



Image Description: Conceptual Rendering Showing EV Conversion Facility

Green Horizons: Urban Workforce Development and Electrification Center

Multnomah County Drainage District | Assessment Plan Proposal
02/14/2024

Proposal Submission Partners

Open Commons | Green Urban Design | Jiri Skopek Architects
CodePDX | Urban Systems

Project Endorsements

Oregon Innovation Fund

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Project Overview



Image Description: Google Satellite Map Showing MCDD, Columbia Slough Area

The Green Horizons Workforce Development and Vehicle Electrification Center is pursuing a planning grant that aims to establish a positive sustainable economic impact for the Multnomah County Drainage District community. This project will produce an assessment plan for a combined **workforce training** and commercial grade **EV fleet conversion facility**. Beginning with five ¹Washington Park Circulator Buses, the broad scope outlined here is to perform an impact assessment and community engagement. The output of which will be used to inform a workforce development initiative and partnership with MTR Western for conversion of a 180 bus fleet. It will put special emphasis on improving the community through strategic investments, such as integrating the community's live-work-play potential, enhancing safety, accessibility, creating equitable jobs in emerging technology, and transitioning to a greener economy.

Within the scope of the assessment plan we will establish a partner consortium to foster collaboration among industry, government, nonprofit, and community stakeholders. Guiding principles for this consortium will be to create a plan that offers a resilient, inclusive, and environmentally sustainable community. It will also look to create a close working relationship with adjacent industry partners in EV charging and Solar integration. We will assess this area of the city for its **potential to become an active and vital mixed use district**.

A series of workshops and research efforts to consider a suitable site, site access, land use, and identify mitigation strategies for hazard events, among other concerns (e.g. the natural risk of flooding, vehicle traffic etc..) will be integral to the plan.

Close attention will be given to the network of open spaces in the Multnomah County Drainage District, multi-modal transportation, resilience and the ability to move toward a low-carbon neighborhood.

¹ Washington Park Circulator Bus EV Conversion is a concurrent Transportation Decarbonization effort

The assessment plan will serve as foundational input to inform three key functions the center will provide once operational.

1. **Skilled Workforce and Labor Training** - The region offers a wide range of job opportunities at all levels, from basic packaging roles at companies like Amazon to complex logistics management at the airport and seaport, highlighting the area's potential as a logistics hub. The emerging tradecraft of **Mechatronic** skill sets combine a working knowledge of mechanical, electrical and software integrated systems. Such as the high voltage, drivetrain and embedded systems in electric vehicle fleets. Our plan will define a curriculum to combine these specialties under one roof and an advanced vocational program.
2. **H-KPI Benchmarking and Measurement** - Open Commons has an established working relationship with NIST (National Institute of Standards and Technology) through the Global Community Transformation Challenge. Holistic Key Performance Indicators (H-KPIS) relevant to achieving sustainability and environmental impact goals will be used to benchmark sustainable, resilience development outcomes. These will inform strategies for accountability and reporting during a transparent civic engagement process.
3. **Community Engagement and Gathering** - central to the project mission will be to engage both local residents, professional communities and adjacent trades within the area. Engaging with the community to understand their needs and perspectives is crucial. Diverse community members and businesses will be part of the planning process, including those from economically disadvantaged backgrounds, to ensure initiatives are equitable. The use of a relational accountability process will be part of the approach as it allows plans to adapt based on community feedback and data analysis. The planned facility will provide meeting space for ongoing and regular cross-community engagement.

Issue Being Addressed

While this assessment plan intends to consider a range of implications and determining factors for the site location, the local community and strategic partners, at its core it is a Workforce Development and Training Plan. Skilled labor and job growth in the green economy is the central issue being addressed.

The workforce of today and the foreseeable future requires a blend of skills and expertise in both physical and digital tools. Digital platforms, mobile applications and rapidly emerging A.I. solutions are ubiquitously integrating into the way people work. The ability to both design and develop, or gain the knowledge to use these tools is essential. Education and training on both their creation and use is shifting from traditional models to concentrated 'bootcamp' style programs delivered in weeks rather than years. Certified training programs and curriculum from other world leading organizations will be evaluated for adoption .

Recognizing the complexity of jobs being reshored, especially in sectors such as electric vehicle conversion, where skills in mechanics, electronics, and programming also known as mechatronics are paramount.

These skills are not only essential for the conversion process but are also in high demand across various other industries, including manufacturing, building control systems, recycling, and municipal services. Thus expanding the reach of the training center beyond EV conversion to certification transferable to other industries.

In order to account for the broader implications of a program like this our impact assessment will conduct research to generate insights, define objectives and set priorities. Gathered through civic engagement forums, workshops, qualitative surveys, traffic studies, the EPA framework for ecological risk and the relational accountability process for equity.



Image Description: Conceptual Rendering of a Vibrant, Low-Carbon, Multi-Modal Transport Enabled Pocket Neighborhood

The holistic assessment plan will engage the community through open participation and workshops that consider these four issues:

1. Transition to Electric Economy and Decarbonisation

Identify the series of steps necessary to achieve 100% of [community wide electricity needs being met in Multnomah County](#) with renewable sources by 2035. Such as electricity accessibility and the adoption of decentralized renewable energy solutions. Stimulating the economy through job growth, integration with storage systems, the utility grid, as well as charging infrastructure.

2. Mobility Access and Transportation

Equitable transport access is crucial for ensuring that all community members can access necessary services, care, and support with minimal exposure to hazards, thereby enhancing their social well-being. In particular the area of [Bridgeton and its current vision](#) to support pedestrians, bikes and cars will be part of the outreach plan and consortium partner network.

3. Enterprise Workforce Development “As a Service”

One of the significant initiatives in this regard is the establishment of the "[Urban Flood Safety & Water Quality District](#)" under Senate Bill 431. This district is tasked with improving, operating, and maintaining flood safety infrastructure along the Columbia River, responding to flood emergencies, and contributing to improved water quality and habitat resilience. The Green Horizons Workforce Development and Electrification Center will make itself available as a host facility that can be used for an expansive range of training curriculum.

4. Green Infrastructure, Resilience, Health & Well-being

The green infrastructure in Multnomah Drainage District is geared towards creating a more sustainable, equitable, and resilient community. Environmental concerns, quality of life and health outcomes, especially those in vulnerable and marginalized communities. We will align to the [Climate Action Plan \(CAP\) for Portland and Multnomah County](#), which focuses on preparing for impacts such as heat, drought, wildfires, flooding, and landslides.

Social and Economic Outcomes

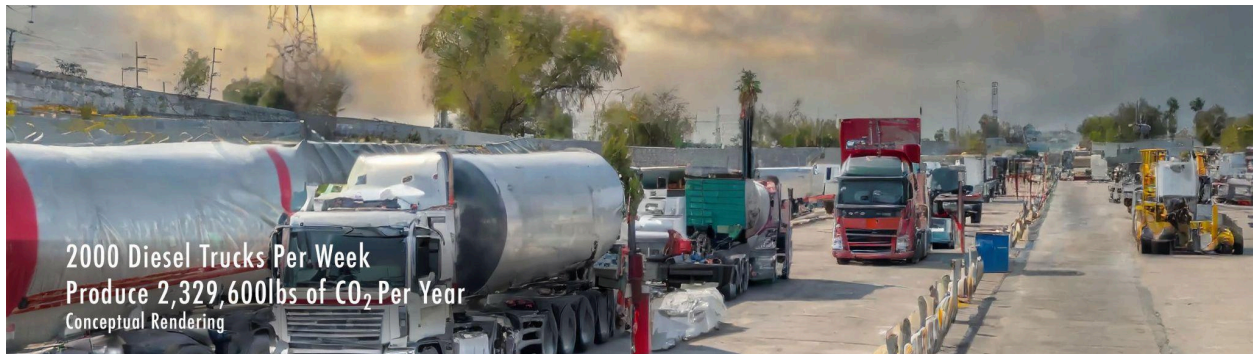


Image Description: Conceptual Rendering of Diesel Truck Congested Access in Industrial Area Contributing to Pollution

The image above depicts the unsustainable GHG and CO₂ scenario and impact of diesel truck congestion that we aim to address with an EV conversion facility.

Consider for a moment the estimated impact of the Jubitz facility located near Bridgeton. Currently ~2,000 trucks visit Jubitz each week, at ~22.4lbs of carbon emissions per gallon of diesel, it is equal to ~2,329,600lbs of carbon per year. Now consider that FedEx, Amazon, Oak Harbor Freight and other Industrial residents are also located nearby. Major logistics centers like Jubitz, could significantly decrease their carbon footprint as a result of proximity and potential partnership with the Green Horizons EV conversion center.

Significant social and economic benefit is being addressed and supported at national and global levels with goals to electrify transportation and logistics sectors within the next 10-20 years. With the stated aim to reduce carbon emissions, including transitioning air and sea freight to greener energy sources. We expect that this area will have additional potential social benefit with carbon sequestration and our plan will define objectives for an environmental impact study as part of a future planning stage.

There is a compelling argument to be made to invest in this area and pursue GHG and pollution reduction that offers improvements to both the water and air quality, as well as enhancing the livability of a historically marginalized community.



Image Description: Conceptual Rendering of a Wetland Supporting Carbon Sequestration

The area boasts numerous amenities like parks, hiking trails, and a raceway, which are pivotal for a live-work-play environment. However, there's an urgent need for investments in infrastructure such as bike paths and pedestrian bridges to improve safety and accessibility for the community without the need to cross highways.

The assessment plan will address human hazards and access first, and identify research partners to evaluate natural carbon sequestration as part of a future planning stage. We speculate ecological benefits to be supported by the wetlands and greenspaces in this area. Considerations for natural habitat experiencing less exposure to both air and noise pollution and the wetlands working more effectively for water retention, filtration, and flood management as part of an environmental impact study will be deferred to a later date.

We anticipate broader social and economic impacts will include opportunities for forest canopy expansion, [shade through green infrastructure](#) and other food growth and outdoor or vertical farming activities. Moreover, the extensive impermeable surface within the vicinity presents a compelling opportunity to enhance stormwater mitigation efforts in a vulnerable area situated at the confluence of two major rivers. The improvement to the water management systems in this drainage district can promote industries that are needed to enhance biodiversity and resist the negative effects of climate change.

These broader environmental outcomes and benefits should be explored and better understood and would be natural activities in a subsequent assessment stage, or follow on planning activity.

During the assessment and planning process we will explore the use of digital twins, advanced analytics, and [A.I to inform and improve district operations](#). We see this as exploratory, yet increasingly valuable as part of the objective to understand and meet the needs of citizens in new ways. While many government and municipal institutions have not yet adopted this technology, they are aware of the transformational impact and need for it. Our core team brings this capability and competency into our planning approach through close partnership with Open Commons and Code PDX.

Community Benefit

Connecting with the community and involving them in the planning process is essential for the success and relevance of the project. Similar to the recently adopted [City of Beaverton Downtown Equity Strategy](#) that prioritizes engaging with BIPOC & DBE, our engagement framework will also leverage the [Racial Accountability Process](#) (similar to other tools from GARE, the Government Alliance on Race and Equity).

This proposal centers around skilled-labor opportunities for workforce development in the Multnomah County Drainage District. To benefit historically underserved communities such as the Vanport and Albina Districts, with the following strategies:

Community Advisory Board: We will establish a Community Advisory Board comprised of representatives from the target communities, including residents, educators, business owners, and local leaders. This board will serve as a platform for ongoing dialogue and collaboration, insight and feedback throughout the planning process. By involving community members directly in decision-making, we can ensure that the project reflects the interests and priorities of the communities it seeks to serve.

Community Engagement Workshops: We will organize a series of community engagement workshops held at accessible locations within the targeted communities. These workshops will provide opportunities for residents to share their insights, needs, and aspirations regarding workforce development and training opportunities. By actively listening to community members, we can ensure that the project aligns with their priorities and addresses their specific needs.

Partnership with Community Organizations: We will establish partnerships with community organizations and grassroots initiatives within the target communities. These partnerships will enable us to leverage existing networks and resources to reach community members effectively. Collaborating with community leaders and organizations will ensure that the project is responsive to the diverse needs of the community.

Engagement Framework: We will utilize the [Relational Accountability Process \(RAP\)](#) for Racial Equity to guarantee that our assessment plan aligns with the needs of the local populace and ensures inclusivity. This approach serves to facilitate ongoing reflection and learning, document and enact adjustments as needed, and maintain transparency throughout the process to articulate the rationale behind specific outcomes, especially those influenced by community input. Fostering genuine accountability and trust with the community necessitates transparent communication regarding processes and their resulting outcomes.

Accessible Communication Channels: We will ensure that communication channels are accessible and inclusive, utilizing multiple mediums such as in-person meetings, digital platforms, printed materials, and multilingual resources. By making information readily available and accessible, we can engage a diverse range of community members and ensure that everyone has the opportunity to participate in the planning process.

Project Milestones and Activities

Activity 1: Project Start Up

- Draft a facilitation needs assessment based on findings derived from initial discussions with partners, stakeholders, and community advisors.
 - Refine outreach plan and procedures to organize key partners, stakeholder and community advisors.
 - Establish initial common objectives shared between stakeholders and community advisors.
 - Refine workshop agendas with stakeholder and community member participants.
- Select community engagement team that is tailored to questions being considered during the facilitation needs assessment.

Activity 2: Community Needs Assessment

- Conduct surveys, focus groups, and interviews with community members to assess their aptitude and interest in mechatronics workforce development.
- Research existing data and reports on workforce trends and skills gaps in the targeted communities.
- Compare with industry trends to inform program curriculum and identify key partners in addressing those gaps
- Facilitate community engagement workshops to gather input and feedback from residents.
- Conduct Workshop 1. Community Needs Assessment.

Activity 3: Formation of Community Advisory Board

- Identify and recruit representatives from the target communities to serve on the Community Advisory Board.
- Amend draft Facilitation Needs Assessment drafted during 1 Project Start Up.
 - Plan orientation sessions and introductory meetings for Advisory Board members.
 - Define milestones, deliverables, governance and accountability framework
 - Establish regular communication channels and meeting schedules for ongoing collaboration.
- Identify regulatory policies for adherence or policies that to be established and lobbying activities if necessary

Activity 4: Development of Training Center Blueprint

- Collaborate with the National Institute of Standards and the Department of Commerce to develop a blueprint for the training center.
- Conduct site assessments and feasibility studies to determine optimal facility placement, restoration or renovation, within the Multnomah County Drainage District.
- Engage with architects, engineers, and other stakeholders to design the layout and infrastructure of the training center.

- Conduct Workshop 2. Training Center Blueprint

Activity 5: Curriculum Development Initiated

- Form curriculum development teams composed of subject matter experts, educators, and community representatives.
- Adopt best practices and industry standards in mechatronics education and training.
- Develop draft curricula for various skill levels and areas of specialization based on community input and workforce demands.

Activity 6: Partnership Formation and Outreach

- Identify potential partner ecosystems, including local businesses, educational institutions, nonprofit organizations, and government agencies.
- Reach out to potential partners to explore collaboration Partner outreach to align on opportunities and mutual goals.
- Hold partnership meetings and negotiations to formalize agreements and commitments.
- Conduct Workshop 3. Partnership Formation.

Activity 7: Identification of Funding Opportunities

- Budgetary planning and coordination with industry partners, fiscal sponsors, and formalize revenue strategy, business model and identify deltas
- Research and identify delta potential funding sources, including grants, sponsorships, and private investments.
- Prepare grant proposals and applications in collaboration with partners and stakeholders.
- Attend funding workshops, conferences, and networking events to expand funding opportunities.

Activity 8: Community Engagement Events

- Organize community engagement events, such as town hall meetings, open houses, and information sessions.
- Develop outreach materials and promotional campaigns to raise awareness about the project and its benefits.
- Facilitate interactive sessions and feedback mechanisms to solicit community input and active participation.

Activity 9: Completion of Planning Grant Deliverables

- Compile and finalize all planning grant deliverables, including reports, proposals, and presentations.
- Conduct internal reviews and revisions based on feedback from stakeholders and partners.
- Submit final deliverables to funding agencies and stakeholders according to grant requirements.

Recruitment, Subcontractor and Resourcing Plan

During start up, the project management team will establish the facilitation needs assessment and derive acceptance from participants that set the engagement process to derive value for the participating community.

Also during start up, the project management team will recruit and sub contract Emerging Small Businesses and Disadvantaged Business Enterprises that can best support the engaged community's deliberations, as described in the facilitation needs assessment, with 20% of the assigned fee.

Three workshops will be convened to be inclusive of representative stakeholders and ad hoc community members who live or work in the drainage district. Accommodation will be provided to under-resourced represented members of the community for those who can attend all of the workshops.

- Conduct Workshop 1. Community Needs Assessment.
- Conduct Workshop 2. Training Center Blueprint.
- Conduct Workshop 3. Partnership Formation.

The \$100,000 grant will be divided in the following way.

Project Management.	\$10,000
Engagement/Facilitation Needs Assessment	\$25,000
Assessment of land use, transportation, and environmental systems	\$15,000
Facility Design and Programing	\$15,000
Workforce Program	\$10,000
Assessment Report Production	\$10,000
Accommodation and Expenses	<u>\$15,000</u>
Total	<u>\$100,000</u>

Challenges and Mitigation Plan

Community Engagement and Participation

- **Challenge:** Difficulty in engaging and mobilizing community members, especially those from historically underserved communities, due to mistrust, apathy, or competing priorities.
- **Mitigation Strategy:** Implement targeted outreach efforts, leveraging partnerships with local community organizations and leaders to build trust and credibility. Offer incentives, such as stipends or refreshments, for participation in community engagement events. Provide multiple avenues for feedback, including online surveys and virtual meetings, to accommodate diverse schedules and preferences.

Technical Complexity

- **Challenge:** Complexity of technical aspects involved in curriculum development, facility design, and infrastructure planning, requiring specialized expertise and resources.
- **Mitigation Strategy:** Form interdisciplinary teams comprising subject matter experts, educators, and professionals with diverse backgrounds to address technical challenges collaboratively. Seek technical assistance and consultation from relevant stakeholders, including academic institutions, industry partners, and government agencies. Invest in professional development and training for project team members to enhance technical proficiency and problem-solving skills.

Navigating Regulatory and Administrative Processes:

- **Challenge:** Navigating through regulatory and administrative processes, such as zoning regulations, permitting requirements, and grant application procedures, which can be time-consuming and bureaucratic.
- **Mitigation Strategy:** Engage with local government agencies and regulatory bodies early in the planning process to understand requirements and streamline approval processes. Maintain open communication channels and foster collaborative relationships with relevant stakeholders to address potential roadblocks proactively. Allocate sufficient time and resources for administrative tasks, including document preparation, compliance, and reporting, to ensure timely project execution.

Addressing Equity and Inclusion:

- **Challenge:** Ensuring equity and inclusion throughout the planning process, particularly in decision-making, resource allocation, and community engagement efforts.
- **Mitigation Strategy:** Prioritize equity and inclusion as guiding principles throughout the planning process, actively seeking input from diverse

stakeholders and amplifying marginalized voices. Implement strategies to address systemic barriers and promote diversity, equity, and inclusion within project teams and advisory boards. Regularly evaluate project activities and outcomes through an equity lens, making adjustments as needed to ensure fairness and accessibility for all community members.