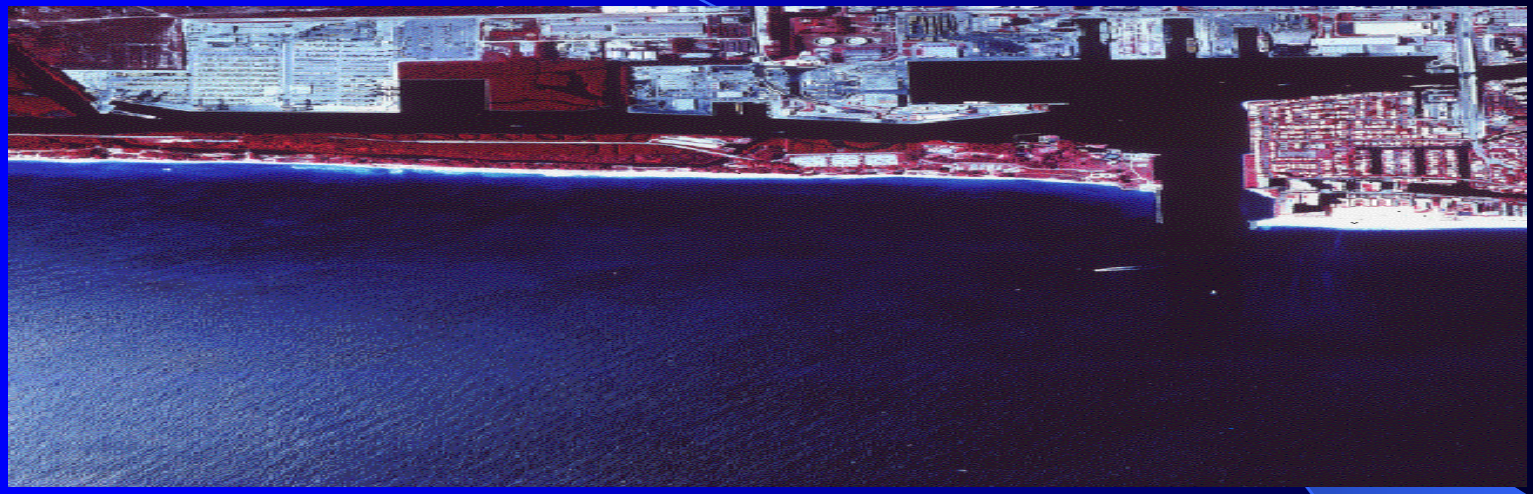
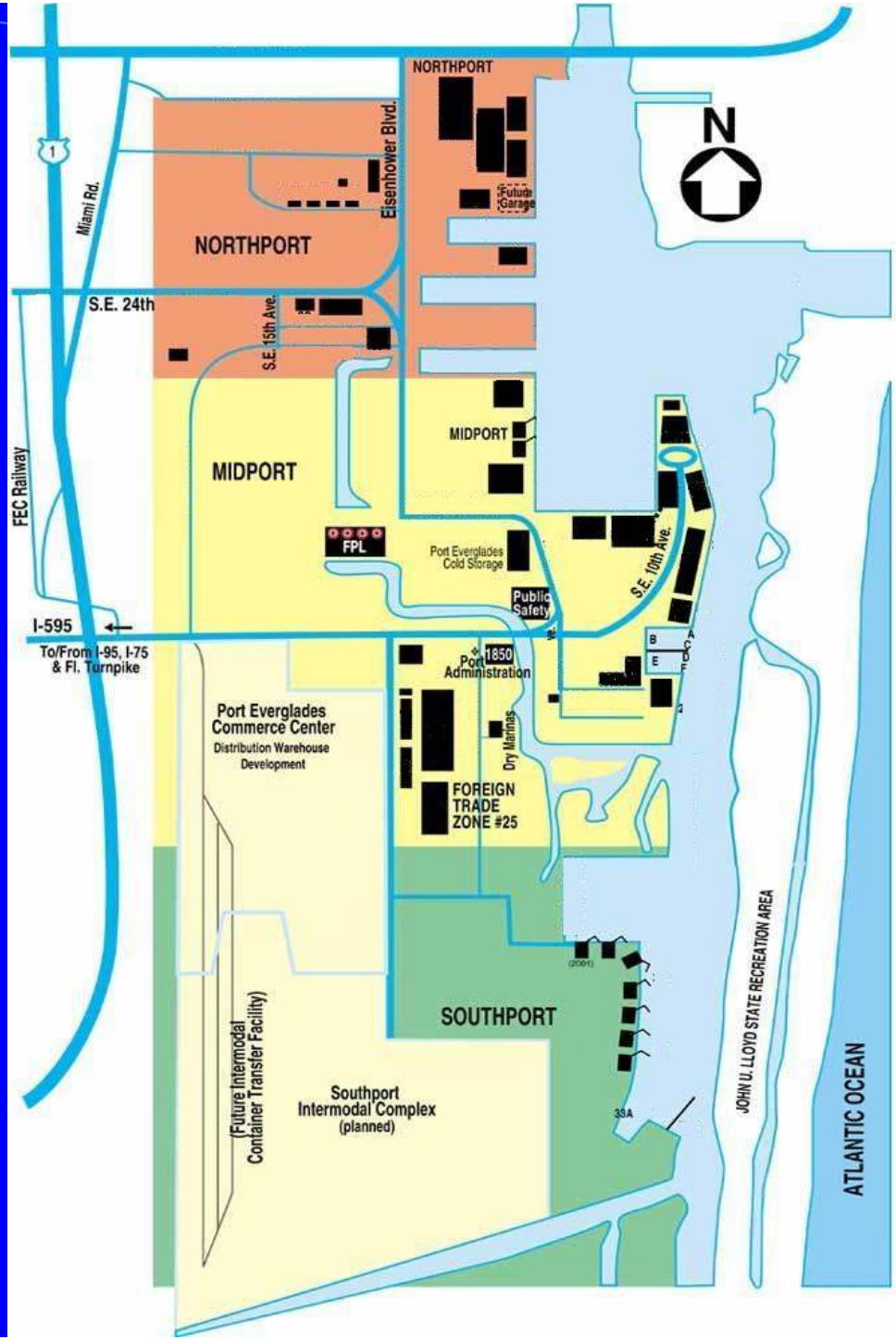
Port Everglades WAM

US Army Engineer District, Jacksonville



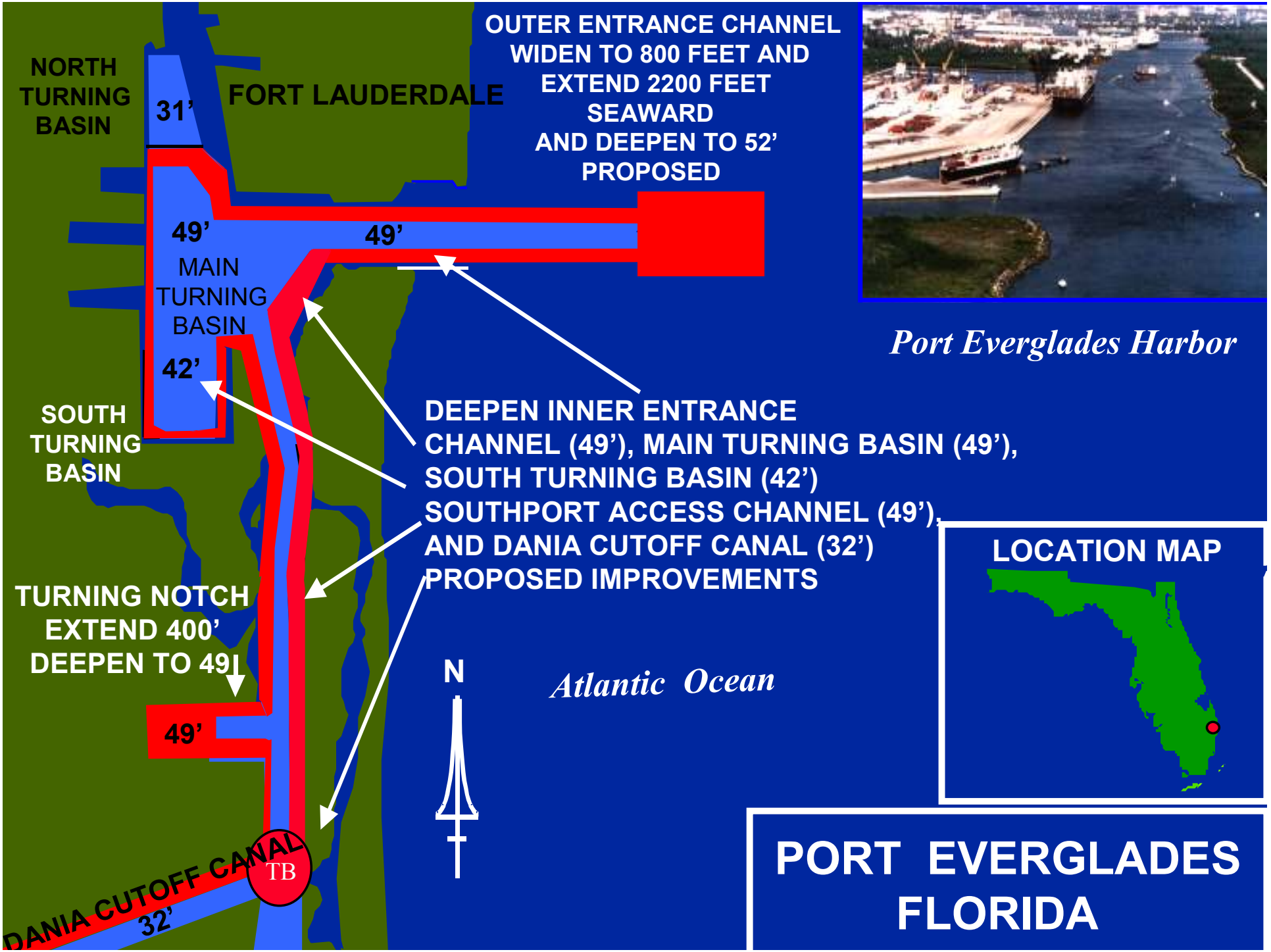

NORTHPORT
N
Miami Rd.
Eisenhower Blvd.
NORTHPORT
Future Garage
S.E. 24th
S.E. 15th Ave.
MIDPORT
MIDPORT
FEC Railway
FPL
Port Everglades Cold Storage
S.E. 10th Ave.
Public Safety
I-595
To/From I-95, I-75 & Fl. Turnpike
Port Administration
1850
Port Everglades Commerce Center
Distribution Warehouse Development
Dry Manifas
FOREIGN TRADE ZONE #25
SOUTHPORT
(Future Intermodal Container Transfer Facility)
Southport Intermodal Complex (planned)
33A
JOHN U. LLOYD STATE RECREATION AREA
ATLANTIC OCEAN

Existing operating characteristics

- Channel depths restrict efficient vessel utilization/loadings
- Narrow channel restricts entry of next-generation container vessels and berthing of largest cruise ships.
- Limited number of berthing areas
- Limited number of turning basins
- Narrow channel restricts vessels to one-way traffic

Evaluated Alternatives

- Without project condition
- With project conditions (combinatorial)
  - Deepening
  - Widener
  - SAC widening
  - Turning Notch (berthing/turning)
  - Dania Canal
  - South Turning Basin


NORTH TURNING BASIN
31'
FORT LAUDERDALE
OUTER ENTRANCE CHANNEL WIDEN TO 800 FEET AND EXTEND 2200 FEET SEAWARD AND DEEPEN TO 52' PROPOSED
49'
49'
MAIN TURNING BASIN
42'
SOUTH TURNING BASIN
DEEPEN INNER ENTRANCE CHANNEL (49'), MAIN TURNING BASIN (49'), SOUTH TURNING BASIN (42') SOUTHPORT ACCESS CHANNEL (49'), AND DANIA CUTOFF CANAL (32') PROPOSED IMPROVEMENTS
TURNING NOTCH EXTEND 400' DEEPEN TO 49
49'
N
Atlantic Ocean
DANIA CUTOFF CANAL
32'
TB
Port Everglades Harbor
LOCATION MAP
PORT EVERGLADES
FLORIDA

WAM is a Simulation Model

- Former Inland Waterway Systems Analysis Program (INSA)
  - Written by CACI, Inc. Alexandria, VA 1975
- Modified/enhanced by LRD Navigation Planning Center over the period 1977-2004
  - Inland and deep-draft versions
- SIMSCRIPT
- Discrete Event Traffic Simulator
- Determines times and costs to complete transits through a system, a restricted reach, lock or turning basin.

Simulation Objectives

- Evaluate proposed improvements
- Estimate shipping times/costs
- Compare performance
- Calculate delay savings

Model Inputs

- System Description
  - Network
  - Vessels
  - Commodities
  - Other Factors
- Shipment List
  - Origin/Destination
  - Equipment Type
  - Commodity/Tonnage
  - Time of Arrival
- Vessel Operating Costs

Model Process

- Schedule all simulated events
- Advance a location indicator through all the elements of the network
- Process each network element based on the passage of simulated time
- Record statistics for each element and shipment as the system clock advances

Model Outputs

- Playback of each shipment (origin, destination, etc.)
- Time by activity (turning, loading, etc.)
- Traffic by reach
- Delays by reach, turning basin, at berth
- Distance traveled/ route choice
- Equipment utilization

Deep-draft WAM Applications

- Panama Canal, 1993
  - Relay lockages
- Soo Locks, 1997
  - Chamber fit, draft constraints
- Charleston Harbor, 1998
  - Tide delays, turning basins, route choice
- Port Everglades, 2003
  - Berthing capacity, safety zones, priority vessels, tug assists
- Tampa Harbor, 2004
  - Anchorage areas, multiple berth calls
  - Other previously developed capabilities