

**CITY OF NEWBERG  
CITY COUNCIL SPECIAL MEETING  
June 25, 2007  
6:30 P.M.**

**Newberg Wastewater Treatment Plant, 2301 Wynooski Rd., Newberg**

**AGENDA**

**I. CALL MEETING TO ORDER**

**II. ROLL CALL**

**III. GENERAL DISCUSSION**

**This is a special meeting of the Newberg City Council for the purpose of presenting a quick overview of the collection and treatment systems and then a walking tour of the City of Newberg Wastewater Treatment Plant. No action will be taken. No oral or written testimony will be heard or received.**

**IV. ADJOURNMENT**

***ACCOMMODATION OF PHYSICAL IMPAIRMENTS:***

In order to accommodate persons with physical impairments, please notify the City Manager's office of any special physical or language accommodations you may need as far in advance of the meeting as possible and no later than 48 hours prior to the meeting. To request these arrangements, please contact Norma Alley, Deputy City Recorder, at (503) 537-1283. For TTY service please call (503) 554-7793.

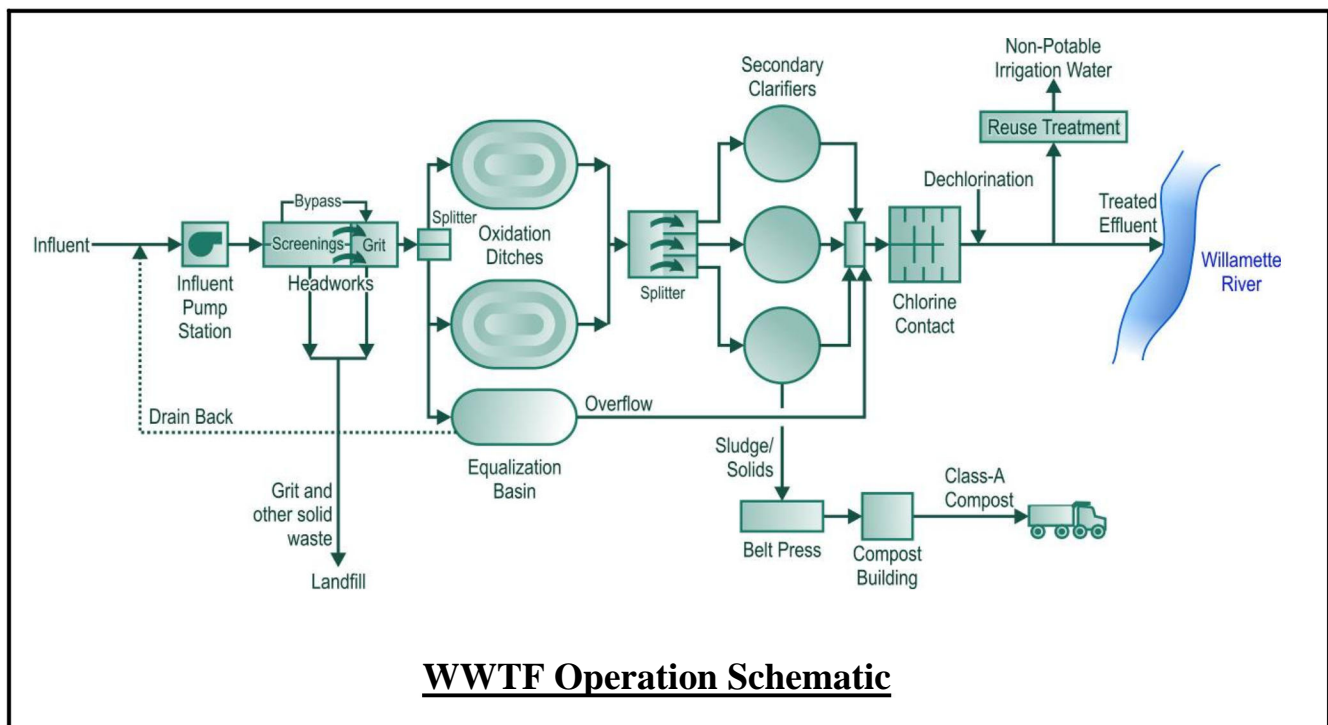
# Wastewater Treatment Facility Planning Summary

In 2004, the City of Newberg (City) contracted with Brown and Caldwell to develop a Facility Plan to provide recommendations to the City's Capital Improvements Project (CIP) program for the City's wastewater treatment facility (WWTF). This Plan lays out the capital expenditures that will:

- Meet existing and predicted regulatory requirements to protect the environment
- Prepare for community growth
- Ensure the maintenance of the City's valuable community investment

The resulting recommendations are based on:

- The population growth projections used in the analysis are in alignment with the City's adopted population projections. Three potential growth rates were used in the analysis: low, median, and high. The phased recommendations are based on the median projections.
- Comparison of future needs with current treatment unit capacity indicate immediate improvements are needed and additional improvements can be phased.
- Cost estimates were developed for the recommended improvements using professional cost estimators that have an extensive database of similar projects and the ability to account for current global trends in the construction industry. The construction costs are expected to escalate rapidly with an increase of 10 percent per year for the next 2 years. Some cities are finding that it is better to borrow the funding now than postpone the improvements and pay higher costs later.



## Study Results-

Based upon the findings of the wastewater facility planning process, the WWTF will require three construction phases. Phase 1 to be executed as soon as possible, dealing with existing shortfalls, Phase 2 in 2015 to meet predicted 2025 population demands, and Phase 3 (Final Build-Out) which would be probably be required in 2025 which will maximized the existing site and topography for 2040 population. Phase 1 is discussed below, the other Phases are found in the report.

### **Phase 1 Improvements-**

The Phase 1 improvements require approximately \$ 38 million dollars of investment in the future of the community (not including purchase of the Baker Rock property). These improvements are needed in order to provide:

- **Wastewater Quantity**

The plant does not have sufficient capacity to convey current peak flows. Excessive Infiltration and Inflow (I/I) from broken pipes and direct stormwater connections to the wastewater collection system is causing the peak flows. Effective I/I removal cannot be achieved prior to Phase 1. If effective I/I removal is achieved, the subsequent phasing can be delayed.

- **Wastewater Quality**

Improvements are needed for meeting the wastewater effluent quality requirements. Current treatment improvements are underway to provide irrigation reclaimed water to local golf courses. Additional immediate improvements are needed to provide reliable effluent quality to meet discharge requirements to the Willamette River

- **Composting**

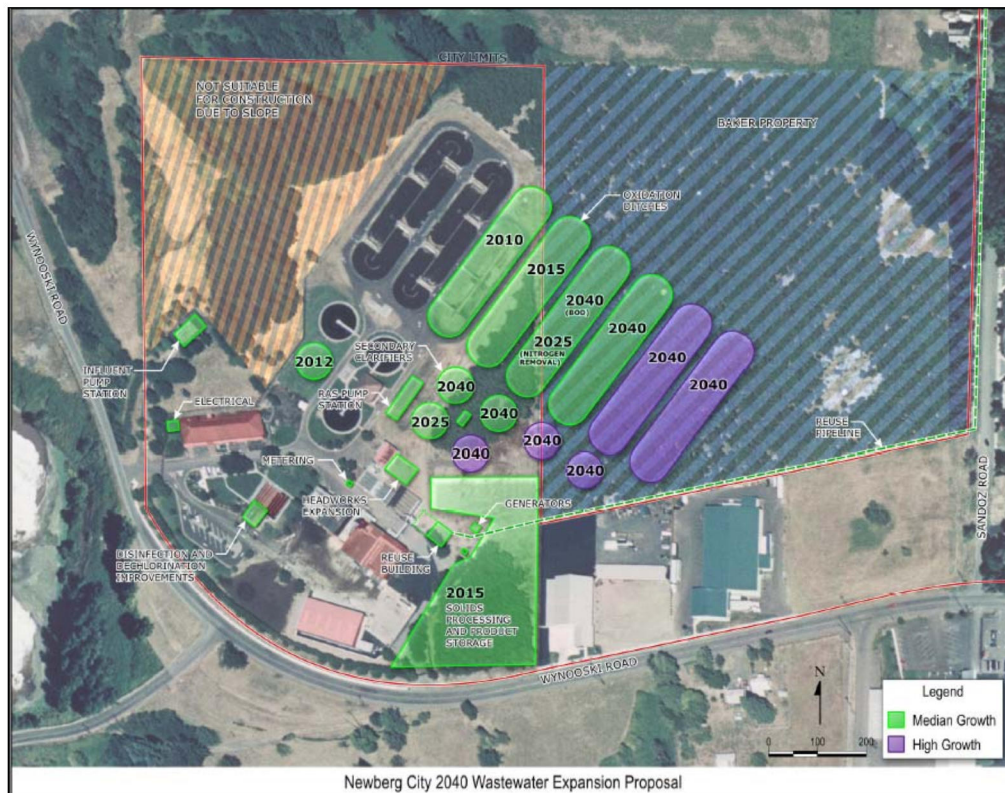
The WWTF ability to provide compost product to the community is currently limited. The moisture content of the sawdust and feed solids are too high for the Composter to handle all the solids generated by the WWTF.

### **Phase 2 Improvements-**

The Phase 2 improvements are estimated to cost approximately \$ 21 million dollars. The project will address the 2025 median population projections for the City.

### **Phase 3 (Final Build-Out) Improvements-**

Phase 3 improvements represent both the median and high growth population predictions that can be serviced in the immediate area of the WWTF, through 2040. Costs are extremely difficult to predict due changes in construction costs, regulatory discharge requirements and new technologies.



## EXECUTIVE SUMMARY

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The City of Newberg (City) provides wastewater collection system services to over 21,000 people spread across an area of approximately 5.2 square miles. This service is provided via the sanitary sewer collection system that is owned, operated, and maintained by the City. Currently, the sanitary collection system connects to over 5,600 residential and nearly 500 commercial and industrial customers.

Demands on the sanitary collection system are expanding as the city's population grows. Land use and population have changed substantially since the preparation of the Sewerage Master Plan in 1985, at which time the population was approximately 12,000. Since then the City has experienced an average growth rate of approximately 2.6 percent with a 2007 population of over 21,000 people. This Sewerage Master Plan Update (SMPU) provides capital improvement and maintenance program recommendations for improving sanitary collection system service and for addressing the future needs of the system through the planning horizons of 2025 and 2040.

To understand the hydraulic needs of the sanitary sewer collection system, the City's trunk lines were modeled using a highly advanced dynamic model. The model simulates flows in the sanitary sewer collection system for existing and future flow conditions. The model was calibrated based on information collected from flow monitoring activities initiated by the City. The calibration helps ensure that the model accurately depicts flows over dry and wet weather conditions.

The modeling identified that 56 pipes are undersized for conveying the existing (2007) flows. By 2025, the number of undersized pipes will increase to approximately 109, and by 2040, about 147 will be undersized. To provide the required conveyance capacity, this SMPU defines over \$61 million in capital improvements that will be required to address the current and future hydraulic needs of the sanitary sewer collection system. Table ES-1 summarizes costs for the required improvements. The pipe replacement and lift station upgrades are required to expand the capacity of the existing components of the system. The system extensions will provide new sewers and lift stations to the areas of the city that are currently undeveloped.

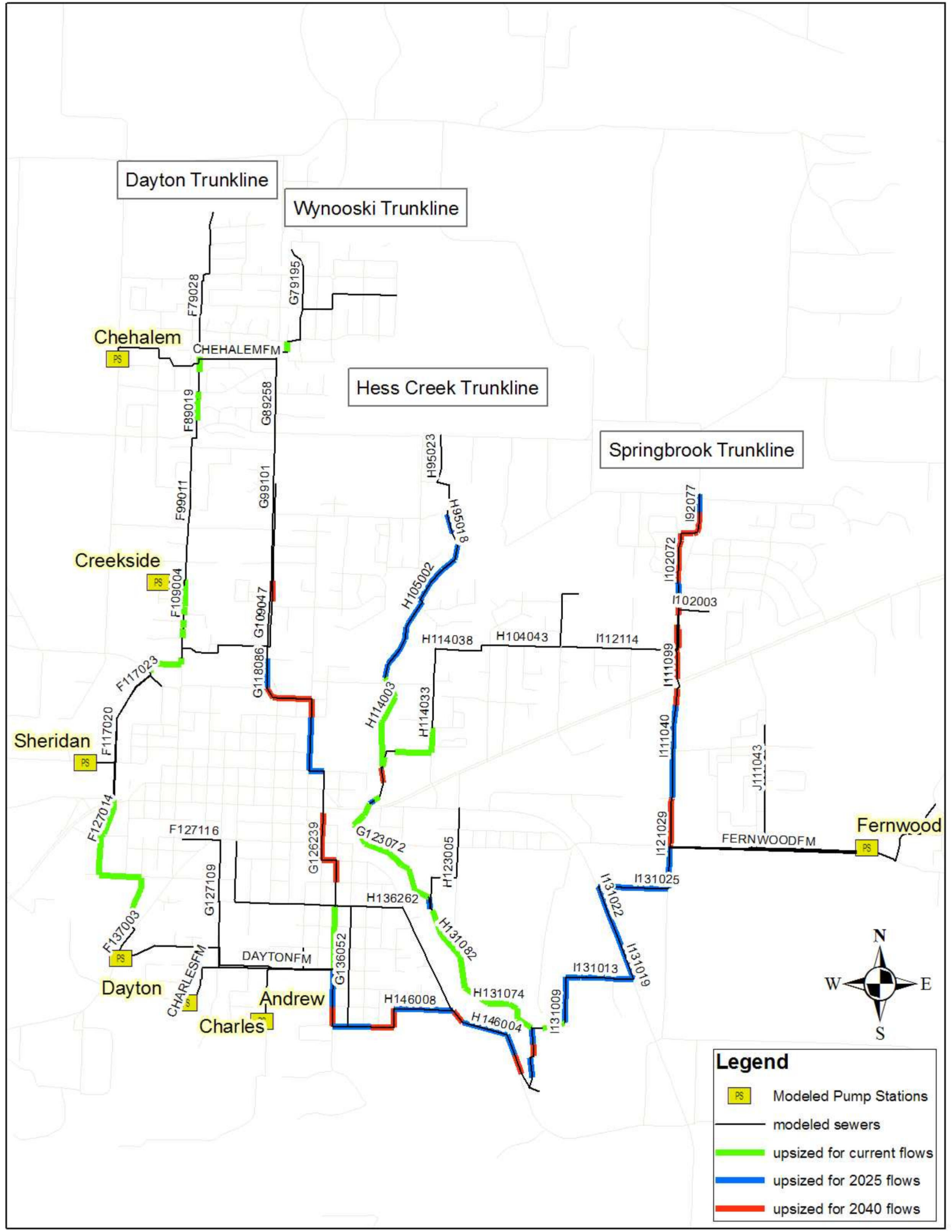
Table ES-1. Capital Improvements Summary	
Component	Estimated cost of improvements, dollars
Pipe replacement, 2040	23,866,000
Lift station upgrades, 2040	5,939,000
Collection system extensions, 2025	9,641,000
Collection system extensions, 2040	21,838,000
Total	61,284,000

In addition, this SMPU recommends the implementation of a sewer rehabilitation and replacement (R&R) program to address the structural and operational deficiencies in the existing collection system. The high volume of infiltration/inflow (I/I) that is conveyed by the collection system is evidence of these deficiencies. These I/I contributions reduce the capacity of the collection system, thereby increasing the costs of providing conveyance capacity and treatment. Approximately \$1.1 million per year is required to implement an R&R program that focuses on reducing I/I through improvements to the collection system.

Projects are ranked for implementation based on when the required capacity will be required. Consequently, pipes that are currently undersized should be replaced first, followed by those that will be undersized by the future 2025 and 2040 planning scenarios. Table ES-2 lists the recommended capital improvement projects (CIP), including the R&R program implementation for the next 10 years. The table does not include the sewer extensions and lift stations required for future growth.

Table ES-2. Recommended Capital Improvement Projects Through 2017				
Year	Project name	Priority	Estimated cost, dollars	Annual CIP cost, dollars
2008	Hess Creek No. 2	1	490,000	5,119,000
	Dayton Lift Station		3,529,000	
	R&R Program	-	1,100,000	
2009	Hess Creek No. 3	1	492,000	1,592,000
	R&R Program	-	1,100,000	
2010	Hess Creek No. 4	1	529,000	1,629,000
	R&R Program	-	1,100,000	
2011	Hess Creek No. 5	1	560,000	1,660,000
	R&R Program	-	1,100,000	
2012	Hess Creek No. 6	1	499,000	1,599,000
	R&R Program	-	1,100,000	
2013	Hess Creek No. 7	1	394,000	1,494,000
	R&R Program	-	1,100,000	
2014	Hess Creek No. 8	1	513,000	1,613,000
	R&R Program	-	1,100,000	
2015	Hess Creek No. 9	1	415,000	1,515,000
	R&R Program	-	1,100,000	
2016	Dayton No. 1	1	618,000	1,718,000
	R&R Program	-	1,100,000	
2017	Dayton- 4 <sup>th</sup>	1	502,000	1,602,000
	R&R Program	-	1,100,000	

The City's sanitary sewer maintenance program was assessed as part of the development of the SMPU. It is primarily reactive; that is, most activities are performed as the result of customer complaints or in response to observed problems. A preventive maintenance program is required to identify and address sewer deficiencies before they become severe enough to cause problems for customers. Otherwise, the collection system will continue to degrade, resulting in an increase in the number of problems as the system ages, including defects that can create sinkholes, sewer backups, basement flooding, and other forms of sanitary sewer overflows. The City needs to provide additional maintenance staffing to support a preventive maintenance program. Total staffing for the sanitary sewer maintenance program should be 11.20 full time equivalents. This staffing level is required to maintain an acceptable level of service to the community.



Dayton Trunkline

Wynooski Trunkline

Hess Creek Trunkline

Springbrook Trunkline

Chehalem

Creekside

Sheridan

Dayton

Charles

Andrew

Fernwood



**Legend**

- Modeled Pump Stations
- modeled sewers
- upsized for current flows
- upsized for 2025 flows
- upsized for 2040 flows

# NEWBERG CITY COUNCIL MEETING INFORMATION

DATE of Meeting: June 25, 2007

CITY COUNCIL SPECIAL MEETING – TOUR OF WWTP

Prepared by: Norma Alley

Councilors	Roll Call	Res/Ord/Order # Topic: _____	Res/Ord/Order # Topic: _____	Res/Ord/Order # Topic: _____	Res/Ord/Order # Topic: _____	Res/Ord/Order # Topic: _____	Res/Ord/Order # Topic: _____
ANDREWS, Bob, Mayor	X						
BOYES, Mike	ABSENT						
CURRIER, Roger	X						
LARSON, Bob	X						
PALMER, Jeff	X						
RIERSON, Bart	X						
SOPPE, Robert	X						
ROLL CALL VOTES		YES: _____ NO: _____ Absent: _____ Abstain: _____	YES: _____ NO: _____ Absent: _____ Abstain: _____	YES: _____ NO: _____ Absent: _____ Abstain: _____	YES: _____ NO: _____ Absent: _____ Abstain: _____	YES: _____ NO: _____ Absent: _____ Abstain: _____	YES: _____ NO: _____ Absent: _____ Abstain: _____
Department:							
CHANGES: (Yes/No)							
MOTION (1 <sup>st</sup> /2 <sup>nd</sup> ):							

**CITY RECORDER:**

- Route COPY of the Meeting Information Sheet and materials received at meeting to applicable departments for processing of Council action items.
- Route originals of materials/overheads received at meeting to City Recorder for the record.
- Route labeled Audio tape(s) to Library (ATTN: Denise Rielly) except Executive Session tapes gets routed to the City Recorder.

**CITY DEPARTMENTS:** WITHIN 48 HOURS - Route to City Recorder for Signature (verify changes, if any):

- IF ANY CHANGES, CORRECTIONS ARE TO BE MADE BY DEPARTMENT ORIGINATING DOCUMENT.
- Print final Orders/Ordinances/Resolutions and attachments on 100% cotton white bond paper (excluding RCA).
- IF NOT ADOPTED, route hard copy to City Recorder w/ following notation PRINTED ON TOP - "FAILED TO PASS (DATE)".
- Route to City Recorder for collection of signatures.

**CITY RECORDER:** \* Route signed copies of documents to respective departments; \* Place originals of orders/ordinances/resolutions in City Vault & Index appropriately; \* Transfer FINAL order/ordinance/Resolution into appropriate City Recorder Computer Directory.