

MEMORANDUM

TO: Mayor and City Council

FROM: Ryan Sisson, Civil Engineer

SUBJECT: RECOMMENDATIONS FOR CROSSWALK STRIPING ON EAST MAIN STREET & GATEWAY BOULEVARD

DATE: February 9, 2022

Background

Alterations to crosswalks within the right-of-way fall under the jurisdiction of the Council, per City Code 10.04.030 Administration - Powers of Council. Therefore, in its September 28, 2020, meeting, Council authorized City engineering staff to procure a Traffic Engineer's consultant services to assess whether adding crosswalk striping to specific street intersections would increase safety for pedestrians.

In its February 22nd, 2021, meeting, Council reviewed Branch Engineering's initial report that concluded there was not sufficient volume of pedestrian numbers during the winter months to recommend that a crosswalk be added, therefore Council directed staff to reassess the pedestrian volume of the crossings at E. Main Street and 12th Street during the summer time.

Branch Engineering submitted a follow-up report, dated September 3, 2021, that concluded, even with summer time counts, that the number of pedestrian crossings at the intersection of E. Main Street and 12th Street was not sufficiently high enough (more than 20/hour) to justify adding crosswalk striping – according to a national decision making matrix typically used by Traffic Engineers to assess crosswalks.

Mr. Haga's recommendation to Council states: *"Although the pedestrian crossing volumes do not appear to trigger the threshold of 20 pedestrian crossings per hour, if a marked crosswalk were considered as a preferred alternative for the City, it would logically be located at either the east or west leg of the intersection at 12th Street where there would be adequate lighting to serve pedestrian crossings occurring after dark, and it may look something like what is currently installed at the east leg of 10th and E. Main Street."*

However, future counts of pedestrians *"may produce closer to the threshold volume of pedestrian crossings necessary to trigger a recommendation for a marked crosswalk from the NCHRP Report 562 methodology on E. Main Street."*

His final report also emphatically recommended not adding crosswalks along the commercial strip of Gateway Boulevard south the Connector.

Recommendation

Staff recommends that Council consider painted crosswalks at both east and west sides of the intersection at E. Main Street and 12th Street.

Cost:

\$1,700 of thermoplastic striping.



Richard Meyers, City Manager



Ryan Sisson, Civil Engineer

Attachment

- Haga, Dan, (September 3, 2021). *E. Main Street and Gateway Blvd Ped Crossings*, Branch Engineering.

TECHNICAL MEMORANDUM



DATE: September 3, 2021

PROJECT: Gateway Blvd and E. Main Street Ped Crossings

TO: Ryan Sisson, PE
City of Cottage Grove

FROM: Dan Haga, PE

RE: E. Main Street and Gateway Blvd Ped Crossings



This memorandum is presented as a summary of data that was recollected and reviewed for pedestrian crossings of Gateway Blvd and E. Main Street in Cottage Grove. Previously, data were collected on these corridors and presented in a report provided to the City of Cottage Grove, dated January 15, 2021. The purpose of the pedestrian crossing study, initiated at the request of the City of Cottage Grove, is to assess whether providing markings (striping) for pedestrian crossings would result in an increase to the safety of the crossings for pedestrians. More recent efforts were made and data were recollected on July 29th and August 3, 2021 for two periods, with one period for each location around noon and the other covering the evening/PM peak hour (one contiguous hour between 4:00 and 6:00 PM).

JANUARY 15, 2021 REPORT SUMMARY

The National Cooperative Highway Research Program (NCHRP) Report 562 - *Improving Pedestrian Crossings at Unsignalized Crossings* publication was used as a reference for guidance on determining the adequacy of existing pedestrian crossing locations on the two corridors. Previously collected approaching vehicular traffic volumes and conflicting pedestrian crossing movement data were utilized as inputs to an NCHRP Report 562 accompanying spreadsheet to determine if there were any improvements identified as necessary for pedestrian crossings at unsignalized and uncontrolled approaches, along with approaching vehicle speeds and expected compliance by motorists.

It was determined based on the pedestrian and vehicular volumes that the only suggested pedestrian crossing treatment option per the NCHRP 562 Report methodology and accompanying spreadsheet output was to provide a raised median (without a marked crosswalk). The NCHRP spreadsheet utilized a lower threshold volume of 20 pedestrian crossings before the raised median treatment output is changed to a marked crosswalk, and there is not a default (no treatment) option/recommendation (i.e. if "0" pedestrians are input, the treatment category [output] is still *"Consider raised median island, curb extensions, traffic calming, etc. as feasible."*).

JULY AND AUGUST 2021 DATA COLLECTION

Since the State of Oregon's Governor first issued the stay at home, stay safe executive order at the onset of the COVID-19 pandemic in March 2020, traffic and transportation trends have been impacted, resulting in less than average vehicular and pedestrian crossing traffic volumes. Since data collected

previously were collected in November 2020 or January 2021, there was reasonable doubt that vehicular or pedestrian levels of traffic observed were up to normal level conditions. Since it was known that data collected at the time could be less than typical design hour conditions, data were recollected in July and August 2021 and reevaluated.

The new data that were collected were reinput into the NCHRP Report 562 accompanying spreadsheet and the output results are the same as were previously reported in the January 15, 2021 Report provided to the City of Cottage Grove, suggesting a raised median or treatment other than a marked crosswalk. The new data did not have a significantly higher number of pedestrian crossings, and there was a total of six pedestrians observed crossing E. Main Street near 12th Street and nine observed crossing Gateway Blvd between Oswald and Harvey Road during two-hours of data collection at each location.

As indicated previously, the lower threshold on the spreadsheet between the default raised median (and other treatments) recommendation and a recommendation for providing a marked crosswalk is 20 pedestrian crossings during a contiguous peak one hour.

LAND USE AND SURROUNDING FACILITIES

Gateway Blvd:

As discussed in the January 15, 2021 report to the City of Cottage Grove, the mix of truck traffic and vehicular speeds on Gateway Blvd do not favor encouraging pedestrians to cross Gateway Blvd between the Cottage Grove Connector and the truck entrance at the east side of Gateway at the south end of the built-up commercial corridor. During the observations, it was noted that some vehicles approach the Gateway Blvd corridor from the interstate off-ramp at high rates of speed, which is especially concerning, considering some of the observed approaching vehicles are large commercial trucks.

During the observations, it was noted that several pedestrians crossed Gateway Blvd near the intersection of Oswald Ave, and several crossed near the truck entrance at the south end of the corridor, where it is assumed the crossings were associated with a restaurant or the existing hotel at the west side of Gateway Blvd and the commercial truck traffic at the truck stop.

Pedestrian treatment on this corridor that may encourage pedestrian crossings might be placed south of the truck entrance, but not so as trucks waiting to turn into the truck stop entrance driveway obscure the view of a pedestrian crossing Gateway Blvd from a motor vehicle in the adjacent travel lane within adequate stopping sight distance. For a 35 MPH design speed, the stopping sight distance recommended by AASHTO is 250 feet, which would likely shift the designated crossing south and may not get adequate compliance from users crossing between the truck stop and the restaurant, with some out-of-direction travel required.

The safety of pedestrian crossings could be improved with a raised median that would provide refuge for the crossing pedestrian by shortening the exposure from either approach. With median refuge, the view of the length of the crossing for stopping sight distance from an approaching motor vehicle could be shortened, since the crossing pedestrian would have refuge in the center raised median, although this would not be an ideal condition.

E. Main Street:

There are several marked crossings on E. Main Street, including traffic signals at Gateway Blvd, at 16th Street and at 14th Street, and at Highway 99S. There is a marked crosswalk present at 10th Street crossing the east leg of the E. Main Street approach. The designated crossing locations are relatively evenly spaced, besides a gap between 10th Street and 14th Street.

The more recent data collection efforts focused on the E. Main Street corridor at/near 12th Street, where there is a convenience market land use present in the northeast quadrant of the intersection, a transit stop at the south west corner, a dog park to the north, and City Parks nearby at the south side of E. Main Street. Per the City of Cottage Grove, there is also a seasonal warming shelter for homeless people north on 12th Street in the vicinity of the intersection.

While the referenced NCHRP Report 562 spreadsheet did not yield a recommendation for a marked crosswalk or active pedestrian treatments based on the observed pedestrian volumes, the only place where a crossing treatment that is recommended (such as a raised median) would be suitable would-be mid-block where there wouldn't be a propensity to block left-turns or force platoons of motor vehicle traffic to wait for a left turning vehicle to have a gap in the approaching traffic stream to turn. Given the presence of existing driveway approaches on the corridor, providing a raised median for pedestrian refuge isn't feasible without removal of access, except close to the intersection at 14th Street, where pedestrians would reasonably be expected to make a route diversion to the intersection to cross.

Although the pedestrian crossing volumes do not appear to trigger the threshold of 20 pedestrian crossings per hour, if a marked crosswalk were considered as a preferred alternative for the City, it would logically be located at either the east or west leg of the intersection at 12th Street where there would be adequate lighting to serve pedestrian crossings occurring after dark, and it may look something like what is currently installed at the east leg of 10th and E. Main Street.

If a crosswalk were installed at the City's discretion, it could be supplemented with pedestrian crossing signs (MUTCD W11-2) and downward pointing arrow plaques (W16-7P) pointing to the crosswalk to enhance awareness of the crossing location to approaching vehicles. Additional enhancements might also include transverse stop bars supplemented with stop here for pedestrians signage (R1-5a/b) or state law yield to pedestrians within crosswalk paddles (MUTCD R1-6/6a). Stop bars are not to be used on uncontrolled approaches without an accompanying R1-5 series signage for pedestrian crossing locations. An example of pedestrian signage typically located at unsignalized pedestrian crossings is included as an attachment.

RECOMMENDATIONS

The pedestrian crossing activity on Gateway Blvd and E. Main Street were revisited in July and August 2021 that were first observed, reviewed and reported to the City of Cottage Grove in a report provided by Branch Engineering dated January 15, 2021. The observed July and August pedestrian crossing volumes combined with the motor vehicle approaching traffic volumes and speeds do not appear to trigger any treatment recommendations that were not previously identified in the January report findings. The NCHRP Report 562 methodology has a default output value that recommends a raised median island, curb extensions, and/or other traffic calming devices even when there are no pedestrian crossings input to the spreadsheet. Per the NCHRP Report methodology, a marked crosswalk is not triggered with the existing approaching traffic volumes and speeds until there are 20 or more pedestrian crossings per hour.

Although the NCHRP Methodology does not identify a marked crossing as a recommended treatment with the site conditions noted for the two corridors, should the City decide they wish to provide pedestrian crossing treatment improvements, a logical place for a marked crosswalk might be the east or west leg of E. Main Street at 12th Street, where there would be approximately even spacing between marked crossings on the corridor, and there is lighting present to facilitate crossings after dark, although the existing lighting levels were not reviewed for adequacy. The convenience market, dog park and nearby parks in the vicinity as well as the warming shelter are likely pedestrian generating

land uses in the vicinity and, under normal traffic conditions, may produce closer to the threshold volume of pedestrian crossings necessary to trigger a recommendation for a marked crosswalk from the NCHRP Report 562 methodology on E. Main Street.

On Gateway Blvd, the safest location for a pedestrian crossing appears to be south of the truck entrance on the corridor and north of Harvey Rd to avoid pedestrian crossings that conflict with large trucks that are frequenting the truck stop entrance and avoid a limited approaching sight distance condition associated with the horizontal alignment near Harvey Rd and south. A crossing in this area would garner the most benefit and usage if located where crossings between the truck stop and the restaurant and/or hotel would not require a significantly long route diversion to cross, and would benefit from a raised median to shorten the exposure distance and provide a refuge for crossing pedestrians.

Please feel free to contact me if there any questions regarding this.

SIGNAGE EXAMPLES

