July 12th, 2022

Analysis of Proposed Redvelopment of Property Commonly Known As Arlington International Racecourse

Submitted to:

CITY OF GOOD NEIGHBORS
ARLINGTON HEIGHTS, ILLINOIS

Submitted by:

Sam Schwartz
A TYLin Company

Sam Schwartz
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Chicago, IL 60606
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Sam Schwartz
A TYLin Company

July 12, 2022

Charles Witherington-Perkins
Director of Planning & Community Development
Village of Arlington Heights
Attn: Department of Planning & Community Development
33 S. Arlington Heights Road
Arlington Heights, IL 60005

RE: RFP for Analysis of Proposed Redevelopment of Property Commonly Known as Arlington International Racecourse

Dear Mr. Witherington-Perkins:

Sam Schwartz is pleased to submit this proposal to the Village of Arlington Heights to provide comprehensive transportation and parking services related to the proposed redevelopment of the former Arlington International Racecourse into a new mixed-use stadium district for the Chicago Bears Football Club. This once-in-a-lifetime project will be a flagship property for Arlington Heights that has the potential to generate a Game Day crowd equal to or greater than the Village's entire population. It is therefore critical that the traffic engineering, transportation planning, and parking elements of the redevelopment project are executed thoughtfully to successfully integrate the project into the surrounding built environment and uphold the quality of life in Arlington Heights.

In reviewing our enclosed proposal, you will note the following standout characteristics of the Sam Schwartz team:

Stadium, arena, & special event experience. Sam Schwartz has leveraged our planning, engineering, and operational expertise to help venues of all types move its visitors, staff, and equipment effectively. Past arena and special event experience includes MetLife Stadium; Wrigley Field; Barclays Center; and peer review for the proposed Oakland A's ballpark, plus music venues, major tourist attractions, and even mega-events like presidential inaugurations.

A forward-looking approach to projects. The long-term success of the Chicago Bears' redevelopment project will necessitate a resilient development plan. Our team routinely helps major cities and developers future-proof for coming innovations in transportation, leveraging big data to inform our recommendations.

Expertise in private sector traffic studies, with the trust of public agencies. Our project work places our staff on both sides of the table, equipping us with a dual perspective that would be highly valuable to the Village of Arlington Heights in discussions with the Chicago Bears and their team.

As a nationally recognized transportation expert with a strong local presence, Sam Schwartz and our subconsultant GRAEF will contribute meaningfully as a peer reviewer and represent the Village's interests throughout the duration of the redevelopment planning process.

Please do not hesitate to contact us at [redacted] or [redacted] if you have any questions or require additional information. Thank you for the opportunity to support the Village of Arlington Heights on this exciting project!

Sincerely,

Jeff Smithline, PE, PTOE
Senior Vice President+
National Practice Leader – Traffic Engineering

Sara Disney Haufe, PE, PTOE
Senior Associate +
Director of Traffic Engineering – Chicago

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Cover Image: Wikimedia Commons

01. Information about the Proposer & Subcontractor

Sam Schwartz

Sam Schwartz is a 140+-person firm with a talented team of professional planners, engineers, designers, and data scientists in eight offices around the United States: Chicago, New York City, Jersey City, Washington D.C., Oakland, Los Angeles, Seattle, and Tampa. With over twenty-seven years of practice on a wide array of complex transportation issues and development strategies, Sam Schwartz is a national leader in providing transportation engineering services and studies.

Our industry-leading team specializes in developing context-sensitive transportation solutions for urban mobility nationally and abroad. We identify transportation and social impacts and provide creative, multi-modal plans that are grounded in technically rigorous analysis and industry-accepted design standards, working towards larger policy goals such as Vision Zero, economic development, social equity, environmental and climate resiliency, and design excellence. We work to balance the needs and improve the quality- of-life of all users, including those using transit, walking, biking, driving, hailing rides, and moving freight.

Unlike other firms, our planning, engineering, and design services are not "add-on" services but instead comprise Sam Schwartz's core business practice. As a mid-sized firm, we offer flexibility, responsiveness, and a tactical approach to solving transportation challenges which is made possible by our size and emphasis on collaboration and creating local and long-lasting relationships. Our project experience reflects this strategic, integrated approach, spanning modes, disciplines, communications media, and technology.

Sam Schwartz's headquarters office is in New York City, NY at 322 8th Ave, 5th Fl., 10001. Our office local to Arlington Heights is in Chicago at 223 W. Jackson Blvd., Suite 1101, 60606. The staff proposed on this team are located in both the Chicago and New York offices and the Sam Schwartz Chicago staff have a long history and familiarity with the northwestern suburbs, as we also held an office in Itasca, and many of our staff continued working relationships throughout Mount Prospect, Downers Grove, Evanston, Glenview, and with the Northwest Municipal Conference, among other municipal agencies similar in context and location to Arlington Heights.

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Key Services

- Transportation Planning
- Traffic Engineering
- Transportation Demand Management
- Traffic and Pedestrian Modeling / Simulation of Event Day Management
- Pedestrian Management
- Site/Access Planning
- Parking Studies
- Intelligent Transportation Systems

P22-03-3660

GRAEF

GRAEF is a multi-discipline engineering firm dedicated to serving public and private clients throughout the United States. For over 60 years, their ability to excel has been driven by integrity, quality, and our commitment to customer service. GRAEF began as an individual partnership structural engineering firm in 1961. Today, with 279 employees in ten offices in the Midwest, Florida, and Caribbean, GRAEF offers clients a full range of consulting services. GRAEF takes pride in having progressive staff who are skilled in the latest technologies, knowledgeable of the evolving marketplace, and experienced in sustainable practices. GRAEF has two Chicagoland locations, one located near O'Hare Airport at 8501 West Higgins Road, Chicago, IL 60631. The other located downtown in the Loop at 332 South Michigan Avenue, Chicago, IL 60604.

Key Services

- Civil Engineering
- Surveying
- Freeway, Interchange, and Roadway Design
- Municipal Engineering
- Structural Engineering
- Parking Structure Planning & Design

Pending or Past Litigation from the Last 5 Years

Sam Schwartz has no pending or current litigation nor any recent litigation to report from within the last 5 years.

A summary of litigation and arbitration for GRAEF from the last 5 years is below.

- GRAEF v. WSOR, Milwaukee County Wisconsin Circuit Court, Case No. 16-CV-9080. Settled in October 2017.
- Connie Barnum, as Special Administrator of the Estate of Paul C. Barnum, deceased and Connie Barnum, Individually v. Village of Riverdale, et. al., Cook County Illinois Circuit Court. Settled in January 2018.
- Murphy v. Palos Community Hospital, et. al., Cook County IL Case No. 2015-L-066052. Settled in May 2022.
- Dane County v. GRAEF. Settled in December 2018.
- Zurich American Insurance Company v. Terra Engineering & Construction et. al., Milwaukee County Wisconsin Circuit Case No. 17-CV-11048. 2017.Settled in December 2019.
- Robin Matchett-Schmidt v. City of Oak Creek, et. al., Milwaukee County Wisconsin Circuit Court Case No. 19-CV-4295. Settled in May 2021.
- Blue Skies of Texas, Inc. v. Skanska USA Building, Inc. et. al., Bear County Texas, 438th Judicial District. Case No. 2019-CI-19689. This case is in mediation.

P22-03-3660

02. Similar Project Experience & References

As a master-planned redevelopment, the former Arlington International Racetrack parcel is expected to become a unique combination of distinct yet complementary land uses: a modern venue for major sports competitions and special events, a vibrant entertainment district, and a mixed-use, transit-oriented neighborhood with daytime employees, overnight travelers, and homes for new Arlington Heights residents. Each of these development types require a high level of technical expertise and the creative application of best practices in transportation and parking to enable the creation of a successful destination.

The Sam Schwartz team offers substantial experience working for (and providing peer review of) sports venues and major events, as well as supporting the planning and execution process for master-planned developments. While these development types each require context-sensitive transportation and parking analyses that reflect the specific development characteristics and intended programming, the underlying transportation principles that contribute to design excellence are the same.

Our core services that relate to these types of projects is below, along with a list of past experience working with sports venues, large-scale development projects, and special event conditions. Additional details about selected project examples from Sam Schwartz and GRAEF are provided on the following pages.

Depth of Applicable Experience

Sports Venues & Special Events

- Oakland A's Ballpark Development Peer Review
- MetLife Stadium: Game Day Traffic + Parking Evaluation
- Wrigley Field Traffic Engineering Services
- Barclays Center
- Red Bull Stadium Traffic, Parking, + TDM
- Citi Field Transit Access + Service Improvements
- Prudential Center Transit, Traffic, + Parking Management Plan
- Washington Nationals Park Traffic Operations + Parking Plan
- Verizon Center Traffic Operations + Parking Plan
- MLB All-Star Week Traffic Operations + Parking Plan
- Presidential Inauguration Traffic Operations Plan (2009, 2013, 2017, and 2021)
- Washington DC Papal Visit Traffic Operations Plan

Master Planned Developments

- Obama Presidential Center
- Point of the Mountain
- Brooklyn Navy Yard Master Plan
- Schuylkill Yards/Drexel Innovation Neighborhood Plan
- Pittsburgh EcoInnovation District
- Ford Corktown Master Plan (Detroit)
- Broadway Station TOD Development Master Plan (Denver)

New Mobility Planning

- City of Chicago E-scooter Pilot
- Seattle New Mobility Playbook
- King County (WA) Microtransit Pilot
- Miami-Dade County Shared Mobility Study
- Dockless Bike/Scooter Share Equity Analysis (San Francisco)

Oakland A's Ballpark Development Peer Review

Oakland, CA

Image Credit: Oakland A's

Sam Schwartz is serving as the peer reviewer for the Oakland Department of Transportation for the transportation plan for the proposed Oakland A's ballpark at Howard Terminal, on the Oakland waterfront. Sam Schwartz is evaluating all traffic analysis, parking analysis, TDM mitigation measures, and TNC management strategies as part of the CEQA process and is also advising the city on public outreach efforts and development of a mobility hub adjacent to the proposed ballpark. Peer review recommendations have resulted in greater transit priority, including bus route extensions and bus priority lanes, additional TNC management techniques, and a plan for an inter-modal mobility hub adjacent to the ballpark.

Client
Oakland Department of Transportation

Services
- Traffic Engineering
- Transit Planning
- Transportation Demand Management
- New Mobility

Dates
December 2018–Present

Key Client Reference

Nicole Ferrara

Policy and Intergovern-mental Affairs Officer at the Oakland Department of Transportation

250 Frank Ogawa Plaza, 4th Floor, Oakland, CA 94612

[redacted]

[redacted]

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MetLife Stadium: Game Day Traffic + Parking Evaluation

East Rutherford, NJ

Sam Schwartz was retained by MetLife Stadium to conduct a multi-faceted transportation planning analysis and review of the traffic and parking impact of the American Dream Meadowlands development. MetLife Stadium had concerns that the traffic and parking activity associated with the American Dream Meadowlands development would impact the game day experience for the fans of the NY Giants and NY Jets. Sam Schwartz independently determined the traffic generation potential of the American Dream facility utilizing appropriate assumptions regarding arrival/departure patterns, stay away, transit ridership, vehicle occupancy and other factors. Sam Schwartz identified the overall mitigation necessary to provide acceptable game day traffic conditions when considering the combined American Dream facility and the stadium patrons. The mitigation and improvement scenarios identified the basis of the Game Day Operating plans that are put in place along the surrounding roadway network, highway ramp system and within the stadium property and parking areas.

Client
MetLife Stadium (NY Giant and NY Jets)

Services
- Transportation Logistics
- Multi-modal Transport
- Transit Planning

Dates
2012–2013

P22-03-3660

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Obama Presidential Center

Jackson Park, Chicago, IL

Sam Schwartz is providing traffic engineering and transportation planning services for the Barack Obama Foundation for the proposed Obama Presidential Center (OPC). The traffic impact study analyzes the expected traffic impacts associated with the closure and removal of a six-lane segment of Cornell Avenue within Jackson Park to accommodate the preferred location of the OPC. Several alternatives are being analyzed that include various combinations of roadway closures and alternate routing. The study involves data collection at approximately 40 intersections, travel demand modeling to assess traffic diversions and growth, traffic analysis and simulation using Synchro/SimTraffic, identification of potential impacts, and development of mitigation measures and intersection capacity improvements to accommodate the diverted traffic due to the street removal.

Sam Schwartz is also informing the site design with respect to access and circulation for the OPC site, including multi-modal access; tour bus, passenger car, and taxi pick-up/drop-off accommodations; truck loading; parking demand studies; and both on- and off-site pedestrian and bicycle safety. Travel demand management strategies are being developed to encourage transit and non-motorized travel to and from the site. Another key aspect for ground-level planning is considering the potential impact that the security perimeter and physical barriers would have on vehicular, pedestrian, and bicycle access and circulation, such that the potential queues resulting from security screening operations can be accommodated.

Sam Schwartz is also a key participant in the extensive stakeholder outreach effort, which includes the Mayor's Office, Chicago Department of Transportation, Illinois Department of Transportation, and community representatives.

Client
Barack Obama Foundation

Services
- Traffic Engineering
- Traffic Modeling
- Transportation Planning
- Geometric Concept Design
- Signal Design
- MOT

Dates
September 2016–Present

Key Client Reference

Roark Frankel

Director of Planning and Construction for the Barack Obama Foundation

5235 S. Harper Court, Suite 1140, Chicago, IL 60615

[redacted]

P22-03-3660

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Waukegan Casino Peer Review Services

City of Waukegan, IL

Sam Schwartz is supporting the City of Waukegan through their review and approval process for the American Place Casino, which will open a temporary facility in July 2022 and follow with a permanent facility by 2025. Under this contract, Sam Schwartz is completing peer review services of all transportation-related materials prepared by the casino developer's consultant team, including traffic impact analyses, parking lot design, and overall site plan layout. Through this iterative series of reviews, Sam Schwartz is advising City staff on the completeness and the technical accuracy of the developer's materials and has represented the City's interests at project meetings and Planning & Zoning Commission. As a result of these advisory services, the City was able to negotiate changes to the temporary casino site plan to promote functional on-site traffic circulation, pedestrian connectivity, and safe transportation conditions on site and on the adjacent roadway network. Sam Schwartz's advisory role to the City will continue through the upcoming site plan review process for the permanent casino facility.

Client
City of Waukegan

Services
- Traffic Engineering Peer Review
- Site Plan Review
- Expert Testimony

Dates
2022–Present

Key Client Reference

Noelle Kischer-Lepper

Director of Economic Development & Planning for the City of Waukegan

100 N Martin Luther King Jr. Avenue, Waukegan, IL 60085

[redacted]

[redacted]

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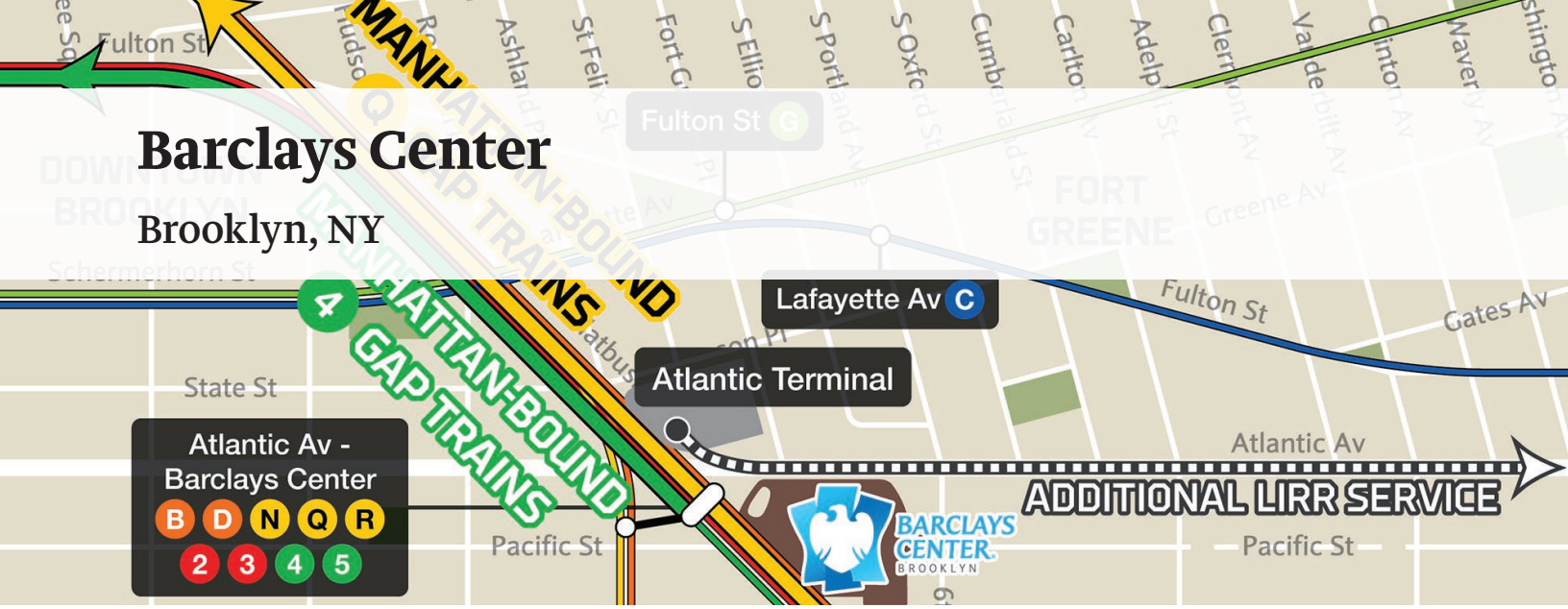
Barclays Center

Brooklyn, NY



Sam Schwartz was retained by Forest City Ratner Companies to provide transportation engineering and planning services for the Barclays Center, a new 18,000-seat arena that will be home to the NBA's newest team, the Brooklyn Nets, as well as numerous other events, that is part of the Atlantic Yards project (the largest development in Brooklyn's history). Our services included transportation logistics planning, agency coordination, traffic analysis related to project related roadway changes, and development of traffic and pedestrian mitigation plans to adapt to changes in site logistics throughout the construction process.

The Sam Schwartz team also prepared a comprehensive transportation demand management (TDM) plan for the arena in order to limit the number of private vehicles traveling to events and maximize the use of transit and other modes. This includes developing methods to market transit to fans and discourage driving; conducting transit service analyses and providing recommendations for the subway, Long Island Railroad and bus service enhancements.

Our team also performed a pedestrian analysis for the arena, which included static and dynamic pedestrian analysis of stairwells, escalators and corridors. A fan egress profile was created, based on seating sections and expected modal split data, that linked external nodes (subway, LIRR, parking facilities) and building exits. The stairwells leading from the arena to the subway were closely analyzed to determine pedestrian flow rates and levels of service.

Client
Forest City Ratner Companies

Services
- Transportation Planning
- Transportation Demand Management
- Traffic Analysis
- Parking Analysis
- Transit Analysis and Logistics
- Traffic Mitigation
- Agency Coordination
- Public Outreach

Dates
2006–2013

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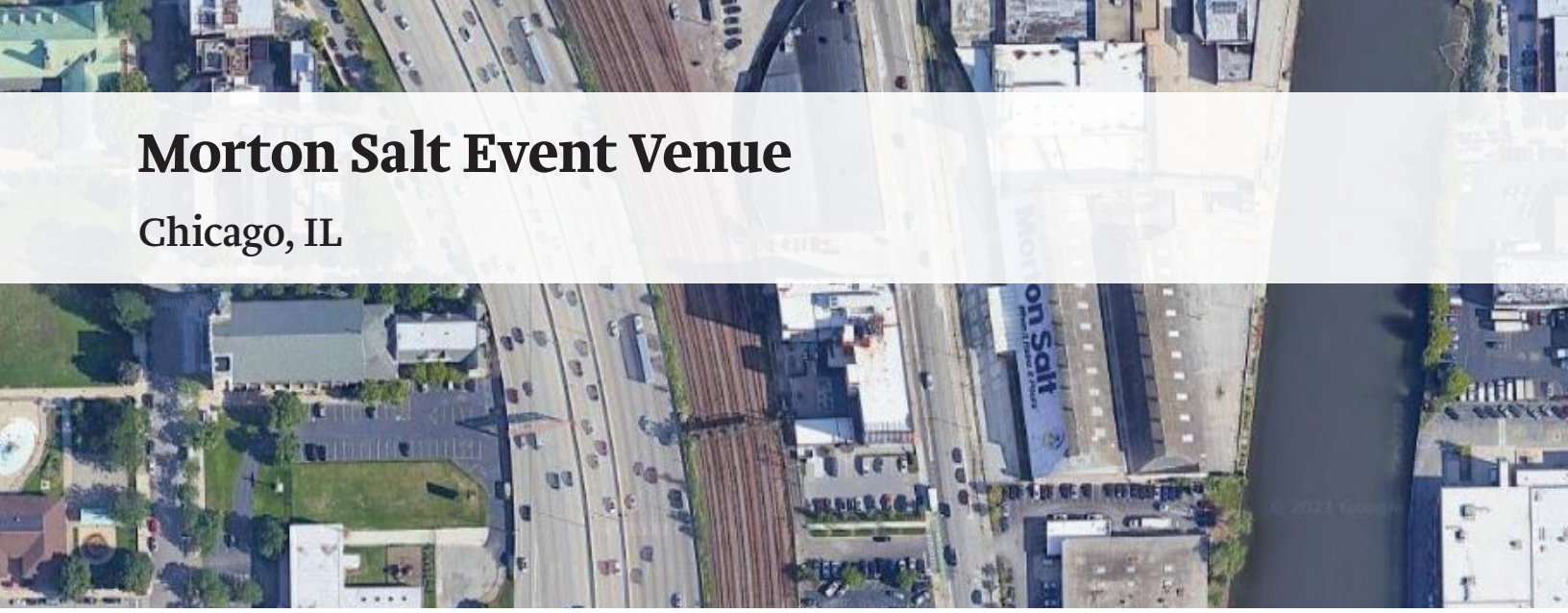
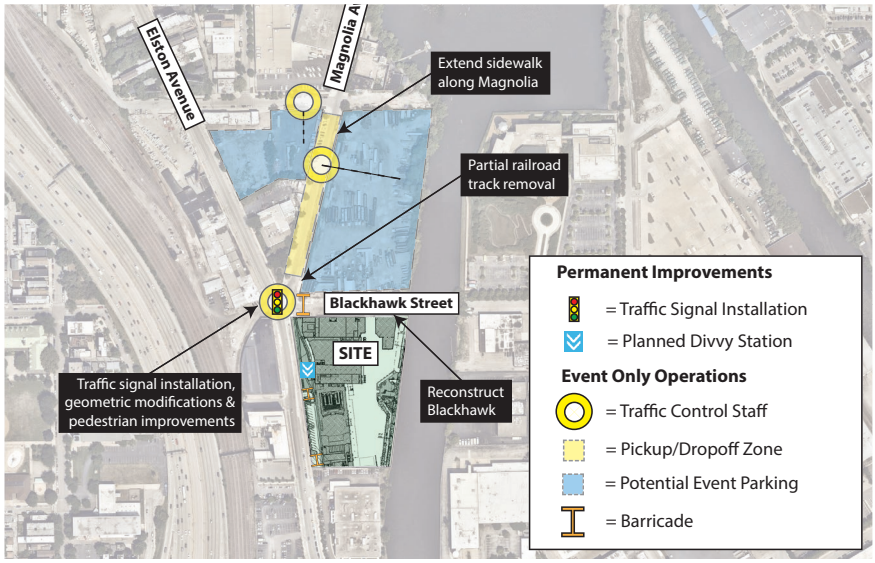


Morton Salt Event Venue

Chicago, IL

Under the leadership of Blue Star Properties and R2 Companies, an adaptive reuse is proposed for the former Morton Salt warehousing and packaging facility to provide a combination of office, bar/restaurant, and special event uses. The subject site is located in the heart of the North Branch Industrial Modernization Corridor, which was recently subjected to a rezoning effort by the City of Chicago to allow mixed-use development in this historically industrial neighborhood. In support of this redevelopment's needs during the typical weekday commuter periods and during special events in the evening, Sam Schwartz devised a detailed methodology for assessing the mode split, routing patterns, and transportation impact of the project. Recommendations identified in this study included a suggested staging area for taxis and rideshare vehicles, use of geofencing to reinforce that staging area, and other traffic management strategies to employ during special events. Additionally, improved pedestrian amenities and the installation of a new traffic signal at Elston Avenue/Magnolia Avenue/Blackhawk Avenue were recommended. This project was approved by the City of Chicago in early 2021, and Sam Schwartz continues to support the project in coordination with the Illinois Department of Transportation for potential improvements along nearby North Avenue.



Client
Blue Star Properties

Services
- Traffic Engineering
- Transportation Planning
- Expert Testimony
- Agency Coordination

Dates
2019–Present

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Wrigley Field Traffic Engineering Services

Chicago, IL

Sam Schwartz has provided traffic engineering services to the Chicago Cubs since 2012 to support various initiatives aimed at improving the fan experience and managing the impact of game-related transportation demands on the surrounding community. Among these services, Sam Schwartz supported the development of an adjacent hotel, office building, and entertainment plaza now known as Gallagher Way. Additional services have included a study of traffic impacts associated with modified start times for games and a Transportation Demand Management program to reduce traffic congestion and on-street parking demand.

Client
Chicago Cubs

Services
- Traffic Engineering
- Transportation Demand Management

Dates
May 2012-2020

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P22-03-3660

Washington Nationals Park Traffic Operations + Parking Plan

Washington, DC

Sam Schwartz has played a key role in managing the Nationals Park Traffic Operations and Parking Plan since 2013. Sam Schwartz was brought on by DDOT to analyze stadium attendance and transit ridership and to determine attendance thresholds associated with tiered staffing plans for game days. Sam Schwartz coordinates with a diverse group of stakeholders impacted by game-day activities and provides recommendations regarding traffic operations, including signal timing and messaging to direct drivers to the stadium and back to the Maryland/Virginia suburbs.

Sam Schwartz prepares inventories and maps showing the locations and capacities of offstreet parking facilities and an inventory of on-street parking spaces. Our team provides technical support to DDOT throughout the season for converting strategic curbside locations to alternative uses by prohibiting parking on game days.

Sam Schwartz helps identify suitable locations for curb access by ride-share vehicles such as Lyft and Uber, and develops plans to establish off-site staging areas for these vehicles. Our team also develops transportation demand management recommendations, including updated web content and information regarding transit bus services and bicycle routes.

Sam Schwartz also promotes pedestrian safety and transit use. Our team prepared maps highlighting walk routes from Metrorail and transit bus stops, and placement of Traffic Control Officers to mitigate pedestrian/vehicle conflicts.

Client
District of Columbia Department of Transportation (DDOT)

Services
- Traffic Engineering
- Transportation Planning
- Wayfinding

Dates
January 2013–Present

P22-03-3660

Sam Schwartz
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IL 47/ I-90 Interchange Improvements

Village of Huntley, IL

Services

Highways - Roads & Streets
Special Studies - Location Drainage
Special Studies - Surveying
Environmental Reports - Environmental Assessment
Location Design Studies - Reconstruction/ Major Rehabilitation
Special Studies - Traffic Studies
Highways - Freeways
Structures - Highways: Advanced Typical
Special Studies - Lighting: Typical
Hydraulic Reports - Waterway Complex

Client

David Johnson
Village Manager
Village of Huntley
10987 Main Street
Huntley, IL 60142
[redacted]

GRAEF was retained by the Village of Huntley to complete Phase I and II design services for this interchange reconstruction project. The existing interchange includes ramps to and from the east, and there was a need for a full access interchange accommodating all traffic movements. GRAEF, along with traffic and environmental subconsultants, developed a Phase I Design Concept Report and Phase II bidding documents meeting both Illinois Tollway and IDOT requirements. Stakeholders in the project include IDOT, the Illinois Tollway, the Village of Huntley, Kane County, and McHenry County. This multi-jurisdictional project required numerous public meetings and presentations prepared by the design team. Monthly updates were also provided to the various stakeholders in order to keep them current with project developments.

The initial focus of the Phase I design effort concerned traffic projections. Traffic projections developed in the Feasibility Study, which was also prepared by GRAEF, were updated to reflect the latest development data. The Half Cloverleaf interchange, deemed preferred in the Feasibility Study, still remained the selected interchange based on the updated traffic. Once this layout was confirmed, detailed horizontal and vertical geometrics were developed.

GRAEF completed the Phase II design documents, and construction was completed by at the end of 2013. The facility is an All Electronic Tolling interchange. Since cash payments will not be accepted at the plazas, the right-of-way requirements were reduced due to narrower plazas as well as a reduction in queue requirements. The final documents include a number of sustainable design elements, including geothermal energy at the plaza control buildings, vegetative trellises on the control buildings, water quality enhancements on detention pond outflows, permeable shoulders in some project locations, reflective roofs on the control buildings, and warm mix asphalt proposed on the ramps.

The Village of Huntley was anxious to realize a full interchange at this location. The resultant economic development and convenience of the interchange for their residents were primary motivating factors for completion of the interchange.

P22-03-3660

Potter Road

Cook County Highway Department, Cook County, IL

Services

Highways - Roads & Streets
Traffic Signal Plans
Location Drainage Studies
Route Survey
Traffic Study
Hydraulic Studies
Planning

GRAEF worked with the Cook County Highway Department for the reconstruction of Potter Road from Dempster Street to Golf Road, a distance of over one mile.

The work consisted of the preparation of Phase I plans and reports, and Phase II final plans for 1.5 miles of roadway. The improvements consisted of widening, reconstruction, turn lanes, water mains, traffic signals, and a complex drainage system (including a 5'x7' box culvert). The project was located in the City of Park Ridge, City of Des Plaines, Maine Township and unincorporated Cook County. The roads were under various jurisdictions, including IDOT, CCHD, and Maine Township. USACOE permit was applied for and granted.

The traffic signal work consisted of the preparation of four Intersection Design Studies for improvements including traffic counts and projections, geometric design, warrant analysis; interconnect analysis and implementation, and intersection capacity analysis. Permanent traffic signal plans and temporary traffic signal plans were then designed. The intersections of Potter Road with Dempster Street, Ballard Road and Golf Road had to meet IDOT and CCHD requirements, with the intersection of Potter Road with Church Street designed to CCHD guidelines. These intersections included Emergency Vehicle Preemption installation and/or relocation.

The work was primarily performed for the Cook County Highway Department, funded by county MFT. Sidewalk and water main work was performed for the City of Des Plaines, and water main work was performed for Maine Township, along with coordination and inclusion of a turn lane for the Village of Park Ridge.

P22-03-3660

Pace Headquarters Office Building

Arlington Heights, IL

Client
Pace Suburban Services / RTA

Services
Structural Engineering
Site/ Civil Engineering
Land Surveying

Data
65,000 Square Foot
$13.7 Million Office Building Cost

GRAEF was retained by Muller2 to provide site and structural services for this two-story, 65,000 square foot office building in Arlington Heights, Illinois.

The site design included an interconnected series of detention basins Additionally, small height retaining walls were included to adequately provide detention on the limited site area. The design included a loading dock, looped water main, and traffic pattern analysis.

The structural system included steel framed floors with composite beams supporting concrete slabs on metal deck, with a mechanical penthouse composed of steel beams and steel joists supporting a roof metal deck. The lateral system used was steel moment frames in one direction and precast concrete shear walls in the other direction.

GRAEF also provided professional land survey services. This included a complete topographic survey of the 10.65 acre campus as well as a Plat of Survey for permitting and a Plat of Resubdivision in order to consolidate two parcels on the site.

P22-03-3660

Arlington Heights Fire Station #2

Arlington Heights, IL

Services

Structural Engineering
Civil Engineering

Data

25,300 Square Feet
$5.4 Million Construction Cost

GRAEF served as structural and civil engineer for design of a new 25,300-square-foot fire station. The facility has a single-story apparatus bay comprised of metal and wood roof joists on masonry bearing walls and concrete wall footings. The station's two-story portion included a concrete basement and was comprised of a wood truss roof, a concrete deck, steel framed floors, and masonry bearing walls. The design also included 270 linear feet of cast-in-place concrete retaining wall. Site design included underground detention as well as tight grading tolerances due to the limited site size and pavement slope requirements.

The building consists of administration, residential, and apparatus areas. The apparatus area has four drive-through bays, direct vehicle exhaust, radiant heating, and a hose tower. The first floor consists of the residential area with bunkroom, locker rooms, dayroom, kitchen and support facilities. The administrative office area is on the second floor with offices, conference room and training room. The basement contains mechanical and electrical spaces along with fitness and storage space.

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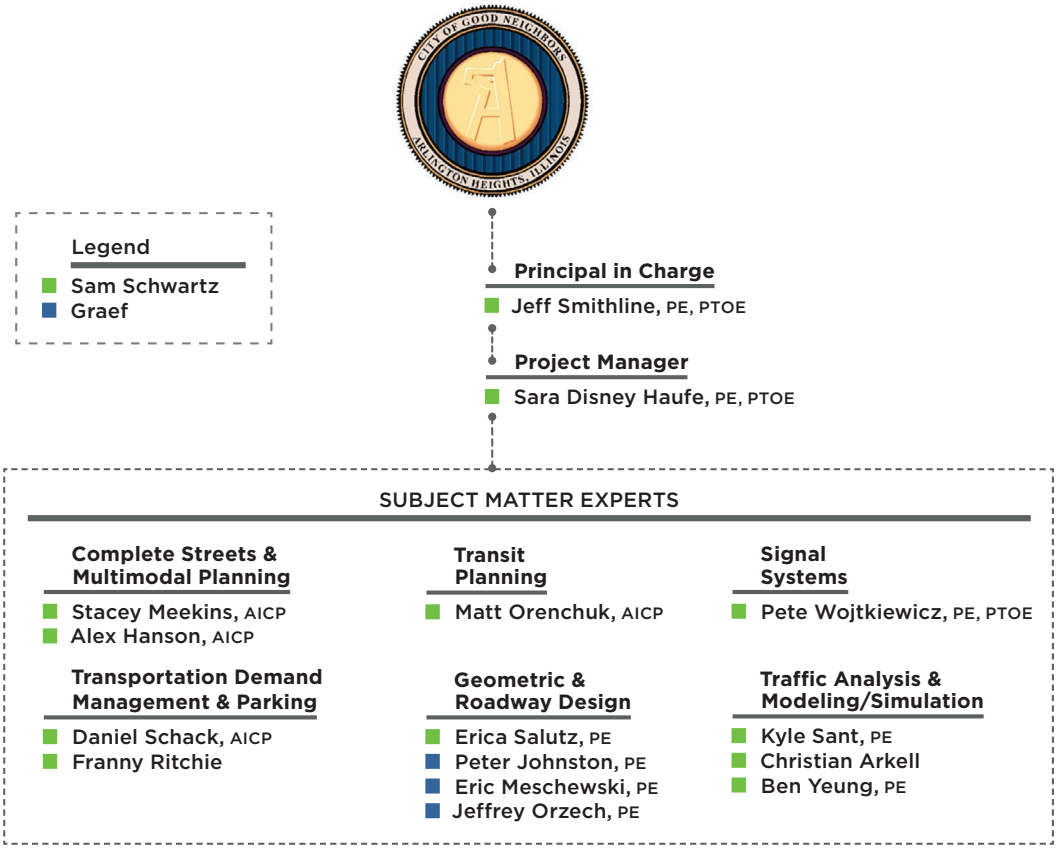
03. Project Team

The successful redevelopment of the former Arlington International Racecourse must create a balanced mobility ecosystem in order to achieve a vibrant mixed-use entertainment district, a transit-oriented community for new residents, and a world-class sports facility. It is therefore critical that the Village's selected consultant have the ability to provide comprehensive transportation expertise—and at Sam Schwartz, we pride ourselves on our truly integrated approach to projects. Between our traffic engineers, transportation planners, parking experts, transit planners, and design engineers, we work seamlessly across disciplines. This culture of cross-pollination is embedded in our values and revealed in our project approach that delivers stronger, more comprehensive solutions to our clients. Combined with GRAEF's civil design expertise on infrastructure projects for state, county, and local agencies, Sam Schwartz's comprehensive and robust approach to identifying transportation solutions will provide a remarkable asset on this project.

In support of the Village of Arlington Heights, we have assembled a team of local and national experts who offer the breadth and depth of experience needed to support the Village of Arlington Heights in this endeavor. Project leadership will be provided by **Sara Disney Haufe, PE, PTOE (Project Manager), Jeff Smithline, PE, PTOE (Principal in Charge), Daniel Schack, AICP (Stadium & TDM Subject Matter Expert), Franny Ritchie (Parking & TDM Subject Matter Expert),** and **Peter Johnston, PE (Civil Design Subject Matter Expert).** A personal bio for each leader is provided in the following pages. Additional subject matter experts are shown in our team's organizational chart. Resumes for the entire team may be found in the Resume Appendix.



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Sara Disney Haufe, PE, PTOE: Project Manager

Sara is the Director of Traffic Engineering (Chicago) and a Senior Associate with Sam Schwartz, offering 17 years of experience in traffic engineering and transportation planning throughout the Chicago metropolitan area. During this time, Ms. Disney Haufe has managed hundreds of projects for clients in the private sector (including developers of all land use types) and public sector alike, providing her with a perspective that allows her to better serve clients on both sides of the table. This well-rounded point of view has benefited such projects as the Obama Presidential Center, which required coordination with both CDOT and IDOT to achieve the closure of a major arterial through Jackson Park and accommodate displaced traffic demand on other corridors; peer review services and public testimony in support of the City of Waukegan as they navigate the review process for the American Place Casino; and the Randolph Street Corridor Improvement Study in Chicago's vibrant and rapidly developing West Loop. Through these projects and others, she has managed staff across all transportation disciplines and in multiple Sam Schwartz offices, as well as coordinating work by subconsultants located as close as Chicago and as far as Barcelona, Spain. Her work and project management style are characterized by the ability to balance competing interests, communicate successfully with partners and stakeholders about complex technical issues, and develop multimodal solutions that are cohesive with adjacent land uses.

Sara has been recognized by the Urban Land Institute Chicago District Council as their 2019 Young Visionary of the Year, and through the Illinois Chapter of the American Planning Association, she has trained Plan Commission members and municipal planners to understand the traffic and parking studies commonly presented by developers' consultants.

Jeff Smithline, PE, PTOE: Principal in Charge

Jeff Smithline, PE, PTOE, will serve as Principal in Charge for this project. Jeff is a Senior Vice President and National Director of Traffic Engineering at Sam Schwartz with 25 years of experience completing traffic engineering and transportation planning studies for both the public and private sectors. He has specific experience with large sports venues across all major professional sports in both urban and suburban contexts, including the NFL, NBA, MLS, MLB, and NHL. He specifically worked with representatives of the NY Giants and NY Jets in providing a peer review of the traffic impact study for the proposed American Dream retail and entertainment center adjacent to MetLife Stadium to determine how new traffic generated would impact gameday operations and identify mitigation measures. In the Chicagoland area, he prepared the traffic impact study for the Obama Presidential Center and serves as Principal in Charge for the Randolph Street Corridor Improvement Study in Chicago's West Loop.

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Daniel Schack, AICP is a Senior Associate and Director of Sam Schwartz's New York Planning Department. He has over fifteen years' experience managing an array of transportation studies for large-scale event venues and dense urban development sites. This has included development and successful implementation of a comprehensive TDM plan for Barclays Center in Brooklyn, New York that included detailed plans for transit service, roadway operations, parking locations and pricing, and marketing initiatives to encourage fans to use transit. He also led the development of the mobility plan for the Nassau Hub site that will turn the area surrounding the Nassau Coliseum into a vibrant and sustainable mixed-use district. Mr. Schack is adept at developing site-specific plans for multi-modal connectivity that minimize the need to rely on single occupancy vehicles and balance the needs of all users.

Franny Ritchie is a transportation planner with a particular focus on campus and district settings. Prior to joining Sam Schwartz, she worked in university facilities consulting and within the capital planning office of the University of Illinois Chicago, where she worked on long-term strategic planning around parking provision and Transportation Demand Management for the university and hospital. At Sam Schwartz, she has continued to focus on campus-style development, including large-scale mixed-use districts. Recent projects include a transit and transportation analysis for the University of Chicago; a parking and placemaking analysis of a shopping center in the western suburbs of Chicago; and research to guide the City of Chicago's proposed zoning amendments in transit-oriented development districts.

Peter Johnston PE, LEED AP has managed both transportation and site development projects from planning through construction. As a life-long resident of Arlington Heights, he understands the importance an acceptable redevelopment of the Arlington Park property. GRAEF's current and prior interactions with the impacted transportation agencies as well Peter's unique understanding of Village, business, and resident concerns, will contribute to a redevelopment balancing the varied interests. Peter can clearly convey client expectations to team members and efficiently advance projects to meet required schedules. His technical background covers many civil disciplines and includes geometrics, pavements, traffic, drainage, erosion control, and utilities. Practical experience, excellent communication skills, and his formal MBA training in Operations Research allow him to move projects from conception to construction in an efficient and timely manner. Peter takes pride in his ability to rapidly respond to client concerns and engage the appropriate disciplines as necessary.

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04. Approach and Implementation

A project of this magnitude and importance will require a multifaceted approach to the peer review process, particularly given the likelihood of phased development over the course of several years. The Village's selected consultant must be capable of more than ensuring the technical accuracy of the traffic and parking analyses prepared by the Chicago Bears' consultant; it will also be necessary to have a sufficient understanding of master-planned developments, stadiums, and entertainment complexes to ensure that all of the appropriate transportation considerations are addressed.

Based on our experience working on stadiums, special events, and large-scale development projects, Sam Schwartz has identified several focus areas for the traffic and parking peer review process and for independent research and analysis of the Chicago Bears' mixed-use stadium development plan, detailed below. This proposed scope of services would be executed as two interrelated tasks, with Step 1 being a review of the completeness and accuracy of the materials provided by the Chicago Bears development team and Step 2 being an independent investigation of the best-practice methodologies and mitigation/management strategies that our team believes will yield the best development outcome for the Village. A collaborative kick-off meeting with Village staff at the initiation of the project is envisioned to discuss the materials provided by the development team and confirm schedule and review objectives for the current stage of the peer review process.

Step 1. Initial Peer Review

This first round of peer review services for the proposed redevelopment would focus on two key deliverables from the Chicago Bears' consultant team: the initial "high-level" traffic and parking assessment and the concept site plan. Since the transportation components of the site plan lay the foundation for safe and efficient operation within the development and on adjacent roadways, it is important that both documents are reviewed in tandem to draw meaningful preliminary conclusions about the feasibility of the proposed redevelopment.

In reviewing these documents, Sam Schwartz would assess the placement and density of proposed land uses and leverage our knowledge of transportation best practices to provide initial review feedback. This assessment would be combined with an expert technical review of the calculations and projections expected in the initial traffic and parking assessment, informed by our team's past experience on similar projects and the findings of the independent research and analysis detailed in Step 2. Peer review services are highly dependent upon the nature of the deliverables subject to review, including the level of detail provided and the accuracy of the contents. Based on our assumptions about the materials that will be received, it is anticipated that the focus of our review may include but is not limited to the following:

Anticipated Site Plan Review Components

- Location, configuration, and intersection control for external access to Euclid Avenue, Wilke Road, and Rohlwing Road/Industrial Avenue/Winnetka Avenue, as well as the influence of these features on expected traffic functionality and user travel patterns
- The layout of internal roadways, intersections, and walkways, particularly with respect to congestion potential and conflict points for vehicle-vehicle and vehicle-pedestrian interactions

- Placement of designated staging and loading areas for transit, shuttles, taxi/Uber/Lyft, and valet service, as well as associated potential for internal gridlock and/or spillback onto external streets
- Access to and configuration of parking areas for efficient vehicular movements and safe pedestrian routing
- Spatial relationship and connectivity of the proposed development to the Arlington Park Metra Station to maximize visibility and accessibility of transit service
- Parcel layout and pedestrian and bicycle connectivity within the redevelopment to facilitate a "park-once" mentality
- Connections to the external pedestrian and bicycle network, including the multi-use path along Euclid Avenue, to facilitate non-auto travel

Anticipated Traffic & Parking Assessment Review Components

- Existing area traffic volumes and turning movements to establish an understanding of current travel patterns and demands on existing infrastructure, particularly at major intersections along Euclid Avenue, Wilke Road, Northwest Highway, Arlington Heights Road, and Rohlwing Road/Industrial Avenue/Winnetka Avenue and at nearby interchanges to IL 53 and to Interstate 90
- Trip generation projections for the proposed stadium and mixed-use facilities for various operating scenarios, including typical weekdays and weekends, weekday and weekend football games, and weekday and weekend concerts/special events
- Estimated routing patterns for the various user types traveling to, from, and within the redevelopment
- Parking demand projections and associated parking supply and lot layout by user group (football fan and VIP, employee, retail patron, resident, etc.) for on- and off-site parking facilities
- Inclusion of shared parking strategies, parking pricing, and off-site parking facilities to optimize parking operations and reduce its footprint
- Forecasted transit demand by type, including consideration of opportunities for increased transit and microtransit service via Metra and/or Pace during typical weekday and special event conditions
- Potential Transportation Demand Management (TDM) techniques to minimize vehicular demand during standard operations and during special events, such as transit promotion plans and employee commuter programs
- The efficacy of cited resources and assumptions, including those that inform mode splits, arrival and departure profiles, and internal capture between on-site land uses (also to be related to the independent research performed in Step 2)
- Potential special event transportation management strategies, including routing patterns by mode, internal street closures for pedestrian activity and Game Day/special event programming, shuttle service within the site and to/from off-site parking facilities, and placement of traffic control personnel
- Limits of the study area that will be included in future detailed traffic analyses

It is assumed that traffic modeling, such as Synchro/SimTraffic or VISSIM models of the study area, will not be provided in the initial traffic and parking assessment prepared by the Chicago Bears' consultant and that this will be part of future stages of peer review.

Based on the review components listed, Sam Schwartz and GRAEF will provide a high-level opinion of improvements needed to accommodate the proposed redevelopment under typical weekday and weekend conditions and

during football games/special events and assess the feasibility of constructing those improvements. The impact of these mitigation measures on the surrounding community will be reviewed with consideration for such factors as required property acquisition, high-level costs, and continuity with the regional transportation network.

Sam Schwartz and GRAEF will produce a memorandum detailing the results of this initial peer review. This document will include an assessment of the completeness and accuracy of the evaluation to date, recommended measures for further investigation by the Bears' consultant team, and guidance on the scope of future analysis steps. Areas of concern will be flagged with respect to the redevelopment characteristics and feasibility of accommodating associated transportation demands, and notable assets and benefits that the project may provide to the greater community will be summarized. This deliverable will be provided to Village staff and officials for review and use in discussions with the Chicago Bears.

Step 2. Independent Research & Analysis

Simultaneous with the peer review services described in Step 1, Sam Schwartz will conduct independent research and analyses to enable a comprehensive evaluation of transportation demands and needs for the proposed redevelopment and validate the assumptions and data utilized by the Chicago Bears' consultant team. The level of effort dedicated to this task can be modified in collaboration with Village staff upon receipt of the project-related materials that will inform the needs of the independent research and analysis task.

In the performance of this task, Sam Schwartz is equipped to leverage big data through our partnership with Replica, an outgrowth of Google's Sidewalk Labs that offers robust mobility information in support of transportation and land use planning projects. Replica offers the ability to define custom geographic boundaries of our analyses and extract information that isn't captured in traditional census data, including rideshare trips, trip purpose and distance, and origin-destination data. Due to our existing partnership with Replica, the data in its activity-based model can be accessed instantly with no additional cost at the project level.

Guided by our past project experience on stadiums/arenas, special events, and large-scale mixed-use developments, elements of our team's independent research and analysis may include:

- Sourcing available case studies and precedent data accumulated by Sam Schwartz on prior sports venue projects to establish best practices and to inform assumptions about travel behaviors, such as vehicle occupancy, arrival/departure profiles, and effective Transportation Demand Management strategies
- Leveraging Replica's activity-based models to assess relevant travel behaviors at Soldier Field and at other NFL stadiums and sports arenas with similar characteristics to the proposed redevelopment project, including:
  - Existing origin-destination information for patrons of Chicago Bears football games and for concerts and other major events at Soldier Field
  - Transportation mode splits, including personal auto, walking, biking, transit, and taxi/Uber/Lyft use
  - Duration and timing of arrival and departure profiles surrounding special events
  - Historic transportation activity for the former Arlington International Racetrack to provide a point of comparison with the proposed redevelopment
- Validating the data sources used by the Chicago Bears' consultant team and ensuring the use of best-practice resources in projecting traffic and parking generation for the redevelopment project under various operational scenarios (weekday vs. weekend, typical vs. football game vs. concert, etc.) and with consideration for the interaction between on-site uses for the given mixed-use development profile

- Validating foundational traffic data in the Chicago Bears' study by reviewing the Illinois Department of Transportation (IDOT) traffic count database and, as specified in the RFP, supplementing with spot turning movement counts at up to eight (8) intersections for a total of up to 16 hours each, spanning anticipated peak hours of the area transportation network and of the redevelopment itself
- Assessing opportunities for increased transit service, such as staging trains on the third track of Metra's Union Pacific Northwest Line at Arlington Park, expanding Pace's On Demand service boundary north of Euclid Avenue and providing more expedient arrival times during events, or supplementing these existing services with new targeted options
- Utilizing the results of forementioned independent research tasks to assess projected trip distribution estimates, trip assignment projections, and parking demand projections provided by the development team, thereby enabling a high-level assessment of potential impacts and capacity constraints
- Comparing forecasted special event activity to existing area traffic demands in order to identify likely critical periods of activity, such as Monday Night Football games and weeknight concerts that would result in a coincidence of special event traffic with weekday evening commuter traffic
- Identifying potential off-site parking locations, utilizing Replica to validate complementary parking demand characteristics at large-scale office complexes along the I-90 corridor in nearby communities like Schaumburg, Rolling Meadows, and Elk Grove Village; Woodfield Mall; or Harper College
- Performing a field visit to assess existing infrastructure conditions as a means to inform necessary improvements and associated high-level costs

Sam Schwartz and GRAEF will also utilize publicly available resources to identify planned area infrastructure improvements by the Illinois Department of Transportation, Cook County Department of Transportation and Highways, Metra, Pace Suburban Bus, Arlington Heights, Rolling Meadows, and others.

The results of our team's independent research and analysis will be integrated into the Step 1 memorandum to underpin the peer review comments provided by Sam Schwartz and GRAEF. As appropriate, a technical summary of the team's work will be produced as an attachment to that review memorandum.

Steps 3 through 6. Ongoing Consultancy and Expert Support

Sam Schwartz and GRAEF will be available as an ongoing resource to the Village of Arlington Heights through the duration of the redevelopment review process to provide expert insights as the plan advances. As each set of milestone deliverables is provided by the Chicago Bears and their team of consultants, the Sam Schwartz team will coordinate with Village staff on the objectives and desired schedule of continued peer review services to ensure that sufficient resources are allocated to the task at hand. Anticipated future review tasks that the Village of Arlington Heights may require assistance with may include, but are not limited to:

- Technical review and validation of transportation models, particularly in software packages such as Synchro/SimTraffic, VISSIM, CUBE, and others
- Assessing detailed traffic management and TDM plans for various event conditions, including event type, day, and time
- Assisting with the Village's coordination efforts by leveraging our team's familiarity and relationships with state, county, and regional authorities in transportation, transit, and planning, including IDOT, CCDOTH, RTA, Metra, Pace, and CMAP

Our team will communicate proactively with Village staff throughout the execution of each task to ensure that the Village's primary concerns and best interests are honored in the review process, yielding recommendations for conditions and requirements of approval that align with the community's objectives. Official documentation of our findings will be provided at appropriate and agreed-upon milestones, including but not limited to a final report to the Village Board and for public distribution.

Our lead staff members routinely represent our work to both technical and non-technical audiences in negotiation meetings, design charrettes, community engagement events, and public hearings. Transportation is a foundational component of our daily lives, and concerns about transportation impacts can produce intense and visceral responses on the part of local constituents—and, therefore, on the part of the municipal staff and government officials who serve them. As a representative of Arlington Heights, the Sam Schwartz team will apply highly effective communication skills to contribute meaningful technical insights to meetings and presentations in a manner that is both informative and accessible to the given audience. This service will be available to support Village staff in discussions with elected officials at the local, regional, and state levels; the Chicago Bears development team; jurisdictional transportation agencies and transit authorities; and/or members of the public.

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05. Cost Proposal and Fee Schedule

The effort required to complete peer review services is highly dependent upon the size and completeness of the deliverable being reviewed, as well as the nature of the review desired by the municipality. Likewise, the degree of independent research and analysis required must align with the complexity of the redevelopment plan and associated programming. Sam Schwartz and GRAEF therefore developed the fee estimates presented on the following page for Step 1 and Step 2 services with the use of assumptions informed by our past experience on similar projects and as an effective representative of municipal clients in a peer review role. If our team should be selected to support the Village of Arlington Heights in this endeavor, we will be happy to collaborate with Village staff on an appropriate investment of effort in these initial services.

For ongoing consultancy under this contract, hourly rates for Sam Schwartz and GRAEF staff are listed below. All rates utilized in the preparation of this proposal are based on a 3.0 multiplier and are subject to increases in accordance with annual salary adjustments for staff.

Sam Schwartz

Title	Representative Hourly Rate (2022-2023)
Senior Vice President	$330
Vice President/ Principal	$252
Senior Associate	$204
Associate	$177
Senior Engineer II	$159
Senior Engineer I	$144
Engineer II	$126
Engineer I	$111
Field Technician	$84
Senior Planner II	$141
Senior Planner I	$129
Planner II	$120
Planner I	$102

GRAEF

Title	Representative Hourly Rate (2022-2023)
P8	$205
P6	$175
P3	$150

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Estimated Hours by Title

		Representative Hourly Rate	Step 1 Hours	Step 2 Hours
Sam Schwartz	Sr. Vice President	$330	20	10
	Vice President/ Principal	$252	14	4
	Senior Associate	$204	64	30
	Senior Engineer I	$144	48	34
	Engineer I	$111	16	24
	Field Technician	$84	0	45
	Senior Planner II	$141	46	30
	Planner II	$120	0	36
GRAEF	P8	$205	5	1
	P5	$175	23	31
	P3	$150	4	12
	Expenses (Count Processing, Travel, Misc.)		0	$3,360
	Fee Estimate Step by Step		$44,008	$41,108
	Total Fee Estimate			**$85,116**

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06. Proposed Schedule

Based on the assumptions detailed within our proposal, it is anticipated that initial peer review services and associated independent research and analysis would be completed within an estimated eight weeks. As desired, the Sam Schwartz team can facilitate weekly or biweekly status meetings with Village staff to streamline the communication of critical information and enable the expedient completion of services.

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07. Certificate of Insurance

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 9/29/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:
Marquis Professional Risk 485A Route 1 South, Suite 240 Iselin NJ 08830	PHONE (A/C, No, Ext): [redacted] FAX (A/C, No): [redacted] E-MAIL ADDRESS: [redacted]

INSURED	SAMSCHW-01
Sam Schwartz Engineering, DPC Sam Schwartz Consulting, LLC 322 8th Avenue, 5th Floor New York NY 10001	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : RLI Insurance Company	13056
INSURER B : StarStone National Insurance Company	25496
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** 14358410 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY	Y		PSB0004108	10/1/2021	10/1/2022	EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 1,000,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
A	**AUTOMOBILE LIABILITY**			PSA0001898	10/1/2021	10/1/2022	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
A B	X **UMBRELLA LIAB** X OCCUR			PSE0002169 81275I210ALI	10/1/2021 10/1/2021	10/1/2022 10/1/2022	EACH OCCURRENCE	$ $5,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$ $5,000,000
	DED X RETENTION $ 10,000						Excess policy limit	$ $1,000,000
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N	N / A		PSW0002818	10/1/2021	10/1/2022	X PER STATUTE OTH-ER	
	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? **(Mandatory in NH)**						E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
A	Professional Liability			RDP0044817	10/1/2021	10/1/2022	Per Claim/ Aggregate	$2M/$5M

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER	CANCELLATION
Evidence of Insurance	**SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.** AUTHORIZED REPRESENTATIVE

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Sara Disney Haufe, PE, PTOE

Senior Associate + Director of Traffic Engineering, Chicago

Project Manager

Ms. Disney Haufe expertly balances her technical expertise and accessible communication style, positioning her to build consensus between decision makers, stakeholders, and daily users for successful project outcomes.

Relevant Experience

Waukegan Casino Peer Review Services, WAUKEGAN, IL

As a trusted advisor to the City of Waukegan, Ms. Disney Haufe is leading Sam Schwartz's peer review efforts to assess the technical quality and completeness of traffic impact analyses performed by the casino developer's consultant. Other services have included a review of multiple site plan iterations for the temporary casino site, participating in project meetings to represent the City's interests, and expert testimony to the City's Planning & Zoning Commission. The temporary casino was approved and is expected to open on July 1, 2022, and Sam Schwartz's support to the City of Waukegan will continue through the site plan review and approval process for the permanent casino slated to open by 2025.

Wrigley Field Traffic Engineering Services, CHICAGO, IL

Ms. Disney Haufe oversaw Sam Schwartz's traffic engineering analysis of potential neighborhood traffic closures to support a security buffer before, during, and after Cubs games and other events. Recommendations included such special event traffic management strategies as variable message signage, placement of traffic control aides, and adjustments to transit service during games.

Obama Presidential Center Transportation Impact Analyses, CHICAGO, IL

Ms. Disney Haufe serves as the main point of contact and the liaison between the Barack Obama Foundation and CDOT for Sam Schwartz's ongoing transportation analysis and support for the Obama Presidential Center (OPC). With the planned closure of a major IDOT arterial, the adjacency of four CTA bus routes, and robust non-auto travel due to the OPC's setting in an historic park and near a university, Sam Schwartz's multimodal analyses for this project have included a review of transit accessibility during site selection; curbside pick-up/drop-off queue projections for Transportation Network Providers (TNPs), taxis, and charter buses; the preservation and planning of pedestrian accessibility during construction;

Years of Experience
17 Years

Education
B.S. Civil & Environmental Engineering
University of Illinois, 2005

Certifications
Professional Engineer: IL, WI

Professional Traffic Operations Engineer

Professional Affiliations
Urban Land Institute Chicago, Full Member; 2019 Young Visionary Award Winner; 2018 Kahan Fellow

Institute of Transportation Engineers, Illinois Section former President

*Performed under previous employment

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traditional intersection capacity analyses; and review of engineering plans by other consultants.

Morton Salt Concert Venue Transportation Impact Study, CHICAGO, IL
Ms. Disney Haufe was the project manager for a multimodal transportation evaluation of this adaptive reuse development in Chicago's North Branch Industrial Corridor. Key recommendations included improvements to the Elston Street bicycle infrastructure, Transportation Demand Management strategies to encourage multimodal travel and manage vehicular demand during concerts and special events, and improvements to the Elston Avenue/Magnolia Avenue/Blackhawk Avenue intersection to improve operation and safety for vehicles, pedestrians, and bicyclists.

Richton Road Phase I Study, RICHTON PARK, IL
As a subconsultant GRAEF, Ms. Disney is the project manager for Sam Schwartz's work on the Richton Road One-Way to Two-Way conversion, Phase I for the Village of Richton Park. The project envisions the conversion of Richton Road and Poplar Street from one-way to two-way streets. Traffic projections and analyses based on a previous Sam Schwartz study were performed, along with crash analyses to identify recommendations for mitigating safety issues. Ms. Disney Haufe facilitated coordination efforts with both IDOT and Cook County DOTH staff.

Main Street Triangle District Parking & TDM Study, ORLAND PARK, IL
On behalf of the Village of Orland Park, Ms. Disney Haufe led a shared parking analysis of the transit-oriented Main Street Triangle district in response to a developer's proposal for additional mixed-use development on site. Accounting for the Village's parking supply commitments to the University of Chicago Medical Center, as well as anticipated Transportation Demand Management (TDM) strategies that reflect the complementary nature of uses within this walkable site, the study aided Orland Park staff in identifying parking requirements of the developer as part of the site plan review and approval process.

***Navy Pier Master Plan & Circulation Study,** CHICAGO, IL
As part of a multidisciplinary project team, Ms. Disney Haufe provided traffic engineering and transportation planning services for the Navy Pier Master Plan. With nearly nine million visitors per year, Navy Pier accommodates a variety of travel modes, including personal autos, taxis, buses, trolleys, bicyclists, and pedestrians. The need for efficient multimodal access and circulation under a variety of seasonal conditions was paramount in the traffic component of the Master Plan. Recommended improvements included revised traffic circulation, vehicle staging, and pedestrian accommodations in order to maximize safety and functionality.

Randolph Street Corridor Study, CHICAGO, IL
As project manager of a multidisciplinary team under contract to the Chicago Department of Transportation (CDOT), Ms. Disney Haufe is leading this transformative effort to create a new vision for Randolph Street in Chicago's West Loop. In support of CDOT's objective to eliminate the service lanes and improve people space along this corridor, Ms. Disney Haufe led a robust data collection effort that documented complex vehicular operations, heavy parking demand and curbside pick-up/drop-off activity, a vibrant pedestrian environment, and travel via bicycle, scooter share, and other personal forms of micromobility. Work on this project to date has included the development of numerous corridor design alternatives that are responsive to IDOT standards and CDOT objectives, consideration for known and unknown development proposals, and both in-person and virtual public engagement efforts.

Jeff Smithline, PE, PTOE

Senior Vice President + National Director, Traffic Engineering

Principal in Charge

Through his deep experience in traffic engineering and transportation planning, Mr. Smithline delivers projects that consider mobility and safety for all roadway users. He solves complex problems on projects that range from neighborhood and campus transportation plans to concept development/alternatives analyses for infrastructure improvements to traffic studies for new developments.

Relevant Experience

MetLife Stadium: Game Day Traffic & Parking Evaluation, MEADOWLANDS, NJ

Mr. Smithline was a Technical Advisor on retained by MetLife Stadium to conduct a multi-faceted transportation planning analysis and review of the traffic and parking impact of the American Dream Meadowlands development. The Giants and Jets had concerns that the traffic and parking activity associated with the proposed adjacent entertainment and retail complex. He performed a peer review to determine the traffic generation potential of the American Dream facility utilizing assumptions regarding arrival/departure patterns, transit ridership, vehicle occupancy, and other factors tailored to NFL games. His team identified mitigation necessary to provide acceptable game day traffic conditions when considering the combined American Dream facility and the stadium patrons. The mitigation and improvement scenarios identified the basis of the Game Day Operating plans that were put in place along the surrounding roadway network, highway ramp system, and within the stadium property and parking areas.

Nassau Events Center Redevelopment, UNIONDALE, NY

Mr. Smithline was Project Director for the transportation analyses associated with the proposed redevelopment of the Nassau Coliseum site into a stadium, retail, and entertainment destination. He was responsible for all the aspects of the transportation analysis for the EAF including data collection, trip generation, volume projections, detailed analyses, and recommended mitigation. The traffic analysis and project improvements were coordinated with the Town of Hempstead, Nassau County, and NYSDOT for approval. Sam Schwartz also performed a detailed shared parking analysis for the site. Mr. Smithline provided transportation expert testimony at Town hearings

Years of Experience

25 Years

Education

M.S. Engineering Management
Cornell University, 1997

B.S. Civil Engineering
Cornell University, 1996

Certifications

Professional Engineer: NY, NJ, FL, IL, CT, DC, IN, MI

Professional Traffic Operations Engineer

Professional Affiliations

Association of Pedestrian and Bicycle Professionals

Institute of Transportation Engineers: Pedestrian & Bicycle Standing Committee; Urban Goods Movement Standing Committee

National Society of Professional Engineers

Publications

Co-author, FHWA's Signalized Intersection Information Guide, Second Edition

Presentations

"Urban Traffic Calming: The Queens Boulevard Safety Study," ITE Technical Conference, 2004

"Accounting for the Future of Working From Home in Post-COVID Traffic Forecasts," ITE Annual Conference, 2021

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Jeff Smithline, PE, PTOE

Sam Schwartz
A TYLin Company

Oakland A's Ballpark Development Peer Review, OAKLAND, CA

Mr. Smithline served as a technical peer reviewer for the Oakland Department of Transportation for the transportation plan for the proposed Oakland A's ballpark at Howard Terminal on the Oakland waterfront. He evaluated all traffic analyses, parking analyses, TDM mitigation measures, and rideshare (Uber/Lyft) management strategies as part of the CEQA process and advised the city on public outreach efforts and development of a mobility hub adjacent to the proposed ballpark. Peer review recommendations resulted in greater transit priority, including bus route extensions and bus priority lanes, additional rideshare/curbside management techniques, and a plan for an intermodal mobility hub adjacent to the ballpark.

New MLS Stadium in NYC, QUEENS, NY

Mr. Smithline was Project Manager for Sam Schwartz's transportation and parking analyses for the proposed MLS stadium in Flushing Meadows-Corona Park (FMCP), which would have been the home of a new expansion team. Work included developing assumptions for fan origins, modal splits, arrival/departure patterns, and vehicle occupancies; determining expected ingress/egress routes for employees, fans, and VIP; analyzing the potential impacts on area intersections during pre- and post-game peak periods; and identifying off-site improvements for potential impact mitigation. The parking analyses included collecting several days of parking utilization data to determine existing conditions; identify potential parking locations; calculate parking demands; and create supply and demand tables/graphs. He also prepared detailed analyses of the potential traffic and parking implications for same day tennis events or Mets games and developed weekday and weekend traffic management parking plans to address issues. To minimize traffic and parking needs, Mr. Smithline developed Travel Demand Management strategies (shuttle routes, enhanced transit, parking management, etc.) to reduce single-occupancy auto travel to the site. Sam Schwartz also provided stadium design input.

DDOT Washington Convention Center Traffic & Parking Plan Update, WASHINGTON, DC

Mr. Smithline served as Technical Advisor to update the Washington Convention Center (WCC) Transportation Operations and Parking Plan (TOPP), which was originally produced during the 2004 inaugural season and required a major update to reflect significant land use and transportation changes. Sam Schwartz provided a review and update of the 2004 TOPP, incorporating proposed and planned infrastructure changes, traffic analysis from relevant DDOT projects, and private sector development. Sam Schwartz reviewed crash & traffic data. Sam Schwartz created a VISSIM traffic simulation model to analyze potential traffic impacts regarding the new Marriott Marquis hotel and conducted on-site assessments during major events.

Barclays Center Traffic Study and Transportation Demand Management (TDM), BROOKLYN, NY

Mr. Smithline was Lead Traffic Engineer who managed the preparation of a comprehensive post-opening traffic study to examine the impacts of Barclays Center events on area traffic. The study included analysis of over 50 local intersections on both event and non-event days in the pre- and post-event peak hours. The study identified specific effects of arena traffic on individual intersections and movements, as well as a traffic mitigation plan that included striping changes, parking regulation adjustments, and changes to signal phasing/timing plans. He also helped develop the Barclays Center TDM program, which reduced the usage of private automobiles by arena visitors and their impact on the surrounding community. This included extensive research into successful TDM precedents and fan surveys on methods to change travel behavior; analyses of subway and bus service with the MTA to develop event transit plans; assessment of rail station capacity and service to ensure patrons could be accommodated; operational plans for remote parking facilities and shuttle bus service; and vehicular and pedestrian wayfinding signage plans on nearby highways and sidewalks.

Daniel Schack, AICP

Senior Associate + Director of Planning

TDM & Parking

Mr. Schack has managed an array of transportation studies for the private and public sectors, including impact analyses, transportation demand management programs, traffic calming plans, and operational evaluations. Mr. Schack has worked with both small developers and major event venues and institutional facilities. He is proficient in leveraging Big Data to identify and track critical metrics, working collaboratively with multi-disciplinary teams of planners, engineers, and data scientists, and balancing both qualitative and quantitative analyses to develop solutions.

Relevant Experience

Barclays Center Transportation Demand Management (TDM),

BROOKLYN, NY

Mr. Schack managed the Barclays Center TDM plan, leading the development of the successful program, which reduced the usage of private automobiles by arena visitors and their impact on the surrounding community. This included extensive research into successful TDM precedents and fan surveys and focus groups on methods to change travel behavior; analyses of subway and bus service with the MTA to develop event transit plans; assessment of LIRR station capacity and service to ensure patrons could be accommodated; transit marketing plans for the arena website and event promotional materials; operational plans for remote parking facilities and shuttle bus service; coordinated online parking reservation system to reduce area circulation and promote remote and HOV parking programs; and vehicular and pedestrian wayfinding signage plans on nearby highways and sidewalks.

Mr. Schack also managed the preparation of a comprehensive traffic study to examine the impacts of Barclays Center events on area traffic. The study included analysis of 56 local intersections on both event and non-event days in the pre- and post-event peak hours. ATRs were used to estimate regional vehicle arrival and departure patterns and a travel time analysis was performed for seven routes. The study identified specific effects of arena traffic on individual intersections and movements, as well as a traffic mitigation plan that included striping changes, parking regulation adjustments, and changes to signal phasing/timing plans.

Years of Experience

15 Years

Education

Master of City Planning
University of Pennsylvania, 2004

B.A. Psychology
New York University, 2001

Certifications

American Institute of Certified Planners

Professional Affiliations

American Planning Association

American Institute of Certified Planners

Institute of Transportation Engineers

ITE Pedestrian and Bicycle Council

ITE Sustainability Task Force

Urban Land Institute New York Infrastructure Council

Sam Schwartz
A TYLin Company

Nassau Hub Mobility Plan, TOWN OF HEMPSTEAD, NY
Mr. Schack managed the development of a Mobility Plan for the redevelopment of the Nassau Coliseum site into a mixed-use district centered around the renovated arena, including hundreds of residential units, offices, retail, and entertainment facilities. The Mobility Plan focused on ways to design and program the site to accommodate all travelers and reduce dependence on single occupancy vehicles. The project team conducted extensive research into mobility aspects of mixed-use developments around the country that are centered around large event venues. The plan included guidelines for bike parking locations and capacities at individual buildings, shuttle bus service to/from nearby LIRR stations, routing for upgrades to the local bike network, incorporation into potential local bike share systems, and TDM programs to encourage ridesharing, transit, and active transportation use by residents and workers.

Storm King Art Center Transportation Demand Management Plan, NEW WINDSOR, NY
Mr. Schack directed the development of a transportation demand management plan for the Storm King Art Center, a 500-acre outdoor sculpture park located ~60 miles north of New York City. The facility is undergoing a master planning effort for an expansion and expected doubling of visitors in the coming years, and the TDM plan is being created to allow these new visitors to be accommodated without building acres of new parking. Mr. Schack led the effort that is rooted in a quantitative analysis of current travel patterns to identify the visitors most susceptible to changing travel modes and targeted strategies to encourage them to do so. TDM elements developed for the plan included an enhanced shuttle bus service from the nearest rail station, pricing strategies to narrow the cost gap between driving and taking transit, messaging strategies to promote sustainable travel, utilization of New Mobility services (such as on-demand micro-transit systems), and long-term strategies to prepare for Autonomous Vehicles.

NYCEDC Morris Park Transportation Study, BRONX, NY
Mr. Schack served as the TDM task leader for this NYCEDC project to assess the existing transportation challenges in Morris Park, Bronx and develop a strategy to improve transportation connections between the project area, adjacent communities, and the region. The TDM plan included measures to allow commuters easier access to this large employment center without relying on single occupancy vehicles. The plan centered on proximity to a future new Metro North station and consisted of a set of measures to maximize local use and connection to the station, as well as several subway stations located beyond the Morris Park walkshed. Final elements included consolidation and optimization of private shuttle services, adjustments to MTA bus routes to better connect employment and residential areas, bike lane connections with regional and local routes, and limiting local parking options. The plan also included recommendations for employer-sponsored TDM programs, such as transit fare subsidies, carpool incentives, etc. to facilitate sustainable travel options.

NYP Brooklyn Methodist Hospital Traffic & Parking Plan, BROOKLYN, NY
Mr. Schack was the project director responsible for developing a traffic and parking plan to reduce traffic impacts of Brooklyn Methodist Hospital. Working for two clients, the hospital and a neighborhood association, he led the effort to evaluate the current and future traffic and parking issues in the area based on field studies, employee and visitor surveys, interviews with hospital staff, and community feedback. Traffic and parking plans were developed to alleviate current traffic congestion and limit future issues considering expansion. The plan focused on multiple TDM measures to reduce single occupancy vehicle use by employees and patients/visitors, including a shuttle bus from nearby rail stations, transit promotions, priority carpool parking, and parking price adjustments. The plan included revised curbside parking regulations and wayfinding to better manage ambulance, truck, taxi, etc. on the surrounding blocks.

Franny Ritchie

Senior Transportation Planner

TDM & Parking

Franny Ritchie is a transportation planner with a particular focus on campus and institutional planning. Prior to joining Sam Schwartz, she worked in university facilities consulting and within the capital planning office of the University of Illinois Chicago, where she worked on long-term strategic planning around parking provision and transportation demand management for the university and hospital.

Relevant Experience

Village Market Streetscape Improvement Plan, LA GRANGE PARK, IL

Ms. Ritchie is currently working with the Village of La Grange Park to develop a suite of recommendations for the improvement of Village Market and the surrounding area. Village Market serves as the Village's de facto downtown, and the Village seeks to enhance safety, access and placemaking. Ms. Ritchie is acting as the project manager, taking the Village through a public engagement process and using that process to inform a plan for future improvements.

University of Chicago Transportation Analysis, CHICAGO, IL

Ms. Ritchie is currently serving as a project manager to evaluate the existing University of Chicago transit service (including subsidized CTA buses, shuttles, and other transportation services) and make recommendations about how the university can rationalize its transportation offer. The project team has undertaken a data-driven analysis of the university's transportation resources and, in partnership with a group of university stakeholders, is making recommendations on how to maximize safety, reliability and access for the university community.

***Transportation & Parking Demand Management,** CHICAGO, IL

Over her three-year tenure at the University of Illinois at Chicago (UIC), Ms. Ritchie served as the subject matter expert for transportation demand management. She developed forecasting tools to anticipate and plan for the university's parking demand and supply over the course of the next ten years and developed a suite of programs to support alternative (non-private vehicle) commutes to prepare for changes to total parking provision.

Years of Experience

10 Years

Education

Master of City Planning
MIT, 2011

MA, Urban & Environmental History
SUNY-Albany, 2008

BA, Social & Cultural History
Carnegie Mellon University, 2005

Professional Affiliations

American Planning Association

Parking Reform Network

Publications

University Trends (contributing author)

Cambridge Independent (columnist)

Design After Decline (contributing researcher)

*work preformed under previous employment

Sam Schwartz
A TYLin Company

Franny Ritchie

Sam Schwartz
A TYLin Company

Better Streets for Buses, CHICAGO, IL
Better Streets for Buses is a public outreach project conducted jointly by CDOT and CTA. The two agencies are working together to collect public input on the best ways to improve user experience across the CTA bus network. Ms. Ritchie is acting as a project manager for public outreach phase of the project and the subsequent development of a framework plan to guide future capital improvements and funding pursuits.

Lemont Downtown Parking Analysis, LEMONT, IL
Ms. Ritchie worked with a team of designers and planners to address parking demand and customer experience in Lemont, IL. The team performed an occupancy analysis, made recommendations on rehabilitating underused public spaces, and

Point of the Mountain Smart Mobility Study, SALT LAKE CITY, UT
Point of the Mountain is a new development on an undeveloped site south of the city. Sam Schwartz was involved in making recommendations of the design and provision of mobility services. Ms. Ritchie contributed an analysis of parking demand as it related to 'Good/Better/Best' mobility provision, and to analyze anticipated demand given various pricing models for different mobility services, working to design an implementable 'Mobility as a Service' program for residents and employees.

City of Chicago e-Scooter Implementation, CHICAGO, IL
Working with the Chicago Department of Transportation, Ms. Ritchie worked as part of a Sam Schwartz team to develop a set of rules and regulations to govern the city's two-year e-scooter licensing program. Ms. Ritchie acted as co-author, researcher, and cross-departmental liaison between various City offices (Transportation, Disabilities, Legal, etc.), as well as helping the city in their stakeholder engagement process.

***Transportation & Parking Demand Management,** CHICAGO, IL
Over her three-year tenure at the university, Ms. Ritchie served as the subject matter expert for transportation demand management. This included a suite of presentations to the Chancellor and senior leadership, outlining anticipated changes to the university's parking and transportation demands into the next ten years and the proposal and implementation of various pilot programs to remedy UIC's transportation challenges.

***City and Government Liaison,** CHICAGO, IL
Ms. Ritchie served as the primary liaison for her office at UIC and external government and partner agencies. This meant communicating with city staff and elected officials; CDOT; and partner organizations within the Illinois Medical District. Conversations typically focused on pedestrian and safety improvements to campus and on places where university capital projects would potentially impinge on city rights of way.

***Biennial Commuter Survey,** CHICAGO, IL
Working with diverse stakeholders from across the University and UI Health, Ms. Ritchie professionalized a commuter survey of UIC's 48,000 stakeholders, laying the groundwork for a longitudinal analysis of UIC's commuting patterns.

***Bike Walk Oak Park Slow Streets,** OAK PARK, IL
Ms. Ritchie worked with executive committee of Bike Walk Oak Park; the Transportation Commission; and Village Trustees in Oak Park, IL to design the route; safety strategy; data collection; and community outreach around the Village's Slow Street pilot program in the summer of 2020.

***Massachusetts Institute of Technology Parking Analysis,** CAMBRIDGE, MA
As a staff member in the Office of Campus Planning, Ms. Ritchie developed a report outlining the challenges to MIT's parking and transportation provision. The report was used to inform MIT's AccessMIT program, a comprehensive TDM program that was implemented in 2016.

Stacey Meekins, AICP

Principal + National Practice Leader, Complete Streets

Complete Streets and Multimodal Planning

Ms. Meekins is a leading expert in pedestrian safety and mobility. She has focused her career on helping communities implement solutions to make their transportation systems more inclusive; establishing safer, more inviting environments that promote and empower walking and bicycling as integral modes of transportation.

Relevant Experience

Northwest Municipal Conference Multimodal Plan, SUBURBAN CHICAGO, IL
Sam Schwartz developed a comprehensive multimodal transportation plan for a region covering 44 member communities and 1.3 million residents. Sam Schwartz organized a broad coalition of local, regional, and state agencies to identify regional bike corridors and design and policy strategies to make it easier for people to walk and bike to transit. Ms. Meekins served as Principal in Charge for this plan.

Downtown Parking & Civic Study, LEMONT, IL
This study involves a comprehensive civic space and parking assessment for the Village of Lemont's downtown business district. Lemont's downtown is a thriving and growing destination for dining and entertainment. Ms. Meekins is serving as Principal in Charge of this study, overseeing quality assurance of deliverables.

Mundelein Downtown Subarea Plan, MUNDELEIN, IL
Two primary issues faced the Village of Mundelein in their downtown: 1. How to make the main street a walkable, bikeable, and business-friendly environment through streetscaping and cross-section changes; and 2. How to connect to regional bike trails that currently stop at either side of the downtown without a connection. Sam Schwartz analyzed options for the trail connection and developed conceptual designs for a sidewalk-level bikeway connection that maintains adequate space for pedestrian and commercial activity.

Uptown Normal Master Plan, NORMAL, IL
Ms. Meekins led the transportation analysis for the Uptown Normal Master Plan. Key issues that the town faced were cut-through traffic, poor connections for all modes, and an over-supply of parking yet a lack of turnover and the perception of a parking problem. The plan includes strategies for improving circulation and easing parking challenges.

Years of Experience
15 Years

Education
Master Urban Planning + Policy
University of Illinois at Chicago, 2005

B.S. Civil Engineering
Northwestern University, 2000

Certifications
American Institute of Certified Planners

Professional Affiliations
American Planning Association

Association of Pedestrian and Bicycle Professionals

Active Transportation Alliance

Women's Transportation Seminar

Presentations
National Complete Streets Coalition Instructor

Vision Zero: From Concept to Pracitce, Presenter, Ontario Traffic Council Vision Zero Symposium, 2021

Equity in Bikeshare, Panel Moderator, WTS Annual Conference, 2015; Chicago, IL

Vision Zero: From Concept to Practice, Presenter, Ontario Traffic Council, 2020

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Stacey Meekins, AICP

Sam Schwartz
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Lincoln Square Master Plan, CHICAGO, IL
Sam Schwartz performed the transportation analysis for a master plan on the north side of the City of Chicago. The neighborhood is well-served by transit, including CTA bus and rail; however, there is a distinct division between the northern half of the neighborhood and the commercial and transit hubs. Sam Schwartz, led by Ms. Meekins, provided recommendations to improve connections for people traveling by all means between the disparate areas of the neighborhood. Additional recommendations focused on strengthening walkability in the core and strengthening the connection between the primary transit station and the commercial corridors.

Ann Arbor Transportation Master Plan,
ANN ARBOR, MI
Ms. Meekins was the Project Manager for a city-wide transportation master plan in Ann Arbor, Michigan. The plan used traditional data analyses combined with innovative approaches to assess the state of transportation relative to the City's goals. With a prominent goal being to achieve zero deaths and serious injuries from traffic crashes, a strong focus has been devoted to safety analyses and the development of strategies that make the transportation network safe for all users, in addition to working well as a whole system.

North Branch Framework Study, CHICAGO, IL
Ms. Meekins served as Project Director for Sam Schwartz of this multi-disciplinary study in Chicago's dynamic North Branch neighborhood. The study area included large development parcels that were historically protected industrial parcels along the North Branch of the Chicago River. Sam Schwartz provided transportation analysis to determine a suite of recommendations that will enhance multi-modal connectivity and minimize added congestion in an already constrained environment. Key recommendations included the development of a brand-new transit alignment linking these development sites to the regional transit hubs in downtown Chicago and a comprehensive upgrade to the network of traffic signals to make them more adaptive and able to better handle the variable traffic demands in the study area.

Wicker Park Bucktown Master Plan, CHICAGO, IL
Ms. Meekins led the transportation analysis and recommendations development for the Wicker Park Bucktown Master Plan update. The plan included recommendations for improving multimodal access in a vibrant neighborhood in Chicago. Less than six months after the plan's completion, the City has begun work on designing the recommended improvements along this corridor and at the intersection that serves as the hub of the neighborhood.

Tinley Park Mental Health Center Campus Redevelopment, TINLEY PARK, IL
Partnering with Farr Associates on a site plan for the redevelopment of a former state-run mental health facility, Sam Schwartz led the transportation analysis and design. At 280 acres, the site is the largest brownfields redevelopment site in the entire Chicagoland area. Situated adjacent to a Metra commuter rail station as well as community hubs including the Tinley Park library, the site had enormous potential. Ms. Meekins led the transportation component of the redevelopment plan, including development of alternative roadway networks, typical cross-sections, and a framework for parking that adapts to the specific land uses and locations of land uses on the site.

Glenview Comprehensive Plan, GLENVIEW, IL
Sam Schwartz served as the transportation expert on the Glenview Comprehensive Plan consulting team. Stacey led a series of exercises during the 4-day charrette to understand the community's concerns and priorities. The outcome was a set of high-priority corridors for bicycle travel, intersections and crossings in need of improvements for people walking, and intersections with significant congestion.

Alex Hanson, AICP

Associate
Complete Streets and Multimodal Planning

Mr. Hanson works with cities around the country to better connect their transportation policies and street design to community goals like health, equity, and resilience. He also specializes in using emerging data sources to understand transportation challenges and employing data to tell compelling stories that build support for transformative projects and plans.

Relevant Experience

NWMC Multimodal Transportation Plan, CHICAGOLAND, IL

The Northwest Municipal Conference (NWMC) includes more than 1.3 million citizens residing in 41 municipalities and 1 township across Chicago's north and northwest suburbs. As deputy project manager and technical lead for this regional plan (funded by CMAP's Local Technical Assistance Program), Mr. Hanson organized and led a broad coalition of municipalities, county and state departments of transportation, transit agencies, county forest preserves, and other stakeholders in identifying regional bike corridors and developing design guidelines and policy recommendations to make it easier for people to walk and bike to transit. He oversaw a survey of more than 2,000 centerline miles of sidewalks across the region and developed a methodology to identify high priority sidewalk gaps near schools and transit. Mr. Hanson also led the development of the final plan document, which includes a comprehensive toolbox on bicycle and pedestrian design strategies.

Ann Arbor Transportation Master Plan, ANN ARBOR, MI

Sam Schwartz partnered with the City of Ann Arbor to develop a transformative update to the City's Comprehensive Transportation Plan focused on eliminating deaths and serious injuries related to traffic crashes and enabling a rapid shift to a carbon neutral transportation system by 2030. Mr. Hanson acted as deputy project manager and technical lead for the project, helping to develop a successful community engagement process that involved thousands of residents and an innovative analytical approach to understand safety and other transportation needs. He also led the design of the all ages and abilities bike network, crafted strategies to address dangerous driving behaviors and high crash locations, and developed a values-based method to prioritize investments across the City.

Years of Experience
9 Years

Education
M.S. City & Regional Planning
Georgia Institute of Technology, 2017

B.S. Foreign Service
Georgetown University, 2011

Certifications
American Institute of Certified Planners

Professional Affiliations
American Cities Climate Challenge, Specialized Consultant

ULI Chicago Resiliency Initiative, Physical Infrastructure Task Force

Board Member, Association of Pedestrian and Bicycle Professionals – Chicagoland Chapter

American Planning Association

Publications
NACTO Designing Cities, From Pop-Up to Permanent: Delivering Lasting Impact from Pilot Projects, 2020.

Transportation Research Board, Aligning Organizational Structure with Strategic Direction in City Transportation Agencies, 2020

Association of Pedestrian and Bicycle Professionals, Street Typologies: An organizing framework for more walkable, bikeable streets, 2020

Walk/Bike/Places, Using Data to Assess the Potential Impacts of Dockless Bike Share in Your City, 2018

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Move Tucson, TUCSON, AZ
Sam Schwartz, as part of the Alta Planning and Design Team, is assisting in the development of MoveTucson, which will identify and prioritize key projects across Tucson and equip the city to implement a high-quality transportation system. Mr. Hanson is leading the analysis of the city's street network and transit system and utilizing mobile location data and innovative analyses to build a deep understanding of the issues and opportunities. Mr. Hanson also led the modeling and analysis of future transportation and land use scenarios to help understand tradeoffs and identify the most impactful projects for the City.

Divvy Bike Share Planning Support, CHICAGO, IL
Sam Schwartz has supported the planning and implementation of Chicago's Divvy bike share system since its initial launch in 2013. CDOT and Lyft came to an agreement in the spring of 2019 to modernize and expand the Divvy bike share system to cover the entire City of Chicago. Mr. Hanson worked closely with CDOT staff to design and negotiate performance standards that ensure an outstanding user experience, equitable coverage of the entire City, and ridership and outreach targets in areas of economic hardship. He also developed a tracking tool for CDOT staff to monitor compliance with all performance standards and provides ongoing guidance and support on performance measurements and system expansion.

New York City Streets Plan, NEW YORK, NY
Sam Schwartz is leading the development of NYC's Streets Plan to prioritize street improvements and other investments that improve safety, access, equity, and sustainability. Mr. Hanson is working with NYC DOT to develop a performance tracking framework for the plan—identifying performance indicators and targets for the department's key goals. He is also leading an assessment of NYC DOT's internal processes and systems, focused on how to improve project development and delivery, better engage the public in the planning process, and enhance internal coordination to improve efficiency and effectiveness.

Move DSM Transportation Master Plan,
DES MOINES, IA
Mr. Hanson acted as deputy project manager for Sam Schwartz' partnership with the City of Des Moines to design a multimodal transportation network and establish new street design standards that emphasize safety, health, and quality of life. He led the team's analysis of the current state of Des Moines' streets, evaluated safety and crashes on a city-wide basis, and developed new analytical approaches to measure accessibility and efficiency for users of all modes. Sam Schwartz used the findings from these analyses, in combination with extensive public and stakeholder engagement, to develop new street typologies that create a safe network that connects people to the places they want to go while also complementing current and future land use. Mr. Hanson partnered with the City to update its complete streets policy, and improve its project development and delivery processes to see the plan's recommendations through to reality.

Phoenix Key Corridors Master Plan, PHOENIX, AZ
The Key Corridors Master Plan is Phoenix's guiding document for determining modal and functional priorities on all major streets and prioritizing and coordinating transportation improvements. Mr. Hanson led Sam Schwartz' assessment of the existing transportation system—incorporating innovative performance metrics that examine access to jobs via different modes and quantify transit's contributions in reducing congestion and increasing overall people throughput. Mr. Hanson also developed a data-driven process for assigning modal and functional priorities to over 1,000 miles of major streets that incorporates urban form, existing activity patterns, and future land use along each corridor. He also led a citywide safety assessment and developed a toolbox of design and policy solutions as part of a safety action plan.

Matt Orenchuk, AICP

Principal + Transit and Rail Leader

Transit Planning

Mr. Orenchuk specializes in bus and rail operations planning, corridor planning, and long range and strategic planning. He has worked for all three transit providers in the Chicago region and has experience in numerous major metropolitan areas across the US. His work helps clients realize agency objectives and improve quality of life for riders by efficiently delivering service improvements.

Relevant Experience

***Chicago RTA Strategic and 10-Year Financial Plan,** CHICAGO, IL

Matt is the principal-in-charge for the consultant team leading the strategic plan for RTA. The team is helping RTA develop vision, goals, and strategies to address the major upheaval that COVID-19 has placed on the region's transit system, including a $700M funding gap projected for 2026. Work is expected to continue throughout 2022, with a plan adoption in January 2023.

CTA Better Streets for Buses Project, CHICAGO, IL

Matt is the principal in charge for the CTA project making recommendations to improve street configurations to address speed and reliability issues with CTA buses. Matt's team provided major public engagement support and is using that feedback to update the plan, including both proposed corridors for improvement and the proposed toolbox CTA and CDOT can use to address bus operational issues.

***Metra Station Optimization Study,** CHICAGO, IL

Matt was his firm's project manager for the Station Optimization Study as a subcontractor. Matt's team helped collect data on 234 stations in the Metra network, assisting in the analysis of under-performing stations. Matt's team also conducted an equity analysis task using Metra's Title VI criteria for stations identified for closure or consolidation.

***CTA Red Line Extension Project,** CHICAGO, IL

Matt was his firm's project manager and technical lead for the service planning and operations and maintenance tasks as a subcontractor. Matt's team reviewed existing ridership, loading, and transfer data to understand rider behavior in the study area. This information will be used to create multiple bus and rail service operating scenarios. Each scenario was

Years of Experience

18 Years

Education

Master of Urban Planning
University of Michigan, 2007

B.S. Civil Engineering
University of Notre Dame, 2002

Certifications

American Institute of Certified Planners

Professional Affiliations

American Planning Association

American Public Transit Association

*Projects completed prior to Sam Schwartz

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evaluated to determine a recommended course of action for bus and rail service changes due to the project.

University of Chicago Transit Planning Services, CHICAGO, IL

Matt was principal in charge for a transit plan recently conducted with the University of Chicago. This work reviewed all aspects of the university's transit services, including daytime shuttles, CTA routes, nighttime shuttles, and Lyft guaranteed ride home service. Matt's team reviewed existing data and made recommendations to improve travel to campus and the larger Hyde Park area.

***CTA Blue Line Capacity Study,** CHICAGO, IL

Matt was his firm's project manager and technical lead for the Blue Line Capacity Study as a subcontractor to a lead firm. Blue Line ridership has increased by 20% over the last ten years, leading CTA to explore ways to alleviate crowding. Matt led the review of existing ridership, loading, and transfer data, using the information to create a capacity analysis for existing, 2025, and 2040 timelines. This work allowed CTA to understand when and where crowding occurs and aid in the development of service or infrastructure changes. Operational improvements are expected to be used as part of FTA Core Capacity grant application.

***CTA Brown Line Capacity Study,** CHICAGO, IL

Matt was his firm's project manager and technical lead on the project as a subcontractor. This study reviewed comprehensive 24-hour boarding and alighting data for all 145 stations in the CTA rail system. Matt's team calculated rail passenger capacity for each station in the system and paired it with the ridership. The result was estimated crowding by line and time of day, with a determination of segments in the system that qualify for FTA core capacity funding.

***Metra Cost Benefit Study,** CHICAGO, IL

Matt was his firm's project manager and lead service planner on the Cost Benefit Analysis as a subcontractor to a lead firm. Phase 1 included analysis of all existing Metra corridors, while Phase 2 considered new expansion projects outside of the existing service footprint. Service planning work included preparation of new and revised schedules for each line in the system. Matt also created operating statistics for all new schedules to be used in operations and capital cost estimating exercises.

***Pulse 95th St. Corridor BRT Project,** CHICAGO, IL

Matt was his firm's project manager for the consultant team that developed a service plan for the proposed 95th Street Pulse (BRT) corridor for Pace Suburban Bus. Matt's team created a detailed running time model, station to station travel times, assessed operating savings in scenarios with TSP and queue jumps, developed operating statistics, and created draft timetables and schedules. These materials were used by Pace in their decision-making process as the project moves forward.

***Pace I-294 Corridor Study,** SUBURBAN CHICAGO, IL

Matt was his firm's project manager as a subconsultant for the I-294 corridor study for Pace Bus. Under Matt's direction, his team supported the market analysis, including creating a tableau dashboard of trips and leading a workshop with Pace planners. Matt's team then created service plan options for new I-294 services traveling the corridor. These plans included travel times and frequency, along with distinct route alignments.

***Better Bus Blueprint,** DULUTH, MN

Matt was project manager for the Better Bus Blueprint with Duluth Transit Authority. This analysis was conducted to determine a revised bus network for both the Minnesota and Wisconsin sides of the Twin Ports region. The project included a before/after analysis of travel times to demonstrate the improved connectivity and access of the proposed network.

Peter Wojtkiewicz, PE, PTOE

Vice President + General Manager, Chicago

Signal Systems

Mr. Wojtkiewicz oversees operations of our Chicago office, accommodating our clients on transportation planning, traffic engineering, transit, shared mobility, geometric and traffic signal design projects. In addition to his General Manager duties, Mr. Wojtkiewicz specializes in traffic signal timing and design projects and is Principal in Charge of IDOT, CDOT, County DOT, and other municipal engineering contracts.

Relevant Experience

IDOT District 1 SCAT (Signal Coordination and Timing),
CHICAGOLAND AREA, IL

Mr. Wojtkiewicz has been part of the consulting contract for IDOT District 1 for the past 22 years, including the last 14 years as principal in charge. Tasks on IDOT SCAT contracts include manual turning movement counts, before and after travel-time runs, timing plan development using Synchro software, timing plan implementation, fine tuning based on field observations, and traffic responsive programming. Final reports for each signal system feature analysis of travel time and delay, number of stops, emissions reduction, and the development of cost-benefit ratios. Characteristics of corridors he studied include: SPUIs (single point urban interchanges), arterials through central business districts, and arterials that cross or run parallel to commuter rail lines with numerous railroad pre-emption calls during rush hour.

IDOT District 1 Various Traffic Signal Design Projects,
CHICAGOLAND AREA, IL

Mr. Wojtkiewicz serves as principal in charge of Sam Schwartz various traffic signal design contract for IDOT District 1. Representative work orders include full design of new traffic signals at existing signalized intersections, upgrade of signals to LED lenses, battery backup systems, and countdown pedestrian timers, and fiber optic interconnect between signals.

Mount Prospect Transportation Study, MOUNT PROSPECT, IL

Mr. Wojtkiewicz worked with the Village of Mount Prospect on its downtown traffic and transportation study. He led the train station and platform relocation analyses portion of the study, working in close coordination with the traffic analysis component related to a new residential development.

Years of Experience

23 Years

Education

B.S. Civil Engineering
University of Illinois, 1999

Certifications

Professional Engineer: IL, FL, NY, IA, MI, WI

Professional Traffic Operations Engineer

IMSA Work Zone, Level I, Level II, Traffic Signals Certification

Professional Affiliations

Institute of Transportation Engineers

ACEC – Illinois, IDOT Committee Member

Publications

Co-author, *FHWA Signalized Intersection Information Guide, Second Edition*

Sam Schwartz
A TYLin Company

Peter Wojtkiewicz, PE, PTOE

Sam Schwartz
A TYLin Company

Obama Presidential Center Traffic Impact Study, Site Access, and Circulation, CHICAGO, IL
Mr. Wojtkiewicz was an advisor for the traffic impact study for the Obama Presidential Center (OPC), which included the closure of Cornell Avenue through Jackson Park, designed by Fredrick Olmsted. The study analyzed the expected traffic impacts associated with the closure and removal of a six-lane segment of Cornell Avenue within Jackson Park to accommodate the preferred location of the OPC. The project also included design of access and circulation for the OPC site including multi-modal access; tour bus, passenger car, and taxi pick-up/drop-off accommodations; truck loading; parking demand studies; and both on- and off-site pedestrian and bicycle safety.

Wrigley Field Traffic Engineering Study, CHICAGO, IL
Mr. Wojtkiewicz served as technical advisor for the Wrigley Field Traffic Engineering Services. He provided recommendations to improve manual traffic, aide control strategies and traffic signal operations for pedestrian, bicycles, private vehicles, and CTA buses during gamedays and special events within the area to help address the traffic impacts of the expansion of Wrigley Field.

Traffic Signal Optimization for Central Traffic Management System, AURORA, IL
Mr. Wojtkiewicz managed six projects that optimized 52 traffic signals for the City of Aurora. The 52 signals were the first on the City's CENTRACS central traffic management system. The five corridors varied in composition from a one-way couple in the central business district to two heavily travelled north-south State routes that run parallel to the Fox River.

Synchro Network Model, LAKE COUNTY, IL
Mr. Wojtkiewicz was project manager for the development of a Countywide Synchro model of every State, County, and Municipal Traffic Signal in Lake County, IL. The model includes timing plans and traffic volumes for over 725 traffic signals. County Staff and consultants use the model along with the County's CENTRACS ATMS system to maximize traffic flow throughout the County.

CDOT Surface Transportation Engineering Contract, CHICAGO, IL
Mr. Wojtkiewicz serves as principal in charge of all surface transportation work orders from CDOT for Sam Schwartz. These work orders include providing in-house engineering staffing, designing pedestrian and bicycle improvements at various intersections, and bike lane striping and signing design for various corridors up to 3.5 miles in length.

Ridge Avenue Signal Design and Optimization, EVANSTON, IL
Mr. Wojtkiewicz assisted in the design of 21 traffic signals and interconnect for the Ridge Avenue Corridor. The design included both temporary and permanent signals. Special design consideration was necessary because the project was in a landmarked historical homes district where signal mast arms were not allowed. He provided temporary traffic signal timings during construction and optimized the entire system after construction was completed.

Divvy Station Siting, CHICAGO, IL
Mr. Wojtkiewicz serves as QA/QC leader for the design and siting of Divvy stations throughout the City of Chicago. In our QA/QC process, the Sam Schwartz Team confirms that stations are accessible to all users and do not conflict with any utility access.

North Branch Framework Plan, CHICAGO, IL
Mr. Wojtkiewicz served as technical advisor for the North Branch Framework Plan. He provided recommendations for the improvement of traffic signal infrastructure and operations within the corridor, which included preliminary cost estimates for the installation of adaptive traffic control systems.

Erica Salutz, PE

Senior Design Engineer

Geometric and Roadway Design

Erica Salutz is a transportation engineer at Sam Schwartz, with over 14 years of experience specializing in bike and pedestrian infrastructure, traffic signal design, and preliminary engineering.

Relevant Experience

Laraway Crossings Business Park, JOLIET, IL

Ms. Salutz serves as project manager and design engineer for the Sam Schwartz team. The Traffic Impact Study conducted by the Sam Schwartz team identified improvements needed to the geometry and a traffic signal at the access to the site at Emerald Drive and Laraway Road along IL 53. Ms. Salutz was involved in preparing the Intersection Design Study (IDS) with ADA details and the Traffic Signal Design plans for the intersections of IL 53 with Emerald Drive and Laraway Road.

Kinzie Street Improvements, CHICAGO, IL

Ms. Salutz served as Civil Engineer, aiding in the design for Kinzie Street from Ogden to Milwaukee/DesPlaines for Chicago DOT. The project included roadway plans for the reconstruction of Kinzie Street, including ADA details, signing and pavement marking plans, landscape plans, and drainage and utility plans. Construction was completed in 2016. This experience was prior to joining Sam Schwartz Consulting.

CDOT Bikeways, CHICAGO, IL

Ms. Salutz serves as Project Manager for the Sam Schwartz team on the CDOT Bikeways contract. This contract involves design of bike facilities along several corridors in Chicago. Ms. Salutz leads the team in preparing the existing conditions and proposed designs for 8 miles of bike facilities in Chicago. These bike facilities range from contraflow lanes on Neighborhood streets to protected bike lanes on Local Roadways.

Howard Street Phase II, EVANSTON, IL

Ms. Salutz served as Project Manager for the Sam Schwartz team on the Howard Street Phase II project. Ms. Salutz was involved in the preparation of the pavement marking plans, signage plans and schedule, and design of ADA ramps. This work was completed in the fall of 2019.

Years of Experience

13 Years

Education

B.S. Engineering
University of Dayton, 2008

Certifications

Professional Engineer: IL

Professional Affiliations

Institute of Transportation Engineers

Sam Schwartz
A TYLin Company

Erica Salutz, PE

Sam Schwartz
A TYLin Company

Grand Ave Improvement, CHICAGO, IL
Ms. Salutz served as Project Engineer, coordinating the design for Grand Ave from Pulaski Rd to Chicago Ave for Chicago DOT. The project included roadway plans for widening and resurfacing of Grand Ave, including ADA details, signing and pavement marking plans, landscape plans, drainage and utility plans, and traffic signal plans. Construction was completed in 2018. This experience was prior to joining Sam Schwartz Consulting.

Marquardt Middle School, GLENDALE HEIGHTS, IL
Ms. Salutz served as project manager and design engineer for the Sam Schwartz team. The Sam Schwartz team provided engineering services for a proposed traffic signal to serve Marquardt Middle School at its existing access point along Glen Ellyn in Glendale Heights. Ms. Salutz oversaw the work which consisted of traffic analysis of the intersection under signalized control, an Intersection Design Study, and Signal and Interconnect plans. The signal at the school access point will be integrated into the DuPage signal system. The signal will be installed during Summer 2021.

Woodman's Market at Milwaukee and Deerfield, BUFFALO GROVE, IL
Ms. Salutz served as project manager and design engineer for the Sam Schwartz team. Significant capacity and signal improvements were identified as part of the Traffic Impact Study conducted by the Sam Schwartz team. Ms. Salutz was involved in preparing the Intersection Design Studies (IDS) with ADA details and the Traffic Signal Design plans for Milwaukee Avenue and Deerfield Road intersection as well as the new site access drive on Deerfield Road. The IDS and Traffic Signals required approvals from both the State and Lake County Division of Transportation. Construction was completed in late 2018.

North Milwaukee Avenue Design and Reconstruction, CHICAGO, IL
Ms. Salutz serves as design engineer for the Sam Schwartz team on the Milwaukee Ave reconstruction from Belmont Ave to Logan Boulevard. The project presents an opportunity to improve the entire Milwaukee Avenue corridor to meet its multimodal demands by utilizing Complete Streets and sustainable urban infrastructure designs. Ms. Salutz was involved in developing design concepts for the corridor, presenting to the public at community meetings, and preparing preferred design alternatives for completion of the Phase I process.

Kyle Sant, PE, PTOE

Senior Transportation Engineer

Traffic Analysis & Modeling/Simulation

Mr. Sant specializes in traffic operations and analysis for private developers and municipalities in the Chicago Metropolitan Area and throughout the country. Throughout the course of his career, Mr. Sant has provided traffic engineering support on a variety of projects and he is an expert at utilizing technical software including Synchro, SimTraffic, and VISSIM

Relevant Experience

Morton Salt Redevelopment, CHICAGO, IL

Sam Schwartz performed a TIS for a proposed rehabilitation of the former Morton Salt site located directly west of the North Branch of the Chicago River. As a part of this study, Mr. Sant evaluated an event-style use during non-standard peak hours, developing projections for multiple forms of non-auto mode-share (transit, bike-share) in addition to TNC usage. Mr. Sant helped develop TDM recommendations to facilitate concentrated drop-off and pick-up behavior around expected event times.

Chicago Public Schools Universal Pre-K, CHICAGO, IL

Sam Schwartz performed a TIS for a universal pre-school development for Chicago Public Schools. This study included a conventional traffic impact analysis, as well as a shared on- and off-street parking analysis and the production of statistical queuing models to evaluate expected drop-off and pick-up operations. Site trip projections included estimates for parents expected to drop-off and pick-up students using non-auto methods including on-foot and using transit. Recommendations included significant pedestrian improvements to facilitate drop-off and pick-up behavior along the school's frontage.

Rush Specialty Hospital, CHICAGO, IL

Sam Schwartz performed a traffic study for the expansion of the existing Rush Facility to include a five-story specialty hospital totaling approximately 135,000 square-feet. To accurately project employee demand, Mr. Sant helped to analyze mode-split data for existing hospital employees. This study also involved the redistribution of existing hospital parking based on the assumed inclusion of a new parking structure.

Years of Experience

7 Years

Education

B.S. Civil Engineering
University of Notre Dame, 2015

Certifications

Professional Engineer: IL

Professional Traffic Operations Engineer

Professional Affiliations

American Society of Civil Engineers, Younger Member Group Chair

*Performed before Sam Schwartz

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Kyle Sant, PE, PTOE

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City of Crystal Lake Traffic Engineering On-Call,
CRYSTAL LAKE, IL
As a part of an existing on-call contract with the City of Crystal Lake, Mr. Sant has performed or assisted in several Traffic Impact Studies. These studies have included Project Cooper, an approximately 180,000 square-foot industrial development, and a 14-unit multi-family residential development.

Village of Elmhurst Traffic Engineering On-Call,
ELMHURST, IL
As a part of an existing on-call contract with the Village of Elmhurst, Mr. Sant has reviewed a Traffic Impact Study performed by a third-party consultant. As a part of the review for a mixed-use residential and commercial development, Mr. Sant assisted in providing recommendations for best accommodating pedestrians near the site, which was to be located directly adjacent to a Metra station.

Buffalo Skyway Removal Feasibility Study,
BUFFALO, NY
Sam Schwartz served on the subconsultant team tasked with evaluating replacement options for the grade-separated section of New York Route 5 known as the Buffalo Skyway. As a part of the study, the subconsultant team created and calibrated VISSIM models of the downtown and regional Buffalo area, with focus on potential diversion routes including Interstate I-190, Interstate 90, and other regional arterials. Mr. Sant updated the baseline VISSIM models to evaluate the feasibility of various improvement strategies including widening of interstate roadways, the addition of new highway segments and interchanges, signal timing adjustments, and other roadway improvements. Mr. Sant also assisted in the development of future traffic volumes and dynamic routing assumptions.

***San Rafael Transit Center Relocation,**
SAN RAFAEL, CA
To accommodate the extension of the Sonoma Marin Area Rail Transit (SMART) line past its current terminus in San Rafael, the City of San Rafael consulted to analyze the potential relocation of the existing downtown Transit Center. Mr. Sant served as the lead analyst on the traffic engineering team, creating and calibrating multimodal VISSIM microsimulations of the downtown San Rafael street network, bus transit center, and rail station. As a part of a highly visible project, Mr. Sant also developed simulation recordings used during public engagement to provide visual aid in understanding analysis alternatives. Related tasks also included developing future traffic projections and performing operational analysis using Synchro software.

***US Route 61 Bus Rapid Transit and Transit Signal Prioritization,** **MINNEAPOLIS, MN**
Mr. Sant served as the lead analyst on the traffic engineering team tasked with evaluating the potential for Bus Rapid Transit (BRT) between White Bear Lake and Minneapolis along US Route 61. Mr. Sant was responsible for developing, calibrating, and reporting the VISSIM model used to estimate the potential travel time savings associated with BRT. Transit-oriented components of the model included dedicated bus lanes, queue jumps, and transit signal prioritization, among others. Mr. Sant also developed and summarized existing and future traffic volumes evaluated using Synchro software.

***Sedona Area Bus Transit Planning,** **SEDONA, AZ**
Mr. Sant served on a consultant team to the City of Sedona to evaluate the potential construction of a transit center intended to serve uptown Sedona and the surrounding tourist areas. Mr. Sant updated an existing VISSIM model of Sedona to assess the efficacy of multiple proposed improvements including roundabouts, grade-separated pedestrian facilities and the additional transit routes associated with the transit center.

Christian Arkell

Senior Transportation Engineer

Traffic Analysis & Modeling/Simulation

Mr. Arkell is a senior transportation engineer at Sam Schwartz, with 9 years of experience specializing in traffic engineering, transportation modeling and analysis for both private and public clients. Mr. Arkell is a highly experienced traffic and pedestrian modeler with capabilities in microsimulation using Vissim and Aimsun software.

Relevant Experience

Port Authority Bus Terminal - Advanced Review and Vissim Modeling, NEW YORK, NY

Mr. Arkell served as senior transportation engineer for the review and refinement of the build-in-place design for the Port Authority Bus Terminal (PABT). This high profile and highly complex project required detailed knowledge of traffic, pedestrian and bus operations which Mr. Arkell utilized to firstly review and subsequently refine the design for the rebuild of the PABT. Tasks undertaken included detailed analysis and planning of pedestrian impacts and mitigations during construction – where a temporary terminal would be in use - and operation of the new facility. Mr. Arkell also developed a unique traffic modeling methodology using Vissim to assess the operational capacity of the proposed bus-only ramp system under various configurations. Traffic analysis of the surrounding road network was also conducted to identify and mitigate the impacts of the construction and operation of the new facility.

LAX ITF-West Peer Review, LOS ANGELES, CA

Mr. Arkell served as senior engineer and simulation modeler for a peer review of a proposed off-airport TNC/Taxi pick-up drop-off (PUDO) facility. He led the overall traffic analysis and traffic modeling effort to review work to date and develop a refined process for further analysis. The project sought to assess the hourly throughput of the site through the lens of capacity analyses, operational design, ACRP 40 guidance, Vissim, Synchro, and pedestrian queueing and wait time. Mr. Arkell combined his deep knowledge of traffic analysis and simulation modeling with his airport landside operations experience to develop and implement a robust methodology to assess various design options and operational layouts for the proposed facility

Areas of Expertise

Traffic Analysis & Modeling/ SImulation

Years of Experience

9 Years

Education

B.S. Civil Engineering (Hons)
University of Sydney, 2012

Certifications

Road Safety Auditor–Level 1 (NSW, Australia)

Publications

AITPM National Conference 2017. Legion for AIMSUN: modelling the interactions between pedestrians, light rail and general traffic.

*Experience from previous employment

Sam Schwartz
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Christian Arkell

Sam Schwartz
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PANYNJ World Trade Center (WTC) Logistics & Traffic Support, NEW YORK, NY
Mr. Arkell serves as transportation engineer on the World Trade Center team. The complex and dynamic nature of the WTC campus requires a deep understanding of traffic and pedestrian operations to maintain the efficiency and safety of the transportation network. Mr. Arkell works closely with PANYNJ Traffic Engineering and WTC teams to provide traffic and pedestrian analyses throughout all components of the WTC site as well as planning for and responding to changes in the campus such as new roadway openings, special events and other complex changes to the configuration and operation of the WTC transportation network. Mr. Arkell has developed a detailed understanding of the highly complex interactions between commuters and general retail customers throughout the facility, comprehensive knowledge of the construction site limits and security access points and coordinates the preparation of permits related to construction activity

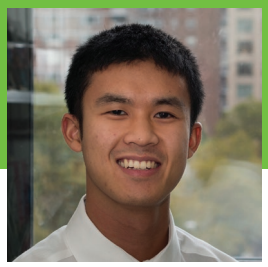
NYS Route 5 (Buffalo Skyway) EIS, BUFFALO, NY
Mr. Arkell served as senior transportation engineer on the team preparing the EIS for NYSDOT's proposed removal of the Buffalo Skyway and construction of associated improvements to various roadways, freeways, and toll facilities. The project involved alternatives analysis, traffic forecasts and diversions based on travel demand modeling, Vissim simulation, and developing and evaluating operational improvements to I-190 mainline and interchanges, adjacent corridors, and affected intersections. The Vissim model encompassed complex highways, interchanges, arterials, and signalized and unsignalized intersections, including significant portions of Downtown Buffalo's urban street grid.

Thomson Avenue Traffic Study, NEW YORK, NY
Mr. Arkell led the Thomson Avenue Traffic Study which assessed the impacts of various NYCDOT street improvement projects in Queens, NY. A large scale Synchro/SimTraffic model was developed and calibrated and then used to test improvements such as pedestrian plazas, bike lane implementation, street reversals and signal adjustments. Future volume development included a detailed assessment of the potential impact of Congestion Pricing on overall demand and routing decisions within the study area. Several demand scenarios were developed to capture the uncertainty of future traffic patterns in the area as a result of congestion pricing and the ongoing pandemic.

PANYNJ LGA Airport Redevelopment,
NEW YORK, NY
Mr. Arkell conducted Vissim microsimulation modeling to support the planning and design of landside traffic operations for the development of La Guardia Airport in New York. The modeling effort involved simulating the complex interaction between passenger cars, taxi and for-hire vehicles on approach to the pick-up drop-off (PUDO) area of the new airport headhouse. This modeling successfully produced detailed analysis in terms of delays to all vehicle types and projected wait time and queue lengths for taxi passengers. Mr. Arkell used the results of the analysis and his knowledge of landside operations to determine the scope of required curbside space needed to maintain efficient flow throughout the airport roadway network.

***Melrose Park Transport and Accessibility Plan,**
SYDNEY, AUSTRALIA
Mr. Arkell led the assessment of transport impacts and development of an integrated long-term plan for 50-hectare mixed use development site catering for up to 30,000 new residents. Key tasks undertaken by Mr. Arkell included the development of a hybrid mesoscopic-microscopic Aimsun model of the study area. The Aimsun model included a key light rail connection to Sydney Olympic Park which necessitated the analysis of very high pedestrian volumes for special event scenarios at the Olympic Stadium and other venues.

Ben Yeung, PE



Senior Transportation Engineer

Traffic Analysis & Modeling/Simulation

Mr. Yeung is a transportation engineer with experience in traffic analysis, modeling, and design for numerous clients throughout North America. Mr. Yeung has worked on traffic impact studies for projects with a broad range of scopes. He specializes in utilizing Synchro/SimTraffic, Highway Capacity Software (HCS), and VISSIM to assess a full range of traffic impacts and to optimize traffic operations. He is proficient in using the Microsoft Office Suite and Adobe Illustrator to develop high-quality reports, presentations, and graphics.

Years of Experience
7 Years

Education
B.S. Civil Engineering
Northeastern University, 2016

Certifications
Professional Engineer: NY

Professional Affiliations
Institute of Transportation Engineers

Relevant Experience

World Trade Center Campus Security Plan Traffic Simulation, NEW YORK, NY

Mr. Yeung worked extensively on developing a VISSIM traffic simulation model for the Port Authority's World Trade Center Campus Security Plan. Mr. Yeung utilized his knowledge of the software to accurately model the unique security systems and procedures anticipated at the World Trade Center Campus. Mr. Yeung extracted pertinent travel time and queue length data and helped to present it to various stakeholders for the site. Mr. Yeung aided in making recommendations to improve operations to maximize efficiency for vehicle throughput when the campus security plan becomes operational.

Ames Elementary School Traffic Study, RIVERSIDE, IL

Mr. Yeung served on a team to provide traffic planning and engineering services to the Riverside School District 96 for an expansion of Ames Elementary School, a school located in a residential neighborhood in a suburb of Chicago, Illinois. To account for the complex web of residential streets in this area, Mr. Yeung used SimTraffic to analyze the impacts of the school expansion for multiple pick-up / drop-off time periods.

US 41 at Dr. MLK Jr. Way and Myrtle Street Project Development and Environment (PD&E) Study, FDOT District One, CITY OF SARASOTA, FL

Mr. Yeung served as a traffic engineer for the 0.5-mile PD&E Study from Dr. MLK Jr. Way to Myrtle Street in the City of Sarasota. The objective of the study was to evaluate safety, connectivity, and operational improve-

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ments at the intersections of US 41 at Dr. MLK Jr. Way & US 41 at Myrtle Street within the City of Sarasota while also developing context-based bicycle/pedestrian facilities between the intersections. Mr. Yeung's primary role was to use VISSIM to develop a high-quality, public-facing visual simulation of a proposed signalized alternative and a proposed roundabout alternative for the corridor. In addition, he used Synchro to analyze vehicular traffic flow and operations of proposed alternatives.

MTA New York City Transit; MTA Bus Company; MTA Bridges and Tunnels; On-Call Traffic Engineering Services, NEW YORK, NY
Mr. Yeung was a member of a team providing transportation solutions for these three separate agencies that operate 5,000 buses and serve over two million customers and almost one million vehicles daily. Mr. Yeung led the traffic analysis for two tasks: (1) Eliminate bottlenecks impacting the SIM express network on the approach to the Hugh Carey Tunnel in Manhattan, and (2) resolve issues with a difficult turning movement which many buses must navigate at the intersection of Westchester Avenue and West Farms Road in the Bronx. Mr. Yeung led the simulation and analysis for a variety of changes to roadway and transit operations, which involved the creation of complex VISSIM models in the first task and the production of Synchro models in the second task.

LaGuardia Airport Redevelopment, QUEENS, NY
Mr. Yeung served as a project engineer for the Port Authority of New York & New Jersey (PANYNJ)'s redevelopment of LaGuardia Airport (LGA). The project aims to transform the airport frontages and roadway network to better accommodate travelers as LGA is redeveloped. Specifically, he has developed VISSIM microsimulation models to assess the performance of proposed alternative terminal frontage operational plans, incorporating the complex and differing pick-up behavior of taxis and passenger cars into the same models. Mr. Yeung has also assisted with data collection for the relocation of for-hire vehicle pick-ups, and with live, on-site and remote monitoring of airport roadway traffic conditions.

Review Related to Highway 401 Expansion Project, MISSISSAUGA & MILTON, ON
Mr. Yeung served as a traffic analyst working on behalf of a design-build contractor to review prior work performed by another consultant for projected traffic operations at the completion of the Highway 401 Expansion Project in Mississauga and Milton, Ontario. Mr. Yeung reviewed VISSIM models and performed supplemental capacity analyses in HCS and Synchro to inform the client of risks associated with being selected to lead project construction and meeting vehicular level-of-service standards.

NYSDOT, Buffalo Skyway (NYS Route 5) Removal Project, BUFFALO, NY
Mr. Yeung supported the traffic analysis components of a Project Scoping Report, Design Report and Environmental Impact Statement (EIS) for NYSDOT's proposed removal of the Buffalo Skyway and construction of associated improvements to various roadways, freeways, and toll facilities. The purpose of the project is to realign the existing transportation network to support recreational, mixed-use, and waterfront development in the Buffalo Harbor area. Mr. Yeung served as a traffic modeler, using VISSIM microsimulation to develop and evaluate operational improvements to the I-190 mainline and interchanges, as well as other nearby affected corridors and intersections.

Roundabout Feasibility Study, WILLISTON, ND
The City of Williston, North Dakota studied a redevelopment of its former airport into a large, mixed-use center with housing, retail, and civic uses. Mr. Yeung assisted in the development of a VISSIM simulation model to analyze existing traffic conditions and future traffic conditions for two site access scenarios, including a scenario with a complex, multi-lane roundabout with five approaches.

Peter Johnston *PE, LEED AP*
Geometric & Roadway Design

Professional Registration

Professional Engineer – IL
062-047647

Education

M.B.A., Operations Research, 1996, Loyola University of Chicago, Chicago, IL

B.S., Civil Engineering, 1987, University of Illinois-Champaign, Champaign, IL

Barrington Road at the I-90 Interchange, Hoffman Estates, IL; Project Manager— GRAEF provided design services to Crawford Murphy Tilly for Phase I services on the project. Specifically, GRAEF was involved in public outreach activities and completed an Interchange Design Study. The Interchange Design Study included Intersection Design Studies at four signalized intersections which are all part of or within the vicinity of the interchange. The Illinois Tollway, Illinois Department of Transportation, and Village of Hoffman Estates were all involved with the design aspects of the project.

IL 47 at the I-90 Interchange, Huntley, IL, Project Manager— GRAEF completed Phase II Engineering Services for this regional transportation improvement. A significantly sized intersection (IL 47 @ Dhamer Dr/Freeman Rd.) just north of the interchange was included in the project. This intersection featured dual left turn lanes and multiple thru lanes on all four approaches of the intersection. The facility is an All Electronic Tolling interchange. Since cash payment is not accepted at the plazas, the right-of-way requirements were reduced due to narrower plazas as well as reduction in queue requirements. The final documents included a number of sustainable design elements, including geothermal energy at the plaza control buildings, vegetative trellises on the control buildings, water quality enhancements on detention pond outflows, pervious shoulders in some project locations, reflective roofs on the control buildings, and warm mix asphalt proposed on the ramps. This project was a multi-agency effort and required GRAEF to incorporate the concerns and standards of both IDOT, the Illinois Tollway, and the Village of Huntley.

IL 47 at I-88 Interchange – Phase I, Sugar Grove, IL; Project Manager— A Phase I study of the interchange, following federal guidelines, is being completed by GRAEF and a team of sub-consultants. National Environmental Policy Act (NEPA) guidelines are being followed for the development of the design in accordance with Illinois Department of Transportation (IDOT) requirements. Additional stakeholders in the process include the Illinois Tollway, Kane County, the Village of Sugar Grove (client), the Village of Elburn, and local townships.

A significant public outreach effort is included as part of IDOT's Context Sensitive Solutions (CSS) process. A Project Study Group (PSG) and Community Advisory Group (CAG) have been formed in order to adhere to this process. The PSG is comprised of governmental agencies who have a vested interest in the project. The CAG is comprised of project stakeholders including local businesses, residents, forest preserve members, staff from local communities, and township officials.

The Phase I process is approximately 90% complete. A Purpose and Need statement has been established for the project and FHWA and resource agency concurrence has been obtained. Projected traffic for the Year 2040 has been established and agreed to by agencies having jurisdiction within the project limits. Alternative interchange layouts have been developed with the assistance of PSG and CAG members. Concurrence was obtained from FHWA and resource agencies on interchange layouts to be carried forward for further study.

Richton Road One-Way Conversion, Village of Richton Park, IL - GRAEF is completing Phase I plans to convert the existing one-way streets of Richton Road and Poplar Avenue to two-way streets. These streets are in the vicinity of Richton

Park's Metra station and the change will improve the traffic flow in the area. Additionally, the change will decrease the heavy traffic movements from southbound Governors Highway to eastbound Sauk Trail in the morning. The intent is to reconstruct the pavements that will be impacted. Coordination meetings are being held with the Federal Highway Authority, IDOT, and the Cook County Highway Department to assure any agency concerns are addressed.

Illinois Tollway, Elgin O'Hare Western Access, Contract I-17-4674, Jane Addams Memorial Tollway System Interchange (Westbound Collector Distributor Road), Project Manager – This project was part of the system interchange at the new I-490 Tollway and the existing Jane Addams Tollway (I-90). Peter managed in-house GRAEF staff as well as six sub-consultants. Both a bridge construction contract and Collector Distributor roadway contract were designed and let in 2018. Additional coordination was needed with the designers of the system interchange as well as those designing the Eastbound Collector Distributor Roadway. Appropriate coordination with permitting agencies and adjacent municipalities was also required.

Pace Headquarters, Arlington Heights, IL— Project Manager for the site development portion of this new Pace headquarters building. Additionally, building structural design, professional land survey and construction phase services were provided. The new site was comprised of a complicated detention and grading design to fit within the existing property. This was a rewarding high profile project for GRAEF staff and the local community.

Arlington Heights Fire Station – Project Manager on the site design for the new Arlington Heights Fire Department headquarters on Arlington Heights Road. Peter led the civil design team on the design of the parking lot, storm sewer, detention facility, sanitary sewer, water main service, and erosion controls. Coordination with the design architect and Village Engineer was beneficial in creating a design meeting the objectives of both parties. Mr. Johnston also appeared before the Village Planning Commission to discuss the proposed site design and detention facility.

US 34 (Veterans Parkway), IDOT PTB 126/012, Kendall County, IL—Project Manager for Phase II Engineering services consisting of widening of US Route 34 from a 2-lane facility to a 4-lane facility with median. The median will be traversable in some sections, but raised in others. A unique drainage system is being designed for the west end of the project. Due to the proximity of the Fox River to the south, there will be no direct discharges of storm sewer allowed to the Fox River in the west end of the project. Instead, an infiltration system consisting of inverted U-shaped structures has been devised. The storm sewer pipe collection system will be directed into these structures and the water will infiltrate to the groundwater table. These linear aligned structures will also function as detention systems in large storm events.

Eric Meschewski *PE, CP II*

Civil Engineer

Professional Registration

Professional Engineer – IL 062-065709

Education

M.S., Civil Engineering – Structures, 2013

University of Illinois at Chicago, Chicago, IL

B.S., Civil Engineering, 2009

Purdue University, West Lafayette, IN

Certifications

IDOT; Module I Fundamentals of Storm Water Pollution and Erosion and Sediment Control

IDOT; Module II Erosion and Sediment Control Planning & Design

IDOT; Module III Erosion and Sediment Control Inspection

IDOT PCC Level 1 Technician

ACI Concrete Field Testing Technician

APWA Certified Public Infrastructure Inspector exp. 03/14/27

IDOT Mixture Aggregate Technician

IDOT STTP – S33 Soils Field Testing and Inspection

IDOT Hot Mix Asphalt Level 1

IDOT Nuclear Density Tester

OSHA 10 Hour

IDOT ADA/PROWAG Training

IDOT, Documentation of Contract Quantities; 22-19556 exp. 03/07/26

Richton Road One-Way Conversion, Village of Richton Park, IL - GRAEF is completing Phase I plans to convert the existing one-way streets of Richton Road and Poplar Avenue to two-way streets. These streets are in the vicinity of Richton Park's Metra station and the change will improve the traffic flow in the area. Additionally, the change will decrease the heavy traffic movements from southbound Governors Highway to eastbound Sauk Trail in the morning. The intent is to reconstruct the pavements that will be impacted. Coordination meetings are being held with the Federal Highway Authority, IDOT, and the Cook County Highway Department to assure any agency concerns are addressed.

IDOT I-55 Resurfacing, Drafter and Designer; IDOT tasked GRAEF with developing plans for resurfacing approximately 27 miles (13 in each direction) for I-55. Tasks included recommend pavement removal and replacement based on cores taken, developing plans and specifications for two separate contracts, and cost estimating the work to be done. Additional work included maintenance of traffic for this work and bridge work and creating an environmental survey request (ESR) package.

Carl Sandburg High School Baseball Field, Orland Park, IL; Design Engineer – GRAEF has been tasked with developing the reconstruction plans for the varsity baseball field at the high school. The new field is comprised of artificial turf with an underlying drainage layer to convey storm water flows. Eric's role consisted of permit coordination with Cook County Department of Transportation and Highways, the Metropolitan Water Reclamation District of Greater Chicago, and the Village of Orland Park for stormwater management.

Village of Schaumburg, 90 N Boulevard MSI Campus; Project Engineer, Schaumburg, IL — The project consisted of utility coordination for the entire Motorola campus for a new roadway. The scope included coordination with the roadway designer, village, and developer to prepare plans showing existing utility layout and locations.

City of Elgin, Chicago Street Reconstruction; Project Engineer, Elgin, IL — The project consisted of putting together IEPA permits for water main replacement. The project also consisted of preparing plans for approximately 3,500 feet of water main replacement, utility coordination, and construction phasing.

South Street Extension, Elgin, IL– Assistant Resident Engineer. Inspected water main installation, sanitary sewer installation, storm sewer installation, box culvert installation, soldier pile installation, HMA installation, soldier pile wall installation, curb and gutter installation, bike path, ADA curb ramp and sidewalk installation.

Montgomery IRP/MFT, Montgomery, IL — Resident Engineer for various roads within the village. The scope included roadway resurfacing, roadway reconstruction, ADA curb ramp installation, various curb and gutter removal and replacement, various sidewalk removal and replacement, and storm installation.

Green Street Parking Lot, Bensenville, IL — Resident Engineer for the installation of a new parking lot. The scope included tree removal, earth excavation, base installation, curb and gutter installation, sidewalk installation, ADA curb ramp installation, and HMA installation.

Jeffrey Orzech *PE*

Civil Engineer

Professional Registration

Professional Engineer – IL

062-053695

Education

B.S., Civil Engineering, 1992

University of Illinois, Urbana, IL

Certifications

IDOT Survey 1 - Beginning

IDOT - Local Roads Training Program - Pavement Construction Inspection

IDOT; Module I Fundamentals of Storm Water Pollution and Erosion and Sediment Control

IDOT; Module II Erosion and Sediment Control Planning & Design

IDOT - Bridge Inspection

IDOT - Rehabilitating Urban Streets

IDOT - Highway Signing

IDOT - Trenching and Shoring Safety

IDOT – Americans with Disability Act Accessibility Guidelines (ADAAG) and Public Right-of-Way Accessibility Guidelines (PROWAG) Seminar

Potter Road, Cook County, IL—Project Engineer for this Part A (Phase I) Report in Park Ridge, Des Plaines and unincorporated Cook County, which includes one mile of Potter Road from Dempster Street to Golf Road and half-mile segments of Dempster Street, Ballard Road and Golf Road. Work included survey, traffic analysis for planning of additional lanes and traffic signal interconnect, signal timing, horizontal and vertical geometric improvements (including roadway versus floodplain analysis), ADA analysis, additional right-of-way investigation, utility impacts, sewer and ditch drainage, pavement design and bridge replacement. Mr. Orzech coordinated the Potter Road design with the Cook County Highway Department, Illinois Department of Transportation, Illinois Department of Natural Resources, Maine Township, and the Cities of Des Plaines and Park Ridge.

City of Chicago Department of Transportation, Pershing Road, Chicago, IL— Prepared Phase I Intersection Design Studies analyzing traffic counts, signal timing and roadway geometrics for 5000 feet of street relocation, widening and reconstruction. Phase II Design consisted of vertical and horizontal roadway geometrics, street grading with nine intersections, drainage design of a 30" diameter sewer included sizing and layout outletting to a 20-foot diameter MWRD sewer, traffic signals, street lighting, landscaping, building demolition, a decorative fountain, staging, striping, estimates and specifications. He served as Lead Design Engineer on this 5.1 million dollar project.

Rand Road & Ela Road, Village of Lake Zurich, Lake County, IL—Project Engineer: Phase II work consisted of the preparation of Plans, Special Provisions and estimates for improvements to the intersection consisting of the addition of eastbound and westbound right turn lanes on Rand Road and included drainage, retaining walls and traffic signal improvements. At the request of Lake County, sidewalks extending 250 feet north and south of the intersection were added to the improvement. The work was funded by the CMAQ grant with Village/Lake County matching funds. The project was led by the State following IDOT Bureau of Local Roads procedures. Structural work consists of the preparation of plans for a concrete faced sheet pile retaining wall approximately 350 feet in length and needed for the westbound right turn lane widening.

Main Street & Deerpath Road Intersection, Batavia, IL; Project Engineer— GRAEF was selected by the City of Batavia to complete a Phase I Project Development Report for the improvement of the intersection of Main Street and Deerpath Road. The project was led by the City of Batavia with assistance from Kane County since Main Street is a County route. GRAEF also coordinated with IDOT to get concurrence on traffic volume issues. The GRAEF team analyzed and compared a standard, signalized intersection improvement to a roundabout improvement. GRAEF worked with the City and County to analyze the pros and cons of each type of improvement. The City of Batavia and Kane County chose the signalized intersection option. GRAEF provided full Phase I engineering services including survey, utility coordination, Right-of-Way analysis, traffic and accident analysis, IDS's, wetland delineation, PESA, drainage, cost estimates and coordination. GRAEF completed the Phase I Report in accordance with the IDOT BLRS Policies and Procedures for Federal Aid Projects.

IDOT PTB 193, Item 17, Work Orders 1, 6 and 15, Interstate 55 Resurfacing from I-80 to Weber Road, Will County, IL; Project Engineer—GRAEF prepared two construction contracts for the milling and resurfacing of I-55 from I-80 to Weber Road. One contract addresses the southbound direction (62K30) and one address the northbound direction (62K51). The GRAEF team completed a field visit, reviewed

prior improvement plans, and arranged with our subconsultant to obtain pavement cores. Traffic staging plans were developed in order to maintain minimal differential lift thickness so that the work can be completed at night, and therefore no daytime lane closures, along this heavily travelled expressway. Drainage improvements including structure cleaning, ditch grading, and pipe cleaning are included in the improvements. GRAEF worked closely with IDOT Materials to assure that the proper mixes will be utilized. Pavement patching will also be completed prior to the overlay.

Midlothian Road at Lake Zurich High School, Village of Lake Zurich, IL; Project Engineer—This project consisted of developing a Phase I Report for Midlothian Road at the main entrance to Lake Zurich High School in the Village of Lake Zurich. The Report design issues included roadway widening and resurfacing to create new turn lanes into the high school, adding new pedestrian facilities including sidewalk and crossings, analysis of bicycle path location options, traffic projections and traffic signal timing design, safety review, locations of new traffic signals to an unsignalized intersection, and enclosing the existing surface drainage system with a below ground system. This project included an Intersection Design Study, wetlands delineation and report, and ESR elements.

City of Chicago Department of Transportation, Addison Traffic Study, Chicago, IL—Project Engineer for a traffic study and report for Addison Street between Cicero Avenue and Milwaukee Avenue. This project included traffic and pedestrian counts, accident analysis, and sign and signal warrants. The study detailed options for changing traffic directions on single and dual direction streets, protected and unprotected pedestrian crossings, recommendations for new signal locations, lane striping modifications for better traffic flow, traffic platoon optimization, vehicular and pedestrian movement projections, and rerouting traffic volume analysis for different street direction and lane striping options.

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