

# Wastewater Treatment Division PRODUCTIVITY INITIATIVE Annual Report 2007



*Creating Resources from Wastewater*

King County Department of  
Natural Resources and Parks



King County

July 2008

King County Department of  
Natural Resources and Parks  
**Wastewater Treatment Division**

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*Pictured on front cover:* In May 2008, the Carnation Treatment Plant began treating wastewater for the City of Carnation using an advanced treatment technology, called a membrane bio-reactor (MBR) system. Construction on a wetland enhancement at Chinook Bend Natural Area was completed in Fall 2007.

### Executive Summary

The Wastewater Treatment Division's (WTD) Productivity Initiative Pilot Program establishes annual savings targets for the wastewater operating program. The program provides that savings achieved by employees in excess of those targets be shared 50/50 between ratepayers and employees as a financial incentive to take actions to operate more efficiently. Although employees did save more than \$9,207,761 in planned savings, plus \$1,508,767 in savings resulting from employee actions, program expenses in 2007 exceeded the target. As a result, the savings achieved in 2007 were not sufficient for employees to earn a financial incentive.

The 2007 productivity target, after adjusting for factors outside the program's control, was \$75,084,414, and the actual program expenditure was \$75,666,677. While this amount is under the division's budgeting authority, it exceeded its productivity target by \$582,263. The capital (asset management) productivity pilot resulted in \$65,964 savings, thus bringing the net overexpenditure to \$516,299. When the target is not achieved, the overexpenditure is split equally between ratepayers and the employee Incentive Fund as specified in the pilot plan. Therefore, the employees' share (\$258,150) was funded from the "Rainy Day" portion of the Incentive Fund, which was specifically earmarked by employees in the first year of the program for this purpose.

While disappointing, these results were not altogether unexpected. As was predicted when the 10-year program launched, opportunities for savings have become increasingly harder to identify and implement with each year of the program. While the division did save money in some areas, particularly from vacancies, other expenses were higher than projected. The end result was that overexpenditures were greater than our savings.

Unrelated to the 2007 results, WTD also found discrepancies in how cogeneration revenue and chemicals were accounted for in 2006, resulting in adjustments that put the Incentive Fund balance at zero and leaving a deficit to be covered by future savings.

### Outlook for 2008 to 2010

As the targets have become harder to meet, the division has decided to implement a number of strategies that may help us meet the productivity target in the remaining years of the pilot program, but more importantly, help us achieve long-term efficiencies beyond the life of the program. Just like any business, we have reached a point where we must make certain investments to achieve greater efficiencies down the road. Investing in long-term efficiencies may prevent us from achieving targets in the near-term (2008-2010). Division-wide strategies that will help meet the Productivity target include:

### At a Glance...

- ✓ **Ratepayer savings for 2007:** \$9.2 million, for total of \$51.75 million since 2001.
- ✓ **New actions:** Develop an Energy Plan, develop and implement a Strategic Asset Management Plan, establish and implement a Maintenance Best Practices Program, and execute a new organization structure and project management system.
- ✓ **Staffing:** Implement a staffing plan that will maintain staffing levels at 2000 numbers, while Carnation and Brightwater come on-line.
- ✓ **2007 Operating results:** \$582,263 over target for expenditures.

## Productivity Initiative Annual Report 2007

- **Develop an Energy Plan:** The division will not only continue efforts to convert Waste-2-Energy, but will seek energy efficiencies at all facilities.
- **Develop and implement a Strategic Asset Management Plan:**  
In order to better manage wastewater program assets, the division will apply a lifecycle cost analysis for most maintenance decisions, develop a risk management framework for project assessment and define levels of service. Technical standards for engineering and design will also be updated and a new as-built policy that has already been adopted will help reduce inefficiencies and changes during construction.
- **Establish and implement a Maintenance Best Practices Program:**  
In 2007, the county contracted with Genesis Solutions to identify and implement actions for WTD to improve its current maintenance practices and move closer to a desired best practices standard. While initial investment in this program may impact the division's ability to meet its target in 2008, business plan savings that will be realized beginning in 2009 are expected to offset the \$1.6 million investment made in 2008.
- **Finalize the new organization structure and project management system:** The wastewater program has been undergoing a reorganization of both the operating and capital programs. This reorganization will allow the utility to operate and maintain two new wastewater facilities (the Brightwater and Carnation treatment facilities) using the same number of wastewater program employees as 2000). In addition, by implementing a new project management system, the division will gain efficiencies by achieving more predictable results with our projects.

Some external and internal forces that are likely to impact how the division achieves its goals over the next few years include more stringent environmental regulations, economic decline, population growth and an aging workforce. The division has developed strategic initiatives that will help us prepare for and mitigate these change dynamics for the least impact on productivity.

I am looking forward to this opportunity to "dig deeper" using the lessons of 2007, as well as the past years' productivity results. I appreciate the support for the program that has been shown by our elected officials, labor organizations, King County Office of Management and Budget, Department of Natural Resource and Parks, and most of all, the WTD employees.



Christie True  
Division Director

### At a Glance...

- ✓ Create an Energy Plan.
- ✓ Develop and implement a Strategic Asset Management Plan.
- ✓ Establish and implement a Maintenance Best Practices Plan.
- ✓ Finalize the new organization structure and project management system.

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### Overview of Productivity Initiative Pilot

The Productivity Initiative Pilot Program is a 10-year incentive program that applies certain private-sector business practices, including the establishment of an incentive-based cash payment to employees in the wastewater program, to cut operating costs, increase productivity and continue a high level of service and environmental protection for our customers.

### Background

The Productivity Initiative was developed in 2000 and approved by the King County Executive and Council as a pilot program for the operating program in 2001. The pilot program was conceived as an opportunity for a traditional utility to be managed and operated more like a business. For King County's wastewater treatment employees, this means providing the same high-quality services to the public that King County has always provided, and doing it with the best and most appropriate technology, human resources and fiscal planning found in the business world today. To the public, this means WTD is committed to being more efficient, reducing costs and meeting the county's obligation to protect public health and the environment.

The Productivity Initiative Pilot Program identifies specific levels of service, cost reductions and efficiencies over the period 2001 to 2010 that will result in an estimated \$75.9 million savings (*see graph Appendix 1, Page 33*) for ratepayers, while maintaining levels of service to these same customers. Through 2007, \$51.7 million in savings have been achieved. Savings are achieved by undertaking an intensive review of current business practices, identifying and implementing cost saving practices, working to increase employee involvement in business decisions and ensuring that the wastewater program receives the best possible services from its partner agencies within and outside the county.

The Productivity Initiative links management decisions about employees with labor, and it requires that management and labor cooperate to identify new ways of getting business done, meet the bottom line, protect public health and safety, and allow employees to share in the financial rewards and risks of operating the program more like a business.

### At a Glance...

#### Basic Goals and Objectives

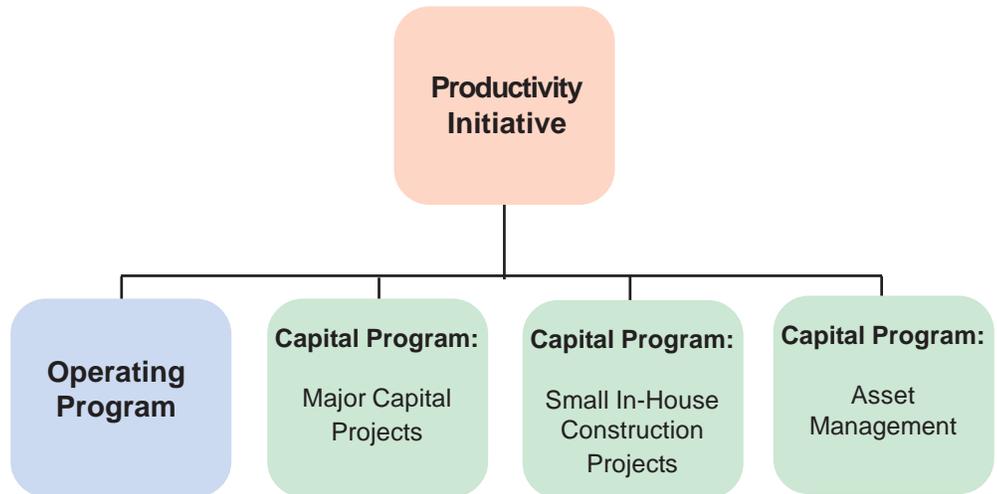
- ✓ Improve efficiency and reduce cost within the wastewater program.
- ✓ Move to operate the utility more like a business.
- ✓ Maintain the wastewater program as a public utility.
- ✓ Meet or exceed all regulatory requirements.
- ✓ Incur no loss of service, reduction in safety standards or effluent quality.

#### Commitments

- ✓ Uphold no privatization of program.
- ✓ Incur no involuntary layoffs.
- ✓ Provide opportunity for incentive payments to employees for meeting and exceeding target budgets.
- ✓ Beginning in 2001, save a minimum cumulative total of \$75.9 million from the operating budget by 2010.
- ✓ Extend program to capital construction budget (the initial program was limited to the operating budget only).

**Components of Pilot Program**

The pilot program began with the operations program. Since the program was launched, it has expanded to include three pilot programs within the capital program: Major Capital Projects Pilot, Small In-House Capital Construction Projects Pilot and Asset Management Pilot.



***Operating Program Pilot (active since 2000)***

Annual productivity targets are developed with incorporated planned savings. These planned savings must be met to achieve the target. Employees generate documented savings which reduce annual operating expenditures. If operating expenditures are below the target, ratepayers share in 50 percent of the savings and the other 50 percent goes to the Incentive fund, which captures a portion of the savings that employees have generated by meeting or exceeding targets.

***Major Capital Projects Pilot (active since 2005)***

All capital projects over \$1 million are eligible to participate. Participation is decided on a case-by-case basis. A target budget (cost at completion) is set by an external, independent third party for each eligible capital project. Staff is challenged to deliver the capital project at a lower cost than the target.

**At a Glance...**

**Examples of Efficiencies Implemented to Date**

- ✓ Installed high solids centrifuge.
- ✓ Improved energy management.
- ✓ Recycled grit.
- ✓ Leveraged spare parts and standardized equipment.
- ✓ Reduced expenses for supplies.
- ✓ Eliminated positions.
- ✓ Absorbed work during short-term vacancies.

### ***Small In-House Capital Construction Projects Pilot (active since 2005)***

Under certain conditions, savings created by doing work in-house rather than by outside contractors can be documented and applied to the Incentive Fund. An independent estimate is required as part of any proposal by in-house staff to do the work at a lower cost than using an outside contractor.

### ***Asset Management Pilot (active since 2006)***

Using a suite of 153 assets at South Plant, maintenance, refurbishment and replacement decisions are based on reducing overall costs by balancing maintenance and repair, replacement and refurbishing costs to extend the useful life of an asset. Savings in this pilot can occur only when staff successfully extend the useful life of equipment beyond the anticipated replacement date.

## 2007 Financial Results: Operating Program

### Target and Adjustments

#### 2007 Results

Unadjusted target	\$71,891,390
Adjusted target	\$75,084,414
Actual expenditures	\$75,666,677
Overexpenditure	(\$582,263)
Eligible savings for Incentive Fund	\$0
Capital program savings	\$65,964
Net overexpenditure	(\$516,299)
Employee share (50%)	(\$258,150)
Ratepayer share (50%)	(\$258,150)

#### Background on Annual Targets

The annual operating targets for the pilot program were established by HDR, Inc., the consultant that worked with the wastewater program to develop the pilot program in the late 1990s. The baseline budget was established using WTD's 2000 Operating Program Budget.

HDR recommended that the wastewater program reduce its baseline budget incrementally over five years (2000 to 2005) to achieve a 15 percent reduction. The level of savings achieved by implementing planned savings actions would then be sustained during the remaining years of the Pilot Program (2006-2010). In their view, this would position King County's wastewater program to compare favorably with what a private contractor would charge to run King County's wastewater operations.

#### Adjustment Process

Both an unadjusted target and an adjusted target are reported annually. The unadjusted targets for the 10 years of the Pilot Program were established when the program was developed, as described above. The unadjusted target is subject to an annual adjustment process, detailed in Appendix C-7 to the Pilot Plan approved by council.

The target adjustments account for changes in conditions that are outside the program's control, such as county-wide cost-of-living increases, increased loading at the treatment plants and changes in commodity and energy prices.

### **Accounting for New Work**

In 2007, the wastewater program continued to use an identification and review process developed in 2005 to identify and account for new work. "New work" is defined as work that is beyond the scope of services that was committed to in the pilot plan and is either:

- Required by changes in fiscal policy.
- Required by changes in county policy or procedure.
- Required because of a change in law or new permit requirements.
- Directed from outside WTD or the Environmental Lab.

In addition, new work must be work not taken on solely at the discretion of WTD or the Environmental Lab.

In addition to the target adjustments, the Pilot Program allows the annual targets to be adjusted for any new work not captured in the initial development of the Pilot Program, and which was imposed on the program by directives originating from outside the program.

After being identified as new work by section managers, a project is approved as new work under the above definition by WTD management, WTD Finance, and DNRP Finance (see Page 36). Section analysts establish new time codes and employees begin tracking time and expenditures related to the new work. WTD and the Technical Review Committee conduct an annual review of what and when new work should be added to the "base work."

### **Savings**

#### **Planned Savings**

A primary strategy for achieving annual productivity targets in the Pilot Program Plan was to implement specific major actions to achieve productivity targets for the first five years of the program (2000 to 2005). The level of savings achieved by implementing those actions would then be sustained during the remaining years of the Productivity Initiative (2006 to 2010).

#### **Employee Generated Savings**

These are actions that division employees undertook to save operating expenses. While many of these savings are generated each year, there are a few items that continue to provide savings over several years.

Savings resulting from employee actions totaled more \$1.5 million and are detailed on pages 12-15 of this report.

### **At a Glance...**

#### **New Work**

- ✓ Henderson CSO
- ✓ Herbicide Ordinance
- ✓ Beulah Park-Cove
- ✓ Elliott West/Denny CSO Facilities
- ✓ Bunker Trail (Vashon) Pump Stations
- ✓ New Vashon Treatment Plant
- ✓ North Creek Storage Facility

### **Short-Term Salary Savings**

#### **Overview**

The section managers and section budget analysts used the same process for assessing short-term salary savings in 2007 as in the previous two years. Each section provided data on salary short-term savings on a worksheet, which was analyzed by the Incentive Fund Committee before being included in the committee's savings recommendation.

#### **Process**

Supervisors and section managers used detailed worksheets to document short-term salary savings from positions vacant for all or part of 2007. Only savings achieved from directing work normally assigned to the vacated position(s) to others in the unit, including coworkers, leads and supervisors, were documented. Any costs incurred for overtime, temporary workers or contract labor were noted on the worksheets and deducted from the savings being claimed.

In most cases, existing staff accomplished the additional work assigned to them from vacated position(s) by using a combination of short-term and temporary strategies.

For example, staff elected to accept additional assignments by temporarily rebalancing workloads, deferring essential but non-urgent tasks, staggering vacation and leave schedules, increasing the number of employees assigned to a supervisor and taking advantage of internal resources by cross-training. Exempt staff also temporarily worked extra hours at no additional monetary compensation.

Employees and management recognized that such actions are not sustainable long-term without compromising safety, union contract provisions, employee health and well-being, and employee retention. Employees proposed or elected to accept these strategies on a short-term basis rather than hire temporary workers or contract help while permanent replacements were sought for vacancies.

The salary savings worksheets used by supervisors and section managers detail the percentage of a vacant position's workload they estimate was accomplished by using these strategies. The percentage of work estimated as completed in each case ranges from 15 to 80 percent, and savings have been calculated accordingly. In a few circumstances, it was the judgment of supervisors and section managers that 100 percent of the work was accomplished.

#### **At a Glance...**

- ✓ To maximize existing staffing, employees elected to defer or reschedule administrative and housekeeping activities, elective training opportunities and discretionary time off.

## Productivity Initiative Annual Report 2007

### **Methodology**

1. WTD Human Resources distributes a spreadsheet to section analysts that lists all the vacancies for the prior calendar year.
2. Section analysts confer with section managers and supervisors to determine what percentage of the body of work was performed during the vacancy, calculate any mitigating or backfill costs, and provide additional information to support the salary savings.
3. Salary savings forms are then compiled and submitted to the Incentive Fund Committee for review and approval. The committee can (and does) ask for more information about submittals prior to making a decision.
4. The approved salary savings, along with the productivity savings and recommendation from the Incentive Fund Committee, are submitted to the WTD Director for final approval.

### **Results**

<b>Section</b>	<b>Savings</b>
Environmental Lab	\$209,033
Finance & Administration	\$24,515
Planning & Compliance	\$35,801
East	\$369,387
West	\$334,019
<b>Total Short-Term Salary Savings</b>	<b>\$972,755</b>

## **Savings Resulting from Employee Actions**

Savings resulting from employee actions totaled more than \$1.5 million in 2007. These are actions that the employees undertook to save operating expenses. While many of these savings are generated each year, there are a few items that continue to provide savings over several years.

Section	Expense	Salary Savings	Total Savings
Asset Management	\$31,432		\$31,432
East	\$257,697	\$369,387	\$627,084
Finance & Administration	\$5,269	\$24,515	\$29,784
Environmental Lab	\$22,936	\$209,033	\$231,969
Planning & Compliance	\$133,558	\$35,801	\$169,359
West	\$85,120	\$334,019	\$419,139
<b>Total</b>	<b>\$536,012</b>	<b>\$972,755</b>	<b>\$1,508,767</b>

**Air dryer:** The old refrigerated air dryer at South Plant was removed, and a more efficient air dryer was installed.

**Asset Management Pilot Program:** WTD has deferred the need to rebuild or replace assets at South Plant as a result of good maintenance practices.

**Chlorine valve rebuilds:** The chlorine cylinder valves used in the West Point disinfection process were plated and rebuilt instead of replaced, resulting in considerable savings.

**Clean green recycling:** A separate dumpster for clean green materials was added at South Plant and the material separated from normal garbage. The disposal cost of clean green material is less than half the cost of garbage.

**CoGen operation:** South Plant operations used the gas turbine cogeneration facility to reduce electrical demand charges.

**Compressor cylinder liner repair:** Instead of replacing the South Plant compressor cylinder liners as usual, they were repaired at a lower cost.

**Conveyor boot protection:** Extended the life of a conveyor boot at South Plant by developing a conveyor boot-protection plate.

**Courier service cost reduction:** The transport of influent samples from each treatment plant was consolidated from twice a week to once a week, cutting the cost of courier services in half.

**DAFT polymer dosage:** Converted the polymer dosing strategy for the Dissolved Air Flotation Thickeners (DAFT) operations at South Plant to a "feed-forward" control strategy, resulting in savings of polymer, electricity, and gas.

### At a Glance...

- ✓ Savings resulting from employee actions totaled over \$1.5 million for 2007.
- ✓ Expense Savings: Materials, supplies, energy, chemicals, overtime, contracting, etc. Directly contributes to Incentive Fund.
- ✓ Labor Savings: Value of time made available through more efficient work practices and used for additional work. Does not directly contribute to Incentive Fund.

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**Dewatering improvements:** Extended the life of dewatering polymer dilution pump stations at South Plant by installing a flow indicator switch.

**Dewatering team:** Converted the staffing of dewatering operations at South Plant from a rotating shift activity (24/7) to a dedicated team schedule. This resulted in savings from less overtime, shift differential pay and comp-time pay down.

**Dissolved Oxygen (DO) probe reduction:** Reduced the number of DO probes with probes requiring less maintenance without an impact to the secondary process at South Plant. Less labor and fewer parts are required.

**Door mat purchase:** Purchased door mats and discontinued more costly rental of door mats and shop towels for East Section.

**Grit recycling:** Grit from the treatment plants was sent to a composting facility at a lower cost than it previously cost to send it to landfill disposal.

**Hazardous Materials Program:** Facilities Inspection staff were certified to perform sampling and project management at a lower cost than previously performed by consultants.

**H2S inspection:** Sewer inspection support and sampling was performed by summer interns instead of Facilities Inspection staff, resulting in a cost savings.

**Hypochlorite use reduction:** Reduced hypochlorite use was achieved in South Plant's disinfection process by installing a mixer, reconfiguring the contact channel and optimizing chlorine residual analyzer locations. The average hypochlorite dose was reduced as well as the variability in dose, allowing for further lowering of hypochlorite doses.

**Lighting controls:** Installed various types of lighting controls to automatically shut off lighting after a predetermined time at West Point.

**Lower copier paper costs:** A significantly less expensive source of copier paper was sourced for the copiers at King Street.

**Lower cost/longer life standards:** Worked with a vendor to obtain chemical standards used in the Environmental Lab with a longer shelf life.

**Micro COD method:** South Plant Lab switched from a macro Chemical Oxygen Demand (COD) method to a "micro" method. This reduced staff time and their exposure to hazardous materials.

**Mixed liquor blower energy use:** The aeration of the secondary mixer liquor channels at West Point previously utilized three blowers operating at reduced load. Running two blowers at a higher loading rate rather than

three at a reduced rate lowered the overall energy costs for channel aeration.

**Monitor installation in ML/RAS areas:** Installed monitors in the Mixed Liquor (ML) and Return Activated Sludge (RAS) of South Plant secondary process, which reduced the manual sampling and analyses, and resulted in energy savings.

**MOV strategy in sed aeration:** Installed header control valve position indicators to allow for “most open valve” (MOV) control strategy to be used for operating South Plant’s secondary aeration system.

**New method for IC-PMS dissolved samples:** The methodology for the analyses of Inductively Coupled Plasma-Mass Spectrometry (IC-PMS) dissolved samples was changed by eliminating the need to digest these samples before analyses. Eliminating the sample digestion allowed the Environmental Lab to increase in the number of samples taken during the course of the year and eliminate the cost of acid and digestion vessels.

**New method for ultra low IC-PMS detection:** Developed a new method to perform ultra-low IC-PMS detection limit work and enabled the older IC-PMS system to be taken off-line and to end its service/maintenance contract at the Environmental Lab.

**New use for digester cleanings:** The staff worked collaboratively with the Solid Waste Division in the Department of Natural Resources and Parks to apply digester cleanings as landfill top cover. Modifications made at the plant improved the quality of the cleaning in order to beneficially reuse the cleanings as top cover and save on disposal costs.

**On site acid distillation:** The Environmental Lab purchased an Acid Distiller Unit, allowing the creation of ultra-pure acid from reagent grade acid instead of having to purchase very expensive ultra-pure acid from a vendor.

**One Call Program:** Greater scrutiny of sewer locate requests, providing more specific direction to contractors and reviewing faxed drawings reduced the number of field locates. Time saved on locates allowed Facilities Inspection staff to work on other projects.

**Outfall inspection:** Facilities Inspection and the Environmental Lab coordinated the use of the lab’s underwater camera attached to a remote-operated vehicle (ROV) to inspect several outfalls. This resulted in less time for contract divers and increased ability to inspect areas divers could not previously access.

**Paint disposal and recycling:** Improved the recycling and disposal of used thinner and paints at West Point, resulting in lower disposal costs.

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Switching from alkyd paint to acrylic paint also decreased hazardous waste disposal costs.

**PSE bill consolidation:** South Plant staff worked with Puget Sound Energy (PSE) to consolidate electricity bills, significantly reducing the amount of time spent on opening and sorting bills.

**Scale calibration:** Reduced the hours needed to calibrate the scale weight analog loops at South Plant.

**Sedimentation tank plugs:** Special plugs were built for the sedimentation tanks so crews would not have to spend the time setting up and completing a confined space entry at South Plant.

**Sludge cross collection and TBST removal:** Removed sludge cross collectors and thicken blended sludge tanks (TBST) at West Point, saving electricity, labor and materials.

**Sonar Inspection Program:** Facilities Inspection staff were able to clean sediment, take measurements and replace flange bolts as part of the Sonar Inspection Program instead of having the work done by the contractor at a higher cost.

**Truck scale printer:** Eliminated the hours needed to make annual daylight savings time changes to the septage truck scale printer at South Plant.

**Valve replacement:** The dry poly slide gate was replaced with a valve, reducing the time spent removing, cleaning and reinstalling the old slide gate at South Plant. The new valve system requires zero maintenance, resulting in substantial labor savings.

**Vashon dewatering cessation:** Stopped dewatering of Vashon sludge to reduce the costs of polymer, belt filter parts, operator and maintenance time, and ferry tickets.

**Watermark production:** Staff produced the Watermark, a WTD publication, internally with existing staff, instead of paying more for external production, and reduced the number of copies, for additional savings.

**Weed cloth:** Installed weed cloth on the Beulah Cove (Vashon Island) sand filter to save labor weeding.

**Work site location:** A significant amount of travel time each day was saved by allowing certain West Point employees to start their day at specific drive sites, which allowed them to accomplish more work.

## 2007 Financial Results: Capital Program

### Major Capital Projects Pilot

All wastewater capital projects with budgets of more than \$1 million are eligible to participate in the Major Capital Pilot Program.

#### *Methodology*

A project target budget (i.e., cost at completion) is set by an external independent third party for each participating capital project. If the wastewater treatment program completes the project for less than the target budget, a portion of the savings is eligible for the Incentive Fund. There is no financial penalty if the program does not meet the target budget under the terms of the capital pilot program plan.

The wastewater program originally contracted for target setting services with two outside consultants. These consultants are not eligible to provide any other consulting services on assigned projects. Targets are set following completion of a project's predesign report, between the 30 percent and 60 percent design completion milestones. All project data is given to the consultant, who then independently determines what it would cost for a "well run" agency to complete the same project. This cost becomes known as the target budget. No adjustments can be made to the target budget throughout the life of a project except for inflation. At the end of each fiscal year, Engineering News Record's Construction Cost Index (ENR CCI) will be utilized to determine the amount of annual project spending attributable to inflation. After subtracting such spending from a project's final cost, the revised figure will be measured against the target budget to see if savings were realized.

Project management staff gain flexibility in managing and controlling projects by the use of consultant/contractor incentives and alternative delivery methods. The concept is to link project performance to consultant and contractor performance by using creative incentives. Examples include completing work within contract budget, sharing unused contract contingency, achieving early project completion, using report cards, etc.

Savings (if realized) are calculated by taking the target budget minus the final project cost. Any resulting savings are split between ratepayers (83 percent) and pilot program participants (17 percent). The split was developed on the basis of a 50/50 split between ratepayers and people responsible for achieving savings: employees, consultants and contractors. Employees (the only group eligible for a share of the savings) would receive one third of the 50 percent share, or approximately 17 percent of the total savings.

Determining savings can only occur once the project has been closed out. There are no provisions for intermediate measures or payouts. There is no penalty to the pilot program participants for not meeting or for exceeding a target budget.

### At a Glance...

- ✓ All capital projects \$1M+ to be considered.
- ✓ Target budget set by external, independent third party.
- ✓ Savings eligible for Incentive Fund.
- ✓ No penalty if target not met. No Rainy Day Funds required.
- ✓ No adjustments to target budget, except inflation.
- ✓ Incentives and alternate delivery methods used for optimal performance.
- ✓ Ratepayers and staff to split savings 83 percent for ratepayers and 17 percent for WTD staff.
- ✓ Savings can only be determined once project is closed out.

### Results

In 2005, three major capital projects were selected to participate in the program: Brightwater Treatment Plant and Conveyance System, Carnation Treatment Plant and Bellevue Pump Station. In 2005, the wastewater program contracted with two consultants to establish savings targets for each project.

- The success of generating productivity savings for construction of the Brightwater Treatment Plant and Conveyance System by completing the entire project for less than the productivity financial target will not be known until the project is closed out, somewhere around 2011. Current projections indicate that Brightwater's target cost is being exceeded by 12.7 percent, and thus savings would not be achieved. However, with only 36 percent of project funds spent through 2007, and with numerous variables and opportunities remaining, it is far too early to accurately predict whether or not savings will be realized.
- A major change in the project scope of the Carnation Treatment Facility made after the original target was established eliminates the possibility of coming in under the productivity target and creating productivity savings. The program does not allow the target cost to be revisited or altered due to material changes.
- As stated in last year's report, costs for completing the Bellevue Pump Station project continue to run considerably higher than estimated. The high bid for constructing the pump station eliminates the possibility of the project coming in under the productivity target and creating productivity savings. The current Bellevue Pump Station forecast is 69 percent above its target estimate.

As the wastewater program undertakes additional capital projects of \$1 million and more in the remaining years of the Productivity Initiative, those projects will be reviewed for their potential to participate in the Major Capital Pilot Program. During the second half of 2008, it is expected that the Ballard Siphon Replacement, Kent-Auburn Interceptor and Black Diamond Storage Facility projects will undergo target setting. Other possible 2008 candidates include the Kirkland Pump Station Modification and West Point Digestion Improvement projects.

### At a Glance...

- ✓ Brightwater Treatment Plant project to be closed out around 2011.
- ✓ Bellevue Pump Station and Carnation Treatment Facility not likely to be eligible due to high bids and changes in project scope.

### Small In-House Capital Construction Projects Pilot

#### **Methodology**

Small in-house capital construction projects are eligible to participate in the pilot project if they meet the following specific criteria:

- The total cost of labor, equipment and supplies is less than \$25,000 for a single trade or craft, or \$70,000 for two or more trades or crafts.
- Wastewater program employees must submit a bid that is more competitive than an independent estimate to perform the same work.
- If the in-house bid is more competitive, then the difference may be eligible for the Incentive Fund. If the *actual costs* of the project after the project is completed are greater than the independent estimate, then the difference between the estimate and the actual cost borne by WTD must be paid to the wastewater operating budget from the Incentive Fund.

Any resulting savings from performing an eligible small capital construction project in-house would be eligible for the Incentive Fund.

#### **Results**

There was no activity in the Small In-House Capital Construction Projects Pilot in 2007. No projects were identified that were more cost efficient to do in-house, as opposed to being performed by contractors, after the cost of obtaining an independent construction estimate was factored into the employee bid.

#### At a Glance...

- ✓ No activity in Small In-House Capital Construction Projects Pilot in 2007.

### Asset Management Pilot

#### **Objectives**

- Make and document effective decisions regarding maintaining, refurbishing and replacing assets based on cost, risk and customer service requirements.
- Reduce overall cost of doing business by balancing maintenance and replacement costs to extend the useful life of an asset.
- Implement and evaluate the program's effectiveness against a standard for a "well-run," similar wastewater utility, including cost and system reliability.

#### **Methodology**

The Asset Management Pilot was first applied to 153 selected assets at South Plant, including both mechanical and electrical equipment. WTD has good historical operations, replacement and maintenance cost information for these assets.

Staff identified each asset's condition, age, service level, rebuild/replacement intervals and cost. Target rebuild and replacement intervals were established. As equipment exhibited a maintenance need or was scheduled for an action, a financial analysis was performed that compared the current operating and maintenance costs with the alternative rebuild or replacement costs.

The result was used to determine whether continued running, rebuilding or replacing an asset would be the least costly. That financial analysis is complete for all pilot assets with rebuild or replacement costs scheduled for 2004-2007. Staff has also reviewed all decisions to defer replacing or rebuilding assets to ensure that the condition will not likely result in any reduction in service levels.

Guidelines were developed to determine when actions deliberately taken and documented by staff resulted in costs lower than the target cost. The guidelines are based on the asset's lowest lifecycle cost in terms of extending its active life, while continuing to operate at a high performance level. These guidelines are intended to clarify the decision-making process for both participants and external stakeholders that review the program.

### At a Glance...

#### **Results**

- ✓ Financial analysis completed for 153 assets at South Treatment Plant.
- ✓ Deferred \$1,360,075 of capital renewal and replacement work.
- ✓ Saved \$65,964 in deferred interest on capital bonds for 2007, based on recent borrowing costs.
- ✓ 116 assets were scheduled to be rebuilt or replaced in 2007 at potential expenditure of \$2.6 million.
- ✓ Deferred actions from 2007 may be reconsidered in 2008, which would increase the potential expenditure.
- ✓ Program to expand to include all raw sewage pumps in 2008.
- ✓ Actions for all assets require the consideration and approval of WTD maintenance supervisors and management.

### ***Determining Savings***

An annual cost is projected to maintain and operate the asset (operating budget) versus replace or refurbish the asset (capital budget) without degradation of service. Actual costs are then compared against projected costs. Savings can result from successfully deferring the costs of replacement or refurbishment by extending the useful life of an asset beyond the anticipated replacement date. An associated program is aimed at created savings in maintenance activities by optimizing maintenance activities through use of predictive analysis and other reliability-centered techniques.

The actual savings in the capital budget is determined by identifying the deferred amount of borrowed money to replace or refurbish an asset. The savings are determined by deferred interest costs on capital bonds. In 2007, the program deferred about \$1,360,075 of capital renewal and replacement work, resulting in a \$65,964 savings in interest payments on money not borrowed.

### ***Next Steps***

The wastewater program plans to expand the Asset Management Pilot to include all raw sewage pumps in the system, typically its most expensive assets to acquire, operate and maintain. WTD is capturing baseline replacement cost data and establishing a replacement schedule in 2008 for the 180 raw sewage pumps in preparation for including these pumps in the pilot program beginning in 2008.

# Productivity Initiative Annual Report 2007

## Incentive Fund

### 2001 to 2007 Comparison of Productivity Initiative Results

	2001	2002	2003	2004	2005	2006	2007	Ratepayer Savings
*Operating expenditures without productivity	\$80,590,030	\$70,425,072	\$67,891,407	\$72,763,115	\$76,779,813	\$82,131,582	\$84,292,176	
Less: operating business plan savings	\$2,560,030	\$4,639,072	\$6,263,407	\$7,659,049	\$8,797,620	\$8,983,589	\$9,207,761	\$48,110,528
Productivity operating expenditure target	\$78,030,000	\$65,786,000	\$61,628,000	\$65,104,066	\$67,982,193	\$73,147,993	\$75,084,414	
Less: actual operating expenditures	\$68,898,000	\$60,431,000	\$60,687,000	\$65,697,769	\$65,233,984	\$71,449,761	\$75,666,677	
Under (over) expenditure target	\$9,132,000	\$5,355,000	\$941,889	(\$593,704)	\$2,748,209	\$1,698,232	(\$582,263)	
Documented operating savings	\$2,762,000	\$1,670,956	\$941,889	\$0	\$1,445,306	\$1,644,352	\$0	
Minus: Penalties	\$0	\$0	\$0	\$0	\$0	\$137,029	N/A	
Plus: capital savings	\$0	\$0	\$0	\$0	\$0	\$37,600	\$65,964	
Ratepayer share (50%)	\$1,381,000	\$835,478	\$470,944	(\$296,852)	\$722,653	\$772,461	(\$258,150)	\$3,627,534

### Employee Share Breakdown

Payment to employees	\$750,685	\$766,884	\$432,178	\$0	\$617,283	\$689,692	\$0	
Administrative costs	\$67,336	\$68,594	\$38,765	\$0	\$55,370	\$82,769	\$0	
Contribution to Rainy Day Fund	\$400,000	\$0	\$0	(\$296,852)	\$100,000	\$0	\$0	
Contribution to Investment Fund	\$162,979	\$0*	\$0*	\$0*	(\$50,000)	\$0	\$0	
Employee share (50%)	\$1,381,000	\$835,478	\$470,944	(\$296,852)	\$722,653	\$772,461	(\$258,150)	

### Incentive Fund Year-End Balances

Incentive Fund year-end balance	\$562,979	\$587,048	\$603,839	\$319,749	\$369,104	\$356,404	(\$194,599)	
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\*Operating expenditures without productivity is the amount that was estimated to be the actual expenditures of the Wastewater Treatment Division if the division had not implemented the Productivity Initiative. From this amount, reduced expenditures based on operating business plan savings were estimated to establish the productivity operating expenditure target.

**\*\*Note:** This table includes previously-reported amounts for the years of 2005 and 2006. It does not include corrected amounts for the years of 2005 and 2006 based on audit findings and corrections detailed on pages 29-31 of this report. For a table including corrections, please see Appendix 5 on page 38.

## 2001 to 2007 Productivity Incentive Fund Activity

The Productivity Incentive Fund, which captures a portion of the savings that employees have generated by meeting and exceeding target budgets, addresses two primary objectives. The first objective is to create a pool of money that can be drawn upon to fund over-target costs that are the responsibility of the wastewater program. If the wastewater program does not meet its annual adjusted budget target, the difference must be made up from funds taken out of the Productivity Incentive Fund. The second objective is to create an incentive for wastewater program employees to reduce costs below the annual budget target costs. In addition to the minimum annual payouts to employees of 25 percent of the funds assigned, distribution of the funds may include:

- Investment in employees through training and other employee development programs.
- Awards and recognition.
- A Reserve Fund, functions as a “rainy day fund” to addresses possible shortfalls in meeting budget targets.
- Other activities consistent with achieving the goals of the Productivity Pilot Program

	2001	2002	2003	2004	2005	2006	2007	Total
Savings to ratepayers (50%)	\$1,381,000	\$835,478	\$470,944	(\$296,852)	\$722,653	\$772,461	(\$258,150)	\$3,627,534
Savings to employees (50%)	\$1,381,000	\$835,478	\$470,944	(\$296,852)	\$722,653	\$772,461	(\$258,150)	\$3,627,534
Employee payouts (one full share)	\$1,260	\$1,253	\$681	\$0	\$943	\$1,069	\$0	\$5,206
Administrative costs associated with employee payout	\$67,336	\$68,594	\$38,765	\$0	\$55,370	\$82,769	\$0	\$312,834
Annual Incentive Fund contribution / adjustment	+\$562,979	+\$24,069	+\$16,791	(\$284,090)	+\$49,355	(\$12,700)	(\$551,003)*	(\$194,599)

\*Adjustment for previous years' corrections were consolidated in the 2007 Incentive Fund entries. The adjustment for 2006 of a negative \$280,814, combined with the shortfall in 2007 of \$258,150 totals \$538,964. Since there was only \$356,404 in the Productivity Incentive Fund, adding the 2007 fund activity\*\* of \$12,039 to the amount of \$538,964 makes a total adjustment for the year of \$551,003, leaving a deficit of \$194,599 to be covered by future savings.

\*\*Fund activity is the net difference on fund expenses versus interest earned on fund monies.

During the determination of the program results for 2007, \$839,146 of cogeneration revenue was included in the target. Cogeneration revenues were shown as a reduction to operating expenses and should not have been additionally shown as operating revenues. This error was partially offset by a miscalculation of chemical costs that added \$172,582 to the target. The net result of these two corrections to the program was a downward adjustment to the Incentive Fund balance of \$280,814.

**Note:** This table includes previously-reported amounts for the years of 2005 and 2006. It does not include corrected amounts for the years of 2005 and 2006 based on audit findings and corrections detailed on pages 29-31 of this report. For a table including corrections, please see Appendix 5 on page 39.

## Balanced Scorecard

### Overview

WTD uses a Balanced Scorecard, a performance measurement tool often used in private business, to measure its overall performance. The Balanced Scorecard ensures that program decisions take into account different perspectives, including financial performance, business practices, customer focus and employee management. These four areas are measured by four corresponding quadrants of the Balanced Scorecard.

In 2001, WTD management identified performance indicators in each of the four quadrants, and began collecting data so that year-to-year comparisons could be made during the ten years of the Productivity Initiative. The targets are set to be very aggressive and comparable to results reflecting the performance of the best wastewater programs in the nation.

A performance measurement system, such as the Balanced Scorecard, allows a public utility to align its service levels with operational and financial performance. With it, a utility can get feedback needed to guide planning efforts. The four quadrants and their key measures are described on the following pages.

### How Ratings are Applied to Measurements

In 2003, the program began using specialized software (“pbViews”) to help automate the process of gathering and displaying data. Beginning in 2006, the methodology of color ratings was standardized so that green is achieved when the performance-to-target ratio is equal to or greater than 100 percent; a measure is rated yellow when the performance-to-target ratio is 90-99 percent; and a measure receives a color rating of red when its performance-to-target ratio is less than 90 percent. However, any performance for environmentally critical measures or permit compliance that falls below 100 percent of target will receive a color rating of red.

### 2007 Summary of Overall Results

In 2007, all four quadrants of the Balanced Scorecard were rated **yellow**. The Business Practices and Financial Performance quadrants declined from overall green ratings to yellow, while the Customer Focus quadrant rating improved overall from red to yellow, and the overall rating for Employee Management remained the same as 2006. The overall rating for the Financial Performance quadrant declined because WTD did not meet its annual productivity target. However, other financial indicators for WTD, such as the debt service coverage ratio and bond ratings, remained strong. In the Business Practices quadrant, performance of several measures related to resource recovery and effluent quality remained strong; however, multiple sewer overflows due to severe weather and permit violations pulled the overall rating down. The Customer Focus quadrant improved from red to yellow, with higher satisfaction ratings from customers. Ratings on most Employee Management measures remained consistent with 2006 ratings.

\*NPDES = National Pollutant Discharge Elimination System



### At a Glance...

- ✓ **Green** indicates target was satisfactorily met. A **green** rating is only achieved when performance is at 100 percent of target.
- ✓ **Yellow** indicates performance was within 90-99 percent of established target. For environmentally critical measures, such as NPDES\* permit compliance and Number of Sanitary Sewer Overflows, there is no yellow rating. For those measures, a rating of red is given for any performance falling below the target.
- ✓ **Red** means performance has fallen below an established threshold and is in need of attention. In 2006, this threshold was standardized across all measures as any performance falling below 90 percent of established target. For critical measures in which performance must be maintained at or above 100 percent, red indicates failing to meet 100 percent of target.

# Productivity Initiative Annual Report 2007

## WTD 2007 Balanced Scorecard Report

Measure <i>*NTET=Not to Exceed Target</i>	2007 Target	2007 Actual	2006 Actual
<b>Financial Performance</b>			
Operating cost per lb. of biochemical oxygen demand & total suspended solids (BOD & TSS) removed NTET*	<\$0.3383	\$0.3229	\$0.3425
Contribution to Productivity Incentive Fund	>\$0	\$0	\$772,461
Productivity Operating Budget NTET*	<\$75,118,173	\$75,666,677**	\$71,449,761
Total debt service coverage ratio	≥1.15	1.19	1.28
<b>Business Practices</b>			
% compliance with National Pollutant Discharge Elimination System (NPDES) permit effluent limits	100%	100%	100%
% compliance with NPDES permit reporting requirements	100%	99.30%	99.33%
% compliance with air quality permit	100%	98.13%	100%
# marine sediment sites meeting state quality standards	7	7	7
# of sanitary sewer overflows caused by wet weather NTET*	0	18	11
# of avoidable sanitary sewer overflows NTET*	7	20	19
% of Combined Sewer Overflows (CSOs) to total flow NTET*	<3.00%	1.70%	1.12%
% digester gas recovered for reuse	≥75%	68.50%	73%
% biosolids recycled	100%	100%	100%
Reclaimed water (million gallons)	≥260.00	292	259.00
% of BOD/Chemical oxygen demand (COD) NPDES limit NTET*	≤80.00%	43.50%	31.00%
Fecal coliform annual geometric mean (coliform forming units) NTET*	≤175	15	18
Total suspended solids mg/L NTET*	≤24 mg/L	14 mg/L	12 mg/L
<b>Customer Focus</b>			
Component agency response to survey	≥50%	38%	21%
Quality of contract Services rated by local sewer agencies (1-5)	≥4	3.62	3.29
Customer service satisfaction by local sewer agencies (1-5)	≥4	3.92	2.29
Resident good neighbor survey (residents who view WTD as good neighbor)	>75%	74%	74%
Business good neighbor survey (businesses who view WTD as good neighbor)	≥75%	67%	63%
<b>Employee Management</b>			
% employees retained	≥91%	93%	94.4%
Hours of training per employee	≥50	53.66	51.11
Safety—# lost time accidents NTET*	≤22	16	24
Safety—employee satisfaction with workplace safety (1-5)	≥4	3.85	3.85
Overall satisfaction with job (1-5)	≥4	3.84	3.84
Employee rating of innovation (1-5)	≥4	3.65	3.66
Employee satisfaction with supervisor communication and support (1-5)	≥4	3.58	3.56
Satisfaction with leadership and management (1-5)	≥4	3.20	3.27
Satisfaction with spirit of teamwork (rating of 1-5)	≥4	3.83	3.73
Satisfaction with participation and involvement in decision making (1-5)	≥4	3.70	3.72
Satisfaction with training and development (1-5)	≥4	3.27	3.25
<b>LEGEND</b>			
<b>Met target (100% performance to target ratio)</b>			
<b>Near target (90-99% performance to target ratio)</b>			
<b>Needs attention (below 90% performance to target ratio)</b>			

## Financial Performance Results

### Description of Measures

The Financial Performance quadrant of the Balanced Scorecard includes measures that indicate the overall financial health of WTD and the efficiency with which the division provides services to its customers and stakeholders.

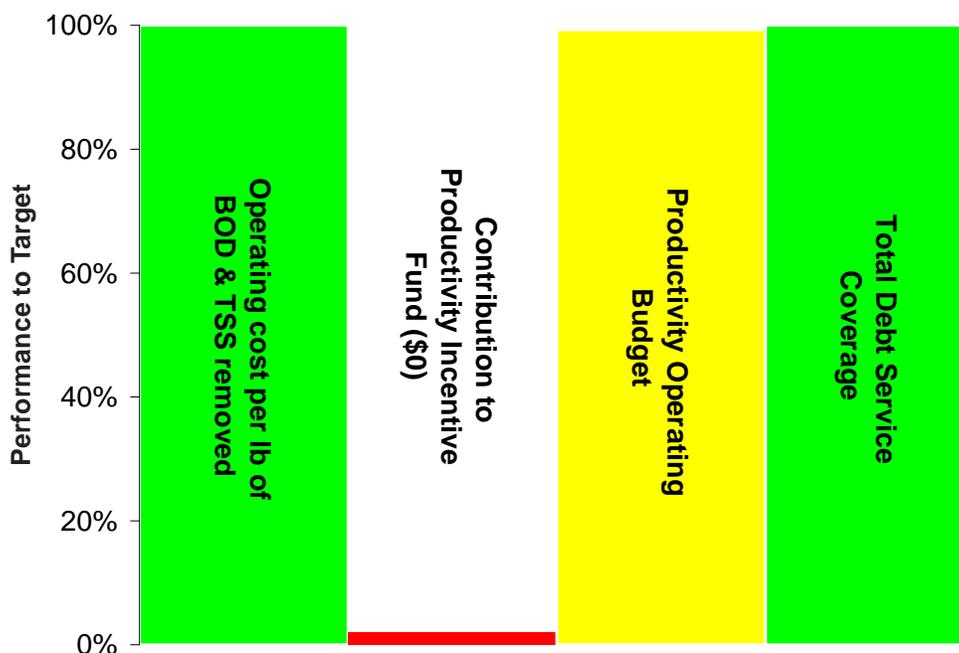
### 2007 Performance Results

Measure	Performance Notes
Efficiency measured by operating cost per lb. of pollutants (biochemical oxygen demand & total suspended solids - BOD & TSS) removed from effluent (not to exceed target)	Operating costs per lb. of pollutants were lower than the inflation adjusted target – measure rated green
Contribution to Productivity Incentive Fund (possible only when efficiencies in operating or capital programs result in an under-expenditure in the overall productivity operating budget)	\$0 – measure rated red
Productivity Operating Budget (actual expenditures compared to a not-to-exceed target)	WTD did not meet the 2007 Productivity Operating Budget target – measure rated yellow
Debt service coverage ratio	1.19 – measure rated green



## At a Glance...

- ✓ For the second time since the Productivity Initiative Pilot Program began in 2000, the wastewater program did not meet its annual productivity target. The program exceeded its target by \$582,263. The wastewater program must meet its Productivity Operating Budget target in a given year in order for a contribution to be made to the Productivity Incentive Fund. There was no contribution made for 2007.
- ✓ For seven years in a row, since the inception of the Balanced Scorecard in 2001, WTD has consistently exceeded the target established for its total debt service coverage ratio, an indicator of strong financial health for the organization.
- ✓ In 2007, the cost per pound of pollutants removed from wastewater effluent stayed below the inflation-adjusted target.





# Productivity Initiative Annual Report 2007

## Business Practices Results

### Description of Measures

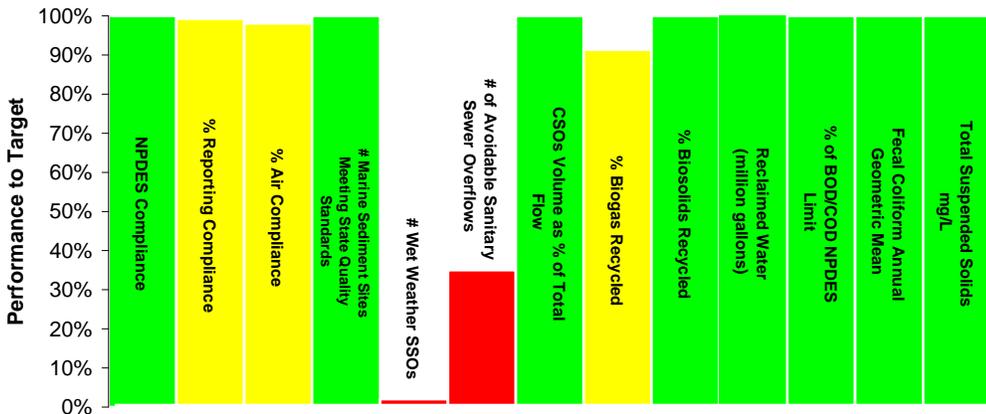
The Business Practices quadrant of the Balanced Scorecard includes four categories of measures that are key to WTD’s business practices: permit and facility compliance, operational performance, resource recovery and effluent non-degradation. Included in these categories are measures of WTD’s compliance with its NPDES permits, its stewardship of public health and water quality in terms of keeping down sewer overflows and conducting sediment cleanups, resource reclamation efforts and maintaining high standards for the quality of treated wastewater effluent.

## At a Glance...

- ✓ Both West Point and South Treatment Plants continue to consistently achieve 100 percent compliance with their NPDES permits. As multi-year platinum award honorees, both plants will be recognized at a National Association of Clean Water Agencies (NACWA) awards ceremony in July 2008.
- ✓ The percentage of biogas being recycled at the two treatment plants has declined over the past three years due to aging cogeneration facilities. Construction of a new Waste-2-Energy project at West Point (2010-2011) will bring new cogeneration facilities on-line by 2012 that will allow greater utilization of the available digester gas.
- ✓ An extreme storm on December 3, 2007, overwhelmed pumping, conveyance and treatment systems, causing all 18 of the wet weather overflows experienced in 2007.

### 2007 Performance Results

Measure	Performance Notes
NPDES permit compliance	100 percent compliance for both West Point and South Treatment Plants, two Platinum Peak Performance Awards
Percent reporting compliance	99.3 percent reporting compliance is average for both plants – measure rated yellow
Percent air compliance	98.13 percent compliance average for both plants – measure rated green
Number of marine sediment sites meeting state quality standards	7 out of 7 (data is from 2001) – measure rated green
Number of wet weather sanitary sewer overflows	18 – measure rated red
Number of avoidable sanitary sewer overflows	20 – measure rated red
Combined sewer overflow (CSO) volume as percentage of total flow	1.7 percent – measure rated green
Percent of biogas recycled at wastewater treatment facilities	68.5 percent a slight decline from 2006 – measure rated yellow
Percent biosolids recycled	100 percent – measure rated green
Reclaimed water (million gallons)	292 million gallons – measure raised from yellow to green
Percent of pollutants (biochemical oxygen demand & total suspended solids - BOD & TSS) NPDES limit	All three non-degradation guarantee measures are rated green
Fecal coliform annual geometric mean	
Total suspended solids million gallons / liter (mg/L)	



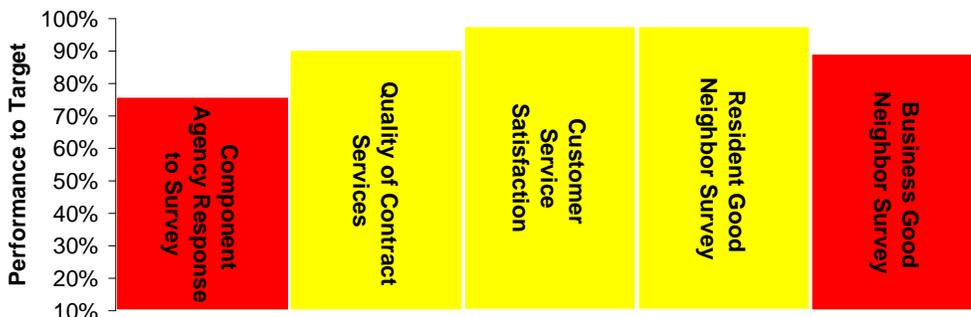
## Customer Focus Results

### Description of Measures

The Customer Focus quadrant of the Balanced Scorecard includes measures that look at how component agencies view the quality and value of their contract services with WTD. This quadrant also looks at how neighbors to WTD facilities, both residential and business, view WTD as a neighbor. Near neighbor and contract customer surveys are sent out annually to customers and neighbors. Questions in the contract customer surveys are rated on a scale of 1-5, with 1 being poor and 5 being excellent. The target established for these measures is 4, a rating of very good. The results of the Near Neighbor survey are calculated as a percentage of neighbors and businesses who view the West Point and South Treatment Plants as good neighbors. The target established for these measures is 75 percent.

### 2007 Performance Results

Measure	Performance Notes
Quality of contract services as rated by local sewer agencies	This measure improved by 10 percent from 2006 – the measure rating improved from red to yellow
Customer service satisfaction by local sewer agencies	The customer satisfaction rating rose by 71 percent from 2006 – raising the rating from red to yellow
Response rate to Contract Customer Survey	The response rate for the 2007 survey nearly doubled from 2006, but was not quite enough to bring up the measure from a red rating – measure rated red
Residents who view WTD as a good neighbor	74 percent, the same rating as 2006. While very close to meeting the target, this measure rated yellow
Businesses who view WTD as a good neighbor	67 percent, which continues a trend of improvement in this measure each year since 2005. While the overall rating has improved, businesses continue to give WTD lower ratings due to odor complaints and the measure is still rated red



## At a Glance...

- ✓ WTD worked with a survey design consultant to improve the organization and content of the contract customer survey, taking into account feedback received from the local agencies. The survey improvements led to a near doubling of the response rate for 2007.
- ✓ Higher ratings of Customer Satisfaction and Quality of Contract Services by component agencies improved both measures' ratings from red to yellow in 2007. Higher satisfaction ratings may be due to the Division Director holding individual meetings with each component agency in 2007 to improve communication and relationships with our component agency customers.
- ✓ To improve relations with residential and business neighbors, the top two priorities for King County continue to be exploring new methods of odor control and responding to complaints within 24 hours.



# Productivity Initiative Annual Report 2007

## Employee Management Results

### Description of Measures

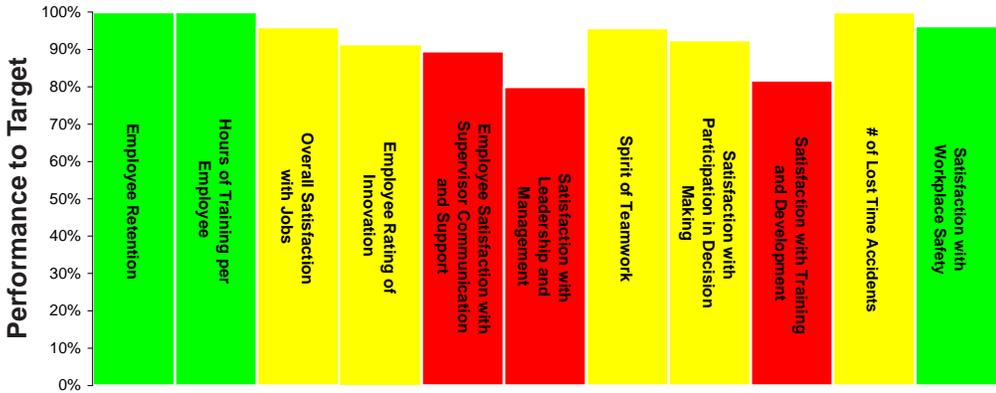
The Employee Management quadrant of the Balanced Scorecard primarily includes measures tied to results from the annual Employee Survey. There are also measures for the employee retention rate and hours of training per employee.

### 2007 Performance Results

Measure	Performance Notes
Employee retention	93 percent – measure rated green
Hours of training per employee	53.66 hours (average) per employee – measure rated green
Overall job satisfaction	3.84 (out of 5) – measure rated yellow
Employee rating of innovation	3.65 (out of 5) – measure rated yellow
Employee satisfaction with supervisor communication and support	3.58 (out of 5) – measure rated red
Satisfaction with leadership and management	3.20 (out of 5) – measure rated red
Spirit of teamwork	Measure improved slightly to 3.83 (out of 5) – measure rated yellow
Satisfaction with participation in decision making	3.70 (out of 5) – measure rated yellow
Satisfaction with training and development	3.27 (out of 5) – measure rated red
Safety – number of lost time accidents	16, a 33 percent decrease from 2006. Measure met target and rating improved from yellow to green
Safety – satisfaction with workplace safety	3.85 (out of 5), rating unchanged from 2006 – measure rated yellow

## At a Glance...

- ✓ The number of hours of training per employee remains above the target 50 hours of training per employee (on average); however, employee ratings of satisfaction with training and development remains low. A new measure will be added in 2008 that will look at workforce development as a result of training by measuring the number of employees achieving new certifications.
- ✓ WTD continues to emphasize workforce development and succession planning, especially for technical positions that will experience turnover due to retirements in the coming years. WTD launched its new Technical Training for Operations Program, T<sup>2</sup>OPS, in summer 2007.
- ✓ Lost time accidents for employees decreased 33 percent from 2006, improving the measure's rating from yellow to green.



### Report from Executive Audit Services

The King County Office of Management and Budget, Executive Audit Services, reviewed the Productivity Initiative target adjustments, target totals and actual totals for 2006; reviewed worksheets for reasonableness and consistency with established procedures; and compared current and prior year target adjustments for consistency of method and application.

In its report dated June 24, 2008, Executive Audit Services' findings and recommendations are summarized below along with WTD's responses.

#### Findings

WTD's failure to meet the Initiative target has resulted in an incentive fund deficit balance of \$194,599 at the end of 2007. Division staff performed a thorough review of program calculations since its inception and identified formula errors that affected prior reported target expenditure amounts and actual expenditures. The review and resulting corrections indicate a positive balance in the incentive fund until 2007.

Two material errors affected Productivity Initiative calculations:

- Cogeneration at West Point. In late 2001, the West Point Plant began generating electricity by powering a generator with by-products digester gas, and selling the power to Seattle City Light. WTD recorded proceeds from the sales as revenue. In 2005, City Light installed meters at the plant to measure cogeneration production and began to deduct the amount from their billings to WTD. The C-7 formula to compute the impact of cogeneration was not changed. Cogeneration savings continued to be computed as revenue even though the amount was already accounted for as a reduction to expense.
- South Plant sodium hypochlorite. The South Plant began using sodium hypochlorite in 2004. The base rate for computing price changes should have been the 2004 rate, but in 2005 an incorrect rate was used in the formula, causing the C-7 target budget to be overstated.

The cumulative effect of the two errors was an overstatement of \$538,963 in incentive fund savings.

The errors affected balances for 2005, 2006, and 2007. The Division approved a distribution to employees based on 2006 Productivity Initiative results. Since the fund now shows a deficit balance, our concern was that the 2006 payout may have caused a deficit balance in the incentive fund at the end of 2006, but that does not appear to be the case.

According to the analysis, the errors resulted in a distribution overpayment of \$280,814 for 2006. After correcting for the overpayment, however, the incentive fund shows a positive balance of \$75,590 at the end of 2006.

Division financial analysts were not able to fully reconcile differences between Productivity Incentive report balances and IBIS records. Expenditure amounts are extracted from IBIS cost center records, which are periodically updated. Corrections and late adjusting entries required by WTD's independent auditor affected final IBIS reports but may not have been included in the cost center records used for the Productivity Initiative report. Considerable effort would be required to trace account balances through to the end of each year affected and identify the differences. We do not believe the discrepancy is of sufficient magnitude to justify the resources that would be expended in attempting a full reconciliation.

### **Conclusion**

After discussions with WTD staff, after examining the explanations for and the effects of the corrections, we are of the opinion that the adjusted balances are as accurate as can be reasonably determined.

### Recommendations

#### **Recommendation #1:**

We recommend the Division accept Productivity Initiative balances based on the corrections and go forward, without further revision.

**WTD Response:** *WTD concurs with this recommendation.*

#### **Recommendation #2:**

We recommend that WTD develop specific plans for eliminating the deficit fund balance and submit them to the Budget Office for review.

**WTD Response:** *WTD concurs with this recommendation and will work with the Budget Office to develop a plan which eliminates the deficit between 2008 to 2010.*

### At a Glance...

- ✓ The Executive Auditor agrees that collected Incentive fund balances are reasonable and accurate.
- ✓ WTD will work with Budget Office to develop plan to eliminate deficit.



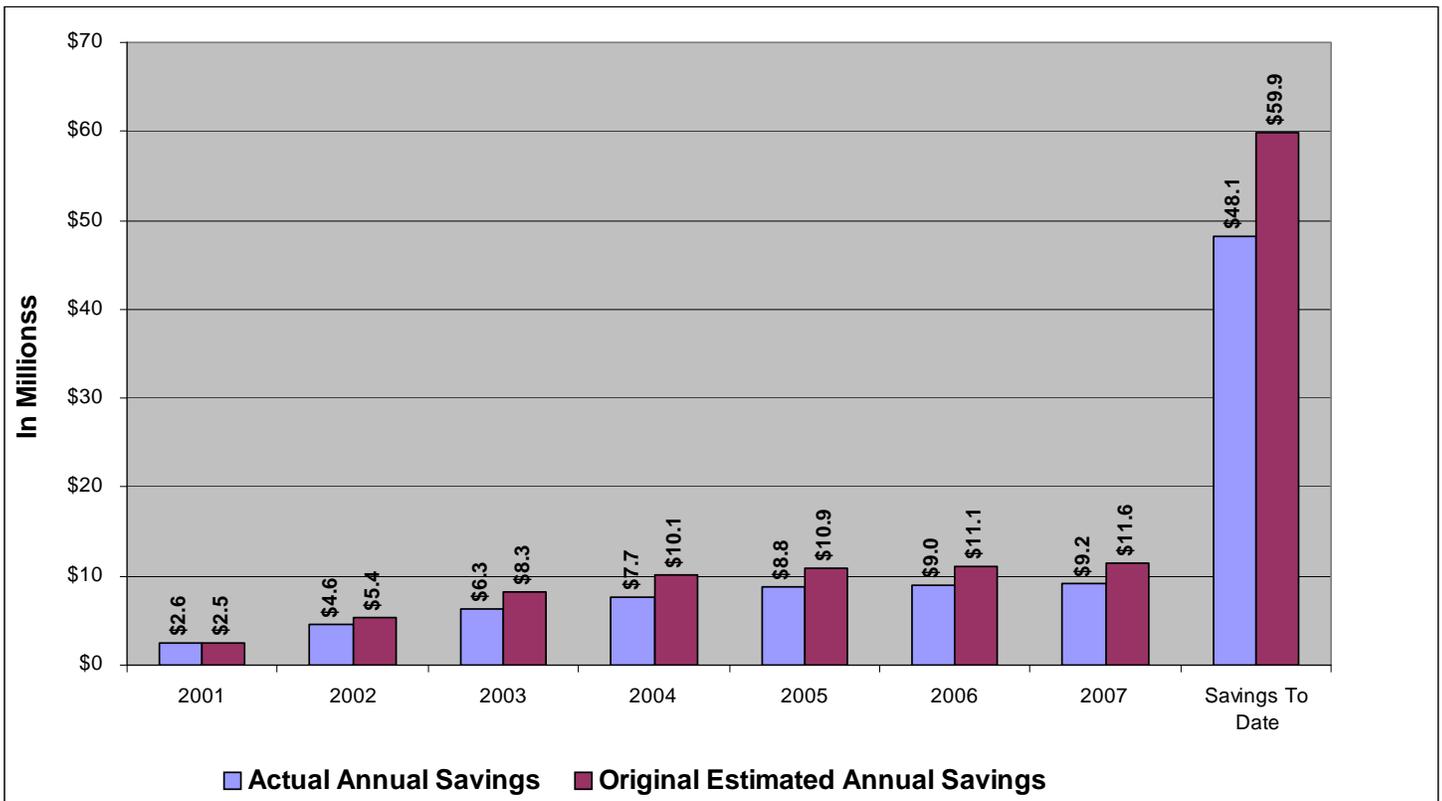
# Technical Appendix

## Appendix 1: Estimated Savings by Year

The Productivity Initiative Pilot Program identifies specific levels of service, cost reductions and efficiencies over the period 2001 to 2010 that will result in an estimated \$75.9 million savings for ratepayers, while increasing levels of service to these same customers. Savings are achieved by undertaking an intensive review of current business practices, identifying and implementing cost saving practices, working to increase employee involvement in business decisions and ensuring that the wastewater program receives the best possible services from its partner agencies within and outside the county.

The following graph shows the estimated savings that were established at the beginning of the program, compared to the actual savings that were attained each year through 2007, as well as a program-to-date total for both actual and estimated annual savings.

These numbers do not include the additional savings of \$3.63 million attained by the employees by beating the target (see Appendix 5 on Page 38). Actual savings to date, with the addition of savings achieved by beating the target, come to \$51.7 million versus \$48.1 million achieved by meeting the target.



## Appendix 2: 2007 Incentive Fund Performance Guarantees and Eligibility Guidelines

### ***Productivity Incentive Fund***

The Productivity Incentive Fund is an account created to track the additional savings that result from actual costs lower than the annual adjusted operating target that are attributable to actions taken by employees to incur savings. The King County Wastewater Treatment Division shall retain 50 percent of those additional savings and 50 percent shall be assigned to a Productivity Incentive Fund. A minimum of 25 percent of the funds annually assigned to the Productivity Incentive Fund shall be designated for distribution to all eligible employees as defined following.

If the wastewater program does not meet the annual adjusted operating target, then the difference shall be made up from the Productivity Incentive Fund.

### ***Performance Guarantees***

- *Permit Effluent Standards.* The wastewater program will pay from the operating budget for any fines related to NPDES permit violations at these plants, as evidenced by issuance of a Notice of Penalty by the Washington State Department of Ecology (Ecology). In addition, any Productivity Incentive Fund contribution established by this Pilot Program shall be reduced by one-twelfth for each month in any given year in which a violation occurred as evidenced by issuance of a Notice of Penalty or Administrative Order by Ecology due to an effluent exceedance. This would not apply if the violation was a direct result of an uncontrollable circumstance.
- *Performance Nondegradation Guarantee.* The wastewater program further guarantees to achieve specific effluent limits for the South Treatment and West Point Treatment Plants. For any year that one of these limits is exceeded, the wastewater program will forfeit 33 percent from any contribution to the Productivity Incentive Fund. These specific performance parameters may be reviewed annually as information is collected over time:
  - Annual Average Suspended Solids: 24mg/l.
  - Annual Average Biochemical Oxygen Demand (BOD): 24 mg/l.
  - Annual Geometric Mean Fecal Coliform: 175 colonies/100 mls.
- *Safety.* The wastewater program guarantees that maintaining the safety of wastewater program employees will remain a primary concern in how it conducts its business. The wastewater program will not exceed an average of 22 time-loss accidents (an average based on the last five years, from 1996 to 2000) per rolling three-year period, based on the current number of employees and facilities in service. For any year that this rolling three-year average limit is exceeded, the wastewater program will forfeit five percent from any contribution to the Productivity Incentive Fund.

### ***Administrative Guidelines/Payout Eligibility Criteria Definitions***

- *Savings Year.* The calendar year in which an annual Incentive Fund is calculated.
- *Payout Year.* The year following the savings year when a payout can be made from the Incentive Fund.
- *Payout.* The action of distributing money from the Incentive Fund to eligible employees.

### ***Eligible Employees***

“Eligible employees” includes any regular full-time, regular part-time, term-limited temporary and temporary employees (including interns) of the Wastewater Treatment Division or wastewater program whose position is within the boundaries of the wastewater program, provided that:

## Productivity Initiative Annual Report 2007

- The employee actively worked during the savings year.
- The employee worked at least 520 consecutive hours for the WTP/ WTD to establish initial eligibility, and worked without a break in service (terminated) after meeting the 520-hour threshold to maintain eligibility.
- The employee was not discharged at any time during the savings year for cause or performance.
- An employee that leaves WTD after the savings year and before the payout is still eligible for the payout.
- The Division Director and Assistant Division Director are not eligible for payout from the Incentive Fund.
- GIS analysts working for WTD must meet all following criteria before being eligible for the Incentive Fund:
  1. Must be a member of the Technical Employees Association (TEA) bargaining unit in WTD.
  2. Ninety percent or more of their work must be exclusive to the WTD.
  3. Assigned work area must be at WTD facilities and/or WTD designated staff offices.
  4. Must be supervised by a WTD employee.

### **Individual Prorated Share Calculations**

- An eligible employee's share of the Incentive Fund shall be determined by the number of hours that an employee was compensated in the savings year after working the initial 520 hours required to establish eligibility.
- Eligible hours shall be prorated to the percentage of full-time, defined as 2080 hours.
- No employee shall receive more than 100 percent or "one" share.
- For the purposes of calculating "Eligible hours during the savings year," the year shall be defined as the hours/days corresponding to the biweekly periods paid during the savings year, also known as the "payroll year." (This may include hours worked/compensated for prior years but paid in the savings year, and exclude hours compensated in the savings year, paid in the following year).
- Full-time employees who have no unpaid leave (except military leave) in the savings year shall be considered for a full share if they have earned at least 1976 eligible hours (95 percent of 2080 hours).
- Full-time employees working a previously approved 35-hour work week are prorated.
- The complete list of eligible hour types follows on Page 37. Not all of the eligible types are fully compensated, e.g. job injury.

### **Payout Distributions**

The minimum prorated payout share must be at least \$25.00 to be processed. Prorated share distributions will not be processed for less than that amount.

### **Distribution Amount Calculation**

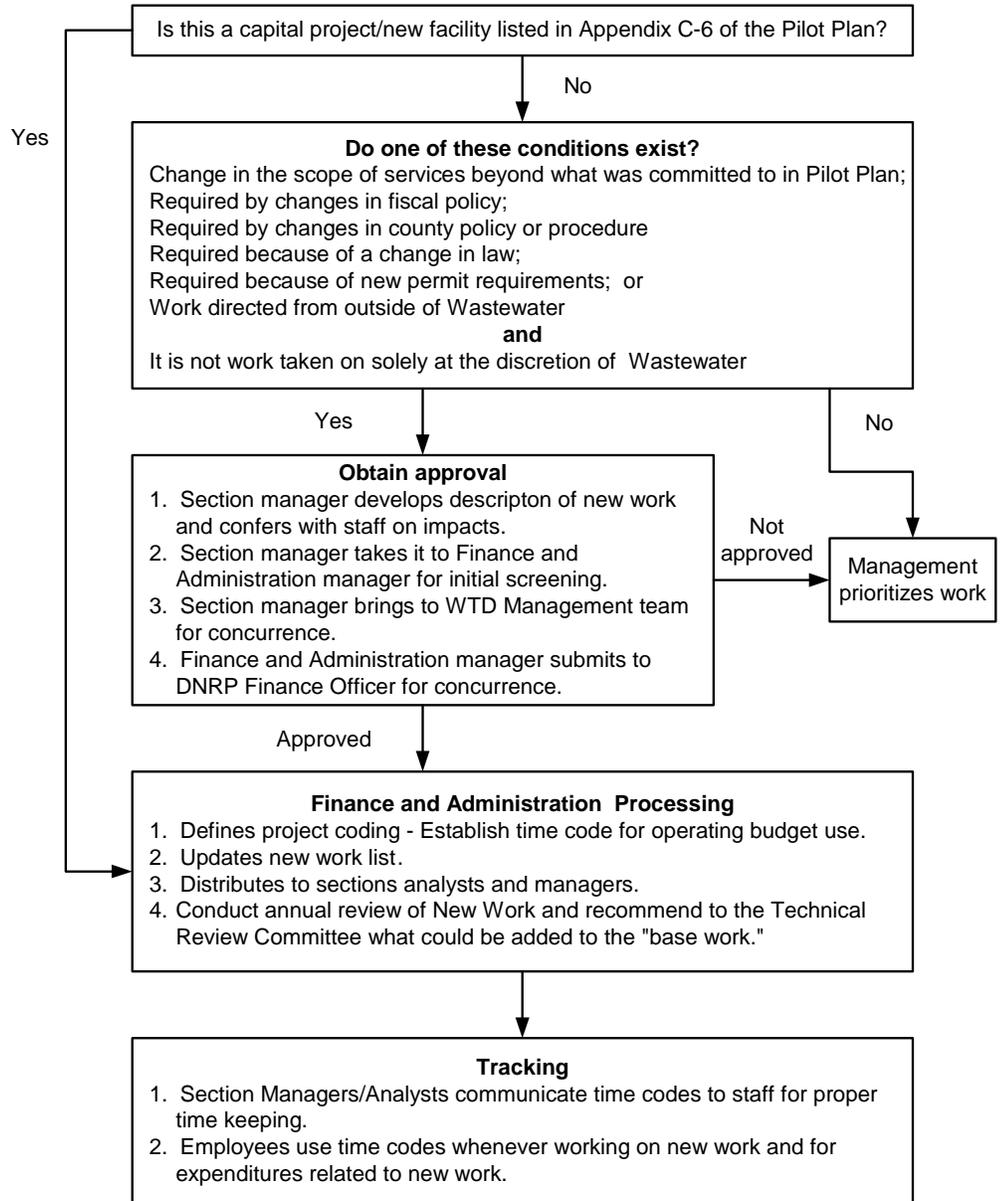
Upon determination of each eligible employee's prorated share of the portion of the Incentive Fund identified for employee payout, the dollars in the fund will be divided by the total number of shares payable to employees to determine the share amount. The distribution to each employee will then be based on his/her prorated amount of the share amount.

*Example:* Three employees worked during the savings payout year...

Employee	Total Compensated Hours	Prorated Share	Share Amount
A	2080	1.0 (100%)	\$285.71
B	1040	0.5 (50%)	\$142.86
C	520	.25 (25%)	\$71.43
Total Shares to Disburse		1.75	
Total Dollars in the Fund		\$500	
Share Amount (500/1.75)		\$285.71	

Appendix 3: Determining New Work

Determining "New Work"



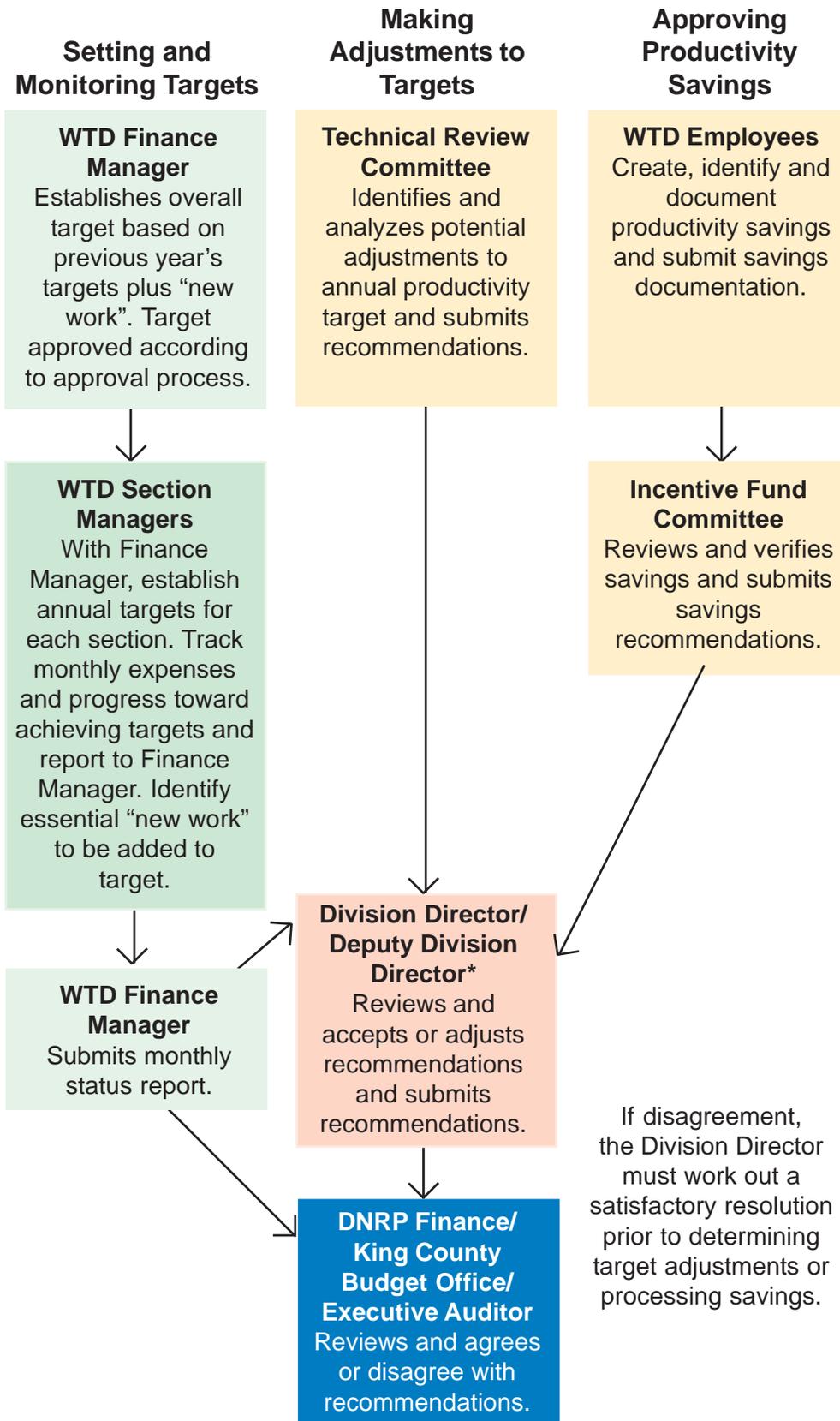
September 19, 2005

At a Glance...

The Pilot Program allows the annual targets to be adjusted for any "new work" not captured in the initial development of the Pilot Program, and which was imposed on the program by directives originating from outside the program.

- ✓ Review conditions
- ✓ Obtain approval
- ✓ Finance and Administration processing
- ✓ Tracking

Appendix 4: Decision Making & Oversight



If disagreement, the Division Director must work out a satisfactory resolution prior to determining target adjustments or processing savings.

**At a Glance...**

\* Division Director and Deputy Division Director are the final division-level decision makers for the program. To maintain program integrity, they are not eligible for any financial distributions from the Productivity Incentive Fund.

## Appendix 5: Incentive Fund Tables with Calculation of Corrections

### 2001 to 2007 Comparison of Productivity Initiative Results - Including previously-reported and corrected amounts for audit adjustments

	2001	2002	2003	2004	2005	2006	2007	Ratepayer Savings
*Operating expenditures without productivity	\$80,590,030	\$70,425,072	\$67,891,407	\$72,763,115	<del>\$76,779,813</del> <b>\$76,583,492</b>	<del>\$82,131,582</del> <b>\$81,502,618</b>	\$84,292,176	
Less: operating business plan savings	\$2,560,030	\$4,639,072	\$6,263,407	\$7,659,049	\$8,797,620	\$8,983,589	\$9,207,761	\$48,110,528
Productivity operating expenditure target	\$78,030,000	\$65,786,000	\$61,628,000	\$65,104,066	<del>\$67,982,193</del> <b>\$67,785,872</b>	<del>\$73,147,993</del> <b>\$72,519,029</b>	\$75,084,414	
Less: actual operating expenditures	\$68,898,000	\$60,431,000	\$60,687,000	\$65,697,769	\$65,233,984	\$71,449,761	\$75,666,677	
Under (over) expenditure target	\$9,132,000	\$5,355,000	\$941,889	(\$593,704)	<del>\$2,748,209</del> <b>\$2,551,888</b>	<del>\$1,698,232</del> <b>\$1,069,268</b>	(\$582,263)	
Documented operating savings	\$2,762,000	\$1,670,956	\$941,889	\$0	\$1,445,306	\$1,644,352	\$0	
Minus: Penalties	\$0	\$0	\$0	\$0	\$0	\$137,029	N/A	
Plus: capital savings	\$0	\$0	\$0	\$0	\$0	\$37,600	\$65,964	
Ratepayer share (50%)	\$1,381,000	\$835,478	\$470,944	(\$296,852)	\$722,653	\$772,461	(\$258,150)	\$3,627,534

### Employee Share Breakdown

Payment to employees	\$750,685	\$766,884	\$432,178	\$0	\$617,283	\$689,692	\$0	
Administrative costs	\$67,336	\$68,594	\$38,765	\$0	\$55,370	\$82,769	\$0	
Contribution to Rainy Day Fund	\$400,000	\$0	\$0	(\$296,852)	\$100,000	\$0	\$0	
Contribution to Investment Fund	\$162,979	\$0*	\$0*	\$0*	(\$50,000)	\$0	\$0	
Employee share (50%)	\$1,381,000	\$835,478	\$470,944	(\$296,852)	\$722,653	\$772,461	(\$258,150)	

### Incentive Fund Year-End Balances

Incentive Fund year-end balance	\$562,979	\$587,048	\$603,839	\$319,749	\$369,104	<del>\$356,404</del> <b>\$75,590</b>	(\$194,599)	
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\*Operating expenditures without productivity is the amount that was estimated to be the actual expenditures of the Wastewater Treatment Division if the division had not implemented the Productivity Initiative. From this amount, reduced expenditures based on operating business plan savings were estimated to establish the productivity operating expenditure target.

**Note:** This table includes previously-reported (strike-through) AND corrected amounts (in blue) for the years of 2005 and 2006 based on audit findings and corrections detailed on pages 29-31 of this report.

## Appendix 5: Incentive Fund Tables with Calculation of Corrections

### 2001 to 2007 Productivity Incentive Fund Activity - Including previously-reported and corrected amounts for audit adjustments

	2001	2002	2003	2004	2005	2006	2007	Total
Savings to ratepayers (50%)	\$1,381,000	\$835,478	\$470,944	(\$296,852)	\$722,653	\$772,461	(\$258,150)	\$3,627,534
Savings to employees (50%)	\$1,381,000	\$835,478	\$470,944	(\$296,852)	\$722,653	\$772,461	(\$258,150)	\$3,627,534
Employee payouts (one full share)	\$1,260	\$1,253	\$681	\$0	\$943	\$1,069	\$0	\$5,206
Administrative costs associated with employee payout	\$67,336	\$68,594	\$38,765	\$0	\$55,370	\$82,769	\$0	\$312,834
Annual Incentive Fund contribution / adjustment	+\$562,979	+\$24,069	+\$16,791	(\$284,090)	+\$49,355	(293,514)* (\$12,700)	(\$270,189)* (\$551,003)	(\$194,599)

\*The negative \$293,514 adjustment to the Incentive Fund for 2006 includes the \$280,814 correction and \$12,700 adjustment for fund activity\*\*. The negative \$270,189 adjustment to the Incentive Fund for 2007 includes the shortfall of \$258,150 and \$12,039 adjustment for fund activity\*\*.

\*\*Fund activity is the net difference on fund expenses versus interest earned on fund monies.

**Note:** This table includes previously-reported (strike-through) AND corrected amounts (in **blue**) for the years of 2005 and 2006 based on audit findings and corrections detailed on pages 29-31 of this report.

## IFC Responsibilities

- ✓ Develop recommendations on how to document savings and expend funds.
- ✓ Recommend annual distribution of Productivity Initiative Fund to Division Director.
- ✓ Monitor use of the investment portion of the Incentive Fund.
- ✓ Communicate with employees.

## TRC Responsibilities

- ✓ Review and recommend changes to the “inside the fence” and “outside the fence” elements.
- ✓ Review and recommend any changes as may be needed based on the operating program review.
- ✓ Review, comment and recommend strategies to be implemented to achieve future Productivity Initiative targets.
- ✓ Share insights and understanding of the Productivity Initiative with labor representatives and coworkers.

## Productivity Initiative Annual Report 2007

### Appendix 6: Incentive Fund Committee (IFC)

#### Role of Incentive Fund Committee (IFC)

The Incentive Fund Committee provides recommendations to the WTD Division Director regarding the oversight and management of the Incentive Fund. The 14 committee members are selected to represent their respective labor organizations, as follows: Local 925 (4 members), TEA (3 members), Local 117 (2 members), Council 2 Local 1652R (1 member) and Local 17 (1 member). In addition, two members represent the Management Team, and one member represents non-represented employees.

#### *2007 Recommendation and Activities*

The final 2007 Productivity Initiative target and the target adjustment factors and methodology were reviewed and approved by the committee. Short-term salary savings and expense and labor savings resulting from employee actions were individually reviewed and approved by the committee. Periodic reviews were done by the committee on the expenditures and balances of the Incentive Fund. The committee reviewed and approved the eligibility guidelines.

### Appendix 7: Technical Review Committee (TRC)

#### Role of Technical Review Committee (TRC)

The role of the Technical Review Committee is to review and recommend updates and improvements regarding the Productivity Initiative to the WTD Management Team. Committee members work with their labor representatives and fellow employees to keep them informed of issues that arise and convey the interests of their sponsors.

#### *2007 Recommendations and Activities*

The committee was inactive in 2007 due to the bulk of activities taking place during the early years of the program.

## Acknowledgments

### 2007-2008 Incentive Fund Committee

#### *Members*

- Al Brooks, Local 117
- Rick Butler, Local 117
- Brian Duncan, TEA
- Robert Emery, 925
- Mike Fischer, Management Team
- Kevin Kennedy, Local 925 (2007)
- Jim Laremore, Local 925
- Mark Lucas, TEA
- Leon Maday, TEA
- Diane McElhany, Nonreps At-Large
- John McMillin, Local 925
- Richard Meeks, Local 17
- Lorraine Patterson, Management Team
- Jim Pitts, Management Team (2007)
- Peggy Rice, WSCCCE Council 2 Local 1652R
- Curtis Steinke, Local 925 (2007)
- Chris Tinnin, Local 925

#### *Staff*

- Tim Aratani, Finance Section
- Brent Bills, Finance Section
- Cynthia Hickey, Facilitator/Director's Office
- PJ Callahan, Communications
- Rachael Dillman, Communications

### Balanced Scorecard

- Erica Jacobs

### 2008 Management Team

#### *Members*

- Christie True, Division Director
- Lorraine Patterson, Assistant Division Director
- Tim Aratani, Finance & Administration Manager
- Greg Bush, Environmental and Community Services Section Manager
- Pam Elardo, West Section Manager
- Mike Fischer, East Section Manager
- Kathy Loland, Acting Major CIP Section Manager
- Shirley Marroquin, Acting Asset Management Section Manager
- Elizabeth Milestone and Kim Ramsey, Acting Human Resources Managers
- Gunars Sreibers, Acting Brightwater Facilities Manager

### 2007 Budget Reporting, Analysis and Payroll

#### *Preparation*

- Frank Alexander
- Tim Aratani
- Dennis Barnes
- Brent Bills
- Jana Buss
- Cynthia Hickey
- Joanne Kimura
- Edie Lackland
- Elizabeth Milestone
- Donna Nord
- Kristin Painter
- Nancy Robbins
- Steve Tull
- Kevin Yokoyama