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June 11, 2024  
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Sharon E. Dickerson, Esq.  
General Counsel  
Casino Reinvestment Development Authority (CRDA)  
15 S. Pennsylvania Avenue  
Atlantic City, NJ 08401

RE: Traffic Engineering Review  
Atlantic Avenue Road Diet  
City of Atlantic City, Atlantic County, NJ

Dear Ms. Dickerson:

At the request of CRDA, I have reviewed the following documents / information related to the Atlantic Avenue Road Diet Project:

- 7/16/21 Traffic Analysis Methodology Report for Atlantic Avenue Road Diet (Phases 1 & 2), prepared by Remington & Vernick Engineers.
- 8/3/23 - 8/12/23 Traffic Counts conducted by Remington & Vernick Engineers.
- 9/14/21 Plans for Atlantic Avenue Road Diet-Phase 1, Tennessee Avenue to Maine Avenue, Federal Project No. STBGP-1100(300), NJDOT Job No. 5502329, prepared by Remington & Vernick Engineers.
- 8/3/23 and 8/5/23 Traffic Counts conducted by RVE.
- 3/12/24 Revised Preliminary Submission to the New Jersey Department of Transportation (NJDOT) consisting of Memorandum of Support from Atlantic City Historic Preservation Commission, Updated CED (Categorical Exclusion Document), Project Fact Sheet and Sign-In Sheet from 2/13/24 Public Information Meeting (PIM), and Plans for Atlantic Avenue Road Diet-Phase 2B, Albany Avenue to Tennessee Avenue, Federal Project No. STBGP-1100(301), NJDOT Job No. 5502331, prepared by Remington & Vernick Engineers (RVE)(plans signed on 5/30/24).
- 5/23/24 Letter from Trenk Isabel Siddiqi & Shandanian PC, transmitting a 2/14/24 Letter from Nahmad Davis & Goldstein, 1/18/24 Traffic Engineering Evaluation prepared by Shropshire Associates, 4/9/24 Response from RVE, and a 4/8/24 Letter from Atlantic City to Vijesh Darji of NJDOT (this contained information from 2/13/24 PIM).

7/16/21 Traffic Analysis Methodology Report (TAMR) (comments indexed to page numbers)

1. For background purposes, per **2.1 Traffic Analysis Objective**, the following is stated: *“This TAMR will evaluate existing volumes and traffic operations at all signalized (33 study intersections for Existing Conditions and will evaluate forecasted traffic volumes for Future Years as a three-lane roadway with bike lanes and pedestrian facilities. Safety benefits will also be discussed.”*

2. For background purposes, under **2.2.1 Project Location & Study Area**, it states that “...study area for this project includes Atlantic Avenue within the City’s Right-of-Way (ROW) from Maine Avenue (northern limit) to Boston Avenue (southern limit). For purposes of this report and analysis, the traffic analysis is comprised of 33 signalized intersections that span approximately 2.4 miles of roadway.”
3. Under **2.2.1 Analysis Years, Scenarios, & Periods** it is stated that “...existing year for the traffic analysis in this study will be Base Year 2021, while the future years will be Future Year 2026 (assumed Opening Year) and Future Year 2046 (assumed Design Year).” It then adds “Four scenarios will be investigated, existing four-lane operations, two future year operations as a three-lane roadway with bike lanes and pedestrian facilities, and one scenario operating as an emergency detour evacuation for scenarios such as a hurricane or other inclement weather. In the future year scenarios, the difference is the bike lanes will be adjacent to the through traffic, and in the other scenario the bike lanes will be projected from traffic (adjacent to the sidewalk and parking).” However, it is noted that the existing typical section for Atlantic Avenue is four lanes with a left turn lane. Finally, it notes that “One peak period was analyzed, assumed to be a Friday PM peak traffic conditions for the analysis years listed above. The data collected will be adjusted as necessary to reflect any seasonal variations in traffic...”. The studied intersections are depicted on Exhibit 1. It is noted that typical traffic studies analyze both AM and PM Peak Hours at a minimum, sometimes also including Saturday Peak Hours. For shore resorts like Atlantic City (AC), weekend traffic volumes could be the highest. Therefore, traffic counts should have been performed and for Weekday AM, Weekday PM, Saturday and Sunday Peak Hours. Also, most traffic studies utilize counts conducted within a year of when traffic report is submitted (NJDOT typically requires this for traffic reports submitted them). Based on a review of “*Intersection Multimodal Counts (Raw Data)*” provided in **Appendix B**, the following is offered regarding the counts included as the basis of the analyses:
  - Atlantic Avenue “North of NJ Ave” and “B/WPA Ave & N Carolina Ave” on Wed 8/22/12-Fri 8/24/12 (9 years before TAMR was prepared and therefore out of date), and Wed 12/12/18- Fri 12-14-18 (3 years before TAMR was prepared; also performed in winter, when traffic volumes in AC are low).
  - Atlantic Avenue “B/W Indiana Ave & MLK Blvd” counts were conducted on Tue 1/21/19-Fri 1/24/19 (2 years before TAMR was prepared; also performed in winter when traffic volumes in AC are low).
  - For Intersections, TAMR indicates that counts were performed in 2017, 2018 or 2019; it also says to “Assume minimum of 5 vehicles per movement and most traffic turns onto Atlantic Avenue” and “Assume similar traffic volumes as surrounding intersections”, but it provides no basis for these assumptions.
  - Counts on Atlantic Avenue “B/W Arkansas Ave & Missouri Ave” were conducted on Wed 8/02/17-Fri 8/04/17 (4 years before TAMR was prepared).
  - No dates could be found for when counts were conducted for “Bikes & Pedestrians”.
  - “Atlantic Ave Bet Mansion & Pennsylvania Aves” on Wed 8/22/12-Fri 8/24/12 (9 years before TAMR was prepared and therefore out of date).
  - “Atlantic Ave Bet Mansion & Pennsylvania Aves” on Tue 2/23/16-Thu 2/25/16 (5 years before TAMR was prepared; also performed in winter when traffic volumes in AC are low).
  - Atlantic Avenue “Bet New Jersey & Connecticut Aves” on Tue 8/25/15-Thu 8/27/15 (6 years before TAMR was prepared).
  - Virginia Avenue “Bet Pacific Avenue and Atlantic Avenue” on Tue 12/11/18-Fri 12/14/18 (3 years before TAMR was prepared; also performed in winter, when traffic volumes in AC are low).
  - Hourly Classification Count and Percent Distribution (location not stated but perhaps also along Virginia Avenue) “Bet Pacific Avenue and Atlantic Avenue” on Tue 12/11/18-Fri

12/14/18 (3 years before TAMR was prepared; also performed in winter, when traffic volumes in AC are low).

- Intersection turning movement counts (including vehicle classification and pedestrians) were conducted on Atlantic Avenue at Delaware Avenue, North Carolina Avenue, Kentucky Avenue, Michigan Avenue, and Columbus Boulevard/Missouri Avenue (Captain John A O'Donnell & Providence) between 3:00PM-9:00PM on Fridays and between 7:00AM-7:00PM on Tuesday or Thursday during March and April 2021 (when traffic volumes in AC are low and also during the COVID pandemic).
- The Travel Run Sheets do not appear to indicate when these were conducted (if during COVID epidemic, runs would likely have been quicker due to reduced traffic volumes).

I have the following comments regarding these traffic counts:

- Older traffic counts were predominantly utilized, only some of which were performed in August (when traffic volumes in the City are traditionally higher).
- These counts were supplemented by additional counts performed in March and April of 2021, at a time of year when traffic volumes in the City are traditionally lower. The counts were also conducted during the COVID-19 pandemic, when traffic volumes were significantly lower.
- It appears that counts were not conducted at many of the thirty-three (33) signalized intersections and that volumes were, instead, based on assumptions.
- Most of the intersection traffic counts utilized as the basis for existing traffic volumes did not include bicycle and pedestrian volumes, so it is unclear from where the volumes found in **Appendix B** were derived.
- Previous studies are included in **Appendix C**, but it does not appear that the traffic counts found here were utilized in the TAMR.

It is noted that accurate and complete traffic counts are the foundation of any traffic report. There are concerns regarding the accuracy of these counts that were subsequently utilized for analyses in the TAMR. Therefore, it is our recommendation that turning movement traffic counts be performed at all thirty-three (33) signalized intersections during the peak summer season (Independence Day through Labor Day). Counts should be performed for bicycles, pedestrians, and vehicles, with the vehicle count being further broken down to vehicle classification (cars, buses, light trucks such as delivery vehicles, and larger trucks). Counts should be performed at several of the busier intersections during weekday morning and evening periods, Friday evening, Saturday morning, and Sunday evening to determine what the actual peak hours are. Then, once the peak period is determined, traffic counts should be performed during the peak period at the remaining intersections.

4. Regarding the "Cross Sections for Typical Existing Conditions (Exhibit 2)" and "Road Diet Option 1 (Exhibit 3)" that are illustrated, it is noted that the existing conditions are depicted as typically being 4 lanes (with no left turn lane) but left turn lanes are present throughout the length of Atlantic Avenue. Therefore, the existing condition should be illustrated. Additionally, bike lanes are typically four feet (4') wide with no buffer between vehicular traffic, however, the 7' wide bike lane with a 3' buffer from vehicular traffic illustrated in Option 1 and as proposed on the Road Diet construction plans raises a concern that aggressive drivers may view this as a second lane in each direction even if well signed and marked.
5. Regarding the "Cross Section for Road Diet Option 2 (Exhibit 4)" and "Layout for Left Turn Lane Storage/Transition (Exhibit 5)", it appears that if the four (4) lanes were constructed consistent with the typical existing conditions illustrated in Exhibit 2, the bike lanes could have been provided without a Road Diet. This option would feature two (2) 11' wide lanes, a 3' wide bike lane and a 8' wide parking area in each direction. Additionally, improvements that are included with the Road Diet, such as new synchronized traffic signals including

improved lighting and therefore visibility, may have provided the desired safety benefits in absence of a Road Diet.

7. If “*engineering judgement*” (as subsequently stated under **3.2.4 Midblock Road Volume Counts**) was employed for the intersection count data utilized in the analyses, this should have been stated in **3.2.3 Traffic Count Data**.
8. Under **3.2.4 Midblock Road Volume Counts**, it states that “*engineering judgment was used while considering the newly collected counts may be lower than an average weekday or Friday due to the Coronavirus (COVID-19).*” However, no explanation or criteria (i.e. percentage that volumes on counts conducted during this period were increased) was provided for the basis of the “*engineering judgement*”.
13. Under **3.2.5 Turning Movement Counts**, TAMR does not indicate if the same “*engineering judgement*” criteria that was applied to Midblock Road Volume Counts performed during COVID-19 was also applied to 2021 turning movement counts not conducted during the summer peak.
14. Regarding **3.2.6 Travel Time Runs**, it is unclear when these were conducted.
15. Based on the Capacity Printouts from the Synchro analyses included in **Appendix D**, it appears that the TAMR incorrectly analyzed Atlantic Avenue intersections in the No Build Condition as having two (2) lanes per direction (shared left turn/thru, shared thru/right turn) when there is typically a left turn lane, thru lane and shared thru/right in each direction. This raises questions about the overall results and comparison between this and the Build Conditions.
16. The Road Diet reduces Atlantic Avenue from five (not four, as stated) lanes to three. Based upon this condition, the first of FHWA’s **Road Diet Expected Benefits** of “Reduction of rear-end and left-turn crashes due to the dedicated left-turn lane” would not be applicable to Atlantic Avenue.
17. Under **4.0 Crash Analysis**, TAMR states that “*not every intersection and/or segment of Atlantic Avenue had a crash analysis completed.*” It is noted that data was compiled some time ago 2013-2017, then updated in 2019 (5 years ago) and 2020 (during COVID-19). Due to the age of the data and the fact that it was updated during the COVID-19 pandemic, the Crash Analysis performed may be of limited value, may not have been comprehensive enough for a Road Diet study (i.e. pedestrian and bicycle crashes should be investigated for the entire Atlantic Avenue corridor), and therefore we recommend that it should be redone.
18. Under **5.1 Model Development**, it is stated that “all analysis scenarios reflect a peak hour on a Friday afternoon between 03:00 pm and 06:00 pm.” However, as previously noted, counts should have been performed at other times (Saturday, Sunday PM) for at least some of the intersections to substantiate usage of Friday 3:00pm to 6:00 pm as the peak period. The counts utilized are incomplete (not performed at all 33 signalized intersections), are too old, performed during the COVID-19 pandemic, or not conducted during the traditional peak season in the City (July 4<sup>th</sup> to Labor Day).
20. Due to all of the concerns listed above it is our recommendation that all of the traffic counts and subsequent analyses should be redone, which will impact **5.3 Analysis Results** through Page 31 of the report, along with the subsequent **6.0 Future Year Analysis**. Details should be provided regarding bus traffic within the corridor, such as the number of routes, stops, possible conflicts with delivery/loading zones, the presence of jitneys, etc. There is a concern that stopped buses and parked delivery vehicles may conflict with the bike lanes, resulting in cyclists diverting into vehicular lanes and thereby exposing themselves to increased safety risks.



21. The NJDOT **Straight Line Diagram** for Atlantic Avenue should be included in the TAMR, and its Functional Classification (Principal Arterial, Minor Arterial, Major Collector, Minor Collector, Local) should be identified. It is assumed that Atlantic Avenue is considered an Arterial or Collector, and not a Local Road. Per current (November 2023-November 2025) **NJDOT Access Permit Annual Background Growth Rate Table** (which should have been added to the TAMR), roadways in Atlantic County other than Local Roads have growth rates exceeding the 1.0% utilized under **6.1 Traffic Forecasting**. Additionally, there is no mention of any proposed developments along the Atlantic Avenue corridor that could impact No Build volumes. The Atlantic City Tourism District Master Plan envisions Atlantic Avenue becoming “once again, the main street of Atlantic City.” If this vision becomes reality, traffic on Atlantic Avenue could potentially increase at a rate higher than typical background traffic growth rate for the area.
22. It is difficult to comprehend how Levels of Service (LOS) at each intersection are not dramatically impacted by implementing the Road Diet, which will halve the number of through traffic lanes in each direction (from 2 to 1). Therefore, further discussion should be provided. The Capacity Analyses included in **Appendix D** should be redone, not only based on the concerns enumerated herein regarding the existing traffic count information, but also to determine that the correct lane configurations were input for existing conditions (i.e. left turn lanes at intersections).
23. TAMR notes that *“there are some areas of concern as there are several movements that operate unacceptably (LOS E or F) and some movements that are at capacity.”* It then goes on to add that the “Atlantic Avenue section of roadway from Michigan Avenue to Mississippi Avenue is the most critical section” and it *“includes four signalized intersections will not work with the typical three-lane section Road Diet.”* If there are any other areas where more than one thru lane is provided for each direction, queueing at transitions back into the typical Road Diet sections should be analyzed.
24. While the only area containing current daily traffic count results exceeding projected the ADT maximum threshold of 18,000 are found between Pennsylvania and North Carolina Avenues, it is noted that the new counts and analyses that we recommend being redone could result in other areas exceeding this threshold.
25. Section **7.2 Impact on Surrounding Roadway Network** only discusses the benefits of Road Diets. However, if capacity analyses indicate that LOS decreases and delays increase on Atlantic Avenue as the result of implementing a Road Diet, it should be expected that some degree of traffic will divert to adjoining parallel streets such as Pacific Avenue or Artie Avenue, but the impact of this is not analyzed or discussed.
26. Under **7.4 Regional Traffic Issues**, it states that “Road Diets are most effective in addressing hazards created by left-turning vehicles.” However, as previously noted, left turn lanes are already present along Atlantic Avenue under existing conditions.
27. Under **7.1.1 Incident Management**, it states that “one simple Road Diet feature can improve response times: the two-way, left-turn lane. However, per **Exhibit 5**, the TAMR proposes dedicated (not two-way) left turn lanes, so the proposed Road Diet leaves the existing left turn lanes intact and removes one of the two existing through lanes. Therefore, the resulting impact on the circulation of emergency vehicles should be analyzed.
28. The Delay and LOS and results provided within Exhibits 58, 59 and 60 should be reanalyzed based upon comments provided herein with respect to the accuracy of the traffic count data utilized, and that existing conditions already provide left turn lanes.

### 8/3/23 and 8/5/23 Traffic Counts conducted by RVE

1. Counts were conducted at 15-minute intervals on Thursday 8/3/23 and Saturday 8/5/23 from 9:00 AM - 9:00 PM at intersections with Atlantic Avenue three (3) streets (Arkansas Avenue, Missouri Avenue, & Georgia Avenue).
2. Unlike the counts included in the TAMR, these counts were conducted during the summer season (when volumes are higher) and within the last year (when traffic likely had finally returned to near pre-COVID levels).
3. The counts has a start time of 9:00 AM start time, however the typical weekday peak morning hour occurs between the 7:00-9:00 AM period.
4. Traffic counts from only three (3) of the thirty-three (33) intersections listed in RVE's TAMR, dated 7/16/21, within the limits of the Atlantic Avenue Road Diet Phases 1 & 2 were re-counted again during the course of the counts that were conducted in 2023.
5. No capacity analyses were provided for either the before (existing) condition on Atlantic Avenue, or the after (proposed condition in the Road Diet. These analyses should have been performed to substantiate that the Road Diet is a reasonable option.

### 3/12/24 Revised Preliminary Submission

1. The RVE letter, dated 3/12/24, was addressed to Vijesh Darji at NJDOT Local Aid. It is unknown whether NJDOT, SJTPO and FHWA are aware that CRDA has not yet granted approval for the Road Diet proposed under this project. It is our understanding that CRDA approval is required for any roadway project in AC other than milling/resurfacing that substantially matches existing conditions. The letter indicates that the anticipated project schedule is for Final Design to be completed in March 2024, with Federal approval to construct in May 2024. It is unknown whether the schedule has been revised.
2. It appears that concerns were raised at the 2/13/23 PIM, including regarding traffic during events and whether first responders were provided an opportunity to review the proposed changes and comment with respect to any anticipated impact(s) and possible consequences such as additional congestion due to reduced lanes resulting in longer response times on emergency response.
3. Under the description of "Atlantic Avenue Safety Improvements" contained with the submission, it states under "Background" that the City, in partnership with SJTPO, NJDOT and FHWA, is *"committed to improving safety, mobility, reducing congestion, and improving air quality through improvements to transportation infrastructure."* However, it is unclear how a Road Diet would reduce congestion and improve air quality, since it appears that it will more than likely result in additional traffic backups. Under "About the Project", the report states that the City received RAISE and NJDOT grant funds to mill/resurface from Tennessee Ave-Boston Ave, and that this also includes an upgraded traffic signal system and new pedestrian lighting, but nothing appeared to be mentioned about a Road Diet. It then states that *"The road configuration from Tennessee Avenue to Mississippi Avenue will remain close to its current lane configuration"*, then adds that *"The road configuration will be reduced to two travel lanes from Mississippi Avenue to Boston Avenue ..."*.

3. On the subsequent sign-off page, Sonny Ireland of the Atlantic City Historic Preservation Commission states that "*I understand these projects consist of paving of Baltic Avenue and Atlantic Avenue...*" but nothing is referenced regarding the Road Diet proposed for Atlantic Avenue.
4. On Pages 2-3 of the "Categorical Exclusion Document (CED)" required by NJDOT, Item 8 (Air Quality), Section 1 states that Project is included in current STIP, while Section 2 indicates that Project is exempt from CAAA conformity requirements. NJDOT or SJTPO should be consulted to determine whether or not these are applicable for the proposed Road Diet. For example, an increase in congestion caused by a reduction in the number of lanes could result in reduced air quality. Likewise, increased congestion could also negatively impact Socioeconomics and Environmental Justice (pages 8-9).
5. The remaining information provided and reviewed that is related to Phase 2B of the project includes plans and quantity estimates. The Plans call for implementation of Road Diet Option 1 (Exhibit 3) from TAMR. The City should speak to certain plan details (i.e. 7' bike lane width, which seems excessive).

5/23/24 Letter from Trenk Isabel Siddiqi & Shandanian PC

(This information was reviewed after comments in this letter were prepared.)

1. Comments on TAMR as provided by Shropshire Associates on 1/18/24 appear to be appropriate.
2. Response to 1/18/24 comments, as provided on 4/9/24 Response by RVE, did not include any new analyses based on updated traffic counts to support the concerns raised about the TAMR.
3. Information provided by the City of Atlantic City to NJDOT on 4/8/24, including comments made during the 2/14/24 PIM, reinforced the PIM comments referenced above under Item #2 of the 3/24/24 Preliminary Plan Submission comments.

Executive Summary

Based upon the foregoing, it is our opinion that the City has provided insufficient information to justify the Road Diet for Atlantic Avenue. We offer the following summary of our observations that are discussed in greater detail above:

1. The time periods and methodologies associated with the collection of the traffic data, including turning movement counts that were not conducted in peak summer season, performed at all thirty-three (33) signalized intersections, lacked vehicle classification (notable buses and delivery trucks), and failed to provide counts for bicycles and pedestrians, in accordance with TAMR Comment #3 above.
2. The resulting capacity analyses do not reflect complete or current traffic volumes. In addition, the Existing and No Build conditions do not accurately reflect the existing left turn lanes present along Atlantic Avenue.
3. Crash analyses are outdated and may not be comprehensive enough for a Road Diet study.
4. No analyses were performed to analyze the potential impacts to the circulation of emergency response vehicles.

5. Analyses were not performed to consider the impact on adjacent roadways, including possible decreases in LOS and increases in delay.

Should you have any questions please feel free to contact the undersigned.

Sincerely,



Bernard T. Tetreault, PE, PTOE, RSP1  
Professional Engineer  
N.J. License #31378

BTT

Cc: Jane Fontana, CRDA (jfantana@njcrda)

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