RECOMMENDATIONS FOR 8 SIGNALIZED INTERSECTIONS: DESCRIPTION OF IMPROVEMENTS

Pedestrian Improvements:

- **Curb extensions**, or bulb outs, are a geometric improvement on corners which shorten the crossing distance for pedestrians, improve visibility between pedestrians and motorists, add more pedestrian queuing space, and reduce vehicle turning speed.
- A **median island** provides refuge for pedestrians crossing a wide road. A median island allows the pedestrian to cross in two stages and calms vehicle traffic, which increases crossing opportunities.
- A **crosswalk** improves pedestrian connectivity and decreases pedestrian delay. In many cases, adding a crosswalk does not affect signal timing and is a very cost-effective way to improve pedestrian conditions at an intersection.
- **Leading pedestrian intervals** allows pedestrians to get a head start in crossing the intersection before conflicting turning vehicles are released.
- **Countdown timers** informs pedestrians of the remaining time they have to cross the street, which improves pedestrian service and reduces potential for conflicts between motorists and pedestrians.

Improvements to Increase Efficiency:

- **Shorter cycle lengths** reduce pedestrian and motorist delay, where appropriate.
- **Flashing operation** reduces delay for all users at times of day when demand is low and can be added or implemented at locations where traffic is high during peak hours and low during the remaining hours of the day. At locations where signals operate in flash, geometric changes, pavement marking and/or signage may be required to provide pedestrians and bicyclist safe opportunities to cross the street.
- **A semi-actuated signal** responds to traffic on the minor street and pedestrians crossing the major street to reduce delay when traffic volumes on the minor street are relatively low.

Other Improvements:

- A **road diet** slows traffic and reduces pedestrian crossing distance across the street. Road diets also provide space for a bike lane or parking lane, which provide an additional buffer from traffic for pedestrians.
- A **roundabout** reduces delay and potential conflicts between users at the intersection. Roundabouts have also been found to improve safety compared to other intersection types.
- **Removing the signal** and converting the intersection to a two- or all-way stop-controlled intersection may reduce delay to motorists.
- **Other improvements include** widening the median island to provide additional queuing space and increase comfort for pedestrians on a median-separated roadway, changing the signal phasing to better accommodate all users, and implementing safe routes to school to improve operations during student arrival and dismissal periods.