

The Six E's: **Engineering** (Commissioner Julie Boland)

Adapted from the League of American Bicyclists - The most visible and perhaps most tangible evidence of a great place for multi-modal transportation is the presence of infrastructure that welcomes and supports it. Surveys show that the physical environment is a key determinant in whether people will walk, bike, bus, or drive. The most advanced multi-modal communities have 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.

Commissioner Boland met with Transportation Engineer Cyrus Naheedy on April 10, 2019, with the goal of beginning a dialogue to better understand the Engineering Component of the Six E's. We focused our conversation around Vision Zero and the role of Engineering in meeting Vision Zero goals. Two keys to Vision Zero are (1) Data-driven Engineering and (2) a Systems approach. Some possible action items and follow-up requests are listed below.

1. We need high quality, **systems-level data** to establish forward-looking priorities across the system (e.g., existing crosswalks and crosswalk lighting conditions, historic crash patterns, prevailing traffic speeds, predictive analysis). While Engineering has been using a data-driven approach to developing solutions for individual projects, adequate system-wide data is lacking.

Follow-up Request: An action plan should be developed to acquire the relevant data.

2. **Data-gathering** should be consistent with the **Complete Streets approach**. Some existing guidelines/regulations which consider only vehicular traffic (e.g., vehicle service level) are inconsistent with Complete Streets. We need to find solutions when **local values conflict with state practices**, either through legislation, negotiation, or returning segments of state-owned roads to local control (Kalamazoo did this recently).

Follow-up Request: Identify sources of conflict and best options for resolving.

3. Data-gathering 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.

Follow-up Request: Could an online reporting tool be helpful for acquiring more complete data? Do we know if this has worked well in other similar communities?

4. Revisit the suggestions of the **Speed Reduction Task Force**, as their recommendations are well-aligned with Vision Zero goals.

Follow-up Request: If there are obstacles to implementing each of the recommendations, what are those obstacles?

Commented [CK1]: Consider emphasizing the creation and maintenance of complete systems and networks; including pavement conditions, signs, pavement markings other treatments, lighting, and traffic signals. Although data can describe the system, the physical elements are critical. Planning, part of this E, informs how to continue to build out our pedestrian and cycling networks and provides the vision for future investments. Integration with the auto system impacts the psychology, comfort, and safety of the users. Recent movement towards low-stress facilities and creating a complete and comfortable network should be a focal point. Planning with a Vision Zero emphasis will continue to promote safe and complete transportation systems.

Commented [CK2]: These existing reports may be helpful:

- [Transportation Plan \(+ appendices\)](#)
- [Non-motorized Transportation Plan](#)
- [Annual Non-motorized Report](#)
- [Annual Bike System Inventory documents](#)
- [Pedestrian Safety and Access Report](#)
- [Treeline Plan](#)
- [North Main Street – Huron River Corridor Vision for the Future](#)
- [South State Street Corridor Study; South State Street Corridor Plan](#)
- [WATS Complete Streets plan](#)
- [SEMCOG long-range plan](#)

Commented [CK3]: A draft definition/description is provided here for consideration. You may want to use this, or something similar, for your report.

Commented [CK4]: There is context beyond the data needs alone.

Commented [CK5]: A systems-level approach to setting transportation priorities is needed. Example: identifying community desires for the transportation system help staff determine what is needed to deliver on those outcomes and what existing data we have/need. The Transportation Plan Update will help drive this as well.

Commented [CK6]: Values should drive data-gathering, analysis, and performance metrics.

Commented [CK7]: Consider addressing the environmental or health benefits of active transportation (including walking and biking, and the reduction in greenhouse gas emissions). Evaluate sustainability related criterion in terms of our complete streets policy.

Commented [CK8]: The state/local comparison is one example, but it doesn't encompass all conflicts: some are entirely local (for example: the vehicle level of service (LOS) consideration). The concept of values driving decisions – and the conflicts that can occur when they don't – isn't inherently a jurisdictional one.

Commented [CK9]: NOTE: Some overlap with points above (e.g., the state-owned roads issue); and some Speed Reduction Committee recommendations aren't specific to Engineering. Perhaps these should be incorporated to other relevant "Es."