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Rockland County Green Infrastructure

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 Rockland County Task Force on Water Resources Management



Stevens Innovation Expo
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ABSTRACT/INTRO

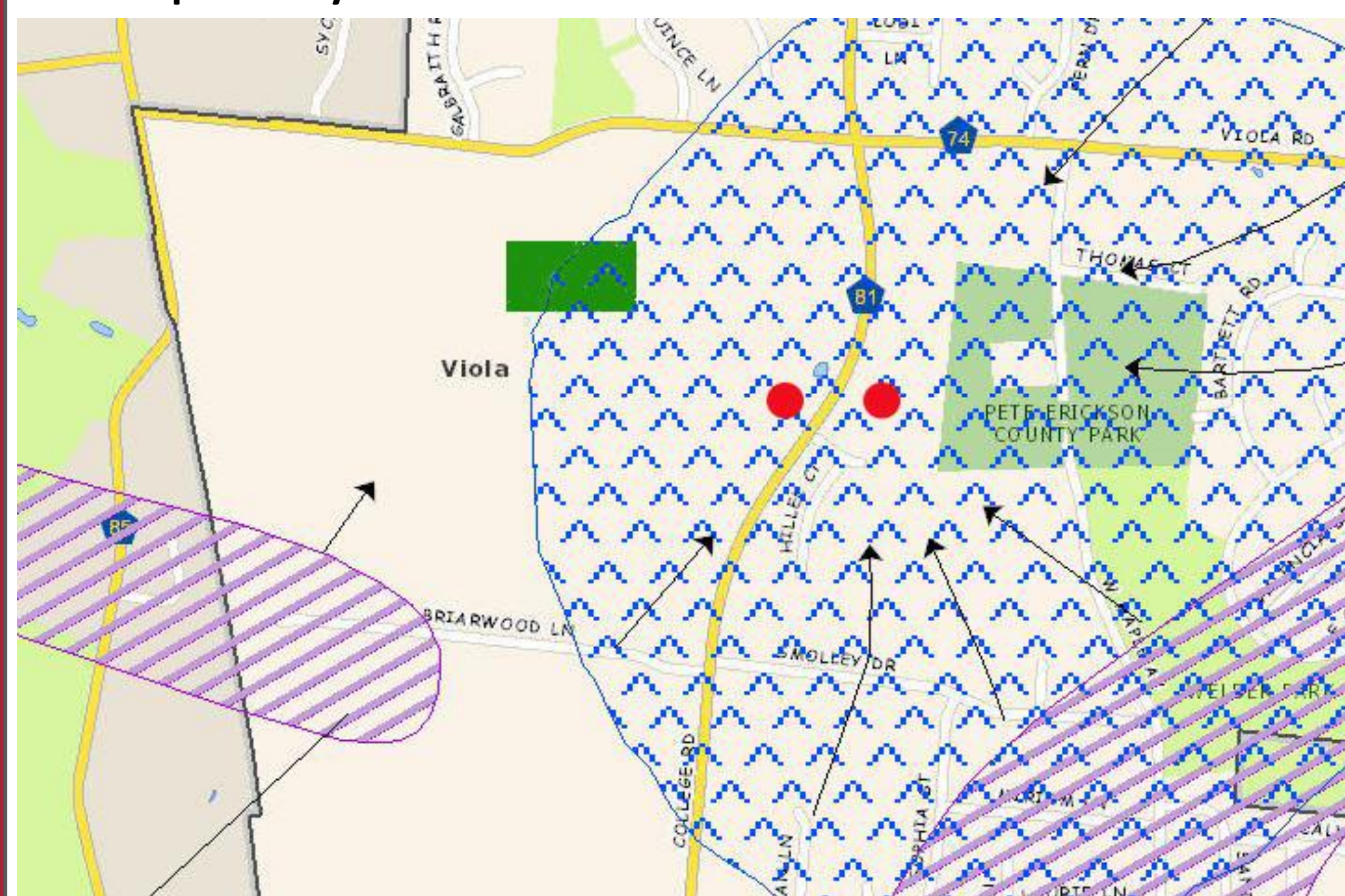
In order for Rockland County's sources of potable water to remain sustainable and support projected population growth and economic recovery, the aquifers must be replenished. Potential solutions in the form of green infrastructure were compared based on criteria as defined by an appointed task force.

THEORY/BACKGROUND

The Rockland County Task Force on Water Resources Management is working to develop a County Water Plan that ensures a safe, long-term water supply for Rockland County, NY that incorporates sustainability, demand-side principles and conservation.

Rockland County GIS data was used to select and analyze the site location and determine the effectiveness of aquifer recharge from infiltration.

The USEPA National Stormwater Calculator was used to analyze the annual amount of rainfall, infiltration and frequency of runoff from the selected site.



Proposed Site and Viola Well Field

- Legend
- Groundwater Flow Direction
 - ☐ Capture Zones, 250ft
 - Proposed Site Location
 - ▨ Groundwater Divide
 - Viola Well Field(UWNY 28,106)

Green Infrastructure Technologies

Rain Garden



Depressed area filled with vegetation to allow stormwater to infiltrate slowly

Infiltration Basin

Area of highly permeable soils that temporarily store for infiltration

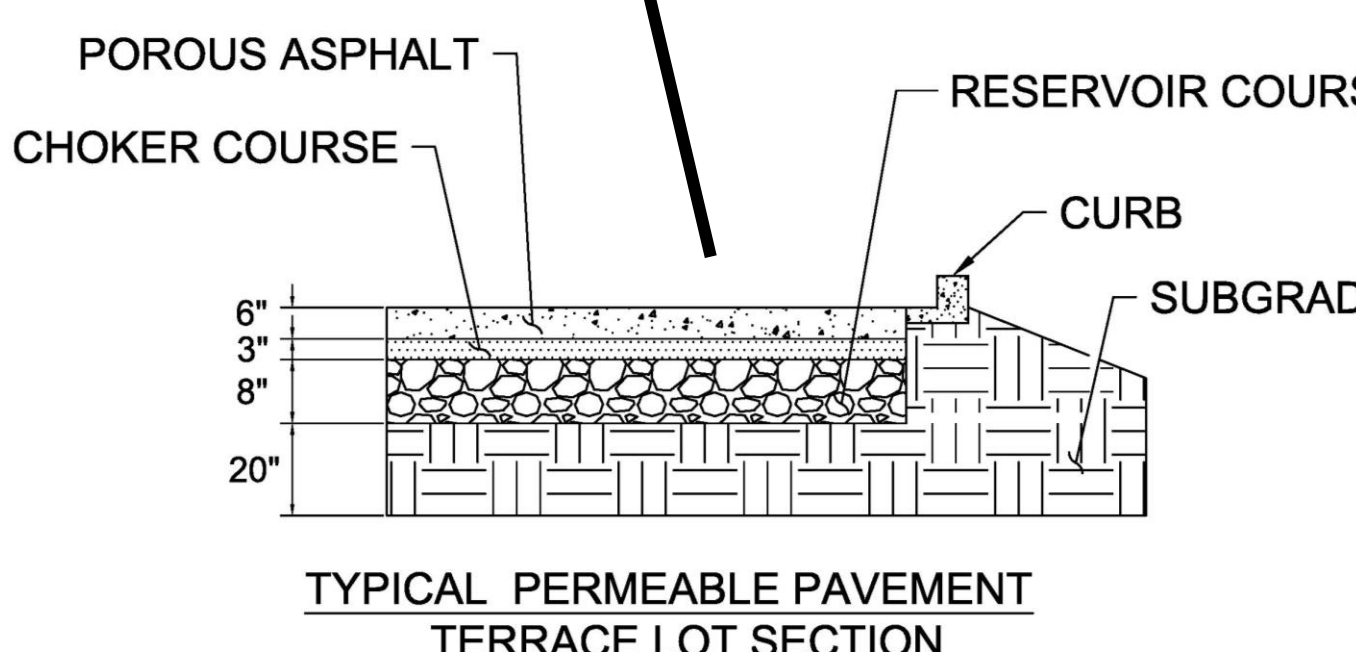
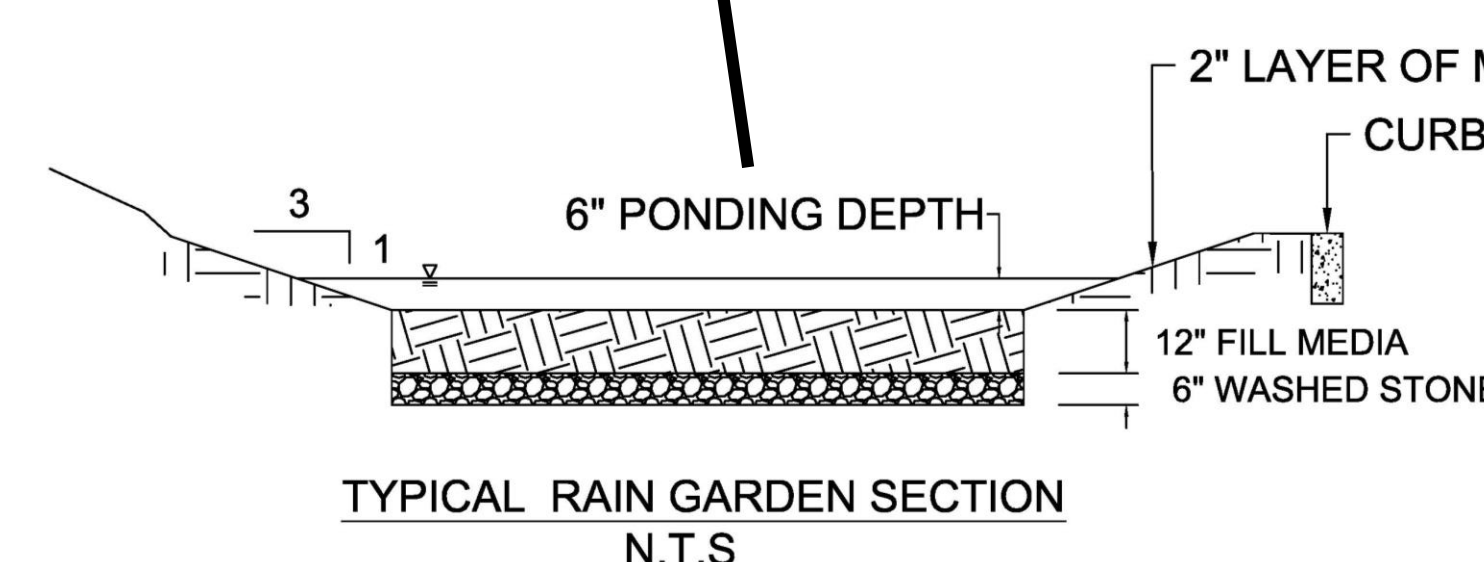
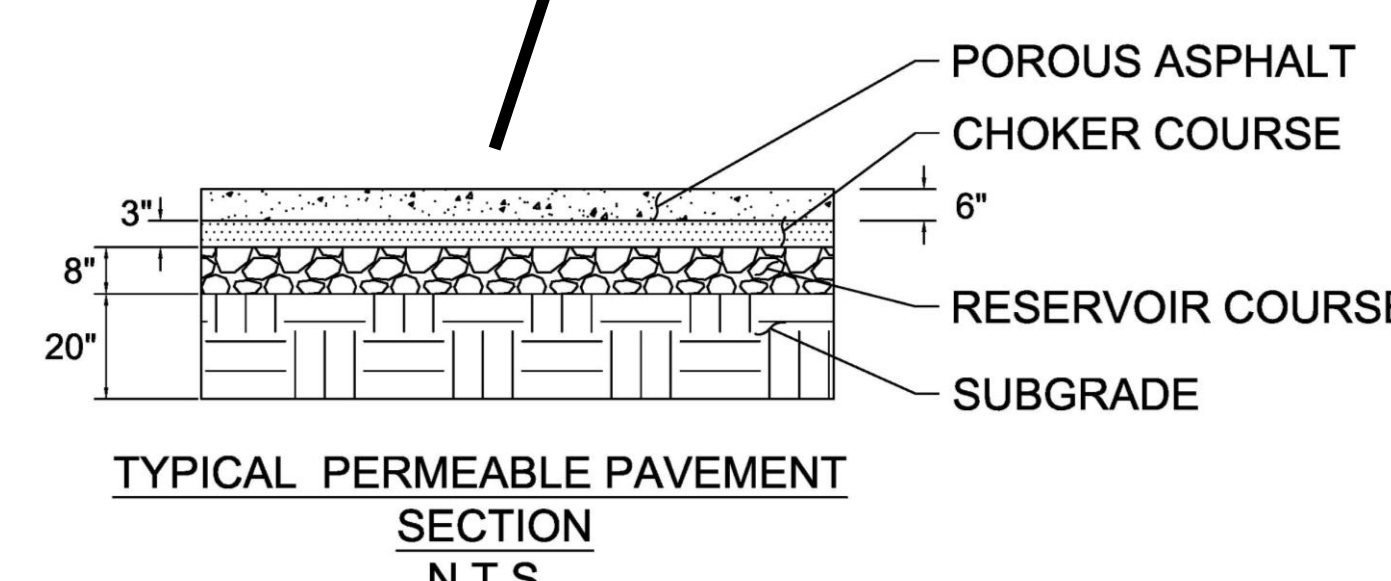
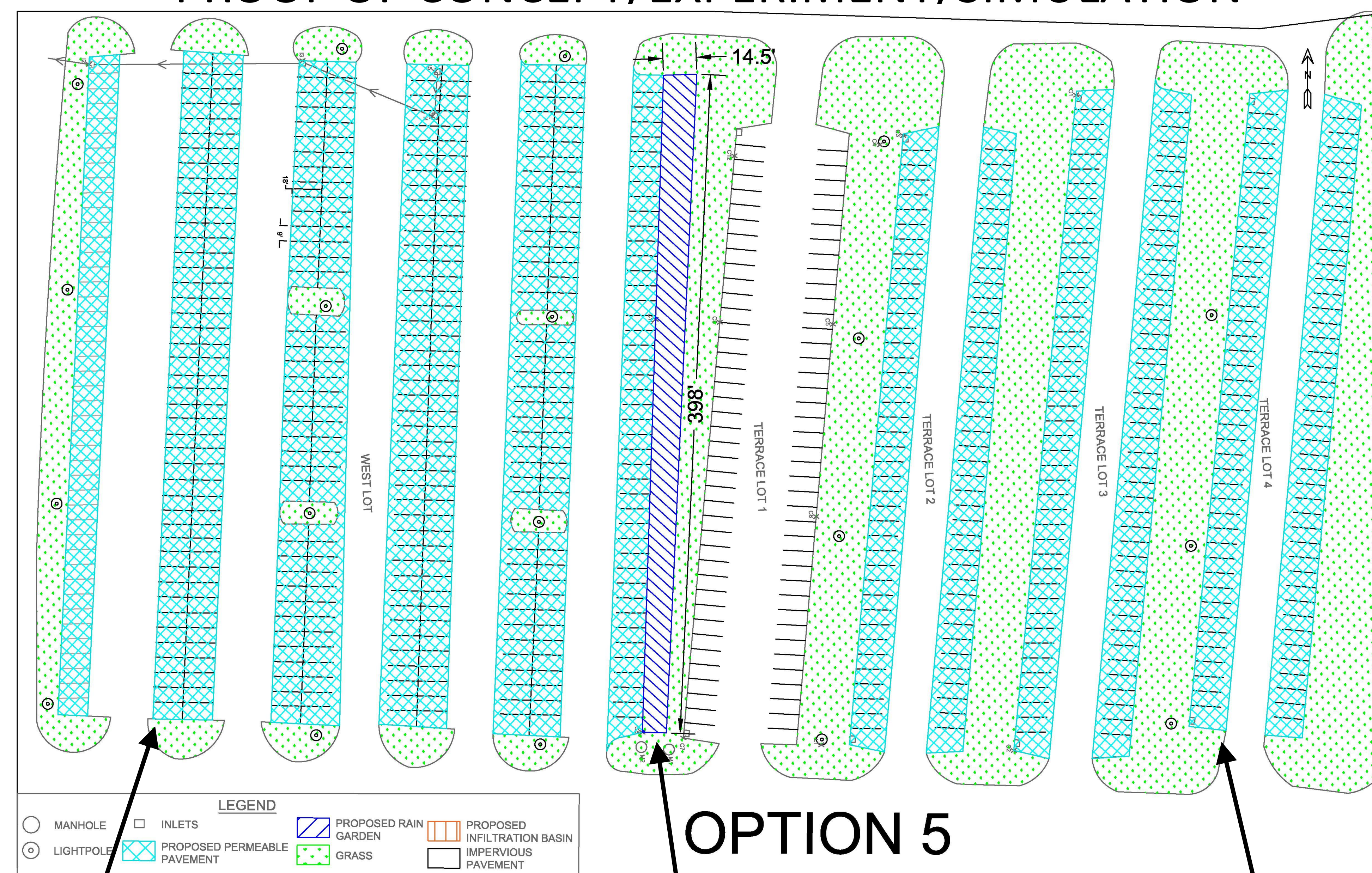


Permeable Pavement



Material that allows water to flow through it rather than turning into runoff

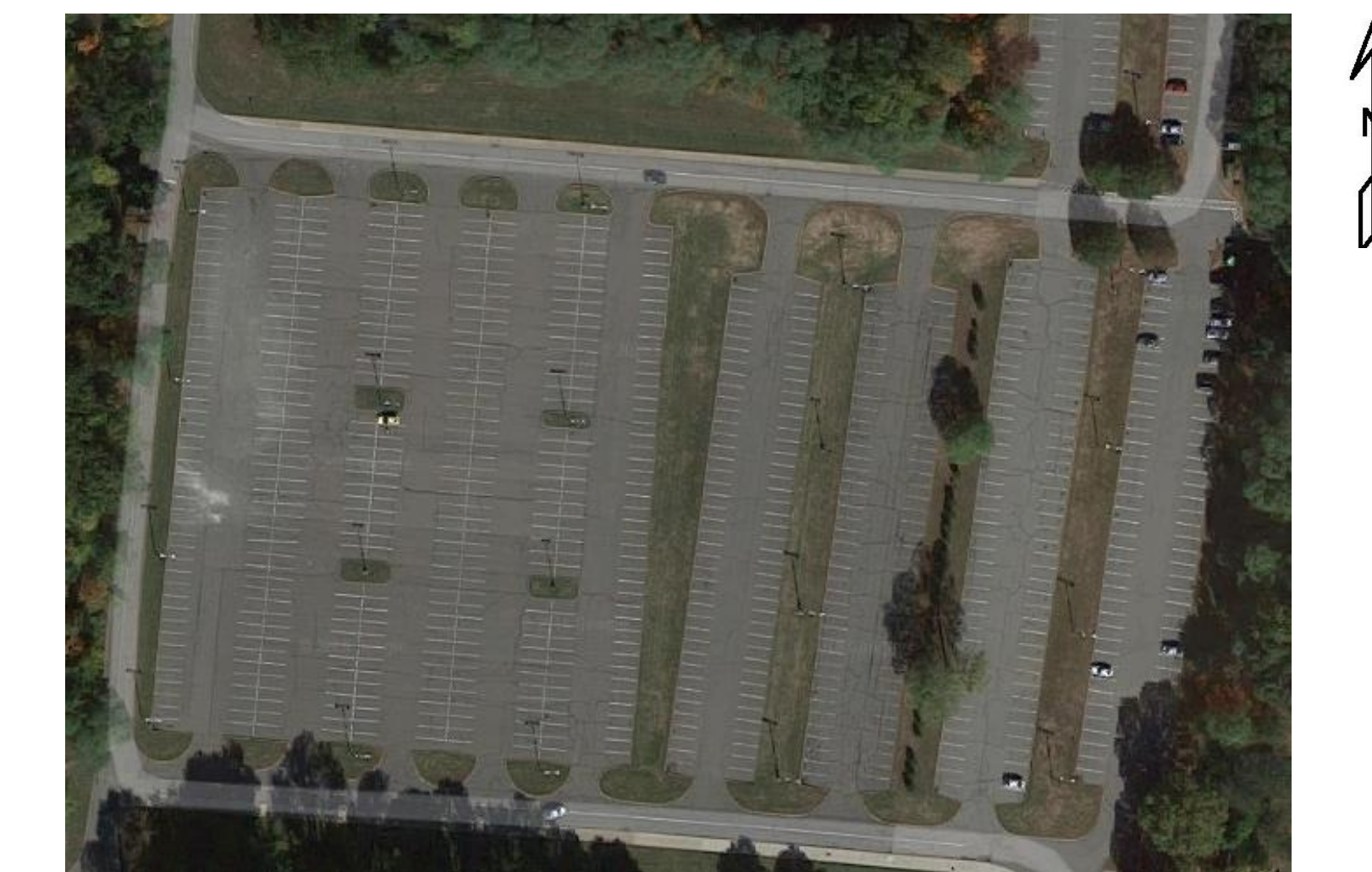
PROOF OF CONCEPT/EXPERIMENT/SIMULATION



REAL WORLD APPLICATIONS/IMPACT

Rockland Community College was selected by the Workgroup of the Task Force on Water Resources Management as an ideal location to implement Green Infrastructure within Rockland County, New York. The site has type C soil, groundwater greater than 20-40ft below land surface, and close proximity to the underperforming Viola well field. The location of the green infrastructure on the campus of Rockland Community College allows for the educational benefits for students and faculty to incorporate the infiltration basin and permeable pavement in current research projects focused on increasing groundwater supply.

Aerial View of Proposed Site



RESULTS/CONCLUSIONS

Of the five combinations of green infrastructure technologies analyzed, option 5 was selected as the final design. This design includes a rain garden along with permeable pavement. There will be three phases of construction, the first being permeable pavement in the parking spaces of the western portion of the lot. The second phase is the rain garden. The third and final phase is the permeable pavement in the parking spaces of the eastern, terraced portion of the lot.



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- USEPA National Stormwater Calculator
- QGIS