ConCord

ROUTE OF THE BADGER

CASE STUDY



Pacific Northwest NATIONAL LABORATORY

U.S. DEPARTMENT of ENERGY

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Route of the Badger

Building Regional Connectivity through an Integrated Trail System

April 2026

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Summary

The Route of the Badger, in southeastern Wisconsin, is a regional trail network project underway that connects city neighborhoods, suburbs, and rural landscapes, making it easier for people to walk, bike, and access greenspace. More than 700 miles of paths are being built out in phases to connect four counties, creating one of the largest regional networks in the Midwest (Rails-to-Trail Conservancy 2024a).

Partnerships with WE Energies, the region's electric utility, have enabled use of existing corridors to connect trail segments, further integrating the larger trail network. Wide transmission corridors that were once off-limits are now being adapted for public access and recreational use, while still serving their original purpose as transmission assets. Nearly 100 miles of trails in Wisconsin have already been built in these spaces (Rails-to-Trail Conservancy 2024a).

In Greenfield, WI, the Powerline Trail illustrates this model. Built within a 200-foot-wide corridor, the trail provides a 10-foot paved surface with turf shoulders, wide enough to double as a service road (City of Greenfield, Wisconsin 2024). In September 2025, we conducted two interviews with representatives involved with development of Route of the Badger Trail segments. Interviewees explained that municipalities have assumed mowing and routine upkeep, while WE Energies retains full rights to access and can require modifications if utility work is needed (interview, September 25, 2025; interview, September 30, 2025).

Funding for these phases has come largely from federal transportation grants such as the Congestion Mitigation and Air Quality Improvement (CMAQ) program, which covers 80 percent of costs, leaving local governments to provide the remaining share (Jannene, 2024). Interviews highlighted that this local match often determines whether projects advance (interview, September 30, 2025).

Initially, concerns from nearby residents during planning centered on privacy and safety. However, interviewees reported that once trail segments opened, public use was strong, and the corridors quickly became valued local amenities (interview, September 30, 2025). For WE Energies, the trails also provided practical value by improving visibility, easing vegetation management, and adding "eyes and ears" for corridor security (interview, September 25, 2025).

The Route of the Badger has opened some segments and continues to expand, with new connections under study toward Lake Michigan (Jannene, J 2024). The project shows how existing corridors can serve multiple functions, carrying power while also providing safe and accessible community spaces.

Acronyms and Abbreviations

CE – Categorical Exclusion
CMAQ – Congestion Mitigation and Air Quality
DNR – Department of Natural Resources
EA – Environmental Assessment
EIS – Environmental Impact Statement
FHWA – Federal Highway Administration
NEPA – National Environmental Protection Act
NERC – North American Electric Reliability Corporation
O&M – Operations & Maintenance
ROW – Right(s) of Way
SEWRPC – Southeastern Wisconsin Regional Planning Commission
TAP – Transportation Alternatives Program

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1.0 Connecting Transmission Corridors Initiative

The Connecting Transmission Corridors (ConCord) Initiative seeks to characterize the benefits of multi-functional transmission corridors, with a specific focus on recreation, conservation and restoration, and wildfire mitigation. This initiative outlines options and identifies best practices for providing public benefits in transmission corridors while also identifying models, tools, and resources for evaluating benefits in existing and future transmission infrastructure and transmission planning paradigms.

Case studies serve as informative examples of multifunctional transmission corridors and provide valuable lessons learned on recreation and land management. The Route of the Badger case study is one of several completed within the ConCord Initiative to highlight and characterize existing efforts within transmission corridors. This case study focuses on recreation-oriented corridor use and trail development within transmission corridors. Each case study was developed through a combination of desk-based research and interviews with key informants affiliated with the project. In the following sections, background information on the Route of the Badger is presented, as well as details on project development and key takeaways. There are also three appendices that detail the measures implemented, the spatial scale, and timeline for the project.

2.0 Route of the Badger

2.1 Background and Context

The origins of the Route of the Badger trace back to a broader national effort to connect fragmented trails into regional networks. In 2017, Rails-to-Trails Conservancy launched TrailNation to support large, interconnected systems across the United States (Rails-to-Trail Conservancy 2024b); southeastern Wisconsin was identified as one of the TrailNation regions based on its trail density and potential to close key gaps (Rails-to-Trail Conservancy 2024a).

At the local level, trail building progressed incrementally for decades. Counties and municipalities added park paths, riverfront trails, and rail-to-trail conversions, but many routes remained isolated. Building a continuous network required coordinated governance and expanded land access. Utility rights-of-way (ROW), running uninterrupted across much of the region, have served as a practical option. Interviews conducted for this case study described continuity as a central challenge: while many paths existed locally, the lack of connections prevented them from functioning as a larger mobility system. As one interviewee explained, *"You already have wide corridors cutting across neighborhoods, if they can be shared safely, they solve a connectivity problem"* (interview, September 25, 2025).

The decision to incorporate WE Energies' transmission corridors reflected successful precedents as well as practicality. WE Energies has a long history of supporting trails projects and negotiating access agreements with trails advocates dating back to the 1970s (Matteson, 2021). Public reporting documents nearly 100 miles of trails in Wisconsin already developed within utility corridors, with additional mileage in progress (Matteson, 2021). Interviews for this case study noted arrangements in which municipalities handle routine upkeep, while the utility retains authority to modify the corridor if infrastructure work is required (interview, September 25, 2025).

Funding mechanisms also shaped how the initiative advanced. Federal transportation programs such as CMAQ and the Transportation Alternatives Program (TAP) provided primary funding streams, covering most construction costs but requiring a local match and long-term maintenance commitments (Wisconsin Department of Transportation n.d.a; n.d.b). Communities with stronger planning capacity or active advocacy groups were more likely to assemble the local share, while smaller jurisdictions often struggled, affecting where early segments could be built. As one interviewee summarized, *"The federal share makes projects possible, but if the council can't put in its portion, the trail doesn't move forward"* (interview, September 30, 2025).

Early public meetings drew mixed reactions, with adjacent property owners often raising privacy and safety concerns. Interviews reported that, once completed, segments drew steady use and support, which in turn reinforced momentum for additional connections: *"Every time a segment opened, the demand for the next one grew"* (interview, September 30, 2025).

Together, these factors shaped the setting in which the Route of the Badger emerged. National programs created a framework for investment, local trails provided starting points, utility corridors offered continuous space, and community perceptions shifted as completed segments demonstrated value, laying the groundwork for the scope of work that followed.

For reference, Appendix B Table 2 demonstrates the key scale parameters of the case (corridor length, affected areas, typical trail footprint per mile, and major assets/nodes), providing a single point of entry for the quantitative context summarized above.

2.2 Objectives and Scope

The Route of the Badger is being developed as a phased, multi-jurisdictional network to solve a simple but persistent problem: communities in southeastern Wisconsin had trails, but they did not connect. Residents could walk or bike within a park or along a converted rail line, yet there was no way to move easily across city boundaries or between suburban and urban neighborhoods.

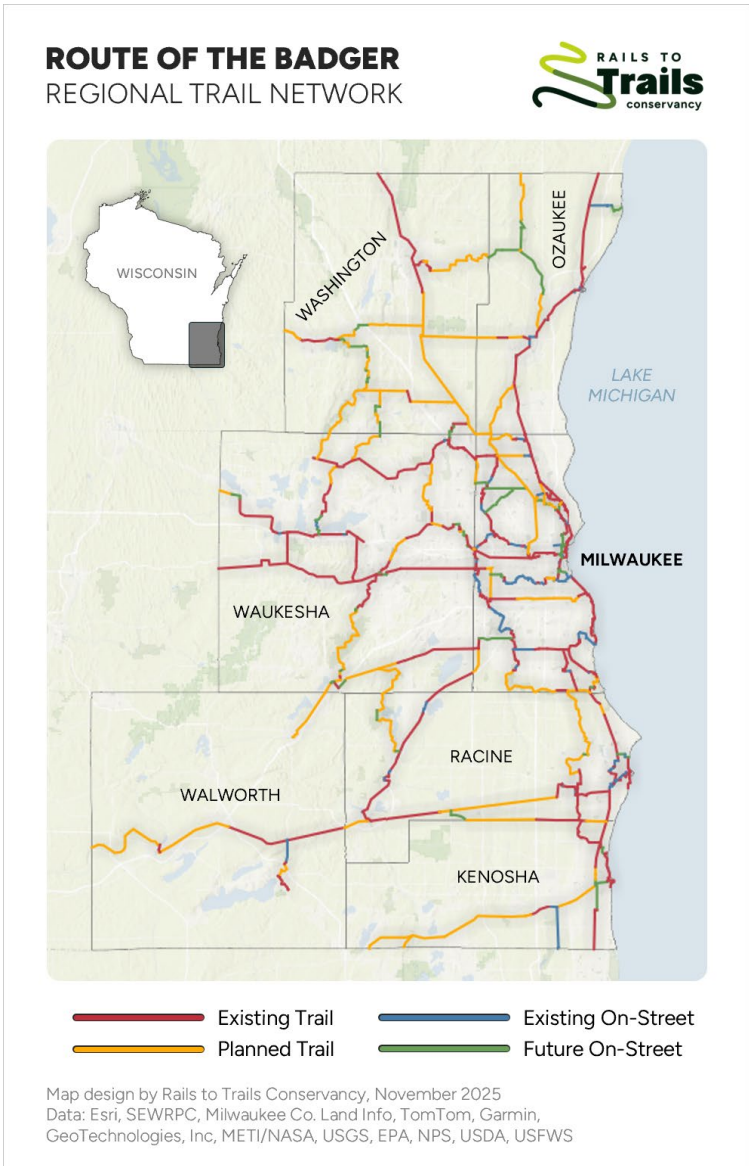


Figure 1. Route of the Badger Regional Trail Network

The project's objective was to create a continuous regional trail system that serves daily travel and recreation. Rather than functioning only as leisure amenities, the trails are intended to operate as safe corridors linking schools, workplaces, parks, and neighborhoods across the region (Rails-to-Trail Conservancy 2024a). Interviews emphasized this dual role, noting that while trails are often introduced as recreation projects, they quickly become part of everyday transportation: *"People talk about trails like they're extras, but once they're built, they're used to get places just like roads"* (interview, September 30, 2025). The scope of the initiative is regional and multi-jurisdictional, extending across Milwaukee, Racine, Kenosha, and Waukesha counties and requiring cooperation among numerous municipalities (Figure 1), (Jannene, J 2024). Within this footprint, the network draws on a mix of corridors (e.g., riverfront paths, parkland, converted rail lines, and electric transmission rights-of-way). Interviews noted that transmission corridors are especially important because they are wide, continuous, and already traverse physical barriers, enabling connections that would otherwise be cost-prohibitive: *"The power line corridors are already there, they're continuous, and they solve connections we could never*

afford to buy outright" (interview, September 25, 2025).

2.3 Governance and Setting

The Route of the Badger operates through partnerships that balance public access with the operational needs of electric infrastructure. WE Energies retains ownership of transmission corridors where several trail segments are located; the corridors remain utility assets, and public use is enabled through license or easement agreements with local partners. Guidance on trail – utility co-location and Wisconsin reporting both describe this model with defined roles for maintenance and utility access (Matteson, C 2021; Rails-to-Trail Conservancy n.d.).

Coordination extends beyond individual agreements. The Southeastern Wisconsin Regional Planning Commission (SEWRPC) provides the regional land-use and transportation framework that helps align cross-boundary connections (Southeastern Wisconsin Regional Planning Commission 2024). Project materials also describe a coalition model involving Rails-to-Trails Conservancy, Wisconsin Bike Fed, SEWRPC, and local governments organizing planning and outreach, while city-level updates document multi-city studies work for east–west trail links, (Jannene, J 2024; Rails-to-Trail Conservancy 2018).

Regulatory requirements shape implementation at the segment level. Where construction disturbs soil or intersects wetlands, Wisconsin DNR stormwater and (as applicable) wetland reviews add defined steps before work can proceed (Wisconsin Department of Natural Resources n.d.). When federal funding or approvals are involved, environmental review under NEPA applies according to Federal Highway Administration (FHWA) procedures (e.g., Categorical Exclusion (CE) / Environmental Assessment (EA) / (Environmental Impact Statement (EIS) classes of action) (Federal Highway Administration n.d.). At the same time, utilities must meet North American Electric Reliability Corporation (NERC) vegetation-clearance standards for transmission reliability, which influence vegetation zones and access within the corridor (Federal Energy Regulatory Commission 2020).

In practice, this governance framework is pragmatic: the corridors remain first and foremost energy infrastructure, opened for public use through agreements that specify responsibilities. Interviews for this case study noted practical benefits observed by partners, including clear access for maintenance vehicles and regular presence in the corridor, while emphasizing that the agreements preserve the utility's operational authority (interview, September 25, 2025; interview, September 30, 2025).

2.4 Project Development

The Route of the Badger network has advanced through phased build, with some segments already open and additional links still in planning. This approach pairs early, visible segments with a longer regional plan. Interviews conducted for this case study noted that demonstrating use on initial sections helped turn plans into tangible anchors for later links, creating a practical sequence for expansion.

Phase 1 opened in October 2022 as roughly three miles of paved shared-use trail, creating an initial west-to-east link and moving the corridor from plan to everyday public use (Dohr, B 2022). Phase 2 extended the corridor 1.6 miles east from 60th Street to Pondview Park, with a side connection (40th Street to Howard Avenue). Typical sections use a 10-ft paved path with 2-ft turf shoulders within the transmission corridor, and the paved surface can accommodate maintenance vehicles when needed (City of Greenfield, Wisconsin 2024; City of Greenfield and City of Milwaukee 2023). Project materials show Phase 2 was in design during 2023, with bid and construction targeted for 2024; public updates indicate the segment opened in 2024 (City of Greenfield and City of Milwaukee 2023) (PowerlineTrail.org n.d.). Consultant documentation summarizes key design elements and crossings for the corridor (KL Engineering n.d.).

Development typically begins with multi-city feasibility and alignment work, followed by public involvement and staged design milestones. For the South Powerline Trail Study, the next cross-city connection was organized within the utility corridor, with field survey and data collection conducted in summer 2024. Community engagement activities were held between the fall of 2024 and winter of 2025, a draft feasibility and implementation plan was released in Spring 2025, and a final plan was issued in July 2025 (City of Milwaukee 2025). Appendix C Table 3 provides a timeline of major decision and delivery milestones (feasibility approval, implementation start, phase openings, and current status), which the narrative in this section describes in sequence.

3.0 Barriers and Constraints

Barriers to implementation were primarily procedural and coordination-related: permitting requirements and multi-jurisdiction sequencing introduced time and alignment adjustments, while public concerns centered on near-neighbor impacts (privacy and perceived safety) rather than the safety of the transmission infrastructure itself.

As projects moved from concept to construction, alignments were refined to reflect site conditions and permitting. Where construction disturbed soils or intersected wetlands, state review and permitting steps, such as construction stormwater compliance and wetlands-related approvals, added time and occasionally required route adjustments before work could proceed (Wisconsin Department of Natural Resources n.d.). Because these steps can affect schedule and design details, they also create additional points when partners may need to communicate and explain their changes to local stakeholders.

With additional sections open, partner cities have coordinated the next connections toward a continuous east–west route. Public updates describe an emerging nine-mile corridor linking West Allis, Greenfield, Milwaukee, and St. Francis, with further links under study as planned expansions move toward Lake Michigan (Jannene, J 2024; City of Milwaukee 2025). Because the corridor crosses multiple jurisdictions, coordination of milestones and public communication is needed so openings create continuous links rather than isolated segments (City of Milwaukee 2025).

Interviews conducted for this case study noted that planning discussions most often surfaced adjacent-property concerns, privacy, and crime while concerns about the safety of the utility infrastructure itself were not raised in those sessions (interview, September 25, 2025; interview, September 30, 2025). Therefore, the interview suggests that engagement in this case is centered on near-neighbor impacts, alongside practical use and safety expectations for public trail use.

4.0 Outcomes and Impacts

Initial trail openings signaled strong everyday demand for an interconnected transportation network. In Greenfield, a Powerline Trail segment opened in 2022 and saw steady walking and biking, establishing the corridor as a practical local link as well as a recreation space (Dohr, B 2022). As additional pieces came online, partners used those results to plan the next connections, moving from isolated links toward an east–west corridor that ties multiple communities together (Jannene, J 2024; City of Milwaukee 2025).

Connectivity is the most visible outcome to date. Public updates describe an emerging nine-mile route linking West Allis, Greenfield, Milwaukee, and St. Francis, with further connections studied toward the Hank Aaron State Trail and Oak Leaf Trail near Lake Michigan (Jannene, J 2024; City of Milwaukee 2025). These steps shift the network from individual projects to a path people can follow across city lines.

Use is being tracked, not just observed. The region's planning commission operates a non-motorized counting program to measure walking and biking, providing data communities can use to calibrate design, maintenance, and safety improvements over time (Southeastern Wisconsin Regional Commission 2024). Interview feedback aligned with these observations, noting that once segments opened, regular use reinforced public support and helped set priorities for the next links (interview, September 25, 2025; interview, September 30, 2025).

Operationally, co-location with transmission corridors has practical effects. Interviews reported that paved trail surfaces also function as reliable access for maintenance vehicles, and that regular presence along the corridor improves visibility more "eyes and ears" without changing the corridor's primary purpose (interview, September 25, 2025; interview, September 30, 2025). Project materials reflect this dual function in standard cross-sections that include a paved path and turf shoulders sized to accommodate service access (City of Greenfield, Wisconsin 2024).

At the system level, interest in trail use and expansion has grown. Milwaukee County Parks cites increased public demand for trail projects since 2020 and has set goals to add mileage to meet that demand (Milwaukee County Parks 2024). Interviews for this case study echoed this trend, noting that visible, well-used segments made it easier for neighboring jurisdictions to advance their own connections (interview, September 25, 2025; interview, September 30, 2025).

5.0 Key Takeaways

Evidence from interviews and project documentation supports a practical sequence for building a regional trail network from local segments. The Route of the Badger case study points to transferable lessons that can inform future multi-functional transmission corridor projects. These lessons focus on sequencing, co-use design standards, and implementation flexibility.

For cross-city routes, interviewees emphasized a two-step sequence: first align jurisdictions through a joint feasibility and coordination process, then deliver early, visible buildable segments to demonstrate everyday use and build momentum. This sequence helps ensure openings and standards align across jurisdictions while still enabling incremental implementation (City of Milwaukee 2025).

It is valuable to clarify standards on co-use design elements that can allow public access and utility operations to coexist. Typical design elements described in this case include all-weather shared-use paths of about 10 ft with turf shoulders, so public access and maintenance needs can coexist (City of Greenfield, Wisconsin 2024; North Central Texas Council of Governments 2012); interviewees also noted that agreements work best when they make subordinate-use and temporary-closure provisions explicit in agreements to preserve utility operational authority while clarifying public expectations (Rails-to-Trail Conservancy n.d.); (interview, September 25, 2025; interview, September 30, 2025).

Maintaining flexibility in alignments during implementation is critical as projects move from concept to construction. Required permitting steps, such as construction stormwater compliance and wetland permitting, could introduce defined checkpoints where alignments can be confirmed and adjusted before work can proceed (Wisconsin Department of Natural Resources n.d.). Ongoing monitoring could further support this process over time. For example, the region's non-motorized count program provides a framework for tracking use as new segments open and for informing maintenance and safety improvements (Southeastern Wisconsin Regional Commission 2024). Specifically, this non-motorized count program is a regional monitoring effort that collects bicycle and pedestrian counts on trails and other facilities to inform maintenance, safety, and investment decisions. Taken together, these practices balance public access, operations, and long-term care while allowing the network to grow in phased steps (interview, September 25, 2025; interview, September 30, 2025).

Appendix A Table 1 summarizes the measures implemented in this case (e.g., co-location agreements, standard cross-sections, phased sequencing, permitting steps, access/closure protocols, and O&M commitments) that demonstrates how these takeaways have appeared in practice.

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Appendix A - Measures Implemented

Table 1. Practical actions used to deliver and operate the corridor, including co-location agreements, standard cross-sections, phased build sequencing, multi-city coordination, permitting steps, public engagement, access/closure protocols, on-street connectors, O&M commitments, monitoring, and adaptive refinements.

ID	Measure	Description
M1	Trail–utility co-location via license/easement	Public trail use established as subordinate to utility operations, with the corridor owner retaining access and the ability to temporarily close the trail for line work/vegetation management. Roles for upkeep are defined with local partners.
M2	Standard shared-use cross-section in transmission ROW	Typical section uses a 10-ft paved path with 2-ft turf shoulders within the ROW; paved surface can support maintenance vehicles as needed, aligning with shared-use guidance.
M3	Phased build sequence (“early, visible segments” first)	Initial segments opened to demonstrate everyday use and create anchors for subsequent links; later phases extended the corridor.
M4	Joint multi-city feasibility with shared milestones	A coordinated feasibility process (2024–2025) organized routing, engagement, and sequencing across four cities to avoid gaps and line up decisions.
M5	Environmental/permitting workflow	Where construction disturbs soil or intersects wetlands, construction stormwater and (as applicable) wetland reviews are completed before work proceeds; alignments may be refined.
M6	Public engagement cycle	Project steps included open houses/online input and documented design milestones (e.g., 30%/60%) prior to final plans and bidding.
M7	Temporary closure & access protocols	Agreements and project materials specify procedures for temporary closures during utility work and maintain vehicular access for operations within the corridor.
M8	On-street connectors and protected crossings	Short on-street links and crossing treatments used to bridge gaps and manage pinch points while meeting shared-use facility criteria.
M9	Operations & maintenance commitments	Municipal partners assume mowing, snow removal, signage/wayfinding, and routine inspection, ensuring the corridor remains functional for both users and utility access.
M10	Ongoing monitoring to inform adjustments	Use is tracked through the regional non-motorized counting program to calibrate maintenance, safety features, and future priorities as segments open.
M11	Subordinate-use communication & expectations	Public materials and outreach explain that recreational use is subordinate to electric operations, setting expectations about periodic closures and vegetation management.
M12	Adaptive alignment refinements	As projects move from concept to construction, site conditions and public feedback inform small alignment shifts to resolve constraints without halting progress.

Appendix B – Scale Table

Table 2. Snapshot of project scale: lengths of completed segments and the emerging corridor, the typical trail footprint per mile based on standard section, and key assets or connections affected.

Item	Value
Corridor length affected	Phase 1 (Greenfield): ≈3.0 mi (opened October 2022). Phase 2 (Greenfield): ≈1.6 mi (opened 2024). Emerging multi-city corridor: ≈9 mi linking West Allis - Greenfield - Milwaukee - St. Francis. Regional program target: 700+ mi (Route of the Badger)
Habitat restored / trail built (acres/mi)	Approximate trail footprint ≈1.7 ac/mi (10-ft paved + two 2-ft turf shoulders → total ≈14 ft; 14 ft × 5,280 ft ÷ 43,560 ≈ 1.7). Within a ~200-ft corridor, the ROW width ≈24.2 ac/mi (context for co-location).
Key assets affected	WE Energies transmission corridor; connections toward Hank Aaron State Trail and Oak Leaf Trail; city streets/crossings; Pondview Park node; neighborhood links.

Appendix C – Timeline Table

Table 3. Major decision and delivery milestones, showing approval dates, construction start, phase completions, and current status.

Milestone	Date	Attribution
Approval/decision (multi-city feasibility final)	July 2025	South Powerline Trail Study - Final Feasibility & Implementation Plan
Implementation start (recent build phase)	2024	Greenfield Powerline Trail Phase 2: design 2023; bid/construct 2024; segment opened 2024
Major phase(s)	Phase 1: ≈3.0 mi opened October 17, 2022. Phase 2: ≈1.6 mi opened 2024	Phase 1 opening news; Phase 2 project materials/updates
Status	Emerging ≈9-mile corridor across four cities; additional links under study toward Lake Michigan	Public updates & study page

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