

Mapping Green Stormwater Infrastructure Careers to Improve Diversity and Inclusivity

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Green Stormwater Infrastructure Workforce Collaborative

- Focused on illuminating and tackling the challenges related to developing sustainable, equitable, and inclusive career pathways within GSI field
- The Collaborative currently includes Academic, Non-profit, Conservation District, Government and Business representatives from the Central Puget Sound region

Problem Statement

1. **Inequitable and Unreliable Career Opportunities:** Limited GSI training and long-term career prospects, resulting in a lack of workforce retention and a diverse, qualified labor pool
2. **Funding Instability:** Competition for funding, projects and trained workers among organizations
3. **Lack of Cross-sector Coordination:** Lack of coordination among public, private and non-profit orgs in facilitating GSI work at a regional scale





Mission

The Collaborative promotes knowledge sharing, and collaborates to create opportunities to develop sustainable, equitable, and inclusive career and employment opportunities within the GSI field for the southern portion of the Salish Sea Region, extending from Thurston County north to Whatcom County

Purpose

The Collaborative serves as a space to both problem-solve on significant challenges in the GSI workforce development space, and to co-create projects and products that seek to serve as solutions to these challenges



Focus Areas for 2023

- **Mapping GSI Careers:** Develop a clearer understanding of the GSI Career Ecosystem and related training opportunities to progress ones' career. Take actions on recommendations in this report.
- **Pierce County Training:** Shape a training program to support workforce development within Pierce County that prepares individuals to design, install and maintain green infrastructure.
- **Grow the Collaborative:** Engage new partners in the work of the collaborative to ensure it continues to be reflective of the current challenges and opportunities within Workforce Development





Seattle Jobs
Initiative

Seattle Jobs Initiative

SJI has 25 years' experience working with government agencies, employers, training providers, and community-based organizations.

We focus on building **careers**, not jobs.

We center **equity** in all that we do.



Research Questions

Are there Green Stormwater career paths?

What training, credentials, or experience does one need to advance on these paths?

Are these paths accessible to frontline communities?

In particular, are design and project management career paths accessible?



Accessible

Require a 2-year degree or less

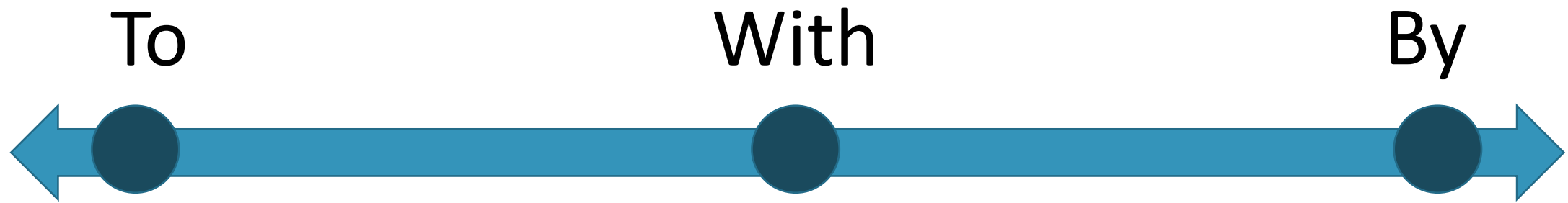
Make 80% or more of the metropolitan statistical area's median income





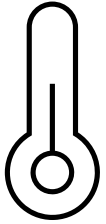
Why accessible?

Environmental Justice

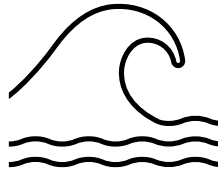




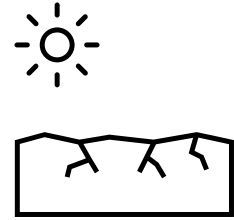
Frontline communities are first and most impacted by...



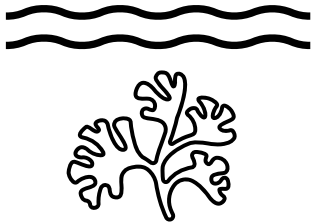
Extreme
Temperatures



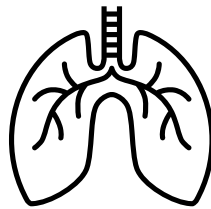
Flooding



Water Stress



Ocean Acidification



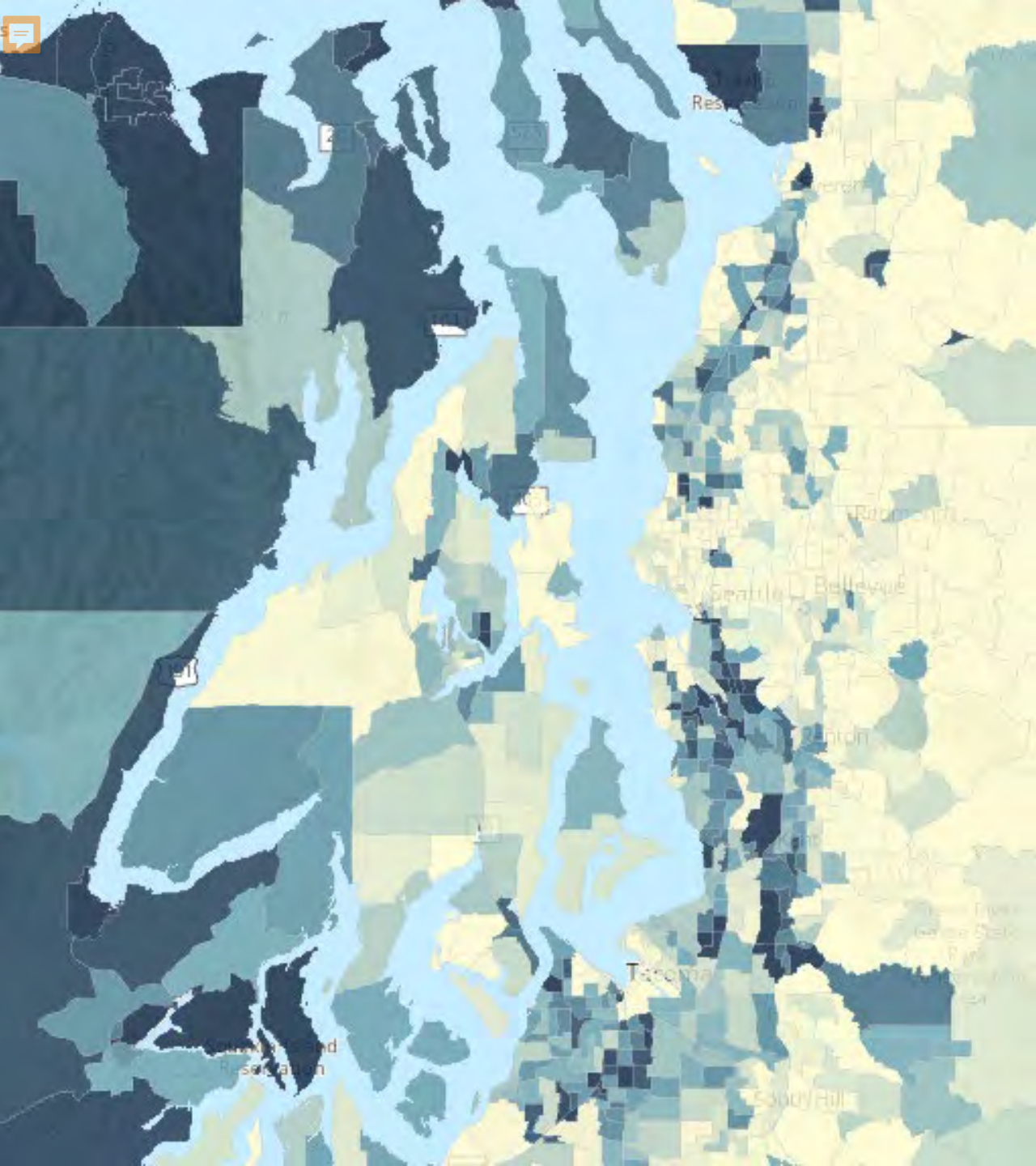
Poor Air Quality



Frontline Communities' Exposure

Where people live

Where people work



Frontline Communities' Vulnerabilities

Low income

Minoritized group

Health

Language



Project Components

Interview local GSI experts

Analyze local labor data

Build map of career paths

Identify “missing rungs”



What?



Where GSI lies



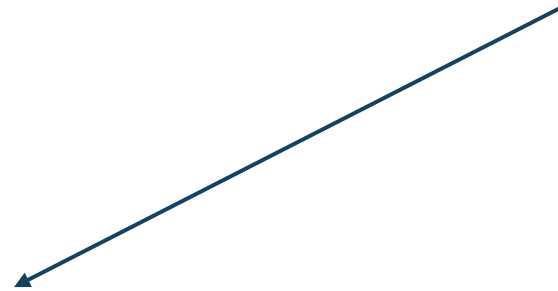
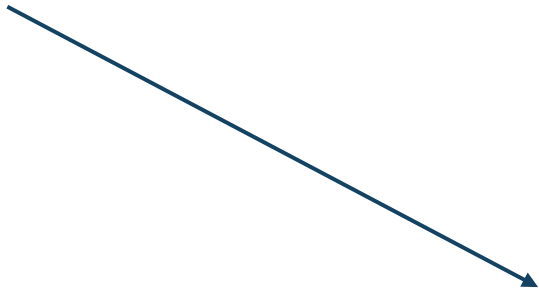
Natural Systems



Gray Infrastructure



Built Environment



Green Stormwater
Infrastructure



GSI Elements

Retention & detention basins

Rainwater harvesting

Constructed/floating wetlands

Bioswales

Rain gardens

Green roofs

Permeable pavements

Silva cells

Bioretention planters

Riparian corridors

Urban forests & street trees





Multilayered Benefits

Cleans & slows stormwater

Cleans air

Reduces urban heat island effect

Supports local biodiversity

Improves/expands neighborhood greenspace



Challenges

It's different...

More visible

Demands more regular
maintenance

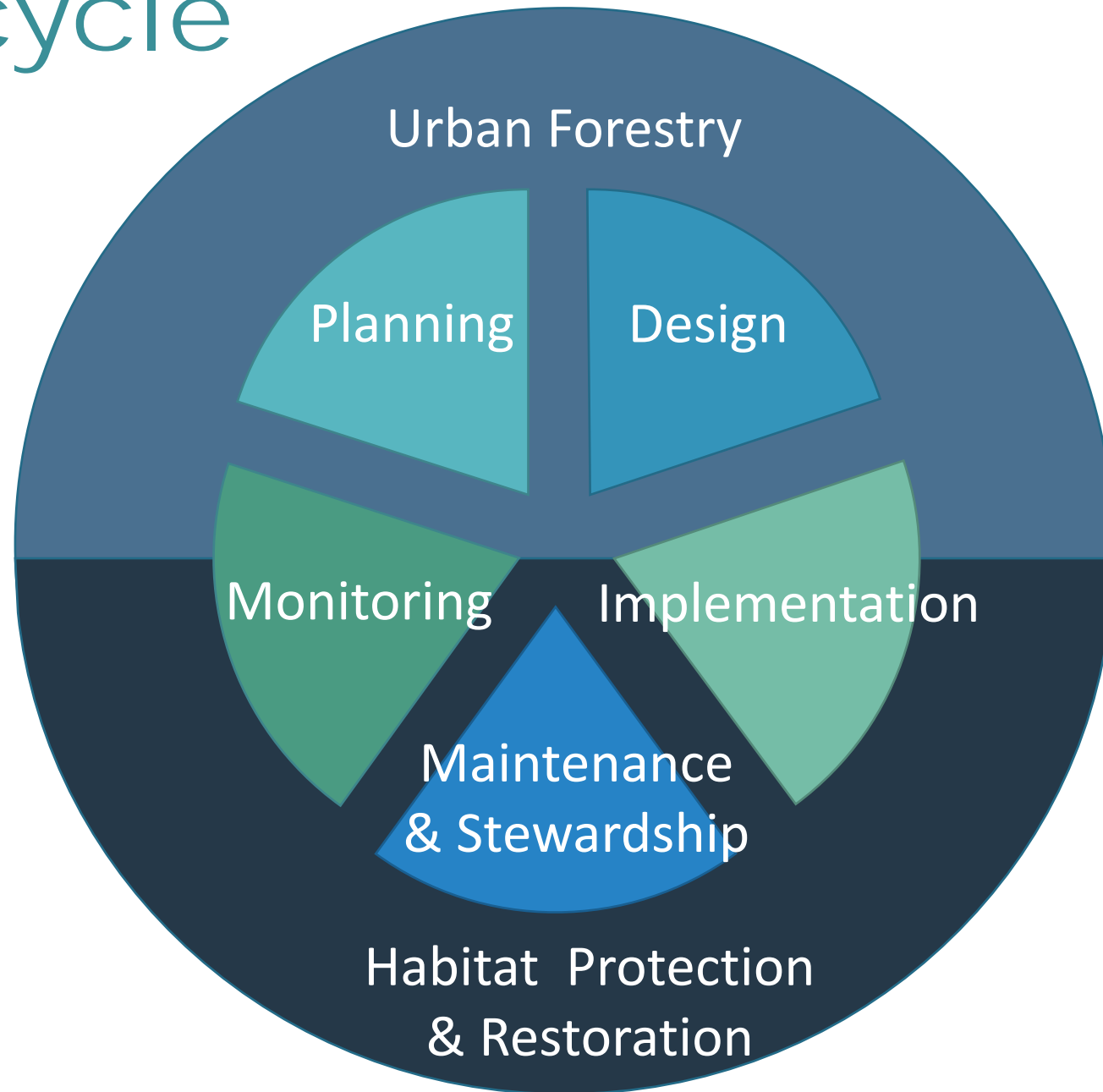




How?

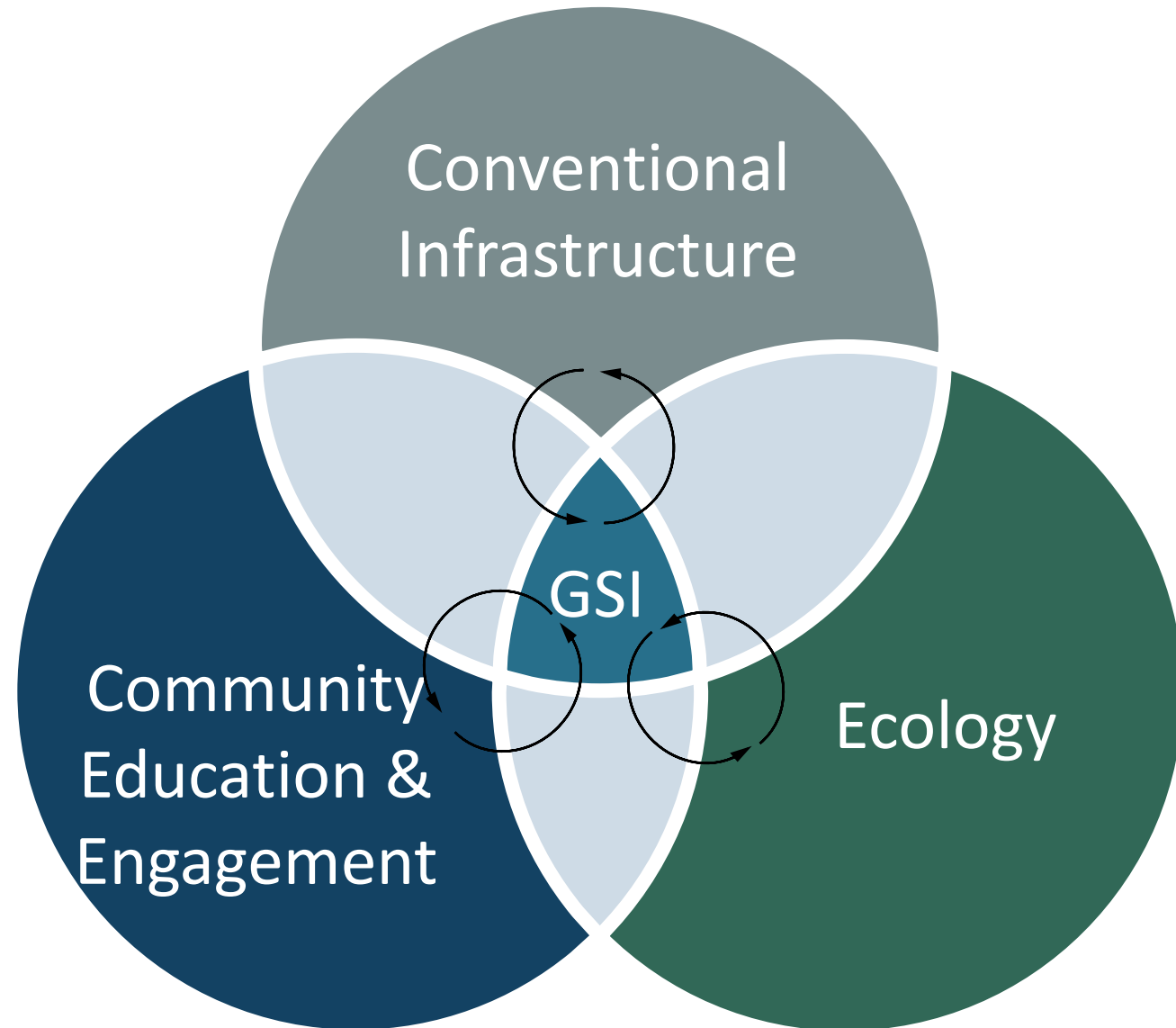


GSI Lifecycle





Where GSI Occupations Are





GSI/ Occupations



Planning

Site identification & selection

Get approval from landowner

Processing permits

Community engagement & education

GSI potential

Type of GSI project

Pre-implementation monitoring



Planning Occupations

Urban planner

Landscape architects

Project manager

Community outreach coordinators

Ecologist

Forester

Wetlands specialists

Operations managers

Maintenance crew chiefs



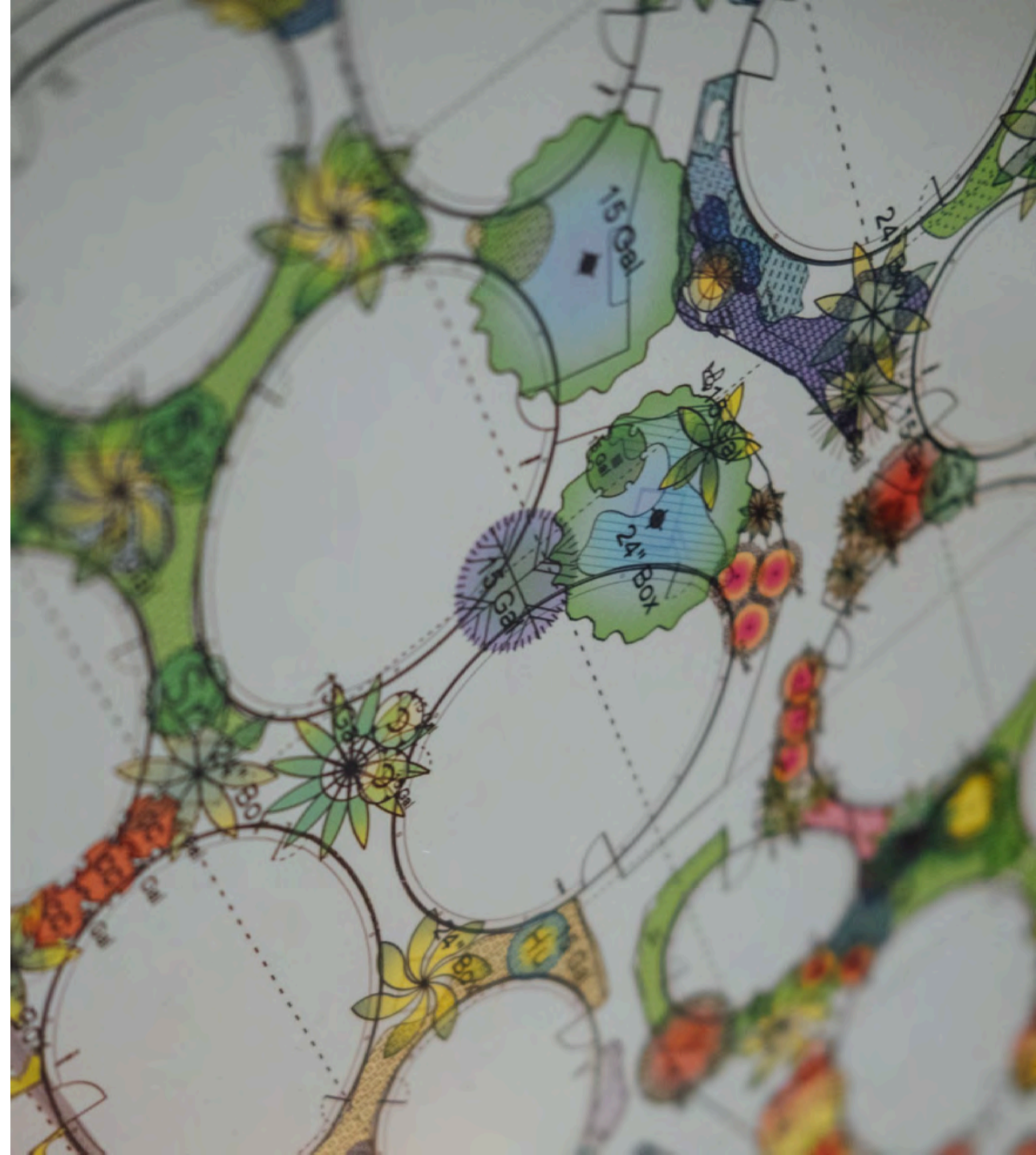
Engage with the local communities

Site assessment (including ecological assessment)

Topography, geology, and hydrology analysis

Identify the best GSI project type

Develop plans with technical specifications





Design Occupations

Civil engineers (geotechnical)

Landscape architects

Foresters

Arborists

Ecologists & horticulturalists

Construction managers

Landscape contractors

Soil & materials scientists

Sales representatives

CAD technicians

Land surveyor





Implementation

Site preparation

Excavation & grading

Pipelaying & plumbing

Paving & surfacing

Depaving & pavement removals

Planting & landscaping



Implementation Occupations

Landscaper

Horticulturalist

Arborist/tree crew

Plumber

Landscape/Construction Laborer

Equipment Operator

Paver



Maintenance & Stewardship

Maintain or enhance GSI's capacity & water monitoring by:

Clearing inlets and outlets

Managing sedimentation in the system

Seasonal irrigation & maintenance

Replacing plants as necessary

Modifying or replacing system components



Maintenance & Monitoring Occupations

Water quality specialists

Environmental health & safety technicians

Foresters & arborists

Groundskeepers

Maintenance workers

Utility workers





Urban Forestry

Planning

Advising/advocating for policy

Planting & maintaining trees

Supporting tree preservation

Permaculture

Community outreach & education



Urban Forestry Occupations

Foresters

Arborists

Planners

Conservation Scientist

Forest and Conservation Technicians

Soil & Plant Scientists



Habitat Protection & Restoration

Informing planning and policy
in order protect existing
habitats

Renewing or restoring
degraded or destroyed
ecosystems





Habitat Restoration Occupations

Environmental Restoration Planners

Conservation Scientists

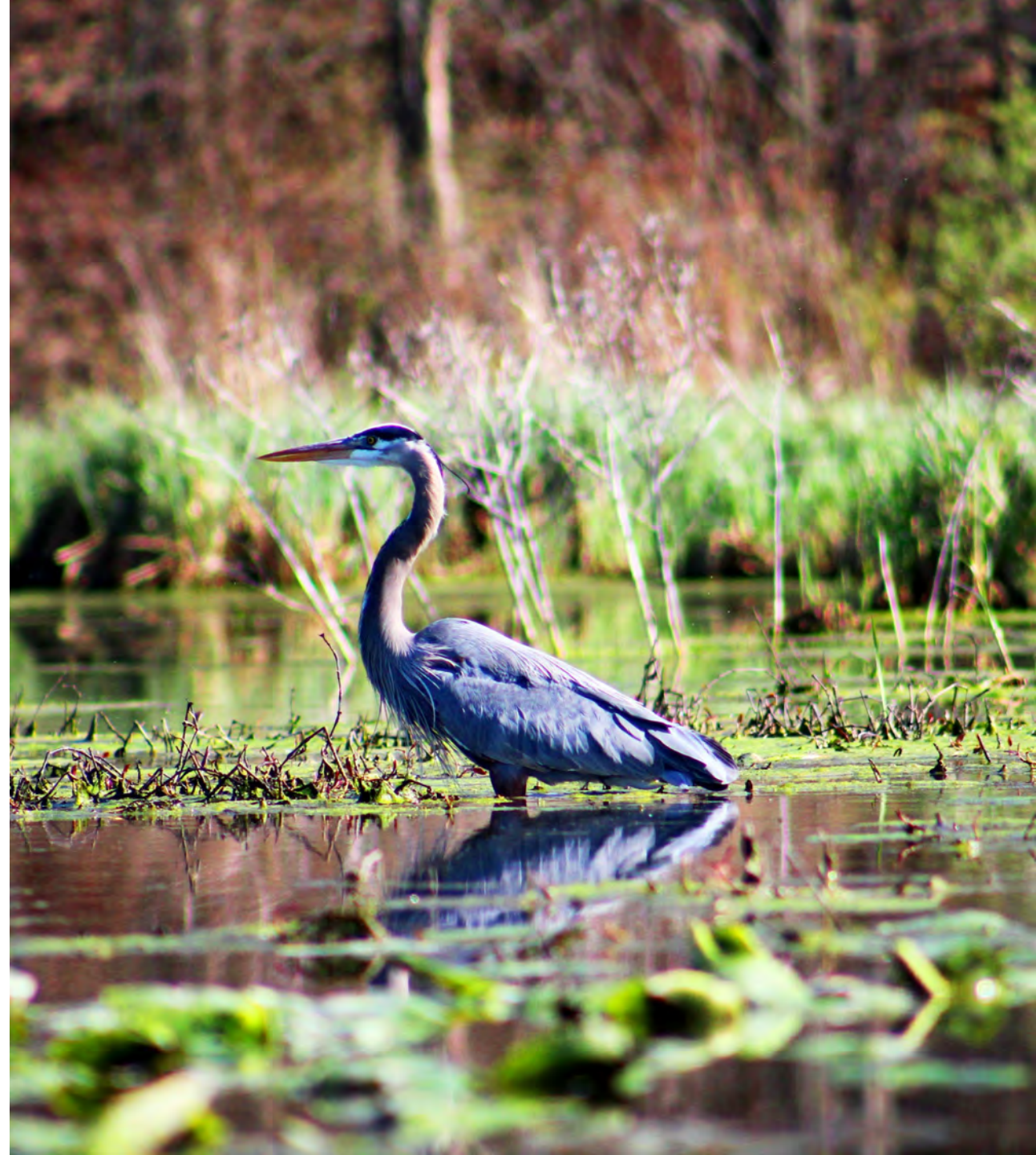
Environmental Engineers

Hydrologists

Water Resource Specialists

Foresters, Forestry Technicians, &
Forestry Maintenance Worker

Biological Field Technicians





GSI/ Training



RainWise Contractor Training

Program delivered jointly by King County Wastewater Treatment Division and SPU

Rebates (50 to 100% of the project cost) to property owners for rain gardens and cistern installations

3-day training

Residential scale

RainWise contractors handle pre-inspection, build, and post-inspection



Dirt Corps

Create access to green careers for all

Paid six-week training on environmental restoration and GSI

Hands-on design and construction

Residential scale





Washington Stormwater Center

Episodic

Limited in scope

Primarily online training



GSI Occupations and Career Pathways Dashboard

Green Stormwater Infrastructure Careers

Purpose

Green stormwater infrastructure (GSI) is a growing focus in the Puget Sound region. Protecting the health of our waterways and the Sound is critical to the health of our communities, particularly frontline communities that experience the impact of climate first and most severely.

Frontline communities are disproportionately communities of color, low income, and speak languages other than English. Thus, involvement of and leadership by people from frontline communities is essential for successful GSI implementation.

This dashboard maps careers involved in GSI.

GSI Jobs Tab

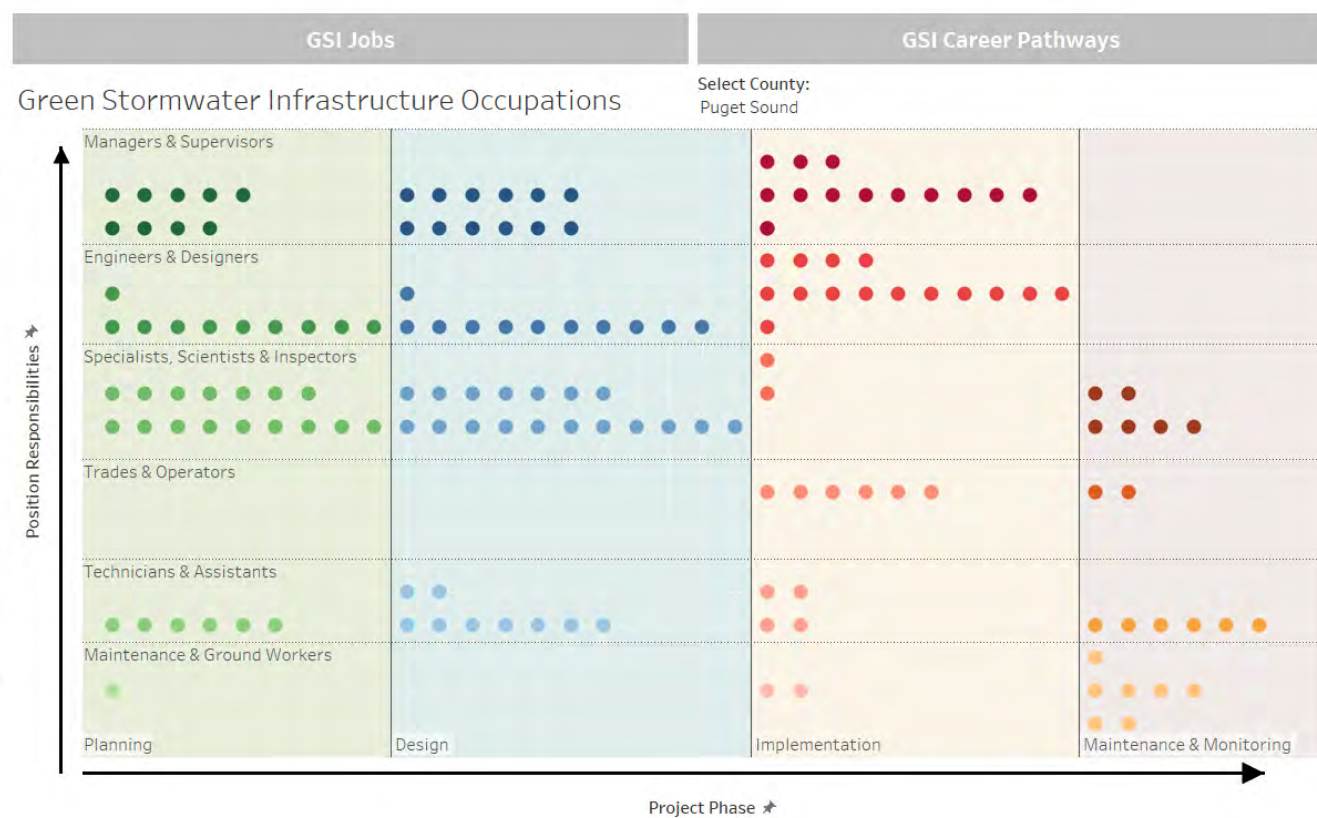
In this grid are the occupations involved in GSI projects by the phase and the degree of responsibility for the project. The tool tip contains information about the education, training, and credentials typically required. It also contains the statistics from LightCast (a national labor market data provider) on demographics, median income, and the growth projections for the occupation based on the county or for the entire Puget Sound region.

The map below the grid contains the training programs in the state for the occupation identified (if any).

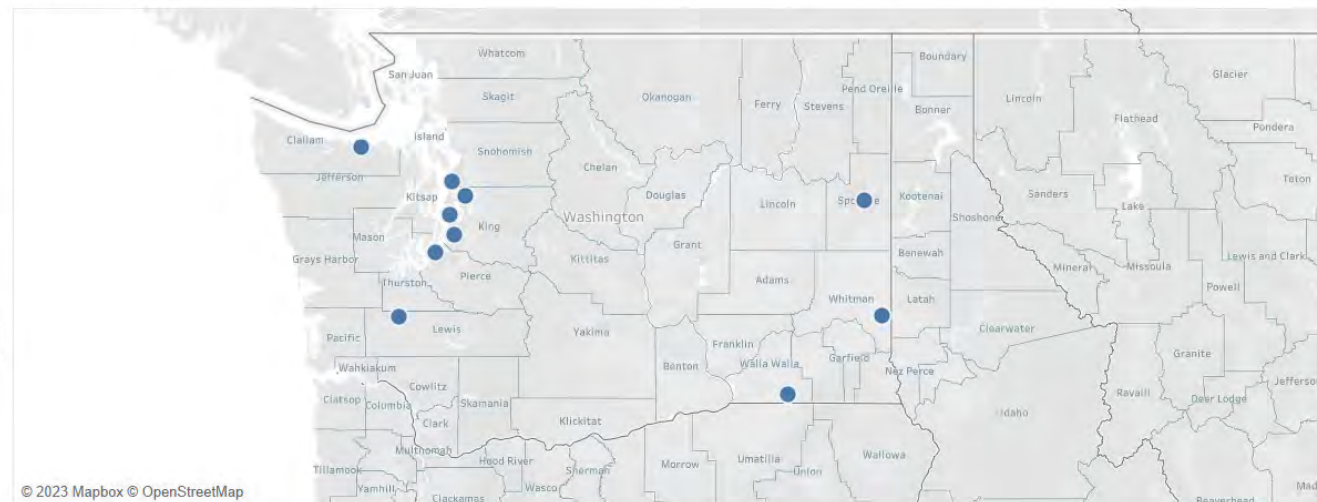
GSI Career Pathways Tab

This tab presents the different career pathways found in GSI by topic of work or study. The following sectors were included in this dashboard: Public Sector, Community and Social Work, Environmental Sciences, Hydrology, Forestry, Construction, Trades, and Maintenance.

The GSI Career Pathways Tab shows what a typical career pathway looks like for each of these sectors, from entry level (requiring less than 2 years of training). The tool tip contains information on the requirements to enter the selected occupation (education, work experience, on-the-job training) as well as projected employment growth and expected annual earnings collected from LightCast. It also provides a short job description (obtained from O*NET, an occupation classification from the Department of Labor) and a list of related GSI training or certificates available for the selected occupation (if any).



Training Programs for First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers





Conclusions



Research Questions

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Are there Green
Stormwater career
paths?

Yes!

Enhancing existing paths:
applying existing knowledge
and skills in new ways

Community education and
engagement

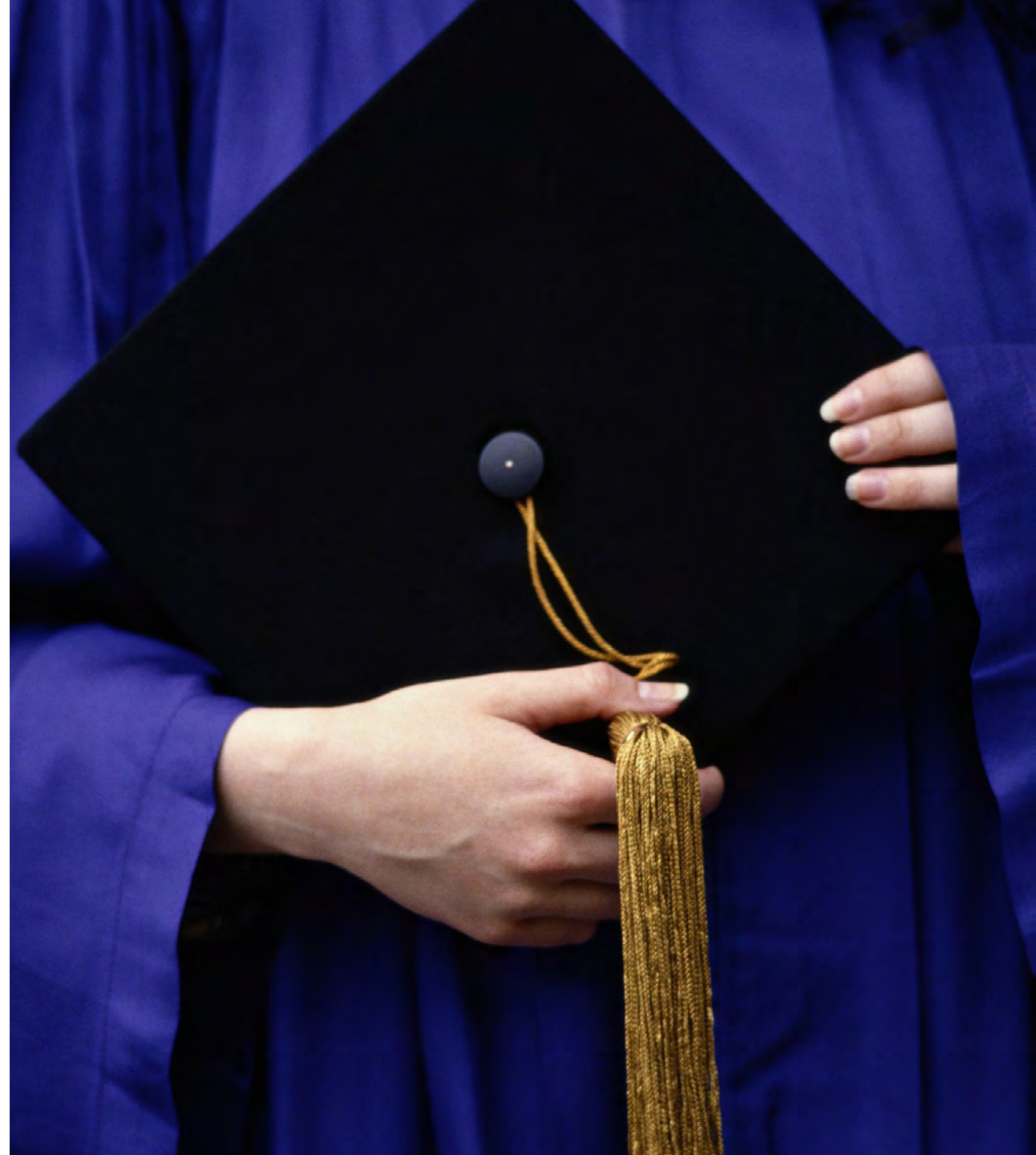


What training or credentials are there?

Dirt Corps has an excellent reputation

RainWise reportedly offers a business development opportunity

But no consistent professional certification or credential that workers can take from job to job or project to project





What training, credentials, or experience do workers need?

On-the-job GSI experience allows laborers and maintenance workers to be creative and experiment

Community education & engagement is a significant component without an identified pathway



Are pathways to project design & management accessible?

Opportunities in residential-scale design & construction

Not clear how sustainable they are

Utility scale planning, design, and project management limited to 4-year degree pathways





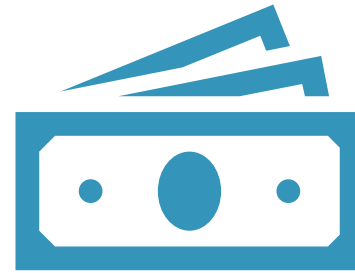
Recommendations



Advocate for policies that prioritize hiring RainWise/Dirt Corps grad contractors for maintenance



Strengthen pipeline from laborers to technicians and from technicians to design and project management



Identify funding for credentialing through programs like Dirt Corps



Support Community Education/Engagement as a role with unique skills and prioritize hiring from frontline communities



Thank You!

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Opportunity to Engage

1. Join the Collaborative!
2. **Attend the March 2 Workshop** focused on activating the recommendations in this report

Interested in learning more or joining the workshop
Reach out to Hannah – hannah.kett@tnc.org