STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION

From: Erik Paddleford EP 10/27/17
Bicycle/ Pedestrian Technician

Date: October 27, 2017

At: Division of Aeronautics, Rail & Transit

Subject: Data Collection Van – (CSAC) Complete Streets Advisory Committee - Recommended Collection of Roadway Attributes

To: Nicholas Alexander
Administrator, AMPS

Thru: Shelley Winters SW 10/27/17
Administrator, Bureau of Rail & Transit

During the September meeting of the CSAC you provided the committee with an overview of the Department's asset management plan and working groups related to the plan. During your presentation you indicated you would be interested in the committee's input on what sorts of data, from a pedestrian and bicycle perspective, the committee would like to see collected.

Over the last month, committee members have listed and agreed on a number of roadway attributes that should be considered by the Department's "Collection Van Task Force" who has been tasked with determining existing and future department-wide business needs for asset collection vehicles. These attributes recommended for consideration are intended to be used to facilitate various complete streets analysis and improvements, and to fill gaps in data needed for meaningful performance metrics related to walking, bicycling, transit, and complete streets in general.

Many of the parameters listed are related to the Level of Traffic Stress model that has been piloted by committee members and further enhanced by Plymouth State University in their current Department sponsored research called "Active Transportation Accounting: Developing metrics for project prioritization".

I have attached the list provided to me by the committee and submit it for your review and consideration.

I would also like to note that a member of the CSAC has a contact with the company TomTom who already has the ability to collect the parameters listed by the committee and would be interested in meeting with members of the Collection Van Task Force to discuss their capabilities should the Task Force be interested.

Thank you for your time and consideration.

cc: L. Keniston

Collection Van Want List – Complete Streets

1. **Pavement Markings and Lane Configurations** - Lane configurations and pavement markings can have a very large effect on how a roadway performs as a complete street, as described below. Data on lane configurations would allow for an analysis of complete streets elements without a visit to the field, and would inform any recommended changes to lane configurations as part of routine paving. Oftentimes, low or no cost complete streets improvements can be achieved simply through paint. Quantifying certain lane markings could also be incorporated into a multitude performance measurements related to non-motorized transportation and complete streets. While much of this data is currently available in the NHDOT roads GIS layer, the NHDOT Roadway Data Inventory Manual identifies many of these attributes as "low accuracy" and the collection method is "windshield survey/aerial imagery". Small changes in the location of pavement markings can make a significant difference for non-motorized users of the roadway.

    a. **Lane Width** – The travel lane width will help in exploring potential changes to lane and shoulder widths. Narrower travel lanes can reduce traffic speeds and allow more space to be allocated for shoulders. Lane widths also come into play with the LTS analysis.
    b. **Shoulder Width** – Shoulder width may be the single most important measure of suitability for bicycling by allowing space for a bicycle to operate. Where sidewalks are not present, shoulders are used for pedestrians, and create a buffer for pedestrians from motor vehicle traffic even when a sidewalk is present.
    c. **Turn Lanes, Length of Turn Lanes** – Turn lanes at intersections can often degrade the bicycling and walking environment. They add additional stress and exposure to bicyclists, increase crossing distances, and can pose a "double threat" hazard to pedestrian crossings. It is also a data point in the LTS analysis.
    d. **Crosswalks, Crosswalk Type, Crosswalk Condition, and Mid-Block Crossings-** An inventory of crosswalks can have a multitude of uses, including LTS analysis, accessibility measures, safety analysis, maintenance measures, and others. Crosswalk type may include whether it is continental, block, transvers, or uses other materials, etc. The presence of RRFB or Pedestrian Hybrid Beacons could also be included. Mid-block crossings help with pedestrian LTS analysis as well as accessibility analysis.
    e. **Bike Lanes and Shared Lane Markings (sharrows)** – A complete accounting of bicycle lanes and sharrows on state routes could be used as a performance metric, and is also used in LTS analysis. A descriptor of bike lanes within turn lanes (for example, a bike lane between a through lane and right turn lane) would also contribute to LTS analysis as well as track how current infrastructure matches best practices.

2. **Paved Roadway Width** – Knowing the width of the roadway helps in determining potential lane configurations. Only a few feet of error can be significant in evaluating available roadway space for non-motorized users.

3. **Shoulder Condition** – Shoulders are among the most important assets for pedestrians and bicycles on NH State roadways. An analysis of their condition could contribute on how effectively they can perform.

4. **Sidewalks, and Sidewalk Width** – Sidewalks are a primary piece of infrastructure for pedestrians. At present, there is no comprehensive database of sidewalks. It can be used as a performance metric, included in LTS analysis, and used to estimate winter maintenance costs.

5. **Sidewalk Tip-Downs and ADA accessibility** – This important data point helps measure accessibility and can be used as a data point in performance measures.

6. **Presence of a Curb, and Curb Height** – a curb affects the effective width of a bike lane, and also provides a measure of separation for pedestrians on the sidewalk or side of the road. In some instances on NH roadways, the curb has been buried by successive years of paving and is flush with the pavement. Curb height would help determine if the curb is able to function as intended.

7. **Presence and Width of Gap Between Sidewalk and Roadway** – A grass or planted buffer between the sidewalk and roadway can affect the walkability and feel of a sidewalk, as well as safety. This data point would be used in a Pedestrian LTS analysis.

8. **Refuge Islands** – The presence of a refuge island effects pedestrian safety and accessibility. It would be used in a pedestrian LTS analysis.

9. **Curb Cuts, Number of Curb Cuts** – The number, width, and frequency of curb cuts can affect the performance and safety of all users of the roadway. It may be used in a pedestrian LTS analysis.

10. **Bus or Transit Stops** –The identification bus or transit stops and the presence of a transit shelter can contribute to the state's knowledge of transit locations. Comprehensive data on transit stops can be used to measure transit accessibility, and help identify pedestrian and bicycle access to transit needs.

11. **Adjacent Land Uses** – A data point identifying the land uses adjacent to a roadway can be used in Pedestrian LTS analysis. Even less-detailed information, such as whether a roadway faces parking or building frontage may be useful.

12. **Presence of Shade or Street Trees** – The presence of shade or street trees contributes to the pedestrian environment, particularly in villages and developed areas. This factor could be used as a performance metric or as part of a pedestrian LTS analysis.

13. **Speed Limit Sign Data** – Motor vehicle speeds is an important factor in how a street performs as a complete streets, and is also an important factor in safety particularly as it relates to pedestrians and bicyclists. Having data on the posted speed limit may be valuable. It is also used in LTS analysis.

14. **Storm Drains and Manhole Covers** – Storm drains often interrupt bicycle shoulders and can create a safety hazard. Storm drains and manhole covers can be extremely slippery for bicycles when wet.