

# CITY OF WEST CHICAGO

WHERE HISTORY & PROGRESS MEET

Approved May 6, 2010

## MINUTES

### INFRASTRUCTURE COMMITTEE

**April 1, 2010 - 7:00 P.M.**

1. **Call to Order, Roll Call, and Establishment of a Quorum.** Chairman Dzierzanowski called the meeting to order at 7:00 P.M. Roll Call found Aldermen Nanette Connelly, Nicholas Dzierzanowski, James Smith, and John Smith present. Aldermen Sandra Dimas and Russell Radkiewicz were absent. Alderman James Beifuss arrived at 7:12 P.M.

Also in attendance were Public Works Director Robert Flatter, Water Treatment Plant Supervisor Joe Munder, and Administrative Secretary Michelle Baldino.

Others in attendance were Bernard Held and Kelly Fitzgibbon with Crawford, Murphy & Tilly, Inc.

2. **Approval of Minutes.**

A. **Infrastructure Committee Minutes of March 4, 2010.** Alderman Nanette Connelly made a motion to approve the minutes of March 4, 2010 with no changes, seconded by Alderman John Smith. Voting Yea: Aldermen Nanette Connelly, John Smith, Nicholas Dzierzanowski, and James Smith. Voting Nay: 0.

3. **Public Participation / Presentations.**

A. **Tank Feasibility and Siting Study Report – Crawford, Murphy & Tilly, Inc.** Mr. Flatter introduced Kelly Fitzgibbon and Bernard Held from Crawford, Murphy & Tilly, Inc. (CMT). He explained that the City hired CMT to update the City's water system hydraulic model, which lead to this contract to determine where infrastructure upgrades to the distribution system should be located to maintain fire and service flows and also to determine what is necessary in planning for future growth for the City (i.e., additional elevated storage tanks). Ms. Fitzgibbon, Project Engineer, gave the Committee a presentation in accordance with the attached handout (Attachment A).

Ms. Fitzgibbon explained the various considerations when selecting locations for future elevated tanks, and five locations were evaluated. The report recommends location #1 (Washington Street and Prince Crossing Road), and location #5 (Pearl Road and Pioneer Park). Ms. Fitzgibbon explained that location #3 (Joliet Street and Joy Road), which was also selected, was no longer available, as the City recently decided to sell the land. Ms. Fitzgibbon reviewed the costs associated with the construction of the elevated tanks, indicating that the costs did not include land acquisition, storm water work or site landscaping, etc.

During discussion, Mr. Flatter stated that staff would prefer to build two 1.5 MG elevated tanks which would meet system storage recommendations. The City's additional storage need is currently recommended at 2.75 MG. Construction impacts, and storage tank size, shape and color was also discussed.

Mr. Flatter stated that Staff is asking for acceptance of the recommendations as outlined in the Final Tank Feasibility and Siting Study report.

**4. Items for Consent.** Chairman Dzierzanowski read the following items for Consent from the Agenda:

- A. Acceptance of Tank Feasibility and Siting Study Report – Crawford, Murphy & Tilly, Inc.
- B. Contract Amendment No. 1/First Extension to Route 64 Utility Relocation Project – AECOM USA, Inc.
- C. Contract Amendment No. 1/First Extension to Illinois Route 59 Watermain Replacement Project (South) – Trotter and Associates, Inc.
- D. Contract Amendment No. 3/Third Extension to Well No. 7 Generator Project – Broadway Electric, Inc.
- E. Contract Amendment No. 3/Third Extension to Well No. 12 Drilling Project – Layne-Western Company.

**Alderman Nanette Connelly made a motion, seconded by Alderman James Beifuss to approve the items for Consent. Voting Yea: Aldermen Nanette Connelly, James, Beifuss, Nicholas Dzierzanowski, James Smith and John Smith. Voting Nay: 0.**

**5. Items for Discussion.** None.

**6. Unfinished Business.** None.

**7. Other Business.** None.

**8. New Business.** None.

**9. Reports from Staff.**

A. Mr. Flatter informed the Committee that the City has received an additional \$362,000.00 in American Recovery Reinvestment Act (ARRA) funding, which will pay 100% for resurfacing selected areas of Arbor Avenue, Hawthorne Lane, and Washington Street.

B. Mr. Flatter stated that on Wednesday, March 31, 2009, staff met with the Department of Agriculture and it has been confirmed that there are several Ash trees within the City that have been affected by Emerald Ash Borer. He stated that staff would like to educate the public via public notice. The affected trees that have been found cannot be saved, and will have to be removed.

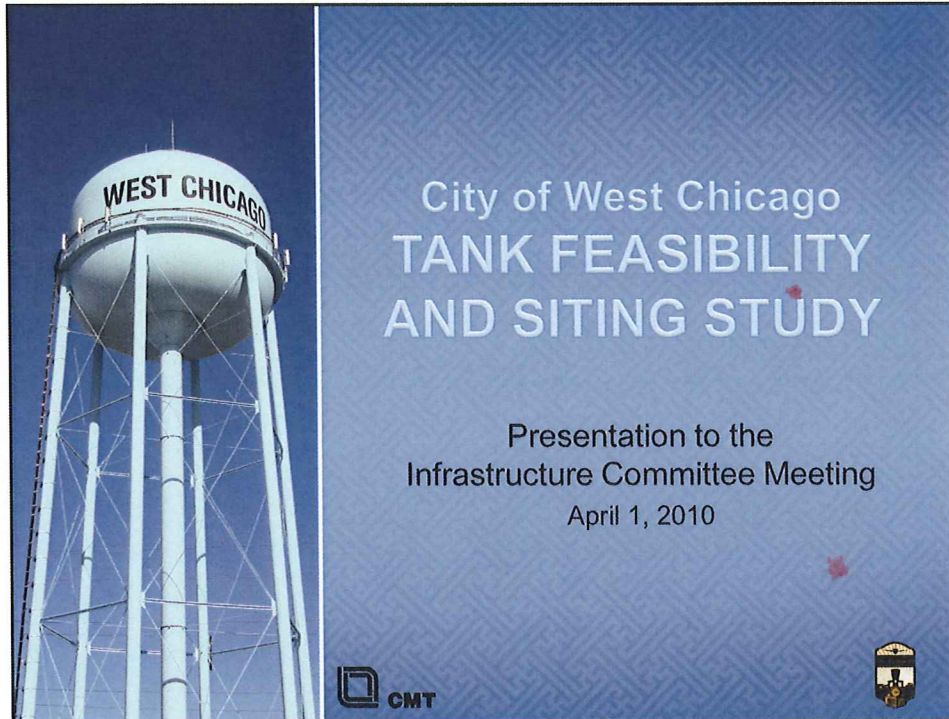
Alderman Beifuss said that he would like to see the City take a proactive approach to this problem and take advantage of treatments that are available to save the trees. During discussion, Mr. Flatter

informed Committee that in order to determine the type and number of trees in the City's parkway, staff would like to hire Graf Tree Care to perform a survey. Staff would also team up with Graf Tree Care, as a certified arborist company, approved by the Department of Agriculture, to remove infested trees. Once all trees are mapped, staff will bring a proposal back to Committee in order to have funds allocated to take appropriate action. Chairman Dzierzanowski also suggested that the City should consider offering to help those residents that have infested trees on their private property since it is in the City's best interest to have those trees removed.

**10. Adjournment.** At 8:10 P.M., Alderman Nanette Connelly made a motion to adjourn, seconded by Alderman James Smith. Motion was approved by voice vote.

Respectfully submitted,

Michelle Baldino  
Administrative Secretary



## Acknowledgements

**We would like to take the opportunity to thank the following City staff members for their cooperation and input to complete the study:**

- Robert Flatter, P.E. – Director of Public Works
- Joe Munder – Water Treatment Plant Supervisor





## Components of the Study

- **Background Information**
- Determine storage requirements
- Evaluate potential elevated tank locations
- Determine overall system improvement from each tank location
- Determine costs for each tank location
- Recommendations

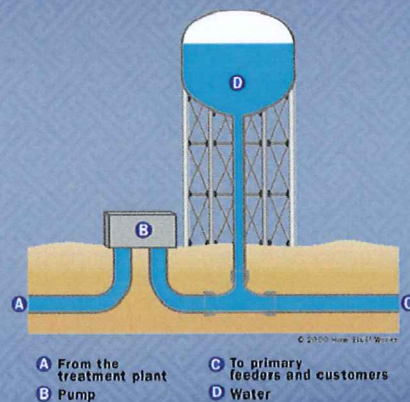


## Storage Capacity

Adequate storage capacity provides water for:

- Peak water usage
- Fire flows
- Emergency conditions

Also allows for constant flow from the water treatment plant



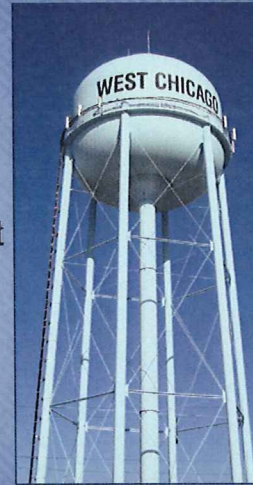
## Ground & Elevated Storage

### Ground Storage

- 0.5 MG Tank at Well 4 Pump Station
- 0.5 MG Tank at Wells 8 & 9 Pump Station
- 2- 1.6 MG Clearwell Storage Tanks at Water Treatment Plant

### Elevated Storage

- 0.5 MG Tank at Hawthorne Lane
- 0.25 MG Tank at Fremont Street



Hawthorne Lane  
Elevated Tank



### Ground Storage

	Maximum Operating Levels		Average Operating Levels	
	Water Level	Full Capacity (gallons)	Water Level	Available Volume of Water (gallons)
Well 4 Ground Storage Tank	31.5'	500,000	23.5'	373,300
Wells 8 & 9 Ground Storage Tank	23.6'	500,000	17.5'	370,100
<b>TOTALS</b>	--	1,000,000	--	743,400

### Elevated Storage

	Maximum Operating Levels		Average Operating Levels	
	Water Level	Full Capacity (gallons)	Water Level	Available Volume of Water (gallons)
Hawthorne Lane Elevated Tank	39.9'	500,000	34'	443,200
Fremont Street Elevated Tank	31.2'	250,000	22'	195,600
<b>TOTALS</b>	--	750,000	--	638,800





## Components of the Study

- Background Information
- **Determine storage requirements**
- Evaluate potential elevated tank locations
- Determine overall system improvement from each tank location
- Determine costs for each tank location
- Recommendations



## Existing Storage Requirements

- Recommended Total Storage: **4.5 MG (per 10 State Standards)**
- Available Total Storage: **1.75 MG**
- Recommended Additional Storage: **2.75 MG**



## Future Storage Requirements

- Recommended Total Storage: **7.0 MG (per 10 State Standards)**
- Available Total Storage: **1.75 MG**
- Recommended Additional Storage: **5.25 MG**



## Components of the Study

- Background Information
- Determine storage requirements
- **Evaluate potential elevated tank locations**
- Determine overall system improvement from each tank location
- Determine costs for each tank location
- Recommendations





## Tank Location Considerations

- DuPage Airport airspace requirements

— Elevated Tank Airspace Penetration

○ Existing Elevated Tank

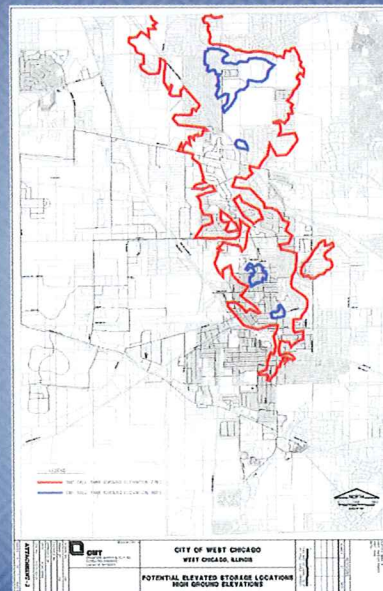


## Tank Location Considerations

- Ground elevation
- Land availability

— 130' Tall Tank (Ground Elevation 800')

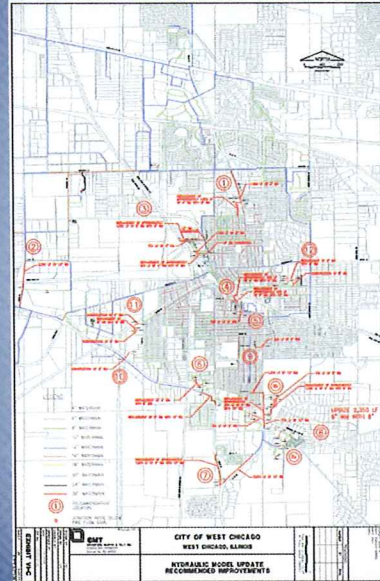
— 160' Tall Tank (Ground Elevation 770')



## Tank Location Considerations

- Areas with low available fire flow and resulting recommended watermain improvements

Watermain Improvements



- 5 tank locations were evaluated:





## Tank Location #1

**Location:** Washington Street and Prince Crossing Road

**Advantages:**

- Minimal watermain improvements
- Second shortest tank
- Land availability

**Disadvantages:** Single family residential zoning



## Tank Location #2

**Location:** St. Andrews Golf Club and Klein Road

**Advantages:**

- Shortest tank
- Land availability (undeveloped)

**Disadvantages:** Extensive watermain improvements





## Tank Location #3

**Location:** Joliet Street and Joy Road

**Advantages:** Location offsets amount of watermain improvements for the area

**Disadvantages:**

- Tallest tank
- Extensive watermain improvements
- Land availability (to be determined)



## Tank Location #4

**Location:** Hawthorne Lane Elevated Tank (replacement)

**Advantages:**

- No land acquisition
- Minimal watermain improvements

**Disadvantages:**

- Tank penetrates airspace
- Water Treatment Plant and ComEd proximity
- Existing tank demolition



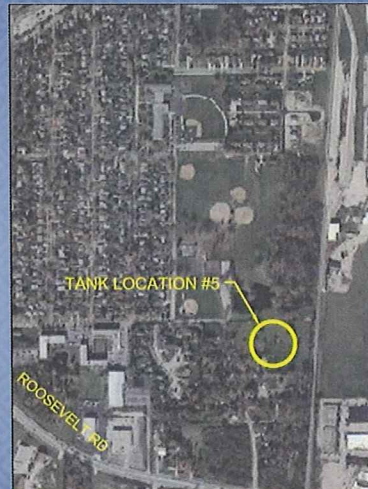
## Tank Location #5

**Location:** Pearl Road and Pioneer Park

**Advantages:** No land acquisition

**Disadvantages:**

- Single family residential zoning
- Second tallest tank
- Watermain improvements



## Components of the Study

- Background Information
- Determine storage requirements
- Evaluate potential elevated tank locations
- **Determine overall system improvement from each tank location**
- Determine costs for each tank location
- Recommendations





## Fire Flow Evaluation

Junctions in the Existing System	Existing System	Existing System	Proposed Tank Location #1	Proposed Tank Location #2	Proposed Tank Location #3	Proposed Tank Location #5
771	Junction Nodes that do not meet Fire Flow Goals	96	93	94	58	86
	Junction Nodes With Available Fire Flow Greater than 110% of the Existing System	-	1	29	98	87
	Junction Nodes With Available Fire Flow Less than 90% of the Existing System	-	0	0	0	0
	Junction Nodes With Available Fire Flow Within 90% and 110% of the Existing System	-	770	742	673	684
	Average Percentage Increase in Fire Flow Compared to Existing System	-	1	4	8	3



Note: Location #4 is the same as existing conditions  
Ranking: #3, #2, #5, #1, #4



## Components of the Study

- Background Information
- Determine storage requirements
- Evaluate potential elevated tank locations
- Determine overall system improvement from each tank location
- **Determine costs for each tank location**
- Recommendations





## Components of the Study

### Tank Costs (1.0 MG Waterspheroid)

Improvements	Tank Location #1	Tank Location #2	Tank Location #3	Tank Location #4	Tank Location #5	
	-	-	-	-	Alternative A	Alternative B
Tank (including on-site watermain)	\$2,831,000	\$2,747,000	\$3,123,000	\$2,972,000	\$3,051,000	\$3,051,000
Off-site Watermain	-	\$2,883,000	\$1,498,000	-	\$2,240,000	\$1,900,000
System Improvements Savings*	-	-	(\$1,310,000)	-	-	-
<b>TOTAL</b>	<b>\$2,831,000</b>	<b>\$5,630,000</b>	<b>\$3,311,000</b>	<b>\$2,972,000</b>	<b>\$5,291,000</b>	<b>\$4,951,000</b>

*Ranking: #1, #4, #3, #5B, #5A, #2*



## Components of the Study

- Initial Recommendation: 1.0 MG Elevated Tank at Location #1 and 1.0 MG Elevated Tank at Location #3

Recommendation based on:

- Tank cost
- Land availability
- Elevated tank predominantly increases fire flow
- Capital cost with and without system improvement savings



- Further Evaluation of Elevated Tank Locations #1 and #5\*
- Taking into account tanks at these locations:
  - With Phase I Improvements
  - With Phase I and II Improvements

\*If Location #3 unfeasible



			Option #6	Option #7	Option #8	Option #9
Junctions in the Existing System	Existing System	Tank Location #3	Proposed Tank Location #1 with Phase I Improvements	Tank Location #1 with Phase I & Phase II Improvements	Proposed Tank Location #5 with Phase I Improvements	Tank Location #5 with Phase I & Phase II Improvements
771	Junction Nodes that do not meet Fire Flow Goals under Normal Maximum Day Operating Conditions	58	72	68	62	60
	Junction Nodes With Available Fire Flow Greater than 110% of the Existing System	98	62	64	112	122
	Junction Nodes With Available Fire Flow Less than 90% of the Existing System	0	0	0	0	0
	Junction Nodes With Available Fire Within 90% and 110% of the Existing System	673	709	707	659	649
	Average Percentage Increase In Fire Flow Compared to Existing System	8	5	5	6	7





## Components of the Study

- Background Information
- Determine storage requirements
- Evaluate potential elevated tank locations
- Determine overall system improvement from each tank location
- Determine costs for each tank location
- **Recommendations**



## Report Recommendations

- Construct 1.0 MG Elevated Tank at Location #1 and 1.0 MG Elevated Tank at Location #3
- If Location #3 is not feasible, construct 1.0 MG Elevated Tank at Location #1 and 1.0 MG Elevated Tank at Location #5 with Phase I Improvements
- Construct remaining 0.75 MG in either elevated or ground storage





## Staff Discussion

- To minimize construction impacts, construct two 1.5 MG Elevated Tanks to meet existing system storage recommendations
- Prepared budgetary costs for a 1.5 MG Elevated Tank and a 1.0 MG Elevated Tank



### ▪ Tank Costs (1.5 MG Waterspheroid)

Improvements	Tank Location #1	Tank Location #3	Tank Location #5
Tank (including on-site watermain)	\$3,589,000	\$4,020,000	\$3,915,000
Off-site Watermain	-	\$1,498,000	\$486,000
Phase I Improvements	-	-	\$1,028,000
<b>TOTAL</b>	<b>\$3,589,000</b>	<b>\$5,518,000</b>	<b>\$5,429,000</b>



Thank You!

