Meeting Notes

ODOT TSM Field Technology Plan

TSM and Field Technicians Group - Needs Assessment Work Session #1

June 23, 2020

Microsoft Teams

ATTENDEES

- Ray Herrera, ODOT R2 Recorder Tech
- Will Adams, ODOT R2 Recorder Tech
- Craig Senger, ODOT R2 Recorder Tech
- Kevin Kohr, ODOT R5 Recorder Tech
- Josh Lucas, ODOT TSM Analyst
- Simon Peralta, ODOT TSM Analyst
- Ali Jafarnejad, ODOT TSM Traffic Count Coordinator
- Christopher Harris, ODOT TSM Lead
- Chris Wright, ODOT TSM Transportation Data Section Manager
- Don Crownover, ODOT TSM Traffic Count Engineer
- Paul Tiller, ODOT TSM Field Operations Coordinator
- Yi-Min Ha, Kittelson
- Alice Root, Kittelson
- Scott Beaird, Kittelson
- JR Wegehaupt, Quality Counts

MEETING NOTES

The following summarizes key discussion items during the Needs Assessment Work Session:

1. TSM collects data for the federally mandated data for HPMS reporting. TSM also provides data that supports other programs within ODOT and other local agencies.
    a. Internal ODOT users include pavement, bridge, planning, and economic group.
    b. External users include other jurisdictions, reporters, utility companies, and citizens
    c. Mandated reports include:
        i. Traffic Volume Table
        ii. Annual submittal of state and non-state site data
2. D**ata Collected** – ODOT TSM currently collects the following data:
    a. Turning movement counts
    b. Vehicle classification data (class and weight breakdown collected using Weigh-in-Motion provided by Commerce and Compliance)
    c. K and D factors
    d. Seasonal data
    e. Trend data at permanent counters
    f. VMT for economic impacts
3. **Data Processing** – A lot of time is spent towards data processing such as watching videos for movement counts, QA/QC, formatting and reporting. TSM processes roughly 2,000-3,000 coverage counts and 200-300 special counts (manual, video, or tube counts) annually.

   a. TSM shared they could add more value by addressing customer-facing needs if they could streamline more of the data processing activities.
4. **Use Cases** – Example requests ODOT receives from other agencies and consultants include:
   a. Historical data for traffic impacts
   b. Impacts of special events, such as COVID-19, bridge repairs, etc.
   c. Reporter questions
   d. Weight data for research
5. **Equipment** – TSM collects data using single and dual tube road counters, loop detectors, radar detectors, cameras, and bicycle and pedestrian counters and the group encounters several issues as the equipment ages.
   a. Loop detectors currently experience the most wear and tear due to traffic, corrosion from salt, and construction activity.
   b. Piezo sensors located at permanent sites provide class data and have short lifespans of up to 5 years. Although this provides critical data, it is unreliable and requires high maintenance efforts.
   c. Asphalt is critical to the longevity of loops and piezos. More dense asphalt increases the life of equipment; rutting shortens the life of equipment.
   d.
6. **Legacy Hardware and Interoperability** – TSM shared that there are many on-going discussions with TSMO/ITS about data sharing.
   a. Sharing data from the ATR to the TSMO/ITS systems may provide ODOT the ability to be responsive and dynamic in responding to varying traffic conditions. TSMO/ITS systems may also have data that could help TSM better fulfill its reporting requirements.
   b. TSM shared that the primary challenge with interoperability with TSMO/ITS is legacy hardware and communications, and having the right skillsets.
   c. Aging field equipment is becoming more difficult to support as new software and firmware versions are released. In some cases, TSM has requested vendors not to upgrade the equipment firmware to maintain interoperability with the other data collection equipment/systems.
   d. No access to network communications has limited TSM from upgrading permanent equipment.
   e. Majority of ATRs are connected via land line. Relying on land line is a potential risk because land lines may be a lower priority network to be fixed after a natural disaster. Paul Tiller notes that landlines changed over to IP use would speed up connectivity and allow for equipment to be upgraded with the caveat that it meet security door controls approval. Some locations have cellular connections and some but not all locations have spotty connections.
7. **Data Vendors** – As more data is procured from data vendors, there is a growing need for TSM to understand how the unit's data, equipment, workforce and partnerships will need to evolve.
8. **Workforce Safety** – Field technicians shared the following safety-related challenges when in the field:

a. Working in urban areas includes unique safety issues regarding the homeless, contraband, etc.
b. Replacing or fixing loops in the road puts technicians at risk and requires additional precautions such as having a spotter, working during low volume periods (at night), or required lane closures (temporary traffic control). Lane closures also add costs and require more coordination.
c. Investing in remote sensing equipment that is out of the roadway, such as radar and cameras, could keep staff out of the road and improve workforce safety.
d. Investing in equipment that reduces setup time at locations where technicians may be exposed to traffic, could help improve workforce safety.
e. Contracted spotters could help as an additional resource but would need to be vetted for reliability (i.e. flagger or safety training). Contracted spotters are not allowed to drive ODOT vehicles and can only sit as passengers in state vehicles.
f. Retaining qualified spotters long-term is a challenge.

9. **Coordination** – Outside of ODOT, there is frequent coordination with telecom technicians and power companies for troubleshooting. Several potential improvements to coordinating with other groups within ODOT was identified including: 1) temporary traffic control when working on the road travel way, 2) coordination with electricians, and 3) coordination with Signals and ITS for access to traffic signal cabinets; access into shared signal cabinets is strictly enforced and requires a certified signal electrician or signal engineer onsite. Coordination for meet times often extends troubleshooting response times.
10. **Asset Management** – ODOT TSM currently tracks assets across multiple spreadsheets and relies on staff knowledge. A formalized asset tracking process may help ODOT TSM better manage resources, retain equipment knowledge within the institution and justify funding needs.