



Providence Bicycle and Pedestrian Advisory Commission

Jorge O. Elorza, Mayor

Staff Report: Intersection Safety Improvements at Raymond Street and Valley Street – Smith Hill – Ward 12 (For Action)

Presented at March 17, 2021 BPAC meeting

Project Background

The City of Providence Department of Planning and Development seeks comments from the BPAC regarding design plans for urban trail improvements on Raymond Street at Valley Street. This will be a design level review of the project and will be the second of two reviews before the Commission.

Following the Commission's discussion of the broader Dean-Raymond corridor at the February 2021 meeting and continuation of that review, this agenda item focuses in on the specific concerns related to vulnerable road user safety at this intersection.

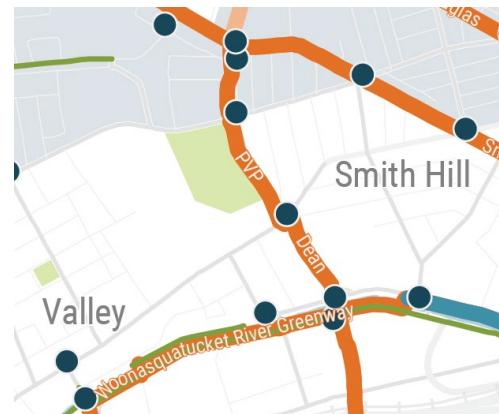
Great Streets Plan Context

In addition to the Dean-Raymond corridor being a connection for the urban trail network proposed in the Great Streets Plan, this particular intersection is highlighted as one needing safety improvements.

One person was hit at the intersection while biking within the past 3 years and no one was hit while walking.

There are currently four phases to the traffic signal, one for Valley Street (45 seconds), one for West Park Street (20 seconds), one for Raymond Street northbound (20 seconds), and one for Raymond Street southbound (40 seconds). The total signal cycle length is 125 seconds.

The crosswalk across Valley Street westbound (1 second solid 10 seconds flashing) has conflicting traffic turning right from Raymond Street southbound during its phase, and currently the crosswalk across Raymond Street southbound (5 seconds solid 10 seconds flashing) and Raymond Street northbound (5 seconds solid 10 seconds flashing) are each on their own phases that does not have any conflicts except permitted turns on red. To cross the full Raymond Street crosswalk would take a pedestrian 22 seconds and the Valley Street crosswalk 11 seconds.





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Options to Improve Safety

- **Potential near-term feasibility:**
 - **Make West Park one-way away** – West Park is by far the least-used leg of the intersection, with about one vehicle per light cycle using it even during rush hour. Making it one-way away from the intersection would eliminate the need for its signal phase and provide extra time to improve pedestrian & bicycle safety in the signal phasing.
 - **Leading Pedestrian Interval (LPI)** – walk light is on for a few seconds while conflicting movements are still red before the cars get a green light. Usually pretty simple but sometimes the signal electrical cabinets need to be upgrade to have enough room for the necessary circuitry.
 - **No Turn on Red signage** – Even with LPIs and other signal improvements to improve crosswalk safety, cars turning right on red can create dangerous conflicts in crosswalks. Red arrows can discourage this behavior, as can No Turn On Red signs mounted on the signal mastarm.
- **Potential longer-term feasibility:**
 - **Separate through/turning traffic phases** – currently there are no turning-specific signal heads at the intersection. This usually costs more than you would expect to fix and may snowball to other signal upgrades. This can provide a time in the signal cycle when there are no conflicts for the concurrent pedestrian phase.
 - **Adjust median on southern Raymond Street leg to provide new pedestrian refuge** – The walk signals currently expect crosswalk users to cross the northbound and southbound sides of Raymond Street separately, with a pedestrian refuge and walk button on the median. The existing median is being eliminated as part of these plans, requiring some adjustments to make the crosswalk work. One adjustment that could help with the intersection’s accessibility to crosswalk users is to adjust the median further to allow for a new refuge slightly to the west of where it is now.
 - **Add crosswalk and refuge island on north side of intersection** – Currently there is no crosswalk across Raymond Street on the north side of the intersection, but there is a sufficiently sized crosshatched median island. This would not address the safety of the existing crosswalks but could add additional crosswalk accessibility in coordination with other improvements.
 - **Add curb extensions on north corner and west corner** – The two areas where this intersection is wider than the existing car lanes dictate are between Ayrault St and Valley St on the north and adjacent to Davis Park on Valley St on the west. Small curb extensions at these locations could shorten crosswalk distances.



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Staff Recommendations:

- Potential near-term improvements to the intersection should be expedited to occur before or immediately following corridor improvements:
 - West Park should be converted to one-way away from the intersection.
 - Leading Pedestrian Intervals should be implemented for the crosswalks across the western (Valley) and southern (Raymond) legs of the intersection, providing at least 15 seconds of conflict-free walk light across Raymond Street.
 - No Turn On Red signage should be mounted on the intersection's signal mastarms.
- Longer-term improvements such as adding and adjusting refuge islands, adding curb extensions, and separating out turning phases from through phases in the signal cycle should be evaluated and considered.

Respectfully submitted by Alex Ellis.