

University Avenue Waterloo Council Work Session

July 24, 2017



Agenda

- Review of University Avenue Recommendations
 - Typical Cross-Section
 - 4-Lane Cross Section
 - 5-Lane Cross-Section
 - Aesthetic, Bicycle and Pedestrian Improvements
 - Bus Turnouts and Bus Stops
 - Speed Limits
 - Intersection Design
- Review University Avenue Project Information



Review Process

- Bi-Weekly Project Management Team Meetings
 - City Staff (Engineering, Planning, Traffic Operations, Public Works)
 - AECOM Staff
- Meetings with Other Stakeholders
 - MET Transit
 - Complete Streets Advisory Committee
 - Utility Companies
- Public Input Meeting
 - March 21, 2017



University Avenue Location Map



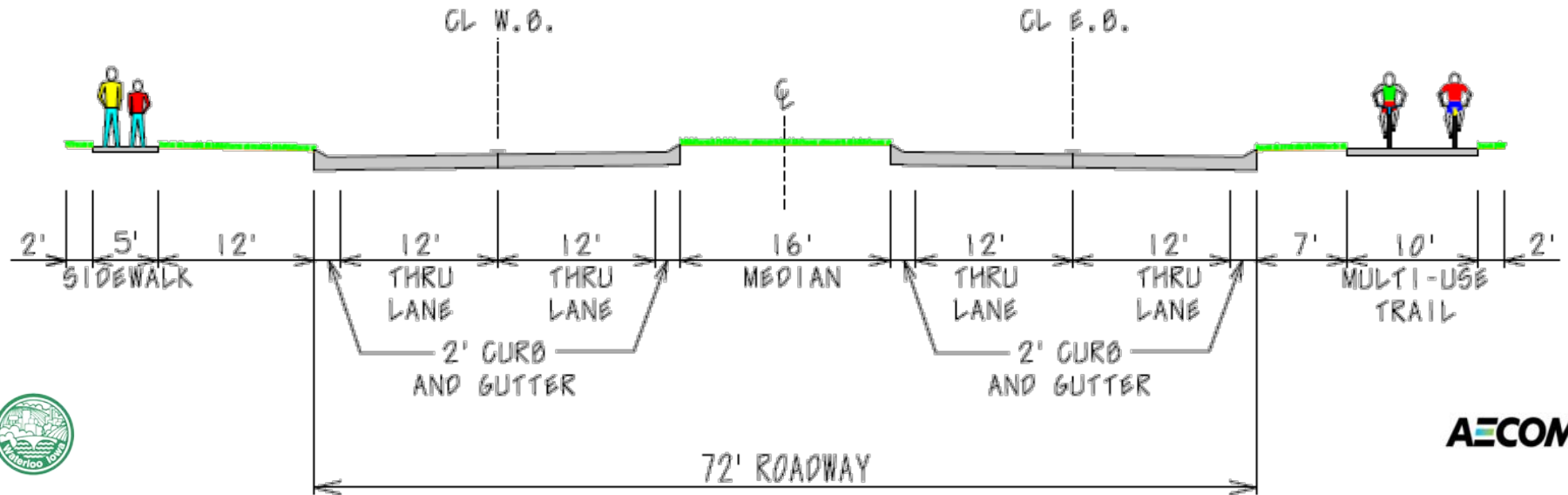
University Avenue Recommendation

- Typical 4-Lane Cross-Section to Replace 6-Lane Section
 - Meets the current and projected traffic volumes.
(traffic volumes range from 7,000 to 22,000 veh/day)
 - Creates space for complete street & streetscape improvements.
 - Reduces ROW acquisition
 - Reduces cost for construction, operations, and maintenance for the facility.



University Avenue Recommendation

- Typical Cross-Section Recommendation:
 - University Avenue from Highway 63 to Tunis Drive is recommended to be constructed as a 4-lane section with 12-foot lanes, 2-foot standard sloped curb and gutter sections, and 16-foot median.



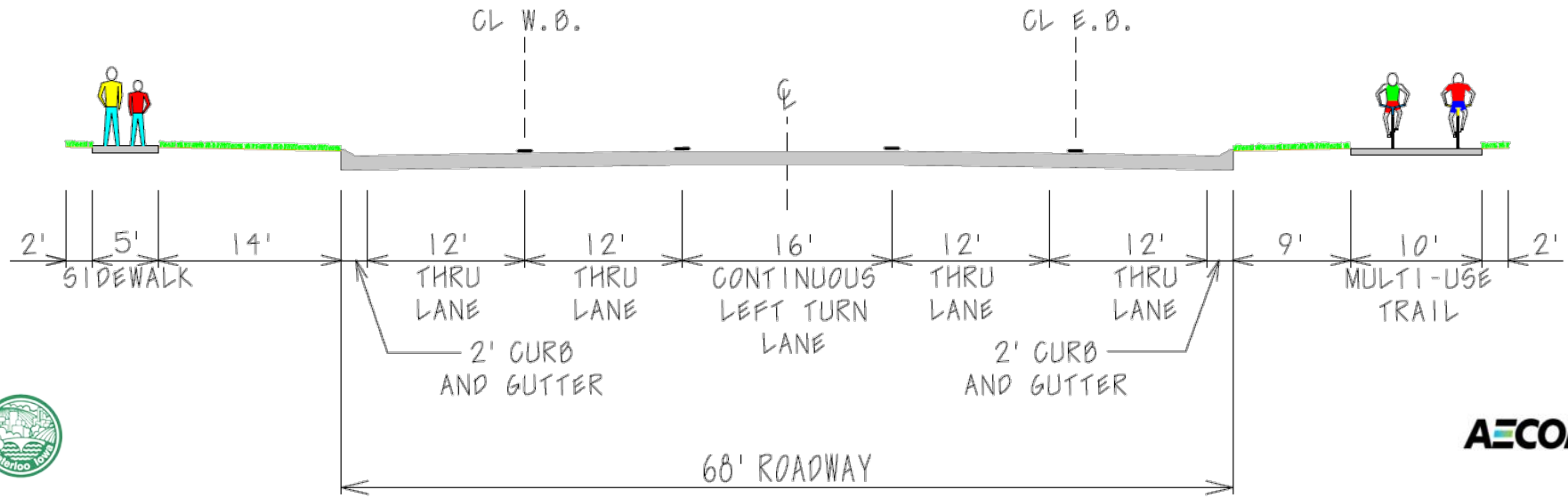
University Avenue Recommendation

- 5-Lane Typical Cross-Section:
 - Two-Way-Left-Turn-Lane (TWLTL)
 - Operates well with low design speeds and high driveway densities.
 - Increases business access
 - Potential of increasing number of crashes
 - Highly recommended by cities with similar corridors
 - 2nd Street in Coralville
 - S. Duff Avenue in Ames



University Avenue Recommendation

- Typical Cross-Section Recommendation:
 - University Avenue from Tunis Drive to Midway Drive is recommended to be constructed as a 5-lane section with 12-foot lanes and 2-foot standard rolled curb and gutter sections.



University Avenue Recommendation

- Aesthetic, Bicycle and Pedestrian Improvements
 - A shared use path creates connections with adjacent businesses and the Cedar Falls University Avenue Trail, Greenhill Road Trail and Sergeant Road Trail.
 - Sidewalk creates connections with adjacent businesses and existing neighborhood sidewalks.
 - Develop a aesthetic design plan for future installation as funding becomes available.
 - Landscaping/Plantings
 - Streetscape/Neighborhood Markers
 - Pedestrian Lighting



University Avenue Recommendation

- Bus Turnouts and Bus Stops:
 - Evaluation of Bus Turnout Locations
 - North Star Community Services
 - Tunis/EPI
 - Falls Avenue – Existing Bus Shelters
 - Ansborough Avenue
 - Existing bus shelters are located at Falls Avenue
 - Bus stops locations identified with Bus Stop ADA Improvements Project



University Avenue Recommendation

- Bus Turnouts and Bus Stops Recommendation:
 - Construction of a bus turnout at Tunis Drive and near North Star Community Services
 - Utilize Existing Bus Shelters at Falls Avenue for Bus Stop

EPI/Tunis Drive



North Star Community Services



University Avenue Discussion

- Speed Limit:

- Speed Limits are contingent upon several different factors including but not limited to safety, capacity, access points, driver expectation and number of intersections.

- Existing corridor has below average crash rates at 45 mph.

University Avenue	258/HMVMt
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Statewide City Street Average	453/HMVMt
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- University Avenue from Midway Drive to Tunis Drive may benefit from slower speeds with a possible 5-lane typical cross-section and the access points, and provides a logical transition to Cedar Falls.
- University Avenue from Tunis Drive to Hwy 63 has controlled access and frontage roads for the majority of this section.



University Avenue Recommendation

- Speed Limit Recommendation:
 - University Avenue from Midway Drive to Tunis Drive is recommended to have a posted speed limit of 35 mph.
 - University Avenue from Tunis Drive to Highway 63 is recommended to have a posted speed limit of 45 mph.



University Avenue Discussion

- Intersection Design

- Based on the 2011 Traffic Report
 - At several locations, traffic operations are similar, or slightly better, with signalized intersections than with roundabouts.
- Construction of roundabouts has severe impacts to ROW and access in most locations.
- Roundabouts have improved safety characteristics
 - Generally roundabouts reduce severity of crashes.
- University Avenue intersection crash rates are currently below the statewide average.



University Avenue Discussion

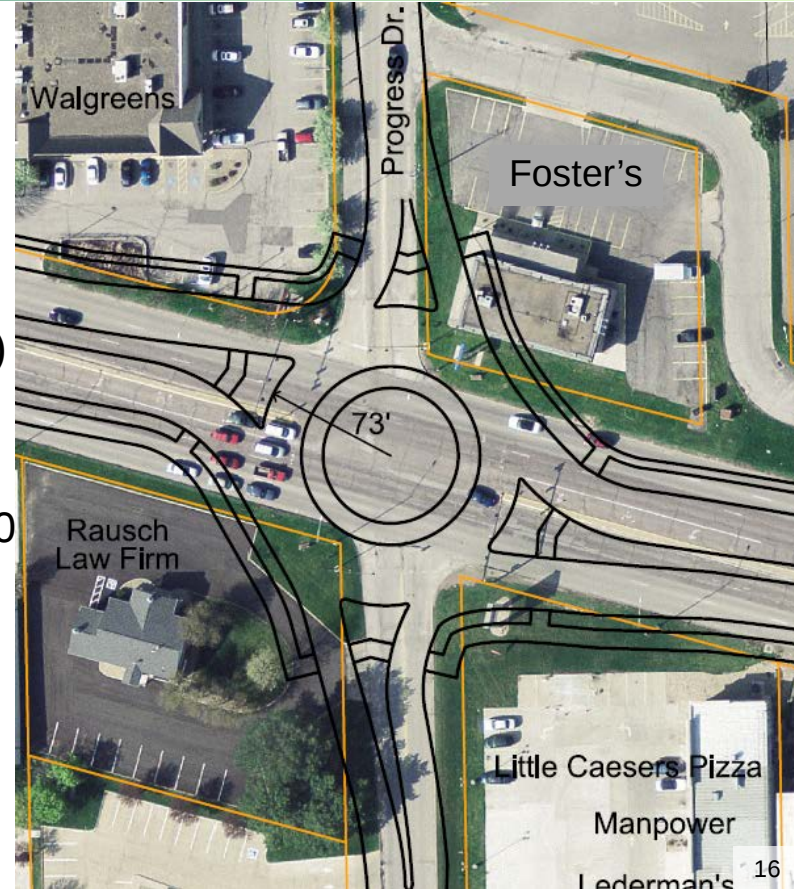
	Level of Service/Delay		ROW Impact		Access Impact	
	Signals	Roundabout	Signals	Roundabout	Signals	Roundabout
Midway Drive	B/10.2	B/12.7	Minimal	Severe	None	Severe
Progress Drive	C/26.5	C/23.7	Minimal	Severe	None	Minimal
Tunis Drive	B/13.2	C/17.0	Minimal	Severe (?)	None	Moderate
Greenhill West Ramp	N/A	B/11.5	Minimal	Minimal	None	Improved
Greenhill East Ramp	N/A	B/11.3	Minimal	Severe	None	Moderate
Casey's/Becks	A/6.0	C/15.3	Minimal	Severe	None	Severe
Falls Avenue	B/16.7	C/21.1	Minimal	Severe (?)	None	Severe
Sager Avenue	A/7.3	B/12.0	Minimal	Minimal	None	Severe
Ansborough Avenue	C/36.9	C/23.4	Minimal	Moderate	None	Minimal
Wallgate Avenue	A/1.6	C/18.0	Minimal	Moderate	None	None
Fletcher Avenue	B/19.7	C/16.6	Minimal	Minimal	None	None



Source: 2011 Traffic Study

University Avenue Discussion

- Intersection Design
 - Progress Drive Roundabout
 - Operationally More Efficient
 - Lower Cost of Roadway Construction
 - Severe ROW Impacts (Total Acquisitions)
 - 3910 University Avenue (NE quadrant)
 - 3821 University Avenue (SW quadrant)
 - The acquisitions are estimated at \$1,620,000



University Avenue Discussion



- Intersection Design
 - Hackett Road Roundabout
 - Increase Cost of Construction
 - Additional ROW Impacts
 - Vissim Simulation shows Minimal Affect on Traffic Progression
 - Increased Delays Compared to Existing Ramp Intersections
 - Increased Access for Hackett Road
 - Increased Traffic on Hackett Road and at Hackett/Greenhill Intersection

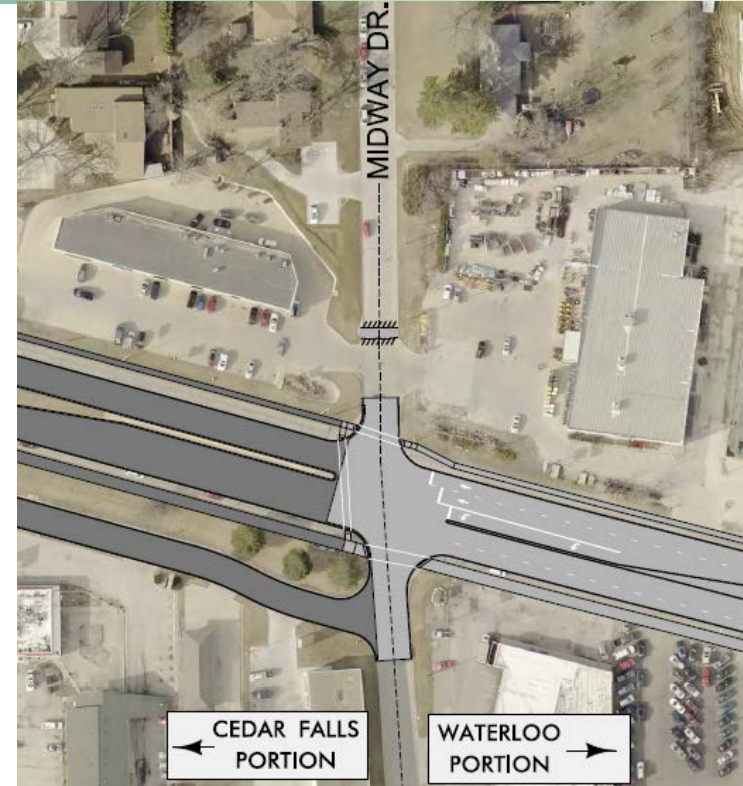
University Avenue Recommendation

- Intersection Design Recommendation:
 - The intersection design recommendation for University Avenue is the coordinated traffic signal alternative.
 - Coordinated Traffic Signals
 - Lower overall costs
 - Reduction in overall travel time and delay
 - Reduced fuel consumption and air pollution
 - Less impact on adjacent businesses



University Avenue Project Information

- Midway Intersection Construction Coordination
 - The existing city limits is on the centerline of Midway Drive.
 - Midway Drive intersection construction includes traffic signal, storm sewer, water main and paving portions of which are in Cedar Falls.
 - An agreement with the City of Waterloo and Cedar Falls will be required to establish the cost share for construction.



University Avenue Project Information

- Funding
 - Total Project Cost Estimate – \$36.4 Million
 - Includes typical costs for construction
 - Roadway, Storm Sewer, Sidewalk, Street Lighting, Shared Use Path, Design and ROW
 - Does not include
 - Sanitary Sewer, Water Main, Bridge Work, Enhancements
 - IDOT Funding Received – \$28 Million
 - Searching for Savings Opportunities
 - Delaying bridge work
 - Minimizing Greenhill Road ramp work
 - Grant Opportunities



University Avenue Project Information

- Schedule
 - Present Recommendations to City Council
 - Final Design & ROW Acquisition – 2017
 - Bid Letting - January 2018
 - Construction Begins - Spring 2018



Questions/Comments/Discussion

