# BIKE & PEDESTRIAN WAY COMMISSION MASTER PLAN

Joint Mequon-Thiensville

GRAEF

**Primary Contact:**
Craig Huebner, AICP
Project Manager
Craig.Huebner@graef-usa.com
414-266-9228

275 W Wisconsin
Suite 300
Milwaukee, WI 53203
414 / 259 1500
www.graef-usa.com

The Avenue
275 West Wisconsin Avenue, Suite 300
Milwaukee, WI 53203
414 / 259 1500
414 / 259 0037 fax

www.graef-usa.com

Cole McCraw
Assistant City Engineer
City of Mequon
City of Mequon Engineering Department
11333 N Cedarburg Rd
Mequon, WI 53092

RE: Joint Mequon-Thiensville Bike & Pedestrian Way Commission Master Plan

Dear Mequon-Thiensville Bike & Pedestrian Way Commission Members,

GRAEF is excited to provide you with this proposal for professional consulting services to prepare a Mequon-Thiensville Bicycle + Pedestrian Master Plan. As can be seen in the supplementary qualifications package attached with this cover letter, the GRAEF team has a proven track record of successful bike and pedestrian master planning, design, and construction. We are based out of Milwaukee and have strong familiarity with Thiensville and Mequon.

**Highly Skilled, Experience, and Passionate Project Team:**
The GRAEF team encompasses a multitude of experts in a variety of fields at your fingertips. Beyond our experienced planning team, we offer a broad range of engineering, Landscape Architects, Architects, GIS, legal and environmental services that can often fill the gap when special questions arise relating to different aspects of the bicycle and pedestrian facility design. For this project, Craig Huebner will serve as Project Manager, with over 10 years of bike and pedestrian planning experience. Craig will manage the team of landscape architects, transportation/traffic engineers, GIS specialists and transportation planners to ensure the Commission receives a final product you can be proud of.

**Know the Territory (Technical and Geographic):**
GRAEF offers significant skills and experience in the planning and design of bicycle paths, trails, and pedestrian pathways. New guidelines and resources for bike and pedestrian facility design are constantly being released, and our team stays on top of these releases. From the National Association of City Transportation Officials (NACTO), to Congress for New Urbanism (CNU), to the Manual on Uniform Traffic Control Devices (MUTCD), to the WisDOT Facilities Development Manual (FDM), design standards are constantly being improved to better serve communities. GRAEF is familiar with a variety of these sources, and designs streets and trails to incorporate these practices and be in compliance with any new regulations.

Our GRAEF team will bring local, regional knowledge to this project including recent bike/ped planning and design in adjacent communities. In 2023, GRAEF worked closely with the Village of Germantown to adopt a village-wide trail master plan. This process included conversations with Wisconsin Bike Federation, and Route of the Badger that looked at the larger SE Wisconsin network of trails and critical gaps in existing bike/ped connections.

The GRAEF team is confident that we have the creativity, expertise and capability to meet your needs. We are very excited to have the opportunity to work with the Commission, Village of Thiensville, and City of Mequon to advance your vision for bicycle and pedestrian improvements, and creating a master plan that satisfies the needs of your communities.

Sincerely,

Craig Huebner, AICP
Project Manager
Craig.Huebner@graef-usa.com

GRAEF

Since its inception in 1961, GRAEF has grown from a small individual partnership to a prominent, multi-disciplinary international firm. GRAEF has a team of nearly 300 employees spread across ten offices in the Midwest, Florida, and Turks and Caicos.

Over 60+ years, GRAEF's unwavering dedication to excellence has been fueled by core values such as integrity, quality, and a steadfast commitment to exceptional customer service. These principles form the bedrock of GRAEF's operations, ensuring that clients receive the highest level of satisfaction and a seamless experience.

GRAEF has remained at the forefront of the industry, consistently adapting to emerging trends and embracing advancements, and is proud to be a reliable partner for clients seeking top-tier design services and unmatched expertise.

## OUR CORE PURPOSE

To improve the physical environment for the benefit of society

## WE ARE

- **Planners & Urban Designers**
- **Transportation Engineers**
- **Landscape Architects**
- **Site / Civil Engineers**
- **Surveyors**
- **GIS Specialists**
- **Structural Engineers**
- **Environmental Engineers**
- **Mechanical, Electrical & Plumbing Engineers**
- **Architects**

## WE ARE LOCAL

Being a local firm, we have a strong connection with the community and better understanding of local needs, leading to effective solutions.

## DIVERSE TEAM

Our team leverages the strengths of each team member, creating a dynamic and resilient environment that can thrive in both traditional and contemporary spaces.

## WE KNOW BIKE & PEDESTRIAN WAYS

Our expertise is unmatched, reflecting our commitment to creating extraordinary experiences while ensuring safety for the community.

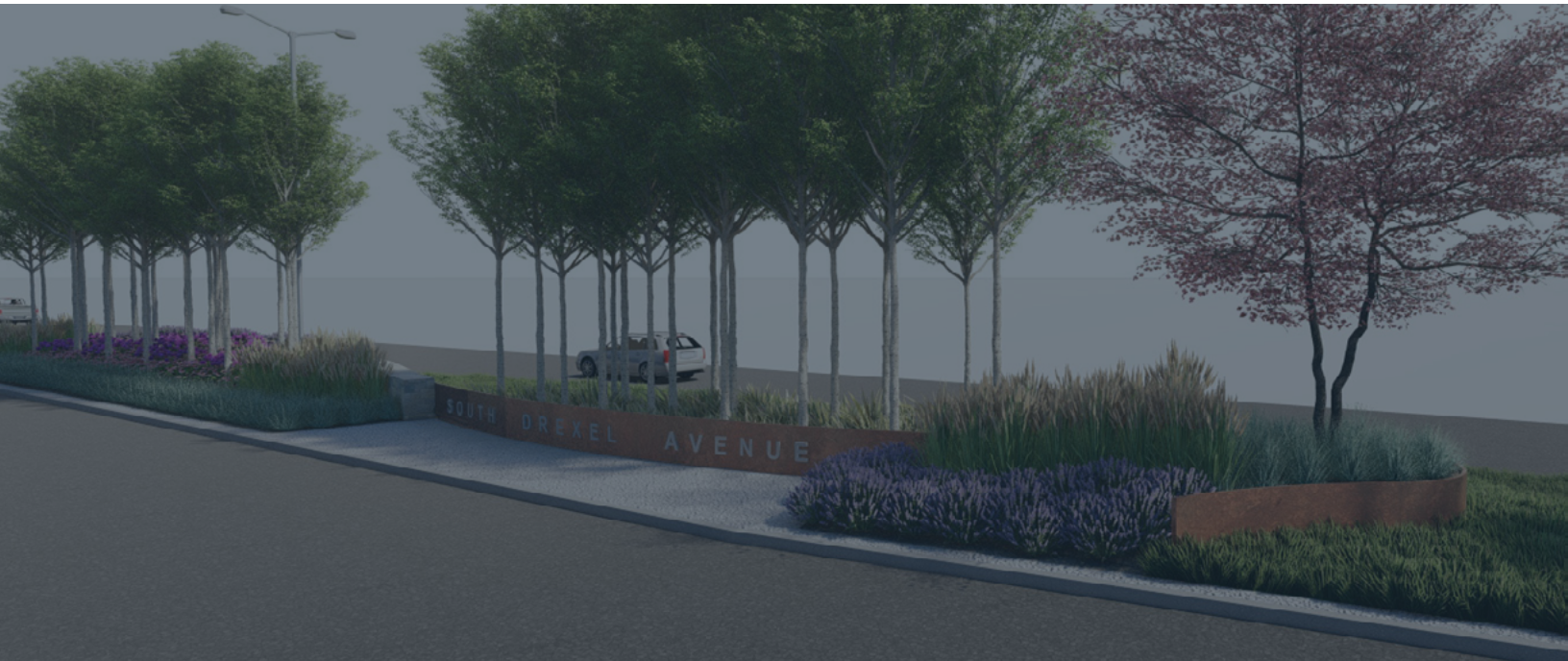
# PLANNING & URBAN DESIGN TEAM

WE STRIVE TO ENHANCE EVERY COMMUNITY WE SERVE, EMPLOYING OUR EXPERTISE TO CREATE POSITIVE AND SUSTAINABLE TRANSFORMATIONS TAILORED TO LOCAL NEEDS AND ASPIRATIONS.

The Planning & Urban Design Team is focused on advancing the sustainability and resilience of our communities. We prioritize collaboration and innovation with our partners and clients. Listening and engaging are integral to our work, and we are committed to promoting equity and inclusion in all aspects of our practice. We like to prepare detailed plans, guidelines, and concepts that enhance development, preserve or restore the environment, and add value to a community.

We integrate new development and redevelopment with existing neighborhoods, districts, and corridors to create livable, walkable, active public places – places tailored to fit local social, economic, and cultural activities. We view planning and urban design as simultaneously building on community traditions and crafting new and sustainable pathways for communities to evolve.

As planners and urban designers, we recognize the importance of a good working relationship with public officials, business operators, and local citizens. Through meaningful dialogue with public agencies, community leaders, and residents, we aim to catalyze consensus-based planning that leads to action.



# TRANSPORTATION ENGINEERING TEAM

## WE DESIGN SAFE BIKE AND PEDESTRIAN PATHWAYS WITH A FOCUS ON COST-EFFICIENCY, HISTORICAL PRESERVATION, COMMUNITY ENGAGEMENT, AND VISUAL APPEAL.

Our skilled team of transportation engineers and technicians specialize in designing efficient and safe bike and pedestrian pathways. We offer a comprehensive range of services tailored to enhance the infrastructure for cyclists and walkers, including dedicated bike lanes, pedestrian-friendly intersections, and well-lit pathways. Our expertise extends to creating roundabouts and optimizing site development to prioritize the needs of bikers and pedestrians.

We have a proven track record in crafting reconstruction and rehabilitation plans for existing routes while incorporating innovative designs for new pathways. Our approach emphasizes cost-efficiency, historical preservation, community engagement, and visual appeal to minimize environmental concerns and ensure public support.

Over the years, we've partnered with various governmental bodies and private entities across rural and urban landscapes, contributing to the creation of inclusive and accessible transportation networks.

# BIKE & PEDESTRIAN MASTER PLANNING

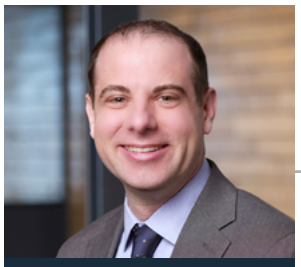
GRAEF RECOGNIZES THE CRUCIAL SIGNIFICANCE OF BIKE AND PEDESTRIAN PATHWAYS IN PROMOTING SUSTAINABLE AND ACCESSIBLE URBAN MOBILITY.

GRAEF plans systems of “complete streets” with interconnected public places, bicycle circulation, and active pedestrian areas. Streetscape and landscape design must respect the context, accept constraints, function effectively, generate positive activity, look attractive, and allow for efficient operation and maintenance. If well-designed, bicycle and pedestrian facilities can increase personal health, environmental health, air quality, and social and economic vitality.

Because of our fully integrated, inter-disciplinary approach to design, we have the expertise to provide cost-effective, efficient design solutions for roadway systems that are creative, functional and pleasing to the eye. GRAEF has a great deal of experience with providing specialty types of traffic calming elements such as: bump-outs, raised-pedestrian (tabletop) crosswalks, rumble strips, accent paving, traffic circles, roundabouts, specialty signage and chokers.

# PROJECT TEAM

WE HAVE ASSEMBLED AN EXPERIENCED TEAM OF PLANNERS, DESIGNERS, AND TRAFFIC ENGINEERS WHO ARE PASSIONATE ABOUT INNOVATIONS IN BICYCLE AND PEDESTRIAN PLANNING AND DESIGN.

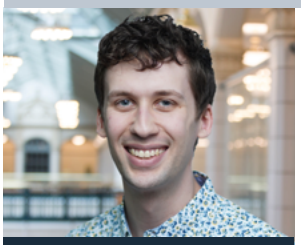


**ANDRE OST**
QA / QC

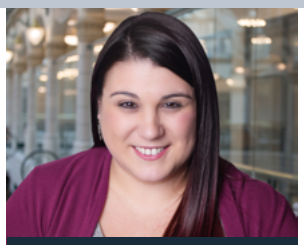
**CRAIG HUEBNER**
PROJECT MANAGER

**JOSEPH PEPITONE**
PRINCIPAL-IN-CHARGE

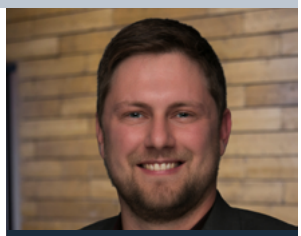
**PROJECT TEAM**



**DOMINIC MARLOW**
PLANNER



**ALEX MOTL**
TRAFFIC ENGINEER



**ALEX THILL**
LANDSCAPE DESIGNER

## CRAIG HUEBNER, AICP

### PROJECT MANAGER | PLANNING & URBAN DESIGN TEAM LEAD

*Craig is the Practice Team Leader for GRAEF's Planning + Urban Design studio. Craig's academic background is in both architecture and urban planning, and he has several years of experience working in both fields. His work experience includes bike + pedestrian master planning, comprehensive planning, neighborhood master planning, commercial redevelopment, streetscape corridor planning/design, urban design, park and open space planning, and design guidelines. In addition, Craig has extensive experience in the creation of innovative public participation plans for a variety of planning projects.*

### EDUCATION

Master of Architecture, 2012
Master of Urban Planning, 2012
Certificate in Real Estate Development, 2012
University of Wisconsin-Milwaukee, Milwaukee, WI
B.S., Architectural Studies, 2009
University of Wisconsin-Milwaukee, Milwaukee, WI

### PROFESSIONAL CERTIFICATIONS

American Institute of Certified Planners (AICP)

### PROFESSIONAL AFFILIATIONS

American Planning Association (APA)
Wisconsin Chapter of the American Planning Association (APA-WI)

**MUNICIPAL PLANNING**

Craig has extensive experience acting as an extension of municipal staff in the role of ongoing planning consultant in over a dozen communities across Wisconsin. In this role, Craig analyzes existing land use and zoning codes and policies, understands and interprets municipal master plans and ordinances, prepares staff reports for private sector development approval procedures, assists in economic development tasks (TIF analysis, grant assistance, etc.), and leads special planning projects (master plans, design guidelines, incentive programs, ordinance amendments, site planning/design, etc.). Craig's experience in different municipalities allows him to share best practices found in other communities for current projects.

**Relevant Project Experience:**

- Germantown: Trail Master Plan; Comprehensive Plan; and CORP
- Milwaukee County Parkway Conversion Projects
- Franklin Ryan Creek Trail Master Plan
- MRMC Bicycle + Pedestrian Master Plan
- Milwaukee Brady Street Pedestrianization Study
- Milwaukee North Avenue, East Side Streetscape + Vision Zero Plan
- West Allis National Avenue Corridor Strategic Plan
- Shorewood Wilson Drive Redesign

## JOSEPH PEPITONE, PLA, LEED AP

### PRINCIPAL-IN-CHARGE | SENIOR LANDSCAPE ARCHITECT

*Joe is a licensed landscape architect who brings 36 years of professional experience in project management and landscape architectural design and planning. During his tenure at GRAEF, Joe's projects have won numerous design awards. His expertise includes master planning to incorporate building(s) and site program elements in a functional and cohesive manner. His thorough knowledge of all aspects of site development allow him to provide complete and thorough documentation.*

### EDUCATION

B.S., Landscape Architecture, 1986, University of Wisconsin-Madison, Madison, WI

### PROFESSIONAL REGISTRATION

Registered Landscape Architect – WI, CA, MN, MI, NV, VA
CLARB National Certification

**Ryan Creek Trail Master Plan, Franklin WI – Project Manager:** GRAEF provided planning and conceptual landscape design services along with cost estimates for various trail route options through the 8 square mile study area. The master plan aims at providing a bike/ped trail connecting the southwest portion of the City to regional trail connections The Trail Master Plan represents a major expansion to the regional trail system into a historically and environmentally significant portion of the City, making the area attractive to future residents and expanding accessibility and recreation opportunities for all.

**Herb & Dolly Smith Park, City of Neenah, WI – Landscape Architect:** Highlights of the park include a shelter with restrooms and open-air picnic space, bike and pedestrian trails with wildlife viewing areas, and a canoe and kayak launch. In addition, to avoid sensitive environmental areas and meet ADA accessibility guidelines, the trail path includes a 60-foot long timber boardwalk ravine crossing as well as a 390-foot-long timber boardwalk across Little Lake Butte des Morts at the mouth of the Neenah Slough.

## ANDRE OST, PE, PTOE

### QUALITY ASSURANCE / QUALITY CONTROL

*Andre provides both transportation and traffic engineering design services to various clients throughout the State of Wisconsin. Specific transportation project involvement has included conceptual design layout, alternative analysis, environmental impact studies, public involvement, utility coordination, preliminary design, pavement design, and the preparation of plans, specifications, and estimates. Specific traffic project improvements include analysis of intersection improvements, preparation of signal warrant studies, traffic signal design, parking studies and traffic animation models.*

### EDUCATION

B.C.E., 2006, University of Minnesota-Twin Cities, Minneapolis, MN

### PROFESSIONAL REGISTRATION

Professional Engineer – WI, IL, MN, FL
Professional Traffic Operations Engineer

**Milwaukee Regional Medical Center 87th Street Reconstruction, Milwaukee Regional Medical Center (MRMC), Wauwatosa, WI - Project Manager:** Reconstruction of approximately 2,700 feet of 4-lane urban roadway and six intersections on the MRMC healthcare campus. Project design also included evaluation of road alternatives, bicycle lanes, lighting and streetscaping.

**W North Avenue, STH 100 to 95th Street, WisDOT/City of Wauwatosa - Project Manager:** For the urban reconstruction and rehabilitation project on W North Avenue. The 0.5 mile reconstruction segment of the project includes replacement of the pavement, aging utilities, and provides complete streets including innovative separated bike lanes.

**City of Milwaukee ARPA Reckless Driving Initiative (W Locust St; N 35th St; N 27th St/W Center St/W Fond du Lac Ave Intersections) - Project Engineer:** Completed traffic analysis Rapid Implementation Project designs for three separate roadways to reduce speeds and reckless driving behaviors. Analysis and design focused on traffic operations and preferred intersection approach configurations under road diet. Cross-sections were implemented to minimize unsafe lane changes and weaving maneuvers.

## ALEX MOTLE, PE, PTOE, RSP

### TRAFFIC ENGINEER

*Alex provides traffic engineering services for a wide variety of urban and rural roadway projects. Her project experience includes corridor improvement studies; intersection design analysis and evaluations; roundabout and innovative intersection operations analysis; freeway capacity and operations analysis; signal timing reviews and plans; traffic impact analysis/trip generation and distribution; safety analysis; school zone safety; complete streets and bike/ped facilities; parking studies; transportation demand management; traffic calming plans; data collection and analysis; and micro-simulation.*

### EDUCATION

M.S., Transportation Engineering, Civil & Environmental Engineering, 2014, University of Wisconsin-Madison, Madison, WI

### PROFESSIONAL REGISTRATION

Professional Engineer – FL, WI, IL, MN
Professional Traffic Operations Engineer

### PROFESSIONAL CERTIFICATIONS

Road Safety Professional1 (RSP1)

**W. Beloit Road, S. 60th to W. Lincoln, WisDOT/City of West Allis, West Allis, WI – Traffic Engineer:** Study of urban street corridor evaluating geometrics, signing and pavement markings, on-street parking regulations, pedestrian and bicycle accommodations, safety conditions, volumes, peak hour traffic operations, signal timings, and corridor progression/intersection coordination.

**W. National Avenue, S. 65th Street to S. 62nd Street, WisDOT/City of West Allis, WI - Traffic Engineer:** Study of urban street corridor evaluating geometrics, signing and pavement markings, on-street parking regulations, pedestrian and bicycle accommodations, safety conditions, volumes, peak hour traffic operations, signal timings, and corridor progression/intersection coordination. Traffic analysis included various cross-section and intersection approach lane configurations to determine preferred on-street parking, bicycle and pedestrian, and turn lane facilities.

## DOMINIC MARLOW, AICP

**PLANNER**

*Dominic's experience sits at the intersection of urban planning and architectural design, ranging from research and demographic studies to spatial planning, mapping, and architectural rendering. Dominic's work seeks to manage the complexities of systems in the physical environment to improve public spaces and help cities become adaptable to new or unforeseen changes. He is passionate about using design as a communication tool to help cities and communities envision the future they want to build.*

### EDUCATION

Master of City Design from University of Illinois at Chicago; BA Urban Studies; BA Architectural Studies from University of Illinois at Chicago

### PROFESSIONAL CERTIFICATION

American Institute of Certified Planners (AICP)

**North Avenue, East Side Streetscape Visioning, Milwaukee, WI - Planner & Designer:** GRAEF created a conceptual streetscape design for the North Avenue Business Improvement District (BID) with the goal of improving pedestrian and cyclist safety, calming traffic, and enhancing the economic vitality of the North Avenue Commercial Corridor as it travels through the East Side of Milwaukee. The project spanned from the Milwaukee River east along East North Avenue to North Lake Drive and Lake Michigan. The plan recommends creative solutions to emphasize the street as a safe place for all to live, work, and visit.

**Downtown + Lakefront Plan - Streetscape and Public Realm Design, City of Port Washington, WI – Planner/Urban Designer:** Designed streetscape improvements for six downtown streets and four new public places to connect redevelopment sites, improve pedestrian safety and accessibility, and enhance the character of the downtown as part of the Downtown and Lakefront Plan. Street designs included curb extensions, reduced lane widths, raised table intersections, painted crosswalks, offstreet protected bicycle facilities, managed streets, pedestrianized alleys, and ADA improvements to achieve traffic calming and improve pedestrian and bicyclist safety and experience. Public place designs included a mix of improvements private businesses and new development can implement to complement public investments and public private partnerships enhancing the public realm.

## ALEX THILL, ASLA

**LANDSCAPE DESIGNER**

*Alex brings a collection of site design and planning experience to the project team and has been involved in a large breadth of design projects ranging from both urban and rural spaces, waterfront design, mixed use development, public park design, and master planning. Additionally, Alex has extensive experience in community visioning workshops; targeted at formulating strategic plans for both local and regional municipalities. Currently, Alex serves as the Chapter President for the Wisconsin Chapter of the American Society of Landscape Architects.*

### EDUCATION

Master of Landscape Architecture, 2016, University of Minnesota-Twin Cities, Minneapolis, MN
Bachelor of Environmental Design, 2014, University of Minnesota-Twin Cities, Minneapolis, MN

### PROFESSIONAL AFFILIATION

American Society of Landscape Architecture (ASLA)
Wisconsin Chapter of the American Society of Landscape Architecture (WI ASLA)

**Drexel Town Square Open Space, Oak Creek, WI – Landscape Architect:** Large 85-acre redevelopment on the former industrial Delphi site. GRAEF provided multiple engineering services including planning and landscape architecture for the entire project. The open space design included the ecological restoration of a degraded 17 acre wetland and 9 acres of upland areas, including a multiuse trail that extends almost 1 mile in length and has a 250' long elevated, boardwalk/bridge extending over part of the wetland ponds.

**Downtown Riverwalk West, West Bend, WI – Landscape/Site Designer:** The project focused on a programmatic visioning of Riverwalk West in the City of West Bend. The design process included multiple site tours to gather feedback from the different stakeholder groups. The design realized the vision of a kayak launch, multiple "touch the water" moments, as well as business integration through urban infill strategies along Main Street. One of the strategies used was the creation of public green space in the form of a riverfront plaza. What was once the back door of businesses, is now an inviting and engaging pedestrian space along the Milwaukee River. *with another firm*

# PROJECT APPROACH

## TASK 1: INVENTORY ROADWAY CHARACTERISTICS, BIKE AND PEDESTRIAN WAY CONDITIONS, BICYCLE USE AND CRASHES

GRAEF will gather and review existing data in order to gain a detailed understanding of existing conditions. GRAEF will obtain available data to create an existing inventory of roadway, bike, and pedestrian facilities. This inventory will be ESRI GIS-compatible format.

## TASK 2: COMMUNITY ASSESSMENT

The GRAEF Team will assemble and evaluate both quantitative and qualitative information. In addition to a basic inventory, this process will help identify key strengths, weaknesses, opportunities and challenges. We will look at past plans and the lessons learned from previous engagement. We will also include data from comparable projects (both local and national) that bring new knowledge to the table.

## TASK 3: ASSIST THE COMMISSION IN UPDATING THE VISION, GOALS, OBJECTIVES, AND POLICIES

**Meetings:** GRAEF will attend a kickoff meeting with the Commission to discuss project goals, understand expectations and clarify project requirements, review the overall project conditions and obtain background information, identify key project stakeholders, and clarify roles, responsibilities, and project schedule. GRAEF will also attend monthly meetings with the Joint Mequon-Thiensville Bike & Pedestrian Way Commission. Each meeting will include an update on project status and also be an opportunity for the public to track project progress.

**Engagement:** In addition to attendance at monthly meetings, GRAEF will conduct an online survey to garner input from the community and serve as the Needs Assessment input method. Additionally, GRAEF will discuss with the Commission the facilitation of a community open house. This public meeting would be conducted either in tandem with the monthly Commission meetings or a stand-alone meeting as a way for the community to provide input on the project. The meeting would focus on obtaining feedback on existing conditions, goals/objectives, and community priorities.

**Draft and Final Report:** GRAEF will create a report outline early in the project to obtain confirmation from the Commission on report structure and contents. GRAEF will produce a visually appealing Plan that is detailed yet easy to read. Additionally, we will ensure all project deliverables are electronically formatted and accessible to the greatest extent possible for posting on web platforms and be inclusive of individuals with disabilities navigating any final products for the public.

## TASK 4A: IDENTIFY BICYCLE TRAVEL CORRIDORS

Inventorying the existing bicycle and pedestrian infrastructure conditions as outlined in Task 1 is critical, but understanding how the facilities tie into the community should not be overlooked. Ideal infrastructure creates connections, meaning that existing facilities are integrated with Mequon and Thiensville hotspots without any access gaps or disruptions along the trip. Disruptions in the infrastructure may result in lower usage. Reviewing historic volume counts on the facilities will show high- and low-use corridors and reveal where improvements may be necessary. High-volume corridors are frequently considered priorities; the school of thought is that if a facility has many users, it's an important corridor and warrants a large share of resources and attention. Similarly, a low-volume facility that doesn't serve as many users may not warrant the same degree of attention. However, these low-volume facilities may have the greatest opportunities for improvements, if there are deficiencies that cause low usage. Investing in deficient facilities to create better connections may increase usage. Therefore, the existing conditions, the desired origins and destinations, and the volumes and usage of each facility in should be evaluated together to determine and prioritize where improvements will have the most value.

After identifying the facilities and conditions, GRAEF will review trip-generators such as commercial and business districts, parks and public spaces, schools, residential districts and neighborhoods, and other regional connections and compare the locations of these destinations with the existing facilities. Criteria will be developed to evaluate how successfully the facilities integrate with the destinations. Are there gaps between facilities and destinations? Does a facility end without providing a clear connection or access point to a destination? Is the connection unnecessarily circuitous? Is the connection safe? Along with evaluating the connections, volume data for the corridors will be reviewed. Facilities in good condition with strong connections to major destinations will likely see high volumes; facilities in poor conditions or with poor connections to major destinations may see varying volumes; facilities in poor condition or with no nearby destinations may see low volumes. The volume data will support the team in prioritizing improvement locations.

### TASK 4B: BICYCLE AND PEDESTRIAN VOLUME COUNTS

Collecting accurate and robust volume data and facility usage information for alternative transportation modes like pedestrians and bicyclists can be a challenge when using traditional data collection tools like cameras and tube counts. Big data sources and modern technology can provide a larger and more detailed data set than manual counts taken at a specific time and place. GRAEF proposes partnering with a big data vendor to get a better understanding of bicycle and pedestrian volumes, trips, and routes in Mequon and Thiensville. This information will help reveal which facilities are used the most often, when activity is highest, and where gaps might exist in the current infrastructure, and can help guide recommendations for future improvements.

### TASK 5: EVALUATE AND SELECT SPECIFIC ROUTE ALTERNATIVES AND DESIGN TREATMENTS

GRAEF will identify priority bike/ped segments and appropriate design treatment based upon criteria agreed upon with the Commission (such as goals/objectives, available funding, relationship to existing nearby projects, addresses critical gap in existing bike/ped network, etc.).

### TASK 6: PREPARE A SAFETY COMPONENT

Reviewing the safety of existing multi-modal facilities involves more than reviewing crash histories. Understanding where crashes have occurred is important, but a facility with no crashes may still have safety issues. There could be near misses, or there could be low usage due to the unsafe conditions, and improvements could increase usage and safety. The Community Assessment will be extremely valuable in understanding these safety concerns. As part of Task 3, GRAEF will conduct surveys/ask for public feedback on experiences while using existing facilities and use this guidance in conjunction with the inventory and volume data to identify locations for safety improvements.

Many of the safety improvements are likely to address deficiencies like accessibility, visibility, or unprotected spaces that were identified in other evaluations. For example, if a bicycle facility ends just short of a school, and students need to travel on a high-volume street with many vehicles for the last leg of the trip, that corridor may be identified as a route with gaps in connectivity and low volumes. Completing that connection could be a significant safety improvement for riders, thus increasing usage. Improvements such as separated facilities, clear signing and pavement markings at crossings with vehicle traffic, and logically thought-out connections are all examples of safety improvements that could be implemented pending the safety review.

### TASK 7: EVALUATE THE FINISHED PLAN AGAINST PRE-ESTABLISHED PLANNING CRITERIA AND GOALS AND OBJECTIVES

Using the recommendations from Task 5, GRAEF will create a phasing plan inclusive of "priority corridor segments" and all recommended bike/ped facilities. "Priority Corridor Segments" shall address (1) clear action steps; (2) performance metrics; (3) partnership opportunities (existing and needed); (4) funding opportunities; and (5) policy change impacts and adaptions.

### TASK 8: OPERATION MAINTENANCE COST/BENEFIT ANALYSIS

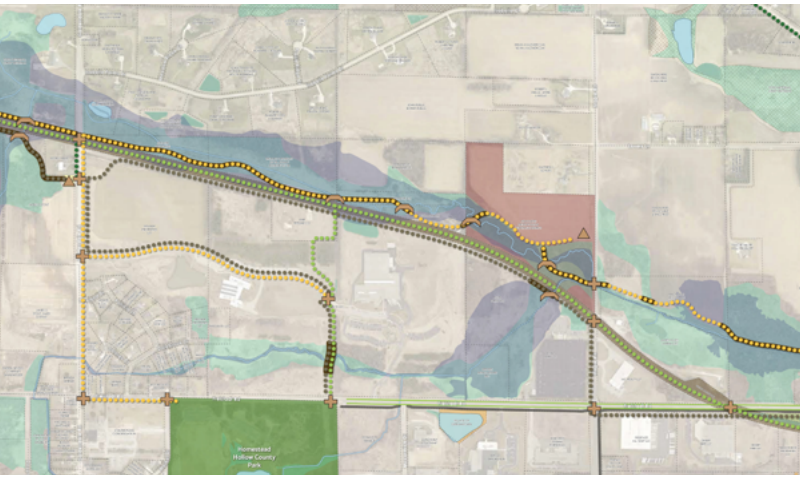
Within the Plan report, GRAEF will prepare capital and ongoing maintenance cost opinions for recommended bike and pedestrian facility types and trail elements (not including ROW or property acquisitions). This will also include estimated life cycle cost for each recommendation.

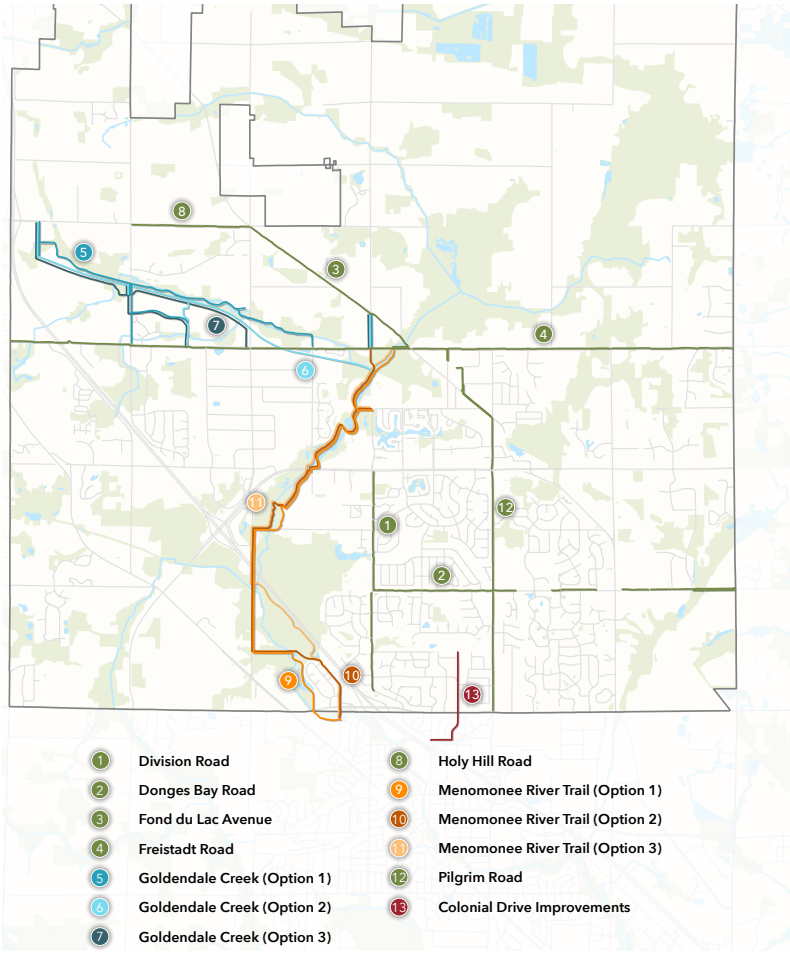
### TASK 9: IMPACT FEE EVALUATION

GRAEF will perform an impact fee evaluation to determine if an impact fee applies based upon the study results and if so, the calculation of an appropriate impact fee value will be recommended in conjunction with City of Mequon.

# GERMANTOWN TRAIL MASTER PLAN

GERMANTOWN, WI






## THE GERMANTOWN PEDESTRIAN/BICYCLE TRAIL MASTER PLAN INCREASED PARTICIPATION IN WALKING AND CYCLING FOR ACTIVE TRANSPORTATION, RECREATION AND WELLNESS THROUGH THE CREATION OF INTERCONNECTED AND SAFE TRAIL NETWORKS.

GRAEF created a Trail Master Plan for Germantown, outlining routes for the Menomonee River Trail and Goldendale Creek Trails to fulfill the “Route of the Badger” vision for Southeast Wisconsin. This offers scenic access to environmental corridors and waterways with trails situated near water sources and alternate routes for connectivity.

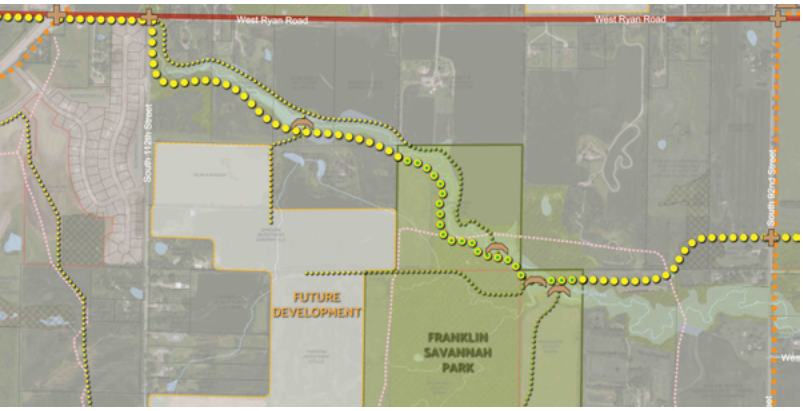
The plan also identifies six major roadway corridors for sidepath trails, establishing an evaluation framework to prioritize segments and amenities, along with a phased implementation plan detailing action steps, performance metrics, partnerships, funding opportunities, and policy considerations.

Designs for trail facilities included elevated boardwalks, bridges, and intersections, with cost estimates provided for each recommendation to aid in budgeting and decision-making.

**Copy of full report:**
https://www.germantownwi.gov/DocumentCenter/View/8495/2024-01-15-Germantown-Trail-Master-Plan---ADOPTED

# RYAN CREEK TRAIL MASTER PLAN

FRANKLIN, WI




THE RYAN CREEK TRAIL MASTER PLAN PROVIDES A BIKE/PED TRAIL CONNECTING THE SOUTHWEST PORTION OF THE CITY TO REGIONAL TRAIL CONNECTIONS.

The 8-square mile study area presented a complex mix of ongoing and planned residential/mixed-use developments, natural areas, and multiple government jurisdictions. The resulting Master Plan provides the City with a detailed menu of trail route options vetted for feasibility, connectivity, and access to the natural beauty of the Ryan Creek watershed.

GRAEF provided planning and conceptual landscape design services along with cost estimates for various trail route options through the study area. Each route identifies the number of road and water crossings needed, connections to future development, and descriptions of trade-offs for making final trail routing decisions during implementation. GRAEF's planning strategy involved careful navigation of property ownership to minimize future conflicts without sacrificing trail quality or connections. GRAEF also presented alternatives to the Parks Commission to provide the opportunity to assess the trail plan in depth and ask any questions about routing decisions.

The Trail Master Plan represents a major expansion to the regional trail system into a historically and environmentally significant portion of the City, making the area attractive to future residents and expanding accessibility and recreation opportunities for all.

# SHOREWOOD COMPREHENSIVE BICYCLE STUDY

SHOREWOOD, WI


THE AIM OF THIS STUDY WAS TO SET OBJECTIVES, IDENTIFY SAFE BIKE ROUTES, ENSURE BIKE SAFETY EDUCATION, AND CREATE A PLAN FOR FUTURE BIKE FACILITIES.

GRAEF was retained by the Village of Shorewood to provide professional engineering services for a Comprehensive Village Bicycle Study. The study goals were to (a) plan a village-wide network of safe and convenient routes for bicycles transportation within the community; (b) provide a network that promotes bicycle use within the Village; (c) provide opportunities to educate the citizens on bicycle safety; and (d) increase bicycle usage within the Village through promotion of safe routes.

**Copy of full report:**
https://acrobat.adobe.com/id/urn:aaid:sc:US:f350b576-3ffe-41cc-bf90-8a369009b3b3

**Data Collection:** Inventoried existing and planned designated bicycle routes in surrounding communities. In addition, bicycle counts were conducted on the roads and the trails to get an idea of the existing ridership within the village.

**Planning:** Worked with the Village to identify key origins/ destinations within the Village.

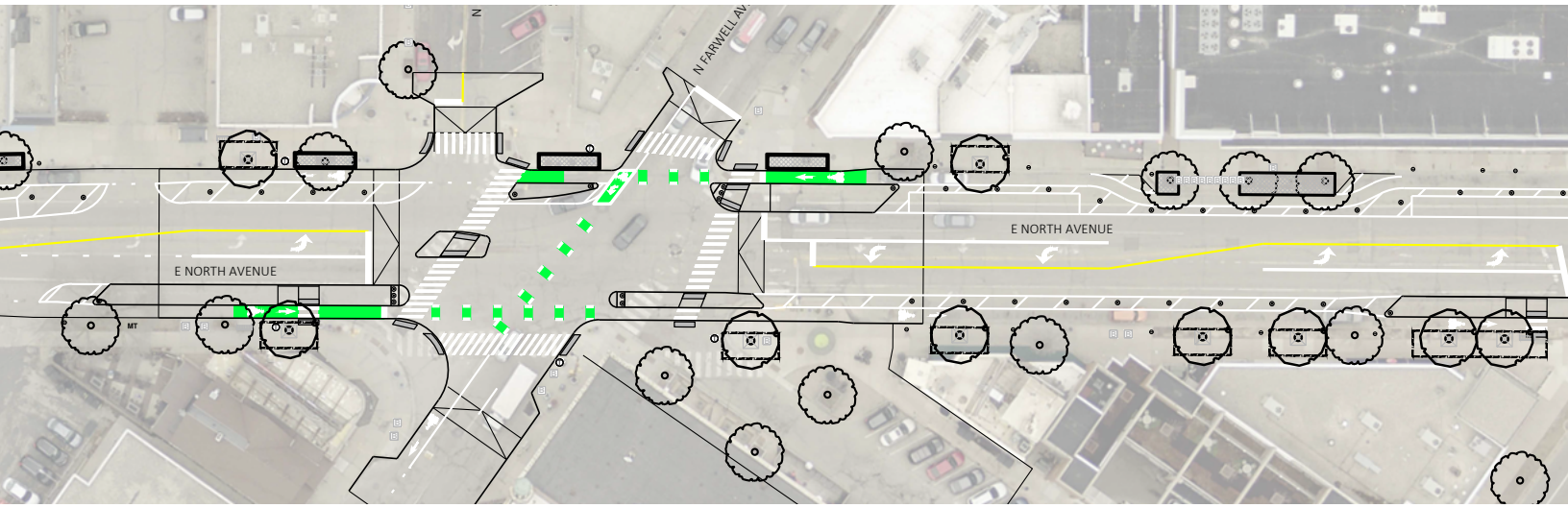
**Feasibility:** Investigated identified routes to determine feasibility & identify potential impacts; computed the Bicycle Compatibility Index for all roadways within the village to determine what routes were most compatible for bikes.

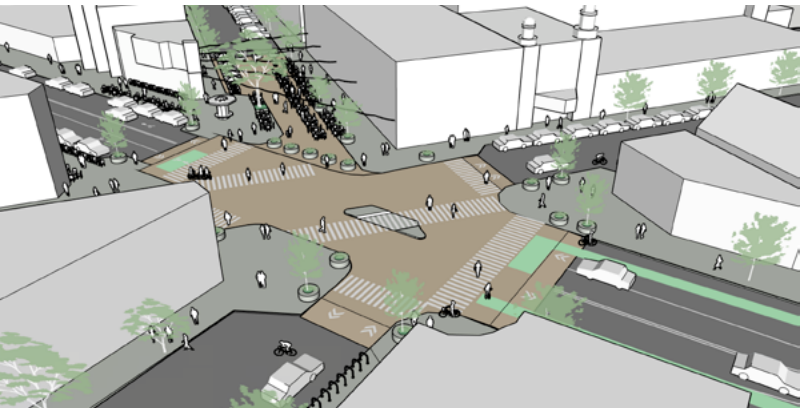
**Meetings:** Met with the Bicycle Federation of Wisconsin to gain their input; met with WisDOT to discuss bicycle accommodations along East Capitol Drive and Lake Drive; presented the Comprehensive Bicycle Study to the Village.

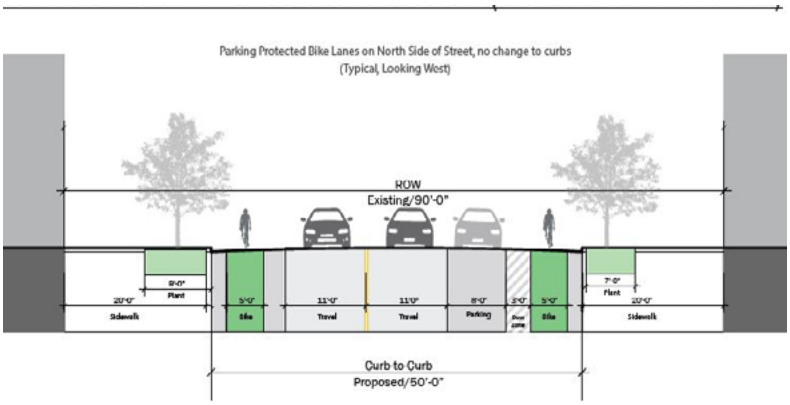
**Survey:** Prepared an on-line survey link and a hard copy survey. GRAEF personnel attended the 5th Annual Criterium Cycling Classic held in the Village to conduct surveys in person.

# NORTH AVENUE, EAST SIDE STREETSCAPE + VISION ZERO PLAN

MILWAUKEE, WI





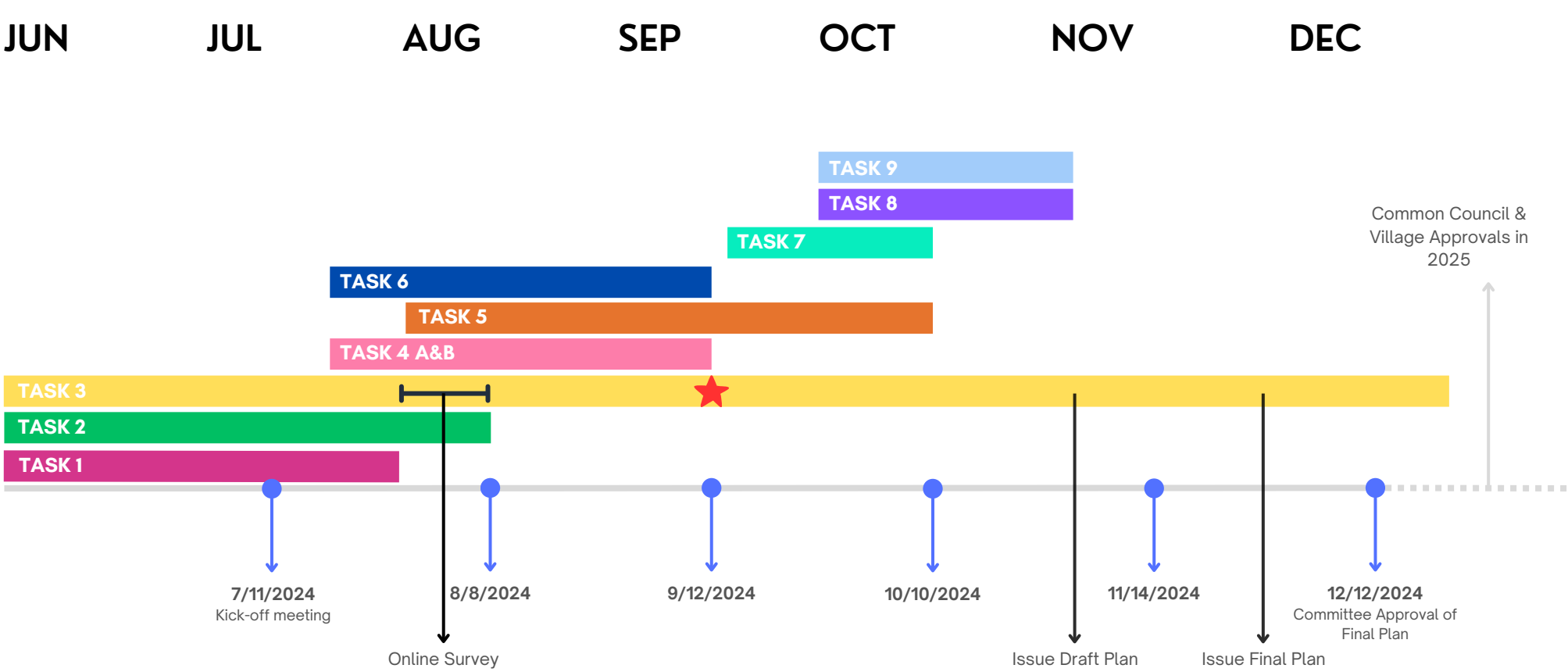

## THE PLAN RECOMMENDS CREATIVE SOLUTIONS TO EMPHASIZE THE STREET AS A SAFE PLACE FOR ALL TO LIVE, WORK, AND VISIT.

GRAEF + TKWA created a conceptual streetscape design for the North Avenue Business Improvement District (BID) and the City of Milwaukee with the goal of implementing vision zero. The project spanned from the Milwaukee River east along East North Avenue to North Lake Drive and Lake Michigan. The recommendations are broken into interim and long-term solutions and are aligned with the City's Pedestrian Plan.

North Avenue is recognized as one of the Top 10 Crash Hot Spots and Top 10 Most Dangerous Corridors on the Pedestrian High Injury Network in the 2019 City of Milwaukee Pedestrian Plan. Safety improvements were paramount to the visioning process, with key attention paid to shortening pedestrian crossings and making safer, protected connections for cyclists to access the two Oak Leaf Trail bike ramps onto North Avenue. Partial pedestrianization of streets, managed streets, and parking improvements were all included in the vision. The recommendations were broken into two parts: Interim and Long Term improvements. The Interim recommendations were designed in such a way as to avoid curb reconstruction so they may be implemented within one year, while the Long Term vision includes recommendations for breaking ground as funds become available and the results of the pilot improvements are determined.

GRAEF is continuing to work with the BID and the City of Milwaukee Department of Public Works and Department of City Development to implement the recommendations of the streetscape design as funds become available. As the City implements the design, GRAEF is providing materials to support community engagement and outreach to set up the City and local officials for success moving forward.

# JOINT MEQUON-THIENSVILLE BIKE & PEDESTRIAN WAY COMMISSION MASTER PLAN SCHEDULE




**TASK 1**
Inventory Roadway, Bike & Ped Conditions, Bike Use and Crashes

**TASK 2**
Community Assessment

**TASK 3**
Assist Commission in Updating Vision, Goals, Objectives and Policies

**TASK 4 A&B**
Identify Bicycle Travel Corridors
Bike & Ped Volume Counts

**TASK 5**
Evaluate and Select Specific Route Alternatives and Design Treatments

**TASK 6**
Prepare a Safety Component

**TASK 7**
Evaluate the Finished Plan

**TASK 8**
Operation and Maintenance Cost/Benefit Analysis

**TASK 9**
Impact Fee Evaluation

Monthly Commission Meeting

Community Open House