CLEAR WATER SOURCES
ON PRIVATE PROPERTY
CITY OF MARSHFIELD’S
PROGRAMS

FIND IT

WWOA
44th Annual Conference
Pre-Conference Workshop October 21, 2010
Green Bay, Wisconsin

Ron Dickrell,
Superintendent
Marshfield Wastewater Utility
BACKGROUND

- 20,000 population
- 10 square mile area
- Average 3 MGD/day
- 138 miles or 730,000 ft. sanitary sewer
- (4) Lift Stations
- Chronic I/I problems:
  - Tight soils
  - SSOs
  - Basement backups
  - Sewer mortatorium
- 30 MGD through a 11 MGD peak plant
2004
2003 CMAR
COLL. SYS. O & M PROGRAM/
CMOM ELEMENTS:

- Goals
- Organization
- Legal Authority
- Maintenance
- Design & Performance Standards
- Overflow Emergency Response Plan
- Capacity Assurance
- Self-Auditing Program
- Special Studies
1990 WAR ON I/I

- House-to-house inspections
- $1,000,000/yr. on capital projects & O & M
- Identify sources – smoke & dye testing

2000 – new plant with 28 MGD peak
2001 – Took over cleaning & televising
GOAL - REDUCE I/I

HOW

Cleaning – 300,000 ft. (43%)
GOAL - REDUCE I/I

Cleaning – 300,000 ft.

**BENEFITS:**

- Averts basement backups
- Removes grit & debris (1.4 M lbs.)
- Makes system more efficient (free flow)
GOAL - REDUCE I/I

FIND IT

Televising – 730,000 ft. in 4 years
<table>
<thead>
<tr>
<th>Sewer Type</th>
<th>Project Name</th>
<th>City</th>
<th>Street</th>
<th>Sanitary</th>
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<th>Starting Manhole</th>
<th>Ending Manhole</th>
<th>Manhole Depth</th>
<th>Crew</th>
<th>Truck</th>
<th>Pipe Size</th>
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<td>P6</td>
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**Pipe Condition**

**Comment**

**Total Length**

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**Pipe Condition**

**Comment**

- Poor: Pipe cracks, and pipe missing, many minor to moderate sags.

**Observations**

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<tr>
<th>Fig. Code</th>
<th>Modifier Code</th>
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REDUCE I/I
FIND IT
FLOW MONITORING
175,000 ft./year
(25%)
Wet vs Dry flow at X14 on 8/24/06

Flowlink 4 for Windows

7.4 gals. I/I per upstream ft. of pipe
REDUCE I/I
FIND IT
2,300 MANHOLES:
🔍 Inspect – 300
## Connections

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## Observations

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**Marshfield Wastewater Utility**

3411 South Galvin Avenue
Marshfield, WI 54449
Phone: (715) 591-2022
Fax: (715) 591-2027

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Generated on Tuesday 7/31/2007 at 02:09 PM by the PipeTech TV Inspection System.
2,300 MANHOLES:

- Inspect – 300
- Repair – 70
- Replace - 15
GOAL - REDUCE I/I

Mainline Replacement:

- > $750,000/year since 1993
- 15,000 - 30,000 ft.
EXCAVATE

COST -

$190/LINEAR FT.
LINING
2009

72 lines/20,000 ft.

Ex @ $190/ft.   Line @ $28/ft.

$3,800,000   $560,000

SAVINGS =

$3,000,000
FUNDING

>$1,000,000/Y

R.

$250,000+ – O & M
(cleaning, televising, repairs)

$750,000 – Capital Projects
(mainline replacement, lining)
<table>
<thead>
<tr>
<th>Year</th>
<th>Borrow</th>
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<td>2008</td>
<td>$300,000</td>
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ORGANIZATION

Place Plumbing Inspector under supervision of WW Supt.

Benefits:

* Direct control over:
  -> Clearwater source inspections - House-to-House (250), dye testing, private laterals, investigations, corrective orders, Development Review Team

* Funding – 75/25% labor & expenses
* Performance Evaluation

Clearwater Committee (Quarterly) – DPW, City Engineer, Asst City Engineer, WW Supt, Asst WW Supt, Asst Street Supt, Plumbing Inspector
CW Comm Functions:

- Review completions – Cleaning, TVing, MH inspec, dye testing, private lateral insp, mandrel & pressure testing, flow monitoring, FOG control
- Recommend ordinance changes
- PRIORITIZE:
  - Mainline repl & rep (review videos – excavate, line, burst – 225=$5 M)
  - Spot repairs
  - Grout sealing
  - Sleeve lining
  - Manhole repl & rep
DRAWING: LATERAL CONNECTION

1’ 1’

SEWER MAIN OR RISER

LATERAL
STUDIES
40 – 85 % CLEARWATER FROM PRIVATE LATERALS
400% rain induced I/I

> 100,000 gal.

cauising 3-4 basement backups per 1-2 inch event

in a bottleneck area
FINDINGS

175 Houses

- 50 with no leaks
- 125 leaking – moderate to severe
- 40 sump pumps
- 135 no sump pumps – stone or leaking concrete
CONTACTS BY LETTER

- Lateral contributing to clearwater entry
- Offer to televise lateral and call to set up appointment
- If leaking – corrective order
- If not leaking – encourage and urge – ideal time to replace
- Assisted in contacting a plumber, cost info, option info
- Consequences – if future replacement, increased cost
- Benefits – new lateral - eliminate roots and potential backups

PRE-CONSTRUCTION MEETINGS
RESULTS

27 OF 29 REPLACED
(2 were replaced)

100% COMPLIANCE
2008

- 26 laterals
- 3 previously replaced
- 12 televised
- 7 commitments
- 1 declined

30% Compliance
2010

NEW POLICY
Forgive assessment

Sewer assessment - $1,200-$1,500

$1,500-$1,800
2010

29 laterals
1 previously replaced
19 televised
14 commitments
10 declined

50% Compliance
SUCCESSFUL??

MORAL – MARSHFIELD STORY
NEVER

RELAX

GIVE UP

STOP
ALWAYS

PERSERVERE
Ron Dickrell
Marshfield Wastewater Utility
2601 East 34th Street
Marshfield, WI 54449
(715) 591.2022
rdickrell@ci.marshfield.wi.us
QUESTIONS