

Lake Jesup Water Quality: Before and After TMDL/BMAP

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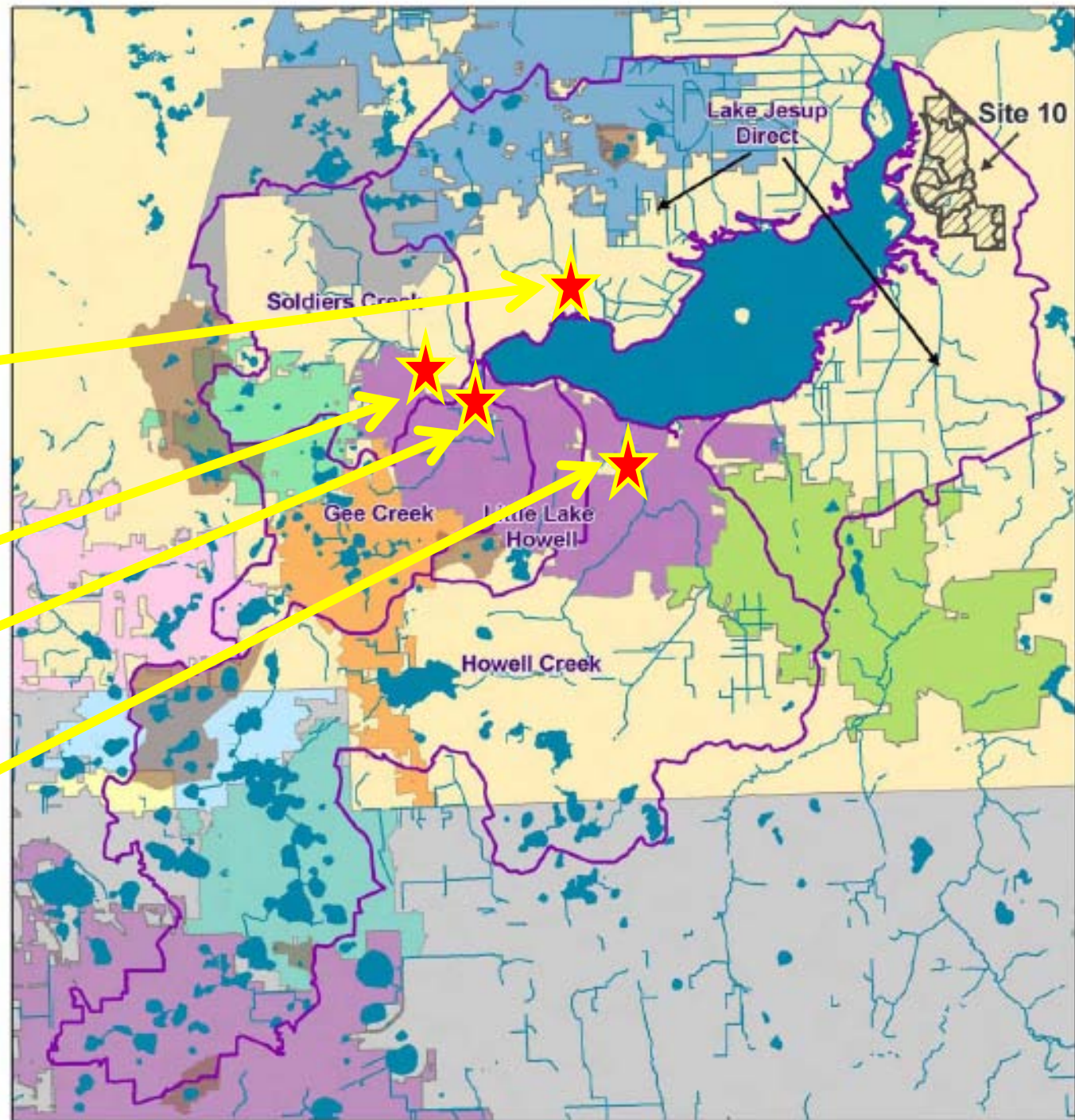
Sample Sites

Six Mile Creek
and Sanford
Avenue Canal

Soldier Creek

Gee Creek

Howell Creek



Howell Creek

~1995 – 2000 vs ~2008 - 2012

- Water levels
 - Stage & discharge no different
- TP significantly lower
 - Concentration: 0.12 → 0.09 mg/L P
 - Load: 7.3 MT/yr → 4.9 MT/yr
 - 2.4 MT TP/yr reduction



Howell Creek

~1995 – 2000 vs ~2008 - 2012

- Water levels
 - Stage & discharge no different
- TP significantly lower
 - Concentration: 0.12 → 0.09 mg/L P
 - Load: 7.3 MT/yr → 4.9 MT/yr
- **PO4 significantly lower**
 - **Concentration: 0.07 → 0.04 mg/L P**
 - **Almost all of reduction from PO4**



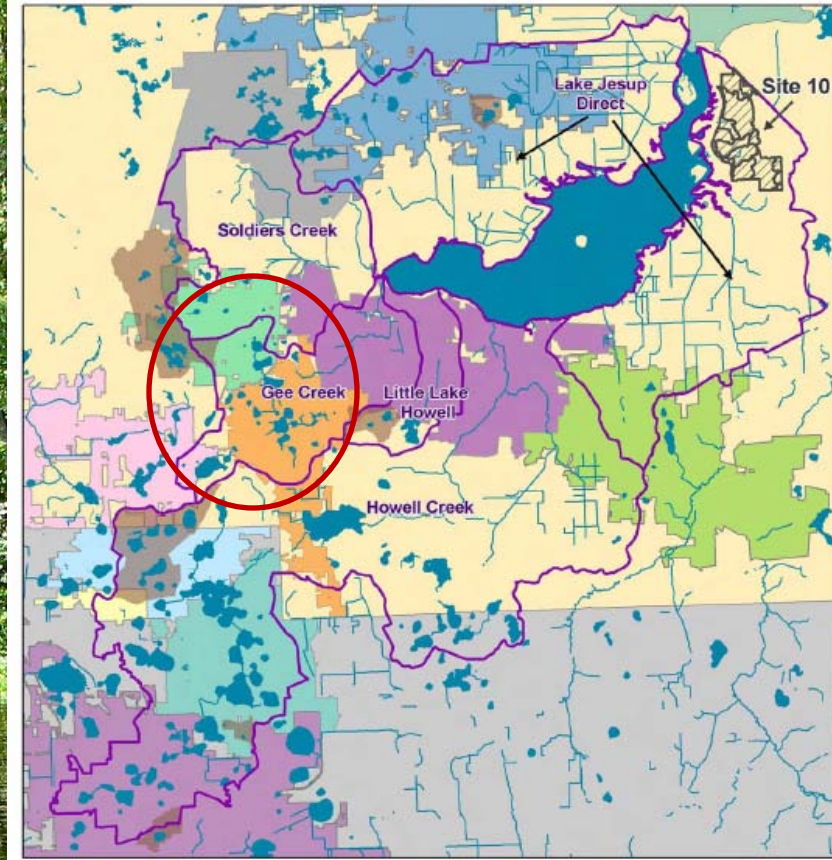
Howell Creek

~1995 – 2000 vs ~2008 - 2012

- 2.4 MT/yr reduction on average
- 33% of Howell Creek TP load reduced
- < 25% of required external reductions
- Howell Creek BMAP projects completed: 1.8 – 2.9 MT/yr estimate



Soldier/Gee Confluence



Soldier Creek

~1995 – 2000 vs ~2009 - 2012

- Water levels
 - Stage & discharge no different
- TP - 0.144 mg/L P
 - TP no difference in concentration
- PO₄ – 0.100 mg/L P
 - PO₄ unchanged



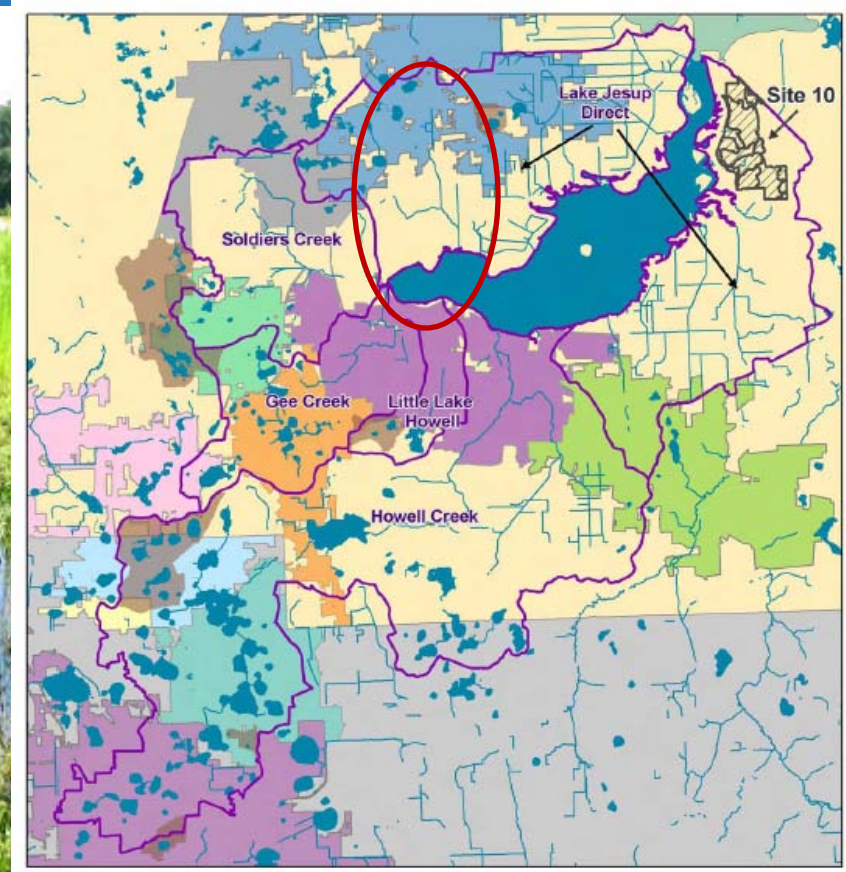
Gee Creek

~1995 – 2000 vs ~2009 - 2012

- Water levels
 - Stage significantly lower but discharge not statistically different
- TP – 0.118 mg/L P
 - TP no difference
- PO4 – 0.07 mg/L P
 - PO4 no difference



Six Mile Creek/Sanford Ave Canal



6-Mile Creek

~1995 – 2000 vs ~2009 - 2012

- Water levels – no data
- TP: 0.175 mg/L P
 - TP unchanged
- PO4: 0.109 mg/L
 - PO4 unchanged



Jesup Whole Lake

~1995 – 2004 vs ~2004 - 2012

- Water levels
 - Stage significantly lower post TMDL
- TP - 0.159 mg/L P
 - TP unchanged
- Chl a: 77 mg/m³ 117 mg/m³
 - Chl a significantly higher
- PO₄: 0.014 mg/L P
 - PO₄ unchanged



Jesup Whole Lake

~1995 – 2004 vs ~2004 - 2012

- **Phytoplankton diversity has dropped**
 - **Almost no diatoms in water column**
 - **Dropped from 9 dominant phylum to 4**
- **Cyanophyta abundance is higher**
 - **2 – 3 orders of magnitude**
 - **Cylindrospermopsis became dominant genera in 2007**



A Ways To Go

Most verified impaired waters are here, but the logistic curve defining required reductions is different for every water body

