Attachment 5

Responses to Additional Questions Received on the Proposed Northbound to Eastbound Right Turn Lane at the intersection of Broadway Street NE at Pine Street NE

After the supplemental staff report responding to issues raised in public testimony at the August 10, 2020, Council meeting was completed, additional questions were received by staff. Some of the questions overlap the information provided in the staff report. These additional questions and staff response are provided below.

1. Where did this idea originate?

The proposal for the right turn lane began in 2010 when staff received a request from Gary Obery to consider a road diet on Broadway Street NE, between Pine Street NE and Salem Parkway. At the time the City was preparing to repave Broadway Street and Mr. Obery asked if the existing four-lane undivided striping could be replaced with a three-lane configuration. An intersection capacity analysis was completed at the Broadway Street at Pine Street intersection that indicated a northbound right turn lane was needed to mitigate the capacity impact of the proposed road diet.

Implementation of the road diet will reduce the northbound through lanes from two to one at the intersection. The right turn lane is required to reduce the congestion caused by right turning vehicles stopped for pedestrians crossing at the east leg of the intersection.

2. If there was not state money available, would the City even consider this right turn lane? Why or why not?

The restriping of Broadway Street NE is an important safety enhancement for this roadway section. The right turn lane supports and properly implements the road diet project. The project qualified for state funding because ODOT considers it a safety enhancement in its totality. The right turn lane would not be proposed without the road diet project.

3. Do you have actual traffic count for this intersection? How do those compare with comparable intersections in Salem?

Counts were conducted in 2010 and in 2019. The traffic volumes are comparable to other signalized intersections of two minor arterial streets.

4. What is your estimate of the increased traffic capacity the right turn lane will provide?

A right turn lane increases the capacity of a signalized intersection by moving slowing or stopped turning vehicles from the through travel lane. The increased capacity provided by a right turn lane varies significantly depending on the turning volumes, signal timing, and pedestrian volumes.

The right turn lane will also provide for transit bus stops that will not block through traffic or bicycle traffic. Salem Area Mass Transit District staff have indicated that they support allowing transit buses to use the right turn lane as a bus stop.

5. How big is the actual right turn demand during peak hours? In other words, during peak hours what percentage of cars currently go straight and what percentage currently turn right?

The 2019 traffic count showed 90 vehicles making the right turn during the AM peak hour and 56 vehicles making the right turn during the PM peak hour. During the AM peak hour in the northbound direction, 9 turned left (2%), 339 through (77%), 90 turned right (21%). During the PM peak hour in the northbound direction, 11 turned left (1%), 714 through (92%), 56 turned right (7%).

6. Could you compare the increased capacity to the increased danger to pedestrians from cars making a relatively unimpeded right turn?

The proposed right turn lane will not create an "unimpeded" movement, nor will it increase danger to pedestrians. The right turn lane will be controlled by the traffic signal. Right turn lanes are considered safety improvements by ODOT and the AASHTO *Highway Safety Manual* for all users of the street (vehicles, bicycles, and pedestrians).

7. Could you compare the increased danger to bicyclists who will be between the northbound lane and cars wishing to move to the right turn lane?

The right turn lane will improve bicycle safety by removing the issue of the "right hook" (driver turns right across the bike lane when a bicyclist is traveling through the intersection). The vehicle transition across the bike lane prior to the intersection will be clearly marked as part of the striping plan for the right turn lane.

8. Is any increase capacity worth the increased danger to non-car users?

A right turn lane is not considered to increase danger to bicyclists and pedestrians. The *Highway Safety Manual* identifies it as a safety improvement. ODOT gives credit for a right turn lane when evaluating safety improvements for all uses of the intersection.

9. By adding a turn lane, does the number of lanes at the intersection decrease, increase, or remain the same?

The number of lanes on the south side of the intersection will remain the same after the project is completed. Broadway Street currently has four lanes on the south side of the Pine Street intersection (two northbound and two southbound lanes). When the project is completed, Broadway will still have four lanes south of Pine Street (one southbound lane and three northbound lanes—left turn, though, and right turn). The additional width of the intersection will be due to the addition of the bicycle lanes.

10. What does Broadway look like north of Pine? How many lanes?

Currently, the Broadway Street cross-section north of Pine Street consists of four lanes, two lanes in each direction. No turn lanes or bike lanes are provided.

11. Is there a current or planned road diet north of Pine?

Yes, this project (that includes the subject right turn lane) will implement a road diet by converting Broadway Street north of Pine Street from the existing fourlane undivided cross-section into a three-lane cross-section; one lane in each direction, a two-way left-turn lane and bike lanes in both directions.

12. Is there a current or planned road diet south of Pine?

Yes, between Pine and Spruce (the next intersection south).

13. Is the right turn lane part of a larger plan or just a one-off change at this intersection?

The proposed right turn lane is part of the Broadway Street road diet project. It is the only lane addition proposed for the project.

14. How would the right turn lane affect the businesses at the adjacent shopping center?

No effect.

15. Would the right turn lane positively or negatively affect the traffic safety island at Pine and Maple? Please explain.

The proposed right turn lane at Broadway Street will have no effect on the traffic safety island at Maple Street. The traffic safety island was constructed to improve pedestrian and bicycle crossing safety at this location. The island may in fact have a traffic calming effect on Pine Street because it narrows the roadway at this location.

The island however may have an impact on Broadway Street, as it blocks through traffic on Maple crossing Pine. Improving capacity on Broadway Street will provide detoured Maple Street traffic an alternative route instead of using the adjacent neighborhood streets.

16. It appears as if the proposed intersection will look somewhat like the intersection at Edgewater and Rosemount in West Salem. How does the traffic counts at these two intersections compare?

We do not have traffic count information at Edgewater and Rosemont.

17. There is a different configuration at 17th and Market, going south. Why would this type of arrangement not work at Pine and Broadway? Please explain.

Most signalized intersections along 17th Street do not have right turn lanes. Increased traffic volumes coupled with pedestrian crossings are causing added congestion at these intersections. Council may recall that during the discussion of the State Street road diet, right turn lanes figured prominently in addressing these issues at the 17th Street intersection.

Right turn lanes have been installed at the two Broadway Street signalized intersections south of Pine Street. These facilities at Market and Hood Streets have been in place for several years without incident.

18. What is the plan for Broadway Street between Pine and Spruce? Will this block be designed as two travel lanes and a center turn lane, or will it remain unchanged?

The section of Broadway between Spruce and Pine will be changed to one lane in each direction with a center turn lane. Currently in that section of Broadway, the travel lanes transition from two lanes at Spruce, to four lanes at Pine.

19. Is this project in the TSP? I presume it is. If so, are there other projects of a similar nature in the plan? Again, if so, why was this project proposed as opposed to others of a similar nature?

Broadway Street is designated as a minor arterial and the project is consistent with the Salem TSP. Broadway Street in its current configuration has four travel lanes, no center turn lane, and no bike lanes. The cross-section for a minor arterial in the Salem TSP is for one lane in each direction with a center turn lane and bike lanes (see illustration from the Salem TSP below). The Salem TSP also establishes that additional intersection improvements and right-of-way may be required at the intersections of arterial and collector streets (Street System Element Policy 4.7)



Most of the designated minor arterial streets in the Salem TSP are either consistent with the standard (e.g., most of 17th Street, Fairview Industrial Drive, Market east of Lancaster) or they are lacking some element of the typical cross section (e.g., missing bike lanes or center turn lane).

20. Do we have any artist renditions of how the proposed intersection would appear? Would like to be able to compare the intersection as it exists and as it is proposed.

The attached illustrations show the existing intersection layout and then the road diet with and without the right turn lane.

21. Will there still be a planter strip in front of Josie's or does the sidewalk become directly next the street? Any place for replacement trees?

The planter strip in front of Josie's is paved. The project will place the sidewalk next to the curb. To reduce impact to adjacent properties, no additional right-of-way is proposed to be purchased for additional green space.

22. Is the northbound flow along Broadway not constrained by the limited lanes and heavier conflicting flows at both Market and at Hood St? It seems that the signal at Hood St is very near to carrying all the traffic it can, and that there is no way to increase the traffic flow north of Hood along Broadway (exiting the signal) without significant impacts. If that is true, is it not true that the current flows on northbound Broadway are as high as they will ever be, and that we don't need to build reserve capacity at Broadway/Pine? The downstream intersections are a large factor in the amount of northbound traffic that gets to the Broadway and Pine intersection. However, Broadway Street has many street intersections that add and remove traffic between Hood and Pine. It should also be noted that those intersections also have northbound right turn lanes. Broadway and Pine is proposed to be configured just like the intersection at Market.

Attachments:

- 1. Map: Existing Intersection Layout
- 2. Map: Road Diet with Right Turn Lane
- 3. Map: Road Diet without Right Turn Lane





