

**Summary Evaluation Memo
Potential Interchange Roadway Impacts for
Biddeford & Saco, Maine**

Date: January 27, 2017
Subject: Evaluation of Traffic Impacts Associated with Potential Interchange
Biddeford & Saco, Maine
To: Municipalities of Biddeford & Saco
From: Randy Dunton, Gorrill Palmer (JN 2850.03)

Understanding of Project Evaluation

Gorrill Palmer (GP) has been retained by the Cities of Biddeford and Saco to evaluate, on a very macroscopic level, the potential traffic implications of a new I-95 interchange if it were located somewhere between the existing Exit 32 in Biddeford and Exit 36 in Saco. The goal of a new interchange would be to provide access to the downtowns in such a way as to reduce the distance a vehicle would have to travel from the Interstate to the downtown. This would have the impact of reducing vehicles miles traveled (VMT) and decrease unnecessary traffic volume on roadways and through intersections that are already at or nearing capacity and would require significant investments in the future to maintain adequate levels of service. This evaluation is intended to provide information to the municipalities to assist them in making an informed decision of whether or not to move the project to the next level.

Traffic Volumes

The construction of an additional interchange between Exits 32 and 36 could significantly impact the distribution of existing traffic on a regional level. GP has been working with Mr. Kevin Hooper and the PACTS model that he created in 2015 to evaluate potential traffic volume redistributions should a new interchange be constructed. Mr. Hooper provided GP with a summary of his analysis for an interchange in the area of the South Street overpass in Biddeford that estimates the potential increase and decrease in traffic volumes for different locations in the Biddeford and Saco area. Based on discussions with Mr. Hooper, the same regional impacts could be expected with the interchange in either Biddeford or Saco; however, immediate roadway networks in the proximity of the interchanges could be different depending on the location of the interchange.

The attached Figures show existing annual average daily traffic (AADT) volumes as well as increases and decreases in traffic as a result of a potential interchange in either Biddeford (Figure 1) or Saco (Figure 2). The potential interchanges are shown on the South Street overpass for Biddeford and the Boom Road overpass for Saco. The purpose of this evaluation was NOT to evaluate those two locations for adequacy of an interchange and their respective roads to



accommodate the increased traffic of an interchange, but were chosen because they each represent a point in their municipality approximately half way between Exits 32 & Exit 36. If an interchange is pursued, a separate evaluation would be required to identify the best location for an interchange.

Traffic Impacts of Potential Interchange

Regardless of whether the interchange is in Saco or Biddeford, the regional impacts of the interchange would be expected to be about the same. The primary difference in traffic impacts between the two municipalities would be expected within a mile from the centers of the downtowns. Generally, regardless of interchange location, on the periphery of the downtowns an approximately 10% reduction in traffic volume could be expected on the major primary routes into / out of the downtowns. Saco could experience 15%-20% reduction on Route 1 between the “triangle” and Ocean Park Road, due to a combined decrease in traffic from both Exit 36 and Route 1 to the north. Each municipality is described more in detail as follows:

Biddeford:

The primary benefits to Biddeford of an interchange (in either municipality) is a decrease in traffic volumes at Exit 32, along Route 111 and through the “five points” intersection. This is especially critical since “five points” is known to have capacity issues now, which will only be exacerbated with future development and background growth. This intersection has been modified over the years to improve operations; however, at the expense of using all available area for improvements. Therefore, any future improvements to the intersection would be expected to come at considerable cost and acquisition of property.

Getting closer to the downtown the benefit of the reduction of traffic is dispersed with still some minor benefits on Route 111 and Route 1.

The challenges to an interchange in Biddeford would be expected to occur along Route 1 closer to downtown. Since Route 1 is the first major north-south road parallel to I-95, this would be the first major intersection with a road that carries traffic from the potential interchange toward downtown. Because this area is well established with structures and existing roadways, costs would be expected to be significant with acquisition of property required.



Saco:

The primary benefits to Saco of an interchange (in either municipality) is a decrease in traffic volume along Route 1, primarily from Ocean Park Road to the “triangle” (Elm / Route 112 / Route 1 / Main / Beach). This is especially critical since this section of roadway is at or nearing capacity. In addition, the “triangle” has undergone numerous evaluations over the years and is identified as an especially troublesome location given the combination of three closely spaced signalized intersections in a “triangle” pattern with high traffic volumes on all legs. This location is made more challenging by several significant structures in close proximity. Therefore, any reduction of traffic to this location would help to improve the operations of Route 1 and Route 9.

The section of Route 1 from the “triangle” toward Biddeford and Route 9 from the “triangle” toward Biddeford may also experience some reduction of traffic but to a lesser degree.

The primary challenge to an interchange in Saco is where and how it would enter into the downtown area. The connector from a proposed interchange into downtown Saco could be expected to carry over 8,000 vehicles per day, and wherever that road intersects in the Saco downtown area, it will have significant impacts and most likely require significant mitigation to address. In addition, those vehicles between Biddeford and a new interchange in Saco would be expected to use Route 1 and Pine Street on Springs Island or Route 1 and Lincoln Street, neither location can easily be modified to accommodate more traffic due to the close proximity of bridges.

Potential for Infill

Both Biddeford and Saco should be aware of the potential for “infill”. This phenomenon is first started when a location is improved from an operational standpoint either through adding additional capacity (such as another through lane) or decreasing the traffic volume by creating an alternate route (or interchange). Drivers who currently avoided the area before due to the poor operations now alter their routes through the location since operations have now been approved. This unfortunately results in the capacity that was just created being absorbed by the rerouted traffic and the location is back to where it started prior to the increased capacity. This will; however, typically improve lesser side roads that the drivers were using as alternate routes.

Conclusion

A new interchange located between Exit 32 in Biddeford and Exit 36 in Saco would be expected to have benefits (regardless of municipality) to key locations in each municipality and improve operations on significant corridors within each community. The most significant challenges to each community if they were to have the interchange in their community would be wherever the



connector from the new interchange intersected the downtown. Wherever this intersection occurs, it is expected to require significant mitigation and the acquisition of property. Based on this preliminary macroscopic evaluation, it would appear that Saco may have a more significant challenge in accommodating an interchange in their community than Biddeford.

Although a potential interchange would have challenges in each municipality, an interchange would reduce overall vehicle miles travelled (VMT) by providing a closer access to the downtowns and as a result, would have an overall net benefit to the adjacent roadway network both short term and in long term maintenance.