Potential Future Conditions (1978+0.6 m) 2050-2100?

For general planning purposes only; does not account for dynamic changes

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Potential Future Conditions (1978+1.0 m) 2100?

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Potential Future Conditions (1978+1.8 m) 2100-?

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Summary of Potentially Vulnerable* Building Infrastructure

Scenario	Highest Annual Tide (6.4 ft)	1978 Storm (8.9 ft)
Existing	4	101
+0.3 m (1 ft) SLR	6	204
+0.6 m (2 ft) SLR	38	342
+1.0 m (3.3 ft) SLR	192	528
+1.8 m (6.0 ft) SLR	564	868

includes only primary buildings, excludes decks, dock structures, outbuildings, pools, mobile homes

elevations referenced to NAVD88

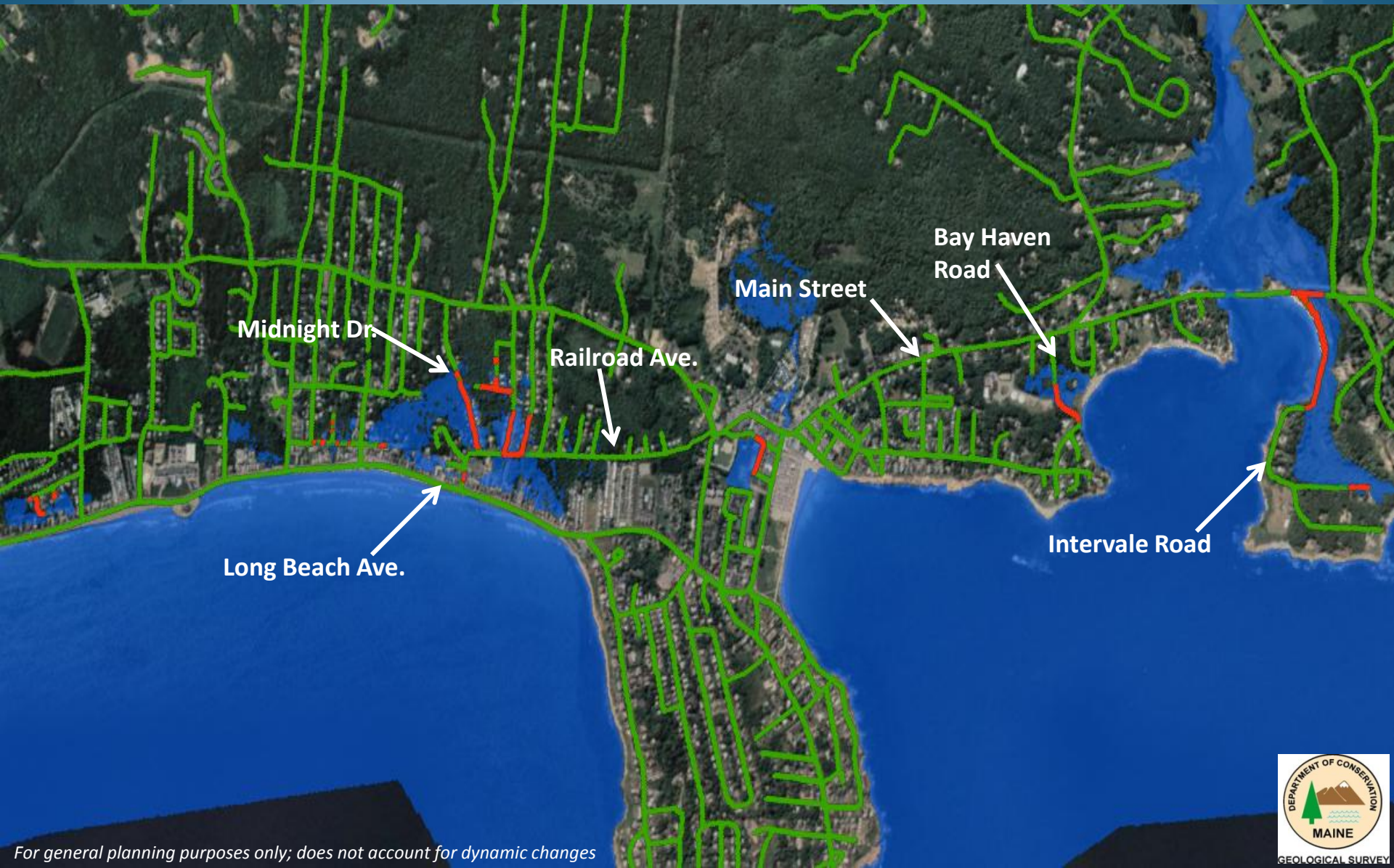
** Assumes "bathtub" flooding, no wave setup, static topography, and that a building is "inundated" if the flooding scenario* ***covers*** *the centroid of the building footprint, regardless of the flooding depth. Does not assign any kind of damage function.*

Preliminary Evaluation of Impacts from 1978 Storm Inundation (no wave setup)

Transportation Infrastructure

Transportation Infrastructure

Historic Conditions - 1978 storm (8.9 ft NAVD)



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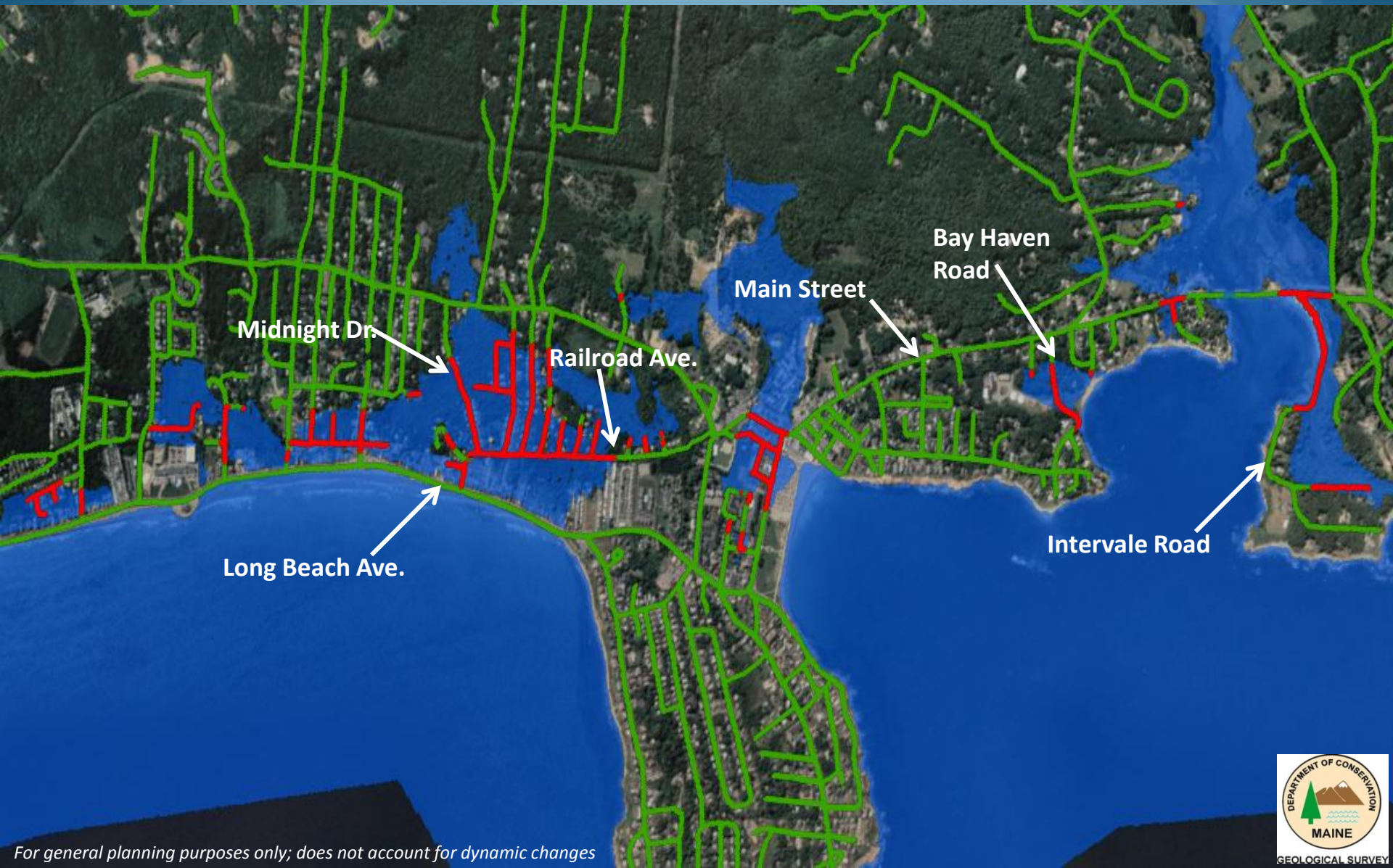
Potential Future Conditions (1978+0.3 m) 2030-2050?

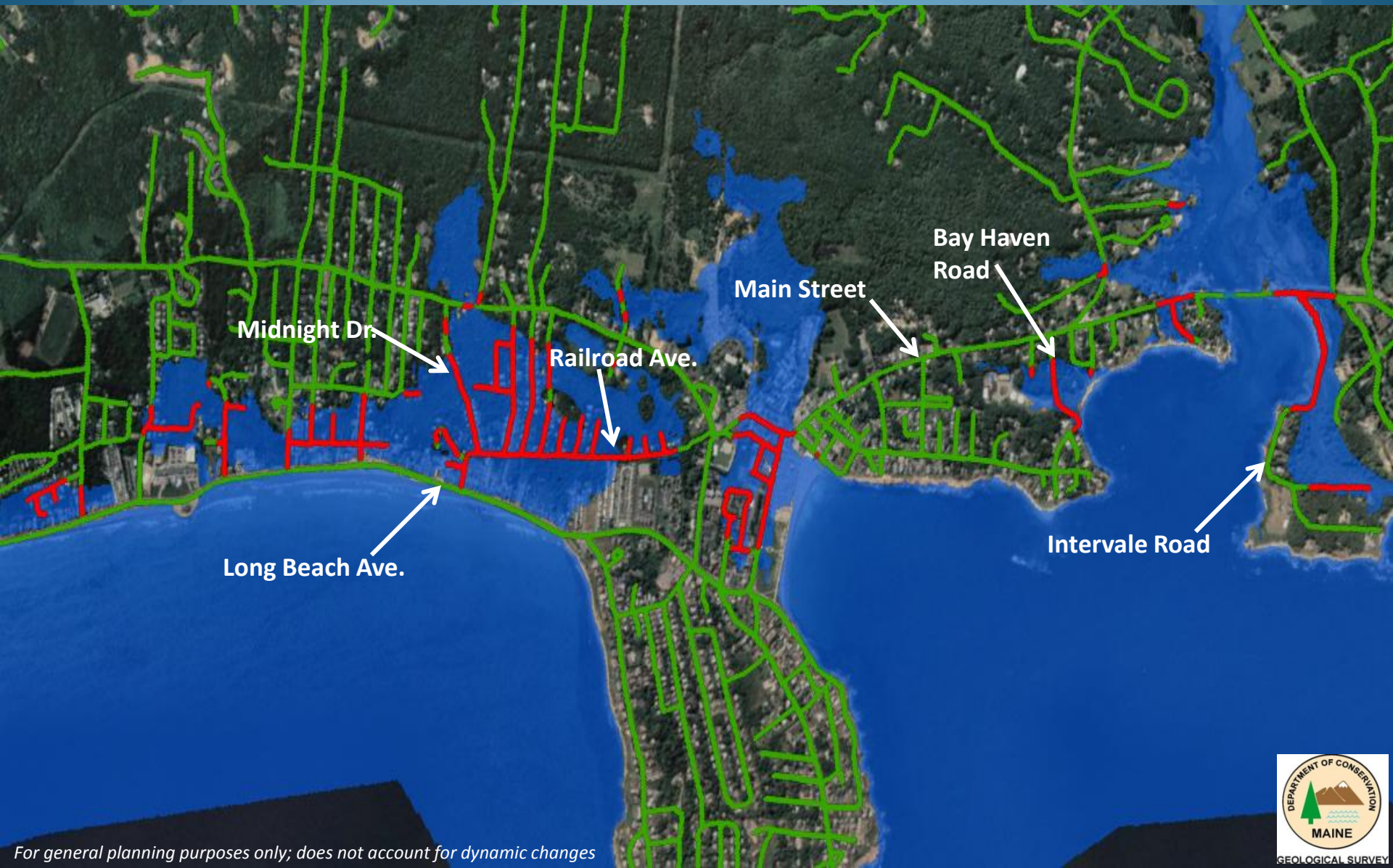
For general planning purposes only; does not account for dynamic changes

Potential Future Conditions (1978+0.6 m) 2050-2100?



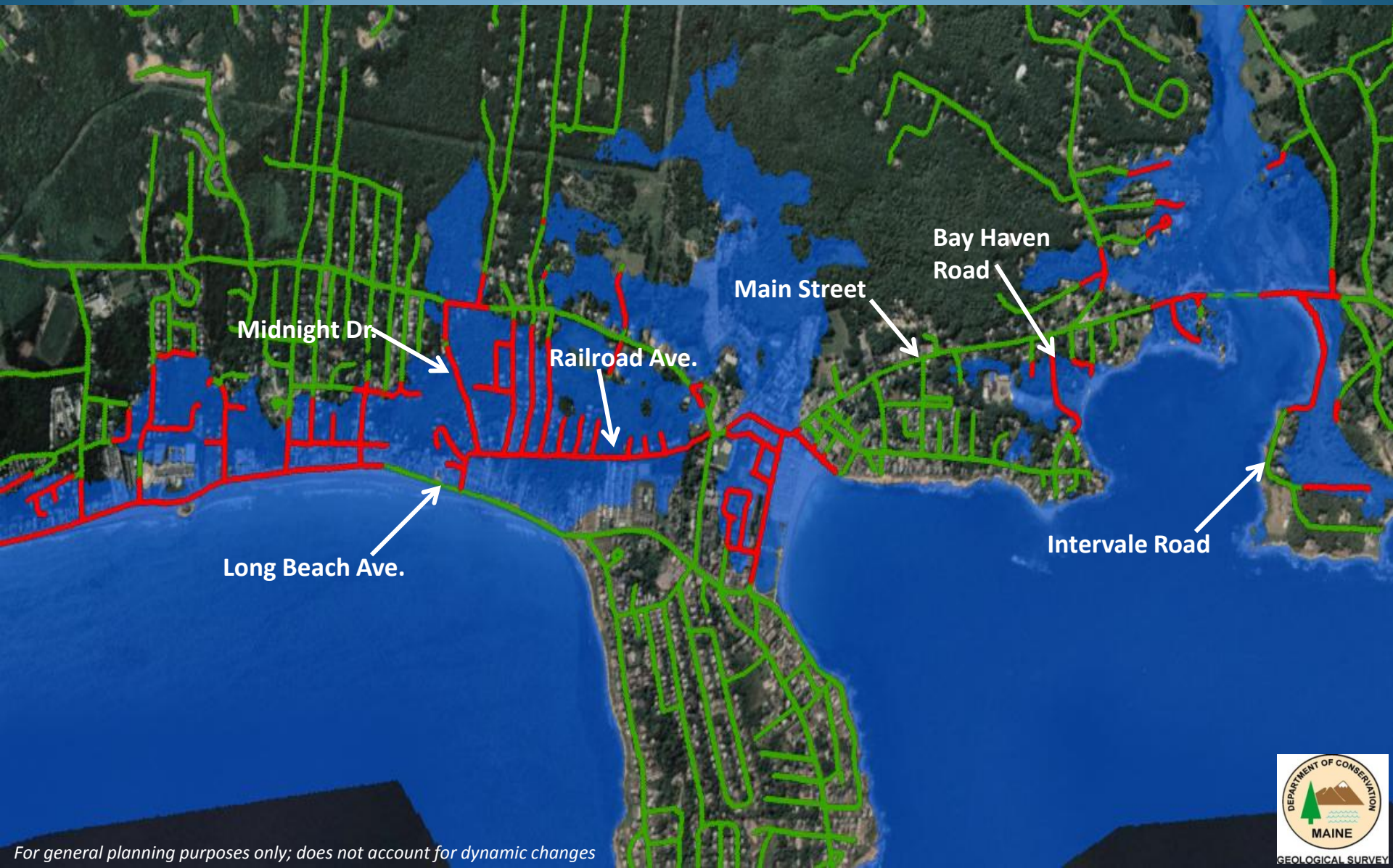
For general planning purposes only; does not account for dynamic changes

Potential Future Conditions (1978+1.0 m) 2100?



For general planning purposes only; does not account for dynamic changes

Potential Future Conditions (1978+1.8 m) 2100-?



For general planning purposes only; does not account for dynamic changes

Summary of Potentially Vulnerable* Road Infrastructure

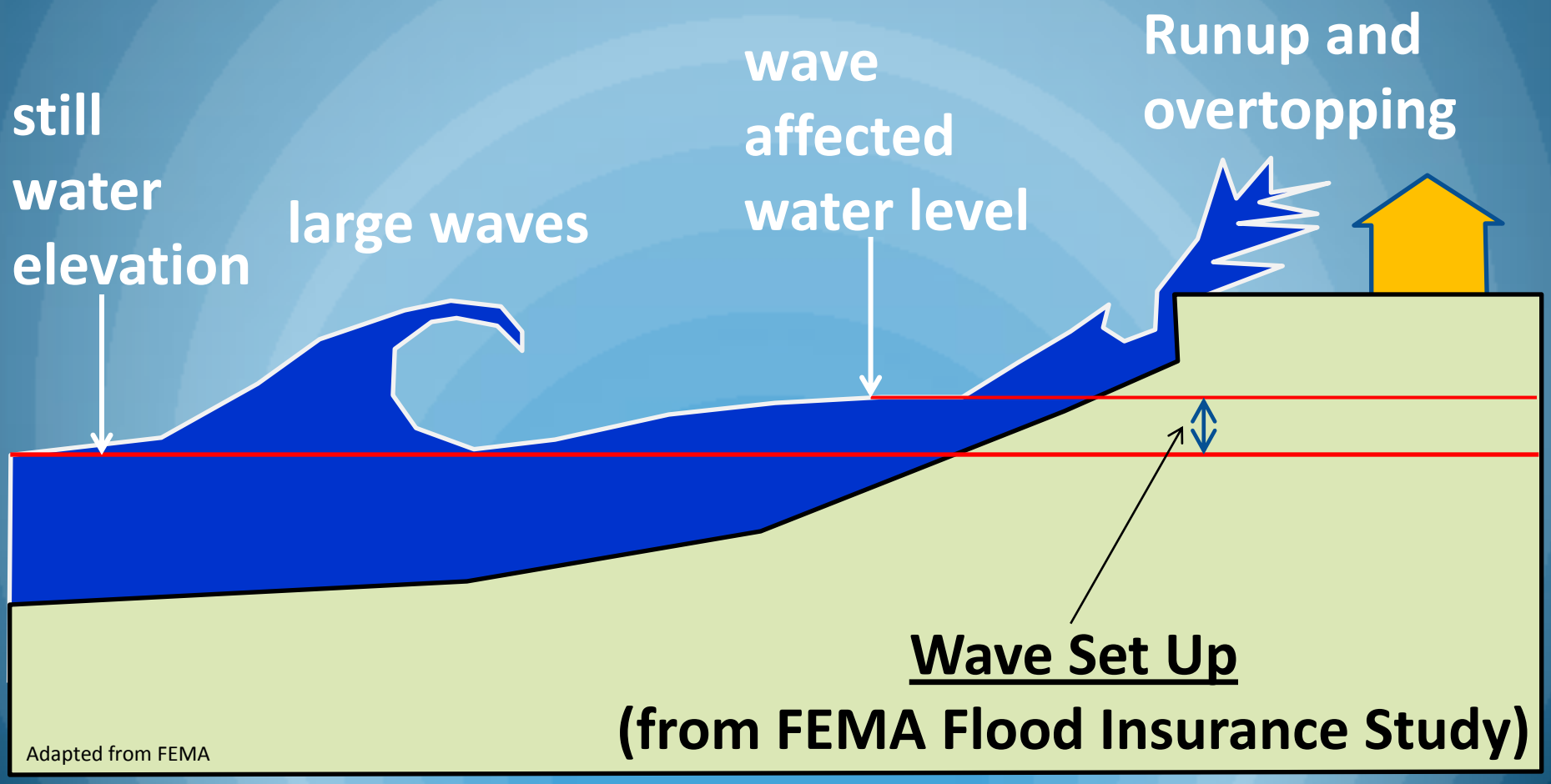
Scenario	Highest Annual Tide (6.4 ft)	1978 Storm (8.9 ft)
Existing	0.1 miles	1.9 miles
+0.3 m (1 ft) SLR	0.2 miles	4.1 miles
+0.6 m (2 ft) SLR	1.1 miles	6.6 miles
+1.0 m (3.3 ft) SLR	3.8 miles	9.5 miles
+1.8 m (6.0 ft) SLR	9.9 miles	15.9 miles

elevations referenced to NAVD88

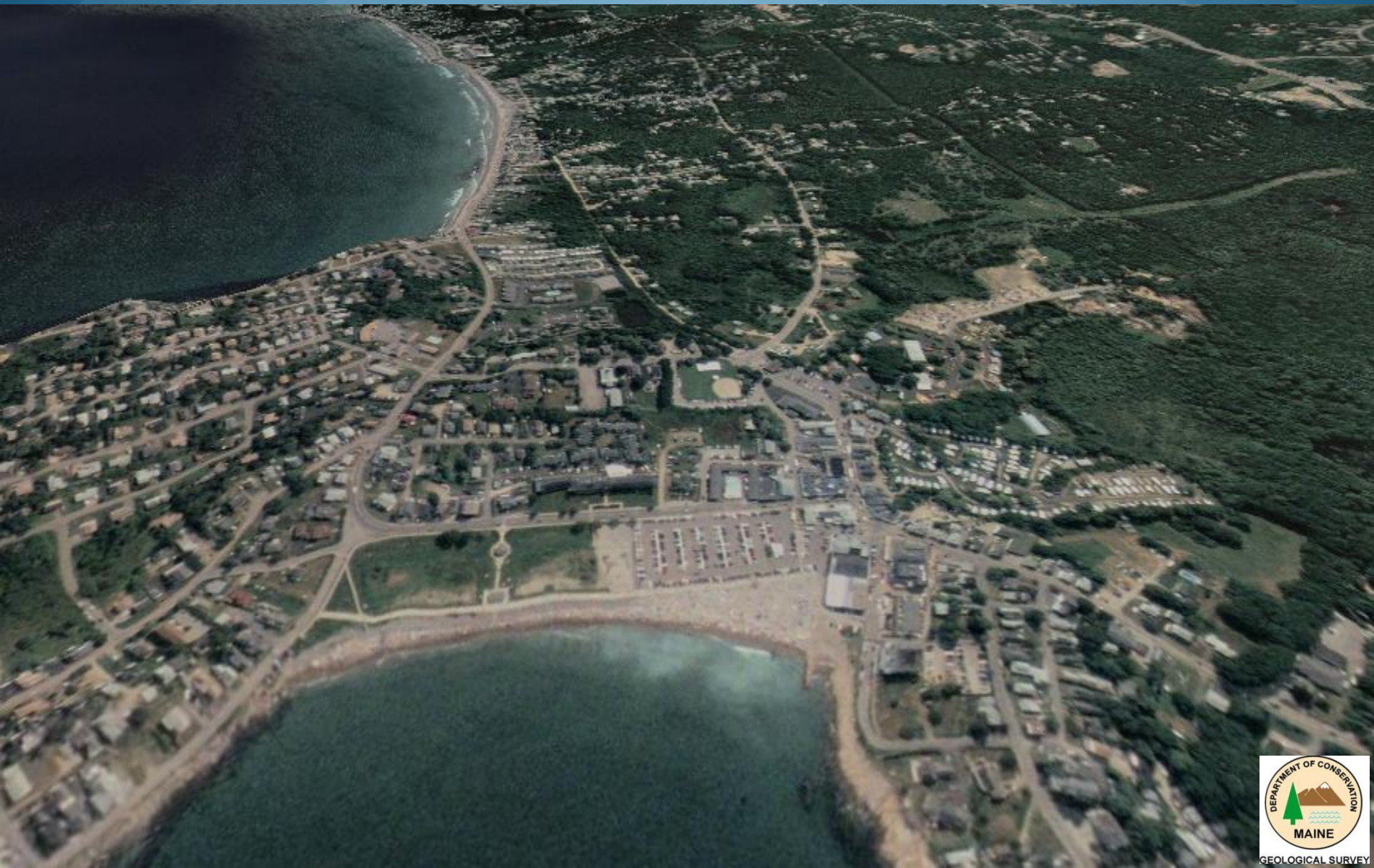
excludes bridges removed from LiDAR

** Assumes "bathtub" flooding, no wave setup, static topography, and that a road is "inundated" if the flooding scenario* ***covers*** *the entire road, regardless of the flooding depth. Does not assign any kind of damage function.*

What about the influence of waves? (applicable to areas of open coast only)



Short Sands Beach



Historic Conditions - 1978 storm
No wave setup (8.9 ft NAVD)

For general planning purposes only; does not account for dynamic changes

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Historic Conditions - 1978 storm (plus wave setup of 2.6 feet, 11.5 ft NAVD)

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Potential Future Conditions - 1978 storm+0.3 m) (plus wave setup of 2.6 feet, 12.5 ft NAVD)

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Potential Future Conditions - 1978 storm+0.6 m (plus wave setup of 2.6 feet, 13.5 ft NAVD)

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Potential Future Conditions - 1978 storm+1.0 m (plus wave setup of 2.6 feet, 14.8 ft NAVD)

For general planning purposes only; does not account for dynamic changes

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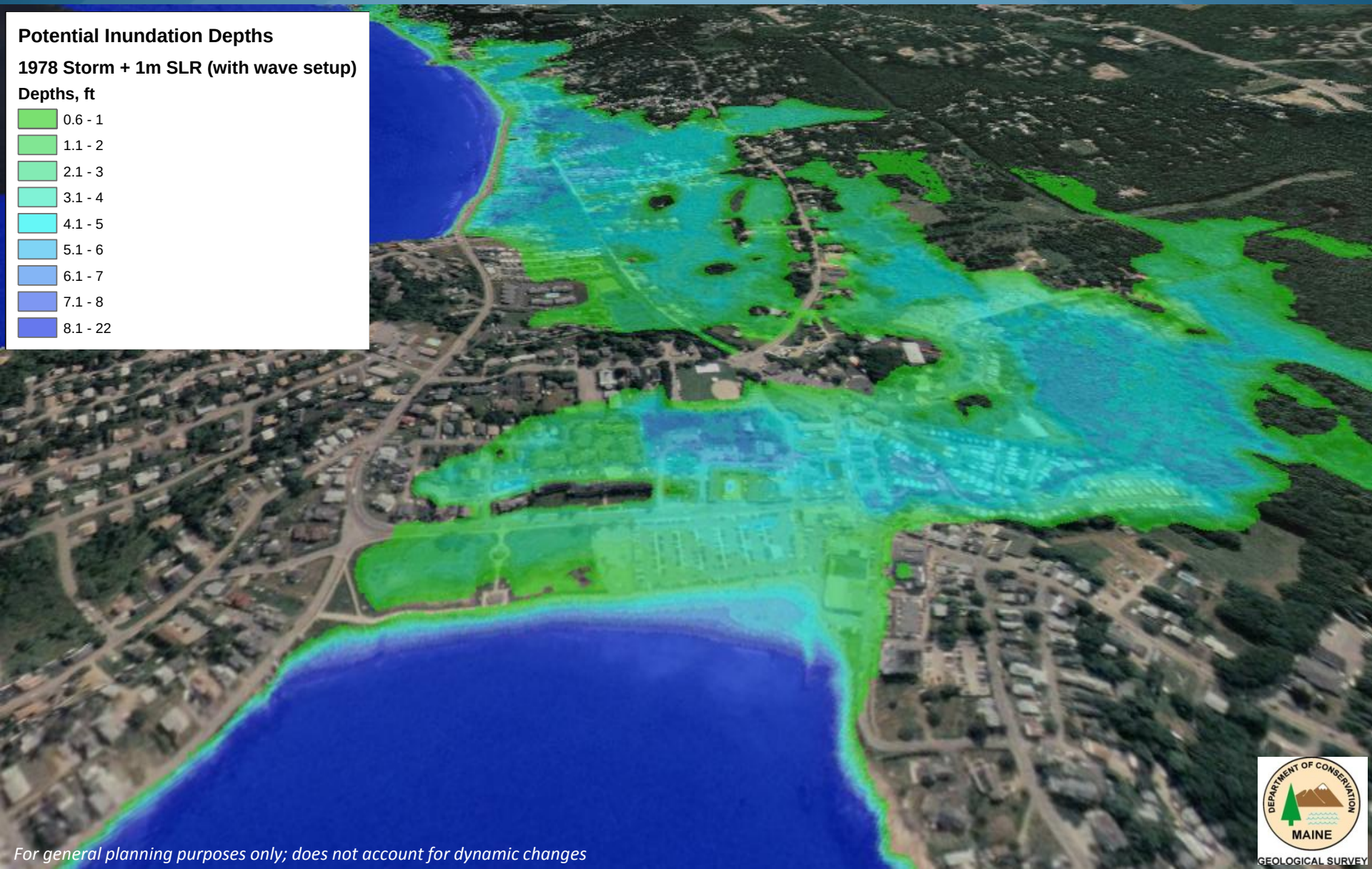
Potential Future Conditions - 1978 storm+1.0 m (plus wave setup of 2.6 feet, 14.8 ft NAVD)



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Critical Infrastructure
York Sewer District Treatment Plant

York Sewer District Treatment Plant
Highest Annual Tide + 0.6 m SLR

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York Sewer District Treatment Plant
Highest Annual Tide + 1.0 m SLR

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York Sewer District Treatment Plant
Highest Annual Tide + 1.8 m SLR

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York Sewer District Treatment Plant
1978 Storm (no wave setup)

For general planning purposes only; does not account for dynamic changes

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York Sewer District Treatment Plant
1978 Storm (2.6 ft wave setup)

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York Sewer District Treatment Plant
1978 Storm + 0.3 m SLR (2.6 ft wave setup)

For general planning purposes only; does not account for dynamic changes

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York Sewer District Treatment Plant
1978 Storm + 0.6 m SLR (2.6 ft wave setup)

For general planning purposes only; does not account for dynamic changes

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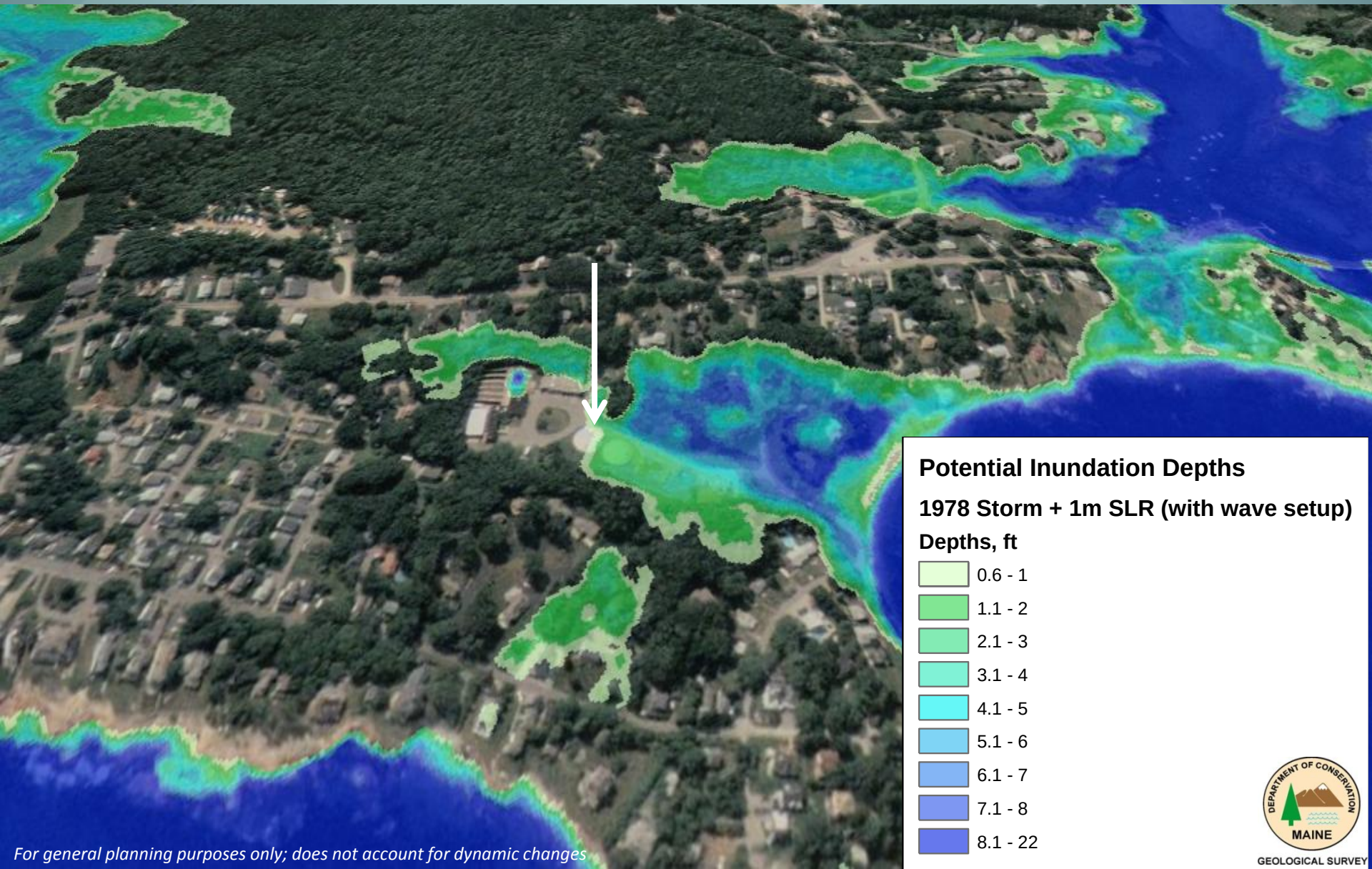
York Sewer District Treatment Plant
1978 Storm + 1.0 m SLR (2.6 ft wave setup)

For general planning purposes only; does not account for dynamic changes

Critical Infrastructure
York Sewer District Treatment Plant



For general planning purposes only; does not account for dynamic changes

Adding Visualization Techniques to help image potential impacts of Sea Level Rise

York, ME
2003 Orthophotograph
100 50 0 100 Meters
N
W
E
S

Existing HAT

Visualization of ~Existing HAT

Visualization of ~HAT plus 0.6 m

Visualization of ~HAT plus 1.0 m

Imagine waves on top of this…
Visualization of ~HAT plus 1.8 m

Implications

Consider using the HAT elevation to simulate static, monthly, tidal flooding that may occur in the future under various SLR scenarios.

***At a minimum*, consider using the base 1978 stillwater elevations with a variety of SLR scenarios to develop a *phased* or *criticality* approach. Instead, consider using the 1978 stillwater elevations *including wave setup* for potential impacts along the open coast and critical infrastructure.**

What Can Towns do to Adapt?

Operating Principles for Our Efforts

- Use the best science and tools for GIS inundation scenarios, but be conservative

  (e.g., 2 feet of SLR by 2100 is probably not enough to plan for, so we are now looking at 1 m or 1.8 meters).
- Adapting to Sea Level Rise will protect you from Storm Surges
- Don’t separate discussion of natural from built environment impacts – keep environmentalists, public works staff, and emergency personnel around the same table

Operating Principles for Our Efforts

- Some Maine communities are willing to go over and above minimum ordinances or regulations – because of their actual experiences with flooding.
- Expect unforeseen delays (e.g. Disputing FEMA FIRM remapping efforts). Expect to take your time!

SLR Policy in Maine…

There is a long history, from way before Al Gore.