

Staff Report

DUFF AVENUE CORRIDOR STUDY UPDATE

July 21, 2026

BACKGROUND:

Duff Avenue is one of Ames's most critical north-south arterial roadways, serving residents, businesses, medical facilities, and freight movement. In July 2025, the City Council approved a Professional Services Agreement with Foth Infrastructure & Environment, LLC to conduct a corridor study. **The extent of this study is along Duff Avenue from the Union Pacific Railroad (UPRR) crossing near Main Street to 16th Street.** The study evaluated current and future traffic operations, safety, walkability, connectivity, and railroad crossing impacts, and identified long-term improvement concepts for the corridor.

Staff is not seeking any decisions from the City Council at this time. This staff report is a summary of the more technical memo attached to this report that details the study's outreach, technical analysis, and conceptual design and is intended to provide Council with an update of the findings and public outreach prior to finalizing the study. The final report will be brought back to City Council later this fall for formal Council action.

It should be noted that the outcomes of the study and eventual consideration by City Council are intended to be used as a planning document for future improvements along the corridor. These improvements are considered to be in the medium term (10 to 15 year horizon of the Metropolitan Transportation Plan). This study will help guide decisions and look for future opportunities to prepare for the project programming in future Capital Improvements Plan (CIP) years.

INITIAL PUBLIC OUTREACH:

The first round of public outreach began in late March 2026 and gathered input on existing conditions, concerns, and priorities for the corridor, receiving 547 survey responses. The survey was mailed to all property owners within a 400-foot radius of the corridor. Direct email contact was also made with contacts from the Old Town and Sunrise neighborhood associations, Ames Regional Economic Alliance, Mary Greeley Medical Center, McFarland Clinic, and the Main Street Ames businesses. The survey was also promoted on the City of Ames social media outlets. **Respondents' top three priorities included:**

1. **Improving safety for all users**
2. **Reducing traffic congestion and delays**

3. Improving walkability and bikeability

The project team also met directly with staff from Mary Greeley Medical Center and McFarland Clinic.

TRAFFIC ENGINEERING ANALYSIS AND STUDY BACKGROUND:

While input was being gathered in the initial public outreach, an analysis of the technical components of the corridor was ongoing. The study does not begin from a blank slate, but rather advances priorities the City Council has already established in following adopted plans:

- The **Ames Connect 2050 Metropolitan Transportation Plan** sets regional goals for safety, accessibility and connectivity, environmental stewardship, and efficiency; including designing streets for all users and focusing safety investments on the region's High-Priority Safety Network.
- The **Comprehensive Safety Action Plan** commits the region to Vision Zero (zero fatalities) and identifies this stretch of Duff Avenue as part of the region's High-Priority Safety Network.
- **Walk Bike Roll Ames** plan identifies this corridor as a high-priority location for a shared-use path expansion and the East 12th Street crossing as a high-priority pedestrian crossing improvement.
- The **Complete Streets Plan** and the **Ames Climate Action Plan** further emphasize designing streets that safely serve all users and support walking, biking, and transit.

The corridor carries approximately 9,000 to 12,300 vehicles per day and is forecasted to carry 10,200 to 13,900 vehicles per day in 2050. **All primary intersections operate at an acceptable level of service (LOS D or better) today and are forecasted to continue doing so through 2050 under the existing four-lane configuration.**

The safety analysis found that the intersection of Duff Avenue and 16th Street experiences more crashes than would typically be expected for an intersection of its geometry and traffic volume. Most crashes are attributed to failure to stop at a stop sign. The corridor as a whole also experiences a high number of rear-end, broadside, sideswipe, and left-turn crashes.

The analysis also reviewed corridor speeds, transit data, and railroad crossing data, which are further described in the attached memo.

CONCEPTUAL DESIGN:

Following the initial public input and technical analysis, a conceptual design was developed to address the concerns identified by both the public and the technical analysis. **The corridor currently provides more vehicle capacity than its traffic volumes require, both today and in 2050.**

The study's initial conceptual design proposes converting Duff Avenue from a four-lane undivided roadway to a three-lane section with a center two-way left-turn lane. This

reallocates roadway width toward the safety, crossing, and multimodal outcomes prioritized in the City's adopted plans and by the public.

The concept also includes a continuous shared-use path (west side), enhanced pedestrian crossings (including a pedestrian hybrid beacon at East 12th Street that would also activate for ambulances), and two alternatives for the 16th Street intersection: a mini/compact roundabout, and a two-way stop-controlled intersection where Duff Avenue traffic no longer stops.

ADDITIONAL PUBLIC OUTREACH:

A second round of public outreach, conducted in June 2026, was delivered to the same groups as the initial outreach and sought input on the conceptual design described above.

The survey received 711 responses. **Feedback on the conceptual design reflected a range of perspectives including approximately 57% of respondents who were unsupportive of the proposed improvements and 43% who were neutral or supportive. The most common concern was the potential for increased congestion and delay from reducing the number of through lanes.**

Respondents also raised questions about transit operations, shared-use path maintenance, railroad crossing delays, emergency vehicle access, and the 16th Street intersection alternatives.

In response to the concerns raised in the second round of outreach, the project team re-examined the traffic modeling in detail to evaluate the concern most frequently raised by survey respondents: that a three-lane section would significantly increase congestion and delay. **The modeling does not support this concern. The corridor continues to operate acceptably in 2050 under a three-lane configuration, performing nearly the same as, and in some instances more efficiently than, the existing four-lane section as illustrated in the table below.**

Intersection	2050 Operations (4-Lane Section)	2050 Operations (3-Lane Section)	Average Vehicle Delay Change
Duff Ave and Main St	LOS A (3.3 seconds/vehicle)	LOS A (3.5 seconds/vehicle)	+0.2 seconds/vehicle
Duff Ave and 6th St	LOS A (7.7 seconds/vehicle)	LOS A (8 seconds/vehicle)	+0.3 seconds/vehicle
Duff Ave and 9th St	LOS A (5.2 seconds/vehicle)	LOS A (5.8 seconds/vehicle)	+0.6 seconds/vehicle
Duff Ave and 11th St	LOS B (11.7 seconds/vehicle)	LOS B (13.1 seconds/vehicle)	+1.4 seconds/vehicle
Duff Ave and 13th St	LOS C (30 seconds/vehicle)	LOS C (29.2 seconds/vehicle)	-0.8 seconds/vehicle
Duff Ave and 16th St	LOS C (22.6 seconds/vehicle)	Roundabout: LOS A (7.2 seconds/vehicle) Two-way Stop: *N/A	Roundabout: -15.4 seconds/vehicle Two-way Stop: *N/A

**Note: Overall intersection delay and level of service are not typically calculated for two-way*

stop-controlled intersections since one roadway has free-flowing traffic.

The project team developed an alternative version of the conceptual design that includes bus pull-outs at the CyRide transit stops near 11th Street. However, staff notes that, based on national guidelines, pull-outs may not be necessary given the observed and forecasted traffic volumes, transit ridership, dwell times, and bus frequencies at the stop.

The railroad crossing data was re-evaluated following public outreach and confirmed that the study's proposed conceptual design accommodates queueing from typical railroad train crossing events.

A conceptual plan was developed without the enhanced mid-block pedestrian crossing in front of Bandshell Park between 5th and 6th Street due to significant negative feedback regarding the proposed crossing.

Additionally, at the intersection of Duff and 16th Street with the alternative for the two-way stop control, the project team added a marked pedestrian crossing with a rectangular rapid flashing beacon (RRFB) to address concerns about losing the ability to cross Duff Avenue if the existing all-way stop control is removed.

DUFF AVENUE RAILROAD CROSSING:

One major item remains outside of the scope of the current study, which is exploring potential alternatives for the existing at-grade crossing of the Union Pacific Railroad and Duff Avenue. This crossing causes major interruptions to traffic flow and is the primary contributor to congestion along the corridor following long delays that average over 3 minutes per train crossing with an average of 38 trains per day. Recovery times for the corridor following train crossings can be up to 90 seconds during peak hour traffic, and the crossing is typically blocked for a total of approximately 2 hours each day.

During the second round of public outreach, 75% of respondents supported conducting a detailed study of the Duff Avenue railroad crossing. A similar study was conducted in the early 2000s with a formal report to the City Council in 2003. Major issues were identified, including business coordination, drainage, public sentiment regarding the grade separation and project costs. The City Council at that time chose not to move forward with any project.

Staff estimates that conducting such a study today would cost around \$400,000, and that a grade separation construction project could now be on the order of \$40 to \$50 million (although the study would perform a more detailed analysis to confirm those construction estimates). The cost to perform the study could be supplemented with either AAMPO federal planning funds or a national competitive grant program such as the FRA's Railroad Crossing Elimination (RCE) Grant; however, a 20% local match would be required with either funding option for the study.

Staff notes that a modern railroad crossing study would emphasize alternatives with a much smaller footprint and impact to businesses compared to what was shown with the 2003 study and would place a high priority on improving connectivity between Downtown Ames and Bandshell Park.

OPTIONS:

OPTION 1: THREE-LANE SECTION WITH CENTER LEFT-TURN LANE

This option was identified through the traffic engineering analysis as the preferred alternative because it accommodates forecasted traffic volumes through the 2050 planning horizon and beyond. **Traffic modeling indicates that vehicle delays at intersections remain nearly unchanged when compared to the existing four-lane configuration. In addition, the introduction of dedicated left-turn lanes provides opportunities to further optimize traffic signal timing and improve traffic operations throughout the corridor.**

Significant benefits are realized with the three-lane configuration, including reduced vehicle crashes, improved multimodal accommodations through the addition of a shared use path, and safer pedestrian crossings. The conceptual design also preserves the majority of the existing tree canopy, helping maintain the character of the neighborhood while supporting the City's climate action goals.

This option was also supported by the ambulance service at Mary Greeley Medical Center because it provides more efficient movement of emergency response vehicles and promotes more predictable driver behavior, particularly with the addition of the pedestrian hybrid beacon at 12th Street.

Overall, this option best meets the goals identified during the public outreach process by improving safety, maintaining traffic operations, enhancing multimodal transportation, preserving neighborhood character, and providing the greatest long-term value for the community.

OPTION 2: FOUR-LANE SECTION (KEEP EXISTING SECTION)

This option would maintain the existing four-lane roadway configuration. Traffic operations, including intersection levels of service and travel times through the corridor, would remain similar to those of the proposed three-lane section. **However, opportunities to further optimize traffic signal timing would remain limited because left-turning vehicles would continue to control signal phasing at intersections.**

This option would not provide the safety improvements identified in the corridor study. Many of the crashes within the corridor are directly related to the existing four-lane configuration, where left-turning vehicles stop within the inside through lane. This condition contributes to rear-end and sideswipe crashes as following motorists brake suddenly or change lanes to avoid stopped vehicles.

Pedestrian crossings would remain unchanged, with no reduction in crossing distance or improvement in pedestrian comfort. **A shared use path could still be constructed; however, additional tree removal and likely right-of-way acquisition would be necessary to provide adequate space for the facility.**

This option would also require the City to construct and maintain roadway capacity beyond what is supported by the traffic engineering analysis. Maintaining infrastructure that is not necessary for forecasted traffic volumes represents an opportunity cost, as those resources could instead be invested in other transportation priorities throughout the community. In addition, the operational improvements identified by the ambulance service at Mary Greeley Medical Center would not be realized.

Overall, this option maintains existing operations but does not address the safety concerns, multimodal improvements, or long-term transportation goals identified through the engineering analysis and public outreach process.

OPTION 3: FIVE-LANE SECTION WITH CENTER TURN LANE

Although this option was not identified as an alternative during the traffic study because the existing corridor already provides excess vehicle capacity, it could be considered if maintaining two through lanes in each direction is identified as a Council priority.

Separating left-turning vehicles from through traffic would improve safety compared to the existing four-lane configuration by reducing conflicts associated with vehicles stopping in the inside through lanes. **As a result, this option would provide many of the same crash reduction benefits associated with the three-lane alternative.**

However, corridors with excess roadway capacity often experience higher operating speeds. Because forecasted traffic volumes are relatively low compared to the available capacity, drivers are less influenced by surrounding traffic, reducing the natural traffic-calming effect and increasing the likelihood of higher travel speeds. **The wider roadway would also increase pedestrian crossing distances and reduce pedestrian comfort.**

A shared use path and sidewalk could still be accommodated, however, additional right-of-way acquisition would likely be required. The facilities would generally need to be constructed immediately behind the curb. This configuration would eliminate the grass parking area and opportunities for street trees, significantly changing the character of the corridor while reducing separation between pedestrians and moving traffic.

This option would require the City to construct and maintain roadway capacity that is not supported by the traffic engineering analysis. **Maintaining infrastructure beyond what is needed for forecasted traffic volumes represents an ongoing financial commitment without a demonstrated transportation need.** In addition, the operational improvements identified by the ambulance service at Mary Greeley Medical Center would not be fully realized because emergency vehicles would continue to encounter two lanes of traffic in each direction.

Overall, while this option provides additional vehicle capacity, it does so without a demonstrated operational need and with increased costs, greater impacts to the corridor environment, and fewer benefits for pedestrians and the surrounding neighborhood.

STAFF COMMENTS:

This workshop is intended to be informational, and no formal decision or direction is requested from Council at this time.

However, if Council finds that the public's concerns regarding the conceptual design raised through the study's outreach do not align with the goals Council has for the corridor, staff would benefit from that direction to ensure the final study properly reflects Council's intent when it returns for consideration. For example, if Council does

not view the three-lane section as the appropriate treatment, it could direct staff to carry a four-lane option in the final study.

The study found that Duff Avenue operates well below the capacity of its existing four-lane configuration, both today and through 2050, while carrying documented safety and pedestrian crossing deficiencies. **Staff believes the conceptual design in Option 1 responds appropriately to those findings as well as to the priorities Council has already adopted through previous plans and that the public has identified in the initial study outreach.**

Staff recognizes that most second-round respondents were concerned about congestion, but the traffic modeling does not support that concern: the corridor is projected to operate at acceptable levels of service under the three-lane section.

It should also be noted that detailed-level design decisions will likely not be made until the project is programmed in a future CIP.

Staff will finalize the corridor study and report and bring the final version to Council this fall (likely September or October) for direction on accepting its findings. The accepted study would serve as the corridor's long-term planning document and guide future project programming.

ATTACHMENT(S):

[Memo - Duff Ave Corridor Study Workshop.pdf](#)

[Duff Ave Corridor Study Council Workshop Presentation.pdf](#)

[3 Lane Section Duff Ave Corridor Study.pdf](#)