

# National Green Infrastructure Certification Program NGICP

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# Objectives

- Who we are and why we are involved in green infrastructure education
- NGICP overview
- How certification supports green infrastructure
- Job market potential

# How I Got Here



# Sustainability at Parkland

- Sustainable Campus Committee
- Champaign County Regional Planning Commission & Local Green Infrastructure Projects
- Community Education

# Why GI-specific education?

- Lack of skilled laborers
- Lack of discipline cross-over
- Funding for projects
- Maintenance issues
- Diversity of best practices
- Lack of time
- Lowest-bid culture



# NGICP Overview

# Water Environment Federation (WEF)

- Credentialing body
- “Not-for-profit technical and educational organization of 35,000+ representing **water** quality professionals around the world.”



# Summary

- Sets **national certification standards** for construction, inspection and maintenance workers
- Designed to meet **international best practice standards**
- Aims to advance the establishment of **sustainable communities by promoting green infrastructure (GI)**
- Support the development of **proficient green workforce**
- Establish a **career path** for skilled GI workers





# Structure

- Initiated by DC Water and Water Environment Federation
- Includes 15 partnering organizations from across the country
- Led by a Governing Body and includes a Strategic Planning and Technical Advisory Groups
- Body of Knowledge defined by experts
- Technical material and test questions based upon Body of Knowledge
- Testing provides confirmation that level of understanding meets a basic threshold

# Community Education Licensed Training Center

- Parkland holds a license
- Requires Certified NGICP Trainer
- Certification Trainings can be flexible

# NGICP Program

- Training material
- In-class training
- In-field training





# Training Sequence

## Information Covered:

- Background Information
  - Introduction to stormwater management and green infrastructure
  - Materials and vegetation used in GI practices and systems
  - Safety, site management, and managing for long-term performance
- Green Infrastructure Best Practices
  - Bioretention
  - Permeable/porous pavement
  - Rainwater harvesting
  - Green/Blue roofs
  - Dry wells
  - Constructed stormwater wetlands

# Practices

## Information Covered for GI Practices:

- Background information
  - What the GI practice is and how it functions
  - The components and materials used for the GI practice
- Construction
  - Sequence of construction
  - Typical/common problems – good/bad examples
- Inspection and Maintenance
  - What to look for – typical/common problems including good/bad examples
  - Types of corrective action to take



- Must complete 35 pdu/ 2 yrs to maintain certification
- Working community of certified professionals
- WEF hopes to add levels of certification

# Currently:

- **Certified Individuals:** 468 (as of June 30, 2019).
- **Licensees:** NGICP now has 14 licensees (USA, Canada, New Zealand)
- **Partners:** 15 partners

# Currently:

- **Volunteers:** 100+ volunteers
  - Strategic Advisory Council (governance)
  - Certification Committee (maintain certification scheme)
  - Technical Advisory Group (development of technical components)
- **Trainers:** 61 approved trainers globally
- **Trainings:** 2019 = 13 trainings



# Two Trainings in 2019



# Challenges

- Creating demand for certification while offering it
- Timing
- Own standards and ideas
- Economic gain isn't established
- Calls for work should include specific GI skills
- Unplanned costs for maintenance



# Opportunities

- Education
- Creating demand for certification while offering it
- Collaboration & consolidation

# Why certification?

- **Why support a national certification rather than use local education and in-house training?**

# Stormwater Management

- Can you see that a certification program might help manage stormwater?

# Stormwater Management Compliance

- How can compliance be made easier with a set of international best practices?

# Urban Development

- How does certification help solve issues regarding sustainable development?

# Maintenance Solutions

- How does training help maintain green infrastructure sites?





# Current Job Market

<https://www.youtube.com/watch?v=UeJIFXQH3RA>

March 2017; Jobs for the Future,  
NatureWORKS Report (3:23)

- “According to Mark Zandi, Chief Economist of Moody’s Analytics, infrastructure investments create over 16 percent more jobs dollar-for-dollar than a payroll tax holiday, nearly 40 percent more jobs than an across-the-board tax cut, and over five times as many jobs as temporary business tax cuts.”

# Job impact from \$188.4 billion of water infrastructure investment over five years

	Direct and indirect jobs	Induced jobs	Total job impact
Jobs	<b>1,293,015</b>	<b>568,927</b>	<b>1,861,942</b>
Full time equivalent jobs*	<b>1,831,772</b>	<b>805,980</b>	<b>2,637,751</b>

\* A full time equivalent job is equivalent to a 40-hours-a-week job. It is more correctly described as a measurement of work translated into jobs, rather than a measurement of jobs themselves. A measurement of FTEs is thus more comprehensive because it includes both the new jobs created and the increased hours worked by existing employees, while a straightforward job creation measurement ignores the latter effect.

*WaterWorks: Rebuilding Infrastructure, Creating Jobs, Greening the Environment. 2011*

# 2014 Chesapeake Day

## Bay Journal

[Home](#) [Topics](#) [Features](#) [Opinion](#) [Travel](#) [Blog](#) [Films](#) [Events](#)

### Green infrastructure jobs outpacing pool of skilled workers

Groups seek funding to create certification programs.

By Rona Kobell on May 28, 2014

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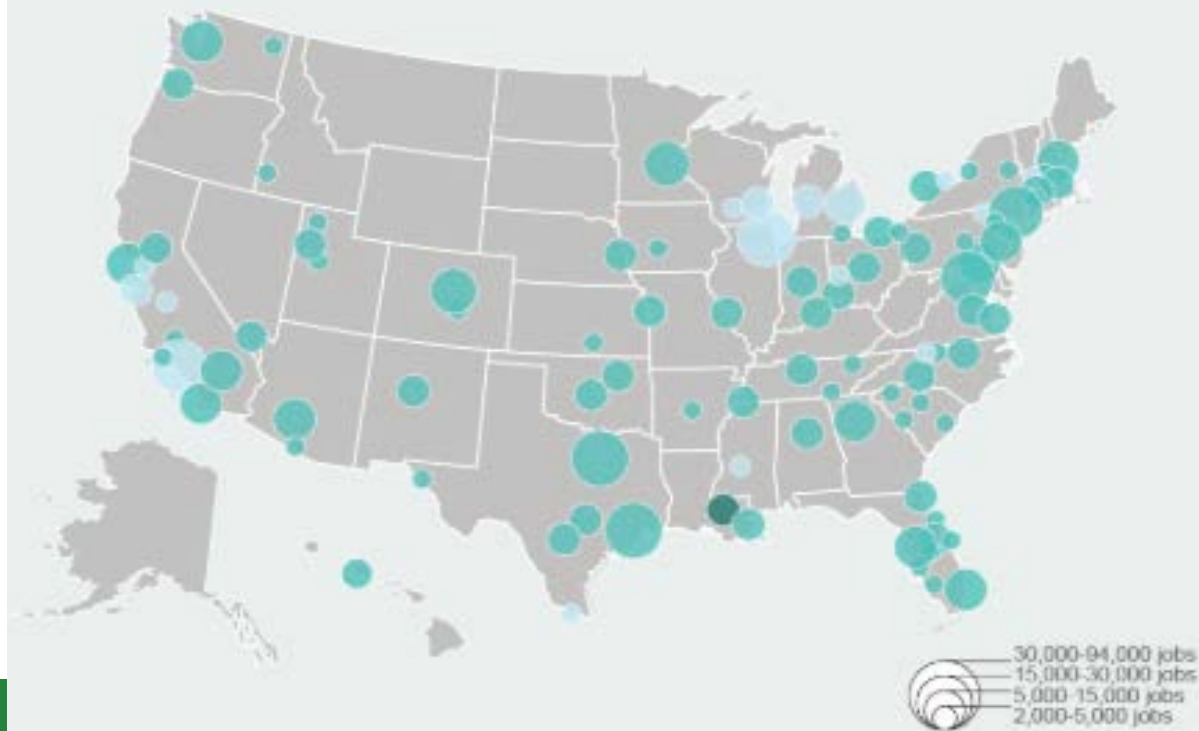


- 2016, 1.7 million water-related jobs

## Water workers in the 100 largest metro areas

By total employment and share of employment, 2016

 <1% of employment    1-2% of employment    >2% of employment



30,000-94,000 jobs  
15,000-30,000 jobs  
5,000-15,000 jobs  
2,000-5,000 jobs

# Occupations

- 2016, 1.7 water-related jobs
- Higher education requirement
- Entry & middle level
- Community workforce agreements
- 30 different occupations GI-related
- Trends- 6-11% growth in GI-related through 2020

# Greatest Need- Occupations

- Supervisors for landscaping & horticulture workers
- Landscaping & groundskeeping workers
- Tree trimmers & pruners
- Excavating & loading machine operators
- Laborers, nursery & greenhouse

# Opportunities

- Existing occupations with additional training
- Employers challenged to find trained individuals (pay premium)
- Workforce development



# Clean Rivers Project- DC

- Entry level positions associated with NGICP certification
- Over half of certificate holders have been hired by DCWater

# Greatest Need- Workforce Development

- Acknowledge local diversity
- Water workforce needs public visibility
- Look for talent in untraditional places
- Determining why hiring skilled workers is difficult
- Proactive recruitment strategies
- Equip workers with hard & soft skills
- Ongoing need to retain & grow talent in water sector

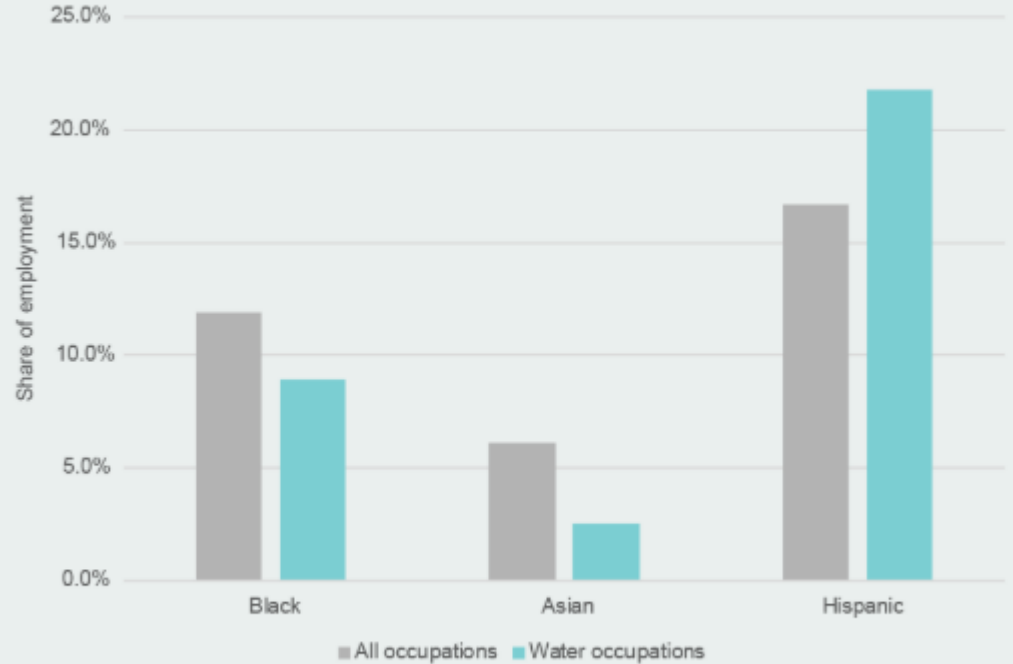
# Opportunities

- Earn competitive wages and face lower educational barriers to entry.
- Develop extensive knowledge and interdisciplinary, transferable skills
- Retirements & employment shifts in the infrastructure sector means prospective workers can find long-term careers

# Racial Diversity

- White  
65.3%

Racial Diversity in Water Occupations vs. All Occupations, 2016



<https://www.brookings.edu/research/water-workforce/>

Source: Brookings analysis of BLS Occupational Employment Statistics and CPS data

# Chicago-Naperville-Elgin, IL-IN-WI

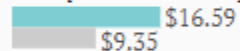
Metro area water employment, 2016

42,819

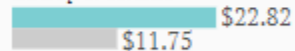
Rank: 4/100

Hourly wage distribution of the water workforce (■) versus all occupations (■), 2016

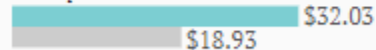
10th percentile hourly wage



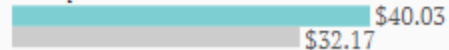
25th percentile



50th percentile



75th percentile



90th percentile



<https://www.brookings.edu/research/water-workforce/>

# Water Workforce Playbook

- Renewing the water workforce: Improving water infrastructure and creating a pipeline to opportunity, Metropolitan Policy Program, Brookens, 2018
- <https://www.brookings.edu/wp-content/uploads/2018/06/Brookings-Metro-Renewing-the-Water-Workforce-June-2018.pdf#page=31>

# Workforce Development

- Highest growth potential
- Turn unskilled into skilled labor force
- Fill gaps created by green infrastructure installations

# Thank you!

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