CHAPTER 2

LANDSCAPE TYPOLOGIES

Fig. 2-01

2. LANDSCAPE TYPOLOGIES

EXISTING LANDSCAPE CONDITIONS OVERVIEW

In the following pages, the **existing landscape conditions** are described in detail, including its role within the transit system, a list of sites where the condition is found, photographic examples of the condition, and how frequently this condition appears across PRT sites (shown as percentage of total sites evaluated).

To help envision the types of landscape improvements possible for each condition, this section includes an annotated view of an existing condition, and identifies the **recommended landscape strategies**, as well as outlines the **current maintenance needs** (to establish a baseline for understanding whether improvements will increase, decrease, or remain the same in maintenance intensity).

This section also provides examples of important **design considerations** for project teams to prioritize during planning and design of future station area improvements.

The **application** sections sets targets for landscape improvements, illustrating how the landscape strategies can be applied through a conceptual site.

Lastly, each landscape typology is also accompanied by a **case study**, illustrating how similar landscapes have been addressed across different municipalities or peer transit agencies ranging from Minneapolis Metro to cities like Cincinnati or the DC metro area. The case studies are meant to provide inspiration and alternative ways of thinking about specific areas of the transit system.

GRAPHIC KEY: MAINTENANCE REQUIREMENTS

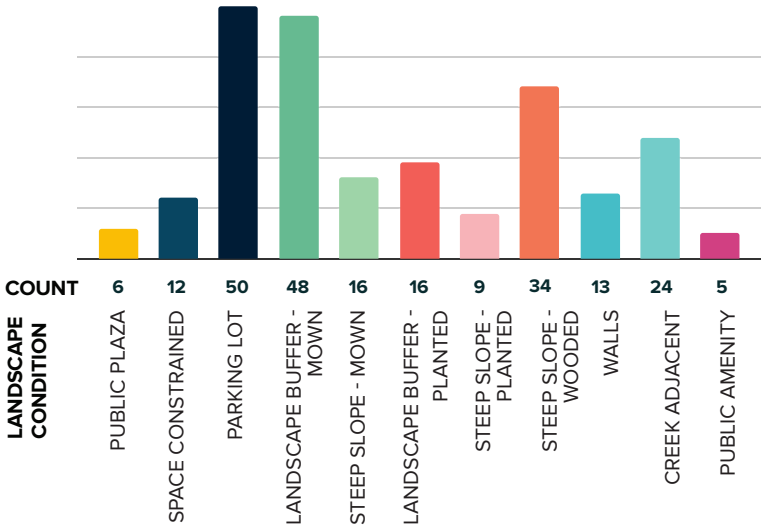
Indicates High, Medium, or Low Existing Maintenance Requirements

Indicates an increase in maintenance

Indicates maintenance needs will remain the same or similar, though tasks may shift

Indicates a decrease in maintenance

NUMBER OF LANDSCAPE CONDITIONS ACROSS ALL EVALUATED PROPERTIES



Public Plaza

Public Plazas were identified at long platform stations where there is a large area of hardscape marking the entry to the station, or providing space for amenities such as trash receptacles, bicycle parking, signage and lighting. This is where passengers typically purchase transit passes and wait for transit. Public plazas are also used for rider drop-off or pick-up.

Parking Lot

Any site that has a parking lot as part of its station or facility area is included in this category. It also includes park and rides.

Landscape Buffer - Mown Lawn

This category refers to areas of short grass, generally bordered by a curb, that act as a separation between roadways and station areas. There may or may not also be trees as part of mown lawn areas.

Steep Slope - Mown Lawn

Steep slopes are defined generally as grades greater than 33% slope, or 3:1. This category identifies steep slopes that are typically maintained as lawn.

Landscape Buffer - Planted

This category refers to areas planted with a variety of understory shrub or grass species, generally bordered by a curb, that act as a separation between roadways and station areas.

Steep Slope - Wooded

Steep slopes are defined generally as grades greater than 33% slope, or 3:1. Heavily wooded conditions are found along roadways, creeks, or more suburban station areas.

Steep Slope - Planted

Steep slopes are defined generally as grades greater than 33% slope, or 3:1. This category identifies steep slopes that are planted with understory shrub or grass species.

Space Constrained

Space constrained sites were found in urban conditions such as downtown stations like Gateway or First Avenue, or where the station is along active roadways, such as the Red Line stations in Beechview, or some of the Silver Line stations in Bethel Park.

Walls

Due to the region's topography of steep slopes and varying terrain, walls are an inevitable component of the landscape. Across PRT properties, walls vary in height and condition.

Creek Adjacent

A number of transit lines run parallel to existing hydrology networks or creeks. These areas are most likely to suffer from impacts of flooding.

Public Amenity

A few sites provide public amenity in the form of public park, memorial, or playground.

Roadways

This category was not calculated as part of the analysis, as the condition is present across PRT's system. However, roads and busways are a significant part of the landscape that impacts rider experience.

PUBLIC ENTRY PLAZAS

As the most visible and public landscape condition, the entry plaza should be welcoming, comfortable, and provide clear instructions for accessing and navigating transit. While the more formal condition found at stations with platforms and canopies is described here, the arrival and entry experience at each and every station should be a priority—accessible and legible arrival is crucial for a positive passenger experience—ensuring safety, reducing stress, and promoting efficient transit use.

The use of wayfinding, defined pathways, and enhanced green space will help to empower riders to navigate stations and boost their confidence in using public transportation, making their experience as positive as possible. Studies show that enhancing green space and green infrastructure improves passengers' experience, increases comfort, improves aesthetic appearance, and reduces perceived wait times by as much as 30%[1].

Amenities such as seating, trash receptacles, and lighting are an important aspect of station plazas, particularly in areas where passengers wait for transit. Additional amenities like bicycle parking and adequate drop off zones are imperative to meet a diverse range of customer needs.

1 Lagune-Reutler, M., Guthrie, A., Fan, Y., & Levinson, D. (2016). Transit Stop Environments and Waiting Time Perception: Impacts of Trees, Traffic Exposure, and Polluted Air. Transportation Research Record, 2543(1), 82-90. https://doi.org/10.3141/2543-09

CASTLE SHANNON

Fig. 2-02

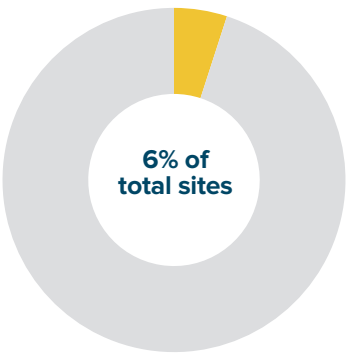
NEGLEY

Fig. 2-03

Stations with this condition:

- Castle Shannon
- East Liberty
- Gateway
- Negley
- Roslyn
- Washington Junction

Trees and green space in transit areas improves passenger experience, **reducing perceived wait times by as much as 30%.**



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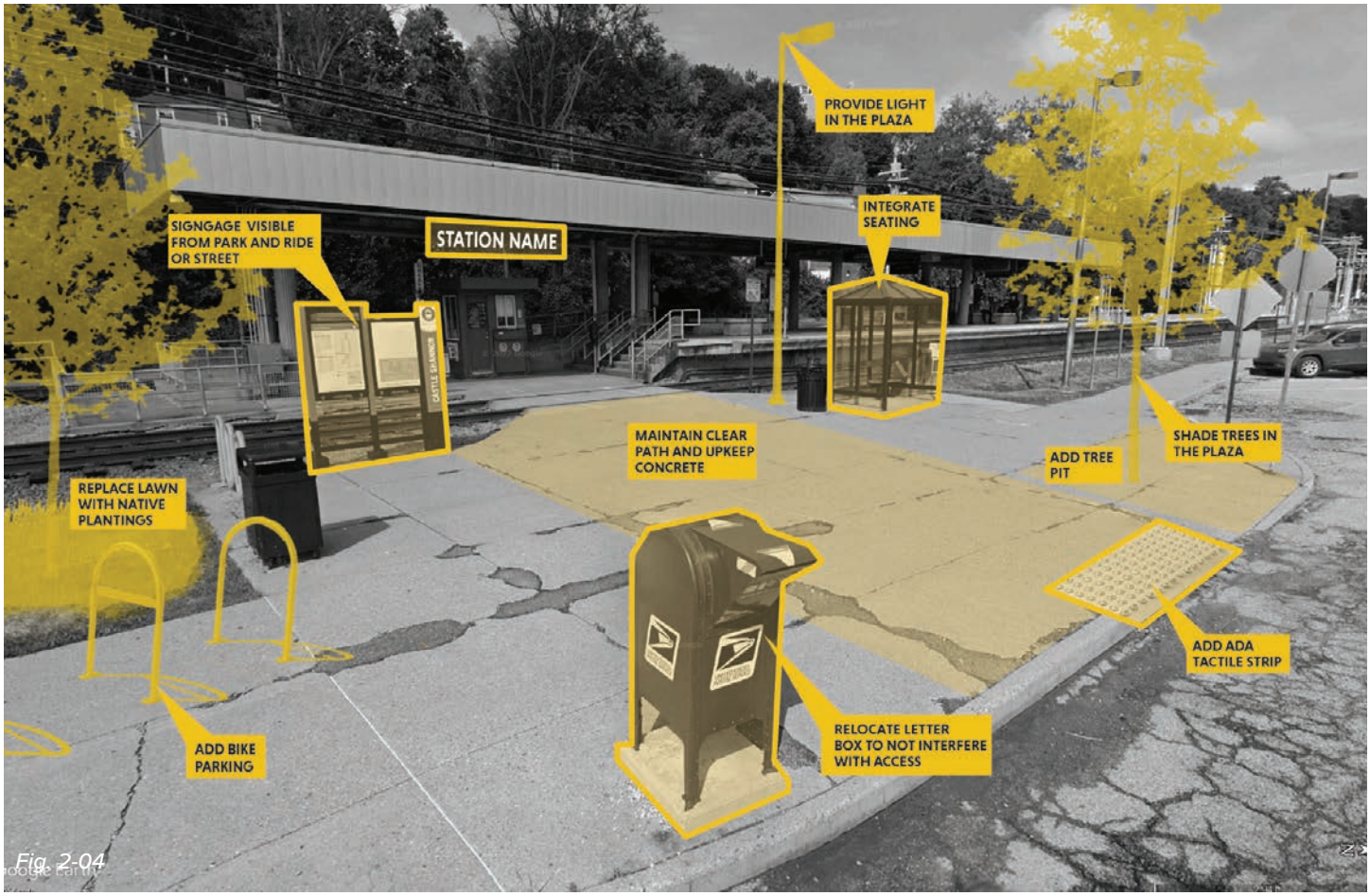


Fig. 2-04

Current Maintenance Requirements

The most common maintenance requirements within public entry plazas include removal of trash, cleanup of vandalism or graffiti, and repair of amenities such as seating, shelters, and signage. Additional needs include concrete or asphalt surface repair and coordination with maintenance teams to keep adjacent track infrastructure and roadways safe, clean, and operational.

Maintenance Intensity

HIGH

Considerations

Desire Lines / Clear Path
ADA Accessibility
Lighting
Appropriate Amenities
Canopy Coverage

Recommended Landscape Strategies

See Chapter 3 for more information on each of the different landscape strategies.

APPLICATION

1. Target **15-30% of arrival area to green space** (trees, planters, stormwater management).
2. Maintain legible, accessible entrance that is **ADA compliant**.
3. Provide buffers between pedestrian crossings and oncoming traffic to **limit potential conflict.**
4. Provide **zones for amenities** such as trash receptacles, bicycle parking, and community amenities such as mailbox drop boxes, newspaper dispensers.
5. Provide **seating in covered areas**, either with structure or **tree canopy,** to provide riders with shade and comfort.
6. Plants should have **high ecological value**, support stormwater management, and provide habitat for insects, birds, and other habitat.

Fig. 2-05

MAINTENANCE INTENSITY

HIGH

With the use of durable plants and hardscape material, improvements near station arrival plazas will likely require the same amount of attention and maintenance.

CASE STUDY

TARGET FIELD STATION

Minneapolis, MN - MetroTransit

Target Field Station in downtown Minneapolis is a key multi-modal transit hub and public gathering space adjacent to the Minnesota Twins Stadium. It was designed to spur neighborhood revitalization and connect light rail and commuter trains, bus lines, and an extensive network of bike and pedestrian trails across the Twin Cities. The site combines transportation infrastructure with sustainable landscape design, with stormwater systems designed to capture, filter, and reuse stormwater on site, removing an estimated 97% of sediment from runoff. The project also utilizes a no-shovel snowmelt system—where an antifreeze mixture is pumped through plastic tubing embedded in the concrete, melting snow without the use of salt or deicing chemicals.

The transit station entry plaza design utilizes a simple combination of trees in linear grates that both direct foot-traffic, while softening the hardscape, providing shade and canopy coverage and below-grade stormwater management.

KEY FIGURES

Landscape Elements: Trees, Native Plantings, Stormwater Infrastructure (Underground Cisterns), Public Amenity

Landscape Area (% of Total Station Area): 17%

Owner: Hennepin County

Year Completed: 2014

Funding: Mix of local, federal, and state sources. Included grants from Mississippi Watershed Management Organization.

Project Team: OLIN (Landscape Architect), Perkins Eastman, Knutson Construction

Fig. 2-06

Fig. 2-07

(Left) Aerial view of the Target Field Station public entry plaza. Illuminated poles provide signage and lighting, and can be programmed for special events. Photo by Morgan Sheff via Hennepin County.

(Top) Ground-level view of the entry sequence. Photo via Knutson Construction.

PARKING LOT

The most frequently found landscape condition is parking lots - which make up approximately 117 acres of PRT parcels - and include commuter park and rides and staff parking at operational sites. They range in size, from 10-15 spaces at sites like Muldowney, and over 700 spaces at Wilkinsburg. Since most lots are surfaced with asphalt, they greatly contribute to stormwater runoff and may carry pollutants like heavy metals, oil, grease and gas, as well as increased sediment, into Pittsburgh's waterways. Parking lots also greatly contribute to urban heat island, creating uncomfortable and unfriendly environments, especially during summer months.

WASHINGTON JUNCTION

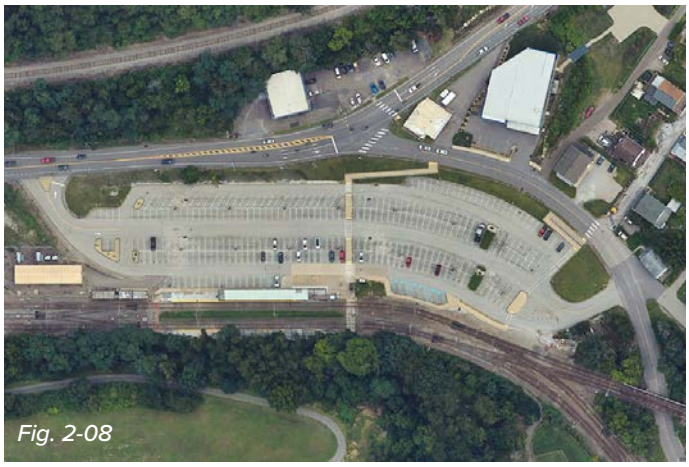


Fig. 2-08

MCCANDLESS

Fig. 2-09

Stations with this condition:

- Bell
- Carnegie
- Castle Shannon
- Crafton
- Dormont Junction
- Hamnett
- Harmar Garage
- Idlewood
- Killarney
- Library
- Lytle
- Memorial Hall
- Mount Lebanon
- Palm Garden
- Potomac
- Sheraden
- South Hills Junction
- South Hills Village
- Swissvale
- Washington Junction
- West Library
- Wilkinsburg

Park and Rides:

- Alpine Village
- Amridge
- Beulah Church
- Covenant / Presbyterian Church
- Duquesne
- Elizabeth
- Forest Hills
- Glenfield
- Harmar
- Large
- McCandless
- McKeesport Transportation Center
- Monroeville Mall
- Muldowney
- North Park Pool
- Plum
- Ross
- Spring Garden
- Tarentum
- Thorn Run
- University Boulevard
- Wabash
- Woodville

Operational Facilities:

- Collier Garage
- East Liberty Garage
- Harmar
- Manchester Main Complex
- Ross Garage
- South Hills Junction
- West Mifflin Garage

Parking lots make up approximately **117 acres of primarily impervious cover**, equivalent to 88 football fields.

FREQUENCY OF CONDITION

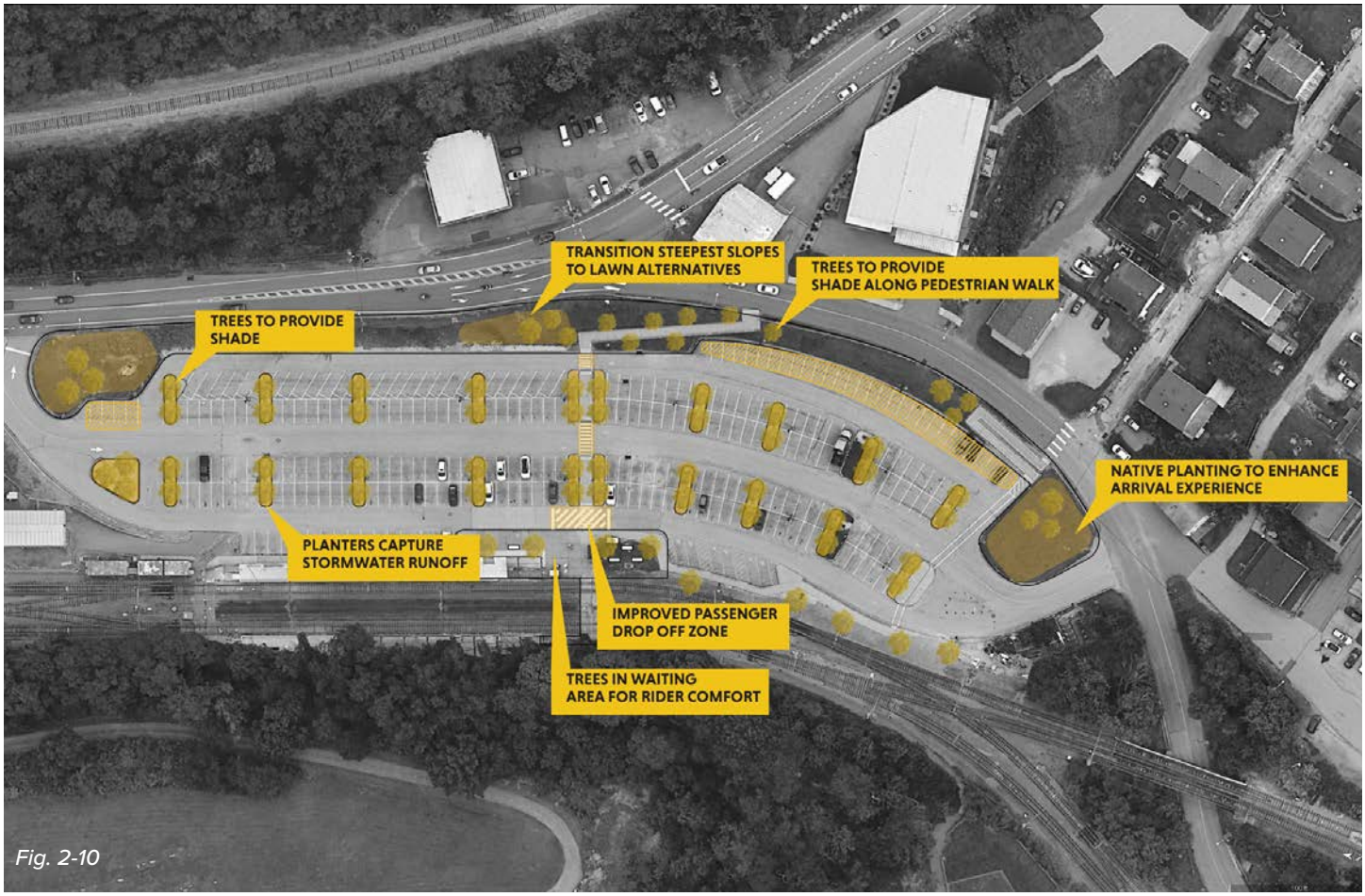


Fig. 2-10

Current Maintenance Requirements

Maintenance of parking lots is fairly minimal, repairing asphalt as needed. However, many of the parking lots across the system are in poor condition and will need to be repaved in the near future. At that time, PRT should consider integrating more landscape features.

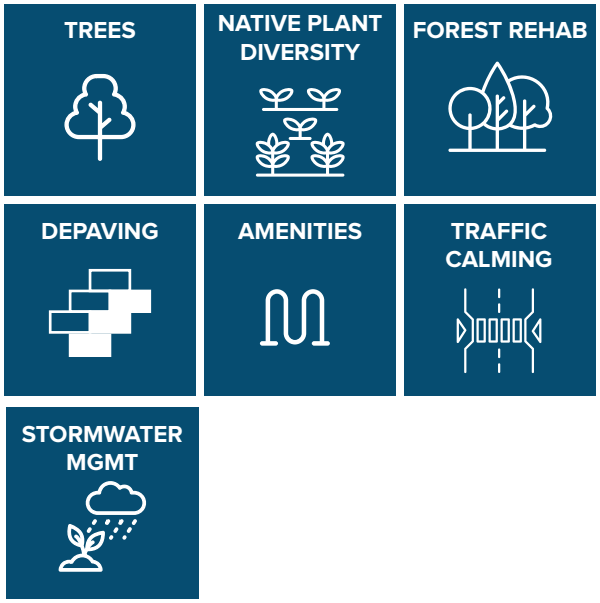
Maintenance Intensity

LOW

Considerations

Canopy Coverage
Utilization Rates
Neighborhood Walk Access to Public Parks
Manage Stormwater + Capture Runoff

Recommended Landscape Strategies



See Chapter 3 for more information on each of the different landscape strategies.

APPLICATION

1. Provide **1 tree for every 5 parking spaces**
2. Provide **min 7' width landscaped islands** or stormwater planters every 20 spaces, and at bottom and top of parking rows.
3. Provide landscape that equals at least **10% of total area.**
4. Target capturing **80% of stormwater** on site.
5. Evaluate utilization rate in order to right size parking lots. Leftover space should consider **depaving, reforestation, or transition to public amenity,** or other public usage.
6. Utilize traffic calming measures to ensure safe pedestrian access to station areas.

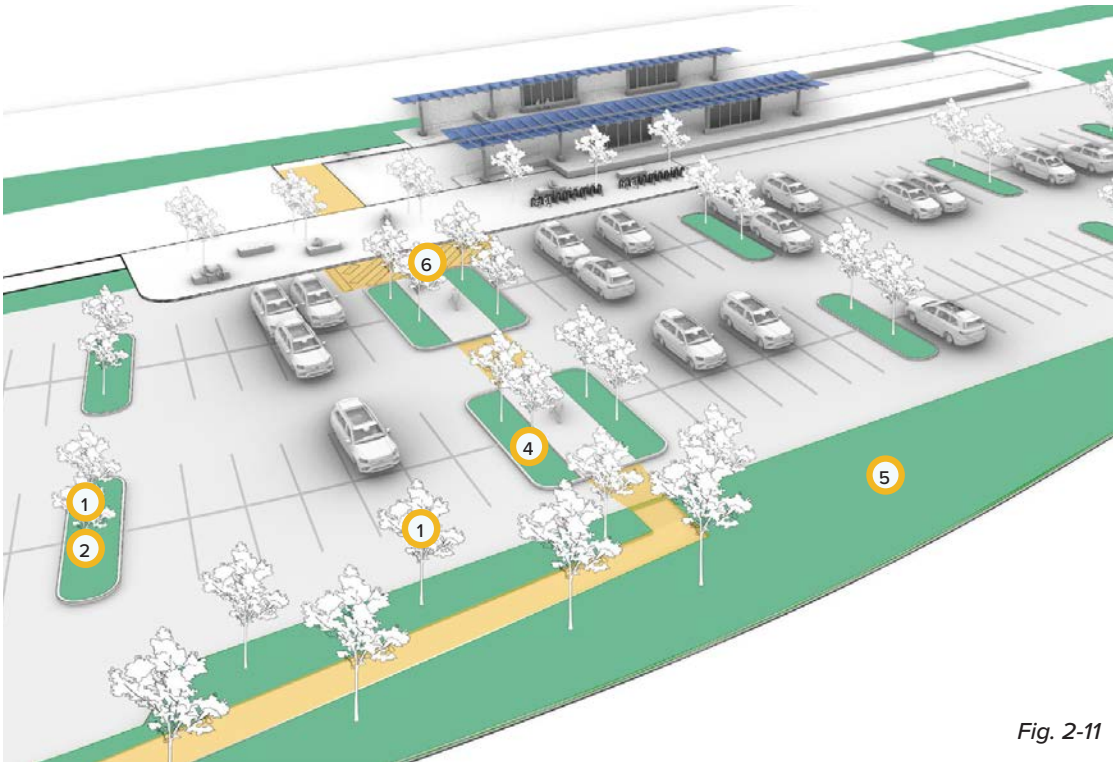


Fig. 2-11

MAINTENANCE INTENSITY

HIGH

Managing this type of landscape will require maintenance beyond current practices. However, the environmental benefits and improvements to the passenger experience should be prioritized.

ZONING CODE COMPARISON

This table highlights codes governing Pittsburgh and other peer cities regarding landscape requirements for parking lots. These metrics provide PRT with realistic targets for improving conditions for both the environment and riders, and comply with zoning code on capital projects as they move into implementation.

	Interior Landscaping Requirements			Perimeter Landscape Planting	
City	Trees	Islands	Landscape General	Land Use Buffering	Public Streets Screening
Pittsburgh, PA	1 Tree per 5 Spaces	Min 5' Width	25SF per space for up to 100 spaces -or- 30SF for over 100 spaces	Screening between adjacent property and ROW Width: 5' Min Height: 42" Min	(1) Tree per 30LF
Philadelphia, PA	1 Tree per 5 Spaces	Required in Lots with > 50 spaces. Every 20 spaces.	10% of Total Area	Fence or Landscape Buffer Required Width: 8' Min - 1 Tree + 3 Shrubs per 20LF	Fence or Landscape Buffer Required Width: 5-10' (1) Tree per 35LF
Milwaukee, WI	1 Tree per 4 spaces	Min 8' Width	100 SF per 4 parking spaces	Fence or Landscape Buffer Required 5-10' Width with Evergreen Shrubs	Fence or Landscape Buffer Required Width: 5-10' (4) shrubs or (8) perennials per 10LF (1) Tree per 20 LF
Minneapolis, MN	1 Tree per 50' for parking lots over 10 spaces	Required in Lots over 10 spaces Min 7' Width	300SF per 50 spaces	7'-9' Wide Buffer 95% Opaque	7' - 9' Wide Buffer (1) Tree per 25LF

CASE STUDY

SANTA CLARA STATION

Eugene, OR - Lane Transit District

Santa Clara Station in Eugene, OR is a busy transit corridor that serves as a hub for Lane Transit District fixed bus routes and bus rapid transit lines. The parking lot provides 55 spaces, electric vehicle charging stations, clearly designated drop-off zones, and public amenities like secured bike parking and a comfort station with restroom facilities. While typical parking lots generally contribute to greater stormwater runoff, this thoughtfully designed landscape manages and treats 100% of stormwater runoff through the use of permeable pavers, a large retention basin, native plantings and bioswales. The site's landscaping not only supports ecological function but also greatly contributes to the overall aesthetic of the transit station, reflecting on the transit authority's broader goals of sustainability, community integration, and multi-modal transit access.

KEY FIGURES

Landscape Elements: Native Plantings, Landscape Buffer, Stormwater Infrastructure (Retention Basin). 100% of stormwater is treated and retained onsite.

Park and Ride: 60 Parking Spaces

Landscape Area (% of Total Station): 26%

Costs / Funding: $10.3M / Federal Transit Administration 5307 Funds, Connect Oregon Grant, Surface Transportation Block Grant (STBG) and Local Funds

Year Completed: 2021

Design Partners: Rowell Brokaw

Fig. 2-12

(Left) The Santa Clara Transit Station in Eugene Oregon, developed as part of the Lane Transit District, follows more stringent parking lot requirements than other major cities, and the improvement to the rider experience is measurable.

Image by Rowell Brokaw.

LANDSCAPE BUFFER - MOWN LAWN

The second most common landscape type is mown lawn, which is found on relatively flat or slightly sloped surfaces, often bordered by a curb to act as a separation between roadways and station areas (mown lawn on steep slopes is described as a separate landscape condition). These areas of turf are typically a monoculture, where one dominant species of grass provides little value to wildlife or pollinators, and may be vulnerable to pests and diseases. Similar to asphalt parking lots, lawn areas also contribute to stormwater runoff, as typical lawns can only infiltrate one inch of rainwater per hour. When compared to a forest, which can infiltrate 16 inches,[1] lawns provide little value in stormwater management.

1 https://library.weconservepa.org/guides/151-from-lawn-to-meadow

CASTLE SHANNON

Fig. 2-13

WASHINGTON JUNCTION

Fig. 2-14

Stations with this condition:

- Carnegie
- Casswell
- Castle Shannon
- Dawn
- Dorchester
- Edgebrook
- Harmar Garage
- Herron
- Ingram
- Kings School Road
- Mount Lebanon
- Negley
- Overbrook Junction
- Palm Garden
- Pioneer
- Poplar
- Potomac
- Sarah
- Sheraden
- South Bank
- South Hills Junction
- South Hills Village
- St. Anne's
- Stevenson
- Washington Junction
- Westfield
- Whited
- Wilkinsburg

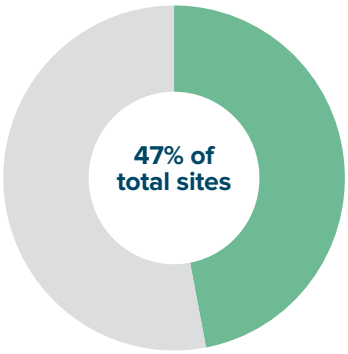
Park and Rides:

- Alpine Village
- Amridge
- Beulah Church
- Covenant / Presbyterian Church
- Duquesne
- Elizabeth
- Forest Hills
- Harmar
- Large
- McCandless
- McKeesport Transportation Center
- Muldowney
- Plum
- Spring Garden
- Tarentum
- Thorn Run
- University Boulevard

Operational Facilities:

- East Liberty Garage
- Ross Garage
- Manchester Main Complex

47% of PRT's stations have some form of lawn, requiring regular maintenance. With **shallow root systems** and often in **compacted soil**, lawn areas can contribute to stormwater runoff.



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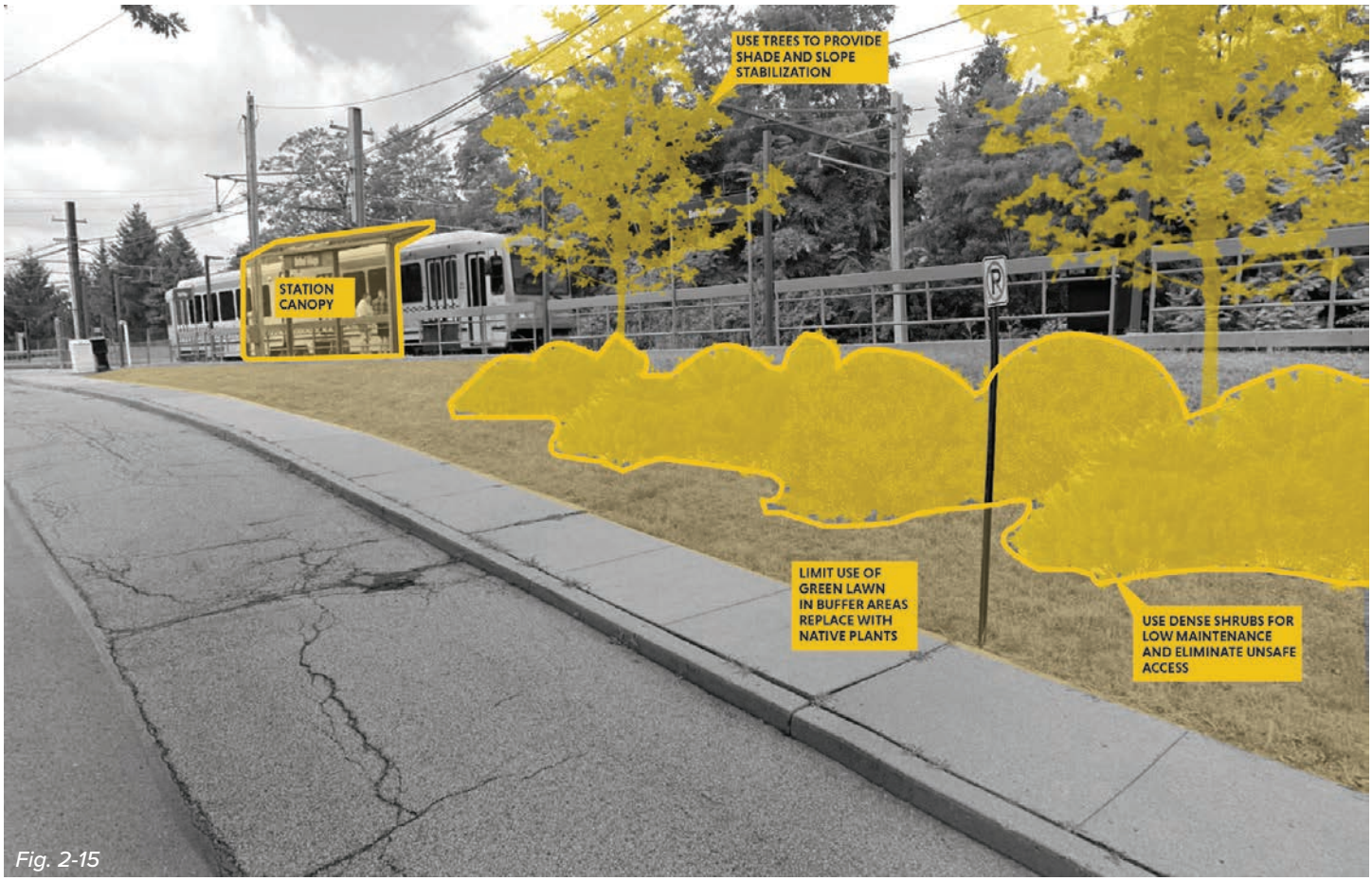


Fig. 2-15

Current Maintenance Requirements

Current maintenance practices involve mowing lawn on a 5-week rotation, which is significantly longer than typically recommended mowing frequency of once per week during peak growing season. If maintenance crews miss a week, stations may look uncared for. Maintenance equipment runs on gasoline, with lawn mower exhaust contributing to air pollution.

Maintenance Intensity

HIGH

Considerations

Increase Ecological Value
Manage Stormwater + Capture Runoff
Programmatic Use (recreation areas or high-foot traffic zones might remain lawn)

Recommended Landscape Strategies

See Chapter 3 for more information on each of the different landscape strategies.

APPLICATION

1. **Reduce lawn areas by 50%**
2. Utilize a **mix of meadow planting, no-mow grasses**, or trees and shrubs, as suitable for the condition
3. Planting strategies near high-use areas should incorporate durable and hardy species
4. Consider pedestrian desire lines and avoid planting in these areas.
5. Plants should have **high ecological value**, support stormwater management, and provide habitat for insects, birds, and other habitat.
6. Consider deep-rooted grasses and long-lived, fast-growing trees for **carbon sequestration** potential.

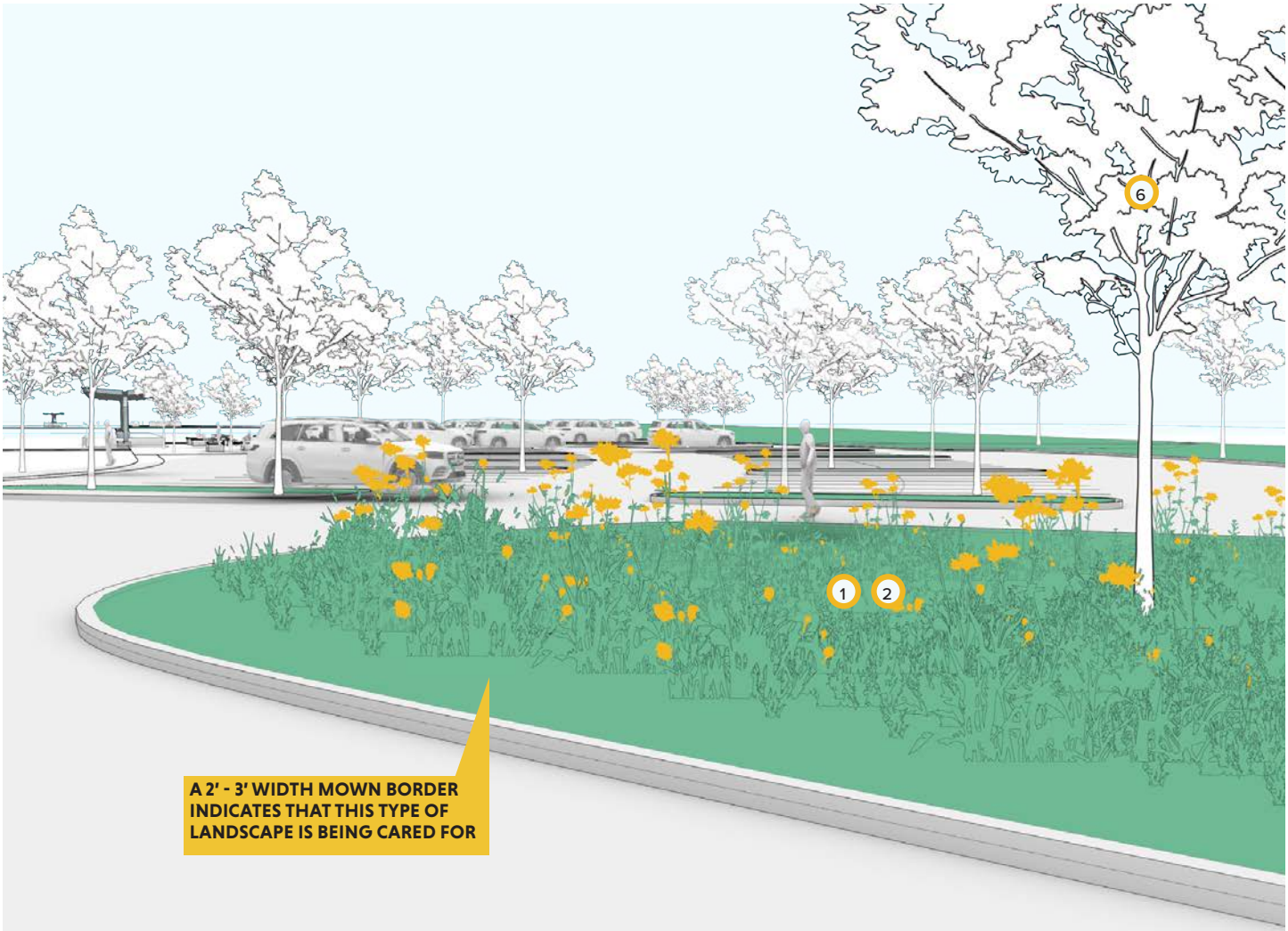


Fig. 2-16

MAINTENANCE INTENSITY

MEDIUM

Reducing the area of lawn and transitioning to native meadow will require less maintenance after establishment, requiring mowing only once per year at the most.

CASE STUDY

NATIVE POLLINATOR CONVERSION PROJECT

Caln Township Parks and Recreation, Chester County, Pennsylvania

The first phase of Caln Township Native Pollinator Conversion Project successfully transformed 1 acre of township-owned land from turf grass into a native pollinator meadow. The project began in 2022, with site prep including applying post-emergent herbicide, while continuing mowing practices throughout spring, summer, and fall. Volunteers who attended a seeding workshop helped to apply a mixture of PA Native Wildflower seeds, native grasses, and cover crop of annual rye to provide erosion and weed control through establishment. By 2024, the meadow had established and Caln Township Parks and Recreation department provided tours to other municipalities and groups interested in implementing similar projects.

The project was so successful that a second phase, converting an additional acre of land, began construction in October 2024.

KEY FIGURES

Landscape Elements: Native Plantings, Landscape Buffer

Size: 1 acre

Funding: Pennsylvania American Water Grant, PA DEP Environmental Education Grant

Year Completed: Phase I began April 2022, Phase II began October 2024

Partners: Caln Township Parks and Recreation Department, PennState Extension Master Watershed Stewards and Master Gardeners, PADCNR, Chester County Conservation District

Fig. 2-17

Fig. 2-18

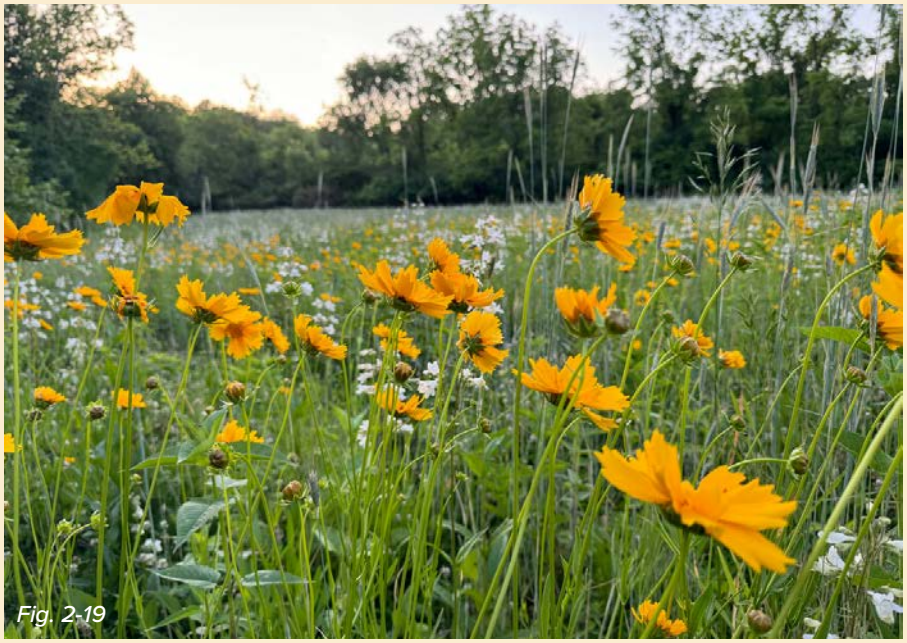


Fig. 2-19

Images show the transition from lawn to meadow. All images via Caln Township.

(Top) The site consisted primarily of turf grass
(Middle) Immediately after an herbicide application to remove the turf grass and expose soil prior to seeding.
(Right) The meadow in Year 2.

LANDSCAPE BUFFER - PLANTED

This condition refers to green landscape buffers that are planted, either purposely or naturally emergent, with a variety of understory shrub or grass species. Emergent or naturally occurring plant material is likely to contain invasive species. While these areas of grasses and shrubs are better than lawn in managing stormwater, slowing runoff, and preventing erosion, this landscape type lacks consistency and language within existing conditions, often appearing unkempt or poorly managed.

In some instances, such as South Park Station, the planting and maintenance is spearheaded and managed by local neighborhood groups or organizations. While these types of partnerships are beneficial, they should be formalized with binding agreements that include long-term care and maintenance plans. Future partnerships should utilize these guidelines for plant recommendations that provide consistent aesthetic quality, and ecological and environmental value.

Where increasing tree canopy is feasible, trees with columnar, upright growth habits should be considered so as to not encroach on rail lines or roadways, and limit the amount of additional pruning maintenance required.

WASHINGTON JUNCTION

Fig. 2-20

ARLINGTON

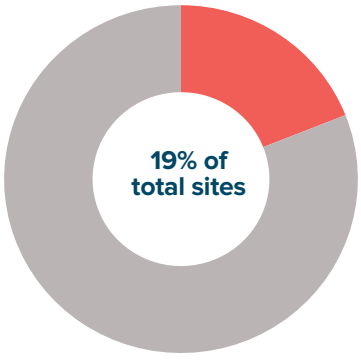
Fig. 2-21

Stations with this condition:

- Allegheny
- Arlington
- Bethel Village
- Carnegie
- Castle Shannon
- Crafton
- Dorchester
- East Liberty
- Idlewood
- Lytle
- Munroe
- Negley
- South Park Road
- Washington Junction
- Willow

Park and Rides with this condition:

- Amridge
- Duquesne
- Woodville



FREQUENCY OF CONDITION

Fig. 2-22

Current Maintenance Requirements

Maintenance needs include monitoring for invasive species and weeds, as well as pruning and trash cleanup.

Recommended Landscape Strategies

See Chapter 3 for more information on each of the different landscape strategies.

Current Maintenance Intensity

MEDIUM

Design Considerations

Increase Ecological Value
Manage Stormwater + Capture Runoff
Manage Invasive Species
Proximity to Transit Infrastructure
Overhead Infrastructure (Power lines)
Pedestrian Desire Lines

APPLICATION

1. Maintain **sight lines** for safety by utilizing low shrubs and grasses (2-3' max height at maturity).
2. Refrain from planting within pedestrian desire lines so plants are not trampled. The use of **dense evergreen shrubs** can be considered where pedestrian movement should be discouraged.
3. Utilize a limited palette of perennial shrubs and grasses (2-3 species per bed) for **visual consistency.** Prioritize plant species that require very little maintenance to maintain their form or structure.
4. Planting palette should consider **year-round interest**, providing a mix of evergreen, flowering, and grass species.
5. Maintain desired offset (6' min.) from rail tracks
6. Plants should have **high ecological value**, support stormwater management, and provide habitat for insects, birds, and other habitat.
7. Consider deep-rooted plant species and fast growing, long-lived trees for **carbon sequestration** potential.

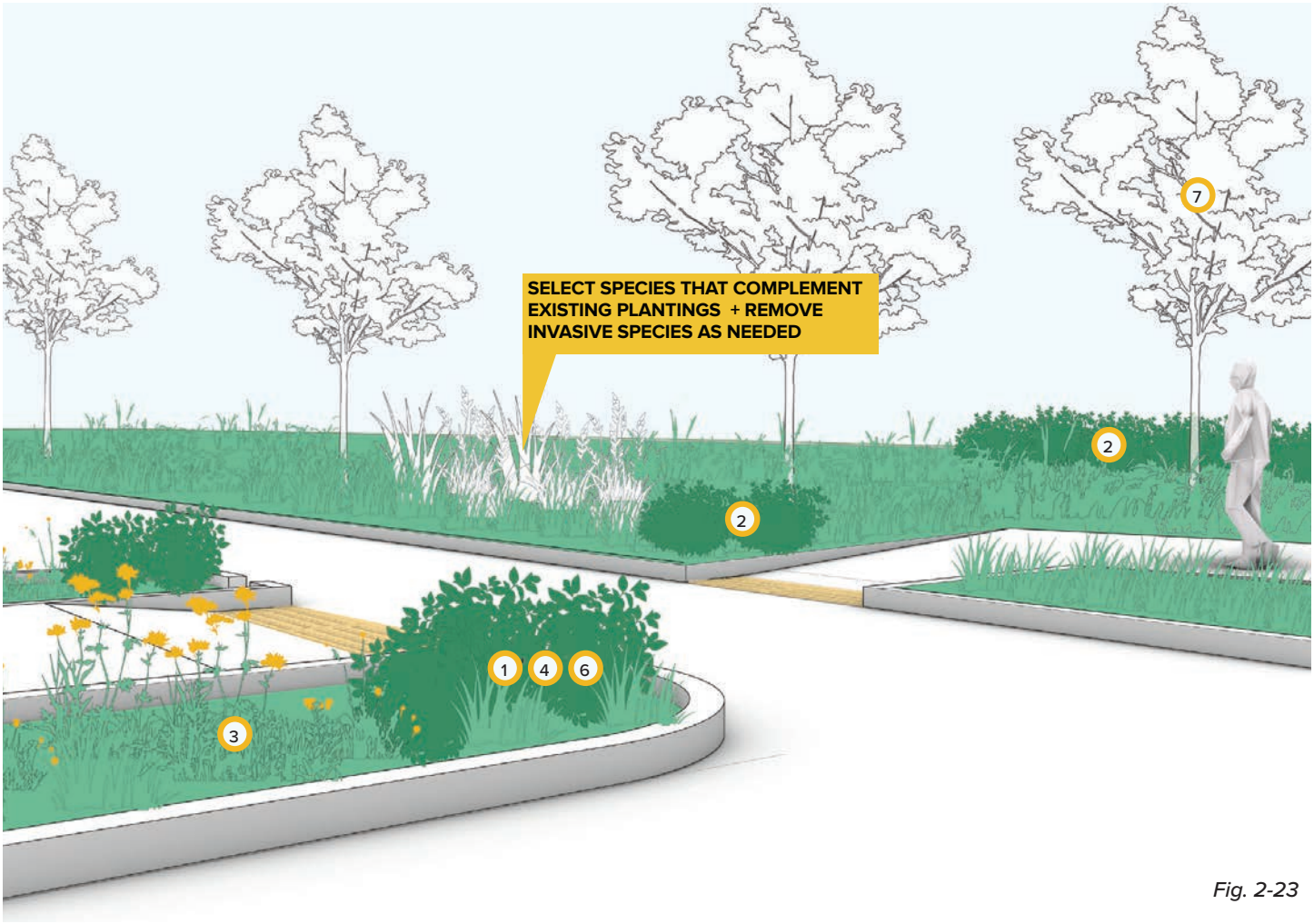


Fig. 2-23

MAINTENANCE INTENSITY

MEDIUM

As the proposed condition is primarily additional plantings that complement the existing shrub or grass layer, maintenance needs will be similar, including weeding and light seasonal pruning.

CASE STUDY

NORTHSIDE TRANSIT CENTER

Cincinnati, OH - SORTA / Metro

The Northside Transit Center, one of the busiest transit hubs in Cincinnati, transforms a neglected and underutilized urban site into a vibrant urban transit hub and park. Landscape buffers, with native groundcover, shrubs, and trees, strategically divide and soften the hardscape elements--which accommodate nine bus platforms as well as connections to the surrounding urban fabric. The landscape provides much-needed relief from the urban context, and support a park-like feel of the transit center. Community art and branded graphics are also woven through the design, celebrating the history and "reflecting the eclectic and diverse culture of the Northside community." [1]

1 MSA Design. Metro Northside Transit Center. Retrieved from https://www.msaarch.com/projects/metro-northside-transit-center-graphics

KEY FIGURES

Landscape Elements: Native Plantings, Landscape Buffer, Public Art

Landscape Area (% of Total Station): 15%

Costs / Funding: $3.7M / 80% Federal Funded, 20% Local Match

Year Completed: 2020

Design Partners: MSA Design, Vivian Lambi + Associates (Landscape Architect)

Fig. 2-24

Fig. 2-25

Planted buffer with mix of native shrubs, groundcovers, and trees soften the hardscape area around the bus station. Images via MSA Design.

STEEP SLOPE - LAWN

PRT's transit systems span a diverse range of topographic conditions: including approximately 117 acres of steep slopes across all properties, including station areas and facilities, and along PRT's ROW and fixed guideways. For the purposes of this assessment, steep slopes are defined as grades greater than 25%, equivalent to 1 foot of vertical rise for every 4 feet of horizontal distance.

Maintaining these slopes as lawn presents significant maintenance and safety challenges, particularly for crews responsible for mowing. Beyond the operational difficulty and dangers, steep slopes are also highly prone to erosion, especially during heavy rainfall. Turf grass, with its shallow root systems, are poorly suited for erosion control, as it is not sufficient to slow runoff, stabilize slopes or prevent gullies from forming.

While these areas are not typically navigated by passengers, they are highly visible, making them well-suited for conversion to alternative landscape cover types that require less maintenance, while still providing aesthetic value.

PIONEER

Fig. 2-26

CASTLE SHANNON

Fig. 2-27

Stations with this condition:

- Bethel Village
- Castle Shannon
- Denise
- Edgebrook
- Herron
- Homewood
- Mount Lebanon
- Negley
- Pioneer
- Sheraden
- South Hills Junction
- West Library
- Willow

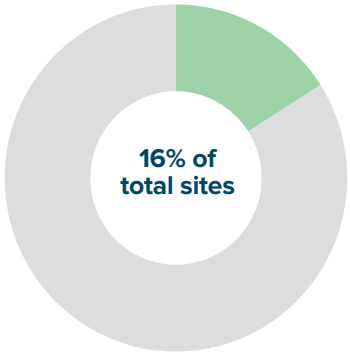
Operational Facilities with this condition:

- Collier Garage
- West Mifflin Garage
- South Hills Junction

Park and Rides with this condition:

- Beulah Church
- Large

Roughly 117 acres of PRT parcels is on steep slopes. The **steepest slopes** (greater than 40% grade) make up approximately **33 acres**.



FREQUENCY OF CONDITION

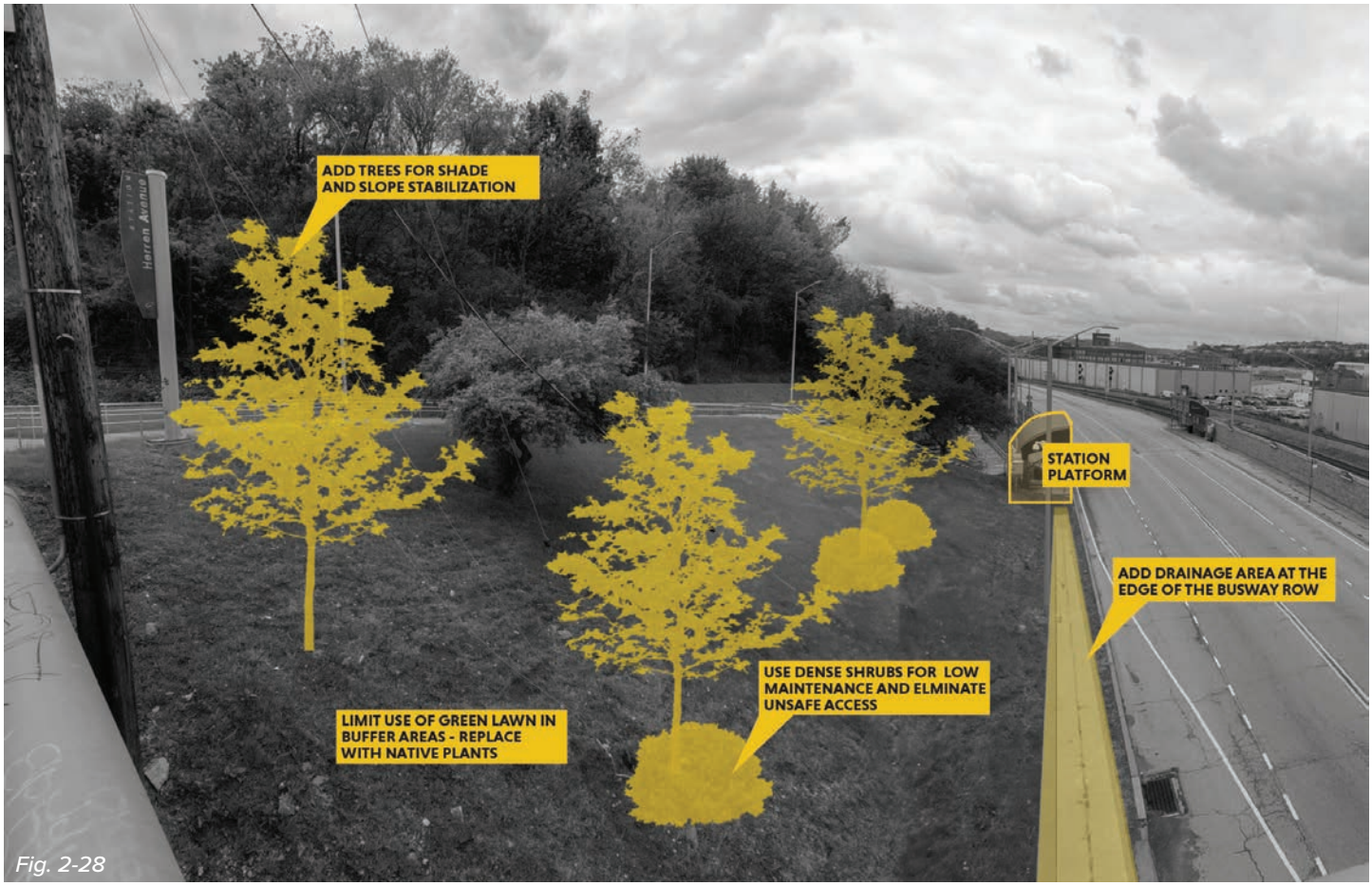


Fig. 2-28

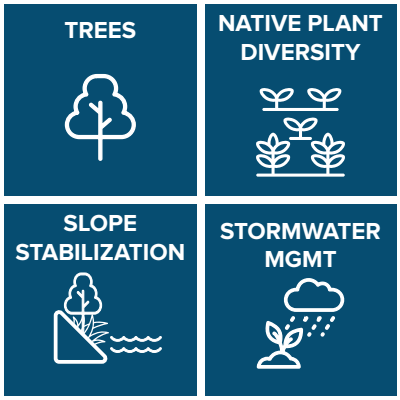
Current Maintenance Requirements

Current maintenance practices involve mowing lawn on a 5-week rotation. Maintenance equipment runs on gasoline, with lawn mower exhaust contributing to air pollution. PennDOT advises against mowing with regular equipment on slopes greater than 40%, instead a side-mounted mower or a boom mower should be used.

Current Maintenance Intensity

VERY HIGH

Recommended Landscape Strategies



See Chapter 3 for more information on each of the different landscape strategies.

Considerations

Increase Ecological Value
Manage Stormwater + Capture Runoff
Drought Tolerance
Pedestrian Desire Lines
Slope Stabilization
Erosion Control
Soil Characteristics

APPLICATION

1. **Reduce lawn areas by 90%**
2. Utilize a **mix of meadow planting, no-mow grasses**, or **trees and shrubs**, as suitable for the condition to aid in stabilizing slopes.
3. Dense evergreen shrubs can deter riders from running down hillsides.
4. Utilize **erosion control** or **drainage methods** described in Chapter 3 as needed for the specific condition.
5. Plants should have **high ecological value**, support stormwater management, and provide habitat for insects, birds, and other habitat. Select plant species suited to upland slope conditions.
6. Consider deep-rooted plant species both for **slope stabilization** and **carbon sequestration** potential.

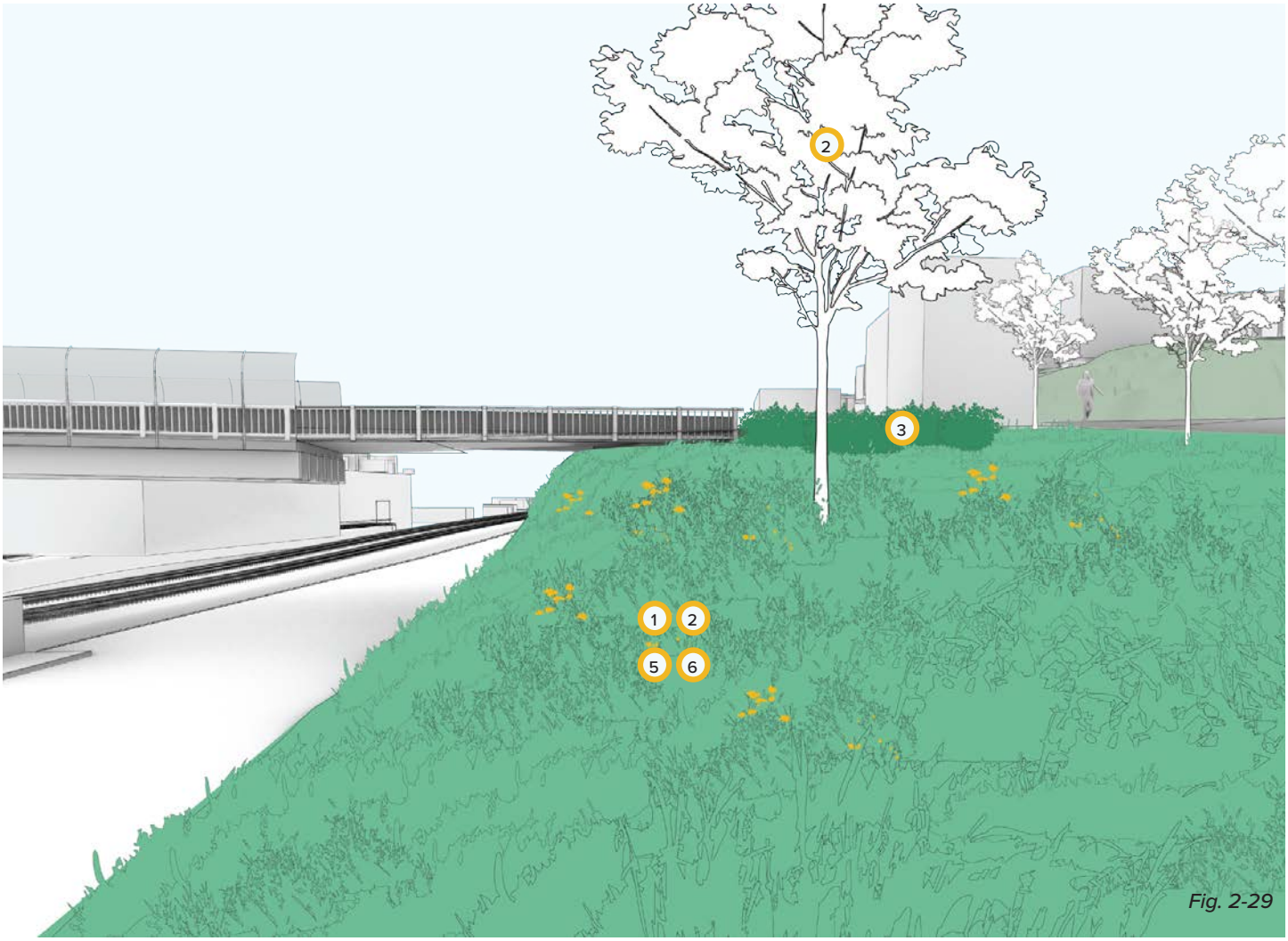


Fig. 2-29

MAINTENANCE INTENSITY

LOW

Due to safety concerns, steep slopes should not be mown, and instead planted with low-maintenance grasses, meadow, and native shrubs suitable for sloped conditions - cover types that require very little maintenance once established.

CASE STUDY

CENTER FOR SUSTAINABLE LANDSCAPES

Phipps Conservancy and Botanical Garden

The Center for Sustainable Landscapes is an extension of the public gardens at the historic Phipps Conservatory. One of the greatest challenges for the design team was working with the site's existing conditions, including exposed rock cliffs, steep topography, and degraded slopes on a former brownfield site. The team aimed to stabilize steep slopes while integrating accessible circulation and stormwater management features.

To restore the site and enrich the visitor experience, the design utilizes native plant species that are adapted to such challenging conditions. Upland and drought-tolerant plant communities were used in higher elevations, while lowland and wetland species were planted in lower-lying areas. Due to budget constraints, the team relied heavily on seed mixes to establish vegetation.

The landscape manages all stormwater on site for 99.7% of rainfall events.[1]

1 Pevzner, Nicholas, and Sean McKay. "Phipps Conservatory Center for Sustainable Landscapes." Landscape Performance Series. Landscape Architecture Foundation, 2016. https://doi.org/10.31353/cs1110

KEY FIGURES

Landscape Elements: Steep Slope Stabilization, Slope Restoration, Native Plantings, Landscape Buffer

Maintenance Costs: The native plants cost $0.80/sf to maintain, a 20% savings from other non-native plantings.

Costs / Funding: $11.8M

Year Completed: 2012

Design Partners: Andropogon Associates (Landscape Architect), The Design Alliance (Architect), Civil and Environmental Consultants, Inc (Civil)

Site Before (above), and After (below). Images by Andropogon.

Fig. 2-31

Fig. 2-30

Fig. 2-32

STEEP SLOPE - PLANTED

This landscape condition refers to steep slopes (greater than 33%, or 3:1) that are planted, either purposely or naturally emergent, with a variety of understory shrub or grass species. Many of these conditions contain invasive species, though care should be taken when attempting to manage invasive species so as to minimize disturbance to slopes and prevent further erosion or slope degradation. Strategies for improving this landscape condition include re-vegetation, introducing drought tolerant native groundcovers and shrubs adapted to sloped conditions, increasing tree canopy, and managing stormwater runoff through the use of planting strategies, rain gardens, diversion and infiltration beams, or terracing.

Where steep slopes are adjacent to pedestrian right-of-way or accessible pathways, curb or other edging should be utilized alongside stormwater management strategies to prevent sedimentation and provide a clear path of travel.

Additionally, designers should consider pedestrian desire lines, and either incorporate the use of accessible pathways, or, if pedestrian movement is unsafe, deter circulation through the use of dense evergreen shrubs.

BETHEL VILLAGE

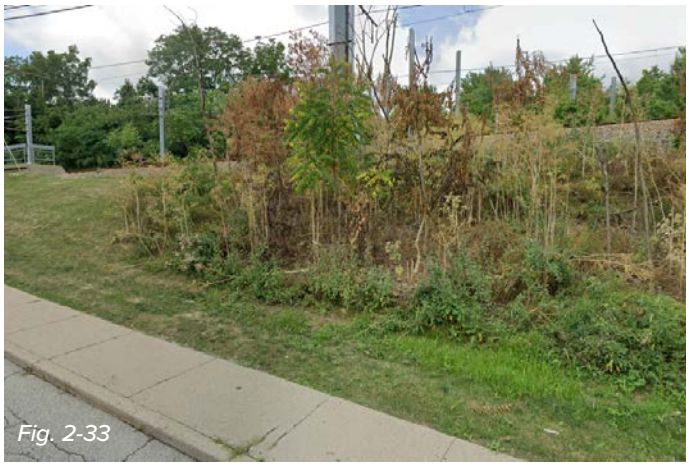


Fig. 2-33

IDLEWOOD

Fig. 2-34

Stations with this condition:

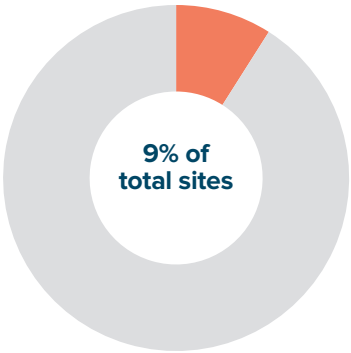
- Bethel Village
- Dormont Junction
- Hamnett
- Homewood
- Idlewood
- Swissvale
- Whited

Operational Facilities with this condition:

- West Mifflin Garage

Park and Rides with this condition:

- Large
- Ross



FREQUENCY OF CONDITION

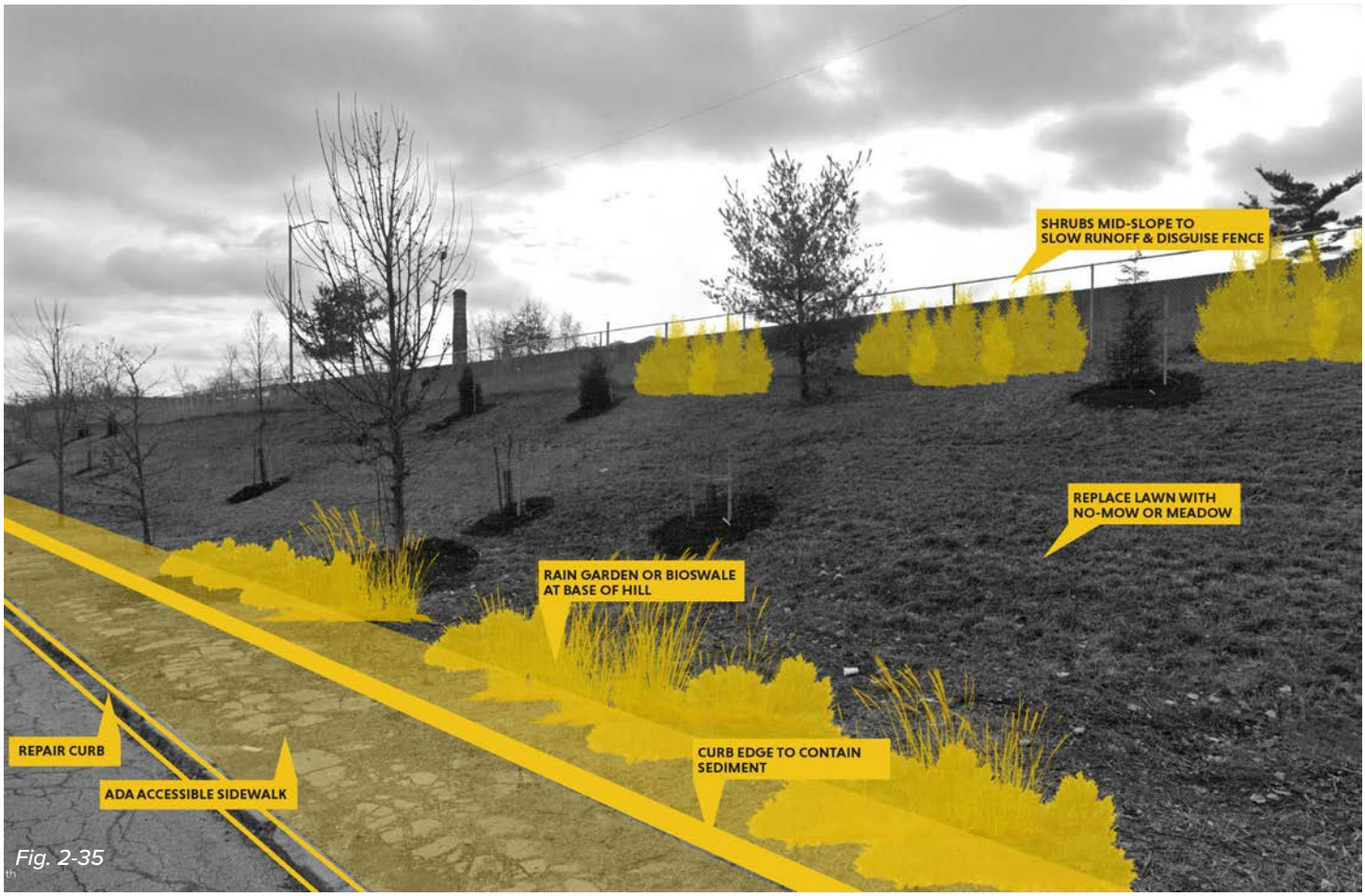


Fig. 2-35

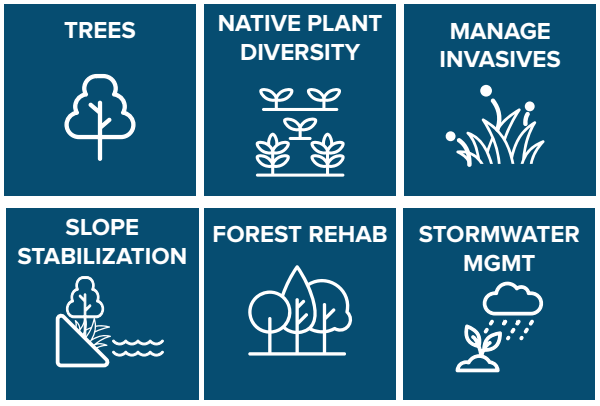
Current Maintenance Requirements

Maintenance needs include monitoring for invasive species and weeds, as well as seasonal pruning, trash cleanup.

Current Maintenance Intensity

MEDIUM

Recommended Landscape Strategies



See Chapter 3 for more information on each of the different landscape strategies.

Design Considerations

Increase Ecological Value
Manage Stormwater + Capture Runoff
Drought Tolerance
Pedestrian Desire Lines
Erosion Control
Soil Characteristics

STEEP SLOPE - WOODED

This landscape conditions refers to heavily wooded or tree-covered areas, often found in the steep slopes or undevelopable land along roadways, creeks, and in more suburban station areas. Steep slopes, grades greater than 33% slope, or 3:1, comprise approximately 19.5% of all PRT properties. Managing stormwater runoff and maintaining tree canopy, while managing invasive species and restoring degraded slopes to prevent future landslides or further erosion, are the greatest priorities for this landscape condition.

While not always highly visible to riders, care should be taken where pathways are adjacent to wooded areas to prioritize public safety, incorporate lighting, providing a positive passenger experience at the woodland's edge.

HERRON

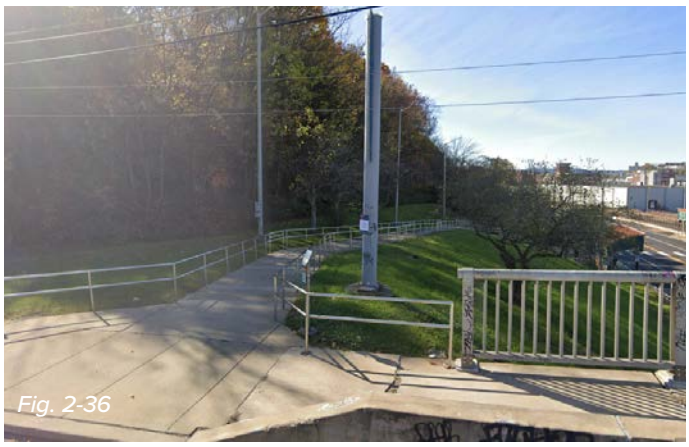


Fig. 2-36

LIBRARY

Fig. 2-37

Stations with this condition:

- Bell
- Boggs
- Bon Air
- Central
- Dawn
- Edgebrook
- Fallowfield
- Glenbury
- Herron
- Highland
- Hillcrest
- Inglewood
- Library
- Logan Road
- McNeilly
- Memorial Hall
- Mon Incline Lower
- Mon Incline Upper
- Palm Garden
- Pioneer
- Roslyn
- Sarah
- South Bank
- South Hills Junction
- South Hills Village
- West Library

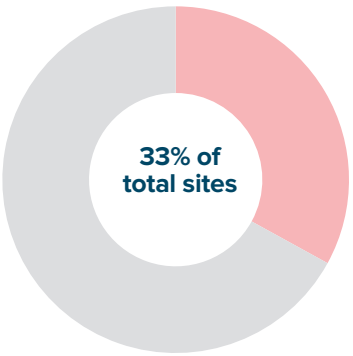
Park and Rides with this condition:

- Alpine Village
- Forest Hills
- Muldowney
- Thorn Run
- University Boulevard
- Woodville

Operational Facilities with this condition:

- Collier Garage

Tree canopy coverage across PRT's properties **is 31%**. Pittsburgh's Climate Action Plan identifies a goal of 60% tree canopy cover by the year 2030.



FREQUENCY OF CONDITION

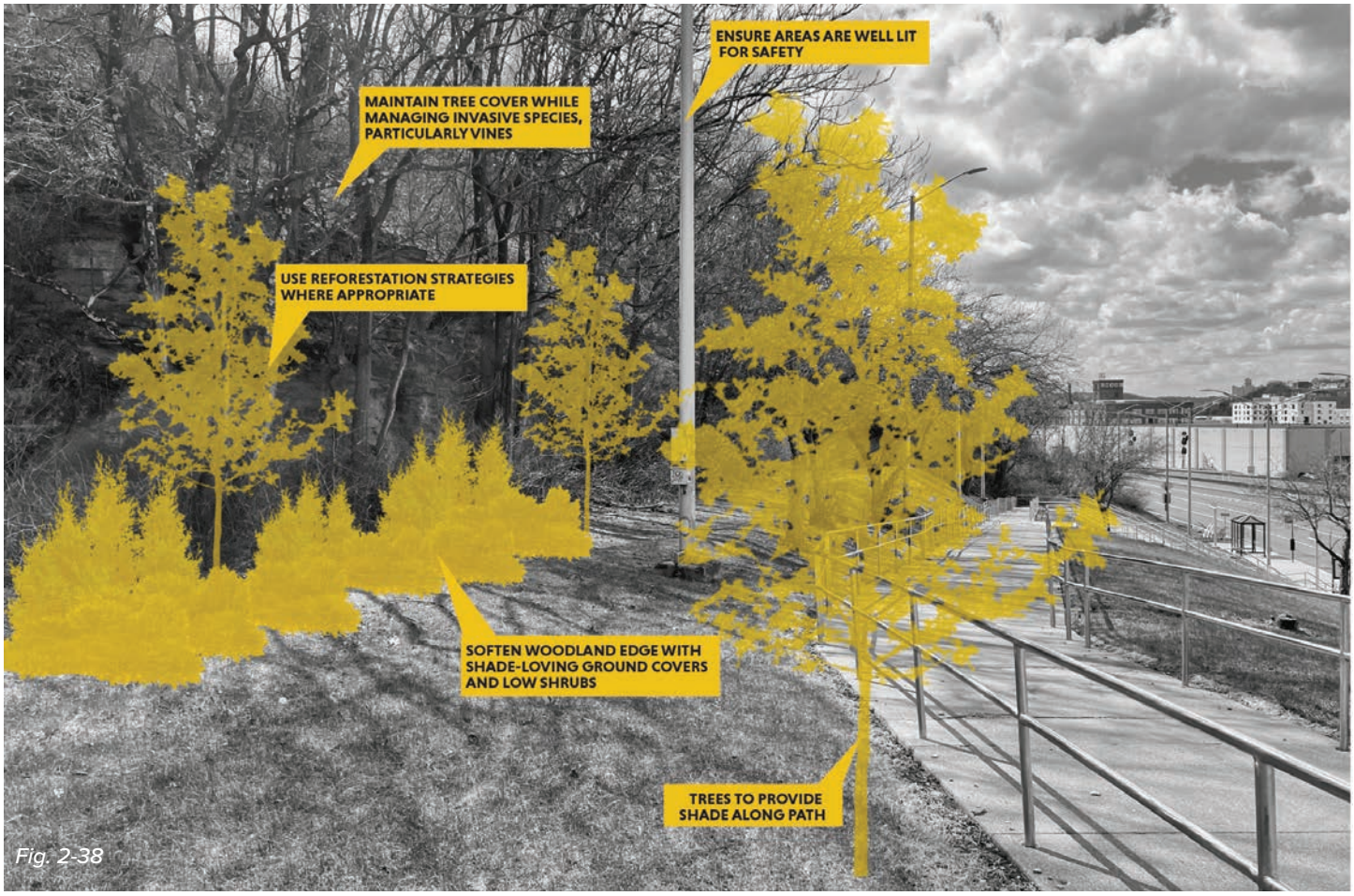


Fig. 2-38

Current Maintenance Requirements

Maintenance in this condition is primarily as-needed and reactionary, addressing safety concerns or implementing erosion control methods only after challenges present themselves, for example, following a landslide occurrence.

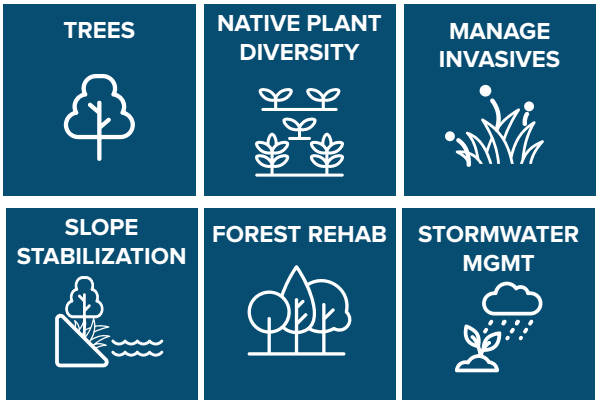
Current Maintenance Intensity

MEDIUM

Design Considerations

Preserve Existing Tree Canopy
Erosion Control
Soil Characteristics

Recommended Landscape Strategies



See Chapter 3 for more information on each of the different landscape strategies.

STEEP SLOPE - PLANTED APPLICATION

1. For existing grass and shrubs, **identify invasive species to remove** and select plant species that complementing the existing or established groundcover.
2. Utilize **erosion control methods** that support management of stormwater runoff through both upland (at the top of the slope) and lowland (base of slope) areas.
3. Utilize a **mix of drought tolerant meadow planting, no-mow grasses**, or **trees and shrubs**, as suitable for the condition.
4. Dense evergreen shrubs can deter riders from running down hillsides. Aim for 30% evergreen to provide **winter structure and interest**.
5. Plants should have **high ecological value**, support stormwater management, and provide habitat for insects, birds, and other animals. Selections should complement existing plant communities and be suited to
6. Consider deep-rooted and long-lived plant species both for **slope stabilization** and **carbon sequestration.**

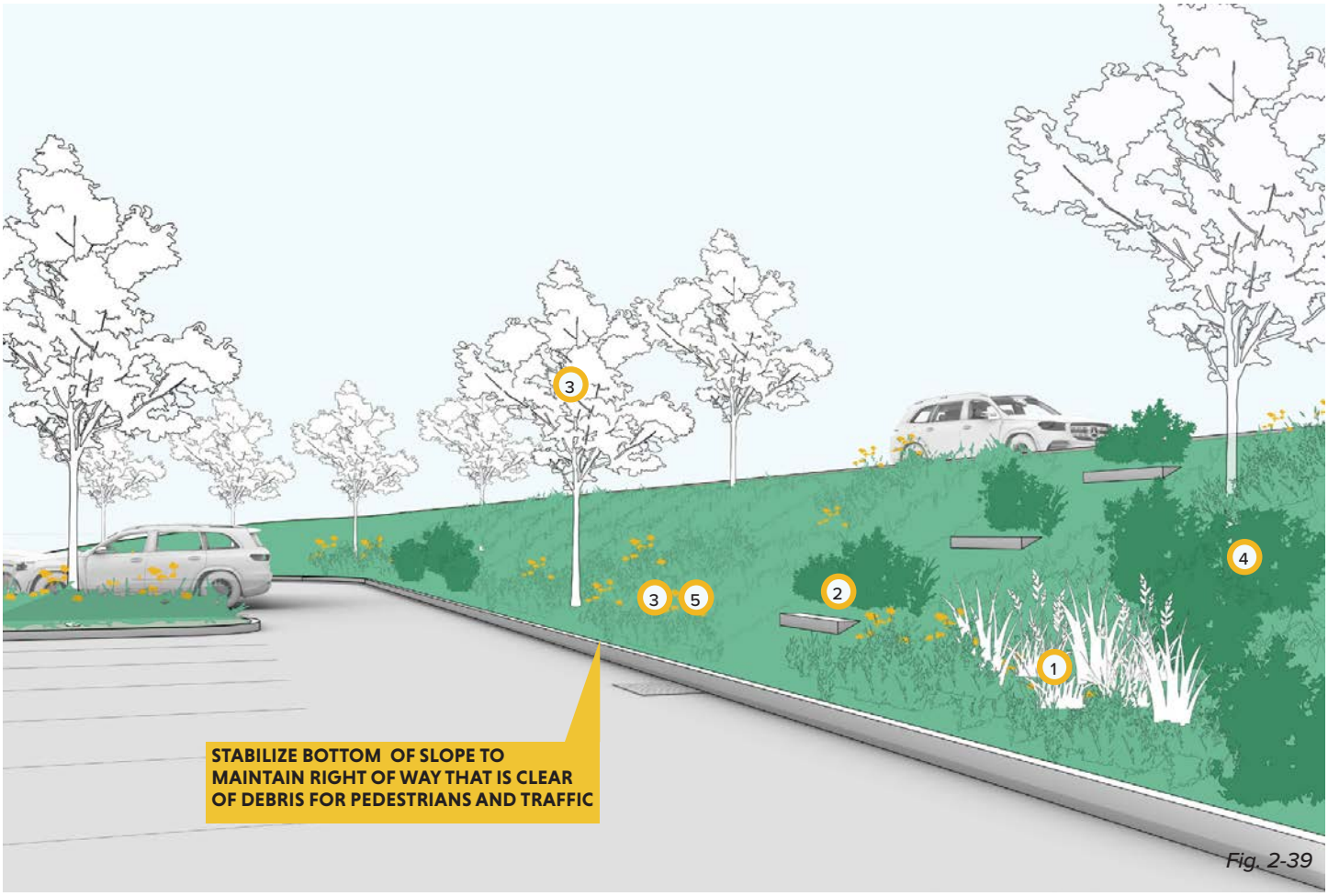


Fig. 2-39

MAINTENANCE INTENSITY

MEDIUM

Similar to wooded areas, maintenance of these landscapes should continue to be low.

STEEP SLOPE - WOODED APPLICATION

1. **Maintain existing canopy** coverage. Do not remove trees, regardless of species, unless absolutely necessary**.**
2. **Fallen trees can be left in situ** within wooded areas and strategically positioned perpendicular to the flow of water to slow the velocity and volume of runoff.
3. If a **retaining wall** is required, consider low cost gabion walls in less visible areas. Higher visibility areas should consider **stone block that can also function as seating**.
4. **Manage invasive vines and weeds** such as knotweed and poison ivy, particularly in higher visibility areas.
5. Soften the woodland's edge by creating a **transition zone** between wooded and open area. Plants should be selected for their ability to thrive in partial shade conditions.
6. Plants should have **high ecological value**, support stormwater management, and provide habitat for insects, birds, and other animals.
7. Consider deep-rooted and long-lived plant species both for **slope stabilization** and **carbon sequestration**.

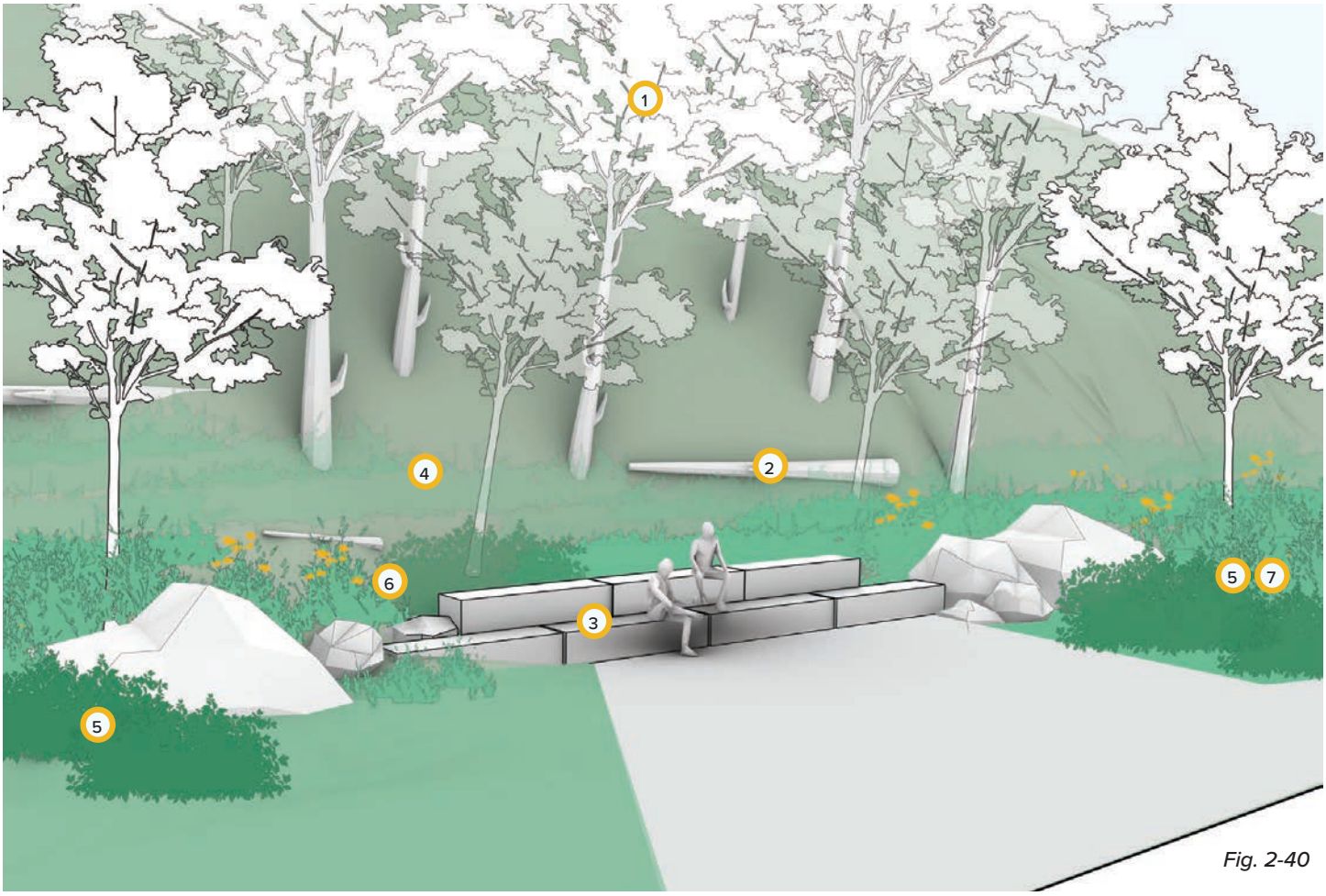


Fig. 2-40

MAINTENANCE INTENSITY

MEDIUM

As one of the least visible landscape conditions, maintenance needs are intended to remain low, though managing invasive species is beyond current maintenance practices, therefore considered an increase in maintenance.

SPACE CONSTRAINED

Space constrained sites are typically found in more urban environments where the amount of exterior space available for landscape is limited, or where transit stations must fit within limited or irregular footprints. Examples include downtown locations like Gateway or First Avenue, where stations are integrated into existing buildings or office complexes, as well as sites along active roadways such as the Red Line stations at Hampshire, Fallowfield, and Shiras.

These locations present unique design challenges related to accessibility, visibility, pedestrian flow, and safety. Limited space often restricts the inclusion of typical amenities like shelters, seating, or landscape buffers. However, well-executed design solutions can still enhance user experience through creative use of vertical elements, efficient circulation patterns, and strategic lighting or signage.

Where possible, partnerships with adjacent property owners or corporate partners can help expand the usable landscape footprint, improving functionality without major land acquisition. Future improvements should prioritize maximizing the spatial efficiency of these sites while ensuring safe, legible, and welcoming environments for all transit users.

FIRST AVENUE

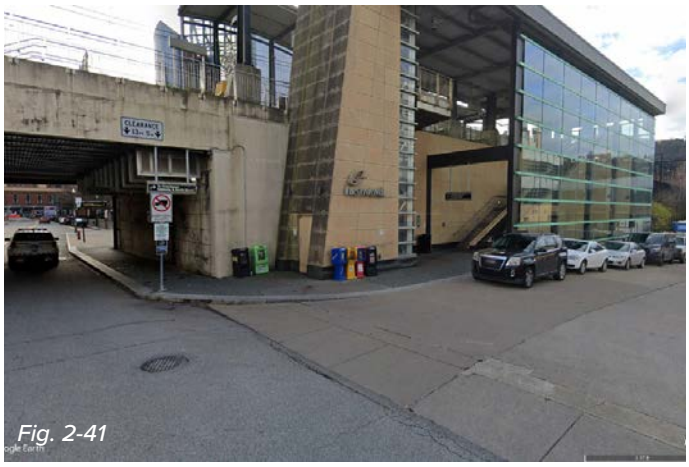


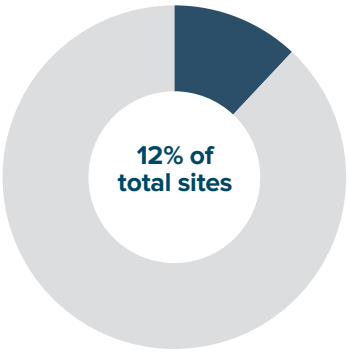
Fig. 2-41

FALLOWFIELD

Fig. 2-42

Stations with this condition:

- Belasco
- Bethel Village
- Crafton
- First Avenue
- Gateway
- Hampshire
- Mesta
- North Side
- Penn Station
- Shiras
- Station Square
- St Anne
- Steel Plaza
- Westfield
- Wood Street



FREQUENCY OF CONDITION

Fig. 2-43

Current Maintenance Requirements

Maintenance needs include pavement repair, trash cleanup, or painting. At some stations, particularly downtown stations like Gateway and First Avenue, maintenance might be handled by a corporate partner.

Current Maintenance Intensity

LOW

Design Considerations

Canopy Coverage
Utilization Rates
Neighborhood Walk Access to Public Parks
Stormwater Runoff

Recommended Landscape Strategies

See Chapter 3 for more information on each of the different landscape strategies.

APPLICATION

1. Target **10% of station area** to dedicate to **landscape / green space.**
2. Provide **safe pedestrian access** to station platforms through marked crosswalks, tactile strips, and traffic calming measures such as curb bump outs or signalized intersections.
3. Utilize **trees with columnar, upright growth habit,** so as to not encroach on transit infrastructure or rail lines.
4. Trees in planting beds or in-ground with tree grates allow pedestrian movement but provide the benefit of **added tree canopy and shade,** enhancing rider experience.
5. **Large planters** may be applicable in more urban conditions, though drought tolerant species should be selected if irrigation is not to be provided.
6. **Maintain site lines** through low-growing (12-24") groundcovers, grasses, and shrubs. Native plants should be chosen for their **high ecological value** and ability to support stormwater management.

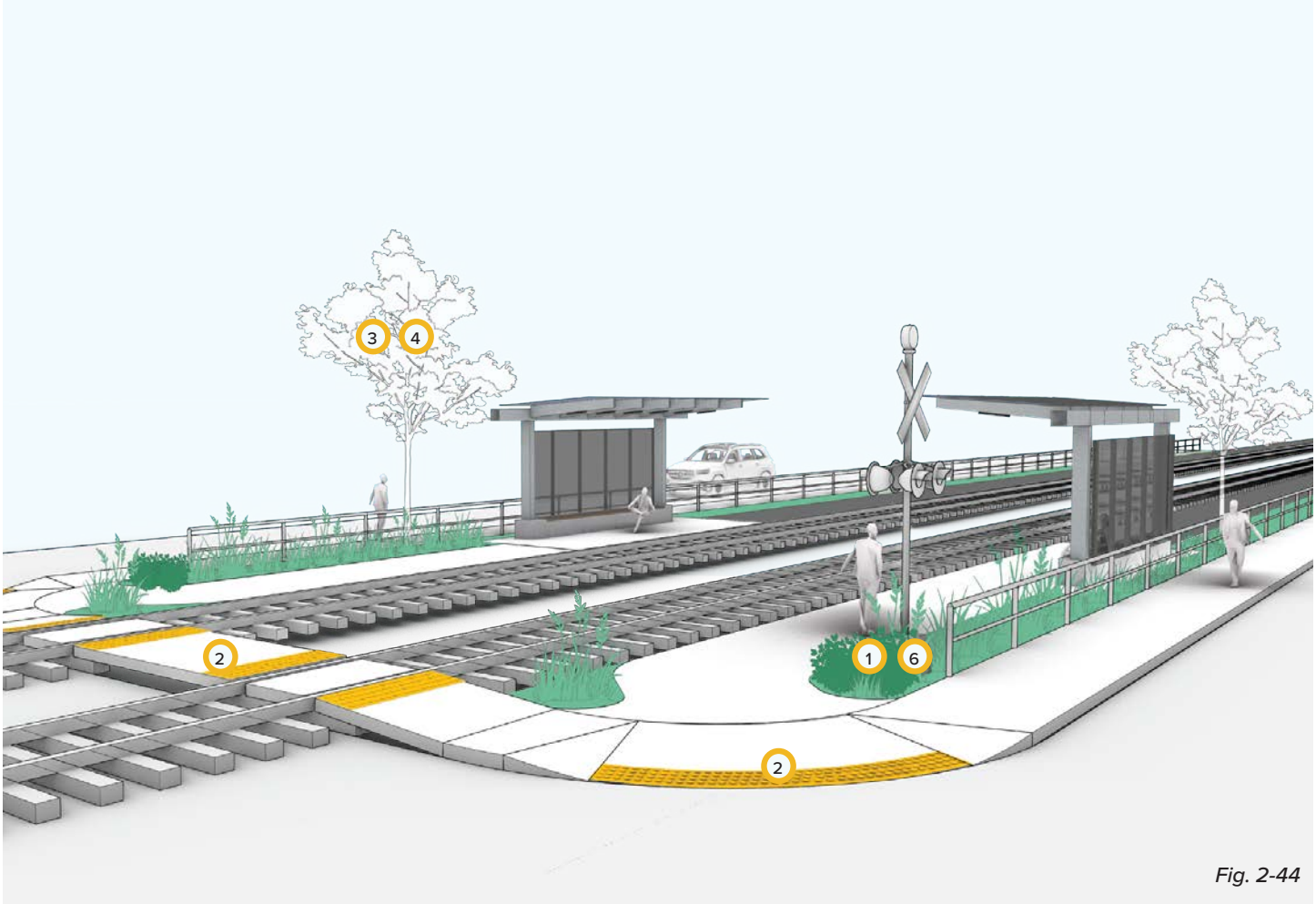


Fig. 2-44

MAINTENANCE INTENSITY

MEDIUM

The introduction of landscape elements within space constrained sites will likely require more maintenance than the existing condition. However, the improvements to rider experience should be prioritized.

CASE STUDY

BUS RAPID TRANSIT STATION

Montgomery County Department of Transportation, US 29 BRT Station Design, Silver Spring, MD

When Montgomery County, MD set out to develop the region's first Bus Rapid Transit (BRT) system, they required stations that could be branded, accessible, safe, comfortable, while also offering a positive life cycle investment. They focused on "shaping station areas that were accessible, adaptable, and sustainable"[1] by developing a modular "kit of parts" that could adapt to the unique site conditions and evolving ridership demands. Community input emphasized the integration of sustainable landscape and materials, including in the ability to support future PV panels to achieve net zero emissions. The project also used renewable and locally sourced natural materials, and employed low-impact development strategies such as bioswales, tree pits, and native groundcovers surrounding the platforms.

KEY FIGURES

Landscape Elements: Native Plantings, Stormwater Infrastructure

Landscape Area (% of Total Station): 25%

Costs / Funding: The 14-Mile project is estimated to cost $31M / Federal TIGER funds

Year Completed: 2020

Design Partners: ZGF, Landscape Forms Studio 431, RK&K (Engineering) Concrete General (Contractors)

1 ZGF Architects. (2020). Montgomery County Department of Transportation, US 29 BRT Station Design. ZGF. https://www.zgf.com/work/693-montgomery-county-department-of-transportation-us-29-brt-station-design

Fig. 2-45

Fig. 2-46

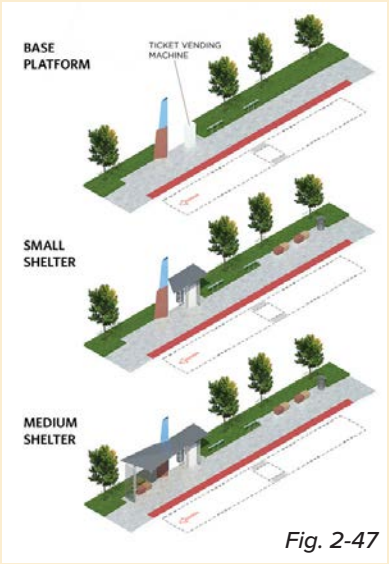


Fig. 2-47

(Top) The diagrams illustrate the conceptual framework for implementing a cohesive station appearance across sites of different sizes. Each station, regardless of the available area, incorporates landscape in the form of trees, stormwater planters, or other green space.

(Left) Images © Halkin Mason Photography via ZGF Architects.

WALLS

Given the region's steep topography, walls are a necessary and prevalent feature across PRT's properties. These walls vary in height, construction, and condition—from low retaining walls that can also function as seating, to 20-foot or taller cinder block, stone or concrete structures that navigate extreme grade changes. Rather than being seen as visual intrusions, this landscape type presents an opportunity to enhance community identity.

Incorporating public art, such as murals, can transform walls into community assets. Studies consistently show that public art improves perceptions of safety, enhances well-being, and fosters a sense of social belonging.[1] Public art can also stimulate economic development by attracting visitors, increasing foot traffic and reinforcing residents' connection to place, by centering community voices and co-designing shared public spaces. During focus group interviews with maintenance staff, it was noted that walls featuring murals or artwork were less prone to vandalism. Project teams should reference PRT's Public Art Strategic Plan for further guidance on procurement, public art engagement, and implementation.

Where space permits, additional strategies such as planting vegetation in front of walls can help to soften the visual impact of taller walls, and integrate them more naturally into the surrounding landscape.

DUQUESNE

Fig. 2-48

CRAFTON

Fig. 2-49

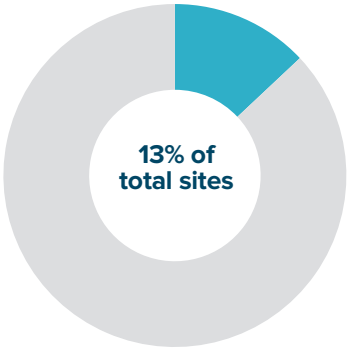
1 Young, Caitlin. "How Public Art Can Improve Quality of Life and Advance Equity." Housing Matters, Urban Institute, 16 Nov. 2022, https://housingmatters.urban.org/articles/how-public-art-can-improve-quality-life-and-advance-equity.

Stations with this condition:

- Bell
- Crafton
- Hamnett
- Homewood
- Idlewood
- McNeilly
- Roslyn
- South Bank
- Station Square
- Swissvale
- Westfield
- Willow

Park and Rides with this condition:

- Duquesne



FREQUENCY OF CONDITION

Fig. 2-50

Current Maintenance Requirements

Walls require periodic inspection and, depending on the material, may require repair such as patching or repointing. Many walls should also be cleaned periodically, requiring power washing as needed.

Recommended Landscape Strategies

TREES

PUBLIC ART

See Chapter 3 for more information on each of the different landscape strategies.

Maintenance Intensity

LOW

Considerations

Visibility
Neighborhood Partners
Accessibility

APPLICATION

1. Consider partnerships with **local artists** to beautify larger walls with **public murals**.
2. Where walls align with station entrances, consider employing **PRT branding and signage.**
3. Utilize **PRT's Public Art Strategic Plan** for guidance on procurement and community engagement.
4. Conduct **structural assessment** every 5 years and repair as needed. Walls should also be cleaned or pressure washed as needed.
5. If space allows, plant a min 4’ wide buffer (either at grade, or with 24-30" high planter walls) with a **mix of trees, shrubs**, and grasses to **minimize wall height and soften hard material**s.
6. Plants should have **high ecological value**, support stormwater management, and provide habitat for insects, birds, and other habitat.
7. Consider deep-rooted plant species, and long-lived tree species for their **carbon sequestration** potential.

Fig. 2-51

MAINTENANCE INTENSITY

MEDIUM

While introducing vegetation would be an increase in maintenance requirements, the use of public art would require the same, or less, maintenance over the long term. Agreements could be put in place with community members or local artists to maintain the murals.

CASE STUDY

MURAL ARTS

Philadelphia, PA

Mural Arts Philadelphia began in the 1980s as an anti-graffiti initiative, and now is the nation's largest public art program, creating 50-100 projects annually. The initiative's objective is to use art as a catalyst for urban transformation. With a history spanning three decades, Mural Arts serves as a compelling case study in how public art can strengthen community identity, instill a sense of pride and drive positive change. Studies show that public art can boost perceptions of the neighborhood, and expand empathy and social trust.[1]

Founded and led by Jane Golden, the project fosters partnerships between established artists and local communities to reimagine and revitalize public spaces. Reflecting on the transformative power of empowering youth to leave their mark on their communities, Golden has said, "Young people started to make their mark on the city in big, bold, beautiful, inspiring ways."

KEY FIGURES

Landscape Elements: Public Art

Operating Budget: $2.8M (2024 Fiscal Budget)

Design Partners: Various Local Artists

1 Tebes, Jacob Kraemer, et al. Porch Light Program: Final Evaluation Report. Philadelphia Department of Behavioral Health and Intellectual disability Services, June 2015, https://dbhids.org/wp-content/uploads/2016/01/Community_Mural-Arts_Porch-Light-Evaluation.pdf

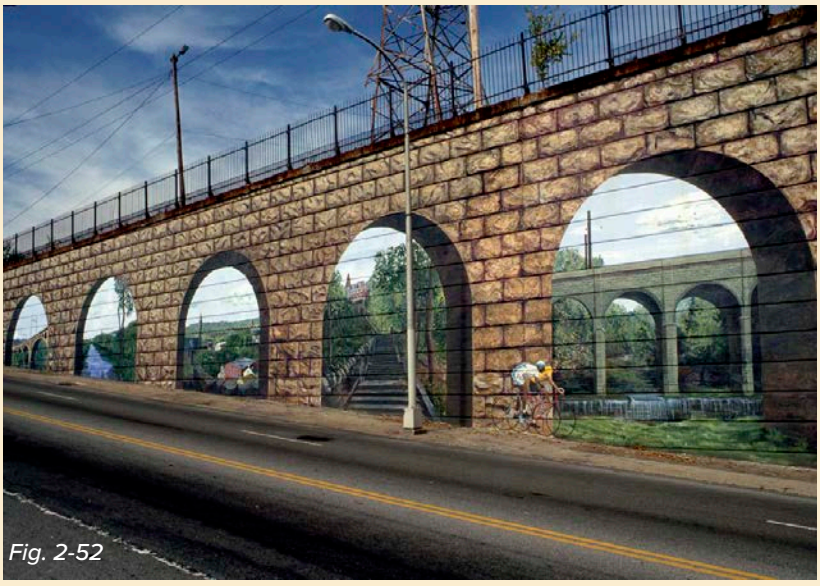


Fig. 2-52

Fig. 2-53

(Right) "Manayunk Textile" by artist Henry Morales. Photo by Conrad Benner.
(Left) "Manayunk Views" by Tish Ingersoll, 1997, restored in 2016. Photo via the artist.

CREEK ADJACENT

A number of transit lines run parallel to existing hydrology networks of streams or creeks, including portions of the Red and Silver Lines and South Busway, which follow Sawmill Run—a stream corridor that experiences frequent flooding. Southern portions of the Red and Blue Lines follow Graeser's Run, a small tributary of Chartiers Creek. The station areas adjacent to these open or channelized streams are most likely to suffer from impacts of flooding, and consideration should be given to increasing pervious land cover, planting additional trees, and restoring or repairing riverine corridors to more naturalized settings where feasible.

In order to align goals and funding sources, improvements of this landscape condition should be undertaken in conjunction with local watershed organizations such as Watersheds of South Pittsburgh, Upstream, or others, as well as municipal agencies such as Pittsburgh Water and Sewer Authority (PWSA). An assessment of the areas most frequently experiencing flooding would help to prioritize sections of the streams that are most in need of stabilization and repair. It is important to note that any work within waterways potentially falls under the regulatory jurisdiction of the United States Army Corps of Engineers (USACE) and/or Pennsylvania Department of Environmental Protection and can require a land use permit to authorize the activity. Careful consideration should be taken when working creek adjacent to ensure regulatory compliance prior to implementation of any actions and/or activities.

BEAGLE

Fig. 2-54

ST ANNE

Fig. 2-55

Stations with this condition:

- Beagle
- Castle Shannon
- Central
- Dorchester
- Glenbury
- Inglewood
- Killarney
- Kings School Road
- Library
- Logan Road
- McNeilly
- Memorial Hall
- Munroe
- Overbrook
- Sandy Creek
- Sarah
- Smith Road
- St. Anne's
- Washington Junction
- West Library

Park and Rides with this condition:

- Glenfield
- Large
- McCandless
- Plum
- Woodville

Streams or creeks run alongside a number of PRT's station areas and facilities, totaling **24% of properties evaluated.**

Fig. 2-56

Current Maintenance Requirements

Current maintenance requirements include periodic litter removal, cleaning out culverts, and stream bank stabilization on an as-needed, or emergency basis.

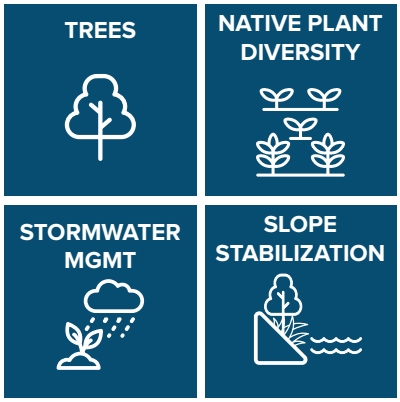
Maintenance Intensity

MEDIUM

Considerations

Visibility
Neighborhood Partners
Accessibility

Recommended Landscape Strategies



See Chapter 3 for more information on each of the different landscape strategies.

APPLICATION

1. Where feasible, **increase riparian buffer zone** to a minimum of 35', or up to 100'. **Regrade slope** as needed, and r**evegetate with native plants** to support slope stabilization.
2. Utilize **erosion control, slope stabilization, and energy dissipation** methods such as coir logs planted with wetland plugs, flood benches, rip rap, stone block walls, or cross vanes that slow and redirect velocity of water flow.
3. Conduct **structural assessment of embankments** every 5 years and repair as needed.
4. Plant **native trees along river corridors** to provide shade and improve habitat for fish & wildlife.
5. Manage invasive vines or wetland species. Do not remove trees unless absolutely necessary. Tree stumps can be left in place to stabilize stream bank.
6. Plants should have **high ecological value**, filter pollutants and runoff, improve soil health, and provide habitat for insects, birds, fish and other wildlife.

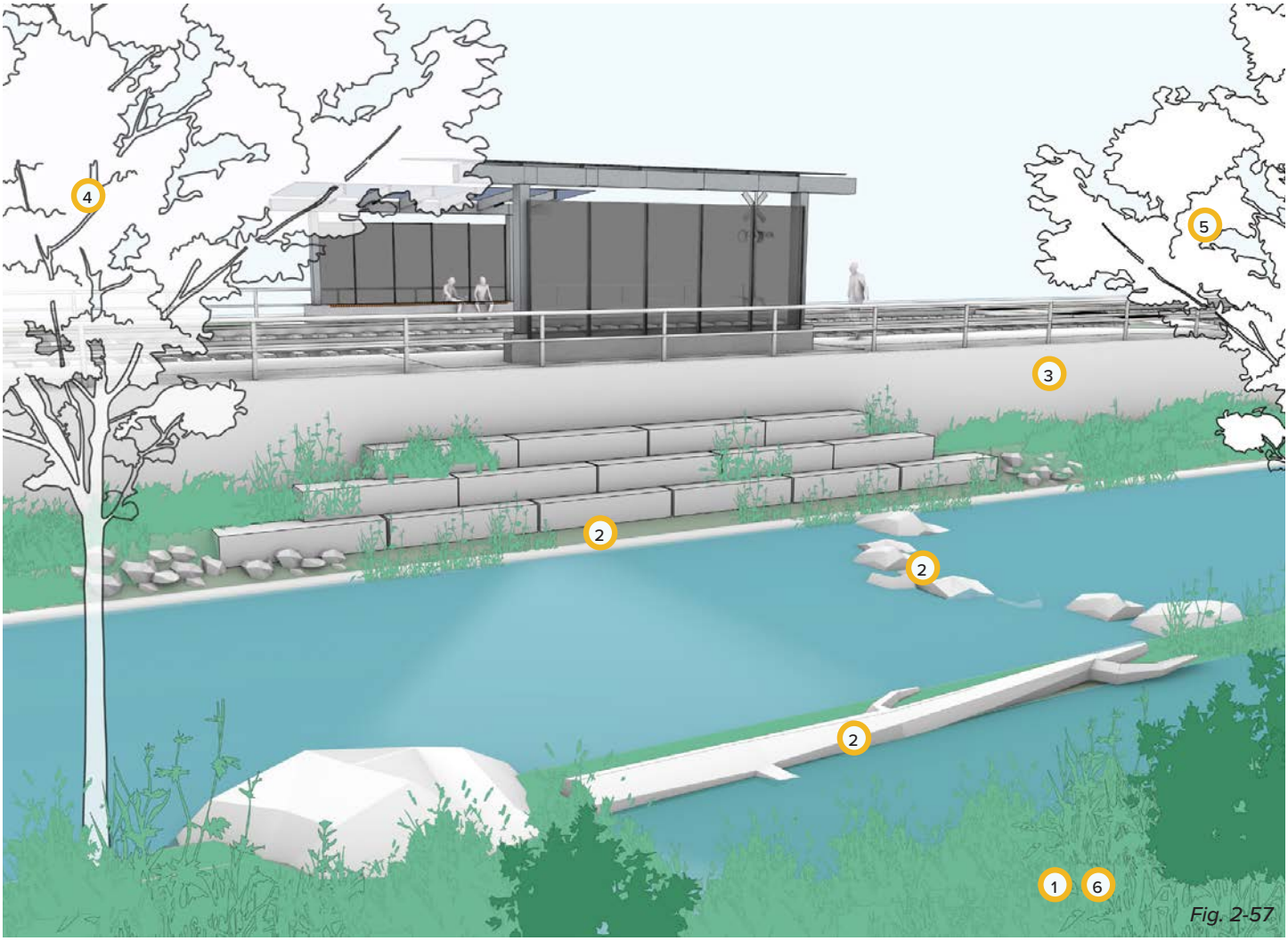


Fig. 2-57

MAINTENANCE INTENSITY

MEDIUM

Once stream restoration projects are completed, maintenance needs should remain similar to pre-construction conditions. However, we propose more attention be given to managing invasive species and proactive stabilization and restoration.

CASE STUDY

LOWER WALLER CREEK RESTORATION

Austin, TX

The Lower Wall Creek restoration in Austin, Texas transforms approximately 13 acres along a neglected urban stream into a vibrant ecological and public space. One of two original waterways traversing through the city, Waller Creek had been heavily developed—over 60% of the areas surrounding the waterway are impervious—leading to increased pollutants, erosion, low water quality and reduced habitat, as well as flooding. The restoration focused on eliminating invasive plants, rehabilitating existing structures, and introducing bank-armoring and erosion control methods aimed at dissipating and redirecting the velocity of water flow during peak storm events. Plantings were chosen for their ability to provide stabilization through their root systems, filter pollutants, and improve shade, habitat, and enhanced visual appeal. The restoration is part of a larger corridor framework project that links residents to a system of public spaces and continuous trails throughout Austin.

KEY FIGURES

Landscape Elements: Native Plantings, Tree Canopy Cover, Urban Stream Restoration

Costs / Funding: Funded by a combination of Waterloo Green Conservancy, City of Austin Tax Increment Financing Zone funds, and federal funding from the US Army Corps of Engineers.

Status: Plan began in 2012, construction took place between 2019 and 2021. Phase II construction began in 2023, and is expected completed in 2026.

Partners: Michael Van Valkenburgh Associates (MVVA), Thomas Phifer and Partners, Waterloo Greenway Conservancy, City of Austin Technical Advisory Group

Fig. 2-58

Fig. 2-59

Photos of Waller Creek before restoration (left), and after (right). Images by Susan Kenzie via ASLA The Field.

PUBLIC AMENITY

Public amenities, in the form of parks, playgrounds, and memorials, play a critical role in shaping vibrant, inclusive communities. They contribute to physical and mental well being and present opportunities for enhanced environmental resilience through tree canopy coverage and green infrastructure. These can reduce urban heat island and mitigate the impacts of flooding. Across PRT's system, a few sites provide public amenities and, though somewhat unique, this is a landscape condition that should be expanded upon—particularly in future TOD improvements.

Studies show that when there is a park, people are more likely to walk or take public transit to access a transit station, and a transit station that has a park may provide a more pleasant first-mile / last-mile experience.[1]

Future developments should prioritize the integration of public realm amenities. A system-wide study—looking at existing institutional and commercial anchors, ridership, and available or underutilized open space—such as parking lots—would indicate potential sites with the greatest opportunity for incorporating enhanced public amenities near transit stations.

1 Park, Kyoung, Dong-Ah Choi, Guang Tian, and Reid Ewing. "Not Parking Lots but Parks: A Joint Association of Parks and Transit Stations with Travel Behavior." International Journal of Environmental Research and Public Health, vol. 16, no. 4, 2019, article 547. MDPI, https://doi.org/10.3390/ijerph16040547.

WILLOW

Fig. 2-60

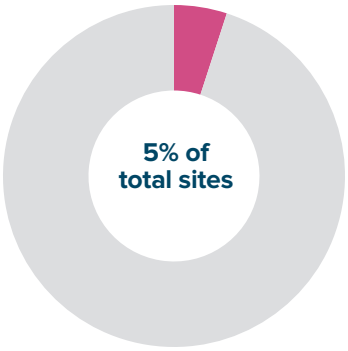
ROSLYN

Fig. 2-61

Stations with this condition:

- Library
- Overbrook Junction
- Roslyn
- Steel Plaza
- Willow

Studies show that **when there is a park people are more likely to take public transit** or walk to access a transit station.



FREQUENCY OF CONDITION

Fig. 2-62

Current Maintenance Requirements

Though these conditions are unique, maintenance demands are not that atypical from other highly visible station areas. Ideally, maintenance is managed by a nearby neighborhood group or institutional partner. These areas should be monitored closely to make sure amenities like seating and lighting remain functional and present no public safety hazards.

Maintenance Intensity

MEDIUM

Considerations

Visibility
Neighborhood Partners
Accessibility

Recommended Landscape Strategies

TREES | **PUBLIC ART** | **AMENITIES**

See Chapter 3 for more information on each of the different landscape strategies.

APPLICATION

1. Public spaces should rely on existing **institutional anchors, community amenity, or commercial partners** to support programming and maintenance, and support an **active public space**.
2. Provide safe pedestrian and public access through **accessible surfaces, pathways** and **multi-modal connectivity.**
3. Public space may be permanent or temporary, such as a **pop-up.** Program might range from park, playground, memorial, flexible open area, or **plaza and pavilion** with food and beverage offerings.
4. Program and public amenity function should be dependent upon the existing community needs and desires.
5. Planting palette should consider **year-round interest**, providing a mix of evergreen, flowering, and grass species.
6. Plants should have **high ecological value**, support stormwater management, and provide habitat for insects, birds, and other habitat.
7. Consider deep-rooted plant species for **carbon sequestration** potential.

Fig. 2-63

MAINTENANCE INTENSITY

MEDIUM

Maintenance demands should remain the same, as these types of public spaces are best managed by a nearby or on-site partner, such as a community group or commercial vendor.

CASE STUDY

PULASKI PARK AND ACADEMY OF MUSIC BUS STATION

Northampton, MA, Pioneer Valley Transit Authority (PVTA)
Western Massachusetts

The Academy of Music bus stop was a high ridership transit station that had fallen into disrepair. The revitalization of this station, and the integration of public space improvements exemplifies how thoughtful public realm design can enhance transit experiences. Improvements included fully accessible pathways navigating steep slopes, incorporating bike-share facilities, and an open plaza and lawn to host a range of events, transforming this transit stop into a vibrant community gathering space.

KEY FIGURES

Landscape Elements: Public Amenity, Native Plantings

Size: 2.5 Acres

Costs / Funding: $2.5M / Combination of Community Preservation Act and Parkland Acquisitions and Renovations for Communities (PARC) grants.

Year Completed: 2017

Design Partners: Stimson Studio (Landscape Architect)


Fig. 2-64


Fig. 2-65


Fig. 2-66

Fig. 2-67

Pulaski Park and Academy of Music Bus Station - Northampton, MA - (Top) Photographs by Ngoc Doan (Bottom left) Photograph by Charles Mayer Photography (Right) Plan drawing by Stimson Studio

ROADWAY

The roads and busways that make up PRT transit routes are a significant part of the rider experience, where trips can range from average of 15-30 minutes, depending on the rider's route. These roadside landscapes present opportunities for implementing greenhouse reduction strategies, reforestation or ecological restoration, as well as considering roadway sizing, canopy coverage, and areas for potentially increasing landscape buffers that would improve the visual quality along roadways and provide habitat for native pollinators.

As a necessary component of the transit system, consideration should be given to ways of mitigating and offsetting the impervious cover and heat island effects generated by this landscape condition. As future and ongoing roadway construction projects are evaluated, PRT should prioritize right-sizing right-of-ways to allow for the incorporation of landscape and stormwater management elements.

SOUTH BUSWAY

Fig. 2-68

EAST BUSWAY

Fig. 2-69

This condition is present across the system.

Roads, including Busway routes, make up approximately 71 acres, about **8.5% of total PRT properties**.

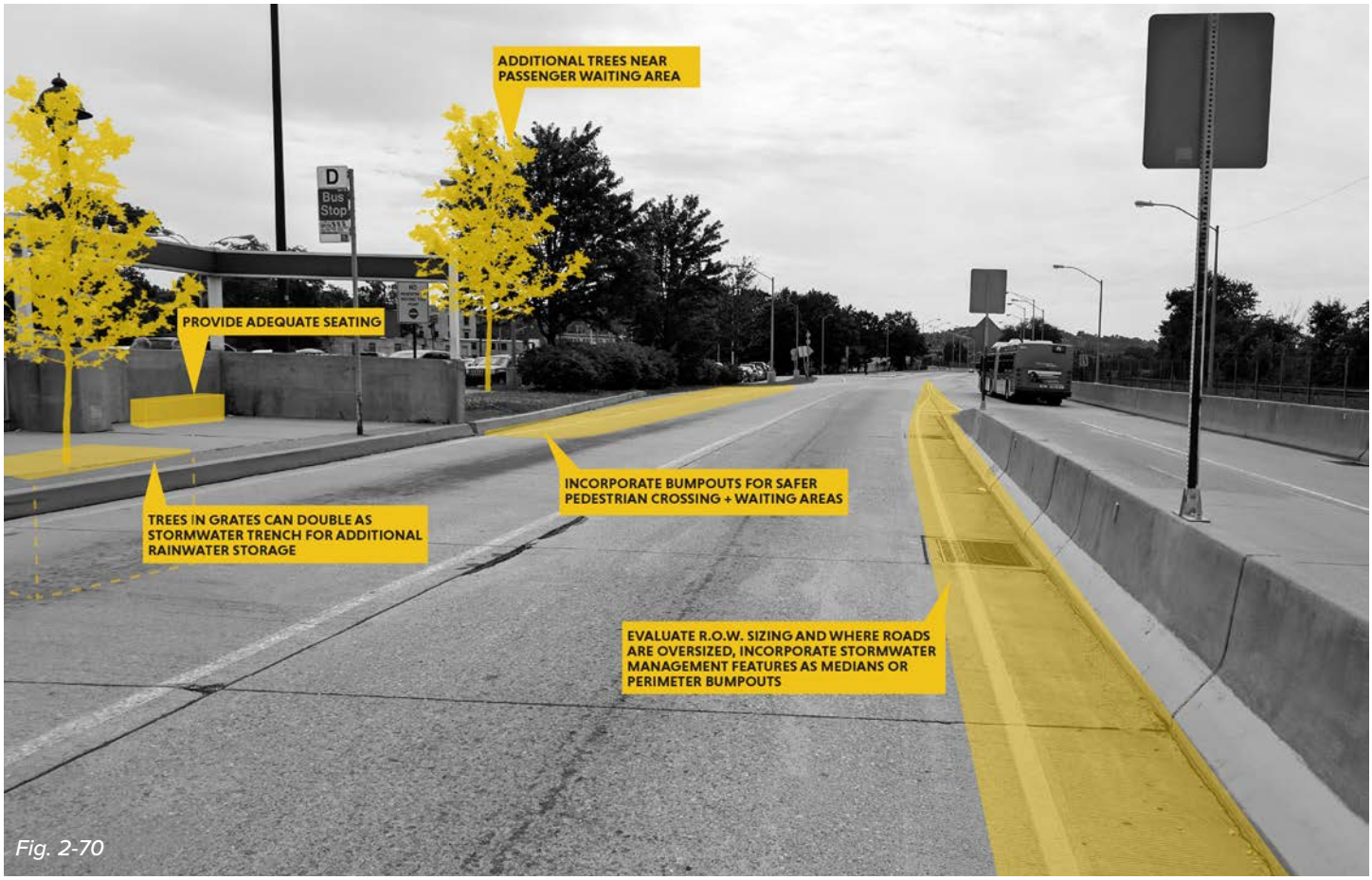


Fig. 2-70

Current Maintenance Requirements

Maintenance along roadways and in the right-of-way can present safety hazards for maintenance teams. Tasks include asphalt or concrete repair, striping, and clearing debris or fallen trees.

Recommended Landscape Strategies

See Chapter 3 for more information on each of the different landscape strategies.

Maintenance Intensity

MEDIUM

Considerations

Visibility
Neighborhood Partners
Accessibility

APPLICATION

1. Evaluate road sizing for possible road diet.
2. Where road lanes or shoulders are currently oversized, reclaim area for pedestrian ROW and **stormwater management strategies such as tree pits, permeable pavers, rain gardens**, or **bioswales**.
3. Utilize curb bump-outs for **safe pedestrian crossings.**
4. Target a **30% increase in tree canopy** along busways and roadways. Maintain 6'-0" offset from roadways.
5. Utilize **trees with columnar, upright growth habit,** so as to not encroach on transit infrastructure or rail lines.
6. Plants should have **high ecological value**, support stormwater management, and provide habitat for insects, birds, and other habitat.

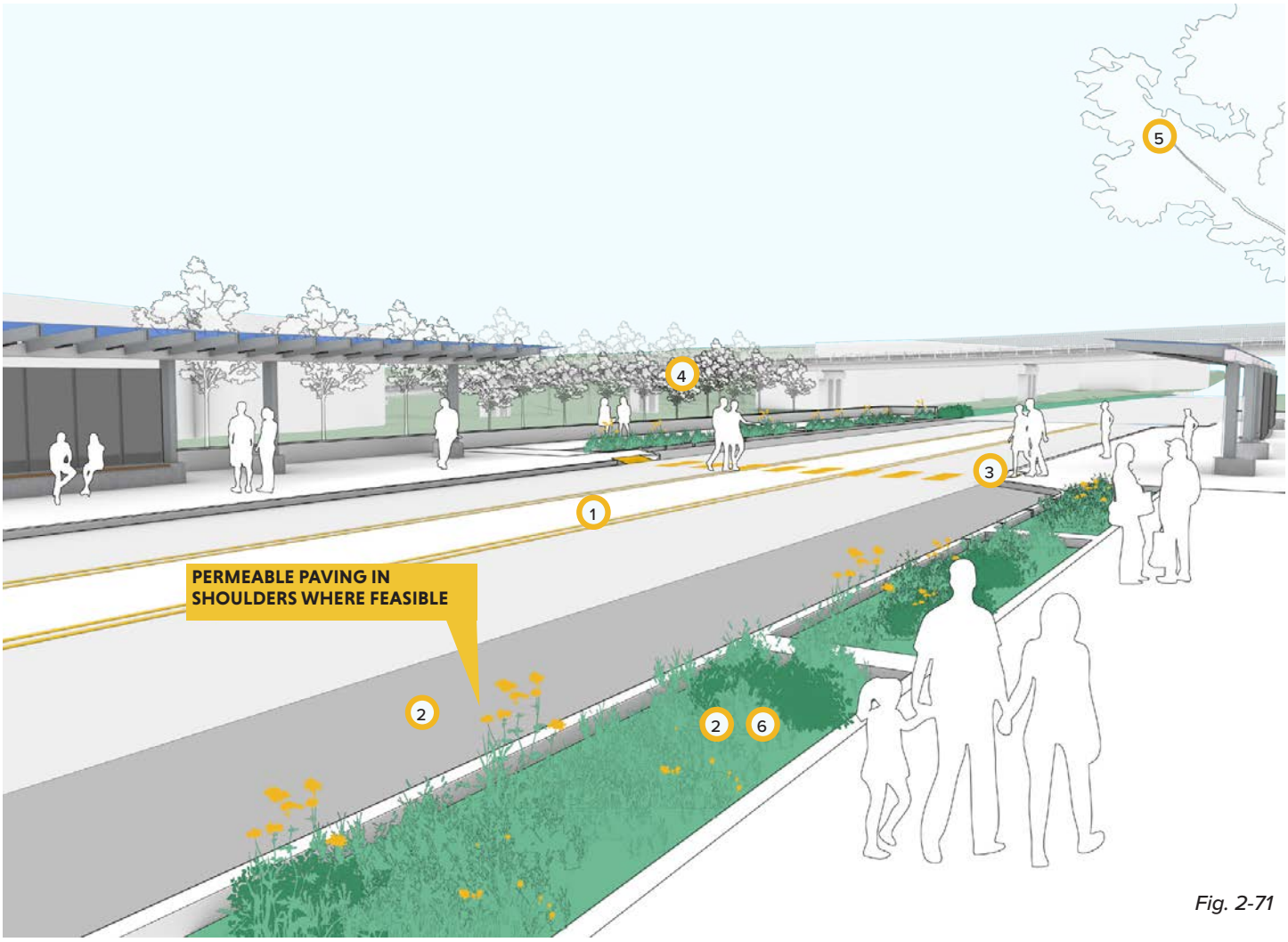


Fig. 2-71

MAINTENANCE INTENSITY

MEDIUM

It is recommended that roadway improvements are considered during station area improvements, and during routine roadway repairs. The incorporation of stormwater management within these zones will be an increase in maintenance, though it could be part of a specialized Green Stormwater Infrastructure external contract.

CASE STUDIES

STREETS GREEN INFRASTRUCTURE POLICY

City of Boston, Office of Green Infrastructure

Cities across the United States are implementing innovative strategies for enhancing visual appeal of roadways, while also creating landscapes that can help to reduce flooding, enhance vital ecosystems and habitat for pollinators, mitigate urban heat island effect, and improve air quality.

For example, the City of Boston has established a policy that requires incorporation of green stormwater infrastructure in all streets and right-of-way (ROW) projects. The policy aims to create stormwater infrastructure out of oversized streets, or when curbs, alleys, and roads are repaired.

KEY FIGURES

Landscape Elements: Native Plantings, Landscape Buffer, Stormwater Management

Year Established: 2022

POLLINATOR HABITAT INITIATIVES

Pennsylvania Department of Transportation, PA Turnpike

Both PennDOT and the PA Turnpike Commission have established native pollinator habitat initiatives aimed at supporting declining pollinator populations of bees, butterflies, and other insects vital to our ecosystem and agriculture production, by converting roadside areas into native wildflower habitats. These programs not only provide essential habitat for pollinators, but also provide educational opportunities, improved visual quality along roadsides, and reduced maintenance costs due to decreased mowing requirements. To date, over 16 acres of pilot plots have been installed along the PA Turnpike.

KEY FIGURES

Landscape Elements: Native Plantings, Landscape Buffer, Stormwater Management

Year Established: 2022

Awards: 2024 Diamond Award, ACEC/PA

Fig. 2-72

A vegetated swale installed in Boston as part of the Green Infrastructure policy collects runoff from adjacent sidewalks cycle tracks, and roadways.

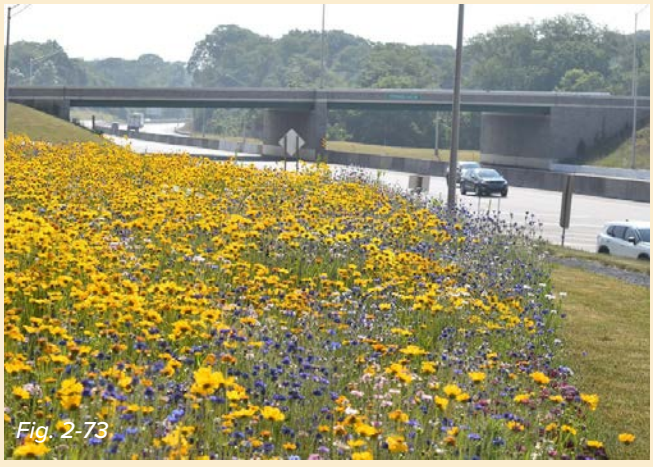


Fig. 2-73

A roadside landscape along the Pennsylvania Turnpike that has been converted to native pollinator habitat. Image by McCormick Taylor.