

## Transportation Study – Recommendations & Implementation Timeline – Working Document as of 3/24/17

Issue	Recommendation	Implementation Timeline	Staff Assigned
<b>Issue 1: Corridor Progression/Intersection Efficiency</b> 1a. State Street Corridor Signal Coordination	1. Revise cycle lengths & related phases to a 70-second cycle length and incorporate newer pedestrian signal operations parameters;	ASAP – <span style="color: red;">completed Fall of 2016</span>	Street Dept. coordinate with sub-contractor
	2. Optimize and coordinate the signal operations with appropriate offsets;	ASAP – <span style="color: red;">completed Fall of 2016</span>	Street Dept. coordinate with sub-contractor
	3. Shift the green times slightly at State/Central (more green to State) to address capacity/queuing concerns;	ASAP – <span style="color: red;">completed Fall of 2016</span>	Street Dept. coordinate with sub-contractor
	4. Monitoring of the corridor for occasional signal operations tweaks, including taking part in any potential future optimization programs coordinated by the Macatawa Area Coordinating Council (MACC); and	Ongoing	City Staff
	5. In the long term the City should consider upgrading all remaining diagonal span signals (three on this corridor plus others) to either a box span or mast arm layout. Such “far side” configurations provide better signal visibility and safer operations in addition to other benefits.	Coordinate with street reconstruction project	Street Department & sub-contractor
1b. Washington Avenue at Fairview Road	1. Revise the signal operations such that Fairview Road receives approximately 4-5 seconds more green indication while retaining minimum pedestrian crossing requirements; and	ASAP – <span style="color: red;">completed Fall of 2016</span>	Street Department & sub-contractor
	2. Monitor the intersection for eventual upgrade to a semi-actuated operation (detection on Washington) as Fairview Road volumes will likely continue to increase with ongoing nearby development.	Ongoing	City Staff
<b>Issue 2: Stop Sign Control Updates</b> 2a. Roosevelt Avenue at Centennial Street	1. Revise the current two way stop control to an all-way stop control	ASAP – <span style="color: red;">completed 8/15/16</span>	City Staff

	<p>operation; and</p> <p>2. Include the above effort placing applicable warning signs and temporary measures on the Centennial Street approaches to make drivers fully aware of the change in operation.</p>	ASAP - <b>completed 8/15/16</b>	Street Department
2b. Central Avenue at Taft Street	<p>1. Switch the current two-way stop control to stop the Taft Street approaches instead of the Central Avenue approaches; and</p> <p>2. Along with removal of the existing top bar pavement markings on Central, include in the above effort placing applicable warning signs and temporary measures on the Taft Street approaches to make drivers fully aware of the change in operation.</p>	<p>ASAP – <b>completed 8/29/16</b></p> <p>ASAP – <b>traffic control order finalized by CC on 9/6/16</b></p>	<p>City Staff</p> <p>Street Department</p>
<p><b>Issue 3: Existing Signal Control Warrant Updates</b></p> <p>3a. Washington Avenue at Franklin Street</p>	<p>1. Retain the signal controlled operation;</p> <p>2. Revise the cycle length and related phases to a 70-second cycle length and incorporate newer pedestrian signal operations parameters;</p> <p>3. Revise the green time splits to provide Washington a longer green indication;</p> <p>4. Check controller operations and detection devices to ensure semi-actuated operation as intended; and</p> <p>5. As noted for State Street signals, in the long term the City should consider upgrading this diagonal span signal to either a box span or mast arm layout. Such “far side” configurations provide better signal visibility and safer operations in addition to other benefits.</p>	<p>--</p> <p>ASAP – <b>completed Fall of 2016</b></p> <p>ASAP – <b>completed Fall of 2016</b></p> <p>Coordinate with street reconstruction project</p> <p>Coordinate with street reconstruction project</p>	<p>--</p> <p>Street Department &amp; sub-contractor</p> <p>Street Department &amp; sub-contractor</p> <p>Street Department &amp; sub-contractor</p> <p>Street Department &amp; sub-contractor</p>
3b. Washington Avenue at Centennial Street	<p>1. Replace the existing signal system and related pavement marking with 2-way stop control; and</p>	As Soon As Practical	Street Department & sub-contractor

	2. Monitor the intersection for potential increases in pedestrian activity.	Ongoing	
<b>Issue 4: Miscellaneous Concerns</b>			
4a. Traffic Signal Night Flash Schedule	1. Revise all signals to operate in night flash mode from 10:00 pm to 6:00 am.	ASAP – <b>completed Fall of 2016</b>	Street Department & sub-contractor
4b. Washington/Fairview Fog Gate Warnings	1. Consider installing an additional sign/beacon combination on Fairview Road just south of Roosevelt; and	Work with Consumers Energy	City Staff
	2. Review other potential improvements to the fog gate warning system.	Work with Consumers Energy	City Staff
4c. Gentex Pedestrian Crossing – Centennial at Cooperation Drive	1. Replace the current older pedestrian crossing warning signs with new signs that meet MMUTCD standards, both at the crossing(s) and in advance of the crossings; and	Meet with Gentex to identify recommended solutions– <b>PED signal contract approved by CC on 11/21/16 to install signalized PED crossings via a donation from Gentex. Work completed.</b>	City Staff
	2. Consider (City and Gentex) upgrading the crosswalk/sidewalk system at that curve for better pedestrian visibility and to reduce crossings at unmarked locations (one potential alternative is shown on the rough sketch on the next page.)	Meet with Gentex to identify recommended solutions – <b>PED signal contract approved by CC on 11/21/16 to install signalized PED crossings via a donation from Gentex. Work completed on signal a “corner” of Centennial and Cooperation Drive.</b>	City Staff
	Related Discussion/Recommendations: <ul style="list-style-type: none"> <li>• Install applicable pedestrian crosswalk warning signs (in advance too) for this new location; and</li> <li>• Consider working with Gentex to relocate the currently direct Wellness lot driveway to Cooperation Drive to the adjacent internal driveway just to the east that already serves as a parking lot entry/exit (rough sketch in the appendix.)</li> </ul>	Meet with Gentex to identify recommended solutions - <b>PED signal contract approved by CC on 11/21/16 to install signalized PED crossings via a donation from Gentex. Work to be completed in spring 2017.</b>  <b>Due to grading issues determined relocation of existing wellness drive was not practical on 9/28/16.</b>	City Staff
4d. Pavement Marking Review	Washington Street Corridor – With the exception of its intersection with Jefferson St., none of the unsignalized public street intersections have the appropriate left turn lane markings in place on Washington St. To better meet	2017 pavement marking season	Street Department & sub-contractor

	<p>current standards and for consistency along the corridor, the left turn lanes on each approach should be defined by a +/- 100-foot solid white marking and a 40-50 foot gap on the entry side of the left turn lane, and a double yellow adjacent to the opposing exit lane. An example is currently in place at Jefferson St. (as shown above). The only caveat to that example is that two arrows in each direction are not needed. The first arrow marking on approach could be removed or replaced with an "ONLY" pavement marking. This type of improvement should be applied at the following Washington Street intersections:</p> <ul style="list-style-type: none"> <li>• Colonial St. (westbound)</li> <li>• Elm St.</li> <li>• Church St.</li> <li>• Maple St.</li> <li>• Carlton St.</li> </ul> <p>2. Church Street at Washington – Replace the existing solid white centerline marking with a double yellow that is required for defining/separating traffic flows in opposite directions.</p> <p>3. Main Avenue from Washington to State – Portions or all of this +/- 37-foot wide section of Main Avenue should be considered for some type of pavement marking to better define through lanes. As it stands, the current lack of markings (other than the centerline) provides roughly an 18-foot wide zone in each direction that were observed to allow drivers to drift along a variety of alignments as they drive down the corridor. The City should consider one of the following alternatives (or a variant thereof that may include a bike lane or two):</p>	<p>Coordinate with street reconstruction project (2017)</p> <p>Not recommended</p>	<p>Street Department &amp; sub-contractor</p>
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	<ul style="list-style-type: none"> <li>• Mark as a three-lane cross section with a center left turn lane, thereby providing a safer environment for left turn traffic and likely slower vehicle speeds. This would result in a loss of on-street parking that would largely affect the church, but could very affective along the corridor, particularly between Washington and Franklin with the businesses along the north edge.</li> <li>• Place white edge markings to better define the two through lanes and on-street parking zones, making sure to keep the latter far enough back from public street intersections to provide adequate sight distances.</li> </ul>	2017 pavement marking season	Street Department & sub-contractor
		2017 pavement marking season	Street Department & sub-contractor
<p><b>SUMMARY-Longer Term Goals to Keep in Mind</b></p>	<ul style="list-style-type: none"> <li>• Continue to work with the MACC, particularly if/when there is an opportunity to take part in a larger signal optimization project;</li> <li>• Replace all of the existing old diagonal span signals with box span or mast arm designs for improved signal visibility and intersection safety;</li> <li>• Continue to upgrade/maintain pavement markings (and signs) on a regular basis to help ensure safer street and intersection operations.</li> </ul>	Ongoing	City Staff
		Coordinate with street reconstruction projects	City Staff
		Ongoing	City Staff