

McKenzie River Discovery Center (MRDC) 2021

Exhibit Program Walk-through Treatment

This treatment has been developed as preliminary general overview of the design direction and space programming of the MRDC. The design and content development of each exhibit will be refined in subsequent documents in conjunction with required disciplines.

MRDC Mission:

Informed by the McKenzie River Watershed, its unique hydrology, iconic boating culture, native fish, we inspire stewardship by educating and entertaining through interactive interpretive exhibits and hands-on immersive experiences.

The overarching mission experience concept will provide a contemporary state of the art immersive, interactive visitor experience that engages the visitor and tells the story of the McKenzie River.

This concept divides the river's stories into three categories, later named "Story Zones."

These zones are:

1. Zone One – Boats & Guides
2. Zone Two – River & Watershed
3. Zone Three – Fish & Ecology

Note: There will be wide use of WIFI and secure “Intranet” covering the whole site, exterior and interior, to take full advantage of mobile device, AR/VR/XR/MR apps, and content exploration potential.

The MRDC immersion begins on the MRDC website and expands greatly when you enter the parking lot. The entire site will be painted with a private and secure WIFI signal that can access the MRDC in-depth knowledge base.

Area Development: There are existing structures on the property, some dating back to 1910.

These will be used for staff offices, community events and hands-on experiential workshop space to supplement Discovery Center programming. Therefore, the design of the new main facility reflects and pays homage to those existing structures and time period.

Sprinkled around the grounds will be several “Environmental” exhibits that will entice guest participation in outdoor discovery events such as wooded trail hiking, tracking, compass use via Geo cashing, and flora and fauna identification via QR code species identifiers linked to the MRDC special content website.

There will be multi-use craftsman gazebo style structures that can be used for outdoor classes, and/or family or group picnics.

The landscaping will encourage native species, and will have areas designed for special event use to host small concerts or theatrical performance / art events and installations.

MRDC Facility:



A spacious ten thousand square foot, white barn style building, with wrap around porch and red metal roof, will be placed adjacent to the revitalized fishing pond, and refurbished existing structures and will house the main exhibits and experiences.

The main entry presents a classic portico, that mimics and is symbolic of the many waterfalls that are located around the region and the Cascade Mountain Range, and ultimately feed clear snow melt water down into a vast aquifer and ultimately the McKenzie River.

As you cross the threshold, you step onto a simulated river bed of photo real river stones that are ADA friendly. Suddenly, the unique sound of river stones under foot and rushing water sweeps over you with each footfall. The adventure is afoot.

Entrance:

As you enter the building, you step into a 1,000 square foot space that is a combination gift shop and dedicated ticket sales counter. You can also purchase small gifts, books and handmade fishing tackle and other river related products at the other point of sale counters.

The North wall contains the entrance to the exhibit area. Here we see a full size 25 foot tall streaming waterfall cascading down through natural rock-work before us.



As we step closer, we are engulfed in the sounds and smells

of the waterfall experience, inviting us to step forward across the river stones and in amongst the larger boulders, where the fall appears to be splashing and crashing from above.

We can feel the cold breeze and mist on our faces as we pass and break into the main exhibit hall, filled with large format forest imagery and the exhibits.



Waterfall Exhibit Entrance Links:

<https://www.eugenecascadescoast.org/regions-cities/mckenzie-river/things-to-do/waterfalls/>

http://visitmckenzieriver.com/oregon/item_category/area-waterfalls/

Just past the falls, we see an interactive display locating the many falls of the region. We turn now and enter the main hall. It feels like we are entering a beautiful Northwest forest.

The walls are rich with large super graphics and animating projections, that envelop all the different exhibits.

Animating Trout and Salmon swim by across the floor via projection mapping, and follow an invisible path, beckoning us to move forward into the space. To dive in and become immersed. We can see several historic drift boats hanging overhead as we move forward.

Natural sounds of the forest mingle with the gentle sounds of tumbling water over moss laden rocks fill the room with a soft ambiance. There is a flickering of light dancing around the room, reminding us that we have entered another world. It is as if we are walking under a canopy of trees, and the sun filters through and dances subtly around us.

Main Hall:

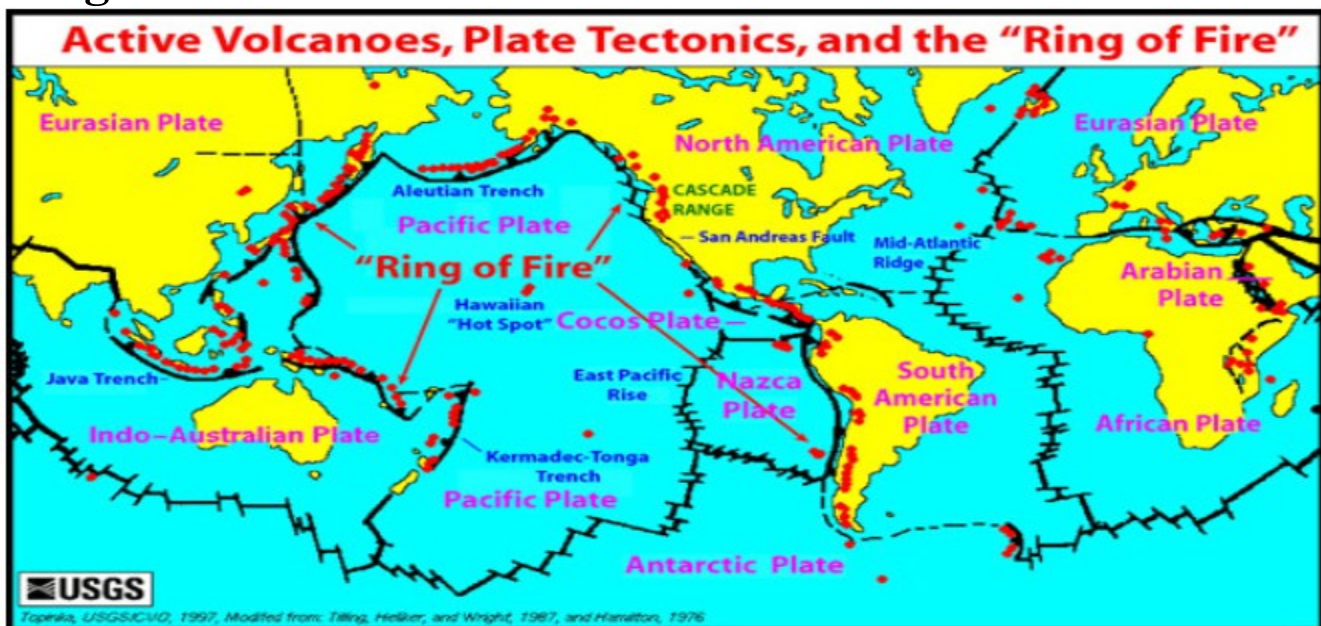
Geology: At the core of the McKenzie River Watershed ecosystem is the need to understand how it came to be.

We need to explore the really big picture.

How were the Cascade Mountains formed ?

First we must explore and understand the Ring Of Fire, Plate Tectonics and the Cascadia Subduction Zone, the Cascade Arc, and the extreme uplifting that has taken place over millions of years, to allow the perfect storm of geologic alignments to occur, resulting in the creation of the high altitude lava beds, that the snow pack can then percolate through to make the McKenzie River outflow so unique and precious.

Ring Of Fire:



This exhibit will have multiple touch screen immersive interactive display opportunities due to the subject matter, and the large amount of contemporary new data and research that has been developed, especially with the OSU and UO Earth Sciences research facilities being involved.

We also have direct access to a local NOAA station in Newport, Oregon, affiliated with OSU via the Hatfield Marine Science Center.

The center piece of this exhibit will be a six foot diameter, touch interactive, rotating globe pinpointing hot spots and live events, allowing guests to explore how the Ring of Fire is connected via plate tectonics to other areas hundreds of miles away.

The depth of material for this exhibit makes it one of the anchor immersive experiences we plan to develop.

New mobile technologies will allow maximum guest interactivity with the MRDC Intranet via AR/VR/XR/MR apps. on the guests own mobile devices. Further increasing the immersive experience.

This exhibit also lends itself nicely to be included in the handful of exhibits that offer VR headset interaction. We can stand on the very edge of an erupting volcano and see and feel the hot lava percolating up and around us in semi

slow motion. Or stand on the ridge of a mountain as it rises up below our feet, and carries us up to the present day altitude of the Cascade Range in hyper real-time speed, spanning a million years in the blink of an eye.

Weather:

Once we understand the Geology of the region, we must now focus on the weather, and how the weather on the top peaks of the cascade Range is directly tied again to what happens on the coast. The two regions seem to have been joined together for a millennium.

Here, we are presented with multiple large format touch screens, that tell the big picture story of how the Pacific Coast storms hammer the coast in the winter and sweep across the Willamette Valley, and then dump the huge amounts of snowfall on the Cascade Mountain Range that is required to keep the water replenishment cycle going.

The coastal storms and resulting snow pack in the Cascade Mountain Range, are the primary source of water that replenishes the source waters of the McKenzie River.

One of the unique things about the hydrology/geology of the river is that it is fed by an underground aquifer roughly the size of lake Mead or one of Great Lakes.

In many cases the spring fed water that makes the McKenzie River when tested via dating technology is up to 7-10 years

old, meaning if no rain fell on the Cascades, the McKenzie River would flow unchanged for almost a decade. This is what makes the McKenzie River unique in the world.

We are able to run back and forward in time via touch and gesture technology, and watch as massive storms build before us in real-time, huge cumulonimbus storm clouds billowing up on the screen. Lightning flashing at our finger tip touch, sparks a new awareness of the power of nature.

Stand for a moment as wild storms build and surround you, and buckets of virtual rain and hail stones rain down on you via the VR headset portion of the experience.

Region History:

Our next exhibit deals with the history of the McKenzie River and surrounding area. The indigenous native American peoples, the pioneer settlers, the lumber and timber industries, the development of the drift boat unique to the McKenzie, and how this one main source of pure water travels from the high elevation aquifers hidden deep in the lava beds, all the way down to the Willamette Valley, and then turns North, joins the Willamette River, and travels all the way to Portland, bringing life to a good portion of the entire State of Oregon.

This multi screen kiosk provides comfortable seating and three separate screens, each focused on different time periods of the history of the McKenzie River.

From the indigenous populations, to early settlers, to the long relationship with the city of Eugene, Oregon, and the life support line that the McKenzie offers for the region.

River Guide Experience:

In the center of the main hall, we see a large cylinder structure with many mini touch screens surrounding it. We see fly fishing on the river, drift boats navigating rapids and calm spots. Most all of them are recognized members of the regional community that frequents this stretch of the McKenzie River. Over time, the human use of the river has also evolved from massive timber and lumber rafts, to a better understanding of what the McKenzie really is, and what a true natural wonder it is, and how for generations of indigenous people and early settlers, it has provided a natural path for fish species to migrate and spawn.

This naturally led to the development of the fly fishing and sport fishing hobby and industry.

<https://www.eugenecascadescoast.org/regions-cities/mckenzie-river/things-to-do/fishing/>

Unique to the McKenzie River is also the development of the McKenzie River Drift Boat, specifically designed to traverse the unique mountain river. It was inspired by the east coast fishing dory and modified over time to meet the challenges of this unique environment.

We can now explore that history and climb into a computer controlled, real hand-made drift boat, attached to a 6 DOF (degrees of freedom) motion base, surrounded by a high resolution image system, that lets you pilot your way down a short section of the McKenzie in real-time. You will feel the rippling currents and eddies as your boat is swept along the forest lined banks of the river. You are immersed in the fishing guide experience. Each boat will hold up to three guests, and each one will have a chance to be the guide.

Each experience will be recorded in real-time, and automatically uploaded to the guests personal MRDC annual member account.

Salmon Splash:

Salmon splash is a big one for the little kids! Here we have a very tactile display of a shallow river bed, where salmon and trout can be seen life size working their way up stream to spawn. Through interactive projection mapping, the young children can enjoy a virtual splash and chase of selected species. This exhibit can be tuned by changing species and count to allow a calm interaction as well.

A great place to take a little break.

White Water Run Experience:

In most rivers in this region, including the McKenzie, there are areas of greater turbulence or wave action. This is called white water and can become a challenge to navigate and is

also very exciting.

Here we have repeated some of the technical components of the “Guide” experience, and ramped them up to mimic in real-time, a “White Water Rafting” adventure. The raft will seat 6 to 8 guests, and each guest will have use of a real paddle that is linked into the motion control software, encouraging the “team” to work together to affect the outcome of their efforts.

One added feature of this experience will be allowing the guests to get an up close and personal lesson in water safety, including correct behavior and survival techniques when traveling on the river.

Rocks, Rivers, Trails & Trips:

On the East wall of the main hall, there will be an exhibit focusing on all the wonderful places in the region that can be visited after you leave the MRDC. This is a complex assembly of the most popular to the most secret places only the locals know. Plan your next adventure or make a new plan to expand your current one. You might even learn how to pick your own salad for your picnic lunch.

East Hall:

Fly Tying Tricks-n-tips:

This exhibit offers the most tactile experience, and will combine large format touch & gesture screen technology, but

will marry AR/XR/MR technology as an overlay, to help clearly illustrate the unique craftsmanship involved in the creation of various types of “flies”, used to catch the McKenzie River fish. Each fly discussed will explore the construction techniques, but also the “why”, which is based on the type of fish species and their respective diet. It will delve into insect life and plant life, and show the huge interdependence and biodiversity of the McKenzie River watershed ecosystem that makes this river so special.

Trout Cam:

Live link to new Hatchery. Directly across the river from the MRDC site is the Leaburg Dam and the adjacent new Leaburg Hatchery. This exhibit will be a live video feed, 24/7, both underwater and above, that will give guests an up close look at the hatchery fish and the day to day operations. There will be touch screen pads to help answer questions, and depending on the time of day, guests will be able to help with the distribution of feed for the hatchery fish “LIVE” with the push of button.

Fly Fishing “LIVE”:

This exhibit takes the guests out to the edge of the river, to a shallow wading spot on the edge of a hot fishing hole. Each guest is provided with a Virtual Fly rod and pair of AR goggles. The virtual fly rod is actually a wand that acts as the interface to the game. When using the wands and goggles, the guests will see the full rod and fishing line perform just like

the real thing. There will be instructional grid overlays that teach the right arc of the cast, and virtual fish will rise and take the virtual fly giving a fun lifelike experience.

Boats of the McKenzie:

There are approximately 22 boats in the region that could be part of the collection. Hanging boats throughout, each with QR code for phone interaction and content exploration.

The main drift boat exhibit is positioned on the far East wall of the East wing. This is to take advantage of the large barn doors and outdoor covered porch, to allow for scheduled hand work, wood-crafting boat building, live demonstrations and lectures in a workshop environment. It is hoped that an ongoing drift boat building project will be taking place in one form or another, so that visitors can see the craftsman working on a real project.

Build a Boat:

This exhibit takes the viewer step by step through the boat building process via a series of high quality personalized video demonstrations. It is presented via large screen monitors, and will also have a 360 VR headset component, that will let the guests see the work being done from the eyes of the craftsman. On the east end of this hall will be a small “Live” woodworking shop that opens to the wrap around exterior porch so guest boat builders/ wood workers or docents could give “Live” teaching demonstrations.

Fish Got to Swim:

This is a fun whimsical and real 360 dome video experience, that takes the guests on an underwater adventure up the rivers and streams, from the ocean as an adult Steelhead, and then back down stream all the way to the sea again, as an egg, hatchling, fry and finally, a juvenile and young adult.

Enjoy the story and adventure as told by our delightful guides the “Steelhead Twins”, as we follow them through their life cycle and all the different environments and changes they must deal with, as they make their way back to the ocean.

Along the way, we meet several other creatures that also live in these waters and are a valuable part of the river ecosystem.

The River's Edge:

Here we find a touch screen interactive display dealing with all the plants and animals that live along the river. Directly adjacent to the touch display will be a photo mural of a beautiful section of the McKenzie River, approximately 10 feet tall and 30 feet long. There will be several “interactive species” display posts placed along the mural wall, each with its own gesture technology interface. With a simple hand wave, the selected species will become visible on the river mural wall as information is presented.

Birds got to Fly:

As we wander through the exhibits, there will be projections on walls, ceiling and scrims depicting all the different birds that inhabit the region. Eagles, herons, hawks, owls and more

will all be presented with these live captured or photo real computer graphics. Each species will be able to be scanned by the guests phone, allowing access to the MRDC database of information.

Summary:

The McKenzie River Discovery Center is located along the McKenzie River in the foothills of the Cascade Mountain Range, in what most people would consider the edge of the wilderness. The community that has developed over time, along the McKenzie, is made up of a diverse group of dedicated individuals that chose to live and work close to nature in a truly wonderful, and some say magical environment.

In addition to Covid-19, the community has recently gone through a horrific trial by fire, where many lost everything in the 2020 McKenzie River fire (Holiday Farm Fire).

<https://catchmagazine.net/article/the-mckenzie-fire-by-kelley-moen/>

The devastating forest fire stopped just short of the main historic building of the old fish hatchery, the new site for the MRDC.

It was here that the local community then rallied and came together to help each other in this time of extreme crisis.

Slowly, and with great determination, the McKenzie River community is rebuilding and coming back to life.

The MRDC will memorialize this event and the people of the community with the development of this state of the art, immersive museum experience, that explores and explains in depth the natural wonders of this magical environment, and all the people that have called it home.

The McKenzie River percolating from the ancient lava as it has done for a millennia, is very much like the Phoenix rising from the ashes bringing new life.

The MRDC will endeavor to share an important legacy of information and life, that needs to be passed on to future generations, to help grow new “Stewards of the Planet” and this region.

We are transitory caretakers of this earth, and so we must make every effort to educate and inspire those that come after us.

The MRDC will provide a perfect vehicle for this effort, for a community that has worked so hard to cherish and preserve the spectacular beauty of this special gift from Nature.