DuPage Water Commission
MEMORANDUM

TO: Chairman Rathje & Commissioners

FROM: Robert L. Martin, P.E.
General Manager

DATE: July 10, 2007

SUBJECT: Supplemental Board Information

1. Revised Commission agenda adding Chairman Rathje's appointment of Commissioner Saverino to the Engineering Committee under XII. New Business.

2. Memorandum dated July 5, 2007 from Chairman Rathje appointing Commissioner Saverino to the Engineering Committee.

3. Memorandum dated July 10, 2007 transmitting PowerPoint presentations made at the June 26, 2007 Regional Water Supply Planning Group meeting.

4. Letter dated July 10, 2007 from City of Oakbrook Terrace regarding water service to the Oakbrook Terrace Service Corporation/Royce Realty Properties/Robert R. Krilich Interests.

Board/Commission Meeting Documents/July 12, 2007 Commission Meeting/CD/Supplemental Meeting Information 070710.doc

DuPage Water Commission

600 E. Butterfield Road, Elmhurst, IL 60126-4642
(630)834-0100 Fax: (630)834-0120

CELEBRATING 15 YEARS OF WATER SERVICE

REVISED AGENDA

DuPAGE WATER COMMISSION
THURSDAY, JULY 12, 2007
7:30 P.M.

600 EAST BUTTERFIELD ROAD
ELMHURST, IL 60126

I. Call to Order and Pledge of Allegiance

II. Roll Call

(Majority of the Commissioners then in office—minimum 7)

III. Administering Official Oath

- Frank Saverino, Sr., Municipal Representative District 6

IV. Public Comments (limited to 5 minutes per person)

V. Approval of Minutes

- Regular Meeting of June 14, 2007

(Concurrence of a Majority of those Commissioners Present, provided there is a quorum—minimum 4)

RECOMMENDED MOTION: To approve the Minutes of the June 14, 2007 Regular Meeting of the DuPage Water Commission (Voice Vote).

VI. Treasurer's Report – June 2007

(Concurrence of a Majority of those Commissioners Present, provided there is a quorum—minimum 4)

RECOMMENDED MOTION: To accept the June 2007 Treasurer's Report (Voice Vote).

VII. Committee Reports

A. Administration Committee

1. Report of 7/12/07 Administration Committee

2. Actions on Items Listed on 7/12/07 Administration Committee

All visitors must present a valid drivers license or other government-issued photo identification, sign in at the reception area and wear a visitor badge while at the DuPage Pumping Station.

B. Engineering & Construction Committee

1. Report of 7/12/07 Engineering & Construction Committee

2. Actions on Items Listed on 7/12/07 Engineering & Construction Committee

C. Finance Committee

1. Report of 7/12/07 Finance Committee

2. Actions on Items Listed on 7/12/07 Finance Committee

VIII. Chairman's Report

IX. Omnibus Vote Requiring Majority Vote

- Resolution No. R-47-07: A Resolution Awarding a Contract for Soils and Materials Testing Services

(Concurrence of a Majority of the Appointed Commissioners—7)

RECOMMENDED MOTION: To adopt the items listed on the Majority Omnibus Vote Agenda in a single group pursuant to the Omnibus Vote Procedures (Roll Call).

X. Omnibus Vote Requiring Super-Majority or Special Majority Vote

A. Resolution No. R-45-07: A Resolution Approving and Ratifying Certain Work Authorization Orders Under Quick Response Contract QR-7/05 at the July 12, 2007, DuPage Water Commission Meeting

(Affirmative Majority of the Appointed Commissioners, containing the votes of at least 1/3 of the County Appointed Commissioners and 40% of the Municipal Appointed Commissioners—3 County + 3 Muni+1=7)

B. Resolution No. R-46-07: A Resolution Approving and Ratifying Certain Task Orders under a Master Contract with Consoer Townsend Envirodyne Engineers, Inc. at the July 12, 2007, DuPage Water Commission Meeting

(Affirmative Majority of the Appointed Commissioners, containing the votes of at least 1/3 of the County Appointed Commissioners and 40% of the Municipal Appointed Commissioners—3 County + 3 Muni+1=7)

C. Resolution No. R-48-07: A Resolution Approving and Authorizing the Execution of a Fourth Amendment to the Contract for Evaluation, Design, and Bidding of Electrical Generation Supply Facilities at the DuPage Pump Station

(Affirmative Majority of the Appointed Commissioners, containing the votes of at least 1/3 of the County Appointed Commissioners and 40% of the Municipal Appointed Commissioners—3 County + 3 Muni+1=7)

RECOMMENDED MOTION: To adopt the items listed on the Super/Special Majority Omnibus Vote Agenda in a single group pursuant to the Omnibus Vote Procedures (Roll Call).

XI. Old Business

- Summary of Action Taken Since Previous Meeting

XII. New Business

- Appointment of Commissioner Saverino to Engineering Committee

(Concurrence of a Majority of those Commissioners Present, provided there is a quorum—minimum 4)

RECOMMENDED MOTION: To confirm Chairman Rathje's appointment of Commissioner Saverino to the Engineering Committee until such time as new committee appointments are made and confirmed (Voice Vote).

XIII. Accounts Payable

(Affirmative Majority of the Appointed Commissioners, containing the votes of at least 1/3 of the County Appointed Commissioners and 40% of the Municipal Appointed Commissioners—3 County + 3 Muni+1=7)

RECOMMENDED MOTION: To approve the Accounts Payable in the amount of $14,793.10 subject to submission of all contractually required documentation (Roll Call).

XIV. Executive Session

(Concurrence of a Majority of those Commissioners Present, provided there is a quorum—minimum 4)

RECOMMENDED MOTION: To go into Executive Session to discuss matters related to personnel pursuant to 5 ILCS 120/2(c)(1), to discuss acquisition of real estate pursuant to 5 ILCS 120/2(c)(5), and to discuss pending, probable, or imminent litigation pursuant to 5 ILCS 120/2(c)(11) (Roll Call).

RECOMMENDED MOTION: To come out of Executive Session (Voice Vote).

XV. Adjournment

(Concurrence of a Majority of those Commissioners Present, provided there is a quorum—minimum 4)

DuPage Water Commission
MEMORANDUM

TO: Commissioners

FROM: Chairman Rathje

DATE: July 5, 2007

SUBJECT: Committee Appointment of Commissioner Saverino

I would like to appoint Commissioner Saverino to the Engineering Committee to fill the vacancy left by Commissioner Ferraro.

Board/Memorandums/Committee Assignments 070705.doc

Louis Rathje

DuPage Water Commission
MEMORANDUM

TO: Chairman Rathje and Commissioners

FROM: Robert L. Martin, P.E.
General Manager

DATE: July 10, 2007

SUBJECT: Regional Water Supply Planning Group

Attached are copies of two PowerPoint presentations that were made at the June 26, 2007 meeting of the Regional Water Supply Planning Group (RWSPG). The presentation entitled "Water Demand Scenarios for NE Illinois Study Area" shows the sectors of water users and the usage by county in the eleven county planning area. Three proposed water demand scenarios used to project water demand in the future are also presented. The RWSPG is charged with projecting water demand to 2050.

The second presentation entitled "Water reuse: An integral part of sustainable water resource planning" looks at using treated wastewater for reuse.

Administration/Regional Water Supply Planning Group/General/Memo to Board 070710.doc

Water Demand Scenarios for NE Illinois Study Area

Progress Report #1
RWSPG Meeting
CMAP – June 26, 2007

Presenter:
Ben Dziegielewski
Southern Illinois University Carbondale

Aims of the Study

- Prepare future water-demand scenarios for the 11-county regional planning area of Northeastern Illinois
- Include estimates of water use by major sectors in 5-year increments for the period 2010-2050
- Allocate future water use to major withdrawal points within the region

The 11 counties include:

- Boone
- Cook
- DeKalb
- DuPage
- Kane
- Kankakee
- Kendall
- Grundy
- Lake
- McHenry
- Will

Illinois Counties

Completed Items

- Definition of sectors of water users
- Definitions of study areas and sub-areas
- Acquisition of historical water-use data
- Acquisition of socio-economic data
- Selection of assumptions for scenarios
- Completion & approval of Detailed Workplan

Sectors of Water Users

Five major sectors (categories) of water use:

- Public supply (municipal & industrial) sector
- Self-supplied commercial and industrial sector
- Power generation sector
- Other domestic sector
- Irrigation and agricultural sector

Water Withdrawals - 11 county Area

Source: USGS 2004

2000 Withdrawals by County with once-through thermoelectric

Source: USGS 2004

2000 Withdrawals by County without once-through thermoelectric

Source: USGS 2004

Sectors and Study (Sub-) Areas within NE IL Region

- For public-supply sector:
  - 26 water supply service areas
  - 11 county metro areas (not included in the 26)
- For power generation sector:
  - Individual (9+) thermoelectric power plants
- For other domestic, self-supplied C&I, and agricultural/irrigation sectors
  - 11 counties

NE Illinois Community Water Systems

County Served	CWS Systems	Population Served
BOONE	10	33,618
COOK	163	5,421,221
DEKALB	19	85,383
DUPAGE	53	787,898
GRUNDY	19	31,965
KANE	41	464,493
KANKAKEE	24	84,903
KENDALL	9	41,278
LAKE	106	595,692
MCHENRY	35	201,643
WILL	57	449,584
Total	536	8,197,878

Extracted from EPA SDWIS data, April 2007

Public-supply (M&I) Sector – Selected 37 Study Areas

Boone County MA +	Kane County MA +
Belvidere	Aurora
Cook County MA +	Elgin
Chicago	
Bedford Park	Kankakee County MA +
Evanston	Kankakee-Aqua Illinois
Northwest Suburban Mun. JAWA	Kendall County MA +
Oak Lawn	Oswego (+part Joliet)
Wilmette	Lake County MA +
Glencoe	Central Lake County JAWA
Northbrook	Highland Park
Winnetka	Waukegan
Hammond WWD	Lake County PWD
DeKalb County MA +	Lake Forest
DeKalb	North Chicago
DuPage County MA +	McHenry County MA +
DuPage WC (+part Aurora)	Crystal Lake
Grundy County MA +	Will County MA +
Morris	Joliet

MA = Metro County Area

Community Water Systems in Northeastern Illinois

M&I Water Use in 26 Study Areas

M&I Per Capita Use in 2005

Self-supplied Commercial and Industrial Sector

Total C&I use in 2005 = 296 mgd

Power Generation Sector

Total thermoelectric Withdrawals in 2000 = 4,250 mgd

Population of Self-supplied Domestic Sector

Irrigation and Agricultural Sector

Three Water Demand Scenarios

- *Scenario 1 – Reference Path:*
  - The recent (last 10 to 20 years) trends in population growth and urban development patterns will continue.
  - The official projections of population and employment in the 11-county planning area represent "reference" growth.
  - Recent trends in the efficiency of water use will continue.
  - Water demand parameters will follow the recent historical trends or official/available projections.

Three Water Demand Scenarios

- *Scenario 2 – Less Resource Intensive (LRI) Path:*
  - The patterns of population and urban development within the study area will be adjusted to represent some aspects of "smart growth."
  - More population growth will shift into counties with existing water infrastructure while keeping total population growth at the same level as in Scenario 1.
  - More water conservation (like BMP) will be included.
  - Water demand parameters would be assumed to shift to levels which result in lower water use.

Three Water Demand Scenarios

- *Scenario 3 – More Resource Intensive (MRI) Path:*
  - The distribution of growth (i.e., geographic growth pattern) would be such as to contribute to higher rates of water use.
  - Future growth of population will shift to the outlying (collar) counties while keeping total population growth at the same level as in Scenario 1.
  - The efficiency assumptions would include less water conservation then indicated by the recent trends in Scenario 1.

Factors Affecting Future Water Demands in the 11-County Area of NE Illinois

Factor	Scenario 1- Reference Path	Scenario 2- Less Resource Intensive	Scenario 3 – More Resource Intensive
Total population	CMAP projections	CMAP projections	CMAP projections
Population density and distribution of growth	As implied by CMAP projections	More population and higher density in inner counties	More population and lower density in outer counties
Commercial/ industrial activity	CMAP projections	Adjusted to CMAP population projections	Adjusted to CMAP population projections
Mix of commercial/ industrial activity	Recent trend	Decrease in high water-using activities	Increase in high water-using activities
Power generation	Recent trend	No new power plants built within the study area	All new power plants in study area use cooling towers
Employment-to-population ratio	Recent trends	Adjusted to CMAP projections	Adjusted to CMAP projections
Water conservation	Recent trends	More active conservation	Conservation below recent trends (1/2)
Future water prices	Recent trends continue	Higher rates of future price increases	Prices held and 2005 level in real terms
Per capita income	Existing projections	Moderated growth of income	Higher than current projections
Weather conditions: temperature	1971-2000 average	1971-2000 average	1971-2000 average
Weather conditions: precipitation	1971-2000 average	1971-2000 average	1971-2000 average

Sensitivity Analysis

- The primary variables for sensitivity analysis will include future climate (air temperature and precipitation) and possibly changes in region-wide growth of future population and employment.
- The range of climate variability will be specified as an increase in air temperature by 6°F and precipitation shifts within ±5 inches, both to 2050 period.

Items to be Completed

- Complete/verify five historical data sets (7/13/07)
- Data on seasonal and maximum-day use (7/20/07)
- Projections data from CMAP (7/31/07)
- Estimation of water-use models (7/27/07)
- Complete "Current Trends" scenario (8/15/07)
- Complete the LRI and MRS scenarios (9/28/07)
- Prepare data for sensitivity analysis (10/12/07)
- **Next RWSPG – October 23, 2007 in Geneva, Illinois**

Water reuse: An integral part of sustainable water resource planning

Presentation to the NE Illinois Regional Water Supply Planning Group

June 26, 2007

Acknowledgments

- Partners
  - Illinois Institute of Technology
  - Illinois Waste Management Research Center
  - Chicago Metropolitan Agency for Planning
- Sponsor
  - US EPA Science to Achieve Results Program
- Work conducted by
  - Yi Meng
  - Shihui Luo
  - Feng Huang

NE Illinois: Limited water sources

Northeastern Illinois regional non-cooling water source allocation (NIPC, 2001)

We don't use water very efficiently

Domestic water use (USEPA, 2006)

Water shortage: What are the options?

- Reduce growth
- Conserve water
- Develop new water sources
- Reuse treated wastewater
  - Incidental (un-planned) reuse
  - Planned reuse

Incidental (un-planned) reuse is common

Planned water use: Common in water-stressed states (20 years experience in Tucson, AZ)

Planned water reuse: Local examples

- [illegible] (1971)
  - Total volume = [illegible]
  - ~25% reused ([illegible])
    - [illegible] year [illegible] process
- Fox River Watershed (2010)
  - Total volume = [illegible]
  - 14 treatment systems [illegible]
  - ~2% reused ([illegible])
    - [illegible]

How can treated wastewater be reused?

- Urban water reuse (unrestricted & restricted)
- Agricultural irrigation (food & nonfood crops)
- Recreational water use (unrestricted & restricted)
- Environmental water reuse
- Industrial water reuse
- Groundwater recharge
- Indirect potable reuse

(USEPA, 2004)

What risks are associated with water reuse?

- Human health risks
  - Pathogenic organisms
    - Bacteria, viruses, protozoa
  - Chemical contaminants of concern
    - Pharmaceuticals
    - Pesticides, herbicides
    - Disinfection by-products
- Ecosystem risks
  - Chemical contaminants of concern
  - Nutrients

"…there have not been any confirmed cases of infectious disease resulting from the use of properly treated reclaimed water in the U.S."

USEPA (2004)

- Are there unconfirmed cases?
- What about non-infectious disease?
- How long does it take to see effects?
- What about ecosystem risks?
- What about incidental reuse?

What are the regulations?

- Federal
  - There are no water reuse regulations
  - *Guidelines for Water Reuse* (USEPA, 2004)
- States (2004 data)
  - 25 states have regulations
  - 16 states have guidelines
  - 9 states without regulations or guidelines

Does Illinois have reuse guidelines or regulations?

- State level
  - IEPA [illegible] regulations
  - Dept. of Public Health [illegible]
- Regional (CMAP)
  - "[illegible] recommended alternative is to conduct a re-[illegible] study, such as this [illegible]."
- Municipal
  - Chicago's Water Agenda 2011
  - Village of Niles [illegible]

Water reuse in Richmond, IL

- Mandated water reuse
  - Leachate, cooling and water [illegible] process [illegible]
  - Industrial cooling water
  - Toilet during commercial, industrial, public
  - Farmers [illegible]
  - Boiler feed water [illegible], industrial, public
- Discharges are the appropriate non-potable industrial processes

Planning for water reuse in NE Illinois

Is wastewater reuse economical?

- Objective:
  - Minimize cost
- Constraints:
  - Demand
  - Mass balance
  - Capacity
  - Water withdrawal
  - Water quality

Cost depends on volume & distance

Pipeline costs dominate

Chicago reuse study summary

- Pipeline installation costs dominate
- Equal reduced discharge effect supply costs
- Reuse can be cost effective
- Chicago is an unusual case study
  - Discharge costs are very cheap
  - Reuse offers economical opportunity in WWTP 2
  - Chicago's economical water conservation efforts

Barriers to reuse

- Universal
  - Public perception
  - Planning effort/cost
  - Contaminants (pathogens, heavy metals)
- Specific to ?? Illinois
  - Drainage to Lake Michigan
  - Water rights & recent precedents
  - Reliable reuse
  - Distribution
  - Public water supply is inexpensive

Incentives for reuse

- "New source" addresses shortage
- Reliable
- Keep high quality water for high quality needs
- Reduces loading to surface waters
- Can be economical

Conclusions

- Expect water shortages in parts of NE Illinois
- Water reuse should be part of the solution

Mayor
THOMAS S. MAZAIKA

City Clerk
ELAINE K. DE LUCA

City Administrator
MARTIN J. BOURKE

CITY OF OAKBROOK TERRACE

17W275 BUTTERFIELD ROAD
OAKBROOK TERRACE, IL 60181
630-941-8300 FAX 630-941-7254

Alderman
Ward 1
INGRID M. DURHAM
TOM THOMAS

Alderman
Ward 2
MICHAEL A. SARALLO
FRANK J. VLACH

Alderman
Ward 3
JAMES E. BOJAN
MARTHA J. BOJAN

July 10, 2007

Mr. Robert L. Martin, General Manager
DuPage Water Commission
600 East Butterfield Road
Elmhurst, Illinois 60126-4642

Re: Water Service To The Oakbrook Terrace Service Corporation / Royce Realty Properties / Robert R. Krilich Interests

Dear Mr. Martin:

The City of Oakbrook Terrace ("City") has condemned an easement through a portion of the property owned by the Robert R. Krilich Interests (the "Krilich Property"), and our attorneys have expressed concern that any City comment on the private utility company, the Oakbrook Terrace Service Corporation ("OBTSC"), could be utilized to place the City at a disadvantage during the course of the valuation stage of the condemnation trial. Because the City has had no opportunity to review any specific Krilich proposal to upgrade or modify the OBTSC system to meet the metering, storage, and connection requirements of the DuPage Water Commission ("DWC"), it is difficult for us to formulate a specific and detailed response.

Nevertheless, pursuant to your earlier e-mail and our telephone conversation last week informing the City of the interest of the OBTSC in obtaining a Lake Michigan water allocation from the State of Illinois and subsequent customer service from the DWC, I am providing you with the following information concerning the history of the City with respect to the Krilich Property and the OBTSC, and the City's current water system:

- Contrary to what the DWC may have been led to believe, the entire area served by the OBTSC is located within the corporate limits of the City of Oakbrook Terrace, and has been since 1972;

- With the construction and operation of the western pressure adjusting station/metering station (PAS) and the east-west water main connection, the City's potable water system has adequate capacity to serve any and all buildings currently serviced by OBTSC and any buildings constructed on other vacant property that would be developed by Royce Realty Properties or Robert R. Krilich, Sr.;

- The City has not had any direct negotiations with OBTSC concerning the purchase of its facilities for many years;

- The City has not received any development plans for the Krilich Property from Royce Realty Properties or the Robert R. Krilich Interests.

If you have any questions concerning this letter or any other matters, please call me direct at (630) 941-8300, extension 307.

Sincerely,

Martin J. Bourke,
City Administrator

Pc: Mayor Mazaika and City Council
City Attorney
Assistant To The City Administrator
Water Superintendent
Special Counsel Kurnik
Special Counsel Day