

“E” Topic Area: Engineering

“E” Definition & Description of Subject

Engineering is responsible for the planning, creation, modification, and maintenance of the transportation infrastructure. Engineering works toward creating a complete system that supports safe and convenient walking, biking, riding (bus or train), and driving. Important components include pavement conditions, signs, pavement markings and other treatments, lighting, and traffic signals. These elements should lead to well-connected transportation networks, consisting of quiet neighborhood streets, sidewalks and crosswalks, conventional and protected bike lanes, shared use trails, ample parking for non-motorized vehicles, and policies to ensure connectivity and maintenance of these facilities.

Current State

General Needs & Challenges Surrounding Engineering for Ann Arbor

- Pavement conditions are poor in many areas, frustrating both drivers and bikers.
- Crosswalks are common, but serious pedestrian-vehicle accidents continue to occur, sometimes within existing crosswalks. Concerning issues include inconsistent crosswalk markings/signage, inadequate crosswalk lighting, and high prevailing driving speed, as well as distraction. Crosswalk safety is important for both pedestrians and bus-riders, including special populations such as school children and the disabled.
- Biking networks are under-developed, such that bike commuters often need to bike on streets with “sharrows” or no markings at all rather than in dedicated bike lanes. This limits the number of potential bikers who feel comfortable enough to use their bicycles for transportation. Even where there are marked bike lanes, some bikers feel more comfortable on the sidewalks than in the streets.
- Bicycles and scooters that can be rented for very short periods of time are relatively new options in our multi-modal system. Most often, these users do not wear helmets, making them especially vulnerable to cars.
- The AAATA provides a valuable resource with its bus system, which continues to improve. Remaining gaps include late night and holiday service--which is important for persons who work late and on holidays—and some areas outside the current hub/spoke service model.
- While Ann Arbor has been developing initiatives to make pedestrians and bikers feel more welcome and bus routes have been expanded, some problems of mode equity persist. For example, during construction projects, pedestrian access may be closed while vehicle access is maintained. Another example is that bus-riding to Briarwood mall is de-incentivized by placing the bus stops far from the mall entrances.

Additional Considerations

- A systems-level approach to setting transportation priorities is needed. Transportation improvements should be distributed equitably among different neighborhoods and parts of town.
- Ann Arbor’s road network includes roads owned and maintained by three different entities: the city, the state, and the county. Thus, the city cannot autonomously modify all transportation routes within the city.

- Within the city council and the population, there are differing views about how to balance the needs of drivers and non-motorized transportation.
- Ann Arbor's streetlight network includes lights owned and maintained by the city and lights owned and maintained by DTE.
- There is a large influx of drivers from outside of town into Ann Arbor each day. This makes bicycle and pedestrian safety along the arteries particularly challenging. One issue contributing to this problem is the lack of affordable housing within Ann Arbor.

Background Research

Relevant Existing City of Ann Arbor or State of Michigan Programs/Initiatives

- 1) The City has adopted a Vision Zero Goal, with no traffic-related deaths or serious injuries. Two key components of Vision Zero are data-driven engineering and a systems approach.
- 2) The City has adopted sustainability goals. Transportation is an important component of this. Initiatives that increase biking, walking, and bus-riding will make Ann Arbor a more sustainable city. Greenhouse gas emissions will be reduced and the citizens who use these modalities will experience health benefits.
- 3) The State has adopted a Complete Streets criterion for infrastructure planning. However, the perception is that the State is still automobile-centric, as exemplified by "vehicle service level" criteria. City Engineers should (and do) take a more balanced approach, considering all forms of transportation, as well as sustainability.

Programs/Initiatives in Other Cities/States (if applicable)

- 1) There are a number of other cities that have adopted Vision Zero with positive results. Some of these cities are similar in size and make-up to Ann Arbor, e.g., Boulder Colorado, and can serve as a model for us.
- 2) Kalamazoo recently opted to return a state-owned road to local control. This is a possible model for resolving disputes with the State.

Next Steps

Questions to Consider

- The Speed Reduction Task force put together an impressive report, with recommendations well aligned with Vision Zero goals. How are those recommendations currently being implemented? To the extent that they aren't being implemented, why not?
- How much flexibility do we have to augment vehicle level of service with other metrics, so that we don't privilege automobile transportation over other modes?
- Do we have any provisions in zoning code to encourage non-motorized access, such as bike parking?

Ideas – How to Improve This "E" (high-level policy targets, goals, metrics, innovations)

- We need high quality, systems-level data, with appropriate context, to establish forward-looking priorities across the system (e.g., existing crosswalk and crosswalk lighting)

conditions, historic crash patterns, prevailing traffic speeds, predictive analysis). Collection of data should be as equitable and complete as possible. For example, relying solely on police reports of crashes under-reports the actual number of collisions and near-misses, possibly in systematic ways.

What community stakeholders should be engaged in future discussions?

