Request for Proposal:
Pocket Neighborhood at the Former Carmelite Monastery Site

25 Watson Avenue
Barrington, Rhode Island

Addendum #1
Issued: February 20, 2024

A. Response to Questions

Question: Is the expectation that the appraisal value will be met in any response or proposal?

Response: No. The appraisal was provided as general reference only. The proposed purchase value is only one of the factors in the evaluation; and only accounts for 10% (10 out of 100) in Section 6. Evaluations of Proposals/Scoring. There is no required minimum offering price.

B. Supporting Exhibits

The following document is issued as an additional Exhibit to the Request for Proposal and provided as a supporting document for respondents.

1. Exhibit A: Stormwater and Sewer Assessment, Carmelite Monastery Development

February 12, 2024

Mr. Phil Hervey, AICP
Town Manager
283 County Road
Barrington, RI, 02806

Re: **Stormwater and Sewer Assessment**
Carmelite Monastery Development
25 Watson Ave, Barrington RI
(Pare Project No. 23231.00)

Dear Mr. Hervey,

Pare Corporation is pleased to provide this letter summarizing potential stormwater and sanitary sewer solutions for the proposed residential development located at 25 Watson Ave (AP 7, Lot 4) referred to as the Carmelite Monastery. Pare reviewed available information regarding the existing stormwater and sanitary sewer systems adjacent to the project site. Pare identified opportunities and constraints for the proposed stormwater management system and sanitary sewer system. Pare prepared options to manage stormwater runoff and provide sanitary sewer services for the development. The options are based on the Union Studios' conceptual layout entitled "Carmelite Monastery" dated January 19, 2024. The conceptual layouts depict subdividing the property into eight parcels, with a mix of single-family houses, cottage style houses and open space for recreational use.

STORMWATER

Regulations
The property is within the jurisdiction of the RI Coastal Resources Management Council (CRMC) and the Rhode Island Department of Environmental Management (RIDEM). The project will be required to comply with the *Rhode Island Stormwater Design and Installation Standards Manual* (RISDISM). State permits that may be applicable include a *RI Pollutant Discharge Elimination System* (RIPDES) permit through RIDEM and/or *Freshwater Wetlands in the Vicinity of the Coast* permit through CRMC. The proposed development will be required to meet all eleven of the RISDISM stormwater management standards for each of the downstream areas.

The project will be required to comply with the Town of Barrington's *Land Development and Subdivision Regulations*. This document includes regulations for *Storm Drainage Systems* located in § 200-49. The proposed development will be required to provide drainage plans and drainage calculations prepared by a registered engineer in Rhode Island that conform to the § 200-49 regulations for hydrology and hydraulic design.

Existing Conditions
The property is approximately 7.3 acres, with existing site features including the monastery building, parking, sidewalks, woods, and grass areas. According to the RIDEM Environmental Resource Map, the property is not within the FEMA floodplain and does not appear to have wetland resource areas onsite. A portion of the property is within a Natural Heritage Area.

The site's existing ground cover includes roof, pavement, woods and grassed areas. The existing topography is steep, with the center of the property at approximately elevation 45' and the lowest point of the property being approximately elevation 16'. The RIDEM Environmental Resource Map's GIS information depicts existing soils as well drained. During later phases, on-site soils should be classified through subsurface investigations such as test pits or borings to confirm the estimated seasonal high groundwater table and the soil's potential for infiltration.

Stormwater runoff from the property drains to four design points which ultimately flow to two separate off-site waterbodies. The southern portion of the property drains to the Upper Narragansett Bay. Per the RIDEM Environmental Resource Map, this waterbody is impaired by nitrogen and bacteria. Runoff from this portion of the site will require additional water quality treatment per the RISDISM. The northern portion of the property drains to Brickyard Pond. Per the RIDEM Environmental Resource Map, this waterbody is impaired by phosphorus, which will require additional water quality treatment as well. The additional water quality treatment requirements are outlined in *Appendix H.3: Water Quality Goals and Pollutant Loading Analysis Guidance for Discharge to Impaired Waters*. This includes information on the required pollutant loading analysis calculation and the treatment offset requirements for specific impairments that require more impervious surface area water quality treatment.

Based on the RIDEM Environmental Resource Map's 2020 impervious surface GIS layer, the site has approximately 1.20 acres of impervious surface. Based on the small percentage of impervious area on site, the development will be classified as a new development per RISDISM minimum standard six. The development will require both water quality best management practices (BMP) and peak flow mitigation BMPs to meet the eleven stormwater management standards. Due to both of the ultimate receiving water bodies being impaired, the proposed development will have additional impervious surface area water quality treatment as mentioned above.

Per minimum standard one of the RISDISM, the project will be required to use available techniques for minimizing the generation of runoff via low impact development (LID) methods. The use of LID methods can be cost effective and also provides innovative nature-based stormwater treatment that improves water quality, protects natural resource areas, uses the natural landscape conditions, limits earthwork activities, reduces the required impervious surface cover or allows impervious surface cover to be disconnected, provides native vegetation for habitats and restores natural features when applicable.

Per minimum standard five of the RISDISM, the project will be required to ensure the pre-development peak flow rates are not exceeded in the post-development condition for the following design storms: 1-year, 10-year and 100-year. Additionally, Barrington's *Storm Drainage Systems* regulations located in §200-49, require the project to meet the pre-development to post-development peak flow rates for the following design storms: 2-year and 25 -year. Per §200-49, the project's hydraulics must be designed for the 25-year design storm for pipe capacity.

Stormwater Management

The proposed development consists of six single family buildings and twelve single-family cottage unit residential buildings. There is an opportunity for each lot to manage stormwater runoff individually. This approach would require each parcel to provide on-site stormwater best management practices that meet the RISDISM requirements. Separated stormwater management systems are easier to assign operation and

maintenance responsibilities. Disadvantages for separated systems on each property include designated stormwater management area for each property that will reduce available land for the owner's use, and increased cost due to installation of multiple stormwater systems. This approach may result in an uneven distribution of stormwater management across the site. Lots with more impervious area in the existing condition will require more stormwater management while lots with less existing impervious will have a higher burden. Also managing peak flow on smaller lots can be inefficient and fill the landscape with multiple stormwater systems.

Alternatively, the development may be designed with a combined stormwater management system that manages stormwater from each of the properties across the site. Lots would share responsibility for operation and maintenance through a homeowners association agreement. Combined stormwater management may be more cost effective due to the reduced material and maintenance costs for subdivision design. With this approach, fewer stormwater BMPs could be constructed in more suitable locations away from homes if beneficial. Advantages from the existing impervious areas would be applied to the watershed, not individual parcels.

Based on the site's existing topography, it is recommended that stormwater management areas be located along the existing north property boundary and southwest property boundary to intercept stormwater runoff to the maximum extents practicable.

Collection and conveyance of stormwater runoff can be accomplished by the use of swales and a closed drainage system where required. The drainage system would include catch basins, drain manholes and drainage pipes to route stormwater runoff to the stormwater management areas.

The stormwater management approach should include LID methods and BMP's to provide water quality treatment, groundwater recharge, and stormwater detention. Water quality treatment can be achieved through LID methods such as reduced impervious area through reducing sidewalks widths to 4 feet, the use of alternative hardscape materials for driveways, disconnecting impervious surfaces, and providing qualifying pervious areas (QPA). Other LID techniques that are recommended include preserving natural vegetation to the maximum extent practicable to minimize clearing, designing stormwater BMP's in areas with the greatest infiltration rate, and the use of small-scale BMP's to treat stormwater runoff as close as possible to the source.

Small-scale BMP's that are recommended include bioretention areas, tree box filters, drywells or sand filters. The LID methods referenced above are compatible with these surface stormwater BMP's to design a low impact development. Roof runoff should be infiltrated in drywells located close to the source where feasible. Infiltrating roof runoff can be cost effective, provides groundwater recharge, water quality treatment, and reduces the size of downstream BMP's.

Other small-scale subsurface infiltration systems may be appropriate for small driveways, patios, and other impervious surfaces. In order to receive runoff from non-roof impervious areas, pretreatment will be required, which may increase costs.

Detention basins and infiltration basins can provide peak flow mitigation for the project. These systems should be designed in areas where frequent ponding is appropriate. The basin depth and footprint should be considered during the design to minimize impacts to the surrounding areas. Public access to these

systems should be avoided with planting or fencing.

Surface stormwater systems provide the required water quality treatment and detention at lower costs than subsurface alternatives, though require area that reduces space available for lawn. Subsurface detention systems may be considered for increased cost, but are often difficult to incorporate in residential subdivisions due to site constraints.

SEWER

Existing Conditions and Sewer Regulations
There are four existing sewer mains adjacent to the subject property, and for the purpose of this letter are identified as the:

- North gravity-sewer main (8-inch diameter) in Watson Avenue,
- South gravity-sewer main (8-inch diameter) in Watson Avenue,
- North gravity-sewer main (10- and 12-inch diameters) in Freemont Avenue, and
- South Freemont Avenue force main.

A pump station that resides on the west side of Freemont Avenue delivers sewage through the force main to the north gravity-sewer main in Freemont Avenue.

The Barrington GIS map shows that the three gravity-sewer mains are systems that provide potential connection options for the proposed development. The available sewer capacity of the existing sewer infrastructure would need to be calculated by the design engineer and would be based on the proposed development's maximum daily flow, which can be estimated by following the guidance in the RIDEM document, *FLOW ESTIMATION POLICY FOR DESIGN OF SANITARY SEWERS*. This document advises estimating proposed wastewater flows on those that are measured from similar neighborhoods, and that a minimum of 300 gallons per household-day be employed. The flow values for the proposed development will aid in determining the adequacy of the existing sewer system to convey both existing and new flows. The integrity and capacity of the existing sewer infrastructure should be assessed by professionals skilled and licensed, as applicable, to validate the system's ability to handle existing and proposed flows. It would benefit Barrington and project abutters to measure flows and to inspect the sewer infrastructure with video equipment.

Conceptual Sewer Connections
In the manners described here, Barrington may consider connecting the seven lots depicted in Union Studios' conceptual layout dated January 19, 2024, to the several gravity sewer mains in Freeport Avenue and Watson Avenue. The sewer connections described below are possibilities that Barrington could consider and are not final recommendations. These considerations are based on the conceptual layout, record plans provided by the Town, and information from the Barrington GIS database. A comprehensive engineering study should be performed to fully identify the means for connecting the proposed buildings to the sewer mains as the design progresses.

Pare anticipates gravity sewers are preferred, thus avoiding the need for pump stations to convey wastewater from the proposed lots to the public sewer mains. Pare anticipates that the finished floor for each proposed building would reside approximately two feet above finish ground surface. In the case of a design that lowers the ground surface below elevations sufficient to provide adequate gravity drainage, it

might be necessary for some or all of the lots to utilize lift stations to convey wastewater into the gravity-sewer mains in Freeport Avenue and Watson Avenue.

Lots #1 and #2 could connect into the north gravity-sewer main in Watson Avenue with a gravity sewer service. Connecting the building sewer from Lot #2 may require extending this sewer main southward to run along the Lot 2 frontage. The Lot #1 and Lot #2 buildings' finished floors would likely reside at a minimum elevation of approximately 40 feet.

Lots #3 and #4 could connect to the south-gravity sewer main in Watson Avenue with a gravity sewer service, likely without need for modification to the existing sewer main. The finished floor elevations for Lots #3 and #4 buildings would likely be within the approximate range of 37 feet to 44 feet.

Lots #5, #6, and #7 could connect to the north-gravity sewer main in Freemont Avenue with a gravity sewer service. This sewer main would likely need to be extended southward to run along the frontage of Lots #6 and #7. The finished floors for buildings on these three lots would reside at approximately elevation 40 feet to 41 feet.

The information outlined in this letter is based upon the information noted herein. Prior to commencing design, detailed plans depicting the proposed wastewater and stormwater management systems should be prepared under the supervision of a RI Licensed Professional Engineer.

Please contact us with any questions or comments.

Sincerely,

David L. Potter, P.E.
Vice President
Civil Division

DLP/ACB/CH

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