Draft report is posted on the District Website at: watermatters.org

Click on the Minimum Flows and Levels Documents and Reports link on the Documents and Publications Page.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2008</td>
<td>Project initiated at the request of the City of Temple Terrace</td>
</tr>
<tr>
<td></td>
<td>River Watch Task Force</td>
</tr>
<tr>
<td>February 2009</td>
<td>Draft project report completed and presented to Task Force, Hillsborough River Interlocal Planning Board and District Governing Board</td>
</tr>
<tr>
<td>March 2009</td>
<td>Draft project report presented to Hillsborough County City-County Planning Commission</td>
</tr>
<tr>
<td>March 2009</td>
<td>Rule amendments concerning clarification of language dealing with the establishment of management levels for the middle Hillsborough River and other water-supply reservoirs presented to the Governing Board – Board delayed action in response to a request from the City of Temple Terrace</td>
</tr>
<tr>
<td>May 2009</td>
<td>Governing Board withdrew proposed rule amendments, based on comments from the Department of Environmental Protection</td>
</tr>
<tr>
<td>June 2009</td>
<td>Draft project report presented to Hillsborough River Basin Board and discussed with consultant for Temple Terrace River Watch Task Force</td>
</tr>
</tbody>
</table>
Hillsborough River and Tampa Bypass Canal
Middle Hillsborough River – Augmentation

Water Use Permit No. 20002062, Identification No. 10
& Water Use Permit No. 206675, Identification No. 1

Withdrawal (mgd) vs Year

- Tampa Bypass Canal
- Sulphur Springs

Year: 1980 to 2010
Withdrawal: 0 to 35 mgd
Middle Hillsborough River Bottom Profile and Hypothetical Water Surface Profile without the Dam

Elevation (feet above NGVD29)

Distance Upstream from the City of Tampa Dam (miles)
Fish Passage
Wetted Perimeter
Days of Floodplain Inundation
Middle Hillsborough River Bottom Profile and Hypothetical Water Surface Profile At Full Pool

Dam crest elevation = 22.5 feet

- Dam crest elevation = 22.5 feet
- 17.9 Feet
- 19.1 Feet

Elevation (feet above NGVD29)
Distance Upstream from the City of Tampa Dam (miles)

- Dam
- 40th Street
- 56th Street
- Bullard Parkway
- Fowler Avenue
- Fletcher Avenue
- Interstate 75
Middle Hillsborough River Control Point

Minimum = 17.87 Feet
Difference Between Water Levels at the Dam and Fowler Avenue (Recent Data)
Water Levels at the Dam and Fowler Avenue

\[ y = 0.5115x + 11.353 \]
\[ R^2 = 0.3377 \]

Elevation at Fowler (ft above NGVD29)
Elevation at Dam (ft above NGVD)

\[ N = 10,243 \]
Water Level Fluctuations in the Middle River are Unlike Fluctuations Upstream
Water Level Fluctuations in the Middle River are More Similar to Area Lakes

Monthly Mean Water Surface Elevation (ft above NGVD29)

- Lake Magdalene
- Egypt Lake
- Lake Carroll
- Bellows Lake (East Lake)
- Hillsborough River near Tampa

Date

Cypress on the Middle River
Minimum Lake Levels - Cypress Standard

- Normal Pool
- Minimum Lake Level: 1.8 ft
- High Minimum Lake Level: 0.4 ft
## Middle Hillsborough River

**Theoretical Minimum Lake Levels and Six-Year P10 and P50 Elevations**

<table>
<thead>
<tr>
<th>Year</th>
<th>Theoretical High Minimum Lake Level</th>
<th>6-Yr P10</th>
<th>6-Yr P50</th>
</tr>
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<tr>
<td>1989</td>
<td>20.8</td>
<td>21.0</td>
<td>21.2</td>
</tr>
<tr>
<td>1990</td>
<td>21.4</td>
<td>21.6</td>
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<td>1993</td>
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<tr>
<td>2007</td>
<td>28.2</td>
<td>28.4</td>
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<tr>
<td>2008</td>
<td>28.6</td>
<td>28.8</td>
<td>29.0</td>
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</tbody>
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The diagram shows the theoretical high minimum lake level and the six-year P10 and P50 elevations for the Middle Hillsborough River from 1990 to 2008.
Other Significant Change Standards

- Species Richness
- Basin Connectivity
- Recreation/Ski
- Aesthetics
- Dock-Use
- Lake Mixing
Other Significant Change Standards

Species Richness

Basin Connectivity

Recreation/Ski

Aesthetics

Dock-Use

Lake Mixing
Monthly Mean Middle River Water Surface Elevations and Annual Average Withdrawals - 1946 through 2007
Augmentation of the middle river with water from Sulphur Springs initiated.
First water-use permit issued to City of Tampa for middle river withdrawals.
Morris Bridge Well Field becomes operational.
Tampa Bypass Canal system completed.
Augmentation initiated with water from the Tampa Bypass Canal system.
Permanent pumping facility constructed for augmentation with water from the Tampa Bypass Canal system.
Aquifer Storage and Recovery system initiated by City of Tampa.
Tampa Bay Water formed; Partnership Agreement capped withdrawals from middle river at 82 million gallons per day.
Executive Director Order No. SWF 00-16 authorized increased augmentation with water from the Tampa Bypass Canal system.
Executive Director Order No. SWF 00-17 authorized increased augmentation with water from Sulphur Springs.
Executive Director Order No. SWF 00-26 authorized augmentation with water from Morris Bridge Sink.
Minimum levels and recovery strategy adopted for lower Hillsborough River.
Executive Director Order No. SWF 00-57 authorized augmentation with water from Morris Bridge Sink.
Executive Director Order No. SWF 01-22 authorized increased augmentation with water from Sulphur Springs.
15 2006-May Executive Director Order No. SWF 06-31 authorized increased augmentation with water from the Tampa Bypass Canal system.

16 2006-May Executive Director Order No. SWF 07-3 authorized increased augmentation with water from the Tampa Bypass Canal system.

17 2007-Aug Revised minimum flows adopted for lower Hillsborough River; minimum flows adopted for Sulphur Springs, Tampa Bypass Canal; Recovery Strategy for lower river also adopted.

18 2007-Dec Minimum flows adopted for upper Hillsborough River and Crystal Springs

19 2008-Jan Pumping from Tampa Bypass Canal initiated as part of Lower Hillsborough River Recovery Strategy.

20 2008-Oct Executive Director Order No. SWF 08-043 authorized increased augmentation with water from the Tampa Bypass Canal system.

21 2008-Oct Tampa Bypass Canal Middle Pool pipeline study completed.

22 2008-Dec Executive Director Order No. SWF 08-043 amended for increased augmentation with water from the Tampa Bypass Canal system.
Summary of Water Quality Data Review

- Middle Hillsborough River may be classified as eutrophic or hypereutrophic based on concentrations of phosphorus, nitrogen and chlorophyll and water transparency included in the United States Geological Survey and District data sets.

- ~70% of the 4,690 dissolved oxygen concentration measurements in the United States Geological Survey and District data sets were below state standard of 5.0 mg/L.

- Low dissolved oxygen concentrations may be associated with anthropogenic pollutant loading or natural phenomena, including inputs of organic matter from floodplain wetlands and oxygen depletion in deeper waters within the system.
Water Quality Standards and Water Body Impairment

- Final 2009 Verified List developed by the Department of Environmental Protection identifies the Hillsborough Reservoir as impaired due to low dissolved oxygen concentrations with total phosphorus identified as the causative pollutant.

- To date, no Total Maximum Daily Loads addressing impairment of middle River or Cow House Creek have been finalized, although some draft recommendations have been developed.

- Upon development of TMDLs, a Basin Management Plan will be developed by the Department to restore the Hillsborough Reservoir.
Rules Clarification
-Rule 40D-8.031, Florida Administrative Code-

40D-8.031 Implementation.

(1) No Minimum Flows, Minimum Levels or Guidance Levels shall be prescribed for any reservoir or other artificial structure which is located entirely within lands owned, leased, or otherwise controlled by the user, and which require water only for filling, replenishing, and maintaining of the water level thereof, provided however:

(a) That Chapter 40D-2, F.A.C., shall apply to the use of water for such filling, replenishing, and maintaining of the water level, and

(b) That the High Guidance Level, determined pursuant to the procedures set forth in Rule 40D-8.624, F.A.C., may be established for any lake determined by the Board to be in the public interest.

(2) No Minimum Flows, Minimum Levels or Guidance Levels shall be prescribed for Lake Manatee in Manatee County, Evers Reservoir in Manatee County, the City of Tampa Reservoir on the Middle Hillsborough River in Hillsborough County, Shell Creek Reservoir above the Hendrickson Dam in Charlotte County and the Peace River/Manasota Regional Water Supply Authority Reservoir in DeSoto County.

(3) – (5) No change.

Specific Authority 373.044, 373.113, 373.171, F.S. Law Implemented 373.042, 373.0421, 373.216, 373.219, 373.223, 373.413, 373.414, 373.416, F.S. History – New 6-7-78, Amended 10-16-78, 1-22-79, Formerly 16J-8.03, Amended 3-23-81, 8-7-00, 2-18-08, ______.
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Questions?
For More Information Contact

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