



APWA MINNESOTA CHAPTER PUBLIC WORKS PROJECT OF THE YEAR NOMINATION FORM

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Submission Deadline: October 1, 2022

All nomination and supporting data are to be submitted as a PDF to Sarah at sarah.lloyd@bolton-menk.com with a maximum page size of 5 pages, including photos.

Project Nominated: I-94 Dayton Parkway Interchange

Managing Agency: City of Dayton
Contact Person: Zach Doud, City Administrator
Agency Address: 12260 South Diamond Lake Road
Agency Phone Number: 763.427.4589
Email: dmontebello@srfconsulting.com

Project Design Firm: SRF Consulting Group
Project Construction Administration Firm: SRF Consulting Group, Minnesota Department of Transportation
Project General Contractor: C.S. McCrossan

Name of Person Making Nomination: Dave Montebello, PE
Phone Number: 763.249.6754
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Criteria for Nomination

- Project must be substantially completed by October 31, 2021 or October 31, 2022.
- Includes use of innovative construction management techniques and completion of the project on schedule.
- Maintained excellent safety performance and safety program throughout construction.
- Evidence of strong community relations during all project phases.
- Consideration given to the environment. Sustainable design techniques involved.
- Unusual accomplishments given adverse conditions.
- Provides future value to the public works profession and perception by the public.
- Additional considerations such as value engineering, innovative project financing, multi-agency coordination and participation.

Reasons for Nomination: Describe the project with the aspects and features of the project that fulfilled any of the applicable criteria listed. (Include description on a separate page.)



I-94 DAYTON PARKWAY INTERCHANGE

City of Dayton, Minnesota

PUBLIC WORKS PROJECT OF THE YEAR



PROJECT OVERVIEW

Local access to Interstate 94 (I-94) in the northwest area of the Twin Cities metro was limited due to regional connections at TH 101 and TH 610, federal requirements for interchange spacing, and lack of a sound system plan that identified another regional access point. The cities of Dayton, Rogers, Corcoran, and Maple Grove, along with MnDOT and Hennepin County (the County), recognized the need to address congestion and safety by developing a safe and efficient transportation system that allowed for additional growth and provided additional access to I-94.

This plan needed to meet state and federal requirements, address safety and emergency response issues on I-94, better balance traffic at I-94 access points, and support local economic development. The City of Dayton (the City), a small community of just over 5,000, took the lead on planning this project that supported economic development and actively promoted planned growth in its community. Planning began in 2008 and culminated in the opening of a new Dayton Parkway interchange (Interchange) in 2021.

“The Dayton Parkway Interchange is a critical transportation project, located in an area of significant manufacturing and industrial development potential, adjacent to one of the busiest freeways in the state.”

Dawn Sperr, President, I-94 West Corridor Coalition

History of the Planning & Design Process

The completion of the Interchange was over twelve years in the making, beginning with the NW Hennepin County Area Study in 2008. The study resulted in a recommendation for a new I-94 interchange between TH 610 in Maple Grove and TH 101 in Rogers.

A Technical Advisory Committee (TAC) was formed in 2011 to study what was then called the Brockton Interchange. The TAC included representatives from the cities of Dayton, Rogers, and Maple Grove, and Hennepin County, MnDOT, and the FHWA. Over a twelve-month period, preliminary alternatives were developed and evaluated, including a partial clover leaf, trumpet, diverging diamond, split diamond, and offset. Business owners, landowners, and the public showed overwhelming support of the offset design. An offset design partial clover leaf with loops was identified as the regionally preferred alternative in December of 2011 and by the end of 2012, a MnDOT Level 1 layout of the preferred design was conditionally approved. However, full construction funding for the project was not available at the time.

In 2013, the City began acquiring the right of way from willing sellers that was necessary to build the interchange. The City also went to work in creatively securing funding for the project, and by 2018, the City had procured federal and LRIP funding totaling nearly \$20.5 million. That funding, combined with contributions from local agencies, gave new life to the project. Also in this time frame, MnDOT decided to advance pavement and geometric improvements to I-94 in this area. This decision accelerated efforts to advance the Dayton project and to coordinate efforts more closely between the City and MnDOT.

In 2018, MnDOT, with the support of the City, completed an environmental document for I-94 that included the Interchange. As part of this work, interchange alternatives were reanalyzed. Since the 2013 study was completed, population and employment assumptions of the surrounding area had changed. The City and MnDOT worked together to perform a full alternatives evaluation that better served the updated land uses and travel patterns. The study determined that a diverging diamond interchange (DDI) was the best alternative.

Key benefits of DDIs include:

- **Safety** – Fewer conflict points change types
- **Capacity** – Serves traffic demand beyond the year 2040
- **Operations** – Stops half the vehicles as the next best alternative
- **Footprint** – Minimizes impacts to adjacent property owners
- **Cost** – One of the lower cost options
- **Multimodal** – Supports shared use path in center of bridge



MnDOT's I-94 design-build unbonded concrete overlay (UBOL) project from the I-494 Fish Lake Interchange to TH 101 was evolving concurrently with the Interchange Study, moving in parallel through preliminary design. The City needed to determine whether the Interchange project would be a city-led design-bid-build project or be included in MnDOT's design-build project. The City Council ultimately voted to maintain leadership of the interchange project under the design-bid-build procurement method.

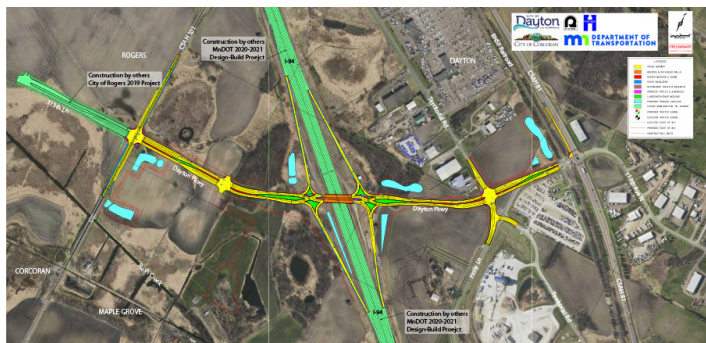
Long-Term Benefits

Before construction of the Interchange construction, several large national industrial developers expressed interest in local sites but listed transportation and logistical concerns as barriers. The same concerns were expressed by residential homebuilders who rely on quick and safe access to I-94 when marketing to potential homebuyers.

"Our region's economy requires a sound transportation system that supports economic activity by connecting, businesses, jobs, and resources. The Dayton Parkway Interchange plays a vital role in supporting that system."

Steve Bot, Board Chair, I-94 West Corridor Coalition

With the Interchange now complete, the interest from developers has converted into significant tangible developments. The vital access to the new transportation route has resulted in developer CRG selecting Dayton for the Cubes at French Lake – their 1,006,880-square-foot development located on 65 acres near the intersection of County Road 81 and Dayton Parkway. This development is touted as "the first bulk inventory distribution facility in Minnesota and the state's largest speculative industrial project ever developed."



Other significant development projects include:

- Inland Development Co.'s 333,750-square-foot office-warehouse project on a 25-acre site just off County Road 81 near Troy Lane.
- Graco's 550,000-square-foot building within the French Lake Industrial Center. The project is expected to bring 350 jobs to the city in the next two to three years. A second 500,000-square-foot building is also in the works.
- Dayton Interchange Business Center, a 124,000-square-foot spec warehouse building.

"Dayton Parkway finally gives Dayton direct access to I-94. This will unlock the economic potential of Dayton, and substantially cut the commute time for its residents."

Tim McNeil, Mayor, City of Dayton

Project Partnerships



INNOVATIVE CONSTRUCTION MANAGEMENT

Multi-agency cooperation and participation were carried out through construction management. MnDOT led the construction oversight jointly as part of the I-94 UBOL project while the City and SRF provided project staking, technical support, review and concurrence on change orders, and processing of contractor payment. This multi-agency approach allowed for successful coordination of project schedules, traffic control changes, and public outreach with the concurrent I-94 unbonded overlay project.

Single points of contact were established between the contractor, MnDOT project manager, and design engineer, giving direct access to efficiently resolve questions or issues as they arose in the field. This was also critical considering construction began in the spring of 2020 at the start of the COVID-19 pandemic. Weekly construction meetings, which would have historically been held on site, were held virtually in a hybrid setting for the first time.



As a result of careful coordination of the construction schedule with the I-94 UBOL project owner (MnDOT) and contractor (C.S. McCrossan), the project team minimized the number of stages and traffic control changes required to construct the new interchange.

Construction was completed on time and within budget, with the interchange open to traffic in November 2021.

APPROACH & COMMITMENT TO SAFETY

In general, construction followed MnDOT's joint Maintenance of Traffic (MOT) plan. However, for the first time in Minnesota, a new, innovative conveyor system carried concrete from a mobile batch plant over live traffic and into trucks in the construction zone. The system reduced the number of construction trucks mixing with general vehicle traffic, creating a safer work zone for motorists and construction crews. **Between the Interchange project and I-94 UBOL project, it was estimated the conveyor replaced approximately 6,000 truck trips over 2021 construction, thus reducing vehicle emissions and potential vehicle conflicts.**

Other critical construction logistics the Interchange team navigated included:

- A tight construction window required coordination with I-94 UBOL project to coordinate the ramps, center pier construction, and bridge work with mainline construction work.
- The team established detailed staging and construction windows the contractor needed to hit. This coordination minimized impacts on traffic and improved safety for workers and users.
- CR 101 work needed to take place while open to traffic; the team developed detailed staging plans to allow work to proceed in conjunction with traffic as it was an alternate route to I-94 pavement work.
- With lane closures planned on I-94, it was anticipated traffic would utilize CSAH 101 (Brockton Lane) as a north-south reliever during periods of congestion. As part of construction staging, a temporary miniature roundabout was installed at the intersection of CSAH 101 and CSAH 159 (Territorial Road) to improve traffic flow and safety with increased volumes. The mini roundabout proved so successful that it was left in place as a permanent improvement.

PUBLIC ENGAGEMENT & COMMUNITY RELATIONS

Integration of public engagement through all phases of the project was key to the success of this project. During early planning (for what was then called the I-94/Brockton Lane Interchange Project), three open houses took place over 18 months to review design alternatives for an interchange. In addition, seven targeted small group meetings with landowners and business owners took place.

Additional outreach included:

- Newsletters mailed to nearby property owners
- Flyers posed at area businesses and local establishments
- Press releases in the Crow River News and Champlin-Dayton Press
- Notices posted to the City newsletter and Dayton Elementary School newsletter
- Information posted to the project website

The result of the initial public engagement guided the Project Steering Committee (PSC) to identify a preferred design alternative that attracted broad support from the residents and the business owners in the area. The offset interchange offered the ability to construct improvements using a phased approach that did not disrupt the operations of businesses or significantly reconfigure accesses to county roads.

When the TAC reevaluated the study in 2018, two more open houses occurred, covering:

- The proposed DDI design
- A new proposed project timeline
- Funding procurement

To educate the public on how traffic and pedestrians would navigate a DDI, the team developed a full 3D rendering and video of the project, which helped visually represent other vital elements, such as impacts, aesthetics, and landscaping. During construction, the team established a project website and direct mailer with regular updates on construction progress and upcoming traffic control changes.



RESILIENCY, SUSTAINABILITY, & ENVIRONMENTAL CONSIDERATIONS

Sustainability

The Elm Creek Watershed District, MnDNR, and USACE were involved early in this project as it was known the design would impact wetlands and floodplains. The City and SRF worked diligently with these agencies throughout the task to meet all requirements set by the regulatory bodies.

Seven best management practices (BMPs) “systems” were constructed with combined jurisdiction. Examples of these BMPs included:

- Construction of a floodplain mitigation area to provide compensatory storage for the portions of the parkway built above the existing floodplain.
- Planting of trees, plants, and other landscape elements were carefully selected to support durability, plant survivability, and maintenance



Cultural & Environmental Elements

A Visual Quality Advisory Committee (VQAC) was formed during final design to incorporate streetscape and landscape features and bridge aesthetics into the project. The project was viewed as a “once in a lifetime” opportunity for the community to establish and enhance a connection to the I-94 corridor. Representatives from the City, local residents, the County, MnDOT, and SRF Consulting made up the committee with the following goals:

- Support economic development potential of the business and industrial area
- Complement the beauty found in the surrounding rural landscape
- Envision Dayton Parkway as a model for future roadways in the community
- Design with durability, plant survivability, and maintenance in mind
- Develop community identity signage incorporating key themes from Dayton’s brand

- Balance bridge aesthetic consistency along I-94 with potential for unique community features
- Enhance pedestrian and bicycle facilities that will provide future regional trail connections

The VQAC ultimately had influence on the following elements:

- Bridge pier and abutment shapes
- Bridge surface textures and color finishes
- Bridge center median walkway lights
- Bridge city name plaque
- Decorative bridge and parkway light poles
- Parkway median and boulevard trees and plantings
- Decorative boulder walls
- Special median pavements
- City gateway monument sign
- Stormwater pond plantings and vegetation restoration

NOTABLE ACCOMPLISHMENTS

Years of planning and early coordination meetings among agencies mitigated risk for unforeseen conditions. The City used less than 50% of its \$1 million budget in construction change orders.

When soft, compressible soils were discovered during geotechnical exploration near the proposed bridge location, the design of wick drains and an earth surcharge program accelerated settlement before foundations were constructed. The total length of wick drains used on the project was over 120 miles.

Setting precast bridge beams across I-94 while limiting impacts to traffic was a common challenge. The work was completed over multiple nights utilizing 15-minute closures of the interstate with assistance from the Minnesota State Patrol. Coordination and public outreach of these incremental closures were communicated well in advance.

PUBLIC WORKS INDUSTRY IMPACTS



Value to the Public Works Profession

The Interchange creates a new regional connection to the communities in northwest Hennepin County. With the anticipated growth of this region, the improvements ease traffic congestion on the local road system and provide better safety and mobility for all roadway users. The new interchange also provides a new access point to an existing 6-mile segment of I-94 lacking direct access, which will improve emergency response.

The Dayton Parkway project stands as a testament to what can be accomplished through years of cooperation between agencies, effective public input, and successful engineering and construction work.

“This project highlights a great partnership between the city of Dayton, the I-94 West Corridor Coalition, and MnDOT, and shows what can be done working together. We are grateful for the communities’ patience during construction and look forward to how these improvements, along with the Dayton Parkway Interchange, will improve safety and benefit the region.”

Margaret Anderson Keliher, MnDOT Commissioner

Public Works Partnerships

MnDOT contributed by leading construction oversight and update of EA and IAR as part of the I-94 unbonded overlay project. This was estimated as \$800k–\$1 million of in-kind services.

The City provided project staking, coordination communication, technical support, review and concurrence on change orders, and processing of contractor payment.

A cooperative agreement was also established between the City and the County.

ADDITIONAL CONSIDERATIONS

Value Engineering

A value engineering workshop was held in 2013 when the preferred alternative for the Brockton Lane Interchange was the partial cloverleaf. The key recommendation from the workshop was to develop the diverging diamond interchange as a viable alternative to be jointly considered during the next phase of design with the preferred alternative. The estimated cost savings was \$1.9 million.

Innovative Project Financing

The City was able to lead the construction of a brand new interstate interchange through years of multiple-agency cooperation and procuring creative funding from several sources. Financing included:

- MnDOT Funds (construction oversight)
- MnDOT Funds (signal participation)
- Federal Funds – Met Council - \$7 million
- State Bonds – \$13.5 million
- Municipal State Aid funds
- State Freight Funds – \$2 million
- City of Rogers Funds
- City of Corcoran Funds
- City of Dayton Funds
- Chapter 429 Assessment Dollars

REASON FOR NOMINATION

After nearly twelve years of study and collaboration, the Dayton Parkway Interchange has become a reality. The city has been working with its partners to achieve a common vision for the region through a project that exemplifies the best of the public works profession.

