroinvertebrate data, proposed monitoring data (e.g., fish IBI scores, upland habitat assessments), and consultation with our partner organizations. High priority conservation sites will continue to be identified through Council education and outreach activities, monitoring projects that have given us access to private lands, and discussion with partner organizations like TNC and USFWS. As an example, in the course of our macroinvertebrate monitoring program we met Ron and Janice Murphy who own 60 acres of former wet and upland prairie, which contain a population of Willamette Daisy. We are currently implementing a restoration project with the Murphys and are facilitating the development of a conservation easement through either MRT or NRCS. Our upcoming fish barrier inventory and future baseline monitoring projects with MMT-BEF will bring us into contact with more private landowners and potential sites for conservation and restoration.

We have identified limiting conditions in the watershed through our water quality monitoring program and watershed assessment. For example, data showing high *E. coli* concentrations and summer water temperatures in Bear and Ferguson Creek have highlighted stream reaches in both of these sub-watersheds that are a priority for excluding livestock from riparian areas and restoring riparian vegetation. As a result, we have targeted these areas for landowner outreach, and have implemented five livestock exclusion/riparian enhancement projects in these sub-watersheds to date. To broaden our understanding of limiting conditions in the watershed, we are proposing to collect additional baseline data on fish, stream flow, riparian zones, oak savanna/upland prairie, wet prairie, and oak woodlands. This will enable us to target additional stream reaches and terrestrial areas for restoration.

Our monitoring approach will include an assessment of watershed-scale and site-specific project effectiveness. Ecological health indicators and targets to evaluate the effect of restoration and conservation actions at a watershed scale are described in the matrices attached to this proposal. Project effectiveness monitoring will occur at some sites to evaluate whether our intended project goals are being met by the specific restoration techniques we are implementing. This may include measurement of water quality parameters, physical habitat, and target species.

The Council uses the following steps to prioritize geographic areas, habitat emphasis, project types, and projects:

Table 1. Identifying and Prioritizing Restoration Efforts.

Step	Based on	Result
Identify priority areas and habitats for conservation and restoration	Ecological data; professional judgment; existing plans	Selected sub-watersheds or areas, and habitat emphasis
Identify potential project areas	Strategic location; potential landowner interest	A set of potential project sites within key areas with landowners willing to collaborate in restoration
Determine restoration potential and likelihood of effect	Considerations such as geomorphology, hydrology, habitat condition, surrounding influences	Refined set of potential sites and project types applicable
Move from possible sites to developing projects for implementation	Considerations such as landowner interest, funds, time constraints, permits	Final selection of projects

Evaluating Individual Projects **-** The Council uses the following principles to evaluate potential projects:

1) Meets Priorities,
2) Acres or stream length affected and benefit to multiple species possible,
3) Proximity of project to high quality habitat or restored land,
4) Likelihood of restoration success in improving habitat and function,
5) Level of landowner interest and capability to implement and steward project,
6) Funding potential,
7) Partnership opportunities,
8) Community support, especially in terms of interest from other potential project landowners, and/or lack of controversy, especially with neighbors,
9) Potential for long term protection of habitat or function,
10) Surrounding threats to project success or longevity, such as from land-use, and
11) Council is most appropriate entity.

<u>Explain your vision for how developing a small model watershed effort in select sub-watersheds can contribute to watershed-wide restoration success in your watershed over the long-term.</u>

Environmental conditions and land uses in the Coyote, Bear, and Ferguson Creek sub-watersheds are similar to the rest of the watershed with the exception of urbanized Upper Amazon Creek. Thus, the lessons we learn about project effectiveness and building community

investment and support can be readily applied to the rest of the watershed. In addition, we have found that landowners are most willing to engage in restoration and conservation when they are presented with credible data. This highlights the importance of monitoring our restoration efforts in the model sub-watersheds *and* sharing the results with the community.

Explain how your approach will demonstrate accountability to watershed council members, funders, stakeholders, and policy makers for time and money invested in restoration.

Our experience in conducting the watershed assessment and water quality monitoring program shows that landowners and funders respect and respond to careful research and monitoring of the watershed. Conducting broad-based and valid project effectiveness monitoring is a crucial next step for our watershed council. An important part of this monitoring approach will be to collect data that resonate and are convincing to a wide audience. For example, while it is important to know the condition and structure of riparian areas and whether stream temperatures meet the state water quality standard, we also need to investigate the status of cutthroat trout in the watershed. In addition, we need to demonstrate that the money we are investing is creating watershed improvements that benefit everyone, not just the private property owners engaged in projects. Finally, an overarching step to demonstrating accountability is effective public communication of the results. Presenting findings at watershed council meetings, to other community organizations, and sharing results in writing and our website will be crucial to the success of this program.

Specific Model Watershed Approach

Describe sub-watersheds selected and why

We chose basins with ecological importance, relationships, momentum, leveraged money, partners with priority work in the area, and with consideration of likelihood of success. We developed initial performance targets and are poised for peer learning and will be transparent in this undertaking

> ***Coyote Creek sub-watershed and adjacent lands in The Nature Conservancy's Spencer Creek/West Eugene Wetlands Portfolio site:*** The objectives here are to increase oak and prairie habitat, stream and floodplain interaction, fish passage, and riparian restoration. Interesting components are the extent of working landscapes (ranch, farm, forest), existing landowner connections, and the development pressure in the area. Leverage potential includes our new NFWF outreach and project development grant, our West Eugene Wetlands partnership expanding to a Rivers to Ridges partnership, and the overlap of McKenzie River Trust conservation priority areas.

Ecological:

- Coyote Creek has a significant amount of oak habitat remaining, and has been identified by the Nature Conservancy as an important area for oak conservation and restoration
- Water quality and quantity have significant room for improvement; particularly for water temperature, dissolved oxygen, and summer stream flow
- The mainstem of Coyote Creek has not been channelized, which means that the river still interacts with its floodplain on a regular basis. This makes stream enhancement more ecologically meaningful because you are dealing with a system that still functions well hydrologically.
- Being near Eugene (and between it and Veneta), this area will likely face significant future development, making it important to restore and protect the existing ecological functions of the basin (e.g., floodplain storage, shade) and build ecological capacity (purchase/solicit donations for instream water rights, reduce stream temperatures, open up fish passage to higher stream reaches)

Community:

- The land use is a mixture of large parcels (200- 400 acres) that have been in the same ownership for many years, and small to mid-size parcels (20 – 40 acres) that are likelier to have newer landowners.
- There is an active grange hall and the Council has this solid contact and many additional contacts in the basin from its macroinvertebrate and culvert survey programs.
- TNC, McKenzie River Trust and City of Eugene all have significant contacts with oak landowners from outreach and monitoring endeavors.

Partners:

- The Nature Conservancy has included a portion of Coyote Creek in one of their portfolio sites for oak habitat, stream and wetland conservation and enhancement. The Long Tom WS Council participated in developing the Conservation Action Plan for this portfolio site, brought unique aquatic knowledge, and will be a partner in helping implement the plan.
- USFWS and ODFW are active partners on many of the restoration and enhancement projects the Council implements
- A Rivers to Ridges partnership is building formally to adapt West Eugene Wetland Partnership model to this area (involving many of the same entities).

Current opportunity:

- The Council has implemented projects at several sites in the basin and plan to build on these projects with neighboring landowners or people with key sites.
- 2 landowner/residents are potential hosts
- NFWF funding is secured for 1 year outreach and project development in this basin.

- Coyote is most compelling due to TNC CAP and development pressure

Bear and Ferguson Creek – neighboring sub-watersheds: The objectives here are to enhance stream and floodplain interaction, restore fish passage, enhance wetlands in particular areas, and improve riparian zones. This leverages the Council's fish barrier assessment project, restoration funding, and builds on multiple projects in neighboring Ferguson Basin and Bear Creek itself.

Ecological:

- Bear Creek has significant potential for wetland conservation and enhancement in its lower and mid-elevations
- Resident cutthroat trout, and potentially fluvial cutts from the Willamette, utilize this basin for winter rearing and spawning habitat.
- Water quality and quantity have significant room for improvement; particularly for water temperature, dissolved oxygen, and bacteria.
- Potential for restoring ecological functions is good (stream temperature, trout habitat); this is also the case for Coyote.
- Bear Creek interacts with its floodplain on a regular basis. This makes stream enhancement more ecologically meaningful because you are dealing with a system that still functions well hydrologically.

Community:

- The community is a mixture of large parcels (200- 400 acres) that have been in the same ownership for many years, and small to mid-size parcels (20 – 40 acres) that are likelier to have newer landowners.
- Council may have even better name recognition here

Partners:

- USFWS and ODFW are active partners on many of the restoration and enhancement projects the Council implements. They have projects of their own, as does NRCS.

Current opportunity:

- NRCS projects need stewardship and the Council could be a Technical Services Provider (TSP) and then utilize the demonstration potential.
- The council has implemented 8 projects in these neighboring basins and plan to build on these projects with neighboring landowners.
- 3 potential co-hosts in basin have been identified (information sharing and project development)

For each focus watershed, please explain how you will or already have established 1) specific measurable restoration objectives and interim benchmarks, 2) restoration hypotheses, 3) long-term timeframes for implementation, 4) proposed monitoring actions necessary to track results and adjust future strategies.

Please see the complete matrices attached to this proposal. The Council will also complete other planning processes with BEF/MMT to address the specifics listed above. The monitoring will be addressed programmatically to some extent, in collaboration with BEF staff and fellow model watersheds. The Council had prepared a table (Table 2) outlining our initial approach and will bring that to the discussion.

Table 2. Initial Monitoring Approach

Objective	Sub-watershed level	Site level / project effectiveness
Oak and prairie habitats	*Acres, connectivity	Physical habitat structure (e.g. woody stems/acre); Herbaceous understory composition (e.g % native cover)
Water quality	*Macroinvertebrates (probabilistic sampling), *Continuous stream temp.	*Continuous stream temperature
Cutthroat trout	Population status	Snorkel surveys before/after certain projects
Stream/floodplain interaction	Summer low flows, winter high flows	Stream cross-sections before/after certain projects
Toxics	Mirror DEQ parameters (organophosphates, heavy metals)	Project implementation monitoring (bioswales, stormwater gardens, etc.)
Riparian cover	*Width of riparian zone	% native cover

Model Watershed Funds as Seed Money

Leveraging partnerships and support. How will 10-year support from MMT/BEF enable you to leverage substantial resources into this effort?

The Meyer/BEF funds are critical and unique. By supporting the fundamental qualities of what is expected in good restoration from a scientific standpoint, and honoring the communities and organizations that have demonstrated effectiveness and capability to achieve impact, the partnership provides an opportunity for the Long Tom Watershed Council to leverage funds from a wide variety of sources. The fact that that partnership is for 10 years demonstrates a commitment that clears another barrier for funders at the individual level to think about endowments, and at the organizational level to think of multi-year grants. Even without those gains, the Meyer/BEF funds come into the Long Tom Watershed Council's practiced system of asking for and incorporating funds and support from all types of individual and organizations

into the work of the LTWC and its partners, although we would like to reach another notch of sophistication in this realm. This commitment can also inspire organizations like the local land trust to build program or staffing components that count on partnership with us and our anticipated restoration activity, or just utilize our skills. The same could be said for broad efforts like OSU Extension and their decision to run their pilot EDRR program to address invasive species in our area, knowing they can count on a long-term partner in the area. Besides the existing partnerships listed by subwatershed earlier in this proposal, here is a list of our funding partnerships arranged by program type, with some measure of diversity:

Funding Sources

- All sources and match: 37% state. Cash only: 65% state
- Organization: OWEB, private donors, cities, farmers, farm businesses, timber companies, federal agencies, businesses, wineries, other.
- Outreach, Project Development: NFWF, OWEB, private donors, Oregon Country Fair.
- Restoration: OWEB, StreamBank, BLM, private donors.
- Assessment/Analysis: City of Eugene, DEQ, LCOG, private donors, BLM.
- Monitoring: DEQ, OWEB, private donors.

Building Capacity Across the Willamette

How will implementation of the proposed model watershed strategy generate opportunities to enhance watershed restoration capacity and strategy in other Willamette watersheds.
And
Describe possible dissemination and capacity building opportunities outside your watershed that would stem from your model watershed work.

There are probably more opportunities for this strategy to enhance the work of other Willamette watersheds than we realize at this point. Perhaps the most important element at the outset is two-fold: first, our commitment to this being a *Willamette* strategy at the programmatic level, and second, our track record of sharing expertise and learning with fellow practitioners.
Some opportunities we see are, and we have worked on some aspect of every one in our 11 year history:

- ***Outreach***: Asking landowners to be emissaries to others of their "type", e.g. a rancher discusses why and how they did a restoration action for her fellows, in person or on video, and helps decide how to disseminate it
- ***Biology***: Lessons learned from monitoring existing projects are shared for more effective implementation elsewhere. Project location and type are considered within a network context in the overall strategy for population recovery for species that need more than one watershed. Staff can cross-train their fellows in other watersheds.

- ***Financial & Organizational***: Sharing funding strategies, board recruitment strategies, strategic approaches, lessons learned, helping to organize and convene Willamette-wide discussions, meetings, endeavors.

We are specifically excited about working regionally on Upper Willamette floodplain restoration – this would require collaboration with at least 3 other watershed councils as well as other groups, the land trust, two major universities in the southern valley, ODFW, and OWEB. The Long Tom Watershed Council has spear-headed collaborative discussion on this and anticipates that with a more well-rounded capacity to work locally, we can once again contribute significantly to endeavors regionally and beyond.

Budget and Implementation Considerations

Describe projected needs to implement the proposed model watershed partnership:

Some of the needs will be addressed with funding leveraged by the MMT/BEF funding from grantors such as NFWF, DEQ and OWEB. Listed here are the chief needs that MMT/BEF funding will be so important for.

Staff – To increase the pace, scope and effectiveness of restoration we need to have a peak performance team operating. This includes our existing staff – 5 members at 4.0FTE, and some seasonal crews. The most significant need is to sustain competitive compensation such that we retain highly skilled and committed staff, and to keep their training and professional development up to date.
Equipment – Some maintenance equipment, some computer equipment.
Consultants/contracted services – For technical assistance on project design (chiefly engineering), survey and maintenance crews.
Project funds –Project implementation will be sought from other funders.
Other – For landowner outreach and stewardship education, volunteer coordination, documenting strategies, peer-learning time with partners, monitoring restoration and watershed conditions, updating restoration strategies, documenting and presenting summaries of watershed condition, holding stewardship workshops, hosting data summits, courting project partners, creating marketing devices for restoration and stewardship action. We may need to begin paying for office space if and when the new Environmental Education Center is built (2012 or later).

Cost estimates for how you might use MMT funding for the first several years of the program -
The most significant needs for the first 3 years are presented below, along with approximate costs.

- Complete the baseline fish barrier assessment in the three model watersheds, $17,500,

- Conduct retrospective project monitoring, evaluation, and selected maintenance on a subset of the 30 completed projects to bring them up to performance standards, $75,000,
- Conduct selected monitoring so that a sufficient baseline is established, $110,000,
- Keep key staff full-time, and to enhance the organizational situation of the Council (these include recruiting 2 more board members, updating filing, archiving selected records, documenting strategies), $210,000,
- Conduct landowner outreach such that we line up landowner candidates for stewardship and restoration project action, $60,000 (hopefully partially NFWF)
- Retain technical assistance for 1-2 projects per year, $60,000 (hopefully OWEB).

Please see also the work-plan/budget for the proposed first year allocation.

Financial statements – please find attached.

Conclusion

Public support for restoration can come slowly at first, then builds with repeated education and hands-on experience. However, public support can only solidify with the display of results on an ongoing basis. In the Long Tom River Watershed, we see that the capability and tenure of the Council has made a difference in these first 10 years as well as the thoughtful approach to restoration, data gathering involving landowners themselves, and explanations of monitoring analyses that illustrate the need for action. Work accomplished in the Long Tom Watershed has been deliberate, and much has been used as examples - assessment, monitoring techniques and volunteer incorporation, setting priorities, community problem solving, and restoration implementation. However, we want to get to a tipping point and make a real impact. We want to reach the next level in showing results - effectiveness monitoring compared to specific objectives, and trends compared to baseline information - must be achieved. This is the Council's goal for its second decade of work, and this could be achieved in part through a partnership with Meyer Memorial Trust and Bonneville Environmental Foundation.

Finally, the Long Tom Watershed is more threatened than most people recognize. While Cascade watersheds like the McKenzie gain lots of public attention and support, and rightfully so, essential wet prairie, oak woodland, low-gradient riverine bottomlands and Coast Range headwaters in western Willamette watersheds like the Long Tom are quietly converted or urbanized. Yet the Long Tom River basin has tremendous existing remaining habitat, and potential. For example, Coyote Creek is largely hydrologically intact, a rarity for the Willamette Basin, and thus has enormous restoration potential. Its smaller parcels will help it resist large-scale conversion or development. Its remaining prairie and oak habitats are an anchor area for

the potential recovery of this habitat type throughout the Willamette Valley. We are very excited to make an impact with the foundation that we've built so far, in collaboration with our fellow model watersheds, and with the partnership, support and leadership assistance that Meyer Memorial Trust and Bonneville Environmental Foundation bring to the table.

List of attachments

1) Historical timeline
2) Mission and goals
3) Council "Road Map" (Flowchart of Core Activities)
4) Steering Committee and Staff Biographies
5) Technical Team Profile
6) Watershed Maps and Photos
    a) Coyote Creek
    b) Bear Creek
    c) Ferguson Creek
7) Model Watershed Matrix
    a) Vision
    b) Measuring Ecological Uplift
    c) Measuring Progress
8) Budget and Workplan
9) Financial Statements
10) Financial and Staff History and Trends