

SPRINGFIELD'S QUEST FOR A SUPPLEMENTAL WATER SUPPLY



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AGENDA

- ▶ Need for Supplemental Supply
- ▶ History of Lake II
- ▶ Alternatives
- ▶ Benefits of Lake II
- ▶ Going Forward



IS A SUPPLEMENTAL SUPPLY NEEDED?

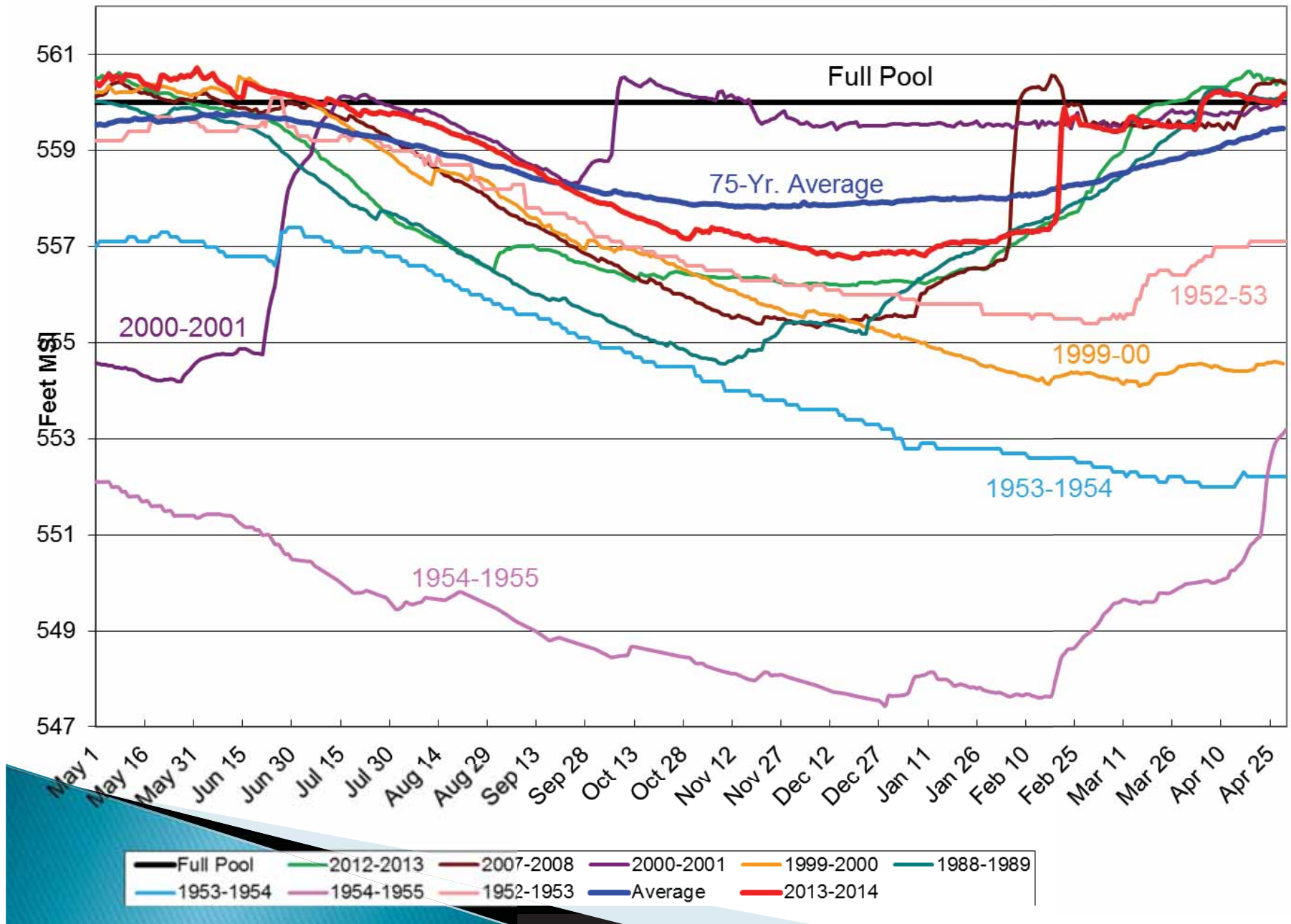
- ▶ Restrictions in 2012, 2000, 1988
- ▶ ISWS states Lake Springfield Supply is an Inadequate System
- ▶ ISWS states currently Lake Springfield with 50% probability could not meet current demands
- ▶ Operation of Power Plants in jeopardy



1950's DROUGHT



CWLP - Lake Elevations



HISTORICAL OVERVIEW

- ▶ Lake Springfield Constructed 1932-1935
- ▶ Drought of 1953-1955 increases drought awareness and concerns over adequacy of water supply.
- ▶ 1965- Lake Springfield II was first recommended after review of various alternatives
- ▶ 1965-1977- Preliminary Lake Design and Land Acquisition occurs. Project interest declines and progress is halted



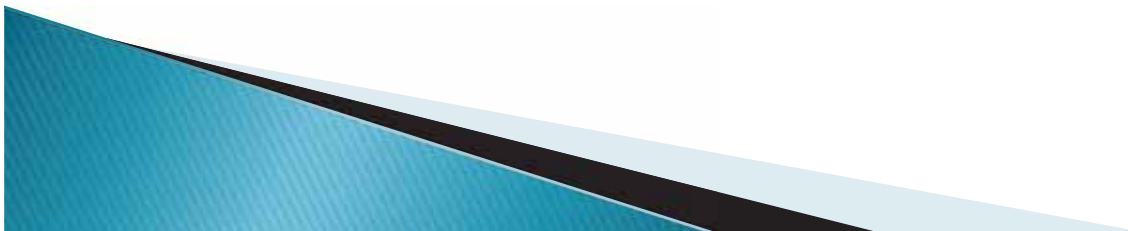
HISTORICAL OVERVIEW

- ▶ October 1988- EWSP hearing with IPCB for variance. Variance renewed 1995, 2000 and 2007. IPCB tells CWLP to move forward with permanent long-term water supply planning.
- ▶ December 1988- Ordinance to move forward with Lake II
- ▶ July 27, 1989-Permit Application submitted to Corps and Bonds issued for project start-up



HISTORICAL OVERVIEW

- ▶ October 1993- First draft of EIS submitted to Corps
- ▶ August 1994- Corps responds requests additional information
- ▶ May 1998- Revised Draft EIS to Corps
- ▶ April 1999- Corps publishes EIS



HISTORICAL OVERVIEW

- ▶ November 2000- Corps publishes Final EIS
- ▶ Feb. 2001 - Public Hearing held by Corps
- ▶ March-May 2001 - Corps begins formulating Record of Decision- Corps needs IEPA Section 401 permit.



HISTORICAL OVERVIEW

- ▶ Sept. 2001 - IEPA specifics issues related to upstream sewage treatment plants
- ▶ Nov 2001 - Aug. 2002 - Conduct studies on sewage treatment plants
- ▶ March 2007 Supplied requested information to Corp and IEPA. Corps using info to prepare update to FEIS and IEPA to publish anti-deg. assessment.



HISTORICAL OVERVIEW

- ▶ CWLP Purchased Gravel Pit in 2010
- ▶ Dec. 2010- Corps issues letter to City informing permit is being withdrawn
 - Mandated to study gravel pits
 - Required to update studies (Water Demand Analysis)
 - Required to update cost estimates of alternatives.



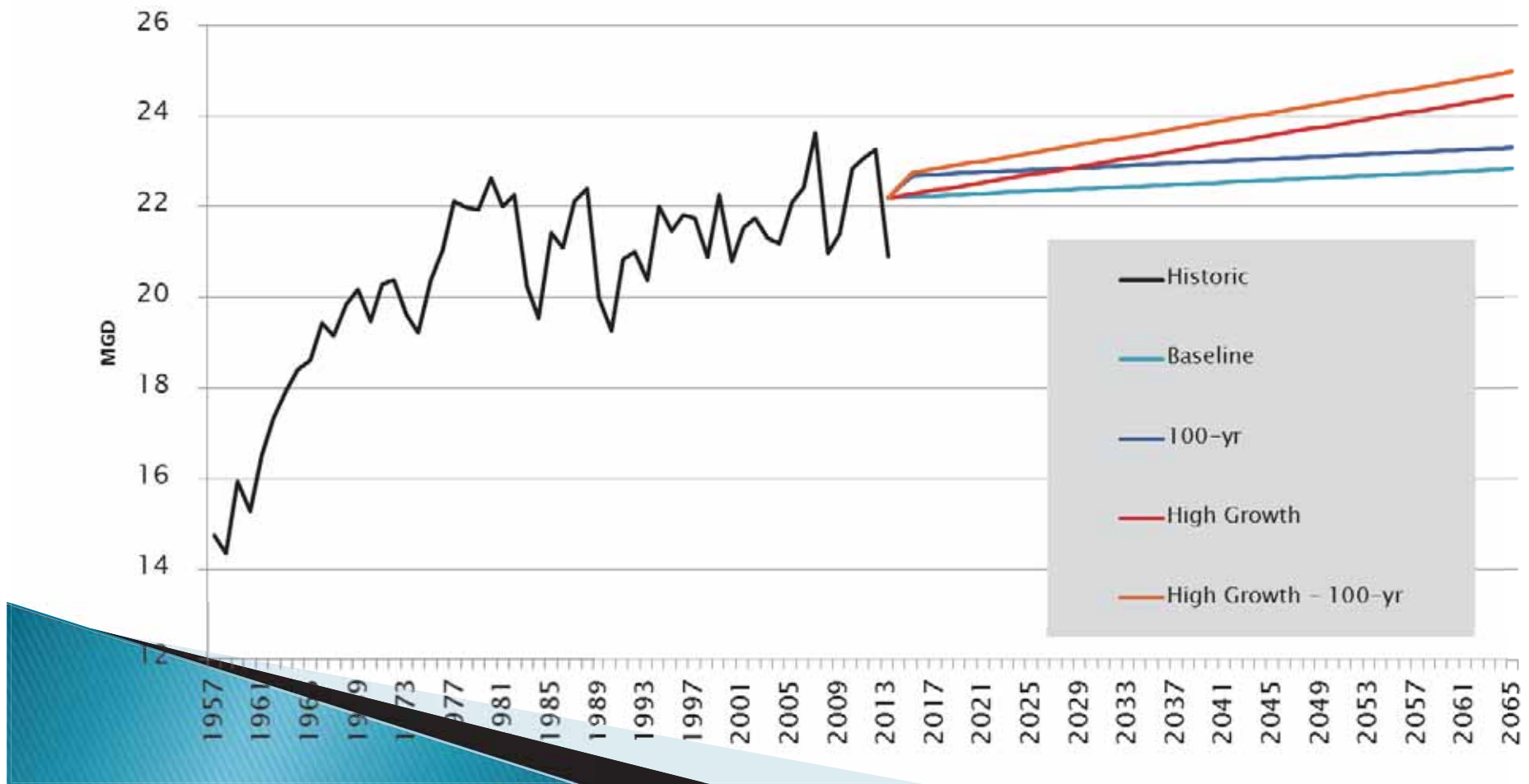
WATER DEMAND ANALYSIS

- ▶ Hired CDM Smith - 2013
- ▶ Project Water Demand for 50 yrs. (2065)
- ▶ Collect data, perform detailed analysis
 - Data Sources
 - CWLP
 - Springfield Sangamon County Regional Planning Commission
 - National Weather Service



WATER DEMAND ANALYSIS

CWLP Forecast Scenarios of Annual Average Demand in MGD



WATER DEMAND ANALYSIS

<u>All numbers in mgd</u>	2012 Annual Average Pumpage	Future 2065 Demand CDM Study
Potable Water Demand	23.2	25.6
<u>ADDITIONAL DEMANDS</u>		
Power Plant Use of Lake Water	9.3	5.0
Increased South Fork Pumpage	-1.0	-1.0
Future Wholesale Demand		2.0
Future Industrial Demand		2.0
Growth Uncertainty		1.0
Net Effect of New Demands Assumptions	+8.3 (31.5)	+9.0 (34.6)
Yield of Lake Springfield	23.3	23.3
Demand - Yield = Drought Needs	$31.5 - 23.3 = 8.2$	$34.6 - 23.3 = 11.3$



ALTERNATIVES

- ▶ Sangamon River Valley Wells and Gravel Pits
- ▶ Havana Lowlands Well Fields
- ▶ Illinois River Valley Well Fields
- ▶ Hunter Lake



Sangamon River Valley Wells and Gravel Pits

- ▶ CWLP performed Bathymetric surveys on all gravel pits
- ▶ Hired Layne Hydro to perform pump test
- ▶ Pump test proved inadequate water available from wells and gravel pits without affecting neighboring wells (1.6 mgd)
 - Riverton, SSWC, Mechanicsburg/Buffalo, Dawson



HAVANA LOWLANDS WELL FIELDS

- ▶ Located near Mason City in eastern portion of Mahomet Aquifer
- ▶ Wells fall within the Imperial Valley Water Authority District
- ▶ 12 mgd – 6 wells, 2 pump stations, 2 tanks and over 38 miles of 30" main- Total Capital Cost- \$122,044,000.
- ▶ 17.75 mgd – 10 wells - 2 well fields, 4 pump stations, 4 tanks and over 47 miles of 36" main- Total Capital Cost-\$183,120,000.



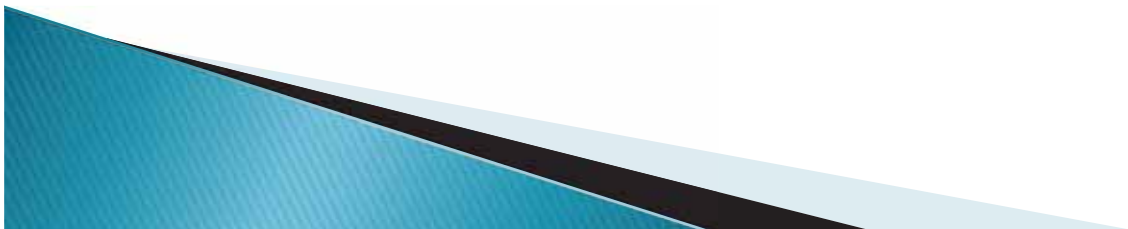
ILLINOIS RIVER VALLEY WELL FIELDS

- ▶ Located in Illinois River Valley Aquifer
- ▶ Located along the Illinois River approximately 7 miles south of US Rt. 36
- ▶ Radial Collector Wells, 4 storage tanks, 4 pump stations, over 56 miles of water main.
- ▶ 12 mgd - Total Capital Cost-\$150,265,000.
- ▶ 17.75 mgd - Total Capital Cost-\$199,948,000.



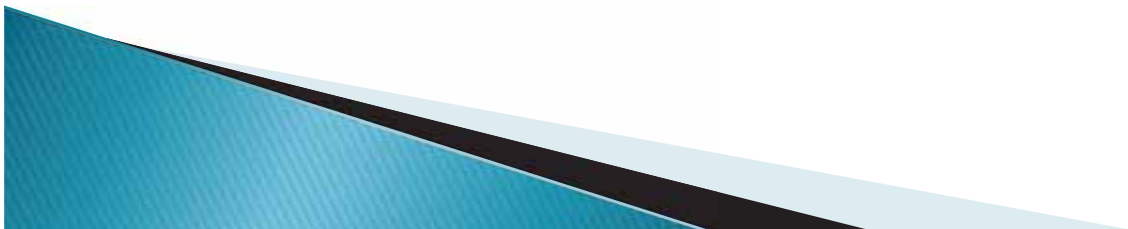
HUNTER LAKE

- ▶ Located southeast of Lake Springfield
- ▶ Capacity 15.3 BG, 3,010 acres, 21.3 mgd drought yield
- ▶ Own 7,148 acres
- ▶ Need to purchase approximately 660 acres
- ▶ Minimal Equipment Maintenance
- ▶ Use existing South Fork Pump Station to transfer water to lake.
- ▶ Total Cost \$108,273,900



COST ANALYSIS

	Hunter Lake 21.3 mgd	Havana 12 mgd	Havana 17.75 mgd	Illinois River 12 mgd	Illinois River 17.75 mgd
Total Capital \$	\$108,273,900	\$122,013,000	\$182,785,000	\$150,265,000	\$199,948,000
Annual Maintenance \$	\$120,000	\$319,000	\$406,000	\$356,000	\$440,000
Capital \$/mgd	\$5,083,000	\$10,168,000	\$10,298,000	\$12,523,000	\$11,265,000
18-Mo. Operational \$	\$386,000	\$2,070,000	\$3,479,000	\$3,363,000	\$4,278,000



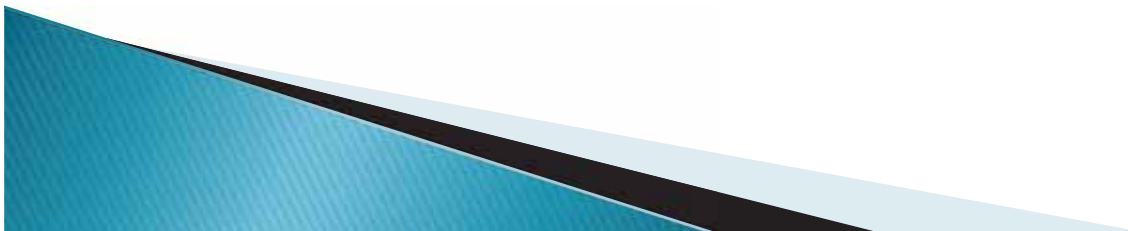
Benefits of Hunter Lake

- ▶ Supplemental water supply for future
- ▶ Recreational benefits -fishing and hunting habitats
- ▶ Continuous Operation of Power Plants
- ▶ Economic Development-Other communities water supplies are “At Risk” - where will businesses go?
 - Decatur, Bloomington, Danville



GOING FORWARD

- ▶ Partnership with IDNR
 - Manage lake as a wildlife preserve
 - No development
 - Help with permitting and studies



GOING FORWARD

- ▶ Meet with Corps and IEPA
- ▶ Provide updated Water Demand Analysis and Cost of Alternative
- ▶ Complete out of date studies
 - ▶ Wetland delineation
 - ▶ Bat Survey
 - ▶ Mitigation Plans
- ▶ Complete Supplemental EIS
- ▶ Obtain Permits

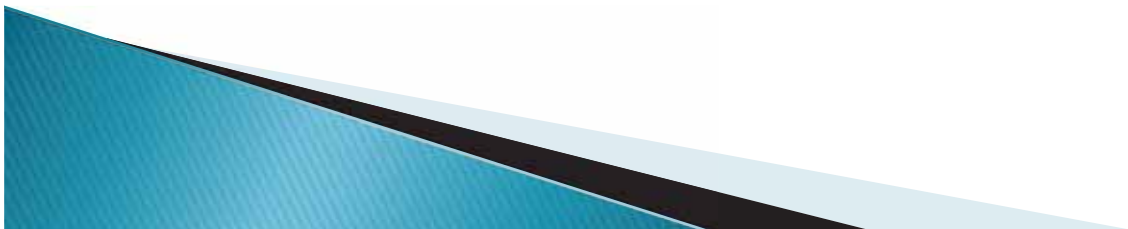


QUESTIONS



CONSERVATION

- ▶ Able to reduce water use by 10-20%
- ▶ High fixed cost business
 - Debt service, labor, maintenance all fixed
 - Chemical and electricity could be reduced
- ▶ Use about 22 mgd- reduce to 18-20 mgd
- ▶ Increase rates so you can use less water?



DREDGING LAKE SPRINGFIELD

- ▶ 1987-1990 dredged 3.2 M yds³
- ▶ Cost \$7.8 M
- ▶ Gained 650 MG
- ▶ Need 12 MGD during drought
- ▶ Would need to dredge 52 M yds³ or 7.7 ft.
- ▶ from entire lake
- ▶ Dredge at \$10/yd³= \$520,000,000

▶ Not cost effective

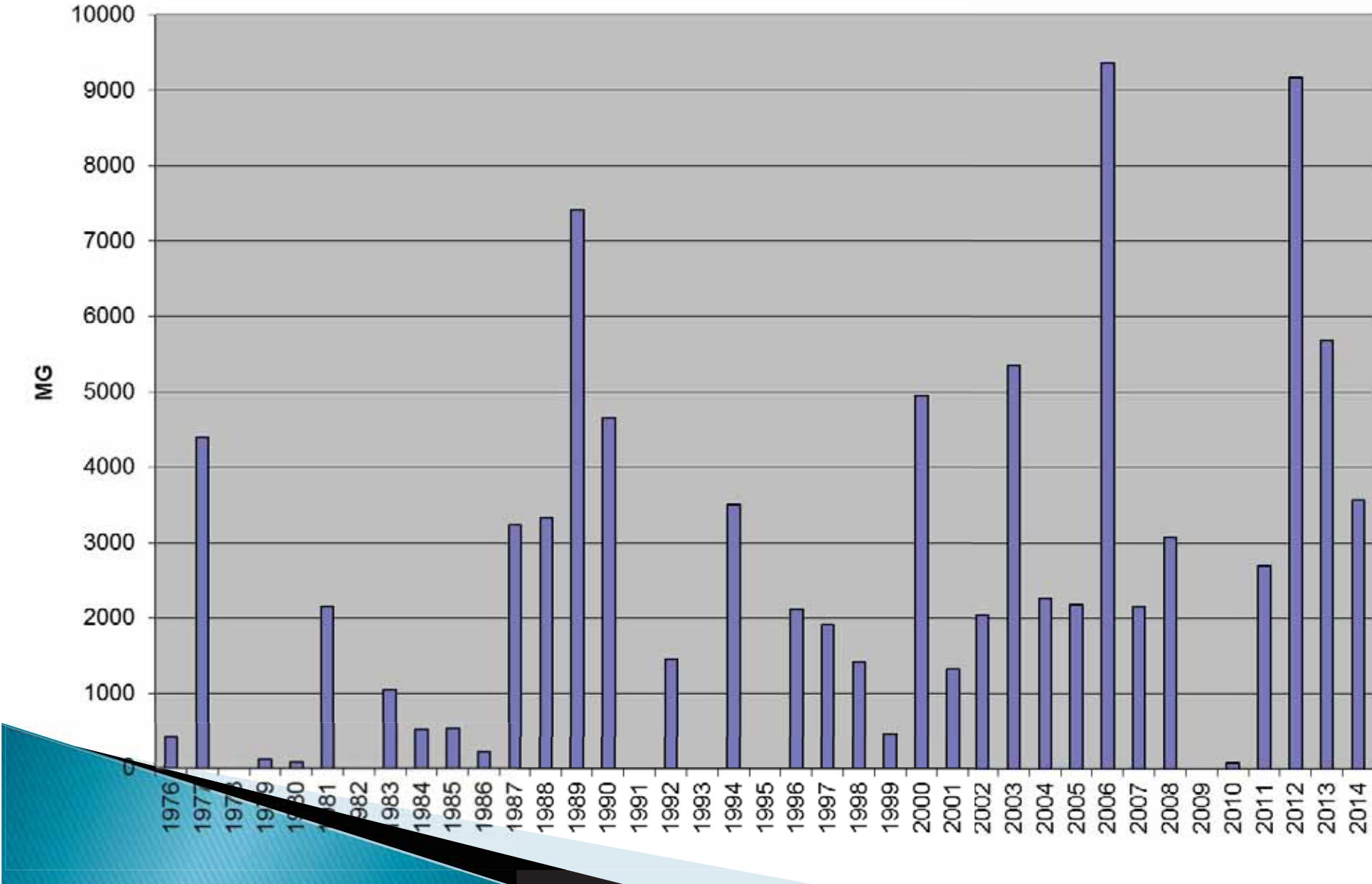


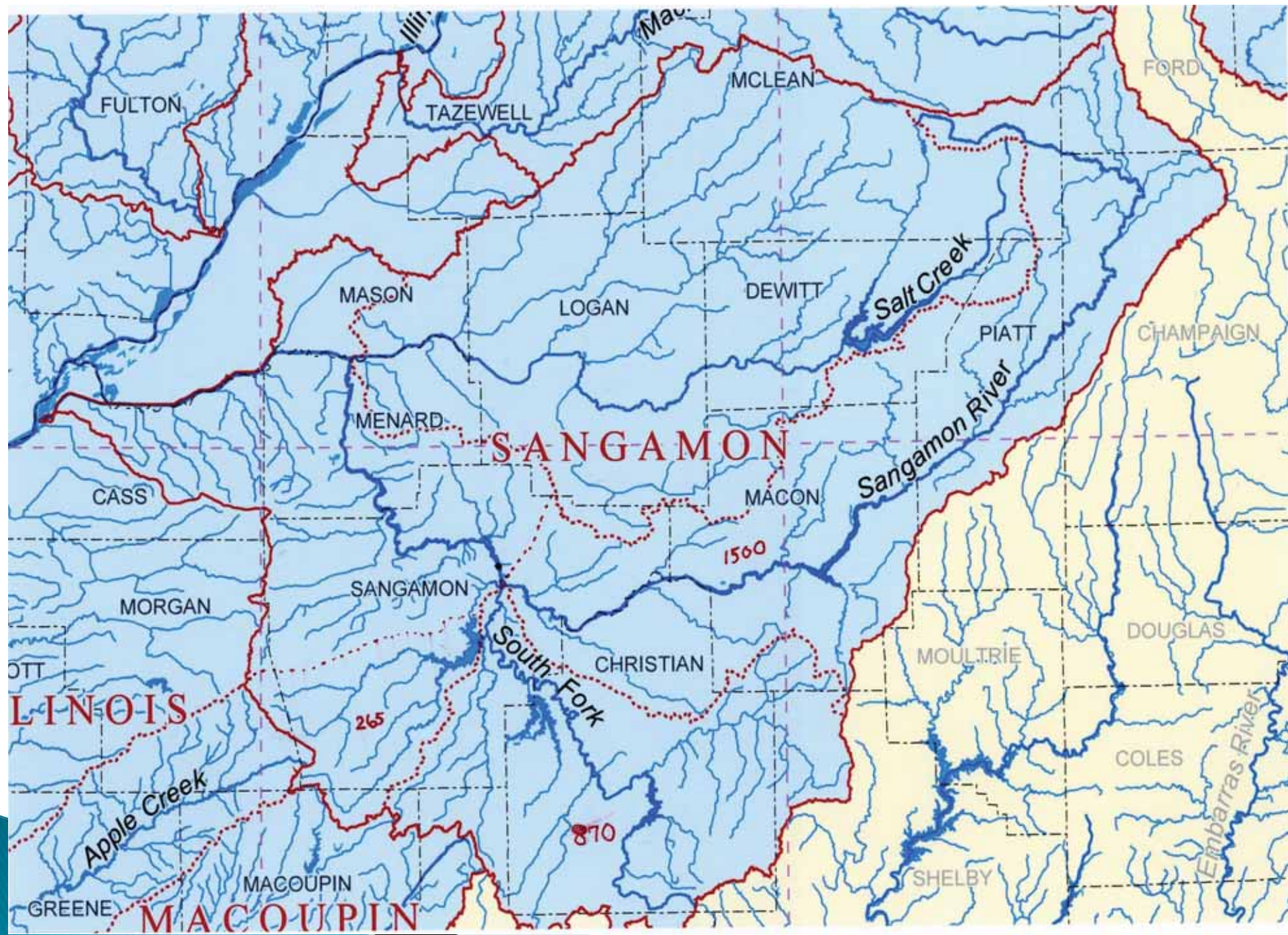
SMSD Effluent

- ▶ IEPA does not allow- requires site specific permit- difficult to obtain
- ▶ Sugar Creek Plant not enough water
- ▶ Spring Creek Plant marginal water
- ▶ Numerous water quality issues
- ▶ Extensive additional treatment would be required- Clarification, Ultrafiltration, RO, UV,
- ▶ YUCK Factor



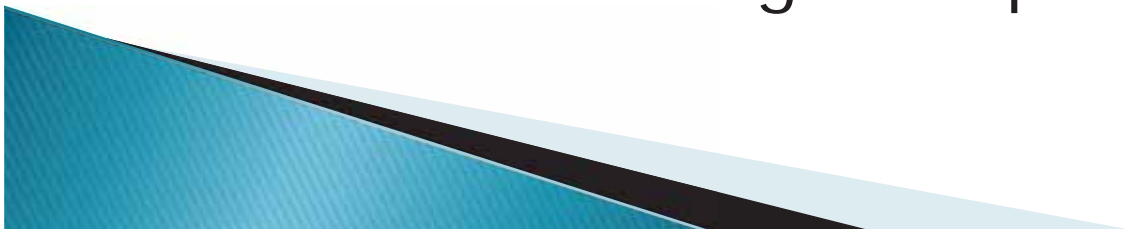
Yearly South Fork Pumpage





Hunter Lake Land

- ▶ 7,062.85 Hunter Lake Total Acreage Owned
- ▶ Purchased 5,595 acres for \$11.6 M in 1970' s
- ▶ Purchased 1,146 acres for \$5.7 M in 1990' s
- ▶ 360 Total Hunter Lake Parcels Owned
- ▶ 35 parcels remaining to be purchased
- ▶ 660 acres remaining to be purchased





CWLP Water Rates In Review

MONTHLY RESIDENTIAL RATE COMPARISON
BASED ON 10 UNITS/MG (7,480 GALLONS) WITH A 5/8" METER
INCLUDES MONTHLY SERVICE CHARGE

SPRINGFIELD	\$28.00	DECATUR	\$48.07
QUINCY	\$23.84	LINCOLN	\$56.69
ROCKFORD	\$30.60	NORMAL	\$50.95
JACKSONVILLE	\$34.97	CHAMPAIGN	\$60.15
PEKIN	\$44.14	URBANA	\$61.51
MOLINE	\$44.52	PEORIA	\$62.27
BLOOMINGTON	\$46.23	CHATHAM	\$72.40

- ▶ A 50% rate increase
\$42.00 - 4th
- ▶ A 60% rate increase
\$44.80 - 6th
- ▶ A 70% rate increase
\$47.60 - 7th

HISTORY

- ▶ After 1950's Drought- Construction of South Fork Pump Station.
- ▶ Began pursuing 2nd water supply in 1970's
- ▶ Have been working with IEPA and Corps for many years



HUNTER LAKE EXPEDITURES

- ▶ Land to Date- \$17.3 M
- ▶ Legal/Studies/Engineering- \$11M

