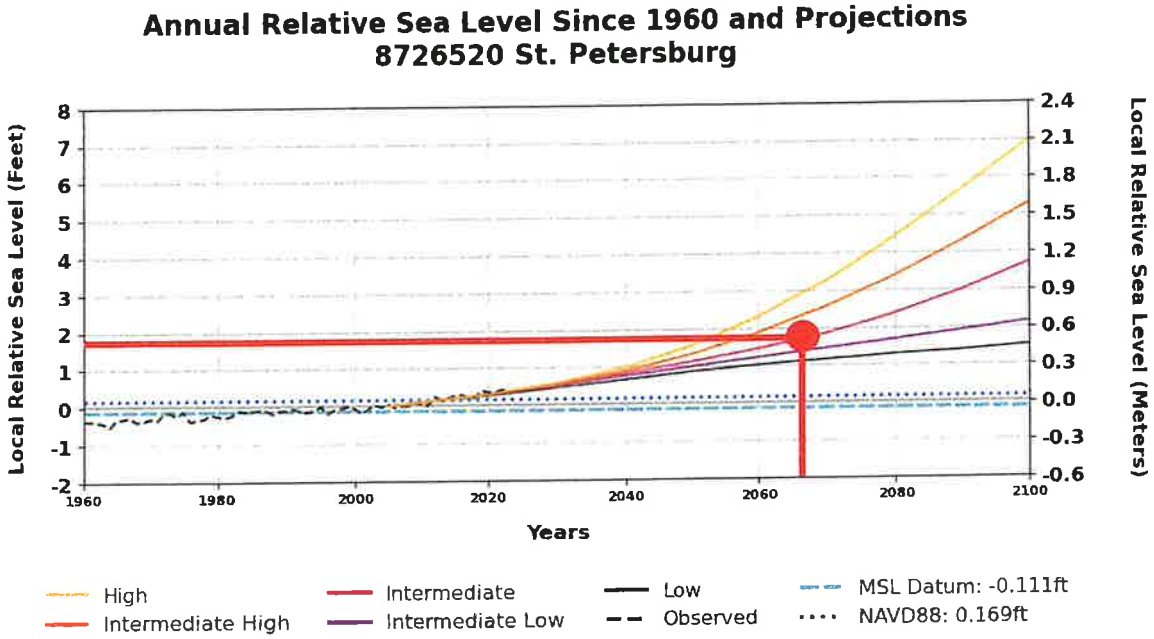
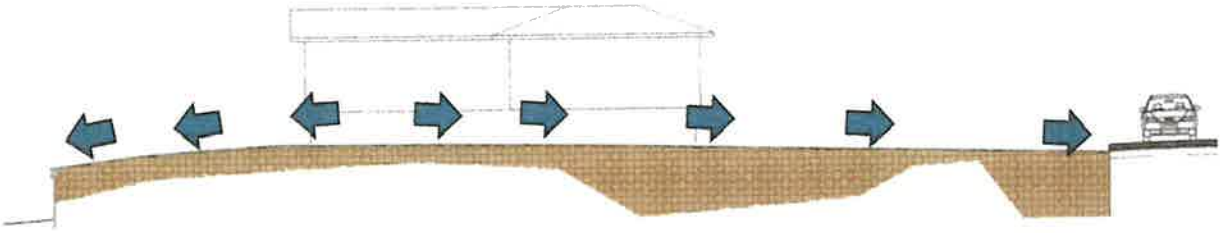
Presented by Joe Foster @ 3-5-25 JPC mtg

Elevation Analysis:

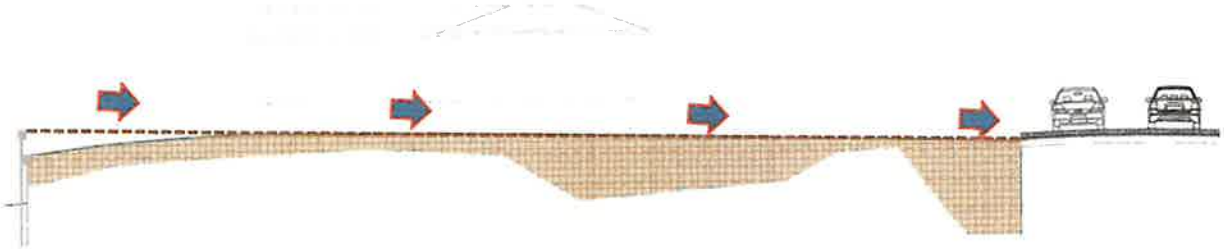
The current seawall elevation in the community is mostly around +2.3' NAVD (North American Vertical Datum). This is approximately 2' above the Mean High Water Level (per NOAA). NOAA projections indicate that sea levels will rise approximately 2' by the year 2065.



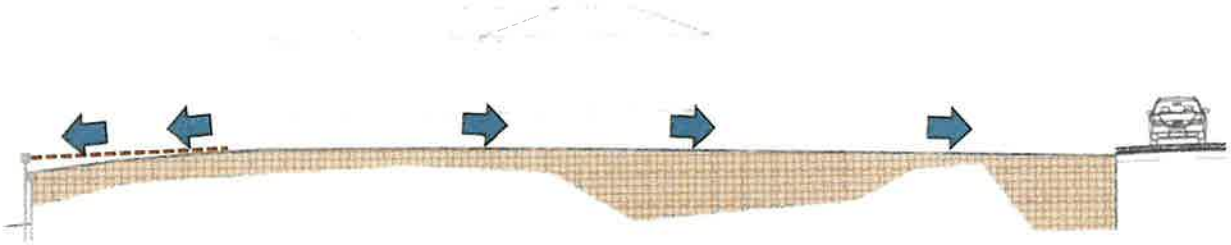
With the understanding that this wall will be past its useful by then, it is recommended that any new seawalls that are installed should account for this projected sea level rise. Just recently, the Town of Longboat Key has updated the seawall code to allow for the elevation of the seawall caps to be raised up to +6.0' NAVD. With this said, the existing stormwater system needs to be accounted for when increasing the seawall cap elevation. Currently, the typical drainage plan for each lot has the stormwater shedding half to the seawall and half to the roadway. If the seawalls are raised too high, then all the stormwater would shed to the street, overwhelming the stormwater system.



Current Conditions

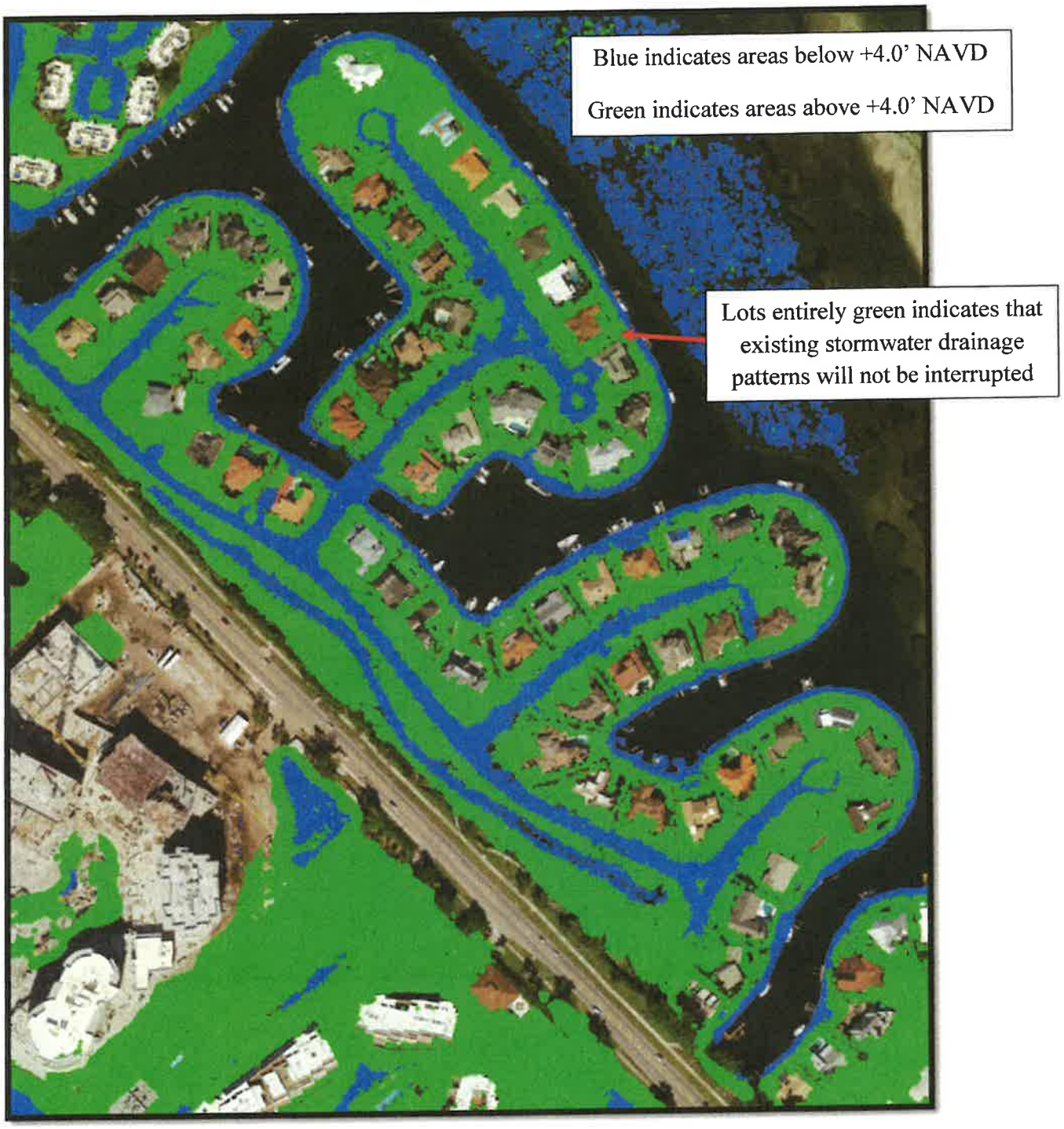


Cap Elevation Raised Above Crown of Lot
(NOT RECOMMENDED)



Cap Elevation Raised

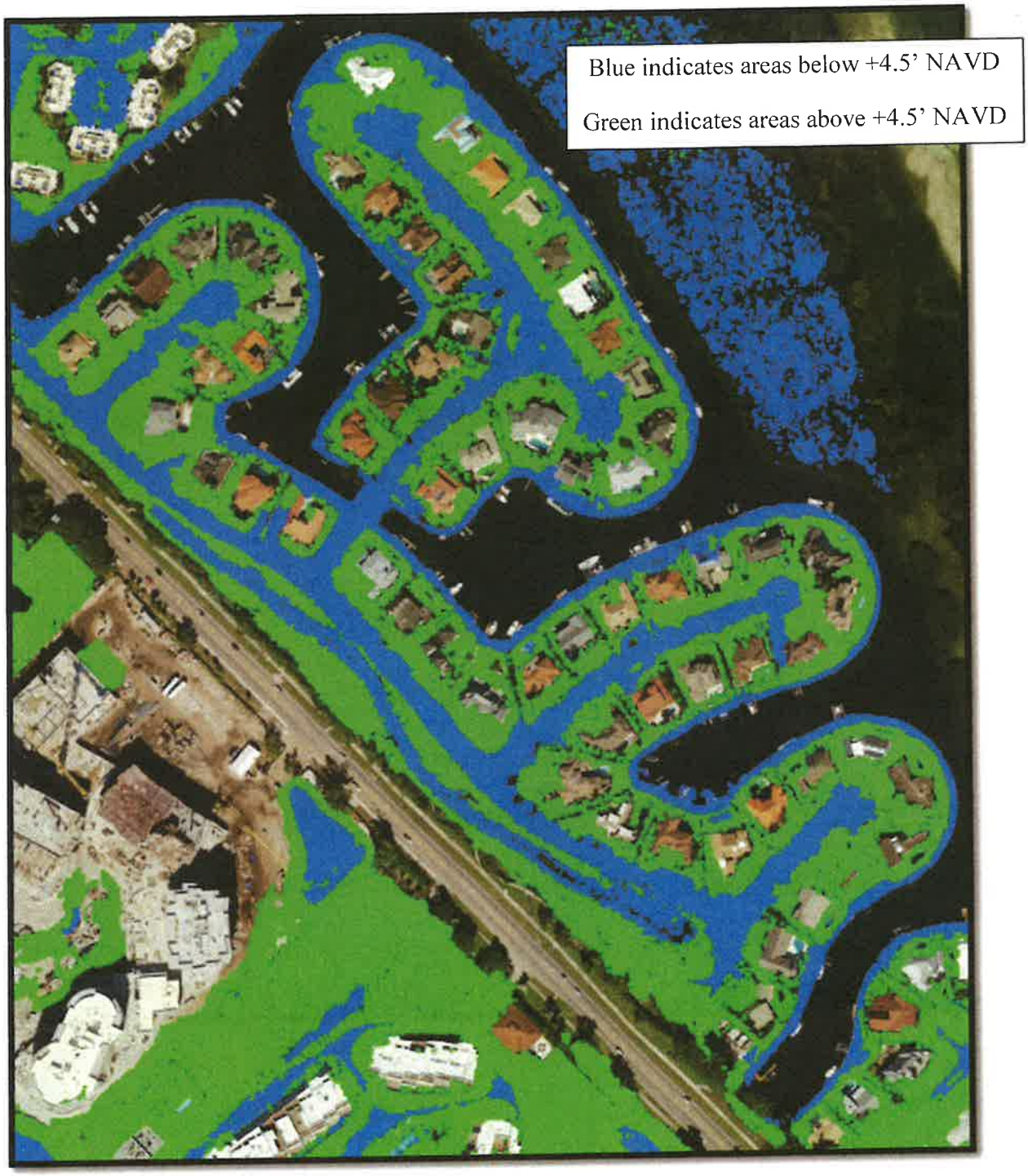
In order to determine which seawall cap elevation would NOT shed more stormwater to the street, but raise the walls as much as possible to combat sea level, the following maps were examined:



Cap Elevation of +4.0' NAVD

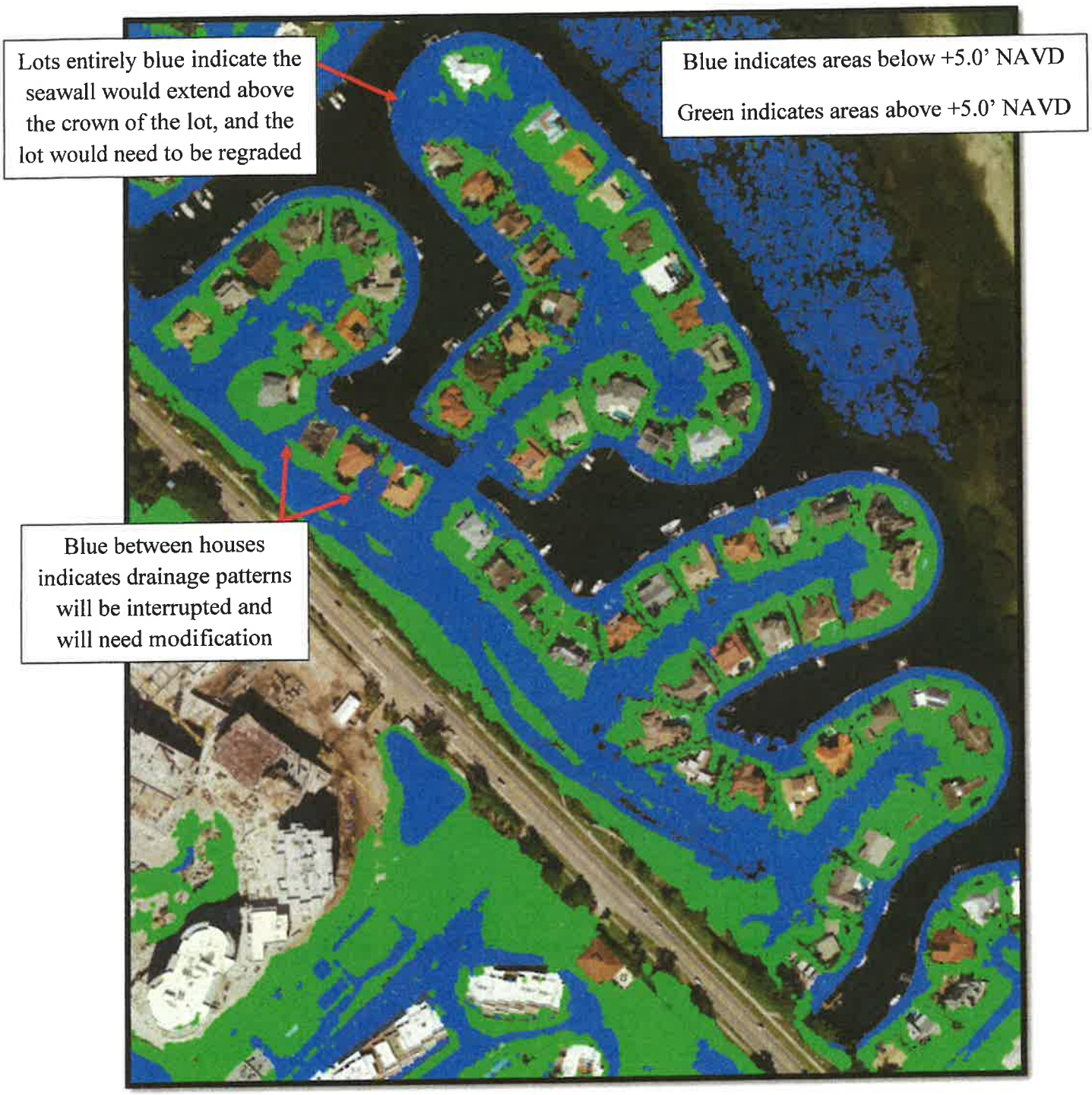
Pros – Uninterrupted drainage profile

Cons – Minimal resiliency against future sea level rise



Cap Elevation of +4.5' NAVD

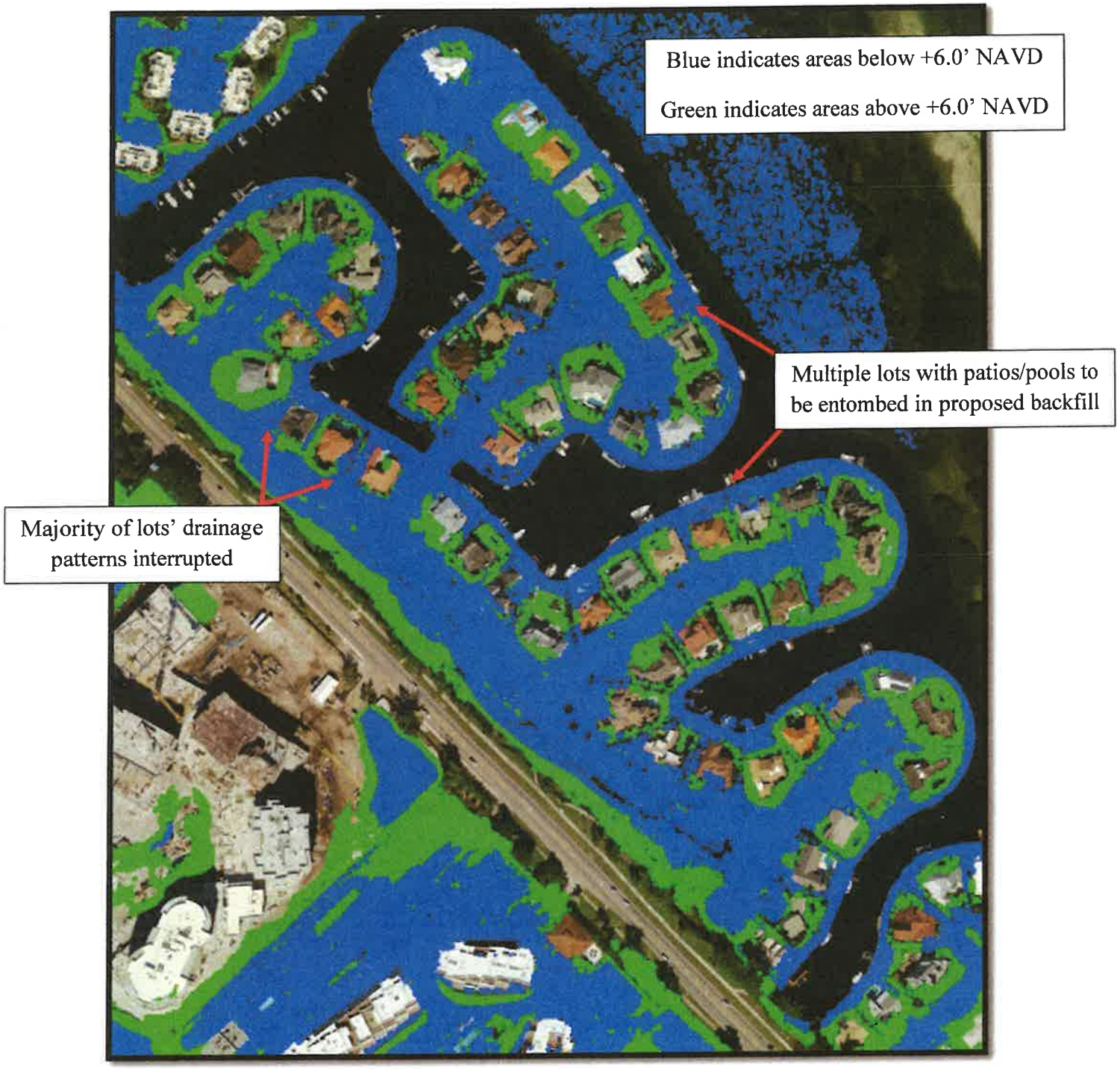
Pros – Uninterrupted drainage profile, adequate resiliency against future sea level rise



Cap Elevation of +5.0' NAVD

Pros – Additional resiliency against future sea level rise

Cons – Interrupted drainage profile, multiple lots requiring alteration/regrading



Cap Elevation of +6.0' NAVD

Pros – Additional resiliency against future sea level rise

Cons – Significantly interrupted drainage profile, multiple lots requiring alteration/regrading, significant impacts to pools

The recommended cap elevation is +4.5' NAVD. This elevation provides additional resiliency to the property without significantly altering the community's stormwater drainage. Raising the elevation to the maximum allowed elevation (+6.0' NAVD) will create more resiliency, but it would cause adverse effects to the stormwater system in the community. The raise will help extend the life of the seawall as the reinforced cap will be higher in elevation and not be exposed to saltwater when compared to a cap at a lower elevation. This raise of approximately 2.2' be greater than the predicted 2.0' of sea level rise which adds additional resiliency.

A cap elevation of +5.0' NAVD was analyzed, and while it generally maintained proper stormwater drainage (with the exception of a handful of lots which may be addressed with French drains), it was found that backfilling the lots to match the cap elevation would require demolishing/rebuilding the patios/pool decks at a number of homes along the seawall.

If desired, the new seawall could be designed with an adaptive cap, meaning the seawall would be designed to accommodate a stem wall to be poured on top of the seawall cap in the future. This would allow the seawall to be raised if the redevelopment was more conducive for higher cap elevation.