City of East Providence
Department of Planning and Economic Development

ROBERTO L. DASILVA
MAYOR

KEITH A. BRYNES, AICP
DIRECTOR OF PLANNING AND
ECONOMIC DEVELOPMENT

Memorandum

Date: November 6, 2024

To: **Raymond Lavey, Waterfront District Executive Director**

From: **James Moran, Chief Economic Planner**

CC. **Keith A. Brynes, AICP, Director of Planning and Economic Development**

Daniel Borges, Public Works Director

Erik Skadberg, City Engineer

Re: **Metacomet Peer Review Response**

Pursuant to recently submitted peer review comments from the Metacomet Waterfront Development traffic and stormwater peer review consultant, Pare Corporation, the Department of Planning concurs with the findings and responses provided within these documents and offer the following review comments on the review response statements provided by the peer review engineers in their review documents:

I. Traffic Peer Review

Outstanding Comments

1. The Department of Planning agrees with Pare's suggestion that each substantial phase of the development have its own traffic analysis completed as a means of monitoring traffic conditions and evaluating if additional mitigation is needed.

5. Pare indicates that this response relating to traffic counts is not ideal, the methodology is consistent with accepted traffic engineering practices. As stated under item 1 above, perhaps traffic counts can be revisited under a phased traffic analysis process if the Commission elects to utilize phased traffic studies.

9. While this response from the developer states that they are not proposing any large public gatherings to the amphitheater, the Waterfront Commission should stipulate that no major events or outdoor concerts will take place at the amphitheater as part of its approval of the overall development. Any effort to institute any events should require prior approval of the full Waterfront Commission.

15. Planning reiterates its position that additional traffic studies be completed at each significant phase of the development to ensure that traffic impacts are mitigated as effectively as possible as each development scenario moves forward.

16. Pare's comments portray a critical concern that is shared by Planning staff as it relates to the development of a final acceptable option for accessing the development's primary access driveway from Veteran's Memorial Parkway. As stated in the peer review the Waterfront Commission and Design Review Committee should be well briefed on any design review transactions occurring between RIDOT and the developer on this issue.

21. While the developer indicates that trucks destined to service the properties are allowed, it will be important to receive updated truck traffic impacts for the development based on the proposed final design of the grocery store as well as any other truck related impacts to the other commercial uses proposed on the property.

22. Planning agrees with Pare's recommendation that an additional crossing be considered in the vicinity of the Amphitheater. Once fully developed, it is anticipated that a large number of pedestrians and bicyclists will want to access the development from the bike path on the westerly side of the Vets Parkway. Pare's logic regarding pedestrians and bicyclists not choosing to walk or ride the approximately 2,000 feet to access the single crossing appears to be sound and consideration should be taken to install a crossing in the vicinity of the amphitheater.

25. The issue of cut-through traffic in the adjacent residential neighborhood, as discussed under this line item in the memo is an important quality of life issue for the residential neighbors of the proposed development. These issues will need to be aggressively studied as each phase of the development proceeds and mitigative measures should be considered to ensure that cut-through traffic is reduced to the greatest extent possible

II. Stormwater Peer Review

Proposed Site Plan Documents

3. Per a concurrence from the City Engineer and Department of Public Works, Planning recommends that the recommended revisions and actions be implemented by the applicant.

4. Per a concurrence from the City Engineer and Department of Public Works, Planning recommends that the recommended revisions and actions be implemented by the applicant.

8. Add pipe ends per Pare's recommendation.

10. The applicant should provide details as requested by Pare.

Drainage Report

2. The requested information should be provided by the applicant.

5. Applicant should confirm, as requested.

8. Per a concurrence from the City Engineer and Department of Public Works, Planning recommends that the recommended revisions and actions be implemented by the applicant.

11.b. Confirm as requested.

11.e Per a concurrence from the City Engineer and Department of Public Works, Planning recommends that the recommended revisions and actions be implemented by the applicant.

16. Confirm that sufficient freeboard height is available per Pare's comments.

22. Review and revise accordingly per Pare's request.

23. Confirm status as requested.

24. Review and confirm as requested.

Copies of both the traffic peer review and stormwater system peer review are attached for reference to accompany the responses provide in this Planning Department peer review memorandum. Please feel free to contact me at your convenience if you have any questions.

Attached: Pare Traffic Peer Review completed by Managing Engineer Derek L. Hug, PE

Pare Stormwater Peer Review completed by Robert J. Sykes, PE

PARE CORPORATION

October 16, 2024

Mr. Raymond Lavey
Executive Director
Waterfront District Commission
145 Taunton Avenue, Town Hall 2nd Floor
East Providence, RI 02914

Re: **Waterfront District Commission – Traffic Peer Review Services**
Metacomet Redevelopment – Crossman Revised Traffic Study
On-Call Professional Engineering Review Services
East Providence, Rhode Island
(Pare Project No. 24039.00)

Dear Mr. Lavey:

Pare Corporation (Pare) has completed a subsequent review of the traffic study and site access and circulation for the Metacomet Redevelopment Project. Pare's most recent review focused on the following documents provided by the Waterfront District Commission:

- Revised letter to Bob Rocchio as a supplement to the March 2023 Preliminary Traffic Impact and Access Study, dated December 29, 2023 and Revised September 16, 2024, prepared by Crossman Engineering
- Response to Waterfront District Commission Traffic Peer Review, Metacomet Redevelopment, dated August 14, 2024, prepared by Vanasse & Associates, Inc.
- Metacomet Redevelopment Traffic Peer Review Response to Comments, dated August 16, 2024, prepared by Crossman Engineering

In addition, other documents previously provided to Pare relevant to this review include:

- Letter to Bob Rocchio as a supplement to the March 2023 Preliminary Traffic Impact and Access Study, dated December 29, 2023, prepared by Crossman Engineering
- Preliminary Traffic Impact and Access Study, Metacomet Golf Club Redevelopment, dated March 2023, prepared by Vanasse & Associates, Inc.
- Proposed Site Plan Documents, Proposed Metacomet Redevelopment dated December 21, 2023, prepared by Bohler Engineering
- Traffic Impact and Access Study, Metacomet Golf Club Redevelopment, dated December 2020, prepared by Vanasse & Associates, Inc.

- Traffic Engineering Peer Review, Proposed Land Development Project – Master Plan Submission, The Metacomet Golf Club Redevelopment, dated March 30, 2021, prepared by BETA Group, Inc.

- Letter to Robert Rocchio, P.E., dated March 1, 2024, prepared by Keep Metacomet Green

It should be noted that the response to comments provided by Vanasse & Associates, largely refers to the other two reviewed documents and therefore is largely obsolete. As such, this review will primarily focus on the two documents prepared by Crossman Engineering.

Outstanding Comments

Pare's original May 15, 2024 comments to Crossman's December 29, 2023 letter are presented, with Crossman's August 16, 2024 response in italics, and Pare's current disposition/comments followed in bold. For purposes of brevity, original comments that did not require a response from the applicant were omitted.

1. The introduction to the supplement is clear that its purpose is to assist the developer in obtaining conceptual buy-in from the Rhode Island Department of Transportation (RIDOT) on the proposed mitigation measures for Veterans Memorial Parkway (VMP). As a result, the study focuses almost exclusively on impacts and mitigation measures along VMP and is not intended to be a comprehensive traffic study for the project. Analyses and discussion regarding impacts of the proposed development on City streets and intersections is generally not included in this supplement. The Vanasse & Associates (VAI) study does analyze and discuss some City streets and intersections, but the development uses and sizes have changed since the Vanasse Study was completed, and the Vanasse counts were taken during the COVID epidemic back in 2020. Pare recommends renewed analyses at City intersections utilizing new counts to evaluate the need for mitigation on City streets and the completion of a single, comprehensive traffic impact analysis report with a scope and level of detail befitting a development of this size.

   The planning level analysis completed by VAI determined that the local street network of Lyon Avenue, Mercer Street and Fort Street presently and in the future under full build conditions, all operate at a good Level of Service A and B during peak weekday and weekend traffic conditions. Though the development profile has been slightly modified, and original counts were completed during COVID, the traffic volumes used in the VAI study, that included expansion of their base traffic conditions to compensate for the count period as noted, resulted in similar, if not higher traffic demands projected on the local street network, resulting in a conservative analysis that was conducted in the VAI study. Based on the analysis and recommendations in the VAI planning study, it was determined that additional operational analysis of these local roads that were demonstrated to operate at a good LOS B or better, was not warranted in the supplemental study as no actionable information would be garnered. Therefore, the additional analysis focused on key intersections potentially warranting some form of mitigation.

   To demonstrate anticipated operations on the local side streets in the Crossman supplemental study with the updated values, as requested, we have added an analysis of a key neighborhood intersection located at the junction of the Lyon Avenue with Fort Street. The analysis has been provided for existing and future build conditions to demonstrate potential project related traffic impacts. The updated report summarizes anticipated operations at this main neighborhood intersection that had been presented in Figures 3 and 5 in our original study, depicting existing

and future build traffic volumes at the junction.

In an effort to mitigate potential adverse impacts on the local neighborhood streets, and address concerns of residents on the traffic related effects of the project, a focused approach with the city to identify opportunities for off-site mitigation along the local streets was initiated. This was done once the scale of the project and anticipated impacts were confirmed in the supplemental documentation provided for review. As demonstrated in the studies, the local streets will operate in an efficient and acceptable manner with the estimated additional traffic demands related to the development under future build conditions. Though acceptable, it is understood that the increase in traffic is substantive relative to local neighborhood streets, raising a concern of local residents. The owner acknowledges this concern, and with the design team, have been working and coordinating with the City's Planning Department, Public Safety Officer and Public Works Department to develop appropriate short-and long-term upgrades and traffic calming measures that would be appropriate to address potential traffic increases along the local street system.

These discussions with the city departments have led to a proposal for easily implemented measures that should limit or restrict site related traffic circulation within the neighborhood and resultant potential impacts. A description of these measures has been added for reference in the report, though would require state and local approvals, and represent only potential measures. These improvements could be modified as needed, or expanded as necessary as the project is constructed over a number of years. The alternatives should promote use of Veterans Memorial Parkway for access to the site and make circulation through the neighborhood less desirable.

Pare concurs that capacity analyses at locations that were previously analyzed by VAI as having a LOS of B or better need not be re-reviewed.

The potential mitigation measures proposed by the applicant are acceptable to Pare – but does this response indicate that each substantial phase of development will have its own traffic analysis completed as a means of monitoring traffic conditions and evaluating if additional mitigation is needed? Pare would welcome this approach, as predicting impacts of successive smaller pieces of development incrementally tends to be a much more accurate way to ensure mitigation is right-sized and unexpected impacts, should they arise, can be addressed as they appear.

2. It is noted that like the VAI study before it, the study update talked very little about circulation patterns within the site, including whether parking within the site was distributed appropriately between the land uses, if the layout promoted safe and efficient internal circulation, truck delivery routes, etc.

A discussion on site access and circulation has been added to help define the traffic distribution patterns to the associated mixed-use elements.

No further comment required.

3. There is no discussion of traffic safety anywhere in the document. The crash data in the VAI report is likely still adequate and updating this data is unlikely to result in different conclusions. However, there is no discussion regarding stopping sight distances approaching the proposed roundabout or intersection sight distance, either at the proposed roundabout or at any of the proposed site driveways, which should be based on the existing 85th percentile travel speeds on these streets.

   A discussion on traffic safety including sight distances at the proposed driveways and roundabout has been added to the report.

   No further comment required.

5. Updated traffic counts were performed in November 2023. This count period is both post-COVID and prior to the closure of the westbound Washington Bridge structure. Therefore, these volumes are acceptable for determining current and likely future conditions. It should be noted that ATR counts were conducted on VMP, Lyon Avenue, and South Broadway, but manual turning movement counts were only performed at the VMP intersections with Lyon Avenue and South Broadway. This manual turning movement count effort did not include any of the other intersections included in the VAI study.

   The data collection program was strategic in updating and validating existing conditions along the VMP and on the local surrounding street system. Where minor side street counts were not taken under the new count program, they were balanced against the updated counts from the original study with higher values utilized where appropriate.

   This approach, while not ideal, is consistent with accepted traffic engineering practices and is acceptable.

6. Figure 3 shows existing intersection traffic volumes. It appears that the volumes at the Lyon Avenue intersections with Mercer Street and Fort Street, as well as the intersection of South Broadway at Fort Street appear to be combinations of the recent ATR counts and the turning movement counts from the VAI study, but this is not clear, either in the figures or in the text.

   The volumes in Figure 3 represent the updated and validated existing conditions established between studies. A reference has been added for clarification of the values.

   No further comment required.

7. There was no discussion regarding whether seasonal adjustments to the November 2023 count data should be applied. Please confirm.

   The count data did not require a seasonal adjustment as traffic volumes obtained in October for Urban Principal Arterials are higher than average traffic conditions in accordance with RIDOT Seasonal Adjustment factors. The count data was not adjusted downward to represent the average conditions, therefore resulting a conservative analysis in our study. The reference has been added for clarification.

   No further comment required.

9. There is no discussion of the amphitheater in the trip generation discussion. What types of events are anticipated to be held here? Should this be included in the trip generation for weekday PM and Saturday peak periods?

   The area defined as the "amphitheater" is being provided as an internal site amenity for the development and was created based upon the grading and topography in that area of the site and the scenic views the area provides to the golf course and the tidal cove. No events generating large public gatherings including concert type events are planned for this area, that would warrant separate consideration for analysis.

   No further comment required.

13. Pare agrees that where mitigation is clearly anticipated, performance of future no-build condition analyses is unnecessary. However, there are other intersections that may need evaluation for impacts where no-build condition analyses would be useful. See comment 15 below.

    Refer to Response to Comment 1 where the owner is presently and as the project is constructed over an extended period as market conditions dictate, will be working with the appropriate city departments on mitigating potential impacts along the immediate servicing roadway system if they realized.

    No further comment required.

14. While there are trip distribution figures in the appendix, there is no discussion regarding how this trip distribution was generated or what factors were included in determining the trip distribution. It is expected that different uses will have different trip distributions, both within the site (based on location and proximity to various site access points) and external to the site. A golf course will likely have a different trip distribution than a supermarket or a residence, for example.

    The distribution patterns were consistent with the original VAI planning study utilizing journey to work for the residential element and local generation of the commercial uses. Different distribution patterns were utilized for each in calculating future site driveway volumes and reference to this distribution has been added to the report for further clarification.

    The clarification is appreciated and the approach used to distribute the anticipated site traffic appears to be appropriate. No further comment required.

15. How was the percentage of site trips that use City streets determined? Is it realistic to expect that none of the exiting site traffic will utilize Mercer Street, which provides direct access to VMP? Assuming many of the trips distributed to/from the west on Fort Street will be destined for Interstate 195 to/from Providence, are they using First Street or Second Street to access VMP, and subsequently, the I-195 ramps? Should the intersections of VMP with Mercer, First, or Second be evaluated for potential traffic safety and capacity impacts? In addition, very little site traffic appears to be assigned to South Broadway to/from the north, even though this appears to be the most direct route for anybody whose origin or destination would be oriented east of the site and accessed via Interstate 195, or points north within East Providence, including the Henderson Bridge. Are there

intersections along those paths that should be evaluated?

Refer to Response to Comment 1 regarding the study of local roads in the immediate site vicinity. Appropriate treatments of city streets and required input of other agencies will guide the final mitigation measures to be implemented and at what stage. Regarding other areas in the city and potential influence area of the commercial tenants, the commercial/retail uses proposed are intended to be complimentary service-oriented neighborhood businesses to this area of the city as like establishments are provided at multiple locations within the city, and along the Route 6 corridor to the immediate east in Seekonk, a major commercial arterial with similar, competing commercial/retail establishments.

The areas to the north and east are serviced by the Highland Avenue corridor as noted, along with a large commercial shopping area at the Pawtucket Avenue/Taunton Avenue intersection at Carpenters Corners, and along the Newport Avenue commercial corridor extending into Pawtucket. Based on this demographic, it is anticipated that the Metacomet site, along with the extensive internal capture, will service this area of the city extending south to Riverside and West Barrington as little competition exist in this area of both communities. Only a single, outdated Shaw's grocer is located to the south servicing the southern, Riverside area of Pawtucket Avenue, Willett Avenue, and the northern Barrington neighborhoods. This is inclusive to the north and south along Veterans Memorial Parkway and is defined further in the study.

Regarding those destined from the north via areas adjacent to the Seekonk River in the northern Waterfront District redevelopment areas and adjacent neighborhoods, and East Side of Providence from the Henderson Bridge, it would be anticipated this traffic would access the site via an underutilized, efficient operating, Waterfront Drive to Veterans Memorial Parkway. The infrastructure in this area includes the recent extension of Waterfront Drive and ongoing improvements to be completed as part of the Henderson Bridge replacement project in the near future that will provide a more direct and efficient access route to the site from this area of the city.

Long term improvements include the extension of Waterfront Drive further south through the Bold Point Development District that will link to the Parkway at the proposed roundabout at Lyon Avenue. This connection will further distribute traffic destined to the Metacomet development and lessen demands along the Parkway and existing local street system. The local street network will continue to be evaluated and appropriate measures implemented as redevelopment occurs over an extended period in the western part of the city, including properties within the Waterfront District.

See Pare's disposition to Comment 1 and the encouragement of traffic studies to be completed for each significant phase of development, and the traffic patterns observed from early phases will help guide the need for improvements, whether on VMP or City streets and intersections. No further comment required.

16. Based on the Proposed Traffic Volumes diagram, there are more than 150 left turns into the site expected at the site access to VMP during the weekday afternoon and Saturday midday peaks, without the benefit of a dedicated turn lane to remove these vehicles from the stream of southbound through traffic. As adding additional lanes will further degrade the parkway aesthetic along VMP, not permitting this movement should be strongly considered.

Based upon the design of this section of VMP, a separate left turn lane to accommodate this demand was not considered necessary as the southbound left lane is proposed to be dropped immediately after the site access drive. This lane drop condition will most likely result in a defacto left turn lane into the site, with most through traffic utilizing the outside lane, which is maintained through the site access driveway for points south.

The two southbound lanes are added in advance of Lyon Avenue to permit efficient entry operations at the roundabout and can be dropped as proposed in the conceptual off-site improvement plan beyond the controlled junction at Lyon Avenue. Based upon this comment and discussions with the RIDOT, we will work with the RIDOT and the Scenic Roadways Board to determine if a separate left turn lane is appropriate, and feasible at the site driveway. The operation of this section of VMP will be modelled in Vissim to assist in the design as part of our coordination and PAPA permitting review with the RIDOT to ensure proper design and treatments at the roundabout, and through the project area.

Pare's concerns about the safety of allowing left turns into the site at the site driveway without a specifically designed left turn bay, that is not a "defacto" lane or a trap lane, remain. It does seem clear in the revised letter that RIDOT shares some level of concern regarding this aspect of the design. We trust the City and Waterfront Design Review Committee will be kept up to date as the design progresses.

17. The analyses were completed using HCS7. It does not appear that the analyses were adjusted for peak hour factors or heavy vehicles. Please adjust as necessary.

The peak hour factors and consideration of heavy vehicles was included in the analysis and no adjustments are necessary. The actual peak hour factors were higher and to be conservative, the lower base defacto rate of 0.92 was utilized. Regarding heavy trucks, through truck traffic is prohibited on the VMP and therefore there is a negligible volume of large trucks impacting traffic flow on VMP during peak daily traffic conditions.

No further comment required.

18. The southernmost site access on Lyon Avenue is quite close to the proposed roundabout at VMP. Consider making this access right-in, right-out only or eliminating it.

This driveway is a key access/egress to the site commercial area and is necessary for the efficient overall access and circulation plan for the development. It has been situated as close as practical to VMP in an effort to minimize intrusion of commercial traffic to the northeast as a goal in limiting neighborhood impacts which is a requirement in the Metacomet District Design Guidelines, subsection Entrances to the Property.

The operational analysis results indicate that the queuing from the roundabout will not impact this driveway. Also, during the final design and permitting effort with the RIDOT, additional detailed Vissim analysis will be completed to verify results and operations and appropriate adjustments will be made as necessary. It should be noted, that through the review process with the Waterfront Design Review Committee, modifications to this road within the site have been made resulting in a shift of the noted intersection further to the northeast away from the roundabout.

Pare is willing to accept the driveway location, assuming the upcoming Vissim analysis indicates queues between the roundabout and driveway will not interfere with each other. No further comment required at this time.

19. Given some of the other comments above relative to the distribution of site-generated trips, the results of the analyses presented in Table 3 may change.

    No changes to the distribution or results presented in Table 3 are necessary as defined in earlier responses.

    No further comment required.

20. As noted in Pare's review of the VAI study, based on the site plans reviewed, it appears there are two significant intersections within the development, including one all-way stop, and one roundabout/traffic circle. Consideration should be given to analyzing these intersections as well to ensure they are designed appropriately.

    Based upon the proposed three access points to the site, and the internal circulation to the numerous destinations in the development, concentration of traffic at these two internal junctions is not required by drivers to access internal destinations or is anticipated. There are multiple driveways off the main internal roadways to the specific pockets of buildings and parking areas, including the residential apartments that will distribute traffic throughout the site, outside of these junctions.

    The major concentration of site traffic will be limited to only the three proposed points of access to the development from the major routes of VMP and Lyon Avenue, which have been analyzed and designed and shown to operate in an acceptable, efficient manner. The primary internal junction would be the single lane roundabout/circle which can efficiently accommodate the anticipated peak approach volume entering the site at this location and was reviewed as part of the justification of the design.

    No further comment required.

21. As noted in Pare's review of the VAI study, will there be a specific route for trucks delivering to the retail establishments, especially the grocery store, which will likely need to be accessed by 53-foot trailer semi-trucks? It should be noted that VMP is not a RIDOT-approved route for such vehicles.

    The primary truck route will be to and from I-195 along the VMP to the Lyon Avenue driveways for access to the commercial area of the development. Regarding the RIDOT regulation, VMP is restricted for use by through trucking, trucks destined to service properties on VMP are permitted. Truck route information will be incorporated into the plan set to demonstrate vehicle paths and appropriate design treatments along the internal roadways and intersections serving the property.

    No further comment required.

22. Based on the site plan reviewed, there appears to be one connection to the East Bay Bike Path, located at the proposed roundabout. Should there be another near the south/east side of the development, near the amphitheater?

    A separate pedestrian crossing of VMP would require signal control to provide a safe mid-block crossing in the vicinity of the amphitheater. Given the guidelines to reduce the need for these types of treatments on VMP and review required with the Scenic Roadways Board, it would be an unnecessary duplication of crossing and required treatments. An extensive walking/biking network has been created on the property and along the VMP frontage linking to the roundabout and East Bay Bike Path that will provide a direct and safe route for vulnerable users to the development.

    Pare's concerns about pedestrian crossings near the proposed amphitheater location remain. Even if the amphitheater is only intended for residents or visitors to the site, it is nonetheless a place of assembly. Further, the walking paths between the development and golf course are located in this vicinity, which will provide a connection not only for site users, but residents of the neighborhood to the northeast of the site. Just across VMP from the amphitheater location is a trailhead for the East Bay Bike Path, in combination with this being the location where the East Bay Bike Path diverges from VMP toward the Watchemoket Cove crossing, thus establishing a natural demand path across VMP at this location. It is reasonable to assume many pedestrians and bicyclists will choose not to walk/bike approximately 1,000 feet north to cross VMP at the Lyon Avenue roundabout, then walk 1,000 feet south, rather than simply cross at this location, regardless of the presence of a formal crosswalk. Pare strongly encourages the applicant to work with RIDOT, the Scenic Roadways Board, and the City to design a safe crossing here that fits within the context of the scenic roadway and surroundings.

Additional Comments:

23. As part of this review, Pare thoroughly reviewed the analysis worksheets and tables to ensure accuracy. We have no significant comments and the contents of the analysis tables appear to be accurate.

24. Pare agrees with the recommendations to standardize the intersection of VMP at South Broadway into a more conventional "T" intersection and to restrict the left turning movements between VMP and Mercer Street. However, it is possible that those who would have made the left from VMP onto Mercer Street to cut through the neighborhood may choose to simply use 1st Street instead to achieve the same result.

25. The applicant makes clear in the revised letter that the proposed development will be constructed in stages over a non-specific period of time, and that the development program and ultimate land uses may change based on market conditions. It further indicates that the applicant is committed to working with the City to provide measures deemed necessary to discourage cut-through traffic through the surrounding neighborhoods. What these additional measures may be, and the framework to be implemented to determine what measures may be necessary and when remains vague. The process of evaluating neighborhood street impacts as development stages are completed and others considered should be detailed as part of the local permitting process.

The applicant should provide a formal response to address each comment not labeled as "No further comment required" and additional comments.

If you have any questions or require any additional information, please do not hesitate to contact me at 401-578-8543 or dhug@parecorp.com.

Sincerely,

Derek L. Hug, P.E., PTOE
Managing Engineer

DLH/kls

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October 17, 2024

Mr. Raymond Lavey
Executive Director
Waterfront District Commission
145 Taunton Avenue, Town Hall 2nd Floor
East Providence, RI 02914

Re: **Waterfront District Commission – Stormwater Peer Review Services**
Metacomet Redevelopment
On-Call Professional Engineering Review Services
East Providence, Rhode Island
(Pare Project No. 24039.00)

Dear Mr. Lavey:

Pare Corporation (Pare) has completed our review of the stormwater management design for the Metacomet Redevelopment Project. Pare reviewed the following documents provided by the Waterfront District Commission:

- Drainage Report for Marshall Properties proposed Metacomet Redevelopment dated December 21, 2023, and Revised August 16, 2024, prepared by Bohler Engineering
- Proposed Site Plan Documents for Marshall Properties proposed Metacomet Redevelopment dated December 21, 2023, and revised August 16, 2014, prepared by Bohler Engineering
- Comment Letter Response dated August 29, 2024, prepared by Bohler Engineering

Pare Offers the following comments pertaining to these submissions:

Proposed Site Plan Documents:

1. Bioretention Basin Detail on Detail Sheet (C-906) does not show the proposed 30-inch perforated pipe illustrated on Drainage Plan D (Sheet C-455) and shown in HydroCAD model. Detail currently shows 4-inch perforated PVC underdrain. Review and revise accordingly.
   Response: No Bioretention Basin proposed.

   Pare Response: Response Accepted.

2. Drainage Plan C (Sheet C-454) Subcatchment PD2.1 appears to surcharge through a proposed catch basin grate to the Proposed Above Ground Stormwater Basin P2.1. The proposed catch basin rim elevation is above the top of Stormwater Basin P2.1 berm. Review and confirm intent.
   Response: The plan is revised to discharge the pipe to a flared end section with rip rap apron.

   Pare Response: Response Accepted.

3. Infiltration Basin Detail on Detail Sheet (Sheet C-906) shows a sediment forebay for the Infiltration Basins. Sediment forebays are not illustrated on the grading or drainage plan sheets. Show limits of pretreatment as required including sediment forebay check dam locations and heights
   a. Update infiltrating areas within calculations.

   Response: The detail is revised to remove the forebay. Pretreatment to the surface basins with infiltration are achieved by offline deep sump CBs, NA for contributing roofs with direct discharge to infiltration, and/or proprietary water quality units when CBs are inline.

Pare Response: Confirm Infiltration Basins are in conformance with (250-RICR) Section 8.21 Stormwater Infiltration Practices Part D Subpart 1. To protect the long-term integrity of the infiltration rate, and when proposing Deep Sump Catch Basins for pretreatment, one of the following practices must also be implemented:

- **Upper sand layer (6" minimum w/ filter fabric at the sand/gravel interface); or**
- **Washed pea gravel (1/8" to 3/8")**
- **Proprietary devise"**

Review and revise detail accordingly.

Above Ground Stormwater Basin P3.4 has C-101 CB contributing directly to the system without pretreatment.

Above Ground Stormwater Basin P3.10 has M-20 CB contributing directly to the system without pretreatment.

Above Ground Stormwater Basin P7.2 has K-100 CB contributing directly to the system without pretreatment.

4. Pretreatment is not shown for the underground infiltration and detention systems. Confirm pretreatment requirements are met.

   Response: Pretreatment is not required for contributing roofs if they discharge directly to the infiltration system. For other areas, Pretreatment is met by offline deep sump catch basins or, where pipe networks utilize catch basins inline, a proprietary water quality unit is proposed prior to discharge.

   Pare Response: See Response #3 regarding deep sump catch basins being used for pretreatment.

   Underground Stormwater Basin P3.7 has E-100 CB and E-200 CB contributing directly to the system without pretreatment.

   Underground Stormwater Basin P3.9 has H-200 CB and H-100 CB contributing directly to the system without pretreatment.

   Underground Stormwater Basin P3.3 has B-300 CB and B-100 CB contributing directly to the system without pretreatment.

5. Maintenance access ports are not shown for the underground infiltration and detention systems. Add system specific details illustrating how the systems will be accessed and maintained.

   Response: These are added to the respective detail for each system.

   Pare Response: Response Accepted.

6. Proposed Underground Stormwater Basin P3.1.1 on Drainage Plan D (Sheet C-455) is annotated as P3.1.2 within the hydrologic model. Review and revise accordingly.

   Response: The plan is revised to annotate as P3.1.2.

   Pare Response: Response Accepted.

7. Review Proposed Diversion-MH 7 and proposed HDS-MH 249 on Drainage Plan D (Sheet C-455). Confirm flow direction and inverts.

   Response: The plans are revised to reflect positively draining pipes.

Pare Response: Response Accepted.

8. Confirm how runoff from the proposed parking lot west of Infiltration Basin P4.3 is being directed to the basin on Drainage Plan A (Sheet C-452).
   Response: A closed pipe drainage system is added to direct the parking area to P7.3

   Pare Response: Response Accepted. Recommend adding pipe ends (Flared End Section, Headwall, etc.) to the Drainage Plans.

9. Confirm how runoff from the proposed roadway and front of houses south of Bioretention-Infiltration Basin P3.10 is being directed to the basin on Drainage Plan D (Sheet C-455). For Prop. Bunker-CB 267, provide invert of primary outlet and the location.
   Response: Runoff from the roadway is collected in CBs at the cul-de-sac, while downspouts from the duplexes discharge into a collector pipe route to P3.10. A bunker is no longer proposed.

   Pare Response: Response Accepted.

10. Provide details on how the Wet Extended Detention Basin will be accessed and maintained. Revise grading for access to the sediment forebay as required.
    Response: The basin (including outlet control structure) can be accessed from the adjacent roadway, parking lot, and/or sidewalk. As there is no longer a proposed sediment forebay, maintenance to the Wet ED Basin is periodic mowing so a designated 12-foot wide, 15% maintenance access drive is not provided.

    Pare Response: Provide details on how the Wet Extended Detention Basin will be accessed and maintained. Recommend showing the anticipated gate locations and widths to confirm access to the outlet control and proprietary system.

11. The Wet Extended Detention Basin will have approximately 7 feet of ponding during a 100-year storm event. Confirm if fencing, safety benches, or other means of protection should be included.
    Response: The revised plans include a fence around the perimeter of the Wet Extended Detention Basin.

    Pare Response: Response Accepted.

12. The Prop. AG-OCS 11 for the Wet Extended Detention Basin is located at approximately elevation 47±. The detail and hydrologic calculations call for an orifice at elevation 43.5. Please review and provide additional detail.
    Response: The location of the OCS is set in the embankment. The orifice at 43.5 is for a reverse slope pond drain so the OCS does not need to have an exposed face at 43.5.

    Pare Response: Response Accepted.

13. Confirm Bioretention systems are in conformance with Stormwater Management, Design, and Installation Rules (250-RICR) Section 8.23- Filtering Systems Part D Treatment Subpart 4. Bioretention systems shall consist of the following treatment components… a 6-inch to 9-inch-deep surface ponding area." Confirm ponding depths within Bioretention systems.
    a. Update provided WQv within calculations.
       Response: No Bioretention Basin proposed.

       Pare Response: Response Accepted.

14. Confirm Bioretention systems are proposed with the required pretreatment. Show sediment forebays, if applicable, and update the filter areas.
    Response: No Bioretention Basin proposed.

    Pare Response: Response Accepted.

15. Bioretention Basin Detail on Detail Sheet C-906 soil mix should conform with 250-RICR-150-10 Section 8.23-Filtering Systems Part D Treatment Subpart 4. Review and revise accordingly.
    Response: No Bioretention Basin proposed.

    Pare Response: Response Accepted.

16. Landscape plans should show plantings proposed within the infiltration, bioretention, and wet extended detention basin.
    Response: Acknowledged. Landscape plans will be revised accordingly.

    Pare Response: Revised Landscape Plans have not been provided.

Drainage Report:

1. Appendix A Checklist – review Minimum Standards 4 & 5. DP 4 does not directly discharge to a 4th Order Stream or Pond of 50 acres or Greater. DP 4 discharges to a forested wetland and Fort Street prior to entering Providence River. Additionally, not all subcatchments in DP 3 discharge directly to Providence River.
    Response: The checklist is revised accordingly to match the updated analysis that considered DP3 as only what is realized at the cove pipe discharge. DP4 (now DP7) meets Minimum Standards 4 and 5.

    Pare Response: Response Accepted.

2. Provide calculations for sediment forebay pretreatment sizing for surface infiltration and filtering practices. Confirm pretreatment sizing in accordance with the applicable sections of the 250-RICR-150-10 Section 8.23-Filtering Systems.
    Response: Calculations will be provided for the pretreatment practices to the infiltration and filtering practices.

    Pare Response: Calculations for pretreatment practices to the infiltration and filtering practices have not been provided. Confirm pretreatment sizing in accordance with the applicable sections of the 250-RICR-150-10.

3. The drainage report references deep sump hooded catch basins. The plans show the RIDOT Standard Detail 4.3.0 with a 3-foot sump. Review and revise the details accordingly in conformance with 250-RICR-150-10 Section 8.30 – Pretreatment – Deep Sump Catch Basins.
    Response: The detail will be revised to 4-foot sump depth to comply with the cited section.

    Pare Response: Response Accepted.

4. Provide calculations to confirm compliance with 250-RICR-150-10 Section 8.23- Filtering Systems Part D Treatment Subpart 6 for minimum filter bed area and other applicable standards for Bioretention Areas.
    Response: No Bioretention Basin proposed.

    Pare Response: Response Accepted.

5. Provide calculations to confirm compliance with 250-RICR-150-10 Section 8.21 Stormwater Infiltration Practices Part C- Conveyance Subpart 3. All infiltration systems shall be designed to fully de-water the entire WQv within 48 hours after the storm event.

   Response: Drawdown calculations are included in the revised drainage report to demonstrate de-watering in less than 48 hours.

   Pare Response: Confirm that "K" values from field permeability tests were completed in accordance with Appendix H Section H.1.3 Field Infiltration Testing.

6. Appendix A Checklist Table 5.2 – Summary of BMPs identifies that infiltration systems do not meet the Horizontal Setback Criteria. Provide Technical Justification and the distance provided.

   Response: The checklist is updated accordingly, and Technical Justifications provided on page 5 of the revised drainage report.

   Pare Response: Response Accepted.

7. Provide calculations to confirm compliance with 250-RICR-150-10 Section 8.33 Quantity Control – Stormwater Basins Part E and Part F for Using Basins for Additional Pollutant Loading Reduction. Confirm minimum detention times, pretreatment, length to width ratios, drainage area surface area ratios, and permanent pool ratios.

   Response: A Jellyfish is added prior to discharge into the Wet ED Basin to meet the pollutant loading reduction rather than utilizing the Wet extended basin for enhanced removal credit. Other inflows to the Wet ED Basin are from the treated outflow from Basin P3.9.

   Pare Response: Response Accepted.

8. Wet Extended Detention Basins shall have a minimum contributing drainage area of 25 acres, unless groundwater is intercepted. Basins that do intercept groundwater shall not include the volume of the permanent pool in storage calculations. Confirm ESHGT.

   Response: Test pit #1, P6, and #3 from the preliminary geotechnical investigation indicates ESHGT at elevation 39, 40.5, and 44 respectively. The basin bottom (elevation 41) intercepts the average groundwater elevation (41.5) and should maintain a permanent pool.

   Pare Response: Based on the logs provided, Test Pit #1 indicated mottling at approximate elevation 39.5. The 2-inch probe P6 would not be used to identify estimated seasonal high groundwater, however the observed groundwater elevation within the log is 44.0. And Test Pit #3 identifies groundwater encountered at approximate elevation 30. Review and revise response and design accordingly.

9. Review Time of Concentration for Subcatchment ED 2 and ED 4. The Time of Concentration currently delineated is not the hydraulically most distant point within the subwatershed. Review and revise existing flows accordingly.

   Response: In subcatchment ED2 the slowest path was selected that was not intercepted by an existing catch basin into a closed pipe system. A more distant path in the subwatershed results in a faster time and less conservative design due to less shallow concentrated flow and more channelized flow.

   The drainage analysis of DP4 (now DP7) was revised and better reflects the sub watersheds within.

   Pare Response: ED-2 includes a long flat portion of the existing fairway without any identified

presence of closed drainage near the northern boundary. Review and confirm.

For DP7 and Pond EP7.1, there are several other isolated depressions throughout the site. Confirm consistent approach for hydrologic modelling throughout the existing conditions. Provide modeling of Pond EP7.1: Depression-Discarded to demonstrate assumptions for infiltration rates, volume, and peak elevations.

10. Confirm that test holes were observed by an RI Registered Professional Engineer or DEM- licensed Class IV Soil Evaluator.
    Response: Northeast Geotechnical, Inc. has confirmed.

    Pare Response: Response Accepted. Recommend listing all the observers who logged soils in Appendix A Checklist – Part 4.

11. Appendix A Checklist Table 5.3 does not include the soils analysis or separation to groundwater for each BMP and states "awaiting final geotechnical data". For infiltration practices, provide information in accordance with 250-RICR-150-10 Section 8.21- Stormwater Infiltration Practices providing a minimum of 1 test hole per 5,000 square feet. For filtering systems, provide information to confirm compliance with the requirements of 250-RICR-150-10 Section 8.23- Filtering Systems.
    a. The Test Boring Logs, Test Probe Logs, and Test Pit Logs provided include soil descriptions using Burmister Identification System for the stratums observed. For stormwater management design, USDA textural classifications are required for selecting infiltration rates. One sample per hole was taken and grain size distribution tests were completed to determine the USDA textural classifications. Approximate depths of samples are included within a summary table.
    Response: The checklist is revised accordingly. The additional testing demonstrates minimum number of test holes for each infiltration practice.

    Pare Response: Response Accepted.

    b. The ESHGT should be observed and logged based on the identification of redoximorphic features. The Test Pit and Boring Logs do not review ESHGT. Review and confirm ESHGT elevations.
    Response: ESHGT was indicated in the logs in the Preliminary Geotechnical report from 9/6/2022 and these are indicated on the plans. No ESHGT was found by the geotechnical engineer in the report from 1/22/2024.

    Pare Response: Response Accepted. Confirm if observed groundwater elevations are used, they are utilized only in accordance with Section H.1.2 Test Pit/Boring Requirements of the RISDISM and RIDEM Guidance for utilizing Adjustment Factors for observed groundwater elevations.

    c. The preliminary Geotechnical Engineering Report does not include soil data for the following proposed infiltration practices:

    - Infiltration Basin P2.1
    - Underground Stormwater Basin P3.9
    - Infiltration Trench P3.13
    - Infiltration Basin P4.3

    Response: The new geotechnical data is included in the revised drainage report.

    Pare Response: Response Accepted.

d. Underground Stormwater Basin P2.2 shows a bottom of stone elevation of 40.2 and an Estimated Seasonal High Groundwater Elevation (ESHGT) of 38.0 within TP-23 and elevation 39.0 within B-42.

   i. Within 250-RICR-150-10 Section 8.21- Stormwater Infiltration Practices, the bottom of infiltration practices shall be separated by at least 3 feet vertically from the ESHGT. Review and revise accordingly.

Response: Basin P2.2 is removed due to the findings within the latest geotechnical investigation.

Pare Response: Response Accepted.

e. Provide a section view of each BMP, showing the soil data collected and the associated elevations of the stratums observed, USDA soil textural class, and the ESHGT determined based on redoximorphic features. The bottoms of systems should be located with the required ESHGT separation, and outside of fill materials and A and B soil horizons.

Response: The necessary information to review the design intent for each BMP can be found in Appendix C and Table 5.3 of Appendix A Checklist. The system bottoms have been located with the required ESHGT separation and the fill materials along with A and B soil horizons will be removed.

Pare Response: Confirm that if observed groundwater elevations are used within the design, they are utilized only in accordance with Section H.1.2 Test Pit/Boring Requirements of the RISDISM and are adjusted based on RIDEM Guidance for utilizing Adjustment Factors for observed groundwater elevations.

Observations and determination of the seasonal high groundwater table during the wet season shall be made by a licensed Soil Evaluator January 1 through April 1. Wet season determinations are intended to measure the groundwater table at its annual highest level. Yearly fluctuations in the groundwater table may necessitate that the Department add adjustment factors to compensate for periods of low groundwater recharge that results in the seasonal high groundwater table to be lower than normal.

TP-K6 Test Pit Log indicates mottling approximately 2.5 feet below grade (Elevation 13.4). The existing ground surface elevation is identified as approximately 15.90. Table 5.3 indicates SHWT elevation of 11.9. Table 5.3 indicates a bottom elevation for P2.1 of 43.5, the plans indicate a bottom elevation of approximately 15.0. Review and confirm separation.

For P3.3 UG Infiltration Basin, B-33 Boring Log indicates groundwater observed approximately 15.5 feet below grade (Elevation 39.5). No mottling was identified within the log. If observed groundwater within a boring is to be used for SHWT, the groundwater table should be observed at the time of the drilling and again 24-hours later in accordance with the procedures outlined within Appendix H of the RISDISM. RIDEM Adjustment Factors should be applied for observed groundwater elevations in accordance with the procedures for Wet Season Determinations.

Recommend providing section view of each BMP with estimated SHWT. This will likely be a requirement for RIDEM permitting.

12. Hydrologic Calculations for Infiltration Basin P2.1 show a peak elevation of 15.30 in the 100-year storm. Confirm sufficient freeboard is available from the top of berm elevation (15.50 in HydroCAD and 15.00 on Proposed Site Documents).

    Response: The plans and report are revised to provide 1-foot of freeboard in the infiltration basin and resolved discrepancies between them.

    Pare Response: Response Accepted.

13. Hydrologic Calculations for Infiltration Basin P2.1 show an outflow of 22.29 cfs through the spillway during the 100-year storm event discharging directly to golf course. Confirm safe passage of the 100- year flows and detail any necessary downstream stabilization).

    Response: This 100-yr outflow is less than the existing conditions peak flow to DP2 and the proposed overland flow condition is the same as existing conditions, so no downstream stabilization is planned.

    Pare Response: Response Accepted.

14. Hydrologic Calculations for Infiltration Basin P3.4 show a peak elevation of 49.80 in the 100-year storm. Confirm sufficient freeboard is available from the top of berm elevation (50.50 in HydroCAD and 50.00 on the Proposed Site Documents).

    Response: See response to #12.

    Pare Response: Response Accepted.

15. Hydrologic Calculations for Bioretention-Infiltration Basin P3.10 show a peak elevation of 47.32 in the 100-year storm. Confirm sufficient freeboard is available from the top of berm of elevation (47.50 in HydroCAD and 47.00 on Proposed site Plan Documents).

    Response: The plans and report are revised to provide 1-foot of freeboard in the infiltration basin and resolved discrepancies between them.

    Pare Response: Response Accepted.

16. Hydrologic Calculations for Infiltration Basin P4.2 show a peak elevation of 63.98 in the 100-year storm. Confirm sufficient freeboard is available from the top of berm elevation (64.50 in HydroCAD and 64.00 on Proposed Site Documents).

    Response: See response to #12.

    Pare Response: Hydrologic Calculations for Infiltration Basin P4.2 (now P7.2) shows a peak elevation of 63.94 in the 100-year storm. Confirm sufficient freeboard is available from the top of berm elevation (64.50 in HydroCAD and 64.00 on Proposed Site Documents). The note indicates a top of berm of 65.0 but the grading indicated a top of berm of approximately 64.0.

17. Confirm Recharge Volume provided, and Water Quality Volume provided for Infiltration Chambers P3.9. The Stage-Area Storage for weir elevation 58.60 is 20,720 cf. A volume of 22,733 cf is listed. Review and revise accordingly.

    Response: The plans and report are revised to provide 1-foot of freeboard in the infiltration basin and resolved discrepancies between them.

    Pare Response: Response Accepted.

18. HydroCAD analysis should be updated using appropriate grate dimensions of the Nyloplast Dome Grate for applicable BMPs.
    Response: No Nyloplast Dome Grates are proposed on the revised plans.

    Pare Response: Response Accepted.

19. Provide product flow rates for the Jellyfish Filter Systems and model sizing calculations.
    Response: The backup from Contech Engineered Solutions LLC is included in the revised drainage report.

    Pare Response: Response Accepted.

20. Provide HydroCAD 1.2" storm summary to confirm WQf values listed in Exhibit 4-III (Page 434 in Appendix F).
    Response: The revised drainage report includes the 1.2" storm summary in the HydroCAD outputs found in Appendix D and E.

    Pare Response: Response Accepted.

21. Appendix A – Part 1, MS4 should be checked for initial discharge location for DP 5 and DP 1.
    Response: The checklist will include these boxes checked.

    Pare Response: Response Accepted.

22. **RIDEM Minimum Standard 3: Water Quality Volume: In accordance with Section 8.21 Stormwater Infiltration Practices "If the in-situ infiltration rate for the underlying soils is greater than 8.3 inches per hour, 100% of the WQv shall be treated by an acceptable water quality practice prior to entry into an infiltration facility." PD7.3 should not be credited for Water Quality, and an upstream Water Quality system is required prior to infiltration. Review and revise accordingly.**

23. **Confirm status of RIDEM and USACE permitting.**

24. **Review and confirm safe passage of the 100-year design storm. Confirm that surcharged conditions within the conveyance system do not negatively impact proposed structures, and all flows contribute to the anticipated downstream design points.**

The applicant should provide a formal response to address each comment.

If you have any questions or require any additional information, please do not hesitate to contact me at 401-334-4100 or bsykes@parecorp.com.

Sincerely,

Robert J. Sykes P.E.
Managing Engineer

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