

PROPOSAL FOR ENGINEERING SERVICES

TRI-COMMUNITY JOINT STUDY COMMITTEE FOR THE BLUE STAR TRAIL

Blue Star Trail - North Section

FEBRUARY 17, 2021



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February 17, 2021



Tri-Community Joint Study Committee for the Blue Star Trail (TCC)
P.O. Box 464
Douglas, MI 49406

Re: REQUEST FOR PROPOSAL FOR ENGINEERING SERVICES BLUE STAR TRAIL – NORTH SECTION

Dear Committee Members,

C2AE is pleased to provide the Tri-Community Joint Study Committee for the Blue Star Trail with our proposal for professional services for your upcoming trail project. We are proud to have played a significant role in the development of similar non-motorized trails across Michigan over the past two decades. We are eager to share our insights and valuable knowledge on multiple funding sources, and authority development, and to assist the organization in carrying out its vision for Blue Star Trail.

It is our understanding that the Committee, with members from Saugatuck Township, City of Saugatuck, City of the Village of Douglas, and the Friends, will be the entity to lead the completion of a 4.5-mile section of Trail from Douglas over the bridge through City of Saugatuck and Saugatuck TWP. The three remaining sections of trail to complete the northern portion have been studied and evaluated over the past couple of years. We intend to incorporate the existing preliminary design work in the early evaluation phase to gain consensus of the stakeholders for the selected route and crossing over the Kalamazoo River.

To further demonstrate C2AE's desire and ability to assist the Committee in making this project successful, we offer:

- A driven team of C2AE staff and specialty subconsultants with strong qualifications and experience in planning, designing, building, and using many miles of trails throughout Michigan.
- Proven success with coordinating and helping to guide stakeholders, landowners, and governmental jurisdictions and agencies on collaborative multi-phase planning, design, and construction projects.
- Our established ability to estimate construction and maintenance costs with accuracy and manage construction projects within budget.
- Trusted relationships with and comprehensive understanding of multiple funding agencies and sources.

We encourage you to contact the project references provided to gain a deeper understanding of the quality of services we have consistently provided to clients across Michigan. Feel free to contact us with any questions.

Sincerely,
C2AE

A handwritten signature in blue ink that reads "Larry Fox".

Larry Fox, PE
Project Manager
larry.fox@c2ae.com

A handwritten signature in blue ink that reads "Cory Davis".

Cory Davis, PE
Assistant Project Manager
cory.davis@c2ae.com

FIRM INFORMATION

HISTORY

C2AE is a Michigan-based engineering and architecture design firm founded in 1966. Our decades of experience includes work on premiere Michigan trails, such as the Iron Belle Trail, the Nakwema Trail, and the Lansing River Trail.

WHAT SETS US APART

Our team of more than 100 people is truly full service. With professionals at every step of the design process, we bring enterprise thinking to each opportunity. We create architecture that empowers our clients and their communities, and enable it with innovative, technically-sound engineering design through intentional collaboration.



“The commissioners and all of the project partners are thrilled with how the trail turned out. It is very rewarding to see how much it is already being used! We are very appreciative of all who have been involved and assisted in this endeavor — it has truly been a group effort.”

Rachel Frisch

Otsego County Administrator

Otsego County Iron Belle Trail Project

EXPERIENCE

- 300+** Miles of Trails
- 900** Miles of Sanitary Sewer
- 250** Miles of Storm Water
- 800** Miles of Water Main
- 40** Water Treatment Plants
- 70** Wastewater Treatment Plants
- 1,000** Miles of Highways & Roads
- 100** State, County & Local Parks
- 40** Libraries
- 15** Assisted Living Facilities
- 1.5 M** SF of Medical Facilities
- 125** Schools and Universities
- 20** Industrial Parks
- 2.5 M** SF of Manufacturing Facilities

Escanaba

Gaylord

Grand Rapids*

Lansing











Kalamazoo

Canton

Syracuse

**C2AE will primarily serve out of our Grand Rapids office, located at 648 Monroe Avenue NW Suite 210 Grand Rapids, Michigan 49503, with significant support from other offices.*

SERVICES

-  Architecture
-  Civil Engineering
-  Construction Admin.
-  Electrical Engineering
-  Interior Design
-  Landscape Architecture
-  Mechanical Engineering
-  Structural Engineering
-  Transportation
-  Water/Wastewater

TEAMING PARTNERS

MEYERSON CONSULTING is a Petoskey-based trail and funding consulting firm. Owner Emily Meyerson has worked on Michigan trails for 20 years and with C2AE on multiple occasions.

CARDNO is a global environmental engineering company powered by a talented 4,000-strong workforce. C2AE and Cardno have teamed on several projects, including the Iron Belle Trail.

DRIEENGA (D&A), providing land survey and soils engineering, has operated in Michigan since 1995. C2AE and D&A most recently teamed on the addition of a Miracle Playfield at The Dome Sports Center in Schoolcraft, Michigan.

CARTER & ASSOCIATES is a Michigan-based, minority-owned business with experience in traffic signal design. Most recently, C2AE and Carter & Associates worked together on an extension of Coleman Road in Lansing.



RESUMES



SAUGATUCK TOWNSHIP
Allegan County, Michigan

TRI-COMMUNITY JOINT STUDY COMMITTEE

Roger Marks, PE
QA/QC (Trails)

Scott Cook
QA/QC (Roads)

Al Kaltenthaler, PE
QA/QC (Bridges)



Larry Fox, PE
Project Manager



Cory Davis, PE
Assistant Project Manager



Tony Grinnel, PE
Transportation
Engineer



Tyler Ruel, PE
Transportation
Engineer



Mark Adams, PE
Transportation
Engineer



Cory Davis, PE
Construction
Engineer



Kelly Green
Construction
Inspector



Rusti Owens,
RLA, ASLA
Landscape Architect



Erik Cronk,
PLA, LEED AP
Landscape Architect



Jamie McArdle
Landscape
Architect



Liz Westrate, PE
Structural
Engineer



Mandy Marsh, PE,
LEED AP BD+C
Structural Engineer



Matt Jarvi, PE
Electrical
Engineer

Cardno
Environmental
Engineering

Driesenga
Land Surveying,
Easement Acquisition,
Soils Engineering

**Carter &
Associates**
Traffic Signals

Meyerson Consulting
Funding/Trail Design
Consulting



LARRY FOX, PE

Project Manager

Larry has provided advising, design, and project management for a variety of projects. He has accumulated decades of expertise in trail projects for MDOT and for municipalities throughout Michigan. Larry has personally worked on over 40 miles of trail in the last five years.

YEARS OF EXPERIENCE

40

EDUCATION

MTU Bachelor of Science, Civil
Engineering: Michigan
Technological University, 1980

REGISTRATIONS

Professional Engineer: MI

PROFESSIONAL AFFILIATIONS

National Society of Professional Engineers (NSPE)

Michigan Society of Professional Engineers (MSPE)

Water Environment Federation (WEF)

HIGHLIGHTED EXPERIENCE

[Networks Northwest Traverse City to Charlevoix Trail](#)

Project manager for a new 46-mile trail to extend from Traverse City to Charlevoix along northern lower Michigan's scenic coastline. The combined shared-use paths, shared roadways, bike lanes, and boardwalks will be coordinated across multiple municipalities. This work is designed to attract more tourism to the region. Portions of this trail currently underway include the Acme to Elk Rapids 11-mile stretch.

[Otsego County Gaylord Gateway Trailhead](#)

Project manager for the design of a new trailhead facility on the Iron Belle Trail in downtown Gaylord. The trailhead will include a courtyard with an outdoor fire feature, a pavilion building, and year-round restrooms.

[Otsego County Iron Belle Trail New Segment](#)

Civil engineer for the schematic design, cost estimating, design, and construction engineering of this 13-mile trail through Otsego County. The trail connects to the existing North Central State Trail. This project was designed within the right of way of an active rail corridor. Funding comes from a MDOT TAP grant, two MNRTF grants, a RTP grant, an IBT grant, and local share contributions by two townships and the County.

[Michigan DTMB Higgins Lake State Park Pathways](#)

Project manager for the planning, design, and construction of the connector trails. C2AE coordinated with the DNR and DTMB to prepare trail routing alternatives, cost estimates, and a narrative report for use in funding applications. The trail is three miles of paved pathway. The trail forms a portion of the Iron Belle Trail.

[Burt Township Trail Committee New Burt Lake Non-Motorized Path](#)

Project manager for a concept plan for a non-motorized trail around Burt Lake. The trail was divided into segments and prioritized for funding applications. The trail includes sections of paved road shoulders and wooden boardwalks, but the majority of the trail consists of a 6-inch thick crushed aggregate surface.

[City of West Branch New North River Trail](#)

Project leader for the continued development of the River Trail, designing the north portion. The trail includes an elevated boardwalk and a paved 10 ft. wide non-motorized trail along the south edge of the Ogemaw Creek. The trail has an overlook deck with seating, site lighting, and a crossing of M-55 to connect to the trailhead for the South River Trail.



CORY DAVIS, PE

Assistant Project Manager,
Construction Engineer

Cory has performed contract administration, construction material testing, site observation, and inspection. He frequently spearheads design and construction phases of projects—both government-funded and private development.

YEARS OF EXPERIENCE

18

EDUCATION

UM Master of Business Administration: University of Michigan, 2010

WMU Bachelor of Construction Engineering: Western Michigan University, 2003

REGISTRATIONS

Professional Engineer: MI

PROFESSIONAL AFFILIATIONS

ACEC Emerging Leaders Program

MDOT Office Technician

MDOT Field Manager

ACEC Materials Acceptance Process Training

Troxler Nuclear Gauge Safety

Troxler Radiation Safety Officer

MDOT Prevailing Wage Training

HIGHLIGHTED EXPERIENCE

DeWitt Charter Township Old US-27 Non-Motorized Trail

Construction engineer for the Old US-27 pathway and sidewalk from Sheridan to Northcrest, totaling nearly two miles. The project included HMA surface path on the east side of the road and concrete sidewalk on the west side. MDOT TAP funding.

City of Durand West Parking Lot and Pathway Improvements

Project manager for utilities improvements, green infrastructure, storm water management, streets and streetscape beautification, and sidewalks to connect to the pathway to link the downtown area with City Hall, U.S. Post Office, and Riverside Market. MEDC/CDBG DIG funding.

Delhi Township New Non-Motorized Path

Civil engineering services for the construction of a hot mix asphalt non-motorized path complete with concrete curb, gutter, sidewalk, and ramps as well as aggregate base and grading.

Kent County Youth Agricultural Association Fairgrounds Relocation

Project manager for the development of a master plan outlining the relocation of the fairgrounds. Input meetings informed elements of the new design, such as the number and size of facilities, the emphasis on grounds' show arena, the number of parking spaces, and avenues for future expansion.

Clinton County Road Commission Coleman Road Extension

Project manager for the extension of Coleman Road from West Road to Wood Street passing under US 127, a TIP-funded STP project. Bike lanes, sidewalks, and a shared use path create new access for non-motorized traffic. New traffic signals were placed at Wood and West. The sanitary sewer and storm sewer were extended.

City of Otsego South Farmer Street Reconstruction

Construction engineer for the reconstruction of South Farmer Street, between Hammond Street and Allegan Street, including 0.21 miles of HMA resurfacing, concrete curb, gutter, sidewalks and ramps, storm and sanitary sewers, and water main. MDOT LAP.

City of Eaton Rapids Safe Routes to Schools

Project manager for new sidewalks, crosswalk improvements, ADA compliant sidewalk ramps, and pavement markings planning and design. MDOT LAP funding.

City of St. Johns Scott Road Improvements and Path

Project manager for the design and construction of road improvements on Scott Road from Sturgis Street to Gibbs Street, the addition of one mile of shared-use path from Astwood Mews Lane to the Fred Meijer Heartland Trail, and minor accompanying drainage improvements.



ROGER MARKS, PE

Trail QA/QC

Roger is a skilled communicator. His experience facilitating conversation between team members with different ideas has led to truly cohesive projects that adhere to schedule and budget.

YEARS OF EXPERIENCE

28

EDUCATION

MSU Bachelor of Science, Civil Engineering: Michigan State University, 1992

REGISTRATIONS

Professional Engineer: MI

National Association of Sewer Service Companies (NASSCO) Pipe Assessment Certification Program and Manhole Assessment Certification Program (expired)

MDEQ Storm Water Operator, Construction Site

PROFESSIONAL AFFILIATIONS

ACEC Transportation Committee Chair, Past

American Society of Civil Engineers (ASCE)

American Council of Engineering Consultants (ACEC)

HIGHLIGHTED EXPERIENCE

Clinton County Road Commission, City of DeWitt, and DeWitt Charter Township Clark and Herbison Roads Rehabilitation and Non-motorized Paths

Project manager for the reconstruction of Herbison and Clark Roads and the construction of corresponding non-motorized pathways as part of a larger network of pathway projects coordinated between DeWitt Charter Township, the City of DeWitt, and Clinton County.

DeWitt Charter Township, City of DeWitt, and Clinton County Road Commission Schavey Road Reconstruction and Path

Project manager for the design of the Schavey Road reconstruction and off-road shared use path. Funded in part by an MDOT CMAQ grant and Urban STP. Williamston Community Schools Safe Routes to Schools QA/QC for new sidewalks, crosswalk improvements, landscaping, lighting, and pavement marking.

City of Eaton Rapids Safe Routes to Schools

Civil engineer for the design and construction of sidewalks, ADA compliant sidewalk ramps, crosswalk improvements, and pavement markings. MDOT LAP

City of South Haven Phoenix Street Trail

Project manager for the design and construction of approximately 1,000 feet of HMA non-motorized trail along the north side of Phoenix Street, from Blue Star Highway, to connect to the pending MDOT trail near I-196.

DeWitt Township Old US-27 Corridor Study and Non-Motorized Trail

Project manager for the design and construction of the Old US-27 pathway and sidewalk from Sheridan to Northcrest, totaling nearly two miles. The project included HMA surface path on the east side of the road and concrete sidewalk on the west side, and was funded in part by an MDOT Transportation Alternates Program grant.

Michigan DNR White Pine Trail Drainage Corrections

Drainage review and budget development services for improvements to the existing path failed in areas of steep side slope in a major storm event. Work included planning the repairs and correcting drainage treatment to avoid future damage.



SCOTT COOK

Road QA/QC

Scott has worked extensively in quality control, design, and project management capacities for streets, highways, roads, and utilities projects for the Michigan Department of Transportation and numerous municipal clients across the state.

YEARS OF EXPERIENCE

29

EDUCATION

MTU Bachelor of Science, Civil
Engineering: Michigan
Technological University, 1992

HIGHLIGHTED EXPERIENCE

City of Lansing New Eastside Connector Trail

Lead designer for the construction of a non-motorized path between Pennsylvania and Saginaw going through the Lansing School District Property. The trail length was 1.2 miles and required new traffic signals at the Marshall Street crossing. Both design and construction projects were closely coordinated with the school district.

City of Corunna Streetscape and Non-Motorized Path Enhancement

Project manager for non-motorized path and streetscape and lighting enhancements on M-71 from Hastings to McCurdy Park.

Michigan Department of Transportation I-69 Non-Motorized Path

Project manager for the new 8 ft. concrete pathway totaling nearly 1.5 miles. The path was designed to connect pedestrian and cyclists to five neighborhoods and several schools using federal, state, and city funds. Other improvements included modular block retaining walls, guardrail upgrades, non-freeway signing, drainage, and pavement marking.

Michigan Department of Transportation M-43 Oshtemo Township Non-Motorized Path

Project manager for non-motorized pathway on M-34 from 2nd St. to the west city limits of Kalamazoo. The project included ADA ramp design, non-freeway signing, and an elevated boardwalk.

City of Lansing Waverly Road Non-Motorized Path

Design engineer for non-motorized pathway on Waverly Road, from north of Jolly Road to Cooley Street. Project included 1.5 miles of non-motorized pathway with concrete curb and gutter replacement, HMA, concrete sidewalk ramp replacement, and pavement markings.

City of Lansing Major Streets FY2019

Project manager for improvements to Kalamazoo St., American Rd., and Miller Rd. Work includes milling and resurfacing with necessary base repairs.

City of DeWitt 2016 Local Streets

Project manager for a local streets contract consisting of milling and resurfacing residential streets. Work included removal and replacement of sanitary sewer and sewer leads within the ROW. In addition, work included the design of ADA compliant sidewalk ramps at existing sidewalks. In total, the project spanned a mile and a half of roadway.

Michigan Department of Transportation M-11 and Clyde Park Intersection Improvements

Project manager for the full-depth reconstruction of the intersection of M-11 and Clyde Park Avenue in Wyoming, Michigan, involving geometric and safety upgrades, municipal utility relocations, and replacements or improvements to traffic signals, drainage, commercial driveways, signage, permanent pavement markings, and sidewalk and ADA ramps.



AL KALTENTHALER, PE, SE

Bridge QA/QC

Al is best known for his trail-blazing approach to street and bridge design. From west Michigan's first diverging diamond interchange to MDOT projects state wide, Al has built his reputation on lasting, innovative, and successful solutions.

YEARS OF EXPERIENCE

37

EDUCATION

UA

Bachelor of Science, Civil Engineering: University of Akron, 1983

REGISTRATIONS

Professional Engineer: MI, IL

Professional Structural Engineer: IL

PROFESSIONAL AFFILIATIONS

American Consulting Engineers Council (Michigan), Transportation Committee Member, Workforce Development/Training Committee

American Society of Civil Engineers (ASCE)

ASCE Michigan Scholarship Committee

Structural Engineering Association of Illinois

**Project completed before joining C2AE*

HIGHLIGHTED EXPERIENCE

[City of Lansing River Trail Bridge Rehabilitation and Replacement](#)

Project manager for the rehabilitation of five trail bridges and the replacement of a sixth. The effort will enhance the city's already robust trail network. For each bridge, the team is completing permit applications, investigating the existing structures, providing designs, and preparing bid documents. The team will then provide construction engineering and administration, testing, and inspection. Environmental concerns include endangered species investigations for mussels and bald eagles.

[Eaton Rapids GAR Island Park and River Trail Bridge](#)

Civil engineer for the design and construction of a new pedestrian boardwalk along the West bank of the Grand River from City Parking Lot 7 South to Hamlin Street. Repair or replacement of the concrete retaining wall around the GAR Island, amenity improvements on the island, and replacement of the pedestrian bridge on the east side of the island.

[Michigan Department of Transportation 2020 Bridge QA Services](#)

Project manager for quality assurance review of any projects assigned by MDOT over the course of a year-long as-needed contract. Services will adhere to applicable OSHA and MIOSHA safety standards.

Documents for review may include bridge and approach roadway plans, special provisions, MOT special provisions and staging plans, estimates/quantities, schedules, and proposals.

[Michigan Department of Transportation 2019 Bridge QA Services](#)

Project manager for a seven-month as-needed contract to provide quality assurance services for bridge projects of all sizes and scopes. Services include reviewing construction document packages for bridge rehabilitation, replacement, and new construction projects throughout the State of Michigan.

[Clinton County Road Commission Coleman Road Extension](#)

QA/QC services for the extension of Coleman Road from West Road to Wood Street passing under US 127, a TIP-funded STP project. Bike lanes, sidewalks, and a shared use path create new access for non-motorized traffic. New traffic signals were placed at Wood and West. The sanitary sewer and storm sewer were extended.

[Davenport University Boardwalk Structure Designs Routes*](#)

Lead engineer and QA/QC for the design of four timber boardwalks at Davenport University. Constructed from available timbers, erected on helical pile-supported piers, and cast in place with concrete spread footing abutments, the resulting boardwalks were connected by an HMA non-motorized trail.



TONY GRINNELL, PE

Civil Engineer

Tony's role as a civil engineer is to ensure a safe, clean environment. He provides designs for road and sewer rehabilitation projects as well as water and sewer system projects. He is proficient in current versions of MicroStation, GEOPAK, and AutoCAD Civil 3D.

YEARS OF EXPERIENCE

22

EDUCATION

MSU Bachelor of Science, Civil Engineering: Michigan State University, 1998

REGISTRATIONS

Professional Engineer: MI

HIGHLIGHTED EXPERIENCE

City of Lansing River Trail Bridge Rehabilitation and Replacement

Civil engineer for the rehabilitation of five trail bridges and the replacement of a sixth. The effort will enhance the city's already robust trail network. For each bridge, the team is completing permit applications, investigating the existing structures, providing designs, and preparing bid documents. The team will then provide construction engineering and administration, testing, and inspection. Environmental concerns include endangered species investigations for mussels and bald eagles.

DeWitt Charter Township Herbison Road and Non-Motorized Path

Lead designer for road improvements to Herbison Road as well as a new shared use path parallel to the roadway from the DeWitt Township offices to Old US-27. Urban STP funding.

Clinton County Road Commission Clark Road Improvements and Non-Motorized Path

Lead designer for improvements to Clark Road along with the construction of a new non-motorized path as part of a larger network of projects coordinated between the road commission, the City of DeWitt, and DeWitt Charter Township.

City of Lansing Waverly Road Non-Motorized Path

Civil engineer for non-motorized pathway on Waverly Road, from north of Jolly Road to Cooley Street. Project included 1.5 miles of non-motorized pathway with concrete curb and gutter replacement, HMA, concrete sidewalk ramp replacement and pavement markings.

City of Lansing Forest and Collins Road Non-Motorized Path

Civil engineer for a 3,200 lf non-motorized path along the south side of Forest Road from just east of US-127—connecting to Bear Lake Path—then northeast of Candlewood Suites East Drive to the east side of Harrison Road. Efforts will include grading and drainage design, a sidewalk connection from the non-motorized path on the south side of Forest Road to the Michigan State University Foundation's parking lot on the facility's north side.

City of Corunna Streetscape and Non-Motorized Path Enhancement

Civil engineer for non-motorized path and streetscape enhancements, including lighting, on M-71 from Hastings to Woodworth and McCurdy Park.

MDOT I-69 Non-Motorized Path

Civil engineer for the new 8 ft. concrete pathway totaling nearly 1.5 miles. The path was designed to connect pedestrian and cyclists to five neighborhoods and several schools using federal, state, and city funds. Other improvements included modular block retaining walls, guardrail upgrades, non-freeway signing, drainage, and pavement marking.



TYLER RUEL, PE

Civil Engineer

Tyler has gained valuable experience in both civil/transportation engineering and construction oversight working with C2AE and in his previous role at the Michigan Department of Transportation.

YEARS OF EXPERIENCE

8

EDUCATION

MSU Bachelor of Science, Civil Engineering: Michigan State University, 2011

REGISTRATIONS

Professional Engineer: MI

HIGHLIGHTED EXPERIENCE

Networks Northwest Traverse City to Charlevoix Trail

Civil engineer for a new 46-mile trail to extend from Traverse City to Charlevoix along northern lower Michigan's scenic coastline. The combined shared-use paths, shared roadways, bike lanes, and boardwalks will be coordinated across multiple municipalities. This work is designed to attract more tourism to the region. Portions of this trail currently underway include the Acme to Elk Rapids 11-mile stretch.

City of Lansing Forest and Collins Road Non-Motorized Path

Civil engineer for a 3,200 lf non-motorized path along the south side of Forest Road from just east of US-127—connecting to Bear Lake Path—then northeast of Candlewood Suites East Drive to the east side of Harrison Road. Efforts will include grading and drainage design, a sidewalk connection from the non-motorized path on the south side of Forest Road to the Michigan State University Foundation's parking lot on the facility's north side.

City of Lansing New Eastside Connector Trail

Civil engineer for the construction of a non-motorized path between Pennsylvania and Saginaw going through the Lansing School District Property. The trail length was 1.2 miles. Both design and construction projects were closely coordinated with the school district.

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Civil engineer for the rehabilitation of five trail bridges and the replacement of a sixth. The effort will enhance the city's already robust trail network. For each bridge, the team is completing permit applications, investigating the existing structures, providing designs, and preparing bid documents. The team will then provide construction engineering and administration, testing, and inspection. Environmental concerns include endangered species investigations for mussels and bald eagles.

Otsego County Iron Belle Trail New Segment

Civil engineer for the schematic design, cost estimating, design, and construction engineering of this 13-mile trail through Otsego County. The trail connects to the existing North Central State Trail. This project was designed within the right of way of an active rail corridor. Funding comes from a MDOT TAP grant, two MNRTF grants, a RTP grant, an IBT grant, and local share contributions by two townships and the County.

DeWitt Charter Township Herbison Road and Non-Motorized Path

Civil engineer for road improvements to Herbison Road as well as a new shared use path parallel to the roadway from the DeWitt Township offices to Old US-27. Urban STP funding.



MARK ADAMS, PE

Civil Engineer

Mark's experience includes project management, project engineering, right-of-way engineering, and construction inspection for a variety of municipal and state transportation projects. His high-level thinking is matched by technical skill.

YEARS OF EXPERIENCE

36

EDUCATION



Bachelor of Science, Construction Engineering: Lawrence Technological University, 1984

REGISTRATIONS

Professional Engineer: MI

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE)

CERTIFICATIONS

MDOT Office Technician

Certified Storm Water Operator

HIGHLIGHTED EXPERIENCE

City of South Haven Phoenix Street Trail

Civil engineer for the design and construction of 1,000 ft. of HMA non-motorized trail along the north side of Phoenix Street, from Blue Star Highway, to connect to the pending MDOT trail near I-196.

City of Otsego River Trail Extension

Civil engineer for the design of the City's 2,500 LF non-motorized River Trail extension to Northside Park.

Delhi Charter Township North Connector Trail

Civil engineer involved in the preliminary layout and design of the trail extension from Jolly Road to Willoughby Road. Project included 3.4 miles of HMA non-motorized path, grading, aggregate base, timber walls, boardwalk, timber piles, helicals, three prefabricated steel bridges, concrete curb and gutter, sidewalk ramps, signing and pavement markings.

MDOT I-69 Non-Motorized Path

Civil engineer for the new 8 ft. concrete pathway totaling nearly 1.5 miles. The path was designed to connect pedestrian and cyclists to five neighborhoods and several schools using federal, state, and city funds. Other improvements included modular block retaining walls, guardrail upgrades, non-freeway signing, drainage, and pavement marking.

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Kent County Youth Agricultural Association Fairgrounds Relocation

Civil engineer for the development of a master plan outlining the relocation of the fairgrounds. Input meetings informed elements of the new design, such as the number and size of facilities, the emphasis on grounds' show arena, the number of parking spaces, and avenues for future expansion.

Otsego Downtown Development Authority Riverfront Master Plan

Civil engineer for the City of Otsego's new Riverfront Development Master Plan, outlining the implementation of pedestrian-friendly areas, increased parking, a boat launch, the design and placement of an open air structure, the relocation of select buildings, the enhancement of an existing river trail, and several other recommendations.



KELLY GREEN

Construction Inspector

Kelly has been immersed in the construction industry since high school. He is experienced in materials testing and has a particular interest in site/civil construction projects.

YEARS OF EXPERIENCE

34

EDUCATION

FSU Ferris State University
Construction Management
Program Training

CERTIFICATION

Michigan Level 1 Concrete Technician,
MCA/ACI

Density Technology Certified

Aggregate Sampling Certified

Field Book Certified

**Project completed before joining C2AE*

HIGHLIGHTED EXPERIENCE

City of Eaton Rapids State Street and Sidewalk Improvements

Construction engineer for the reconstruction of approximately 4,500 feet of State Street, keeping the existing curb and gutter where in good condition and replacing sidewalk ramps to meet ADA standards. The project also replaced the existing four-inch water main between East Street and Raeburn Street.

City of Leslie Mill Street Reconstruction and Bridge Rehabilitation

Construction engineer for the rehabilitation of roadway, which included the replacement of the existing 4 in. water main with a new 12 in. water main, and the complete removal and replacement of an 83 ft. precast box culvert with precast wingwalls.

Bekum America Corporation Master Plan

Construction engineer for the development of a master plan for a 20,000 SF expansion to an existing industrial plant. The team was later retained to complete the project design.

Michigan Department of Transportation*

Lead construction inspector for MDOT projects and material testing of concrete, soils and asphalt. Provided oversight of contractors and coordination with engineers, tracked quantities for progress payments, and completed final project as-builts.

Michigan Department of Transportation*

Lead construction inspector for MDOT projects and material testing of concrete, soils, and asphalt.

Michigan Department of Transportation*

Lead construction inspector for MDOT projects and material testing of concrete, soils, and asphalt.



RUSTI OWENS, PLA, ASLA

Landscape Architect

A skilled illustrator, Rusti can provide clients with beautiful, detailed sketches to convey design intent and turn ideas into real plans.

YEARS OF EXPERIENCE

44

EDUCATION

BSU

Bachelor of Landscape Architecture: Ball State University, 1986

BSU

Bachelor of Science, Environmental Design: Ball State University, 1985

REGISTRATIONS

Professional Landscape Architect: MI

PROFESSIONAL AFFILIATIONS

American Planning Association, Division of Transportation Planning (APA)

Michigan Society of Planning Officials (MSPO)

HIGHLIGHTED EXPERIENCE

[Networks Northwest Traverse City to Charlevoix Trail](#)

Landscape architect for a new 46-mile trail to extend from Traverse City to Charlevoix along northern lower Michigan's scenic coastline. The combined shared-use paths, shared roadways, bike lanes, and boardwalks will be coordinated across multiple municipalities. This work is designed to attract more tourism to the region.

[Delhi Charter Township North Connector Trail](#)

Landscape architect for a trail extension from Jolly Road to Willoughby Road. Project included 3.4 miles of HMA non-motorized path, grading, aggregate base, timber walls, boardwalk, timber piles, helicals, three prefabricated steel bridges, concrete curb and gutter, sidewalk ramps, signing and pavement markings.

[Bath Charter Township Non-Motorized Trail](#)

Coordination and preparation of materials for two public information meetings for the development of pedestrian and bicycle circulation throughout the Township. Study was intended to improve the circulation routes for the residents, provide direction in improving routes of access to schools, churches, and business districts, and make connections to neighboring bicycle and pedestrian corridors from the region.

[City of Lansing Rivertrail South](#)

Landscape architect for the design and construction of just under two miles of non-motorized public recreation trail, which connects three distinct city parks and extends an existing trail system. Working with MDOT and the MDNR, the team helped develop of a 4-acre section of wetland.

[City of Williamston Volunteers Park Master Plan](#)

Project manager for a master plan outlining improvements to Volunteers Community Park. The plan features new Miracle playground equipment, which accommodates kids of all abilities with low access points, spacious play areas, and sensory appeal. The plan also includes new parking, fence alterations, improved stormwater management, a pavilion, landscape buffers, signage, and bike racks.

[Village of Kalkaska Maple Street Reconstruction](#)

Lead designer for the reconstruction of 1,800 ft. of Maple Street from Elm Street to Laurel Street, and Elm and Oak Streets between Maple Street and Cedar Street, including HMA surface removal, earthwork and grading, concrete curb and gutter, concrete sidewalk, HMA paving and restoration. This project is part of an effort to improve the Kalkaska downtown square.



ERIK CRONK, PLA, LEED AP

Landscape Architect

As a graduate student with groundbreaking ideas about sustainability, Erik changed the future of green roofs. Today, he strives to blend structure and nature in his work. He has delivered keynote speeches and won awards for his designs.

YEARS OF EXPERIENCE

13

EDUCATION

MSU Master of Science, Environmental Design: Michigan State University, 2010

MSU Bachelor of Science, Landscape Architecture: Michigan State University, 2008

REGISTRATIONS

Professional Landscape Architect: MI - 2016
USGBC LEED® Accredited Professional
Certified Storm Water Operator

AWARDS/PRESENTATIONS

2016 CELA Conference Featured Speaker
“7 Years of Green Roof Research in the Making”

2011 EPA P3 Sustainable Design Expo
Honorable Mention Award
“Green Roofs for Residential Design”

2010 GRHC Conference Featured Poster
“Hydrology of Sloped Green Roofs”

2009 ASLA Conference Featured Speaker
“Dynamics of Steep Sloped Green Roofs”

HIGHLIGHTED EXPERIENCE

[City of Lansing River Trail Bridges Rehabilitation](#)

Landscape architect for the rehabilitation of five trail bridges and the replacement of a sixth. The effort will enhance the city’s already robust trail network. For each bridge, the team is completing permit applications, investigating the existing structures, providing designs, and preparing bid documents. The team will then provide construction engineering and administration, testing, and inspection. Environmental concerns include endangered species investigations for mussels and bald eagles.

[Delhi Charter Township North Connector Trail](#)

Landscape architect for a trail extension from Jolly Road to Willoughby Road. Project included 3.4 miles of HMA non-motorized path, grading, aggregate base, timber walls, boardwalk, timber piles, helicals, three prefabricated steel bridges, concrete curb and gutter, sidewalk ramps, signing and pavement markings.

[Otsego County Gateway Trailhead](#)

Landscape architecture design services for a new trailhead facility to be located on the Iron Belle Trail in downtown Gaylord. The trailhead will include a courtyard with an outdoor fire feature, a pavilion building and year-round restrooms. 1.75 miles of new trailway are also included in the project.

[Eaton Rapids GAR Island Park and River Trail Bridge](#)

Landscape architecture for the design and construction of a new pedestrian boardwalk along the West bank of the Grand River from City Parking Lot 7 South to Hamlin Street. Repair or replacement of the concrete retaining wall around the GAR Island, amenity improvements on the island, and replacement of the pedestrian bridge on the east side of the island.

[Lansing Lions Club Potter Park Zoo Sensory Garden](#)

Conceptual design services for an approximately .25-acre sensory garden designed to stimulate sensory perceptions and be universally accessible. The garden includes a meandering walking path, a raised planting bed and seating wall, sensory plantings, seating areas, sculptures, interactive sensory play amenities, handicap accessible planter boxes, and a gazebo.

[Michigan Department of Natural Resources Iron Belle Trail*](#)

Landscape architecture design services for the longest trail in Michigan. Provided conceptual trail layout and routing as well as developed a trailhead that includes parking, a plaza with gateway features, a pavilion, restrooms and picnic areas. This section of the trail runs through the City of Gaylord (approximately 2 miles) along an existing railroad corridor and includes crossings of M-32 and the railroad itself.



JAMIE MCARDLE

Landscape Designer

Jamie's dual passions for landscape architecture and social work converge when it comes to the impact of the natural and built environment on the human experience.

YEARS OF EXPERIENCE

5

EDUCATION

WSU Bachelor of Social Work: Wayne State University, 2010

UM Master of Science, Landscape Architecture: University of Michigan, 2017

UM Master of Science, Behavior, Education & Communication: University of Michigan, 2017

**Project completed before joining C2AE*

HIGHLIGHTED EXPERIENCE

[Johnson County Big Bull Creek Trail*](#)

Landscape designer providing landscape and site layout design concepts and cost estimates for this Kansas trail development.

[Jekyll Island State Park Authority Recreational Trail*](#)

Landscape designer providing the development of concepts and design documents for a three-mile recreational trail to connect existing trails and improve island circulation at the Georgia state park.

[Jekyll Island State Park Authority Reforestation Program Update*](#)

Landscape designer providing updates to the existing reforestation program in response to the loss of over 1,000 trees following Hurricane Irma in Jekyll Island, Georgia.

[Jekyll Island State Park Authority Captain Wylly Road Master Plan Development*](#)

Landscape designer for the development of concepts and design documents for improvements to the Georgia island's amenities, habitats, and historical areas as part of the creation of a master plan for the beautification and reforestation of a one-mile corridor. The project involved updating landscape policies and educating the public on work.

[City of Lenexa Multiple Projects*](#)

Landscape designer for the production of landscape plans for various City Center and Ridgeview Road Corridor improvement projects.

[Creekside Residential and Commercial Development Planning*](#)

Landscape designer providing landscape and site layout design concepts for this Missouri residential and commercial land developer.

[English Gardens Landscape Company*](#)

Landscape design intern assisting in the production of renderings and plant information sheets for client review. Tasks included taking measurements and drawing base maps of project sites, compiling work packets for the installation of projects, and assisting in the development of cost estimates.

[Walt Disney World Parks and Resorts Horticulture Maintenance*](#)

Horticulture intern providing landscape services for the parks and resorts, including maintenance and installation of plant material.



LIZ WESTRATE, PE

Structural Engineer

Experienced in roadway and structural design services for a range of municipal projects, Liz has expertly navigated even the strictest of standards and procedures at the local, state, and federal levels.

YEARS OF EXPERIENCE

20

EDUCATION

UM Bachelor of Science, Civil Engineering: University of Michigan, 1998

REGISTRATIONS

Professional Engineer: MI, KS, IA

CERTIFICATIONS

Certified Document Technician

MDOT Qualified Team Leader for Bridge Inspections

**Project completed before joining C2AE*

HIGHLIGHTED EXPERIENCE

City of Grand Rapids Broadway Avenue Indian Mill Creek Pedestrian Bridge*

Structural engineer for the design and development of final plans and special provisions for rehabilitation of a single-span, spread box beam structure as part of the city's pedestrian trail improvements. Rehabilitation included concrete repairs, concrete surface coating, and expansion joint cover plate retrofit.

Grand Rapids and Indiana Railroad Grand River Pedestrian Bridge*

Structural engineer for the design and development of final plans and special provisions for rehabilitation of a Grand Rapids and Indiana Railroad five -span steel truss structure. Rehabilitation included minor concrete and expansion joint repairs, railing repairs, lighting upgrades, and cleaning and coating steel.

Michigan Department of Transportation Georgina Pedestrian Bridge over I-94*

Structural engineer for the preparation of final plans and special provisions for the reconstruction of a two-span, adjacent box beam bridge structure with CIP concrete slab ramps in accordance with MDOT standards. Design included layout of the new structure in accordance with ADA requirements during the preliminary phase and design of reinforced concrete piers on spread footings.

City of Grand Rapids Hall Street over Norfolk Southern Railroad and Steele Avenue*

Structural engineer for the design and development of final plans and special provisions for rehabilitation of a 306-foot, 5 span, steel beam structure. Work included deck replacement, pin and hanger replacements, substructure repairs, and approach work for this project in accordance with MDOT local agency standards.

City of Ludington Washington Street Bayou of Pere Marquette Lake Bridge*

Structural engineer for the design and development of final plans and special provisions for complete bridge replacement. The new bridge is a three-span, 215-foot, prestressed spread box beam superstructure on pile-supported substructure units in accordance with MDOT local agency standards.

Pigeon River Intercounty Drain Beadle Island Bridge Over Cut off Channel*

Structural engineer for the design and development of final plans and special provisions for a single, 80-foot, prefabricated vehicular truss superstructure on pile-supported abutments for Huron, Tuscola, and Sanilac Counties in accordance with MDOT local agency standards.



AMANDA MARSH, PE, LEED AP

Structural Engineer

Mandy has worked on buildings and structural systems for government, education, healthcare, and manufacturing clients. This array of experience makes her a valuable team resource for different structural systems design strategies.

YEARS OF EXPERIENCE

18

EDUCATION

UM Bachelor of Science, Civil Engineering: University of Michigan, 2002

REGISTRATIONS

Professional Engineer: MI, SC, NY
LEED® Accredited Professional w/ Specialty, U.S. Green Building Council (USGBC)

PROFESSIONAL AFFILIATIONS

American Institute of Steel Construction (AISC)

HIGHLIGHTED EXPERIENCE

City of Lansing River Trail Bridges Rehabilitation

Structural engineer for the rehabilitation of five trail bridges and the replacement of a sixth. The effort will enhance the city's already robust trail network. For each bridge, the team is completing permit applications, investigating the existing structures, providing designs, and preparing bid documents. The team will then provide construction engineering and administration, testing, and inspection. Environmental concerns include endangered species investigations for mussels and bald eagles.

City of Lansing River Trail South Extension

Structural engineer for design and construction services for a 3.2-mile extension to the river trail. The completed trail passes along the edge of Mt. Hope Cemetery, the Sycamore Golf facility, through Scott Woods nature area, and the Sycamore Creek.

Networks Northwest Traverse City to Charlevoix Trail

Structural engineer for the design of a new 46 mile trail to extend from Traverse City to Charlevoix along northern lower Michigan's scenic coastline. The combined shared-use paths, shared roadways, bike lanes, bridges, and boardwalks will be coordinated across multiple municipalities.

Delhi Charter Township North Connector Trail

Trail extension from Jolly Road to Willoughby Road. Project included 3.4 miles of HMA non-motorized path, grading, aggregate base, timber walls, boardwalk, timber piles, helicals, three prefabricated steel bridges, concrete curb and gutter, sidewalk ramps, signing and pavement markings.

Emmet County Road Commission Petoskey to Alanson Trail

Structural engineer for a new 7-mile trail segment that includes hot mix asphalt surfaces interspersed with boardwalks through wetland areas. The corridor runs through rural, undeveloped/environmentally sensitive, residential, and commercial areas.

Michigan DTMB North Central State Trail

Structural engineer for a 61-mile, non-motorized public recreational trail between the City of Gaylord and the Village of Mackinaw City. This crushed limestone surfaced trail forms a portion of the Iron Belle Trail. Construction followed the Transportation Enhancement Program process.

Otsego County Iron Belle Trail New Segment

Structural engineer for an 11.5-mile trail extension through the county that connects to the existing North Central State Trail. This trail was designed within the right-of-way of an active rail corridor.



MATHEW JARVI, PE

Electrical Engineer

Matt designs and administrates the construction of medium and low voltage electrical distribution systems. For both new and renovated facilities, he has designed everything from indoor and outdoor lighting to systems for process control, fire alarms, emergency power, communication, and security.

YEARS OF EXPERIENCE

41

EDUCATION

EMU Master of Business Administration: Eastern Michigan University, 1992

UM Bachelor of Science, Electrical Engineering: University of Michigan, 1978

REGISTRATIONS

Professional Engineer: MI, IN, KY, MS, NV, OH, SC, TN, WI

PROFESSIONAL AFFILIATIONS

Institute of Electrical and Electronics Engineers (IEEE)

International Society of Automation (ISA)

National Fire Protection Association (NFPA)

**Project completed before joining C2AE*

HIGHLIGHTED EXPERIENCE

[City of Durand West Parking Lot and Pathway Improvements](#)

Electrical engineer for utilities improvements, green infrastructure, storm water management, streets and streetscape beautification, and sidewalks to connect to the pathway to link the downtown area with City Hall, U.S. Post Office, and Riverside Market. MEDC/CDBG DIG funding.

[Clinton County Fairground Master Planning and Improvements](#)

Electrical engineer for the development of a master plan for redevelopment of the County Fairgrounds complex. Services included conducting a comprehensive property topographic survey that was to serve as base plans for future construction documents of the site improvements. The team was later retained for the design and construction of road and utility infrastructure improvements as outlined in the plan.

[Michigan DTMB Bewabic State Park Electrical Upgrades](#)

Electrical engineer for upgrades the underground electrical distribution in the campsites located in Loop A and about half of the campsites located in Loop B at Bewabic State Park, 46 campsite pedestals in total.

[Michigan DTMB Fayette Historic State Park Toilet/Shower Building](#)

Electrical engineer for the design of a new toilet/shower building, sanitation dump station, and wastewater treatment/disposal system serving the Fayette Historic State Park campground and harbor area.

[Village of Kalkaska Railroad Square Development](#)

QA/QC electrical engineer for the transformation of Kalkaska Railroad Square. The space will see a new plaza with a clock tower, an open-air pavilion with a kitchen and restrooms, a central event lawn with bench seating and landscaping, a designated farmer's market and food truck area, a pedestrian trail, and a plant buffer to guard the existing rail line.

[City of Corunna Streetscape Lighting](#)

QA/QC electrical engineer for non-motorized path and streetscape enhancement application and design on M-71, from Hastings to Woodworth and McCurdy Park.

[Midwest Region National Park Service Visitor's Center*](#)

Electrical power distribution, lighting, fire alarm and communication system design for a new Visitor's Center at Perry's Memorial in Put-In-Bay, Ohio.

[Lansing School District Eastern High School New Athletic Fields](#)

Structural engineer for Eastern High School's new athletic fields as part of the school's relocation. The project includes a soccer, football, and track stadium along with tennis courts and a baseball field. Stadium seating, support facilities, concessions, home and visitor grand stands, and a new parking area complete the design.

Emily Meyerson, AICP

Professional Experience

2003-present

Meyerson Consulting

Petoskey, MI

Community Planner

- Serve as Iron Belle Trail Facilitator for Northeast Michigan helping to plan, fund, develop, sign and market the state trail throughout the region.
- Serve as the Emmet County Housing Ready Program Coordinator, building awareness, advocacy and capacity for local housing solutions.
- Work with communities to complete master plans, recreation and non-motorized transportation plans, trail feasibility studies, water trail plans and trail town action plans.
- Facilitate public visioning sessions and public input meetings for various planning purposes.
- Coordinate event planning and management including tour director, Lake to Lake Bike Tour.
- Conduct educational sessions on various transportation, recreation, and economic issues.
- Complete zoning ordinance audits, zoning amendments and unique research studies.
- Served as the Trailways Coordinator for the Top of Michigan Trails Council (2003-2015):
 - Facilitated the development of over 280 miles of inter-connected multi-use trail system.
 - Provided communication, leadership, and project results for trail facility planning, management, development, and maintenance.
 - Facilitated discussions between DNR and various user groups to solve conflict.
 - Researched and provided expertise on property ownership, deeds, easements, environmental and transportation issues, trail design and alignment.
 - Created unique partnerships to develop trails, trailheads, amenities, and connections.
 - Wrote grants and worked with volunteer groups to raise funds for projects.
 - Created promotional materials such as press releases, website text and brochures.

2015-2018

Michigan Dept of Natural Resources

Lansing, MI

Northern Lower Peninsula Trail Coordinator

- Coordinated the State Trails Program for Northern Lower Michigan.
- Planned new trails and trail programs; wrote and managed implementation grants; set policies and procedures; coordinated maintenance and operations; developed marketing materials.
- Facilitated, presented, and organized public meetings, presentations, and partnerships.
- Developed standards for best practices, creating guides and manuals.
- Worked remotely and managed three remote staff throughout the region.
- Interfaced with the public regarding trail use, land management and program implementation.

1999-2003

Bear Creek Township

Petoskey, MI

Township Planner / Zoning Administrator

- Facilitated various public forums on zoning ordinance language.
- Provided analysis through written reports and presentations of proposed projects to the Planning Commission, Zoning Board of Appeals, and Township Board.
- Administered zoning activities including zoning permits, site plan reviews, zoning changes, special use permits, variances, and enforcement.
- Initiated new projects and partnerships to encourage smart development.
- Created maps and completed analysis using a GIS system.
- Created and staffed intergovernmental committees to coordinate regional planning activities.
- Managed park development through grant writing, plan development, and construction.
- Worked with various agencies to connect communities by a non-motorized trail.

1995-1999

Emmet County

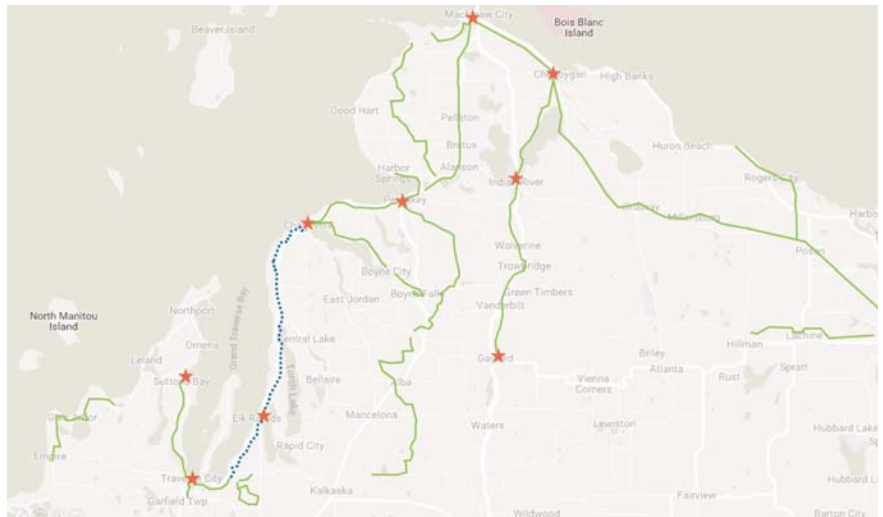
Petoskey, MI

Administrative Planner

- Responded to inquiries from developers, real estate salespersons and landowners.
- Wrote zoning ordinance amendment language.
- Initiated highway corridor studies to coordinate development between landowners.
- Completed reviews and analysis of site plans and special use permits requests.
- Developed educational sessions on emerging issues such as farmland protection programs.



TRAIL EXPERIENCE





Networks Northwest Nakwema Trailway

Size	46 Mile Segment
Completed	In Progress
Cost	Confidential
Contact	Elizabeth Calcutt Former Planner 231.929.5000
Services	Civil Engineering Landscape Architecture

Bringing connectivity across 46 miles of scenic beachfront and other iconic sites along the western edge of Northern Lower Michigan.

The Traverse City to Charlevoix extension of the Networks Northwest Trail will combine shared-use paths, shared roadways, bike lanes, and boardwalks to promote the physical and economic health of the three counties, seven townships, two cities, and the Village of Elk Rapids.

Because the new infrastructure will be owned and maintained by local government agencies, C2AE is coordinating all work with several stakeholders along with the project team, including Networks Northwest, TART Trails, Top of Michigan Trails Council, the MDNR, and MDOT.

Construction on this multi-phase contract is scheduled to take place over five years. For the Acme to Elk Rapids segment, for which survey and design are complete, C2AE's fee is 5% of estimated construction cost. For the Norwood to Bells Bay segment, for which schematic design is complete, C2AE's fee is 1.5% of estimated construction cost.

TRAIL EXPERIENCE





Otsego County Iron Belle Trail

Size	13-Mile Segment
Completed	2019
Cost	\$2.9 M (Construction)
Contact	Rachel Frisch County Administrator 989.731.7520
Services	Civil Engineering Landscape Architecture

C2AE designed a 13-mile segment of Iron Belle Trail through Otsego County. The trail leg runs along an active rail corridor, the first such trail in the state.

Once finished, Iron Belle Trail will cross Michigan from its northwest corner down to Detroit. C2AE provided a study and review of various trail segment routing options with their associated cost estimates, coordinating with the Michigan DNR and with the railroad owners, MDOT, and Lake State Railroad. Also in this phase, C2AE evaluated trail surface types (asphalt vs. crushed limestone) and the use of boardwalks and retaining walls in wetlands or slope-challenged areas.

Additionally, C2AE performed community outreach, holding public information meetings and working with the local units of government to secure funding. By teaming with the MDNR on the funding applications, C2AE helped the project receive a total of \$2.33 million in grant funding through the MDOT TAP, MNRTF, RTP, and IBT programs. C2AE's fee was 23% of final construction cost due to good bids and a lower-than-estimated construction cost.

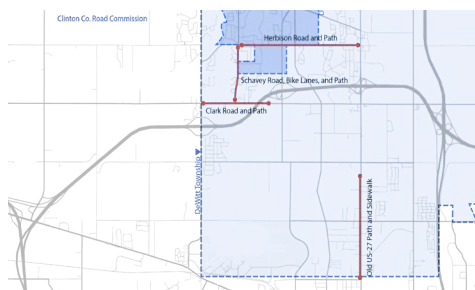
TRAIL EXPERIENCE





Clinton County Road Commission
Roads & Paths

Completed	2018
Cost	\$1.6 M (Construction)
Contact	Dan Armentrout, PE Dir. of Engineering 989.224.3274
Services	Civil Engineering Construction Admin. Survey



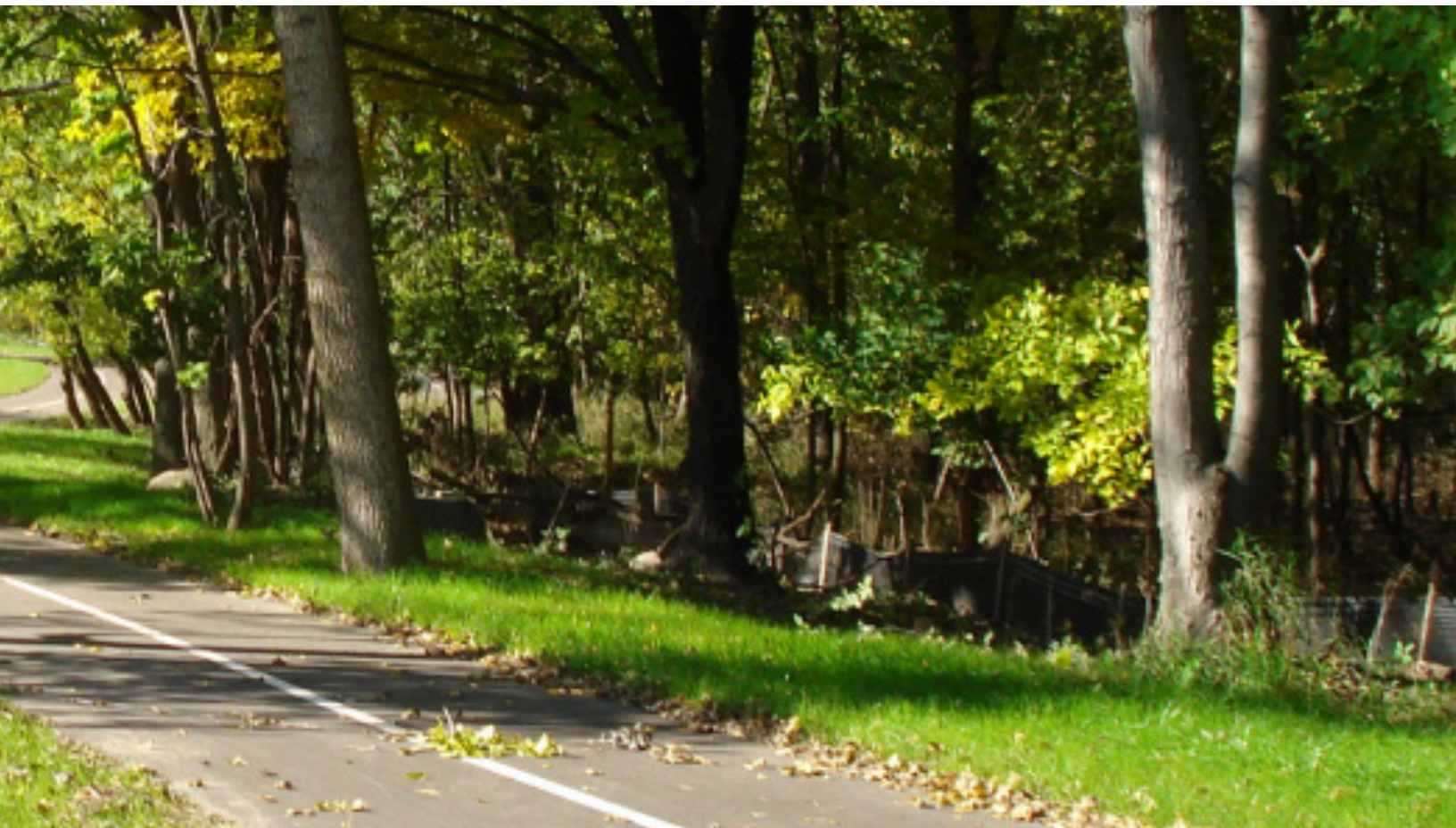
A committee of DeWitt Charter Township citizens first envisioned 71 miles of non-motorized transportation infrastructure in a fully interconnected web of paths and sidewalks in 2013.

This plan proved to be pivotal not only for DeWitt Charter Township, but also for the City of DeWitt, which exists inside township lines. Moreover, because DeWitt Township is not an Act 51 Agency, it was not eligible to apply for funding to implement the intended projects; however, Clinton County Road Commission was. As a result, all three municipalities began to collaborate.

The township brought C2AE into discussions early in planning. Four projects around the county began to take shape on four different roads: Old US-27, Herbison Road, Clark Road, and Schavey Road. Although the projects crossed municipal borders, each of the three local entities agreed that a collaborative approach was the most efficient and cost-effective way to fix the roads and connect pathways around their various communities. The plan bloomed into a network of countywide projects financed by seven different funding sources over multiple years.

TRAIL EXPERIENCE





City of Lansing River Trail Extensions and Bridge Work

Funding	Natural Resources Trust Fund, MDOT & MDNR Grants
Completed	Fall 2021
Cost	\$2 M (Construction)
Contact	Mitch Whisler Assistant City Engineer 517.483.4249
Services	Structural Engineering Civil Engineering Construction Admin.

In the last decade, the City of Lansing has contracted C2AE for several projects along the Lansing River Trail. In 2019, Lansing named C2AE its designer for the rehabilitation of five trail bridges and replacement of a sixth.

Funding for this \$2 million project comes from an Ingham County Trails and Parks Millage. For each of the six bridges, the design team will complete permit applications, investigate and evaluate the existing structures, provide designs for rehabilitation details and the replacement bridge, and prepare bid documents.

The C2AE team is providing construction engineering and administration, testing, and inspection. Environmental concerns include endangered species investigations for both mussels and bald eagles. Due to delays in construction related to COVID-19, work will be constructed during the 2020 and 2021 seasons.

TRAIL EXPERIENCE





Michigan DNR North and South Higgins Lake State Park

Size	3 Miles
Completed	2008-2016
Cost	\$635,000 (Construction)
Contact	Amy Swainston Rec. Trails Specialist 989.275.5151 ext. 2044
Services	Civil Engineering Structural Engineering Construction Admin. Survey

C2AE assisted the Michigan Department of Natural Resources (DNR) with planning, design, and construction services for three miles of non-motorized trail through both the North and South Higgins Lake State Parks.

The team used a previously completed Higgins Lake Trailway Plan as the basis for obtaining funding for these projects.

Project planning began with the evaluation of several routing options, cost estimating, and public outreach. The design brought about a 10-foot-wide asphalt paved trail that traverses through the parks and provides connection points to existing or future trail continuations. A portion of the North Higgins Lake State Park Trail is also a part of the Iron Belle Trail, from Forest Avenue to the Higgins Lake Nursery parking area. Because of the public lands available for these trails, the design allowed for a separated, off-road trail that opens up a scenic and peaceful atmosphere. The trail design required wetlands permitting for a portion as well as coordination with both county road commissions.

TRAIL EXPERIENCE

In our 54 year history as a firm we have designed over 300 miles of trail.

These trail projects involve multi-faceted components of varying complexity. A selection of these are highlighted in the table below. Projects above the solid black line have been completed in the last five years or are in progress; these projects total approximately 80 miles.

	Significant Public Input	Alternate Route Development	Environmental Assessment	Permitting	Surveying & Easement / ROW Acquisition	Constructability and Cost Estimates	Amenity Planning / Design	Bidding & Construction Phase Services	Multi-Jurisdictional Project	Multiple Funding Sources	Multi-Phase / Multi-Year	Length (miles)
Networks Northwest Nakwema Trailway	•	•	•	•	•	•	•	•	•	•	•	46
City of Lansing - Forest & Collins Rd Trail/Path		•		•	•	•	•	•	•	•	•	2.5
Lansing River Trail - Bridges			•	•	•	•		•		•	•	.5
Clinton CRC - Coleman Road Extension			•	•	•	•		•	•		•	1
Otsego County Gaylord Gateway Trailhead	•		•	•		•	•		•	•		1
St. Johns Non-motorized Path				•	•	•		•		•		1.0
Otsego County Iron Belle Trail	•	•	•	•	•	•	•	•	•	•	•	13.2
Moran Twp Pte. LaBarbe Voyageur Trail	•	•	•		•	•	•		•	•	•	3.2
DeWitt Twp Clark Rd South			•	•	•	•		•	•	•	•	1.5
DeWitt Twp/DeWitt Herbison Rd Non-motorized Path	•	•		•	•	•		•	•	•	•	0.8
Gaylord Downtown Infrastructure	•			•		•	•	•	•	•		.35
DeWitt Twp/DeWitt Schavey Rd Trail/Path	•	•	•	•	•	•	•	•	•	•	•	2.2
N. & S. Higgins Lake State Park Iron Belle Trail		•	•	•		•		•	•	•	•	4
DeWitt Twp/DeWitt Old US 27 Non-motorized Path	•	•		•	•	•		•	•	•	•	1.6
Delhi Township Non-Motorized Trail	•	•	•	•		•	•	•	•	•		3.4
West Branch River Trail - Multiple Segments		•	•	•	•	•	•	•	•	•	•	3
Petoskey to Alanson Trail			•	•	•	•	•		•			7.3
Burt Lake Non-Motorized Trail	•	•	•	•	•	•	•	•	•	•	•	4.8
City of Otsego Non-Motorized Trail		•	•		•	•	•		•	•	•	5
MDOT Non-Motorized Trail I-69 BL				•	•	•			•	•		1.5
North Central State Trail - Gaylord to Mackinaw City			•	•	•	•		•		•		62
Lansing River Trail - South Extension	•	•	•	•	•	•	•	•	•	•	•	2.2
City of Corunna Non-Motorized Trail		•			•	•			•	•		0.8
Lansing River Trail - Moores Park												0.4
MDOT Non-Motorized Trail M-43		•		•	•	•			•	•		2.5
Lansing River Trail - East Extension												3.2
Gaylord Aspen Park Trails		•			•	•	•	•		•		3.5
Lansing River Trail - North Extension												6
Gaylord Fairview / N. Center Trail					•	•		•				1.5



**C2AE has designed
over 300 miles
of trailway.**

TRAIL EXPERIENCE

MDOT PREQUALIFICATIONS

C2AE has designed hundreds of Michigan Department of Transportation (MDOT) roadway projects in all regions dating back to 1988.

We currently hold or are in the process of renewing the following 25 MDOT prequalifications for a variety of design and construction services. We have consistently received high project scores for quality work, effective communication, and responsiveness from the project managers within MDOT.

Our in-depth understanding of MDOT processes and solid working relationship with the Grand Region staff will provide added-value to the Tri-Community Joint Study Committee on the northern trail segment.

Construction Inspection: HMA Pavement
Design - Bridges
Design - Buildings
Design - Hydraulics I
Design - Hydraulics II
Design - Roadway
Design - Roadway: Complex
Design - Roadway: Intermediate
Design - Traffic: Pavement Markings
Design - Traffic: Signing - Freeway
Design - Traffic: Signing - Non-Freeway
Design - Traffic: Work Zone Maintenance of Traffic
Design - Utilities: Municipal
Design - Utilities: Pump Stations
Design - Utilities: Roadway Lighting
Design: Landscape Architecture
Design: Project Development Studies

To be submitted in March 2021:
Construction Engineering: Assistance
Construction Engineering: Roadway
Construction Engineering: Roadway - LAP
Construction Inspection: Roadway
Construction Services: Office Technician
Construction Testing: Aggregates
Construction Testing: Concrete
Construction Testing: Density

WORK PLAN

The Tri-Community Joint Study Committee (TCC), consisting of members from Saugatuck Township, the City of Saugatuck, the City of the Village of Douglas, and the Friend of the Blue Star Trail (FOBST), desires to submit funding applications to the Michigan Department of Transportation – Transportation Alternatives Program (TAP) and the Michigan Natural Resources Trust Fund (MNRTF).

The current project will include the planning, design, and construction of three new sections of trail to complete the 4.5-mile north section of the Blue Star Trail. The TAP application is anticipated to be submitted in October, 2021 and the MNRTF application in April of 2022. The desire is for construction to take place in 2023.

Previous preliminary planning and routing analysis work has been completed for these sections of trail, which we plan to utilize in the early phases of planning and design. The trail crossing design over the Kalamazoo River will be a key component to gain consensus and buy-in early in the project from the multiple stakeholders.

Our initial review of the past trail crossing configuration alternatives on the bridge revealed the following aspects that need further evaluation during the schematic design phase:

- Storm water drainage and potential ponding (spread) in the 1-foot buffer areas; scupper capacities
- Impact to existing bridge expansion joints from modifications to incorporate the trail
- Consideration of other options that include widening the existing sidewalk on the west side to a 14-foot trail; possible cantilevering on the outside of the bridge to gain more width
- Staging of construction to minimize impact for emergency vehicles and the motoring public

Our firm implemented a similar bridge modification project for the City of Lansing on Aurelius Road that converted a 4-lane bridge to a 3-lane section to incorporate a 10-foot non-motorized path/trail.

Based on C2AE’s understanding of the project, we propose the following general work plan, which can be modified and adjusted as needed throughout the project.

A PLANNING

C2AE will develop and implement an action plan for planning and design engineering of the currently defined trail corridor. The plan will identify an overall project timeline, communication engagement strategy or strategies, funding sources, roles and responsibilities, and a phasing plan with estimated timelines and costs for design, construction, and trail maintenance. We recognize that the keys dates currently identified by the committee include the October 2021 TAP Grant application and the April 2022 MNRTF Application. We have included examples of the action planning components are in the additional information section.

1 Timeline

C2AE will create a project timeline at the outset of the project for use in tracking and monitoring the project progress. Timeline dates will be updated on a monthly basis as part of our progress reporting process. Monthly progress reports will be provided by C2AE to provide updates for all current project activities.

Timeline will include, but not be limited to, the following key milestone dates:

- Project team meetings
- Local units of government/public meetings
- Duration of schematic design phase with deliverable dates (funding applications)
- Duration of final design phase with deliverable dates

WORK PLAN (CONT.)

- Permit submittal dates
- Duration for bidding
- Duration of construction
- Regional events
- Any other key milestones

2 Public Outreach

Communicating effectively along the way, we will meet project goals with a comprehensive design that integrates:

- Thorough review and vetting of previous work to date
- Proactive project scoping
- Sound data collection
- Site and context analysis and synthesis
- Comprehensive mapping
- Creative alternatives
- Environmentally compatible, sustainable, and cost-effective solutions
- Realistic opinions of probable construction and maintenance costs
- Detailed, implementable action plans with workable phasing

These elements are to be conducted by a multi-disciplined team with professional experience and expertise in non-motorized trail access development, natural resource systems, accessibility requirements/guidelines, context-

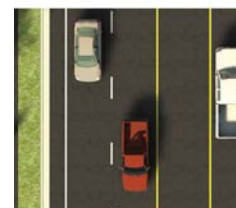
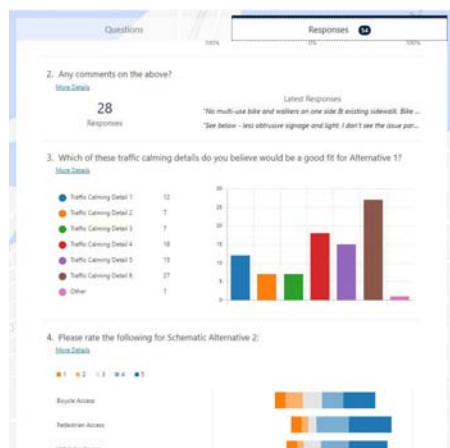
sensitive design solutions, aesthetics, and other relevant functional needs. C2AE will lead this effort, providing:

- **Project Management** led by seasoned C2AE principal Larry Fox and aided by experienced assistant project manager Cory Davis
- **Trail Routing, Public Involvement, and Inter-agency Coordination** led by Rusti Owens
- **Civil Engineering** including conceptual layout and design led by Tyler Ruel

In addition, our specialized team partners include Meyerson Consulting for funding and public engagement expertise, Cardno for environmental and natural features assessments, Carter & Associates for traffic signal work, and Driesenga Associates for surveying, geotechnical engineering, and easement acquisition

3 Funding Evaluation/Applications

We will review the existing list of funding sources for each trail segment and determine if there are other opportunities available. Requirements for each funding agency will be documented. In general, C2AE will be responsible for the development of the majority of the funding application, with input, review, and submittal of funding applications by the applicable governmental agencies. C2AE will generate exhibits, cost opinions,



and other supporting documentation as needed. Private fundraising activities will be conducted by the project team and supported by C2AE.

4 Roles and Responsibilities

At the kickoff meeting, we will document the roles and responsibilities of each stakeholder or entity involved in the project. Throughout the project, C2AE will coordinate and track the progress of key assignments to ensure the overall project, as well as each trail segment, remains clearly assigned and on schedule. This effort will include monitoring the assignments of the subconsultant firms involved. We will communicate consistently and clearly with the committee or assigned project/community stakeholder teams regarding the project status and commitments.

5 Trail Maintenance Plan

C2AE will use our extensive experience with trail projects and the trail calculators already created to estimate costs associated with trail maintenance, operations, and replacement. We will also assist in the identification of solutions for trail maintenance approaches along the corridor, which can vary from simple cooperation between units of government to a formal establishment of a recreational authority. Maintenance will play a key role in achieving the expected service life of the trail system and

ensure viability for generations to come.

B DESIGN & CONSTRUCTION

C2AE proposes the following general scope of services for each trail segment that will meet AASHTO Guidelines, Americans with Disabilities Act and Accessibility Guidelines (ADAAG), and other current federal, state, and local codes and guidelines. MDOT Local Agency guidelines will also be met when state funding is involved.

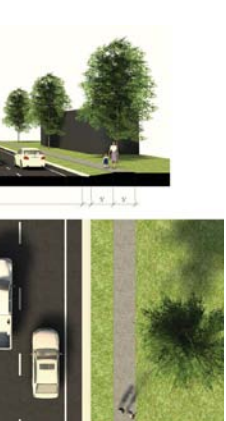
1 Schematic Design

a. Initial Scoping Meeting

C2AE and the committee/project team are accountable for the proper stewardship of funds and time allocated to this project. C2AE's project management plan (PMP) document is designed to assist in this task by providing the detail needed to implement the contract requirements.

C2AE will convene a meeting of the project team personnel responsible for proper project administration (TCC). The meeting's purpose is to review and confirm everyone's expectations regarding the project process.

Second to listening to the voices of the users, communities, and local agencies, schematic design based



WORK PLAN (CONT.)

on sound comprehensive data is next most important to providing feasible and constructible alternatives.

b. Gather Existing Data

C2AE will collect available relevant secondary source information including, but not necessarily limited to:

- Existing schematic trail routes and alternatives
- Preliminary design alternatives for the Kalamazoo River crossing
- GIS and Lidar data, such as parcel mapping, topography, utilities, soil types, natural features, and other environmental conditions
- Federal, state, and local guidelines and requirements for trail development
- Local zoning or planning ordinances
- Historical features, such as protected archaeological sites, significant structures, etc.
- Habitats for endangered or threatened species of flora or fauna
- Planned utility work (broadband, sewer, etc.)

Using available secondary source information—such as aerial or USGS topographic mapping, community mapping, plat maps, and existing planning maps—together with information obtained during the initial scoping meeting, C2AE will develop base plans for use during development of the site/constraints inventory analysis and alternative trail alignment options.

c. Conduct an Initial Visual Site Assessment

The C2AE team (including the project team as they desire) will conduct an initial site assessment of each segment to visually review and document any unique features of the proposed routing corridor(s) and define the envisioned limits and locations for programmed improvements.

At this time, we will collectively identify and confirm any known potential impacts to development as well as identify and address safety and security provisions as necessary. During the assessment we will also identify any

visible potential environmental concerns and/or areas that may require detailed supplemental investigations.

d. Perform Site Analysis

We will add the existing available information and other insights gained from the site assessment. The enhanced drawing will be a backdrop for preparing a graphic site analysis of existing built and natural conditions that could have either a positive or negative impact on the project. Existing conditions will include at a minimum:

- Soils, topography, and vegetation
- Hydrology and drainage patterns, channels, and washes
- Unique biological characteristics
- Outstanding natural features
- Cultural and historic features
- Adjacent land uses
- Negative site features or hazards
- Directions, speed limits, and traffic flow volumes
- Emergency vehicle accessibility
- Logical points of site ingress and egress
- Existing structure locations or development

We will evaluate the trail crossing of the Goshorn Creek just north of 134th Avenue to determine permitting requirements and possible crossing locations. It is our understanding that multiple routes have been conceptually developed through Amalanchier Park or along 134th Avenue to connect the Blue Star Highway trail to the Beeline trail on Holland Street. Previous information will be utilized during our analysis to select the final trail location.

e. TCC Committee Meetings

C2AE will conduct two or three meetings with the TCC to review and discuss the opportunities and constraints associated with each alignment and a preliminary cost for development. During these meetings, the TCC and C2AE will select alignments determined to represent the most feasible and prudent options to present and carry forward for further development as practical alternatives. Following

the initial TCC review meeting, we will refine each illustrative alternative, if necessary, based on comments obtained during the meeting. Since that initial meeting will essentially be more of a work session, further work will be required to refine each alternative into a final presentation format. Additional meetings with the TCC will refine alternatives into a final recommended plan for adoption by the member local units of government.

f. Gather Emergency Responder Input

During the review of alternatives (especially for the Blue Star Highway crossing of the Kalamazoo River), we plan to include local emergency responders to gain their perspective on the alternatives. This could happen as a part of one of the TCC meetings mentioned above. Support of the selected alternative by the local fire departments, police departments, and highway maintenance entity will be important in moving the plan forward.

g. MDOT LAP Review

As a local funding source, MDOT Local Agency Programs will be provided the opportunity for review and input on the alternatives under consideration.

h. Public Information Meeting

C2AE will plan, organize, coordinate, and conduct the final project public information meeting/public hearings through each local unit of government to review the final rendered preferred alternative, opportunities, and constraints, opinions of probable construction cost, trail phasing/segments, and associated planning elements. This information will form the basis for the funding applications.

i. Funding Applications

With the assistance of the TCC, C2AE will develop and prepare the MDOT TAP and MNRTF Funding applications for review and submittal by the applicable local agency.

2 Final Design (Future)

A detailed scope of services will be developed as part of the engineering services agreement. The Design Phase Services will generally include the following elements:

1. Topographic survey
2. Program application and other funding information (NEPA)
3. State Historic Preservation Office (SHPO)
4. Utility coordination
5. Soil borings
6. Easements
7. Preliminary plans
8. Preliminary quantities and opinion of probable Construction Cost
9. Preliminary Special Provisions
10. Grade Inspection/Review Meeting
11. Permits
12. Final Plans and Special Provisions
13. Final Engineer's Opinion of Probable Construction Cost
14. Grant Administration Assistance

3 Bidding

It is understood that the contract with the construction contractor may be held by a Local Unit of Government (LUG) depending on the funding involved. The exact scope of services may be adjusted based on the funding agency(ies).

4 Construction

1. Construction Administration (exact scope of services may be adjusted based on the funding agencies)
2. Construction Observation and Testing

FEE

As noted in the Request for Proposals, it is difficult to provide fee estimates for projects where all aspects of the project are not yet determined. Therefore, we are providing a detailed fee estimate for the Conceptual Design/Funding Application phase of the project. For future phases of the project, we have typically used percentage of construction estimates for fee determination for planning purposes, and have successfully integrated this fee planning concept into contracts for multi-phase/multi-year projects. We suggest the following fee breakdown for planning purposes, and unless it is a highly complicated project, our final fees are anticipated to be within the percentage ranges provided.

CONCEPTUAL DESIGN & GRANT APPLICATIONS

For this phase of the project, C2AE proposes to complete the work a time and material basis, with a total not-to-exceed amount. Our detailed fee breakdown is as follows:

Task 1 – Research and Analysis (includes 1 meeting with TCC)	\$9,400
Task 2 – Alternatives Development (includes 3 meetings with TCC/stakeholders)	\$17,200
Task 3 – Final Plan and Presentations (inc. meeting w/ each local unit of government)	\$7,800
Task 4 – MDOT TAP and MNRTF Grant Applications	\$5,000
Total Not to Exceed Fee	\$39,400

FUTURE PROJECT PHASES

Final Design Engineering	4% to 6% of the estimated construction cost
Construction Engineering	8 to 10% of the estimated construction cost

GRANT APPLICATIONS

At C2AE, assisting our clients with funding opportunities is a major part of what we do. In our 54 years, we have assisted our clients in receiving over \$700 million in grants and loans.

C2AE is well versed in grant applications/funding assistance for trail projects. We have several project managers who have assisted with the successful application and administration of trail funded projects.

C2AE has been successful with numerous **Michigan Natural Resources Trust Fund** applications and **MDOT Transportation Alternatives Program** applications. We are also familiar with other funding sources, such as the **DNR Recreation Passport grant** and **Iron Belle Trail grant**. Where trails can be located on state land, we have worked with clients to successfully use the **DNR Recreational Trails Program grant**. Where the trail is part of the Iron Belle Trail network, that funding has also been successfully utilized.

The level of grant writing assistance varies with each project and client. We understand that with this project, C2AE would be the lead entity in the grant application

preparation process. As witnessed from the enclosed profiles of previous projects (the Otsego County Trail is a good example), C2AE understands that often times multiple funding sources are required to allow a project to move forward. And the proper management of those various funding sources within one project is critical to the success of that project. We have the expertise and experience to assist in the identification of multiple funding sources as they may apply to various projects.

Funding identification and application leadership for this project will be provided by Larry Fox, project manager, and by Emily Meyerson of Meyerson Consulting.

The below video (click to follow YouTube link) summarizes how our funding experts look at the big picture to take a project from concept through completion.



Funding: The Economic Development Catalyst

LOCAL FAMILIARITY

C2AE has had a presence in west and southwest Michigan with offices in Grand Rapids and Kalamazoo that date back as far as 1966.

We have provided engineering and architectural consulting services in this region for a variety of state, county, and local governments, educational facilities, and private businesses over the past 55 years. More specifically, we have worked with the following clients/projects within Allegan County or nearby:

- Saugatuck-Douglass District Library
- Holland State Park Improvements
- MDOT US-131 resurfacing from Dorr to Wayland
- Allegan County Medical Care Community
- Dorr Township
- City of Otsego
- Plainwell Paper Mill
- City of Kalamazoo
- Van Buren Intermediate School District
- City of South Haven
- Bangor Public Schools

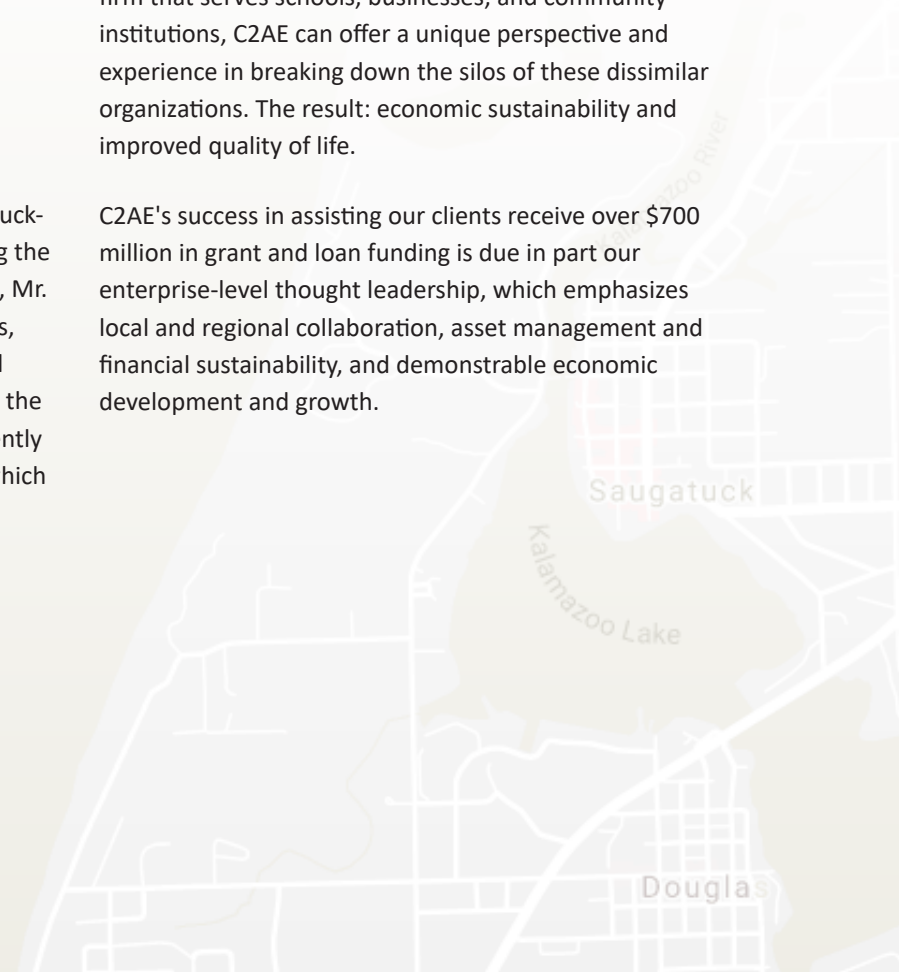
Saugatuck-Douglas Fire Department

Understanding the needs and concerns of the Saugatuck-Douglas Fire Department will be a high priority during the early stages of the trail design. One of C2AE's owners, Mr. Steve Jurczuk, has been a fire fighter for over 15 years, and has worked closely with Fire Chief Greg Janik and Deputy Chief Chris Mantels during his involvement in the Allegan County Fire Chief's Association. Steve is currently the Captain at the Dorr Township Fire Department, which provides our team with the working knowledge and insights of fire department operations.

Familiarity with the Role that Trails on Play in the Economic Cycle of a Region

C2AE has been implementing projects for 50+ years that support the economic cycle: **place needs business, business needs talent, and talent wants place.** When individuals, families, schools, businesses, community institutions, associations, and organizations collectively agree upon goals for regional parks and recreational goals and decide how to reach them, every group benefits and the region benefits. High local quality of life is an attribute business leaders crave when facing the challenge of attracting talent. High quality of life also supports business retention, expansion, and relocation. As a full-service architectural, engineering, and infrastructure design firm that serves schools, businesses, and community institutions, C2AE can offer a unique perspective and experience in breaking down the silos of these dissimilar organizations. The result: economic sustainability and improved quality of life.

C2AE's success in assisting our clients receive over \$700 million in grant and loan funding is due in part our enterprise-level thought leadership, which emphasizes local and regional collaboration, asset management and financial sustainability, and demonstrable economic development and growth.



Familiarity with Lakeshore Communities and Tourist-driven Economies

C2AE has worked on trails, sewer, water, road, and major infrastructure projects for several lakeside and resort communities across West Michigan, Northern Lower Michigan, and the Upper Peninsula, including Sault Ste. Marie, St. Ignace, Mackinac Island, Mackinaw City, Higgins Lake, Gaylord, Grayling, Cadillac, Traverse City, Petoskey, Village of Elk Rapids, Central Lake, Charlevoix, Boyne City, East Jordan, and Pentwater. Our team's understanding of how to implement projects that minimize the adverse economic impacts of construction during peak summer

months will be a valuable asset to the region on your trail projects.

Since C2AE is not currently working with the three communities involved in the Blue Star Trail project, we believe our non-biased approach will be most beneficial in finding common ground and best alternatives for the challenges have slowed the trail development over the past several years. We look forward to developing relationships with all the communities along the Blue Star Trail during the successful implementation of this important regional project.



Saugatuck-Douglas Library Rendering



Holland State Park \$4M Day Use and Campground Renovation

FIRE/POLICE DEPT. INTERACTION



POLICE DEPARTMENTS

Interaction of the local/regional police departments is a typical aspect of the majority of transportation projects managed by C2AE, especially those utilizing MDOT TAP funding.

The police department is normally involved in the project planning/schematic design process to help identify potential problem areas and accident histories. The police departments are also included in the design process, where applicable, including route and intersection reviews as well as review of detour routes and road closures.

During construction, coordination with local fire and police departments is imperative for construction activity impacts and maintaining access for emergency vehicles.

FIRE DEPARTMENTS



C2AE is adept at developing rapport with public safety entities and has done so for many building and infrastructure projects. In fact, C2AE architect Steve Jurczuk serves as captain-firefighter at the Dorr Fire Department.

One recent example of our coordination efforts was on C2AE's bond program services for Bath Community Schools. Improvements at Bath Middle School required close collaboration with the local fire department to provide the department with emergency access around Bath Middle School. C2AE ensured that the design incorporated a turning radius that matched up to the fire department equipment.

Another example of this collaboration is C2AE's work for the City of Lansing. The firm needed to coordinate with the fire marshal for the replacement of the legacy city water main. C2AE collaborated with the local fire and water departments to ensure the solution balanced the cost with performance.

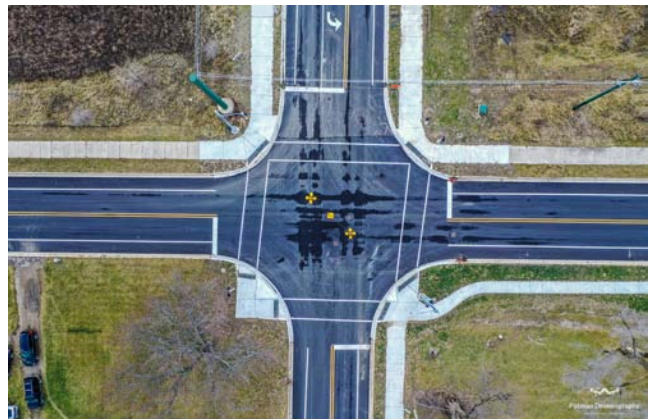
SMART TRAFFIC SIGNALS

Smart traffic signals use a combination of traditional and innovative technology to direct vehicles and pedestrians. When it comes to trail, path, and road design, it is important to consider the possible meeting points between these two types of traffic—and how to facilitate safe passage for both.

Pavement markings and signs at midblock crosswalks are not always effective at capturing drivers' attention and getting them to yield. Rectangular Rapid Flashing Beacons (RRFBs) are a type of traffic signal that emits a flashing light that stands out day or night to capture drivers' attention and warn them of a pedestrian crossing the road. RRFBs are one of the best and easiest ways to increase walkability in a community without significant infrastructure changes.

These signals improve driver yield rates over paint markings alone, are less disruptive to traffic flow than full overhead traffic lights, and can be solar powered, making them much easier and faster to install. C2AE has used this type of signal with great success on two occasions for Clinton County Road Commission: once on Herbison Road and another more recently at the new Coleman Road extension.

C2AE will also be using this type of signal for the City of Lansing East Side Connector non-motorized path. This project will introduce a 1.2-mile path going through Lansing School District property, with new signals at the crossing of Marshall Street (south of Saginaw Street and M-43).



REFERENCES

Elizabeth Calcutt

Project Manager
TART Trails (formerly Networks Northwest)
802.338.2176

Julie Clark

Executive Director
TART Trails
231.941.4300

Brent Bolin

Executive Director
Top of Michigan Trails Council
231.348.8280

Gregory Kinser

Northern Lower Peninsula Regional Trails Coordinator
Michigan Department of Natural Resources
989.390.0431

Thad Beard

City Manager
City of Rockford
(former City Manager in Otsego for 15+ years)
616.866.1537

Rick Galardi

Supervisor
DeWitt Township
517.668.0270

Dave Kurdwa, PE

Community Development Director
City of St. Johns
517.224.8944 x 231

STANDARD CONTRACT

C2AE contracts typically consist of our proposal that contains detailed description of our scope, schedule and fee accompanied by Standard Contract Provisions. However, we routinely utilize industry standard contracts, such as EJCDC documents or other forms to meet funding agency requirements. The following is a copy of our Standard Contract Provisions for Design and Construction Services for reference.

The parties to this agreement, Capital Consultants, Inc., a Michigan Corporation doing business as C2AE in the State of Michigan, hereinafter called the A|E CONSULTANT and the Tri-Community Joint Study Committee hereinafter called the OWNER, hereby agree to the following conditions:

- A. Limit of Scope: The services provided by the A|E CONSULTANT shall be limited to those described in the Scope of Services.
- B. Changed Conditions: If, during the term of this Agreement, circumstances or conditions that were not originally contemplated by or known to the A|E CONSULTANT are revealed, to the extent that they affect the scope of services, compensation, schedule, allocation of risks or other material terms of this Agreement, the A|E CONSULTANT may call for renegotiation of appropriate portions of this Agreement. The A|E CONSULTANT shall notify the OWNER of the changed conditions necessitating renegotiation, and the A|E CONSULTANT and the OWNER shall promptly and in good faith enter into renegotiation of this Agreement to address the changed conditions. If terms cannot be agreed to, the parties agree that either party has the absolute right to terminate this Agreement.
- C. Additional Services: Additional services not specifically identified in the Scope of Services shall be paid for by the OWNER in addition to the fees previously stated, provided the OWNER authorizes such services in writing. Additional services will be billed monthly as work progresses and invoices are due upon receipt.
- D. Standard of Care: In providing services under this Agreement, the A|E CONSULTANT will endeavor to perform in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances. Upon notice to the A|E CONSULTANT and by mutual agreement between the parties, the A|E CONSULTANT will without additional compensation, correct those services not meeting such a standard.
- E. ADA Compliance: The Americans with Disabilities Act (ADA) provides that alterations to a facility must be made in such a manner that, to the maximum extent feasible, the altered portions of the facility are readily accessible to persons with disabilities. The OWNER acknowledges that the requirement of the ADA will be subject to various and possibly contradictory interpretations. The A|E CONSULTANT, therefore, will use its reasonable professional efforts and judgment to interpret applicable ADA requirements and other federal, state and local laws, rules, codes, ordinances and regulations as they apply to the project. The A|E CONSULTANT, however, cannot and does not warrant or guarantee that the OWNER's project will comply with all interpretations of the ADA requirements and/or the requirements of other federal, state and local laws, rules, codes, ordinances and regulations as they apply to the project.
- F. Code Compliance: The A|E CONSULTANT shall put forth reasonable professional efforts to comply with applicable laws, codes and regulations in effect as of the date of submission to building authorities. Design changes made necessary by newly enacted laws, codes and regulations after this date shall entitle the A|E CONSULTANT to a reasonable adjustment in the schedule and additional compensation in accordance with the Additional Services provision of this Agreement.
- G. Permits and Approvals: The A|E CONSULTANT shall assist the OWNER in applying for those permits and approvals normally required by law for projects similar to the one for which the A|E CONSULTANT's services are being engaged. This assistance shall consist of completing and submitting forms to the appropriate regulatory agencies having jurisdiction over the construction documents, and other services normally provided by the A|E CONSULTANT and included in the scope of Basic Services of this Agreement.
- H. Opinions of Probable Construction Cost: In providing opinions of probable construction cost, the OWNER understands that the A|E CONSULTANT has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing, and that the A|E CONSULTANT's opinions of probable construction costs are made on the basis of the A|E CONSULTANT's professional judgment and experience. The A|E CONSULTANT makes no warranty, express or implied, that the bids or the negotiated cost of the work will not vary from the A|E CONSULTANT's opinion of probable construction cost.
- I. Schedule for Rendering Services: The A|E CONSULTANT shall prepare and submit for OWNER approval a schedule for the performance of the A|E CONSULTANT's services. This schedule shall include reasonable allowances for review and approval times required by the OWNER, performance of services by the OWNER's consultants, and review and approval times required by public authorities having jurisdiction over the project. This schedule shall be equitably adjusted as the project progresses,

allowing for changes in scope, character or size of the project requested by the OWNER, or for delays or other causes beyond the A|E CONSULTANT's reasonable control.

- J. **Ownership of Reports, Drawings and Other Materials:** The OWNER agrees that all reports, drawings, letters, work sheets, plans, preliminary material tables, supportive data, documents and other materials produced by the A|E CONSULTANT in the course of and for the purpose of meeting this contract are the property of the A|E CONSULTANT, and shall remain in the possession of the A|E CONSULTANT. The OWNER shall have access to the above named material during normal business hours of the A|E CONSULTANT during and after completion of this contract. The OWNER may obtain copies of any of the above named material. Copies of electronic media may be obtained by the OWNER. (See Alteration and Reuse of CAD Information provision of this Agreement.)
- K. **Alteration and Reuse of CAD Information:** Because computer aided design/drafting (CAD) information stored in electronic form can be modified by other parties, intentionally or otherwise, without notice or indication of said modifications, the A|E CONSULTANT reserves the right to remove all indications of its ownership and/or involvement in the material from each electronic medium not held in its possession. The OWNER may retain copies of the work performed by the A|E CONSULTANT in CAD form. Copies shall be for information and used by the OWNER for the specific purpose for which the A|E CONSULTANT was engaged. Said material shall not be used by the OWNER, or transferred to any other party, for use in other projects, additions to the current project, or any other purpose for which the material was not strictly intended without the A|E CONSULTANT's express written permission. Any unauthorized modification or reuse of the materials shall be at the OWNER's sole risk, and the OWNER agrees to defend, indemnify, and hold the A|E CONSULTANT harmless, from all claims, injuries, damages, losses, expenses, and attorneys fees arising out of the unauthorized modification of these materials.
- L. **Record Documents:** Upon completion of the work, the A|E CONSULTANT shall compile for and deliver to the OWNER a reproducible set of Record Documents based upon the marked-up record drawings, addenda, change orders and other data furnished by the Contractor. These Record Documents will show significant changes made during construction. Because these Record Documents are based on unverified information provided by other parties, which the A|E CONSULTANT shall assume will be reliable, the A|E CONSULTANT cannot and does not warrant their accuracy.
- M. **Optional – Delete if not applicable (suggest requiring retainer for new, non-municipal clients) Retainer:** *The OWNER shall make an initial payment of _____ dollars (\$_____) as a retainer, upon execution of this Agreement. Upon receipt of this retainer payment, the A|E CONSULTANT shall commence services as provided for under this Agreement. The retainer shall be held by the A|E CONSULTANT and shall be applied against the final invoice. In the event the amount of the retainer exceeds the final invoice, the A|E CONSULTANT shall refund the balance with the final invoice. If the final invoice exceeds the retainer, the OWNER shall promptly remit the amount due. As services are performed, invoices will be submitted monthly by the A|E CONSULTANT to the OWNER, and are payable on receipt.*
- N. **Payment Terms:** Invoices will be submitted by the A|E CONSULTANT monthly, are due upon receipt and shall be considered past due if not paid within thirty (30) calendar days of the due date. *(suggest leaving in both options for new or recently established clients) Optional: If payment in full is not received by the A|E CONSULTANT within forty-five (45) calendar days of the due date, invoices shall bear interest at one-and-one-half (1.5) percent (or the maximum rate allowable by law, whichever is less) of the Past Due amount per month, which shall be calculated from the invoice due date. Payment thereafter shall first be applied to accrued interest and then to the unpaid principal.*
- Optional: If the OWNER fails to make payments when due or otherwise is in breach of this Agreement, the A|E CONSULTANT may suspend performance of services upon five (5) calendar days' notice to the OWNER. The A|E CONSULTANT shall have no liability whatsoever to the OWNER for any costs or damages as a result of such suspension caused by any breach of this Agreement by the OWNER. Upon payment in full by the OWNER, the A|E CONSULTANT shall resume services under this Agreement, and the time schedule and compensation shall be equitably adjusted to compensate for the period of suspension plus any other reasonable time and expense necessary for the A|E CONSULTANT to resume performance.*
- O. **Disputed Invoices:** If the OWNER objects to any portion of an invoice, the OWNER shall so notify the A|E CONSULTANT in writing within ten (10) calendar days of receipt of the invoice. The OWNER shall identify in writing the specific cause of the disagreement and the amount in dispute and shall pay that portion of the invoice not in dispute in accordance with other

payment terms of this Agreement. Any dispute over invoiced amounts due which cannot be resolved within ten (10) calendar days after receipt of invoice by direct negotiation between the parties shall be resolved within thirty (30) calendar days in accordance with the Dispute Resolution provision of this Agreement. Interest at one-and-one-half (1.5) percent (or the maximum rate allowable by law, whichever is less) shall be paid by the OWNER on all disputed invoice amounts that are subsequently resolved in the A|E CONSULTANT's favor and shall be calculated on the unpaid balance from the due date of the invoice.

- P. **Abandonment of Work:** If any work is abandoned or suspended, the A|E CONSULTANT shall be paid for services performed prior to receipt of written notice from the OWNER of abandonment or suspension.
- Q. **Errors and Omissions Insurance:** The A|E CONSULTANT maintains an errors and omissions insurance policy as part of normal business practice. The OWNER agrees to limit the A|E CONSULTANT's liability to the OWNER and to all Construction Contractors and Subcontractors on the project due to the A|E CONSULTANT's negligent acts, errors, or omissions, such that the total aggregate liability of the A|E CONSULTANT to all those named shall not exceed \$_____ (**a. equal to C2AE fee; b. equal to construction cost; c. C2AE limits of insurance coverage**).
- R. **Betterment:** If, due to the A|E CONSULTANT's negligence, a required item or component of the project is omitted from the A|E CONSULTANT's construction documents, the A|E CONSULTANT shall not be responsible for paying the cost required to add such item or component to the extent that such item or component would have been required and included in the original construction documents. In no event will the A|E CONSULTANT be responsible for any cost or expense that provides betterment or upgrades or enhances the value of the project.
- S. **Indemnification:** The A|E CONSULTANT agrees, to the fullest extent permitted by law, to indemnify and hold harmless the OWNER, its officers, directors and employees (collectively, OWNER) against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, to the extent caused by the A|E CONSULTANT's negligent performance of professional services under this Agreement and that of its subconsultants or anyone for whom the A|E CONSULTANT is legally liable.

The OWNER agrees, to the fullest extent permitted by law, to indemnify and hold harmless the A|E CONSULTANT, its officers, directors, employees and subconsultants (collectively, A|E CONSULTANT) against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, to the extent caused by the OWNER's negligent acts in connection with the project and the acts of its contractors, subcontractors or consultants or anyone for whom the OWNER is legally liable.

Neither the OWNER nor the A|E CONSULTANT shall be obligated to indemnify the other party in any manner whatsoever for the other party's own negligence.

Or (use first option unless the Owner's attorney objects)

- T. **Indemnification:** The A|E CONSULTANT agrees, to the fullest extent permitted by law, to indemnify and hold harmless the OWNER against damages, liabilities and costs arising from the negligent acts of the A|E CONSULTANT in the performance of professional services under this Agreement, to the extent that the A|E CONSULTANT is responsible for such damages, liabilities and costs on a comparative basis of fault and responsibility between the A|E CONSULTANT and the OWNER. The A|E CONSULTANT shall not be obligated to indemnify the OWNER for the OWNER's own negligence.
- U. **Consequential Damages:** Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by law, neither the OWNER nor the A|E CONSULTANT, their respective officers, directors, partners, employees, contractors or subconsultants shall be liable to the other or shall make any claim for any incidental, indirect or consequential damages arising out of or connected in any way to the project or to this Agreement. This mutual waiver of consequential damages shall include, but is not limited to, loss of use, loss of profit, loss of business, loss of income, loss of reputation or any other consequential damages that either party may have incurred from any cause of action including negligence, strict liability, breach of contract and breach of strict or implied warranty. Both the OWNER and the A|E CONSULTANT shall require similar waivers of consequential damages protecting all the entities or persons named herein in all contracts and subcontracts with others involved in this project.

Section U and V. Choose either Full-Time or Part-Time

- V. Full-Time Construction Observation: The A|E CONSULTANT will provide full-time project representation in order to observe the progress and quality of the work completed by the Contractor. Such observation is not intended to be an exhaustive check or a detailed inspection of the Contractor's work but rather is to allow the A|E CONSULTANT, as an experienced professional, to become generally familiar with the work in progress and to determine, in general, if the work is proceeding in accordance with the Contract Documents.

The A|E CONSULTANT shall keep the OWNER informed about the progress of the work and shall endeavor to guard the OWNER against deficiencies in the work.

The A|E CONSULTANT shall not supervise, direct or have control over the Contractor's work nor have any responsibility for the construction means, methods, techniques, sequences or procedures selected by the Contractor nor for the Contractor's safety precautions or programs in connection with the Work. These rights and responsibilities are solely those of the Contractor in accordance with the Contract Documents.

The A|E CONSULTANT shall not be responsible for any acts or omissions of the Contractor, subcontractor, any entity performing any portions of the work, or any agents or employees of any of them. The A|E CONSULTANT does not guarantee the performance of the Contractor and shall not be responsible for the Contractor's failure to perform its work in accordance with the Contract Documents or any applicable laws, codes, rules or regulations.

- W. Part-Time Construction Observation: The A|E CONSULTANT shall visit the site at intervals appropriate to the stage of construction, or as otherwise agreed to in writing by the OWNER and the A|E CONSULTANT, in order to observe the progress and quality of the work completed by the Contractor. Such visits and observation are not intended to be an exhaustive check or a detailed inspection of the Contractor's work but rather are to allow the A|E CONSULTANT, as an experienced professional, to become generally familiar with the work in progress and to determine, in general, if the work is proceeding in accordance with the Contract Documents.

Based on this general observation, the A|E CONSULTANT shall keep the OWNER informed about the progress of the work and shall endeavor to guard the OWNER against deficiencies in the work.

The A|E CONSULTANT shall not supervise, direct or have control over the Contractor's work nor have any responsibility for the construction means, methods, techniques, sequences or procedures selected by the Contractor nor for the Contractor's safety precautions or programs in connection with the Work. These rights and responsibilities are solely those of the Contractor in accordance with the Contract Documents.

The A|E CONSULTANT shall not be responsible for any acts or omissions of the Contractor, subcontractor, any entity performing any portions of the work, or any agents or employees of any of them. The A|E CONSULTANT does not guarantee the performance of the Contractor and shall not be responsible for the Contractor's failure to perform its work in accordance with the Contract Documents or any applicable laws, codes, rules or regulations.

- X. Jobsite Safety: Neither the professional activities of the A|E CONSULTANT, nor the presence of the A|E CONSULTANT or its employees and subconsultants at a construction/project site, shall relieve the General Contractor of its obligations, duties and responsibilities including, but not limited to, construction means, methods, sequence, techniques or procedures necessary for performing, superintending and coordinating the work in accordance with the Contract Documents and any health or safety precautions required by any regulatory agencies. The A|E CONSULTANT and its personnel have no authority to exercise any control over any construction contractor or its employees in connection with their work or any health or safety programs or procedures. The OWNER agrees that the General Contractor shall be solely responsible for jobsite safety, and warrants that this intent shall be carried out in the OWNER's contract with the General Contractor. The OWNER also agrees that the OWNER, the A|E CONSULTANT and the A|E CONSULTANT's subconsultants shall be indemnified by the General Contractor and shall be made additional insureds under the General Contractor's policies of general liability insurance.

- Y. Hazardous Materials: As used in this Agreement, the term *hazardous materials* shall mean any substances, including but not limited to asbestos, toxic or hazardous waste, PCBs, combustible gases and materials, petroleum or radioactive materials (as

each of these is defined in applicable federal statutes) or any other substances under any conditions and in such quantities as would pose a substantial danger to persons or property exposed to such substances at or near the project site.

Both parties acknowledge that the A|E CONSULTANT's Scope of Services does not include any services related to the presence of any hazardous or toxic materials. In the event the A|E CONSULTANT or any other party encounters any hazardous or toxic materials, or should it become known to the A|E CONSULTANT that such materials may be present on or about the jobsite or any adjacent areas that may affect the performance of the A|E CONSULTANT's services, the A|E CONSULTANT may, at its option and without liability for consequential or any other damages, suspend performance of its services under this Agreement until the OWNER retains appropriate consultants or contractors to identify and abate or remove the hazardous or toxic materials and warrants that the jobsite is in full compliance with all applicable laws and regulations.

The OWNER agrees, notwithstanding any other provision of this Agreement, to the fullest extent permitted by law, to indemnify and hold harmless the A|E CONSULTANT, its officers, partners, employees and consultants (collectively, A|E CONSULTANT) from and against any and all claims, suits, demands, liabilities, losses, damages or costs, including reasonable attorneys' fees and defense costs arising out of or in any way connected with the detection, presence, handling, removal, abatement, or disposal of any asbestos or hazardous or toxic substances, products or materials that exist on, about or adjacent to the project site, whether liability arises under breach of contract or warranty, tort, including negligence, strict liability or statutory liability or any other cause of action, except for the sole negligence or willful misconduct of the A|E CONSULTANT.

- Z. Change Orders/Stop Work Orders: The A|E CONSULTANT and the OWNER agree that any construction contract change orders or stop work orders must be approved in writing by the OWNER.
- AA. Agreement Not to Claim for Cost of Certain Change Orders: The OWNER recognizes and expects that certain Change Orders may be required to be issued as the result in whole or part of imprecision, incompleteness, errors, omissions, ambiguities, or inconsistencies in the Drawings, Specifications and other design documentation furnished by the A|E CONSULTANT or in the other professional services performed or furnished by the A|E CONSULTANT under this Agreement whether caused by professional negligence or by imperfections that are within professional standards ("Covered Change Orders"). Accordingly, the OWNER agrees not to sue and otherwise to make no claim directly or indirectly against the A|E CONSULTANT on the basis of professional negligence, breach of contract or otherwise with respect to the costs of approved Covered Change Orders unless the costs of such approved Covered Change Orders exceed 5% of Construction Cost, and then only for an amount in excess of such percentage. Any responsibility of the A|E CONSULTANT for the costs of Covered Change Orders in excess of such percentage will be determined on the basis of applicable contractual obligations and professional liability standards. For purposes of this paragraph, the cost of Covered Change Orders will not include any costs that the OWNER would have incurred if the Covered Change Order work had been included originally in the Contract Documents without any imprecision, incompleteness, error, omission, ambiguity, or inconsistency in the Drawings, Specifications and other design documents furnished by the A|E CONSULTANT or in the A|E CONSULTANT's other professional services related thereto. Nothing in this provision creates a presumption that, or changes the professional liability standard for determining if, the A|E CONSULTANT is liable for the cost of Covered Change Orders in excess of the percentage of Construction Cost stated above or for any other Change Order.
- BB. Dispute Resolution: The OWNER agrees that all claims, disputes, and other matters in question between the parties arising out of or relating to this Agreement or breach thereof first shall be submitted for nonbinding mediation to any one of the following, as agreed to by the parties: American Arbitration Association, American Intermediation Service, Americord, Dispute Resolution, Inc., Endispute, or Judicate. Any party hereto may initiate mediation within the time allowed for filing per State law and the parties hereto agree to fully cooperate and participate in good faith to resolve the dispute(s). The cost of mediation shall be shared equally by the parties hereto.

If mediation fails to resolve the claim or dispute, the matter shall be submitted to a court of competent jurisdiction.

ADDITIONAL INFORMATION

C2AE has developed various documents, like those included in this section, that will be valuable in assisting the Committee and municipal governments in tracking the project timelines, funding source processes, and communication aspects of this multi-faceted project.

TRAIL FUNDING OPPORTUNITIES

Source	Match Required	Maximum	Trail Development	Bike Routes / Bike Lanes	Parking for trails	Trailhead facilities and parking	Trailside Amenities (overlooks, benches, interpretive Signs)	Land Acquisition for trails and facilities
MDOT - TAP	20		X	X	X			
DNR – MNRTF	25	300,000 (no cap for acquisition)	X			X	X	X
DNR - Land and Water Conservation Fund	50	300,000	X			X	X	
DNR – Rec Passport	25	\$150,000	X			X	X	
IBT Foundation			X	X		X	X	X
Foundations & Organizations			X	X		X	X	X
DNR Recreation Trails Program**			X	X		X	X	X
DNR Recreation Improvement Fund**			X	X		X	X	
DNR State Park Improvement Fund***			X	X		X	X	

**Must be partnered with the DNR Parks and Recreation Department as it is an internal funding source

***Internal funding source for capital improvements in State Parks

Other funding ideas:

1. When Road Agencies redo a road and you add a facility, some of their work could be the match
2. For acquisition when a property owner will reduce the cost of acquisition by the required match amount, called a bargain sale, it will suffice as match for MNRTF
3. If the Local Tribes have the trail on their transportation plan it could qualify for Tribal Transportation funds.

Foundations and Organizations:

1. Rotary Charities
2. Local Community Foundations
3. Oleson Foundation
4. Consumer's Energy Foundation
5. DALMAC Foundation

(This is just a start. . .)

FUNDING/CONSTRUCTION SCHEDULE EXAMPLE

Nakwema Trailway

Overall Plan Construction	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Acme Connector											
Elk Rapids Bike Route			or								
Acme to Elk Rapids Phase 1											
Acme to Elk Rapids Phase 2											
Acme to Elk Rapids Phase 3											
Norwood to Charlevoix Phase 1											
Norwood to Charlevoix Phase 2											
Elk Rapids to Norwood (Phases TBD)											If Needed
Acme Connector	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Grant Approval											
Final Construction Plans											
Construction											
Village of Elk Rapids Bike Route	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Route Approval											
Fundraising if needed											
Final Construction Plans											
Sign/Route Implementation			or								
Acme to Elk Rapids Phase 1	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Design											
Maintenance Plan Complete											
Funding Needs Assessment											
Public Engagement											
Property Acquisition/control											
Fundraising/Grant Writing											
Grant Approval											
Final Construction Plans											
Construction											
Acme to Elk Rapids Phase 2	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Public Engagement											
Property Acquisition/control											
Fundraising/Grant Writing											
Grant Approval											
Final Construction Plans											
Construction											
Norwood to Charlevoix	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Concept Design											
Concept Approval											
Funding Needs Assessment											
Public Engagement											
Design Complete											
Maintenance Plan Complete											
Property Acquisition/control											
Fundraising/Grant Writing											
Grant Approval											
Final Construction Plans											
Construction											
If a Phase 2 is needed	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Public Engagement											
Property Acquisition/control											
Fundraising/Grant Writing											
Grant Approval											
Final Construction Plans											
Construction											

FUNDING/CONSTRUCTION SCHEDULE EXAMPLE

Nakwema Trailway

	2020												2021												2022																							
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb										
Acme to Elk Rapids - Overall																																																
Design Development	█																																															
Updated Construction Costs						█																																										
Meet w/ Major Funding Partners (MDOT especially and potential grant applicants)				█	█																																											
Draft Phasing/Funding Plan Developed for Entire Acme to ER Segment				█	█	█																																										
Finalize Phasing/Funding Plan				█	█	█	█																																									
Meetings with Potential Trail Owners/Applicants				█	█	█	█																																									
Trail Ownership Commitment				█	█	█	█																																									
Property Needs Assessment				█	█	█	█																																									
Property Owner Meetings				█	█	█	█																																									
Final property needs/costs determined				█	█	█	█																																									
Property/Easement Acquiring Entity Determined for Each Phase				█	█	█	█																																									
Easement/Property Acquisition/Negotiation				█	█	█	█	█																																								
IF GRANT FUNDING IS NEEDED FOR ACQUISITION THEN TIMING WILL NEED TO BE ADJUSTED/COMPLETE ACQUISITION FUNDING REQUEST FOR THE ENTIRE SEGMENT EVEN IF PHASED																																																
Amount of money needed for acquisition						█	█	█																																								
Determine potential funders for acquisition						█	█	█																																								
Acquisition entity determined						█	█	█																																								
Acme to Elk Rapids Phase 1 - Trail																																																
Maintenance Plan w/Costs Complete				█	█	█	█																																									
Support from Local Govt & Grant Applicant Secured						█	█	█		█																																						
TAP Grant																																																
Prep & Submittal - October 14										█																																						
Alternate date February 24										█																																						
Supplemental information										█	█																																					
Grant Recommendation										█	█																																					
Final TAP Approval																																																
MNRTF																																																
Collaborator meeting											█																																					
Verify Rec Plans are current										█	█																																					
Grant Writing										█	█																																					
Public Hearing										█	█																																					
Grant Submittal - April 1																																																
Supplemental information											█	█																																				
Trust Fund Recommendation												█																																				
Trust Fund Grant Agreements																																																
All Property/Easements Secured																																																
Final Plans Approved																																																
Bid																																																
Construction																																																

PUBLIC INVOLVEMENT PROGRAM OUTLINE EXAMPLE

Nakwema Trailway

ITEM	PURPOSE	PARTICIPANTS	FORMAT	LOCATION
A	<ul style="list-style-type: none"> introduce the project provide a project update resolve conflict build consensus improve community relations identify project issues evaluate project alternatives develop alternative solutions 	<ul style="list-style-type: none"> advisory committee advisory staff C2AE individuals (ONE-ON-ONE) 	<p>One-on-One Meeting</p> <ul style="list-style-type: none"> general to specific agenda space for exhibits neutral location 	<ul style="list-style-type: none"> government offices commission chambers homes
B	<ul style="list-style-type: none"> introduce the project provide a project update improve community relations identify project issues 	<ul style="list-style-type: none"> special interest groups agency representatives elected/appointed officials individuals (ONE-ON-ONE) 	<p>Small Group Meeting</p> <ul style="list-style-type: none"> general agenda space for exhibits facilitator 	<ul style="list-style-type: none"> community centers libraries government offices churches
C	<ul style="list-style-type: none"> introduce the project provide a project update improve community relations identify project issues 	<ul style="list-style-type: none"> general public specific stakeholders 	<p>Open House/Transportation Fair</p> <ul style="list-style-type: none"> no agenda large open space greeting/comment table 	<ul style="list-style-type: none"> community centers libraries government offices neighborhood events church socials
D	<ul style="list-style-type: none"> build consensus evaluate project alternatives develop alternative solutions 	<ul style="list-style-type: none"> special interest groups agency representatives elected/appointed officials 	<p>Working Session</p> <ul style="list-style-type: none"> specific agenda seating around a table space for exhibits facilitator 	<ul style="list-style-type: none"> community centers libraries schools churches government offices
E	<ul style="list-style-type: none"> brainstorm project ideas 	<ul style="list-style-type: none"> special interest groups elected/appointed officials 	<p>Charrette</p> <ul style="list-style-type: none"> layout space facilitator 	<ul style="list-style-type: none"> community centers government offices
F	<ul style="list-style-type: none"> resolve conflict build consensus evaluate project alternatives develop alternative solutions 	<ul style="list-style-type: none"> general public individuals (ONE-ON-ONE) 	<p>Open Meeting</p> <ul style="list-style-type: none"> specific agenda break-out sessions greeting/comment table space for exhibits facilitator 	<ul style="list-style-type: none"> community centers libraries schools churches government offices
G	<ul style="list-style-type: none"> present preferred program/plan/project alternative(s) satisfy legal mandates for public involvement 	<ul style="list-style-type: none"> general public special interest groups agency representatives elected/appointed officials individuals (ONE-ON-ONE) 	<p>Public Hearing</p> <ul style="list-style-type: none"> formal agenda formal seating greeting/comment table microphone space for displays 	<ul style="list-style-type: none"> community centers schools township Office commission chambers

Meeting Don'ts:

- Hold meetings on Wednesday evenings, Sundays, around major holidays, or long weekends.
- Allow meetings to be too long. (*recommend 1 - 2 1/2 hour meeting between 7:00 and 9:30 PM*)
- Allow meetings to be too short.
- Contact the community solely through mail-outs and newspaper advertising.
- Assign outgoing roles to introverted staff.
- Let local issues override the goals of the meeting.
- Wait until the last minute to meet production deadlines.

Meeting Do's

- Provide ample meeting notification.
- Stick to the agenda.
- Document all comments and decisions.
- Ensure that enough background information has been provided.
- Initiate the evaluation process for meeting effectiveness (lessons learned).
- Establish community contacts.
- Plan, prepare and evaluate.
- Provide name tags for the participants.
- Maintain contact with the community between meeting dates.
- Encourage creative thinking, interest and participation in the project.

MARKETING AND CREATIVE SERVICES

C2AE Team



Lynette Van Heukelum *Graphic Designer*
 Formerly a mechanical engineer, Lynette has shifted her focus from technical design to artistry. She is interested in creating content that compels its audience to keep scrolling, clicking, or turning the page.



Erin Tanis *Creative Writer*
 Erin is an award-winning writer and editor with experience managing website and social media content, writing press releases, and composing grant applications.



Gretchen Foley *Marketing Coordinator*
 Gretchen has been in sales and marketing for over a decade. She specializes in managing marketing campaigns from first point of contact to campaign launch.

C2AE Project Examples

Elk Rapids: C2AE is planning upgrades for the Village of Elk Rapids along a 6,200 LF downtown thoroughfare to make the area more inviting for businesses and tourists.

C2AE developed multiple online public input questionnaires for residents and business owners. This allowed the village to continue the project through COVID, which made traditional town hall meetings difficult. The results of the questionnaire were viewable in real-time and quickly analyzed. QR codes were posted on flyers around town which directed residents to the survey.

Kalkaska: C2AE is working closely with the Village of Kalkaska to develop a grant application to fund the construction of a larger, modernized library building. To supplement this application, C2AE's marketing team interviewed several members of the community—such as business owners, students, elders, remote workers, and library employees—on the value this new facility could bring to the community. The final document will go to several possible funding sources.



Scan this QR code to view interactive survey results:



AMES DISTRICT IMPROVEMENTS

SECOND OPPORTUNITY FOR PUBLIC INPUT

The Village of Elk Rapids is seeking public input on options for much needed safety and functional improvements to the Ames Street District, from East of US-31 to the easterly Village Limits.

Schematic alternatives have been developed based on the initial public survey conducted in spring of 2020. This is our community and your voice is needed, so please review the street scape drawings and complete your feedback survey before Friday, October 2. The schematic drawings and response survey can be viewed and completed as follows:

Online: bit.ly/2ENAbcK
 or scan the QR code:



Hard Copy:
 Available for review at:
 Village Government Center
 315 Bridge St, Elk Rapids, MI 49629

Manually completed survey forms should be dropped off or mailed to the Village Government Center.

All public input surveys must be submitted by Friday, October 2.

Open House:

For those not able to access the surveys, or for those seeking additional information, an Open House will be held at the Government Center from 5 pm to 7 pm on Wednesday, September 30. Representatives of C2AE, the engineering firm, will be available to answer questions. All COVID 19 requirements will be strictly enforced.



[left] section view, Schematic Alternative 1

Larry Fox, PE
larry.fox@c2ae.com
www.c2ae.com

Cory Davis, PE
cory.davis@c2ae.com
www.c2ae.com



it's all about people. | **JANUARY 21, 2021**

TRI-COMMUNITY JOINT STUDY
COMMITTEE

**Planning, Design, and
Construction of
Blue Star Trail -
North Section**



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February 17, 2021

Friends of the Blue Star Trail
PO Box 464
Douglas, MI 49406

Attention: Mr. Richard Donovan

RE: BLUE STAR TRAIL DESIGN; DOUGLAS, SAUGATUCK, AND SAUGATUCK TOWNSHIP

Dear Richard:

Thank you for reaching out earlier this week. It was a pleasure talking with you about your plans for the extension of the Blue Star Trail. Wightman is a full-service consulting firm that exists to serve people and the communities we live in. Our dynamic team of over 140 professionals works to analyze, advise, design, and deliver successful projects in partnership with governments, businesses, and institutions in our communities. Becoming trusted advisors and true partners guides our actions.

We understand the Friends of the Blue Star Trail is seeing proposals for the design of 1.5 miles of addition to the North Section of the Blue Star Trail. This will connect Douglas, over the bridge to Saugatuck, and then through Saugatuck Township, to connect into the Beeline Trail. We propose to offer planning services, grant assistance for MDOT TAP (Transportation Alternatives Program) this fall and MNRTF (Michigan Natural Resources Trust Fund) next spring. We would then conduct the construction document phase, permitting, bidding and construction phases of the project.

Wightman’s multi-disciplined team of trail experts have worked throughout the region to assist communities with trail planning, design and construction. For all the trail projects, a state or federal funding source was utilized to leverage local dollars. We are very familiar with MDOT Local Agency Projects (LAP) and Michigan Natural Resources Trust Fund (MNRTF), both trail and roadway, We are typically involved in seven to ten MDOT LAP and four to five Michigan Department of Natural Resources MNRTF projects each year.

Thank you again for the opportunity to submit this proposal to the Friends of the Blue Star Trail and we look forward to working with you on this project.

If you have any questions, please feel free to contact me.

Very truly yours,

BEN BAKER

Ben Baker, PLA, ASLA, LEED AP
269.487.9611
bbaker@gowightman.com

ALLEGAN

- ▲ 1670 LINCOLN RD. (M-40)
ALLEGAN, MI 49010
- 269.673.8465

BENTON HARBOR

- ▲ 2303 PIPESTONE RD.
BENTON HARBOR, MI 49022
- 269.927.0100

KALAMAZOO

- ▲ 433 E. RANSOM ST.
KALAMAZOO, MI 49007
- 269.327.3532

ROYAL OAK

- ▲ 306 S. WASHINGTON AVE., SUITE 200
ROYAL OAK, MI 48067
- 248.791.1371

FIRM INFORMATION

STRUCTURE:

Sub-S Corporation (Michigan). Firm is licensed to do business in the State of Michigan.
Federal Tax ID#: 38-1962190. Duns & Bradstreet #: 05-603-5306.

BOARD OF DIRECTORS:

Steve C. Carlisle, P.E., Chairman (scarlisle@gowightman.com)
Mickey E. Bittner, P.E., Treasurer (mbittner@gowightman.com)
Brian Lieberg, P.S., Secretary (blieberg@gowightman.com)
Greg Monberg, AIA, Trustee (gmonberg@gowightman.com)
Mary Nykamp, P.E., Trustee (mnykamp@gowightman.com)



OFFICE LOCATIONS:

1670 Lincoln Road Allegan, MI 49010 (269) 673-8465 Fax: (269) 927-1300	2303 Pipestone Road Benton Harbor, MI 49022 (269) 927-0100 Fax: (269) 927-1300	433 E. Ransom Street Kalamazoo, MI 49007 (269) 327-3532 Fax: (269) 927-1300	306 S. Washington Avenue, Suite 200 Royal Oak, MI 48067 (248) 791-1371 Fax: (269) 927-1300
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BACKGROUND:

Wightman has spent over 73 years providing the level of services that has earned the trust of our clients and helped us to become one of the most prominent engineering, surveying and architectural firms in the Midwest. Our employee-owned company provides practical solutions based on common sense for all levels of civil engineering, surveying, and architectural projects.

STAFF:

Wightman employs a continuously expanding team of professionals licensed to provide services in several states. Technical, surveying, inspection, and support staff are trained to provide varying levels of expertise from the smallest daily survey tasks to the design and inspection of the largest municipal or private projects. Continuing education, varied project exposure, and diverse professional backgrounds ensure that our clients will have a large pool of experts from which to draw.

HISTORY:

Our firm was established in 1946 by G. L. Wightman, civil engineer and surveyor. In 1971, our company became Wightman. We are an employee-owned company with more than 140 employees, including twenty-one licensed engineers, six licensed architects, six licensed surveyors, five licensed environmental specialists, and twenty other licensed professionals.

Wightman has served as a consultant to all forms of public and private entities, including county, city, township, village, tribal governments, private developers, and industrial and commercial clients. Wightman has gained a reputation for high quality, effective, and economical consulting services and has a proven track record for development and implementation of real and usable projects. This is evidenced by the many long-term relationships with municipalities that we value, many of which are in excess of 20, 30 or even 40 years. These relationships are perpetuated with a primary client liaison who maintains open communication regarding funding opportunities, status of projects, and proactive planning recommendations.



ARCHITECTURE: CREATIVITY AND INSIGHT IN EVERY ASPECT

Design

- ◆ Cultural
- ◆ Urban Design
- ◆ Commercial
- ◆ Office
- ◆ Banking & Financial
- ◆ Civic
- ◆ Athletic & Recreation
- ◆ Multi-Family
- ◆ Residential
- ◆ Site Master Plans
- ◆ Interior Design
- ◆ Industrial
- ◆ Sustainable Design
- ◆ Landscape
- ◆ Streetscape
- ◆ Religious
- ◆ Healthcare
- ◆ Entertainment
- ◆ Casino
- ◆ Mixed-Use
- ◆ Hospitality
- ◆ Municipal Water and Wastewater Treatment Facilities

Planning & Management

- ◆ Zoning Ordinances
- ◆ Recreational Plans
- ◆ Cost Estimating
- ◆ Town Planning
- ◆ Downtown Redevelopment
- ◆ Bid Management
- ◆ Sustainable Development
- ◆ Contract Administration
- ◆ MDEQ/Army Corps of Engineers Joint Permit Application



ENGINEERING: BROAD RANGE OF EXPERIENCE

Areas of Expertise

- ◆ Bridges and Dams
- ◆ Transportation Systems
- ◆ Wastewater Systems
- ◆ Water Systems
- ◆ Water & Sewage Treatment
- ◆ GIS
- ◆ Land Development
- ◆ Stormwater Management
- ◆ Watershed and Lakes
- ◆ Hydrogeologic
- ◆ Parks and Recreation
- ◆ Sustainable Development

Summary of Services

- ◆ Civil Engineering
- ◆ Structural Engineering
- ◆ Right-of-Way Acquisition
- ◆ Traffic Engineering
- ◆ Landscape Architecture
- ◆ Feasibility Studies
- ◆ Master & Land Use Planning
- ◆ Rate Studies
- ◆ Capital Improvement Plans
- ◆ Grant & Funding Administration
- ◆ Materials Testing
- ◆ Construction Related Services
- ◆ Environmental Services



SURVEYING: EXTENSIVE TRAINING TO MEET ANY REQUIREMENT

Design

- ◆ P.A. 132 Surveys
- ◆ Parcel Divisions
- ◆ ALTA/ACSM Land Title
- ◆ Boundary
- ◆ Topographic
- ◆ Site Design
- ◆ GPS

Construction

- ◆ Construction Staking
- ◆ Road Design Surveys
- ◆ Bridge Surveys
- ◆ Right-of-Way Surveys

Development

- ◆ Subdivisions
- ◆ Condominiums
- ◆ Photogrammetric Control
- ◆ Commercial
- ◆ Residential
- ◆ Land Development & Planning

Additional Services

- ◆ High Definition Laser Scanning
- ◆ Elevation Certificates
- ◆ Mortgage Inspections
- ◆ Accident
- ◆ Forensic
- ◆ Land & Easement Descriptions
- ◆ Drone Photogrammetry



ENVIRONMENTAL: EXTENSIVE EXPERTISE

Industrial Hygiene

- ◆ Asbestos Surveys and Third Party Oversight
- ◆ Lead Surveys & Risk Assessments
- ◆ Mold Survey
- ◆ Radon Testing
- ◆ Indoor Air Quality (Testing/Permitting)
- ◆ Hazardous Waste Surveys

Soil Assessments

- ◆ Dredging Permitting & Sampling
- ◆ Geotechnical Investigations

Brownfield

- ◆ Due Diligence
- ◆ Project Facilitation & Management
- ◆ Grant & Funding Support

Natural Resources

- ◆ Soil Erosion and Sediment Control
- ◆ Wetland Delineation
- ◆ Species at Risk – Surveys and Habitat Assessments
- ◆ Permitting
- ◆ Outdoor Air Quality (Testing and Permitting)

Environmental Management

- ◆ ISO 14001 System Development & Audits
- ◆ Inspection, Permitting and Reporting
- ◆ General Consulting

Due Diligence

- ◆ Baseline, Phase I, & Phase II Environmental Site Assessments
- ◆ Due Care Compliance & Analysis
- ◆ Hydrogeological Investigations
- ◆ Underground Storage Tank Sites and Leaking USTS Characterization
- ◆ Spill Prevention, Control, and Countermeasure Plans (SPCC)
- ◆ Pollution Incident Prevention Plans (PIPP)
- ◆ Facility Wide Compliance Inventory
- ◆ Stormwater Compliance Plans
- ◆ Solid Waste Permitting

MICKEY E. BITTNER, P.E.

PRINCIPAL-IN-CHARGE

Mr. Bittner serves as a QC/QA Engineer with responsibility for analysis, design, and construction management for both municipal and private engineering projects. His experience includes municipal roadway, multi-purpose trails, water main and sewer designs, water and wastewater, as well as assisting communities in obtaining grants and loans and preparing feasibility studies. He also assists communities with public engagement, consensus building, and scope determination.



Expertise

- Roads (MDOT LAP)
- Traffic Signs and Signals
- Water Systems
- Wastewater Systems
- Storm Sewers
- Culverts
- Hydraulic Analysis
- Construction Administration
- Feasibility and Rate Studies

Professional Registrations

- Professional Engineer
Michigan #6201047386
- Construction Site Certified
Stormwater Operator
Michigan #C-03676
- Risk Assessment Methodology
for Water Utilities Certified

Professional Affiliations

- Michigan Water
Environment Association
- American Society of
Civil Engineers
- National Society of
Professional Engineers
- Michigan Society of
Professional Engineers
- Technical Committee
of Kalamazoo Area
Transportation Study

Professional Positions

- Wightman.
2012 – Present
- Wightman Jones, Inc.
2004 – 2012
- Wightman & Associates, Inc.
1996 – 2004

Education

- B.S. Civil Engineering,
Michigan Technological
University, 1996

Project Experience

Hanlon Court, City of Wayland, MI

Project Manager for the reconstruction of an existing residential roadway, including sidewalks, ADA ramps, storm sewer improvements, water main replacement, new concrete curb and gutter, aggregate base, HMA surfacing, and permanent signing.

West Sycamore/Commerce Street Resurfacing, City of Wayland, MI

Project Manager for the resurfacing of two urban streets, including ADA sidewalk ramps, misc water service replacements, drainage improvements, HMA cold milling, and HMA surfacing. Project was funded using MDOT PRIP funds.

Andrew Street Improvements Project, City of Kentwood, MI

Principal for 0.6 miles of roadway reconstruction including water main replacement, sidewalk construction on both sides of the street, concrete curb and gutter, and HMA surfacing.

Lovers Lane Improvements, City of Portage, MI

Project Manager for one mile of complete road reconstruction and enhancement, which included coordination with MDOT who was widening and relocating the Lovers Lane bridge over I-94. The two-lane road was re-aligned and widened to provide four lanes and bike lanes with a 12'-20' wide boulevard. An 8" sanitary sewer was replaced with a new 15" sanitary sewer and the signalization was modernized. Right-of-way acquisition services were provided to obtain sidewalk easements and grading permits.

Irwin Avenue, City of Albion, MI

Project Manager for a 1.2-mile complete roadway reconstruction of Irwin Ave. to S. Superior St. in the City of Albion. Work included machine grading, new HMA surface, aggregate base, drainage structure replacements, a new 12" water main, curb and gutter replacement, sidewalk and ADA ramp replacements, slope restoration, permanent signing and pavement markings. The project was funded utilizing a CDBG grant and local funds.

Forest Drive Improvements Project, City of Portage, MI

Project Manager for the design of 0.77 miles of roadway improvements including HMA base crushing and shaping, 12" water main replacement, HMA surfacing, pavement markings, and restoration. Due to the proximity of West Lake, an infiltration system was designed to eliminate roadway runoff into the lake and preserve water quality. The dense residential population made communication a critical key contributing to the success of this MDOT LAP project.

Portage Street Resurfacing, Kalamazoo, MI

Project Manager for 1.2 miles of hot mix asphalt cold milling and resurfacing, concrete curb and gutter, concrete sidewalk, sewer, drainage, pavement markings, permanent signs, and pedestrian enhancements on Portage St. from Sheridan Dr. to Stockbridge Ave. in Kalamazoo County. The project also included non-motorized improvements, hydrant replacements, new water services, and signal updates. This project was funded with STP funds and local funds.

BEN BAKER, PLA, ASLA, LEED AP

LANDSCAPE ARCHITECT

Mr. Baker is a talented registered Landscape Architect with over 15 years' experience in the field. He is highly organized with the ability to manage multiple projects, meet deadlines and stay within budget. He has a strong reputation as a clear and effective communicator. Mr. Baker has an affinity for park and recreation projects including trail design, playgrounds, and parks.



Expertise

- Landscape Architecture
- Trails
- Planning
- Design

Certifications

- MDOT Training Wheels: On Road Bicycle Facility Training

Professional Affiliations

- LEED Accredited Professional
- President, Michigan Chapter of the American Society of Landscape Architect, 2015-2020s
- Moody on the Market 40 Under 40 for 2018

Professional Registrations

- Licensed Landscape Architect
Michigan - 3901001536
Illinois - 157.001228
Indiana - LA21000135

Professional Positions

- Wightman
2013 - Present
- Planning Commissioner, St. Joseph Charter Township, Berrien County, MI
2012-Present
- Abonmarche Consultants, Inc.
2010-2013
- Wolff Landscape Architecture, Inc.
2004-2010

Education

- Bachelor of Landscape Architecture with High Honors, Michigan State University

Project Experience

Placemaking and Urban Design

Ben has worked on numerous projects relating to outdoor spaces. The relation of people to their outdoor environment is the key aspect of Landscape Architecture. Ben has extensive experience working in urban environments of all sizes, and knows how to design outdoor spaces that are functional and comfortable for the user. Ben is also very in tune with the Michigan Municipal League, and the Governor's Placemaking initiative – knowing that the quality of places, is important to a community's vitality.

Indiana-Michigan River Valley Trail, Niles Charter Township, MI

Project designer for the layout of the 3.3 mile phase of the design running from the Indiana state line to the Brandywine Creek Nature Park in Niles Charter Township. The overall trail, when completed, will connect Niles, MI to Mishawaka, IN and travels 34 miles. This trail is a paved, off-street multi-use trail, utilized by walkers, runners, rollerbladers and bicyclists. Wightman was recently hired by the township to begin development of the next 1.8 mile segment that will complete the Michigan portion of the trail.

Middle Crossing Pathway, City of Dowagiac, MI

Project designer for a nearly ½ mile off-street multi-use trail in the City of Dowagiac. This trail connects the City sidewalk network to Russom Field sports complex on the outskirts of town, where safe pedestrian access previously did not exist.

KL Avenue Trail, Oshtemo Township, MI

Project designer for a mile-long section of trail adjacent to KL Avenue in Oshtemo Township. This project includes coordination between the Township, Road Commission of Kalamazoo County, and MDOT and the replacement of a bridge on US 131. The project design is expected to conclude in early 2018 and then will seek grant funding.

The following projects are experience of Mr. Baker while working at a previous firm.

Chicago Trails Plan, Chicago, IL

Project team member in creating a Master Plan for potential off-street shared use trails throughout Chicago. The secondary goal of this plan was to develop a "Chicago Trail Loop" path to allow users to traverse the City with limited street crossings. This document included over 300 pages discussing and prioritizing 36 potential trails. Each trail was described, including ROW availability, Engineering feasibility, land use compatibility, Cost and use estimates, and any potential fatal flaws. Many of the trails in this plan have been completed, including the highly publicized Bloomingdale (606) Line.

Gary Green Link, Gary, IN

Team member in the development of an award winning ecological and recreational master plan for the Gary area. The plan proposed a thirty-mile loop trail within Gary that will link people to natural areas and other regional trails. This plan emphasized the regions natural resources and their potential for local recreation and eco-tourism. The City started implementing the plan in 2005 and have built a number of trail segments to date.

AARON J. NEITLING, P.E.

SENIOR CIVIL ENGINEER, TRAFFIC REVIEW, MDOT SPECIALIST

Mr. Neitling serves as a Project Manager involved with the design of a wide range of civil engineering consisting of design, contract administration, and construction engineering for both municipal and private engineering projects. His strengths include design and preparation of roadway plans, pavement design, storm sewer design, sanitary sewer design, water main design, preparation of project specifications, and performing contract administration. He also has knowledge in field surveying, construction inspection and materials testing.



Expertise

- Road Design
- Trail Work
- Storm Sewers
- Culverts
- Construction Administration
- Water Systems
- Wastewater Systems
- Site Design

Professional Affiliations

- American Society of Civil Engineers
- Institute of Transportation Engineers

Professional Registrations

- Professional Engineer Michigan #50508
- Construction Site Certified Stormwater Operator Michigan #C09536

Professional Positions

- Wightman 2013- Present
- Driesenga & Associates, Inc. 1999 - 2013

Education

- B.S. Civil Engineering Michigan Technological University, Houghton, 1998

Project Experience

Allegan County Road Commission, MI - This work typically involved the complete roadway reconstruction and working within existing R.O.W. limits as much as possible including culvert replacements and roadside ditch improvements. A summary of projects performed for the Road Commission follows: Monroe Road, 30th Street, 142nd Avenue Safety, 16th Street/120th Avenue Safety, Division Street/142nd Avenue Intersection, Division Street, 146th Avenue Culvert, 1st Street Culvert, 128th Avenue Culvert, 63rd Street/127th Avenue Culvert, 121st Avenue, 25th Street, 32nd Street, 110th Avenue, 104th Avenue, 135th Avenue, 144th Avenue, 28th Street, 138th Avenue, 43rd Street, 127th Avenue, 18th Street, 114th Avenue culvert, 139th Avenue, 144th Avenue, 22nd Street, 10th Street culvert, and Monroe Road Safety.

City of Holland, MI - Mr. Neitling has worked on numerous projects, both public and private. The type of projects performed for the City included both complete roadway reconstruction as well as hot mix asphalt cold milling and resurfacing. Most road projects were completed in conjunction with the Holland BPW which replaced their sanitary sewer and water mains. Other work included storm sewer and storm water management ponds, MDEQ permitting, sidewalk replacements, and retaining walls. The following list of projects required Design and/ or Contract Administration needs: E. 48th Street, Country Club Road, 8th Street, Fairbanks Avenue, 14th Street, 15th Street, 17th Street, W. 40th Street, W. 32nd Street, 5th Street Extension, Windmill Island Streambank Stabilization, Citywide Creek Bed Sewer Repairs, Washington Avenue Tunnel Wall Repair, East End Drive Channel Repair, Holland Heights/No. 24 Drain Improvements, Challenge Manufacturing, Bank of Holland, Hope College Music Hall, Central Avenue CRC, STM Manufacturing, 6th Street, and various other site plans and residential site condominiums.

City of Albion, MI - Mr. Neitling has worked on several infrastructure projects in the City of Albion since 2014. The types of projects completed for the City consist of roadway reconstruction and roadway rehabilitation projects, including storm sewer improvements and water main replacements and extensions. These projects also included close coordination with MDOT and the Calhoun County Road Department for working within the right-of-way and completion of joint projects. A list of projects that have been completed include: Irwin Avenue, 1st Street, 2nd Street, 3rd Street, Wild Street, Hartwell Street, W. Erie Street, 2020 Utility Extension, North Street, and S. Hannah Street.

Medbery Bike Path, City of Montage, MI

This was project was for the design of a 0.8 miles non-motorized facility. This work included grading, HMA paving, and slope restoration. This project was a project funded with DOT Enhancement money through the Local Agency Programming. Mr. Neitling was responsible for the design of the path to meet the design requirements of MDOT, AASHTO, MMUTCD and the Muskegon County Road Commission. Mr. Neitling was also responsible for the contract administration for this project through completion.

Superior Street / Main Street Signal Improvements - City of Wayland, MI

Lead Design Engineer for signal modernization project at the intersection of Superior Street and Main Street in the City of Wayland. Project includes installation of new mast arms, pedestrian signals, and upgrading the sidewalk ramps. The project was funded with MDOT CMAQ funds.



SUZANNAH M. DENEAU

TRAIL DESIGNER



Ms. Deneau has more than 17 years' engineering experience. She provides structural engineering services for Wightman in both engineering and architectural capacities. Ms. Deneau is familiar with all aspects of grant funding opportunities as well as AASHTO Guide for the Design of Bicycle Facilities. Ms. Deneau's role as structural engineer taps into her strength as a problem solver. Her engineering abilities on trail designs along with her leadership of the planning process ensure a quality end product for Wightman's clients.

Expertise

- Trail Projects
- Structural Engineering
- Structural Evaluation
- Waterway & Bluff Restoration
- Concrete Design
- Steel Design
- Bridge Design
- Bridge Inspection

Professional Affiliations

- National Association of Women in Construction
- Precast/Prestressed Concrete Institute

Professional Training

- NHI Safety Inspection of In-Service Bridges
- ASCE HEC-RAS

Professional Registrations

- Construction Site Certified Stormwater Operator Michigan #C-13204
- Soil Erosion & Sedimentation Control Certification #06-0576

Professional Positions

- Wightman & Associates, Inc. 2006 – Present
- Byce & Associates, Inc. 2004 – 2005
- Wightman & Associates, Inc. 1999 – 2001

Education

- B.S. Architectural Engineering Milwaukee School of Engineering, 2001

Project Experience

Indiana Michigan River Valley Trail Project- Niles Charter Township Phase I and II – Planning and Project Engineer for Phase I and II of the Niles Charter Township portion of the project. Project called for trails to be constructed from the Indiana state line to Brandywine Creek Nature Park (just north of US12) and is continuing north to the intersection of Fort and 3rd Streets. This project includes up to 5.1 miles of trails from the state line to the existing City of Niles' trail with additional spurs and possible alternate routes.

Antwerp Township Trail Project – Planning and Project Engineer for an east-west trail from the Village of Paw Paw to the Village of Mattawan through Antwerp Township. The project is in the planning stages, working with MDOT for access within 194 right-of-way and with MDOT and MDNR for funding of Phase I. The trail will be an off-road paved multi-use trail. Construction of Phase I is anticipated to begin in Spring, 2018.

Interurban Trail – Project engineer for the planning of the 42-mile trail connecting the Kalamazoo River Valley Trail in Kalamazoo County through Allegan County to the M-6 trail in Kent County. The planning includes the investigation of three routes: US-131, A45, and the old Interurban rail line now owned by Consumers Energy. Also included as part of the planning project are stakeholder meetings, public outreach, GIS mapping, and a master plan documents.

City of Wayland Interurban Trail Project – Planning and project Engineer for seeking MDOT Transportation Alternatives Program and MDNR Michigan Natural Resources Trust Fund grant for the 1.2 mile section of Interurban Trail through the City limits. Coordination with Consumers Power has been successful, a long-term lease was secured, and engineer cost estimates were prepared. The project proposed additional parking and a restroom facility for trail and park users.

Glassman Park, New Buffalo Township – Project Engineer for securing a MDNR Land and Water Conservation Grant from the MDNR for development of the Township's twenty year old park. The park is bordered by the Galien River and a new canoe launch was designed as part of the project along with nature trails and site amenities.

Oselka Park, New Buffalo Township – Project Engineer for securing a MDNR Michigan Natural Resources Trust Fund grant for the acquisition of a parcel of property downstream of Glassman Park along the Galien River for the Township. The project will provide additional access to the river for kayakers, canoeists, fishermen, and nature enthusiasts.

PAUL HARVEY, EIT JUNIOR CIVIL ENGINEER

Mr. Harvey is an Engineer in Training for Wightman and has experience in multiple projects in both the Design and Construction phases. He has a vast knowledge for the construction process which aids in trouble shooting, problem solving, and minimizing potential issues that may arise.



Expertise

- Bridge Design
- Culvert Design
- Stormwater Management
- Hydraulic Analysis
- Construction Inspection
- Roadway Design

Professional Registrations

- Soil Erosion and Sedimentation Control, #19354

Professional Affiliations

- Tau Beta Phi

Professional Positions

- Wightman
2016 - Present

Education

- B.S. Civil Engineering
Western Michigan
University, 2017

Project Experience

Preventative Maintenance on Four Bridges in Kalamazoo County, MI - Project Engineer for the preventative maintenance of four bridges within Kalamazoo County. This project involves guardrail improvements, epoxy overlays, joint cleaning, concrete surface coating, and railing improvements.

Preventative Maintenance on Two Bridges in Berrien County, MI - Project Engineer for the preventative maintenance of two bridges within Berrien County over the St. Joseph River. This project involves joint improvements, epoxy overlay, deck patching, steel cleaning and coating, concrete surface coating, and railing improvements.

Lake Pleasant Road Bridge Replacement over Beebe Creek, Hillsdale County, MI - Project Engineer on the bridge replacement project on Lake Pleasant Road over Beebe Creek in Hillsdale County. The project includes removing the existing timber structure and replacing it with a 40 foot span concrete spread box beam bridge. In addition, the project involves constructing a 34 foot wide roadway section at the bridge approaches, hydraulic analysis, guardrail design, slope restoration, and necessary permitting.

R Avenue Culvert Replacements, Kalamazoo County, MI - Project Engineer on the R Avenue Culvert Replacement projects in Kalamazoo County which included the removal of the existing culverts and two different waterway crossings on R Avenue and replacing them with sufficient structures. This project involves hydraulic analysis, the reconstruction of the existing roadway approaching the culverts, guardrail design, slope restoration, and necessary permitting.

32nd Street Culvert Replacement over Asher Drain, Kalamazoo County, MI - Project Engineer on the 32nd Street Culvert Replacement project in Kalamazoo County which included the removal and replacement of an existing culvert. This project involves hydraulic analysis, the reconstruction of the existing roadway approaching the culverts, guardrail design, slope restoration, and necessary permitting.

Vine Street Improvements, Kalamazoo, MI - On-site construction inspector for the Vine Street Improvements project in the summer of 2017. This project included 1.5 miles of HMA milling and resurfacing, curb and gutter replacement, ADA sidewalk ramps, water service replacement, and street signal improvements. The project required coordination between the City of Kalamazoo along with the MDOT.

Andrew Street Reconstruction, Kentwood, MI - Assisted with on-site construction inspection throughout the duration of the project. This project involved the complete reconstruct of multiple neighborhood roads including new curb and gutter, new concrete sidewalks, replacing existing driveway aprons, new HMA service, new water main and services, and a new storm sewer system.

JEFFREY V. BRADFORD, P.S.

PROJECT SURVEYOR

Mr. Bradford has more than 30 years of surveying experience including field work such as construction layout for road design, bridge design and associated ramp and earthwork. He has worked on numerous projects involving layout of right-of-way, pavement, curb and gutter, sidewalks, storm sewer, culverts, guard rail and guard rail flair. Also, slope staking for open drainage, bridge substructure, pour elevations, bridge beam control, haunch, rail and bulkhead control, cross sections, superelevations and superelevation transitions, horizontal and vertical controls, PLSS corner locations, data collection of planimetric features and points to create DTM.



Expertise

- Road Design Surveys
- Subdivision Plats
- Boundary Surveys
- ALTA Surveys
- P.A. 132 Surveys
- Topographic Surveys
- Construction Staking

Professional Registrations

- Professional Surveyor
Michigan #44290

Professional Registrations

- Michigan Society of
Professional Surveyors

Professional Positions

- Wightman & Associates, Inc
1986 - Present

Education

- B.S. Surveying Engineering
Ferris State University 1993

Project Experience

Interstate Highway 94 – MDOT Project 11015-202013

Survey Manager in charge of 6.98 miles of hot mix asphalt cold milling and resurfacing and pavement markings on I-94 from south of Three Oaks Road to Red Arrow Highway, Berrien County. Staking included yield stakes for paving operations, detour routes, temporary and permanent signage and quantity calculations.

US-12/Old M-205/Five Points Road Intersection, Cass County, MI MDOT Project 14041-125133

Survey Manager in charge of 0.38 of a mile of concrete intersection improvements and construction of roundabout, drainage improvements, traffic signal removal, signing, lighting and landscaping. Staking items included drainage structures, slope staking for ditching activities, roadway curb and gutter and asphalt locations, detour route, permanent and temporary signage and quantity calculations.

M-86 over Prairie River and Crystal Springs Street over Dowagiac River, Van Buren and Cass Counties, MDOT Project 78061-113259

Survey Project Manager in charge of two separate bridge reconstruction project calculations and coordination of layout of curb and gutter, asphalt widening, piles, abutments, beams, wing walls, dowel pins, slope staking, approach slabs, bridge fascia and guardrail.

Sidewalk ADA Ramp Upgrades, US-12 from Chicago St to Bronson St, New Buffalo, MI, MDOT Job#11011-113015

Survey Project Manager in charge of calculations and coordination of layout of proposed approach and ADA ramp upgrades for 10 intersections on US-12.

Commercial/Division Street Project, Dowagiac, MI- Survey Project Manager of award-winning project which included a road diet that reduced the design speed by widening sidewalks, changing street paving materials with asphalt, brick, and concrete, incorporating on-street parking, providing streetscape elements such as landscaping and lighting, and creating new pedestrian resources like benches, parks, and artwork.

Main Street (BL-I94) Reconstruction, Benton Harbor, MI, MDOT Project 11013-86206

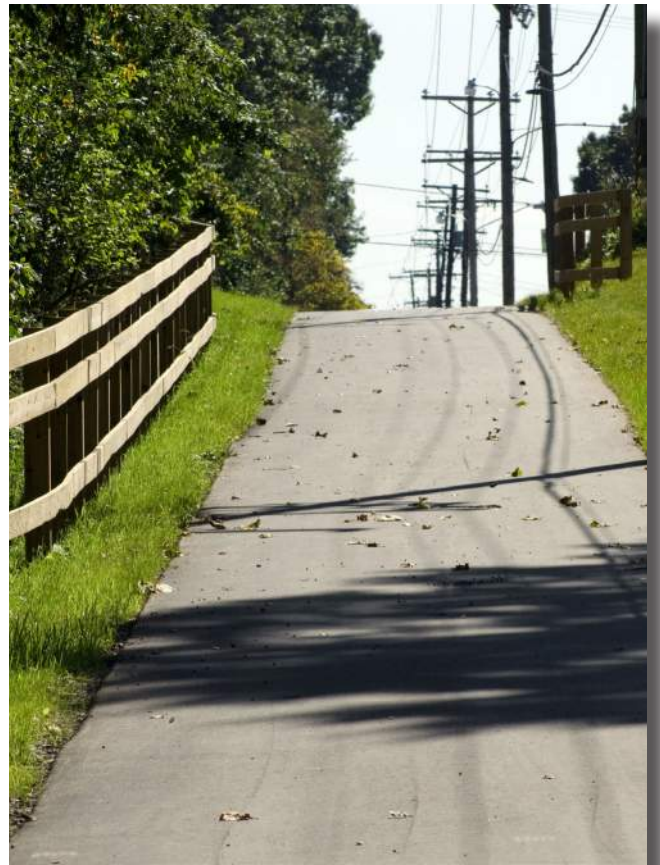
Survey Project Manager in charge of calculations and coordination of layout of hot mix asphalt, roundabouts, concrete curb and gutter, storm, sanitary, watermain, electric, traffic signal polls, hand holes, sidewalk ADA ramps and retention walls for 1.78 miles of roadway on I-94 BL (Main Street) from River Street to M-139 (North Fair Avenue) in Benton Harbor.

TRAIL EXPERIENCE: REFERENCES

Trails have become a substantial feature of Michigan's recreation amenities, landscape and focus. And for good reason, trails provide excellent recreational opportunities for local residents, and regional trails can drive an economic benefit. The recent pandemic has shown tremendous demand for the growth of trail networks. Our team are not only experts in trail design, we are also trail users in the community. Wightman's team of professionals have partnered with communities throughout Michigan to envision, plan, fund and construct trails and other non-motorized facilities.

WIGHTMAN TRAIL COMMUNITIES

Niles Charter Township
Village of Edwardsburg
Ontwa Township
Oronoko Township
Village of Berrien Springs
Cass County Road Commission
City of Dowagiac
Berrien County Road Department
Chikaming Township
New Buffalo Township
Village of Eau Claire
City of Portage
Royalton Township
Village of Cassopolis
Antwerp Township
City of Albion
Village of Paw Paw
Cooper Township
City of Plainwell
Gun Plain Township
Village of Martin
Dorr Township
Leighton Township
Martin Township
Wayland Township
City of Wayland
Byron Township
Village of Vicksburg
Village of Homer
Berrien Township
St. Joseph Charter Township



REFERENCES

Niles Charter Township
Ms. Jill Delucia, Dir. of Parks Comm.
(574) 850-4785
jdelucia@nilestwpmi.gov

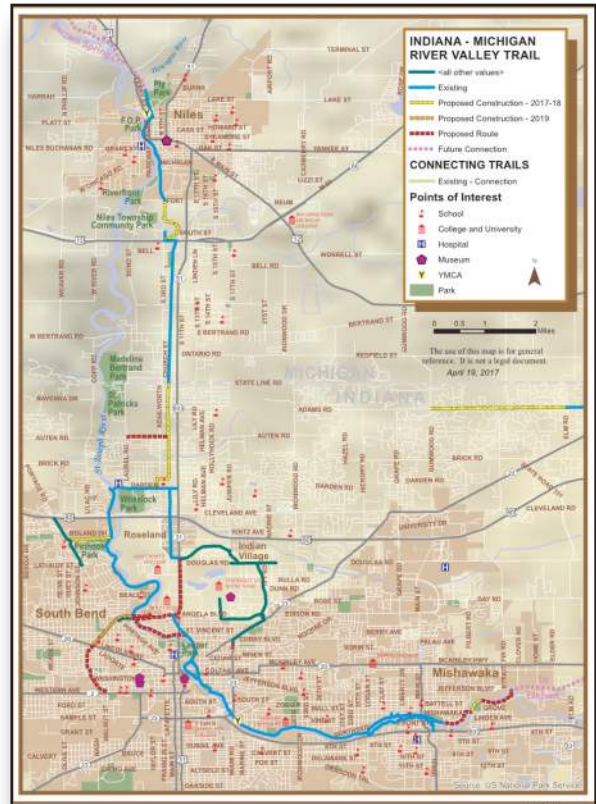
Berrien County Road Dept.
Kevin Stack, Eng. Supervisor
(269) 925-1196 x 4421
kstack@bcroad.org

City of Dowagiac
Kevin Anderson, City Manager
(269) 782-2195
citymanager@dowagiac.org

INDIANA-MICHIGAN RIVER VALLEY TRAIL - PHASE 1



NILES CHARTER TOWNSHIP, MI



Client Reference:
 Niles Charter Township
 Ms. Jill Delucia
 Director of the Parks Commission
 (574) 850-4785

Project Date: 2012-2014

Project Cost: \$842,000

Services Provided:

- ◆ Trail Planning
- ◆ Construction Engineering
- ◆ Preliminary Engineering
- ◆ Surveying
- ◆ Design Engineering
- ◆ Construction Staking
- ◆ Grant Assistance
- ◆ Wetland/Floodplain Delineation

Staff Involved:

- ◆ Steve Carlisle, PE
- ◆ Ben Baker, PLA, LEED AP
- ◆ Suzannah Deneau

The Indiana-Michigan River Valley Trail is a 34-mile trail connecting Niles, MI to Mishawaka, IN. Wightman provided design engineering, construction administration, and staking to assist Niles Charter Township with Phase I of their portion of the project from the Indiana state line to the Brandywine Creek Nature Park (just north of US12).

This 3.3 mile section of non-motorized trail is parallel to a commercial, retail corridor in Niles Charter Township. This phase completes nearly 10% of the 34 mile IN-MI River Valley Trail and travels from the Indiana-Michigan state line to the Brandywine Creek Nature Park. The trail is 10' wide with 2' shoulders through a wooded passageway that can now be utilized by pedestrian travelers and recreational enthusiasts. Wightman provided design engineering, construction administration, and staking to assist Niles Charter Township with Phase I of their portion of the project from the Indiana state line to the Brandywine Creek Nature Park (just north of US12).

Wightman worked with the project partners including Niles Township, Southwest Michigan Planning Commission, Michigan Department of Transportation, Michigan Department of Natural Resources, Berrien County Road Department, and American Electric Power.



INDIANA-MICHIGAN RIVER VALLEY TRAIL - PHASE 2



NILES CHARTER TOWNSHIP, MI



Client Reference:
Niles Charter Township
Ms. Jill Delucia
Director of the Parks Commission
(574) 850-4785

Project Date: 2012-Present

Project Cost: \$1,215,000

Services Provided:

- ◆ Trail Planning
- ◆ Construction Engineering
- ◆ Preliminary Engineering
- ◆ Surveying
- ◆ Design Engineering
- ◆ Construction Staking
- ◆ Grant Assistance
- ◆ Wetland/Floodplain Delineation

Staff Involved:

- ◆ Steve Carlisle, PE
- ◆ Ben Baker, PLA, LEED AP
- ◆ Suzannah Deneau
- ◆ Sarah Proceviat, MSC

This 1.1 mile section of non-motorized trail takes advantage of beautifully wooded properties owned by Michigan Department of Natural Resources and Niles Charter Township located just off of two major roads. This phase links the finished Michigan trail sections with the many miles of trail in Indiana. The trail is 10' wide with 2' shoulders through over Brandywine Creek to be utilized by pedestrian travelers and recreational enthusiasts. The pathway connects another Township park – Community Park with walkers and bikers.

Wightman provided assistance for grant funding, design engineering, permitting, construction administration, and topographic survey and construction staking to Niles Charter Township for Phase II of their portion of the project to connect to the City of Niles trail.



RIVER TO RIVER TRAIL PLANNING



KALAMAZOO, ALLEGAN, & KENT COUNTIES, MI



Client Reference:
West Michigan Transit Greenways
Mr. John Morrison
Executive Director
(616) 485-7805

Project Date: 2016-Present

Project Cost: \$56,000

Services Provided:

- ♦ Trail Planning
- ♦ Stakeholder Engagement
- ♦ Grant Assistance
- ♦ Preliminary Engineering

Staff Involved:

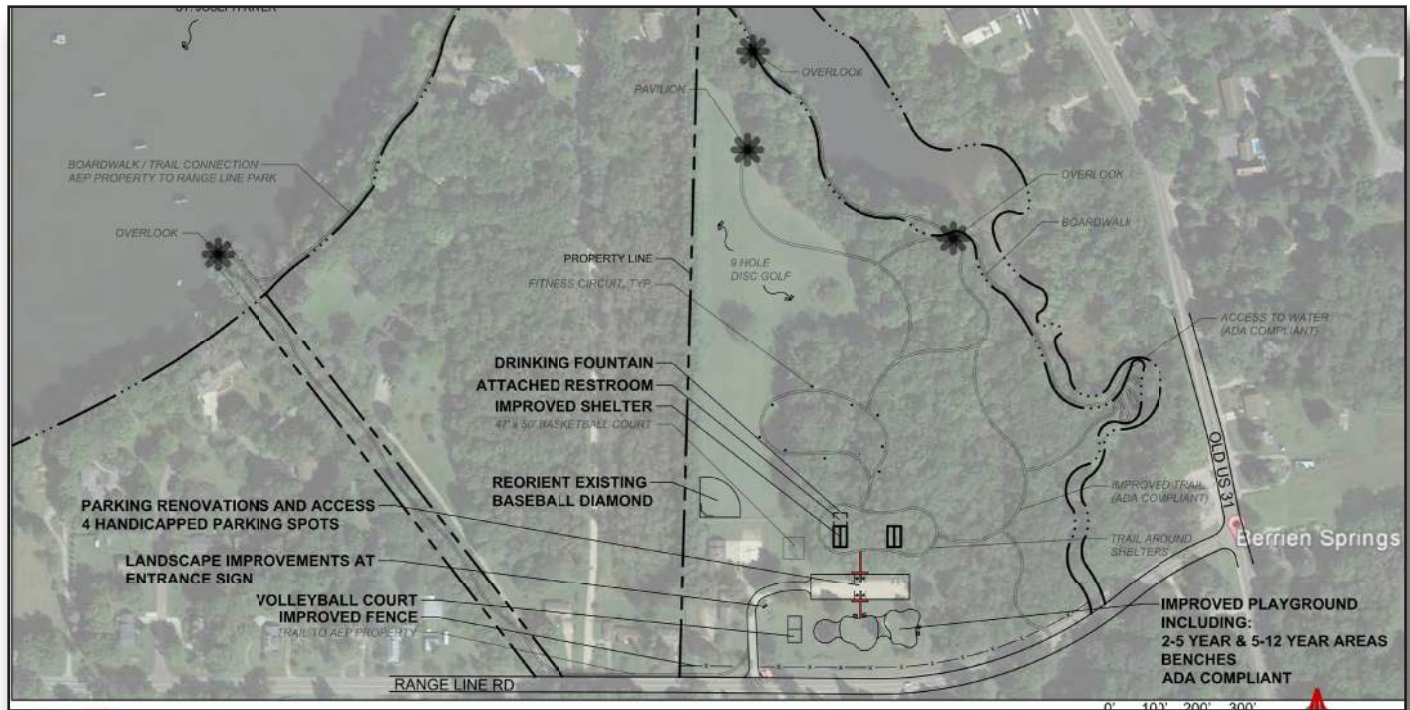
- ♦ Mickey Bittner, PE
- ♦ Steve Carlisle, PE
- ♦ Ben Baker, PLA, LEED AP
- ♦ Laura Fredrickson, PLA
- ♦ Suzannah Deneau
- ♦ Ryan Miller, GISP
- ♦ April Kibby

The River to River Trail is a 40-mile trail that will connect the Kalamazoo River Valley Trail with the Kent County Trail system and eventually to the Grand River Greenway Trail following the previously known Interurban Railroad line mostly owned by Consumers Energy. Thirteen communities have a stake in the Interurban Trail: Kalamazoo, Allegan, and Kent Counties; Cooper, Gun Plain, Martin, Wayland, Leighton, Dorr, and Byron Townships; the Cities of Plainwell and Wayland; and the Village of Martin. This is the fourth trail in the state to propose an alignment within MDOT interstate highway right of way.

This project is currently in the planning stages and we will be engaging stakeholders and partners to gather information regarding the proposed trails and routes. As a result of the planning process, an Interurban Trail Master Plan document will be developed for trail stakeholders and public outreach. This document will include maps, goals, stakeholders and partners, funding guidance, meeting minutes, and implementation. The second deliverable will be an online accessible database with the proposed trail route and amenities located near the trail including downtowns, parks, schools, etc.

RANGE LINE PARK

BERRIEN TOWNSHIP, MI



Client Reference:
 Berrien Township
 Mr. Brian Bixby
 Township Supervisor
 (269) 461-6925

Project Date: 2017-Ongoing

Project Cost: \$300,000

Services Provided:

- ◆ Landscape Architecture
- ◆ Grant Assistance
- ◆ Civil Engineering

Staff Involved:

- ◆ Ben Baker, PLA, LEED AP
- ◆ Suzannah Deneau
- ◆ Laura Fredrickson, PLA

Wightman was contacted by Berrien Township to assist in preliminary park planning and cost estimating for Range Line Park. Wightman worked with the Southwest Michigan Planning Commission and the Township to submit a Michigan Natural Resources Trust Fund through the Michigan Department of Natural Resources for improvements at the park.

The proposed improvements include updated accessible playground, updated picnic shelters with restrooms, accessible trails through the woods with overlooks over the Lake Champlain/ St. Joseph River. This park will also serve as regional trailhead for the extension of the Indiana Michigan River Valley Trail.

The project recently received a Michigan Natural Resources Trust Fund Grant and design documents are underway with an anticipated completion in 2021.

EDWARDSBURG SPORTS COMPLEX



EDWARDSBURG, MI

Client:

Ed Patzer
(866) 223-0082

Project Date: 2018 - 2019

Services Provided:

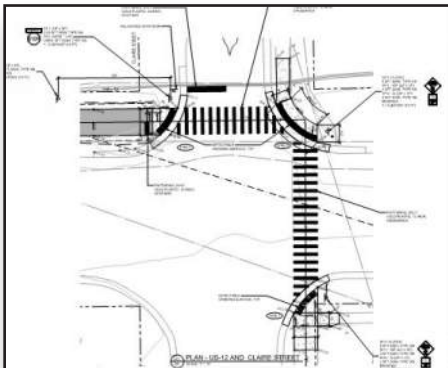
- ◆ Design Engineering
- ◆ Surveying

Staff Involved:

- ◆ Steve Carlisle, PE
- ◆ Suzannah Deneau
- ◆ Ben Baker, PLA, LEED AP

Wightman provided design engineering services for the 0.48 miles of concrete shared-use path, curb, gutter, sidewalk and ramps, hot mix asphalt approach, trail guardrail and signing. The project is located on the north side of US-12 from the Edwardsburg Sports Complex east to Claire Street, Cass County. The 10 ft wide non-motorized pathway was constructed to connect the new Edwardsburg Sports Complex to the existing school compound and the Village sidewalk system.

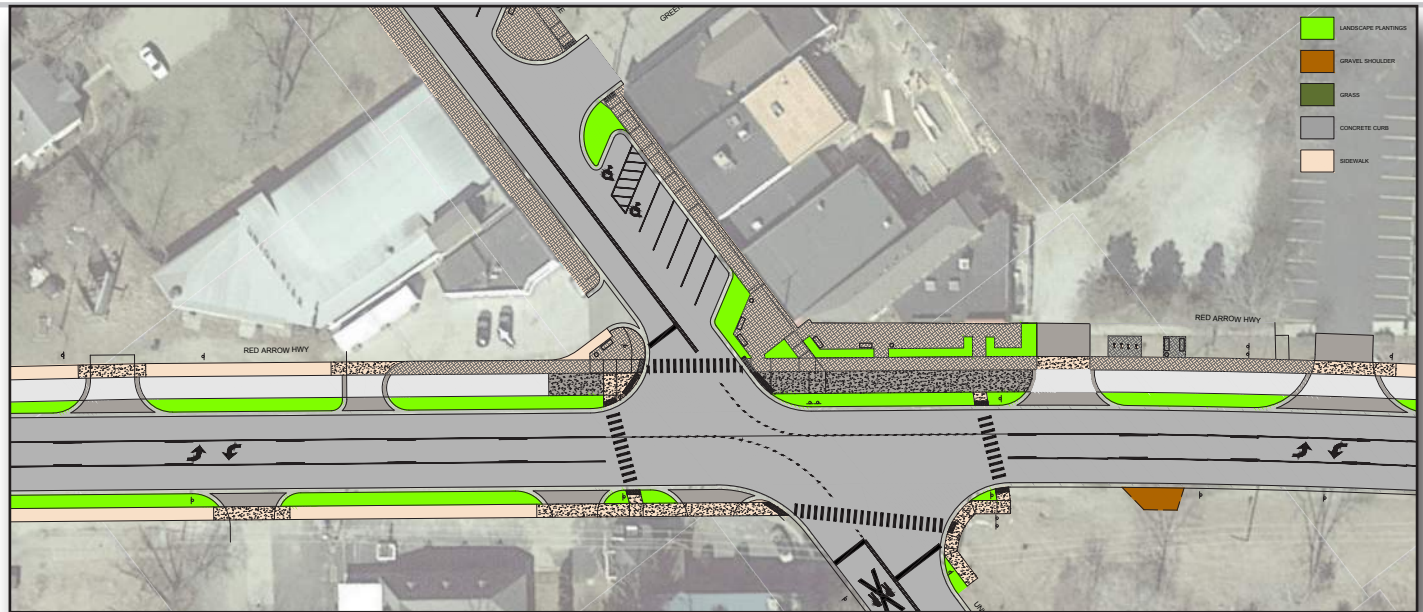
Easement descriptions were prepared to acquire additional property outside of the existing right-of-way so that the non-motorized pathway could be located further away from the roadway for safety and comfort. This project was funded with Michigan Department of Transportation CMAQ funding of \$161,440 and Michigan Department of Natural Resources MNRTF grant of \$40,000. The project was bid through the MDOT Local Agency Programs and the pathway was designed in accordance with AASHTO design standards.



UNION PIER STREETSCAPE



UNION PIER, MI



Proposed Layout

Client Reference:

Berrien County Road Department
 Kevin Stack, PE
 Engineering Supervisor
 269-925-1196 x 4421

Design Start Date: 2019
Construction Start Date: 2020

Project Cost: \$3,800,000

Services Provided:

- ◇ Conceptual design
- ◇ Placemaking
- ◇ Civil Engineering
- ◇ Landscape Architecture
- ◇ Survey
- ◇ Architecture
- ◇ Environmental

Staff Involved:

- ◇ Steve Carlisle, PE
- ◇ Melanie Stange, PE
- ◇ Chris Cowgill, PE
- ◇ Ben Baker, PLA, LEED AP
- ◇ Jeff Bradford, PS

The Berrien County Road Department, in conjunction with Chikaming Township and New Buffalo Township, desired to increase safety, provide multi mobile transportation routes, and beautify the Red Arrow Highway corridor through Union Pier. This includes a road diet to reduce Red Arrow Highway from four lanes to three, a separated non-motorized path, and streetscape elements, which will include landscaping, rain gardens, decorative lighting, site furnishings, and decorative paving.

This road diet is the first phase of reducing Red Arrow Highway to three lanes and will reduce speed and increase safety by providing a dedicated center turn lane.

The project involves multiple funding sources, including federal aid, and is being delivered through the MDOT Local Agency Program. Additional funding sources include grants from the Pokagon Fund, township dollars, and the County local match.

A critical piece of this project is public outreach and communication, as there are various businesses located along the route that will be impacted during peak tourist season. Meetings and open houses were held to help provide information and answer questions. As peak season for businesses and the construction time frame inevitably overlap, a full detour was not feasible, and a phased maintenance of traffic plan was required to allow access to commercial businesses during the project.

MIDDLE CROSSING ROAD PATHWAY

DOWAGIAC, MI



Client Reference:
City of Dowagiac
Mr. Kevin Anderson
(269) 782-2195

Project Date: 2014

Project Cost: \$100,159

Services Provided:

- ◆ Design Engineering
- ◆ Full LAP Construction Engineering
- ◆ Surveying
- ◆ Construction Staking
- ◆ CMAQ Grant Assistance
- ◆ Right-of-way Acquisition

Staff Involved:

- ◆ Steve Carlisle, PE
- ◆ Ben Baker, PLA, LEED AP
- ◆ Suzannah Deneau
- ◆ Jimmy Kahl

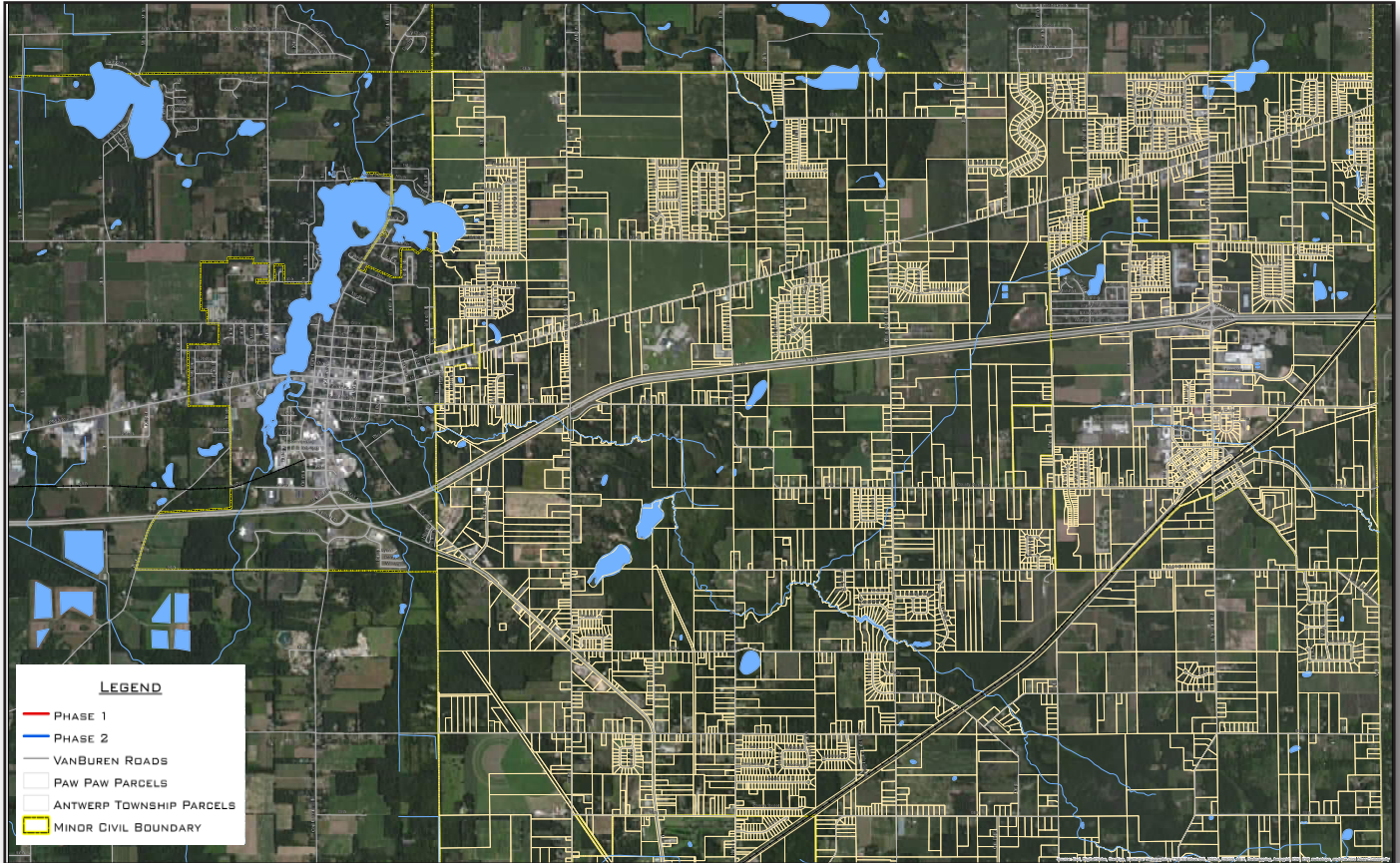
Wightman was contacted by the City of Dowagiac to assist with applying and administering the CMAQ funding for a pathway along Middle Crossing Road in the City of Dowagiac. The path was developed to link the residential area of the downtown to Russom Park, which consists of several baseball, softball, and future soccer fields. The pathway starts at Prairie Ronde Avenue, and continues north to Russom Park a distance of approximately 0.5 miles. The pathway was constructed using aggregate base and a 3" HMA surface, with a width of 10', plus 2' shoulders on either side to satisfy the FHWA trail standards for this type of use. The project was funded through CMAQ and City match monies, and was administered following the MDOT Local Agency Programs requirements.



ANTWERP TOWNSHIP TRAIL PROJECT



ANTWERP TOWNSHIP, MI



Client Reference:
Antwerp Township
Mr. Dan Ruzick
Supervisor
(269) 668-2615

Project Date: 2015- Present

Project Cost: \$2,600,000 (est.)

Services Provided:

- ◆ Trail Planning
- ◆ Stakeholder Engagement
- ◆ Grant Assistance
- ◆ Preliminary Engineering

Staff Involved:

- ◆ Suzannah Deneau
- ◆ Sam Leach, PE

The Antwerp Township Trail Project is intended to connect the Villages of Mattawan and Paw Paw, then connect the Fruitbelt Trail with the Texas Township trail system and is approximately six miles long. The project is currently in the planning stages and we are engaging stakeholders including Antwerp Township; the Village of Mattawan, the Village of Paw Paw, MDOT, MDNR, Paw Paw Conservation Group, local Boy Scout troops, and many others.

This project is the third trail in the state to propose an alignment within an MDOT Interstate Highway right of way. We have had numerous discussions with MDOT about this and they have been on-board with this concept to date.

We continue to work with the stakeholders on this project for submission for grants for design and construction as we prepare for construction of Phase I.

PROJECT EXPERIENCE

We understand that the Tri-Community Joint Study Committee for the Blue Star Trail (TCC) is seeking proposals for engineering services for the Blue Star Trail – North Section. The TCC is made up of representatives from Saugatuck Township, the City of Saugatuck, the Village of Douglas, and the Friends of the Blue Star Trail. TCC intends to build three new sections of trail as part of this project totaling approximately 1.5 miles, to connect existing segments, and ultimately constitute the 4.5 mile north section of the Blue Star Trail. Eventually the Blue Star Trail span approximately 20 miles and will connect the Kal-Haven Trail in South Haven to the Beeline Trail north of Saugatuck.

Wightman has been involved with the planning or design of over 60 miles of trails in the last 5 years. Many of those trails are very similar to this phase of the Blue Star Trail. We have worked with local public safety, police, fire, and ambulance services on many road and trail projects. It's important that public safety officers are able to patrol the trail but also respond to emergencies along the trail. Having a review with the Public Safety departments along this project will be included in our scope of work. On the Indiana and Michigan River Valley Trail a portion of the trail was within the power company's right of way. They did not want unauthorized vehicles to be able to travel down the trail. Foldable bollards were chosen and a master key was given to the power company and first responders. In addition to the key, the folding pin was specified so that an emergency vehicle slowly running into the bollard would also collapse the bollard for access. Regarding safety, we have worked with multiple styles of crossing systems for trails, including smart crossings which can be activated by the push of a button or by detecting a trail user to alert vehicles to a pedestrian's presence at an intersection. We have also designed signage to alert pedestrians of certain dangers, such as a fire station or other emergency vehicle crossing, or bridge or rail crossings.



PROJECT UNDERSTANDING

We understand that the Tri-Community Joint Study Committee for the Blue Star Trail (TCC) is seeking proposals for engineering services for the Blue Star Trail – North Section. The TCC is made up of representatives from Saugatuck Township, the City of Saugatuck, the Village of Douglas, and the Friends of the Blue Star Trail. TCC intends to build three new sections of trail as part of this project, to connect existing segments, and ultimately constitute the 4.5 mile north section of the Blue Star Trail. Eventually the Blue Star Trail span approximately 20 miles and will connect the Kal-Haven Trail in South Haven to the Beeline Trail north of Saugatuck.

This RFP is searching for an engineering firm to provide professional services for the planning, design and construction of this project. The planning phase of work will build upon a 2018 TAP grant draft, as well as 2019 conceptual drawings for section 1 of the project. A preliminary route has been developed and needs to be finalized. The trail will be developed to meet the AASHTO Guide for the Development of Bicycle Facilities, NACTO guidelines, MDOT standards, as well as ADA. It is anticipated that the project will seek funding through MDOT Transportation Alternatives Program (TAP) as well as Michigan Department of Natural Resources Trust Fund (MNRTF). The project will be designed to meet the criteria for both of these programs as well.

Public input is important to the project and the overall success of the Blue Star Trail in general. Positive public perception of the project starts at the planning meetings and continues through construction and beyond. Keeping the public informed on the project and timeline is important, as well as a smooth construction phase with limited disruptions to traffic and businesses. A good design and implementation are just as important so that the user experience, both the trail users and the motorists adjacent to the trail have a positive experience. Our planning process, construction phase services and design philosophy will ensure these key components are met.

PROPOSED WORK PLAN

The scope of work will be broken into the following phases:

PRELIMINARY DESIGN PHASE:

This phase will include refining the preliminary route map; development of typical trail cross sections; review of environmental, historic, or physical constraints; preliminary right of way and property review; as well as preliminary cost estimates for construction. This design will take into account the different trail designs that will be needed for this route which will include at grade trail, bridges/culverts, and boardwalks as necessary.



We believe that this phase has three major goals for the stakeholders:

1) Preparation of the necessary supporting documents to seek state and federal grant funding. 2) Creation of visuals and proposed costs for local match fundraising. And 3) Establishment of major environmental, historic, or physical hurdles for the project early in the preliminary design phase allowing enough time to address them.

Our environmental team will review wetland databases and other information to determine potential areas of concern. Included in this phase is an early onsite review meeting with regulatory and funding agencies including MDOT, EGLE, MDNR, Allegan County Road Commission, and Local Municipalities for coordination and alliance regarding potential environmental conflicts. We propose to meet onsite following the first stakeholder group meeting. We also plan to meet with the Allegan County Road Commission during this preliminary phase as they control the majority of the right of way for the trail route, whether that be along Blue Star Highway or roadways within the Township, with the possibility of passing through Amalanchier Park. The crossing of the bridge over the Kalamazoo River will be a key component of this project.

After these meetings are complete and a conceptual route or routes are identified it would be a good time to conduct the environmental assessment of the routes to have a clear understanding of any wetland or other environmental features that will need to be taken into consideration with the design and construction of the project. Conducting the assessment at this time will allow our team to fully understand what opportunities or constraints may be associated with the proposed routes and we can design and estimate accordingly.

When the conceptual design and cost estimate are completed, Wightman will present our findings to the TCC stakeholder group for review. There are two meetings during this phase: one with the stakeholder group and one for the public to present this information. We are also able to present to three municipalities as well as FOTBST. We will incorporate approved feedback into the plan and estimate. Once the meetings have been complete, applications for grant funding will be submitted to MDOT for TAP funding in October of 2021 and MDNR for MNRTF funding in early 2022. Wightman has worked extensively with these two programs for trail funding in the past and can work to lead this effort. We typically are involved with 3-5 MDNR grants per year and 7-10 TAP, CMAQ or other federally funded MDOT Local Agency Projects per year. We also suggest engaging the West Michigan Regional Planning Commission in assisting with these grants to show how the trail network will benefit the region. It is anticipated that the Allegan County Road Commission will be the Local Agency for the TAP Grant. It will be important during the Preliminary Design Phase to determine which, or all, of the Municipalities will submit for the MNRTF grant(s).



CONSTRUCTION DOCUMENTS – GRADE INSPECTION PLANS:

At this point in time, funding has been secured, the route has been finalized and the environmental, historic or physical hurdles have been defined. This phase will include construction documents through the MDOT

Grade Inspection (GI) phase which is approximately 80% complete; surveying; geotechnical investigation; and the continuation of permit submittals that are required for the proposed work. These plans will meet all of the MDOT requirements and the project will be designed to all applicable standards in accordance with the AASHTO Guide for the Development of Bicycle Facilities and Guide for the Development of Pedestrian Facilities, the FHWA Designing Sidewalks and Trails for Access, the MDOT Standard Specifications for Construction, and the Michigan Manual on Uniform Traffic Control Devices, including horizontal alignment and clearances, vertical alignment, and permanent signs. Trailhead, bike rack, and bench locations will be coordinated with the stakeholder group utilizing the original layouts on the aerial trail map. Signage at the intersection(s) will include stop ahead, stop, intersection, no motor vehicles, and street signs on the trail; and include bike trail and bike crossing warning signs on the roadways.



Included in this phase, is verification of property ownership and property lines. Although it is expected that ownership will be finalized prior to this process.

In addition to meetings with key property owners during this phase, a public meeting is also a good way to share the proposed design with the public.

Project estimating is crucial throughout the entire project, from the preliminary design so that an accurate project budget can be established, through construction. Our attached project sheets show the project costs for many of our recent jobs. We like to estimate conservatively in the early phases of a project where there are many unknowns and refine our project estimates as we gather more information. We just finished the preliminary planning phase of the Indiana Michigan River Valley Trail Phase 3 which covers 8 miles from Niles to Berrien Springs Michigan. At this early stage of design there is a large area of wetlands that may be impacted by the project. Our preliminary estimate included boardwalk for this entire area. As we move forward and delineate the wetlands and work with the regulatory agencies we may be able to install a portion of that section as at-grade trail which would be significantly less expensive, however we want to make sure we are prepared for the worst case scenario. The Indiana Michigan River Valley Trail Phase 2 project bids came in within a few percentage points of the project estimate when they were bid. We were able to find savings during the construction and the project came in under the estimate when it was completed.

FINAL CONSTRUCTION DOCUMENTS:

This phase of work will take any comments from the GI phase drawings and incorporate them into the project set to finalize the documents. We will also work to finalize any permit applications. The construction documents and specifications will be prepared assuming this will be bid through MDOT based on anticipated TAP funding. The plans will also be sent to MDNR for final review, although their review is typically secondary to MDOT.

BID PHASE:

Since it is assumed TAP funding will be utilized for this project bidding will be handled through the MDOT letting process. We will assist with the bid and answer questions as required.



CONSTRUCTION PHASE:

We will work with the Road Commission and MDOT to administer the contract using Field Manager and our qualified Office Tech and provide testing and inspection services. We can provide full-time or part-time inspection based on the requirements for the project. We will also include; shop drawing and submittal review; construction inspection and progress meetings; contractor pay estimates; punch list and review; project closeout; and grant closeout data.

PROPOSED WORK PLAN

EASEMENT SERVICES:

If easements are required, we have worked extensively with Michiana Land Services in the past to secure permanent or construction easements, and we would engage their services.

TIMELINE:

Preliminary Design Phase will begin after the consultant is selected, likely March of 2021 with the application of a TAP grant in October 2021. In addition, an MDNR Trust Fund Grant will be submitted by April 1, 2022.

Construction Documents (GI): it is assumed that this phase will begin once funding is acquired. With the understanding that the project will be seeking TAP funding and MNRTF funding it is anticipated that the earliest this phase might begin is February, 2023. However, we are able to begin work earlier if other funding is secured. We anticipate this phase of work will take 7 months with a GI scheduled in September, 2023.

Final Construction Documents: after the comments are received from the GI it is anticipated that the final construction documents will be submitted back to MDOT within 2 months for bid and letting scheduled for January 2024.

Construction: With tree removals, we anticipate construction starting February 2024 and continuing through Summer for Substantial Completion, and Final Completion by the end of 2024.

The cost for the Preliminary Engineering Phase is anticipated to range from \$24,000 to \$28,000, depending on whether the wetland delineation is completed in this phase or the GI Submittal Phase.

The Cost for the Design of the Project, GI Submittal phase; Final Submittal; and Bidding typically range around 7-8% of the construction cost. Based on our previous projects we anticipate this project construction cost to be somewhere from \$800,000-\$1,500,000 depending on what route is chosen. With the construction scheduled for 2024 or later, standard construction inflation of 2-4 percent per year, as well as current price increases on certain materials due the pandemic, it is difficult to predict market trends for pricing. This would put the design engineering fees in the range of \$60,000-\$115,000.

Construction phase services will vary depending on whether full-time or part-time inspection is required, but typically are approximately 10% of construction cost, which could range from \$80,000-\$150,000.



Standard Terms and Conditions

Updated 4/1/2019

1. Agreement. Wightman & Associates, Inc. (hereinafter "Consultant") shall provide to the Client the scope of services described in Consultant's Proposal attached hereto. These Standard Terms and Conditions are incorporated into Consultant's Proposal, and together may be referred to as the "Agreement" and shall reflect the professional services (or "Project") for which Consultant is responsible. This Agreement shall be the full extent of the Consultant's obligations. The Consultant shall not be responsible for any obligations or costs except as contained in the Agreement.
2. Authorization. Client shall provide Consultant written authorization to proceed, provided that this signed Agreement by Client shall give the Consultant the right to proceed with the Project.
3. Standard of Care. The Consultant's Standard of Care for the purposes of this Agreement shall be that consistent with the level of care and skill ordinarily exercised by members of its profession currently practicing under similar conditions in similar locations.
4. Terms of Payment/Late Payment Actions/Fees. Payment is due upon presentation of invoice and is past due thirty (30) days from invoice date. Client agrees to pay a finance charge of one and one-half percent (1 ½ %) per month, or the maximum rate allowed by law, whichever is less, on past due accounts.
5. Scope of Services/Additional Services/Changes. If the services covered by this Agreement have not been completed within twelve (12) months of the date of this Agreement (unless otherwise stipulated in the proposal), through no fault of Consultant, extension of Consultant's services beyond that time shall be compensated as "Additional Services." All Additional Services shall be billed separately and the scope of the services and compensation shall be mutually agreed between the parties, but in any case, not less than Consultant's Hourly Rate, and all of Consultant's Reimbursable Expenses shall also be paid by Client to Consultant, in the amounts set forth below.
6. Hidden Conditions. Consultant is not responsible for latent deficiencies or hidden or concealed conditions not discovered by Consultant within the scope of its services. If Consultant has reason to believe that such a condition may exist, it will advise Client as to the nature of the suspected condition and its significance. Client will be responsible for all risks associated with this condition and for undertaking, at its sole cost and expense, additional investigation and corrective work, if required. If Consultant repairs or corrects any such deficiencies or conditions, Consultant shall be compensated for the same, as Additional Services.
7. Betterment. If, due to Consultant's negligence, a required item or component of the project is omitted from Consultant's construction documents, Consultant shall not be responsible for paying the cost required to add such item or component to the extent that such item or component should have been included in the original construction documents. Consultant shall not be responsible or liable for any cost or expense that provides betterment or upgrades or enhances the value of the Project.
8. Opinions of Cost. Consultant's opinions or estimates of probable construction cost are prepared on the basis of Consultant's experience and qualifications and represent Consultant's judgment as a professional generally familiar with the industry. However, since Consultant has no control over the cost of labor, materials, equipment, or services furnished by others, other contractor's methods of determining prices, or over competitive bidding or market conditions, Consultant cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from Client's budget or from Consultant's opinions or estimates of probable construction cost.
9. Code Interpretations. The Client acknowledges that the requirements of the Americans with Disabilities Act, as amended ("ADA") (as well as all state and local laws, codes, or ordinances), will be subject to various and possibly contradictory interpretations. Consultant will endeavor to use reasonable professional efforts to interpret applicable ADA and other building code requirements as they may apply to Consultant's services. Consultant cannot and does not promise, warrant, or guarantee that its services will comply with interpretations of building code requirements as they apply currently or in the future and unless the Consultant is negligent, the Client shall pay for any additional costs or expenses which are necessary to keep the Project in compliance with the ADA and all other laws, codes, or ordinances. Any changes made by Consultant shall be billed as Additional Services.
10. Use of Drawings, Specifications, and Other Documents. The drawings, specifications and other documents prepared by Consultant for this project are instruments of Consultant's services for use solely with respect to this Project and, unless otherwise provided, Consultant shall be deemed the author of these documents and shall retain all common law, statutory, and other reserved rights, including the copyright.
11. Retaining Records. Consultant will retain pertinent records relating to the services performed for a period of five years following submission of the report, during which period the records will be made available to Client at reasonable times.
12. Insurance Coverage. Consultant shall maintain the following types of insurance: (a) Professional Liability; (b) Commercial General Liability; (c) Workers' Compensation; (d) Employers' Liability; (e) Hired and non-owned automobiles. Client shall be responsible for purchasing and maintaining its own commercial liability and property insurance, including an all-risk policy covering all damages or casualty which occurred to the Project in an amount not less than the then full replacement cost of the Project. The Client's commercial liability insurance policy shall be written for an amount of not less than \$1 million, single-limit coverage. The Client's commercial liability and property insurance policy shall not be



cancelled or modified without Consultant having received not less than thirty (30) days prior written notice. Consultant shall be named an additional insured on the Client's insurance policies. Client and Consultant waive rights against each other for loss, damage and/or liability to the extent covered by the insurance policies required to be maintained hereunder and each insurance policy hereunder shall contain a waiver of the insurer's rights of subrogation.

13. Limitations/Exclusions. Client agrees that Consultant's total, aggregate liability to Client and any third parties arising from Consultant's professional acts, errors or omissions, shall not exceed Consultant's total fee received for the Project.
14. The Law/Suspension/Termination/Non-Severability. All obligations arising prior to termination of this Agreement shall survive the completion of the services and termination of this Agreement. This Agreement shall be governed in all respects by the laws of the State of Michigan.
15. Indemnity. Except for the limitations set forth herein, Consultant agrees to indemnify and hold the Client harmless from all damage, liability or cost (including reasonable attorney fees and costs of defense) to the extent caused by Consultant's negligent acts, errors, or omissions in the performance of professional services under this Agreement and those of its subconsultants or anyone for whom the Consultant is legally liable. The Client agrees to indemnify and hold Consultant harmless, from all damage, liability or cost (including reasonable attorney fees and costs of defense) to the extent caused by the Client's negligent acts, errors or omissions and by those for whom the Client is legally liable.
16. Certificate of Merit Requirement. Client shall make no claim for professional negligence, either directly or by way of a cross complaint against Consultant, unless Client has first provided Consultant with a written certification executed by an independent consultant currently practicing in the same discipline as Consultant and licensed in the state where the Project issue is located. This certification shall: (a) contain the name and license number of the certifier; (b) specify the acts or omissions that the certifier contends are not in conformance with the Standard of Care for a consultant performing professional services under similar circumstances; and (c) state in detail the basis for the certifier's opinion that such acts or omissions do not conform to the Standard of Care. This certificate shall be provided to Consultant not less than thirty (30) calendar days prior to the filing of any claim. This Certificate of Merit clause will take precedence over any existing state law in force at the time of any claim.
17. Jurisdiction and Venue. Notwithstanding anything in this Agreement to the contrary, Client agrees that any suit related to any dispute related to this Agreement shall be heard in the appropriate Court in the county of the Project. Client agrees that the appropriate County court shall have the subject matter jurisdiction and will be the appropriate venue for any interpretation or dispute related to this Agreement.
18. Termination. Consultant may terminate this Agreement for convenience by written notice to Client and in such event, the Consultant shall be paid only for all work under this Agreement that Consultant has completed to the date of

termination on a prorated, equitable basis as reasonably determined by Consultant and which shall include Consultant's prorated profits, general conditions, and overhead.

19. Billing Rates.

Principal	\$210.00/hour
Senior Licensed Staff.....	\$175.00/hour
Licensed Staff III.....	\$140.00/hour
Licensed Staff II.....	\$130.00/hour
Licensed Staff I.....	\$115.00/hour
Professional Staff V.....	\$140.00/hour
Professional Staff IV.....	\$125.00/hour
Professional Staff III.....	\$105.00/hour
Professional Staff II.....	\$95.00/hour
Professional Staff I.....	\$85.00/hour
Technician IV.....	\$90.00/hour
Technician III.....	\$85.00/hour
Technician II.....	\$75.00/hour
Technician I.....	\$70.00/hour
Administrative.....	\$70.00/hour
3 Man Survey Crew.....	\$185.00/hour
2 Man Survey Crew.....	\$150.00/hour
1 Man Survey Crew.....	\$100.00/hour
3 Man Survey Crew (Construction Staking).....	\$210.00/hour
2 Man Survey Crew (Construction Staking).....	\$175.00/hour
1 Man Survey Crew (Construction Staking).....	\$130.00/hour
High Definition Laser Scanning Technician.....	\$150.00/hour
Expert Witness/Testimony.....	\$400.00/hour
High Definition Laser Scanner Fee.....	\$150.00/hour

Reimbursable Expenses. Compensation for reimbursable expenses shall be computed as a multiple of 1.1 times the expense incurred for the following: Outside Consultants, Travel, Lodging, Postage, UPS, FedEx, Messenger, and Outside Reproduction. Compensation for mileage expenses shall be computed as a multiple of 1.1 times the Federal Rate. In-House Prints/Copies/Plots shall be charged as follows:

- Black & White Prints/Copies
 - 8 ½ x 11 \$0.19/sheet
 - 8 ½ x 14 \$0.19/sheet
 - 11 x 17 \$0.19/sheet
- Color Prints/Copies
 - 8 ½ x 11 \$0.85/sheet
 - 8 ½ x 14 \$0.85/sheet
 - 11 x 17 \$1.25/sheet
- Black & White Plots
 - 12 x 18 \$1.50/sheet
 - 18 x 24 \$2.75/sheet
 - 24 x 36 \$5.00/sheet
 - 30 x 42+ \$7.50/sheet
- Color Plots
 - 12 x 18 \$9.00/sheet
 - 18 x 24 \$18.00/sheet
 - 24 x 36 \$30.00/sheet
 - 30 x 42+ \$42.00/sheet

ENGINEERING SERVICES

W+

WIGHTMAN

it's all about people



TRANSPORTATION

Includes planning and design, budget and funding assistance, right-of-way acquisition, construction engineering, traffic engineering, construction related services including inspection and testing, and construction staking.



SITE DEVELOPMENT

Includes the development of a set of plans showing the use and structures proposed for a property. Plans include existing site characteristics, demolition, grading, utilities, soil erosion control, lighting, and landscaping. Plans also include review of government ordinances and analysis of how they apply to the site—parking requirements, drainage, traffic flow, fences, signs, and more.



SPECIALTY DESIGN PROJECTS

Include streetscape design, roundabout design, drain projects, sustainable development, and more.



BRIDGE & DAMS

Includes structural engineering work, design, inspection, and more.



PARKS & RECREATION

Includes trail planning and design, park planning and design, playground design assistance, trailhead design, pavilion design, and more.



GRANT & FUNDING ADMINISTRATION

Includes review of available grant sources, identification of those for which you are eligible, and guidance in cutting through red tape to get projects funded.



STUDIES

Include feasibility studies, rate studies, capital improvement plans, master and land use planning, water reliability studies, drainage studies, funding applications, and preliminary engineering reports.

www.gowightman.com | 269.927.0100



ENGINEERING SERVICES



PERMITTING

From the simplest single permit to complex multi-permit projects, our team can help navigate the course of federal, state, and local regulatory agencies for utilities (water, sanitary sewer, storm sewer), drainage, erosion control, transportation, land uses and right-of-way encroachments.



COMMUNITY-WIDE ASSET MANAGEMENT PLANS

An asset management plan is a tactical plan for managing an organization's infrastructure and other assets to deliver an agreed upon standard of service. Typically, an asset management plan will cover more than a single asset, taking a systematic approach—especially where a number of assets are co-dependent and work together to deliver an agreed upon standard of service.



MATERIALS TESTING

Includes the testing of concrete and soils, bituminous asphalt content, as well as moisture and density of aggregate for construction projects.



WATER

Includes water supply and/or treatment design, water transmission design and analysis, water distribution design (pressure reducing, pressure sustaining and metering stations), and water storage design. Also includes watershed, lakes as well as shoreline services.



WASTEWATER

Includes the study, analysis, and design of wastewater treatment systems, wastewater collection systems (conventional gravity sewers, low pressure systems, septic tank effluent pump (STEP) systems, vacuum systems, and a combination of all), lift stations, and force mains. Also includes assistance with permitting and compliance issues.



STORMWATER MANAGEMENT

Generally focuses on channeling, conveying, controlling storing, and/or infiltrating rain water to protect developed properties. This is typically a large part of the approval process for any site development project. Can include catch basins, piping, ponds, storage basins, and pump stations where topography is an issue.



HYDROGEOLOGIC

A branch of engineering concerned with groundwater movement and the design of wells, pumps, and drains. The main concerns in groundwater engineering include groundwater contamination, conservation of supplies, and water quality.

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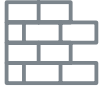


LANDSCAPE ARCHITECTURE SERVICES

W+

WIGHTMAN

it's all about people



LANDSCAPE PLANS

Design of landscape plans for commercial and municipal development including zoning/landscape ordinance compliant plantings.



PARKS & RECREATION

Includes the development of recreation plans used in DNR grant applications, park design, trail system master planning and development, trail design, grant applications (MNRTF), outdoor sports and athletic facilities, playgrounds and splash pads, water features, fountains, and more.



STREETSCAPE DESIGN

Includes planning and design of streetscapes and downtown beautification through the use of hardscapes and softscapes.



GREEN INFRASTRUCTURE

Includes the design and planning of rain gardens, water harvesting, and green roofs through implementation of stormwater management best practises.



SITE ANALYSIS

Site layout such as siting the building and other programming on the site based on topography, water, wind and sun exposure, circulation, and more.



HISTORICAL PRESERVATION PLANS

Includes landscapes, courtyards, hardscapes, connectivity, and more.



SPECIALTY AREAS

Include native plantings design plans, memorial design, and corporate campuses.

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WIGHTMAN COMMUNITY ENGAGEMENT

*It's all about engaging our community, clients, and stakeholders.....*The success of our public engagement strategy is teamwork: from you as the client, to our consultants, and within our internal team, we rely on clear communication and poignant questions to bring us together to discover the right decisions. Our approach can be scaled to match the goals of the group we are engaging, but our preferred strategy is three-tiered.

We start with a Steering Committee that acts as our client group. These are the individuals that will ultimately make final decisions about design and implementation. We also task this group with identifying key individuals to be involved with the next tier of engagement: stakeholders.



Stakeholders are individuals or organizations either directly impacted by decisions that will be made or are influential members of the community that can help us implement parts of the project. This not only gives us the establishes community buy-in, but it gives us insight to opportunities that could be missed before we even begin design.

Our third tier of engagement is the Public; we typically engage the public through workshops or surveys, enabling us to ask broad questions that will provide insight to the greater context projects will impact.



To our team at Wightman, the engagement process is integral to the success of a project. Parks and buildings and infrastructure serve our citizens and region and if we neglect to understand their needs and dreams we will miss out on great opportunities.



IT'S ALL ABOUT CELEBRATING SUCCESS!

Wightman recognizes that achieving major milestones - from the start of construction to the grand opening - of any project is a cause for excitement and celebration for our clients, the community, and even our own staff.

Celebrating the successful completion of a project is a simple way to recognize the hard work accomplished by stakeholders, respectfully honor project donors' gifts, and show appreciation to community members who anxiously awaited the unveiling.



Wightman truly appreciates the time, energy, and efforts of each and every person involved in a project. By partnering, the satisfaction of a job well done and a journey successfully completed can be shared by everyone.

Please don't hesitate to ask how we can help you with a groundbreaking, project milestone, media, or ribbon-cutting event.

THANK YOU



IT'S ALL ABOUT PEOPLE.

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