

Canal Design Standards

Guidelines for Public Space Improvements



STARR WHITEHOUSE
Landscape Architects
and Planners PLLC



**NY Power
Authority**

**Canal
Corporation**

Letter from the Director



KATHY HOCHUL
Governor

JOHN R. KOELMEL
Chairman

BRIAN U. STRATTON
Director, Canal Corporation

Dear New Yorkers:

As we approach the 200th anniversary of the opening of the Erie Canal in 2025, it is my honor and privilege as Director of the Canal Corporation to help mark this extraordinary milestone and begin America's most iconic waterway's third century of service to the people of New York.

The Erie Canal and its connected lateral canals have long stood as symbols of ingenuity, resilience and opportunity. Today, they also stand as vibrant public spaces - outdoor corridors where New Yorkers from Buffalo to Albany and Lake Champlain can connect with the land, the water, and with one another.

In recognition of this legacy and its evolving role, we are pleased to introduce the *Canal Design Standards – Guidelines for Public Space Improvement*. These guidelines are not just a technical resource; they are a reflection of our commitment to shaping the Canal into a unified, welcoming, and enduring public realm, ensuring that this remarkable waterfront corridor remains safe, inviting, and full of life for generations to come.

The design standards establish a common language for enhancements across the entire system - from the benches where families rest, to the lighting that safely guides an evening stroll, to the landscapes that frame the water's edge. With these guidelines, we aim to honor that experience, making each trailhead, each picnic area, and each quiet bench part of something larger and more meaningful. Whether you are biking across counties, fishing at sunrise, or simply pausing to take in the view, the shared language of public space is our way of helping the Canal feel familiar, cared for, and truly yours.

Every element in these guidelines was carefully selected against key criteria: alignment with the Canal's visual identity, environmental sustainability, year-round durability, accessibility, and reliable sourcing. Together, they support a consistent experience for all who visit.

Once a corridor for moving goods and people, the Erie Canal today connects communities, opens access to the outdoors, and anchors a new kind of public life along New York's inland waterfront.

On behalf of the New York State Canal Corporation, it is my pleasure to share these standards with you as part of our ongoing work to respect the past, serve the present, and ensure a vibrant future for the Canal and all who love it.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. U. Stratton". The signature is fluid and cursive, with a large, sweeping "B" and "S".

Brian U. Stratton
Director

Table of Contents

- 1** Introduction
- 2** Canal Context
- 3** Design Opportunities
- 4** Canal Standards
- 5** Complementary Elements
- 6** Landscape Recommendations
- 7** Appendix



Erie Canal flowing through Syracuse, 1906.

01 Introduction

Introduction

Navigating the Design Guide

The Canal Design Standards are intended to assist communities in the planning and implementation of public space improvements within properties owned by the New York State Canal Corporation. Through the exploration of typical conditions along the Canal and identification of design opportunities, this guide illustrates how a thoughtful and consistent application of pre-selected materials and site furnishings can be used to establish a cohesive design language and promote the Canals as a nexus of recreational activity and economic vibrancy.

The Design Guide is organized into five main sections:

- **Canal Context:** A summary of typical Canal conditions, uses and zones.
- **Design Opportunities:** An exploration of design opportunities and suggested use of Canal Standards along the Canal lands, both urban and rural.
- **Canal Standards:** A detailed description of pre-selected site furnishings that are durable and visually compatible with existing Canals branding and infrastructure.
- **Landscape Recommendations:** Horticultural recommendations for landscape installations.
- **Appendix:** Detailed product information and references to design resources that supplement information in this guide.



Cyclists enjoy a break along the Erie Canal at the East Avenue Lift Bridge in Holley, NY.



View of the Erie Canal from South Main Street in Fairport, NY.

02 Canal Context

Canal Context

The Canal Legacy

The New York State Canal System is composed of 57 locks and interconnected Canals that span 524 miles across Upstate New York. The most significant of the Canals is the 339 mile Erie Canal, a National Historic Landmark, connecting the Great Lakes to the Atlantic Ocean. Completed in 1825, the Erie Canal revolutionized the transportation and trading industry, significantly shaping New York's economy and transforming the history of the country. While the NYS Canal System has not served as a major shipping channel for close to half a century, its Canals remain a vital recreational and historical asset connecting a diverse range of landscapes and communities from agricultural to urban, small village to large city. As municipalities look to make improvements to public space on Canal's property, it is essential that implemented designs honor and protect this historic legacy.

Canal Zones

While every location along the Canal is unique, the overall Canal landscape is broadly defined by three general zones: water, edge, and upland. The water and edge fall primarily within the jurisdiction of agencies including the New York State Canal Corporation, the Army Corps of Engineers, and the New York State Department of Environmental Conservation. Due to the regulatory and permitting limitations that govern these zones, this design guide focuses specifically on the opportunities within the upland zone.

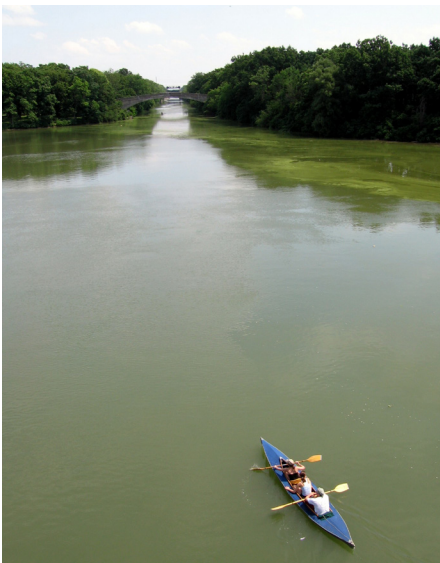


Map from the Value of the NYS Canal System: New York's Multidimensional Waterway by the Erie Canalway National Heritage Corridor, 2020.

Canal Context

The Canal Today

The Canals are accessed and used by people in myriad ways. Boating, both motorized and hand-launched, is a popular recreational activity within the Canal, supported by a network of marinas, docks, and mooring sites. On land, a robust network of Canalside trails offer beautiful views and hundreds of miles of maintained paths for activities such as biking, jogging, cross-country skiing, and snowshoeing. Increased access to the Canal through a combination of programming and improvements to downtowns, plazas, promenades, and interpretive sites is generating excitement around the Canal's rich history and its new role as a recreational destination.



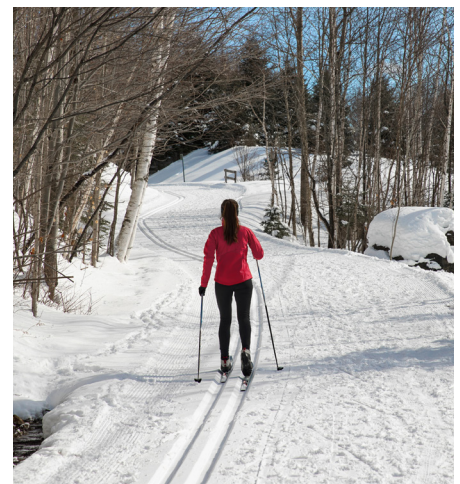
Kayaking is a popular activity along the Erie Canal.



Many people experience the Canal System via a network of bikeways, including the Erie Canalway Trail and Champlain Trail.



Recreational boating is a leisurely way to enjoy the Canalways, as seen here in Brockport, NY.



Canal-side trails double as paths for cross-country skiing.



View of the Champlain Canal from Saunders Street Bridge in Whitehall, NY.

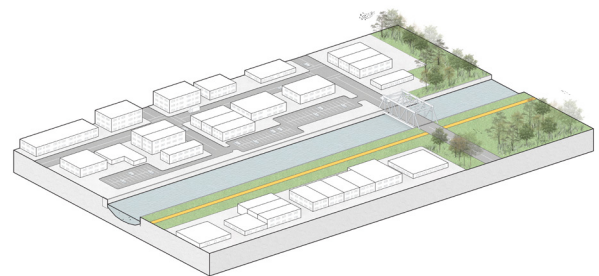
03 Design Opportunities

Design Opportunities

Typical Conditions

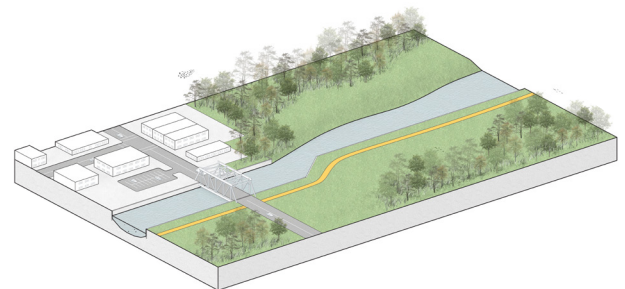
When beginning a design process for any site-specific project, it is important to assess the unique conditions of the terrain and recognize that there is no one-size-fits-all solution. In an effort to address a wide variety of potential conditions among the many properties owned by the New York State Canal Corporation, this report identifies three broad categories that can be used to describe typical Canalside conditions: Downtown, Trail, and Park.

Downtown: Defined by the denser built environment characteristic of cities, towns, and villages centered around the Canal.



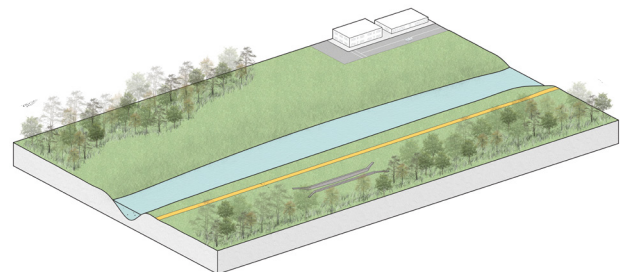
Downtown

Trail: Characterized by the network of Canalside trails found throughout developed, rural, and natural areas. The Erie Canal Trail and Champlain Trails are part and parcel of the larger 750-mile Empire State Trail system.



Trail

Park: Characterized by naturally beautiful open spaces. Park spaces can include both established parks and land designated for future park development, often found along the Canal both in villages and adjacent to agricultural lands or natural areas.



Park

The following pages provide examples of design opportunities and implementation strategies specifically tailored to these typical conditions. The three categories may overlap on any given site, the common denominator being the Canal. Multi-use trails, built along the former tow path and other adjacent rights of way, are also often part of the existing landscapes that must be considered for access and improved amenities.

Design Opportunities

Design Principles

While each project requires site-specific solutions based on local conditions and context, the following considerations should be used as guiding principles when designing and implementing any project.

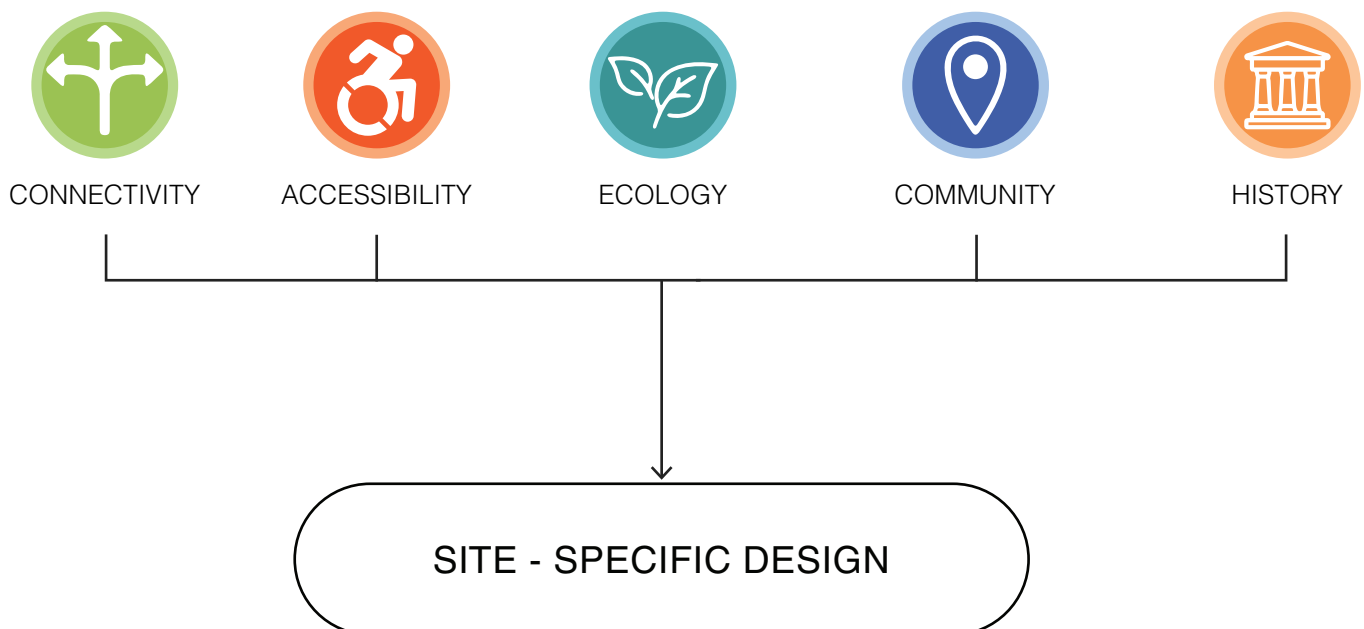
Connectivity: Create clear and safe connections from the surrounding community to the site. Consider access via foot, wheelchair, stroller, bicycle, car, bus, boat and train.

Accessibility: Provide universal access to the upland landscape through the implementation of ADA (Americans with Disabilities Act) compliant furnishings and surfaces.

Ecology: Manage landscapes and mitigate urban heat island effect by reducing paving where possible. Support local flora and fauna by planting native trees, shrubs, and perennials. Reduce mowing where possible and protect wetlands and other vulnerable plant communities.

Community: Identify interests and priorities within the community and create opportunities for school groups, businesses, rotary clubs, or scout troops to maintain the site and gather for events.

History: Celebrate aspects of the site that reflect the history of the Canal or local community.



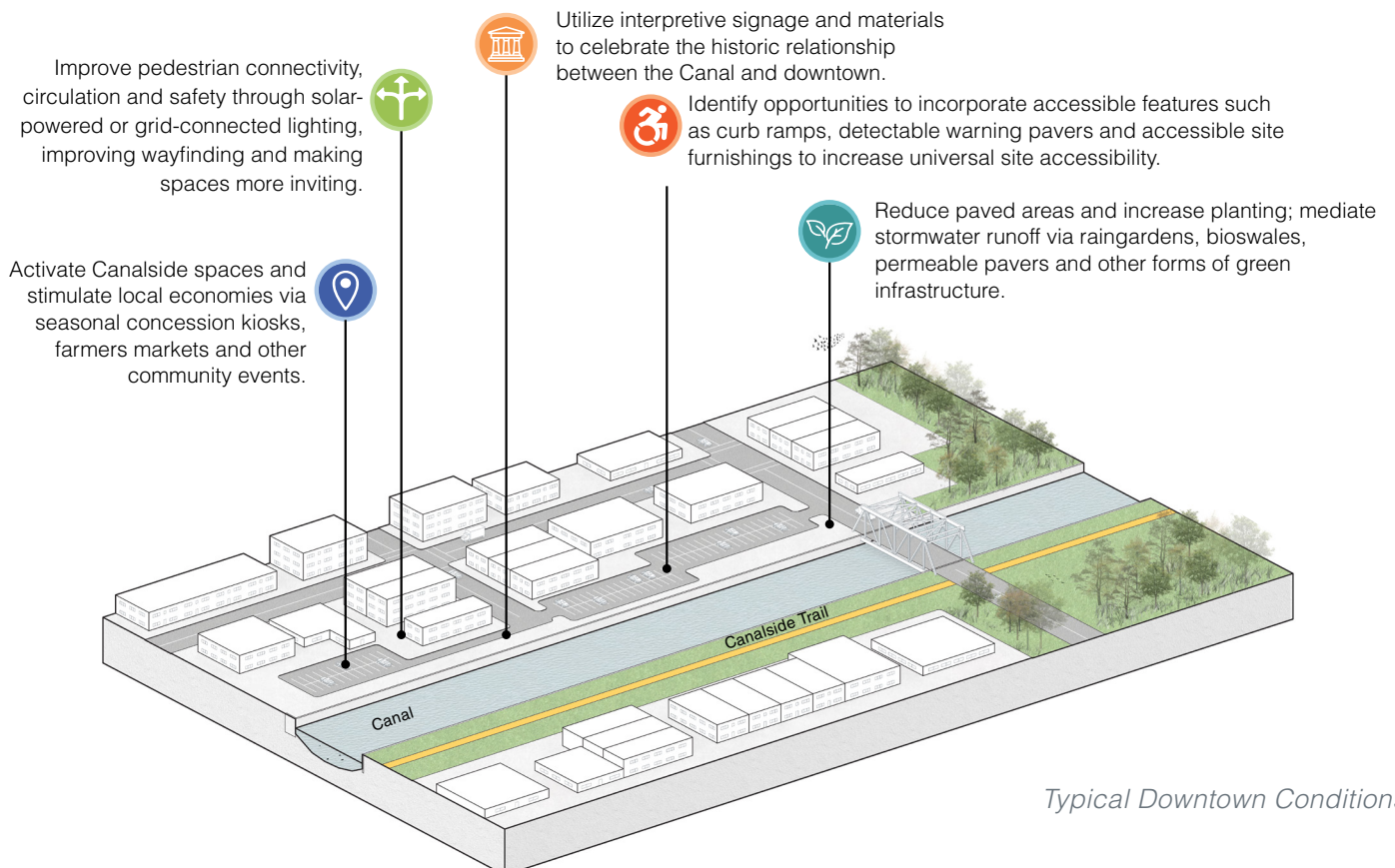
Design Opportunities

Downtown Character

The New York State Canal System brought trade and industry to the doorstep of villages, towns and cities along the Canals, prompting an era of prosperity and growth. Today, those communities remain an active participant in the Canals' transition into a recreational destination within the historical corridor. Through the engagement of local municipalities, the re-imagination and reinforcement of connections between downtown spaces and the Canal can bring continued transformation to waterfronts and local economies.



View of downtown Seneca Falls which maintains a continuous tree-lined promenade and active marina.

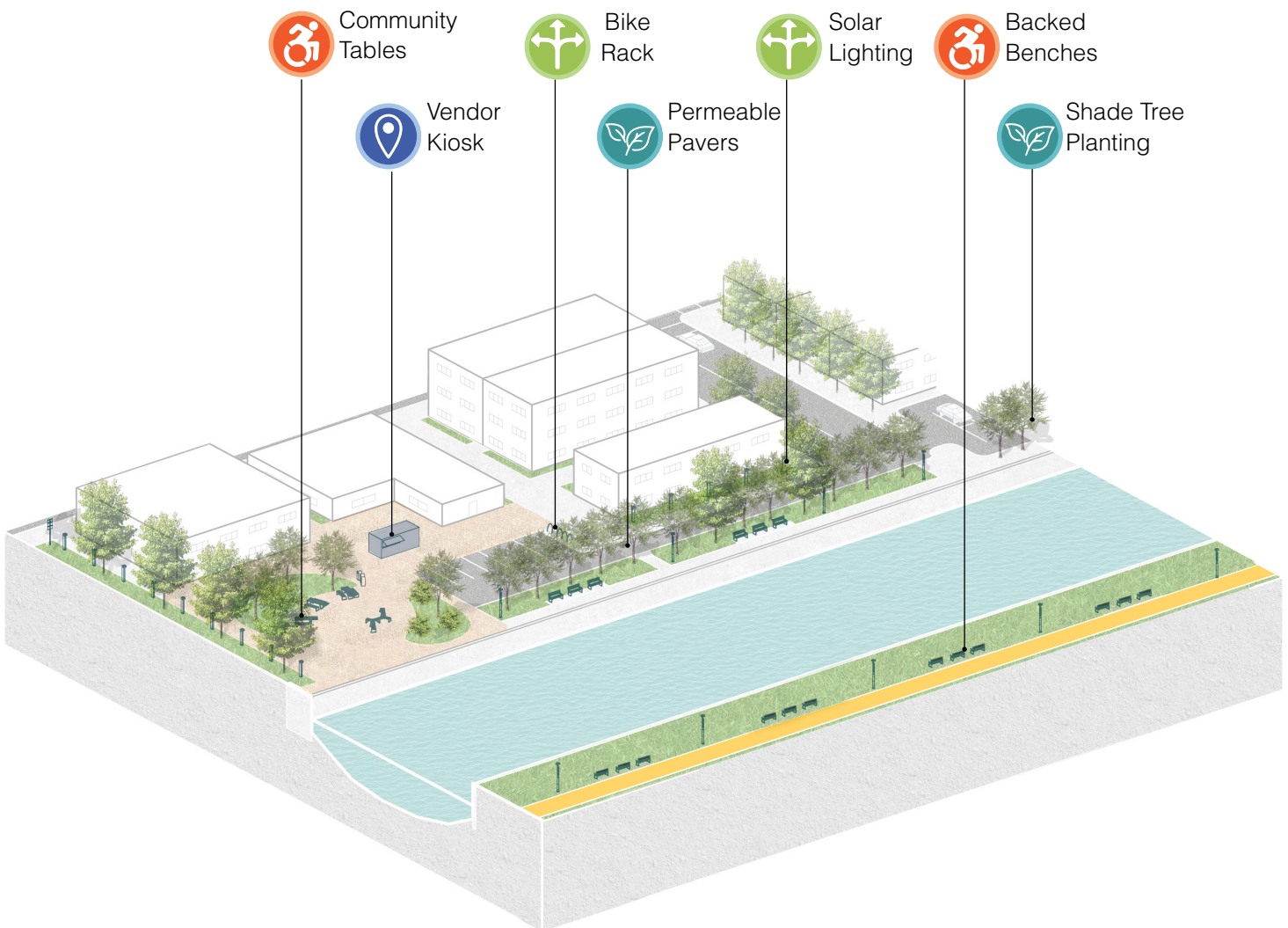


Typical Downtown Conditions

Design Opportunities

Downtown Design

Following the identification of opportunities, a site design can be implemented. Illustrated below is a representative conceptual design utilizing the materials, furnishings and planting strategies outlined in this guide. In any given project some or all of these design components can be deployed depending on the amount of space available and community needs.



Typical Downtown Design

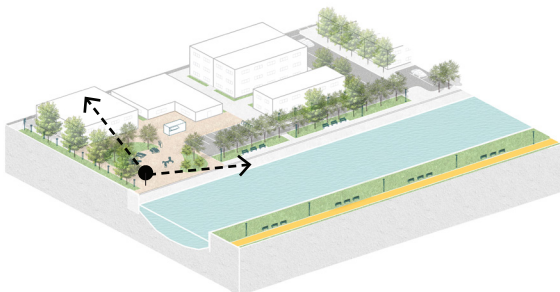
Design Opportunities

Downtown Design

Through the creation of welcoming plazas and promenades along the Canal with ample seating, amenities, and generous planted areas, communities can capitalize on their downtown waterfronts and transform them into vibrant spaces for gathering, playing, eating, and exploring.



Representative view of a design for a Canalside park in a downtown area.



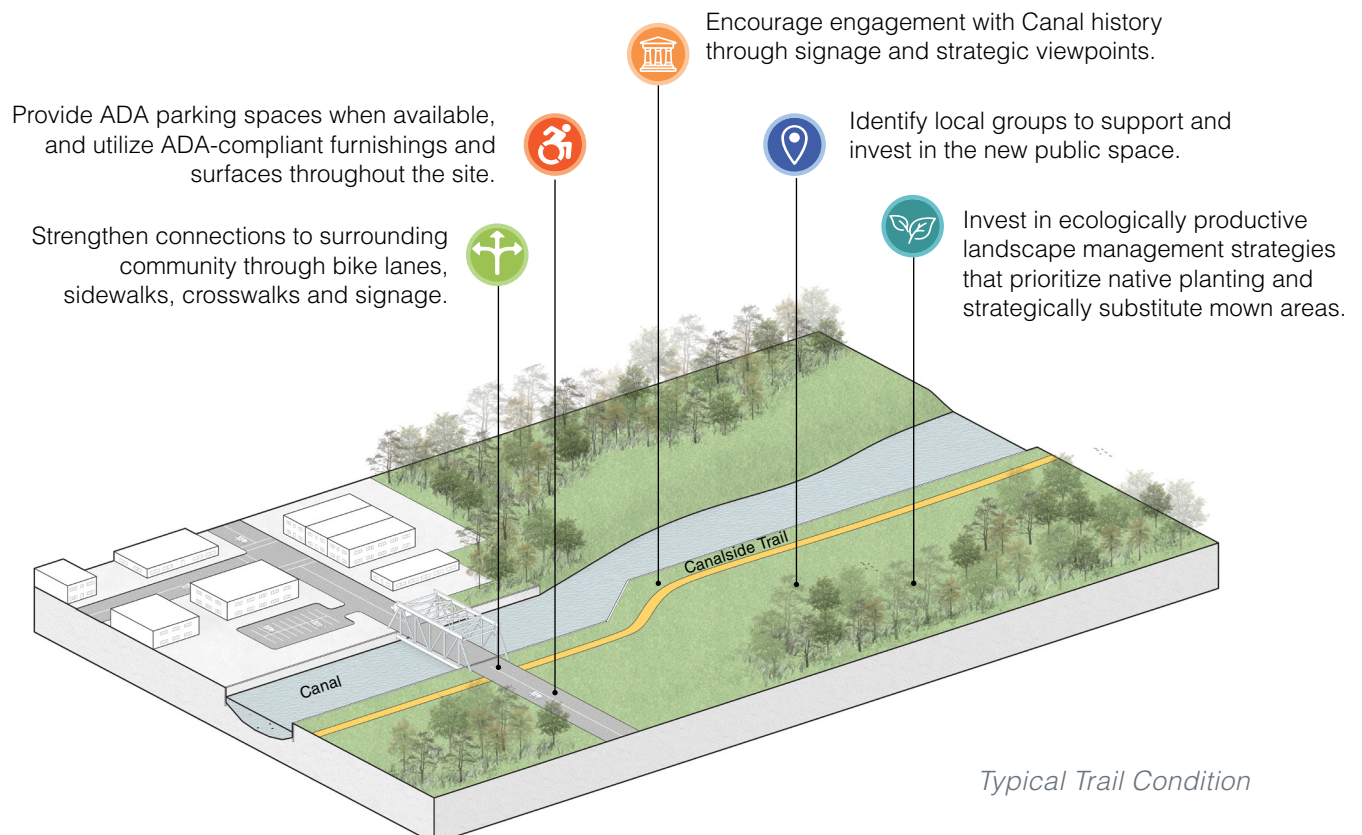
Design Opportunities

Trail Character

The majority of the New York State Canal system is connected by a robust trail network, including the Empire State Trail (EST), Erie Canalway Trail, the Shoreline Trail, the Champlain Trail, and many local spur trails. These formal and informal trails are valuable assets to the communities they connect. While the design of new trails or improvements to existing trails should refer to existing regional standards such as the EST Design Guidelines, the following pages provide guidance for communities seeking to improve access and connection to new or existing trails.



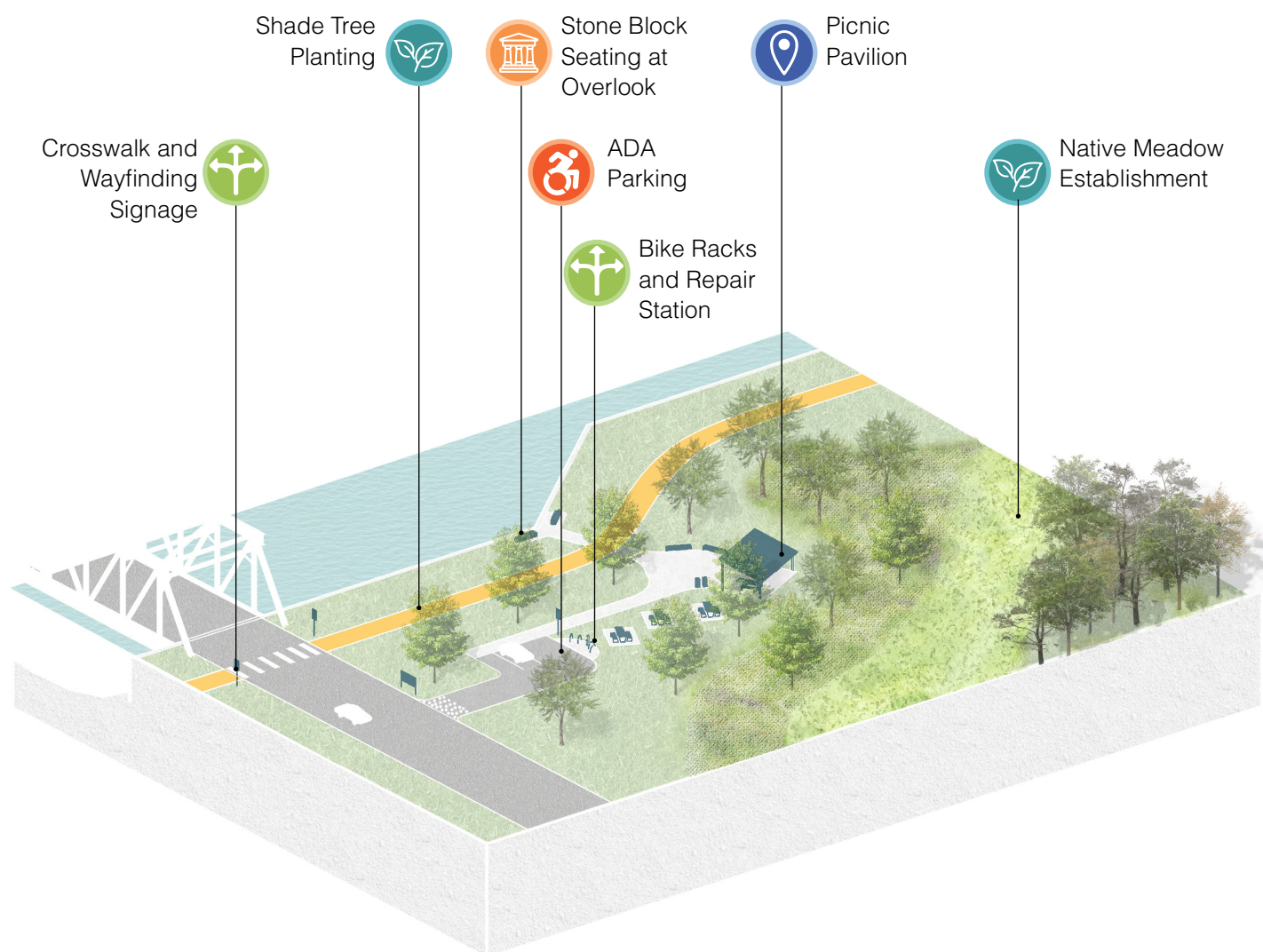
Some Canalside areas are characterized by trailheads for multi-use trails such as this one in Newark, NY.



Design Opportunities

Trail Design

Following the identification of opportunities, a site design can be implemented. Illustrated below is a representative conceptual design utilizing the materials, furnishings and planting strategies outlined in this guide. In any given project some or all of these design components can be deployed depending on the amount of space available and community needs.



Typical Trail Design

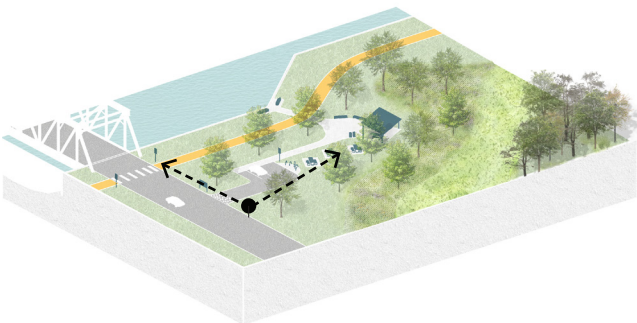
Design Opportunities

Trail Design

Featuring amenities such as bike racks, repair stations, picnic tables, and pavilions, trail access points offer communities excellent opportunities to connect with a larger network of users and attract visitors from around the region. Inviting native landscapes and shade trees create a place to stop along the trail and enjoy the serene Canal environment. Refer to the New York State Canal Corporation website for more information about wayfinding standards.



Representative view of a trailhead conceptual design.



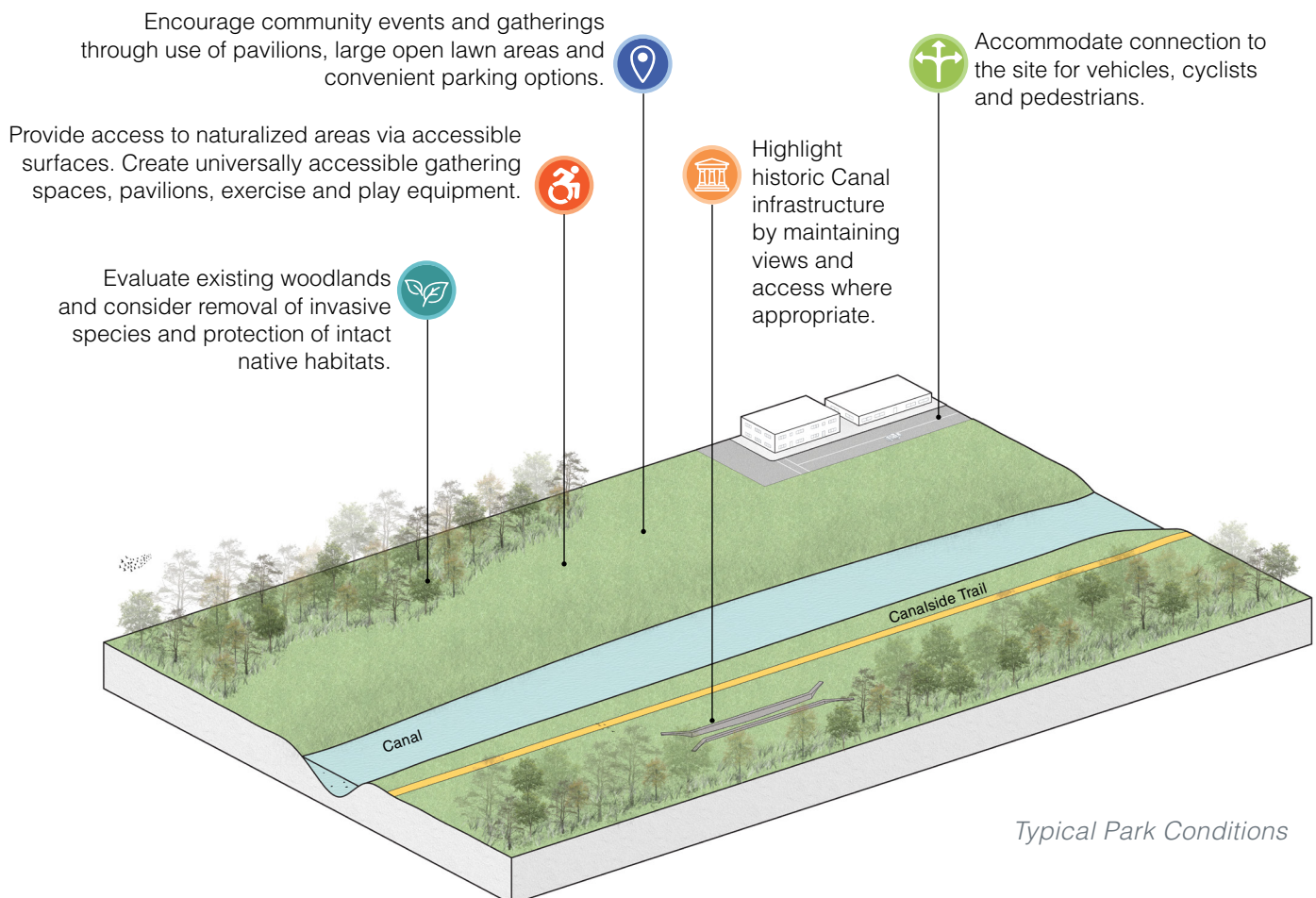
Design Opportunities

Park Character

Open space along the Canal can take many forms. Where not restricted by physical infrastructure or regulatory requirements, there are opportunities to improve the site's ecological function. These improvements can support both passive and active recreation, such as play and exercise, while also encouraging community programming. Historic sites, often found in naturalized areas proximate to the Canal, should be highlighted and celebrated for their significance. Park spaces are often larger in scale and intended to serve as a destination rather than an access point.



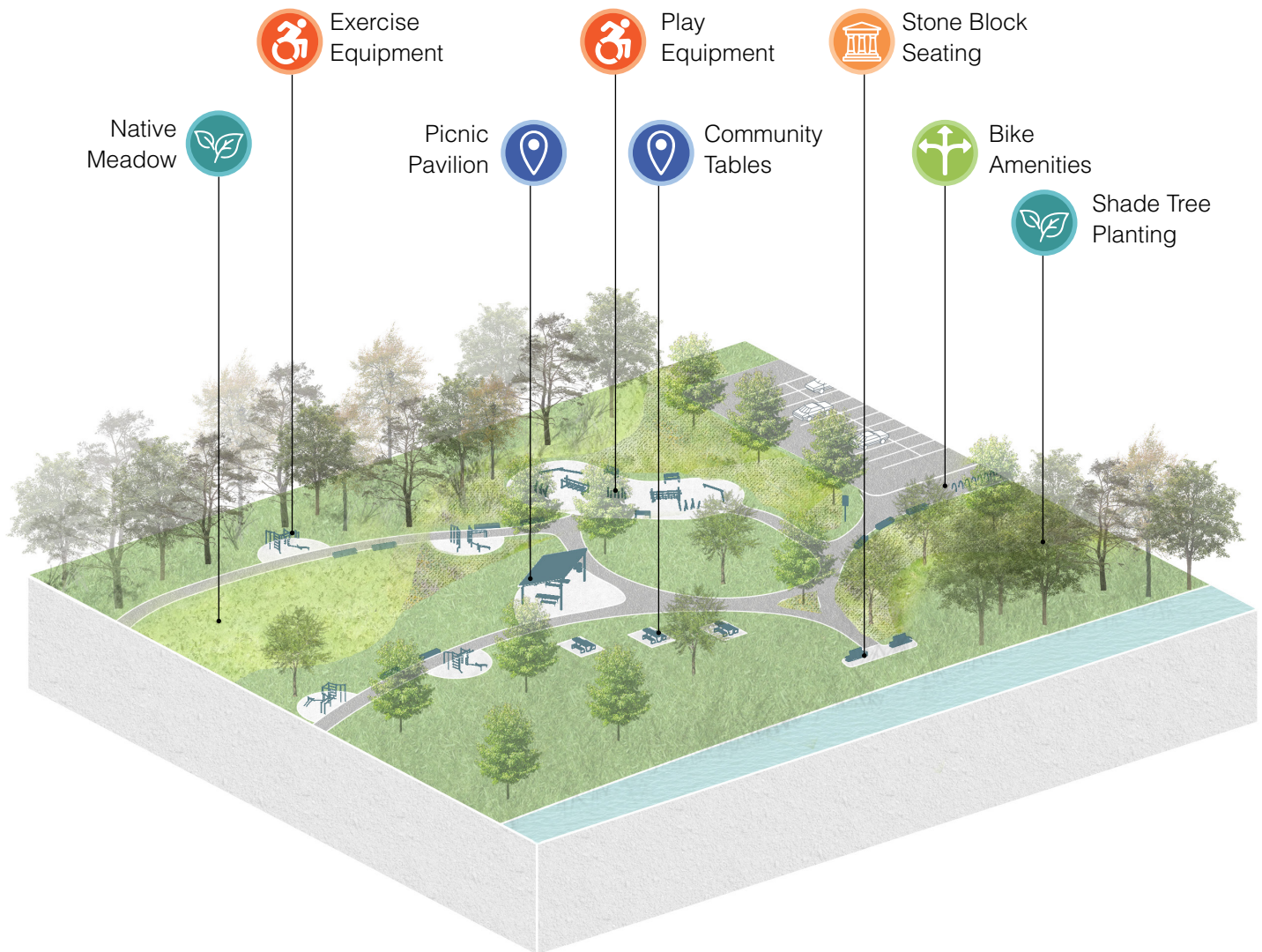
View of the Sandy Creek shoreline at Scout Park in Hamlin, NY.



Design Opportunities

Park Design

Following the identification of opportunities, a site design can be implemented. Illustrated below is a representative conceptual design utilizing the materials, furnishings and planting strategies outlined in this guide. In any given project some or all of these design components can be deployed depending on the amount of space available and community needs.



Typical Park Design

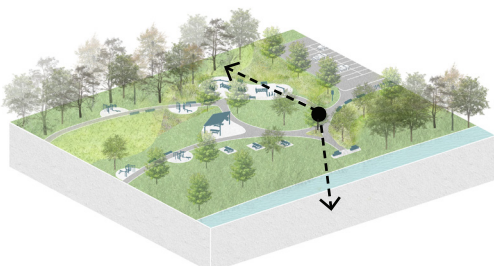
Design Opportunities

Park Design

Canalside park spaces, featuring expansive lawns, areas for play and recreation, and naturalized landscape areas, can become community anchors. These spaces encourage larger-scale programming while offering opportunities for rest, reflection, and enjoyment of the natural beauty commonly found along the Canal shores.



Representative view of a park conceptual design.





View of the Empire State Trail Gateway in Genesee Valley Park, Rochester NY.

04 Canal Standards

Canal Standards

Selection Criteria

The Canal Design Standards serve as a foundational reference for all improvements on Canal Corporation lands, offering a definitive palette of site furnishings, fixtures, and equipment required across all projects and Canal locations. Unlike broader recreational guidelines that provide flexible recommendations to support a variety of recreational uses along the Canal corridor, these standards have been specifically developed to ensure coherence, safety and consistency across all publicly accessible spaces. All improvements are subject to Canal permit application, available online at the New York State Canal Corporation website.

The selection of furnishings and equipment in the Canal Design Standards was guided by a set of key criteria that reflect the values and operational needs of the New York State Canal Corporation. These include:

- Alignment with the visual identity and branding of the Canal system
- Sustainability and environmental responsibility
- Durability to withstand year round weather and heavy use
- Accessibility to ensure inclusive public use
- Affordability for project implementation
- Flexibility to accommodate a variety of site conditions
- Availability through reliable, consistent product sourcing
- Maintainability and easy replacement of components

Together these guidelines support the long-term stewardship and enhancement of Canalside environments while reinforcing a unified public realm throughout the system.

Canal Standards

Existing Canal Framework

The consistent presence of standardized infrastructure and equipment—such as locks, bridges, lighting fixtures, railing types, mooring bollards, signs, and site furnishings—gives the New York State Canal System a unified look and feel across much of its length. Pre-selected site furnishings reinforce and build upon existing standards while ensuring visual cohesion throughout the New York State Canals System as communities implement projects.

Existing Canal Branding Colors:



Pantone 281
(C:100, M:78, Y:0, K:57)

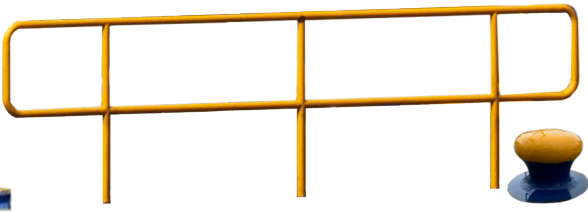


Pantone 124
(C:0, M:29, Y:100, K:1)

Existing Canal Branding Elements:



Light Pole



Pedestrian Railing

Mooring Bollard

Existing Canal Standards:



Representative Photo of Typical Canal Infrastructure

Canal Standards



1 Site Pieces Monoline Backed Bench

2 Site Pieces Monoline Topper

3 Stone Block Seating

4 Site Pieces Monoline Link

5 Site Pieces Community Table

6 Site Pieces Monoline Litter Bin

7 Site Pieces No. 2 Bag Holder and Waste Bin

8 Columbia Cascade Cycloops Arch

9 Dero FixIt Bike Repair Station

10 Most Dependable Hi-Lo Drinking Fountain

11 Ligman Solar Integrated Post Top Luminares - Macaron

12 Ligman Solar Integrated Bollard - Prague

**refer to Appendix for full installation details and associated product information*

Canal Standards

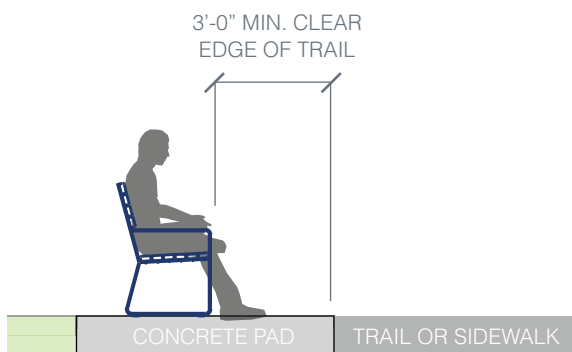
Backed Bench

Specifications

- Product: Site Pieces Monoline Backed Bench, ML-BENCH-72
- Materials: Aluminum frame construction, powder-coated finish. Thermally modified wood slats (Northern White Ash).
- Setting: Surface mounted via anchor bolts to concrete pad or foundation.
- Frame color: Midnight (Dark Blue RAL 5008)

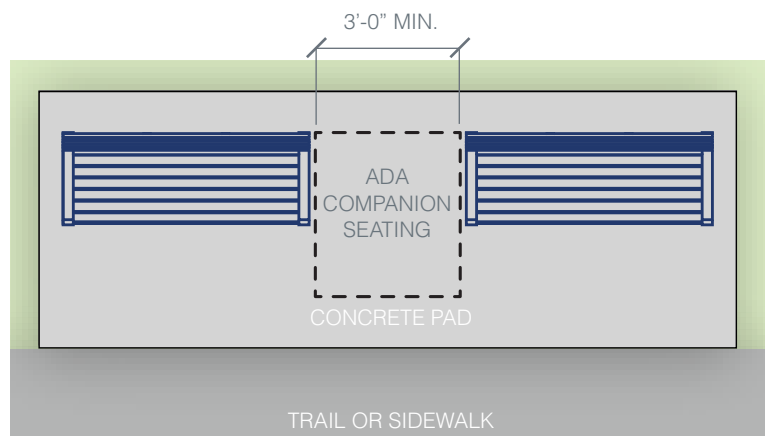
Typical Application

- Seating should be placed in a way that prioritizes views, shade, accessibility and seating at busy intersections.
- The front-facing edge of seating must be located 3' offset from either side of trail or sidewalk.
- In all projects, universal access should be prioritized by incorporating ADA-compliant surfacing, slope requirements, and areas for companion seating.
- All seating should be securely anchored to a concrete slab to prevent theft.



Maintenance

- Powder-coated components can be cleaned as needed with a soft cloth and mild detergent.
- Touch-up paint can be used to repair minor damage.
- Graffiti remover is recommended for removal of unwanted markings.
- Thermally modified wood slats do not require regular maintenance and should be expected to naturally weather to a silver-gray color.



**Refer to Appendix for full installation details and associated product information.*

Canal Standards

Backed Bench Topper

Specifications

- Product: Site Pieces Monoline Backed Bench Topper, ML-TOPBACK-96
- Materials: Aluminum frame construction, powder-coated finish. Thermally modified wood slats (Northern White Ash).
- Setting: Surface mounted via anchor bolts to stone or concrete base.
- Frame color: Midnight (Dark Blue RAL 5008)

Typical Application

- The backed bench topper can be applied to seat-height walls or stone blocks, making them a versatile solution for creating seating, particularly in confined spaces. By providing a back, toppers are an excellent way to expand universally accessible seating.
- Seating should be placed in a way that prioritizes views, shade, accessibility and seating at busy intersections.
- The front-facing edge of seating must be located 3' offset from either side of trail or sidewalk.
- In all projects, universal access should be prioritized by incorporating ADA-compliant surfacing, slope requirements and areas for companion seating.

Maintenance

- Powder-coated components can be cleaned as needed with a soft cloth and mild detergent.
- Touch-up paint can be used to repair minor damage.
- Graffiti remover is recommended for removal of unwanted markings.
- Thermally modified wood slats do not require regular maintenance and should be expected to naturally weather to a silver-gray color.



**Refer to Appendix for full installation details and associated product information.*

Canal Standards

Stone Block Bench

Specifications

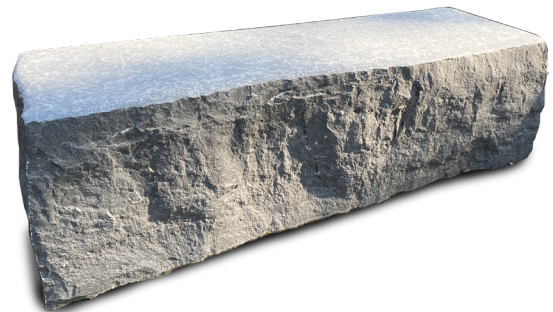
- Product: Locally sourced stone
- Materials: Limestone or granite block, natural cleft faces, saw-cut bottom and smooth finish top.
- Setting: Placed on well-compacted gravel or pavement base.

Typical Application

- The stone block bench is suitable for more rural settings such as trail heads and park spaces where maintenance may be less frequent and a more informal or rustic character is desired.
- Seating should be placed in a way that prioritizes views, shade, accessibility and seating at busy intersections.
- The front-facing edge of seating must be located 3' offset from either side of trail or sidewalk.
- In all projects, universal access should be prioritized by incorporating ADA-compliant surfacing, slope requirements and areas for companion seating.

Maintenance

- Stone blocks have the added benefit of being highly durable and virtually maintenance-free.
- Any marking or stains should be cleaned with a mild soap solution.



**Refer to Appendix for full installation details and associated product information.*

Canal Standards

Modular Bench

Specifications

- Product: Site Pieces Monoline Link Bench, ML-LINK-MI (can be paired with Monoline Flat Bench).
- Materials: Aluminum frame construction, powder-coated finish. Thermally modified wood slats (Northern White Ash).
- Setting: Surface mounted via anchor bolts to concrete pad or foundation.
- Frame color: Midnight (Dark Blue RAL 5008)

Typical Application

- Modular seating elements are adaptable for use in both large and small spaces. When paired with a flat bench, the modular bench can be used a wide variety of seating arrangements, helping to create a unique and inviting environment that enhances social spaces.
- Seating should be placed in a way that prioritizes views, shade, accessibility and seating at busy intersections.
- The front-facing edge of seating must be located 3' offset from either side of trail or sidewalk.
- In all projects, universal access should be prioritized by incorporating ADA-compliant surfacing, slope requirements and areas for companion seating.

Maintenance

- Powder-coated components can be cleaned as needed with a soft cloth and mild detergent.
- Touch-up paint can be used to repair minor damage.
- Graffiti remover is recommended for removal of unwanted markings.
- Thermally modified wood slats do not require regular maintenance and should be expected to naturally weather to a silver-gray color.



**Refer to Appendix for full installation details and associated product information.*

Canal Standards

Picnic Table

Specifications

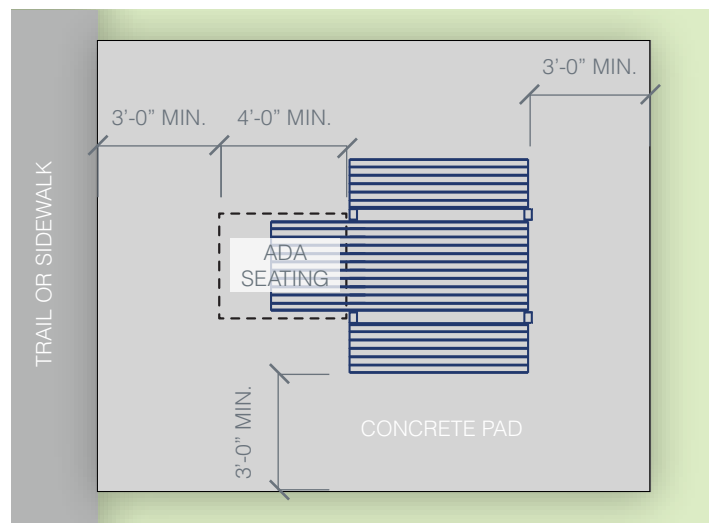
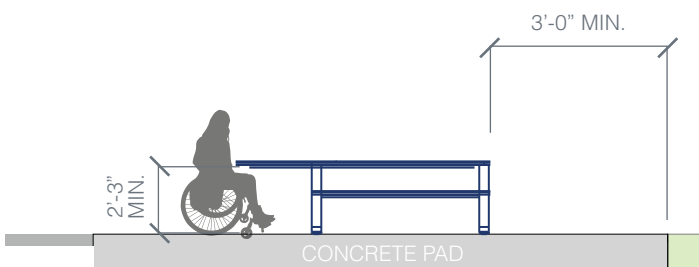
- Product: Site Pieces Monoline Community Table, SKU: ML-CMT
- Materials: Aluminum frame construction, powder-coated finish. Thermally modified wood slats (Northern White Ash).
- Setting: Surface mounted via anchor bolts to concrete pad or foundation.
- Frame color: Midnight (Dark Blue RAL 5008)

Typical Application

- Picnic tables should be utilized in gathering areas, especially those in which picnics, barbecues, or large community events occur.
- Rectangular tables allow for everyone to sit facing each other in a sociable orientation.
- Picnic tables are available with an ADA accessible extension which accommodates wheelchair access.

Maintenance

- Powder-coated components can be cleaned as needed with a soft cloth and mild detergent.
- Touch-up paint can be used to repair minor damage.
- Graffiti remover is recommended for removal of unwanted markings.
- Thermally modified wood slats do not require regular maintenance and should be expected to naturally weather to a silver-gray color.



**Refer to Appendix for full installation details and associated product information.*

Canal Standards

Trash Receptacle

Specifications

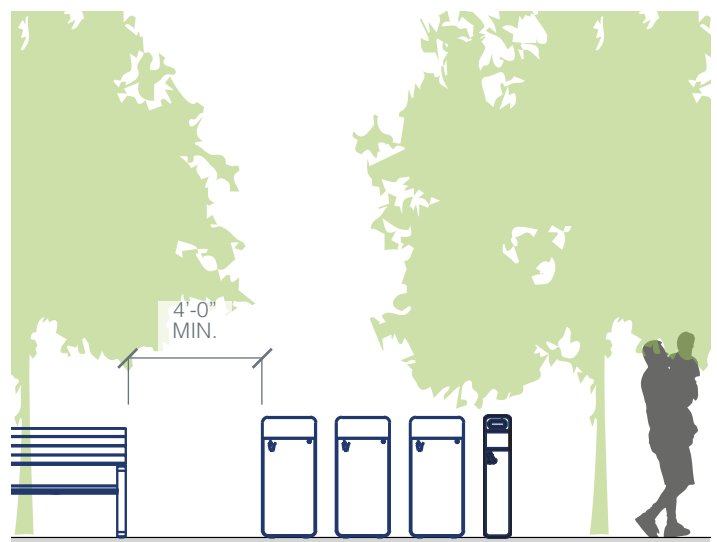
- Product: Site Pieces Monoline 36-gal. Square Litter Bin, SKU: ML-LGLITTER and Monoline No. 2 Combo Unit, ML-NO2COMBO
- Materials: Aluminum frame construction, powder-coated finish. Heavy-duty door hinge with universal door lock.
- Setting: Surface mounted via anchor bolts to stone or concrete base.
- Frame color: Midnight (Dark Blue RAL 5008)

Typical Application

- Receptacles should be placed in settings such as eating areas; transition zones where people seek to shed trash; in locations where people congregate or pause near restrooms, plazas, vendors or special-event areas; along urban streets and trail ways at regular intervals.
- Receptacles should sit at least 4' from where people sit or gather. This reduces or eliminates bad odors and insects drawn to sweets and sugary drinks.
- Depending on whether the trash receptacle is being serviced by hand or maintenance vehicle, adjacent paving materials and clearance requirements should be considered.
- All receptacles should be securely anchored to concrete pads preventing theft and displacement.

Maintenance

- Powder-coated components can be cleaned as needed with a soft cloth and mild detergent.
- Touch-up paint can be used to repair minor damage.
- Graffiti remover is recommended for removal of unwanted markings.
- Maintenance and trash removal agreements must be in place for all receptacles within NYSCC property.



**Refer to Appendix for full installation details and associated product information.*

Canal Standards

Bicycle Rack & Repair Station

Specifications

Bicycle Rack: Columbia Cascade, CycLoops Arch 2178-84

- Finish: Galvanized Steel

Bicycle Repair Station: Dero Fixit Plus

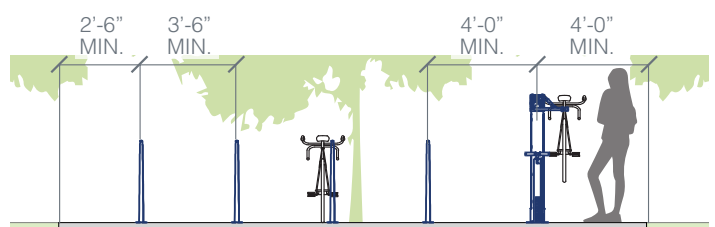
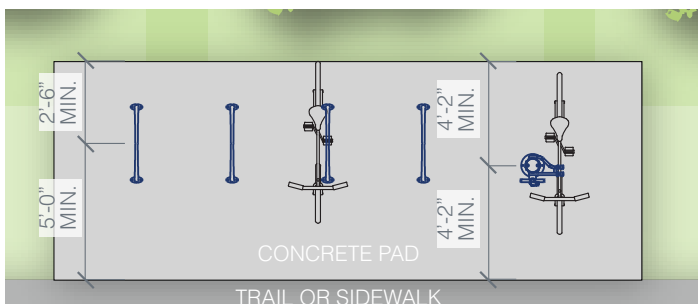
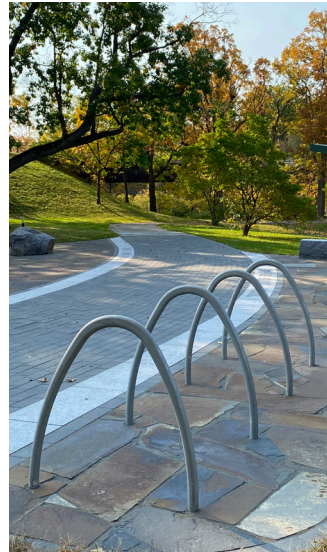
- Finish: Galvanized Steel
- Capacity: 2 Bikes
- Pump: Air Kit Prime attached to Fixit

Typical Application

- Bicycle racks should be readily visible near areas where cyclists are anticipated to dismount and park their bikes, near restrooms, trail access points, seating areas, view points and parking lots.
- Bicycle repair stations are ideal for high-traffic cycling areas.
- All bike amenities should be securely anchored to concrete pads pitched into adjacent well-drained landscape areas.

Maintenance

- Bicycle racks are virtually maintenance-free.
- Bicycle repair stations should be inspected on a regular basis to check for damage to tools, cables, pump and hose.
- Replacement parts can be ordered from manufacturer as needed.



**Refer to Appendix for full installation details and associated product information.*

Canal Standards

Drinking Fountain

Specifications

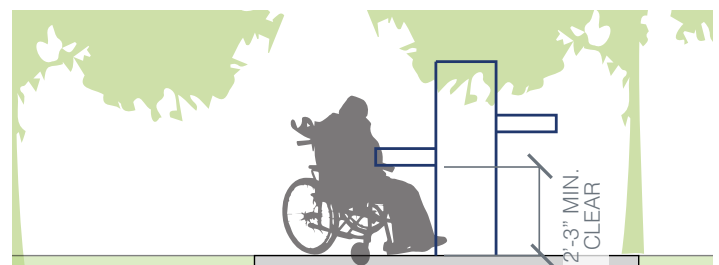
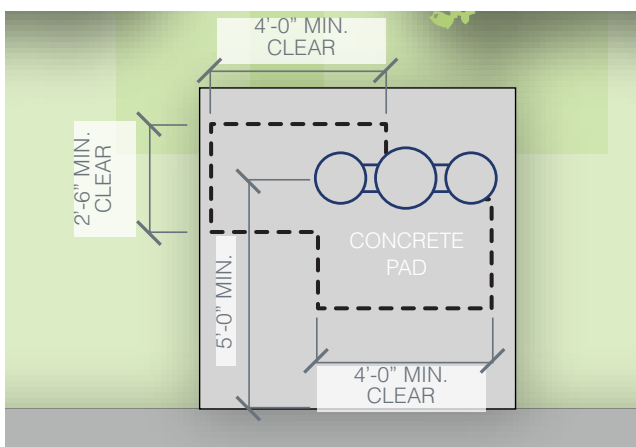
- Most Dependable Fountains Hi-Lo Fountain
- Product #: 10145 SM
- Color: Blue (RAL 5005)

Typical Application

- Water stations should be considered where existing water service is in close proximity, or where new water service is easily provided.
- Adequate clearances must be provided for universal access.

Maintenance

- Drinking fountains should be winterized in advance of freezing temperatures.
- Winterization is the responsibility of the local maintainer or permittee.
- Bubbler, basin and surrounding should be cleaned regularly with a non-toxic disinfectant and soft brush.
- Periodic inspection and replacement of filters or pumps.



**Refer to Appendix for full installation details and associated product information.*

Canal Standards

Solar Light Pole & Bollard

Specifications

Pole: Ligman Solar PV Pole 1, model # USOL-20001

- Luminaire Head: Macaron 1
- Wattage: 20 W
- Beam: Varies per application
- LED Color: W 27
- Finish Color: Black

Bollard: Ligman Prague 7 Solar Bollard, model # UPRA - 10061

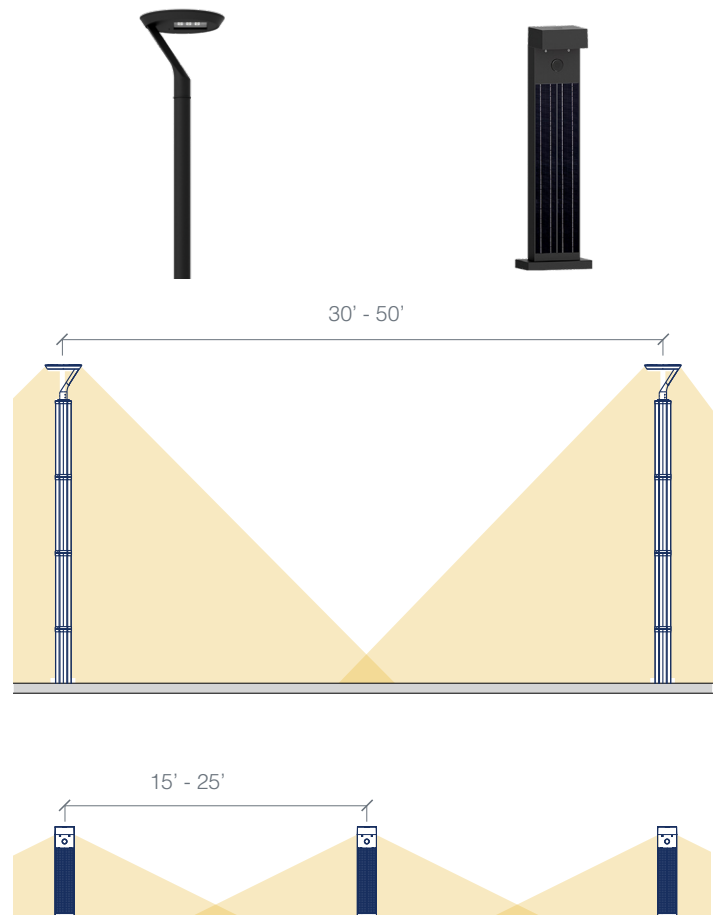
- Lamp: 2W LED/241 Lumens
- Wattage: 20 W
- Beam: Varies per application
- LED Color: W 27
- Finish Color: Black

Typical Application

- Local building codes must be consulted before undertaking any lighting project.
- Lights should be placed at regular distances, without interrupting viewsheds.
- Poles and bollards should be set outside of pathways to avoid interference with pedestrian and vehicular circulation.
- Poles should be mounted on concrete footings set approximately 4" above grade to prevent contact between pole and adjacent soils.
- Color temperatures are adjustable and should be set to a lower Kelvin rating within 2,700 – 3,000 K.
- All fixtures are Dark-Sky compliant and equipped with timing and dimming options to accommodate local requirements.

Maintenance

- Integrated photovoltaic panels should be cleaned regularly with a mild cleaning solution to remove dust, dirt and debris.
- Pole structure and foundation should be inspected for corrosion, rust or damage. Touch-up paint or rust inhibitors should be applied as needed.
- Batteries should be replaced every three to five years, or sooner if signs of degradation are observed.



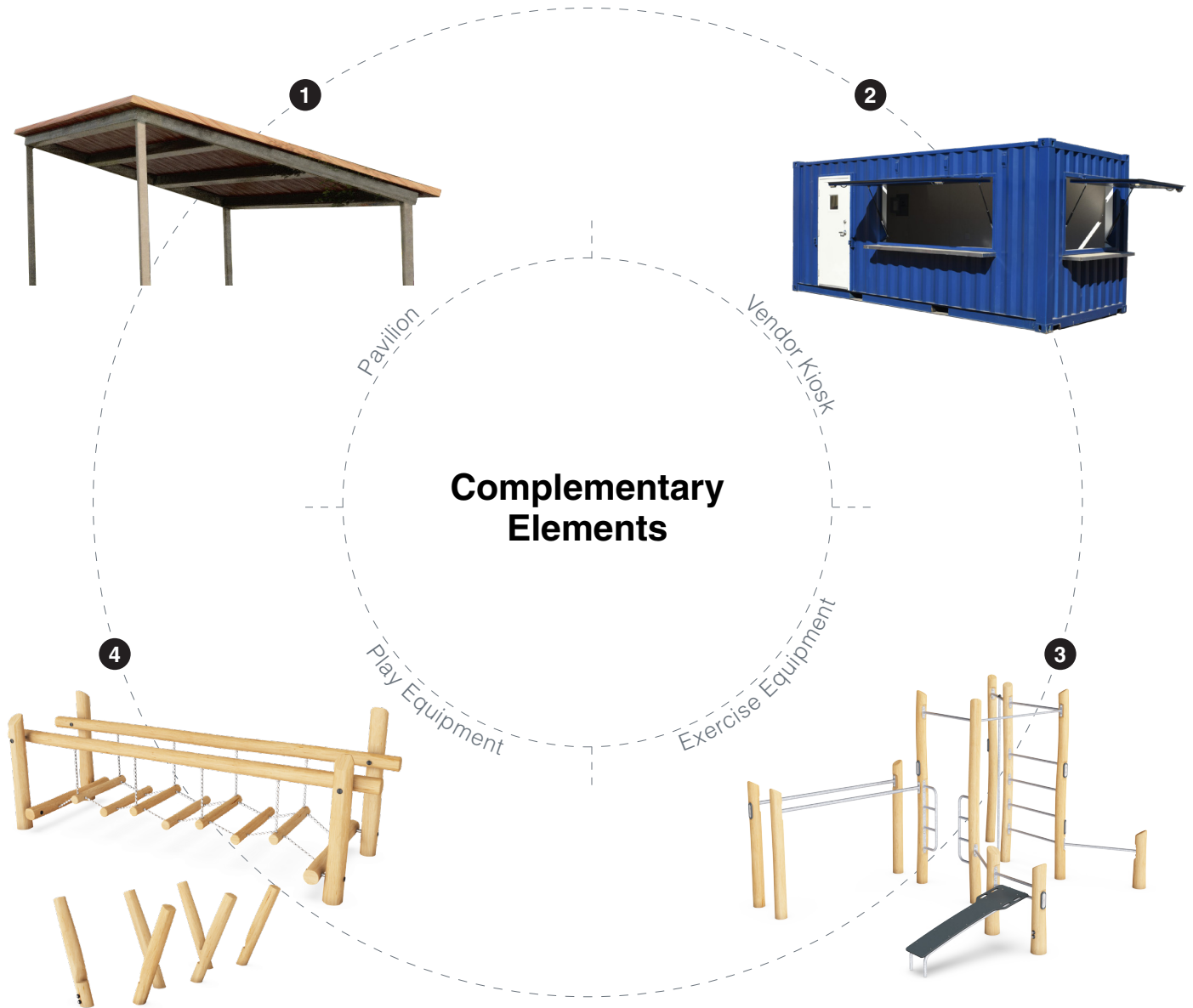
**Refer to Appendix for full installation details and associated product information.*



Natural Wood Exercise Equipment.

05 Complementary Elements

Complementary Elements



- 1 Pavilion
- 2 Vendor Kiosk
- 3 Exercise Equipment
- 4 Play Equipment

Complementary Elements

Pavilion

Specifications

- Tubular steel columns and beams
- Kiln-dried southern yellow pine roof deck
- 24 ga. standing seam roof
- Photovoltaic solar kit, customizable to accommodate need

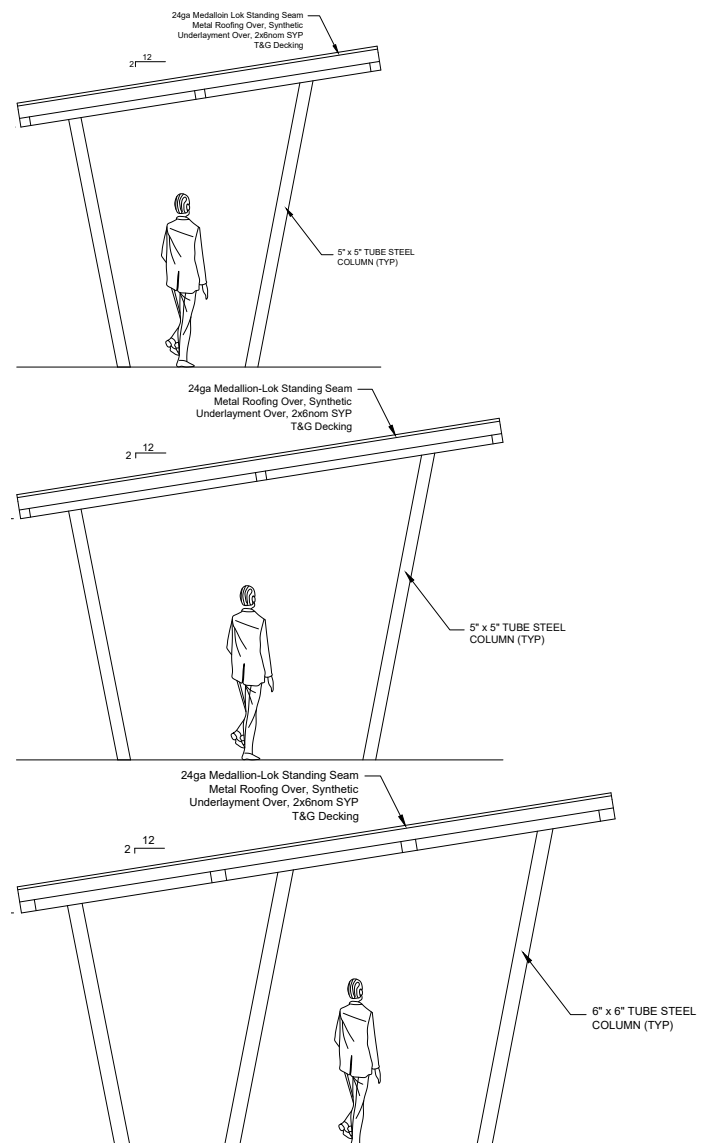
Typical Application

- All pavilions should be oriented towards optimal viewsheds, in coordination with the sun/shade patterns of the site.
- Solar photovoltaic panels are an option to accommodate the charging of mobile devices and personal electric vehicles such as bikes, scooters and wheelchairs.
- Constructed of steel and wood.
- Sizing of pavilions is customizable to fit within a desired space and budget.



Maintenance

- All pavilions should be securely anchored to concrete pads pitched into adjacent well-drained landscape areas.



Complementary Elements

Vendor Kiosk

Typical Application

- Placement of kiosks is encouraged in downtown areas with higher foot traffic; to be used year-round or seasonally.
- These structures, fashioned from recycled shipping containers, are readily available and customizable to fit the needs of individual businesses.
- Kiosks can be easily relocated via forklift and should be placed on solid level ground.
- Kiosks can be off-grid, powered by generator, or connected to existing site electrical where available.

Maintenance

- All kiosks should be placed on concrete pads pitched into adjacent well-drained landscape areas.



Complementary Elements

Play Equipment

Specifications

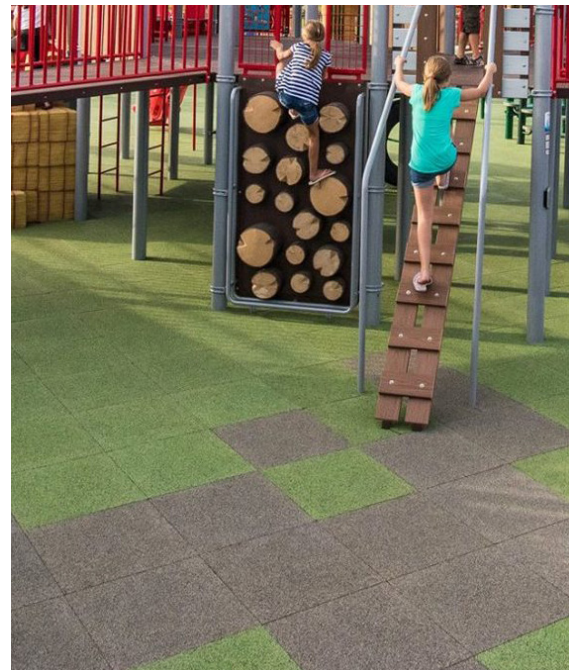
- Nature-based play using natural wood elements.
- Universally accessible equipment.
- Accommodates a wide range of ages and abilities.

Maintenance

- Manufacturer's guidelines should be consulted when designing any play area, and all equipment should be installed by a certified installer.

Typical Application

- Play elements can be adapted based on available size.
- Safety surfacing is required in all play areas, and the use of rubber safety surfacing tiles is recommended to provide optimal durability and cost range.
- Safety surface colors should remain within a natural range of blues, greens, and browns.



Complementary Elements

Exercise Equipment

Specifications

- Exercise using natural wood elements.
- Universally accessible equipment.
- Accommodates a wide range of ages and abilities.

Maintenance

- Manufacturer's guidelines should be consulted when designing any play area, and all equipment should be installed by a certified installer.

Typical Application

- Fitness equipment can be clustered within designated exercise areas or distributed as stations along a fitness trail.
- Safety surfacing is required in all equipment use zones, and the application of rubber safety surfacing tiles is recommended to provide optimal durability and cost range.





Typical Tow Path with Mown Edges, Now Used as a Canalside Trail.

06 Landscape Recommendations

Landscape Recommendations

Surfaces

One of the first matters to consider regarding any site design is the selection of hardscape materials. Asphalt is a popular choice for ADA-accessible pathways and trails given its relative affordability, durability, ease of maintenance and installation. Concrete should be utilized across plazas and other areas where durability is of the utmost concern or where site furnishings are anchored. While more costly and maintenance-intensive, permeable unit pavers can help distinguish uses, particularly in urban contexts. Crushed stone is a good lower-cost material, most appropriately applied to trails and parking lots in rural and natural settings. Safety surface tiles are frequently used within safety zones of play and exercise equipment due to their affordability, durability, and accessibility.



Asphalt



Concrete



Permeable Unit Pavers



Crushed Stone



Safety Surface Tiles

Landscape Recommendations

Landscape Management

Establishing sustainable landscape management practices along the Canal is as critical to the success of a design as the proposed site furnishings and surface materials. Through the considerate implementation of native plantings, municipalities can provide shade and visual interest for patrons, improve Canal water quality, and provide critical habitat for native wildlife that play a key role in the maintenance of our ecosystems. While the guidelines presented in this chapter are not intended as a comprehensive technical manual, they introduce important considerations and recommendations for plant selection, placement, establishment, and maintenance. Additional references, such as the Empire State Trail Design Guide, should be consulted for further guidance.

Planting Principles

Environment: The New York State Canal System traverses a wide range of regional ecosystems and micro-climates. Environmental factors, such as plant hardiness zones, soil quality, water requirements, and shade tolerance should be among the first considerations when selecting plants.

Placement: The placement and arrangement of plant material contributes to the physical experience of a space in both vertical and horizontal dimensions. Considerations such as framing of views, sense of enclosure, seasonal interest, and safety clearances all inform plant placement.

Establishment and Maintenance: Designing for long-term success requires a consideration of the anticipated maintenance needs of plant material, such as weeding, watering, pruning, and mowing. These efforts are often made easier with the use of native plant materials.



Old Erie Canal State Historic Site.

Landscape Recommendations

Planting Considerations

Plant Hardiness: Local climate should be among the first considerations for plant selection. The climates within the New York State Canal System range from the temperate regions of the Finger Lakes to the more frigid areas of the Erie / Ontario lake plain, Ontario lowlands, Mohawk Valley, Capital District, and North Country. While all recommended plant species fall within the hardiness zones found across the New York State Canal System, any new planting should ensure that selected species are hardy based on the project's location. Consult the USDA Hardiness Zone Map to better understand the local micro-climate.

Soils: Soil characteristics such as pH, composition (sand/silt/clay), porosity, and organic content should be considered to guide plant selection and amendments to existing soils. Soil testing services are available throughout New York State at the local offices of Cornell Cooperative Extension. Local soils maps are available online from the USDA Natural Resources Conservation Service.

Water: While some plants can tolerate a wide range of moisture levels, it is important to consider local conditions and determine if planted areas are anticipated to be consistently wet or dry so that plants may be selected accordingly. Consider and plan for how water will be brought to the site during the first two years of plant establishment.

Light: Similarly to moisture levels, many plants thrive best either in full sun or part shade. For particularly shady areas it is important that shade-tolerant plants are selected.

Pest Control: Pests can have a significant impact on plant success. Whether from common animals such as deer or more species-specific threats such as the emerald ash borer, spongy moth, hemlock woolly adelgid or southern pine beetle, it is important to consider what pests may be a problem in a specific region. Deer-resistant plantings should be prioritized, and the New York State DEC provides up-to-date information regarding pest and forest health issues on their website.

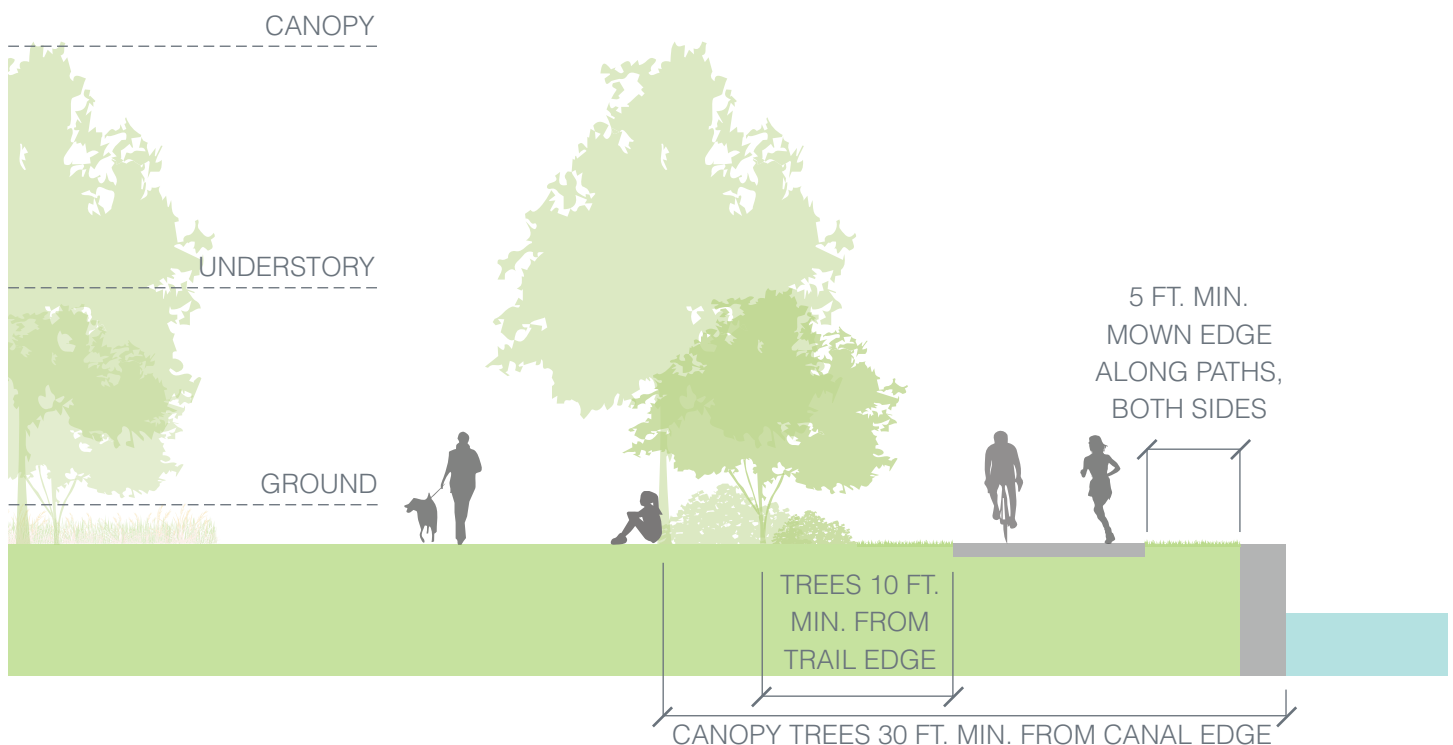
Landscape Recommendations

Plant Placement

Canopy: Larger canopy trees are intended to provide shade and define spaces by creating a feeling of enclosure. These deep, widely rooted plants should be kept at least 30' from the Canal edge to prevent damage to bulkheads and earthen embankments. Refer to the New York State Canal Corporation's Earthen Embankment Integrity Program for more information regarding planting on embankments. Overhead power lines should be avoided when selecting locations for tree planting.

Understory: Smaller trees and larger shrubs provide visual interest throughout the season at eye-level. Understory material should be planted 10' from recreational trails to reduce risk of collision and root damage.

Ground: Includes smaller shrubs and native meadows that provide color and texture at the ground level. Mown lawn can be used as edging to frame a more wild and natural meadow.



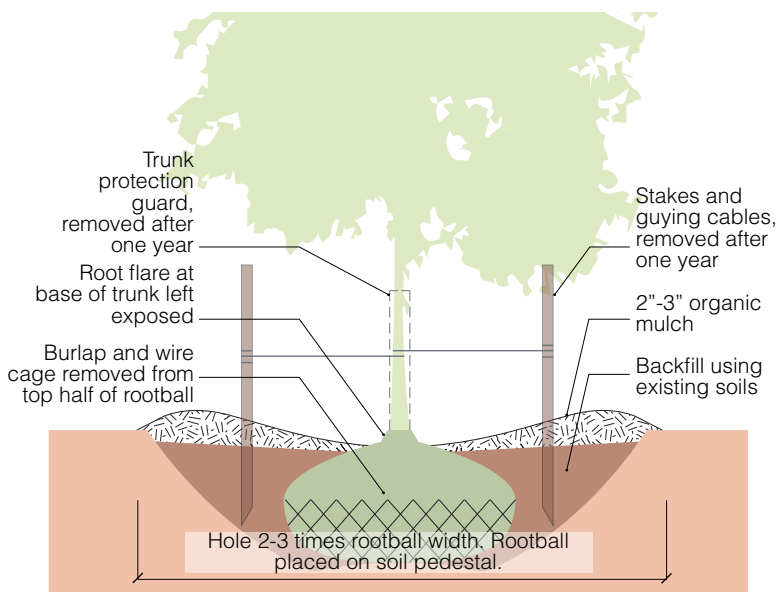
Landscape Recommendations

Establishment and Maintenance

Trees: Proper planting methods as illustrated below should be followed. Common mistakes such as planting the tree too deep or shallow, overmulching, and underwatering, should be avoided. Trees planting should occur in fall or early spring to avoid the stress of summer heat. Once the tree has been planted, ongoing maintenance practices should include inspection and pruning to improve public safety, tree health, and appearance. Pruning guidelines are readily available from many sources, including the US Forest Service and local cooperative extensions.

Shrubs & Perennials: Shrubs and perennials should be planted with proper spacing to allow for air circulation and future growth. All new plantings should receive 2"-3" of organic mulch, compost and regular watering. Planting during the height of the summer should be avoided. Spring pruning of shrubs is recommended to maintain the desired size and shape.

Meadows: A proper native meadow requires adequate preparation, including the removal or smothering of existing vegetation over the course of a full growing season, distribution of a native seed mix in fall or spring, and annual mowing once established. Alternatively, a less-intensive meadow can be established simply by designating areas of turf to be left to naturalize over time. All meadow areas should be mown annually to reduce the growth of woody plants. A clean mown edge also provides a tidy and intentional framing for the more wild and natural meadow textures.



Tree Planting Diagram.



Native Meadow with Mown Buffer Adjacent to Path.

Landscape Recommendations

Earthen Embankments

An earthen embankment is an engineered structure or dam wall of the Canal, which is made from soil, rock, clay, and other earthen material and impounds water for a prolonged period above the adjacent land surface elevation. To maintain and preserve these embankments, the New York State Canal Corporation has developed an Earthen Embankment Integrity Program (EEIP). Communities should refer to the resources available online at nyscanalintegrity.org for further guidance regarding planting within embankment areas.



Earthen Embankment Along the Erie Canal.

Planting

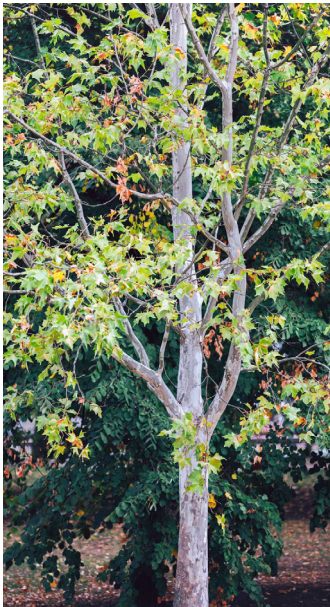
Representative Species

Canopy Trees

		SHADE TOLERANT	MATURE SPREAD	MATURE HEIGHT	HARDINESS ZONE
RED MAPLE	<i>Acer rubrum</i>	N	40-60'	40-60'	3-9
SUGAR MAPLE	<i>Acer saccharum</i>	N	35-50'	50-70'	4-8
HACKBERRY	<i>Celtis occidentalis</i>	Y	25-35'	40-60'	2-8
EASTERN LARCH	<i>Larix laricina</i>	N	25-35'	40-80'	2-6
TULIP POPLAR	<i>Liriodendron tulipifera</i>	N	35-50'	80-120'	4-9
AMERICAN SYCAMORE	<i>Platanus occidentalis</i>	N	60-80'	80-100'	4-9
SWAMP WHITE OAK	<i>Quercus bicolor</i>	N	50-60'	50-60'	3-8
RED OAK	<i>Quercus rubra</i>	Y	35-50'	60-75'	3-8
AMERICAN LINDEN	<i>Tilia americana</i>	Y	35-50'	60-80'	3-8



RED MAPLE
Acer rubrum



AMERICAN SYCAMORE
Platanus occidentalis



TULIP POPLAR
Liriodendron tulipifera



EASTERN LARCH
Larix laricina

Planting

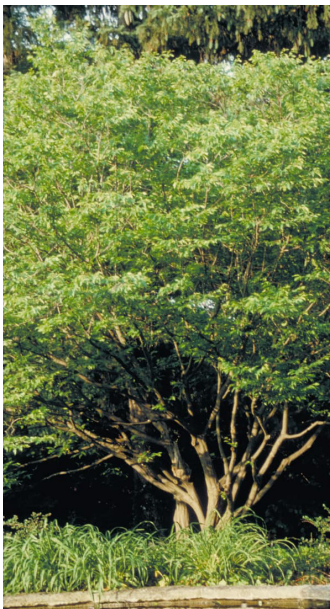
Representative Species

Understory Trees & Shrubs

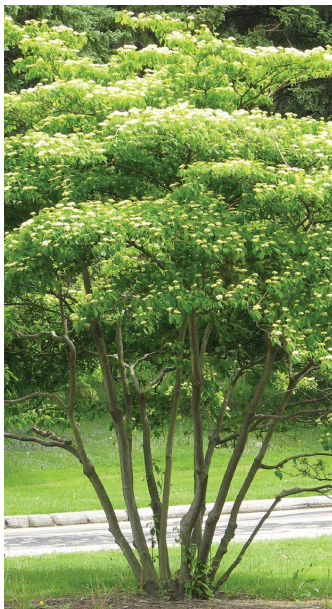
		SHADE TOLERANT	MATURE SPREAD	MATURE HEIGHT	HARDINESS ZONE
CANADIAN SERVICEBERRY	<i>Amelanchier canadensis</i>	Y	10-20'	20-25'	4-7
IRONWOOD	<i>Carpinus caroliniana</i>	Y	20-30'	25-30'	3-9
PAGODA DOGWOOD	<i>Cornus alternifolia</i>	Y	10-15'	15-20'	3-7
GRAY DOGWOOD	<i>Cornus racemosa</i>	Y	15-25'	20-30'	4-8
NORTHERN SPICEBUSH	<i>Lindera benzoin</i>	Y	6-12'	6-12'	4-9
AMERICAN HOPHORNBEAM	<i>Ostrya virginiana</i>	Y	20-30'	30-50'	3-9
CHOKECHERRY	<i>Prunus virginiana</i>	N	15-20'	20-30'	2-7
MAPLELEAF VIBURNUM	<i>Viburnum acerifolium</i>	Y	10-15'	12-18'	3-9
WITCH-HAZEL	<i>Hamamelis virginiana</i>	Y	15-20'	15-20'	3-8



CANADIAN SERVICEBERRY
Amelanchier canadensis



IRONWOOD
Carpinus caroliniana



PAGODA DOGWOOD
Cornus alternifolia



MAPLELEAF VIBURNUM
Viburnum acerifolium

Planting

Representative Species

Perennials

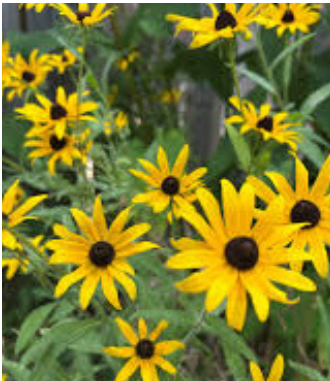
		SHADE TOLERANT	SPACING ON CENTER	MATURE SPREAD	MATURE HEIGHT	HARDINESS ZONE
CANADA ANEMONE	<i>Anemone canadensis</i>	Y	18"	24"	12-24"	2-9
BUTTERFLY WEED	<i>Asclepias tuberosa</i>	Y	12"	12-30"	24-36"	3-9
RED COLUMBINE	<i>Aquilegia canadensis</i>	Y	12"	24"	24"	3-8
AROMATIC ASTER	<i>Aster oblongifolius</i>	N	24"	12-36"	12-36"	3-8
PURPLE CONEFLOWER	<i>Echinacea purpurea</i>	Y	24"	12-30"	36"	4-8
WILD GERANIUM	<i>Geranium maculatum</i>	Y	18"	12-24"	24-30"	4-8
WILD BERGAMONT	<i>Monarda fistulosa</i>	Y	18"	20-24"	24-36"	3-9
FOXGLOVE BEARDTONGUE	<i>Penstemon digitalis</i>	Y	18"	20-24"	12-36"	3-9
SWITCHGRASS	<i>Panicum virgatum</i>	Y	18"	20-24"	24-30"	3-9
BLACK-EYED SUSAN	<i>Rudbeckia hirta</i>	Y	18"	12-24"	12-24"	4-8
BLUE-STEMMED GOLDENROD	<i>Solidago caesia</i>	Y	24"	12-24"	30-36"	4-8
GRAY GOLDENROD	<i>Solidago nemoralis</i>	N	18"	18-24"	24"	4-8
SMOOTH ASTER	<i>Symphyotrichum laeve</i>	Y	24"	12-24"	12-36"	3-9
HEARTLEAF FOAMFLOWER	<i>Tiarella cordifolia</i>	Y	14"	12-18"	12-18"	4-8



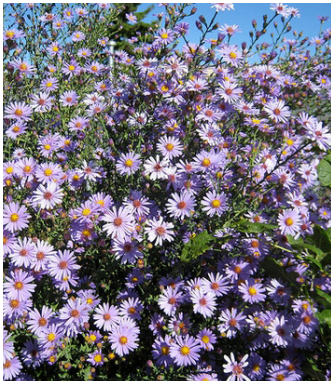
WILD GERANIUM
Geranium maculatum



SWITCHGRASS
Panicum virgatum



BLACK-EYED SUSAN
Rudbeckia hirta



SMOOTH ASTER
Symphyotrichum laeve