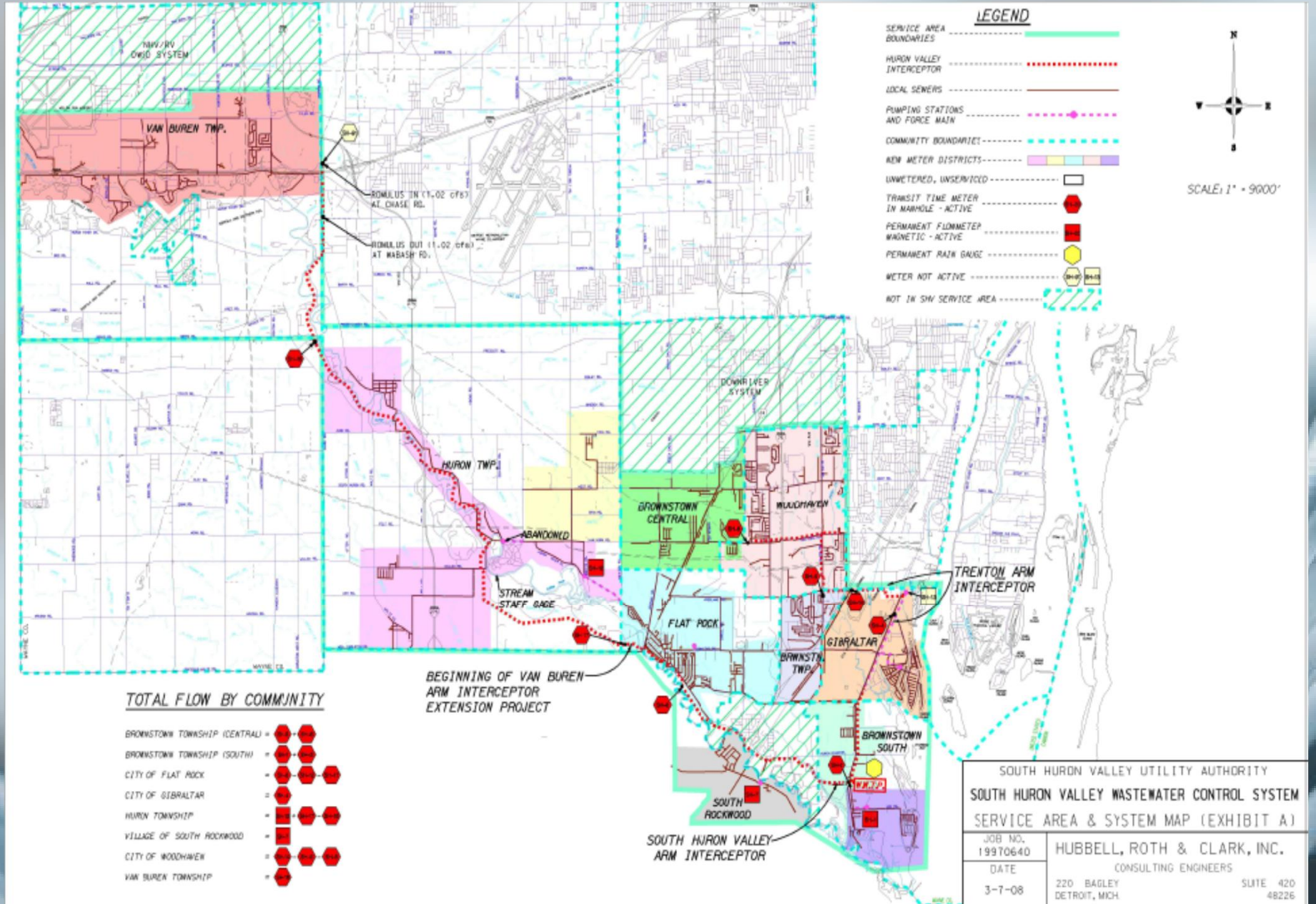


# History and Development of the South Huron Valley Wastewater System

Presented to the SHV Utility Authority Board  
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Hinshon Environmental Consulting

March 17, 2010

# The South Huron Valley System

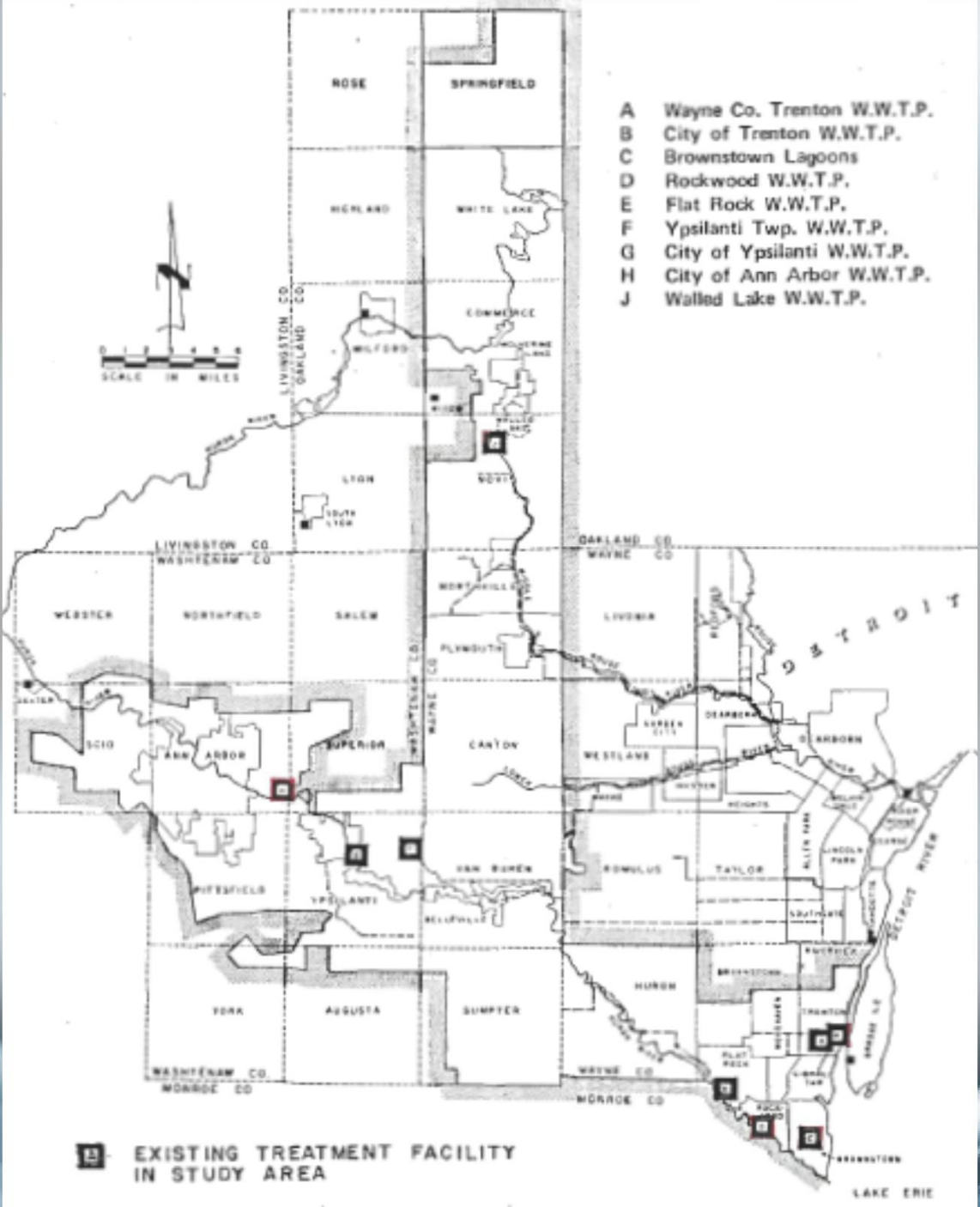


# Presentation Topics

1. **Before the SHV System Existed (Pre 1983)**
2. **The Early Years Under Wayne Co. (1983 – 1991)**
3. **System Growth and Expansion (1992 – 1998)**
4. **Utility Authority Takeover Period (1999 – 2003)**
5. **The Modern Era (2004 – 2010)**
6. **“Pending” Issues for the SHV Utility Authority**

# **1. Pre-1983 Conditions**

# Pre-1983: Wastewater Plants in the Area



# The Great “Super Sewer” Controversy

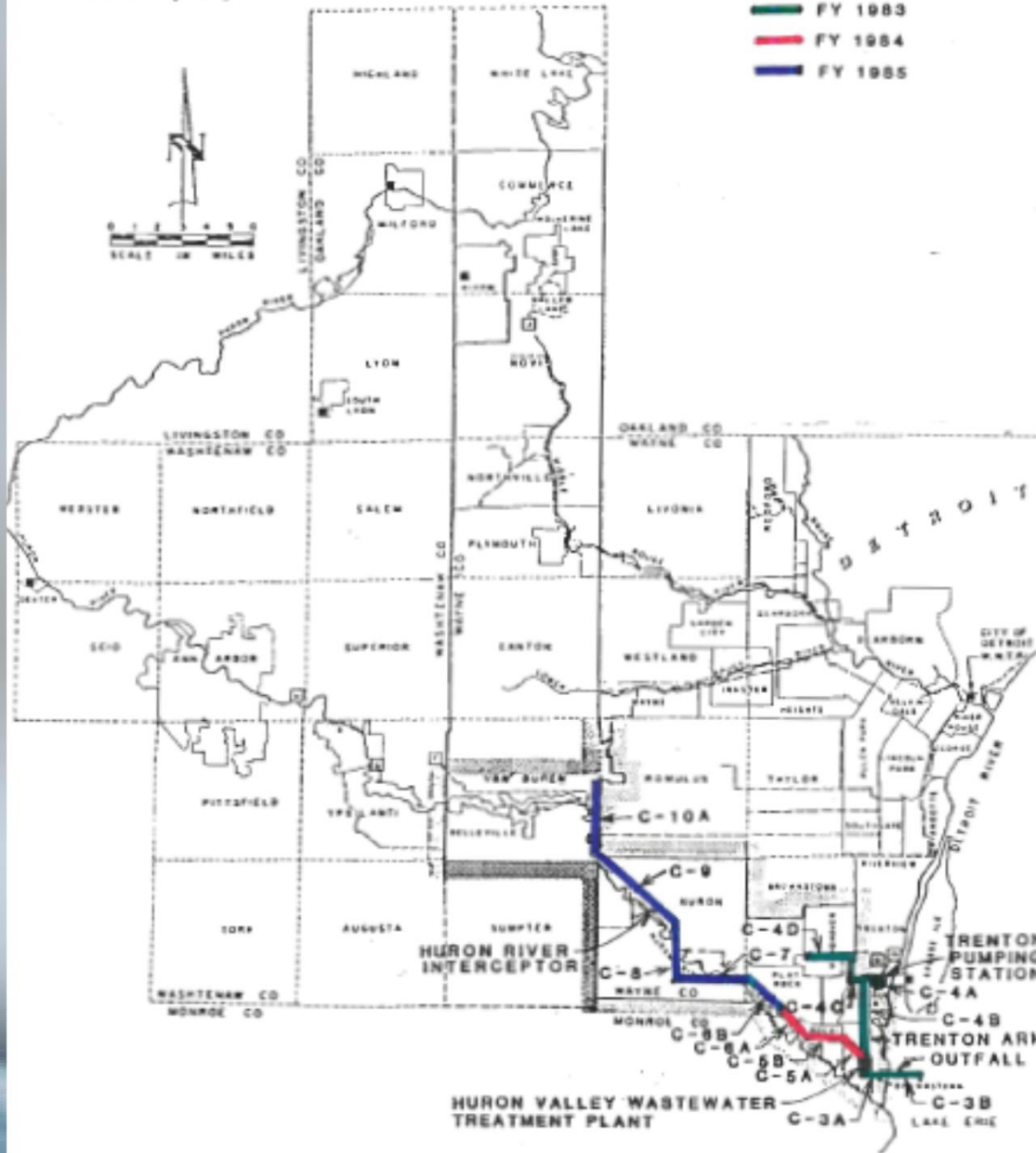
- Water Resources Commission deletes Ann Arbor, Ypsilanti from Super Sewer (1976)
- EPA requires an Environmental Impact Statement to assess secondary impacts of Super Sewer system
- Detroit objects to infringement on DWSD Service Area (western Wayne suburbs)
- FLUSH group challenges need for project and adequacy of planning documents
- Van Buren and Huron balk at signing the Service Agreement

## **2. The Early Years: 1983 - 1991**

HUBBELL, ROTH & CLARK, INC.  
Consulting Engineers

LEGEND

- FY 1983
- FY 1984
- FY 1985



WAYNE COUNTY DEPARTMENT OF PUBLIC WORKS  
SOUTH HURON VALLEY  
WASTEWATER CONTROL SYSTEM

# 1983 SHV System Configuration



# Original SHV System Details

- 12 MGD secondary treatment wastewater plant
- Two major interceptor arms: Trenton Arm; Huron River Interceptor
- MDNR refuses to approve Van Buren Interceptor in initial scope
- \$76.1 Million project financed with 75% EPA Grant; local share distributed to all based on plant & interceptor capacity:

	PURCHASE CAPACITIES (MGD)		COST (\$ Thousands)		
	<u>Community</u>	<u>WWTP</u>	<u>Interceptor</u>	<u>WWTP</u>	<u>Interceptor</u>
Brownstown Twp.		2.537	13.96	\$2,136	\$1,094
Flat Rock		2.071	9.66	\$1,743	\$801
Gibraltar		1.835	7.12	\$1,544	\$324
Huron Township		1.736	7.98	\$1,460	\$662
Romulus		0.000	0.67	\$0	\$56
South Rockwood		0.252	0.83	\$212	\$68
Woodhaven		2.089	17.48	\$1,759	\$1,621
Van Buren Township		<u>1.480</u>	<u>5.31</u>	<u>\$1,245</u>	<u>\$760</u>
TOTAL:		12.00	63.01	\$10,101	\$5,388

# Original SHV System: Facts of Interest

- Biosolids trucked to Wayne County Downriver Plant in Wyandotte and then incinerated
- Some pre-1983 sewer pipes incorporated into new SHV System:
  - Section I of 1968 “Flat Rock – Huron” System (but Sections II, III and IV of that 1968 System not mentioned)
  - Old County sewer in Woodhaven transferred to SHV (pipe is used solely by Woodhaven)
- New Swallow Drive connector built as part of SHV System (used only by South Rockwood)
- Sumpter Township, Trenton and Rockwood decline to join System
- Rockwood given “Right of First Refusal” for future service in exchange for easement to connect South Rockwood
- Romulus receives no treatment at wastewater plant

The background is a soft, abstract blue gradient with several curved, glowing lines that sweep across the bottom right corner, creating a sense of motion and depth.

## **3. System Growth and Expansion: 1992 - 1998**

# Van Buren Township Interceptor

- MDEQ approves Interceptor to Van Buren Township based on a report documenting pollution problems in the area
- Construction starts in 1992 with SRF Loan assistance
- Interceptor placed in service in 1995
- Financing based on same %'s as original 1983 interceptors:

<u>Community</u>	<u>Cost</u>
Brownstown Twp.	\$2,598
Flat Rock	\$1,901
Gibraltar	\$770
Huron Township	\$1,570
Romulus	\$133
South Rockwood	\$162
Van Buren Township	\$1,804
Woodhaven	<u>\$3,847</u>
<b>TOTAL:</b>	<b>\$12,785</b>

# Wastewater Plant Expansion

- Additional 12 MGD capacity added in 1998
- Project financed with SRF Loan
- Cost allocated based on combination of current needs and future growth

## WWTP PURCHASE CAPACITIES (MGD)

<u>Community</u>	<u>Original (1983)</u>	<u>New (1998)</u>	<u>Total</u>	<u>Expansion Cost</u>
Brownstown Twp.	2.537	4.127	6.664	\$8,607
Flat Rock	2.071	1.400	3.471	\$3,272
Gibraltar	1.835	0.134	1.969	\$1,138
Huron Township	1.736	1.930	3.666	\$3,996
Romulus	0.000	0.000	0.000	\$0
South Rockwood	0.252	0.048	0.300	\$196
Van Buren Township	1.480	3.954	5.434	\$7,776
Woodhaven	<u>2.089</u>	<u>0.406</u>	<u>2.495</u>	<u>\$1,631</u>
<b>TOTAL:</b>	<b>12.000</b>	<b>12.00</b>	<b>24.000</b>	<b>\$26,615</b>

The background is a soft, abstract blue gradient with several curved, glowing lines that sweep across the bottom and right sides of the frame, creating a sense of motion and depth.

## **4. Utility Authority Takeover Period 1999 -2003**

# Transfer From Wayne County

- Protracted negotiations over transfer:  
Lawsuit and political maneuvering;
- Begrudging approval from Wayne Co. in 1999;
- Unanimous agreement by SHV Communities tied to precedent-setting O&M Cost Allocation agreement:  
*Pump stations and interceptor O & M costs to be charged to user communities only (not System-Wide)*
- Employee “Hold Harmless” provision required by Wayne County as part of transfer agreement;
- Outstanding debt re-financed by Utility Authority;
- NDPES Permit, IPP program and SRF loans transferred from County to Utility Authority along with all assets and equipment

# Earth Tech Hired as System Operator

- Multiple proposals received by SHVUA
- Earth Tech selected based on cost, scope
- 5 Year fixed price contract with responsibility for wastewater plant, collection system, pump stations, billing meters, NPDES Permit compliance, IPP program, sludge disposal, monitoring and reporting
- All but one former Wayne County employees decline employment with Earth Tech (transfer to Wayne Co. Downriver Wastewater Plant)



# Conversion to Land Application of Biosolids

- Earth Tech recommends Land Application as a cost effective, environmentally friendly sludge disposal option
- ET oversees design, construction of Sludge Storage Tanks and finances work under new Contract with SHVUA
- Project cost = \$2 million
- ET hires a sludge hauler and enters into agreements with local farmers to accept biosolids in accordance with MDEQ application guidelines
- New Biosolids Disposal facilities placed in service in 1999

# Billing Meter Upgrade

- ET undertakes a Billing Meter Upgrade project in 2001 as an “Additional Service” to its Contract
- \$1.285 M spent on metering equipment, site installations and telemetry
- Cost allocated System-Wide to all communities based on Interceptor Purchase Capacity
- In 2003, CDM hired to do an evaluation of Meter Accuracy and to refine the estimate of I/I in SHV interceptors;
- CDM’s report recommended adjustments and modifications to some meters

## **5. The Modern Era (2004 – 2010)**

# **Contract Renewals with Earth Tech and United Water**

- **5 year renewal of Operating Contract negotiated with Earth Tech in 2004; Board decides not to seek competitive bids based on ET's performance record;**
- **United Water assumes Contract as the corporate successor to Earth Tech after a buy out; key staff remain in place;**
- **Board hires Greeley & Hansen in 2008 to conduct a detailed performance appraisal before deciding whether to renew Operating Contract again;**
- **Based on G & H's report, Board decides to forego competitive bids and negotiate another 5 year contract with United Water;**
- **Scope of Work expanded to include comprehensive O&M for SHV Interceptors over a 5 year cycle (20% of System done annually)**

# Billing Meter Maintenance

- CDM hired in 2006 to take over maintenance of billing meters, data collection and analysis, and preparation of the annual report on billable flow from each Community;
- Initial contract covered 2 years (2006 – 2007);
- CDM contract renewed in 2008 (expires 12/31/2010)
- Scope expanded to include development of a computer hydraulic model to simulate System response to wet weather events
- Contract amount = \$628,846 over 3 years; spread to all communities as a System-Wide expense

# Equalization Basin ("EQ Basin")

- 6 MG storage basin at WWTP began construction in 2004 to comply with NPDES Permit requirement to reduce secondary treatment bypasses during wet weather events;
- Cost (\$12.246 Million) proposed to be allocated based on estimated wet weather flows from each community;
- Flat Rock objected to cost allocation and refused to approve Bond Sale, which stymied project;
- Utility Authority entered into an Administrative Consent Order (ACO) with MDEQ establishing a mandatory construction schedule and cost allocation.

# EQ Basin (continued)

- Bonds were sold and the construction contract was executed without Flat Rock's consent;
- Project completed and placed in service in Oct 2006
- Performance Certification submitted in Oct 2007 as required by ACO; not approved as yet
- Flat Rock filed lawsuits challenging the Board's actions, but the Court's have ruled in favor of the Board and ordered Flat Rock to pay its share of the project cost
- EQ Basin O & M costs included with the WWTP expenditures and billed as a System-Wide charge

# Other Significant “Modern Era” Events

- Board adopts FOG (Fats, Oil, Grease) ordinance (2005)
- Biosolids contaminated by Molybdenum; sludge temporarily dewatered and hauled to landfill (2006)
- Board begins work on consolidation of 11 Contracts and Agreements into a single, comprehensive document (2007);
- Van Buren Township builds a 1.3 MG EQ Basin to store its wet weather flows from 3 sewer districts (2008); facility can be dewatered to either the SHV or the Downriver WWTP;
- Randy Pentiuk hired as SHV attorney (2008)
- Board adopts Surcharge Fee schedule (2008)



# More Significant “Modern Era” Events

- Sinkhole emerges on Jefferson Ave due to Trenton Arm deterioration from H<sub>2</sub>S gas; \$300,000 emergency repair undertaken; costs charged to 3 user communities (2008)
- DeMaria delay claim on EQ Basin settled(2009)
- Application for SRF Loan + Stimulus grant money for the Trenton Arm re-lining project fails to qualify for funding (2009)
- Sludge storage tanks cleaned, inspected (2009)
- Rain Gages installed throughout System (2010)

## 6. “Pending” Issues

1. Amend Articles of Incorporation to change Romulus’ status from Board Member to Customer Community
2. Complete work on the new Service Agreement to consolidate 11 existing contracts
3. Resolve ownership of 1968 Wayne Co. pipes in Huron Township (Sections II, III and IV)
4. Install Cured-In-Place liner in Trenton Arm Interceptor to control structural deterioration (requires agreement on cost allocation)
5. Complete repairs on Sludge Storage Tank
6. Secure MDNRE approval of EQ Basin Performance Certification

**Q & A**

