Integrating LEED ND & SITES Into Your Design Approach

- **Joshua C. Sloan, RLA, ASLA, AICP, LEED AP ND, SITES AP**
- **Stephen K. Cook, RLA, ASLA, LEED AP O+M**

- **VIKA MD, LLC**
- **Planning • Landscape Architecture • Engineering • Surveying • Geomatics**

Agenda

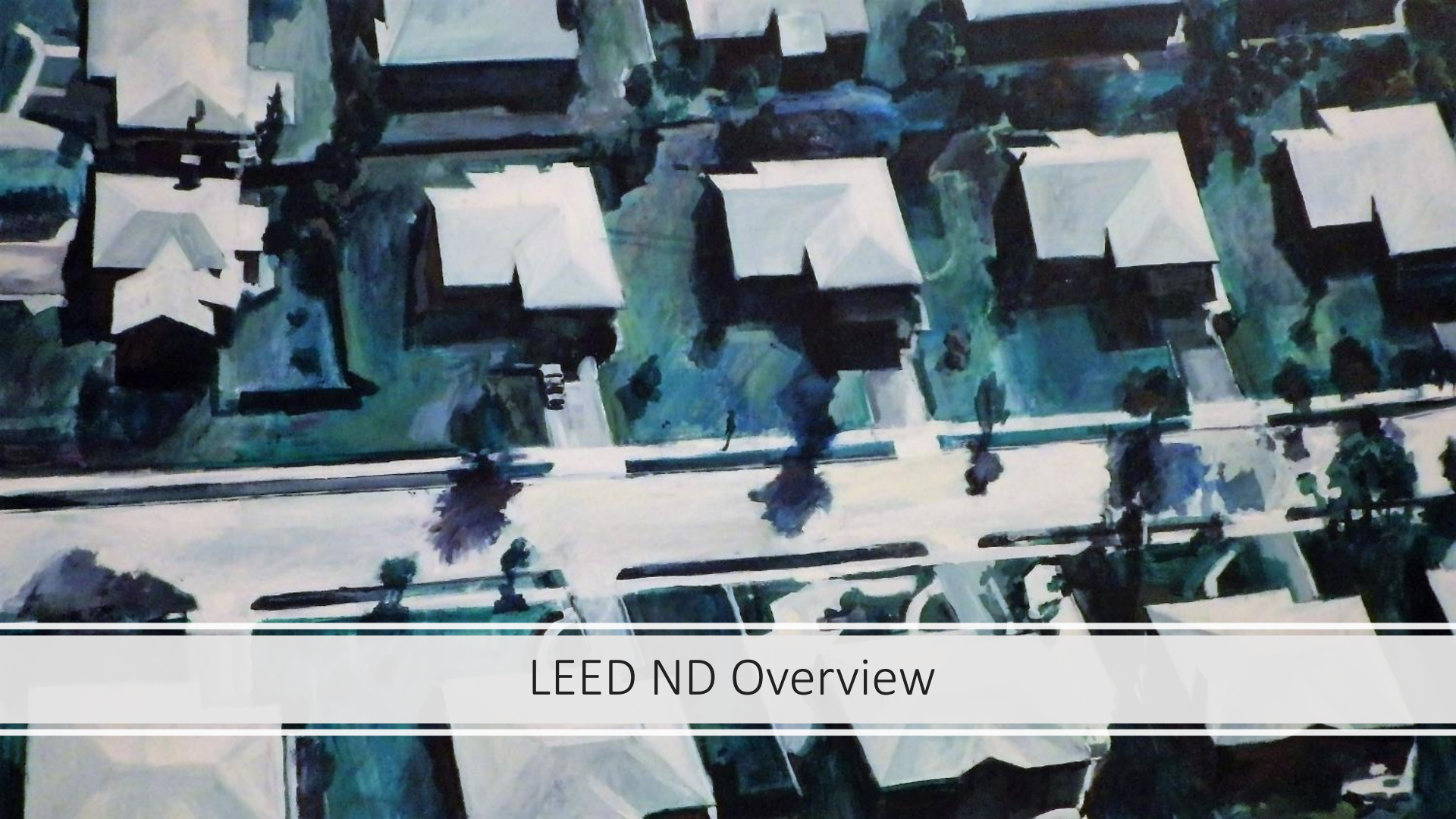
- Introductions
- LEED ND & SITES Intro
- Design Process
- Sustainability Framework
- 4 Credit Comparisons
- Comments/Questions

What professional “green” credentials do you have?

1. LEED AP ND
2. SITES AP
3. Both LEED AP ND & SITES AP
4. Other LEED/Green certification
5. None

What is your profession?

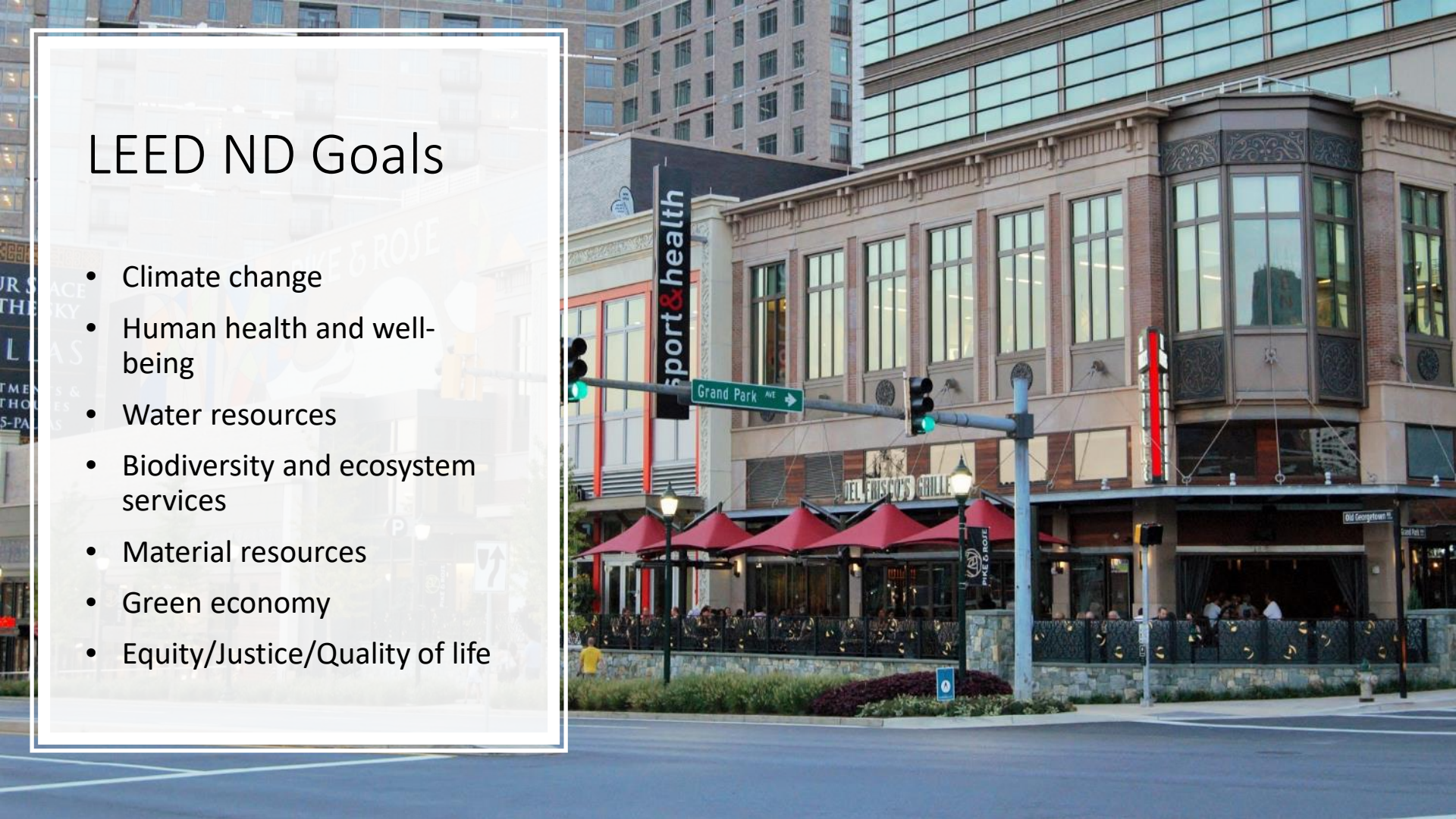
1. Landscape Architect
2. Planner
3. Architect
4. Engineer
5. Other



LEED ND Overview

LEED ND Goals

- Climate change
- Human health and well-being
- Water resources
- Biodiversity and ecosystem services
- Material resources
- Green economy
- Equity/Justice/Quality of life

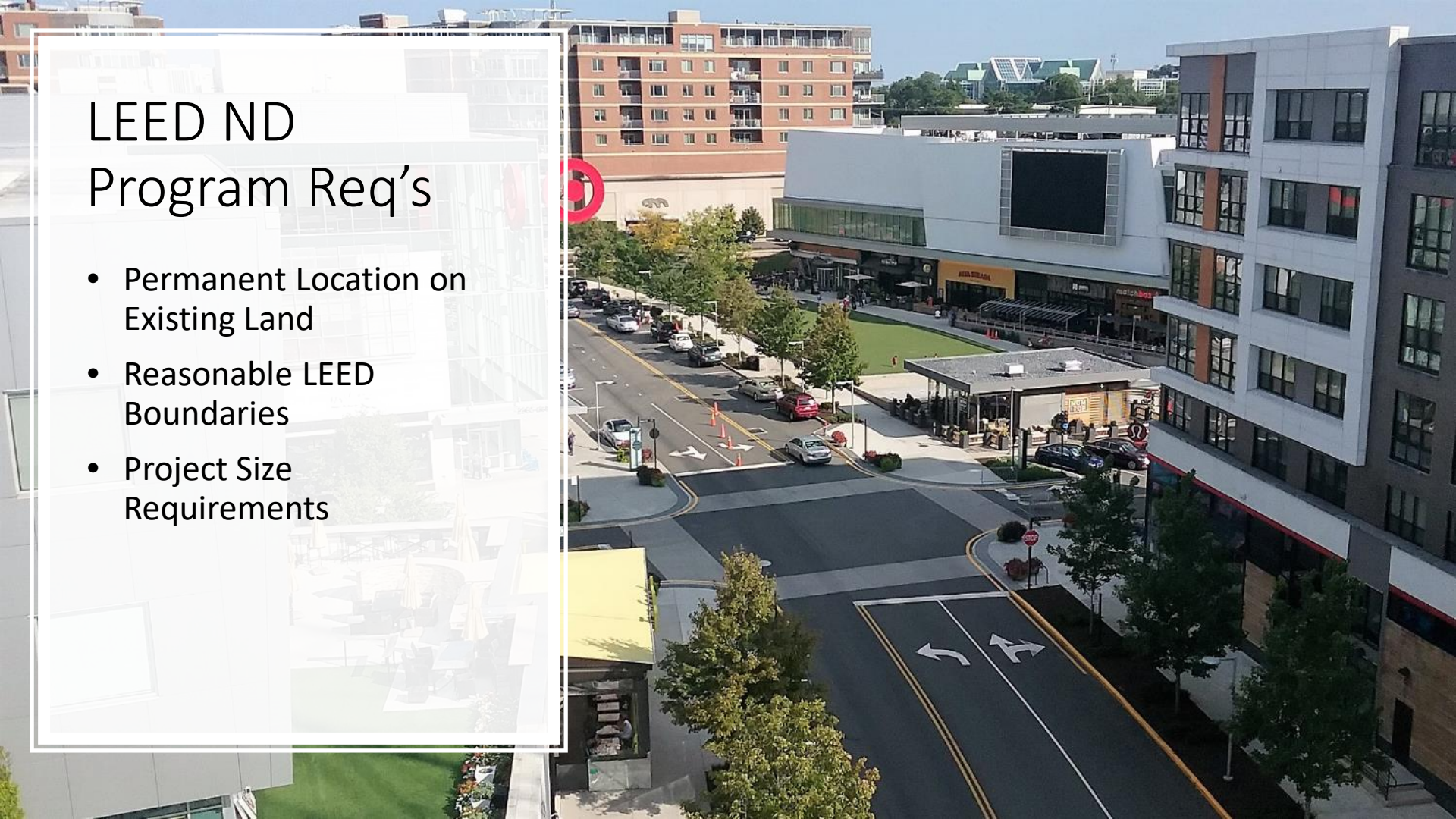


LEED ND Benefits

- Scale
- Comprehensiveness & Synergies
- Longevity

LEED ND Program Req's

- Permanent Location on Existing Land
- Reasonable LEED Boundaries
- Project Size Requirements

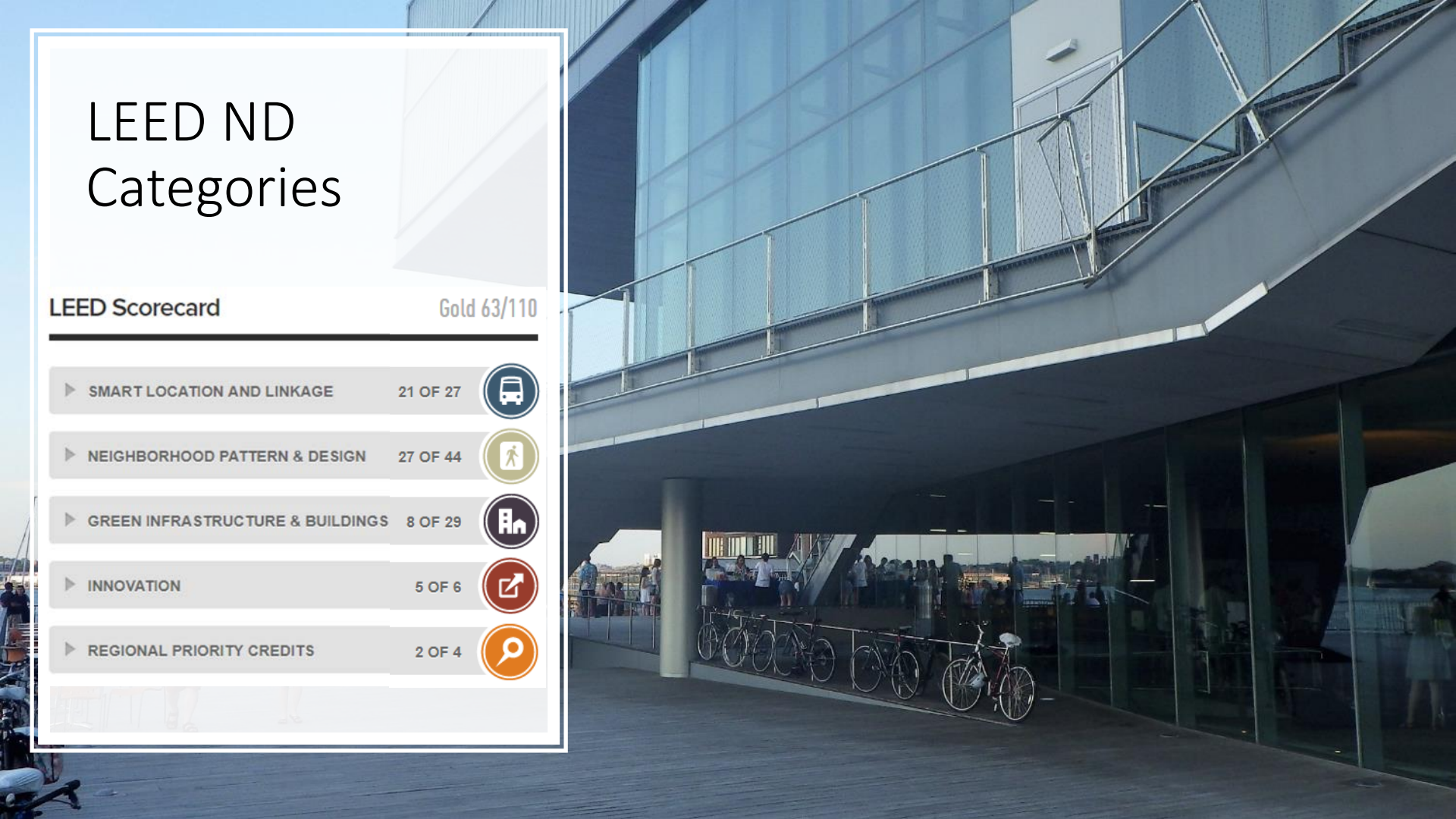


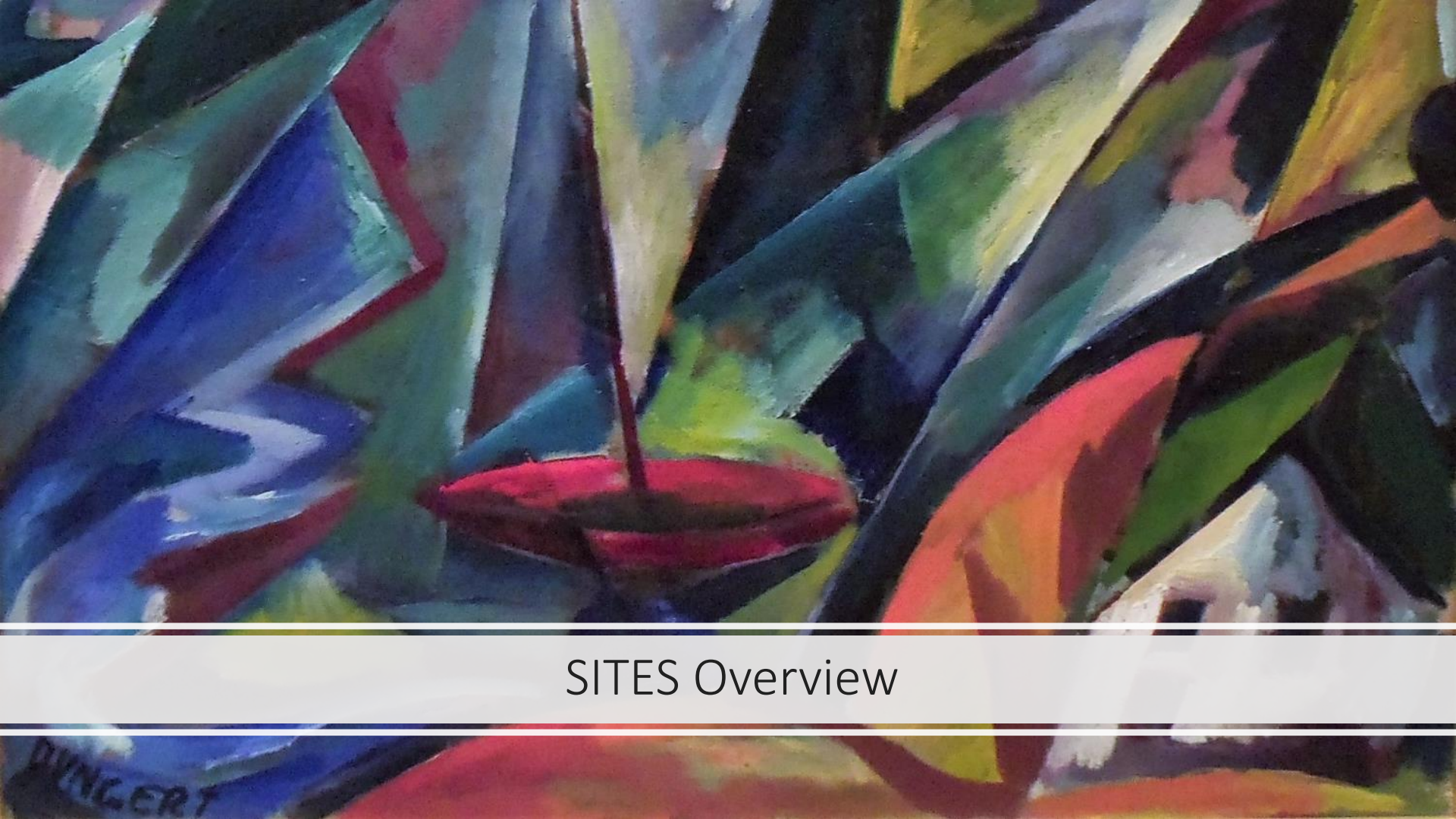
ND Plan v ND Built Project

- LEED ND: Plan – in the planning stage or < 75% GFA constructed
- LEED ND: Built Project – at or after full buildout

[Image: MoCo Planning Department]

LEED ND Categories





SITES Overview

SITES Goals

- Regenerative Systems & Resiliency
- Resource Supply & Climate Change
- Market Transformation
- Individual & Community Well-Being

SITES Benefits

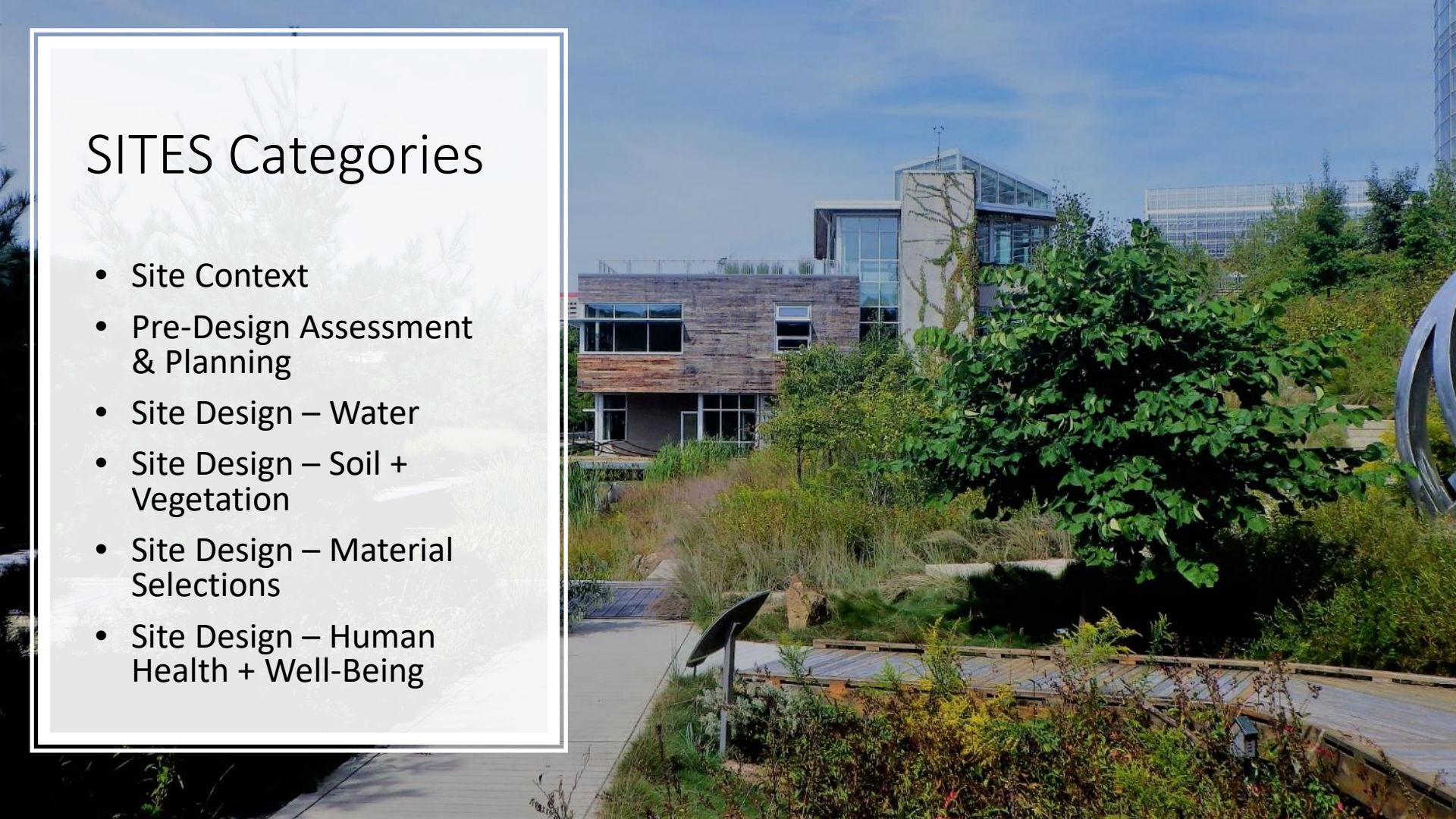
- Best Practices
- Health/Safety/Welfare
- Standards
- Marketability
- Ethics

SITES Program Requirements

- New Projects & Major Renovations
- No Max Area; 2,000sf Min Area

SITES Categories

- Site Context
- Pre-Design Assessment & Planning
- Site Design – Water
- Site Design – Soil + Vegetation
- Site Design – Material Selections
- Site Design – Human Health + Well-Being



SITES Categories

- Construction
- Operations + Maintenance
- (Education + Performance Monitoring
- Innovation or Exemplary Performance)

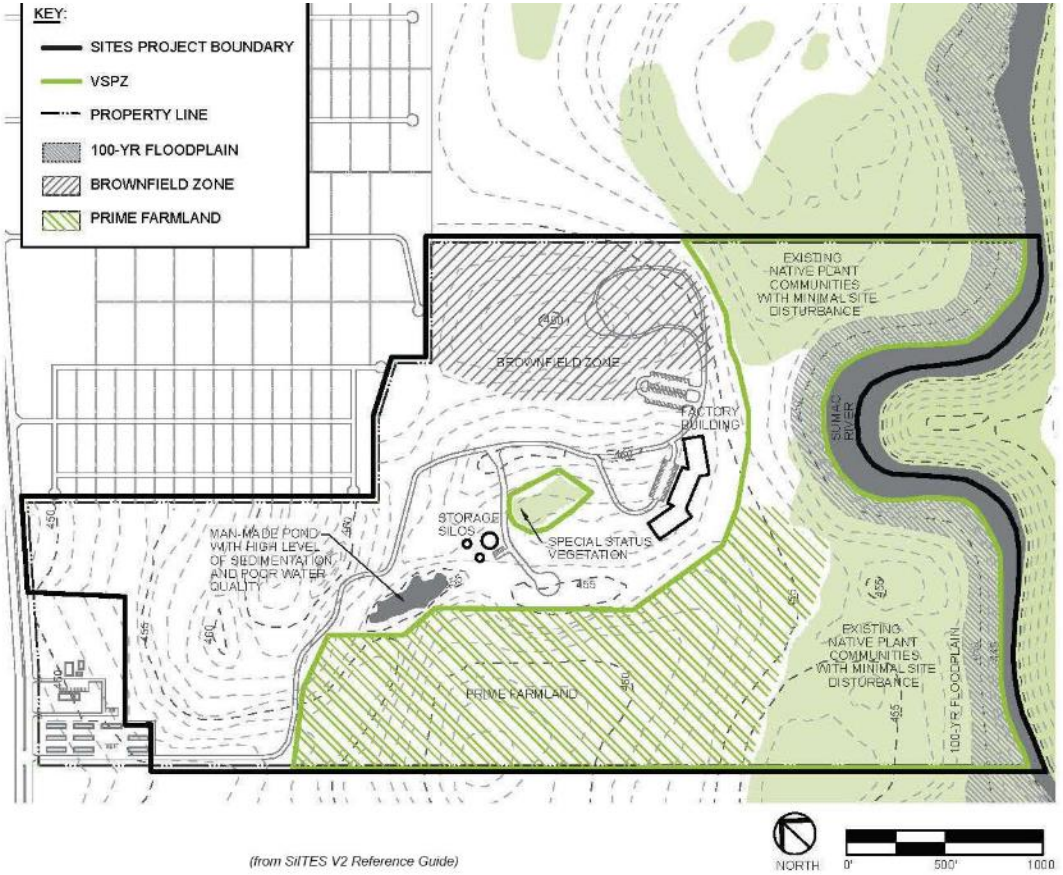
LEED ND & SITES Credit Crosswalk

Have you worked on a LEED ND or SITES project?

1. LEED ND
2. SITES
3. Both
4. Neither
5. Other LEED

SITES Boundaries

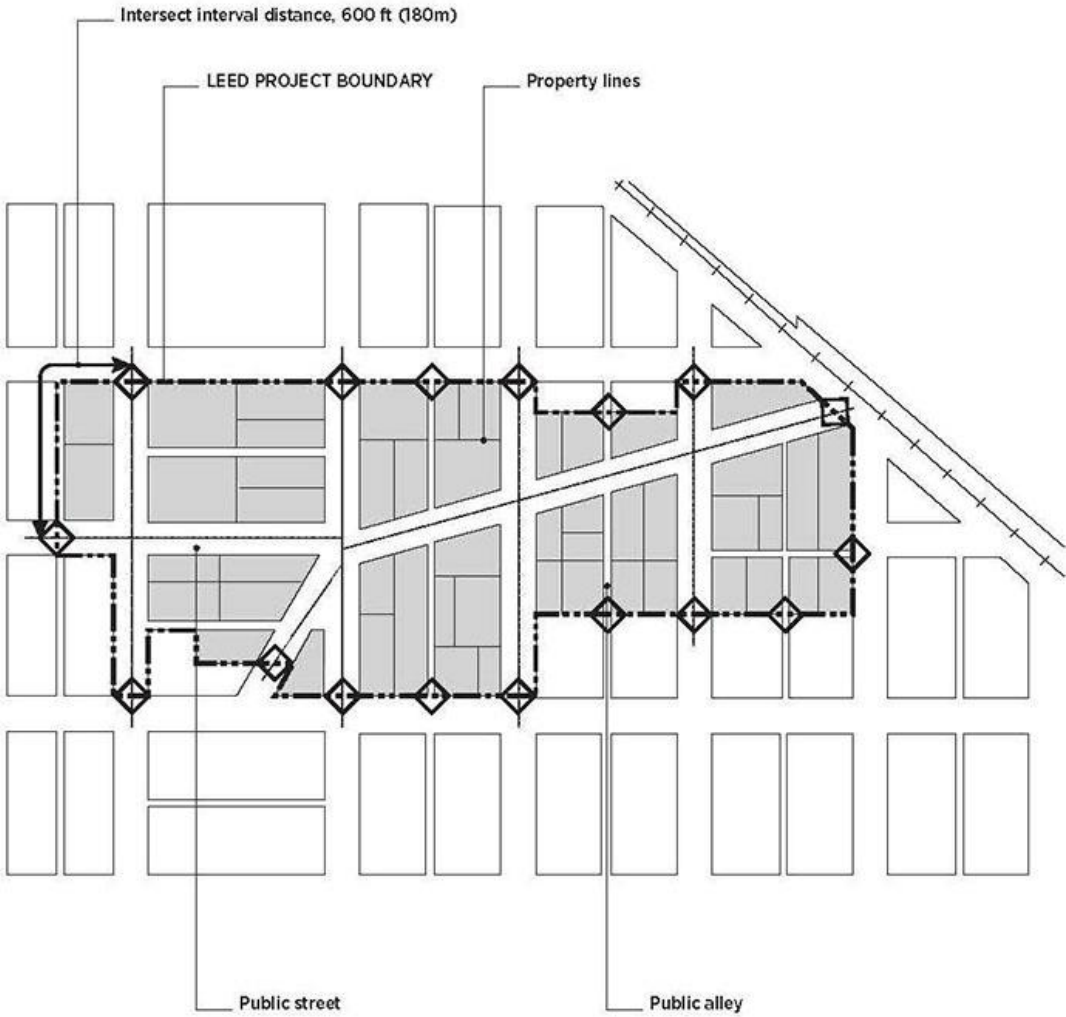
- Land that supports all normal site operations
- Typically a contiguous property
- Non-contiguous if only separated by ROW
- Held under one ownership, management, developer, or maintenance body



(from SITES V2 Reference Guide)

LEED ND Boundaries

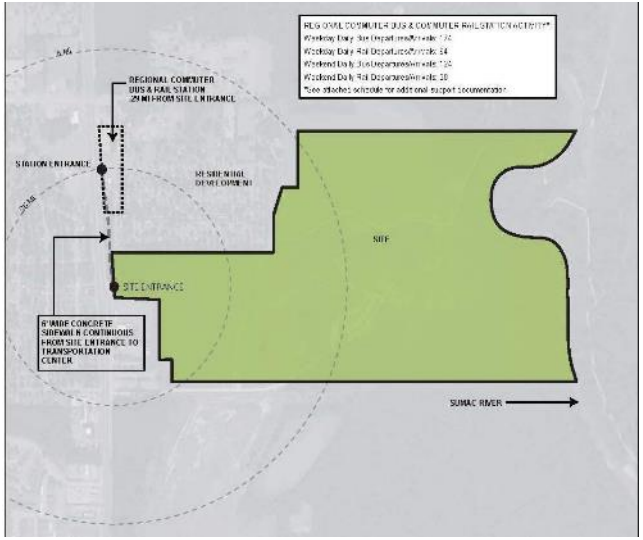
- One or more parcels
- May include adjacent ROW
- If including a ROW, must include entire width
- Pick carefully to meet pre-req's & credits



(From LEED ND Reference Gu

Measuring Location Criteria

- Radial measurements
- Walking distances
- Project entrances
- Geographic center
- Adjacent
- Within site



Draft Crosswalk: Potential Full Substitution

SITES v2 CREDIT		LEED ND v2009 CREDIT
Site Context P1.1: Limit development on farmland, Case 1: Sites without farmland soils		SLLp4 Agricultural Land Conservation, Option 1: Sites Without Affect Soils
Site Context P1.2: Protect Floodplain Functions – Case 1: Sites without Floodplains		SLLp5 Floodplain Avoidance - Option 1: Sites Without Floodplains
Site Context C1.5: Redevelop Degraded Sites, Case 1 Previously developed sites		SLLc1 Preferred Locations Option 1: Location Type (a)
Site Context C1.5: Redevelop Degraded Sites, Case 2 Brownfield Sites		SLLc2 Brownfields Redevelopment: Option 1 Brownfield Sites

Draft Crosswalk: Potential Full Substitution

SITES v2 CREDIT		LEED ND v2009 CREDIT
Pre-design C2.4: Engage Users and Stakeholders		NPDc12: Community Outreach and Involvement, Option 1
Water P3.2: Reduce Water Use for Landscape Irrigation (only Design the Landscape for no Permanent Irrigation)		GIBc4 Water-Efficient Landscaping (Projects with no new or existing irrigation)
Human Health + Well Being C6.1: Protect and maintain cultural and historic places, Option 2: Historic or cultural landscapes		GIBc6: Historic Resource Preservation and Adaptive Reuse (Projects with cultural or historical landscapes that are not altered)
Construction P7.2: Control and Retain Construction Pollutants		GIBp4 Construction activity pollution prevention

Draft Crosswalk: LEED ND Earns SITES

SITES v2 CREDIT		LEED ND v2009 CREDIT
Site Context P1.2: Protect floodplain functions, Case 2: Previously developed and brownfield sites within floodplain	←	SLLp5 Floodplain Avoidance - Option 2: Infill or Previously Developed Sites with Floodplains
Site Context P1.3: Conserve aquatic ecosystems, Case 1: Sites without aquatic ecosystems	←	SLLp3 Wetland and Water Body Conservation - Option 1: Sites with No Wetlands, Water Bodies, Land within 50ft of Wetlands or Land within 100 ft of Water Bodies
Site Context P1.4: Conserve habitats for threatened and endangered species, Case 1: Brownfields and previously developed sites	←	SLLp2 Imperiled Species and Ecological Communities Conservation, Option 1: Sites without Affected Species or Ecological Community

Draft Crosswalk: LEED ND Earns SITES

SITES v2 CREDIT	LEED ND v2009 CREDIT
Site Context P1.4: Conserve habitats for threatened and endangered species, Case 2: Greenfield sites	SLLp2 Imperiled Species and Ecological Communities Conservation, Option 1: Sites without Affected Species or Ecological Community
Site Context C1.7: Connect to multi-modal transit networks, Option 2: Transit Network	SLLc3 Reduced Automobile Dependence, Option 1 Transit-Served Location
Pre-design C2.4: Engage users and stakeholders	NPDc12: Community Outreach and Involvement, Option 1: Community Outreach, Option 2: Charrette, or Option 3: Local Endorsement
P3.1: Manage Precipitation On Site	GIBc8 Stormwater Management, All thresholds
C6.1: Protect and Maintain Cultural and Historic Places, Option 1: Historic buildings, structures, or objects	GIBc6: Historic Resource Preservation and Adaptive Reuse (Projects reusing historical buildings)

Draft Crosswalk: LEED ND Earns SITES

SITES v2 CREDIT		LEED ND v2009 CREDIT
Site Context P1.1: Limit development on farmland, Case 2: Sites with farmland soils – VSPZs	→	SLLp4 Agricultural Land Conservation - Option 1: Sites Without Affected Soils
Site Context P1.1: Limit development on farmland, Case 3: Sites with farmland soils - Mitigation	→	SLLp4 Agricultural Land Conservation - Option 5: Sites With Impacted Soils
Site Context P1.3: Conserve aquatic ecosystems, Case 2: Sites with naturally occurring aquatic ecosystems	→	SLLp3 Wetland and Water Body Conservation- Option 2: Sites with Wetlands, Water Bodies, Land within 50ft of Wetlands or within 100ft of Water Bodies.

Draft Crosswalk: LEED ND Earns SITES

SITES v2 CREDIT		LEED ND v2009 CREDIT
Water C3.4: Reduce outdoor water use, Option 1: Reduce outdoor water use	→	GIBc4 Water Efficient Landscaping
Water C3.4: Reduce outdoor water use, Option 2, Significantly reduce outdoor water use	→	GIBc4 Water Efficient Landscaping
Water C3.4: Reduce outdoor water use, Option 3, Eliminate outdoor water use	→	GIBc4 Water Efficient Landscaping
Soil + Vegetation C4.9: Reduce urban heat island effects	→	GIBc9: Heat Island Reduction, Option 3: Mixed Nonroof and Roof Measures

Design Process

Who is at the typical kick-off meeting? Client and…

1. Design Professionals
2. Sustainability Professionals
3. Natural Scientists
4. Health/Well-Being Specialists

Standard Design Process

- Siloed
- Iterative
- Consultants added when problems need solving
- Subsequent steps considered when reached

Integrative Design Process

- SITES P2.1
- Integrated Team
- Collaborative Communication
- Based on
  - Sustainability Principles
  - Performance Goals

Integrative Design Process

- Stakeholder/User-Driven
- Construction & Maintenance Considered Early

Sustainability Framework

Do you set sustainability goals?

1

Yes, for all projects

2

Yes, for some projects

3

No, but I'd like to

4

No, we can't justify the time/ money

Pre-Design

- Existing Conditions
- Team Assembly
- Analysis
- Rating System
- Opportunities & Constraints

Design Parameters

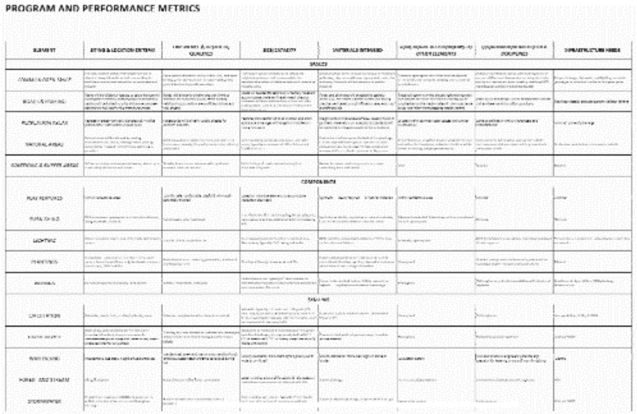
- Finalize Boundary & Development Program
- Test Scorecard
- Charette Credit Solutions

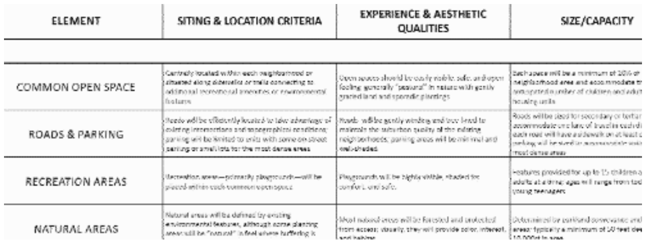
Performance Goals

- Water
- Soils & Vegetation
- Social
- Materials
- Operations & Management
- Construction
- Energy

Performance Metrics

- Spaces
  - Common Open Space
  - Recreation Areas
  - Road & Parking
  - Etc.
- Components
  - Play Features
  - Furnishings
  - Plantings
  - Etc.
- Systems
  - Circulation
  - Stormwater & Drainage
  - Forest Area
  - Etc.

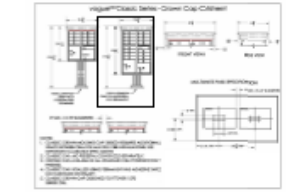

PROGRAM AND PERFORMANCE METRICS



ELEMENT	SITING & LOCATION CRITERIA	EXPERIENCE & AESTHETIC QUALITIES	SIZE/CAPACITY
COMMON OPEN SPACE	[illegible]	[illegible]	[illegible]
ROADS & PARKING	[illegible]	[illegible]	[illegible]
RECREATION AREAS	[illegible]	[illegible]	[illegible]
NATURAL AREAS	[illegible]	[illegible]	[illegible]

Performance Criteria

- Siting & Location
- Experience & Aesthetic Qualities
- Size/Capacity
- Materials
- Functional Relationships
- Coordination Between Disciplines
- Infrastructure Needs



4 MAILBOX DETAIL

7 POCKET PARK BENCH

5 DECORATIVE PAVERS

8 TABLE

5 STREET BENCH

9 LITTER / RECYCLING RECEPTACLE

Design Management

- Assign Roles & Responsibilities
- Establish Design Process
  - Hold Regular Working Sessions
  - Check Progress Against Goals & Risks/Constraints

4 Credit Comparisons

Location

- LEED ND v4 Preferred Locations
- SITES v2 Locate Projects Within Existing Developed Area

Location Comparison

- LEED ND – 1 of 3 options, up to 5 pts
  - Infill/Pre-developed site
  - Connectivity
  - High-Priority Location & Affordability
- SITES – all criteria must be met, 4 pts
  - Infill site
  - Within 500’ of water & sewer service
  - Within 0.5 miles of 7 basic services

Determining Location Credits

- Early mapping & site visits are key
- Ensure walking distance doesn't have walkable "gaps"
- Locate basic service entrances & buildings
- Map infill (same for LEED ND & SITES) percent areas
- Map previously developed area
  - LEED ND – entire site must be previously developed;
  - SITES – 75% of site must be previously developed

Trees

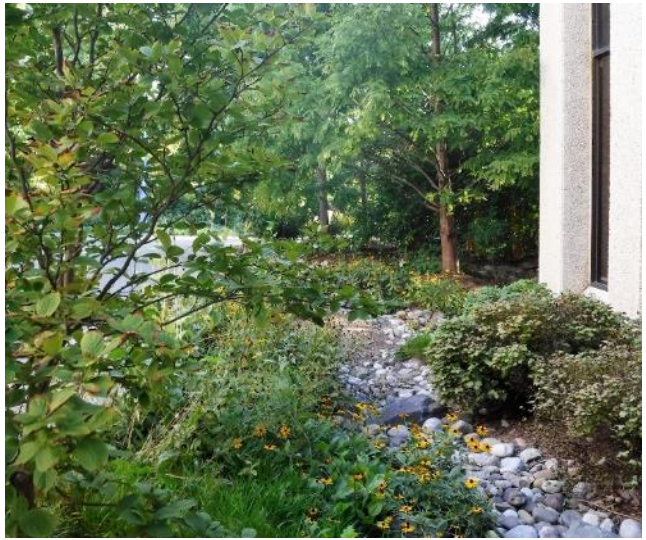
- LEED ND v4 NPD Credit: Tree-Lined and Shaded Streetscapes
- SITES v2 Credit 4.9: Reduce Urban Heat Island Effects

Trees Comparison

- LEED ND, up to 2 pts
  - 50’ spacing over 60% of block lengths
  - Provide shade over 40% of sidewalks
- SITES, 4 pts
  - Shade trees add to area of non-roof measures in formula

Trees Decisions & Conflicts

- Local Ordinances & Guidelines
  - Required tree spacing (> or <)
  - Species canopy calculations
  - Species restrictions
- Utilities
  - Underground conflicts
  - Overhead restrictions
  - Easement restrictions
- Soils
  - Volumes to support canopy
  - Remediation/replacement for soil health



Community Outreach

- LEED ND v4 Community Outreach and Involvement
- SITES v2 Engage Users and Stakeholders

Outreach Comparisons

- LEED ND – 3 options, up to 2 pts
  - 3 steps, similar to SITES
  - Option 1 plus charrette
  - Option 1 plus endorsement
- SITES v2 – 3 steps, 3 pts
  - Identify Goals, Program & Function Goals; Integrate Outreach into P2.1 & P2.2; Provide Alternatives
  - DD Presentation & Review
  - Two forms of design presentation

Outreach Tools

- Visioning Session
- Questionnaire
- Project Website
- Charette
- Open Houses
- HOA/COA Presentations
- Engage Local Groups

Habitat Restoration

- LEED ND v4 Restoration of Habitat or Wetlands and Water Bodies
- Sites v2 Restore Aquatic Ecosystems

Habitat Restoration Comparison

- LEED ND
  - Restoration of pre-development ecological community ≥ 10% of development footprint (1 point)
  - Protect via easement & maintenance program
- SITES
  - Prepare plan based on 9 Attributes of Restored Ecosystems
  - Create maintenance program under O+M P8.1
  - 30% - 90% restored (4 – 6 points)

Habitat Restoration Team Members

- Ecologists
- Arborists
- Conservation/Wildlife Biologists (required for LEED ND)
- Soil Scientists
- Civil Engineers
- Horticulturalists
- Landscape Architects
- Natural Resource Managers
- Construction/Maintenance Managers

Contact Info

- Joshua Sloan
  - Vice President/Director of Planning & Landscape Architecture
  - Sloan@vika.com
- Steve Cook
  - Senior Landscape Architect
  - Cook@vika.com
- 301.916.4100
- www.VIKA.com