



LEED for Communities in the New York Olympic Region: Energy and Sustainability Planning Approaches for Multi-Jurisdictional, Rural, Tourist-Based Communities



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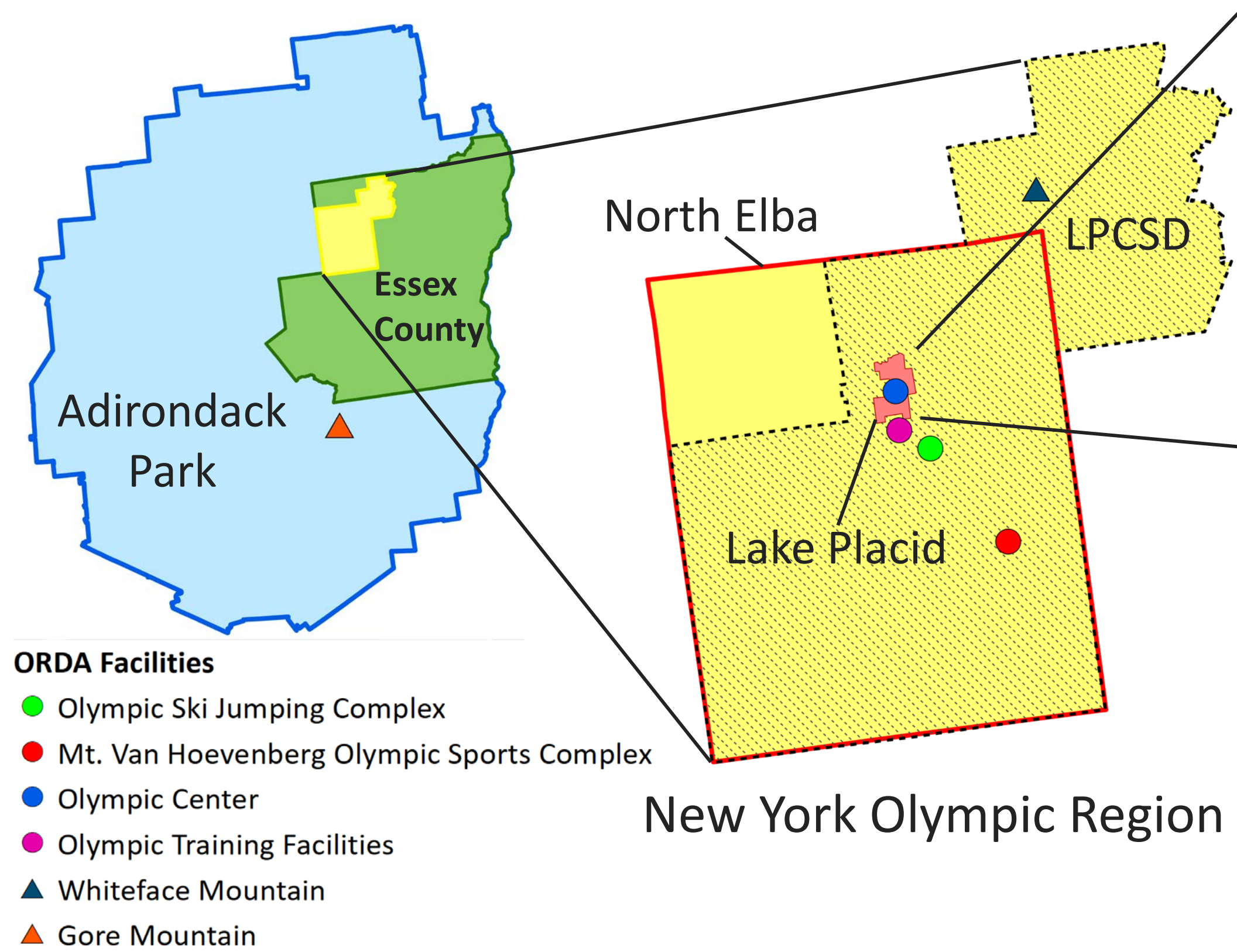


Abstract

The **LEED** (Leadership in Energy and Environmental Design) **for Communities** (LFC) program is a Sustainable Holistic Planning System (SHPS) created by the US Green Building Council (USGBC). Clarkson University collaborated with the USGBC and the New York Olympic Region (NYOR) to implement and provide feedback for this program. NYOR is a rural, multijurisdictional, and tourist-centric region comprised of 4 jurisdictions: Lake Placid Village and Central School District, North Elba Town, and the Olympic Regional Development Authority.

The implementation of LFC in NYOR exposed the challenges of applying largely urban-centric sustainability programs in non-urban communities. It is the catalyst for a multifaceted, multidisciplinary research effort by Clarkson to aid in making SHPS' accessible to non-urban communities.

Region of Study



Overview

- A sustainability planning system
- **Iterative** data tracking
- Focus on **human-centric** planning and sustainability

Performance Metrics

- 14 metrics tracked yearly in every LFC jurisdiction
- Performance scores awarded by comparing similar communities

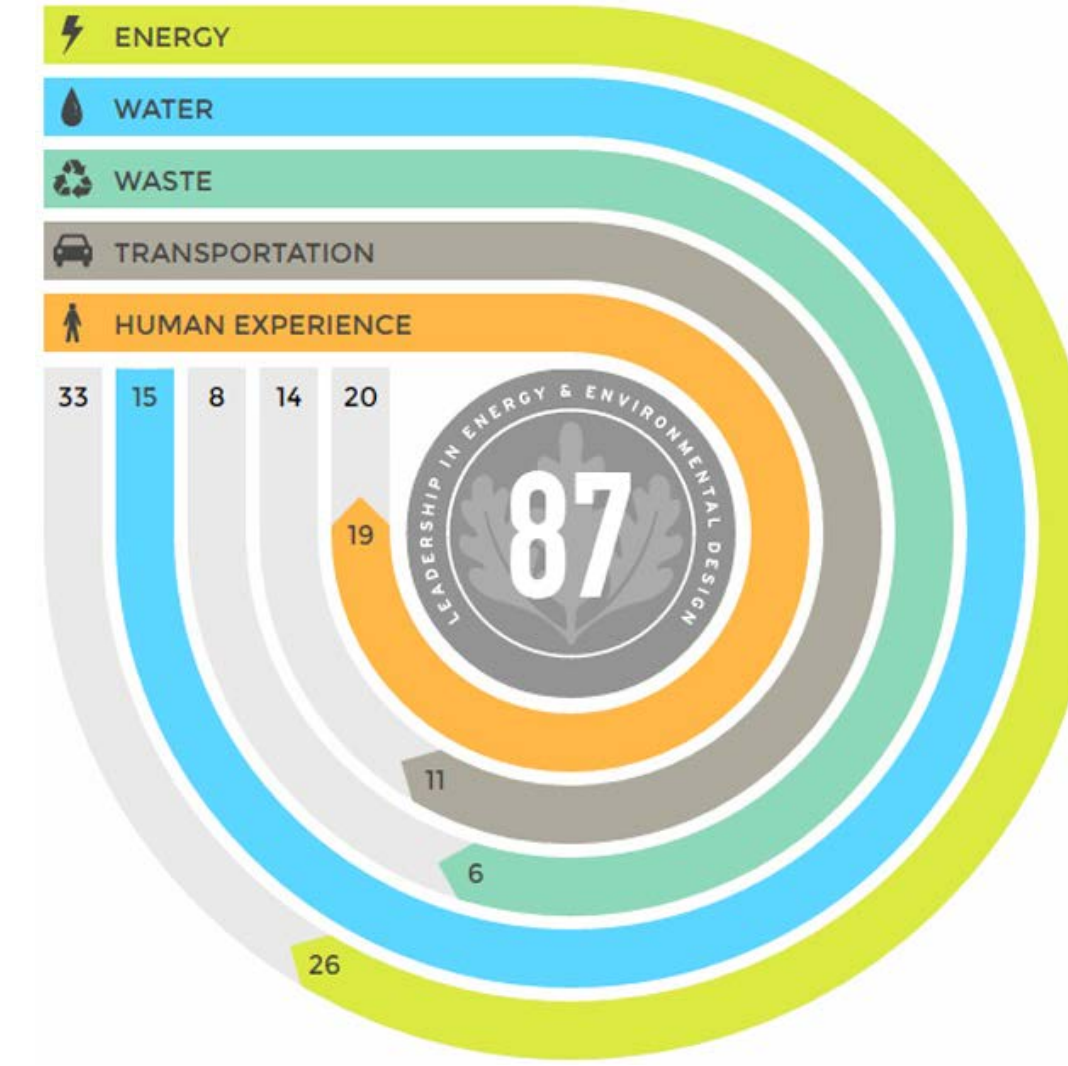


Community Metrics

- Community metrics are unique to community goals

Creating Community Metrics

- Interpreting stakeholder goals
- Lake Placid/North Elba Community Development Commission 2014 Comprehensive Plan
- SMART goals (Specific, Measurable, Attainable, Relevant, and Timely)



LEED for Communities (NYOR Case Example)

Performance Metrics (14)

- GHG Emissions (CO2 Equivalent)

- Domestic Water Consumption

- Municipal Solid Waste Generated
- MSW Diverted from Landfill

- Vehicle Miles Traveled

- Population with (at least) a High School Degree
- Population with (at least) a Bachelor's Degree
- Median Gross Rent as a % of Household Income
- Income Differential/Gini Coefficient
- Median Household Income
- Unemployment Rate
- Median Air Quality Index (AQI)
- Air Quality Days Unhealthy for Sensitive Groups
- Violent Crime

Community Metrics (120)

- Energy Consumption (13)
- Renewable/Alternative Energy (21)
- Electricity (10)
- Building Efficiency (8)

- Water Monitoring (9)
- Water Sources (8)

- Recycling (5)
- Waste Management (4)

- Connectivity (8)

- Community Engagement & Satisfaction (12)
- Health and Accessibility (5)
- Sustainable Recreation (5)
- Affordable Housing & Prosperity (12)

Examples

- Total Energy Used for Snowmaking (kWh) at Whiteface Ski Resort

- Gallons of Rainwater Collected Per Year by LPCSD Students

- # Businesses Committed to Reducing or Eliminating Single-Use Plastics

- # Residents who Commute using Public Transportation

- Miles of Universal Access Trails in NYOR
- # Residential Properties Listed for Short Term Rental



Fall 2018 Adirondack Semester

- Courses provided background knowledge and technical skills to aid students in the research effort

- Set in the ADK Park to immerse students in the region of study and allow easy access to local resources

Research Questions / Significance

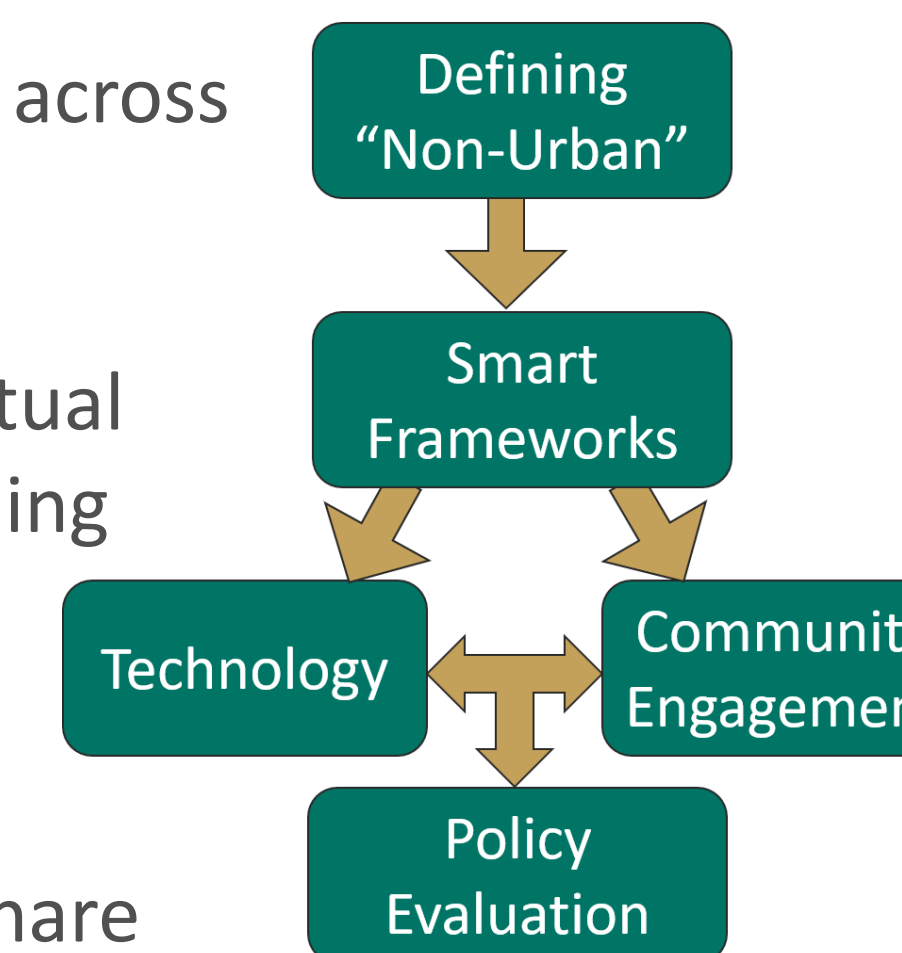
- How well do SHPS' function in non-urban communities?
- What are the best practice frameworks?
- Which civic and community engagement methods can non-urban communities use to effectively engage stakeholders and residents in decision-making?

SHPS have been applied mostly in urban contexts, but non-urban communities number in the millions globally. In the US, they comprise the largest amount of land area, account for most of the counties, contain almost all agricultural output, and encompass spaces with environmental importance and sensitivity. Our project will contribute toward the development of theories and best practices of non-urban SHPS implementation.

Research Activities

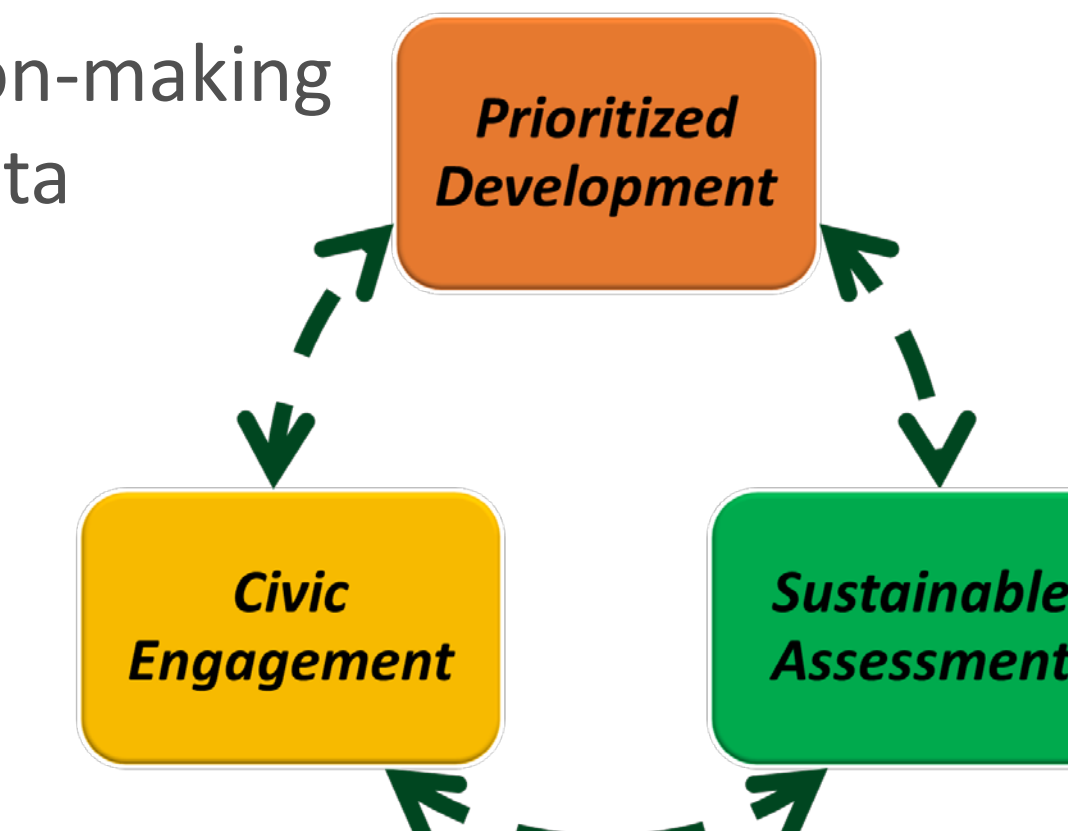
Past:

- Implementation and Case Study of LFC in non-urban multi-jurisdictional community (NYOR)
- Development of **How-To Guide**
 - Practical guidance document outlining steps for LFC certification
 - Generalized for non-urban communities across America
- Literature Review
 - Potential application of SHPS' as conceptual frameworks to improve efficacy of planning in non-urban communities
- Action Learning
 - Partnering academic institutions with communities: a unique opportunity to share resources, experience, and expertise



Future:

- Addressing Civic Engagement and Decision-making
 - Analytical Hierarchy Process and Data Envelopment Analysis
 - Economic Choice Experiments
 - Participatory GIS
- Analysis of additional cases
- Comparative Analysis of multiple SHPS



Implementation Challenges

General Challenges (all non-urban settings)

- Inherent urban-centrism of SHPS
- Critical role of environment in non-urban contexts
- Limited resource availability compared to cities

NYOR Challenges (case specific)

- Transient populations
- Multi-jurisdictional community
- Tourist-centric economy

Research Outcomes

Certification

- LFC Silver or gold expected May 2019

White Paper

- LFC Methodology & challenges (NYOR)

How-To Guide

- Being adopted by USGBC

In Preparation:

- NYOR Case Study
- Literature Review
- Comparative & Engagement Research

Affiliations and Contact Information

Clarkson University: ¹Civil and Environmental Engineering, ²Psychology, ³Political Science, ⁴Reh School of Business, ⁵Institute of Sustainable Environment, ⁶Mathematics

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