Capital Region Congestion Management Process (CMP)

Field Visit Checklist

Before the field visit:

- Coordinate with state and local stakeholders – get input on local context, known issues, operational challenges, safety concerns, future planned projects and developments, and relevant prior studies.

- Review CMP public input – summarize comments made during both surveys that relate to the study area.

- Review NPMRDS and Replica data – summarize key performance measures, characteristics of trips and trip takers, etc.

- Review crash data – pull and review recent crash data at the site. Summarize crashes by crash type. Determine if the site is ranked in the Vision Zero network screening.

During the field visit, record the following observations:

- Signal timing – does the signal appear to allocate green time properly?
    - Wasted green time – does a green signal ever show to a movement with no vehicles in the queue? If so, the minimum green may be too high, or the vehicle detection may be malfunctioning/not present.
    - Phasing – are there movements that could be permitted at the same time but are not?
    - Is there a need for a protected left turn phase that is not present, or vice-versa?
    - Queue clearance – are there any queues that do not fully clear with each cycle of the signal? If so, the maximum green may be too low.
    - Yellow and all-red – is the yellow and all-red time sufficient for vehicles arriving on yellow to fully clear the intersection or safely stop before the conflicting movements begin?

- Signal coordination – does the signal appear to have the same cycle length as adjacent signals?

    - Arrivals on red – on the mainline, most vehicles should arrive on green. If on some cycles, more are arriving on red, this could indicate poor signal coordination.
    - Platooning – depending on the distance to the adjacent signals, cars may arrive in groups (platooning) or spread out if the signals are far away. If platooned, signal coordination is important.

- Turning lanes and queue storage – does storage appear to be sufficient?
    - What are the longest queues observed? Are there any queues that do not fully clear with each cycle of the signal?
    - Left turn lanes – do left turn lanes ever spill back into the through lanes? Do the through lane queues ever get long enough that the left turn lanes can't be accessed?
    - Right turn lanes – are right turn lanes sufficiently long to allow right-turning vehicles to make a right on red without being blocked by a through-moving vehicle?
    - Queue spillback – do queues ever reach adjacent signals? If so, not enough green may be allocated to the mainline (or the roadway may simply be overcapacity).
    - Would the intersection benefit from additional turn lanes?
    - Would the intersection benefit from reconfiguring the existing lanes? (For example, if there is a dedicated right turn lane with little use, would it be helpful to restripe as a shared through/right and add a lane drop? If there is a high proportion of right-turning vehicles, would it be beneficial to restripe a shared lane as a dedicated right turn?)

- Transit operations, if present:
    - What transit facilities and amenities are present?
    - How do transit riders move through the intersection before boarding or after alighting?
    - Where does the transit bus stop to board/alight passengers? Does the bus impede traffic when stopped? Does the bus have trouble merging back in to moving traffic?
    - Is this intersection a good candidate for a queue jump?
    - Signal priority – do buses passing through the intersection ever arrive on red? If so, this intersection may be a candidate for TSP.

- Freight operations – do any trucks have trouble making left or right turns?
    - Queue conflicts – do any turning trucks ever cross stop bars, or otherwise cross into queues? Do any vehicles need to move back to allow a truck to complete a turn?

    - Are trucks observed to have trouble entering or exiting driveways near the intersection?
    - Do trailer wheels go over curbs when making any turns?
    - If designated as a route for oversize freight vehicles, note potential geometric issues.

- Access management – are any conflicts observed with vehicles entering or exiting the roadway at driveways or side streets?
    - Driveways – are there any driveways close to the intersection? Do vehicles have to pass through queues to use the driveways?
    - Side streets – are there any side streets close to the intersection? Do vehicles have to pass through queues to access the side streets?

- Safety – are there any conflict points or crash hazards present?
    - Conflicting movements – does the signal permit conflicting movements to proceed at the same time?
    - Stopping time – does the signal appear to have sufficient yellow and all-red for vehicles to safely stop when arriving at free-flow speed?
    - Were any near-miss crashes observed during the field visit?
    - Do any other safety hazards exist at the site?

- Pedestrian crossings – can pedestrians safely use the intersection?
    - Condition – if present, what are the conditions of the crosswalks, sidewalks, ped signal heads, and curb ramps?
    - Actuation – are ped push buttons present? Do they work?
    - Crossing time – does the signal appear to provide the proper crossing interval? Are crossing distances excessive?
    - Ped volumes – does there appear to be sufficient pedestrian activity to justify leading pedestrian intervals, all-red/exclusive pedestrian phase, or pedestrian recall (walk phase in every cycle, even when button is not pressed)?

- Bicycle operations – were any cyclists observed using the intersection?
    - Are any bike facilities present? If so, is it clear to drivers how bikes are intended to move through the intersection?

- Condition:
    - What is the condition of all pavement markings?
    - What is the condition of all signage?
    - What is the condition of the signal heads? Do they appear to be modern 12" signal heads with proper sun visors, etc.? Is there a signal head over each approach lane? Are there any sight distance issues or obstructions such as trees?

    - Is there lighting present at the intersection?

- Physical characteristics:
    - Are there any structures, drainage features, signal or utility poles, steep slopes, or other physical features near the intersection that may constrain future operational improvements?

After the field visit:

- Summarize findings in all checklist categories listed above.
- Prepare problem statement, recommendations for future study, and conceptual improvements to consider, documented in a short memo.