



Traffic Impact Analysis

Underwood Creek

Park & Shop

Village of Elm Grove

July 22, 2024



July 22, 2024

Thomas Harrigan, Village Manager
Village of Elm Grove
13600 Juneau Boulevard
Elm Grove, WI 53122
Email: tharrigan@elmgrovewi.org

Re: Proposal – Traffic Impact Analysis

Dear Mr. Harrigan and Selection Committee:

The Village of Elm Grove has need for a traffic impact analysis (TIA) as you intend to return Underwood Creek to a more natural design, daylighting the creek from its current location under the downtown “Park & Shop” parking lot. Ayres is here to assist with our traffic expertise and provide recommendations for safe and efficient solutions for accommodating parking and future traffic volumes. In addition, we offer:

- **Familiarity with Elm Grove and the project site.** Ayres has worked in the Village. We have a deep understanding of the project site as we recently worked on a TIA for the School Sisters of Notre Dame site just east of this proposed study area. We look forward to the opportunity to continue our work in the area.
- **Parking study and traffic analysis expertise.** Our team of traffic engineers has conducted dozens of TIAs throughout Wisconsin. We also have qualified staff to analyze and design innovative intersection solutions, including signalized intersections, roundabouts, or restricted-movement intersections if required. Our project manager, Alex Cowan, is a certified WisDOT TIA preparer. He understands traffic operations and identifying appropriate solutions for operational and safety issues. Alex and the support staff listed in this proposal are ready to start on this project immediately.
- **Innovative use of drone technology.** We provide an opportunity to use in-house drone technology to capture the parking inventory. We have used this approach on past projects to gather high-resolution imagery of the parking conditions throughout the day. What this means for you is an invaluable dataset showcasing not only the numbers behind the parking usage, but the actual visual evidence supporting the Village’s parking decisions.
- **In-house expertise in parking layouts.** It’s understood that a preliminary parking layout is currently being developed. If additional design support is needed, our civil team brings decades of experience in functional parking layouts.

Thank you for reaching out for our assistance in assessing the Underwood Creek and Park & Shop project. We look forward to supporting your team and helping make the site renovation a successful one. We are excited to partner with you to offer efficient, cost-effective services and solutions.

Sincerely,

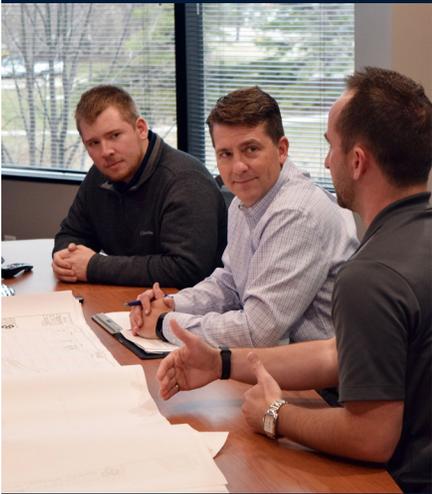
Ayres Associates Inc



Alexander B. Cowan, PE, PTOE
Project Manager
262.522.4944 | CowanA@AyresAssociates.com



Kevin Kuhlow, PE
Manager – Transportation Services-Waukesha
608.443.1210 | KuhlowK@AyresAssociates.com



“I’ve sat through numerous engineering-focused technical discussions, which can be very dry and hard to follow. But Ayres really took the time to explain the likely outcome for each potential street modification. And they also made some important recommendations.”

Ed Haydin

Stakeholder
and Former Member
of East Tosa Alliance

Qualifications Summary of Company

Organizational Capabilities

Ayres is a multi-discipline architectural/engineering consulting firm providing services from a network of 12 offices in seven states. **We will serve the Village of Elm Grove from our Waukesha office.**

Roadway and Traffic Engineering Services

Safe and efficient roadway travel is nearly impossible without quality traffic engineering. Ayres has **in-house** traffic and transportation engineers committed to providing safe, efficient multimodal travel. Our engineering staff provides a range of services to public and private clients, including:

Traffic signal design, operations, and timings	Intersection, downtown, and corridor capacity analysis
Parking studies	Urban and rural roadway design
Staging concept development and traffic control	Pedestrian, school, and bicycle studies
Traffic calming	Crash and safety analysis

Our traffic and transportation engineers help our clients handle increased demand on their street systems while maintaining safety for motorists, pedestrians, and bicyclists and accommodating transit and parking operation. We are specialists in safety and untying traffic tie-ups.

Civil + Municipal Engineering

Much of the work we complete in this industry is all but invisible to the public – and we consider that a sign we’ve done it well. Problems with pipes, pavement, and property can negatively impact people in a community, on a campus, or in a private business. Our commitment to project success begins well before construction does. For projects above and below ground, from pre-planning onward, you can count on us to help you realize quality design while we also help you find funding, mitigate potential regulatory issues, and develop an intelligent plan to keep your project on time and on budget.

Knowledge of Industry Standards

The staff professionals assigned to your project are well-versed in the Manual on Uniform Traffic Control Devices (MUTCD), current ADA standards, and have extensive experience with the Highway Safety Improvement Program (HSIP). Our traffic staff are also active members in the Institute of Transportation Engineers.



Staff Qualifications

Ayres will provide an experienced team to the Village of Elm Grove for your traffic impact analysis at Underwood Creek. Our team of professional engineers has successfully completed traffic projects that improve safety and operations of developments throughout the state. We know how to work with you to complete this project efficiently.

Alex Cowan, PE, PTOE, will serve as project manager. He has a passion for improving safety and connectivity for private and public clients. He will be your primary contact and see that this project is completed to your satisfaction. Other team member resumes follow in this section.



Alex Cowan, PE, PTOE Project Manager

Alex joined Ayres in 2007 and has led a wide range of traffic engineering projects. He takes pride in completing comprehensive traffic studies while also communicating traffic operations in a manner that can be easily understood by the public and project stakeholders. He has performed studies for intersections, corridors, interchanges, and freeways in a mix of urban and rural settings. In addition, Alex has led efforts in traffic counting, transportation management plans, signal warrant studies, traffic signal design, parking studies, and traffic operations analysis for signalized and roundabout intersections. His work in crash and safety analysis includes predictive analysis using crash modification factors and the IHSDM. He is a **Certified WisDOT TIA preparer** and has been a member of the Institute of Transportation Engineers (ITE) since 2008.

Select Experience

- UW Health East Madison Hospital Parking and Traffic Study, Madison
- SSM Fish Hatchery Development, Madison
- School Sisters of Notre Dame Traffic Study, Elm Grove
- UW Health at the American Center TIA Study, Madison
- Third Ward Parking Study, Milwaukee
- Drury Hotel Madison College TIA, Madison
- East Broadway (CTH "D") at STH 59 TIA, Waukesha
- Mayfair Collection TIA and Traffic Signal, Wauwatosa
- Dunwood Crossing TIA Study, Fox Point
- Sonnentag Event/Recreation Complex TIA, Eau Claire
- Goodwill Industries TIA Study, Oak Creek
- Ashland US 2 and 23rd Ave TIA Study, Ashland
- Land by Label Franklin STH 36/Loomis Road Vitalogy TIA Study, Franklin

Total Experience

17 Years

Registrations/Certifications

Registered Professional Engineer, WI, MN, FL, CO

Professional Traffic Operations Engineer (PTOE)

WisDOT Certified Traffic Impact Analysis Preparer, WisDOT

Education

BS, Civil Engineering, UW-Milwaukee

Memberships

Institute of Transportation Engineers, Traffic Engineering Council



Noutheng Yang, PE, PTOE

Data Collection and Operational Analysis

Noutheng joined Ayres' transportation engineering staff in January 2020, bringing excellent technical skills from his time at the Wisconsin Department of Transportation. He is knowledgeable in performing traffic operations analysis, predictive crash safety analysis, **traffic impact analysis**, traffic count and data collection, traffic warrant studies, and delivering transportation management plans. His prior experience with roadway design/plan production has allowed him to assist with the creation of conceptual exhibits for existing and proposed roadway alternatives for multiple traffic studies and projects for clients. **Noutheng will coordinate data collection and processing for the parking review.**

Total Experience

5 Years

Registrations/Certifications

Registered Professional Engineer, WI

Professional Traffic Operations Engineer (PTOE)

WisDOT Certified Traffic Impact Analysis Preparer, WisDOT

Education

BS, Civil Engineering, UW-Madison

Select Experience

- UW Health East Madison Hospital Parking and Traffic Study, Madison
- SSM Fish Hatchery Development, Madison
- School Sisters of Notre Dame Traffic Study, Elm Grove
- UW Health at the American Center TIA Study, Madison
- UW-Madison FPM Physical Plant Relocation TIA
- Land by Label Franklin STH 36/Loomis Road Vitalogy TIA Study, Franklin
- Sonnentag Event/Recreation Complex TIA, Eau Claire



Andy Rowell, PE, PTOE

Traffic Analysis and QA/QC

Andy applies his people skills and traffic and roadway engineering expertise to serve state, county, city, village, town, and private-sector clients. He has nearly two decades of public- and private-sector experience in municipal and transportation project management, from the scoping, planning, and design stages to project bidding and construction. As a former county highway engineer and public works director, Andy can relate with municipal clients. He understands highway department and public works budgets and the funding constraints most communities face. His passion is **providing cost-effective yet innovative engineering solutions**. Andy has extensive experience with public involvement and outreach, traffic safety and operation improvements, and traffic signal design and corridor timing.

Total Experience

22 Years

Registrations/Certifications

Registered Professional Engineer, WI

Professional Traffic Operations Engineer (PTOE)

Education

MBA, Cardinal Stritch University; BS, Civil Engineering, UW-Milwaukee

Select Experience

- One City Schools Traffic Analysis Study, Monona
- UW Health at the American Center Traffic Impact Analysis Study, Madison
- Main Street Traffic & Pedestrian Study, Marinette
- Stanton & Ludington Street Pedestrian Safety Study, Marinette
- 2022 Intersection Improvement, Sidewalk Improvement, Traffic Study Scope, Ashwaubenon
- E. North Street and E. St Paul Avenue 1-way to 2-way Conversion – three signal retrofits and one new signal, City of Waukesha



Austin Johrendt, PE

Civil Engineer

Austin joined Ayres in 2017, bringing experience in construction observation and inspection. He provides design and analysis for municipal and site/civil projects. His project experience comprises community park site design, multifamily residential, commercial, and municipal utilities and roadways. As a project manager, he is continuously involved with projects from the initial concept planning phase through design, permitting, and construction. Austin prioritizes building relationships with clients and working with them to achieve the desired outcome. His responsibilities include utility modeling and design, site layout and grading, permitting, and cost estimates. Austin is available to provide additional support related to **site design and parking layout** should his expertise be needed.

Total Experience

7 Years

Registrations

Registered Professional Engineer, WI, CO

Education

BS, Civil Engineering, UW-Platteville

Select Experience

- SSM Fish Hatchery Development, Madison
- School Sisters of Notre Dame Traffic Study, Elm Grove
- East Broadway (CTH "D") at STH 59 TIA, Waukesha
- West Beloit Road Traffic Counts, West Allis
- WisDOT Traffic Engineering Data Collection
- UW-Madison South Campus Utility Improvements



Kevin Benben

UAS Pilot, Survey Technician

Kevin performs surveying tasks and supports engineering and construction-related functions. He is a certified FAA remote pilot airman and has flown over 400 drone flights with well over 100 hours of flight time for Ayres. His responsibilities include performing risk assessments for flight planning; safely operating all aircraft, sensors and payloads in the Ayres UAS fleet; and conducting survey control for mapping projects. He has experience with ArcMap, RStudio, and ERDAS IMAGINE.

Total Experience

6 Years

Certifications

FAA Remote Pilot Airman Certificate

Education

BS, Geography, GIS Concentration, UW-La Crosse

Select Experience

- UW Health East Madison Hospital Parking and Traffic Study, Madison
- SSM Fish Hatchery Development, Madison
- Waukesha Water Utility Route Study, Waukesha
- West Capitol Drive ALTA, Brookfield
- West Shore Pipeline Record Mapping, Milwaukee
- ATC Granville to Bluemound Project, Milwaukee County
- ATC Cooney to Summit Imagery, Waukesha County
- ATC Line 9042 360 UAS Imagery, Various Locations, WI

Similar Projects

UW Health East Madison Hospital Parking and Traffic Study

Client: Ruckert & Mielke, Inc.

UW Health plans to expand the East Madison Hospital in the coming years through two phases totaling approximately 530,000 square feet. UW Health is interested in understanding the current use of the available parking resources and reserve capacity on site and the expected additional demand created by the proposed expansion plans so that the hospital can make the appropriate additions to the parking accommodations. Additionally, a TIA study was completed in 2012 for the site and UW Health has requested it be reviewed to understand if additional traffic analysis will be required or if the expansion plans will remain within the anticipated volume increases identified in the previous study. Ayres is contracted as a subconsultant to the prime consultant, Ruckert & Mielke, Inc.

“Ayres has remained very dedicated to our projects and continues to provide us with highly qualified engineers, surveyors, inspectors, and support staff.”

Joe Kroll

County Engineer,
Walworth County
Public Works Department



SSM Fish Hatchery Development

Client: HGA

HGA retained Ayres to provide civil engineering design services from schematic design through construction administration for SSM Health Dean Medical Group's Fish Hatchery Campus project involving the replacement of the clinic on the Fish Hatchery campus with an approximately 175,000-square-foot clinic in Madison, Wisconsin. Ayres provided preliminary and final site, grading, utility, and drainage plans. Demolition, erosion control, paving, and phasing plans also were completed in the final design phase. Stormwater design was provided in compliance with City of Madison standards.

Bidding assistance and construction administration services also were

provided, including site visits, shop drawing review, and as-built documentation. Due to the existing clinic having to be open while the new building was constructed the project was phased with multiple parking areas being designed and constructed. Once the new building was open and operational the existing building was demolished with additional parking constructed within the old building footprint.

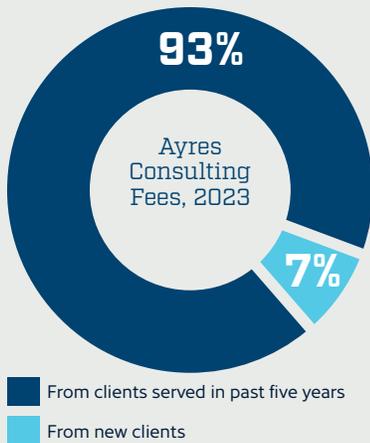


School Sisters of Notre Dame Traffic Study

Client: Mandel Group

Mandel Group has proposed to construct a residential development on the existing School Sisters of Notre Dame property at 13105 Watertown Plank Road in Elm Grove, Wisconsin. The City of Elm Grove has required a traffic study to identify potential improvements to address traffic impacts created by the new development.

The project involved analysis of intersection turning movement traffic counts collected at eight intersections, along with gathering existing signal timing information and historical crash and traffic volume data. Analysis includes trip generation forecasting, traffic operation analysis, crash analysis, and the traffic study report. Unique analysis was required for the evaluation of potential delays and queuing at an at-grade railroad crossing along the corridor. Ayres provided support during the public involvement and approval process.



“Ayres has provided exceptional construction project management on multiple complex and large scale projects for the City of Waukesha. They assembled a professional and experienced team of construction site representatives and surveyors to ensure successful project delivery. We look forward to working with Ayres in the future to facilitate delivery of high profile construction projects for the City.”

Alex Damien

City Engineer, City of Waukesha

References

The quality of our services is demonstrated by the extent of repeat business we enjoy from our clients; we believe this is a true reflection of our clients' satisfaction toward our overall performance. Approximately 93% of our recent revenues were from clients we had served within the previous five years.

Our experience has shown us that close and open communication with our clients is the foundation for a successful working relationship. We place a high priority on **understanding our clients' needs**, openly addressing issues, involving clients in decision-making, and resolving project concerns. In every project we undertake, our goal is always client satisfaction.

We invite you to contact the references listed below for a firsthand account of our work.

Alex Damien, City Engineer

City of Waukesha
201 Delafield Street, Suite 200
Waukesha, WI 53188
262.524.3600
adamien@ci.waukesha-wi.gov

Jim Collins, Transportation Director

City of Oshkosh
926 Dempsey Trail
Oshkosh, WI 54903
920.232.5342
JCollins@oshkoshwi.gov

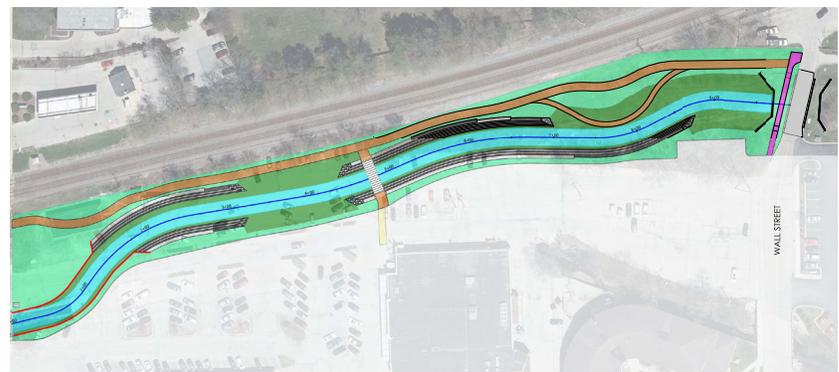
Derek Potter, Project Manager

Wisconsin Department of Transportation Southwest Region
2101 Wright Street
Madison, WI 53704
608.884.7135
Derek.Potter@dot.wi.gov

Project Approach

Project Understanding

We understand that the Village of Elm Grove intends to return Underwood Creek to a more natural design, daylighting the creek from its current location under the downtown “Park & Shop” parking lot. Through conversations with the Village, we are aware that a concept for the rerouting of the creek has already been developed and a preliminary design for the proposed parking layout is currently underway. As part of this effort, it’s critical that the new parking accommodations provide adequate capacity and that the reconfigured design provides for safe and efficient movement of pedestrians and vehicles. To that end, Ayres proposes the following approach to understand the operation of the existing infrastructure and provide insights into the optimal parking and circulation layout for the proposed site changes.



Project Approach

Ayres proposes to complete the TIA with the following approach.

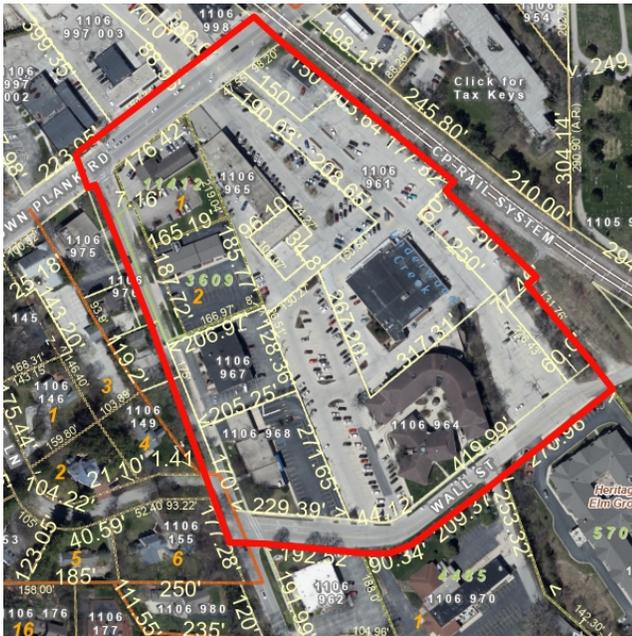
Kick-off and Data Collection

Our project approach will begin with a kick-off meeting with the staff steering committee. The anticipated agenda will address the project goals, schedule, and deliverables, confirm the data collection to be completed, and identify the key stakeholders to be contacted for design feedback. The data collection and field reconnaissance will follow.

The current use of the “Park & Shop” parking resources will be identified through a parking lot survey. Data will be gathered from 7 a.m. to 9 p.m. on a typical day and will provide information on occupancy, turnover, and duration. Aerial photography using **Ayres’ in-house drone technology** will be used to survey all parking lots within the identified study area. The aerial images provide the quantitative data needed to understand

the parking operation. In addition, the high-resolution images provide an extremely valuable photo log of a typical parking operation throughout the day, which can be used for **valuable story-telling and communicating parking trends with the public.**

This data will provide insight into how the existing parking resources are used and the reserve capacity of the current parking resources. The data will guide the expectations of the usage patterns of the proposed site layout.



Intersection and driveway turning movement counts will be gathered on a typical Tuesday, Wednesday, or Thursday using video capture technology. If desirable, Ayres can gather additional data on a typical weekend or replace the weekday counts with a Saturday count. The weekday counts will occur from 6 a.m. to 10 p.m. To save costs for the Village, the initial data processing will only include 6 hours of the day (anticipated peak periods), but know that 16 hours of video footage will be available if needed at any point later in the project. Turning movement counts are suggested at the following locations:

- Intersection of Watertown Plank Road & Elm Grove Road
- Intersection of Elm Grove Road & Wall Street
- “Park & Shop” Driveways & Watertown Plank Road (2 locations)

- “Park & Shop” Driveways & Wall Street (4 locations)
- The necessary count locations can be adjusted following the initial kick-off meeting.

During the data collection efforts, a field reconnaissance will be completed to gather information about the physical conditions of the site, as well as to observe internal site circulation and travel patterns. Data collected will include drive lane widths, lane configurations, bike and pedestrian accommodations, sidewalks and crosswalks, and intersection traffic controls.

Analysis

The analysis phase of the project will take the data collected in the initial phase and evaluate it for the purpose of understanding the existing traffic patterns. The parking data will be analyzed to determine the demand, occupancy, and turnover, as well as the identification of those parking areas that are over or underutilized. For example, **a recent site visit suggests** that the parking stalls in the southeast areas of the parking lot have some available capacity during the weekday midday period.



The traffic count data will be analyzed to determine the existing intersection operations and the typical delay experienced by drivers attempting to exit the parking facilities. Meetings will be held with key stakeholders identified by Village Staff during the kickoff meeting for understanding preferences in access and traffic flow. This would be an appropriate time to hold a progress meeting with the staff steering committee to communicate the observations from the existing data, provide insights

into the feedback received from key stakeholders, and prepare for the information to be provided at the first public information meeting.

All of this existing information will be summarized and used at a public information meeting. The primary purpose of the meeting will be to gather information from the public on their experiences and preferences for circulation at the site. The existing data will help to provide quantitative information about how the “Park & Shop” is currently used. The feedback received will be summarized and included in the final deliverable for the project.

Following the analysis of the existing data and the initial public feedback, Ayres will move forward with analyzing the preliminary layout concept currently being developed by others. Ayres will provide suggestions and insights into potential layout adjustments to improve circulation and traffic routing. These insights will include recommendations for pedestrian routing as well. In addition, parking restrictions will be recommended based on the trends observed in the existing data and the revised layout.



EXISTING SIGNING SUGGESTS A WIDE VARIETY OF PARKING RESTRICTIONS

Intersection operation analysis will be completed that reflects the anticipated rerouted traffic based on the revised site layout.

Report

The results of the data collection, analysis, and public feedback will be summarized in a Traffic Study. A draft report will be provided to Village Staff for review. Following the initial report submittal, a meeting will be held with the staff steering committee to discuss initial comments and potential revisions to the draft report. Following completion of the final report, a second public information meeting will be held to present the conclusions from the study.

Task List

Below is an abbreviated task list summarizing the previous detailed approach.

Data Collection

- Traffic Counts
 - ◆ Watertown Plank Road & “Park & Shop” Driveways (2)
 - ◆ Watertown Plank Road & Elm Grove Road intersection
 - ◆ Elm Grove Road & Wall Street intersection
 - ◆ Wall Street & “Park & Shop” Driveways (4)
- Parking Survey
 - ◆ Aerial images of all lots within study area
 - ◆ 30-minute intervals from 7am – 9pm
- Field Reconnaissance

Analysis

- Circulation Review
 - ◆ Vehicular Routing
 - ◆ Pedestrian Access
- Traffic Operations Analysis
- Parking Analysis
- Stakeholder Feedback

Meetings

- Two public meetings
- Three staff steering committee meetings

Report

Anticipated Schedule

TASK	COMPLETE BY
Anticipated Notice to Proceed	September 3, 2024
Kick-Off Meeting	September 13, 2024
Data Collection	October 11, 2024
Initial Stakeholder Meetings	October, 2024
Analysis	October – November, 2024
Progress Meeting with Staff	Late October, 2024
Public Information Meeting #1	Early November, 2024
Traffic Report – Draft	November 29, 2024
Pre-Final Meeting with Staff	Early December, 2024
Traffic Report – Final	December 27, 2024
Public Information Meeting #2	January, 2025

