

# Bushkill Gateway *Transportation Improvement Plan*

*Final Draft 2024*



*Lehman Township, Pike County and Middle Smithfield Township, Monroe County*





Figure 0.1.01 Bushkill Creek, Jinyin Temple Property, Fernwood, PA



**Lehman Township Board of Supervisors**

- Robert H. Rohner - Chairman
- Theresa Laino - Supervisor
- Aaron Springs - Supervisor

**Funding Partners**

- Federal Highway Administration (FHWA)
- Pennsylvania Department of Transportation (PennDOT)
- Pennsylvania Department of Community and Economic Development (DCED)

**Lehman Township thanks project contributors:**

- Middle Smithfield Township (MST)
- Monroe County (MC)
- National Park Service (NPS)
- Northeast Pennsylvania Alliance (NEPA)
- Pike County (PC)
- Pocono Mountain Visitors Bureau (PMVB)



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Figure 0.1.02 View downstream of the Federal 209 Bridge over Bushkill Creek

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*Figure 1.1.01 A physically suitable site for a new Park & Ride-Trailhead in Fernwood Village.*



# 1 Executive Summary

## Section

## 1.1 Bushkill Gateway Transportation Improvement Plan 2024

This **Bushkill Gateway Transportation Improvement Plan 2024** (BG TIP 2024) was completed by Lehman Township with support from Middle Smithfield Township to identify urgently-needed public safety, accessibility, mobility, and user amenity improvements within the **Bushkill Gateway** corridor – a 2-mile segment of Route 209 between Fernwood and Bushkill Villages that crosses the boundary of the Delaware Water Gap National Recreation Area (DEWA) at the historic portal between Monroe and Pike Counties in Pennsylvania.

The Federal Highway Administration (FHWA) awarded a Federal Lands Access Program (FLAP) grant to Lehman Township to conduct the **BG TIP 2024** project and was matched by a Multi-modal Transportation Fund (MTF) grant from the PA Department of Community and Economic Development (DCED). PennDOT District 4 administered the FHWA grant. The National Park Service (NPS) supported the FHWA grant application; committed to the partnership at the project commencement; collaborated initially; and then withdrew from the partnership midway through the process. *Note: “Federal 209” is used to describe the section of highway within DEWA.*

Three multi-modal transportation engineering tasks were confirmed by NPS. A fourth task was added with the DCED grant, and all were completed by Lehman Township:

- Task 1 **Park & Ride / Trailhead** (Fernwood Village)
- Task 2 **Pedestrian Safety / Accessibility** (Bushkill Village)
- Task 3 **Bushkill Creek Bridge / McDade Trail** (Bushkill Village)
- Task 4 **Signage in Bushkill Gateway** (Fernwood / Bushkill Villages)

*NOTE – Preliminary engineering tasks in the Bushkill Gateway Transportation Improvement Plan 2024 were informed by public vision planning during the Bushkill Village Conservation Study 2017 (BCVS 2017) that was funded by the first FHWA grant to Lehman Township and matched by a grant from the PA Department of Conservation and Natural Resources (DCNR).*

### Task 1 Park & Ride / Trailhead (Fernwood Village)

**History / Status** Since DEWA opened, most visitors have needed a private automobile to enter the “park”, and few have ridden bicycles on the road through the Bushkill Gateway corridor. Since 2013, NPS has co-operated a summer shuttle with the Monroe County Transit Authority (MCTA) that enables a small percentage of users to enter DEWA without a personal motor vehicle via this limited service. The option to walk directly into DEWA from Fernwood and other host communities requires most pedestrians to traverse narrow public roads with no shoulders to

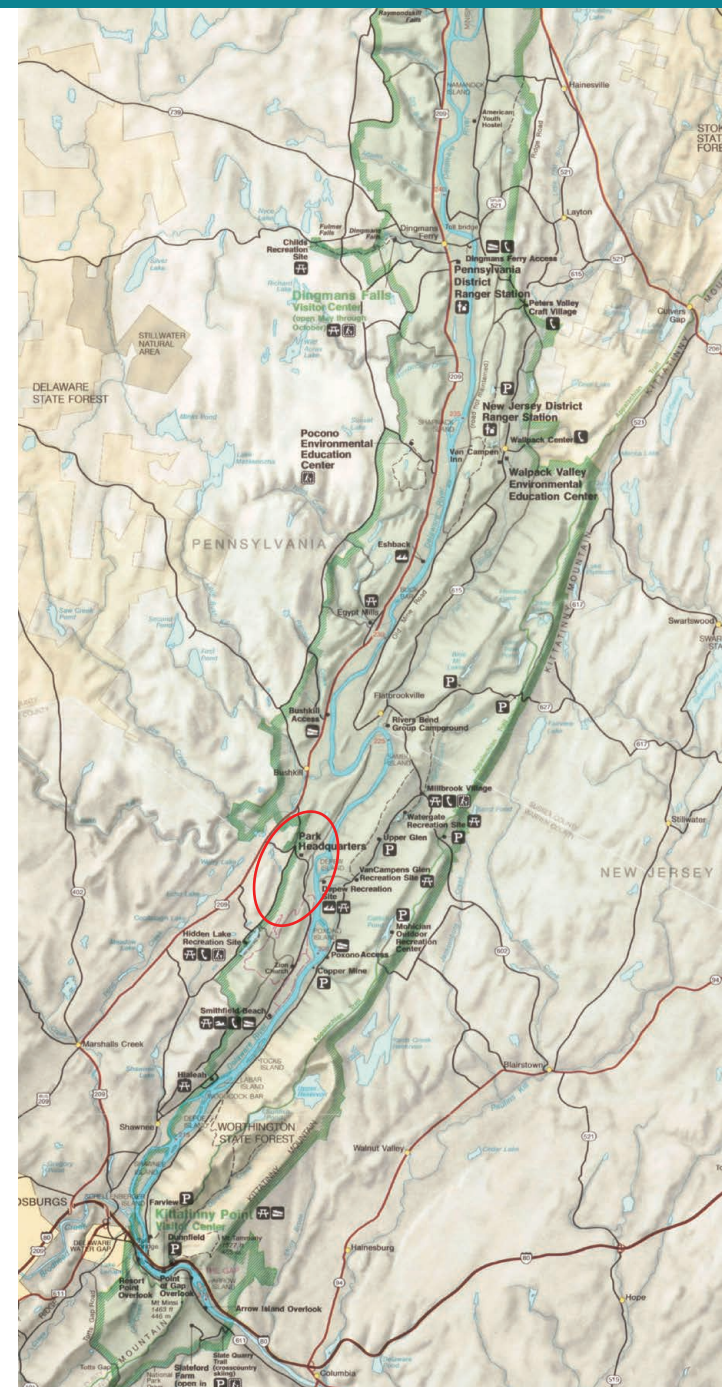


Figure 1.1.02 DEWA park map (NPS) with Bushkill Gateway area in red





Figure 1.1.03 The former traffic blinker light at the Federal 209 - SR 2001 intersection was a cultural landmark in the region.

reach the DEWA boundary. The McDade National Trail, which runs for just over 31 miles along the Pennsylvania side of DEWA, is a major pedestrian and bicycling asset. Its original design, however, did not include trail connections to surrounding neighborhoods – connections which are acknowledged today as essential elements of modern accessible trails. The idea for a multi-modal park & ride / trailhead in Fernwood originated from then-NPS Superintendent John Donahue and was part of a successful strategy to secure FHWA funding for preliminary engineering of ped-bike infrastructure – both within and outside DEWA jurisdiction.

**Opportunities** A new, multi-modal park & ride-trailhead facility on Route 209 in Fernwood Village, located outside DEWA jurisdiction - with a new Fernwood trail link to the McDade Trail is a strategy that local municipal and county partners may pursue to create a valuable civic and economic asset that serves the local community; the general commuting public; and DEWA users.

**Next steps** Local municipalities and county partners can collaborate to acquire a preferred site for a new multi-modal park & ride / trailhead facility in Fernwood Village. Final engineering can be advanced through similar local partnerships. Construction costs can also be shared by local, state, and federal partners. Based on DEWA history, NPS cannot be relied upon to voluntarily cooperate in building a Fernwood trail link to the McDade Trail. NPS may require motivation by local host municipalities, counties, and state and federal elected officials to act as a good faith partner. NPS can prioritize the design, environmental clearances, and construction of a local trail link from Fernwood to the McDade Trail – without burdening internal budgets to fund the improvements – by cooperating with host communities who are eligible and able to bring in funding from outside NPS internal sources, and to deliver the technical products needed. A Fernwood-McDade trail link will create a modern, safe and accessible ped-bike element of a two-county, multi-mobility partnership – and produce local evidence to support NPS claims of DEWA as a regional economic generator. (Refer to *Lehman Township Commentary - Section 3 of this plan*)

## Task 2 Pedestrian Safety / Accessibility (Bushkill Village)

**History / Status** The Bushkill Falls Road (SR 2001) improvement project 2012-2013 was negotiated by NPS with PennDOT, but inexplicably, pedestrian safety and accessibility features were not included when the Route 209 intersection was reconstructed where the “blinking traffic light,” a local landmark once hung overhead in Bushkill Village. Lehman Township at that time requested that NPS include ped-bike facilities at the crossings of the two heavily-traveled highways to ensure “park” users could safely reach multiple village destinations, including: the McDade Trail; the historic Peter’s house; public rest facilities and parking areas on both sides of Route 209 – and the historic Village (Turn) Store.

Modern crosswalks, ADA curb ramps, pedestrian signals and sidewalks connecting the McDade Trail to village destinations were never installed during the PennDOT project, nor were minor retrofitted features kept in repair by NPS in Bushkill Village. In 2024, under NPS jurisdiction, the Route 209-2001 intersection remains non-complaint for basic pedestrian safety and accessibility features at a major McDade Trailhead and DEWA shuttle stop. The *NPS Visitor Use Management Plan 2020 (VUMP)* did not acknowledge Bushkill Village in the report – despite its functions as a primary visitor entry and service location within DEWA. The intentional exclusion of Bushkill Village from the *NPS VUMP* (an amendment to the *DEWA Management Action Plan 1987*) is inexplicable – given the volume of traffic that passes through this location; the level of existing visitor service infrastructure; and the cultural significance of the place. (Refer to *Lehman Township Commentary - Section 3 of this plan*.)

**Opportunities** It is possible for local host communities and counties to collaborate with NPS to secure funds from outside of NPS internal budgets; to conduct the required environmental permitting; and to design, engineer and build the missing pedestrian-bicycle safety and access improvements in Bushkill Village within DEWA. The challenge is the NPS selection of “priority” projects. Based on NPS history at DEWA, the agency alone will not proactively address the needs for modern, safe, and accessible pedestrian and bicycle facilities in the user-intensive Bushkill Village area. The opportunity exists to integrate these ped-bike transportation features effectively within a larger, and urgent transportation need in Bushkill Village – the replacement of the Federal 209-Bushkill Creek Bridge.

**Next Steps** Engineering analyses completed by Lehman Township show that traffic volumes will continue to increase through Bushkill Village over the next 15 years, and that demand will require changes to the travel and turning lanes on Federal 209 at Bushkill Falls Road (SR 2001.) Federal law requires compliant crosswalk facilities be included in highway modifications. In the near future, northbound motor vehicles seeking to turn left from Federal 209 onto Bushkill Falls Road will be stacked in a turning queue that extends back over the existing Bushkill Creek Bridge – an outdated span that is not wide enough to accommodate three travel lanes with shoulders and a complaint McDade Trail facility on the current deck. When the Federal 209-Bushkill Bridge is replaced, modern transportation regulations will require a compliant trail facility on deck that connects ped-bike users via small, safe, and accessible travel routes designed to safely convey bikers and walkers through Bushkill Village. (See *Task 3 McDade Trail over Bushkill Creek*.)

## Task 3 McDade Trail over Bushkill Creek (Bushkill Village)

**History / Status** This *BG TIP 2024* project included preliminary engineering for a new, dedicated trail bridge that would complete the last missing segment of the McDade Trail over Bushkill Creek. During the *BG TIP* project, NPS was conducting a maintenance project for the existing Federal 209 bridge, including minor deck repairs, stream channel dredging; and minor streambank stabilization. The Lehman technical team performed a hydraulic and hydrologic (H&H) engineering study that mapped the Bushkill Creek waterway above and below the Federal 209-Bushkill Creek Bridge and projected volumes; areas of inundation during peak flows; and locations where major streambank stabilization is needed. Lehman Township resubmitted a previous application for competitive federal funding through PennDOT to engineer / build the new McDade Trail Bridge directly downstream from the Federal 209-Bushkill Creek Bridge. After initially sharing data from its highway bridge maintenance project, NPS notified Lehman Township and partners that it was withdrawing from active support of the trail bridge project.

**Opportunities** NPS has shared no plans to build a dedicated Mc Dade Trail Federal 209 bridge over the Bushkill Creek in Bushkill Village, and the trail markings that NPS has painted on the bridge deck do not meet national safety standards. The current Federal 209 highway bridge is over 65 years old and will require additional future repairs and replacement. However, during the *BG TIP* project, NPS did not share plans to replace the structure. Local people remember when the previous bridge over the Bushkill was swept away in the Flood of 1955. Any bridge in this river delta location will always be geologically vulnerable to major flooding impacts from the large Bushkill Creek watershed above it – especially now, after Ida-level storms are on record devastating similar era Delaware Valley infrastructure only 60 miles downriver.



Figure 1.1.04 The Peters House remains un-conserved in 2024 as the most important National Register resource in Bushkill Village.





Figure 1.1.05 Federal 209, looking north toward SR 2001 from The McDade Trail painted on the bridge deck.

**Next steps** Local host communities can demand that the Federal 209-Bushkill Creek Bridge be acknowledged as a regional **lifeline bridge** that is highly vulnerable – and insist that a plan for its expeditious replacement cannot be left solely to the NPS to manage. A partnership is required immediately to move this replacement project as a high economic and safety priority for regional communities – as it should be for NPS. Local host communities can convene to discuss collective actions and engage elected officials at all levels of government to form a local-state-federal partnership to replace the lifeline Federal 209-Bushkill Creek Bridge before it is lost to floods or fatigue – forcing residents and visitors to detour for years, waiting for NPS alone to plan, fund, and rebuild the bridge.

## Task 4 Signage in Bushkill Gateway (Fernwood & Bushkill Villages)

**History / Status** Two agencies administer public signage infrastructure in the BG TIP project area – including: NPS jurisdiction over all signage within DEWA boundaries; and PennDOT for all signage within the state highway rights of way (Routes 209 and 2001.) Also relevant from economic and cultural perspectives, is the initiative by the regional tourism promotion agency – the Pocono Mountains Visitors Bureau (PMVB) to expand its regional wayfinding, branding and information signage system. The Lehman technical team conducted a signage inventory within the BG TIP project corridor and offered ideas for potential future collaborations on transportation and visitor signage strategies.

**Opportunities** Collaborations on signage between host communities are most likely possible on private properties and on local roads. Identity, directional, informational, and interpretive signage features are important to both residents and visitors. NPS will likely decline suggestions for signage within DEWA boundaries. PennDOT requires permits for any signage within its rights of way. Private property such as the Turn Store may be locations where additional signage may be valuable and welcomed to serve visitors and customers. A new public trailhead in Fernwood would be a new signage venue that would be integral to the transportation improvements.

**Next Steps** A regional collaboration between DEWA host communities might embrace the opportunity to tell the *people's history* of the Bushkill area in multiple ways, including signage geared to local and visiting DEWA users.

## 1.2 Navigating the Report online

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### 1.2.2 Web-based report navigation

The ***Bushkill Gateway Transportation Improvement Plan 2024*** can be accessed online. Internal navigation links are available to move easily between sections.

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Figure 2.1 Federal 209 Bridge over Bushkill Creek. View from Creek Road Bridge over the Little Bush Kill Creek.



# 2 Analyses & Findings

## Section

Summaries of analyses and findings for all four tasks are presented in Section 2. Detailed data and analyses for each task are presented in Section 4 – Appendix.



Task 1 Park & Ride-Trailhead (Fernwood Village)



Task 2 Pedestrian Safety & Accessibility (Bushkill Village)



Task 3 McDade Trail over Bushkill Creek



Task 4 Signage at Bushkill Gateway





Figure 2.1.01 A physically suitable site for a new Park & Ride-Trailhead in Fernwood Village.

### 2.1.1 Concept Origin

**The Bushkill Village Conservation Study 2017 (BVCS)** was completed by Lehman Township (LT) in collaboration with the National Park Service (NPS) at Delaware Water Gap National Recreation Area (DEWA), with funding from the US Federal Highway Administration (FHWA) and PA Department of Conservation and Natural Resources (DCNR).

**The BVCS was developed as a cultural landscape assessment** of conservation opportunities in the former village area, which is situated along Federal Route 209 directly inside the southern DEWA boundary, on both sides of Bushkill Creek.

**Visitor services, amenities, and interpretative strategies were identified** in the BVCS, including multi-modal transportation safety and access improvements for visitors and local users in Bushkill Village.

Two major parking policies were enforced by NPS inside DEWA during the BVCS process:

- Public commuter park & ride uses were prohibited within DEWA.
- Visitor parking areas, for reasons unexplained by NPS, were not formalized in Bushkill Village.

**A new public parking alternative outside DEWA boundaries was suggested** by John Donahue (then DEWA Superintendent 2003-2017) to serve as park & ride and trailhead for DEWA visitors at a location beneath a high-tower electric transmission right of way, on an existing parking lot area in Fernwood Village.

*NOTE: For this report, Route 209 outside of DEWA is referred to as "Route 209" and inside DEWA is referred to as "Federal 209."*

**A second FHWA grant funded the Bushkill Gateway Transportation Improvement Plan 2024 (BG TIP)** to enable Lehman Township to advance engineering tasks for three transportation improvements that were identified in the BVCS, and agreed upon as priorities between Lehman Township and NPS at DEWA:

- Task 1. Park & Ride-Trailhead improvements (Fernwood Village)
- Task 2. Pedestrian Safety & Accessibility improvements (Bushkill Village)
- Task 3. McDade Trail Ped/bike improvements over Bushkill Creek (Bushkill Village)

**Lehman Township added a fourth project task to the BG TIP 2024**, that was enabled by matching funds from the PA Department of Community and Economic Development (DCED) grant through the Multi-modal Transportation Program (MTP):

- Task 4. Signage improvements (Bushkill Gateway)

**Findings for a multi-use public parking site in Fernwood Village** confirm the suitability of the concept originally identified by the NPS Superintendent.

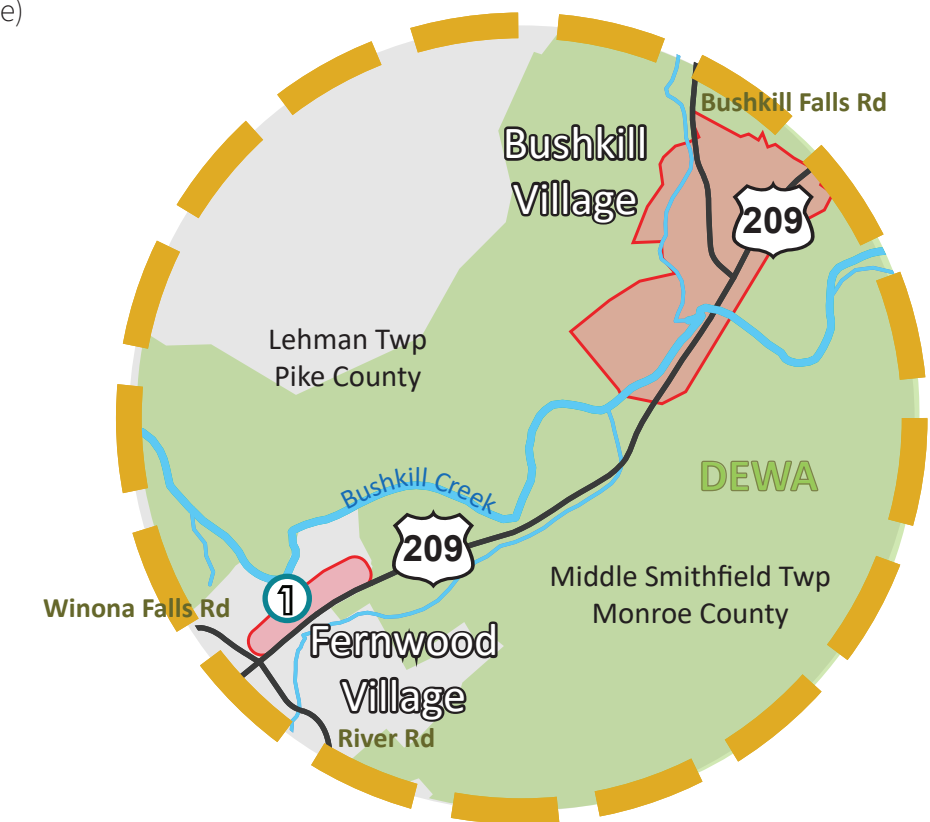


Figure 2.1.02 Task 1 project area site context



## 2.1.2 Summary of Findings

Fernwood Village is integral to a “Bushkill Gateway” strategy as a primary southern entry into DEWA.

The Route 209 corridor crosses Bushkill Creek – the Monroe-Pike County line within the DEWA visitor landing site at Bushkill Village – and Fernwood Village hosts the southern contact station of the DEWA “national park.”

### Site Assessments for Park and Ride-Trailhead Facility

**Fernwood Village is a logical location to combine commuter park & ride and trailhead facilities.**

Fernwood Village on State Route (SR) 209 offers multiple strategic partnership advantages, including:

- Fernwood Village hosts the southern DEWA visitor “contact station” on US 209.
- Fernwood and Bushkill Villages are 1.5 miles apart on the Route 209 corridor.
- Both villages are connected by the narrow Sand Hill Creek valley.
- Bushkill Creek flows through both villages.
- Fernwood Village provides multiple commercial services to DEWA visitors.
- Bushkill Village is the visitor landing site for the DEWA entrance via Federal 209 in Fernwood Village.
- The McDade Trail can physically and safely link the hearts of both villages.

#### 2. Three alternative sites were evaluated within Fernwood Village.

Three sites were identified as potentially suitable to serve as a multi-modal park & ride-trailhead facility, with a trail link to the McDade National Trail inside the DEWA boundary.

- One (1) site was ultimately identified as a preferred multi-modal parking location.
- A conceptual linkage from the preferred site to the McDade Trail was identified.

#### 3. A multimodal transportation program was created for a Fernwood Village park & ride-trailhead facility.

The program was developed to serve modern transportation needs of local residents, commuters, and visitors to the DEWA National Recreation Area. The program includes:

- Regional commuter parking;
- Remote DEWA trailhead parking for cars, buses, RVs, and bicycles;
- DEWA seasonal shuttle access;
- Access for other transit facilities to serve multiple future possibilities (including regional bus service, Monroe County transit buses, and commercial livery services);
- Internal access ways for pedestrians, bicyclists, and hikers;
- Rest room facilities;
- A new trail link to the McDade National Trail;
- Local sidewalk connections to Fernwood Village

Stormwater, potable water, sanitary sewer, and electric are services that were determined to be feasible to deliver for the preferred site development.

#### 4. A physically feasible site was identified as preferred.

The preferred location was determined to be physically feasible for site development as a four (4) acre, multi-modal parking facility on an existing paved parking lot within a 38-acre, former hotel complex at the intersection of Fernwood Drive and Route 209. The site is traversed by a regional high-tower aerial power line which constrains most development options beneath it. An existing parking area that was built for the former hotel complex exists as a completely impervious surface. Former structures on the preferred site have been demolished and removed, enabling an adaptive reuse as a public multi-modal transportation facility.

#### 5. The preferred site is privately owned.

During the course of the project, the owner of the preferred site was contacted by the Lehman technical team and meetings were held – including with representatives from two local municipalities and two county governments – to discuss common goals, project purposes, preferred locations, and general acquisition options.

### Preliminary Site Plan: Roadway Improvements and Park & Ride Facility

#### 6. A preliminary engineering (PE) site plan was developed.

The Lehman technical team developed a PE-level site plan for the park & ride-trailhead based on a combination of the multi-modal program, an estimated parking demand, the area available, and direct access to the Route 209 corridor. This plan was shared with the owner and served as a basis to discuss specific details.

#### 7. Traffic projections and roadway improvement designs were completed.

Traffic counts were completed by the Lehman technical team in 2021 and 2022 for the Fernwood area. Preliminary engineering was developed for roadway improvements on Route 209 in coordination with preliminary engineering for a reconfigured park & ride site entry drive at the current intersection of Fernwood Drive and Route 209. These new geometries were based on projections by the Lehman technical team for future traffic volumes that could be generated by a combination of a new park & ride-trailhead facility, and the increased traffic demands from a projected maximum yield “buildout” development for the entire privately-owned site. These calculations were based on by-right development guidelines under current Middle Smithfield Township zoning.

### Advancing the Fernwood Village Park and Ride-Trailhead Facility

#### 8. An existing PennDOT park & ride nearby remains essentially vacant since the COVID pandemic.

The existing single-purpose PennDOT-operated park & ride at Route 209 and Mt. Nebo/Oak Grove Road (approximately 4.7 miles south of the DEWA entrance in Fernwood Village) is dramatically underutilized since the COVID pandemic altered commuting to work regimens worldwide.

#### 9. A multi-use park & ride at Fernwood Village may replace the Mt. Nebo site to benefit the tax base.

Middle Smithfield Township seeks to develop a Fernwood Village multi-modal parking facility and to enable the Commonwealth to retire the Mt. Nebo site by divesting the state property back into the private sector for tax-generating uses.

#### 10. A functional “swap” of Fernwood Village-Mt. Nebo Park & Ride can offer regional economic benefits.

Considerations include:

- Middle Smithfield seeks to develop a Fernwood Village park & ride as a municipal project.
- Middle Smithfield can benefit from the Mt. Nebo site returning to the tax base.
- The Commonwealth can recoup capital investments in the Mt. Nebo park & ride property.
- PennDOT operating costs for the Mt. Nebo facility will end.
- The Township can work with the new Mt. Nebo owner to appropriately re-develop the site.
- Coordination of Mt. Nebo and Fernwood Village projects support Route 209 shoulder improvements.
- The two projects can advance independently regarding budgets and schedules.

#### 11. Middle Smithfield and Monroe County can resume negotiations with the Fernwood Village site owner.

During the course of this BG TIP project, the private owner elected to discontinue discussions regarding an acquisition by Middle Smithfield Township of a portion of the site for a park & ride-trailhead.

The area preferred for the park & ride-trailhead development remains vacant.

#### 12. Negotiations between Middle Smithfield and the preferred park & ride site owner are essential.

The Township and partners must secure use of a preferred site for a public transportation facility before a trail link between Fernwood Village and the McDade Trail can effectively be pushed through NPS bureaucracy, with assistance from legislators as an important part of a Bushkill Gateway user service strategy.

A Bushkill Gateway user service strategy, is a logical benefit for DEWA, and directly addresses vacancies of the DEWA *Visitor Use Management Plan (VUMP) 2020* report in regards to Bushkill Village.

### Model for Host Communities & DEWA Partnerships

#### 13. The Fernwood Village-McDade Trail link improvement can be a model for a host of DEWA partnerships.

Developing a Fernwood Village-McDade Trail link addresses shortcomings in the original McDade Trail, which represents a 1980’s vision for public access to the National Trail - which in 2024 continues to limit public entry into DEWA by requiring most visitors to enter the “national park” via motor vehicle.

The need to create public pedestrian and bicycle access from local host communities into DEWA has been previously explored in Smithfield Township (Monroe County) by the *Shawnee Greenway Feasibility Study*, and in Milford Borough (Pike County) by the *Pinchot Greenway Study*.

Milford Borough and Lehman Township are collaborating on a similar Milford Gateway engineering project in 2024.



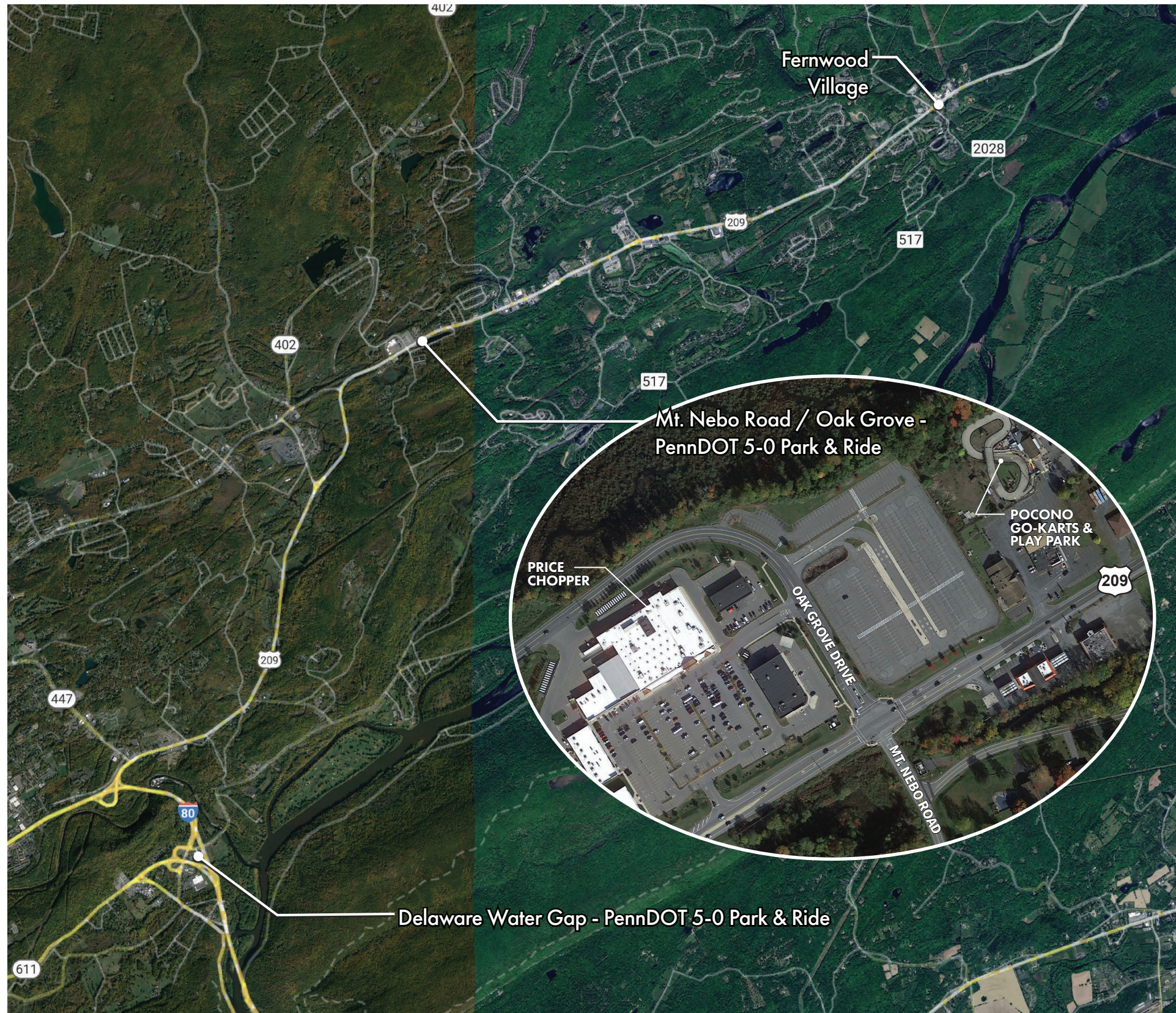


Figure 2.1.03 Existing PennDOT Mt. Nebo park & ride facilities south of Fernwood Village on US 209. (Google Earth Imagery, 2024)

## 2.1.3 Analyses

### Goal

To assess the viability of and develop a plan for a new park & ride-trailhead site in Fernwood Village that can serve the local community; the general commuting public; and DEWA visitors at a new multi-modal facility located directly outside the boundary of the DEWA National Recreation Area, with a trail link to deliver people to the McDade Recreational Trail without the need to enter the “Park” via motor vehicle.

### Program

The preferred facility program was developed to include:

- Auto parking spaces
- Tour bus / RV parking spaces
- Transit / tour / shuttle bus unloading & queuing area
- Bike parking
- Ped/bike connections to local destinations / McDade Trail
- Restroom facilities (ADA)
- Shelter canopy
- Landscape – stormwater best management practice (BMP) provisions
- Traveler / interpretive information

### Background

Existing park & ride sites along the Route 209 corridor south of Fernwood Village

#### Mt. Nebo Rd / Oak Grove Drive Park & Ride- US 209 - PennDOT District 5-0.

An existing park & ride facility is owned and operated by PennDOT District 5-0 at the intersection of Route 209 with Mt. Nebo/ Oak Grove Roads (approximately 4.75 miles south of the DEWA entrance in Fernwood Village.)

The facility was constructed over fifteen years ago within a heavily-used, highway commercial district of Middle Smithfield Township known as Marshalls Creek, which includes a health center, supermarket, pharmacy, and eateries. The Mt. Nebo park & ride provides approximately 465 auto parking spaces.

Multiple site observations over the course of the *BG TIP* project (2021-2024) indicate that the lot is dramatically under-used, with generally less than 15-20 cars parked on a given weekday. PennDOT 5-0 was asked, but does not record site usage.

Deep changes to workplace cultures, coupled with major population migrations to the Poconos region, are the direct result of extended COVID pandemic protocols, and the residual effects on commuting practices from the Pocono region are visible in the handful of cars parked daily at the Mt. Nebo site.

Given that a maximum of 5% of the total site capacity has been used daily over the past three years – the original design program for this commuter park & ride facility needs to be critically reassessed to address the reality that the original purpose and need for the Mt. Nebo Rd. Park & Ride is now likely obsolete.

#### Borough of Delaware Water Gap – Route 611 Park & Ride – PennDOT Dist. 5.0

The next closest public park & ride facility within the Route 209 corridor is located near the municipal line between Borough of Delaware Water Gap and Smithfield Township – approximately six (6) miles south of the Mt. Nebo Road site – at the Delaware Water Gap interchange between SR 611 and I-80.

The Delaware Water Gap Park & Ride provides approximately 150 auto parking spaces and is adjacent to a Pennsylvania Welcome Center operated by the Commonwealth of Pennsylvania – which provides short-term parking for approximately 50 autos and seven (7) large vehicles (tractor trailers/buses).

Both sites are within one (1) mile of Route 209 interchange with I-80. No specific traveler amenities are provided at the park & ride facility.

The Martz Trailways-Stroudsburg Bus Terminal (regional commercial livery service) is located 0.4 miles away and provides bus service to New York City and Philadelphia, PA.



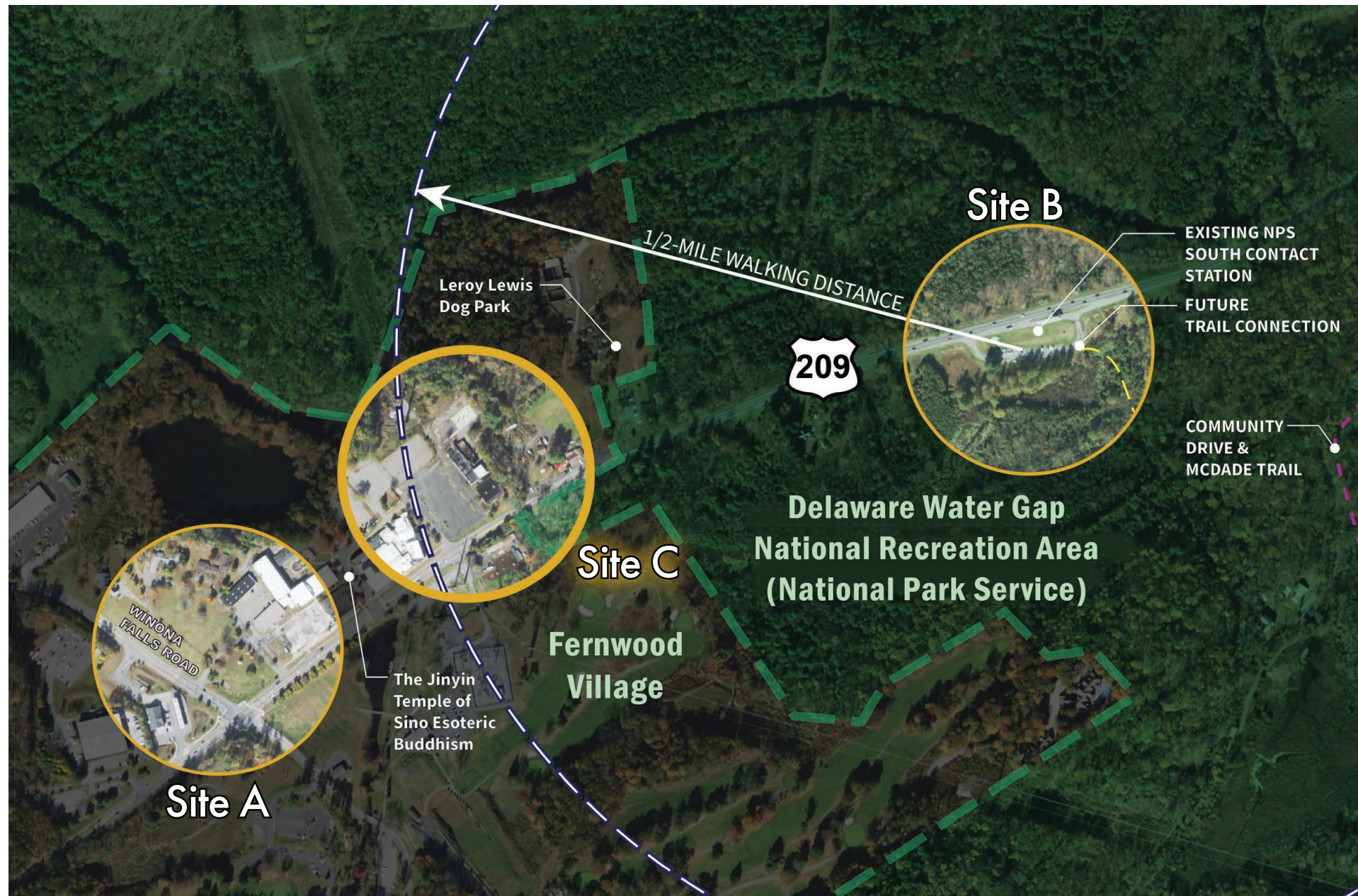


Figure 2.1.04 Park & ride alternative study sites.

## Methodologies

### Park & ridership estimates

The preferred park & ride location in Fernwood Village can intercept commuters who embark from residential communities in Pike and Monroe County neighborhoods that are located north/west of DEWA. These potential users travel down the mountain via Bushkill Falls, Sugar Mountain and Broadhead Roads to reach the Route 209 corridor southbound toward I-80.

This general “commuter-shed” area for a park & ride at Fernwood Village would intercept an undetermined percentage of the 465 maximum possible users that could be served at the Mt. Nebo facility.

Task 1 scope did not include estimating a potential percentage of the maximum capacity at the Mt. Nebo park & ride that might be in demand at Fernwood Village, because recent occupancy over the past two to three (2-3) years is negligible and is not expected to increase appreciably for future commuting uses.

Instead, approximately 20% of the existing capacity of Mt. Nebo was assigned as the park & ride program for Fernwood Village. The total of 94 auto parking spaces was considered reasonable to serve Fernwood Village park & ride commuters and to also overlap effectively to serve visitor surges to DEWA and Fernwood Village during vacation seasons and on off-peak weekend days.

### Park & ride alternative site assessments

The Fernwood Village site that was originally identified by former DEWA Superintendent Donahue as a possible park & ride-trailhead location was considered a viable site to investigate at the time of the FHWA funding application.

Upon project commencement, due diligence considerations included assessments of two other potential sites in Fernwood Village to determine if they might be physically suitable to serve the desired multi-modal functions.

#### Three (3) potential sites were assessed.

All initially appeared to be potentially capable of supporting Task 1 goals. Two of the sites are privately owned. One site is publicly-owned and located inside the DEWA boundary.

See Figure 2.1.04.

#### Evaluation Criteria

Seven (7) criteria were developed to evaluate the suitability of the three alternative sites to meet Task 1 goals. Evaluation criteria include:

1. *Site size, proximity, opportunities, constraints*
  - Is the site of sufficient size to accommodate the program for park & ride-trailhead functions?
  - Does the site fall within a 0.5-mile walking distance to DEWA boundary?
  - Can the site take advantage of existing transportation infrastructure?

*Note: The parcel size needed was estimated to be 4 to 6 acres.*

2. *Transit compatibility*

Can the site enable logical and efficient movements of potential transit vehicles (e.g., County transit, DEWA shuttles, commercial livery services)?

3. *Economic development potential*

Will a park & ride-trailhead facility at this location help support economic development benefits for the local community / region?

4. *Supportive of local / regional planning goals*

Does the park & ride-trailhead site align with planning goals articulated by the host communities, Monroe and Pike Counties, and DEWA?

5. *Environmental / cultural resources*

Are there significant potential environmental / cultural resource challenges that might inhibit development of a park & ride-trailhead facility on this site?

6. *Legal impediments*

Are there known impediments that might affect the acquisition of the site for park & ride-trailhead use, or may affect a reasonable cost of acquisition or lease?

7. *Site engineering / constructability opportunities / constraints*

- Does the site present significant engineering challenges that could increase development costs? (soil, drainage, utility, or topographic)
- Can the site be serviced by the utilities needed?



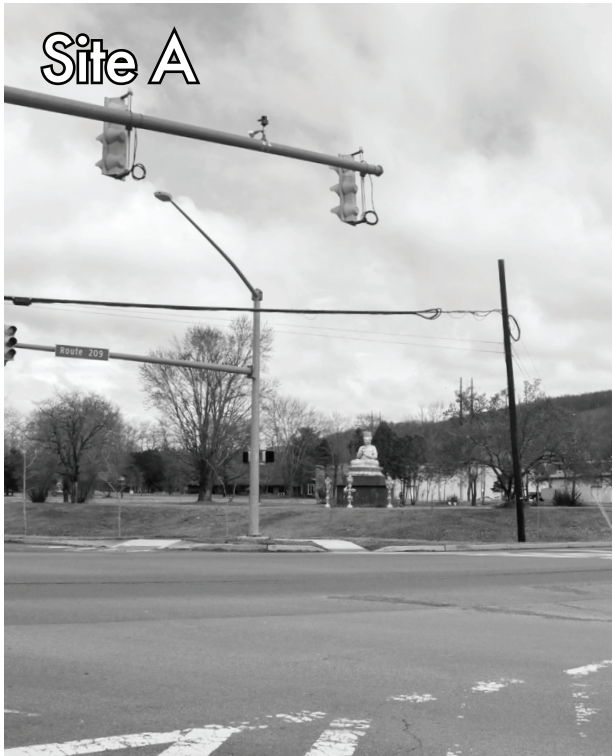


Fig. 2.1.05 View toward Site A from the intersection of US 209 and Winona Falls Road

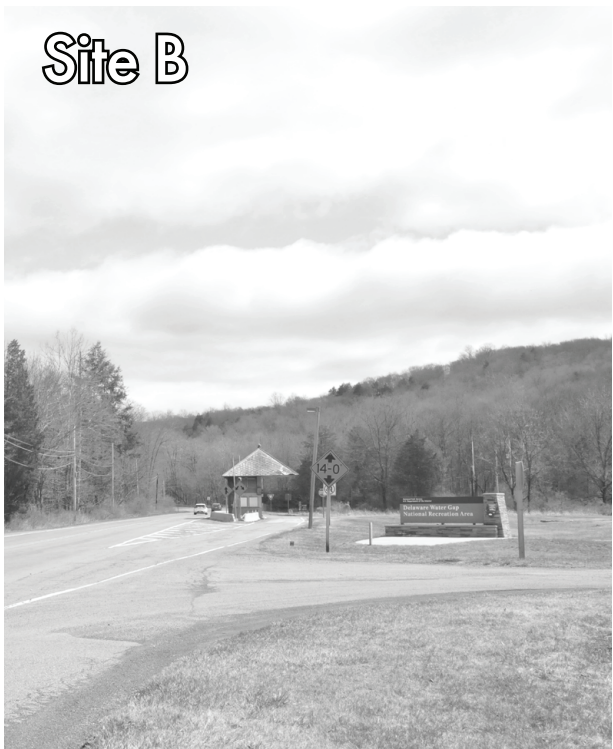


Fig. 2.1.06 View toward Site B from Federal 209 northbound view toward Site 1

### Ranking Matrix for Alternative Site Comparisons

A criteria matrix was created to rank the three alternative sites. Each criterion was assigned a rating between 1 and 5, and was applied to each site. A “5” is a “highly favorable” rating, while “1” is “not favorable”. A maximum rating of 35 was possible for any site. *Refer to Appendix - Exhibit 4.1.3.*

The assessment summaries below describe the potential for each of the three sites to serve as a park & ride-trailhead facility in Fernwood Village:

#### 1. Site A: NW Quadrant of Route 209 - Winona Falls Road (SR 1016) intersection Rating: 19 of 35

The northwest corner of the Route 209-Winona Falls Road intersection was assessed for its potential to serve Task 1 goals. The intersection corner location is partially occupied with landscape features and is part of a larger campus site on the west side of Route 209.

The site has high visibility from Route 209; however, access from either roadway is less-than-favorable for turning/queue distances from the intersection, or to satisfy geometries needed to serve transit vehicles. The horizontal geometries for entrance and internal circulation are compounded at this site by topographical challenges.

The site falls just outside of the 0.5-mile radius from the DEWA boundary, which is considered the maximum ideal walking distance from a park & ride-trailhead site to the “National Park” entry. The park & ride-trailhead strategy in this location generally supports the planning goals of Middle Smithfield Township and Monroe County.

**Site A was rejected** because Site C (located on the same parcel) ranked significantly higher.

#### 2. Site B: Existing southern Contact Station on Federal 209 inside DEWA Rating: 17 of 35

The southern contact station site on Federal 209 is located just inside the DEWA southern boundary and was originally developed by

NPS to control vehicular entries into the park, and to serve limited, short-term visitor parking and U-turnarounds for vehicles not continuing northbound into DEWA on Federal 209. The NPS contact station structure of the 1980s remains unused and in disrepair. The site has excellent visibility, a logical location, and an adaptable access geometry in place for a relatively small parking facility. The site is currently paved asphalt with minimal slopes that support ADA accessibility. No public rest facilities exist at this site.

The area available for parking is constrained between the Federal 209 alignment to the west and a watercourse / wetland area to the east.

This contact station site was identified as a preferred alignment point for a new trail spur to enter DEWA and connect any of the three alternative Fernwood Village area park & ride -trailhead sites to the McDade Trail alignment to the east.

**Site B was rejected** as a viable alternative because commuter park & ride uses are understandably prohibited by NPS within the DEWA boundaries.

#### 3. Site C: Former Parking Area NW at Fernwood Lane and US 209 intersection Rating: 28 of 35

**A large, paved area, located west of the Fernwood Lane (Golf Drive)-Route 209 intersection** is the site originally identified for consideration by former DEWA Superintendent Donahue. The site is a portion of a larger, privately-owned property (same owner as Site A).

**A large asphalt parking lot remains** from a development built as part of a former resort with structures which have since been demolished and removed. The identified area is located beneath an overhead high-tower electric service right-of-way that cuts diagonally across the paved area of the site.

**Highway access from Route 209 exists** as a former PennDOT-permitted entrance drive that is now blocked to traffic. Site visibility is good from Route 209, and the existing vehicular infrastructure and storm drainage system provides a strong basis to consider adaptive reuse of this site area.

**Grades are gentle in this area**, and the location is within the preferred 0.5-mile walking radius from the DEWA boundary. This location has existing partial sidewalk access to other local destinations within the Fernwood Village area, including access to the riding stables, golf course, ski slope, and brewery.

**Redevelopment of this site for a park & ride-trailhead facility aligns with planning goals** of Middle Smithfield Township and Monroe County. The site has potential to directly support significant economic development in the areas directly surrounding it, with public multi-modal facility on a site that is otherwise constrained from most other development uses by the regional electric service lines overhead.

**Redevelopment of this site will require negotiations** between Middle Smithfield Township and Monroe County with the private owner.



Fig. 2.1.07 View of Site C from US 209, with existing entry drive and paved parking area under regional power lines.

### Preferred Site C

Site C is the preferred site, based on ranking of suitability for adaptive reuse as a multi-modal park & ride-trailhead. *Refer to Appendix - Exhibit 4.1.3.* Highlights include:

- Directly adjacent to Route 209; very high visibility; and an existing highway access drive.
- Located 2100’ (0.4 miles) from the DEWA Southern Contact Station on Federal 209.
- At the northern terminus of the Middle Smithfield Township Route 209 bikeway-shoulder improvement corridor.
- Park & ride-trailhead development can deliver a regional transportation improvement that helps to stimulate multiple private sector investments in the Fernwood Village area.
- Highest/best use for a site directly beneath a high-tower, regional electric wires.

- Potential high-value public solution to long-standing, privately-owned blight and public health / safety concerns.
- Existing access drive (Fernwood Lane) can be improved to serve all future uses on the site.
- 100% existing impervious asphalt coverage can be mitigated with “green” remediations.
- Park & ride development can meet local zoning, subdivision, and stormwater requirements.
- Site plan can benefit regional water quality by remediating a remnant stormwater system that currently drains directly into Bushkill Creek without water quality or volume BMPs.
- New public parking in Fernwood Village incentivizes PennDOT to return the Mt. Nebo Park & Ride to the tax base.
- The site is currently owned by a single owner.



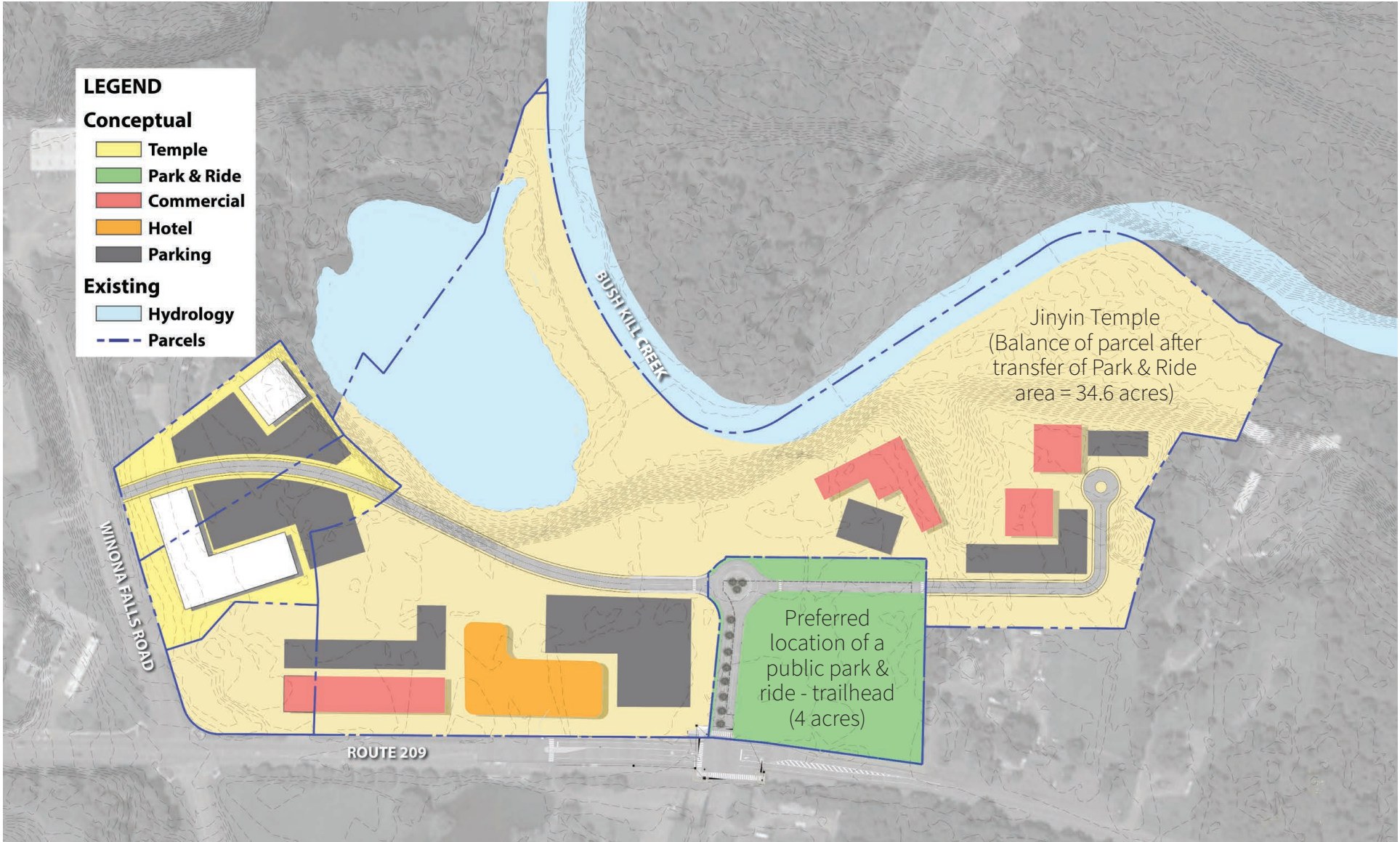


Fig. 2.1.08 Conceptual buildout analysis for mixed use by right at the Jinyin Temple site, including park & ride-trailhead facilities

TABLE 4-3 SUMMARY OF PROPOSED CHARACTER AREAS (from Middle Smithfield Township Comprehensive Plan)								
Area	(1) Intent	(2) Residential Lot Size/Density (Average)		(3) Nonresidential Uses Lot Coverage		(4) Open Space	(5) Maximum Building Height	(6) Infrastructure
T-6 Route 209 Corridor	<ul style="list-style-type: none"><li>Promote mixed-use, village center, and TND</li><li>Target development, redevelopment, &amp; Infill</li><li>Enhance appearance of overall corridor</li><li>Enhance vehicular &amp; pedestrian connectivity</li><li>Primary TDR Receiving Area</li></ul>	5.5 du's/acre	Mix of Single-Family & Two-family dwellings, Multifamily, and Live Work Units	Mixed-use; Regional Commercial; Institutional; Resort; Light Industrial	40-60%	10-15%	2 to 5 stories	Some public sewer; Community & Individual Wells; Sidewalks

Fig. 2.1.09 Middle Smithfield Township Comprehensive Plan, 2008: Summary of T-6 Route 209 Corridor Transect Area

Land Use Planning - Preferred Site C

**Site C is currently owned by Jinyin Temple of Sino Buddhism** and is part of the same campus as Site A. The total 38.57-acre site is located primarily within Middle Smithfield Township, Monroe County, and a small portion in Lehman Township, Pike County. These two portions of the property located in different municipal and county jurisdictions are divided by the Bushkill Creek. Four (4) acres of the parcel will need to be acquired for development of a preferred public park & ride-trailhead facility. See Figure 2.1.08.

**Current general conditions of the preferred site include unimproved facilities.** Private landscape amenity elements have been added to other parts of the private site that are separate from preferred Site C. Other outward improvements to the remaining structures or the site are minimal. The location of the preferred park & ride-trailhead site is within a large existing expanse of asphalt parking area that has not been regularly used for years.

**A review of the Middle Smithfield and Monroe County Comprehensive Plans** and Township zoning ordinances were the basis for the Lehman technical team to prepare a “buildout” analysis that calculated maximum future traffic demands that would be generated from a conceptual “by-right” redevelopment plan for the entire site – including the park & ride-trailhead component.

**Current zoning within Middle Smithfield Township is divided into nine (9) districts:** Conservation District, Rural Reserve District, three (3) Residential Districts, two (2) Commercial Districts and a Commercial/Industrial District. A ‘Resort Complex/Commercial Resort’ overlay district exists to enable opportunities for a mix of commercial, resort-residential, and other compatible uses that can deliver a unified development which does not create conflicts with neighboring residential developments.

**Middle Smithfield Township allows an option for sites that are a minimum of 25 acres** under the ‘Resort Complex/Commercial Resort’ development overlay district. Specific requirements are provided for buffers, coverage, trails, pedestrian walkways, height, and density.

**The Jinyin Temple complex occupies the former ‘Fernwood Hotel/Resort Complex’ site** that was officially incorporated into this ‘Resort Complex/Commercial Resort’ overlay district in 2004. The Jinyin Temple acquired their current holdings in 2017. One of the existing buildings on the site was destroyed by fire in 2018 and was razed.

Zoning requires that any changes proposed for development of the Jinyin property must be reflected in a ‘master plan’ document. In 2019, the Temple produced a master plan for its envisioned re-development of the Jinyin Temple, which was described as the first such center planned in the United States. Refer to Exhibit 4.1.7.

*Middle Smithfield Comprehensive Plan 2008 Update* recommends a ‘transect’ approach to future planning. The ‘transect’ is a continuum that represents the full range of land use environments from the most rural to the most urban. The *T-6 Route 209 Corridor Area* represents the most intensely developed areas along a major transportation corridor. See Figure 2.1.09.

**A “buildout” yield analysis for the Jinyin Temple parcel (38.57 acres) was conducted** for the purposes of evaluating the feasibility of incorporating a park & ride-trailhead facility to serve as a small public transportation facility within a full re-development scenario for the entire Jinyin Temple property. See Figure 2.1.14.

From this analysis, the Lehman technical team made transportation improvement recommendations for the park & ride vehicular access to the site that accounted for maximum traffic volumes projected for a full buildout scenario of the entire site.

*NOTE: The yield analysis developed for this project does not represent any actual re-development scheme. It was developed solely as the basis to calculate maximum traffic volumes that could be generated by a total by-right re-development of the 38.57-acre site – according to existing zoning. From that by-right total buildout tally, a total combined traffic volume was generated to inform the design of shared roadway geometries / traffic signal improvements for the preferred park & ride-trailhead site plan.*



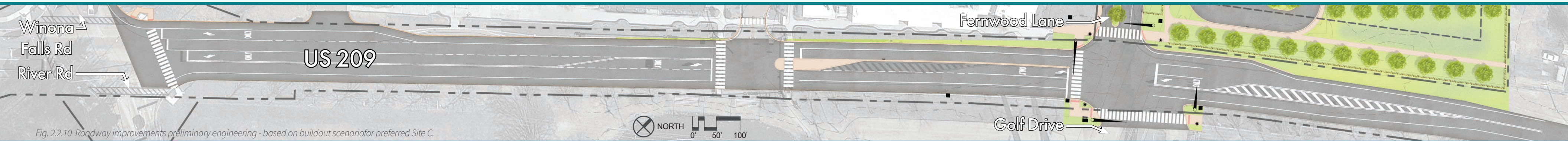


Fig. 2.2.10 Roadway improvements preliminary engineering - based on buildout scenario for preferred Site C.

Land Use Assumptions for Transportation Planning

Existing conditions assessment

The 38.57 acres held by Jinyin Temple are comprised of five (5) separate parcels, according to Monroe County, PA GIS parcel database.

Those five (5) parcels are labeled ‘A’ through ‘E’ along with a parcel identified as the ‘Hotel Parcel’. Refer to Exhibit 4.1.6.

- **Total Site Area:** 38.57 acres owned by Jinyin Temple
- **Undevelopable Area:** 15.41 acres (estimated steep slopes, lake, creek, floodplain)
- **Total Developable Area:** 23.16 acres
- **Existing Impervious:** 10.29 acres (est.) (Approx. 44% of total developable site acreage.) \*\*

\*\*NOTE: Maximum allowable impervious coverage under current zoning is 60% of developable site area.

Buildout program / schematic site plan

A model program for the entire site, including the park & ride-trailhead facility was developed for the 38.57-acre Jinyin Temple site as one possible way to comply with the Township T-6 Route 209 corridor overlay district standards.

Area assignments for three assumed primary uses include:

1. Park & Ride-Trailhead Facility: 3.97 acres
2. Jinyin Temple Re-Development area: 4.61 acres
3. T-6 Route 209 Corridor Development: 14.58 acres

NOTE: Total maximum developable area tallies 23.16 acres for the total site plan. Refer to Exhibit 4.1.6 for calculations.

**Township parking requirements** indicate that a parking plan needs to meet the average and 85% percentile requirements for usage based on the ITE Parking Generation Manual calculations for individual uses.

The calculations of parking requirements for a build-out scenario are incorporated into the land use summary of proposed conditions. Refer to Exhibit 4.1.6.

NOTE: Schematic parking and internal circulation routes were calculated as part of the total impervious area allowed for a completely developed site under township regulations.

Development considerations at preferred site

- High visibility for a public multi-modal site on US 209, just outside DEWA.
- Limited options for other uses at this specific site - due to overhead electric transmission wires.
- Elements of Jinyin Temple Master Plan 2019 can be incorporated into a T-6 Corridor development.
- Site location encourages pedestrian movements and passive recreation within Fernwood Village.
- Internal vehicular routes are designed to serve all ultimate uses within the total site area.
- Collaboration with a transportation partner may provide advantages to the Temple and its visitors.
- The plan for the park & ride-trailhead facility provides dedicated public parking for up to 94 cars.
- Future expansion of the park & ride program is physically possible in subsequent phases – based on demonstrated demand and willingness of the owner to negotiate. Refer to Exhibit 4.1.6.

Roadway Improvements

Roadway and traffic improvements

associated with a new park & ride-trailhead facility at Site C were analyzed using the following data:

1. **Updated traffic count data** performed at peak AM and PM hours, as well as Saturday counts in both peak and off-peak visitor seasons. Refer to Exhibit 4.1.10 and Exhibit 4.1.13.
2. **Land Use Analyses** to describe potential re-development buildout scenarios for the property.
3. **Adjustment for a future growth scenario in year 2040** using current traffic counts, and the demands of the land re-development scenario based on a rate of 1% increase per annum.

**Future traffic demand projections** were developed by the Lehman technical team based on the maximum potential buildout allowable for the entire site – equaling the combined re-development of Jinyin Temple; a maximum T-6 Route 209 Corridor (commercial) development; and the preferred park & ride-trailhead facility – all calculated under current municipal zoning regulations to determine maximum parking requirements and peak traffic circulations. Turning radii and queue distances within the Route 209 ROW and internal circulation drive geometries were based on projections, and to meet the needs of the largest vehicles in the park & ride-trailhead site program.

A proposed roadway improvements plan

is integrated with the preferred park & ride-trailhead facility site plan in Fernwood Village. See Figure 2.1.10 and refer to Exhibit 4.1.12.

Traffic Improvements Preferred for Highway 209

Intersection of Route 209 and Fernwood Lane/ Golf Drive

1. The intersection will need to be signalized.
2. A 225-foot minimum left-turn storage length (excluding taper) will be needed on N-bound Route 209.
3. A 100-foot minimum right-turn storage length (excluding taper) will be needed on S-bound Route 209.
4. All crosswalks will be controlled with pedestrian signals.
5. Traffic signal modifications can include override for emergency vehicles to enter the intersection.

Intersection of Route 209 and Winona Falls Road

6. Signal timings will need adjustments to accommodate future traffic.
7. A 225-foot minimum right-turn storage length (excluding taper) should be considered for S-bound Route 209, if feasible.

Intersection of Fernwood Lane (Resort entrance)- Route 209 – Remove existing signalization / crosswalk

8. Remove the existing signal and crosswalk currently at the Fernwood Lane (the remnant highway access location with non-functioning traffic signal at the former resort entrance).
9. It is recommended that this driveway access to Route 209 be reviewed as part of any redevelopment of the Route 209/ Fernwood Lane/ Golf Drive intersection to provide a single, complaint entry for all new re-development of the Jinyin site.

Stormwater Management

**Stormwater management is required for all new roadway and site developments**, and considerations are addressed in the preferred park & ride-trailhead development plan for Fernwood Village.

Existing collection / conveyance conditions

An existing piped stormwater conveyance system was constructed under the paved parking area that includes the 4-acre area preferred for a new park & ride-trailhead site. The existing piped system appears to be hydraulically linked to drainage from an adjacent segment of Route 209.

The existing stormwater system discharges into the Bushkill Creek at the western edge of the parcel through an outfall in a steep and scoured embankment.

**Future BMP options** – All stormwater system modifications will comply with local, state, and federal stormwater/water quality requirements.

Bio-filtration/rain garden treatments are identified as potential BMP facilities to meet stormwater regulations within the preferred park & ride-trailhead site.

Water quality and volume reductions were not calculated in this phase. Currently, surface stormwater from Route 209 ROW enters the site and will require further investigation and likely mitigation in the final engineering phase.



Transit Assessment

Monroe County Transit Authority (MCTA)

MCTA serves Monroe County with its ‘Red,’ ‘Blue,’ and ‘Silver’ routes as transportation options for the regional population who require access to commercial areas of the Pocono region.

The MCTA also provides public shared-ride services, medical assistance transportation, and transport options for seniors and persons with disabilities.

The Fernwood Village area of Middle Smithfield Township was once served by the MCTA ‘Yellow’ Route of the Pocono Pony, a MCTA fixed-route system, however, the Yellow route service to Fernwood Village was discontinued in 2020, due to low ridership.

A ‘Yellow Flex’ route stop was recently established at the Price Chopper adjacent to the PennDOT Mt. Nebo Road Park & Ride (approximately 5 miles south of Fernwood Village on Route 209) as a reservation-based option to link to other modal connections.

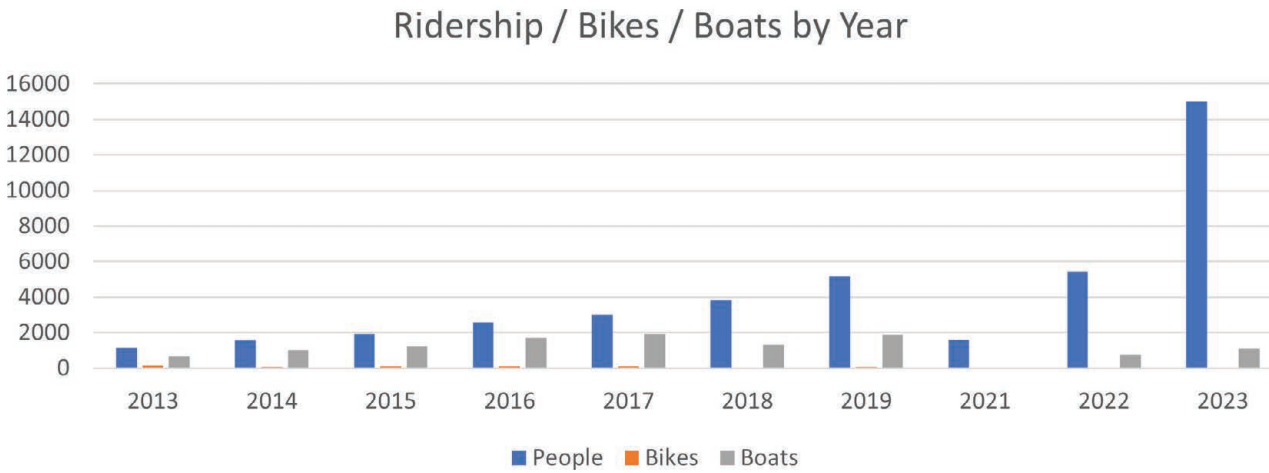


Figure 2.1.11 MCTA River Runner & Hiker Shuttle Ridership Summary 2013-2023. Source: MCTA

DEWA transit options

Transit service within DEWA consists of seasonal shuttles that are operated by MCTA, known as the “Hiker Shuttle” and the “River Runner.” Both shuttles are free to riders during the annual season that begins Memorial Day and ends Labor Day.

The shuttles pick up visitors at major collector points located both inside and outside DEWA and transport them from and/or return them to drop-off locations to support hiking, biking, and boating in various sections along the 30+ mile Federal 209 corridor through the “national park”.

The Hiker Shuttle is restricted to hikers only. The River Runner allows riders to bring bikes and boats between the PennDOT Park & Ride in Delaware Water Gap Borough at the I-80 southern gateway into DEWA and Milford Borough at the northern Route 209 gateway into DEWA. The River Runner service enables visitors to combine travel modes for hiking, biking, and boating outings. ‘Flag’ stops are allowed in addition to scheduled stops along the 209 corridor.

DEWA shuttle ridership grew four-fold from the inception of service in 2013 to the last recorded service in 2019 (prior to the 2020 pandemic.) During the 2020 season, both the Hiker and the River Runner Shuttles were cancelled due to the COVID pandemic, while DEWA was experiencing significant growth in estimated visitor volumes. Visitors arriving in private vehicles created major parking issues within DEWA during that period and also resulted in impacts to host communities of the Park. DEWA shuttle ridership reported for the 2021 through the 2023 summer seasons shows a dramatic rebound in 2022, exceeding the pre-pandemic summer. Ridership nearly tripled between 2022 and 2023 from 5500 visitors to over 15,000 visitors riding the DEWA shuttles. See Figure 2.1.11.

The Alternative Transportation Feasibility Study, 2009 (ATS) analyzed alternative transportation modes within DEWA and described options available to NPS to deal with growing visitation estimates in DEWA. Considerations include cumulative effects of parking shortages, congestion, preservation of natural and historic resources, and increasing vehicle emissions inside the park. See Figure 2.1.13.



Figure 2.1.12 MCTA River Runner Shuttle

The ATS report recommended considering expanded transit service in DEWA through a partnership with the Monroe County Transit Authority.

Three options were evaluated.

Option A1 – the Southern Loop – was recommended (in full partnership with MCTA) as an extension of the then-operating Yellow Route to Dingmans Falls Visitor Center. A one-way loop segment addition along River Road and 209 complements the extended Yellow Route. Recommendations for short-term improvements (0-2 years) included an upgraded visitors center in the Bushkill area.

The logic behind the FHWA-funded ATS recommendation to acknowledge Bushkill as a critical location to improve visitor services resonates for visitors traveling through Bushkill Village, who expect to encounter a coherent visitor experience at this major point of entry into the DEWA “national park.”

Completing the McDade Trail and the Country Road Trail are also multi-modal recommendations in the ATS report.

Regional / Excursion Transit

The two Martz Trailways service destinations closest to Fernwood Village are the Delaware Water Gap (approximately 15 miles south of Fernwood Village in Stroudsburg) and a Route 209 stop in Marshalls Creek.

Preliminary engineering developed for the preferred Fernwood Village park & ride-trailhead site includes physical provisions to accommodate multiple potential bus services to support a reconception of a Fernwood Village visitor portal into DEWA.



Delaware Water Gap National Recreation Area  
Alternative Transportation Feasibility Study

FINAL REPORT



June 2009

Submitted by:  
Vanasse Hangen Brustlin, Inc  
8601 Georgia Ave, Suite 710  
Silver Spring, Maryland 20910

Submitted to:  
National Park Service and  
Federal Highway Administration,  
Eastern Federal Lands Division

With Support from:  
Jacobs Engineering Group, Inc

Figure 2.1.13 The ATS Report, front cover. Source: NPS, FHWA



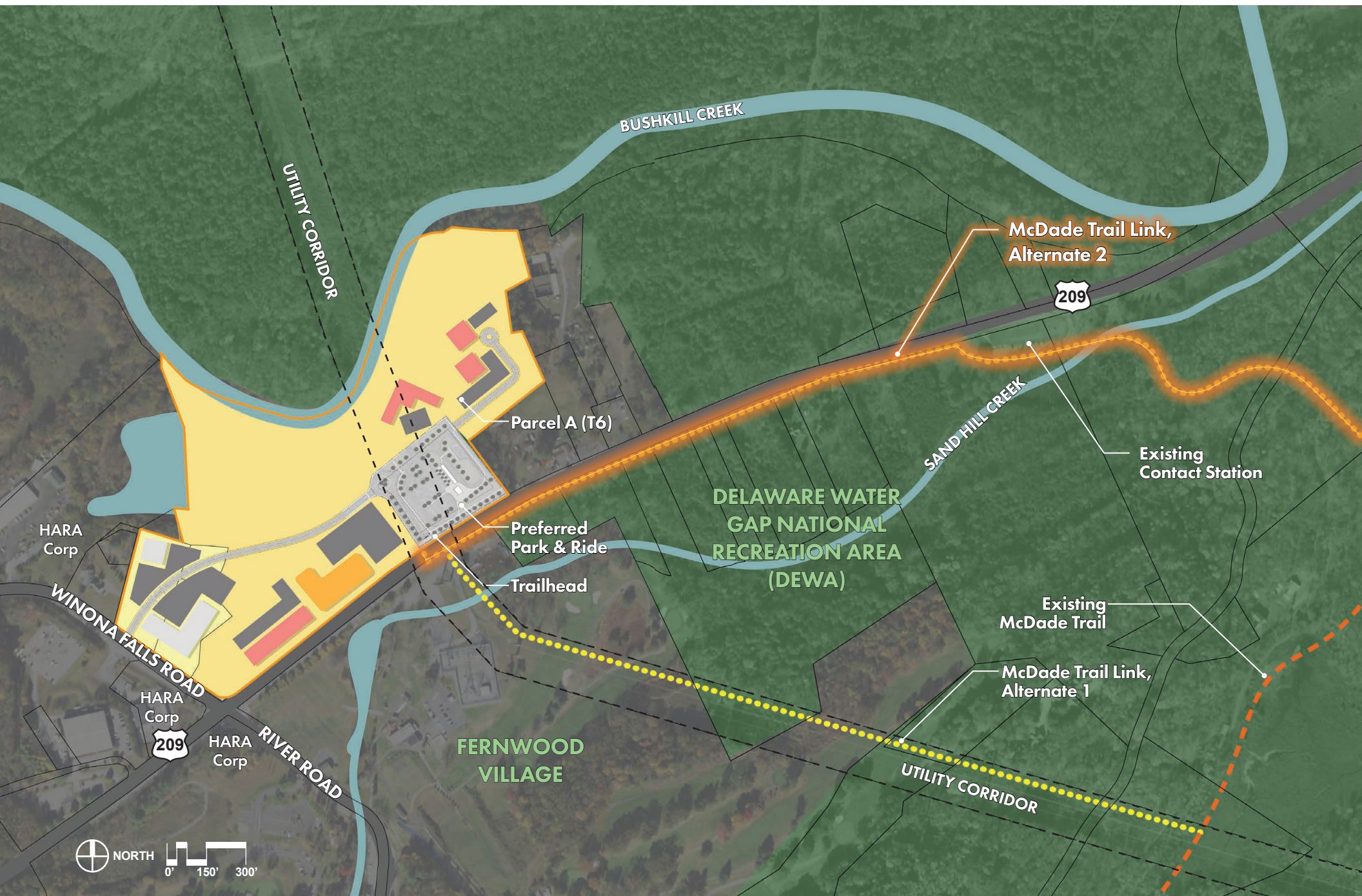


Figure 2.1.14 a conceptual “built-out” scenario of the Jinyin Temple site, including a new Park & Ride facility, and Trailhead - with two alternate trail linkage alignments to the McDade Trail. McDade Trail Link Alternate 2 is the suggested trail alignment.

LEGEND	
Concept Build-out	Existing
<span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span> Temple site	<span style="display:inline-block; width:15px; height:15px; background-color:lightblue; border:1px solid black;"></span> Hydrology
<span style="display:inline-block; width:15px; height:15px; background-color:orange; border:1px solid black;"></span> Commercial	<span style="display:inline-block; width:15px; height:15px; border:1px solid black;"></span> Parcels
<span style="display:inline-block; width:15px; height:15px; background-color:lightorange; border:1px solid black;"></span> Hotel	
<span style="display:inline-block; width:15px; height:15px; background-color:gray; border:1px solid black;"></span> Parking	

### Fernwood Village Trailhead – linkage to the McDade Trail in DEWA

**Fernwood Village was identified as a potential multi-modal trailhead** by former DEWA Superintendent John Donahue in a location that offered the potential to serve multiple area parking needs for both commuters and DEWA visitors. Donahue suggested that a new park & ride facility could be located outside of DEWA boundaries to serve both local commuters and DEWA visitors who would not need to use automobiles to enter the Park.

A multi-modal public parking area in Fernwood Village requires a trail segment that links to the nearest possible segment of the McDade Trail along Community Drive inside DEWA.

**Bicycle access on Route 209 to the Fernwood Village park & ride-trailhead site** is generally possible via intermittent shoulders to the south of Fernwood Village.

**Bicycling on Federal 209 within DEWA** is not recommended even for highly experienced cyclists, as the available paved shoulder on Federal 209 within DEWA ranges from 3’ to 0’ wide, with accompanying grade issues.

**Field observations by the Lehman technical team identified a feasible trail route to the McDade Trail** from the preferred park & ride-trailhead site in Fernwood Village. The route uses shoulder areas of Route 209 outside of DEWA and along Federal 209 inside the “park” to pass through the southern DEWA visitor contact station and then align overland to reach the point where the McDade Trail touches Community Drive.

**A Ferwood Village trail link will need to clear multiple stringent environmental reviews** to build the new trail segment from the southern visitor contact station to the McDade Trail inside DEWA. This series of reviews is a typical process for all NPS projects and will include design, public involvement, alternatives analyses, and on-site investigations to enable construction.

**The process will address the question of whether the McDade Trail Amendment** to the 1987 DEWA General Management Plan (GMP) needs to be “amended” to enable the new Fernwood Village trail link construction.

**Two (2) potential trail link alignments were identified by the Lehman technical team:**

#### McDade Trail link – Alternate 1 – via private properties

- Cross Route 209 at the Fernwood Drive / Golf Lane intersection.
- Follow the overhead electric transmission line corridor to traverse private resort grounds through negotiated easements.
- Connect to McDade Trail by crossing to the east side of Community Drive.

**Total Length:** 0.7 mi (3,800 LF)

**Advantages/Disadvantages:** Steep terrain, grade change; multiple property owner access agreements required; local watercourse crossing (Sand Hill Creek); shorter length.

#### McDade Trail link – Alternate 2 – via Route 209 and DEWA lands

- Cross Route 209 at the Fernwood Drive / Golf Lane intersection
- Create a side path facility on east side of Route/Federal 209 to southern Contact Station
- Enter DEWA lands at the southern Contact Station
- Cross Sand Hill Creek riparian corridor
- Traverse a moderately-sloped valley within the geological outcrops
- Cross Community Drive to reach the McDade Trail

**Total Length:** 0.9 mi (4,700 LF)



Figure 2.1.14 The convergence of the McDade Trail and Community Drive.

**Advantages/Disadvantages:** Moderate grade changes; less challenging control issues (Federal 209 ROW and Contact Station are DEWA jurisdiction); more visible trail connection for Park visitors; longer route by 0.2 mi.

**Alternate 2 trail link is the suggested option to reach the McDade Trail** from a Fernwood Village park & ride-trailhead site, based on several considerations, including:

- The most potentially accessible alignment to serve visitor populations.
- Affecting the fewest number of owners.
- Likely the safest, most direct, and most physically suitable route – acknowledging that it will be required to pass through a rigorous federal project compliance process.



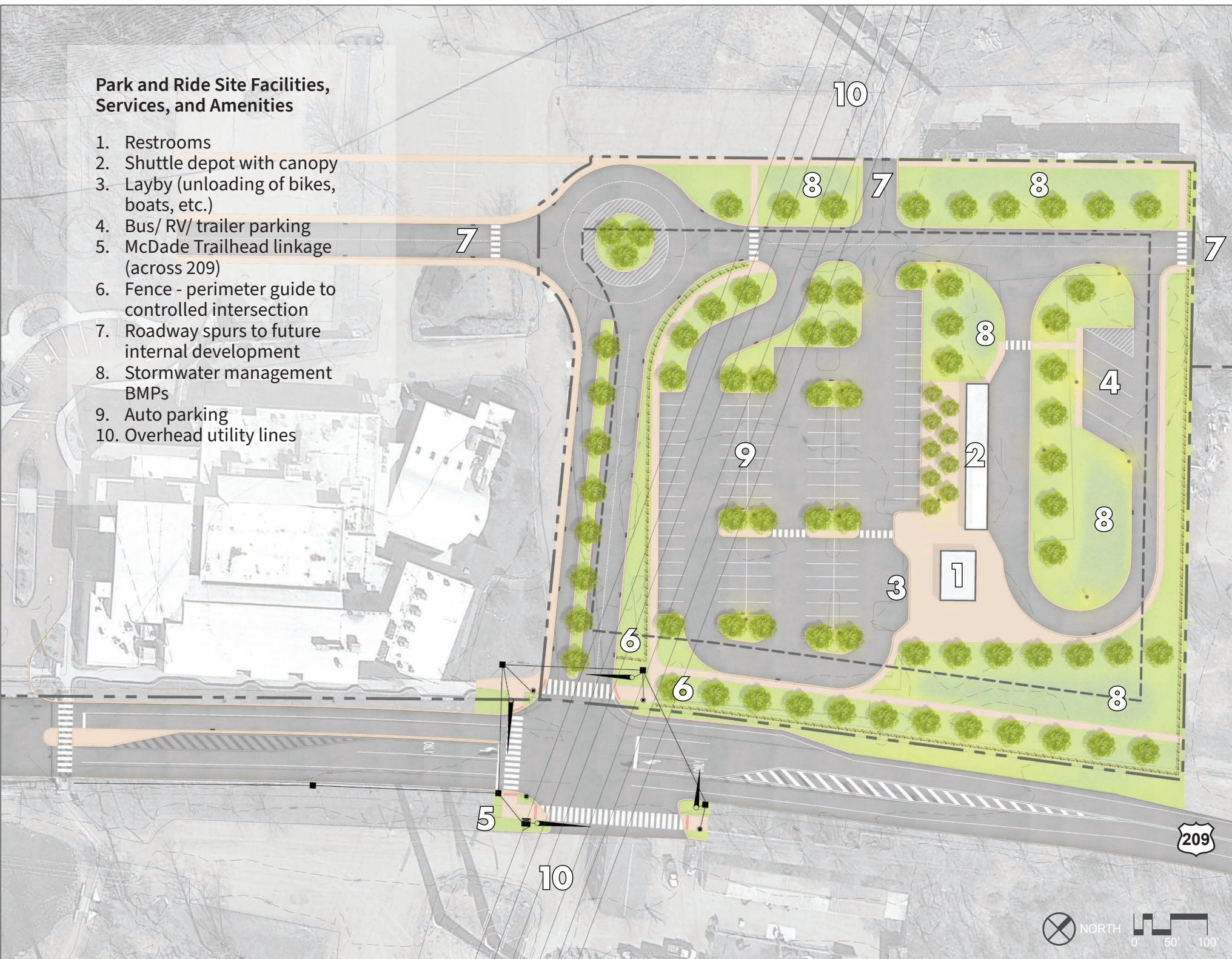


Figure 2.1.16 Preferred multi-modal program on the preferred Fernwood Village site

## 2.1.4 Site Plan for Park & Ride-Trailhead in Fernwood Village

### Program elements for a Park & Ride-Trailhead facility in Fernwood Village

The program elements included in a site plan for a comprehensive Fernwood Village Park & Ride-Trailhead facility - with recommended roadway, traffic, and stormwater improvements include:

- **Parking (autos)** 94 spaces
- **Parking (large)** 5 spaces - commercial tour / livery services / recreational vehicles (RV).
- **Parking (bikes)** 30 rack spaces for bicycles.
- **Restrooms:** 3 stalls per gender; one ADA accessible stall per gender.
- **Potable water** Visitors/pets.
- **Depot canopy** Transit loading/queuing area with seating, travel information.
- **Landscape** Stormwater management, low maintenance vegetation, shade.
- **Information** Traveler/interpretive information/directory, directional, identity.
- **Entry Drive** Internal vehicular access improvements and modifications to Route 209.
- **Lighting** To be determined in final design phase.
- **Ped/bike links** To local destinations / McDade Trail.
  - Connection to existing Fernwood Village sidewalk system.
  - New crosswalk to Golf Drive
  - Side path improvements along the Route 209 corridor, as the suggested trail link to McDade Trail in DEWA

### Site Plan for a Park & Ride-Trailhead facility in Fernwood Village

A site plan was developed to a preliminary engineering level for the preferred park & ride location in Fernwood Village, based on the site program and available base data. Site plan elements are depicted to scale with geometries that meet relevant standards for public facilities located outside the “national park”. See Figure 2.1.16 and refer to Exhibit 4.1.8.

### Design considerations for a Park & Ride-Trailhead facility in Fernwood Village

- A ‘shared access’ drive into the site is recommended via the existing alignment of the Fernwood Lane (Golf Drive) intersection with Route 209. Refer to Exhibit 4.1.8 and 4.1.11.
- Roadway geometry improvements are based on traffic analyses and are incorporated into both the new park & ride-trailhead site plan and along the segment of Route 209 between Fernwood Lane and Winona Falls Road (SR 2028). Turning radii were applied in the site plan geometry for personal vehicles, small/medium-sized transit vehicles, and commercial livery (tour/excursion bus) vehicles. Refer to Appendix Exhibit 4.1.10.
- The 94 parking spaces were estimated as a maximum demand for future park & ride that is equal to less than 25% of the total spaces that currently exist at the PennDOT Mt. Nebo Road-Route 209 Park & Ride location.
- Parking spaces are envisioned to serve both park & ride commuters and off-peak DEWA visitors. The two uses are considered compatible, with minor overlapping of uses anticipated during high-use periods for DEWA users (eg: weekends, summer vacation season).
- A bus / shuttle unloading / queuing area was established with a depot canopy and visitor rest area.
- A bike and watercraft loading location was designed at the shuttle depot.
- An internal walkway system provides pedestrian separation from vehicular traffic to link parking spaces to site amenities.
- Links to sidewalk and potential trail linkages outside the park & ride-trailhead site were identified schematically along the Route 209 ROW, along the Federal 209 ROW (inside DEWA), and between the southern contact station and the McDade Trail (within DEWA).
- A site buffer is created by combining planted stormwater BMP area along Route 209 with fencing and street trees around the perimeter of the site.

### Costs

Refer to Section 4 - Task 1 for costs.

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Figure 2.2.01 View north of existing conditions where NPS treatment of the McDade Trail does not acknowledge or direct the desire and need for safe user movements between the two sides of Federal 209.



## 2.2 Task 2

# Pedestrian/Bike Safety & Accessibility Improvements (Bushkill Village)

### 2.2.1 Concept Origin

**The *Bushkill Village Conservation Study 2017 (BVCS)* is a cultural landscape assessment**, prepared by a Lehman Township technical team, that recommends a broad spectrum of conservation actions to benefit DEWA visitors in Bushkill Village.

These recommendations include multiple strategic partnership remedies to transportation deficiencies in pedestrian and bicycle safety and mobility; multi-modal integration; and universal access on both sides of the busy Federal 209 surrounding the historic crossroads at Bushkill Falls Road (SR 2001).

**The *BVCS 2017* was funded by the Federal Highway Administration (FHWA) and the Pennsylvania Department of Conservation and Natural Resources (DCNR).**

**The National Park Service (NPS) did not accept recommendations in the *BVCS 2017* to improve walkways, parking, or highway access** – and minimal improvements since 2017 have benefitted visitors in Bushkill Village, beyond highway repaving.

**Safe, accessible crosswalk facilities were not included in the 2013 SR 2001 improvements** that were completed by PennDOT, despite requests from Lehman Township to NPS to include basic multi-modal safety features in the state highway improvement project on federal land, at the busy intersection of Bushkill Falls Road (SR 2001) and Federal 209, and where the McDade Trail converges with Federal 209.

**Non-compliant pedestrian crosswalk improvements were later retrofitted by NPS across Federal 209**, but not across SR 2001 to reach the Peters House at the same intersection. Non-compliant crosswalk “improvements” at this location have remained in disrepair for multiple years.

**NPS completed a pavement rehabilitation project for Federal 209 in the Bushkill Gateway area in 2022**, along a section of the highway between the Fernwood visitor contact station and a project terminus north of the SR 2001 intersection. This project included a work element related to the Federal 209 Bridge over Bushkill Creek – but safe/accessible crosswalk improvements at the SR 2001 intersection were not included in the 2022 NPS repaving project.

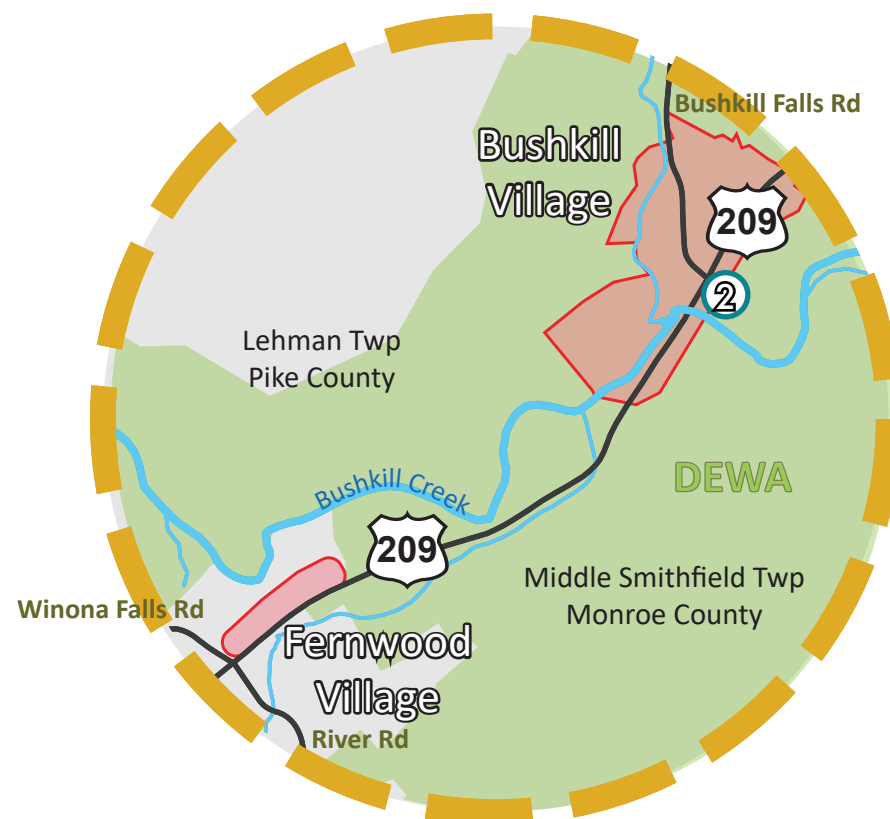


Figure 2.2.02 Task 2 project area site context





Figure 2.2.03 The Federal 209-Creek Road intersection and Bushkill Creek Bridge (photo taken during Federal 209 repaving project.)



Figure 2.2.04 Convergence of the McDade Trail directly onto the east side of Federal 209, north of the Bushkill Creek Bridge (photo taken during Federal 209 repaving project.)

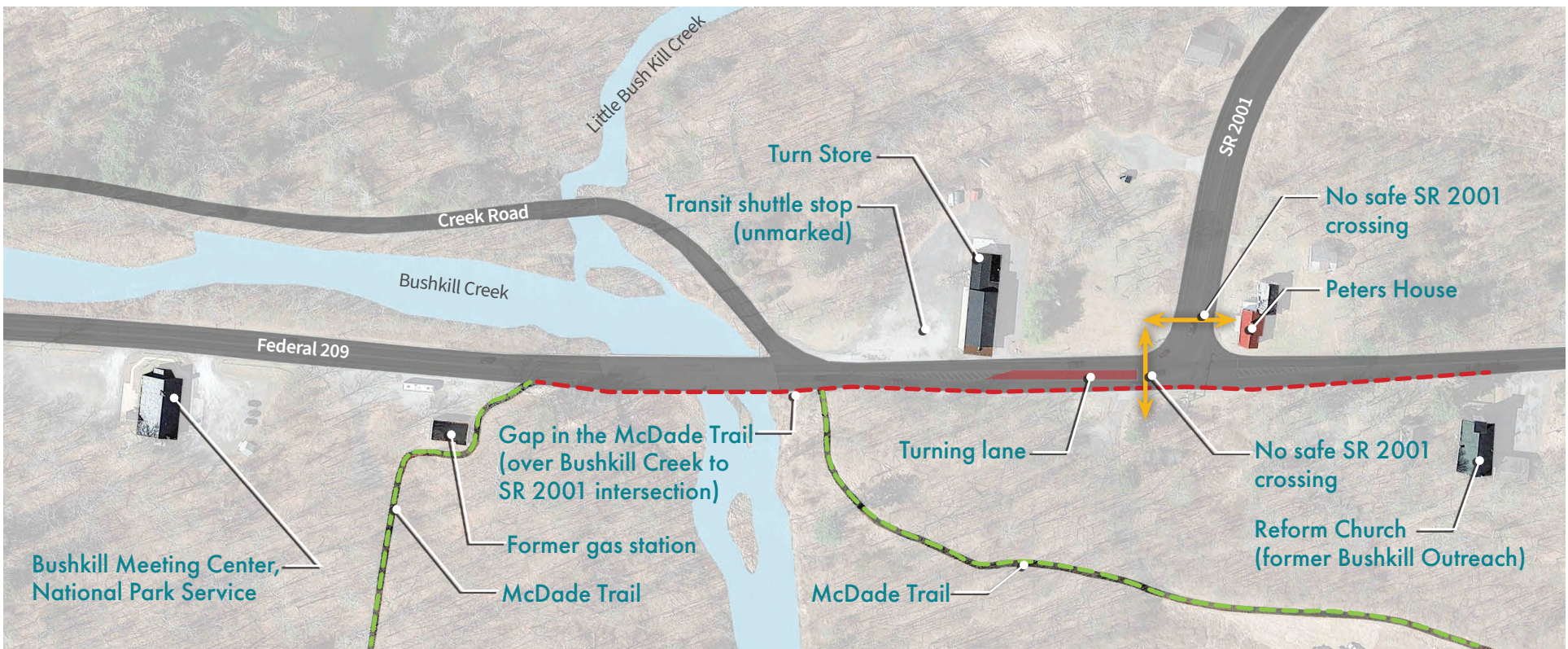


Figure 2.2.05 Existing features and currently non-complaint safety and accessibility features for pedestrians and bicyclists in Bushkill Village.

**The McDade Trail route is blazed by NPS through the major trailhead of Bushkill Village,** but NPS has never built the fundamental transportation safety features for visitors to safely cross Federal 209 from the McDade Trail on the east side to the west side, where major parking areas, rest facilities, picnic tables, a Delaware Water Gap National Recreation Area (DEWA) shuttle stop, and the privately-owned Turn Store all attract pedestrians and bicyclists to cross the highway.

NOTE: the Turn Store is identified in the *DEWA General Management Plan (GMP) 1987* as a major asset for this “national park.”

**Lehman Township and NPS agreed that ped/bike safety and accessibility improvements** should be a major preliminary engineering task in the application to FHWA to fund this *Bushkill Gateway Transportation Improvements Plan, 2024*.

**FHWA awarded a second grant to Lehman Township for this *Bushkill Gateway Transportation Improvements Plan (BG TIP 2024)*** project to conduct three related preliminary engineering tasks in the Bushkill Gateway area, including this Task 2: Pedestrian/Bike Safety & Accessibility Improvements in Bushkill Village.

**The *BVCS 2017* study area forms the basis for ped/bike improvements described in this *BG TIP 2024*.** The analyses and recommendations for ped/bike improvements will enable DEWA visitors to arrive, leave, and travel safely within Bushkill Village without the need to use private motor vehicles to move from place to place within this area of DEWA. Safe ped/bike crossing of Bushkill Creek is specifically described in Section 2.3.

**The *BG TIP 2024* preliminary engineering-level analyses and design** for pedestrian/bicycle improvements in Bushkill Village emphasize:

- Ped/bike mobility on both sides of the Federal 209 highway;
- Pedestrian crossings of Federal 209 and SR 2001 that are safe, accessible, and encourage use;
- Pedestrian facilities integrated with vehicular highway improvements;
- Ped/bike facilities integrated with parking improvements;
- Crossing of the McDade Trail over Bushkill Creek via safe/compliant facilities (*Section 2.3*);
- Ped/bike facilities integrated with DEWA shuttle service;
- Universal accessibility to “national register” resources (Turn Store, Peters House);
- Walkway spur routes to locations of interest on both sides of Bushkill Creek;
- Ped/bike design features that support traffic calming strategies on Federal 209;
- Site/transportation-related features that inhibit rogue ped crossings of Federal 209.



## 2.2.2 Summary of Findings

### Cultural Landscape

- Bushkill Village is a classic example of a “cultural landscape.”**  
The NPS defines a cultural landscape as:  
*"a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values."*
- Cultural landscapes are frameworks for heritage conservation, sensitive modern improvements, and opportunities for interpretative features,** especially where a loss of integrity to original historic resources has occurred — such as in Bushkill Village, where the majority of original Village features have been razed. What remains of the previous river community culture here continues to attract visitors who expect and require basic stewardship interventions to ensure public safety, accessibility, and respect for and interpretation of the extant cultural artifacts.
- A cultural landscape requires a lower threshold of original historic integrity remaining intact** than a National Register of Historic Places resource. There are many possible ways to acknowledge, interpret, and conserve cultural landscapes – especially in a place as important as Bushkill Village.
- The FHWA-funded BVCS 2017 serves as the Cultural Landscape Assessment (CLA) for Bushkill Village** until NPS elects to perform its own version, which would require NPS acknowledgement of Bushkill Village as a place of significance.
- NPS has never acknowledged the importance of Bushkill Village within DEWA jurisdiction** – neither as a significant cultural landscape, nor as a major visitor entry-landing site – despite the:
  - History of the place** – culturally, ecologically, and as a strategic transportation corridor
  - Remaining resources** – with multiple visible artifacts/structures facing *demolition by neglect*
  - Significance of the “historic event”** – when local people stopped the building of a federal dam
  - Extraordinary natural features** that prompted the choice of the original “Tocks Island” dam location
  - Logic of recognizing the Bushkill crossroads as an important “people” location** directly inside the southern DEWA entry on Federal 209 – and therefore, improving it as a special place to safely serve multiple uses

### DEWA Entry & Visitor Services

- Bushkill has functioned as a primary “gateway” into DEWA** since the Army Corps of Engineers abandoned the Tocks Island Dam project. The former village became a major trailhead location when NPS built the McDade Trail up to both sides of the Bushkill Creek – *but never built the trail bridge to connect the two sides.* NPS has also constructed restroom facilities on both sides of Federal 209 and on both sides of Bushkill Creek.
- Integrated treatments are negotiated for every federally-funded transportation project *except*** the NPS 2013 SR 2001 improvement project which – for reasons never explained – did not include pedestrian safety features within the Federal 209 right of way. Nor did the SR 2001 project install universal access features to mitigate negative transportation impacts to the National Historic Register resource at the Peters House site in Bushkill Village.
- Visitor facilities/services that exist within Bushkill Village in 2024 include:**
  - General store** – a private commercial “in-holding” property, open to serve the public
  - Pedestrian facilities** – minor, unimproved, and disconnected segments
  - Visitor parking** – undefined areas without design for highway access or delineated spaces
  - Trailhead for McDade Trail** – a heavily used location, but completely undefined
  - Transit shuttle stop** – an unmarked location near the Turn Store with no information
  - Rest facilities** – three (3) unisex mulching toilet stalls
- The NPS Visitor Use Management Plan (VUMP) 2020 ignored Bushkill Village** as an intensively-traveled gateway into DEWA, where NPS maintains a concentration of visitor infrastructure. **The VUMP was silent on Bushkill Village, despite written submissions by Lehman Township** requesting that the document acknowledge the importance, functions, and needs of this special place to serve visitors.
- The NPS Alternative Transportation Study 2009 (ATS) identified Bushkill Village as a potential visitor center** site. That site selection logic is confirmed in the BVCS 2017, which includes assessments of potential sites for a visitor center within Bushkill Village. Bushkill Village remains a location where people expect to find coherent NPS visitor services within DEWA, regardless of whether a formal visitor center “structure” is ever created. NPS past investments in minimum infrastructure within Bushkill Village support those public expectations.

### What Needs to be Done?

- Safety and accessibility are high priorities for the Bushkill Village cultural landscape,** where basic visitor mobility improvements must be integrated with stewardship of remaining cultural and natural resources that continue to attract users.
- Highway access and visitor parking facilities in Bushkill Village need to be formalized** at this major entrance into DEWA.
- Obstacles to pedestrian safety and accessibility in Bushkill Village need remedies,** including:
  - Crosswalks** – universally-accessible safety features on Federal 209 and SR 2001
  - Pedestrian ways** – formalized, safe, and universally accessible along Federal 209 and SR 2001
  - ADA (ABA) ramp** – to serve the Peters House from Federal 209 and SR 2001 intersection
- Ped/bike recommendations for Bushkill Village are based on vehicular traffic projections** and roadway improvements that will be needed on Federal 209 in the near future.
- Highway improvements are needed on Federal 209 and SR 2001,** including:
  - Federal 209 lane modifications to include crosswalk improvements at Federal 209-SR 2001 intersection.
  - Traffic signal modifications to be linked to new ped crossing signals at the Federal 209-SR 2001 intersection.
  - Formalized entrance drives for safety at all Bushkill Village parking areas.
  - Shuttle stop locations to be integrated with Federal 209 geometric modifications.
- Improvements that may appear as cultural features visually can also serve functional transportation purposes,** including:

- Roadway fencing** to direct pedestrian movements and inhibit mid-block renegade crossings
- Tree rows** parallel to the road to change the highway’s scale and serve as traffic calming in Bushkill Village
- Canopy planting** for shade on travel surfaces and to help reduce heat island impacts

- Graded roadway swales** to prevent erosion and signal the edge of the cartway/shoulder
- Retaining wall (at Peters House)** as part of ADA/ABA ramp system and pedestrian control device
- DEWA shuttle service platform/loading areas** need to be formalized.
- A segment of walkway to the Turn Store** from the Federal 209-SR 2001 intersection is needed to ensure safe pedestrian access to that privately-owned “National Register” resource.

- This BG TIP 2024 produced traffic counts and future traffic volume projections** that demonstrate how the existing northbound, left turn lane on Federal 209 will need to be lengthened to provide adequate queuing distance that will extend back over the Bushkill Creek bridge deck.

- Increased queueing distance will be needed for the Federal 209 northbound left turn lane at SR 2001.
- The increased length needed for the northbound left turn lane on Federal 209 at SR 2001 to accommodate projected volumes will affect lane geometry – including the non-compliant NPS striped shoulder for the McDade Trail on the existing Bushkill Creek Bridge deck.

- The multi-modal safety/accessibility needs at Bushkill Village can be implemented as part of a larger, more urgent project;** specifically, the replacement of a modern Federal 209-Bushkill Creek Bridge. *Refer to Section 2.3.*

- Demands for visitor safety and accessibility improvements in Bushkill Village will continue to increase** based on needs that will not diminish — requiring the NPS policy of not improving Bushkill Village as a primary DEWA visitor landing site to be reversed.

- Solutions needed in the Bushkill Gateway area will require intervention by regional partners** to bring NPS accountability to a collaborative stakeholder table.





Figure 2.2.06 Federal 209-SR2001 intersection and Peters House; view north across Bushkill Falls Road/SR 2001. Photo taken during 2022 repaving project.



Figure 2.2.07 Federal 209-SR2001 intersection; view south along the east side of Federal 209 towards the Bushkill Creek Bridge. Photo taken during 2022 repaving project.

## 2.2.3 Analyses of safety/access issues in Bushkill Village

### Goal

To develop a facility program and preliminary engineering plan for pedestrian-bicycle and multi-modal improvements within Bushkill Village that are integrated with traffic projections for updating highway and vehicular facilities, and to inform remedies for missing transportation safety/accessibility features along the Federal 209 corridor that will serve all users in this location, including local community residents and DEWA visitors.

### Program

A multi-modal facility program was developed to include:

- **Walkways** between Bushkill Village destinations that are dedicated, safe, and accessible
- **Crosswalks** at Federal 209 and SR 2001 intersection that are ADA/ABA accessible
- **Universal access** to historic resources – including the Turn Store and Peters House
- **McDade Trailhead walkway links** to visitor parking/service locations
- **DEWA shuttle stop improvements** with safe and accessible links to all Bushkill locations
- **Visitor support elements** such as user shelter location(s) and travel/interpretive location(s)
- **Visitor parking improvements** integrated with ped/bike safety designs
- **Highway access to parking** areas designed to modern standards

### Background

Previous related studies include:

- *DEWA General Management Plan 1987 (GMP)*
- *DEWA McDade Trail GMP Amendment 2001*
- *DEWA Alternative Transportation Study 2009 (ATS)*
- *Bushkill Village Conservation Study 2017 (BVCS)*
- *DEWA Visitor Use Management Plan (VUMP) 2020*

Relevant roadway improvement projects in the Bushkill Village area of DEWA include:

- PennDOT SR 2001 Highway Improvements Project (2012-2014)
- FHWA + DOI Project NP-DEWA 14(18), 121 (1) Rehabilitative & Preventative Maintenance of Bridges (Bushkill Creek Bridge) (2020)
- NPS US 209 Pavement Rehabilitation Project 2021

Missed opportunities by NPS in Bushkill Village include:

- **2013 SR 2001 Improvement Project** at Bushkill Falls Road (SR 2001) and Federal 209 – pedestrian improvements required for federal projects were not included in the NPS design or reconstruction of the intersection. Impacts to the Peters House historic resource were not even mitigated minimally to create public accessibility.

- **The McDade Trail-Bushkill Creek crossing** has been a series of non-compliant surface applications to the deck of the existing Federal 209 Bridge. During the course of the *BG TIP 2024 project*, NPS rejected partnership strategies by Lehman Township to create a dedicated, safe, and compliant segment of McDade Trail in the form of a new trail bridge over Bushkill Creek. Refer to Section 2.3.
- **The DEWA Draft Visitor Use Management Plan (VUMP) began by NPS proposing tolls for all motor vehicles using Federal 209** between Bushkill and Milford. The NPS strategy would have impacted transportation systems both inside and outside of DEWA boundaries, but the NPS proposal was not supported by environmental/financial analyses that are required to assess impacts from such a project proposal.

The public unanimously opposed the NPS predetermined “tolling” to solve visitor issues it had described in DEWA. The Bushkill Gateway area (between Fernwood and Bushkill Villages) would have been impacted, as the NPS southern “tollgate” location into DEWA.

Instead of using the public *VUMP* responses to constructively engage and address transportation and visitor service concerns in the Bushkill Gateway area, NPS simply removed the recommendation for Federal 209 road tolling and ignored all transportation and visitor needs at Bushkill Village completely in the final *VUMP 2020* report.





Figure 2.2.08 View south of Federal 209, left turn lane, and the Turn Store (left); view north of the Federal 209-SR 2001 intersection and Peters House (right).

## Methodologies

The Lehman technical team conducted site assessments and traffic counts as the basis to develop preliminary engineering for ped/bike safety and multi-mobility access improvements within the Bushkill Village area of DEWA. The team used multiple sources of data, including:

- On-site investigations
- Review of previous relevant documents
- New traffic counts – conducted by the Lehman technical team
- Communications with NPS and PennDOT Districts 5 and 4

### Traffic counts

Traffic counts were conducted by the Lehman technical team at the intersection of Federal 209 & SR 2001 (Bushkill Falls Road) in Bushkill Village. These counts supplemented previous traffic count data collected during the BVCS 2017 project. Refer to Appendix Exhibit 4.2.2

### Traffic projections

Traffic projections were calculated by the Lehman technical team for the intersection of Federal 209 – SR 2001 as the basis for preliminary engineering of future turning lane storage lengths and highway lane geometry modifications that will be needed at the Bushkill Village center, based upon the traffic volume increases projected by year 2040. Refer to Figure 2.2.09 Bushkill Village Traffic Counts. Refer to Appendix Exhibit 4.2.5.

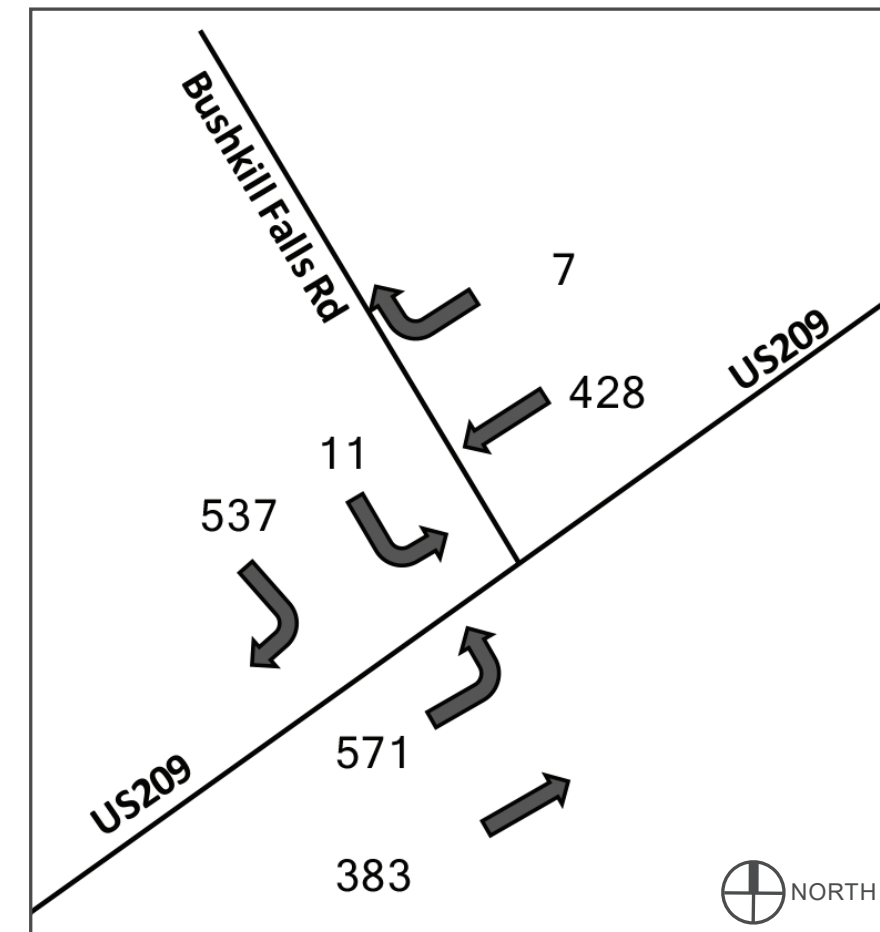


Figure 2.2.09 Bushkill Village Traffic Counts, Intersection of Federal 209 (US 209) and SR 2001 (Bushkill Falls Rd): Projected 2040 Total Summer Saturday Peak Hour Traffic Volumes, completed 8/13/2022.





Figure 2.2.10 Existing [A-B] Federal 209 Bridge deck geometry

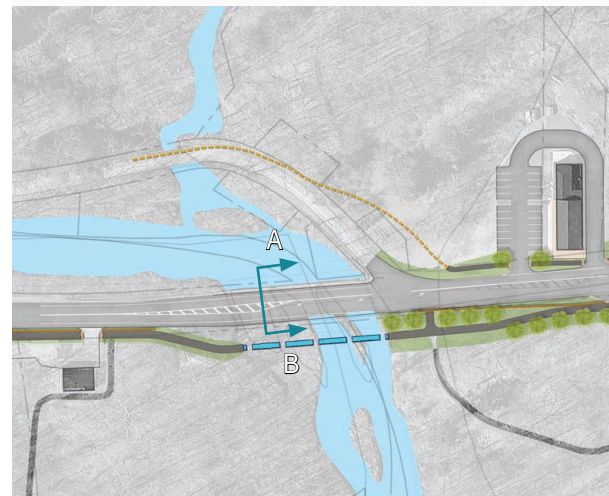
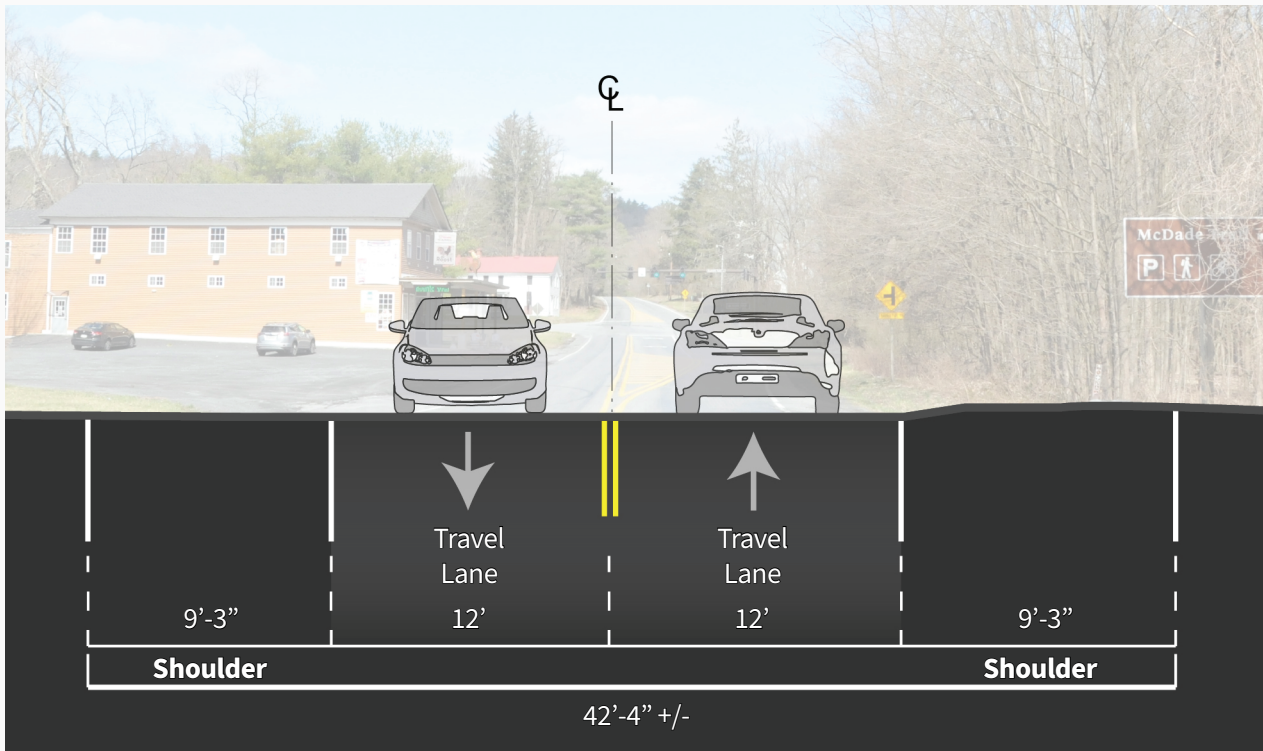
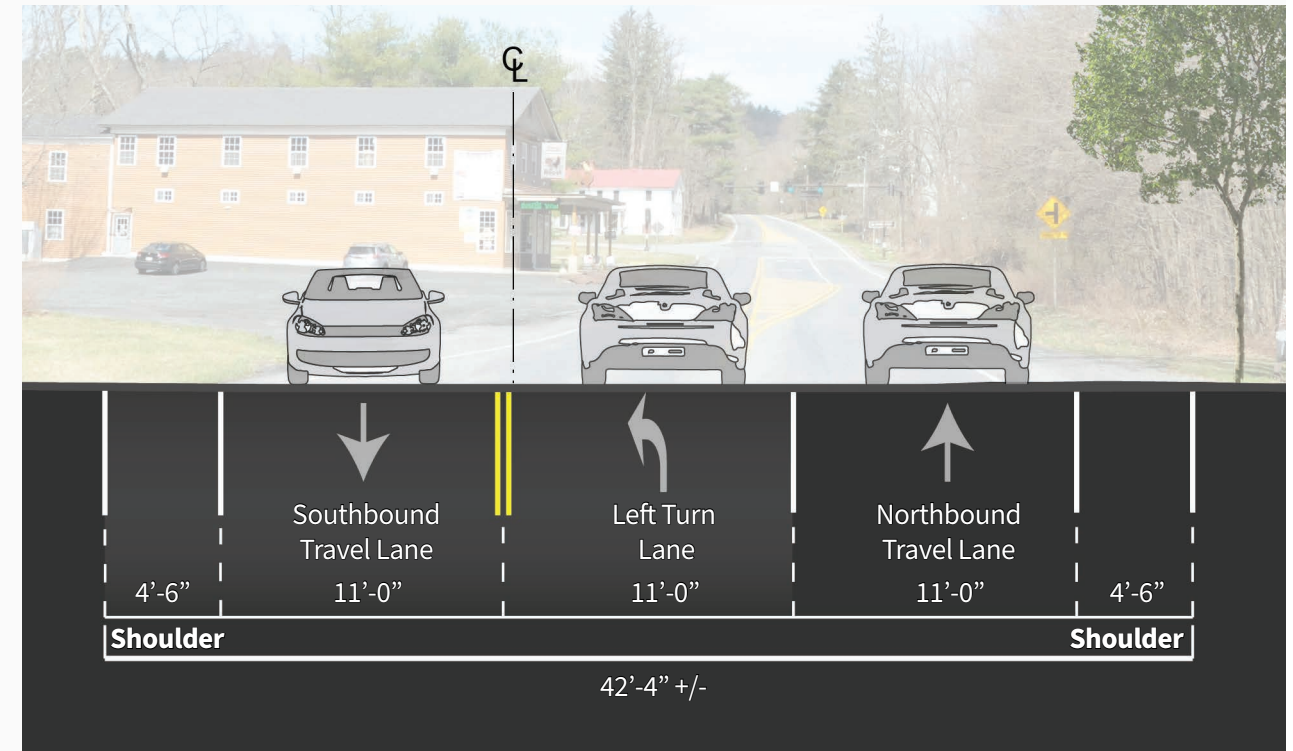


Figure 2.2.11 Preliminary engineering of [A-B] modified lane geometry to serve projected northbound left turning lane, extended southward over the existing Federal 209 Bridge.



## Federal 209 modifications needed

### Pedestrian/bike safety / access improvements

Preliminary engineering for ped/bike safety and multi-mobility access improvement designs in Bushkill were based on multiple modern transportation strategies for the Federal 209 corridor through the Village, including:

- **A coherent, safe, and accessible walkway system** along Federal 209 is warranted in Bushkill Village.
- **The walkway and bike systems should be designed in compliance with AASHTO standards.**
- **Pedestrian facilities should be safe and accessible along preferred segments** on both sides of Federal 209.
- **A continuous, accessible walkway alignment should extend on the eastern side of Federal 209** from the NPS Meeting Center (in Middle Smithfield Twp.) to the SR 2001 intersection (in Lehman Twp.).
- **An accessible walkway should extend along the west side of Federal 209** from Creek Road across the SR 2001 intersection to the Peters House.
- **A pedestrian facility should be included on the upstream side of a new Creek Road Bridge** replacement over the Little Bush Kill Creek, with an accessible walkway connection to Federal 209.
- **Several walkway linkages to the McDade Trail alignment should be designed** as part of the Federal 209 Improvement program for Bushkill Village.
- **The walkway alignment on the east side of Federal 209 should connect seamlessly to a new Federal 209 Bridge** over Bushkill Creek, with a fully-compliant trail facility on the downstream side of the deck.
- **A walkway link should be designed and built to reach the Dutch Reformed Church** on the east side of Federal 209, north of the SR 2001 intersection.
- **A walkway link should be designed and built between the restroom facilities/ parking area near the former train station** site and the intersection of Federal 209 and SR 2001.
- **Crosswalks and pedestrian-activated traffic signals that were not built as part of the PennDOT improvements project are essential safety features that must be constructed** at the intersection of Federal 209 and SR 2001.
- **An ABA (ADA-accessible) walkway/ramp should be built** between the Federal 209 intersection with SR 2001 and the front entry of the Peters House.
- **Treatment options for ped/bike improvements** should meet AASHTO standards with design exceptions considered where merited for access, conservation, and where important to define a negotiated, preferred cultural landscape character for Bushkill Village.

- **Pedestrian control features —** Appropriate “streetscape” elements can be carefully designed to control and direct pedestrian movements within Bushkill Village.

Of particular concern is the eastern segment of Federal 209 between the the Federal 209 Bridge and the SR 2001 intersection, where pedestrians and cyclists need to be directed to cross at a modern, accessible, pedestrian-activated, signalized crossing.

Using a durable split rail fence with concrete posts is a traditional device that is common vernacular to delineate edges of travel corridors.

An appropriate physical barrier of this type along this segment is the only means to effectively prevent random, renegade, mid-block crossings of Federal 209 between the Turn Store (west) and McDade Trail (east).

Other appropriate “streetscape” treatments are identified that relate directly to influencing travel behaviors along a corridor, including the traffic calming effects of street tree canopies.

### McDade Trail integration

The McDade Trail exists as a walking and biking route that extends nearly the entire length of DEWA on the Pennsylvania side of the Delaware River. The McDade Trail was never completed over Bushkill Creek in Bushkill Village. The long term “interim” facility that NPS has delineated as a painted lane on the deck of the existing Federal 209 Bridge does not meet modern safety or accessibility standards and needs to be replaced with a fully compliant facility.

Programming a new Federal 209 Bridge that includes a compliant trail facility on deck is the central element to transportation improvement priorities in Bushkill Village. The McDade Trail approach improvements must be included in the new bridge replacement program along segments between NPS Meeting Center and the Federal 209 - SR 2001 intersection.

### DEWA Shuttle - Transit improvements

The preliminary geometry of dedicated pull-off lanes for the Monroe County Transit Authority-operated shuttle serving DEWA has been developed based on shuttle size to allow for the safe pick-up and drop-off of passengers in Bushkill Village.

The preliminary engineering shows shuttle pulloff locations on both northbound and southbound directions of Federal 209 at the center of Bushkill Village, directly adjacent to formalized pedestrian routes that need to be created.

Final locations and geometries will be determined in the Federal 209 Bridge replacement project design phase.

### Cultural resource requirements considerations

The transportation improvements strategies recommended support cultural resource conservation and cultural landscape treatments that are appropriate for Bushkill Village.



Appropriate treatments for Federal 209 corridor

Elements



1 Fence



2 Access gate



3 Bus shelters



4 Peters House seat wall

Walkways



5 Asphalt



6 Concrete



7 Stone Dust

Plants



8 Bioswales



9 Tree canopy

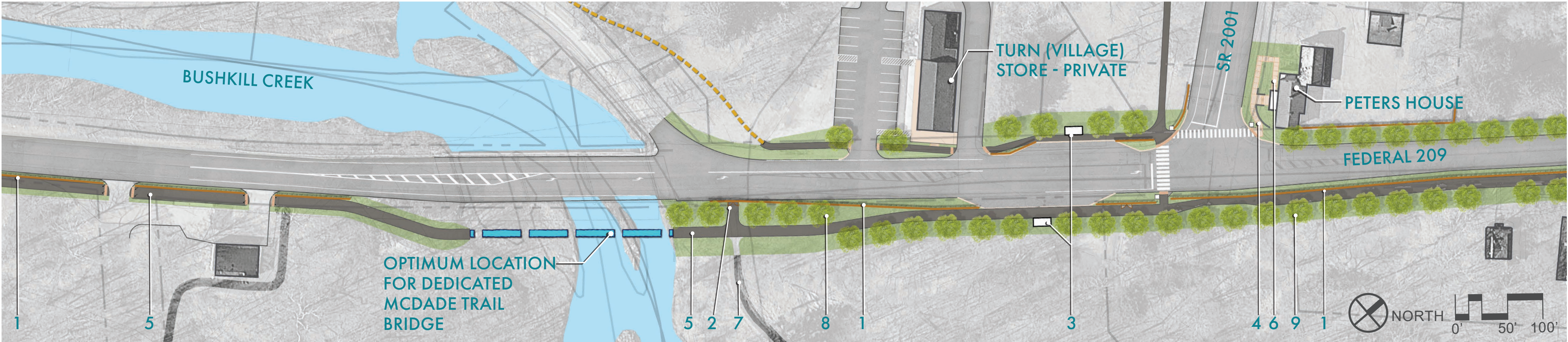


Figure 2.2.12 Palette of appropriate transportation-related streetscape elements for Bushkill Village. Note - highway base plan shows future lane geometry.



Examples of appropriate transportation-related streetscape treatments for Bushkill Village



Figure 2.2.13 (Above) Existing conditions of the Peters House and Federal 209-SR2001 intersection. (Below) Photosimulation of Peters House accessibility improvements.



Figure 2.2.14 (Above) Existing conditions of the Federal 209-SR2001 intersection. (Below) Photosimulation of Federal 209-SR2001 intersection improvements, including DEWA shuttle loading area.



## 2.2.4 Site Plan for Pedestrian/Bicycle Improvements in Bushkill Village

### Program - for multi-modal improvements in Bushkill Village

- **Walkways** between Bushkill Village destinations that are dedicated, safe, and accessible.
- **Crosswalks** at Federal 209 and SR 2001 intersection that are ADA/ABA accessible.
- **Universal access** to historic resources – including the Turn Store and Peters House.
- **McDade Trailhead walkway links** to visitor parking / service locations.
- **DEWA shuttle stop access** with safe and accessible routes to all Bushkill locations.
- **Visitor support elements** such as user shelter location(s), travel/interpretive location(s).
- **Visitor parking improvements** with integrated ped/bike safety designs.
- **Highway access to parking** areas designed to modern standards.

### Costs

Refer to Section 4 - Task 2 for costs.

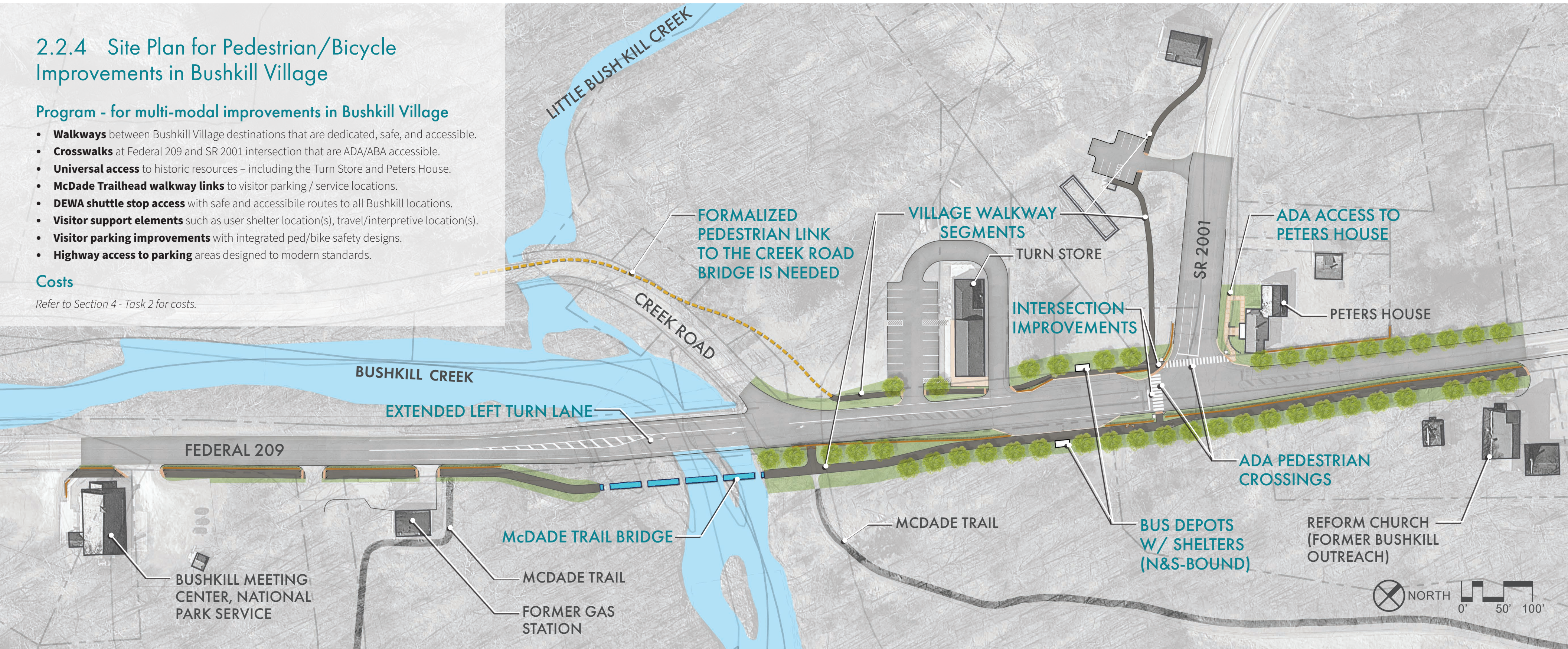


Figure 2.2.15 Site Plan for Pedestrian-Bicycle Improvements in Bushkill Village. Note - preliminary engineering for future lane reconfigurations of Federal 209 are shown.

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Figure 2.3.01 View upstream of Bushkill Creek at the Federal 209 Bridge



## 2.3 Task 3

## McDade Trail over Bushkill Creek

### 2.3.1 Concept Origin

Bushkill Creek is a major watercourse that flows through the Delaware Water Gap National Recreation Area (DEWA). It forms the boundary between Pike and Monroe Counties; Lehman and Middle Smithfield Townships; and PennDOT Districts 4 and 5.

The Federal 209 Bridge crosses Bushkill Creek just upstream of the Delaware River confluence and is a **lifeline transportation structure**.

Local residents and DEWA visitors rely upon Federal 209 to travel north-south through Pike and Monroe Counties, and it is the sole route for all traffic through Bushkill Village. Residents travel through Bushkill daily, and East Stroudsburg School District buses twice daily to deliver students to the Lake-Lehman Junior/Senior High School campus in Lehman Township. Local users may represent a greater annual volume than that of DEWA visitors who use the bridge, but this exact metric is unknown because NPS does not differentiate types of users on its roads.

Since the McDade Trail was built by NPS, the Federal 209 Bridge has served as the de facto crossing for that national trail over Bushkill Creek, with facilities in the form of a painted shoulder on the downstream side of the bridge deck.

The FHWA-funded *Bushkill Village Conservation Study 2017 (BVCS 2017)* identified Bushkill Village as an important user location within DEWA; it identified opportunities for a new McDade Trail ped/bike bridge over Bushkill Creek to serve as a central organizing element of transportation infrastructure for visitor safety, access, and non-motor vehicle mobility within the Village.

The NPS initially supported Lehman Township to advance the preliminary engineering for a McDade Trail Bridge as Task 3 of this *Bushkill Gateway Transportation Improvement Plan 2024 (BGTIP 2024)*, but withdrew support for the bridge after the Township submitted an application for federal funds, through PennDOT, to complete final engineering, environmental clearances, and construction. This NPS policy reversal changed the course of the local and county partners' plan.

Considering the role of the Federal 209 Bridge as an essential “lifeline” to local communities, regional partners, and to NPS — and the age, physical condition, and geometric deficiencies of the existing bridge (originally built in 1939 and replaced in 1956); — Lehman Township and partners shifted the focus of the Task program from the need for a separate trail-only bridge to the urgent need for a Federal 209 highway bridge replacement.

The new structure will safely serve all projected future traffic demands, including McDade Trail users.

“Ownership” of the Federal 209 Bridge and its direct impact on replacement is now the primary issue to be addressed. The bridge is located entirely within NPS jurisdiction but serves a high percentage of non-“park” traffic.

The existing structure must be considered at-risk, given its age, the combined legacy of previous destruction from the 1955 Flood at this exact site, and the devastating impacts of Hurricane Ida in 2021 on similar creeks and bridges in downstream Delaware River communities.

The history of notoriously slow NPS highway repairs serves as a regional alert to begin immediately to plan the future of the Federal 209 Bridge over Bushkill Creek. During the Lehman Team's process of developing a design for a new McDade Trail Bridge, NPS provided no plans when asked for a schedule of replacement for the Federal 209 Bridge. This same bridge, if within PennDOT jurisdiction, would be identified on a Commonwealth system schedule for repair/replacement.

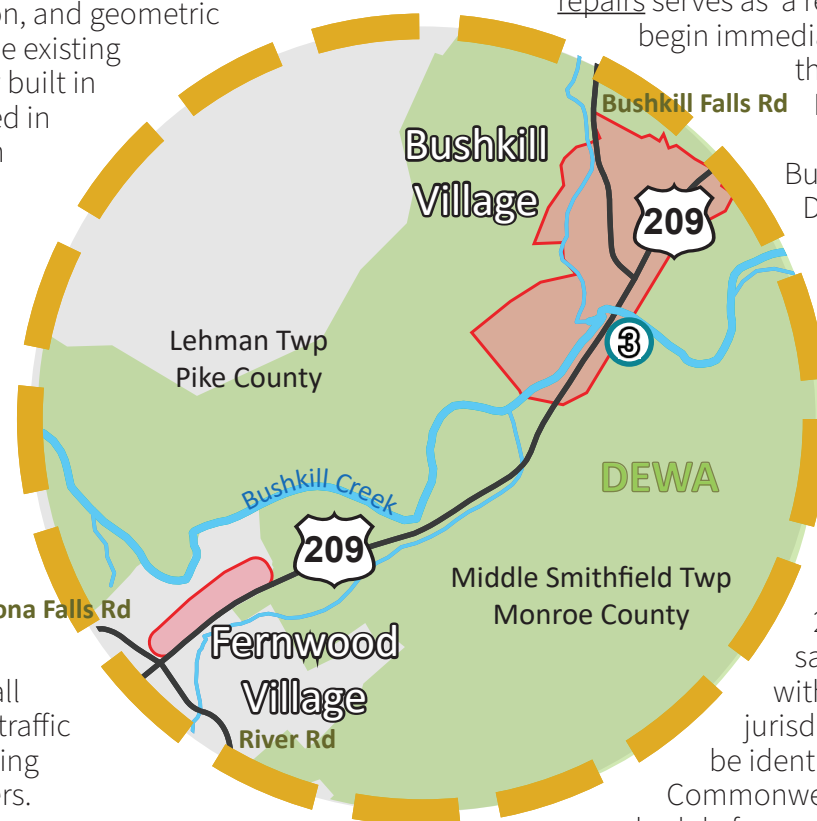


Figure 2.3.02 Task 3 project area site context





### 2.3.2 Summary of Findings

#### NPS Action on McDade Trail Crossing of Bushkill Creek

1. **NPS has no commitment to create a dedicated McDade Trail Bridge** over Bushkill Creek within DEWA.
2. **NPS has ignored Bushkill Village** as a major visitor service area within DEWA – despite its strategic “national park entry” location; its multiple existing user amenities; its use as a major McDade Trailhead; its well-established DEWA shuttle stop; its unique visitor asset of the privately-owned village store/restaurant within DEWA boundaries; and multiple unanswered attempts by Lehman Township to assist NPS with stewardship in the Village.
3. **NPS withdrew support from the McDade Trail Bridge strategy that it originally supported** in the successful FLAP funding application that was awarded to Lehman Township by FHWA.
4. **NPS withdrawal from the regional FHWA-funded DEWA partner planning process raises alarm** that NPS has shared no strategic alternative to replace the aged Federal 209-Bushkill Bridge with a modern, resilient, safe, and accessible multi-modal highway bridge.

#### Bridge Assessment: McDade Trail Crossing of Bushkill Creek

5. **Any Federal 209 bridge over Bushkill Creek is a public lifeline structure** at this strategic geographic location and is essential to regional safety and economy in northeast Pennsylvania. This bridge is beyond being considered as an internal “national park” structure that is subject to only NPS discretion.
6. **The existing Federal 209 Bridge is at increasing risk of catastrophic loss** akin to the loss of the previous bridge in this vulnerable location from the Flood of 1955. Increasing severity and duration of regional and national storm events, the size of the Bushkill Creek watershed, and the structural capacity of the existing structure are cause for concern.
7. **The existing Federal 209 Bridge geometry is functionally obsolete** when NPS attempts to include the McDade Trail program on the existing deck.
8. **Multiple deficiencies of the NPS McDade Trail as it is currently painted on the Federal 209 Bridge** are non-compliant with AASHTO standards. These items include: the width of the painted two-way “trail” lane; the lack of distance or barrier between vehicular and trail traffic; and the lack of bike safety railing on the bridge parapet walls.
9. **A new, separate McDade Trail Bridge is possible to be engineered to serve NPS and emergency vehicles** in the event service is lost on the existing Federal 209 bridge.

#### Traffic & Roadway Assessment: Federal 209 Crossing of Bushkill Creek

10. **Traffic projections show that a future queue of cars will extend back over the Federal 209 Bridge**, requiring a significantly longer storage lane for those travelers waiting to turn left on Bushkill Falls Road. The existing Federal 209 Bridge deck lacks room for a third vehicular lane without sacrificing the painted McDade Trail lane and/or highway shoulders.
11. **The Lehman engineering assessment does not recommend retrofitting a cantilevered McDade Trail deck structure**, outside the existing Federal 209 Bridge substructure for multiple structural and economic reasons.
12. **A new Federal 209 Bridge replacement project will be a multimodal design to incorporate critical transportation / recreation / conservation features**, including:
  - Improved hydraulic opening engineering.
  - Critical streambank stabilization measures for Bushkill Creek.
  - Dedicated, traffic-separated, and fully-compliant McDade Trail facility on deck.
  - Structural improvements to the highway roadbed on the southern 209 approach.
13. **A hydrologic & hydraulic analysis (H&H) was completed for the Bushkill Creek** in the reach directly upstream and downstream of the Federal 209 Bridge by the Lehman technical team as part of Task 3 services. This data emphasizes the imperative for partners to expedite a replacement for the existing Federal 209 Bridge over Bushkill Creek.





Figure 2.3.03 View upstream at the existing Federal 209 bridge over Bushkill Creek (2020).



Figure 2.3.04 View downstream - water levels of Bushkill Creek at the Federal 209 bridge crossing one week after Hurricane Ida (September 9, 2021).



Figure 2.3.05 View north of bridge deck on Federal 209 at the Bushkill Creek crossing (2020).



Figure 2.3.06 View north of McDade Trail as a painted lane on the bridge deck of Federal 209 at the Bushkill Creek crossing after the 2021 bridge maintenance / repair project completion.

## 2.3.3 Analysis: McDade Trail crossing options at Bushkill Creek

### Goal

The goal of Lehman Township and partners, since the *BCVS 2017* was completed, has been to create a safe and accessible McDade Trail crossing where one was never created, as originally envisioned over Bushkill Creek in Bushkill Village.

The original *BCVS 2017* strategy was to create a new bridge that would serve as the infrastructure centerpiece of a ped/bike friendly visitor landing site for DEWA users at the major McDade Trailhead location in Bushkill Village.

The partner goal for this *Bushkill Gateway Transportation Improvements Plan 2024 (BGTIP 2024)*, was refocused to expedite a replacement of the existing Federal 209-Bushkill Creek Bridge, after NPS withdrew support for this FHWA-funded planning project that Lehman Township and partners had begun with NPS.

### Program (options)

The programs for a trail crossing facility over Bushkill Creek share similarities, whether for constructing a modern, stand-alone, ADA-compliant, two-directional trail bridge, or for adding a trail facility to a vehicular bridge deck. General features include:

- Width of lanes: minimum 10'-wide trail lane
- Physical separation from vehicular traffic: 2'-4' buffer from vehicular traffic (recommended based on anticipated traffic volume)
- Height of railing/barrier: 54"
- ADA features
- Other considerations may apply

### Background

#### Alternatives for a McDade Trail – Bushkill Creek crossing

Three options for the crossing of the McDade Trail over the Bushkill Creek were assessed as part of the technical work on Task 3:

#### Crossing Option 1: Build a new, dedicated McDade Trail bridge

**The original project strategy was to create a new, dedicated McDade Trail Bridge over the Bushkill Creek.** This strategy evolved from early discussions between Lehman Township and NPS regarding the Bushkill crossing being the last missing segment of an otherwise completed McDade Trail. Over the years, NPS at DEWA spoke of early bridge plans, but no schematics were shared with the Lehman team.

**The preferred new trail bridge location was directly downstream from the Federal 209 Bridge**, based on multiple factors, including:

- Delta alluvium valley soils
- Hydraulic opening of the existing Federal 209 Bridge
- McDade trail alignment approaches (both sides)
- Optimum streambank foundation locations
- Visibility to the public
- Integration with “street-oriented” ped/bike improvements in Bushkill Village

**Lehman Township submitted a federal grant application to fund a new McDade Trail bridge** in 2017 with an NPS support letter. That PennDOT-administered “transportation enhancements” grant was not awarded.

**Lehman Township re-submitted a second grant application to PennDOT** in 2021, and NPS pulled support for the project shortly after the applicant interview in March 2022. The PennDOT regional review committee asked during the Lehman interview, “What if NPS does not cooperate?” The second application to PennDOT was not awarded.

#### Crossing Option 2: Structural addition for the McDade Trail on the existing Federal 209 bridge structure

**The geometry of the existing bridge deck cannot support modern trail facility geometry** without reducing existing highway lane width and/or sacrificing existing highway shoulders.

**The Lehman technical team engineers considered whether the existing Federal 209 bridge structure could be retrofitted to cantilever a new McDade Trail facility.**

**The technical team determined it was not a prudent investment** to attempt to structurally retrofit the 68-year old bridge, based on unknowable internal conditions of the reinforced concrete substructures and multiple liabilities of trying to modify those structures to bear eccentric loads outside the substructure footprints. Additionally, a cantilevered trail structure on the existing bridge did not remedy the new highway lane geometry projected to require a bridge deck widening within 16 years.

#### Crossing Option 3: Replace the Federal 209 Bridge with the McDade Trail on deck

**The NPS rejection of support for a separate McDade Trail bridge forced Lehman partners to shift focus to the existing Federal 209 Bridge** – and to assess the urgent regional imperatives for a modern structural replacement program.



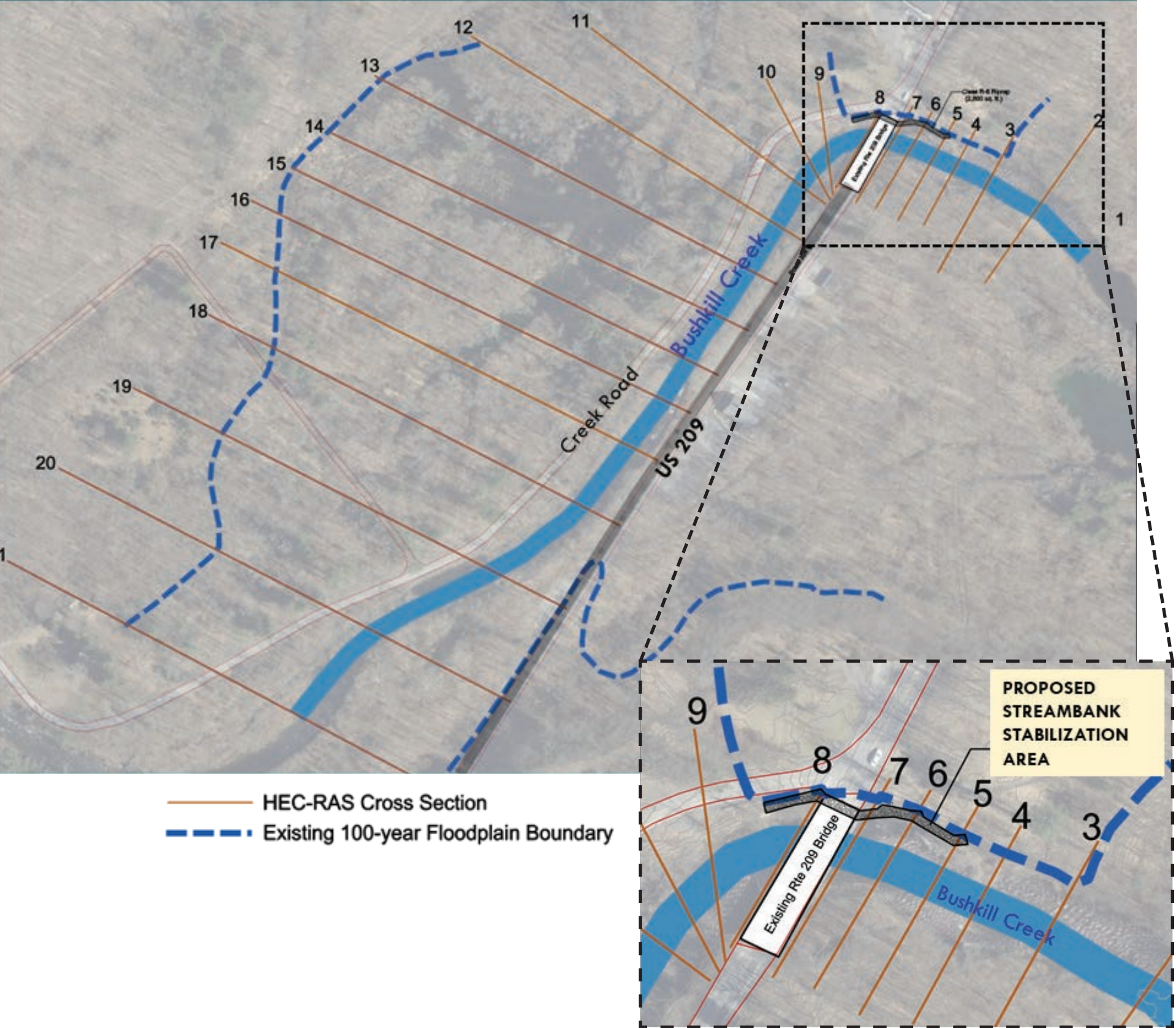


Figure 2.3.07 Hydrologic & Hydraulic Study of the 100-year floodplain boundary performed for this study (see Appendix for the full H&H Report)

Methodologies

Alternatives for a McDade Trail – Bushkill Creek crossing

Crossing Option 1: Build a new, dedicated McDade Trail bridge

The Lehman technical team used AASHTO standards as the basis to contact a prefabricated bridge manufacturer to secure preliminary engineering bridge specifications and preliminary cost estimates for a steel superstructure system.

The manufacturer specified a 3-segment pony truss system that could be assembled and lifted into place to create a clear span of 180 feet over Bushkill Creek.

The new clear span steel truss bridge would feature a deck width of 12 feet to serve the high-traffic Bushkill Village area, compared to the narrower-width fiberglass McDade Trail spans that are used by NPS to cross smaller, more remote waterways.

The strategy for the single clear span design was to reduce new substructure footprints within the creek bed and increase the hydraulic opening area under a new span directly downstream from the hydraulic opening of the Federal 209 Bridge.

The design methodology for the new abutment locations was to locate them in the downstream “shadow” of the existing Federal 209 Bridge abutments. Abutment locations would be integral to streambank stabilization improvements – especially critical on the north bank.

Design of trail approaches would be completed in the final design phase.

In preparation for grant funding applications to design/construct the new McDade Trail

bridge, the Task 3 design team service program was modified to include the completion of a Hydrologic and Hydraulic (H&H) analysis for the crossing area.

The H&H field survey was conducted during the NPS repair project for the Federal 209 Bridge (March-October 2022). The generated stream profiles accounted for both the existing conditions and the conditions anticipated with the dredging and earthwork of the 2022 maintenance project. (See pages 54-55.)

Crossing Option 2: Structural addition for the McDade Trail on the existing Federal 209 bridge structure

The question arose during the study process whether the existing Federal 209 Bridge could be retrofitted to carry a new McDade Trail structure that was cantilevered outside of the existing highway bridge sub- and superstructure geometries.

The Technical team engineers considered the information available from NPS and from on-site observations and concluded the following:

The bridge age, coupled with the unknowns of the actual substructure construction and internal conditions, made the prospect of engineering a retrofitted cantilevered bridge structure not a cost effective solution.

This assessment was also supported by traffic projections conducted by the project team that estimated that the geometry of the existing Federal 209 Bridge deck will be functionally obsolete for the three vehicular travel lanes that a bridge in this location will need to carry within 16 years or less.

This conclusion was the basis for Lehman Township and partners to refocus on the imperative to proactively replace the existing

Federal 209 Bridge with a modern, multi-modal span that will include a safe and accessible McDade Trail crossing over Bushkill Creek.

Supporting data is in the report appendix.

Crossing Option 3: Replace the Federal 209 bridge with the McDade Trail on deck

The original project scope was refocused on the replacement of the existing Federal 209 Bridge after the NPS dropped out of the FHWA-funded partnership project with Lehman Township and regional partners.

Without NPS plans to provide a safe and compliant McDade Trail crossing over Bushkill Creek, and with no NPS replacement strategy for the Federal 209 Bridge, Lehman Township and partners refocused on the imperative to create a proactive, regional partnership strategy that is not solely dependent on NPS – to replace the Federal 209 Bridge and expedite the process before the aging bridge is crippled by materials fatigue or damaged by high water events.

The methodology to expedite the schedule for a Federal 209 Bridge replacement project is dependent upon a collective regional urgency to move the project development outside of NPS-only management. A regional partnership conversation is required that is not dominated by NPS.

This process is supported by the products in this FHWA-funded report, including the H&H Study; the traffic projections for Bushkill Village; the preliminary engineering for safe and accessible ped/bike improvements in Bushkill Village (Task 2); and the larger, smart partnership strategy – conceived by NPS – to create a McDade Trailhead in Fernwood that helps limit auto traffic that enters DEWA (Task 1).





Figure 2.3.08 Example: Retrofitting an existing bridge structure to accommodate a multiuse trail. (Left) BEFORE (2016)-Upper Providence Township, PA. The Schuylkill River Trail over the Schuylkill River. (Right) AFTER (2020)-Upper Providence Township, PA. The Schuylkill River Trail over the Schuylkill River. Note added trail lane width, protection from traffic, rail heights and signage.

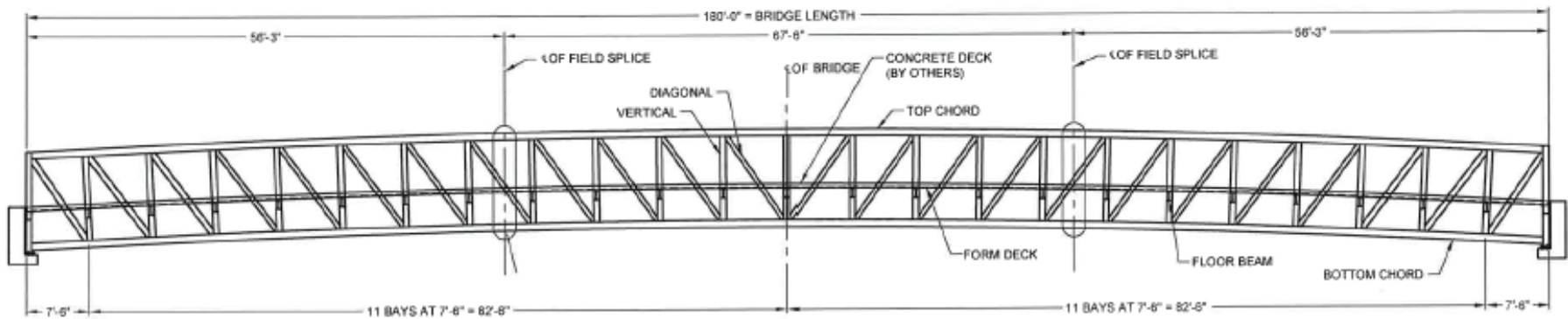


Figure 2.3.09# Prefabricated Bridge Plan for McDade Trail Crossing of Bushkill Creek. A clear-span width of 180' is provided.



Figure 2.3.10 Sketch of the conceptual McDade Trail bridge (as viewed from Federal 209 Bridge deck)



Figure 2.3.09 Sample image of prefabricated ConTech<sup>TM</sup> trail bridge structure. Baxter Trail, Philadelphia, PA (Photo courtesy of ConTech<sup>TM</sup>).





Figure 2.3.11 The Federal 209-Creek Road intersection at Bushkill Creek (2021)

### Hydrologic & Hydraulic (H&H) Analysis

Channel and streambank topography was surveyed in its existing condition, and was modeled using the dredged topography that was a result of the 2022 maintenance project. There was little difference in both creek elevations and velocities between both sets of modeling data.

*The full H&H report is included in the appendix of this report.*



Figure 2.3.12 Simulated rendering of 100-year flood levels at the Federal 209-Creek Road intersection.

### Streambank Stabilization

Streambank stabilization along Bushkill Creek is important in different ways for various segments of the waterway.

The alignment, construction, and maintenance of the Bushkill Creek corridor – from Sand Hill Creek to the location of the Federal 209 Bridge – is basically directed by a “causeway” created by the Federal 209 highway alignment that contains the Bushkill channel to the west.

The original native trail alignment was built as a ford across this area of broad but shallow delta that forms the geologic confluence of the Bushkill watershed with the Delaware River, directly upstream from the Walpack Bend.

As the highway structure was formalized, 20th Century buildings were built on the river side of Route 209 on the Middle Smithfield side of Bushkill Creek. These structures, including the extant (church) NPS Meeting Center, were built in a shifting alluvial floodplain. This underlying geology affects any decisions about the future improvements to the southern highway approach to a new Federal 209 Bridge.

There will be engineering decisions in the next phase to determine how new hydraulic opening geometries for a replacement Federal 209 Bridge may influence the roadbed design of the southern approach to the new Federal 209 Bridge, so that it is able to withstand the erosive forces of the Bushkill Creek that regularly surge against the highway during peak storm events. These future engineering analyses will benefit from the H&H studies performed in this FHWA-funded study, providing critical rationale for streambank stabilization measures on the north bank.

The southern approach and the Federal 209 Bridge together form the regional “lifeline highway” project that cannot be allowed to fail before a replacement is implemented.



Figure 2.3.13 The existing northern streambank downstream of the Federal 209 crossing of Bushkill Creek.

The north side of Bushkill Creek in Lehman Township is also composed of geologic alluvial soils and is vulnerable in different ways than the riparian edges across the Creek in Middle Smithfield Township. Streambank stabilization measures along the Lehman Township banks are in line for direct impacts of the Bushkill Creek flows on both upstream and downstream sides of the existing Federal 209 Bridge. These serious erosion threats are considered to be critically important by both NPS and the Lehman team.

The Summer 2022 bridge maintenance project included adding basic rip rap armoring to areas of the northern Bushkill streambank directly upstream and downstream of the existing Federal 209 Bridge abutment. At the same time, the Lehman team was preparing streambank stabilization recommendations to accompany recommendations for a new Federal 209 replacement bridge.

During this process, the Lehman Team met with representatives from the National Fish and Wildlife Foundation (NFWF) and US Fish & Wildlife Service (USF&W) to discuss options that might be possible for a partnership project where streambank stabilization and habitat enhancement improvements could help match the construction funding for a new Federal 209 Bridge.



Figure 2.3.14 Preparation for stream dredging operations performed with the 2021 Federal 209 bridge maintenance operations. (September 2021).

Based on guidance from NFWF/USF&W, which was coupled with the Lehman Team assessments of field conditions, it appears that the volumes and velocities of a surging Bushkill Creek as it is forced to turn 90 degrees to flow under the Federal 209 Bridge will likely require a level of structural armoring, which may be coupled with vegetative measures, but will not withstand the impacts of Creek flows with vegetative streambank restoration alone.

Field observations of the northern banks, both upstream and downstream of the existing Federal 209 Bridge, show remnants of previous embankment walls and/or abutment structures that are falling into the creek bed and creating obstructions. The need to protect against the erosive forces makes major northern streambank stabilization an essential part of the Federal 209 Bridge replacement project.

The grant application strategy that the Lehman team developed for the McDade Trail bridge funding included provisions for streambank stabilization improvements that would extend upstream and downstream on the north side of the Federal 209 Bridge project area.

As the project for the replacement Federal 209 Bridge is developed, the new program should include major stabilization measures for the north and south sides of Bushkill Creek upstream and downstream of the Federal 209 replacement bridge alignment.



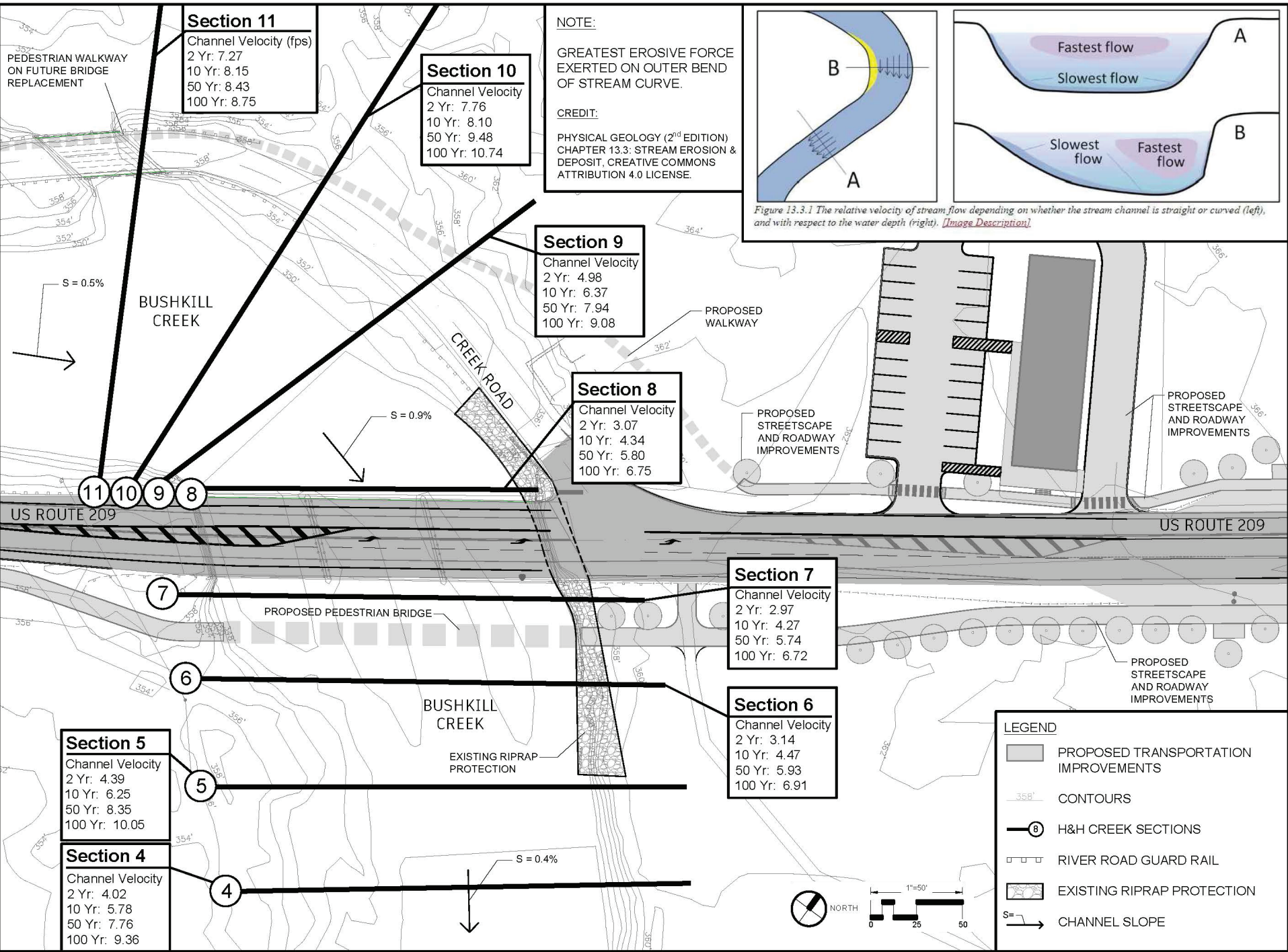


Figure 2.3.15 Stream Velocity Analysis Plan (see Appendix.) Stream velocities at section locations near the Federal 209 bridge crossing of the Bushkill Creek. Note inset graphic showing that the greatest erosive forces are produced by fast flow occurring at creek bends. (Graphic taken from 'Physical Geology (12th Ed.; Chapter 13.3 Stream Erosion & Deposit; Commons Attribution 4.0 License).

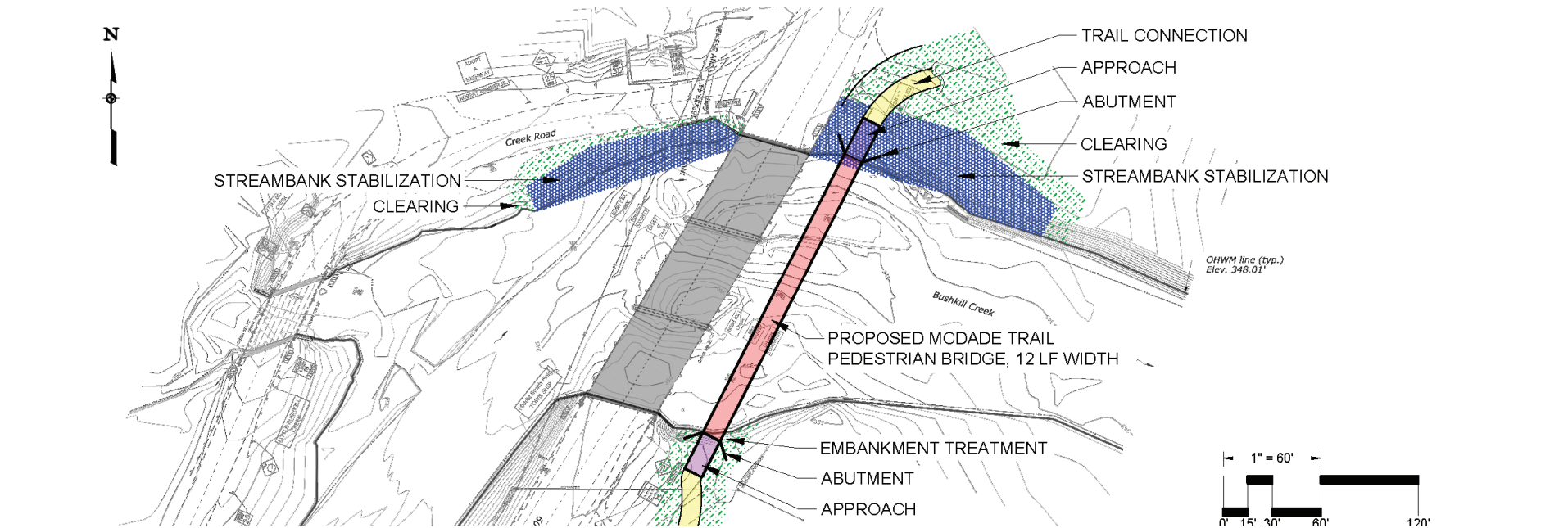


Figure 2.3.16 Schematic McDade Trail Pedestrian Bridge Plan (see Appendix.)

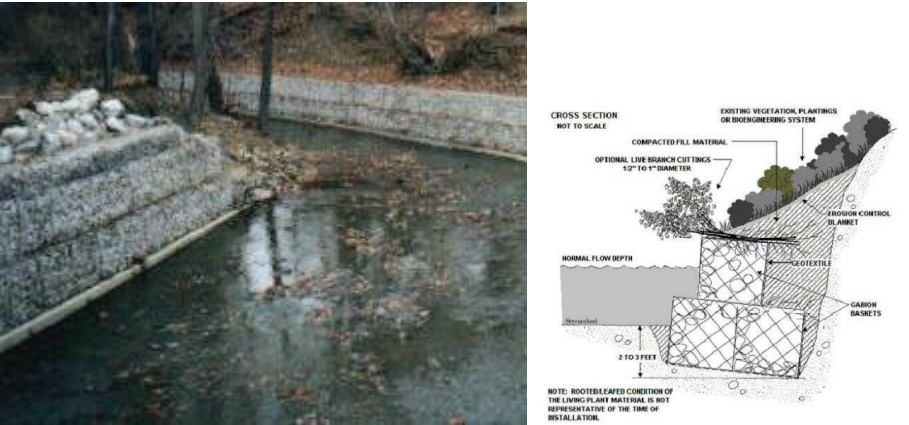


Figure 2.3.17 (Left) Example Streambank Stabilization Option 1 - Gabion Revetment System (Sample Photo : Courtesy of Gabion1, CA). (Right) Typical Gabion Revetment Section. (Courtesy of PA Department of Environmental Protection, Best Management Practices)



Figure 2.3.18 (Left) Example Streambank Stabilization Option 2 - Pre-Cast Revetment Grid (Sample Photo: Courtesy of Submar, Inc.). (Right) Typical Pre-Cast Revetment Grid. (Courtesy of PA Department of Environmental Protection, Best Management Practices)



Figure 2.3.19 (Far left) Example Streambank Stabilization Option 3 - Live Fascine Staking. A vegetative solution to velocity challenges. NOTE: The stream velocities anticipated for larger design storms by the Hydrologic/ Hydraulic model preclude this option from being considered as the primary stabilization technique at the Bushkill Creek bridge crossing. Photo of volunteers planting live stakings as part of a streambank stabilization project in Ohio. (Left) Live Staking Streambank Stabilization. (Courtesy of PA Department of Environmental Protection, Best Management Practices).



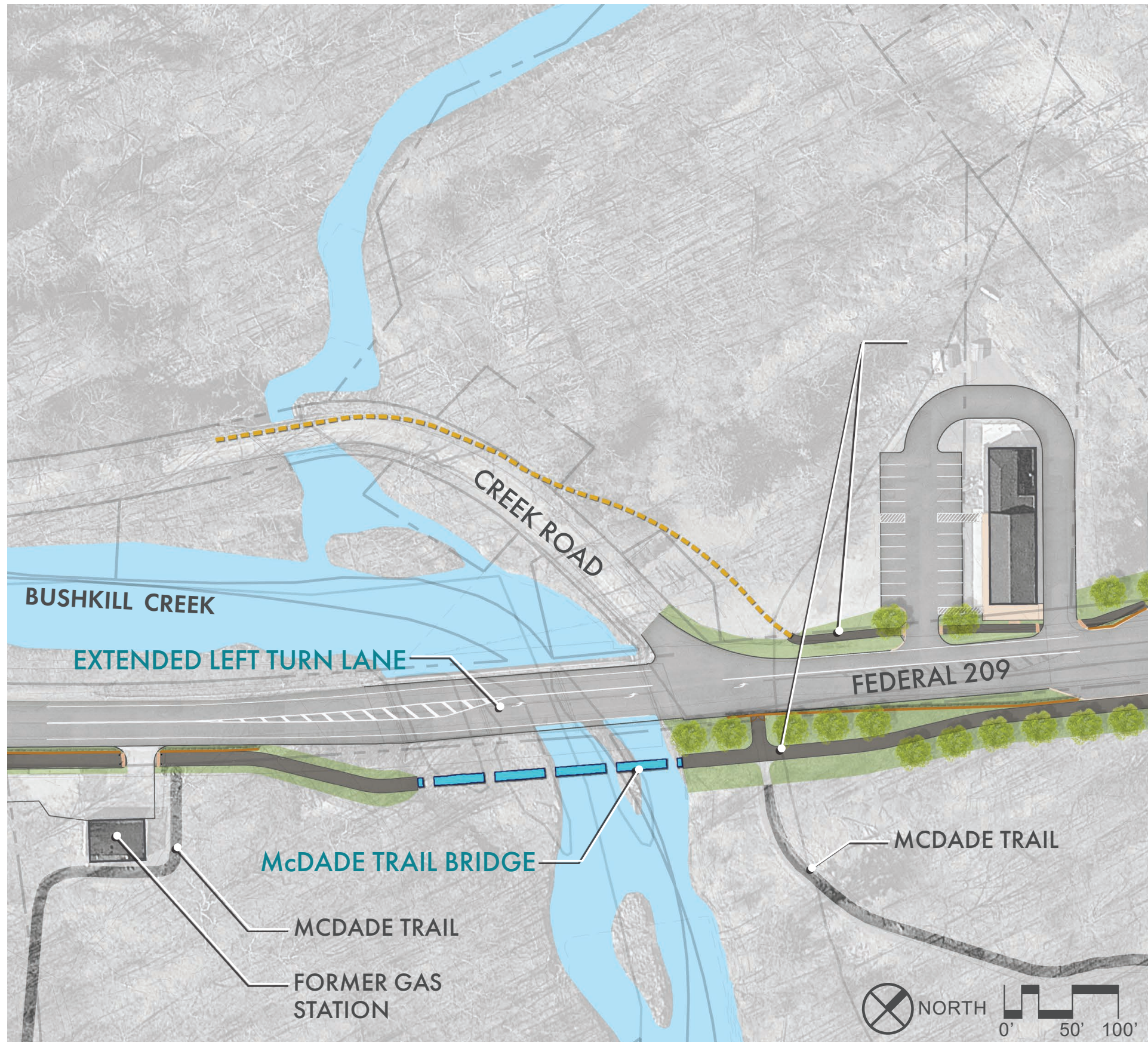


Figure 2.3.20 Site Plan for Pedestrian-Bicycle Improvements in Bushkill Village. NOTE: Preliminary engineering for future lane reconfigurations of Federal 209 are shown, but a new geometry for a replacement Federal 209 bridge is not depicted.

## 2.3.4 Site plan – McDade Trail over Bushkill Creek

The preliminary engineering plans for a new, standalone McDade Trail bridge were developed by the Lehman technical team and are included in this Task 3 chapter and the Appendix of this report.

Schematic site plans for highway geometry for a replacement Federal 209 Bridge are included in the Task 2 chapter and are directly linked to the projected traffic volume increases and the modified vehicular travel lane geometries described by the technical team engineers that extend from Bushkill Falls Road (SR 2001) intersection southward over the highway bridge location.

Task 2 notes that future traffic projections for the Federal 209-Bushkill Falls intersection will require lane and traffic signal modifications. These needed improvements are inseparable from a Federal 209 Bridge preplacement project.

As part of this imperative project, the project partners will need to ensure that NPS includes modern ABA (ADA) – accessible crosswalk facilities on both highways, which were not included in the previous SR 2001 improvement project with PennDOT.

The ped/bike improvements recommended in Task 2 are safety and accessibility features that are integral to the bridge-highway improvements described in Tasks 2 and 3.

### Costs

Refer to Section 4 -Task 3 for costs.

Cost estimates for a Federal 209 Bridge replacement project are outside the scope of this project.

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Figure 2.4.01 Sign types that currently exist in the project area.



2.4.1 Concept Origin

The original grant application for FLAP funds to complete this **Bushkill Gateway Transportation Improvement Plan 2024 (BG TIP)** was to be matched with funds from Lehman Township. After the onset of the COVID pandemic in 2019 the project was put on hold.

To restart the project, Lehman Township successfully applied to the PA Department of Community and Economic Development (DCED) for a match under the Multi-modal Transportation Fund (MTF) program.

Both programs focus on building local community partnerships for transportation improvements. The award of the MTF funds to Lehman Township included a transportation-related “Signage” element as Task 4 of this project.

Also of note, Lehman reached out to create a partnership with fellow Pike County municipality, Milford Borough, which included MTF funding specifically for Milford to conduct a similar, but separate transportation study as the gateway community at the northern end of DEWA.

The administrative collaboration between the two Pike County municipalities is a model that was cited in the successful MTF grant application. The two municipal technical projects were conducted separately, and

reports were published individually. For reference, the Milford report was published as *Milford Gateway Multimodal Transportation Improvements Plan 2024*.

The goal of Task 4 for Lehman Township and partners was to identify opportunities for partners to collaborate on coordinated travel-related signage initiatives within the Bushkill Gateway area.

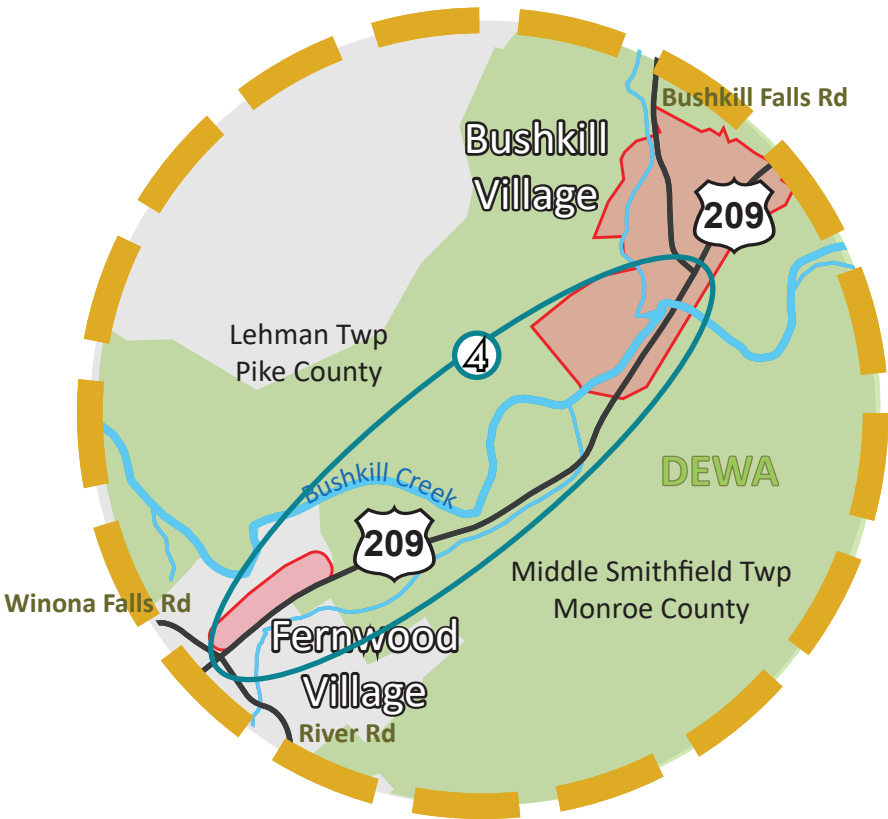


Figure 2.4.02 Task 4 project area site context



## 2.4.2 Summary of Findings

### Transportation Signage

1. **Transportation-related signage in the Bushkill Gateway project area primarily falls under two major public agency jurisdictions:**

- National Park Service (NPS) jurisdiction – lands within the DEWA boundary
- PA Department of Transportation (PennDOT) jurisdiction – state highway rights of way

**Both agencies have developed strict regulations for signage** within their respective jurisdictions.

2. **PennDOT rights of way require permits for any private-party signage** to be erected within the physical highway right of way.

3. **PennDOT signage system**

**PennDOT uses a statewide system to standardize signage types and content** that are to be displayed within PennDOT rights-of-way. Visual access to PennDOT rights-of-way is numerous on private properties that are adjacent to the state highway, and these often include locations of commercial billboards and other private signage, which are regulated by municipal ordinances.

**PennDOT jurisdiction of the Route 209 right-of-way ends where NPS jurisdiction begins** at the southern DEWA Visitor Contact Station, located directly north of Fernwood Village.

### NPS Signage

4. **NPS prohibits all private-party signage within its federal land jurisdiction.**

Special exceptions may include regulated signage for approved vendor partners operating within DEWA.

5. **NPS signage system**

**NPS has a national signage system that is recognized worldwide.** All signage within NPS jurisdiction must meet the agency signage design guidelines. All informational content is decided by NPS. External partners may make recommendations for signage improvements within NPS jurisdictions, but NPS is under no obligation to accommodate any suggestions.

NPS signage types include, but are not limited to:

- Travel (highway) – locational / directional
- Destination (trails, resources) – identity / directional
- Information – general user / interpretive exhibits

6. **NPS signage regulations apply to locations within the Bushkill Gateway project area,** including: the Federal 209 highway corridor (starting at the Visitor Contact Station north of Fernwood Village); Bushkill Village area; and potential segments of a Fernwood Village trailhead spur alignment that fall within DEWA boundaries.

7. **The only exception to NPS control of signage within the Bushkill Village area of DEWA** is the privately-owned parcel that includes the ‘general store’ (currently a restaurant), a facility that is open to serve the traveling / visiting public.

### Potential Opportunities for Signage

8. **Trail spur signage** – Implications of these two adjacent agency jurisdictions on the design of a new McDade trail spur between Community Drive and Fernwood Village include the likelihood that signage for such a trail connection would need to be negotiated with both agencies and could theoretically result in compatible signage treatments for the entire length of a new trail spur. If possible, negotiating for the trail signage system used by NPS on the McDade Trail might serve the segments of a trail spur located outside DEWA jurisdiction and offer several advantages.

9. **Other partner signage initiatives (PMVB)**

The Pocono Mountains Visitors Bureau (PMVB) has been a Lehman Township partner since before the *Bushkill Village Conservation Study 2017 (BVCS)* began. It is a shared understanding that the potential exists to better serve visitors in the Bushkill Village Gateway area; however, this would require basic service improvements in the area to be made by the NPS and its partners.

Currently, this concept languishes, dependent upon NPS acknowledgement that Bushkill Village is a prime visitor landing site on the southern end of DEWA. Engaging partners to help make the improvements will follow NPS policy change.

Concurrently, PMVB has been pursuing a separate ‘pilot’ signage system with Pike County and Milford Borough. The goal of the ‘pilot’ is to integrate the PMVB logo into a coordinated regional system of wayfinding, identity, and informational signage. The system would function on multiple levels and extend from the I-84 corridor to the local visitor landing sites in Milford Borough.

PMVB has sought funding to demonstrate Stage One of this pilot project with several applications to their DCED LSA grant program dedicated to the Pocono region.

PMVB supported Lehman Township and Milford Borough in securing DCED MTF funding for both the Bushkill and the Milford Gateway planning projects. PMVB has pledged continued collaboration with both municipalities and Pike County. Next steps include securing funds to design, fabricate, and install the pilot signage system in the Milford Gateway area.

The PMVB ‘pilot’ signage system also has value as a model for locations within the Bushkill Gateway project area that do not lie within the jurisdictions of NPS or PennDOT. These locations include a new park & ride trailhead facility in Fernwood Village, and/or on the privately-owned village ‘general store’ property in Bushkill Village.

The PMVB pilot signage project for Milford is expected to provide a coordinated signage system which functions as a highly identifiable regional wayfinding and information system that is capable of incorporating identity and information of each local host municipality.



# 2.4.3 Analyses of Signage Options

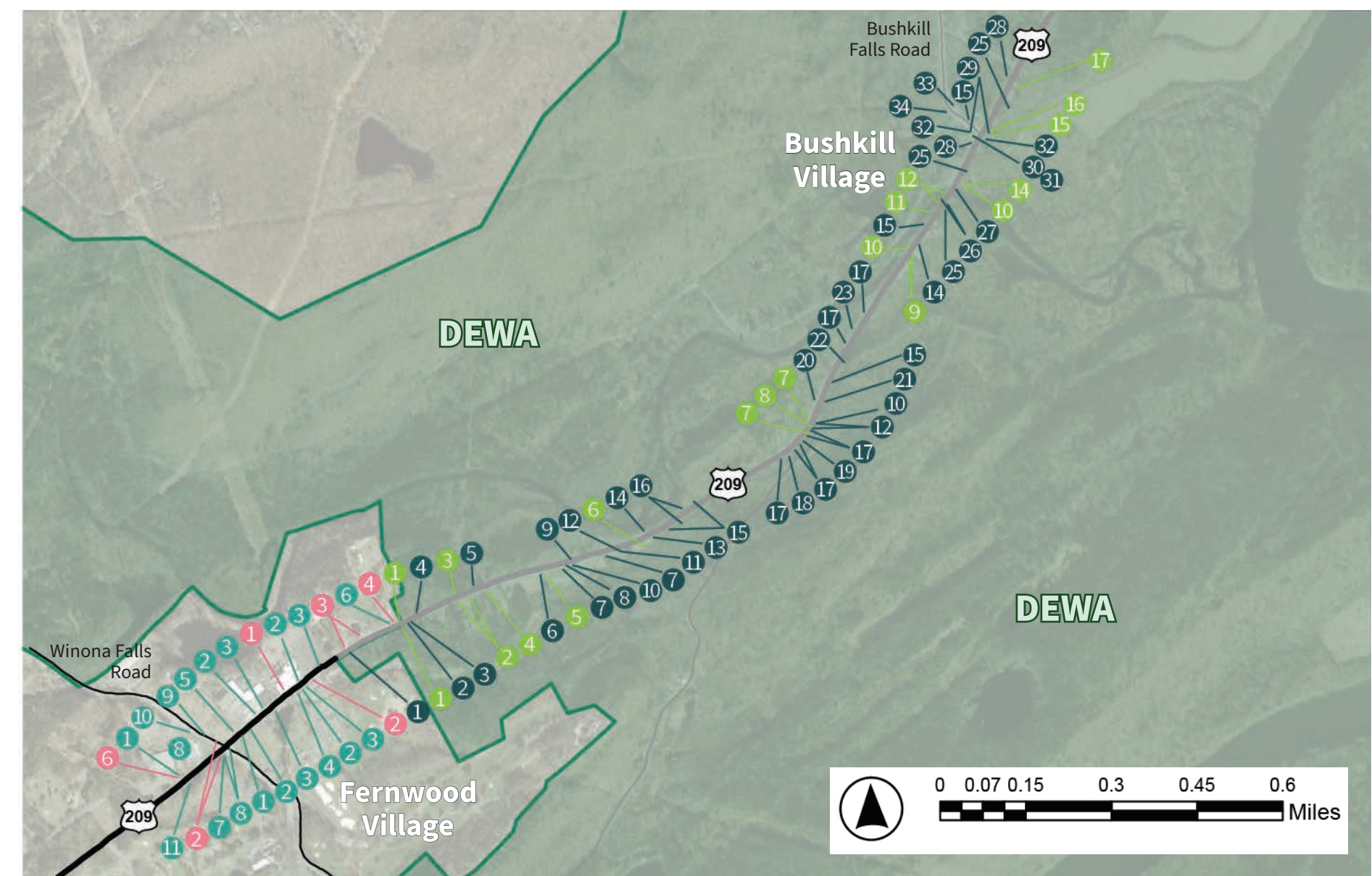


Figure 2.4.03 Existing Signage Location Map - Key Plan of the Federal 209 corridor from Fernwood to Bushkill Village showing existing sign locations along the highway.

## Assessment of Existing Signage

The Lehman technical team conducted an online windshield survey of the existing signage that is currently visible along the Route 209 corridor – both within the PennDOT Route 209 segment and within the NPS DEWA Federal 209 segment.

The data and findings of this investigation are presented for observers to begin to understand the variety and conditions of signage that currently serve the traveling public in this project area.

Inconsistencies and missing information may be noted during review of the data; however, specific recommendations to either agency to modify signage at this stage of planning is not productive or realistic, given the internal priorities and administrative processes of both agencies.

### Existing Signage

#### Traffic Signage - PennDOT



#### Traffic Signage - FHA



#### NPS Signage



#### Commercial Signage



Figure 2.4.04 Legend to Existing Signage Location Map (see opposite page). Showing the four (4) classifications of existing signage in the Fernwood-Bushkill corridor and the corresponding jurisdictional authority. All commercial signage shown is located within Middle Smithfield Township.

The best approach to coordinate signage improvements within the Bushkill Gateway project area – including the two agency jurisdictions – is to ensure that signage improvements are important program elements within critical future projects.

These future projects include the replacement of the Federal 209 Bridge over Bushkill Creek as to be coupled with all the required highway, pedestrian/bicycle, and trail improvements mandated in a federally-funded multi-modal project.



Conceptual Signage Design

Conceptual design strategies for signage within NPS and PennDOT jurisdictions are unproductive at this stage, based on the realities that internal procedures of both agencies are not typically able to respond to such planning strategies proposed by outside sources. Instead, conceptual signage design opportunities do currently exist for partners outside of NPS and PennDOT jurisdictions.

Perhaps the best opportunity for Lehman and Milford communities to improve transportation-related signage in their respective gateway areas is to continue collaborations with PMVB, whose regional vision depends on local partnerships.

PMVB has completed a preliminary pilot signage system design specifically for the Milford area. This system requires updates and retargeting to consider the FHWA MTF-funded planning projects conducted by both Milford Borough and Lehman Township.

PMVB is a long-time partner with NPS at DEWA and understands both the values of the NPS systems and the agency’s constraints.

A PMVB pilot signage project can advance signage strategies with Milford and Pike County and include consultations with Lehman Township, NPS, and other partners. However, the PMVB pilot project does not need to conform to state or federal requirements to install signage features that are located outside those agency jurisdictions.

Prime examples of locations that may foster signage creativity by PMVB with local partners include visitor landing sites administered by Milford Borough (potential, planned, or existing locations), Pike County, and/or Middle Smithfield (perhaps including a Lehman partnership) in Fernwood Village.

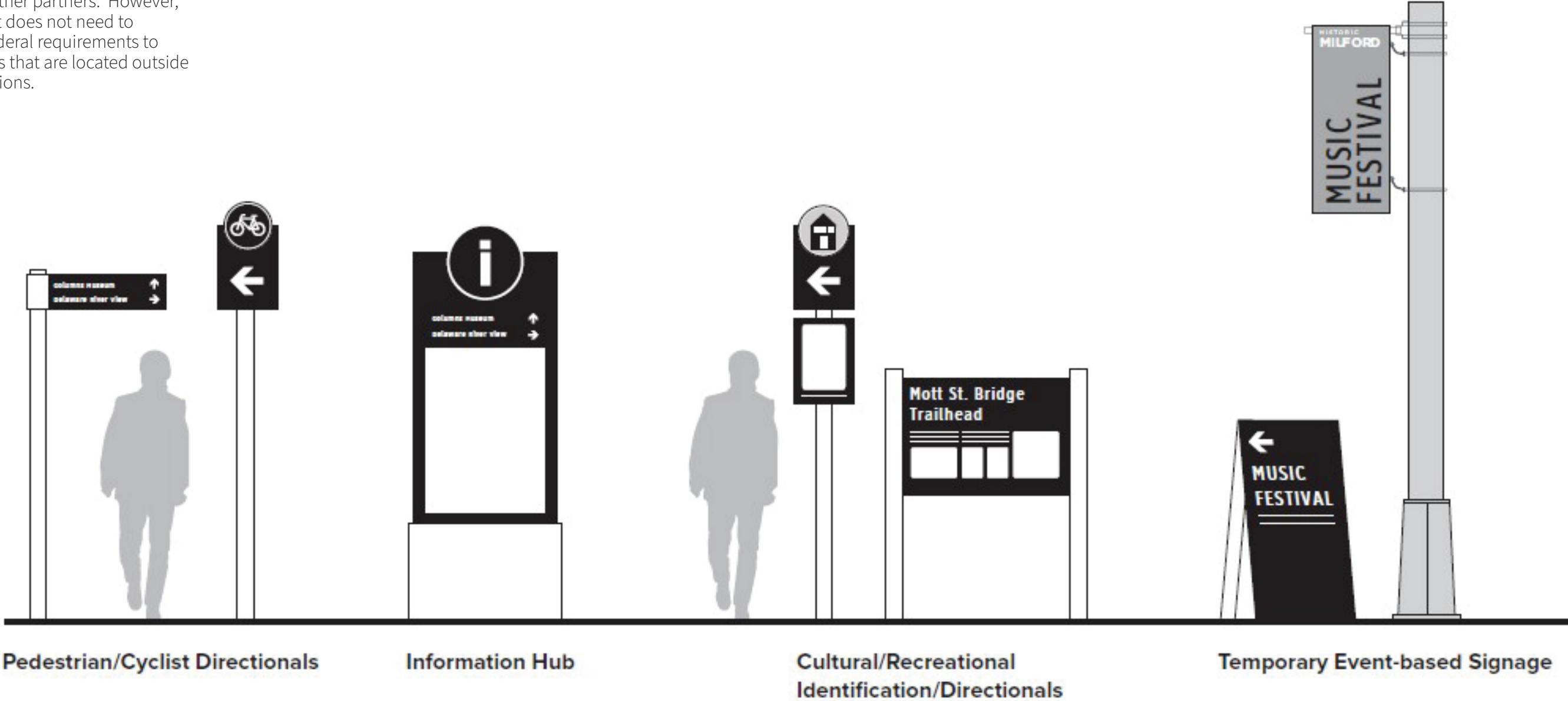


Figure 2.4.05 The Pocono Mountain Visitors Bureau (PMVB) has conceptualized a proposed signage system for Milford Borough. Milford Borough is developing a ‘companion’ Multimodal Improvements Plan 2024 with a signage component. An established theme can help guide decisions by DEWA host communities for the 209 corridor outside of NPS jurisdiction.



# 2.4.4 Strategy for Signage Improvements

There are several levels of signage improvements that can be advanced through collaborations between PMVB and local municipal partners.

## Directional signage

Signs for roadways, trails, walkways, and even water trails are directional signage that help travelers to reach starting and ending points, as well as assist navigation along a route. Directional signage for the various segments of a spur trail connection between a Fernwood Village Trailhead and the McDade Trail along Community Drive will need to meet signage requirements for both PennDOT and NPS.

Directional signage located outside these two agency jurisdictions would do well to avoid any additional design “demands” so that the entire segment presents a simple, unified signage appearance and messaging.

## PennDOT corridors

PMVB has existing partnerships with PennDOT for signage on state/interstate highway rights-of-way. This partnership can be used as a basis to expand similar previously approved signage features into other Commonwealth rights-of-way, such as Route 209 south of the DEWA Visitor Contact Station.

## Identity signage

NPS and PennDOT have identity systems for signage that do not integrate easily with other partner signage systems, except where the use of multiple logos might be negotiated.

Lehman, Milford, and Middle Smithfield all have their own unique identity graphics which they have individually translated into various municipal signage displays. Pike and Monroe Counties each have their own identity/signage systems.

One advantage to the PMVB pilot signage project approach is the PMVB goal to incorporate local partner identity graphics within its larger regional signage system so that each local partner is visually represented in signage that is sited within their jurisdiction.

“Entry” signage to municipalities, regions, and specific sites/facilities are all examples of identity signs that help travelers orient and navigate.

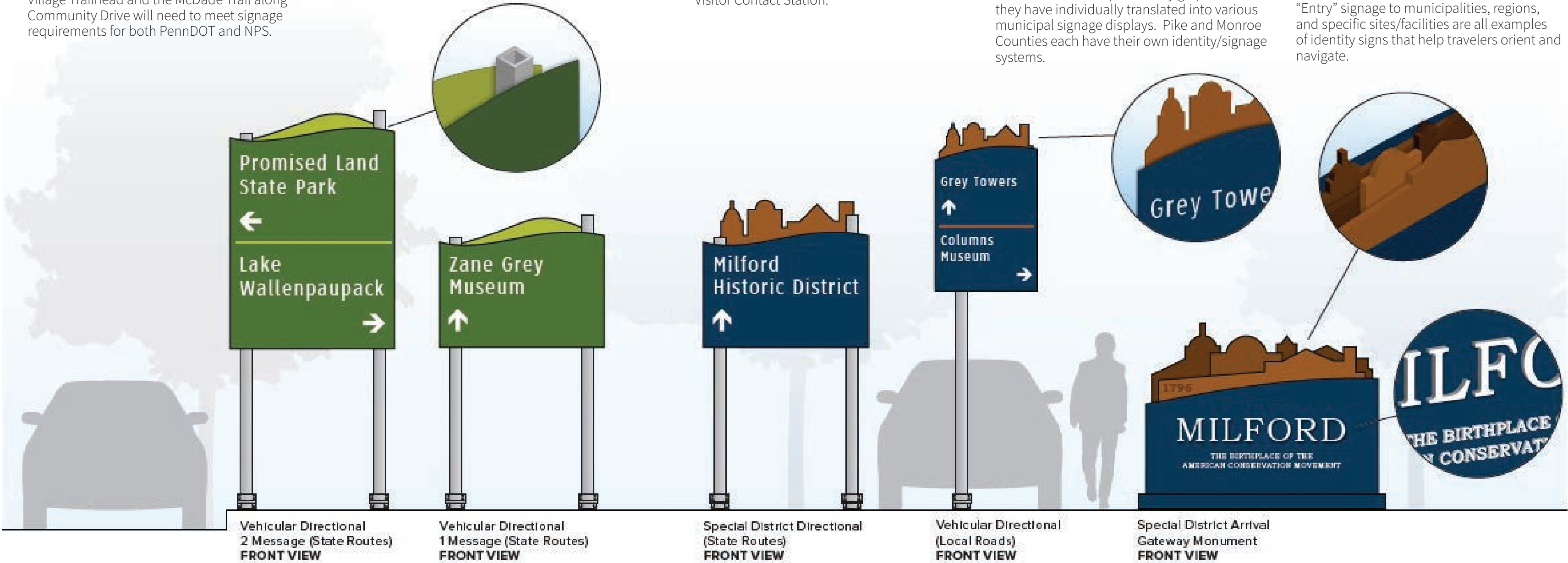


Figure 2.4.06 PMVB conceptual signage design for vehicular directional and special district directional/arrival in Milford Borough outside of NPS jurisdiction.



Informational signage

Examples of informational signage include traveler information “boards/displays” that can typically be found at parks, trailheads, and rest stops. The content of these signs varies for each site. Some signs include basic orientation information and rules about the facility. Other signs also include directories of surrounding resources – possible subscriptions for commercial partners. Some signs contain basic history to set the location within regional context for visitors. Most signs that focus on historic or cultural content are separate systems that are considered “interpretive” signage.

Interpretive Signage

Stories are told through interpretive exhibits, and the most common type is the interpretive signage system. State DOTs sometimes include such features at welcome centers and/or highway rest stops. NPS is a leader in presenting interpretive exhibits at almost every facility within its jurisdiction to tell the stories of the nation related to that specific federal site.

Potential visitor landing locations that could include interpretive exhibits which are produced and stewarded outside of NPS and PennDOT jurisdictions might include a location in Fernwood Village if Middle Smithfield Township acquires, develops, and maintains a public park & ride / trailhead site.

Interpretive exhibits might be developed by local partners – perhaps with PMVB – at future visitor landing sites in Bushkill Village at the General Store, and/or at the proposed new Pike County Trailhead site in Milford Borough.

Advantages of partnering with PMVB in developing interpretive features include the ability to coordinate display subjects and content between various regional sites, as well as to present a consistent visual display that is recognizable as people move through the Gateway communities in the DEWA region of the Pocono Mountains.

Another advantage is the ability and freedom to tell stories that have yet to be told by the NPS, by local historic societies, or by civic organizations. If well planned, these on-site features can be supplemented with deeper resources that can be accessed through modern QR code technology and linked geographically to specific locations along travel routes.

Costs

Costs for signage systems vary widely by structural system types and the costs associated with the content development.

In 2024, there are highly graphic and durable signage systems available in various materials to meet multiple budget, installation, and maintenance requirements.

Identity, directional, and most informational signage will likely be linked to specific transportation improvement projects – such as the possibility that NPS decides that it is important to improve transit shuttle user services in Bushkill Village and accessible depot improvements are made that include important signage elements.

Another example might be that Middle Smithfield creates a municipally-owned park & ride / trailhead facility in Fernwood that becomes part of the municipal park system, in which case, signage elements can be included as an important but relatively small part of the total project cost.

As a preliminary guide, 2024 costs that can be used to estimate budgets for interpretive panels can range between \$3,000 to \$6,000 each, installed – depending on the size and system details. These rough estimates would not include the costs of content generation - which may be possible for partners to secure from qualified volunteers.

Refer to Section 4 - Task 4 for costs.



Figure 2.4.07 Alternate PVMB conceptual artistic signage design for vehicular directional and special district directional/arrival in Milford Borough outside of NPS jurisdiction

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*Figure 3.1.01 Bushkill Creek has a watershed of 80 square miles and drains large areas of Monroe and Pike Counties through the opening beneath the Federal 209 Bridge in Bushkill Village.*



# 3 Action Opportunities

## Section

Summaries of action opportunities for all four tasks are presented in Section 3.  
Detailed data and analyses for each task are presented in Section 4 – Appendices.



Task 1 Park & Ride-Trailhead (Fernwood Village)



Task 2 Pedestrian Safety & Accessibility (Bushkill Village)



Task 3 McDade Trail over Bushkill Creek



Task 4 Signage at Bushkill Gateway





# LEHMAN TOWNSHIP

Please contact the Lehman Township supervisors at:

[lehmanpk@ptd.net](mailto:lehmanpk@ptd.net)

(570) 588-9365

<https://www.lehmantownship.com>

May 28, 2024

**RE: Lehman Township Commentary letter – Bushkill Gateway Transportation Improvement Plan 2024**

To our Pocono Region neighbors and partners,

Lehman Township has tried for over two decades to partner with the National Park Service (NPS) at the Delaware Water Gap National Recreation Area (DEWA). NPS has neglected every Lehman offer, except:

- The ***Bushkill Gateway Transportation Improvement Plan 2024*** (BG TIP 2024) - Initially supported by NPS, but then NPS support was withdrawn.
- The ***Bushkill Village Conservation Study 2017*** (BVCS 2017) - Initially supported by NPS, but recommended improvements were not implemented.

Lehman Township has offered to cut DEWA grass, plow snow, and pick up litter in Bushkill Village, but NPS has avoided those partnerships with multiple changing reasons. NPS did not encourage a credible partnership to help restore and inhabit the historic Peters House in Bushkill Village. Lehman Township developed a funding strategy to assist NPS to rehabilitate the old Bushkill train station platform as a public pavilion, including a commitment to maintain the structure. The idea withered within NPS.

NPS evicted the non-profit Bushkill Outreach food pantry from its 30-year community service location in Bushkill Village – instead of working with the community to rehabilitate the Dutch Reformed Church site and keep the structures occupied and maintained. Now those buildings are left unused to deteriorate, like the other structures in DEWA, after 50 years of a NPS policy of demolition by neglect.

Bushkill Village conditions remain a disgrace to the community and the nation. What might have been characterized for decades as deferred maintenance is now compounded by a clear NPS policy to ignore Bushkill Village as a primary visitor entry into a major national recreation area.

Why?

Mowing grass, clearing snow, collecting trash, rehabilitating heritage structures, building a new trail bridge, and working with longtime community partners/tenants may all be discounted as “non-essential” to NPS. **But, the Federal 209 Bridge is essential as a lifeline structure for everyone,** regional residents and DEWA visitors alike. Choices have crystalized.

If this bridge goes out of service without a replacement program underway, there is no detour that will not severely disrupt traffic and community patterns for years in Middle Smithfield and Lehman Townships and across Pike and Monroe Counties. Expediting the replacement program for a Federal 209 Bridge is a prudent and proactive regional strategy that will also ensure that required user accessibility / safety features are installed in Bushkill Village.

Lehman Township recognizes the people of NPS for their faithful national service. This critical appeal focuses on NPS policies which have not worked at DEWA for over half a century. Lehman Township remains dedicated to conserving our local place – the Delaware Water Gap – Minisink – Bushkill – as our commonwealth regional heritage and our national lands. Lehman believes in ways that partners can ensure that essential infrastructure are shared stewardship priorities.

Lehman Township seeks to collaborate with regional communities and partners who also seek to help NPS at DEWA. The goal is to negotiate a partnership for an essential project, in ways that might finally set a collaborative and sustainable management model for our notorious and beautiful hometown “national park.” ***Lehman Township invites our neighbor municipalities to convene as a council to articulate a united voice to our county, state, and federal representatives.***

Sincerely,

**Lehman Township Supervisors**

Rob Rohner, Chair

Theresa Laino, Vice Chair

Aaron Springs, Supervisor





Figure 3.1.01 View of Route 209-Winona Falls Road intersection.



Figure 3.1.02 View to north of Route 209 in Fernwood.

## Action 3.1.1 Improve public access in Fernwood Village

Fernwood Village is a place reimagined through the planning partnership between Middle Smithfield and Lehman Townships – a process that was enabled with funds from PA DCED and US FHWA.

At present, most travel to and through Fernwood requires a private automobile. There are alternatives.

This **BG TIP 2024** project describes opportunities to integrate commuter, recreation, visitor, bicycle, and pedestrian access improvements at the southern gateway to the Delaware Water Gap National Recreation Area (DEWA) – including capabilities to serve regional transit and excursion providers in Fernwood Village.

Middle Smithfield Township can advance a comprehensive transportation strategy in Fernwood to create these public access/mobility improvements and restore the attractive identity of the village hub that is ready to realize its full potential as a modern regional host community for a major US national recreation area.

The partnership strategies envisioned for Fernwood transportation improvements support the heritage of private investments in the regional and local recreation/travel economies of communities surrounding DEWA.

The Fernwood strategy supports the planning goals of Middle Smithfield Township and Monroe County to create new public access opportunities where logical connections are missing to reach existing recreation, civic and commercial destinations.

Multi-modal transportation improvements at Fernwood can support the sustainable recreation/tourism economy and provide alternatives to remedy past transportation features that have outlived their usefulness. The retirement and re-development of the 5-acre PennDOT Mt Nebo Park & Ride will create direct local economic benefits to Middle Smithfield Township and the Commonwealth.

The first step is to acquire a multi-modal site in Fernwood Village with help from partners.



Figure 3.1.04 View west from Route 209 at Fernwood Drive of existing parking area under regional power lines that is identified as a potential park & ride / trailhead.



## Action 3.1.2 Collaborate to create transportation improvements

The concept of creating a public park & ride that is combined with a trailhead access to the adjacent national recreation area demonstrates smart collaborative planning by local communities, and this plan advances a good idea that originated within the National Park Service.

Comprehensive transportation improvements in Fernwood Village are intended to provide direct benefits to local residents in Middle Smithfield and Lehman Townships, including; commuter parking/ride-sharing, and local access to DEWA without needing to drive into the “park” to park a car.

These benefits for the local communities and their respective Counties of Monroe and Pike are compatible with the transportation improvement idea offered for Fernwood by NPS to help serve visitors to DEWA from outside the region. Imagine if all visitor lodging and recreation facilities surrounding the Fernwood Village center had direct pedestrian and bicycle access to DEWA.

This **BG TIP 2024** demonstrates the benefits and opportunities of local municipalities working together to advance important transportation and community sustainability goals.

Middle Smithfield Township can invite municipal and county partners to reconvene to discuss steps for acquiring a suitable site for a multi-modal park & ride / trailhead in Fernwood.

It may be determined that additional analyses or investigations are needed to proceed to acquisition. With assistance from state and federal elected officials to help secure funding, additional technical services to advance this multi-purpose project can be completed. *See Action 3.1-4 “Funding” (below).*

## Action 3.1.3 Advance the Fernwood park & ride ahead of the McDade Trail connection

Middle Smithfield can advance the acquisition and development of a multi-modal transportation site in Fernwood without immediate support from NPS.

The case for Middle Smithfield Township to develop a multi-modal transportation facility in Fernwood Village is based on its **independent utility** as a municipal asset that creates new local community access to its important village hub, and its importance as a regional economic development initiative. Replacing the obsolete PennDOT Mt. Nebo park & ride site and returning it back into the regional tax base benefits all partners.

During the **BG TIP 2024** project, the NPS at DEWA issued a letter to Lehman Township withdrawing an initial commitment to help advance a trail connection between Fernwood Village and the McDade Trail.

Everyone understands the NPS mandate to protect national resources. Everyone understands there are rational means for projects around the nation, which are used every day to ensure compliance with federal laws and regulations. Everyone also understands that NPS can and has engaged in “outside” partnerships in other national parks where NPS budgets alone cannot achieve the goals.

The FHWA funding for this **BG TIP 2024** project was granted to Lehman Township based on the project merits and on the program’s record of successes that are demonstrated through local-federal partnerships. Local communities that host federal lands are eligible to directly receive federal transportation funding. Lehman Township has successfully competed for and completed two FHWA-funded projects for the Bushkill Gateway.

Middle Smithfield can advance its multi-modal strategies for Fernwood with the expectation that its successes will be the catalyst for NPS at DEWA to return to the partnership table in good faith to negotiate the details of how modern public trail access improvements can be made between Fernwood and the McDade Trail.

## Action 3.1.4 Seek funding aggressively from multiple sources

Middle Smithfield can convene local, county, funding partners, with state and federal legislators to define a consensus Fernwood strategy and create a partner action plan to advance the project.

NPS is not essential in early partner meetings since a Fernwood multi-modal transportation project can advance without a McDade Trail linkage commitment. Benefits to partners include confirming mutual goals at local policy levels before engaging NPS at a federal process level.

A clear statement of purpose can be crafted by Middle Smithfield and partners that will serve as the tool needed by legislators and agencies to understand and support the goals and scope of a “Fernwood” partnership project. This statement can form the basis for partners to pursue funding from multiple sources.

A “Fernwood” public multi-modal project has a variety of elements that are relevant to multiple funding programs that support transportation; recreation; and community/economic development improvements at county, state, regional and federal levels. Various partners may take the lead on specific commitments and grant applications.

- Partnerships already created include:
- **PA DCED** has served as an active partner in the **BG TIP 2024** project and has invited Lehman Township and partners to seek additional assistance from the agency to advance the next phases of consensus community priorities.
  - **PennDOT District 4** has served as the active administrative partner for the **BG TIP 2024** project, and District 5 has been actively engaged in the partner meetings.
  - **PennDOT Central Office** may have requirements to document the value of retiring the Mt. Nebo park & ride facility. State elected officials can assist with this aspect.
  - **PennDOT and DCED** together can help describe requirements and facilitate funding to conduct any additional technical assessments that may be needed.
  - **NEPA** has served as an active project partner and is an important partner in securing future project funding.
  - **Elected state officials** can help a Middle Smithfield partnership to engage all agencies, especially PennDOT to actively negotiate the retirement of the Mt Nebo park & ride site and its return to the tax base.
  - **Middle Smithfield and partners** can use the Lehman Township “model” of securing funding from outside NPS budgets to plan improvements within DEWA and within DEWA host communities. (eg: *BVCS 2017 and BG TIP 2024*)

Strategies to fund the analyses, design, documentation, and construction of a new trail link between Fernwood Village and the McDade Trail should employ these same types of “outside” funding strategies and not rely on NPS budgets. A diverse mix of funding sources to support these actions is viable.

After the Middle Smithfield partnership defines its course of actions, elected officials can help bring NPS to the table to clearly define the agency needs – including a clear delineation of all environmental compliances required for the Fernwood trail linkage project. NPS administrative requirements such as ‘how’ a new Fernwood-McDade Trail link will be addressed within the DEWA Management Action Plan and Amendments will also need to be clearly defined.



Action 3.2.1

Ensure that Bushkill Village ped/bike safety and access improvements are included in the program for the Federal 209 Bridge replacement project.

Safety and access improvements for Bushkill Village are priorities for DEWA pedestrians and bicyclists. However, the urgency to remedy missing and non-compliant features is not acknowledged by NPS.

NPS decision-making within limited budgets must balance demands which are considered urgent priorities. Given this fact, the chances

that standalone ped-bike improvements in Bushkill Village might be conducted are likely low. The alternative to these improvements never happening in the next 50 years, is to include mandated elements within the program for an urgent public project – specifically, the replacement of the Federal 209 Bridge over Bushkill Creek.

There may be no greater public transportation imperative for Monroe and Pike regional partners to collaborate with NPS than a consensus to expedite the replacement of the lifeline Federal 209 Bridge over Bushkill Creek in DEWA, given the findings in this **BG TIP 2024** report,



Figure 3.2.01 View north on Federal 209 at the Bushkill Falls Road intersection. Note the landmark blinking traffic signal (before SR 2001 improvements were completed.).

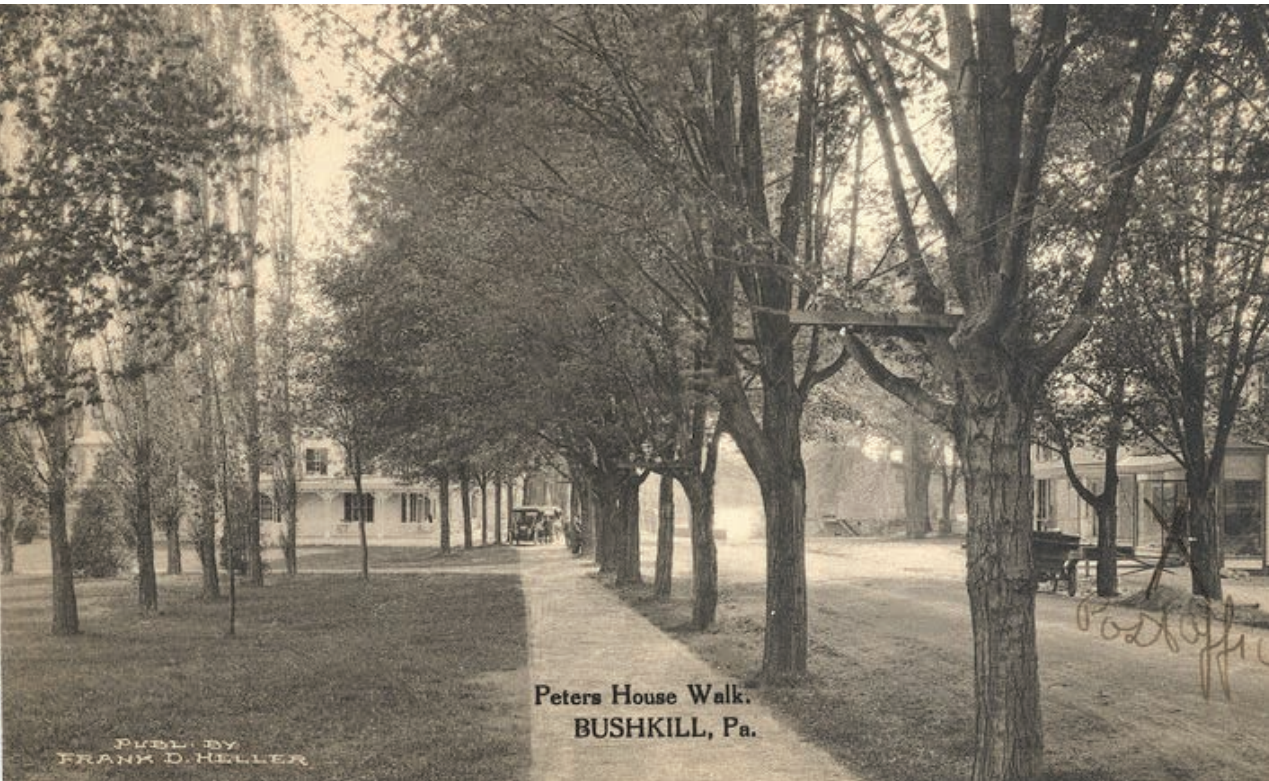


Figure 3.2.02 Historic post card of the village streetscape in Bushkill. Historic features including street trees and pedestrian facilities can help restore ecological, transportation, and recreation features in a 21st Century Bushkill Village..



Figure 3.2.03 View north on Federal 209 toward the intesection with Bushkill Falls Road (SR 2001).



Figure 3.2.04 View south on Route 209 toward the Bushkill Falls Road intersection, before the private properties were acquired by the federal government and buildings were razed to prepare for building the Tocks Island Dam.



### Action 3.2.2 Collaborate on the Federal 209 Bridge replacement as a consensus project

NPS decision-making *can* be influenced by public consensus united behind a project that is understood to directly affect people’s personal lives. NPS reversed its proposed road tolling of Federal 209 after comments to the tolling and other issues in the Visitors Use Management Plan were published in 2020.

If the existing (and vulnerable) Federal 209 bridge structure is suddenly removed from service, the direct and immediate impact on thousands of lives is inevitable. The general public’s understanding of this current situation is essential for consensus support of a plan that regional leaders can proactively pursue for its replacement. Given the findings of this **BG TIP 2024** report, multiple partners can be engaged to support the expedited bridge replacement given the potential impacts from any unanticipated loss of service, including:

- *Middle Smithfield and Lehman Township* would be immediately and heavily impacted by detouring traffic onto small municipal roads as the only alternative to crossing Bushkill and Little Bush Kill Creeks. Greater regional impacts to Pike residents north of Lehman will be felt by those forced to make detours away from SR 2001 before entering the valley at Bushkill.
- *East Stroudsburg School District (ESSD)* students are bussed across the Federal 209 Bridge daily to reach schools at the top of Bushkill Falls Road in Lehman Township.
- *DEWA visitors* will be forced to select from no good options and navigate their way through local township roads to enter DEWA from northbound Route 209.

Glimpses of potential impacts from a Federal 209 Bridge closure at this critical geographic location were felt in 2022-2023 when NPS conducted maintenance on the Federal 209-Bushkill Bridge and repaved the southern entry segment of Federal 209. The travel lane restrictions imposed by the road project caused traffic backups during peak periods on Federal 209 that extended from the Fernwood visitor contact station over the Bushkill Bridge and north through Bushkill Village.

Traffic impacts need to be planned for proactively, including a temporary Federal 209 Bridge during a reconstruction project.

### Action 3.2.3 Work with elected federal/state official to secure partnership funding from multiple sources for all phases of the project

The best strategy to secure major funding for Bushkill Gateway transportation improvement projects is to smartly bundle all the elements into a comprehensive program that focuses on the at-risk bridge structure, and also addresses all modal deficiencies in the short and narrow Bushkill valley corridor.

Because the bridge at risk is owned by NPS, the imperative for federal officials is greater to secure federal funding through enlightened partnership programs at US DOT and FHWA, as well as through potential federal conservation funding for the ecological elements of a comprehensive Federal 209 Bridge replacement project.



Figure 3.2.05 Two National Historic Register resources at the intersection of Federal 209 and Bushkill Falls Road - the Turn Store (foreground) and the Peters House (behind). Photo taken before SR 2001 improvements.

### Action 3.2.4 Local partners can expedite the replacement strategy through partner agencies.

Lehman and Middle Smithfield Townships can continue their partnership that began with the **BG TIP 2024** project. These two municipal partners may assume a “facilitating” role to help represent a larger radius of municipalities that would be impacted by a closing of the Federal 209 Bridge over Bushkill Creek.

A ‘regional council format’ may be considered as an effective way for more river-touching towns in the Minisink valley to work on a consensus strategy to solve the lifeline Bushkill Creek bridge issue. The basis of the ‘regional format’ may include:

- Support from Pike and Monroe County leaders who actively participated in the **BG TIP 2024** project, and will be closely attuned to their municipalities’ collaboration.
- NEPA has been engaged in the **BG TIP 2024** project, and will be a critical partner in the pursuit of funding for a bridge replacement and related transportation improvements in Bushkill Gateway.
- PA DCED is an active partner in the Bushkill Gateway project and understands the challenges of the Bushkill link (under DEWA jurisdiction) of the entire regional 209 corridor. NEPA can assist to document the economic imperatives to keep the entire route 209 alignment unobstructed and functioning as a continuous regional corridor though northeastern Pennsylvania.

With the right project programming, DCED, DCNR, and PennDOT can be re-engaged by local partners to assist in a federal-state-local partnership project.

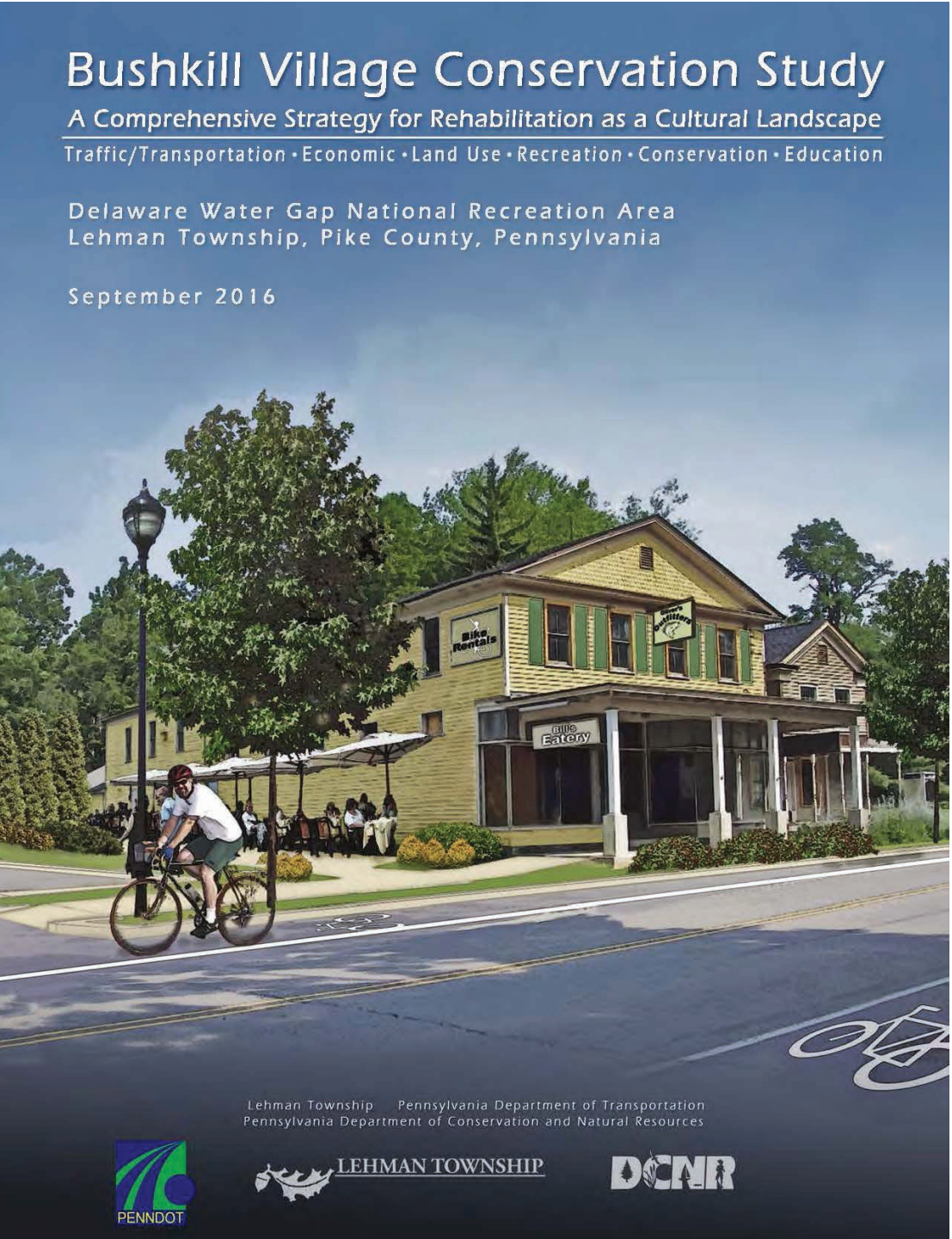


Figure 3.2.06 The Bushkill Village Conservation Study 2017 was the first FHWA-funded planning project completed by Lehman Township in cooperation with NPS at DEWA





Figure 3.3.01 View downstream at the confluence of the Little Bush Kill and Bushkill Creeks, toward the Route 209 bridge that replaced the previous bridge in this location destroyed by the Flood of 1955.

### Action 3.3.1 Make replacement of the Federal 209-Bushkill Creek Bridge an urgent priority

The NPS decision to withdraw its participation from the Bushkill Gateway planning project was the catalyst for Lehman Township and partners to reconsider the priority of their collaborative efforts toward the replacement of the Federal 209 Bridge over Bushkill Creek.

In retrospect, the original partnership strategy to build a separate McDade Trail bridge over Bushkill Creek did nothing to solve the safety and access deficiencies that continue to exist on the existing Federal 209 highway bridge over Bushkill Creek.

Hanging a new cantilevered trail structure on the existing Federal 209 Bridge was assessed and rejected as an option by the Lehman engineering team based on:

- Unknown structural condition of the existing bridge
- Estimated costs to design and construct such a retrofit, and
- The uncertain remaining service life of the current Federal 209 bridge structure.

During the Bushkill Gateway project, the NPS did not provide an estimated timeline for the replacement of the Federal 209 Bridge, which was constructed in 1956.

Concerns that compel a regional urgency to expedite a replacement plan for the Federal 209 Bridge include:

- Age of the existing bridge (68 years)
- Unknown internal structural conditions of the sub- and superstructure members
- Traffic volumes projected on 209 over the Bushkill Bridge
- The need to extend the northbound turning lane for SR 2001 (Bushkill Falls Road) over the Bushkill Creek
- A non-complaint lane for McDade Trail users on the existing Federal 209 Bridge
- The current hydraulic opening for Bushkill Creek below the Federal 209 Bridge
- Threats of Bushkill Creek flood surges to the vulnerable existing Federal 209 bridge
- The lack of modern streambank stabilization methods surrounding the Federal 209 Bridge
- History of highway bridge destruction at the same vulnerable location during the Flood of 1955
- Lack of any alternate route for local or DEWA traffic if the Federal 209 Bridge is disabled.

NPS has not shared a commensurate concern about expediting a Federal 209 Bridge replacement with Bushkill Gateway partners.

The Federal 209 Bridge over Bushkill Creek shares some similar challenges to the Federal 209 Bridge replacement project over Sawkill Creek in Milford – which has taken decades for NPS to advance to the verge of construction. Transparency is needed for the public to understand the NPS’ estimated replacement date as basic agency management tool. NPS at DEWA shared no replacement schedule with the Lehman Team.



### Action 3.3.2 Collaborate at all government levels to expedite the Federal 209 Bridge replacement

All partnership strategies should be open to consideration that might expedite the replacement of the Federal 209 bridge over Bushkill Creek – including “turn-key” design/build project options that might be managed by PennDOT with NPS reviews, and then turned back to NPS when the project is completed.

There are surely many ‘lessons learned’ and partnership strategies that can be discussed when local partners convene NPS, PennDOT, and other stakeholders in the near term for initial brainstorming with elected officials.

### Action 3.3.3 Advance funding and technical works through trusted partners outside NPS

Competing and emergent urgencies can pull internal NPS staff away from an expedited DEWA bridge replacement schedule.

Bridge design and environmental clearance procedures can be conducted by qualified professionals who operate outside direct management by NPS staff. This type of partnership structure enables NPS staff to review all aspects of the project as the client partner, but not burden its limited staff to manage the project full time.

NPS always places special emphasis on conducting cultural resource tasks in-house, however these tasks can be accomplished equally effectively by qualified paid professionals. In this way, NPS can focus limited DEWA staff resources on review tasks instead of primary project tasks and management.

Programming for the bridge replacement project should be smart and comprehensive to ensure that the new bridge is designed and constructed to comply with all federal transportation laws and regulations, and to meet future needs of the Bushkill Village area (Task 2) as described in this **BG TIP 2024** report.

Multi-modal safety and accessibility omissions by NPS in the previous, federally-funded SR 2001 improvement project cannot be repeated in future improvement projects within the Bushkill area of the Federal 209 corridor.



Figure 3.3.02 View upstream across the existing Federal 209 Bridge toward the confluence of the Little Bush Kill with the Bushkill Creek. The southern approach to this bridge is constructed on alluvial materials and is subject to flooding impacts during high flows.

### Action 3.3.4 Seek funding aggressively through multiple partnership formulas

Lehman Township and partners can continue their “big picture” funding partnership strategies that resulted in the successful completion of this **BG TIP 2024** and the previous **BCVS 2017** project.

The replacement program for Federal 209 Bridge over Bushkill Creek can continue to use this funding strategy to leverage multiple county, regional, state, and federal programs that will fund specific elements of the project to deliver a combination of transportation; recreation; conservation; and community / economic development purposes within the multi-use structure.

PA Department of Conservation and Natural Resources (DNCR) was a funding partner for the **BCVS 2017** project, to leverage FHWA funds.

PA Department of Community and Economic Development (DCED) provided multi-modal program matching funds to the FHWA grant to Lehman Township for this **BG TIP 2024** project.

Both of these planning/engineering projects were the result of strategic partnership funding formulas that were negotiated to match state partner funding with the two grants from FHWA as a consistent federal partner program which funds eligible local transportation projects.

This approach presents opportunities for the Federal 209 Bridge replacement project to be funded through Bipartisan Infrastructure Bill (BIL) programs that are managed by US DOT, based on criteria described (in Action 3.3-1 above) and coupled with the project location as the primary entrance to a major national recreation area.

When this type of strategic partnership approach is considered, it can open up multiple eligibilities to compete for federal funds that: delivers funding through local partners; helps complete imperative projects within DEWA; and enables every advantage to expedite the process with NPS as a client.



Figure 3.3.03 View to north of the existing Federal 209 Bridge and the highly vulnerable northern stream bank of sedimentary soils directly downstream from the bridge abutment.



## Action 3.4

## Signage for Bushkill Gateway – Bushkill & Fernwood Villages (Task 4)

### Action 3.4.1 Assist PMVB to advance its regional signage partnership with municipalities / counties.

This signage initiative by the Poconos Mountains Visitors Bureau (PMVB) is a pilot proposal for a local partnership with Milford Borough and Pike County, which has potential to serve as a model for a comprehensive partner signage system across Pocono region.

The PMVB-Milford pilot signage project can be integrated with the transportation improvement opportunities that are described in the *2024 Milford Gateway* project report including: pedestrian, bicycle, stormwater, and signage partnership initiatives in the Borough center that are all described as priorities in the *Milford Comprehensive Plan 2021*.

Each municipality in the Pocono Mountains region is likely to negotiate unique details in collaboration with a regional PMVB signage initiative. Lehman and Middle Smithfield Townships may have needs similar to a pilot Milford-PMVB signage initiative, given that the municipalities represent the southern and northern gateway communities to DEWA in Pennsylvania, respectively.

These three municipalities are already collaborating in the 2024 Bushkill and Milford Gateway planning projects and each can collaborate with PMVB, and with each other, to advance common signage improvement opportunities.



Figure 3.4.01 Modern NPS Entry signage at the southern contact station on Federal 209 in Fernwood.



Figure 3.4.02 Typical "blade" sign type as adapted by NPS for the McDade Trail. This sign type can be adapted to serve portions of a Fernwood to McDade Trail link, for segments both inside and outside DEWA.





Figure 3.4.03 NPS McDade Trail kiosk-type signage for trail usage.

### Action 3.4.2 Negotiate venues / develop content to interpret Minisink valley history outside DEWA

Pike and Monroe Counties each have historical societies and conservation organizations that steward and interpret local and regional histories. Many municipalities have non-profit historic organizations as well as municipal resources that are important venues to reach local residents and area visitors. Middle Smithfield has a prominent community and cultural center in Echo Lake Park on Route 209 south of Fernwood – that includes displays of local historic events, such as the catastrophic loss of the former Route 209 Bridge over Bushkill Creek during the record Flood of 1955.

Opportunities are limited within DEWA jurisdiction for partners to display permanent or major revolving exhibits of various elements of the history of Minisink Valley; the era of the Tocks Island Dam development; and the subsequent events since the dam project was abandoned by the Army Corps of Engineers and NPS assumed stewardship of the federally-acquired lands.

NPS has a long established and rigorous process for developing strategies to interpret resources under its jurisdiction. NPS tools include articulating themes, stories, and display methods to inform the public about prominent events, people, natural features, and artifacts within the various contexts which the agency determines is appropriate for each resource.

Deep records of the historic and ecological chapters of the Bushkill Gateway area exist in multiple repositories, including the NPS archives for DEWA. Considerable archival and research work has been accomplished by multiple partners, however stories of how the current recreation area came to be are not told comprehensively in any venue – including within DEWA itself. The story remains dramatic, compelling and important for future generations – as well as an exciting potential addition to regional marketing and public education.

The NPS interpretation system is highly developed and is often considered the definitive word on topics. Lehman Township and other partners have acknowledged the need for histories to be told in multiple venues, and in broader social contexts – to present details of ‘how’ the national recreation area came to be. Supplementing NPS interpretation would need to be presented in venues outside of DEWA jurisdiction.

In addition to non-profit and local government venues, locations such as a new park & ride / trailhead facility in Fernwood, and the privately-owned Turn Store site within Bushkill Village may be considered appropriate to negotiate as public interpretive locations. Stories told at local venues should be developed at curation levels equivalent to NPS interpretative features to ensure their viability. This will likely require multi-partner collaboration to fund, develop, install, update and maintain the features.

### Action 3.4.3 Secure partnership funding for signage improvements

A process to replace the Federal 209 Bridge over Bushkill Creek will necessarily require consultation between NPS, PennDOT and other state, county and local government jurisdictions. The many elements (roadway, bridge structure, ped/bike accessibility, signage/wayfinding, etc.) in this type of comprehensive project cannot be achieved through NPS internal budgets alone. The administrative coordination needed for a project at this level is also the key to multiple funding opportunities.

Improvements for transportation-related signage within a Federal 209 bridge replacement project can be programmed to create a modern, coordinated signage system (that meets NPS requirements) along a critical 209 corridor – from north of the Federal 209-Bushkill Falls Road intersection in Bushkill Village to below the Route 209-Winona Falls Road intersection in Fernwood Village.

Such a program can be negotiated to integrate PMVB-partner signage initiatives in the Bushkill Gateway area in ways that can secure

funding from transportation, recreation, and community / economic development partners. Coherent wayfinding and identity features on the ground in this gateway corridor will directly support the local travel / tourism industry that is essential to sustainability of Pocono Mountain communities. The NPS claims that DEWA is a regional economic generator can be supported by collaborative and smart transportation and signage improvements on the ground through the Bushkill Gateway segment of 209.

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*Figure 4.1.01 The Delaware River near Buskill Village*



# 4 Appendix

Section

*Detailed data and analyses for each task are presented in Section 4 – Appendices.*



Task 1 Park & Ride-Trailhead (Fernwood Village)



Task 2 Pedestrian Safety & Accessibility (Bushkill Village)



Task 3 McDade Trail over Bushkill Creek



Task 4 Signage at Bushkill Gateway



# Appendix Table of Contents

## 4.0 Previous Planning Studies

### NPS Studies

- 4.0.01 DEWA Visitor Use Management Plan- November 2020
- 4.0.02 DEWA General Management Plan-1987
  - DEWA General Management Plan-Trails Amendment 2001
- 4.0.03 DEWA Long Range Interpretive Plan- September 2015
- 4.0.04 DEWA Alternate Transportation Study – 2009
- 4.0.05 DEWA Historic Buildings Strategy – August 2021
- 4.0.06 DEWA Traffic Safety Study - 2008
- 4.0.07 Dec. 2021-NPS Response Memo- Stakeholder Mtg #2

### Monroe County

- 4.0.07 Monroe County Comprehensive Plan - 2014

### Pike County

- 4.0.08 Pike County Comprehensive Plan – 2006

### Middle Smithfield Township

- 4.0.09 Middle Smithfield Township Comprehensive Plan – 2007

### Lehman Township

- 4.0.10 Lehman Township Comprehensive Plan 2021
- 4.0.11 Bushkill Village Conservation Study - 2017

## 4.1 Task 1

### Data Used for Analysis

- 1 PennDOT District 5-0 Roadway/ Signal Plans: SR 0209 & River Road/ SR 1016 Winona Falls Road
- 2 Monroe County Transit Authority: Current/Previous Route Information & DEWA Shuttle Ridership Information; Shuttle Technical Data
- 3 Jinyin Temple Re-Development Plans (2019)
- 4 Monroe County Parcel Data
- 5 Monroe County FEMA; Flood Insurance Rate Maps

### Exhibits

- 4.1.01 Identification of Park & Ride Sites for Consideration
- 4.1.02 Summary of Planning Documents
- 4.1.03 Site Rating Criteria & Ranking Matrix
- 4.1.04 Middle Smithfield Township Use Regulations within Zoning Districts
- 4.1.05 Preferred Alternative Park & Ride Site & Program Model
- 4.1.06 Land Use Analysis: Basis for Transportation Improvements
- 4.1.07 Jinyin Temple Re-Development Plans (2019) (partial)

- 4.1.08 **Preliminary Design:** Fernwood Park & Ride
  - Turning Radius Diagram
- 4.1.09 Photosimulations: Fernwood Park & Ride
- 4.1.10 Traffic Analysis: Summary-Fernwood/ Bushkill SR-US 209 Improvements
- 4.1.11 **Preliminary Design:** Fernwood SR 0209 Transportation Improvements
- 4.1.12 Estimation of Probable Cost: Transportation Improvements
- 4.1.13 2021-2022 Traffic Count Data: SR0209 & River Road/ SR 1016 Winona Falls Road
- 4.1.14 Transit Investigation Exhibits
  - DEWA Alternate Transportation Study (2009): Southern Loop Option
  - Existing Transit Service Summary
    - Monroe County Transit Authority (MCTA)-Current 2023
    - Monroe County Transit Authority (MCTA)-Yellow Route (Void-2021)
    - DEWA Shuttles Ridership (Operated by MCTA): River Runner; Hiker Shuttle
  - Martz Trailways\_Regional Bus Stops

## 4.2 Task 2

### Data Used for Analysis

- 1 Bushkill Village Conservation Study (2017): Proposed Program
- 2 Bushkill Village Probable Cost of Development
- 3 PennDOT District 4-0: US 0209 & SR 2001 Roadway and Signal Plans
- 4 DEWA / FHWA Bridge Maintenance Project: Project NP-DEWA 14(18), 121(1) (January 2020) – Bushkill Creek Bridge -Rehabilitation & Preventative Maintenance Plan (Survey Plan for Base Map Preparation)
- 5 Lehman Township Comprehensive Plan (Transportation Section)

### Exhibits

- 4.2.01 Summary: Bushkill Village Conservation Study-Program and Transportation Improvement Recommendations
- 4.2.02 2021-2022 Traffic Count Data: US0209 & SR2001/ Bushkill Falls Road
- 4.2.03 Lehman Township: Crash Data
- 4.2.04 Conceptual Pedestrian Connection Improvements: Bushkill Village Pedestrian & Multimodal Improvement Program
- 4.2.05 Traffic Analysis: Summary-Fernwood/ Bushkill SR-US 209 Improvements
- 4.2.06 **Preliminary Design:** Bushkill Village – US 209 Roadway Improvement Plan
- 4.2.07 Estimation of Probable Cost: Transportation Improvements
- 4.2.08 Photosimulations: Bushkill Village Transportation Improvements

## 4.3 Task 3

### Data Used for Analysis

- 1 DEWA / FHWA Bridge Maintenance Project: Project NP-DEWA 14(18), 121(1) (January 2020) – Bushkill Creek Bridge -Rehabilitation & Preventative Maintenance Plan (Survey Plan for Base Map Preparation)
- 2 DEWA: US 209 Bushkill Creek Bridge – 1939 Original Construction Drawings & 1956 Re-Construction Drawings
- 3 Streambank Stabilization Technical Circulars
  - PA DEP Bureau of Waterways Streambank Stabilization
  - USDA NRCS
  - PennDOT Publication 408-Material Specifications
- 4 Cultural Resource and Categorical Exclusion Guidance

### Exhibits

- 4.3.01 Pedestrian Bridge Crossing of Bushkill Creek: Alternative Analysis Memo
- 4.3.02 Hydrological & Hydraulics Analysis Report: Bushkill Creek at U.S Route 209
- 4.3.03 Environmental Clearances and Categorical Exemptions: Summary Memo and PNDI
- 4.3.04 Streambank Stabilization Exhibit
  - L.0-Existing Conditions
  - L.1-Historical Photo Progression
  - L.2 H&H 100-Year Flood Level Plan
  - L.3 Streambank Velocity Analysis
  - L.4 Stabilization Conceptual Design
  - L.5 Stabilization-Typical Sections

- 4.3.05 ConTech™: Proposed Prefabricated Pedestrian Bridge
  - Bridge Sample Plan based on Bushkill Creek Crossing
  - Bridge Estimate
  - Typical Elevations
  - Specifications (Manufacturer & PennDOT)
- 4.3.06 Total Estimated Cost of Pedestrian Bridge and Streambank Stabilization
  - 2021 PennDOT TASA Grant Application (Estimates of Design/Engineering Costs Included)
- 4.3.07 2021 PennDOT TASA Application (Unsuccessful)

## 4.4 Task 4

### Exhibits

- 4.4.01 Estimation of Probable Cost: Bushkill Gateway Signage

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