Stevenson Creek Watershed Plan and Project Implementation 1999-2007
Stevenson Creek Watershed Management Plan (WMP)

- The Watershed Management Plan was completed in 2001 with cooperative funding from the SWFWMD and the City of Clearwater.
- Largest and most urbanized watershed within the City of Clearwater.
- Drains 6,286 acres in west central Pinellas County.
- 90% of watershed developed prior to BMP regulation.
Stevenson Creek Proposed Improvements Projects

• The WMP analyzed existing conditions, identified areas with flooding and water quality issues, and proposed projects to improve these issues.
• These projects were prioritized based on feasibility and cost benefit along with many other factors.
• The WMP identified 28 projects within the watershed with a total estimated cost of $28,000,000 in 2001 dollars.
• Glen Oaks was the #1 ranked project in the WMP and was completed in 2006.
• Two additional projects are possible to implement with Glen Oaks complete and are in the Lake Bellevue branch of Stevenson Creek.
• These projects are the Lake Bellevue Stormwater Improvements and the Turner Street Connector.
Lake Bellevue Branch Projects

- The Glen Oaks and the Lake Bellevue project will provide Stormwater attenuation and water quality benefits.
- The Turner Street Connector project will provide additional conveyance between the two projects and alleviate flooding.
Lake Bellevue Project

• The Lake Bellevue Project is permitted and plans are almost ready for construction.
• The project will remove 8 structures from the 100 year flood plain and provide water quality treatment by removing approximately 13,300 lbs of suspended solids and 550 lbs of nitrogen an an annual basis.
Turner Street Connector

- The conceptual design shown is from the WMP.
- The City is hiring an Engineer of Record to complete the design and permitting of this project.
- The project will remove five structures from the 100 year floodplain and reduce flooding on one arterial road, one collector road and two residential streets.
Glen Oaks Project Details

• 31.54-acre City-owned site
• five stormwater management areas totaling approximately 21 acres
• provide flood protection from a 100-year design storm for 33 nearby structures (78 dwelling units)
• provide water quality treatment for 1,193 acres of a highly urbanized tributary drainage area
• create approximately 4.30 acres of vegetated wetland habitat
• Annual Pollutant Removal
  – 27,700 pounds of suspended solids (TSS)
  – 735 pounds of total nitrogen (TN)
  – 328 pounds of total phosphorous (TP)
Glen Oaks Plan View

- 2,070 acre contributing area
- Two in-stream detention facilities
- Two wet detention water management areas.
- 1 dry-detention area
- Seven Three-Chamber Baffle Boxes
- 4.3 acres of created and restored wetlands
Floodwall Design
Floodwall Construction
Floodwall Construction
Floodwall Construction
Labyrinth Weir Design

Labyrinth Weir Construction
Labyrinth Weir Construction
3-Chamber Baffle Box Design

CRITERIA
• Length - 10 to 15 feet
• Width - 2 feet greater than largest inflow pipe
• Preferred L:W ratio- 3:1
• Weir Height - 3 feet
• Weir Invert - Equal to lowest inflow pipe invert
• Pipe cover - per FDOT Standard Index 205.
• Misc Items-screens, manhole covers, etc. per City of Clearwater standards.

REFERENCES
• EPA Stormwater Technology Fact Sheet-Water Quality Inlets
• EPA Stormwater Technology Fact Sheet-Baffle Boxes
• Sedimentation Control Using Two Baffle Boxes in Series- Gordon England, P.E., John Royal
• Baffle Boxes and Inlet Devices for Stormwater BMP's- Gordon England, P.E.
• Physical Modeling of a Stormwater Sediment Removal Box- Ashok Pandit, Ph.D., P.E., Ganesh Gopatakrishnan
3-Chamber Baffle Box Design
Recreational Features

- 360 LF of Boardwalk
- 1 Mile of Paved Multi-Use Trail
- 2 Observation Decks
- 1 Gazebo
- Pedestrian Bridges
- 2 Lighted Soccer Fields
- Pavilion/trailhead
- Playground
- Misc Park Amenities
Stevenson Creek Estuary Restoration

- USACOE and the City of Clearwater have been working on the project for 7 years under the 206 aquatic restoration program.
- The project has a conceptual permit from FDEP and the plans are at 90%.
- The project is funded and expected to go out to bid in 07.
Estuary Restoration Benefits

- The project will remove 115,000 cubic yards of sand and organic muck and increase the tidal volume.
- Exotic vegetation will be removed and native plants will replace them.
- 3.2 Acre mangrove shelf will provide habitat and water quality benefits.
Cooperative Funding Partners
The Southwest Florida Water Management District
Florida Department of Environmental Protection
United States Army Corps of Engineers