

memorandum

DATE: January 16, 2026

TITLE: Resending a 2021 internal memo, at the City of Philadelphia Streets Department's request.

TO: Adam Smith, Philadelphia Streets Department

FROM: Thom Stead, Associate Manager, Office of Mobility and Design

In January 2026, the City of Philadelphia requested that DVRPC reshare the Market Street Complete Streets Resurfacing memo from June 28th, 2021. This memo summarizes the findings of an analysis that studied the traffic impacts of four alternative roadway designs for Market Street between 34th Street and Schuylkill Avenue. This analysis was done at the City of Philadelphia's request under DVRPC's PennDOT Connects Bike-Friendly Resurfacing on Market Street program. This memo was shared with steering committee members from the City of Philadelphia and PennDOT. The following pages are the 2021 DVRPC product of that analysis.

Please contact Thom Stead, Associate Manager, Office of Mobility and Design (tstead@dvrpc.org) with any questions.

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The purpose of this memo is to summarize results from a traffic operations analysis performed on Market Street from Schuylkill Avenue to 34th Street. The analysis was performed using Synchro and SimTraffic and evaluated four scenarios:

- **Existing Conditions:** This scenario used traffic counts taken in 2015-2017, shared in the Market Street Bridge Rehabilitation Project conducted by Boles Smyth in 2019. Adjustments were made to signal timing and geometry based on current signal timing plans.
- **Proposed 1:** Based on the initial request from the city, this scenario evaluated the full removal of one westbound travel lane from Schuylkill Avenue to 34th Street, in order to accommodate new conventional bike lanes in both directions on Market Street. This scenario was found to cause significant delay and queuing compared with existing conditions.
- **Proposed 2:** To address queuing issues caused by right-turning vehicles in Proposed 1, this scenario removed the same westbound travel lane, but added 100-foot right-turn mixing zones to the westbound approaches to JFK, 32nd, and 33rd. This scenario performed better than Proposed 1, but some issues remained.
- **Proposed 3:** This scenario evaluated the removal of a westbound travel lane from Schuylkill Avenue to JFK, and from 33rd to 34th. Between JFK and 33rd, two westbound travel lanes would remain, and one lane of street parking would instead be removed to accommodate the bike lanes on this block. This scenario performed similarly to Existing Conditions, except at JFK Boulevard where existing problems were exacerbated.
- **Proposed 4:** This scenario is similar to the configuration of the Proposed 3 scenario, but with updated geometry and timing at the Market & JFK intersection; the timing was further optimized by DVRPC after examining initial results. Modeled queue lengths and average delay were greatly reduced on the southbound JFK approach of the intersection as a result of these adjustments. At 33rd Street, 50th and 90th percentile Synchro queues exceed capacity, while Simtraffic queues do not.

Based on the results presented in this memo, Proposed 4 performs best of the alternatives presented, but presents potential issues with queuing at 33rd and Market Street.

Existing Conditions and Proposed Lane Reallocation

The existing cross section of Market Street between Schuylkill Avenue and 34th Street features one eastbound parking lane, two eastbound travel lanes, one center turn lane, and two westbound travel lanes (Figure 1). The purpose of this analysis was to evaluate the traffic impact of removing one westbound travel lane and reallocating the roadway width to create conventional bicycle lanes in both directions (Figure 2).

Figure 1: Existing Conditions, Typical Cross Section

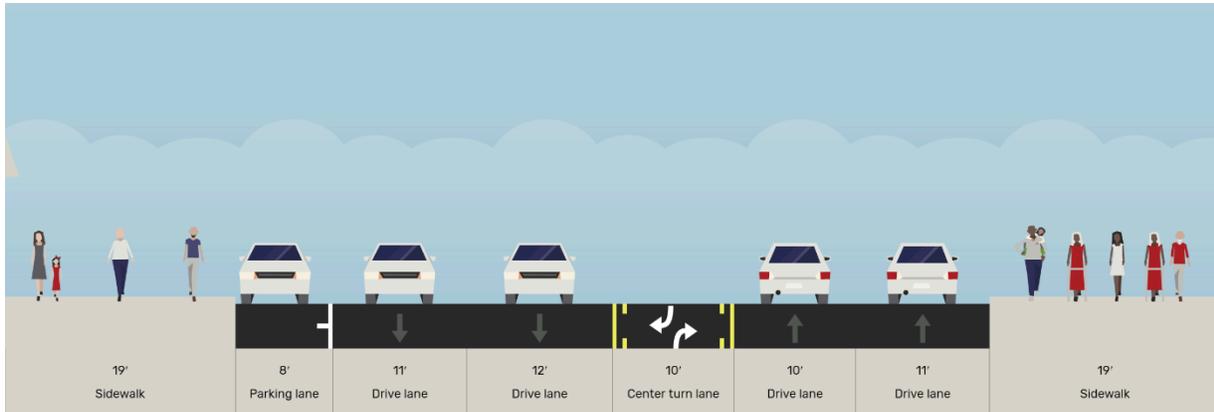
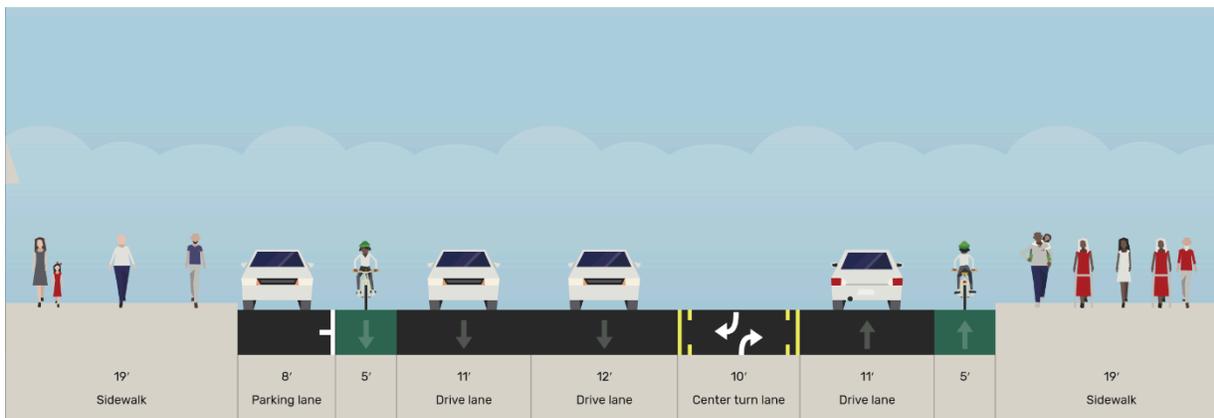


Figure 2: Proposed Lane Reallocation, Typical Cross Section



Analysis

Traffic analysis was conducted for each scenario in both Synchro and SimTraffic. A complete table of results is presented in Appendix A - Market Results. Results for each scenario are summarized below.

Proposed 1

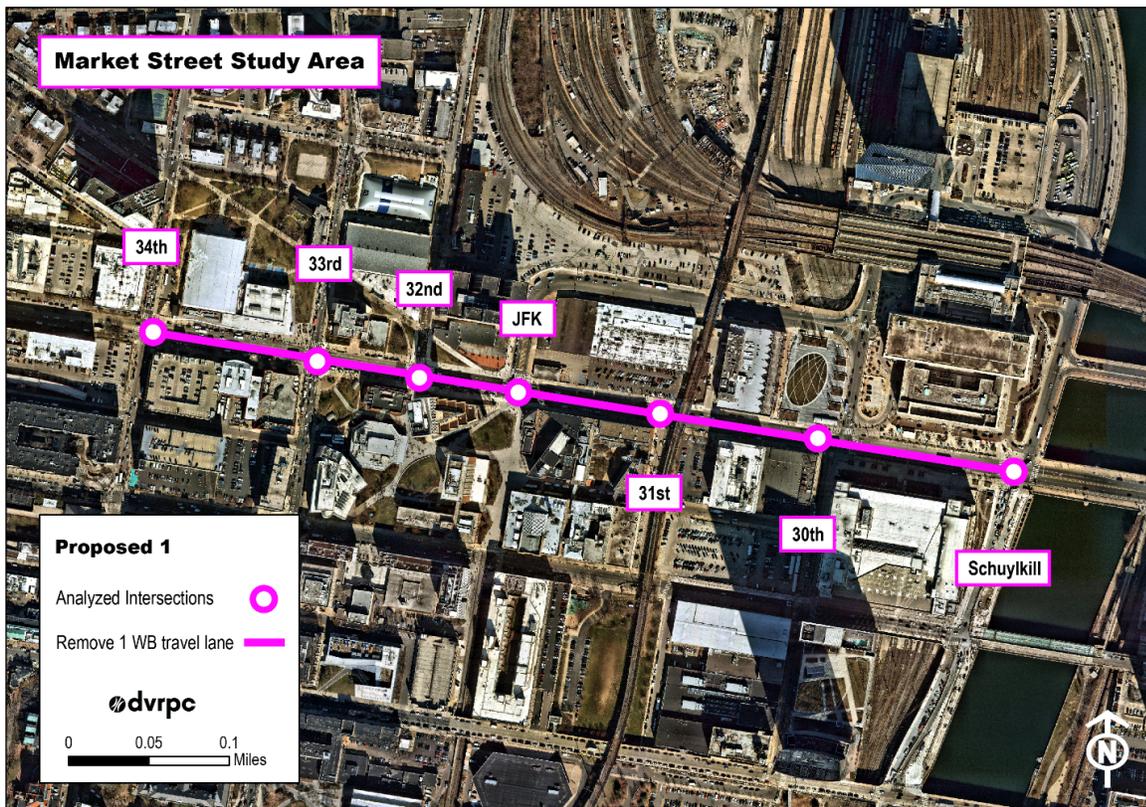
The proposed 1 scenario is illustrated in Figure 3. This scenario removes one westbound travel lane between Schuylkill Avenue and 34th Street, leaving a single westbound lane with left turn lanes at intersections with southbound streets. Minor signal timing changes were made to optimize performance.

Key Takeaways from Proposed 1 Results:

- Compared with existing conditions, Proposed 1 does not significantly alter traffic performance at most intersections during the AM peak.

- However, during the PM peak, Proposed 1 creates or exacerbates delay and queuing at all intersections except 34th Street.
 - Westbound delay begins at 33rd Street, causing queues to spill back into intersections all the way to Schuylkill Avenue.
 - This issue is due in part to westbound vehicles attempting to turn right at 33rd, 32nd, and JFK from the single westbound shared/through lane. Because these right-turning vehicles conflict with heavy pedestrian movements, they create significant delay for the through vehicles behind them.

Figure 3: Proposed 1 Scenario



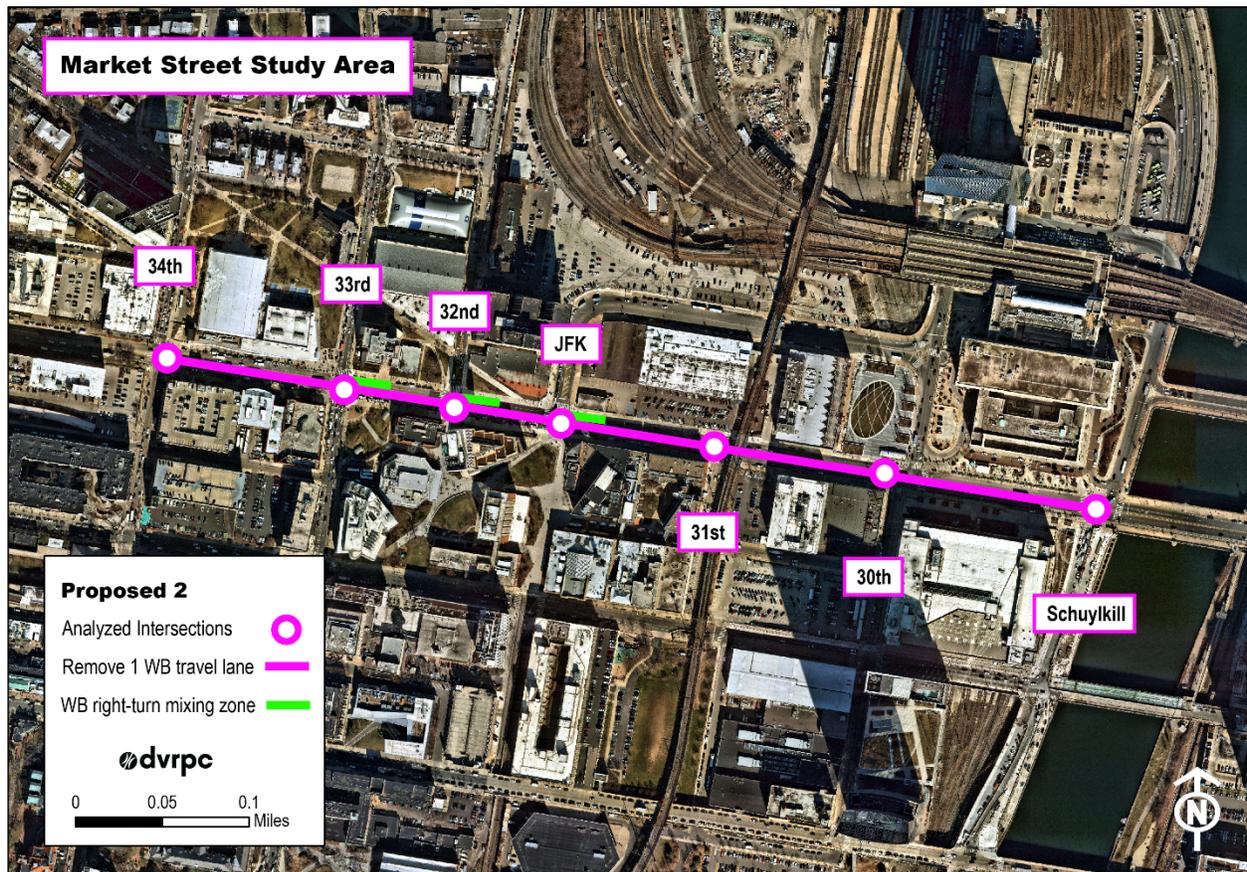
Proposed 2

The Proposed 2 scenario, developed to address the PM peak hour issues in Proposed 1, is illustrated in Figure 4. This scenario is similar to Proposed 1, but adds 100-foot right-turn mixing zones to the westbound approaches of 33rd, 32nd, and JFK to alleviate right-turn blockages. Minor signal timing changes were made to optimize performance.

Key Takeaways from Proposed 2 Results:

- Proposed 2 performs better than Proposed 1 during the PM peak, but issues remain at 33rd Street, 32nd Street, and particularly at JFK Boulevard.

Figure 4: Proposed 2 Scenario



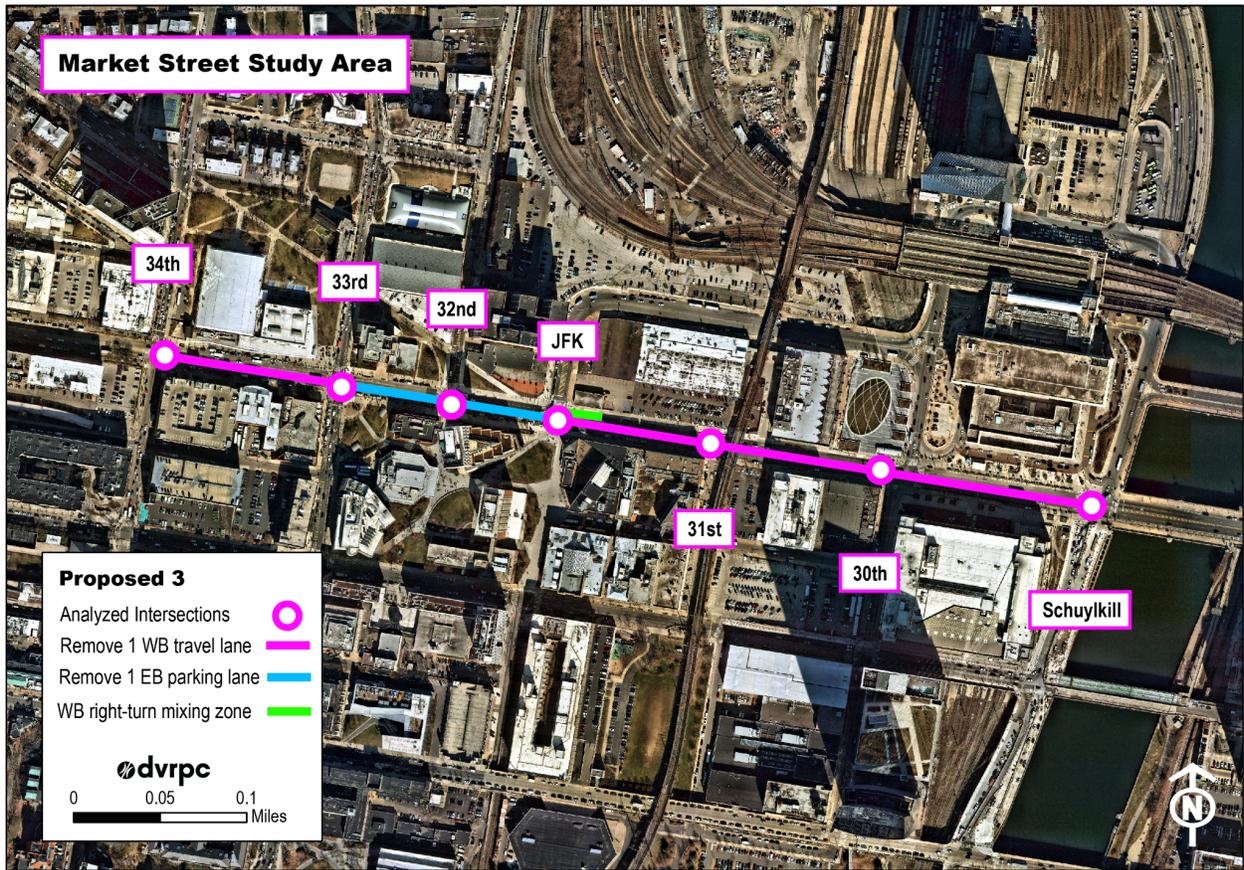
Proposed 3

To better address the PM peak hour congestion issues in Proposed 1 and 2, Proposed 3 (illustrated in Figure 5) does not remove a westbound travel lane between JFK and 33rd. Instead, the parking lane on the south side of the street would be removed (on this block only) to make room for the new bike lanes. Additionally, there is a 100-foot westbound right-turn mixing zone approaching JFK. Minor signal timing changes were made to optimize performance.

Key Takeaways from Proposed 3 Results:

- Proposed 3 does not perform significantly worse than existing conditions during the PM peak, except at JFK, where existing delay and queuing is exacerbated on the westbound and southbound approaches in the SimTraffic results.
- This intersection accommodates large volumes of traffic on every approach, as well as high pedestrian volumes.
- Plans to add a second southbound right-turn lane would likely alleviate the issue at JFK, though this was not included in the scenario.

Figure 5: Proposed 3 Scenario



Proposed 4

Proposed 4 (illustrated in Figures 6 and 7) was developed to address the queueing on the southbound JFK approach. The new configuration notably features dual southbound right turn lanes that are separated from the southbound left turn lane by a concrete median, and subsequent signal timing adjustments. DVRPC further optimized this timing, shifting two seconds from phases 4&8 to phase 6 at the intersection to better service the JFK approach. The adjustments at the Market & JFK intersection are shown in detail in Figure 7, and the plan set is appended.

Key Takeaways from Proposed 4 Results:

- Modeled average delay and queue lengths on the southbound JFK approach are roughly halved at the expense of roughly ten seconds of added delay on the westbound Market Street approach.
- At Market and 30th, southbound delay and queues (which are already failing) worsen slightly in Synchro, but improve slightly in Simtraffic.
- At 33rd and Market, 50th and 95th percentile synchro queues exceed capacity westbound.

Figure 6: Proposed 4 Scenario

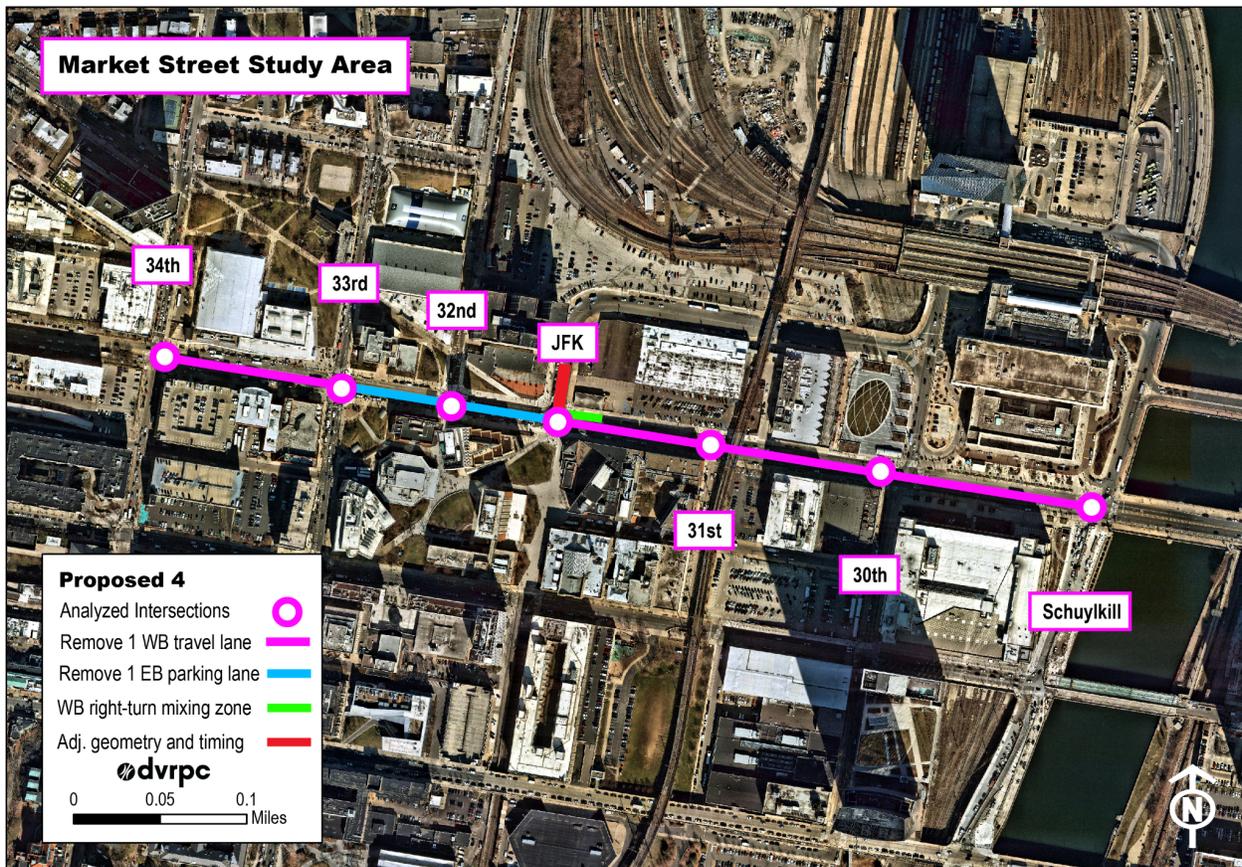
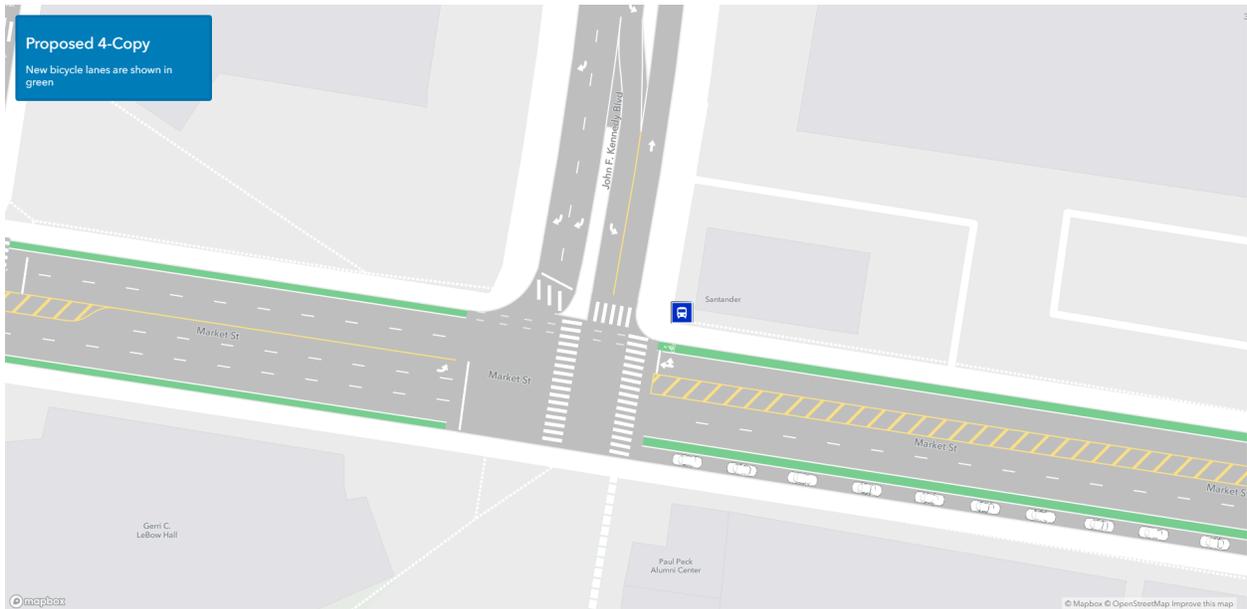


Figure 7: Proposed 4 Scenario, modeled in Remix



Recommendations

Due to the substantial improvement to the bicycle network it would achieve in exchange for a moderate increase in delay and queueing during peak periods, the DVRPC project team recommends implementing the Proposed 4 scenario as part of the upcoming resurfacing.