May 8, 2019 Meeting

The May 8, 2019 Waterloo Technical Society (WTS) meeting was called to order by Vice President Stevenson at 7:20 pm. Vice President Stevenson welcomed visitors and noted that this was the eighth meeting of the 105th year of the Society.

A total of 49 members and guests attended.

Treasurer's Report. Ken Friend reported a beginning balance of $777.47. With income from pre-paid memberships of $40 and expenses of $40.00 for the April speakers' meals this leaves a new balance of $777.47. Treasurer Friend's report stated a total of 8 honorary and 40 paid members yielding a membership roster of 48 members.

Slate of Officers. Officers for the 2019-2020 year (year 106) were presented:

President:	Jim Stevenson
Co-Vice Presidents:	Jerry Mohling and Steve Crouse
Treasurer:	Kenneth Friend and Paul Anderson
Dinner Reservations:	Derek Eagles and Steve Lang
Secretary:	James Stevenson
Publicity/Recognition:	Jim Volgarino
Auditing:	Bill Mitchell and Jim Garrett
Nominating Committee:	Ralph Marrero
Web Site:	Tim Schoenfelder

This slate was modified after Herb Larsen was unable to accept the nomination for President.

Old Business. The topics for this year were reviewed. The dates, speaker and topics for the 105th WTS were:
Speakers for the 2018-2019 Meeting Year (Year 105)

12 Sep 2018—Austin Maginnis—Tiny House Project, UNI

10 Oct 2018 – Steve Lang – Early Electronic Digital Computers

14 Nov 2018 – Jim Volgarino – History of Tunis Speedway

09 Jan 2019 – Chuck Nielson – Extracting Gases from Air, Airgas Gas Supply

13 Feb 2019 – Chad Emerson – Crane Projects, Emerson Crane

13 Mar 2019 – Vasko Popovski – Aspects of Heat Treatment in Firearm Components, AHT (Mike Woods)

10 Apr 2019 – Mark Albright and Tom Pfiffner – Liquified Natural Gas, MidAmerican Energy

08 May 2019 – Larry Wiele – Highway 58 and Viking Road Intersection Reconstruction, AECOM Engineering Services, Waterloo, IA (Architecture, Engineering, Construction and Operations Management)

Discussion on the May 2018 motion to donate $250 to Tiny House Program at UNI concluded with a decision to identify where donations have been made and prioritize alternatives for donations for action at the November 14, 2018 meeting. President ProTem Stevenson and Treasurer Friend are to make a list and members to identify possible recipients. Item tabled until the September 2019 meeting. No discussion on this topic.

New Business. No new business discussed.

Guest Speaker. **Larry Wiele, P.E.** graduated from Iowa State University in 1991, and has worked at AECOM for 27 years. He is a Project Manager for transportation projects, and has been working on the Iowa 58/Viking Road project since 2012. Some of Larry's other projects include US 151 Improvements from Cedar Rapids to Dubuque, Waterloo University Avenue Reconstruction, US 63 Reconstruction and the Cedar Falls Flood System Improvements.



Larry Wiele presented information on the ongoing project to construct a Single-Point Interchange at the Iowa 58/Viking Road intersection in Cedar Falls. This intersection has been in the top 5 on the Iowa DOT's Safety Improvement list, and has routinely been the most congested intersection in the Cedar Valley. The Iowa Department of Transportation and the City of Cedar Falls have teamed together to construct an interchange at this location. This interchange was designed locally by AECOM. The presentation included background information on the study that was conducted to determine the best fit for the interchange, construction plans, and on-going construction activities.

Larry began his presentation with aerial photos of the area each decade since 1970. He highlighted the dates of major changes such as the development of the industrial park and the reconstruction of Viking Road east of IA58. Traffic studies show ten-fold increase since 2010 when 1,800 cars per day passed through the intersection, with 18,000 passing through there now. With this increased traffic came congestion and delays greater than 60 seconds to get through the intersection. When turn lanes back up, traffic accidents occur as drivers have not anticipated the stoppage on IA58. Therefore, this intersection has become the 5th most dangerous in the state.

Improvements have been made piecemeal over the years. Each improvement was short lived as the traffic volume continued to grow. The last improvement cost $3 million and was obsolete in 4 years.

Cedar Falls City decided to approach the Iowa Department of Transportation to find a long-range solution to the problems of safety, congestion and delay. The City offered $10 million and the DOT had $30 million budgeted to change the intersection. Criteria were established to address operation, safety, cost, aesthetics, maintaining traffic flow, and other construction and design considerations.



Figure 1. Diverging diamond interchange.

Many options, numbering more than 10, were considered. The DOT favored a diverging diamond like the one now in West DesMoines. The limited availability of land at the intersection disqualified this option. Roundabouts were considered but were felt to be too dangerous with high speed IA58 traffic flowing into low speed Viking Road traffic. They were also too large for the site. Other options

included changing the Greenhill intersection and the IA58 intersection with IA20 to help channel traffic away from Viking Road. The planning included all these options and received City and State review to help select the best for all parties.

The best alternative called for a single point interchange, moving of the bike trail to an area east of Scheels and stores near it. A single point interchange is controlled by a traffic light for the straight and left turn traffic. Right hand turns occur after traffic clears.

Once the concept was agreed upon, planning could be detailed for excavation, water control, storm sewers, and maintaining traffic movement. The bridge over IA58 and at street level for Viking Road is 115 feet by 225 feet and will carry the traffic over IA58. There will be 5,000 lineal feet of retaining walls which require lagging for holding timber piles that retain concrete walls faced with stone and brick.

The project costs were shared with City and State. AECOM spent 20,000 engineering hours in design in order to begin Phase 1 of 7. The estimate was for $39 million and bids totaled $37 million. $23 million was for the road, $3 million for the bridge and $11 million for the retaining walls. Work began in February 2018, a little over a year ago.

No major problems have been encountered. Larry attributed this to the opening of Prairie Parkway to the east of the commercial district, signage provided by the City to divert some traffic and DOT changeable message signs to keep motorists alert and informed.

In progress at this time are the wall work for the west side of the IA58 underpass, the north half of the bridge is to be completed soon and excavation for the southbound lanes on IA58 is underway. Pictures of the current conditions were shown.

In summary, the right of way has been maintained but at lower traffic volumes through citizen adaptation and City and State signage, traffic congestion is normal but not increased and the partnership between City and State is showing that cooperation is a beautiful benefit.

Phase 7, the finish up and completion of project, is to be completed in the spring of 2020.

Meeting adjourned at 8:20 pm.

Next Meeting. The next meeting will be September 11, 2019. Notices will be emailed in late August..

Respectfully submitted,

James R. Stevenson, Vice President and Secretary