APPENDIX M
Parking Garage Evaluation

The grant that the Village received from the New York State Department of State to study the greening of the waterfront required the examination of all parking alternatives including a garage. This analysis meets that requirement.

For the purposes of this Plan, any potential typical self-park parking structure is presumed to have a maximum height of three levels – surface (ground) level plus two above-ground levels. Any potential robotic structure would have five (surface plus four above-ground) levels, since each level can be shorter. Either scenario complies with the Village's maximum height of 35 feet.

A Downtown parking garage or garages may be necessary if the supply of surface parking (including reconfigured existing lots, new lots, and shared parking) during the height of the season remains insufficient after the Village provides additional surface parking (via the use of reconfigured lots, the addition or acquisition new lots, and the use of shared parking).

Based on the analyses presented in section 11.1, there is a future need to add up to 591 parking spaces, including the existing parking deficiency and future demand identified by the ferry company and Danford's. Proposed improvements will add to the Village's parking. If, however, lot reconfiguration, new lots, and shared parking do not meet the future need for parking, a structured parking solution might be considered by the Village.

Cameron Engineering approximated the potential future parking deficiency (section 11.1) from the parking counts it conducted and from information contained in the Waterfront Study on parking lot reconfigurations and new lots (Appendix 5). Based on that information and including use of shared parking, the minimum size of a potential garage would be approximately 190 spaces.

If shared parking is <u>not</u> provided (a shared parking agreement involves approvals beyond the Village and is not a guarantee), the minimum garage size could be anywhere from 353 spaces (with a loss of Main Street parking) to 415 spaces.

Because these calculations include a relatively large input from Danfords (150 spaces), the Village should conduct parking counts over several summer weekends <u>after all other parking improvements have been made and after any increases in use by Danfords (which has a self-identified need for 150 additional parking spaces)</u>. If 10-15 percent of spaces are *not* vacant, then additional parking is required for the Downtown to reach its true potential. Village residents made clear their preference for surface parking and their opposition to a garage. During the community meetings, however, Village residents said that if a garage were proven necessary, two locations might be acceptable:

- Behind the Gap lot in the parking lot east of Main Street
- In the Meadows lot

Residents also made it clear that they would only support the construction of a garage if no other surface lot options were available and it were attractively designed with a pleasant façade

(as opposed to plain solid concrete walls). The façade design would be part of the Village approval process.

A careful examination of the possible Downtown locations yielded the least disruptive and most convenient space as "behind Village Hall," which would displace the tennis courts, but does not have any immediate residential neighbors. Views of the harbor would not be obscured by a structure here, so its mass would not visually overwhelm any adjacent buildings or uses. This location is only a few hundred feet to the Waterfront or Main Street, and is just 1/8 mile to the Ferry and the intersection of Main Street/East Main Street. Any garage would be set back from the improved walkway along Mill Creek and buffered by large trees, shrubs, and other landscaping. Stormwater drainage lines that discharge into Mill Creek would have to be moved to accommodate the structure. Access to the garage would be from the Meadows lot and Roessner Lane.

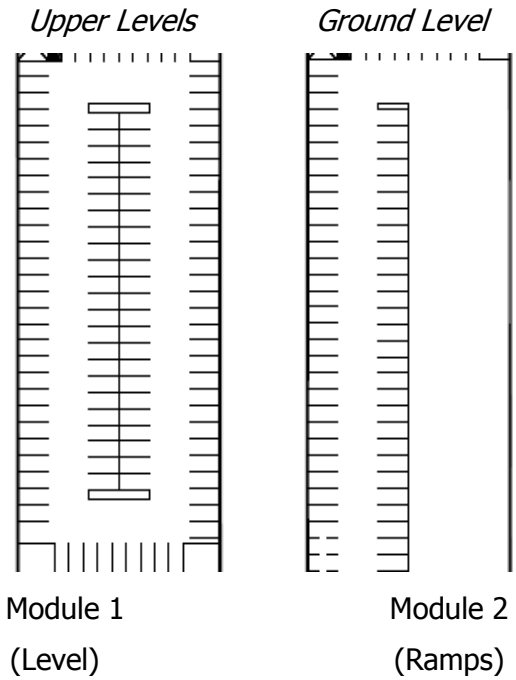
For the Waterfront Study, different parking structures were analyzed with respect to the ability to fit in these locations. There are two types of parking structures:

- A typical self-park garage where each driver parks and personally retrieves the vehicle
- A robotic structure where each driver pulls onto a pad, leaves the structure, and the pad is transported internally to a stacked parking cubicle, to be transported back when the driver inserts a card into an electronic reader

A self-park structure requires level surfaces for parking, plus a way to maneuver from one level to the next. In this study, parking is described in terms of "modules" where each module is a travel aisle plus its adjacent row(s) of parking. A robotic structure requires lower headways, with a central transport aisle open to the ceiling, and bays that cover some of the ground level.

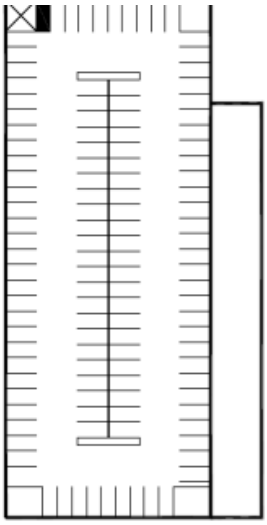
Given area constraints in the Village, three potential self-park configurations were examined. The minimum sizes were based on requiring 60 feet per module (18 foot parking spaces and a 24 foot travel aisle), and a maximum ramp slope of five percent to cover a 12-foot-per-level elevation change.

- *Configuration A:* A 2-module layout, where one module is ramped to provide access to different levels. The minimum size for this layout is 123 feet wide by 290 feet long (including wall thicknesses), which would provide 290 spaces on three (surface plus 2) levels (without accounting for the loss of existing surface parking):
    - 58 spaces on the ground level
    - 116 spaces on two upper levels = 232 spaces
    - 290 spaces total



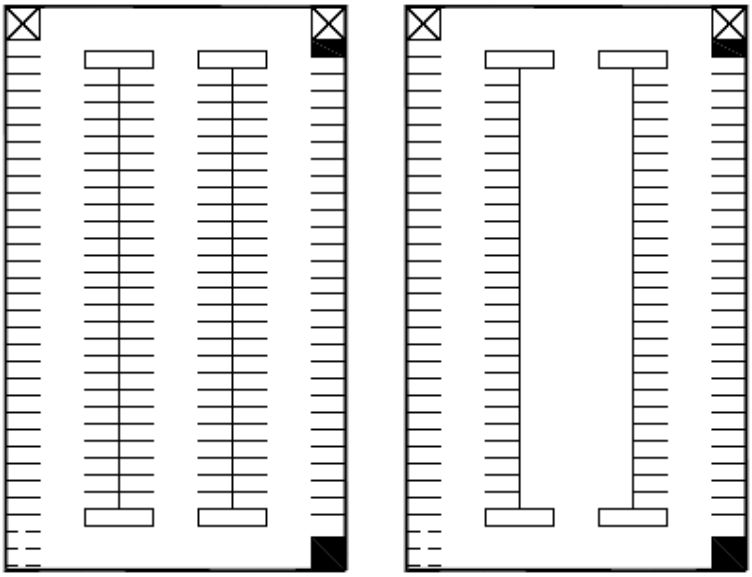
- *Configuration B:* A 2-module layout, where both modules are flat, and the access ramp to different levels is provided outside the main structure. The minimum size for this layout is 122 feet wide, with a 26 foot by 152 foot ramp on its side to allow an 8 percent grade between levels. Based on the same 290 foot length (for an "apples to apples" comparison), it is larger than Configuration A but is also more efficient. It would provide 338 spaces on three (surface plus 2) levels (without accounting for the loss of existing surface parking):
    - 110 spaces on the ground level
    - 114 spaces on two upper levels = 228 spaces
    - 338 spaces total

All Levels



Module 1 and Module 2 Ramp - (Both Levels)

- *Configuration C:* A 3-module layout, where the center module is ramped to provide access to different levels. An example of this layout is at the SUNY Stony Brook Medical Center parking garage. This configuration's minimum size is 180 feet wide by 288 feet long, and it would provide 422 spaces on three (surface plus 2) levels without accounting for the loss of existing surface parking.



Upper Levels Ground Level

- 102 spaces on the ground level

- 160 spaces on two upper levels = 320 spaces
- 422 spaces total

On a square foot basis, the 3-module configuration ("C") is the most efficient, yielding the highest number of spaces per floor. It is also the widest garage, however, and would only fit on the Meadows lot. To summarize the self-park locations, the following are possible locations for each configuration:

- The 2-module garage could fit in the Meadows Lot, on top of the basketball courts, or on the Arden Place North (Gap) Lot with no new retail
- The 2-module-with exterior ramp garage could fit in the same locations: in the Meadows Lot, on the basketball courts, or on the Arden Place North (Gap) Lot with no new retail
- The 3-module garage could fit on the Meadows Lot only

** Note: the Arden Place (Gap) lot cannot accommodate any garage if there is to be new retail along Arden Place.*

The garage locations affect the calculated "net gain" because of the varying surface parking loss. The following summarizes the net gain of each potential garage:

Table -: Self-Parking Garage Net Gains

Location	Existing Parking	Configuration A *2-module*		Configuration B *2-module, exterior ramp*		Configuration C *3-module*	
		Provided	Net Change	Provided	Net Change	Provided	Net Change
Arden (Gap)	181	290	109	338	157	422	241
Meadows	250			338	88	422	172

Configuration A would be a net loss on the Meadows lot, so this combination is not shown. The best gains would be from constructing a "B" garage on the Arden (Gap) lot, or a "C" garage on the Gap lot or the Meadows lot.

With respect to robotic structures, the following projections were included:

- With shorter headways required (6.5 feet for cars, 7.5 feet for SUVs), the ground level would be 8 feet high and upper levels would be 7 feet high, allowing a 5-level (surface plus 4) robotic structure
- A robotic structure would have two single 28-cell bays separated by a 20-foot aisle
- The robotic structure has no minimum length and width, because all movement between levels is completely vertical. Therefore, the size is based on the Arden Place lot reconfiguration with closure of Arden Place, as an "apples to apples" comparison between different potential locations
- There would be approximately ten entry pads, which would remove parking cells from the ground level

- The robotic structure could have:
  - 4 upper levels with 56 holding bays (2 rows x 28)
  - Ground level with one 28-bay row and one 18-bay row
  - Total: 270 spaces

The peak net garage gain is 188 (robotic) or 241 (self-park in a larger structure) garage. Depending on the findings of the post-improvement parking counts, and on the availability of Shared Parking, there could be a need for two garages to yield a higher net gain.

- A separate and more detailed discussion on parking garages is found in Appendix 15, including size, types (automated vs. conventional), estimated capital and operating costs, potential revenue, and financing mechanisms. The discussion considers that the garage would front Arden Place. The Village should perform new parking counts after parking improvements are made and after any increased use at Danfords occurs, to determine if the self-identified 150-space need is accurate
- Finalize arrangements (if any) for shared parking
- Based on the new counts and on shared parking, determine the size required of any garage
- Based on where a garage could go (among other considerations) choose a self-park or robotic structure