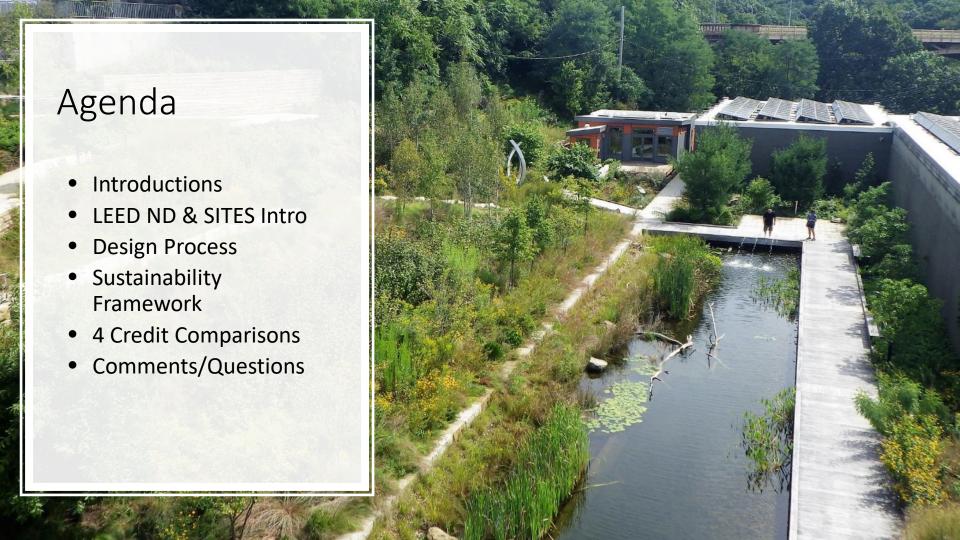
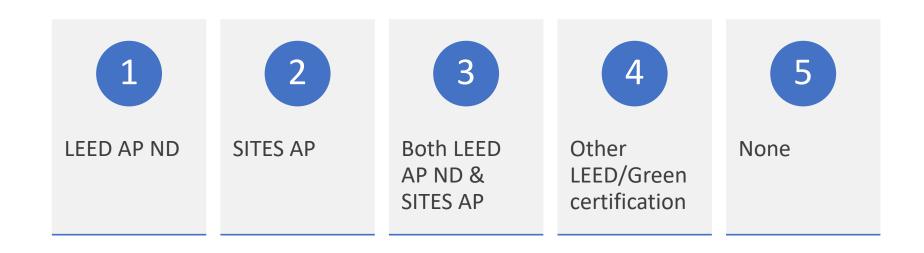
Integrating LEED ND & SITES Into Your Design Approach

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

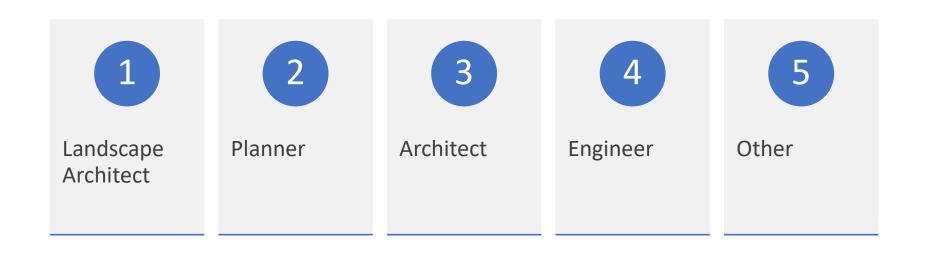
- VIKA MD, LLC
- Planning Landscape Architecture •
 Engineering Surveying Geomatics

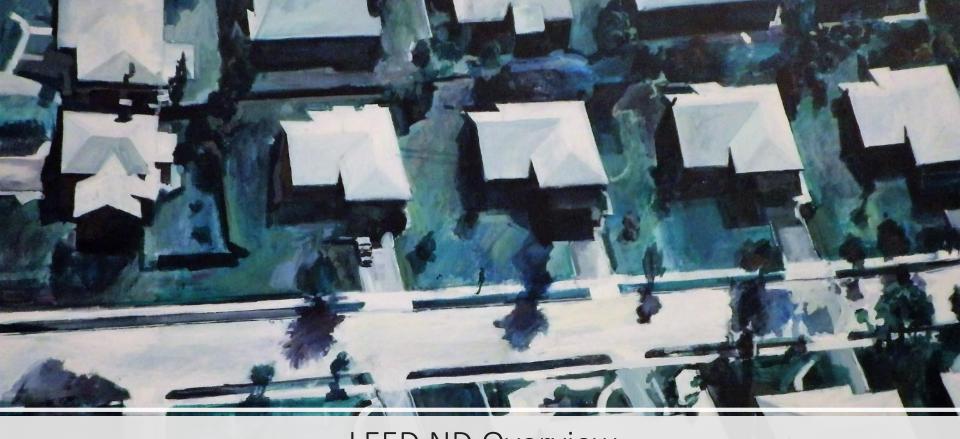


What professional "green" credentials do you have?



What is your profession?





LEED ND Overview

LEED ND Goals

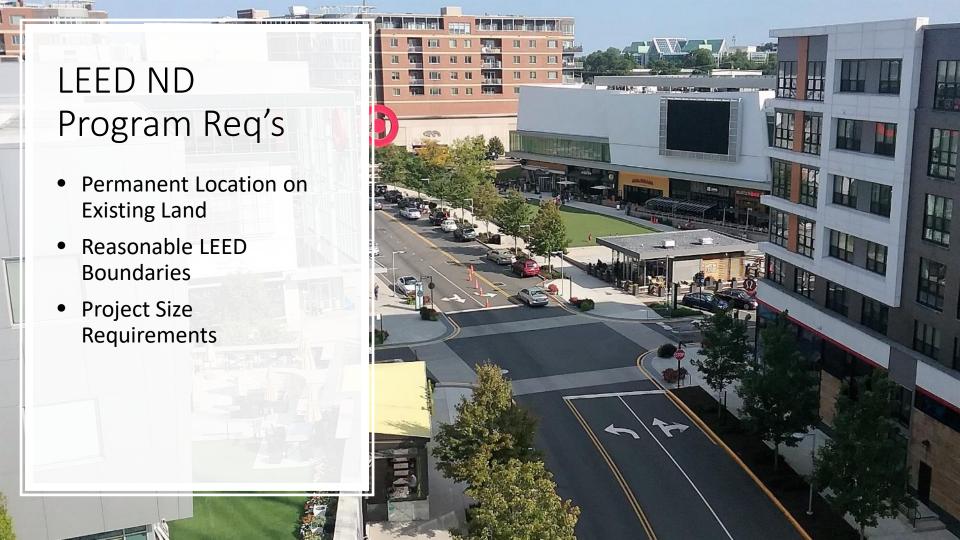
- Climate change
- Human health and wellbeing
- Water resources
- Biodiversity and ecosystem services
- Material resources
- Green economy
- Equity/Justice/Quality of life





- Scale
- Comprehensiveness & Synergies
- Longevity





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 Scorecard

Gold 63/110

SMART LOCATION AND LINKAGE 21 OF 27



NEIGHBORHOOD PATTERN & DESIGN 27 OF 44



► GREEN INFRASTRUCTURE & BUILDINGS 8 OF 29



INNOVATION 5 OF 6

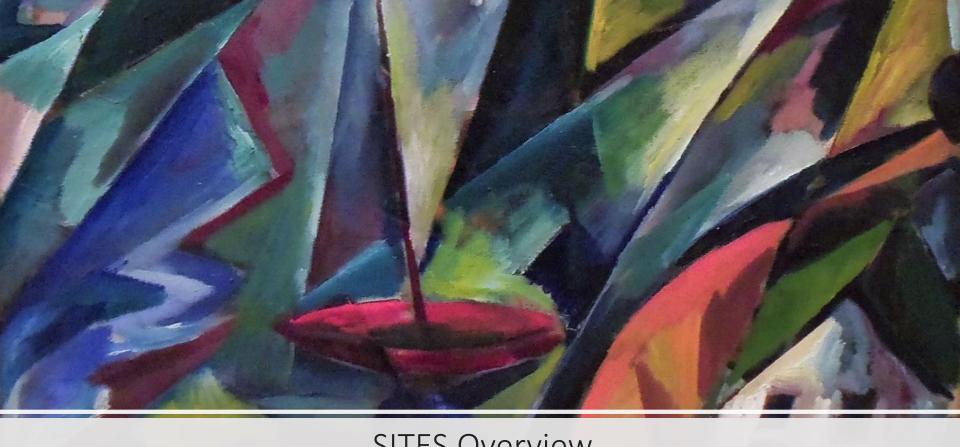


REGIONAL PRIORITY CREDITS

2 OF







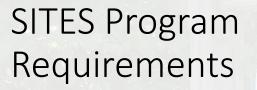
SITES Overview



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







- 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

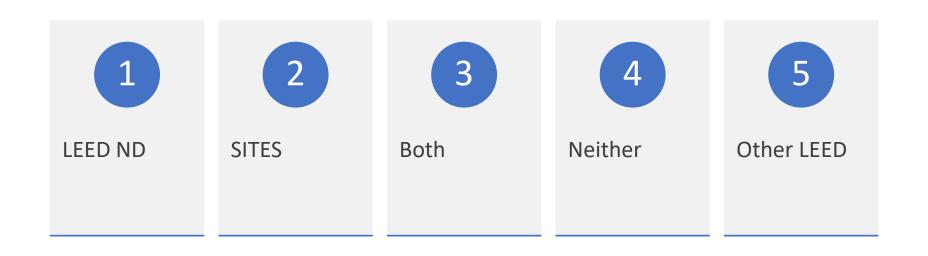
- Construction
- Operations + Maintenance
- (Education + Performance Monitoring
- Innovation or Exemplary Performance)





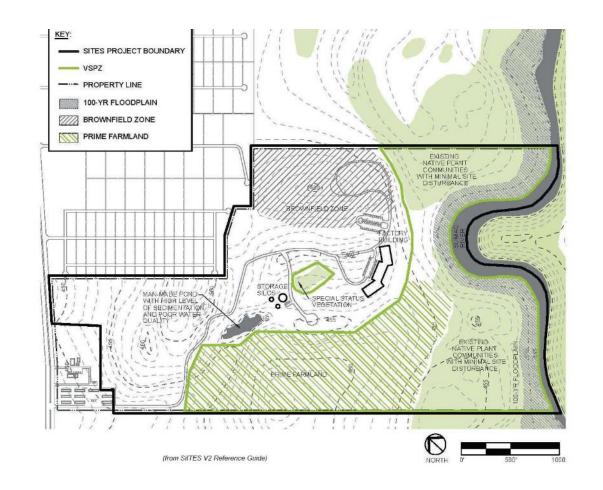
LEED ND & SITES Credit Crosswalk

Have you worked on a LEED ND or SITES project?



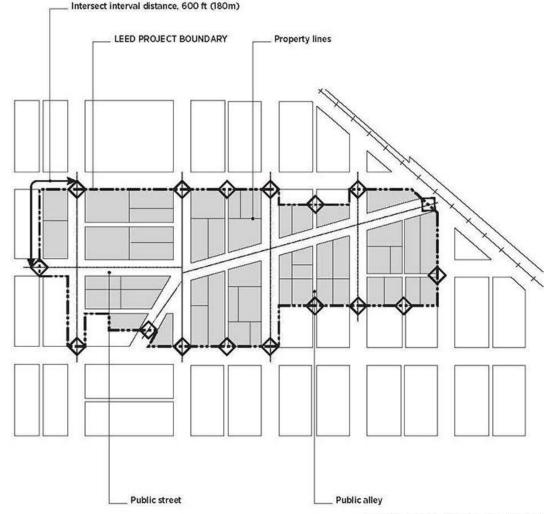
SITES Boundaries

- 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



LEED ND Boundaries

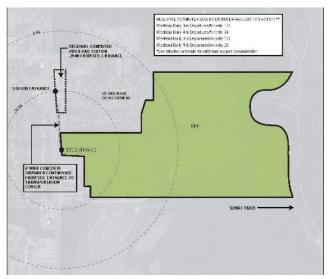
- One or more parcels
- May include adjacent ROW
- If including a ROW, must include entire width
- Pick carefully to meet pre-reg's & credits



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	\longleftrightarrow	SLLp4 Agricultural Land Conservation, Option 1: Sites Without Affect Soils
Site Context P1.2: Protect Floodplain Functions – Case 1: Sites without Floodplains	\longleftrightarrow	SLLp5 Floodplain Avoidance - Option 1: Sites Without Floodplains
Site Context C1.5: Redevelop Degraded Sites, Case 1 Previously developed sites	\longleftrightarrow	SLLc1 Preferred Locations Option 1: Location Type (a)
Site Context C1.5: Redevelop Degraded Sites, Case 2 Brownfield Sites	\longleftrightarrow	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	\longleftrightarrow	NPDc12: Community Outreach and Involvement, Option 1
Water P3.2: Reduce Water Use for Landscape Irrigation (only Design the Landscape for no Permanent Irrigation)	\longleftrightarrow	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	\longleftrightarrow	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	\longleftrightarrow	GIBp4 Construction activity pollution prevention

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

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)

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.

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...



Standard Design Process

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





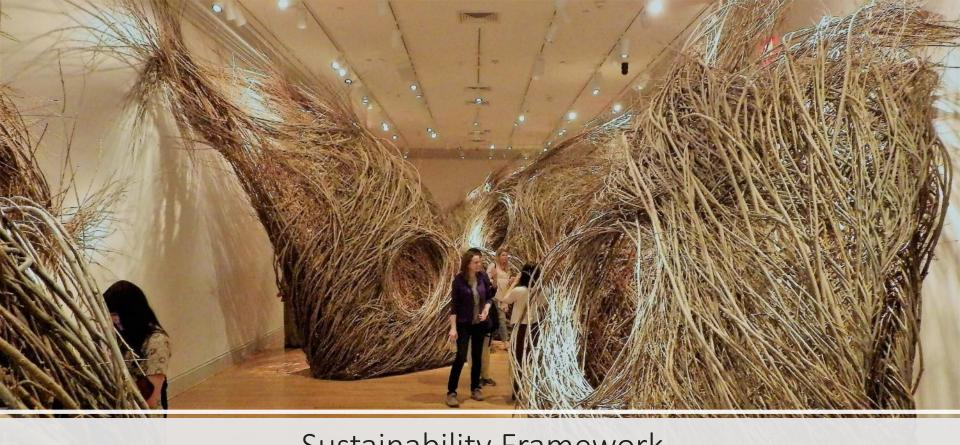
- SITES P2.1
- Integrated Team
- Collaborative
 Communication
- Based on
 - Sustainability Principles
 - Performance Goals





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

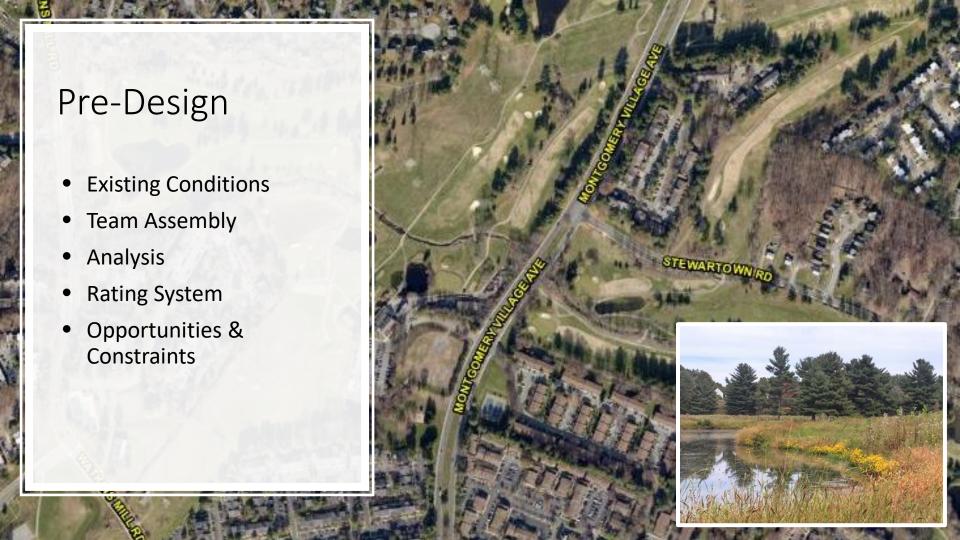




Sustainability Framework

Do you set sustainability goals?





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 Systems
 - Play Features
 - Furnishings
 - Plantings
 - Etc.

- Circulation
- Stormwater& Drainage
- Forest Area
- Etc.

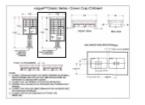
ROGRAM AND PERSORMANCE METRICS

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ELEMENT	SITING & LOCATION CRITERIA	EXPERIENCE & AESTHETIC QUALITIES	SIZE/CAPACITY	
COMMON OPEN SPACE	Cantrady located within each neighborhood or sthesped along observation artifacts connecting to additional terrestrous amounts, or inversemental features.	Open sources should be only risible, safe, and open feeling generally "passars" in nature with gently gracied is not and sporadic plantings.	back space will be a minimum of 20% of neighborhood area and accommodate to ordupated number of clubber and edult housing units	
ROADS & PARKING	Reado will be effect, rely located to take advantage of outring intersections and watersphiles on efficient garding will be limited to units with some on-shoot parting or arrell lots for the most dense ereas.	much will be goodly working and over level to maintain the subscribes quality of the relating neighborhoods, garning areas will be minimal and evaluatedad.	Roads will be sked for secondary or tertur accommodate one late, of travel in each of each road will have as described on at feat to service, will be sized to accome which each most dame at way.	
RECREATION AREAS	(Macrowillian, week—pointedly pilotypeurch—odil he placed at into code contract report specia	Playsounds will be highly within shaded for confort, and safe.	-eatures provided for up to 15 children a adults at a time; ages or if range from tool young beenagers	
NATURAL AREAS	Natural areas will be defined by ensiting environmental features, although cores planting areas will be "natural" in feel where buffering is	feloot national energy will be fine-steed and anotechnol from access; showing they will provide policy, interest, and hadren.	Octomismed by contional conveyance and energy typically a minimum of 50 feet dea	

Performance Criteria

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





MAILBOX DETAIL

POCKET PARK BENCH





5 DECORATIVE PAVERS



PORME - SURMACE

ARC MALE PARTMEL!

MATERIA: ALL MEAN PRAME
IN POWER COAT THERE.

SON: INTORA HARD WOOD SLAT
SUIT:

68' TOLMAR! / BINCHER 66'

DOTO 18'

(B) TABLE

08 1888/0-70 1011







FORMS - SURFACES ARCH UTTER-RECKSIME BEOSPIACIE MATERIAL: RECYCLES HAROMODO SIES: 36 GAL (2-28 GAL

6 STREET BENCH

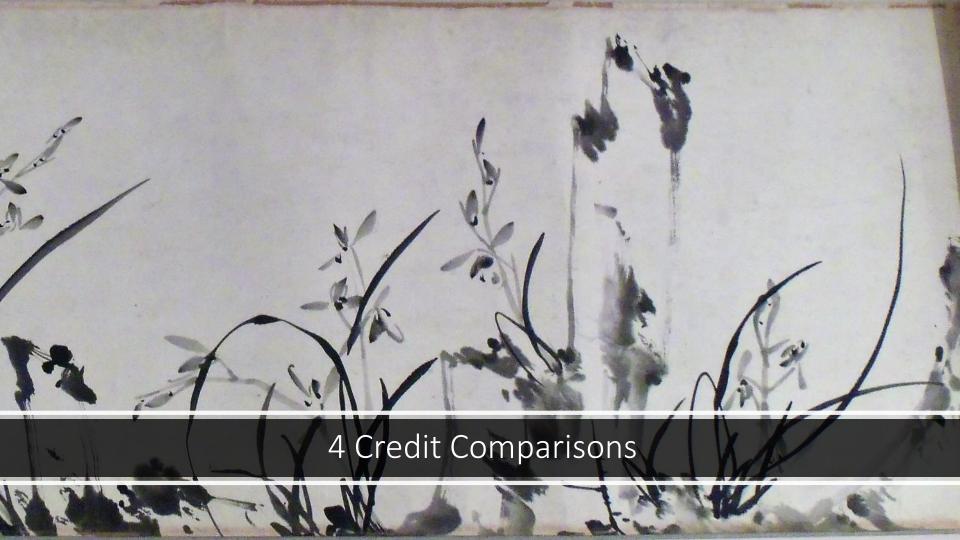
dit AMMOVES CO.A

UTTER / RECYCLING RECEPTACE

Design Management

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





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

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 - Cook@vika.com
- 301.916.4100
- www.VIKA.com

