Auditor of State
Betty Montgomery

CITY OF WARREN
PHASE 5
PERFORMANCE AUDIT

AUGUST 21, 2003

Auditor of State
Betty Montgomery

To the Citizens of the City of Warren:

In April 2002, officials of the City of Warren requested that the Auditor of State complete the final phase of a comprehensive performance audit of all City departments. The City requested that the performance audit be conducted to provide a resource in the its ongoing effort to improve the effectiveness and efficiency of its operations, to establish internal accountability over the use of tax dollars, to improve the quality and responsiveness of city government to its constituents, and to help address the financial difficulties the City is experiencing.

This performance audit report contains assessments of the Environmental Services, Water, Water Pollution Control, and Community Development Departments. The information contained within the report is intended to assist the City in identifying cost savings and efficiency improvements. The City is also encouraged to continue to assess overall operations and develop other recommendations independent of this performance audit.

An executive summary has been prepared which includes the project history, objectives and scope, and methodology of the performance audit. The executive summary also includes a summary of significant findings, commendations, recommendations and financial implications. This report has been provided to the City of Warren and its contents discussed with members of City Council, the Mayor, and appropriate department management personnel. The City has been encouraged to use the results of the performance audit as a resource in improving its overall operations, service delivery, and financial stability.

Additional copies of this report can be requested by calling the Clerk of the Bureau's office at (614) 466-2310 or toll free at (800) 282-0370. In addition, this performance audit can be accessed online through the Auditor of State of Ohio website at http://www.auditor.state.oh.us/ by choosing the "On-Line Audit Search" option.

Sincerely,

Betty Montgomery

BETTY MONTGOMERY
Auditor of State

August 21, 2003

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Executive Summary

Project History

The mayor, the city auditor, and the director of public service and safety (City Officials) of the City of Warren (the City) contacted the Auditor of State's Office requesting a performance audit be conducted on all operations within the City of Warren. The City Officials were seeking assistance on how to improve the efficiency of operations and effectiveness of the delivery of services to the citizens of Warren as well as to help address the financial difficulties the City was experiencing. As a result of this meeting, it was determined that because of the City's financial and staffing conditions, a prioritization approach would be used whereby those operations determined to have the most significant impact on revenues, expenditures and public safety would be the first departments to be assessed, with the remaining departments being reviewed in subsequent phases. The first four phases of the City performance audit covered: Income Tax Department, Operations, Fire, Police, Municipal Court, Finance, Health, Packard Music Hall, Engineering, Planning and Building Department, Mayor's Office, Human Resources, Technology Utilization, Purchasing and Law Department. This final phase of the performance audit includes the following areas:

- Environmental Services Department;
- Water Department - Water Service and Office Administration;
- Water Department - Purification and Distribution;
- Water Pollution Control Department; and
- Community Development Department.

Objectives and Scope

A performance audit is defined as a systematic and objective assessment of the performance of an organization, program, function or activity to develop findings, conclusions and recommendations. Performance audits are usually classified as either economy and efficiency audits or program audits.

Economy and efficiency audits consider whether an entity is using its resources efficiently and effectively. They attempt to determine if management is maximizing output for a given amount of input. If the entity is efficient, it is assumed that it will accomplish its goals with minimum resources and with the fewest negative consequences.

Program audits normally are designed to determine if the entity's activities or programs are effective, if they are reaching their goals, and if the goals are proper, suitable, or relevant. Program audits often focus on the relationship of the program goals with the actual program outputs or outcomes. Program audits attempt to determine if the actual outputs match, exceed or fall short of the intended outputs. This performance audit contains elements of both an economy and efficiency audit and a program performance audit.

Methodology

To complete the performance audit, the auditors gathered and assessed a significant amount of data pertaining to the City's operations; conducted interviews with various groups associated with the City as well as national trade organizations and peer cities; and reviewed information from peer cities, other government entities, and external organizations. The methodology is further explained below.

Studies, Reports and Other Data Sources

In assessing the various performance audit areas, the City was asked to provide previous studies or analyses already prepared on the subject areas. In addition to reviewing this information, the auditors spent a significant amount of time gathering and assessing other pertinent documents and information. Examples of the studies, reports and other data sources which were studied include the following:

- Organizational and staffing reports for the City;
- City of Warren Codified Ordinances;
- Various revenue, payroll, expenditure, and budgetary reports from the City's financial systems;
- Various management reports generated from systems within the community development, human resources, data processing, environmental services, water pollution control, and water departments;
- Negotiated labor contracts;
- Various departmental policies and manuals;
- GFOA recommended financial practices;
- Information and reports from best practice agencies and firms; and
- Various sections of the Ohio Revised Code.

Interviews, Discussions, and Surveys

Numerous interviews and discussions were held with many levels and groups of individuals involved internally and externally with the City. These interviews were invaluable in developing an overall understanding of the City's operations and were useful sources in identifying concerns related to the City's operations. Examples of the organizations and individuals that were interviewed include the following:

- The city auditor;
- The acting director of community development;
- The director of environmental services;
- The director of water utility operations;
- The director of water pollution control;
- The manager of data processing;
- Various supervisors and staff of each department;
- Various staff at the Ohio Environmental Protection Agency; and
- Private vendors specializing in certain technology.

Benchmark Comparisons with Other Cities

Several cities were selected to provide benchmark comparisons for the areas assessed in this phase of the performance audit. The cities of Cleveland Heights, Cuyahoga Falls, Elyria, Hamilton, Lima, Lorain, and Mansfield were used in the applicable sections of the performance audit. These cities were selected based upon demographic and operational data. In addition, the treatment facility of Lake County-Mentor (LCSD) was used as a peer in the water pollution control section. Performance indicators were established for the various performance audit areas to develop a mechanism for determining how effectively and efficiently the City is providing services. The information was gathered primarily through information requests and interviews with appropriate personnel at each entity. Key comparative data for the City and the respective peers is presented in each section of the report.

Overview

The City of Warren is located in Trumbull County in northeastern Ohio. The City functions as the county seat and encompasses approximately 16.3 square miles. Over the past decade, the population has steadily decreased. The 2000 census population of 46,832 represents a 7.8 percent decrease from the 1990 population of 50,793.

The Environmental Services Department (ESD) collects refuse, yard waste, and white goods from residential and commercial customers within the city limits. Refuse collection is performed five days per week by staff using semi-automated refuse trucks. ESD works with the Geauga/Trumbull County Solid Waste District throughout the year to coordinate disposal of tires, hazardous materials, and recycling of aluminum, glass, paper, and plastic materials.

The Water Service Division (WSD) of the Water Department (WD) installs, maintains, and reads water meters. The division also collects fees charged to residents for water service, handles complaints, investigates unusual water usage, and shuts off and restores water service. The Office Administration Division (OAD) maintains account information for the water, wastewater, and environmental services departments. In addition, OAD prepares and issues bills and processes customer payments.

WD obtains, purifies, and distributes nearly 20 million gallons of water per day (mgd). The water distribution division (WDD) is responsible for pipeline and water meter maintenance, including construction, installation, maintenance, and repair, which are the primary functions involved with the operation and maintenance of the distribution system. The water purification division (WPD) is responsible for testing the water at various stages in the treatment process and for reporting water quality test results to the Ohio Environmental Protection Agency (OEPA), as well as laboratory testing and system monitoring. WPD maintenance personnel are responsible for maintaining and replacing the operational infrastructure and equipment at the purification plant, as well as maintaining pumping stations.

The water pollution control (WPC) department is responsible for wastewater collection, treatment, and disposal in accordance with federal, state, and local health and environmental protection regulations. The sewer and storm water division is responsible for preventative cleaning and maintenance of the sewer system, completing repairs to catch basins, ditches and culverts, and performing dye and smoke testing to find breaks or illegal taps in the sewer system. The operations division monitors and controls the treatment plant process, including analyzing instrument readings and laboratory test results. The maintenance division repairs and services WPC equipment, including pumps, valves, and buildings, in addition to seven pump stations. The laboratory division monitors compliance with OEPA treatment requirements. Furthermore, WPC saves approximately $400,000 annually in landfill costs by converting sludge through its Class A biosolids process into an organic fertilizer.

The Community Development Department (CD) concentrates on administering the United States Department of Housing and Urban Development (HUD) programs that aim to eliminate slum and blight conditions throughout the City. CD uses HUD grant awards, such as the Community Development Block Grant (CDBG) and the Housing Opportunities Made Equal (HOME) funding, to develop programs and services addressing community needs. CD completes a consolidated plan every three years to help identify and prioritize funding and determine what activities will be funded

during the three years. Additionally, CD must submit to HUD an annual review known as the Consolidated Annual Performance and Evaluation Report (CAPER). CD outsources economic development initiatives to Warren Redevelopment and Planning (WRAP). WRAP is a non-profit economic development corporation that guides and tries to further develop the physical, economic and social revitalization of downtown Warren and its central business district (CBD).

Key Findings and Recommendations

A summary of key findings, recommendations, commendations and financial implications is provided here, although more thorough analyses are contained throughout the report. All interested parties are encouraged to read the entire report. The results of this performance audit should not be construed as criticism of City of Warren management. Rather, the performance audit should be used as a management tool by the City in its efforts to improve operations.

Environmental Services Department

- ESD's monthly costs to provide residential refuse collection services exceed the monthly fee charged to residents by 15.2 percent. Therefore, ESD uses its available commercial refuse revenue and the City increases commercial rates as needed to help offset the residential refuse operational deficit. Additionally, revenues are not adequately being collected by OAD, which further limits ESD's ability to provide cost-effective residential refuse collection services. During the course of the performance audit (March 2003), Council approved a temporary rate increase of $1 per month for a period of ten months.

  Prior to any further increases in fees charged to residents for refuse collection, ESD should work with OAD to improve collections and either perform internally, or engage an appropriate vendor to perform, a thorough and detailed rate study to ensure that rates are equitable and fair. While ESD appears to have negotiated an agreement that minimizes solid waste fees and is cost beneficial for the City, it should evaluate and potentially renegotiate the contract with the current vendor to determine if solid waste fees charged to the City could be further reduced, upon expiration of the current contract. ESD should also continue to solicit additional bids for refuse disposal services when the current contract expires to determine if another vendor would provide quality refuse disposal services at a lower cost.

- A structural inspection performed on June 29, 2000 by an engineering consultant revealed poor facility conditions and a significant need to repair aspects of the ESD facility. In addition to the engineering consultant firm's inspection, AOS performed an on-site inspection of the ESD facility and identified numerous hazards. ESD maintains an eight year capital improvement plan that includes equipment and supplies, but does not include facility needs. As a result, ESD's facility requirements have not been adequately planned or budgeted.

  ESD should develop and implement a safety plan to comply with the Occupational Safety & Health Administration (OSHA) safety requirements and work with OSHA to develop the plan to outline periodic training for all staff. ESD should also incorporate OSHA's recommendations into its capital improvement plan for critical repairs to the facility.

Furthermore, ESD should develop appropriate management strategies to enhance its ability to successfully execute the budget and to achieve long-range goals.

Water Department - Water Service and Office Administration

- WSD's meter reading technology is not as advanced and efficient as certain peer cities. Consequently, WSD needs more meter readers and account clerks to manage the City's accounts. Moreover, WSD experienced 2.6 times more lost time claims and 8.3 times more medical only claims than the peers for meter readers. WSD's electronic accuracy is the lowest of the peers, primarily due to outdated technology that historically malfunctions. Additionally, WSD duplicates efforts by handwriting each meter read in a meter book due to the high number of misreads and inconsistent data transfers. Based on an analysis of three technology systems, automatic meter reading (AMR) technology provides the greatest cost savings and a quicker payback period by eliminating the need for meter readers and requiring only one billing cycle that would allow OAD to reduce 4.0 account clerk FTEs.

  The City and WD should strongly consider upgrading its meter reading technology to AMR. Benefits of AMR technology include collecting data daily and monitoring the water meter system in a real time environment, reducing the billing cycle to once a month, and streamlining operations to save operating costs. Once bid proposals are complete, WD should identify and obtain sources to finance the technology upgrade. If an AMR data collection system is installed, the total implementation costs would be approximately $5.2 million, which includes equipment, labor and training. The total cost savings for upgrading to AMR technology would be about $420,200 annually through reducing 4.0 FTE meter reader positions, 4.0 FTE account clerk positions, and associated workers' compensation costs.

- As of January 3, 2003, the City had approximately $117,000 in past-due payments between 90 and 120 days, and $2.1 million owed over 120 days. Amending city ordinances to place responsibility for utility payments on the property owner and subsequently certifying delinquent accounts to the county auditor would allow the City to better enforce collections. Additionally, using standard collection procedures, maximizing the use of the utilities management software, and developing standard and objective criteria for establishing payment plans could result in increased collections and streamlined operations.

  The City should amend its codified ordinances to establish that property owners of record, to whom water, sewer, and sanitation services are furnished, are responsible for the payment of all unpaid services. After passage of amended codified ordinances, OAD should immediately implement the procedures necessary to automatically discontinue service and certify those accounts which are 90 days past due. In addition, OAD should consult with the City's law

department to determine if any past due amounts, including prior years' delinquencies, can be retroactively certified. OAD should formally develop and implement standard collection procedures, defining time frames and criteria for mailing notices and only visit customers for final notices, thereby allowing OAD to reduce at least 1.0 FTE CSR position.

Finally, OAD should follow through on upgrading its software, develop objective and standard criteria for payment plans, and enter collection and voucher information directly into the notes of the utilities management system. By taking these measures to enhance and enforce the collections process, the City could see an annual increase in revenues of approximately $117,000. Furthermore, depending on the City's ability to retroactively certify prior years' delinquent accounts, the age of delinquent accounts, the ability to locate property owners that have moved from the City, the accuracy of historical account information, and the City's aggressiveness in pursuing accounts past-due 120 days, the City could realize approximately $1,125,000 in one-time additional revenue.

Water Department - Purification and Distribution

- WD has not developed a strategic plan, a formal mission statement, or key goals; lacks a technology plan to guide its activities; and does not forecast expenditures beyond one year. WD does not undertake adequate financial planning on an ongoing basis and does not follow budgeting best practices that enable the budget to serve as a tool for effective planning or communication. In addition, WD lacks financial policies recommended by GFOA that outline the organization's position regarding financial planning, revenue, and expenditures. Furthermore, WD does not use performance measures to help develop its budget or report organizational or financial performance to oversight officials.

  The director should work with staff and stakeholders to create the strategic plan, vision, mission statement, and goals for WD. WD should also develop a technology plan and improve its financial forecasting to more effectively estimate and plan for future needs. WD should improve its main operating budget document by including more detailed information and explanations. Financial planning practices should be formalized into recommended budget policies. In addition, WD should develop performance measures that can be used to facilitate assessment of divisional performance.

- WDD does not have a detailed listing of deferred maintenance projects or an estimate of the total cost of these projects. Therefore, WDD cannot effectively predict replacement needs, prioritize maintenance efforts, or support an on-going capital improvement planning process. The lack of monitoring and tracking of data for deferred maintenance projects inhibits WDD's ability to predict maintenance needs, prioritize maintenance activities, and efficiently deploy resources.

WDD should improve its maintenance activities with better long term planning, improved tracking of deferred maintenance projects and related costs, and by performing a comprehensive inventory assessment. An improved preventative maintenance program will enable WDD to replace or maintain components at such intervals that the total maintenance costs are minimized. Although an initial time investment may be required to complete the necessary inventory assessment, improved asset management could reduce unaccounted for water. For instance, if WDD reduced unaccounted for water by one percent, it could achieve a savings of approximately $55,000 annually.

- WD lacks a comprehensive infrastructure mapping application and a work order management program. Infrastructure mapping and maintaining an asset inventory are important tools for developing and maintaining an infrastructure condition assessment and can facilitate completion of pipeline maintenance tasks. A work order management program would help assess staff performance and training needs; identify areas for improvement in completing maintenance work; manage workflow more efficiently from request to completion; and facilitate budget planning. In addition, implementing a technology-based infrastructure asset management program and a work order management program would allow WD to improve operational efficiency.

  WD should consider purchasing a software mapping solution to provide integration of mapping data to the recommended work order and asset management package, which would result in one-time costs of about $16,500. Additionally, WD should purchase and use software for work order tracking and automatic assignment of routine maintenance, resulting in one-time costs of $5,000 and annual training costs of $2,000. After WD implements these technological improvements, conducts cross-training, and increases crew leader responsibility and accountability for administrative duties, it should consider reducing at least one pipeline maintenance FTE and two foremen positions.

Water Pollution Control

- Although WPC has elements of a strategic plan, it could improve its planning process by developing a formal and written strategic plan that encompasses all of its operations and includes long term goals to help guide operations in the future. WPC does not consistently forecast or use a strategic budgeting process that links to a strategic plan or mission statement. In addition, WPC capital improvement planning (CIP) has been postponed due to operational revenue shortfalls.

  WPC should develop and implement a formal, written strategic plan comprising all aspects of its operations and including clearly defined and up-to-date vision and mission statements, short and long term goals and objectives, action plans, and performance measures to help guide operations. WPC should develop a strategic budget that links to the strategic plan and

consistently forecast revenue and expenditures. WPC should also conduct comprehensive planning for necessary improvements on a periodic basis.

- WPC is not compliant with the Clean Water Act (CWA). The director is currently revising the Long Term Combined Sewer Plan (LTCSP) to address the OEPA recommended changes. Without an approved LTCSP, WPC is not compliant with the National Pollutant Discharge Elimination System (NPDES) permit and with the CWA.

  The WPC director should promptly provide sufficient information to the OEPA for the approval of the LTCSP. Gaining OEPA approval for the LTCSP will enable City to begin implementing OEPA approved measures to control sewer overflows. Once the plan is approved, the City should concentrate on updating the existing plans for the necessary long-term capital improvements including the separation of the combined sewer system.

- Based on current operational costs, projected revenues, and information obtained from other cities, selling packaged Nature's Blend™ may not be cost effective. Nonetheless, the City entered into a 20 year agreement with a distributor to sell packaged Nature's Blend™. While the agreement clearly defines certain issues, other aspects in the agreement lack clear and specific measures and stipulations to ensure the distributor is effectively performing all duties, which could impact the success of selling the product. Furthermore, developing an effective and comprehensive marketing plan would help promote the selling process, and adequately tracking costs would help measure its financial position and allow management to make decisions based on accurate and reliable information.

  WPC and the City should amend the current agreement with the distributor to include clear and specific measures and stipulations. In addition, WPC should closely monitor costs and revenues, develop a comprehensive marketing plan to establish niche markets, and use appropriate methodologies to track costs. While selling packaged Nature's Blend™ will involve additional time and effort from staff, WPC should focus on improving other important aspects of operations.

- The engineering department is responsible for responding to and resolving engineering requests for all City departments. Using the engineering department would allow WPC to allocate additional resources to improve operations as discussed throughout this report.

  WPC should work with the engineering department to determine how the department can effectively fulfill WPC's needs in a timely manner. As a result, WPC should consider not filling its vacant engineering position, avoiding salary and benefit costs of approximately $60,200 annually.

Community Development Department

- CD provides a higher number of programs than the peers. Nonetheless, CD has not implemented many programs to address high priority needs of the City, as outlined in the consolidated plan. Additionally, the Citizens Advisory Committee (the Committee) is responsible for the review and allocation of funding to programs.

  CD should focus on working with the Committee to implement programs and services that address the City's high priority needs. In order to do this, CD should use the consolidated plan as a guideline to identify high priority needs of the City and the Committee should closely review the consolidated plan and other proposals to ensure that the high priority needs have been accurately identified. In addition, the Committee should develop and use defined selection criteria when deciding on funding for programs.

- CD does not evaluate the success of its grant-funded programs. Therefore, CD is unable to assess the effectiveness of programs and services or make effective funding decisions. In addition, CD does not have a formal, written process to monitor subrecipients. A formal monitoring procedure allows entities to assess subrecipients' effectiveness by providing a performance guideline.

  CD should evaluate the effectiveness of its grant-funded programs on an annual basis. Program evaluation should be an integral component of CD's internal monitoring mechanisms. CD should also develop and implement formal and written monitoring procedures to ensure that subrecipients and contractors adhere to grant guidelines and provide quality services. Hiring a full-time director and grants coordinator should assist CD in evaluating programs and developing and applying formal monitoring procedures.

- CD does not encumber and expend all available grant resources during the fiscal year, maintains a large carry-over of CDBG resources, and does not allocate grants in a timely manner. As a result, programs may not be provided with appropriate and timely funding to support services. This could also contribute to CD's inability to address and fund high priority needs.

  CD should work to commit funds in a timely manner by approving applications for CDBG funds earlier; processing transactions on a bi-weekly or weekly basis; reminding subrecipients of the spending deadline and assessing potential penalties if subrecipients consistently miss deadlines; and drawing down larger amounts of funding from the Integrated Disbursement and Information System (IDIS). Funds should be encumbered in a timely manner and should be directed toward programs that directly benefit residents of the City of Warren.

- CD outsources its economic development initiatives and practices to WRAP. In contrast, peers do not outsource their economic development initiatives. In addition, CD does not formally monitor the effectiveness and success of WRAP's activities. Based on the relatively low business investments per capita and lower number of new jobs created per capita, activities performed by WRAP to improve the economic condition of the City are not as successful as the peers. Employing a full-time director and urban rural grants coordinator would allow CD to perform economic development activities, thereby eliminating the need for WRAP to perform all of the City's economic development functions.

  The City and CD should consider performing economic development functions internally, including revolving loan activities, resulting in cost savings of $52,000 annually and increased program income of $30,000 annually. The savings could be used to fund the director position and additional programs to address the City's high priority needs. However, CD should use WRAP and other appropriate organizations as additional resources to help improve the economic development of the City. Furthermore, CD should maintain and track economic development information including jobs created, jobs retained, and investments made to fully evaluate the success of its economic development activities. During the course of the performance audit, CD became more involved in economic development practices, and hired a full-time director and urban rural grants coordinator.

- CD and WRAP have not developed a formal economic development plan. An economic development plan provides a blueprint for achieving community objectives by translating a community's broader vision and goals into economic initiatives.

  CD should develop an economic development plan for the City and implement the economic development programs outlined in the plan. The economic development plan should include a statement of purpose, goals for economic change, community analysis, strategies and tactics for achieving goals, and an action timetable. According to CD, it is in the process of preparing an economic development plan.

Additional Findings and Recommendations

This section of the executive summary is organized by report section and highlights other findings and recommendations from those areas of the audit report. Each section of the audit report contains additional findings and recommendations.

Environmental Services Department

- ESD does not operate a curbside recycling collection program and has never surveyed its residential and commercial customers to determine if recycling needs have changed.

Although the peer average landfill cost avoidance is higher than ESD, the peers' cost avoidance does not fully offset the operational costs of a recycling program. As a result, peer cities recoup costs associated with recycling through refuse collection fees.

ESD should survey the residents to determine their recycling needs. The survey should indicate that a curbside recycling program would come at a cost to residential and commercial customers. ESD should also research markets that exist for recyclables to determine the market demands. If ESD implemented a recycling program, it should fully assess the projected savings in landfill costs and solid waste fees, and costs to implement and operate the program to help determine an appropriate fee to charge for this additional service.

- Although ESD has a manual covering certain policies and procedures, there are no policies and procedures dealing with safety. According to the Environmental Protection Agency (EPA), refuse collection and disposal has been deemed one of the most dangerous working environments. As a result, it is necessary to ensure that safety policies and procedures are in place.

  ESD should develop a safety manual that includes safety policies and procedures, and an organized enforcement system to ensure that a safe work environment is maintained. A safety manual will allow ESD to provide and maintain safe working conditions and promote safe operating practices that will protect employees, residents and properties.

- The City developed a "responsible person" program a year ago to identify various risks and designated hazards in the work environment. However, there are no formal guidelines, program objectives or processes to ensure that the safety hazards within ESD are eliminated. The American Public Works Association (APWA) recommends specific guidelines for hazard communication and identification.

  The City should develop guidelines to ensure that the responsible person in ESD is achieving requirements set forth in the program objectives. Formal guidelines should include job responsibilities for each responsible person and more stringent and consistent inspection reporting, in accordance with best management practices from APWA. The safety service director, human resource director and ESD director should schedule periodic safety meetings with responsible persons to review safety issues and develop recommendations for improvements leading to the elimination of all hazards in the work environment.

- ESD does not keep preventive maintenance (PM) records or maintain costs for all repairs on all vehicles. As a result, the total cost to maintain the fleet cannot be determined. In addition, ESD does not have a comprehensive computer system for tracking equipment maintenance or parts inventory, such as a computerized fleet analysis software system (CFA).

ESD should purchase a computerized fleet analysis software system similar to the Operations Department for the management and tracking of information on the maintenance and repair of all equipment. CFA will help the mechanic make cost-effective decisions concerning equipment procurement, utilization, maintenance, and replacement.

Water Department - Water Service and Office Administration

- The cross connection technician, water serviceman, and water distribution technician are a part of WSD. However, their job duties closely align with meter maintenance functions in the distribution division. Peers have aligned meter maintenance positions within their water distribution sections to help maintain meters as an integral part of the infrastructure.

  WD should consider transferring the water service supervisor, cross connection technicians, water servicemen, and water service distribution technicians to the distribution division because these positions directly relate to distribution maintenance. Transferring these positions would improve communication within the distribution operations and provide direct control over all aspects of distribution related to meters and backflow prevention.

- OAD and WSD used significantly more sick leave as compared to the peers and state average. Based on the relatively high use of sick leave, WSD and OAD may not be actively promoting current sick leave incentives. In addition, creating recognition programs, developing standard sick leave explanation forms and consistently analyzing sick leave use could help manage and control sick leave use.

  OAD and WSD should work with the human resources department (HR) to develop additional sick leave policies and ensure they are aligned with city-wide policies and labor agreements. Furthermore, actively promoting the current sick leave incentives and implementing efficiency improvements discussed throughout this report would reduce sick leave use. An annual cost savings of approximately $11,000 would be realized by reducing sick leave use to the state average. In addition, reducing sick leave could also minimize overtime use, resulting in additional cost savings.

- WSD does not track or generate a list of the City's meter inventory to readily identify consumption, meter age, last testing date, meter warranties and meter register technology. This data is necessary to forecast and budget capital improvements of the infrastructure.

  WSD should develop and maintain an up-to-date inventory of all water meters and include data as to condition, when installation was done, and any repairs that have been completed. Since the utility billing software that OAD uses has a meter inventory database, OAD should work with WSD to update and maintain the database. By developing and tracking up-to-date

inventory, WSD can better manage the City's meter inventory data, and adequately forecast and budget for replacements.

- OAD currently handles all bill-processing and collections in-house. Lockbox is a key cash collections service, accelerating the process of converting accounts receivable into cash by expediting mail flows, reducing processing time and improving the availability of funds. Cleveland Heights and Wooster are able to use a lockbox collection process efficiently to handle their bill processing because their data collection technology allows them to send all utility bills out at once.

  If Warren reduces its billing cycles to one per month, OAD should pursue a lockbox collection process. Using a lockbox collection process would accelerate converting receivables into cash, reduce processing time, improve fund availability, and reduce handling of cash and check payments. While OAD would incur an annual cost of approximately $45,000 for lockbox processing, it would be able to reduce 4.0 account clerk positions (see **Key Finding and Recommendations**).

- OAD has not upgraded to the latest version of software and does not fully use its functionality, such as to expedite identification of meter variances and misreads for follow up. OAD has reviewed the latest version of UMS, which would provide numerous benefits.

  The director should work with data processing personnel to identify reports that will improve the process of managing meter variances and misreads. Procedures also should be developed to use the reports to avoid duplication of effort and reduce the time it takes to start the billing process. In addition, OAD should follow through on upgrading its system to provide additional benefits as described throughout this report.

Water Department - Purification and Distribution

- While WD completed a capability assurance plan (CAP) that supports and delineates an extensive capital improvement program (CIP) for improving and upgrading the operations, it does not have a formal process in place for effectively and proactively identifying and prioritizing capital improvement needs. WD also does not pursue all available funding sources for capital improvements.

  WD should consistently use the American Public Works Association (APWA) standards to guide its capital planning process and establish a formal capital improvement planning committee to annually update the CIP. The director should implement a process to identify and obtain additional funding from professional organizations and state and federal grant programs. Applying and receiving State Issue 2 funding could provide WD with an

additional $100,000 for capital improvement costs on average annually, assuming WD received an average grant award at least once every five years.

- WWD's average leave time per employee was 34.5 hours less than the peer average; however, it was five days more than the reported state average for bargaining unit employees. Although WWD has an excuse policy and an incentive, it does not analyze sick leave on a consistent basis and has not enacted additional policies to control sick leave, such as developing a recognition program, using uniform sick leave forms, and requiring sick leave use to be formally reviewed on all employee performance evaluations.

  WWD should work with the human resources department (HR) to develop additional sick leave policies and ensure they are aligned with city-wide policies and labor agreements. If WWD could reduce the amount of sick leave to the statewide average for state bargaining unit employees of about eight days per employee, WWD could realize an annual cost savings of approximately $37,000.

- WWD could improve its contingency plan by updating it to reflect construction contingencies and security issues during the plant construction phase of the WPD expansion project. OEPA requires the contingency plan be updated annually and as circumstances warrant. WWD's contingency plan does not include any statements of responsibility for emergency purchasing and budgeting. Further, WWD does not have funds budgeted for emergencies that are included in its financial report. In addition, WWD has not provided appropriate training on the operational aspects of the emergency and contingency plan.

  WWD should take steps to improve its contingency plan and ensure that it incorporates the ongoing OEPA guidelines and Ohio Administrative Code (OAC) requirements, especially through the construction phase of the WPD plant expansion. WWD should carefully assess the scope of security and be mindful of disclosing all the security procedures. To help with the review of employee's duties, all employees should be trained, at least annually, on the emergency procedures by in-house administrative staff. During this performance audit, the director stated that WWD has updated the contingency plan.

Water Pollution Control

- Revenues do not cover WPC's cost of service. To address this issue, WPC contracted for a rate study which is expected to be completed in early 2003. The City's relatively low sewer rates appear to be contributing to WPC's operating deficit. The effectiveness of OAD's collections activities also impact WPC's revenues and its ability to cover operational costs.

Prior to increasing rates charged to residents, WPC should examine additional opportunities to improve operational efficiency to ensure that it is providing quality services at a minimal cost to residents. WPC should incorporate changes affecting its operational costs in the rate study and in any subsequent rate adjustments. Additionally, WPC should work with OAD to improve the collection rate for sewer fees.

- Based on a contractual agreement, Trumbull County services a portion of Warren due to the location and sewer structure of these areas within the City. However, a portion of the costs incurred by the County to service Warren residents are being subsidized by the City, because WPC charges the City's rate to these residents as defined by Ordinance 9153, which is less than Trumbull County's rate.

  Considering that Trumbull County is responsible for providing sewer services for certain Warren residents, the costs of these services and subsequent rate charged to residents should reflect Trumbull County's service costs. Therefore, City Council should consider passing an appropriate ordinance to charge Trumbull County's rate to residents served by the County, which would eliminate the current subsidy incurred by the City. Prior to this change, WPC and Trumbull County should work together to inform the residents of the situation and clearly explain the rationale for the change in rates. Charging Trumbull County's rate to Warren residents served by the County would save WPC approximately $50,000 annually.

- Grants for WPC are not being sought. Through the EPA and the Catalog of Federal Domestic Assistance, a wastewater grant is available for unique and innovative projects that address the requirements of the National Pollutant Discharge Elimination System (NPDES) program, with special emphasis on wet weather activities, storm water, combined sewer overflows and sanitary sewer overflows. Out of the 400 plus proposals sent to the EPA for 2003 grant awards, 30 to 35 projects will be awarded grants. Nonetheless, WPC may be able to obtain this grant to fund numerous activities, especially those related to its Storm Water Phase II program.

  WPC should attempt to maximize revenue by implementing a process for regularly reviewing and applying for grants. An employee at WPC should be designated research grant responsibilities and complete applications, as appropriate. Based on the average grant award and assuming WPC is successful in obtaining the wastewater grant through EPA's competitive application process, WPC could obtain approximately $100,000 in one-time revenue.

- WPC can achieve a flatter organizational structure by effectively addressing the retirement of the superintendent in January 2003. Reallocating the superintendent's functions and

responsibilities to the sewer foreman, chief operator, and maintenance supervisor would result in a flatter and more streamlined organizational structure.

WPC should consider eliminating the superintendent's position by allocating additional management functions and responsibilities to the maintenance supervisor, sewer foreman and chief operator, and adjusting salary levels of these positions to reflect any additional responsibilities. WPC should assess training needs of these employees and provide needed training to ensure that they function effectively with the added roles and responsibilities. Based on salary rates in the collective bargaining agreements and the superintendent's salary, the net financial impact of this recommendation is a cost savings of about $72,600 annually.

- Based on a sample review of work orders and according to the sewer foreman, the sewer division at WPC does not always track response times for complaints and completion times for general maintenance and emergencies. According to industry standards, best practice entities track response times to increase operational efficiency for sewer divisions.

  WPC should consistently and accurately record response and completion times for work orders to provide management information necessary to assess performance. Completion times should be recorded and monitored by the sewer foreman to help ensure that operational efficiency of the repair crew is accurately recorded.

- WPC is in the process of fully transitioning to CartêGraph, which will allow WPC to enhance its data tracking and monitoring capabilities. In addition, data in the prior system can be integrated into the new system, with some manipulation.

  WPC should work with the City's technology department to transfer data from the previous system to the new system, thereby avoiding manual re-entry of previous data. WPC should track additional performance data and costs to maximize the use of its public works management system.

- The maintenance division is operating very efficiently, which can be partially attributed to the role of the chief mechanic. The ratios of work orders per FTE, square footage per FTE and MG processed per FTE are significantly higher at WPC. Furthermore, as the equipment at WPC ages, the workload for the mechanics may increase. As a result, filling the chief mechanic position and operating with 8.0 FTEs would fully ensure that the maintenance division has sufficient resources to handle its workload.

  WPC should either recommend for promotion an existing mechanic to the chief mechanic position or fill the position with a qualified external applicant. Doing so would provide sufficient supervisory support for related functions, and allow the division to maintain its high-level of productivity.

Community Development Department

- The City is considering combining the Engineering, Planning and Building Department with Community Development, creating a consolidated Community Services Department (CS). Although the City has identified some financial impacts of the proposal, it has not fully analyzed the impact on the General Fund or on CD administrative costs. In addition, the City has not thoroughly assessed the effect of the proposal on other city departments and other options to reorganize functions that could further streamline operations.

  Before making a final decision to combine CD with EPB, the City should reassess its city-wide organizational structure. When doing so, the City should consider how its peers structure and coordinate activities, as well as the functions performed by its different departments and the related impact on combining those functions.

- While CD maintains a mission statement as required by HUD, it does not have a strategic plan tied to a City-wide plan. A strategic plan assists a governmental entity to consistently administer its resources and to provide structure and decision making within the organization.

  CD should develop and implement a strategic plan that ties to the City's plan. The strategic plan should describe long-term objectives and how staff, funding and resources will help CD achieve these objectives.

- CD has not developed benchmarks or performance measures to assess its operational performance. Performance measurement is a management tool that measures work performed and the results achieved, while helping management to plan, budget, and structure the programs and control results. Without a performance measurement system, CD is unable to identify its performance level or improve service delivery.

  CD should develop a methodology to obtain and analyze the results of internal and external performance. The performance measures should be aligned with CD's strategic objectives to effectively evaluate performance.

- CD does not aggressively influence the greatest amount of public or private property owners to participate in potential brownfield programs. Additionally, the EPA has developed a number of tools to address the liability concerns of lending institutions, municipalities, property owners, developers, and prospective purchasers. Using EPA agreements should allow CD to realize additional brownfield revitalization opportunities. Further, the City would benefit through increased economic development initiatives and civic improvements.

CD should actively encourage private property owners to participate in brownfields programs. CD should make private property owners aware of EPA agreements and covenants which protect their direct interest, while allowing brownfield redevelopment to occur. CD should also adopt the practices of the Mansfield Community Development Department (MCDD) and receive a covenant from the EPA not to sue potential brownfield participants.

- CD enters data into HUD's IDIS, but does not fully use its functions or document HUD security requirements. CD does not use the IDIS module that matches the recorded financial transaction with the information in the IDIS set-up. This could keep funds that are available for disbursement from being used and could contribute to the high timeliness ratios and large carry-over balances at CD. Moreover, there is no documentation within CD that shows who has access to specific IDIS modules, who is authorized to complete a transaction in another's absence, and who has been trained on the system.

  CD management should review IDIS and ensure that all modules available are being used to manage HUD grants. As part of this review, system requirements should be documented for access control, segregation of duties and training. This will help to ensure CD employees are accountable for transactions and are in compliance with HUD regulations.

Commendations

- Using a semi-automated system allows ESD to efficiently perform services and indicates effective management and planning of operations. In addition, developing and implementing a semi-automated system results in streamlined and efficient operations as indicated by the staffing analysis in this report, reduced workers compensation claims and potential for injuries, and minimized use of sick leave.

- By effectively researching alternative leaf disposal methods, ESD avoids compost landfill costs. After factoring in the cost to have the leaves mulched ($8,000), ESD could realize an annual landfill cost savings of about $25,000 in its leaf collection program.

- Using low levels of sick time minimizes ESD's personnel costs while maintaining high levels of productivity. Refuse collection is a dangerous job and as a result, the propensity for injuries and illness is high.

- WPD's procedures manual and extensive labeling throughout the plant provide an added level of process documentation that exceeds practices conducted by the peers and American

Water Works Association (AWWA) standards. WPD effectively uses cross-training to ensure adequate staffing in the event of an emergency and coverage when staff are absent.

- Through the selected members of the storm water committee, the department and opinions, WPC has gained public awareness and acceptance of its storm water program. WPC is leading the forefront into acceptance and compliance through greater public awareness and participation in the Phase II planning.

- WPC is efficiently providing treatment services without sacrificing the quality of the services provided to the citizens. As a result, WPC is minimizing the costs necessary to provide a high-level of service, showing that funds provided by citizens to support operations are being used effectively.

- Through active and direct involvement, the director of WPC has implemented an efficiently staffed operations division. By reducing 2.0 FTE operators, WPC has realized an annual cost savings of approximately $107,000 in salaries and benefits.

- Effectively using a detailed preventative maintenance tracking system allows the maintenance division to operate with minimal staff while still performing the necessary work. In addition, the tracking system provides appropriate and thorough management information that can be used to support any needed staffing changes in the future.

- Pursuing a biosolids program has resulted in landfill cost savings and has met EPA requirements to control pollutants. Furthermore, WPC has been proactive by altering its biosolids operations to be more cost effective, while maintaining an environmentally sound process.

- By providing one-on-one sessions with sub-recipients, CD ensures applications are complete, enabling the Committees to operate more efficiently. Providing the Committee with review sheets on sub-recipients enables the Committee to have accurate and pertinent information on each sub-recipient.

- By proactively offering tuition reimbursement to potential contractors, CD will help ensure that a greater number of bids are received from licensed lead abatement contractors. With more certified contractors, CD can use a larger number of potential suppliers for their repair work, which will create a larger pool from which to select the best quality for the lowest price.

Summary of Financial Implications

The following table summarizes the performance audit recommendations that contain financial implications. These recommendations provide a series of ideas or suggestions that the City should consider. Detailed information concerning the financial implications, including assumptions, is contained within the individual sections of the performance audit.

Summary of Financial Implications

	Recommendation	Estimated One-time Revenue Enhancement	Estimated Annual Revenue Enhancement	Estimated Annual Cost Savings	Estimated Annual Costs	Estimated One-Time Implementation Costs
Environmental Services Department (ESD)						
R2.4	Use individuals sentenced to community service and existing staff for leaf collection to reduce overtime			$1,000		
R2.12	Purchase Computerized Fleet Analysis Software System				$500	$4,000
Subtotal ESD				**$1,000**	**$500**	**$4,000**
Water Department - Water Service (WSD) and Office Administration (OAD)						
R3.2	Reduce sick leave and overtime use			$11,000		
R3.3	Upgrade to AMR data collection system			$420,200		$5,200,000
R3.7	Consolidate garden meter bills			$1,000		
R3.8	Outsource bill mailing services			$7,700		
R3.9	Certify delinquent accounts to property owners and implement standard collection procedures	$1,125,000	$117,000			
R3.11	Implement lockbox collections				$45,000	
R3.12	Reduce 1.0 FTE CSR position			$32,800		
Subtotal WSD and OAD		**$1,125,000**	**$117,000**	**$472,700**	**$45,000**	**$5,200,000**
Water Department - Purification and Distribution						
R4.2	Train eight employees at $250 per staff to improve the budgeting process				$2,000	
R4.7	Obtain grant funding for water department		$100,000			

	Recommendation	Estimated One-time Revenue Enhancement	Estimated Annual Revenue Enhancement	Estimated Annual Cost Savings	Estimated Annual Costs	Estimated One-Time Implementation Costs
R4.9	Consider reducing one laborer position			$40,000		
R4.11	Consider reducing 2.0 FTE foreman and adding 1.0 FTE administrative staff			$105,000	$45,000	
R4.12	Reduce sick leave to statewide average			$37,000		
R4.13	Improve inventory assessment process to reduce unaccounted for water			$55,000		$7,900
R4.14	Purchase software for work order tracking and automatic assignment of routine maintenance				$2,000	$5,000
R4.15	Implement mapping infrastructure				$3,000	$16,500
R4.17	Provide annual training for staff				$37,000	
Subtotal Purification & Distribution			**$100,000**	**$237,000**	**$89,000**	**$29,400**
Water Pollution Control (WPC)						
R5.5	Charge Trumbull County's rate to Warren residents served by the County			$50,000		
R5.8	Obtain grant funding	$100,000				
R5.10	Reduce the superintendent position and promote chief operator and sewer foreman to supervisory positions			$72,600		
R5.16	Reduce sick leave to ODAS benchmark			$6,100		
R5.19	Use the engineering dept. and avoid filling vacant engineer position			$60,200 (Cost Avoidance)		
R5.24	Fill the chief mechanic position				$64,200	
Subtotal WPC		**$100,000**		**$188,900**	**$64,200**	
Community Development						
R6.1	Hire full-time director				$27,000	
R6.14	Fill the urban rural grants coordinator and do not fill the assist. director position			$5,000		

	Recommendation	Estimated One-time Revenue Enhancement	Estimated Annual Revenue Enhancement	Estimated Annual Cost Savings	Estimated Annual Costs	Estimated One-Time Implementation Costs
R6.16	Require suppliers to receive certification prior to reimbursement.			$4,700		
R6.26	Perform economic development activities internally, thereby eliminating contract with WRAP			$52,000		
R6.28	Operate RLF internally		$30,000			
R6.30	Obtain Crystal software training					$850
Subtotal Community Development			**$30,000**	**$61,700**	**$27,000**	**$850**
Totals		**$1,225,000**	**$247,000**	**$961,300**	**$225,700**	**$5,234,250**

Environmental Services Department

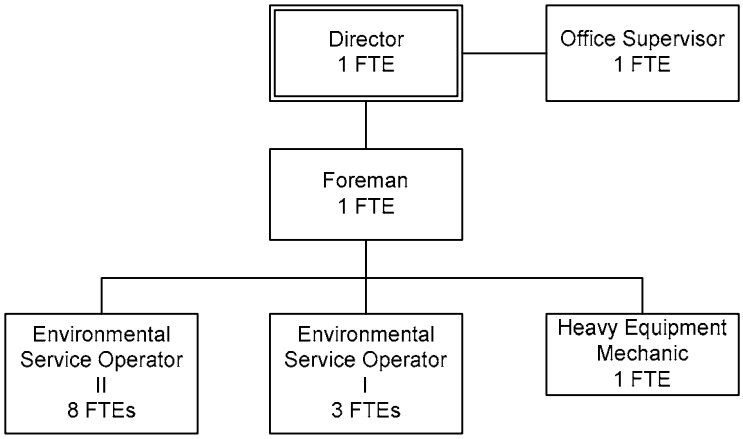
Background

This section of the performance audit focuses on the City of Warren's Environmental Services Department (ESD) functions. ESD is responsible for the administration, collection and disposal of municipal solid waste (refuse) within the City of Warren (City). Performance comparisons are made between ESD and peer refuse collection departments in Cuyahoga Falls and Elyria.

Organizational Chart

Chart 2-1 provides an overview of ESD's organizational structure and staffing levels. All positions are shown as full-time equivalents (FTEs). An FTE is defined as an employee that works 40 hours per week.

Chart 2-1: Environmental Services Department as of May 1, 2002



Excluding the director, ESD employees are members of the American Federation of State, County and Municipal Employees AFL-CIO, Local 74 (AFSCME) collective bargaining unit. The duties for each position are as follows:

Director: Plans and oversees the operations of the department. Approves payroll and prepares budgets. Ensures compliance with all federal, state and local laws as they pertain to sanitation collections.

Office Supervisor: Processes all purchasing requisitions, workers compensation claims, payroll functions; and maintains all vouchers, records, reports, billings, and activities related to the department budget. In addition, the office supervisor acts on behalf of the director in the director's absence.

Foreman: Plans and oversees the work of collection crews. Supervises the collection of solid waste and the maintenance of trucks, prepares daily collection schedules for sanitation crews, maintains work records, creates periodic reports and issues warning and fees tags.

Environmental Service Operator II (ESO II): Collects trash and refuse by operating large refuse collection vehicles. Maintains daily activities record, issues non-collection notices for trash that is not appropriately put together, and performs weekly preventive maintenance on vehicles as instructed.

Environmental Service Operator I (ESO I): Performs general unskilled manual work such as facility maintenance, cleaning and the collection of white goods.

Heavy Equipment Mechanic: Performs skilled work, such as major mechanical and metal fabrication repairs on all refuse equipment.

Summary of Operations

ESD collects refuse, yard waste (leaves, brush) and white goods (appliances). The collection of refuse is performed for all residential properties (single and multi-family). Each residential customer receives one 96 gallon refuse container for their refuse. If a resident needs additional containers, they can purchase them from ESD at the City's cost. Refuse collection is performed five days per week by ESOs using semi-automated refuse trucks. On the daily routes, the ESOs attach each container to the semi-automated truck and activate the automated bar, which empties the container into the truck.

Commercial accounts differ from residential accounts in that dumpsters are used instead of smaller containers. The dumpsters range in size from two to eight cubic yards. Commercial refuse routes are run daily, five days per week. Commercial refuse trucks load from the front, as opposed to the side.

Yard waste consists of leaves and brush. All leaves are required to be bagged prior to being picked-up and must be placed on the tree lawn separate from regular refuse. During leaf season (November), all bagged leaves are picked up according to the leaf collection schedule. Residents may also bring bagged leaves to the ESD facility for disposal at any time during the year. If residents want bagged leaves picked up during the year and they exceed two cubic yards, "excessive pile" fees will be charged. Brush that is properly cut and bundled will also be picked up anytime during the year and "excessive pile" fees will not be charged if the two cubic yard rule is not exceeded.

Residents are also encouraged to participate in the Christmas tree recycling program by dropping off their trees at Packard Park. A private tree service grinds the trees so they can be hauled to the water pollution control department to be used as a bulking agent in the bio-solids process. ESD picks-up all Christmas trees that are on tree lawns by the end of January.

Excessive piles are picked up as part of the daily routes. A designated truck is sent to a pick-up point based on communication between the route drivers and the ESD office. White goods, consisting primarily of appliances, are picked up once a week using a pickup truck. Residents must call ESD to schedule a pickup and a $15.00 surcharge is added to the resident's next utility bill.

In 1988, as part of the H.B. 592, the State of Ohio designated the formation of various solid waste districts to develop a solid waste management plan for the communities, businesses and industries within the districts. The Geauga/Trumbull County Solid Waste District (the solid waste district) is responsible for tire and hazardous material disposal programs within the City. In addition, the solid waste district is responsible for setting recycling goals each year through public awareness, market development and technical assistance programs. The solid waste district has established five recycling drop-off sites throughout the City to allow residents to drop-off plastic, glass, paper and aluminum. On average, a total of 10 to 15 tons of recyclable materials are dropped-off per month, at the five drop-off sites. The collection of recyclable materials from the various drop-off sites is the responsibility of the solid waste district. The hazardous waste and tire recycling programs within the City are organized by ESD through a grant from the solid waste district. Twice a year, ESD allows residents to drop-off any hazardous materials consisting of paint, pesticides, herbicides, paint thinner and motor oil. Throughout the year, ESD allows residents to recycle used tires by taking them to the ESD facility. The solid waste district has a transfer facility where solid waste is taken prior to being taken to approved landfills for disposal. ESD takes all white goods to a private scrap metal facility for disposal.

During the coarse of the performance audit, ESD temporarily increased its rate (March 2003) by $1 per month for a period of ten months. Prior to this, the last rate increase for residential refuse collection services occurred in 2000. Rates increased from $11.37 to $12.37 per month per residential account. ESD also offers a residential refuse collection discount for those residential property owners that have an annual income less than $12,000. In addition, ESD competitively bids for the collection of the City's commercial properties against private refuse collection companies. Commercial rates vary and are based on the size, the number of dumpsters and how many stops it takes for the collection crews to empty the dumpsters at one location.

Financial Data

ESD derives its operations and maintenance budget from user fees. **Table 2-1** presents the actual expenditures for FY 2000, FY 2001, and FY 2002 for ESD.

Table 2-1: ESC Expenditures

Organizational Code Description	2000 Actual	2001 Actual	Percent Change	2002 Actual	Percent Change
Salaries/Wages	$533,822	$559,217	4.8%	$575,491	2.9%
Benefits	$247,672	$287,441	16.1%	$355,881	23.8%
Contract Labor and Services	$1,511,708	$1,555,498	2.9%	$1,533,589	(1.4)%
Supplies	$79,254	$87,142	10.0%	$81,582	(6.4)%
Maintenance	$37,410	$34,286	(8.4)%	$41,889	22.2%
Capital	$26,161	$3,394	(87.0)%	$168,615	4868.0%
Miscellaneous	$374,502	$357,352	(4.6)%	$361,269	1.1%
Total Operational Costs	**$2,810,529**	**$2,884,330**	**2.6%**	**$3,118,316**	**8.1%**

Source: Warren Environmental Service Department Annual Reports

As shown in **Table 2-1**, total FY 2001 expenditures for the ESD were approximately $2.8 million, a 2.6 percent increase from the previous year. The actual amount for FY 2002 is approximately $3 million, an increase of 8.1 percent compared to FY 2001 expenditure levels. Explanations for the significant changes (greater or less than four percent) in the current operating budget include the following:

An increase in Salaries and Wages for FY 2001 and FY 2002 actual: The 4.8 percent increase of salaries and wages for the FY 2001 actual expenditures, when compared to FY 2000, was the result of the annual salary increase as specified in the AFSCME labor contract. Additionally, FY 2002 expenditures increased almost 3 percent to FY 2001 levels which reflects the regular cost of salaries for ESD operators, with an increase as specified in the AFSCME labor contract.

An increase in Fringe Benefits for FY 2001 and an increase in FY 2002 actual: The 16 percent increase in medical premiums for the FY 2001 actual expenditures, when compared to FY 2000, was due to an increase in medical premiums. Additionally, FY 2002 actual expenditures increased 23.8 percent compared to FY 2001 due to an increase in city-wide health care costs.

An increase in Contract Labor and Services for FY 2001 and a decrease in FY 2002: The increase in contract services for the FY 2001 actual expenditures compared to FY 2000 actual expenditures reflects an increase in refuse collected (tonnage) over the previous year. This resulted in higher landfill and solid waste district costs. Conversely, actual expenditures for FY 2002 decreased from FY 2001 expenditures due to needed reductions vehicle and equipment maintenance costs.

An increase in Supplies for FY 2001 and a decrease in FY 2002: The increase in supplies of 10 percent for the FY 2001 over FY 2000 was due to an increase in market costs for operational materials such as diesel fuel, oil and other fluids for equipment maintenance. In addition, ESD purchased dumpsters, garbage containers, a welder, and a pressure washer. Actual expenditures for FY 2002 decreased by 6.4 percent over FY 2001 expenditures.

A decrease in Maintenance for FY 2001 and an increase in FY 2002: The decrease in building maintenance of 8.3 percent in FY 2001 reflects a reduction in cost due to deferred vehicle and building maintenance and repairs normally performed by ESD employees. An increase of 22.2 percent actual expenditures for FY 2002 over FY 2001 expenditures is due to building maintenance needs. (See **F2.20** for further analysis).

A decrease in Capital for FY 2001 and an increase in FY 2002: A decrease in capital for FY 2001 of 87 percent was due to a reduction in capital needs. An increase of 4868 percent actual expenditures for FY 2002 over FY 2001 expenditures due to the purchasing of fully automated refuse collection equipment and a front-end loader.

A decrease in Miscellaneous for FY 2001: A decrease in miscellaneous services for FY 2001 of 4.5 percent was due to a reduction in monies transferred out to the general fund for administrative costs, as established by codified ordinance.

Performance Measures

The following is a list of performance measures used to conduct the review of the ESD:

- Analyze current staffing levels;
- Assess the refuse collection program;
- Assess the yard waste collection program;
- Analyze leave and overtime usage;
- Assess policies and procedures;
- Analyze the rate structure of residential accounts to determine if the revenue collected covers the actual cost of providing services;
- Analyze the vehicle maintenance and replacement program;
- Assess facility functionality; and
- Assess technology utilization.

Findings/Commendations/Recommendations

Staffing and Scheduling

F2.1 **Table 2-2** illustrates staffing levels of ESD in comparison to the peer sanitation departments.

Table 2-2: Staffing Comparisons

Classifications	Warren	Cuyahoga Falls	Elyria	Peer Average
Supervisor	1.0	1.2 [2]	0.3 [3]	0.8
Secretary/Computer Operator	1.0	2.0	0.6 [4]	1.3
Foreman	1.0	1.0	1.0	1.0
Collections Operator	11.0	18.0	23.0 [5]	20.5
Mechanic	1.0	1.0	1.3 [7]	1.2
Total FTEs	**15.0**	**23.2**	**26.2**	**24.8**
Total FTEs used for recycling functions	N/A [1]	2.0 [6]	4.0	3.0
Total FTEs Dedicated to Refuse Collection only	**15.0**	**21.2**	**22.2**	**21.7**
Total Number of Customers	**15,342**	**16,203**	**22,650**	**19,426**
Total Number FTEs per 1,000 Customers	**.97**	**1.30**	**.98**	**1.14**
Part-time/Seasonal/ Community Service Help	yes	Yes	yes	N/A

Source: ESD and peer cities
Note: The FTEs that perform recycling functions among the peers, were taken out of the staffing analysis to develop a more accurate. staffing comparison of those performing only refuse collection services.
[1] Warren does not have a recycling collection program.
[2] The service director is equally split among five departments.
[3] The safety service director and one assistant safety service director are split equally among five departments.
[4] Includes one secretary and one computer operator who are split equally among five departments.
[5] Includes 21 route managers, 1 leadman and 1 collector.
[6] Four employees collecting recycling part-time and refuse part-time (20 hours per week).
[7] One mechanic FTE and two mechanics are split among 12 departments to work on vehicles, including refuse = .16 FTE each.

As illustrated in **Table 2-2**, ESD has 15 FTEs, or 31 percent less than the total FTE peer average dedicated to refuse collection. Overall, ESD's staffing is lower than the peers because they operate a semi-automated refuse collection system that requires one operator per truck. The peers operate a manual refuse collection system that relies on two or three operators per truck. ESD recently upgraded its collection system from manual to semi-automated (see **F2.4**, **F2.5** and **F2.6** for analysis of semi-automated versus manual refuse collections). As a direct result of the change from manual to semi-automated refuse collection, ESD reduced its staff size from 27 to 15 FTEs (44 percent). Further, unlike the peers, ESD does not operate a curbside recycling program.

ESD's number of operators (11 FTEs) is appropriate for performing semi-automated refuse collections and white goods collection programs. Usually, nine operators are used for these programs; seven for the semi-automated process and two for the white goods process. Based on the number of tons collected per FTE and weekly stops per FTE (see **F2.2**), ESD is operating very efficiently with seven operators for the semi-automated process. A minimum of two employees are required for white goods collection because the process is manual and requires two employees to lift heavy objects. The two remaining operators are used to maintain the facility, help with the tire recycling program, perform minor vehicle maintenance and fill-in for operators on leave.

To ensure operations are not negatively impacted during employee leaves and absences, ESD depends heavily on cross-training and has a back-up for each position or each function performed (see **F2.18** for a detailed mechanic staffing analysis). The office manager and foreman have been cross-trained to handle the director's duties in his absence. The foreman is also cross-trained to answer phones when necessary. When the office manager is on leave for any length of time, an employee from another department covers the administrative and secretarial functions. A refuse operator also is used to help the mechanic with minor preventive maintenance repairs to vehicles.

In addition, the detailed staffing workload analysis performed in **F2.2** shows that ESD is efficiently staffed as compared to peers. The major contributing factor which allows ESD to maintain efficient operations and staffing levels is its semi-automated refuse collection system.

F2.2 **Table 2-3** compares annual tons of refuse collected per FTE between ESD, peers and other United States cities for both manual and semi-automated refuse collection, based on FY 2001 figures. The use of manual or semi-automated refuse collection services determines the speed of refuse pick-up and the number of accounts that can be collected per FTE.

Table 2-3 Refuse Collected per FTE Comparison (Tons) [1]

ESD vs. Manual Peers				
	ESD	**Cuyahoga Falls**	**Elyria**	**Peer Average**
Number of Tons Collected per FTE	2,300 (semi-automated)	1,372 (manual)	1,199 (manual)	1,285

ESD vs. Semi-Automated Peers					
	ESD	**Rochester, NY**	**Philadelphia, PA**	**Peoria, AZ**	**Peer Average**
Number of Tons Collected per FTE	2,300	1,208	2,804	2,765	2,259

Source: ESD, peer cities and Municipal Benchmarks

[1] Includes the collection of all refuse (biodegradable, white goods, building materials, yard waste). Does not include any materials that are part of the recycling collection program.

As shown in **Table 2-3**, ESD manages nearly twice the tonnage per FTE with the semi-automated collection system, compared to the peers who operate manually (see **F2.4**, **F2.5** and **F2.6** for more on semi-automation). Additionally, when compared to other semi-automated operational cities, ESD collects similar tonnage per FTE as compared to the peer average. Several factors contribute to the number of tons of refuse collected per FTE from year to year. For instance, heavy precipitation inside containers or the amount of refuse disposed of may increase the total weight (tonnage) collected.

In addition to the total tonnage collected, the number of routes and weekly stops also affects staffing levels. The number of routes and subsequent weekly stops could have a greater impact on staffing levels because ESD is required to collect refuse from every active account, regardless of the actual tonnage collected from each account. **Table 2-4** compares the number of weekly stops per FTE between ESD, the peers and other United States cities for manual and automated refuse collection.

Table 2-4: Number of Weekly Stops per FTE Comparison (Residential and Commercial) [1]

ESD vs. Manual Peers				
	ESD	**Cuyahoga Falls**	**Elyria**	**Peer Average**
Total Number of Residential and Commercial Accounts	15,342	16,203	22,650	19,426
Total Refuse Collection Operators (FTEs) on Regular Routes	7 [2]	16 [3]	21 [4]	18.5
Number of Weekly Stops per FTE	2,191	1,012	1,078	1,045
Number of Daily Accounts per Residential and Commercial Route (per FTE) [5]	438	202	323	262

ESD vs. Automated Peers						
	ESD	**Scottsdale, AZ**	**Shreveport, LA**	**Long Beach, CA**	**Corpus Christi, TX**	**Peer Average**
Number of Weekly Stops per FTE	2,191 semi-automated	2,600 fully-automated	1,145 semi-automated	1,440 semi-automated	1,130 semi-automated	1,578

Source: ESD, peer cities and *Municipal Benchmarks*
Note 1: Number of weekly stops per FTE is calculated as: Number of residential and commercial accounts divided by number of operators on regular routes (collections are once per week).
Note 2: Table excludes "white goods" pick-up because the number of stops fluctuates day to day.
[1] Based on an average city size of approximately 75 linear feet per house.
[2] ESD has a total of 11 operators, 1 operator per route (7 routes) are utilized, leaving 2 operators to collect white goods and 2 operators to perform other functions as needed.
[3] Cuyahoga Falls has a total of 18 operators. Two operators per route (8 routes) are utilized, leaving 2 operators to perform other functions, as needed.
[4] Elyria has a total of 21 operators: Three operators per route (7 routes) are utilized.
[5] Based on number of residential and commercial accounts, divided by five days per week, divided by number of routes per day, divided by the number of FTEs on one route.

As shown in **Table 2-4**, ESD exceeds the peer average (manual operations) in the number of collection stops per week by over 50 percent. In addition, a worker at ESD collects a significantly higher number of accounts per route (438) as compared to the manually operated peers. ESD's workload per FTE is greater due to only needing one operator per route because of its semi-automated system, compared to Cuyahoga Falls and Elyria needing two and three operators per route due to their manual systems. ESD also exceeds peers that use semi-automated operations by 28 percent on the number of stops per week per FTE.

However, the City of Scottsdale, Arizona, which is fully-automated, collects at almost 16 percent more stops per FTE than ESD (see **F2.4** through **F2.6**, and **C2.3**) Based upon the analysis of tonnage collected per FTE (**Table 2-3**) and weekly stops per FTEs (**Table 2-4**), ESD is adequately staffed to operate its semi-automated system.

C2.1 The high amount of refuse collected per FTE, high number of weekly stops per FTE, and high number of accounts per FTE indicates that ESD is maximizing output and productivity with minimal staffing levels. Using a semi-automated system allows ESD to efficiently perform services and indicates effective management and planning of operations.

F2.3 ESD uses an incentive scheduling system for its waste collection personnel. In this type of system, each employee is assigned a specific route with a fixed number of stops to service each day. The employee's workday is over whenever they finish the route. Regardless of actual time worked, employees are paid for a full day. This gives workers an incentive to finish their routes as quickly as possible, while still ensuring that all accounts will be serviced in the course of the day. Further, an incentive scheduling system may help to recruit people for ESO positions simply because the employee is allowed to leave after the route is completed. While the incentive program has many advantages for the department, it can also create problems. According to the International City/County Management Association (ICMA), employees may place speed ahead of safety, causing injuries to themselves or leading to traffic accidents.

Table 2-5 illustrates the number of workers compensation claims over the last three years.

Table 2-5: ESD Workers Compensation Claims

	1999	2000	2001	Total
Claims That Resulted in Lost Time	2	1	0	3
Claims That Resulted in No Lost Time	6	6	0	12
Total Claims	**8**	**7**	**0**	**15**

Source: Human Resource Department

As shown in **Table 2-5**, ESD has had a total of 15 workers compensation claims over the last three years, with zero workers compensation claims filed in FY 2001. According to the human resource department supervisor, the 15 accidents involved the following injuries: bee stings, contusions (cuts, abrasion), debris in eye, ankle sprain, tendonitis and a tailbone injury from lifting. According to the American Public Works Association (APWA), the most

common refuse collection injuries include back and eye injuries, and contusions. All refuse collection related incidents are considered non-preventable injuries. However, incidents and injuries can be minimized with a comprehensive safety manual and appropriate safety training (see **R2.6**).

Table 2-6 compares workers compensation claims to the peers.

Table 2-6: Workers Compensation Claim Comparison [1]

Year	ESD	Cuyahoga Falls	Elyria	Peer Average
2000	1	35	26	31
2001	0	20	22	21
Total	**1**	**55**	**48**	**52**

Source: ESD and peer cities
[1] Injuries resulting in time off.

As indicated in **Table 2-6**, ESD's compensation claims are significantly lower than the peer average. Cuyahoga Falls and Elyria also operate an incentive program. However, the peers have a manual refuse collection operation, which may contribute to the high number of workers compensation claims. Consequently, the largest factor impacting the lower number of workers compensation claims at ESD is its semi-automated refuse collection program which limits strenuous overhead lifting and other contact with hazardous materials. ESD's low workers compensation claims may also be a direct result of effective management, coaching and emphasis on safety. However, formal strategies recommended by APWA to further lower workers compensation claims are lacking at ESD and include the following:

- Team initiatives: With proper team training, employees form teams that provide valuable feedback to management, offer an effective means to communicate with front-line personnel and provide increased employee buy-in with department policies and practices.

- Vehicle and route selection incentives: With excellent driving safety records and crew productivity, employees have the ability to choose their routes and truck assignments. The chance to get better assignments encourages employees to operate vehicles safely and efficiently.

- Training initiatives: Investment in employee training to improve morale and performance. For example, employers may offer supervisors the opportunity to take college-level courses to improve leadership and management skills.

C2.2 ESD is commended for effectively managing the incentive scheduling system that has helped personnel to be self-motivated and responsible, as shown in their ability to maintain lower workers compensation claims associated with low injury rates (see **Table 2-6**) while still maintaining high productivity rates (see **Tables 2-3** and **2-4)**.

R2.1 ESD should consider developing formal employee motivational strategies to further ensure the safety of its employees. Focusing on employee motivation can result in improved work/life quality, decreased overtime and absenteeism, increased productivity, improved labor/management relations and improved safety awareness. Further, establishing a safety manual would outline safety guidelines in detail, allowing employees to be fully aware of safety hazards (see **F2.14** and **R2.6** for further analysis on safety policies).

Level of Service (Refuse, Recycling, Yard Waste)

F2.4 **Table 2-7** compares levels of service between ESD and the peers.

Table 2-7: Service Level Peer Comparison (FY 2002)

Service	Warren	Cuyahoga Falls	Elyria	Peer Average
Average Number of Refuse Collection Routes per Day (5 days per week)	7 [1]	8 [2]	7 [1]	7.5
Number of Active Residential Accounts	15,166	15,853	22,525	19,189
Number of Active Commercial Accounts	176	350	125	237
Total Number of Accounts	**15,342**	**16,203**	**22,650**	**19,426**
Average Number of Hours Worked per Day [3]	6.0	6.0	6.0	6.0
Vehicle Design and Load Features	**Semi-automated** 1 operator per truck Side and front loading	**Manual** operations 2 operators per truck Side loading	**Manual** operations 2 to 3 operators per truck Rear loading	N/A
Residential Set-out Requirements	Curbside pick-up Backyard pick-up for senior citizens or disabled.	Curbside pick-up Backyard pick-up for senior citizens or disabled.	Curbside pick-up Backyard pick-up for senior citizens or disabled.	N/A
Types of Collection Services	Refuse and yard waste	Refuse, yard waste/composting, recycling	Refuse, yard waste and recycling	N/A
Frequency of Collection	1 time per week	1 time per week	1 time per week	1 time per week
Annual Tons of Refuse Collected [4]	24,723	21,955	21,685	21,820

Source: Warren and peers
[1] Includes six residential, one commercial route.
[2] Includes six residential routes and two commercial.
[3] Based on an "incentive" scheduling system whereby the employee is finished working after their route is completed.
[4] Includes total tons (average over a three year period 1999, 2000 and 2001) of commercial and residential refuse collected.

As shown in **Table 2-7**, ESD has approximately 21 percent fewer refuse collection accounts (residential and commercial) compared to the peer average. While ESD and peers provide yard waste collections, ESD does not offer recycling services (see **F2.8**). As previously stated, the major difference in service delivery between ESD and the peers is that ESD runs a semi-automated refuse collection program, whereas the peers operate manually.

F2.5 ESD continually reviews local, state and federal guidelines that may affect refuse administration, collection and disposal to forecast future needs. For instance, the Occupational Safety & Health Administration (OSHA) is in the process of developing guidelines that will force sanitation departments to limit refuse operators from repetitive lifting (physical) resulting in back injuries. As a result, according to Solid Waste Association of North America (SWANA), most sanitation departments will be heading towards semi-automated and fully-automated refuse collection operations for the future to reduce staff size, and to reduce the high number of injuries associated with manual operations. ESD took the lead in identifying these guidelines and as a result, moved from manual to semi-automated operations.

F2.6 According to SWANA, the two most efficient refuse collection processes are semi-automated and fully-automated operations. Based on statistics from various sanitation departments, operating an automated refuse operation saves on time and injuries which are common in manual operations. Additionally, the industry standards identified by SWANA for the amount of time spent at each stop or house consists of the following:

- 45 seconds - semi automated (operator brings container close to the equipment to load the refuse truck);
- 20 seconds - automated (the operator remains in truck to load the refuse); and
- 90 seconds - total manual (hand pick-up and load the refuse).

All ESD equipment is semi-automated, which means that the operator brings each container close to the equipment to empty into the truck. On May 28, 2002, the Auditor of State's (AOS) office observed, without being seen, several refuse collection operators on different routes. The operators were timed from the point of stopping the vehicle to the time the driver got back into the truck and headed to the next stop. The operators were consistently timed at approximately 25 to 30 seconds per stop. The operators also attempted to make sure the containers were standing upright before going to the next stop.

ESD is gradually moving towards a fully automated refuse collection system by taking semi-automated equipment, which is past its lifecycle, and replacing it with fully automated equipment. According to the Director, the old chassis are still going to be used and only the body of the vehicle will be replaced to minimize implementation costs. Fully automated equipment has an arm that reaches out to grab the containers instead of the operators getting out of the truck to bring the container to the truck, as is currently being done. Going to fully automated operations would allow ESD to increase the workload of employees by allowing for speedier collections, thereby increasing the number of stops, tons collected, and routes per FTE, as shown in **Table 2-4** with Scottsdale Arizona. As a result, ESD would be able to reduce staffing levels to realize additional cost savings by implementing a fully-automated refuse collection system.

C2.3 Developing and implementing a semi-automated refuse collection program has provided ESD with the following benefits:

- Streamlined and efficient operations as indicated by the staffing analysis in this report (see **F2.1** and **F2.2**);
- Reduced workers compensation claims and potential for injuries (see **F2.3**); and
- Minimized use of sick leave (see **F2.11**).

In addition, ESD should be commended for planning to implement a full-automated refuse collection system, leading to greater operational efficiency within the department.

F2.7 Shortly after implementing the semi-automated refuse collection program, ESD sought resident feedback to determine customer satisfaction with the new process and to make any necessary improvements. ESD received positive responses from the survey that included the following opinions:

- *Program:* Single-family home response: 314 indicated that it was a good idea, 27 indicated some problems but the basic system is good, 18 no better or worse than the previous system, 1 indicated that it was a bad idea and 8 did not respond.
- *Cleanliness:* Single-family home response: 295 indicated a cleaner environment, 7 indicated a dirtier environment, 58 stated that there was no change and 8 did not respond.
- *Ease:* Single-family home response: 343 indicated that the new system was very helpful, 13 indicated that the new system was not helpful and 11 did not respond. Apartment dwellers indicated that the information provided with the garbage container was very helpful.

C2.4 ESD is commended for providing an avenue for residents to comment on the new refuse collection program and make recommendations for improvement. Residents appear satisfied overall with the semi-automated refuse collection program, which has led to cleaner neighborhoods and a more efficient process.

F2.8 **Table 2-8** compares recycling programs between ESD and the peers.

Table 2-8: Annual Recycling Program Comparison

	Warren	Cuyahoga Falls	Elyria	Peer Average
Curbside Recycling Program	No [1]	Yes	Yes	Yes
Tons of Recycling[2]	470 [3]	3,479	1,495	2,487
Tons of Refuse	24,723	21,955	21,685	21,820
Recycling Rate[4] (percentage)	1.9	16.0	6.9	11.4
Refuse Tipping Fees (per ton)	$36.00	$35.50	$28.31	$31.75
Expenditures	N/A	$337,000	$169,250	$253,125
Landfill Cost Avoidance (Refuse)	$16,920	$122,460	$42,323	$82,391

Source: ESD and peer cities
Note: Tipping fee is a term used in the solid waste industry for the cost of disposing refuse in either a landfill or a transfer station.
[1] Geauga/Trumbull County Solid Waste District manages five recycling drop-off centers in the City.
[2] Average tons of recycling collected in 2000 and 2001.
[3] Based on the number of tons collected from drop-off centers (5 locations) throughout the City.
[4] Recycling rate = Total Municipal Solid Waste Recycled divided by Total Municipal Solid Waste Generated.

As shown in **Table 2-8**, ESD does not operate a curbside recycling collection program. ESD disposes of almost 3,000 tons more refuse per year than the peers (see **Table 2-7**). Although the peer average landfill cost avoidance is higher than ESD, the peers' cost avoidance does not fully offset the operational costs of a recycling program. As a result, peer cities recoup costs associated with recycling through refuse collection fees. In addition, ESD pays approximately 13.4 percent more for tipping fees than the peers (see **F2.17** for further analysis of tipping fees).

The City has had drop-off recycling centers since 1995. Prior to this, there were no recycling programs offered to homeowners and the City has never determined the needs of the homeowners, as it relates to recycling. ESD has never surveyed its residential and commercial accounts to determine if recycling needs have changed. According to the Container Recycling Institute, polls show while Americans support recycling, they are doing it less than they did in the early 1990's because desires and needs have changed.

A key factor in developing and maintaining a recycling program is based on the availability of markets for materials recovered and/or energy produced. State and local governments are finding themselves with low recycling participation rates and low market demands. For instance, Alabama, Kentucky and Texas have ceased recycling operations altogether. The cities of Baltimore and Albuquerque are rearranging or cutting back their schedules to better

consolidate pickups. New York City stopped picking up plastic and glass because of the decrease in market demand for those materials. A curbside recycling collection program could be costly. The economies of scale seem to indicate that large cities and regional efforts are favored because of the level of capital investment involved.

R2.2 ESD should survey the residents to determine their recycling needs. The survey should indicate that a curbside recycling program would come at a cost to residential and commercial customers, due to the additional equipment and personnel needs. ESD should also research markets that exist for recyclables by contacting the scrap industry and those who handle secondary materials directly, to determine the market demands. ESD could survey the customer at minimal cost on the City's website or use the existing survey process sent with utility bills. If ESD implemented a recycling program, it should fully assess the projected savings in landfill costs and solid waste fees (see **F2.17** and **R2.9**), and costs to implement and operate the program to help determine an appropriate fee to charge for this additional service.

F2.9 ESD is looking into one specific supplier to provide temporary leaf mulching services during leaf season. The quoted per season price for leaf mulching was approximately $8,000 to mulch 17,000 cubic yards of leaves and $2,000 to grind Christmas trees. These services would include mulching leaves prior to delivering them to the water pollution control department for processing. According to the director, there are no plans to obtain additional quotes from other possible suppliers for a lower cost.

In 2002, the Auditor of State's office (AOS) completed a performance audit on the City's purchasing department which identified purchasing inconsistencies among different departments. The audit mentioned inconsistencies in practices among departments which resulted in a lack of adequate internal controls. The policy of requiring multiple quotes only for certain categories of purchases lends a perception of inconsistency in terms of monitoring purchases and compliance with the City's minority/disadvantaged and local buying priorities.

R2.3 ESD should follow appropriate purchasing practices as identified in the performance audit. ESD should obtain three quotes for every purchase totaling more than $500 unless there is an attached statement from the department head that only one viable supplier is available. Women's Business Enterprise (WBE) and Minority Business Enterprise (MBE) supplier participants should be tracked, with guidance from the City's purchasing and equal employment opportunity (EEO) coordinators to ensure support for the City's economic development programs by assisting minority/disadvantaged businesses to compete successfully in the local economy.

F2.10 ESD pays $8 per cubic yard ($27,600 annually) to dispose of yard waste at a certified EPA compost facility. ESD is looking into an alternative disposal method by using the leaves as a

bulking agent for the bio-solids operation in the water pollution control department to reduce compost landfill expenditures. ESD has arranged the services of court-designated offenders that have been sentenced to community service time to remove the leaves from the bags at no cost to the City. The peer cities do not have alternative disposal methods and instead, rely on the high cost of landfilling.

C2.5 ESD should be commended for effectively researching alternative leaf disposal methods to avoid compost landfill costs. After factoring in the cost to have the leaves mulched ($8,000), ESD could see an annual landfill disposal cost savings of $25,000 in its leaf collection program.

Sick and Overtime Usage

F2.11 **Table 2-9** compares sick time usage with peer cities.

Table 2-9: Sick Time Usage Comparison (Hours)

Years	ESD	Cuyahoga Falls	Elyria	State Average	Peer Average
Number of FTEs	15.0	23.2	26.2	N/A	24.7
2000	637 (80 days) 5 days per FTE	1,502 (187 days) 8 days per FTE	2,724 (340 days) 13 days per FTE	6.85 days per FTE	10.5 days per FTE
2001	516 (64 days) 4 days per FTE	3,183 hours (397 days) 17 days per FTE	3,110 (388 days) 15 days per FTE	7.09 days per FTE	16.0 days per FTE

Source: ESD and peer cities
Note: Number of Sick Days per FTE figures were rounded

As shown in **Table 2-9**, ESD used 1.85 (27.0 percent) and 3.09 (43.6 percent) fewer sick days per FTE in FY 2000 and FY 2001, respectively, than the State sick time average. Further, in FY 2000 and FY 2001, ESD used 5.5 (52.4 percent) and 12.0 (75 percent) fewer sick days per FTE as compared to the peer averages, respectively. ESD's low sick time use may be attributed to its incentive scheduling program (see **F2.3**) and its use of a semi-automated system (see **F2.4**).

C2.6 Using low levels of sick time minimizes ESD's personnel costs while maintaining high levels of productivity. Refuse collection is a dangerous job and as a result, the propensity for

injuries and illness is high. ESD should be used as the benchmark for other sanitation departments to follow.

F2.12 **Table 2-10** compares overtime usage with peer cities.

Table 2-10: Overtime Time Usage Comparison (Hours)

	Warren	Cuyahoga Falls	Elyria	Peer Average
Number of FTEs	**15.0**	**23.2**	**26.2**	**24.7**
FY 2000	2,245	2,785	3,751	3,268
FY 2001	2,664	3,183	3,593	3,388
Total Average OT hours (FY 2000 and 2001)	**2,454**	**2,984**	**3,672**	**3,328**
Total Overtime Hours per Week per FTE	**3.1**	**2.5**	**2.7**	**2.6**

Source: ESD and peer cities

As shown in **Table 2-10**, ESD used 19.2 percent more overtime hours per FTE, per week when compared to the peer average. Approximately 57 percent of ESD's overtime hours are spent collecting leaves.

Table 2-11 analyzes the overtime costs as a percentage of the overall budget between ESD and the peer cities.

Table 2-11: Overtime Cost Comparison as a Percentage of Overall Budget (FY 2001) [1]

	ESD	Cuyahoga Falls	Elyria [2]	Peer Average
Total Budget	$2,886,333	$3,214,506	$2,893,341	$3,053,923
Total Overtime Cost	$58,327	$63,753	$58,668	$61,210
Overtime as a Percentage of Overall Budget	2.0	1.98	2.0	1.99

Source: ESD and peers

[1] Only includes expenditures for refuse (residential and commercial) and leaf collection functions. Recycling and compost related expenditures are excluded from this analysis

[2] Overtime only includes refuse collection functions because the street department performs leaf collection.

As shown in **Table 2-11**, overtime cost as a percentage of the overall budget is approximately two percent for ESD and the peer cities. Overtime is primarily for leaf and refuse collection functions for residential and commercial accounts.

ESD has access to community service (non-paid) workers and could also use one ESD operator, currently being used for general maintenance and cleaning around the facility, for leaf collection activities. ESD has a pick-up truck which does not require a CDL to operate, that could be used by the extra operator to collect leaves during regular hours (seven hours per day). Community service help could be used if the ESD operators are being fully utilized for regular refuse collection activities.

R2.4 ESD should reduce overtime costs by reviewing the daily collection routes on an annual basis to ensure that the number of refuse collection accounts per route is appropriate to fill a seven hour work day (includes two 15 minute breaks and one half hour lunch). In addition, ESD should consider using community service workers or other available operators to collect leaves during normal working hours to help reduce the labor intensive work associated with leaf collection.

Financial Implication: If ESD reduced overtime use to the peer average (reduce 266 hours) by using one existing operator not currently being used on regular refuse collection routes and one community service worker for leaf collection during regular hours (seven hours per day) throughout November, ESD could save about $2,000 annually in overtime costs. The average hourly cost for a seasonal employee is $7.00. A community service worker would work a total of 133 hours in a season, for a total annual cost of approximately $1,000. As a result, the net annual savings is about $1,000.

Job Descriptions, Policies and Procedures

F2.13 Most of ESD's job descriptions have not been updated and lack detail. For instance, the job description for the ESO I position does not appear to accurately describe the job responsibilities of the position. Additionally, the job title for the superintendent changed to director but has not been changed in the job description.

R2.5 The job descriptions for ESD should be reviewed and updated annually. An updated set of job descriptions would provide ESD with the foundation for establishing internal equity and developing a comprehensive evaluation system. Additionally, ESD should work with the human resource department to update job descriptions to adequately reflect the current level of responsibilities. All job descriptions should include:

- Job title;
- Salary information;

- Job summary;
- Specific responsibilities (Including reporting and supervisory requirements);
- Duties performed;
- Percentage of time devoted to each duty;
- Equipment operation requirements;
- Level of decision making;
- Knowledge/skills/abilities required; qualifying education training (including cross-training); and
- Experience and special job requirements.

Descriptions may also include additional detail, such as performance standards to be achieved, working conditions and potential hazards, and supervisory responsibilities. Job descriptions are important for the following reasons:

- To clearly articulate job content to employees and supervisors;
- To establish individual performance expectations;
- To provide criteria for recruitment and selection; and
- To avoid legal liability.

While updating job descriptions, ESD should be cognizant of the required compliance with the Americans with Disabilities Act (ADA) requirements and should reflect this in the departmental job descriptions.

F2.14 ESD's policies and procedures manual covers areas such as refuse collection routes, communications and personnel matters. Although these areas are an important part of ESD's operations, there are no policies and procedures dealing with safety. According to the Environmental Protection Agency (EPA), refuse collection and disposal has been deemed one of the most dangerous working environments. As a result, it is necessary to ensure that safety policies and procedures are in place.

R2.6 ESD should develop a safety manual. The safety manual should include safety policies and procedures and an organized enforcement system to ensure that a safe work environment is maintained. The safety manual should address the following areas:

- Personal protective equipment;
- Accident reporting procedures;
- Lifting techniques;
- Motor vehicle operations;
- Safety hazard reporting procedures;
- Employee safety responsibilities;

- Supervisor safety responsibilities;
- Safety training;
- Inspection and reporting requirements by the designated "responsible person" (see **F2.15** for further analysis); and
- OSHA guidelines.

Safety policies and procedures should be an integral part of ESD's mission. A safety manual will allow ESD to provide and maintain safe working conditions and promote safe operating practices that will protect employees, residents and properties. ESD should require all employees to sign an acknowledgment indicating that they have read and understand all safety policies within the manual.

F2.15 There are no formal guidelines, program objectives or processes to ensure that the safety hazards within ESD are eliminated. The City developed a "responsible person" program a year ago to identify various risks and designated hazards in the work environment. According to the human resource department, there is a responsible person in each department who is trained by OSHA in identifying hazards in the workplace. An ESD operator has been designated as a responsible person and is responsible for identifying risks and hazardous areas within ESD. However, there is no oversight to make sure responsible people are meeting expectations and that program objectives are being met. (See the **human resources section,** *City of Warren Phase IV* performance audit report for further discussion of the responsible person program.)

The responsible person in each department receives an additional $.50 per hour ($1,040 per year) to inspect the facilities on a quarterly basis and report on the findings. While the responsible person in ESD is current on inspections for 2002, only one inspection was reported on the facility in 2001. As a result, the responsible person is being paid for work that is not being performed. Furthermore, in FY 2001, ESD's responsible person identified several hazards within the department that have also been identified in the FY 2002 reports, indicating hazards that still exist. According to the responsible person reports, the roof, floor and garage doors need repair, and that the building is unsafe. The report does not identify specific hazards, nor does it specify what makes them hazardous.

The American Public Works Association (APWA) recommends guidelines for hazard communication and identification which include the following:

- Inspect all department buildings and grounds each week;
- Give a detailed description of all hazards identified;
- Give a detailed recommendation on what needs to be done to eliminate the hazards; and

- Rate each hazard, 1 through 5. A rating of 1 would be defined as hazards that need immediate response, such as something that may cause serious injury or death. A rating of 5 would be defined as hazards that may lead to a lesser injury if not identified and eliminated, such as oil on the ground or electrical panels not being labeled effectively.

R2.7 The City should develop guidelines to ensure that the responsible person in ESD is achieving requirements set forth in the program objectives. Formal guidelines should include job responsibilities for each responsible person and more stringent and consistent inspection reporting, in accordance with best management practices from APWA. The hazard inspection report should be reviewed and signed by the safety service director, the human resource director (risk management) and the ESD director so that the hazards are effectively communicated. The safety service director, human resource director and ESD director should schedule periodic safety meetings with responsible persons to review safety issues and develop recommendations for improvements leading to the elimination of all hazards in the work environment.

Rate Structure

F2.16 The ESD office supervisor does not have access to the utility billing system to run the necessary reports related to refuse collection. The reports that can be generated from the utility billing system are delinquencies and account termination. These reports can be used to effectively manage ESD's revenues and keep track of the status of refuse accounts. (See **water service and office administration** section for further analysis)

R2.8 ESD should work with the information technology department to access the necessary information from the utility billing system that will allow ESD to monitor all sanitation accounts and their status. This should allow ESD to assist water service and office administration in enforcing collections and providing adequate revenue to fund its operations.

F2.17 **Table 2-12** compares residential refuse collections to peers.

Table 2-12: Residential Sanitation Rate Analysis (FY 2001)

	Warren	Cuyahoga Falls	Elyria	Peer Average
Number of Active Residential Accounts [3]	15,166	15,853	22,525	19,189
Cost to Perform Residential Refuse Collection Services [1]	$2,593,000	$2,824,268	$2,724,090	$2,774,179
Average Monthly Cost per Account	$14.25	$14.84	$10.07	$12.46
Monthly Charge per Residential Account [2]	$12.37	$17.75	$12.50	$15.13
Difference Between Cost to Perform Residential Refuse Collections and Charge (per Account)	**($1.88)**	**$2.91**	**$2.43**	**$2.67**

Source: ESD 2001 annual report, utility billing system and peer cities
Note: Neither recycling nor commercial refuse collection costs are included in analysis
[1] Includes costs associated with residential refuse and yard waste collection such as: labor (salary and benefits), supplies, long-term debt, and other refuse, yard waste and compost costs, and solid waste district fees.
[2] Fee only includes residential refuse and yard waste curbside pickup. Back-yard pickup would be a slightly higher in cost (labor).
[3] The number of residential accounts only represents active accounts and does not include in-active accounts. According to Warren's Acting Director of ESD, the total number of active and in-active residential accounts is 16,247.

As illustrated in **Table 2-12**, ESD's monthly costs to provide residential refuse collection services exceed the monthly fee charged to residents by 15.2 percent. Therefore, ESD uses its available commercial refuse revenue and the City increases commercial rates as needed in accordance with Codified Ordinance 927 to offset the residential refuse operational deficit. However, depending on commercial revenues to offset residential expenditures may become a problem in the future, especially if commercial businesses continue to decline in Warren and if other refuse haulers competing for commercial accounts offer and charge a lower commercial rate than the City. Additionally, revenues are not adequately being collected by the water service and office administration divisions, which further limits ESD's ability to provide cost-effective residential refuse collection services (see **water service and office administration** section).

According to the superintendent of sanitation, Cuyahoga Falls is charging more than the cost to provide residential refuse collection services in order to help offset the cost of compost and recycling operations. In addition, Elyria is subsidizing its recycling program with residential refuse revenues (see **F2.8** for recycling analysis).

Although ESD's staffing levels are significantly less than the peers (see **F2.1** and **F2.2**), **Table 2-12** indicates that its average monthly cost per account is higher than Elyria and only slightly lower than Cuyahoga Falls. Solid waste fees and amount of refuse collected further impact ESD's monthly average cost per account. **Table 2-13** compares solid waste expenditures at ESD to peers.

Table 2-13: Residential Solid Waste Expenditure Analysis (FY 2001)

	Warren	Cuyahoga Falls	Elyria	Peer Average
Number of Active Residential Accounts [1]	15,166	15,853	22,525	19,189
Annual Tons of Residential Refuse Collected [2]	20,223	14,955	19,835	17,395
Solid Waste (Refuse) Fees [3]	$635,590 [4]	$498,893	$796,000	$647,446
Solid Waste Fees per Ton of Refuse	$31.43	$33.35	$40.13	$37.22

Source: ESD and peers

[1] The number of residential accounts only represents active accounts and does not include in-active accounts. According to Warren's Acting Director of ESD, the total number of active and in-active residential accounts is 16,247.

[2] Includes only total (three year average) tons of residential refuse collected, excluding commercial collections.

[3] Includes solid waste district fees and tipping fees.

[4] Because ESD does not separate commercial from residential expenditures, the total residential expenditures were determined based on the percentage of residential tons collected annually. Of the total tons collected in FY 2001, 82.4 percent were residential. Therefore, 82.4 percent of overall expenditures (918,000) is $756,432 in FY 2001. The total residential expenditures ($756,432) are offset by community fees (revenues) of $120,842 per year paid to the City of Warren by the vendor, which equals $635,590.

As illustrated in **Table 2-13**, ESD's ratio of solid waste fees per ton of refuse is lower than Cuyahoga Falls and Elyria. ESD and the peers maintain a similar process for disposing of refuse. The refuse is dropped off at a transfer station, where an outside trucking company takes the refuse from the transfer station to the landfill for disposal. ESD depends on the vendor's transfer facility to dispose of its refuse.

Although tipping fees are higher than the peer average by 13.4 percent (see **Table 2-8**), the current contracted disposal company provides revenues of approximately $120,000 annually to Warren's General Fund for being located within the City boundaries, thus offsetting some of the solid waste fees (i.e., tipping fees) charged by the disposal company. The contracted disposal company provides transfer station services to other communities and provides the City with additional revenue to help soften the cost of allowing refuse collection vehicles from other communities traveling on its roadways to dispose of their refuse. Tipping fees are based on several factors including gasoline prices, trucking industry prices and location of landfills. For example, out of the total tipping fee cost that ESD pays ($36.00 per ton), $4.50 to $6.00 is the cost for a private trucking company to haul refuse from the transfer

station to the landfill. ESD routinely receives two bids for refuse disposal services. According to ESD, the current vendor provides the lowest bid. The current contract expires in 2004.

Soliciting additional bids for refuse disposal services through other newspapers and publications, websites, and public announcements would increase competition, potentially resulting in lower tipping fees charged by a vendor without impacting quality of service. In addition, ESD could reduce the amount of refuse that is disposed by the vendor and subsequent solid waste costs through increasing its recycling rate (see **F2.8** and **R2.2**).

During the coarse of the performance audit (March 2003), Council approved a temporary rate increase of $1 per month for a period of ten months.

R2.9 Prior to any further increases in fees charged to residents for refuse collection, ESD should conduct the following activities:

- Work with the water service and office administration divisions to improve the collection rate for refuse fees. An effective process for collecting revenues would help minimize the current deficit for residential refuse operations.

- Either perform internally, or engage an appropriate vendor to perform, a thorough and detailed cost analysis to ensure that rates are equitable and fair, which was beyond the scope of this performance audit. The cost analysis should include forecasting for future needs to ensure that rate increases are planned ahead of time to reflect necessary capital and labor increases.

While ESD appears to have negotiated an agreement that minimizes solid waste fees and is cost beneficial for the City, it should continue to work with the current vendor to further serve the City in a more economical manner. In addition, ESD should continue to solicit additional bids (i.e., more than two bids) for refuse disposal services when the current contact expires to determine if another vendor would provide quality refuse collection services at a lower cost. Finally, the rate structure should be examined once per year as part of the budget development process to determine if any adjustments should be made, and it should be based on effectively developed budgets and appropriate record keeping.

Vehicle Maintenance

F2.18 **Table 2-14** shows staffing levels for vehicle maintenance for ESD and peers.

Table 2-14: Vehicle Maintenance Comparison

	Warren	Cuyahoga Falls	Elyria	Peer Average
Centralized [1]	No	Yes	Yes	Yes
Current Mechanic Staffing Level (FTE)	1.0	1.0	1.32	1.16
Number of Vehicles and Equipment Maintained	15	18	14	16
Number of Vehicles Maintained per FTE	15	18	10.6	14.3
Contracted Maintenance Services	Tire replacement	All major work such as engine, tires and break work.	No	N/A

Source: ESD and peer cities
[1] Centralized vehicle maintenance is defined as having one department that maintains all city vehicles.

As illustrated in **Table 2-14**, ESD maintains a similar number of vehicles per FTE when compared to the peer average. ESD is does more equipment work internally as compared to Cuyahoga Falls, which is more dependent on contracted maintenance services. In addition, replacing vehicles routinely after they have reached their serviceable life (approximately seven years) allows ESD to keep mechanic staffing needs and major repair costs at a minimum. ESD also cross-trains operators to perform minor mechanical work which is not reflected in **Table 2-14**. Therefore, due to effective cross-training (see **F2.1**) and the comparison of mechanic staffing levels to the peers and amount of work performed by mechanics internally, ESD has an appropriate number of mechanics for the number of vehicles they maintain.

F2.19 ESD uses the services of a tire supplier for the replacement of tires on all refuse trucks. **Table 2-15** analyzes the cost of using outside tire supplier services versus performing this function in-house.

Table 2-15: Tire Supplier vs. Performing In-House

Supplier Tire Services	
Monthly Charge	$1,700
Total Annual Supplier Charge	**$20,400**
ESD	
Number of Tires Replaced per Year	2
Average Cost for Tire Replacement per Vehicle [1]	$500
Total Annual Cost for Tires per Truck	$1,000
Number of Refuse Trucks Only (Packers)	11
Total Actual Cost for Tire Replacement (Entire Fleet)	**$11,000**
Annual Cost for Permanent Hydraulic Lift and Mobile Hydraulic Lift (10 Year Life Cycle)	**$3,200** [2]
Part-time Mechanic Helper (Annual Salary)	**$13,500**
Total Annual Cost for ESD to Perform Tire Services In-house	**$26,700**

Source: ESD
[1] Used the average cost of tires at $125 times four tires = $500.
[2] Cost of two hydraulic lifts ($32,000) divided by the life span (10 years) = $3,200 per year

Table 2-15 indicates that ESD saves approximately $6,300 annually by using an outside tire supplier instead of performing this function internally. Based on the staffing analysis conducted in **F2.2**, it is assumed that ESD would need at least one part-time mechanic to replace tires. In addition, ESD would need to purchase equipment to handle tire replacements internally. The vendor quoted a General Services Administration (GSA) price for four jack stands and four wheel contact lifts at approximately $32,000 (includes shipping).

In addition, ESD depends on the tire supplier to makes service calls to the garage and at any location where the trucks break down, allowing ESD's mechanic to focus on major equipment work and preventative maintenance on those vehicles at the garage. According to the director, ESD has used the services of the current supplier for over five years because they provide the best service at the lowest cost. However, ESD does not formally check prices for this type of service with other potential suppliers. Obtaining additional prices for

tire replacement services could result in attaining a quality vendor that would provide the same services at a lower cost.

C2.7 Using an outside tire replacement service saves operational costs for ESD and allows the mechanic to focus on major repairs and other priority items. Additionally, using a supplier helps eliminate the space needs for a large tire inventory.

R2.10 Although ESD is operating tire replacement operations cost-effectively, it should consider obtaining additional price quotes for contracted services to further ensure it receives the best service at the lowest cost (see **R2.3**). Additionally, ESD should compare the cost of hiring tire repair services with the cost of providing this service in-house on a regular basis (e.g., bi-annual or triennial) to ensure this process remains cost-beneficial.

Facility

F2.20 A structural inspection was performed on June 29, 2000 by an engineering consultant to assess the condition of the sanitation building and compare the repair costs with replacement costs. The inspection revealed the following:

- Roof panels are misaligned, leading to leaks;
- Masonry end wall has severe step cracking reducing the building's capacity to resist wind loads;
- Masonry above all overhead doors needs substantial restoration and repair; and
- Exposed structural steel needs painting and structural supplementation.

The engineering consulting firm estimated the cost of repairing the existing facility to be approximately $180,000, which is based on preliminary information and approximate extent of damage. This cost does not include any architectural, mechanical or electrical upgrades or expansions. The engineering consulting firm estimates that the replacement cost of the structure shell is approximately $207,000. This cost is based on an estimated price of $18.00 per square foot and the useful life of approximately 35 to 40 years.

ESD maintains an eight year capital improvement plan that includes equipment and supplies, but does not include facility needs. As a result, ESD's facility requirements have not been adequately planned or budgeted. As of May, 2002, there have been no repairs to the deteriorated facility.

According to GFOA standards, a government should develop appropriate management strategies to enhance its ability to successfully execute the budget and to achieve long- range goals, such as improving facility and capital needs. Management strategies are necessary to

facilitate achievement of both programmatic and financial goals, and to promote budgetary compliance.

In addition to the engineering consultant firm's inspection, AOS performed an on-site inspection of the ESD facility. The following is a list of safety hazards observed by AOS which pointed to an unsafe environment within ESD and could ultimately result in a serious accident.

- Pit walls are caving-in;
- Bay overhead entrances are deteriorating;
- Some bay doors cannot be opened or closed;
- Poor lighting in garage;
- Circuit breakers are not labeled;
- Drill press is not anchored to the floor; and
- Oil and other lubricants on the floor.

Although State and local government workers are excluded from Federal coverage under the Occupational Safety and Health Act of 1970, ESD is required to follow worker safety and health requirements established by OSHA under Ohio Revised Code (ORC) 4167.04. To assist local governments in meeting these requirements, OSHA created the Public Employment Risk Reduction Program (PERRP). OSHA and the Public Employment Risk Reduction Advisory Commission, a sixteen member body consisting of eight representatives of public employers and eight representatives of public employees, develop rules and procedures for the program. PERRP is designed to ensure that public employees in the state of Ohio are provided with a safe and healthy working environment. The implementation and administration of PERRP is performed by OSHA.

Under PERRP, OSHA provides "no fee, no risk" on-site safety inspections, safety training and hazard recognition at the employer's request for all public employees except firefighters, peace officers, emergency medical technicians, paramedics and correctional officers in county and municipal facilities in order to assist with compliance with all safety health standards adopted by the Public Employment Risk Reduction Advisory Commission. OSHA does not issue fines or violations, perform random general inspections, or use prior consultation activity as a basis for a citation. PERRP works with government entities to identify actual and potential safety hazards. PERRP also examines mandatory written procedures (blood borne pathogens, hazard communication, confined space, how to lift properly, etc.) for compliance with safety and health rules and regulations. PERRP would prepare a detailed report (within 30 days) to assist ESD in developing specific programs and hazard mitigation methods. According to OSHA, using PERRP services helps government entities to increase employee productivity and morale while reducing the following:

- Accidents that result in injury or death;
- Lost workdays; and
- Workers' compensation, medical and legal costs.

Furthermore, according to ORC § 4167.04 "Each public employer shall furnish to each public employee a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to public employees." According to ORC § 4167.06 "A public employee acting in good faith has the right to refuse to work under conditions that the public employee reasonably believes present an eminent danger of death or serious harm to the public employee."

R2.11 ESD should develop and implement a safety plan to comply with OSHA safety requirements. ESD should request a free OSHA consultation to identify issues that need to be addressed in the plan. ESD should work with OSHA to develop the plan that would outline periodic training for all staff. For example, OSHA provides safety training and hazard recognition to educate supervisors and employees about the application of safety and health standards that ESD should include as a part its safety policies and procedures (see **F2.14** and **R2.6**) ESD should also incorporate OSHA's recommendations into its capital improvement plan for critical repair needs to the facility. ESD should also develop appropriate management strategies to enhance its ability to successfully execute the budget and to achieve long- range goals. ESD improvements should be a priority due to the hazardous environment as outlined in **F2.20**.

Technology

F2.21 ESD does not keep preventive maintenance (PM) records or maintain costs for all repairs on all vehicles. As a result, the total cost to maintain the fleet cannot be determined. Although the mechanic stated that ESD has a preventive maintenance schedule, there is an absence of a formal written schedule or data supporting the preventive maintenance record for each vehicle. In addition, ESD does not have a comprehensive computer system for tracking equipment maintenance or parts inventory, such as a computerized fleet analysis software system (CFA). The CFA software application allows for the recording and monitoring of vehicle repairs and costs, and provides a means to maintain an inventory of all parts. An effective preventive maintenance program can be used to extend the life of a vehicle.

Peer cities maintain a centralized vehicle maintenance garage and depend largely on a computerized fleet maintenance software system to keep track of manufacturer recommended maintenance requirements, equipment and supply inventory and mechanics' time spent on each vehicle. According to the peers, the fleet maintenance software allows them to effectively manage all rolling stock within the city.

R2.12 ESD should purchase a computerized fleet analysis software system similar to the Operations Department for the management of information on the maintenance and repair of all equipment. CFA will help the mechanic make cost-effective decisions concerning equipment procurement, utilization, maintenance and replacement.

Financial Implication: Total initial cost for a CFA software system is approximately $4,000 and includes one software license, internet training for two employees and the first year of technical support. If the City would elect to train more than two employees on the CFA software system it would cost an additional $1,200 per person. The annual cost for technical support after the first year would be $500.

Financial Implication Summary

The following table summarizes the performance audit recommendations that contain financial implications. These recommendations provide a series of ideas or suggestions that the City should consider. Certain recommendations are dependent on labor negotiations or community approval. Detailed information concerning the financial implications, including assumptions, is contained within the section of the performance audit report.

Summary of Financial Implication for ESD

Recommendations		Estimated Annual Cost	Estimated Implementation Costs (One time)	Estimated Annual Cost Savings
R2.4	Using individuals sentenced to community service and existing staff for leaf collection to reduce overtime			$1,000
R2.12	Computerized Fleet Analysis Software System	$500	$4,000	
Total		**$500**	**$4,000**	**$1,000**

Conclusion Statement

Overall, ESD is an effectively managed department, due mainly to its semi-automated refuse collection program. The semi-automated refuse collection program allows ESD to operate effectively with minimal staffing resources and minimizes potential injuries and subsequent workers compensation claims. Additionally, ESD has effectively managed sick leave and uses employees in various capacities through cross-training.

ESD could improve operations by developing formal safety policies and procedures. Since a recycling program could improve the environment and reduce landfill costs, ESD should survey residents to determine their recycling needs and inform them of the costs necessary to operate a recycling program. Additionally, there is an urgent need for facility improvements that currently go against OSHA regulations, as evident in the visual walkthrough by AOS staff and the building condition report from an engineering firm. OSHA related improvements need to be addressed in ESD's long term capital improvement plan to further meet the needs of the department and create a safe environment for its employees. Further, implementing computerized fleet analysis software would allow ESD to better track repair data and improve overall preventative maintenance.

Currently, residents are paying less per month than the actual cost to ESD to provide refuse collection services. Prior to increasing fees charged to residents for refuse collection, ESD should perform a thorough and detailed cost analysis. In addition, ESD should work with the water service and office administration divisions to improve the collection of refuse fees. While ESD appears to have negotiated an agreement that minimizes solid waste fees and is cost beneficial for the City, upon expiration of the current contract, ESD should continue to evaluate and negotiate with the current vendor and ensure that the necessary steps are taken in the solicitation of additional bids (i.e., more than two bids) for refuse disposal services. Taking these steps would ensure that the City has minimized the costs of providing refuse collection services and has an in-depth understanding of necessary changes to its rates.

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Water Department
Water Service and Office Administration

Background

The City of Warren (City) operates three major enterprise funds consisting of a water system, wastewater system, and environmental services. The water system consists of four divisions: water treatment, water distribution, water service, and office administration. This section of the performance audit assesses the water service division (WSD) and office administration division (OAD) in the water department (WD).

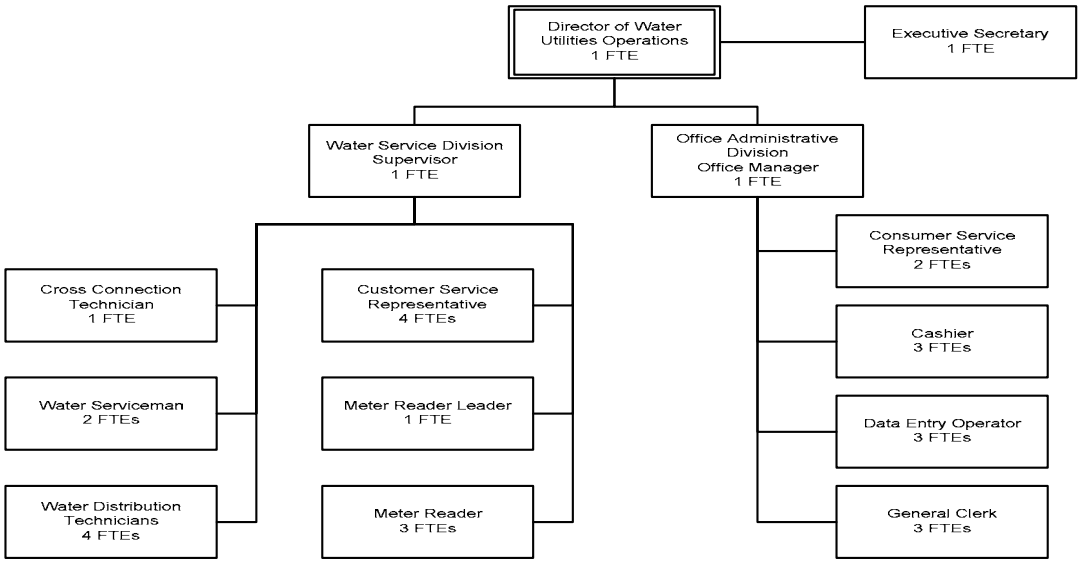
WSD is responsible for installing, maintaining and reading meters; collecting delinquent accounts; handling complaints; investigating high and low water usage; and shutting off and restoring water service. This section of the report will focus on the positions in WSD that specifically assist OAD in billing and collecting, which includes the water service supervisor, customer service representative, meter reader leader, and meter readers. WSD's positions of cross connection technician, water servicemen and water distribution technician perform various duties in support of OAD and the water distribution department. These duties include installation and maintenance functions on meters, service activations or deactivations, Environmental Protection Agency compliance testing, inspection of facility plumbing, engineering, and water quality inspections. Many of the duties for water service are generated by OAD and customer requests. WSD coordinates support for handling distribution problems and responds to customer complaints or service issues. This is consistent with operations observed in peer water distribution departments. Therefore, these positions are analyzed in the **purification and distribution** section of this performance audit (see **F4.11, Table 4-8, F4.12** and **Table 4-9** for further discussion).

OAD maintains account information for all customers of the three enterprise funds, prepares and issues consolidated bills, and processes payments from customers. Throughout this section, comparisons of WSD and OAD will be made to peer water departments in Cleveland Heights, Cuyahoga Falls and Elyria.

Organizational Chart and Staffing

Chart 3-1 provides a staffing overview of WSD and OAD as of May 1, 2002.

Chart 3-1: Water Utility Billing Organizational Chart



The director of water utilities operations oversees the operations of the WSD and OAD, and also manages the water purification and water distribution operations. **Water department purification and distribution** is reviewed as a separate section of this performance audit.

The executive secretary provides a wide range of administrative support including: maintaining budget documents, preparing and maintaining payroll records, preparing accident reports and workers' compensation claims, processing purchasing documents, and performing word processing for WD division management.

Office Administration Division

The office manager supervises the OAD staff and is responsible for the billing and collection activity for all utility bills. The office manager reports directly to the director of water utilities.

The consumer service representatives perform a wide range of customer service functions including: processing new account applications, posting monthly accounts, and processing suspense accounts and uncollectible accounts. The cashiers process utility payments, reconcile daily receipts with the computerized accounting system, and prepare daily bank deposit slips.

The data entry operators are responsible for most of the billing duties once all the meters are read for a particular billing cycle. This includes keying and scanning information from written records into the New World Systems utility management system (UMS) so that all account information is updated, adjusted, and corrected prior to bills being generated.

The general clerks are responsible for daily clerical tasks consisting of answering phones, posting customer deposits, filing, endorsing and balancing customer checks and utility bill stubs, processing work orders, and scheduling appointments to investigate customer complaints. Filing duties for this position include completed work orders, completed adjustments, deposit slips, and folio updates. Hardcopy folios are maintained for each meter address and updated as customers change.

Water Service Division

The water service supervisor is responsible for supervising the reading of water meters, delinquent account collections, and meter replacement. The supervisor collects 25 chlorine tests and receives an additional 75 chlorine tests from distribution technicians and forwards them to the water treatment lab as required by the Environmental Protection Agency (EPA). The water service supervisor also transports daily bank deposits for OAD.

The customer service representatives (CSR) are responsible for collections on delinquent accounts, termination of water service if necessary, and new account activation. They also complete field investigations on customer complaints.

The meter reader leader is responsible for supervision of daily meter reading activity and assists meter readers in completing routes. The leader also troubleshoots any meter that does not register a reading and notifies the utility customer of potential leaks if water consumption is high or if the meter is not reading accurately.

The meter readers are responsible for obtaining accurate readings of the City's water meters based on assigned daily routes. This is done electronically and manually. The reader also communicates any meter problems noted to WSD staff for follow up.

The cross connection technician is responsible for administering back flow prevention programs in accordance with State of Ohio codes and any other applicable rules and regulations, inspection of residential, commercial and industrial meter setting compliance, and inspecting facilities for plumbing integrity. The water servicemen are responsible for activation/deactivation of customer water service and investigation of service complaints. The water distribution technician is responsible for a variety of engineering assignments including, but not limited to, participation in, and supervision of, construction related to water utilities; preparation of estimates, plans, designs and specifications for public works and water utility projects; and completion of special field surveys and investigations, usually in response to public complaints. The **purification and**

distribution section of this report includes further analysis on the cross connection technicians, water servicemen and water distribution technicians (see **F4.11** and **F4.12**).

Summary of Operations

Currently, there are 52 residential water meter routes consisting of approximately 22,000 meters that are read monthly by three meter readers. There are three billing cycles in a month for the 52 routes and an additional commercial and industrial (M accounts) billing cycle. M accounts are read in approximately one day. For water customers using City sewers, the water usage determines both the amount billed for water consumption and sewer use.

Each meter reader is assigned one route per day, consisting of approximately 400 to 450 meter reads. The meter reader is equipped with a "smart gun" and a "pack" that electronically reads and stores meter readings. Prior to starting a route, a pack is uploaded with the specific route information. All meters have a remote sensor located outside the house or business. The meter reader uses the "smart gun" to interact with the remote sensor, obtain the meter reading, and send it to the computer pack for data storage.

In addition to the electronic meter reading devices, the meter reader carries one of 52 route books which contain a meter slip for every meter. The meter reader writes down each meter read on the respective meter slip. In addition, the meter reader manually calculates and documents the monthly usage by subtracting the previous meter reading from the current meter reading. The manual documentation of meter information is necessary because electronic meter reads are sometimes lost and moisture causes electronic sensor read failures. Meter readers document data gathering problems on the back of each meter slip.

Once the meter readers have completed their daily routes, the meter data is downloaded from the packs to the Sensus meter reading application, which is separate from the NWS application, and subsequently transferred to the NWS utility management system. After downloading, the meter reads are deleted and the packs are uploaded with meter information for the next day's route. The route books are reviewed manually by one of the CSRs in order to identify non-reads, misreads or unusual variances. Meter slips without a meter reading, or unusual readings, are pulled out of the meter book for follow up, either by the meter reader leader or the customer service representative. Corrected meter readings and estimates are directly entered into NWS. A consumption report is generated by NWS for each billing cycle in order to provide one final review and investigation for unusually high meter readings, negative readings, or missed readings.

Most residents receive a monthly bill for all water, sewer and sanitation. Residents with septic systems are not billed for sewer and residents with water wells are not billed for water. However, residents must use the City's refuse collection service. Commercial and industrial entities can contract separately for refuse collection. Effective June 8, 2002, the City began

charging all property owners a storm water utility fee to help fund the maintenance and capital needs of the City's storm water sewer system. As of May 1, 2002, the number of active customers currently billed is:

- 22,228 water customers;
- 17,933 sewer customers; and
- 15,342 refuse collection customers.

Customers pay for utilities by mail, at the Local 717 Credit Union, or in person at WD. Checks and remittance stubs are reconciled using an adding machine with tape for backup. The payments are then entered into NWS by a data entry operator scanning each remittance stub. Adjustments are keypunched if the amount paid is different from the amount due. A bank deposit slip is prepared for all checks received through the mail. Credit card payments are received by the cashiers and the authorized batch report is attached to their daily reports. Payments made through the local credit union are picked up each morning and delivered to the data entry operator who scans and enters the stubs similar to the payments made by mail. Payments received directly are entered into the NWS utility application by one of three cashiers. Customers submitting payments in person are issued a receipt regardless of the method of payment. Each cashier prepares a bank deposit slip for their daily receipts.

Each bill has a due date for payment. A 10 percent penalty on the current billed amount is assessed when payment is not received by the due date, and its status becomes delinquent. CSRs who serve as collectors are notified of current delinquencies by weekly computer reports. The CSRs visit customers for collection and place 30 or 60 day delinquent "shut off pending notice" on the door if customers are unavailable. The CSRs answer phone calls from customers that receive late tags and help make payment arrangements. If these efforts prove unsuccessful, water service is discontinued, generally after 90 days. Warren's City Ordinance 919.03 states that delinquencies past 90 days should be sent to a collection agency.

Financial Data

The historical expenditures and 2002 Budget for OAD and WSD are presented in **Table 3-1** and **Table 3-2** respectively.

Table 3-1: Office Administration Division Budget and Actual Expenditures

Expenditure/Category	2000 Actual	2001 Actual	2000 – 2001 (% Change)	2002 Actual	2001 – 2002 (% Change)
Salaries and Wages	$479,174	$471,652	(1.6)	$508,345	7.8
Fringe Benefits	$226,266	$245,394	8.5	$276,849	12.8
Contracted Labor and Services	$61,265	$59,655	(2.6)	$66,644	11.7
Postage	$66,514	$78,726	18.4	$73,001	(7.3)
Administrative Services	$545,336	$562,940	3.2	$655,058	16.4
Data Processing Service	$96,750	$108,000	11.6	$116,250	7.6
Supplies	$27,523	$32,524	18.2	$22,377	(31.2)
Capital Outlay	$10,059	$53,831	435.2	$12,657	(76.5)
Other Expenses	$870	$5,335	513.2	$1,045	(80.4)
Transfers Out [1]	$622,035	$561,887	(9.7)	$640,559	14.0
Total	$2,135,792	**$**2,179,954	**2.1**	**$2,372,785**	**8.8**

Source: 2000-2001 Warren Budget Performance Report and 2002 Budget Listing
[1] This line item is for debt service for WPC and WD.

Table 3-1 illustrates significant changes in the following expenditure categories:

- *Salaries and Wages:* The variance in 2001 salaries is due to positions being unfilled and the City hiring new employees at entry level pay rates. Two general clerk positions were open for six months in 2001. In 2002 OAD began billing for storm water sewage. Salaries and Wages for 2002 increased 7.8 percent due to a more stable staff and increased overtime costs associated with updating the storm water billing data.

- *Fringe Benefits:* The increase for all three years at OAD and WSD (see **Table 3-2**) is based on higher health costs experienced throughout the City.

- *Contracted Labor and Services:* Auditor of State of Ohio audit services, New World Software upgrade training and legal services for Warren's JEDD proposal accounted for the increases in contracted labor services for FY 2002. Building and Equipment maintenance costs in this category were reduced by rebates acquired from the equipment leasing for mailing machines that were replaced.

- *Administrative and Data Processing Services:* This is a city cost allocated to OAD for City administrative and data processing support.

- *Supplies:* The increase in 2001 is attributed to OAD analyzing and testing various postage metering systems from different vendors. Based on the amount of supplies purchased in 2001, OAD did not need to purchase as many supplies in 2002. The

reduction in supply purchases reflects anticipated changes to the billing process stemming from the software upgrade to the billing system.

- *Other Expenses:* Tap-in fees are paid when a property is added to the City's water supply system. In the past, projects that were prepaid required refunds when the construction was abandoned. There were fewer refunds in FY 2002.

- *Capital Outlay:* In 2001, new postage machines were purchased. The expense in 2002 was for the replacement of three computers. For further discussion on Warren's capital budgeting practices see (see **F4.3** and **R4.3** in **purification and distribution**).

Table 3-2: Water Service Division Budget and Actual Expenditures

Expenditure/Category	2000 Actual	2001 Actual	2000 – 2001 (% Change)	2002 Actual	2001 – 2002 (%Change)
Salaries and Wages	$581,424	$609,007	4.7	$620,220	1.8
Fringe Benefits	$246,348	$297,766	20.9	$331,554	11.3
Contracted Labor and Services	$85,134	$145,901	71.4	$124,677	(14.5)
Supplies	$82,779	$54,466	(34.2)	$41,698	(23.4)
Maintenance[1]	$0	$678	N/A	$488	(2.8)
Capital Outlay	$1,100	$42,971	3,806.5	$33,658	(21.7)
Total	**$996,785**	**$1,150,789**	**15.5**	**$1,152,295**	**0.1**

Source: 2000-2001 Warren Budget Performance Report and 2002 Budget Listing
[1] Use city employees for maintenance

Table 3-2 illustrates significant changes in the following expenditure categories:

- *Contracted Labor and Services*: In 2001, WSD had a major increase due to upgrades to the WD parking lot and landscaping. Buildings also required repairs due to wind and storm damage. The radio warranty expired in 2001 and a new lease/maintenance agreement was activated. A uniform rental program for water service employees was also started in 2001. The contracted labor costs are lower in 2002 due to fewer meter replacements and the radio maintenance cost being half the amount spent in 2001.

- *Supplies*: The parts necessary for refurbishing meters were not purchased at the budgeted level in FY 2002 (see **F3.5** and **R3.3** for further discussion).

- *Capital Outlay:* WD budgets for meter replacements but has not replaced them on a consistent basis (see **F3.5** and **R3.3**). In 2001, $43,000 was expended of the $50,000 that was budgeted. In 2002 the actual expenditures show an additional decrease in the number of meters purchased.

For a full assessment of budgeting practices at OAD and WSD, see the **water purification and distribution** section of this performance audit.

Performance Measures

The following performance measures were used to analyze OAD and WSD.

- Assess staffing levels;
- Assess overtime and sick leave usage;
- Assess operational effectiveness of metering;
- Assess operational effectiveness of billing;
- Assess operational effectiveness of collections;
- Assess cost recovery;
- Assess adequacy of technology; and
- Assess policies and procedures.

Findings / Commendations / Recommendations

Staffing Levels

F3.1 **Table 3-3** shows staffing levels for WSD, OAD and the peer cities.

Table 3-3: Staffing Level Comparison FY 2002

Position	Warren[1]	Cuyahoga Falls	Elyria	Cleveland Heights	Peer Average
Director/Superintendent	0.5	N/A	1.0[2]	0.25	0.6
Water Service Supervisor	1.0	N/A	N/A	N/A	N/A
Meter Reader	3.0	5.0	2.0	1.0	2.7
Meter Reader Leader	1.0	0	0.0[2]	1.0	0.3
Customer Service Representative (CSR)	4.0[3]	1.0[3]	3.0[3]	0.0[3]	1.3
Office/Billing Manager	1.0	1.0[4]	0.0	1.0	0.7
Assistant Manager	0.0	1.0	0.0	0.0	0.3
Account Clerk	11.0[5]	11.0	9.0	5.0	8.3
Executive Secretary	1.0[6]	0.0	0.5	0.0	0.0
Total FTEs	**22.5**	**19.0**	**15.5**	**8.25**	**14.3**
Total Accounts[7]	**22,228**	**25,342**	**24,400**	**16,000**	**21,914**
Accounts per Total FTE	**987**	**1,334**	**1,574**	**1,939**	**1,532**
Accounts per Meter Leader and Reader FTE	**5,557**	**5,068**	**12,200**	**8,000**	**7,305**
Accounts per Account Clerk FTE	**2,021**	**2,304**	**2,711**	**3,200**	**2,640**
Accounts per CSR FTE	**5,557**	**25,342**	**8,133**	**N/A**	**16,857**

Source: Warren and peers

[1] Does not include 7 FTEs for the water serviceman, cross connection and water distribution technicians. See the **water department purification and distribution section** for further analysis.

[2] Elyria's superintendent also performs meter reader leader job duties.

[3] Staff in the distribution division at Cuyahoga Falls and Cleveland Heights perform water shut-offs and turn-ons, while CSRs at Warren and Elyria perform this function. In addition, the meter reader and meter reader leader at Cleveland Heights perform collection duties similar to Warren's CSRs.

[4] Position reports directly to the mayor.

[5] Includes general clerks, cashiers, data entry operators and consumer service representatives due to similar office job duties as the peers account clerks.

[6] Executive secretary splits time in other areas of WD in support of the Director of Water Utilities.

[7] Includes only active accounts billed by Warren and the peers.

Table 3-3 illustrates that WSD and OAD handle 36 percent fewer accounts per total FTE than the peer average, which can be attributed to the relatively low number of accounts per meter leader and reader FTE, account clerk FTE, and CSR FTE. Meter reading technology is a significant factor impacting meter reader and account clerk staffing levels (see **F3.5** and **R3.3**). Cleveland Heights efficiency is due to its proximity meter reading technology (see **Table 3-6**), thereby requiring only one meter reader to collect, verify and report the data in approximately a three day period for all accounts, resulting in one billing cycle. The meter reader spends the remaining time performing collection activities, with some assistance from the meter reader leader when necessary. This function is conducted by CSRs at Warren. Although Elyria uses a manual collection

method similar to WSD, Elyria uses Electronic Communication Register (ECR) technology resulting in more accurate readings and eliminating the need to manually record readings. Therefore, Elyria is able to manage more accounts per FTE than WSD. In addition, Wooster uses Automatic Meter Reading (AMR) technology and has eliminated the meter reader position completely, needs only one billing cycle, and processes approximately 3,000 accounts per account clerk FTE.

Upgrading meter reading technology would reduce the need for meter readers, and account clerks by allowing OAD to reduce its billing cycle and implement cost effective billing and collecting practices, such as lockbox collections (see **F3.13** and **R3.11**) and external mailing and printing of bills (see **F3.10** and **R3.8**). By certifying delinquent accounts (see **F3.11** and **R3.9**), implementing standard collection procedures (see **F3.14** and **R3.12**), and fully using the utility billing management system (see **R3.12** and **R3.14**), WSD and OAD would be able to operate with fewer CSRs.

F3.2 **Chart 3-1** shows the positions of the cross connection technician, water serviceman and water distribution technician. These positions are excluded from **Table 3-3** because the job duties are closely aligned with meter maintenance functions. Currently, supervision for these positions falls under the water service supervisor who also oversees the meter reading and collections staff. Peers have aligned meter maintenance positions within their water distribution sections to help maintain meters as an integral part of the infrastructure. For example, Cleveland Heights' water meter maintenance is included within water distribution as a function of maintaining the distribution system. For purposes of this performance audit, the cross connection technician FTE, water serviceman FTEs and water distribution technician FTEs are included in the WD staffing analysis (see **F4.11** and **F4.12** in the **water department purification and distribution** section).

Warren also employs a water service supervisor, while the peers do not (see **Table 3-3**). However, the water service supervisor could help engage in many initiatives and tasks to enhance the operational efficiency in the distribution and purification divisions, such as the following:

- Implementing a technology based infrastructure asset management program and a work order management system;
- Integrating software mapping data;
- Assessing and addressing operational impacts of the plant expansion project; and
- Improving maintenance activities with better long term planning, tracking deferred maintenance projects and related costs, and performing a comprehensive inventory assessment.

Furthermore, changes to meter reader, meter reader leader and CSR staffing levels (see **R3.3** and **R3.12**) would reduce the span of control for the water service supervisor at WSD. Consequently, the water service supervisor's background and skills would be better served in the distribution and purification divisions.

R3.1 WD should consider transferring the water service supervisor, cross connection technicians, water servicemen, and water service distribution technicians to the distribution division because these positions directly relate to distribution maintenance. The transfer of the water service supervisor should include increasing his responsibility to coordinate and implement the infrastructure asset management programs and work order management system recommendations in the purification and distribution section of this report (see **R4.13** and **R4.14** for further detail). Transferring these positions would improve communication within the distribution operations and provide direct control over all aspects of distribution related to meters and backflow prevention. As a result of transferring the water service supervisor, the office manager in OAD should be responsible for supervising the remaining CSRs.

Overtime and Sick Leave Usage

F3.3 **Table 3-4** compares overtime and compensatory use at Warren and Cleveland Heights.

Table 3-4 Average Overtime and Compensatory Days per employee (2001)[1]

	Warren	Cleveland Heights	Cuyahoga Falls
Office Administrative	5.8	4.3	5.6
Water Service	3.7 [1]	34.7	12.9

Source: Warren data processing and peers
Note: Elyria could not provide this information.
[1] Excludes distribution staff to provide accurate comparisons to peers.

Table 3-4 indicates that OAD used the highest amount of overtime and compensatory time while WSD used significantly less overtime and compensatory time than the peers. Cleveland Heights OAD may be lower in overtime partly because it has only one billing cycle and uses efficient billing processes (see **F3.10, R3.8, F3.13** and **R3.11**). In addition, high use of sick leave also impacts the amount of overtime and compensatory time (see **F3.4**).

F3.4 **Table 3-5** compares WSD's and OAD's sick and vacation leave to Cleveland Heights, Cuyahoga Falls and the state average.

Table 3-5 Average Leave Used (days) per Employee FY 2001[1]

	Warren	Cleveland Heights	Cuyahoga Falls	State Average
Office Administrative				
Sick Time	13.3 [1]	3.2	11.3	8.0
Vacation Time	14.8	12.5	15.3	N/A
Total Leave	28.1	15.7	26.6	N/A
Water Service				
Sick Time	12.7 [1, 2]	5.9	8.8	8.0
Vacation Time	13.9 [2]	26.1	15.4	N/A
Total Leave	26.6	32	24.2	N/A

Source: Warren data processing and peers
[1] Excludes one employee in OAD and WSD that used a large amount of sick leave for severe medical situations.
[2] Excludes distribution staff to provide accurate comparisons to peers.

As illustrated in **Table 3-5**, OAD and WSD used significantly more sick leave as compared to the peers and state average. The union contract has provisions for sick leave incentives of an additional two days off for one year, three days off for two consecutive years, and four days off for three consecutive years for perfect attendance. However, based on the use of sick leave, WSD and OAD may not be actively promoting the sick leave incentives. In addition, creating recognition programs, developing standard sick leave explanation forms and consistently analyzing sick leave use could help manage and control sick leave use.

R3.2 OAD and WSD should work with the human resources department (HR) to develop additional sick leave policies and ensure they are aligned with city-wide policies and labor agreements. Policies that should be considered to help reduce sick leave usage include:

- Creating recognition programs or other incentives to reward staff for good attendance;
- Requiring all employees to complete a standardized sick leave explanation form;
- Requiring sick leave use to be a component of the employee's evaluation; and
- Frequently analyzing sick leave use trends to identify potential abuse and disciplining employees abusing sick leave, either formally or informally, such as by discussing apparent abuse with the employee or days off without pay.

Furthermore, actively promoting the current sick leave incentives and implementing efficiency improvements discussed throughout this report would reduce sick leave use.

Financial Implication: Excluding supervisors and the executive secretary, and assuming an average wage of $13 per hour for OAD and $16 per hour for WSD, an annual cost savings of approximately $11,000 would be realized by reducing sick leave use to the

state average. In addition, reducing sick leave could also minimize overtime use, resulting in additional cost savings.

Metering

F3.5 WSD currently uses a manual meter reading technology (see **Table 3-6**) requiring a hand held device called a Tele-Tape Remote (TTR) system. TTR system requires meter readers to plug the hand held devise into a receptacle at each meter to collect the water flow data for billing purposes. WSD began to replace TTRs in 1998 with Electronic Communications Registers (ECRs). At the beginning of 2002, approximately 4,600 ECR units had been installed, with 1,500 TTRs budgeted for replacement in 2002. However, WSD was able to purchase only 1,000 ECR conversion kits in November 2002 due to other funding priorities. Five hundred of those were installed by year end 2002. It will take over 11 years to replace all TTRs at the current budgeted replacement rate. According to the director, about 1,000 TTRs are planned to be replaced in 2003.

ECR technology provides more accurate data collection, but still requires staff to collect data at each meter. However, TTR remote sensors are exposed to weather and pests, impacting the accuracy at the point of collection and decreasing the useful life of the sensors. ECRs maintain accuracy for a longer length of time and are not affected by external elements. **Table 3-6** lists the three most common types of data collection methods available.

Table 3-6 Meter Read Collection Methods

Collection Method	Description
Manual	The meter is equipped with a remote sensor that a reader physically collects data from, either electronically or manually. Requires meter readers to take individual readings daily and it can take a full month to record all readings. Multiple billing cycles per month are typical, with readings taken once per month.
Proximity	The meter is equipped with radio data transmission telemetry units with limited range. Data is usually collected within a couple of days by a portable receiver carried by a meter reader or mounted in a vehicle. The efficient data collection facilitates reading and billing using one cycle per month.
Radio Telemetry/Automatic Meter Reading (AMR)	The meter is equipped with broader range radio data transmission telemetry device based on cellular phone technology. The entire city's data is read and monitored daily. The efficient data collection facilitates reading and billing using one cycle per month.

Source: Equipment manufacturers

The manual system of collection described in **Table 3-6** is used by Elyria, Warren and Cuyahoga Falls. All three cities use different technologies for processing the data. Elyria uses a hand held sensor collector with ECR technology and Cuyahoga Falls uses a hand held device with a keypad to enter data. Cleveland Heights uses the proximity collection method. Proximity reading allows one meter reader to collect all meter reading data using a portable receiver in approximately three days. Cleveland Heights reduced its meter reading staff by 50 percent through implementing proximity data collection technology. Some cities, such as Wooster, have upgraded to a radio telemetry system that has further streamlined the process and eliminated the need for meter readers. The data is automatically sent via cellular data transmission technology at regular intervals. Each meter has its own radio interface that can transmit one to two miles. Wooster's system automatically collects the data every twelve hours through strategically located cellular receivers. Billing is flexible and variances are reported daily. Daily variance reports can be generated to minimize water loss and meter tampering, and more effectively maintain the meter inventory. Proximity and AMR technology allows Cleveland Heights and Wooster to bill once per month, outsource the mailing of bills (see **F3.10** and **R3.8**), and use lockbox collections (see **F3.13** and **R3.11**).

Since Warren's current meter reading technology is not as advanced as Elyria, Cleveland Heights and Wooster, it needs more meter readers and account clerks to manage the City's accounts (see **F3.1** and **Table 3-3**). Moreover, WSD experienced 2.6 times more lost time claims and 8.3 times more medical only claims than the peers for meter readers, based on an Ohio Worker's Compensation report from 1999 to June 2002. The city paid out $48,000 for lost time claims and $110,430 for medical only claims during this period. Implementing technology enhancements would reduce worker's compensation claims by improving the work environment and reducing the need for numerous meter readers. Based on the previous claims history, WSD paid an average of $45,000 annually in total claims since 1999.

Finally, WSD is obtaining inaccurate meter readings from existing TTRs. A review of the daily meter reads for the month of April 2002 showed an average of 54 remote meters misread per day. Peer cities experience fewer missed meter readings due to more advanced technology and the ability to follow up on missed readings in a shorter period of time (see **Chart 3-2**). **Table 3-7** compares the accuracy of Warren's collection devices to peer data collection devices.

Table 3-7: Data Collection Devices

	Warren	Cuyahoga Falls	Elyria	Cleveland Heights	Peer Average
Utility Billing Software	NWS	HTE [1]	ACS [2]	NWS	N/A
Meter Reading Software	Sensus	Schlumberger	Neptune	Connect	N/A
Type of Electronic Device Used	Remote Sensor/ Hand Held	Remote Display/ Hand Entered	Remote Sensor/ Hand Held	Remote Sender Unit	N/A
Type of Collection	Meter Reader	Meter Reader	Meter Reader	Vehicle Mounted Collection	N/A
April 2002 Misreads	1,197	0	240	175	138
Number of Meters	22,000	25,342	24,400	16,000	21,914
Electronic Accuracy	96%	100%	99%	99%	99%
Meter Reader FTEs	3	5	2	1	2.67
Misreads per FTE	399	0	120	175	98
Manual Paper Recording	Yes	No	No	No	N/A
Number of Data Collection Days	22 days	20 days	19 days	3 days	14 Days

Source: Warren and peers.
[1] HTE Government Software Inc.
[2] Affiliated Computer Services

Table 3-7 shows that WSD's electronic accuracy is the lowest of the peers, primarily due to outdated technology that historically malfunctions. Elyria and Cleveland Heights use more reliable electronic collection devices which streamline operations and improve efficiency. Additionally, WSD duplicates efforts by handwriting each meter read in a meter book due to the high number of misreads and inconsistent data transfers. Peers rely solely on their collection systems to electronically collect data and generate reports that monitor collections. Cuyahoga Falls requires the greatest number of meter reading FTEs due to manually keypunching data into the handheld collector. Furthermore, Wooster indicated that it had 43 misreads out of 9,108 accounts in February 2003, resulting in an electronic accuracy rate of over 99 percent.

Table 3-8 compares the financial implications of upgrading WD's data collection method and technology (see **Table 3-6**) and implementing billing process improvements inherent to one billing cycle (see **F3.13** and **R3.11**).

Table 3-8: Data Collection Method Impact on FTE Savings

Impact	ECR Upgrade/Manual Collection	Proximity Remote Vehicle Mounted	AMR/Radio Telemetry Installation
Time to reach 100% replacement[1]	8-9months	8-9 months	8-9 months
Cost to Upgrade Technology[2]	$2,500,000[3]	$5,700,000[3]	$5,200,000[4]
Meter reader FTE Savings per year[5]	$50,000	$100,000	$200,000
Account Clerk FTE savings per year for one billing cycle[6]	$0	$175,200	$175,200
Total Annual Cost Savings[7]	**$50,000**	**$275,200**	**$375,200**
Number of years to offset implementation costs	**50 years**	**21 years**	**14 years**

Source: Warren water department and private vendor estimates

[1]Based on Warren's past full meter replacement project, Wooster's full meter replacement project and estimates from private vendors to fully upgrade to each technology.

[2] Estimates include equipment and labor to install

[3] Warren's current meter vendor estimate.

[4] Private vendor estimate.

[5] WSD savings are based on salary and benefit costs per reduction of each FTE.

[6] Assumes that mailing of bills is outsourced and lockbox collections are implemented, and account clerk staff is subsequently reduced by 4 FTEs to meet Cleveland Heights staff levels.

[7] Does not include an estimated annual worker's compensation savings due to meter reader FTE reduction

As shown in **Table 3-8** the AMR collection method provides the greatest cost savings and quickest payback period by eliminating the need for meter readers and requiring one billing cycle that would allow OAD to reduce 4.0 account clerk FTEs by implementing lockbox collections (see **R3.11**). This would result in OAD maintaining a similar level of accounts per account clerk as Cleveland Heights. Various methods are available to finance purchase and implementation costs, such as revenue bonds, general obligation bonds and grants (see **R4.7** in the **purification and distribution** section of this report).

R3.3 The City and WD should strongly consider upgrading its meter reading technology to AMR. Benefits of AMR technology include collecting data daily and monitoring the water meter system in a real time environment, reducing the billing cycle to once per month, and streamlining operations to save operating costs. WD should seek council approval to move forward with requesting bids for AMR. In addition to evaluating costs, WD should fully assess service quality issues by including contract performance requirements, mandatory requirements and desirables in the proposal process (see **Warren Phase IV Purchasing** section). Once the bid proposals are complete, WD should identify and obtain sources to finance the technology upgrade. Implementing strategies to enforce and increase collections would provide revenue to help fund the technology upgrade (see **R3.9** and **R3.12**). Adequate funding is necessary to complete the replacements in a timely manner. During the time that AMR technology is being implemented, WD should only replace TTRs that fail or are no longer useable.

If WD decides not to pursue AMR and instead upgrade to ECR technology, it should develop a detailed plan to replace all TTRs with ECRs in a timely manner. A schedule should be developed that prioritizes replacing meters with the greatest water flow, which have a greater impact on revenues collected. In addition to the replacement schedule, any malfunctioning remote meter sensor should be replaced within a reasonable time frame regardless of the time of year. Upgrading the TTRs to ECRs and replacing malfunctioning sensors in a timely manner will reduce the time spent to revisit a meter location and help to speed up the billing process, thus improving cash flow.

Financial Implication: If an AMR data collection system is installed, the total implementation costs would be approximately $5.2 million, which includes equipment, labor and training. Since no meter readers are needed for the AMR system, four meter reader FTEs should be reduced resulting in annual salaries and benefits savings of about $200,000 (see **Table 3-8**). In addition, eliminating the meter readers would save approximately $45,000 annually in worker's compensation costs. Since AMR technology would result in one billing cycle, OAD should implement lockbox processing (see **R3.11**) and reduce 4.0 FTE clerks, which would save approximately $175,200 annually in salaries and benefits. Therefore, the total cost savings of upgrading to AMR technology would be about $420,200 annually.

F3.6 WSD does not generate a list of the City's meter inventory to readily identify consumption, meter age, last testing date, meter warranties and meter register technology. This data is necessary to forecast and budget capital improvements of the infrastructure (see the **purification and distribution** section for forecasting). Although WSD has procedures for testing meters to identify if they still meet American Water Works Association (AWWA) standards for water flow, it does not use its technology to effectively and proactively track this information so that meters can be identified and prioritized for replacement. Some of the information is already available, but not in a searchable format convenient to generate necessary reports and manage meter maintenance and replacement.

The American Public Works Association (APWA) states that it is a best practice to preplan the level and frequency of maintenance provided for the various elements of the water distribution system including water meters, so that the overall system is properly and adequately managed. In addition, the AWWA states that meter work is technically unrelated to other field operations and extremely interdependent with billing and auditing work. The success of any meter improvement program depends on the ability to identify meters that have become inaccurate. Meters that fail always result in low readings, which in turn, mean lost revenue for the City.

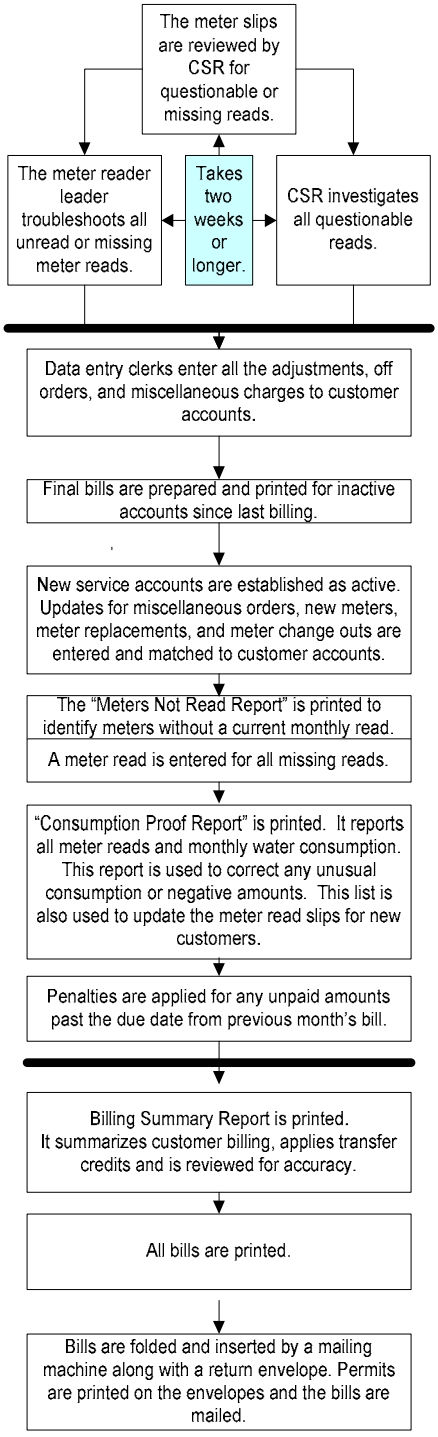
R3.4 Regardless of the current need to upgrade technology (see **R3.3**), WSD should develop and maintain an up-to-date inventory of all water meters and include data as to condition, installation date, and any repairs that have been completed. Since the utility billing

software that OAD uses has a meter inventory database, OAD should work with WSD to update and maintain the database. By developing and tracking up-to-date inventory, WSD can better manage the City's meter inventory data, and adequately forecast and budget for replacements.

Billing

F3.7 Utility bills are not processed in a timely manner. **Chart 3-2** shows the City's billing process flow.

Chart 3-2: Billing Process Flowchart



Because meters are read both electronically and manually due to the high number of misreads (see **Table 3-7**), the billing process is extended. **Chart 3-2** points out that up to two weeks can be used to investigate questionable meter reads. **Table 3-9** contains an example of a monthly work flow schedule.

Table 3-9: Meter Reader Work Flow Schedule, May 2002

Water Billing Zones	Read Date	Cut-Off Date	Mail Date	Due Date
A, D, G	May 6	May 28	June 4	June 25
B, E, H	May 16	June 8	June 14	July 4
C, F, J	May 24	June 18	June 24	July 14
"M" Accounts	May 14	May 25	May 31	June 21

Source: Water Department

As shown in **Table 3-9**, there are nine residential zones divided into three billing groups and one commercial zone. The read date is established for each zone within a cycle by taking the average date of the reads for the entire zone. This results in a cycle of about three weeks. It takes two to three days to read meters for each billing zone. Approximately 7,500 residential meters are read during each of the three billing cycles. The current billing zones are established to distribute work among the account clerks to effectively manage their work load and minimize down time. Multiple billing cycles result in having to employ a higher number of account clerks (see **F3.1** and **F3.5**).

Once the meter reads are verified for accuracy, the billing process takes about five to six days to complete. The total time required to issue bills is three weeks from the initial reading date. Peers issue bills faster, primarily because of more accurate data collection. The City of Elyria sends out bills within four or five days of the initial meter readings. The City of Cleveland Heights reads all of its meters within the first three days of the month, with bills being sent out on the tenth day of the month. The City of Cuyahoga Falls sends bills within three or four days after its meter reads. Account information, meter replacements, and changes in information are updated daily by peers. Therefore, the only matter of concern once the meters are read is the investigation of questionable meter reads. The current meter reading technology has resulted in a relatively high number of inaccurate reads and the need for WSD to manually document data from readings (see **F3.5**). Consequently, staff has not become accustomed to relying on available from the utility billing software to manage variances and misreads.

R3.5 WSD should evaluate how often utility bills should be processed after it has upgraded its technology (see **R3.3**). For instance, upgrading to AMR would reduce the number of billing cycles to one and allow bills to be sent out within two to three days. Furthermore, WSD should fully use its software program to audit meter read variances.

F3.8 During the course of the performance audit, the current Sensus application did not transfer meter reads to the NWS billing system reliably. During one billing cycle, the final billing process caused 1,100 out of 2,800 meter reads to be lost. This occurred due to a file remaining active because final billing was not downloaded in a timely manner. The delay in download caused a separate entry for an identical meter to be entered due to transferring customers. This disrupted the billing program and caused meter reads for all subsequent meters to be nullified in the NWS application. Additional staff hours were required to keypunch data into NWS. The problem was isolated by data processing personnel who instructed the OAD staff how to correct the problem to avoid further occurrences.

R3.6 OAD should work with data processing personnel to ensure that all procedures for both applications are reviewed, so they are accurately and efficiently used. In addition, all internal procedures should be reviewed to ensure that final billing downloads occur daily. Training needs should also be reviewed and completed on a regular basis to maintain and retain staff knowledge and competency.

F3.9 OAD does not maximize use of monthly bills to consolidate communication with its customers. For example, a separate bill is issued to 287 customers for garden meters when the charges could be consolidated on the bill with other existing utility charges. A monthly storm water charge was added to all property owner bills in September, 2002, with the rate being effective as of June, 2002.

Per City policy, customers with zero or negative balances do not receive bills. In contrast, peers provide bills to all customers to inform them of utility usage and balances. Providing utility usage and balances informs customers of the status of their accounts, which allows them to detect usage fluctuations at regular intervals. The City made the decision to suppress printing of these bills because sending them in the past increased billing questions and generated requests for nominal credit refunds.

In addition, the bill dialogue box is not used to communicate information to customers regarding final service termination. Currently, when service is terminated, customers receive a final bill and a deposit receipt release for payment or refund. The deposit release receipt is required to make sure that customer refunds are properly applied, and the customer's signature is required as acknowledgement of the final settlements. The deposit release receipt is manually completed and inserted into the final billing envelope for mailing. However, filling out the deposit release and mailing each bill manually reduces clerks' efficiency. Also, if the customer appears in person to settle the final bill and does not bring the deposit release receipt form, the cashier has to prepare the form again. Peers include the deposit language on the final bill. Entering the deposit receipt release information in the bill dialogue box would reduce paperwork processing, thus saving time for the billing clerk and cashiers.

According to OAD, upgrading its software package (**F3.16** and **R3.14**) would allow it to consolidate garden meter bills with regular bills. In addition, OAD indicates that customers with zero or credit balances will be provided with bills as a part of this upgrade.

R3.7 OAD should work with data processing to consolidate customer billing as it upgrades its software (see **R3.14**). Since storm water billing has been combined with existing bills, the 287 garden meter bills should also be incorporated into the regular utility bill processing. In addition, customers with a zero or credit balance should be sent monthly statements so they can monitor their accounts. However, prior to doing this, WD should establish a policy on credit refunds stating that refunds on outstanding balances will not be processed unless service is being terminated. The bill dialogue box should be used to communicate this information as well as the final bill data and deposit receipt release information.

Financial Implication: Consolidating the garden meter bills with regular would bills save approximately $1,000 annually in postage. Mailing bills with credit and zero balances would have minimal impact on costs.

F3.10 Implementing one billing cycle per month would allow OAD to outsource the printing and mailing of bills (see **R3.5**). As the number of units processed at one time increases, OAD would have a better ability to obtain a lower price for bill processing, similar to bulk purchasing. Cleveland Heights currently outsources its billing at 8.5 cents per bill, excluding postage, for 16,000 units. OAD uses approximately 14 employee hours per week, or 0.35 FTEs per year, to print and mail utility bills, which equates to personnel costs of approximately $17,000 annually. OAD's annual mail processing costs, including supplies and equipment, are about $30,400, resulting in total mail processing costs of approximately $47,400 annually, or 18 cents per bill. In addition, the printer used to print bills requires frequent maintenance. The mailing machine also requires constant monitoring to ensure that bills are properly folded and inserted into mailing envelopes along with a return envelope. OAD currently sorts mail for bulk postage rate using the United States Post Office (USPS) Cass sort system and barcode printing to reduce mailing costs.

R3.8 In conjunction with upgrading technology to implement one billing cycle per month, the City should outsource the printing and mailing of its utility bills. Outsourcing this function would reduce the space required to store forms and envelopes, and the cost to purchase supplies. Additionally, staff time spent mailing bills could be allocated to other important activities. OAD should continue to make sure it receives the lowest bulk postage rate available.

Financial Implication: Based on Cleveland Heights outsourcing costs of 8.5 cents per bill and total bills mailed annually of 266,736 (22,228 accounts times 12 months), OAD

would spend approximately $22,700 annually by outsourcing this function. Since OAD currently spends about $30,400 in equipment and supplies, the Department would save approximately $7,700 annually by contracting for bill mailing services.

Collections

F3.11 As of January 3, 2003, the City had approximately $117,000 past-due payments between 90 and 120 days, and $2.1 million owed over 120 days. Of the total delinquencies, approximately $600,000 in delinquent accounts have filed for bankruptcy and $700,000 in delinquencies have been referred to the City's collection agency. The City has used one agency for years as its collection agent. This agency collects a 35 percent commission on all collections. Only one account has been turned over to the agency since 1998 and the gross collections for the City's delinquent accounts have decreased from $45,000 in 1998 to $6,500 in 2001. In late 2002, the director contracted with another collection agency to recover 500 accounts at a cost of $10 per account.

Although the City contracts with a collection agency for delinquent accounts, amending city ordinances and strengthening collection practices (see **F3.14** and **R3.12**) would allow OAD to enforce and potentially increase collections, thereby significantly reducing the need for an external collection agency. The City's codified ordinances and WD rules and regulations do not specifically identify the ultimate burden of responsibility for all utility bill payments. Chapter 919.02 of the codified ordinances refers to assignment of rates to users and/or customers, but does not identify who is ultimately responsible. According to the director, the current unwritten policy is to place responsibility for utility billing payments on the person living on a property.

Ohio Revised Code (RC) §743.04 states that when water rents or charges are not paid when due, the director or other official or body may do the following: "Certify them, together with any penalties, to the county auditor. The county auditor shall place the certified amount on the real property tax list…" If the City changes its ordinance to certify delinquent balances to the property owner, it may be able recoup past due payments that have remained uncollected for many years.

Numerous cities throughout Ohio, including Cleveland Heights, Elyria, Amherst, and Wooster, place the ultimate liability of unpaid utility bills on the property owner. This allows these cities to certify all delinquent accounts to the county auditor, including any penalties. Certifying delinquent accounts to the county auditor ensures all delinquent utility monies are paid within the following year. OAD has only certified approximately 20 utility (property owner) accounts to the county auditor in the last two years. Cleveland Heights certifies on average, 50 to 100 accounts per year as their sole means of collecting delinquencies. In contrast to Warren, Elyria and Cleveland Heights do not use an external collections agency for delinquencies.

Elyria has reduced its over 90 days past due receivables to less than one half percent of its monthly billings by placing the liability for payment on the property owner and certifying delinquents past 90 days, as well as following stringent past due notification procedures to tenants and property owners (see **F3.14**). A new tenant may be provided with service even if a delinquent bill exists. However, the landlord needs to formally approve and document the request for service. If the previous delinquent bill remains due 12 months after issuance, Elyria will turn-off water service to the existing tenant. Therefore, the landlord is motivated to clear any delinquencies in order to keep renting the property. In addition, Elyria does not allow tenants and owners to obtain water service if there is a delinquent active or final bill in their name. As a result of certifying delinquent accounts and establishing standard collection procedures (see **F3.14** and **R3.12**), Elyria achieves a collection rate over 99 percent, compared to 98 percent at Warren in 2002.

R3.9 The City, in consultation with the law department, should amend its codified ordinances to establish that property owners of record, to whom water, sewer, and sanitation services are furnished, are responsible for the payment of all unpaid services. After passage of amended codified ordinances, OAD should immediately implement the procedures necessary to automatically discontinue service and certify those accounts which are 90 days past due, similar to the practice at Elyria. OAD would need to provide all accounts to the county auditor with a delinquency list to include the following information: the parcel number, name of owner and tenant, address of property and the amount to be certified. The City should also develop policies and procedures on certification of properties to include the following:

- Criteria for certifying delinquent accounts to the county auditor (e.g., accounts 90 days past-due);
- Notification of property owners, by certified mail, as to the intentions of OAD at least two weeks prior to notifying the county auditor of the lien;
- Method for tracking the certified amount on its utility billing system so that OAD does not try to collect the amount that was certified; and
- Method for notifying the county auditor when a property owner pays a delinquent bill that has been certified.

In addition, OAD should consult with the City's law department to determine if any past due amounts, including prior and current years' delinquencies, can be qualified and certified to the property owners of record at the time of accrual that are still in possession of said property. Furthermore, the codified ordinances and rules for water service should be reconciled and revised to strengthen the requirements for obtaining water service with

provisions to motivate property owners to settle outstanding balances. Implementing standard collection procedures and fully using the utilities management system would also potentially increase collections (see **F3.14** and **R3.12**). Since certifying delinquent accounts would provide a strong method to enforce collections, the City and OAD should consider either eliminating the contract with the current collection agency or referring only those accounts that remain delinquent for a long period of time after the property has been certified.

Financial Implication: If OAD certifies to the county auditor each delinquent account upon shutoff and implements formal standard collection procedures (see **R3.12**), the City could see an annual increase in revenues of approximately $117,000, which is based on the current amount of 90 to 120 past due accounts. Increasing annual collections by $117,000 would also increase the City's collection rate to 98.9 percent, based on 2002 billings of $16,433,000 and collections of $16,139,000.

In addition, the City could experience a one-time increase in collections of approximately $1.5 million by retroactively certifying eligible accounts, based on $2.1 million in past due accounts over 120 days and assuming that $600,000 attributed to bankruptcies will not be collectible. However, various factors could impact the City's ability to collect up to $1.5 million, such as the age of the delinquent accounts, the ability to locate property owners that have moved from the City, the accuracy of historical account information, and the City's aggressiveness in pursuing these delinquent accounts. Moreover, collecting this accumulated past due amount is contingent on Warren's legal counsel's ruling on the City's ability to retroactively certify prior years' delinquencies. Assuming that the City collects 75 percent of the $1.5 million owed for accounts past-due 120 days, it could collect approximately $1,125,000 in one-time additional revenue.

F3.12 City ordinances do not require money to be held in escrow for the payment of final utility bills when a property is sold. RC Section 743.04 states that when property to which water service is provided is about to be sold, any party to the sale or his agent may request the director or other official or body to read the meter at that property and to render within ten days following the date on which the request is made, a final bill for all outstanding rents and charges for water service. Such a request shall be made at least fourteen days prior to the transfer of the title of such property.

. Holding money in escrow would help ensure that final bills are paid and property owners are held responsible. Elyria requires new owners to hold $500 in escrow toward bill payment if a delinquent balance exists. If the previous owner's bill is not settled within four months, the new owner's water service can be discontinued, ensuring the new owner negotiates clearing the lien prior to settlement. Elyria only charges new owners a $50 deposit for a new water service application and credits the $50 to the new property

owner's account if bills are paid on time for the first six months. When a property is sold to a new owner, Cleveland Heights sends final utility bills to the escrow bank whenever possible.

R3.10 The City should update its ordinances to require that all property sales have funds held in escrow toward the final payment of all utility services. The escrow amount should be determined by the past history of delinquencies from the change of property ownership. RC Section 743.04 provides a framework that the City can use to develop legislation that requires owners to request final billing fourteen days prior to title transfer. When a property owner requests a final bill prior to sale, it should be part of the procedure to find out who is handling escrow on the real estate transfer and request the amount stated in the new ordinance be held pending final bill payment.

F3.13 OAD currently handles all bill-processing and collections in-house. The Government Finance Officers Association (GFOA) states that government billings and cash flow are often cyclical, causing problems in cash management operations and staffing levels. This is true in the City where there are peaks and valleys in the workload for bill processing staff. GFOA recommends shifting payment processing responsibility to a lockbox processor to alleviate the dilemma of adequately staffing to meet a limited number of peak periods versus overburdening a small staff during critical periods. Lockbox is a key cash collections service, accelerating the process of converting accounts receivable into cash by expediting mail flows, reducing processing time and improving the availability of funds. Cost effective pricing for lockbox processing is based on the number of transactions required per cycle.

Cleveland Heights and Wooster are able to use a lockbox collection process efficiently to handle their bill processing because their data collection technology allows them to send all utility bills out at once. Warren and Elyria have not taken advantage of lockbox processing because they have multiple billing cycles, which increases the cost. Lockbox processors typically guarantee that payments received are deposited into the organization's bank account the same day they are received. Currently, the City deposits are held to the following day for deposit. GFOA recommends that any contract entered into by a governmental entity and lockbox provider, at a minimum, include the following:

- Treatment of exception (non-standard) items;
- Turnaround time;
- Disposition of documents;
- Funds availability schedule; and
- Error tolerance.

R3.11 If Warren reduces its billing cycles to one per month (see **R3.3** and **R3.5**), OAD should pursue a lockbox collection process. Using a lockbox collection process would accelerate

converting receivables into cash, reduce processing time, improve fund availability, and reduce handling of cash and check payments. As a result, OAD should reduce 4.0 account clerk staffing levels (see **R3.3**). The OAD office manager should review all processes and reorganize the department to efficiently use the lockbox process.

Financial Implications: Based on an estimate from a financial institution, OAD would incur an annual cost of approximately $45,000 for lockbox processing. However, OAD would experience additional cost savings (see **R3.3**).

F3.14 OAD could perform delinquent collections more efficiently by using standard and uniform collection procedures. In addition, Customer Service Representatives (CSR) do not maximize the use of the NWS utilities management system. Each CSR is assigned a section of the City for follow up on all delinquent accounts. CSRs follow up daily on their assigned accounts, consisting of physically hanging a color coded late tag on customer doors and collecting money when possible. Prior to pursuing a delinquent account, the CSR will examine if the utility customer has declared bankruptcy or is on a payment plan. However, OAD has not developed standard and objective criteria for establishing payment plans. Instead, each CSR informally develops payment plans with the related customer and tries to collect payments on an ad-hoc basis. According to OAD, upgrading its software (**F3.16** and **R3.14**) will enable payment plans to be directly entered into the system, allow cashiers and other appropriate personnel to readily view these plans, and automatically send a notice to customers terminating payment plans if the plans are not paid in full. In addition, OAD states that the software upgrade would allow past-due notices to be automatically sent, eliminating the need to physically hang tags.

Elyria's written policy for payment plans states that no agreement may be entered into that would cause an account to remain delinquent longer than four months. Minimum monthly payments for customers on payment plans include payments for delinquencies 90 days or more past due, current billing and 25 percent of the remaining arrearage. Additionally, information gathered by CSRs at OAD is written on either the weekly delinquency computer printout or notepad and therefore, is not always entered into the computer system. As a result, the payment arrangement information is not readily available to others at WSD and OAD.

Rather than conducting daily visits, Elyria sends color coded past due invoices in the mail and only requires a technician to visit the property at the time of shut off, when a red tag is put on the customer door and service is disconnected. In addition, Elyria has developed formal and uniform rules to effectively manage delinquent accounts that are lacking at OAD. Elyria's rules include the following:

- Sending reminder notices 45 days after issuing the original bill;
- Sending shut off notices 75 days after the original bill if payment is not received; and

- Sending all delinquency communication to both the property owner of record and tenant if applicable.

By managing the collection process with standard guidelines and mailing past due notices to property owners and tenants, WSD would be able to reduce the need for CSRs to physically visit each customer except to deliver final notices, and would enhance the collections process to maximize revenue (see **F3.11** and **R3.9**). Amending the ordinance to have property owners responsible for past-due payments (see **R3.9**), certifying delinquent accounts (see **R3.9**), and fully using the reporting functions of the utility billing system (see **R3.14**) would further streamline operations and potentially increase collections.

R3.12 OAD should formally develop and implement standard collection procedures defining time frames and criteria for mailing notices and only visit customers for final notices. OAD should consider reducing at least 1.0 FTE CSR position, resulting in a number of accounts maintained per CSR FTE similar to Elyria (see **F3.1**). OAD should also develop objective and standard criteria for payment plans, such as defining types of accounts that can qualify for payment plans, minimum required monthly payments, duration of the agreements, and consequences of missed payments (e.g., certifying property). Additionally, CSRs should enter collection and voucher information directly into the notes of the utilities management system. This will make the information available to all employees in one central location, eliminate the need to rewrite the information from month to month, and reduce time spent looking through files. Furthermore, OAD should follow through on upgrading its software, which would also enhance the collection process (see **R3.14**).

Financial Implication: Reducing 1.0 FTE CSR position would save OAD approximately $38,000 annually in salaries and benefits. OAD would incur additional costs depending on the number of notices mailed for each delinquent account. Assuming that OAD follows Elyria's collection procedure and mails a maximum of two notices per account, the City would incur additional mailing costs of $5,200 annually. Consequently, the net impact of this recommendation would be an annual cost savings of approximately $32,800.

Cost Recovery

F3.15 Internal cost allocations charged by OAD annually to the Environmental Services (ESD) and Water Pollution Control (WPC) Departments have not changed since 1997. The cost allocation calculations are based on the 1991 Havens and Emerson (H&E) billing and collection cost allocation calculations, which have not been updated on a regular basis. The charges are assessed by allocating specific personnel costs involved in metering, billing, and collecting. Other expenses such as equipment leasing, maintenance, postage,

fuel, and outside collection fees are also used in the calculation. There is no data available to support the current billing and collection costs allocated to ESD and WPC.

R3.13 The director should update the Havens and Emerson report to reflect current variables in allocating internal charges to each department and work with the City Auditor to determine proper allocations using actual expenditures for ESD and WPC. The cost allocation should be reviewed yearly as part of the budget process to ensure that rates accurately reflect all costs.

Technology

F3.16 OAD currently uses the New World Systems Utility Management Software (UMS) for the preparation and collection of water, sewer, sanitation, and storm water utility bills, but has not upgraded to the latest version of UMS and does not fully use its functionality (see **F3.9** and **F3.14**). OAD has reviewed the latest version of UMS and would benefit from its upgraded features such as:

- Improved bank drafting;
- Unlimited mailing addresses;
- Improved final bill process and bill reprint;
- Updated copy account feature;
- Improved work order generation in a single step;
- Increased ability to use Crystal Reports (industry standard report writer);
- Updated on-line billing calendar;
- Increased capacity to use complex billing formulas; and
- Unlimited number of billing rate entries.

F3.17 CSRs are not fully using NWS UMS reports to expedite identification of meter variances and misreads for follow up. CSRs manually review meter books for variances and make changes to the consumption proof report. This is time consuming and ineffective when a report of misreads and variances can isolate accounts for follow up. Data entry clerks review the consumption proof report to manually locate unusual meter reads prior to printing customer utility bills. This is good quality control, but the database can be sorted so that specific reports based on predetermined parameters can be printed for review of misreads and variances. CSRs only need to address those variances noted in a variance report. Peers have identified and used reports that allow them to address unusually high or low meter reads. This allows identification of consumption variances and expedites billing procedures. Better use of reports for auditing and follow up can reduce the workload of CSRs, resulting in possible staffing reductions (see **R3.12**)

R3.14 The director should work with data processing personnel to identify NWS utility billing reports that will improve the process of managing meter variances and misreads.

Procedures also should be developed to use the reports to avoid duplication of effort and reduce the time it takes to start the billing process. In addition, OAD should follow through on upgrading its system to provide additional benefits as described above and throughout this report (see **F3.9** and **F3.14**).

Policies and Procedures

F3.18 Certain WSD and OAD practices are not consistent with what is stated in the "Rules and Regulations" which were made effective on May 4, 1968 through the passage of Resolution Number 2743/68. For the most part, the "Rules and Regulations" address water service only and changes have not been made since 1968. The "Rules and Regulations" contain the following items that are not addressed in the City's Codified Ordinances:

- Application for water service by property owners and tenants;
- Transfers and terminations of accounts;
- Water meter serves as the source for billing;
- Billing, estimated billing, and delinquent billing;
- Meter testing and investigations;
- Furnishing of water meters by the Water Department;
- Garden meter charges; and
- Sewer charge rebates for swimming pool water usage.

R3.15 The department should review and update the Rules and Regulations Booklet so that it reflects applicable local, state, and federal guidelines pertaining to service, billing and collections for water, sewer and sanitation. As a result, WSD and OAD would ensure compliance with city ordinances.

F3.19 WSD and OAD do not possess a schedule addressing the retention and disposal of records. Meter slips dating back to the 1950s are still stored by the department. RC §149.39 and the City's codified ordinance outline the records commission responsibility (see the *City of Warren Phase IV Performance Audit Report* for further discussion of records retention).

R3.16 The director should determine which records can be destroyed and submit the inventory list to the Records Commission to obtain approval for disposal. A formal retention and disposal schedule should be developed for all records, including bill stubs, register tapes, final billing records, meter slips, month end reports, work orders, and credit memos. A procedure should be established to ensure records are inventoried and destroyed at proper intervals. This will help with space management and ensure that only important records are retained.

F3.20 Checks received by mail or though the credit union do not have the associated check number entered into the NWS utility billing software, but check numbers for check payments received by cashiers are entered into the system. Checks numbers are also incorrectly posted to accounts. Customers often mention their check number to verify payment was applied to their account correctly. OAD staff cannot do a computer search by check number due to non existent or inaccurate posting. This increases the time it takes to identify and verify customer payment to the proper account when questions arise. Current software applications have the ability to search for check numbers which significantly reduces the time needed to find payments incorrectly applied to another account.

R3.17 All payments by check should have the payment recorded with a check number and the OAD staff should be trained how to do database queries by check number. This will improve utilization of the system, help answer customer questions and improve time management.

F3.21 AOS conducted a special audit for the period April 1, 2000 through April 30, 2000 and found cash collections totaling $26,036 not being deposited in the City's bank account. Although a formal policy establishing the procedures for collection of utility receipts was developed in 1996, there was confusion regarding the current applicability of the procedures.

All audit findings have been corrected except for updating changes in Warren Administrative Order No. 96-3 covering collection of utility receipts. This policy has already been reviewed and changes noted. It was forwarded to City Hall for additions, corrections and review in February 2003. The changes are scheduled to be completed in 2003.

R3.18 The director should complete the updating of Warren Administrative Order No. 96-3 and work with the mayor to have it reissued. A periodic review of all WSD and OAD policies and procedures should also be established to ensure that they are appropriate, updated, and complied with consistently. The director should develop a plan to review specific policies with all department employees at least annually, and all employees should be required to annually sign a formal acknowledgment that they have read all policies and procedures. This will help to ensure that all staff is fully informed of department rules and regulations.

Financial Implication Summary

The following table summarizes the performance audit recommendations within this section which contain financial implications that could be reasonably estimated and quantified. Detailed information concerning the financial implications, including assumptions, is contained within the specific findings and recommendations.

Summary of Financial Implications

Recommendations	Estimated One-Time Revenue Enhancements	Estimated Annual Revenue Enhancement	Estimated Annual Cost Savings	Estimated One-Time Implementation Costs	Estimated Annual Costs
R3.2 Reduce sick leave and overtime use			$11,000		
R3.3 Upgrade to AMR data collection system			$420,200	$5,200,000	
R3.7 Consolidate garden meter bills			$1,000		
R3.8 Outsource bill mailing services			$7,700		
R3.9 Certify delinquent accounts to property owners and implement standard collection procedures	$1,125,000	$117,000			
R3.11 Implement lockbox collections					$45,000
R3.12 Reduce 1.0 FTE CSR position			$32,800		
Total	**$1,125,000**	**$117,000**	**$472,700**	**$5,200,000**	**$45,000**

Conclusion Statement

WSD and OAD would significantly improve operational efficiency by upgrading the meter reading technology to AMR. The current meter reading technology in Warren, including the age and inaccuracy of the meters, has caused WSD and OAD to assign more personnel to maintain and read the meters when compared to the peer cities. Although upgrading to AMR technology would require substantial financial investment by the City, it eliminates the need for meter readers and provides the opportunity to bill once per month. Billing once per month creates the economies of scale necessary to outsource billing functions and implement a lockbox collection process. These changes would save approximately $420,200 annually by reducing 4.0 FTE meter readers, 4.0 FTE account clerks, and eliminating meter reader worker's compensation costs.

The City has approximately $2.1 million in past-due payments with aging over 120 days, indicating a considerable potential to enhance collections methods. Changing the codified ordinances by placing ultimate responsibility for payments on property owners would allow delinquent accounts to be certified to the county auditor, thereby providing greater enforcement authority for delinquent collections to the City. In addition to streamlining operations to reduce 1.0 CSR position, developing standard collection procedures and criteria for payment plans, and fully using the utilities management system would better enforce collections. By taking these actions to enhance the collections process, the City has the potential to increase collections by about $117,000 annually.

Based on the nature of the functions performed and peers' organizational structures, WD should consider transferring the water service supervisor, cross connection technicians, water servicemen, and water service distribution technicians to the distribution division. The relatively high use of sick leave at WSD and OAD could be better managed and controlled by creating recognition programs, developing standard sick leave explanation forms, and consistently analyzing sick leave use.

To adequately manage meters and effectively identify meter age and consumption to assist in capital budgeting and planning, WSD should maintain a database inventory of all meters including repair history and consumption. Determining proper allocations using actual expenditures for costs charged to ESD and WPC for OAD's billing services would ensure that internal services provided by OAD are accurately and appropriately charged back. Furthermore, billing software is not used to consolidate billing, audit meter reads, and generate management reports. Working with data processing to better utilize management information would allow billing issues to be more quickly resolved and provide reports that can be used to efficiently manage operations. In addition, all related policies and procedures should be reviewed, updated, and discussed with staff on an annual basis.

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Water Department
Purification and Distribution

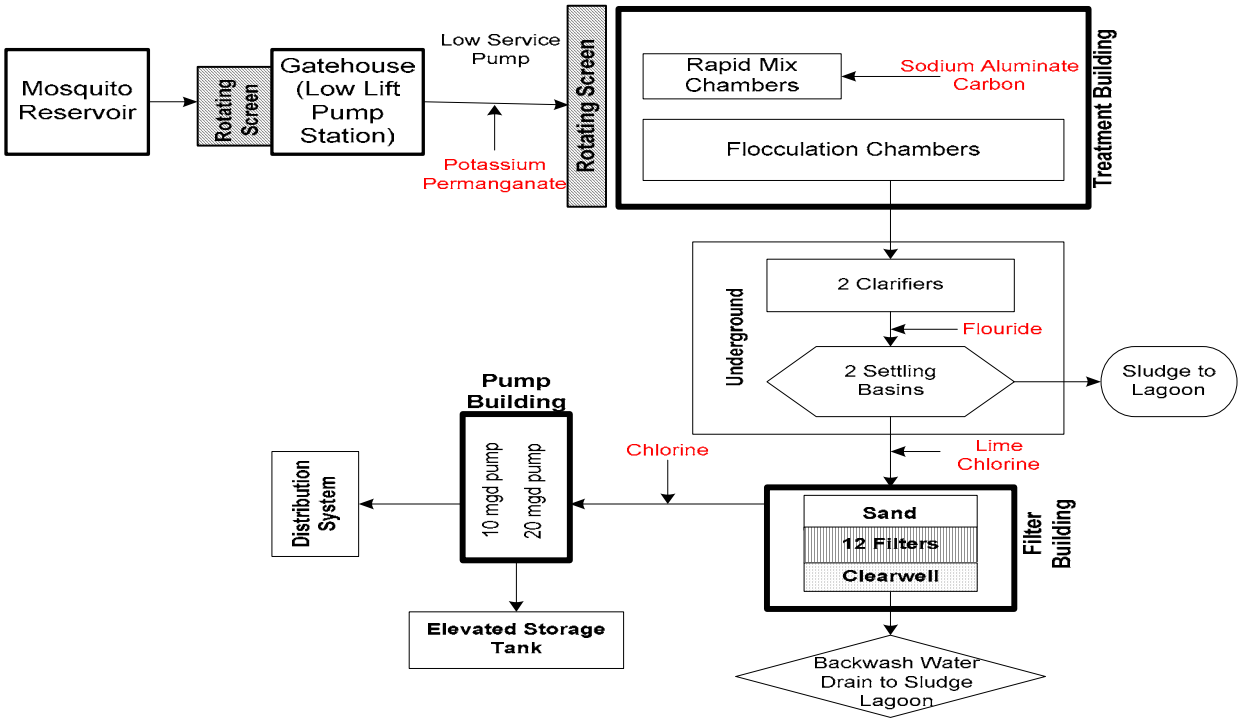
Background

This section focuses on the City of Warren Water Department (WWD) and the operation of its water purification (WPD) and water distribution (WDD) divisions. Peer comparisons will be the Elyria Water Department (EWD), Lima Water Distribution Division (LWDD), and Lorain City Water Department (LCWD).

Summary of Operations

The purpose of WWD is to provide sufficient and safe water to customers in a cost efficient manner. To accomplish its purpose, WWD must operate and maintain extensive capital infrastructure, vehicles, and other equipment. **Chart 4-1** provides an overview of the water purification process performed by WWD.

Chart 4-1: Water Purification Process



WWD obtains, purifies, and distributes nearly 20 million gallons of water per day (mgd). Raw water is obtained from the Mosquito Reservoir, which has a storage capacity of 34 billion gallons. The reservoir is operated by the United States Army Corps of Engineers (the Corps). WWD has a supply and storage contract with the Corps and is permitted under the contract to draw up to 21 mgd from the reservoir. WWD has no alternate raw water source.

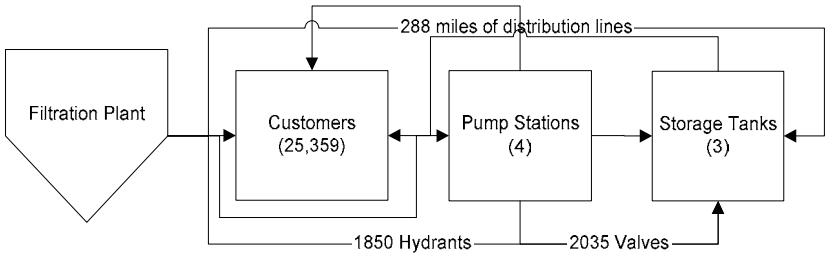
As shown in **Chart 4-1,** raw water is pumped from the reservoir to the water treatment plant using the gatehouse low lift pump station located at the reservoir. Water enters the gatehouse from one of the intake ports and is run through multiple rotating screens to remove large debris prior to entering the treatment building/purification plant. The water treatment process then follows a course of chemical treatment that involves coagulation, flocculation, filtration, chlorination, and fluoridation. Coagulation occurs in four flocculation (mixing) tanks where small debris is activated by adding sodium aluminum carbonate and mixed to promote the process of clotting into larger particles that are easier to remove. Fluoride is added as the water is clarified and settled between the treatment building and the filter building to remove smaller suspended solids. Chlorine is added to eliminate dangerous bacteria. Lime is added to obtain a desirable acidity or "ph balance" of the water. The settled water then flows through one of twelve rapid-sand dual-media filters to remove any remaining suspended solids. After adding more chlorine, the water is ready for the distribution system.

Filter washing is done periodically to ensure the filters operate effectively. The filters are cleaned by delivering water from an elevated 200,000 gallon storage tank backward through the system and across the filters, which produces backwash that is drained to a sludge lagoon. The sludge lagoons are cleaned periodically by pumping the sludge to the water pollution control (WPC) department.

Purified water is stored beneath the filters in underground storage clearwells with an average capacity of 2.8 million gallons. The treated water is then pumped approximately four miles, through 30-inch feeder mains, to elevated storage tanks at the center of the distribution system. Construction of the water distribution system started in 1887 with the installation of tar-coated cast iron pipe. Many of these original pipes are still in service. Today, a network of about 288 miles of water mains serve the City of Warren (the City) and surrounding areas, which include all or parts of the townships of Howland, Bazetta, Champion, Warren, and the Village of Lordstown. WDD maintains the distribution system used to deliver the water treated by the WPD.

Chart 4-2 illustrates the key components of the distribution system.

Chart 4-2: WWD Distribution System

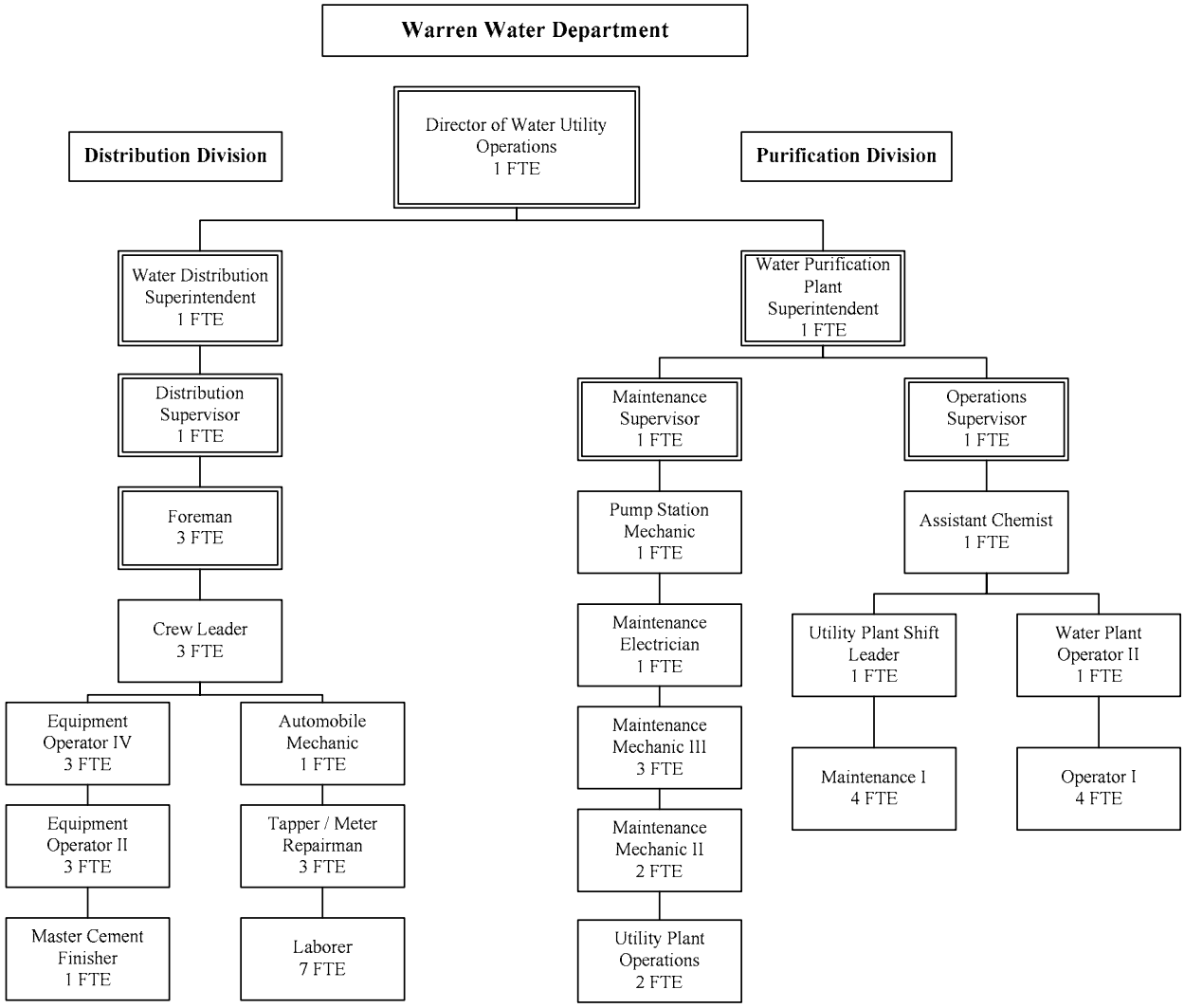


As shown in **Chart 4-2**, the distribution system consists of pipes ranging in diameter from 3-inch to 30-inch mains. In addition to the pipe network, the distribution system consists of pump stations and storage facilities. WWD uses approximately 25,000 meters to account for the water it pumps to residential, commercial, and industrial customers. The WDD handles all repair and maintenance of the distribution pipelines in addition to the pumping units and storage facilities. WDD also performs all fire-hydrant flushing and testing. Major water line replacement work or installation of new mains is outsourced to private contractors.

Organization Chart

Chart 4-3 depicts the WWD organizational structure and staffing levels in full-time equivalent employees (FTEs). A full-time employee is one who works 40 hours per week.

Chart 4-3: Organization and Staffing, as of 11/02



Source: WWD
Note: Organization chart and listed staff represent current staffing and organizational structure in the purification and distribution divisions. In addition, 7 FTEs, are assessed in this section from the water services division staff. The functions of the engineering and drafting staff, 4 FTEs, and the meter maintenance staff, 3 FTEs, overlap with the activities and functions in WDD and therefore are assessed in this section. Furthermore, the chief plant mechanic position was not assessed because the position had not been filled at the time of this audit.

As shown in **Chart 4-3**, WWD employs 50 budgeted FTEs to run its purification and distribution operations. WWD is led by the director of utility operations (the director), who oversees WPD and WDD.

WDD is responsible for operation and maintenance of the distribution system, which can be grouped into two main functions: pipeline maintenance and water meter maintenance. Major pipeline maintenance duties include a variety of activities, such as construction, installation, maintenance and repair of the water distribution system. WDD system maintenance staff also performs all fire hydrant flushing. Eighteen FTEs carry out the distribution system pipeline maintenance function, including six operators and assistant operators, seven laborers, one cement finisher, three crew/section leaders and one garage mechanic. Supervision of the pipeline maintenance work is performed by the three foremen, the distribution superintendent, and the distribution supervisor. Major meter maintenance responsibilities include testing, repair, replacement, which are performed by three tapper/meter repairmen in the distribution department and one cross connection technician, two water service men, and three meter technicians in the water service division. Supervision of the pipeline and meter maintenance work is provided by three foremen, the distribution superintendent and the distribution supervisor. The seven staff from the water service division report to the water service supervisor.

Water distribution technicians send information tracked from all sources, including employees in the service division as well as through customer calls, to the WD supervisors as needed. According to the director, completion of work orders is routinely tracked and information regarding completion is routinely delivered to appropriate parties. The water service supervisor also works with the distribution supervisors. Tracking processes from an asset inventory perspective used for the completion of work orders originated in the water service division are not currently in place (see **F4.23** and **R4.14**).

WPD is also grouped into an operations group and a maintenance group. The operations personnel include 12 FTEs, led by the operations supervisor, that are responsible for testing the water at various stages in the treatment process and for reporting water quality test results to the Ohio Environmental Protection Agency (OEPA), which enforces federal and state environmental requirements. The WPD operations group carries out two main functions, laboratory testing and system monitoring. Laboratory testing is performed primarily by the operations supervisor and the assistant chemist. According to the director, one of the utility plant shift leaders obtained the advanced chemistry certification to provide a testing backup in case the other two qualified chemists are unavailable. These lab tests require the shift leader to spend eight hours a week performing specialized laboratory tests. Additional system monitoring is performed by ten FTEs, including the five operators, one utility plant shift leader, and four maintenance staff reporting to the operations supervisor. Major system monitoring duties include testing water quality and monitoring the performance of treatment plant systems and equipment. WPD maintenance personnel are responsible for maintaining and replacing the operational infrastructure and equipment at the purification plant, as well as maintaining the pumping stations. WPD maintenance personnel are overseen directly by the maintenance supervisor.

Financial Data

WWD is organized as an enterprise operation, which means that it is intended to function like a private sector business with user payments and charges covering the cost of operations and capital improvements. **Table 4-1** lists and compares WWD's actual expenditures for 2000, 2001, and 2002, by calculating the percentage change from the previous year. However, **Table 4-1** does not include capital improvements like major construction projects that are included as part of **Table 4-2.**

Table 4-1: Comparison of Actual Expenditures

	Actual 2000	Actual 2001	% Change from 2000	Actual 2002	% Change from 2001
Salaries	$2,026,750	$2,109,198	4%	$2,120,272	1%
Fringe Benefits	$886,516	$1,077,807	22%	$1,187,482	10%
Contract Labor	$964,347	$1,085,617	13%	$1,019,774	(6%)
Supplies	$565,507	$811,749	44%	$647,950	(20%)
Maintenance	$74,902	$43,521	(42%)	$80,568	85%
Capital Outlay	$245,093	$206,324	(16%)	$126,940	(38%)
Total	**$4,763,115**	**$5,334,216**	**12%**	**$5,182,986**	**(3%)**

Source: Warren City Auditor

Table 4-1 shows that the highest increase occurred in fringe benefits, primarily due to increasing healthcare costs experienced throughout the City. Budgeted contract labor decreased from 2001 to 2002 because of fewer anticipated jobs requiring outside labor, and less pipeline replacement contract work. Supply purchases declined in 2002 primarily from decreases in chemical purchases for filtration. Actual maintenance costs are driven primarily by equipment and vehicle maintenance. While the 2001 to 2002 comparison shows a significant increase, actual costs from each of the two prior years, 1999 and 2000, have been within 10 percent of the 2002 figure, thereby indicating a decision to delay maintenance expenditures for 2001. Capital outlays are significantly below the 2001 actual expenditures because, as a standard practice, capital appropriations are authorized as needed through an amendment to the budget (see **F4.2** and **R4.2**). To offset expenses, WWD collects 90 percent of its revenue from water sales and 10 percent from miscellaneous sources such as water tapping and fee connections.

In 2000, WWD management received approval for a rate increase to pay for operational and capital improvements needed to comply with OEPA requirements and to replace equipment that has served its useful life. The rate increase recommendation was based on a study performed in 1999 by an outside engineering firm. WWD contracted for engineering services in March 1999 to conduct the water rate study as part of efforts to develop a capability assurance plan (CAP) required to receive a loan from the OEPA Water Supply Revolving Loan Account (WSRLA). The purpose of the rate study was to develop recommended water rates, which together with other revenue, would generate sufficient funds to meet projected operation and maintenance (O&M) costs, debt service requirements and funding for a proposed capital improvement program (CIP). To obtain funding for its CIP, WWD sought the low interest WSRLA from the

OEPA. OEPA reviewed and approved the capital improvement project plans in April 2002. The major components of the upgrade plan include:

- *Filter Rehabilitation*: All 12 filters will have filter media, flow controllers, backwash pumps, backwash troughs, and surface wash facilities replaced. WWD filters have aged considerably, although the plant capacity is well within acceptable limits. The filter upgrades should help WWD ensure it can meet new turbidity requirements.
- *Chemical Building Addition*: The raw water pump station will be expanded to house a new chemical feed system. This improvement will play an important role in meeting new OEPA requirements for carbon feeding.
- *Fluoride Building Construction*: The new fluoride building will enable the use of a new feed system for fluoride, which should improve safety by reducing materials handling and inhalation hazards.
- *Raw Water Pump Replacements*: Three pumps will be replaced and a waste holding tank will be constructed to contain drainage from the pump station and carbon slurry feed system. The waste holding tank will help control wastewater.
- *Flocculation Tank Rehabilitation*: Four basins with mixers and paddles will be replaced to improve the flocculation process.

Projected expenditures under the CIP, revenues under 1999 rate, and the projected revenue shortfalls estimated under 1999 rates, as well as the approved rate increases and projected revenue after the rate increase are presented in **Table 4-2.**

Table 4-2: Projected Revenues and CIP Expenditures

	2001	2002	2003	2004	2005
Total WWD Expenditures, Including Proposed CIP	$8,685,059	$9,251,192	$10,963,344	$11,360,702	$11,835,234
Total Revenue Under 1999 Rates	$7,729,631	$7,729,631	$7,729,631	$7,729,631	$7,729,631
Projected Revenue Shortfall	$955,428	$1,521,561	$3,233,713	$3,631,071	$4,105,603
Approved Rate Increases	**14.0%**	**8.0%**	**21.0%**	**4.0%**	**4.5%**
Projected Revenue with Approved Rate Increases	**$8,811,779**	**$9,516,721**	**$11,515,233**	**$11,975,842**	**$12,514,755**

Source: WWD CAP Appendix S

As indicated in **Table 4-2**, the approved rate increases will allow WWD to fully cover operational expenses in each year. In 1999, city council approved a rate increase structure that is estimated to allow WWD to repay the WSRLA loan received for the facilities improvement and purification plant expansion. Under the CIP, expenditures for WWD are projected to exceed $11 million after 2003. The approved rate increase is intended to ensure that WWD will be able to cover its cost of service, including repayment of the WSRLA loan.

Performance Measures

The following performance measures were used to assess WWD:

- Analyze strategic, financial, and capital planning;
- Determine compliance with OEPA water purification requirements;
- Assess staffing levels;
- Analyze leave usage and management;
- Assess staff evaluation and training activities; and
- Analyze maintenance and operational practices.

Findings/Commendations/Recommendations

Strategic Planning

F4.1 WWD has not developed a strategic plan, a formal mission statement or key goals. Strategic planning is a tool that can be used to identify, define, and implement the strategic goals of an organization. The strategic planning process can be used as an organizational development tool for management and staff to collaboratively develop key goals and as an accountability mechanism to measure the degree to which the organization is achieving its goals. Effective strategic planning activities include the following:

- Setting a vision;
- Writing a mission statement;
- Creating a road map;
- Preparing action plans;
- Establishing accountability goals; and
- Developing a performance-oriented organization.

The American Water Works Association (AWWA) has identified seven industry trends that it recommends for utility governing boards and management to understand and consider when developing their short and long term strategic plans. These trends include the following:

1. **Infrastructure Management**: Include an analysis of specific infrastructure needs including the consequences of failing to provide for that infrastructure.

2. **Environmental Regulations**: Develop reasonable plans to align improvement efforts with the Clean Water, Safe Drinking Water, and the Endangered Species Acts.

3. **Water Utility Structure:** Investigate strategic consolidation with other departments and other utility services such as gas and electric (see **water pollution control** for additional information).

4. **Good Customer Relations**: Actively involve stakeholders in setting goals and expectations and increase public understanding.

5. **Continuous Performance Improvement**: Establish strong management and leadership strategies to adapt to a changing work environment.

6. **Technology Use**: Implement technological advances to improve water quality, improve customer service, and reduce costs. For example, consider installing more

automation and management systems to reduce labor and save energy and integrate and streamline internal information systems to maximize effective communication, facilitate easy access to information by employees, and improve timeliness and quality of decision making.

7. **Watershed Management**: Manage the watershed for species enhancement, water yield, and pollution control to address the growing conflict between population growth, development, and environmental regulations.

R4.1 The director should lead a process to develop and implement a strategic plan for WWD, which incorporates relevant aspects of the CIP (see **R4.6** for more on CIP). The director should work with staff and stakeholders to create the strategic vision, mission statement, and goals for WWD. The mission statement should reflect WWD's purpose, goals and values and should reflect an outcome-based approach that conveys the ultimate reason for its existence. By developing a mission statement, WWD can clarify its mission and reason for existence within the service area. The strategic plan should account for the seven industry trends identified by the AWWA. By accounting for and acting on those trends, WWD will be best positioned to meet key challenges facing water utilities (see **R4.13**, **R4.14**, and **R4.15** for more on steps WWD can take to address these issues).

The director should also work with WWD management to prepare corresponding action plans and accountability goals with performance measures to develop a performance-oriented organization. WWD management should create clear, specific, and brief statements that explain staff roles for each major component of the strategic plan, so that employees can see where and how his or her work contributes to WWD's mission and vision. The director should also seek adequate resources to allow management and staff the opportunity to meet established goals and expectations. Creating a strategic plan to guide and evaluate the activities of WWD management is critical for ensuring that activities and resources are used in an efficient and effective fashion to accomplish the purpose of the Department.

Budgeting and Financial Planning

F4.2 WWD does not undertake adequate financial planning on an ongoing basis and does not follow budgeting best practices that enable the budget to serve as a tool for effective planning, operations guidance, or for communicating with oversight officials. **Table 4-3** shows the information provided in a standard WWD budget request, which includes revenue projections for three future years and expenditure projections for one future year.

Table 4-3: WWD Standard Budget Document

Revenue Category	YTD Totals	Monthly Average	2002 Projection	2003 Projection	2004 Projection
Service	$5,214,986	$651,873	$7,822,480	$8,995,852	$9,355,686
Service Rendered	$24,651	$3,081	$36,977	$38,826	$40,379
Bulk Service	$264,650	$33,081	$396,975	$456,522	$474,783
Billing Service	$330,774	$41,346	$661,549	$661,549	$686,010
Interest	$25,063	$3,132	$37,595	$43,235	$44,964
Miscellaneous	$51,391	$6,423	$77,086	$35,000	$36,400
Total	$5,911,518	$738,939	$9,032,664	$10,230,984	$10,640,224
	Projected Water Sale Revenue 2002		$8,800,000		
	Additional Revenue	$232,664			
Expenses	**YTD Totals**	**Monthly Average**	**2002 Projection**		
	$5,700,276	$712,534	$8,550,414		
	Budgeted		$8,783,374		
	Projected 2002 Carryover		$232,959		

Source: WWD

While **Table 4-3** illustrates that the current budget form provides some pertinent information, it does not provide the following detail recommended by the Government Finance Officers Association (GFOA):

- Historical budget data;
- Summary information on recent accomplishments and the status of projects;
- Goals and priorities;
- Performance indicators;
- Staffing and other major factors that impact spending;
- Key assumptions and trends supporting the budget projections; and
- Expense projections beyond the upcoming year to compare to revenue projections.

The lack of budget detail, explanations and sufficient expense projections demonstrates a lack of foresight and planning, and prevents WWD from using the budget documents as an effective planning, operational, and communication tool. For example, capital outlays are expected to be in the millions of dollars for purification plant improvements in 2003. However, the budget line item for capital outlays is blank. The current document also does not facilitate a thorough picture of WWD's financial and operational strength.

Bond rating criteria provide a useful standard for gauging the financial and operational strength of a water utility. The following is a list of questions and criteria that lenders and investors, such as Moody's and Standard and Poor's, consider when assessing credit risk:

- *Legal Provisions*: Revenues must be sufficient to cover both the debt service of the bonds and operating and maintenance expense. Water rates should generate an additional 25 percent of the annual debt service as a reserve so that bondholders are protected in case there is an unforeseeable decline in revenue. How much other debt does the issuer have and what position will a new creditor have for being repaid? The lien position defines the payment priorities of the debt service in relation to other loans or bond issues. Prior liens means debt service is paid before subordinate liens.

  WWD is currently meeting standards for sufficient revenue and debt service and should continue to do so with approved rate increases.

- *Economic Factors*: What is the economic stability of the area? Is it a mix of residential and industrial consumers? What are the trends in the population, employment and income level? If an industry is a major rate payer, is that industry committed to the community and financially stable?

  The recent trends for WWD in these areas are not favorable. Population, employment, and related factors have been decreasing over the past decade. Of particular concern is the decline in commercial and industrial water sales of over 12 percent from 1999 to 2000, and a further decline of 53 percent from 2000 to 2001. According to the billing office manager, the recent re-opening of a major industrial consumer should stabilize or reverse these recent declines in water sales. Collections processes and procedures could also contribute to the decline in water sales (see the **water services and office administration** section).

- *Operating Factors*: How stable is the governing body and operating staff? Is the system well run? Are the existing facilities in good shape? How good is the compliance record of the system? How well will the system be able to meet future demand? What is the current rate structure? Can rates be raised quickly and effectively to meet unforeseen financial shortfalls?

  Overall, WWD's governance situation is stable and the operation is fairly well run. However, improvements need to be made as identified in this section. In general, WWD is in compliance with OEPA, although OEPA has recommended certain improvements, including carbon feeding at the water source intake and ensuring sampling is performed according to the plan submitted to the OEPA. According to the OEPA, another concern is the single source of water supply and contingencies to handle short term supply interruptions and other emergencies. The hydraulic study is

expected to provide a process improvement methodology for the delivery of water throughout WWD. The rate increases approved in 1999 should provide sufficient revenue to fund improvements to plant facilities that will help WWD meet OEPA requirements, including addressing past problems cited by the OEPA.

- *Financial Factors*: How well has the entity performed financially in the past? Are reserve funds adequate? Does a CIP exist and how much is going to have to be spent in the future for improvements to meet regulations?

  WWD has performed well in recent years, as evidenced by its ability to receive approval for an OEPA loan. As a prerequisite, WWD undertook a rate study and implemented a rate increase to finance the loan. WWD has a CIP covering the next five years as part of the funding request, which includes the projects funded by the OEPA loan. However, as indicated in **F4.4**, WWD could improve its routine capital planning processes.

  Details of the WWD plan for capital improvements are explained in the City of Warren Water Treatment Facility Capability Assurance Plan (CAP), prepared in an effort to secure financing from the OEPA for extensive capital improvements. The CAP was prepared by Montgomery Watson Harza (MWH) to address the aging infrastructure of WPD and new drinking water regulations. Details of ten different projects were included for the loan assessment, the details of which were not documented in the budgeted capital expenditure category of the city's budget. The CAP model offers a format that could be used in the future to address construction needs.

Furthermore, WWD does not produce an executive summary of the budget that highlights the key issues or proposed budget and historical comparisons. WWD managers would need training to be able to effectively participate in developing a more detailed and useful budget and related documents.

R4.2 WWD should improve its main operating budget document by including more detailed information and explanations, and making it more useful as a communication tool. The budget should serve not only as a policy document, but also as a financial plan, an operations guide and a communications device. To that end, WWD should prepare a budget document containing an executive summary which highlights key issues as well as the proposed budget and historical comparisons. Descriptions of recent accomplishments and the status of projects should be included to provide a progress report on the implementation of WWD's capital improvement plan. WWD's goals and objectives for the ensuing fiscal year should be presented. Fiscal priorities should be articulated and any changes in priorities explained, with the factors leading to the changes encountered. The budget document should also outline key revenue-raising and spending

decisions. To be effective, it should communicate how and why these decisions were made. The following information should also be included the budget document:

- Financial trends and factors affecting the budget, including the long-range outlook, expected water rate increases, anticipated future borrowing and significant use of funds;
- Fund balance increases;
- Important assumptions underlying the budget;
- Expenditure forecasts (see **R4.3**);
- Performance indicators; and
- Staffing levels and organizational information substantially impacting the budget.

The budget document's readability should be improved by using more charts and graphs to illustrate key issues. The final document should be made available to the public to improve accountability efforts. These changes would permit the budget document to be used by the mayor, city council, and management as an effective tool for evaluating and guiding the financial operations of WWD. The CAP offers a great deal of data formatted to provide useful information and should be updated in future years to improve budgeting practices.

Finally, the director should annually monitor and report to the city auditor, mayor and council, criteria used to determine the viability of taking on additional long term debt and to identify areas for improvement, better enabling WWD to develop an improvement plan. The criteria used by bond rating agencies should be used for assessing the financial strength of WWD. If questions asked for debt issuance purposes regarding community legal provisions, economic factors, operating factors, and financial factors cannot be answered favorably, WWD should prioritize those areas for improvement. Managers should be provided with in-service training on budget preparation, performance measurement and management reporting. Training should include information on funding sources and provide instruction on analysis of historical trends, monitoring of current results and forecasting of future needs. Providing training enables management to empower individuals with the authority and responsibility for defining the goals and developing expenditure plans to meet the goals. This also offers a tool by which performance of the management staff can be evaluated. Improving budget development processes, performance measurement, and management training should enable WWD to operate more efficiently and effectively.

Financial Implication: According to organizations that provide management training, the cost of budget courses typically is $250 per person. Therefore, the eight supervisors could be trained for about $2,000. Annual refresher courses should be offered to expose

the eight managers to technological advances, procedural changes and new management techniques.

F4.3 WWD projects revenue for three years and expenses for only one year (see **Table 4-3**). However, the peers forecast revenues and expenditures for five years. In addition, WWD does not proactively inform customers of the impact of water rate increases, other than noting rate changes on bills and during the public notice period.

Typically, WWD has used historical budget data as the sole foundation for projecting expenditures and revenue. Revenue projections are based upon previous year collections, the number of accounts, past water usage, and the water rate for the coming year. Expenditures are estimated based upon past operation and maintenance (O&M) costs, debt service costs, and input from division managers regarding future staffing and operational needs. Estimated expenditures are compared to the projected revenue to identify discrepancies, but are not linked to the accomplishment of strategic goals or objectives. Usually, expenditures are adjusted if there is a discrepancy between anticipated expenditures and revenues.

According to the Government Financial Officers Association (GFOA), effective financial planning involves assessing long term financial implications of current and proposed policies, programs, and assumptions to develop appropriate strategies for achieving organizational goals. A key component in determining future options, potential problems and opportunities is the forecast of revenues and expenditures. Peers project expenditures and revenues for at least five years. Effective long term revenue and expenditure forecasting will provide the following benefits:

- An understanding of available funding;
- Identification of future financial risks, commitments, and resource demands;
- Assurance that services can be sustained and necessary capital investments can be made; and
- Identification of key variables that cause change in the level of revenue.

R4.3 WWD should improve its financial forecasting to better reflect its current financial position and more effectively estimate and plan for future needs. The forecast should extend at least five years beyond the budget period for revenue and expenditures, and should be regularly monitored and periodically updated. The forecast should be updated during the year as situations occur which materially affect WWD's financial position. The director should develop ongoing cash flow forecasts and incorporate additional data and analysis to estimate future needs. The director's forecast and accompanying assumptions should be expanded and consistently present more detailed historic and projected information and explanatory comments in the following areas:

- Historic and projected inflation rates and key demographic data;
- Actual results of the three most recent fiscal years, for comparison, with explanation of significant variances between forecasted and actual amounts;
- Impact of current and future capital improvement costs identified in WWD's capital improvement plan;
- Effect of water rate increases on residents and other customers;
- Historic and projected staffing by position;
- Description of grants and loans obtained to fund operations and capital improvements
- Description of debt service obligations; and
- Impact of outstanding encumbrances at year-end.

The financial forecast, along with its underlying assumptions and methodology, should be clearly stated and made available to participants in the budget process. It also should be referenced in the final budget document. To improve future forecasting, the variances between previous forecast and actual amounts should be analyzed. The variance analysis should identify the factors that influence revenue collections, expenditure levels and forecast assumptions. By providing more detail in the forecast and its supporting notes, management, the mayor, city council and the public will better understand the financial condition of WWD. Also, management will be able to address problems it identifies with the forecasts. The director should complete the forecasting process by preparing a formal cash flow forecast that incorporates all relevant information based upon a specific set of assumptions or recommendations that have been adopted by WWD.

The director should work with, and draw upon, the expertise of the finance department in developing these forecasts. Taking steps to improve its financial forecasting will better enable WWD to gauge its financial position and proactively carry out its financial operations. Maintaining coordinated and consistent communication with the finance department will ensure input from individuals with the responsibility for recommending final approval of the budgetary projection to the mayor and the council while drawing on expertise in developing a long term financial plan.

F4.4 WWD lacks financial policies recommended by GFOA that outline the organization's position regarding financial planning, revenue and expenditures. Financial planning policies address both the need for long term planning and a balanced budget. Effective revenue polices help ensure stability by protecting against revenue shortfalls that can cause service disruptions or unplanned rate increases. Expenditure policies define an entity's ongoing commitment to accountability for fiscal stability. Long range planning policies assess the long term financial implications of current and proposed operating and capital budgets, budget policies, cash management, investment policies and financial assumptions.

Establishing expenditure policies regarding debt capacity and management, reserve or stabilization accounts and capital expenditures foster accountability and fiscal stability. While a rate study was completed by an external consultant to provide a basis for rate recommendations to cover long term capital expenditures, WWD has not developed budget reserve, debt capacity, balanced budget, and capital expenditure policies. Debt capacity, issuance and management policies specify appropriate uses for debt and identify the maximum amount of debt and debt services that should be outstanding at any time. Reserve or stabilization account policies are designed to enable an entity to maintain a prudent level of financial resources to protect against the need to reduce service levels or raise taxes and fees due to temporary revenue shortfalls or unpredicted one-time expenditures. Capital expenditure accountability policies compare actual expenditures to budget, periodically (e.g., quarterly), and outline actions that could be taken to bring the budget into balance, if necessary. A balanced budget policy defines a balanced operating budget, encourages commitment to a balanced budget under normal circumstances and provides disclosure when a deviation from a balanced operating budget is planned or actually occurs. These types of policies encompass the broad scope of decision-making with regard to the use of resources and are summarized in the budget document.

R4.4 WWD should improve its financial planning practices by formalizing recommended budget policies. Working within the framework of the Auditor of State (AOS) performance audit recommendation for the City's finance department for an improved and timely budget process, WWD should adopt formal financial planning, revenue and expenditure policies. These policies should be used to frame major policy initiatives and be summarized in the budget document while maintaining thematic and regulatory consistency with the existing policies within the finance department. Establishing revenue policies is essential to prudent planning. A policy regarding fees and charges would enable WWD to formally identify the manner in which fees and charges are set and the extent to which revenues cover the cost of service provided. A policy on maintaining a budget reserve would help ensure WWD is able to meet temporary revenue shortfalls or cover one-time emergency expenditures. WWD should also create financial planning policies that support a balanced budget and long-range planning. For example, WWD should adopt a policy regarding the use of one-time revenues to discourage their use for ongoing expenditures, which would help WWD appropriately manage any future grant revenue it may receive (see **R4.7**).

The director should work with and draw upon the expertise of the finance department in developing these policies. The director should also annually review the policies to ensure continued relevance and to identify any gaps that should be addressed with new policies and ensure compliance with overall policies for the City. The results of the director's review should be shared with the mayor and city council during the review of the proposed budget.

F4.5 WWD does not use performance measures to help develop its budget or report organizational or financial performance to oversight officials, as recommended by the American Water Works Association (AWWA) and the GFOA. Effective water utilities use measures to assess performance and hold management accountable. For example, the Akron Water Supply Division sets annual goals to meet its strategic objectives. These goals could be considered objectives for meeting broader strategic goals set by the division and include the following:

- Reduce chemical costs by reducing the use of certain chemicals;
- Provide water at a given turbidity level or below; and
- Eliminate 30 sources of pollution from the watershed area or source water.

Effective goals and performance indicators can be used to measure progress toward strategic objectives, assess financial performance, assess the performance of WWD managers, and report progress to oversight entities.

R4.5 WWD should develop performance measures that can be used in developing the budget and holding managers accountable for performance. Performance indicators should be incorporated in the budget to facilitate assessment of divisional performance. The annual budget should be built upon operational unit performance plans with input from each division. Responsibilities and authority pertaining to an operational unit should be delegated to those who will be held accountable for performance. Resources should be allocated based on strategic priorities, necessary levels of service and standards of performance, as set in budget and planning documents approved by the mayor and city council. WWD management should be held accountable for performance throughout the year using the measures set forth in the budget. Also, fiscal management should be a component of every manager's performance evaluation.

Review of Water Rates

F4.6 An examination of WWD's rate structure indicates revenues are sufficient to cover cost of service. **Table 4-4** compares WWD average residential household cost of service to peers and an average of the five largest cities in Ohio.

Table 4-4: Water Cost Comparison[1]

Year	Five Largest Cities[2]	WWD	EWD	LWDD	LCWD	Peer Average
2000	$201	$188	$122	$129	$166	$139
1999	$198	$188	$122	$129	$166	$139
1998	$196	$188	$122	$129	$166	$139
1997	$184	$188	$122	$109	$166	$132
1996	$182	$188	$122	$93	$166	$127
1995	$172	$188	$122	$93	$166	$127
1994	$166	$188	$122	$93	$128	$114
1993	$157	$154	$110	$93	$128	$110
1992	$149	$154	$107	$93	$128	$109
1991	$143	$154	$107	$93	$128	$109
1990	$138	$111	$97	$81	$128	$102

Source: Ohio EPA Office of Fiscal Administration
[1]Annual Residential Water Rates (based on usage of 7,756 gallons per month or 1,037 cubic feet per month).
[2]Average of Cleveland, Cincinnati, Columbus, Dayton, and Akron

While **Table 4-4** shows that Warren's rate for residential service was $49 higher than the peer average in 2000, its rate was $13 less that the "Five Largest Cities." The recent approval of an approximately $11 million loan from OEPA has contributed to the higher rates in Warren as compared to the peers. Nonetheless, WWD could operate more efficiently to minimize operational costs and subsequent rates charged to customers (see **R4.9** and **R4.11**). **Table 4-5** further illustrates costs and revenues by total gallons billed at WWD and peers.

Table 4-5: Residential Water Revenue and Costs (FY 2001)

	WWD	LWDD	LCWD	Peer Average
Number of Accounts	24,734	23,350	23,000	23,175
Revenue Collected (All Sources)	$9,491,572	$8,557,000	$9,246,385	8,901,693
Expenses (All Sources)	$8,664,951	$5,888,000	$8,775,710	7,331,855
Total Gallons Billed	4,780,518,140	6,668,792,000	3,151,915,500	4,910,353,750
Residential Sales Gallons	1,720,986,530	1,622,976,000	1,922,668,455	1,772,822,228
	36%	25%	61%	43%
Industrial Sales Gallons	3,059,531,610	5,045,816,000	1,229,247,045	3,137,531,523
	64%	75%	39%	57%
Cost per thousand gallons	$1.81	$0.88	$2.78	$1.83
Revenue per thousand gallons	$1.99	$1.28	$2.93	$2.11
Difference Between Costs and Revenue or (net revenue per thousand gallons)	$0.18	$0.40	$0.15	$0.28
Annual Net Revenue	**$860,493**	**$2,667,516**	**$472,787**	**$1,374,899**

Source: WWD and Peers

As indicated by **Table 4-5**, WWD's gross revenue per thousand gallons is below the peer average by 5.7 percent, which amounts to total gross revenues of $574,000 annually. The average cost per thousand gallons at WWD is slightly lower than the peer average.

In addition to the OEPA loan and staffing levels, the makeup of the overall customer base (residential vs. industrial) and industrial base at Warren and the peers impacts costs and revenues per gallon. Based on the percentage of sales attributed to residential and industrial customers, WWD's customer base is more comparable to LWDD than LCWD. The difference in the industrial base significantly affects the cost per gallon at WWD being two times higher than LWDD. LWDD has one primary industrial customer that accounts for the vast majority of its services, whereas WWD has several major industrial customers. Serving one primary industrial customer is likely to be less costly due to the economy of scale in serving one client off one pipe, as compared to serving several industrial customers off several pipes. While WWD can operate more efficiently in certain areas to reduce its operational costs (see **R4.9**), its water fees cover the costs of service and appear to be set at a fair rate to customers, considering the make up of its customer and industrial base.

Capital Planning

F4.7 While WWD completed a CAP that supports and delineates an extensive CIP for improving and upgrading the operations, it does not have a formal process in place for effectively and proactively identifying and prioritizing capital improvement needs. WWD management builds a list of needed capital improvements that is scrutinized and prioritized by the director prior to submitting the annual budget request. As shown in **Table 4-3**, WWD does not include a budget request for capital expenditures. Instead, it follows the city-wide practice of making supplemental requests as needed for capital expenditures followed by budget amendments. This practice is evidenced by no funding being allocated for capital outlay (see **Table 4-1**) and the lack of documentation to support anticipated expenditures.

Overall budgeting processes have not incorporated AWWA and American Public Works Association (APWA) recommended standards for effective capital budgeting practices, such as developing an aging of infrastructure report or a facilities assessment for targeting improvement opportunities (see **R4.13**). WWD does not use an ongoing formal process for identifying, prioritizing, or planning and seeking input on capital improvement needs. Current planning is almost exclusively driven by the need to meet OEPA regulations or necessitated by the obsolescence of equipment, often in a reactive fashion. However, with the recent appointment of a new director, WWD is beginning to take a more proactive role in formalizing the prioritization of capital improvement planning processes. For example, the director is beginning to inventory assets, prioritize repair and replacement needs and schedule work activities accordingly.

APWA recommends that water departments maintain a long range water resources plan and planning process for capital needs which includes the following key elements:

- A committee to recommend allocation of capital resources;
- Policies to guide overall decision making;
- An inventory of existing infrastructure;
- A schedule or plan for replacing and maintaining each component of the infrastructure and;
- A rating system to quantitatively evaluate each of the submitted projects.

Although WWD developed a plan for replacing key infrastructure to meet OEPA requirements and replace outdated equipment, it has not consistently used the APWA standards for its capital planning process. For instance, WWD does not have a formal committee in place for implementing an effective capital improvement planning process. A capital improvement planning committee is an effective method for determining and gaining support for necessary capital improvements, prioritizing and scheduling projects, estimating financial implications of projects, and linking projects related to WWD's mission. A capital improvement planning committee is typically responsible for establishing processes and procedures for identifying, evaluating and making recommendations regarding the current and future needs. The following criteria, listed in order of importance, are typically used to identify needs and prioritize projects:

- Projects required to meet health, safety, and welfare of customers and WWD staff;
- Projects that produce cost savings; and
- Projects recommended but not required by regulatory bodies.

According to the American Water Works Association (AWWA), to fund or finance maintenance and capital improvement projects, several planning and financial considerations need to be addressed through a deliberate, fact-based approach that identifies maintenance elements, generates short and long term plans and financial impacts, and identifies budget, capital improvement, water rate and economic impacts. Effective planning for maintenance and capital improvements requires the following:

- Collecting sufficient water system data and project and maintenance information;
- Applying or understanding financing tools or mechanisms in light of specific local circumstances;
- Gathering good cost projections which reflect financial and water rate impacts; and
- Committing to addressing infrastructure requirements.

WWD does not collect sufficient data in an accessible manner on the condition of its infrastructure or on its maintenance activities (see **R4.13**). WWD could also improve its

efforts to obtain and understand potential funding sources and cost projections (see **R4.7** and **R4.2**). However, the development of the CAP and recent rate increases demonstrate a clear commitment to addressing infrastructure requirements.

R4.6 WWD should consistently use APWA standards to guide its capital planning process and establish a formal capital improvement planning committee to annually update the CIP to reflect the current operational needs and costs associated with capital improvements. The recent completion of the WSRLA loan process and development of the CAP provide a strong foundation upon which WWD can build in its efforts to implement a more effective capital planning process and practices. WWD management should develop the policies and data necessary to guide decision-making regarding capital improvements (see **R4.13**), such as criteria used by WWD management to assess project needs, infrastructure condition data and explanations concerning how projects will help accomplish strategic goals and objectives. The CIP should be the end-product of a process that invites input from key stakeholders and decision-makers and serves as the basis for future capital budget requests from WWD.

The capital improvement planning committee should consist of at least the WWD director, city auditor, safety and service director, some members of the city council, the mayor, select employees from each division of WWD and possibly citizen representation. Recommendations from this committee should be communicated to the finance department budget committee for review and comment and should be provided to the city-wide capital planning committee recommended in the AOS performance audit of the City finance department.

Establishing a formal, ongoing capital improvement process will enable WWD to implement an orderly and routine method of planning and financing for required capital improvements and make capital expenditures more responsive to community needs by informing and involving customers. In addition, by prioritizing projects according to criteria that are embedded in WWD's mission and goals, the CIP could also create a more understandable investment decision making process; improve linkages between capital investments and WWD's long term vision and goals; and make more efficient use of available resources. Updating and implementing its CIP is critical to the successful completion of the current capital improvement project and to the long term success of WWD.

F4.8 WWD does not pursue all available funding sources for capital improvements. **Table 4-6** presents the advantages and disadvantages of the five main financing sources available to fund capital improvements.

Table 4-6: Capital Project Financing Sources

Financing Source	Provides Funds	Repayment	Advantages	Disadvantages
Revenue Bonds	Immediately	By rate payers over 10-30 years	Makes funds available immediately; ties payment to benefits received	Increases rates; high interest cost
General Obligation Bonds	Immediately	By rate payers over 10-30 years	Makes funds available immediately; ties payment to benefits received; potentially lower interest costs	Increases taxes; competes with other local services for limited bond funds; separate payments from benefit
Reserves	In Future	By rate payers each year until reserve is adequate	Eliminates need for borrowing; improves financial stability of system	Can be politically difficult; difficult to protect reserves for intended use; impractical for large projects
Revolving Loans	Immediately	By rate payers over 10-20 years	Makes funds available immediately; ties payment to benefits received; potentially lower interest costs	Increases rates; competition with other local agencies
Grants	Immediately	N/A	Makes funds available immediately, no repayment required	Competition with other local agencies, may have to provide matching funds

Source: University of Virginia Research Center

As shown in **Table 4-6**, each financing source has particular advantages and disadvantages. Currently, WWD only uses two of the five potential funding sources, revenue bonds and revolving loans. Developing a reserve fund and seeking grant funding are two options that WWD could likely benefit from and could improve its ability to provide effective service at the least cost. Grant funding is a particularly good source for funding, as it is an opportunity to address capital improvement needs without having to issue debt or increase water rates. In addition, there are many opportunities in Ohio to receive grant funding. The largest ongoing source of funding for projects is the Ohio Public Works Commission (PWC).

PWC provides funding in the form of grants, loans and local debt support for local governments under the State Capital Improvement Program (SCIP), also known as Issue 2 funding. WWD is eligible for SCIP funding, which could be used to cover costs for engineering and design, construction, equipment and financing related to capital improvement projects. During each program year, 80 percent of the SCIP allocation can be awarded in the form of grants. A minimum of 10 percent in matching funds are required for a repair or replacement project and 50 percent of a project's total cost if it is a new or expansion project. The remaining 20 percent of the SCIP allocation must be awarded in the form of interest free or low interest loans, or in the form of local debt support. Applicants can request up to 100 percent funding in the form of a loan. PWC funds are available on a yearly basis.

For the purposes of allocating SCIP funds, the 88 counties in the state have been organized into 19 districts. WWD is located within district six, which has a SCIP allocation of approximately $8.5 million. However, this funding will no longer be available after 2005 unless it is reauthorized by voters. Further, according to PWC, the

average grant and loan award is approximately $500,000 for SCIP. PWC loans are interest free and are for 20 years or the life of the project, whichever is shorter.

WWD did not apply for PWC funding to help fund its $12 million capital improvement program. In addition, WWD does not regularly research or apply for grants or loans from professional organizations or government entities, such as the Ohio Water Development Authority (OWDA), Water Pollution Control Loan Fund (WPCLF), and Community Development Block Grants Ohio, and does not have a designated employee responsible for researching and applying for grants. WWD is potentially missing sizable grant opportunities to fund capital improvements by not consistently pursuing grants.

R4.7 The director should implement a process to identify and obtain additional funding from professional organizations and state and federal grant programs. WWD should collaborate with the OEPA, PWC, and other similar entities on a regular basis to identify grant funding possibilities. The process of securing these types of funds should incorporate an asset management process using repair versus replacement approaches while addressing life cycle cost principles and evaluating funding alternatives. Obtaining additional funding, particularly from grants, would help WWD supplement the cost of capital improvements and help mitigate the need for rate increases. At a minimum, WWD should annually apply for State Issue 2 grants to help supplement capital improvement costs identified in an updated capital improvement plan. WWD should regularly communicate with the community development department, as well as other City departments that pursue grants. WWD could improve its grant-seeking efforts by drawing on the expertise of other grant-writing professionals within the city.

Financial Implication: Applying and receiving State Issue 2 funding could provide WWD with an additional $100,000 for capital improvement costs on average annually, assuming WWD received an average grant award at least once every five years. Other grants could provide additional funding and low or no interest loans could result in significant cost avoidance compared to conventional loans.

Technology Planning

F4.9 WWD lacks a technology plan to guide its activities. In conjunction with procuring the appropriate technology for a water utility, planning for future needs and technology replacement is critical. Best practice organizations develop and implement long-term strategic technology plans that incorporate operations and strategic planning goals, and describe technological objectives and how technology, funding and resources will help achieve those objectives. In addition, a formal review and revision process is suggested to allow the technology plan to evolve. The planning process should, at a minimum, accomplish the following objectives:

- Set technology priorities and rank technology projects accordingly;
- Establish the justification for new initiatives;
- Provide recommendations to executive management and oversight officials;
- Review progress of technology projects;
- Offer resolutions for significant organizational issues impeding project progress;
- Assess the need for implementation of new technology; and
- Establish and approve technology standards.

In conjunction with their technology plans, best practice organizations develop, update and periodically test a disaster recovery plan that describes in detail the steps required to re-establish the organization's functionality after an unexpected service disruption, such as a fire, flood, or tornado. Effective plans at least address how to accomplish the following objectives:

- Communicate with key officials;
- Re-establish communications with the various district facilities;
- Re-establish transaction processing; and
- Establish a new site or prepare the existing site for reuse.

Effective disaster recovery plans establish roles for key members of the disaster recovery team and outline each team member's specific responsibilities. The goal of the plan is to minimize the ambiguity and confusion that typically occurs when an organization loses the capability to operate normally and establish a clear action plan to resume functionality and ensure that documents and data can be recovered.

R4.8 As a part of its strategic planning process, WWD should develop a technology plan to regularly assess the functionality of its technology and the need to update or alter it. Each division should be included in determining potential technology needs. The director should oversee the planning effort and ensure that WWD examines, at least annually, its use of technology and technology needs. Developing the technology plan in concert with a disaster recovery plan and its current emergency plan would better prepare WWD for unforeseen service interruptions. The director should draw upon the expertise of the TSC, whose responsibility it is to oversee city-wide technology planning and implementation, in developing the WWD technology plan. (See the **technology section** in *Warren Phase 4*) Effective technology planning will better enable WWD to serve its customers in an efficient manner.

Staffing

F4.10 **Table 4-7** compares WDD staffing for the distribution system pipeline maintenance function to peer staffing. Staffing adjustments are made to account for the extra tasks performed by WWD and not performed by the peers. For instance, WWD performs fire hydrant flushing and maintenance, which is performed by the peers' fire departments. WWD was commended by the OEPA for its fire hydrant flushing and maintenance program.

Table 4-7: Distribution System Maintenance Staffing Levels

Item/Function	WWD	LWDD	LCWD	Peer Average	Difference
Leadman	3.0	3.0	4.0	3.5	-0.5
Operator/Assistant Operator	3.0 [1]	5.0	4.0	4.5	-1.5
Laborer	7.0	6.0	8.0	7.0	0.0
Cement Finisher	1.0 [2]	0.0	0.0	0.0	1.0
Garage Mechanic	1.0	0.5	2.0[4]	1.2	-0.2
Total Pipeline Maintenance FTE's	15.0	14.5	18.0	16.2	-1.2
Pipeline Miles	288	384	389	387	-99
Pipeline Miles per FTE	**19**	**26**	**22**	**24**	**-5**
Distribution Gate Valves Repaired/Replaced	13	45	52	49	-36
Fire Hydrants Installed/Replaced	16	60	36	48	-32
Main Breaks/Leaks Repaired	68	N/A[3]	86	86	-18
Sum of Total Tasks Performed	**97**	**105**	**174**	**183**	**-86**
Average Tasks per FTE	***6.5***	***7.2***	***9.7***	***8.4***	***-1.9***

Source: WWD and peer data

[1] Three FTE operator/assistant operator positions have been omitted because these FTEs primarily perform functions not performed by peers, including road safety and repair work and fire hydrant flushing work. The peers use their street departments for road repairs and traffic control during and after repairs. Based on set-up time (two hours each for six person crew = 12 hours), road repair completion time (three hours each for six person crew = 18 hours), and assuming a year with 100 main breaks, estimated additional staffing for road safety and repair work is about 3,000 hours or approximately 2 FTE's. Assuming an average of about one hour to flush each hydrant (including travel time), WDD would require one FTE to complete this function.

[2] Cement finisher also performs laborer functions when necessary.

[3] LCWD break and leak repair data could not be provided.

[4] Two FTE Garage Mechanic positions omitted because LCWD maintains all utility vehicles and equipment. Approximately half the staff time is spent working on vehicles and equipment outside the distribution department.

As illustrated in **Table 4-7**, pipeline miles per FTE and average tasks per FTE are the lowest at WDD, which could be attributed to the following:

- Lack of a technology based infrastructure asset management program and a workorder management program (see **F4.23** and **R4.13**);

- Multiple layers of management through the use of leadmen and foremen on projects (see **F4.16** and **R4.11**), which could cause difficulty in consistently managing work performed by staff;
- Not consistently evaluating staff performance; and
- Lack of an appropriate workorder process for emergency repairs.

In contrast to WDD, LWDD has a workorder process that incorporates an emergency procedure in case of a pipeline break. Upon receiving a repair call, the secretary is responsible for making an immediate assessment of the problem. If it is deemed an emergency, the secretary notifies pipeline maintenance staff with the location and any other information, and also prepares the workorders. Extensive cross-training of workers, like having the secretary complete training and licensing with a commercial drivers license (CDL), enables staff at LWDD to effectively perform in emergency situations. In addition, LWDD has a technical person responsible for computerized mapping and is implementing a CAD system that is expected to provide LWDD a mechanism to track assets and inventory. Full implementation of the computerized program is expected over the next two years.

Computerized tracking of activities provides management with information to establish standards to determine staff proficiency and skills, and to begin to develop standards for future performance. AWWA recognizes mapping software as a very important management tool in the overall maintenance and upkeep of a water distribution system. Knowing the location of pipes and the condition of the infrastructure provides the basis for sound decision making about priorities for projects and related staffing levels. WDD recognizes the need and is working toward tracking the activities completed by staff, thereby improving the performance management of the WDD. According to the distribution supervisor, four filing cabinets of documentation represent the activities completed by the department from a daily activity perspective. Without electronically tracking and reporting this information in an activity based manner, it is difficult to adequately and fully determine operational efficiency.

R4.9 WDD should implement the following to improve pipeline maintenance operational efficiency:

- Develop a cross training program similar to WPD (see **F4.26, F4.27** and **R4.17**);
- Develop a formal process for responding to emergencies;
- Evaluate staff performance periodically;
- Implement a technology-based infrastructure asset management program and a workorder management program (see **R4.13** and **R4.14**)

Upgrading technology to improve work order tracking and asset management should enable WDD to better evaluate staff performance and hold staff accountable for their

activities. Also, use of technology should enable tasks and decision making to be done more efficiently and proactively. For example, effective use of asset management software should enable WDD to identify and replace pipes and equipment as a part of routine work, instead of waiting for a break or failure that requires an emergency response. Furthermore, management should be better able to identify training needs with effective work order tracking and analysis (see **R4.14**). Training will help to eliminate skill deficiencies and develop expectations for future performance. Finally, mapping software should enable more effective and efficient location and repair of pipeline infrastructure (see **R4.15**).

After WDD has implemented these process improvements, it should consider reducing at least one pipeline maintenance FTE, from it's laborer position classification. Reducing one pipeline maintenance FTE would result in WDD maintaining 21 pipeline miles per FTE and performing an average of 6.9 tasks per FTE, which are still below the peers' ratios (see **Table 4-7**).

Financial Implication: Assuming that 1.0 FTE laborer position is reduced, WDD would save approximately $40,000 annually in salary and benefit costs.

F4.11 **Table 4-8** compares WDD staffing for the meter maintenance and installation function to peer staffing for this function. Meter maintenance staffs at WDD, EWD and LCWD perform meter testing, meter repair, meter installation and backflow prevention.

Table 4-8: Comparison of Meter Maintenance Staffing Levels

Category Comparison	WDD[1]	EWD	LCWD	Peer Average	Difference
Water Meter Maintenance Staffing	6.0	4.0	7.0	5.5	-0.5
Total System Water Meters	24,734	18,602	23,000	20,801	3,993
Water Meters per Repair Staff FTE	**4,122**	**4,651**	**3,286**	**3,782**	**340**

Source: WWD and peer departments.
Note: LWDD outsources a majority of meter maintenance functions, so LWDD is excluded from these comparisons.
[1]WDD staffing numbers include 3 FTEs from WDD and 3 FTEs from the water services division.

As **Table 4-8** shows, WDD maintains more water meters per FTE than the peer average while performing similar essential functions. EWD has a higher ratio of water meters per FTE than WDD, which can be primarily attributed to EWD's use of outside contractors for backflow prevention installation and meter testing. As a result, meter maintenance staffing levels at WDD appear to be adequate.

F4.12 **Table 4-9** compares WDD staffing for engineering to LCWD. Both WWD and LCWD E/D staff perform inspections, assess pressure problems for customers, update engineering drawings and locate valves.

Table 4-9: Engineering and Drafting (E/D) Staffing Levels

Category Comparison	WDD[1]	LCWD
Engineering and Drafting Staffing	4	4
Total System Water Meters	24,734	23,000
Water Meters per E/D FTE	**6,184**	**3,896**
Total Pipeline Miles	288	384
Pipeline Miles per E/D FTE	**72**	**96**

Source: WWD and peer departments.
Note: LWDD & EWD data unavailable because this function is handled by the engineering department
[1] Reflects staff currently working in water service section and supervised by the water service supervisor.

As **Table 4-9** shows, water meters and pipeline miles per FTE at WDD are lower than LCWD. However, WWD's E/D staff performs additional functions not performed by LCWD staff. Specifically, all OEPA mandated chlorine tests are done by E/D staff certified to perform the tests. The sample results are given to the water services supervisor in the water services division that is currently part of utilities billing. The water services supervisor gives the sample results to the water treatment lab supervisor who files the required EPA reports. This function is completed by the staff in the LCWD purification division. Therefore, WWD E/D staffing appears adequate. In addition, having this function in the water department provides an additional field supervisor or inspector after and during a meter installation. Using E/D staff to conduct sampling activities allows for an appropriate separation of duties by enabling WDD to verify and confirm the operators' results in the purification plant.

F4.13 WPD purification operations consist of ten staff members that perform system monitoring, including eight operator and assistant operator FTEs and two leader/operator FTEs. WPD requires two FTEs per shift to perform necessary system monitoring activities for plant operations. The number of shifts that one employee can cover in one week, without using overtime, is five. Therefore, the minimum number of employees needed to effectively cover twenty-one shifts, three shifts per day over seven days, is just over eight FTEs. However, if leave time is taken into account, approximately ten FTEs are required to cover twenty-one shifts. Based on the number of shifts, WPD purification staffing levels are adequate.

Table 4-10 compares purification staffing levels at WPD to peer water departments in terms of full-time equivalent employees (FTEs).

Table 4-10: Purification Operations Comparison

Position/Function	WPD	EWD	LWDD	LCWD	Peer Average	Difference
Operator/Assistant Operator	10.0	9.0	8.0	10.0	9.0	1.0
Customer Accounts	24,734	18,602	25,350	23,000	22,317	2,417
Customers Per Purification Staff FTE	**2,473**	**2,067**	**3,169**	**2,300**	**2,480**	**-7**

Source: WWD and peers

Table 4-10 indicates that WPD has the second highest number of customers per FTE as compared to the peers. However, LWDD's ratio of customers per FTE is 28 percent higher than WPD, which can primarily be attributed to its cross-training and automated purification process (see **F4.14** and **R4.10**).

F4.14 **Table 4-11** compares WPD staffing for the plant maintenance function with peer staffing for this function.

Table 4-11: Comparison of Plant Maintenance Staffing Levels

Position/Function	WPD	EWD	LWWD	LCWD	Peer Average	Difference
Plant Mechanic	8	8	4	7	6.3	1.7
Electrician	1	0	0	0	0	1
Total Staff	**9**	**8**	**4**	**7**	**6.3**	**2.7**
Customer Accounts	24,734	18,602	25,350	23,000	22,317	2,417
Accounts per FTE	**2,748**	**2,325**	**6,338**	**3,286**	**3,542**	**-794**

Source: WWD and peer departments.

Table 4-11 illustrates that WPD has one more plant mechanic than the peer average and employs an electrician. In contrast to WPD, the peers outsource electrical functions. The WPD electrician maintains an appropriate certification to perform electrical duties and is also cross-trained to perform needed maintenance duties. Employing and cross-training an electrician allows WPD to quickly address and resolve electrical problems while ensuring that the electrician remains productive when there are no electrical problems to address. [D5.2]

Although **Table 4-11** indicates that WPD has the second lowest number of accounts per FTE, WPD and peers do not maintain workload data in an accessible fashion to fully evaluate the maintenance function. Nonetheless, LWDD has a significantly higher number of customer accounts per FTE because it uses cross training and technological processes. The operators (see **F4.13**) are all cross trained to perform maintenance functions within the plant as needed and do so regularly. In addition, LWDD has implemented an automated purification process, which has streamlined and reduced the

operator workload, allowing the operators to perform maintenance activities. LWDD further plans to reorganize the maintenance function into a pool that has staff with the cross-functional expertise to work in sewer maintenance, distribution system maintenance and purification plant maintenance.

Plant modifications are currently being completed at WPD as part of the five year expansion project, which will result in additional functions being completed by existing maintenance personnel while also helping WPD implement an automated purification process. The engineering firm responsible for the design of the expansion project is also compiling a maintenance and operations plan for all the activities that will be required of the maintenance personnel. Furthermore, WPD maintains its pump station, whereas the peers use distribution staff to maintain their pump stations. Without any backup supply source, WPD considers maintenance at the pump station a high priority to the security of the system. Additionally, WPD implements weekly backup system checks during which the power supply is shut down and a backup generator is put online to run the plant. In contrast, LWDD tries to check their backup system once a month, but indicated that this schedule is difficult to keep.

Based on **Table 4-11**, performing electrical functions internally and the frequent system back-ups conducted by WPD, it appears to be adequately staffed with plant maintenance personnel. However, the current expansion project would have an impact on future plant maintenance staffing levels.

R4.10 WPD should track, compile, and analyze data on the assignment and completion of maintenance work orders in an electronic format (see **R4.14**). At a minimum, WPD should track maintenance performed and the time required for the work to effectively evaluate workload and activities performed as part of the operations and maintenance of the facility. Using the results to identify training activities should help keep all staff current with the latest methods for performing maintenance activities as well as determining the top performing staff members within the organization. Furthermore, this process would allow management to assess critical procedures within the plant and develop and use measurable outcomes to determine how efficiently they are handled within the organization.

As the expansion project nears completion, WPD should use the engineering firm's maintenance and operations plan and compiled maintenance data to fully assess the impact on current plant maintenance staffing levels and determine necessary staffing changes. For instance, WPD should consider the operational and staffing impact of cross-training certain staff to perform maintenance activities and pooling maintenance functions, similar to LWDD.

F4.15 WPD laboratory staff has appropriate OEPA chemical testing certification. **Table 4-12** compares WWD laboratory staffing and testing with the peers.

Table 4-12: Comparison of Laboratory Staffing Levels

Position/Function	WWD	EWD	LCWD	Peer Average
Laboratory Staff	2.0	1.5	3.0	2.3
Annual Tests Performed	12,936	11,057	14,560	12,809
Tests Per FTE	6,468	7,371	4,853	5,569
Tests Per Hour Per FTE[1]	**3.1**	**3.5**	**2.2**	**2.6**

Source: WWD and peers, excluding LWDD because testing information could not be provided.
[1]Annual number of tests per FTE/2080 hours

As illustrated by **Table 4-12**, the number of hourly tests conducted per FTE at WPD is slightly higher than the peer average, indicating appropriate staffing levels. In addition, the AWWA standards state that six tests should be able to be performed per hour, when taking into account all tests performed by system monitoring staff. Shift leaders and operators at WPD also perform tests for chlorine and turbidity, amounting to an additional 48,168 tests performed by an additional 3.0 FTE at WPD. Based on these additional tests (48,168), the number of tests performed by laboratory staff (12,936) and the total number of FTEs conducting all types of tests (5.0 FTEs), the number of hourly tests performed per FTE is 5.9 at WWD, thus meeting the AWWA standard. Additionally, the operations supervisor, assistant chemist, and section leader are trained and certified to complete all chemical and bacteriological tests. The cross trained staff provide testing backup in the event of absence or vacations.

F4.16 **Table 4-13** presents supervisory and support staffing levels at WWD and peer water departments.

Table 4-13: Supervisory and Support Staffing Level Comparison

Position/Function	WWD	EWD	LWDD	LCWD	Peer Average	Difference
Water Purification						
Water Plant Superintendent	1.0	1.0	1.0	1.0	1.0	0.0
Operations Supervisor	1.0	1.0	1.0	1.0	1.0	0.0
Maintenance Supervisor	1.0	1.5	1.0	N/A [2]	1.2	-0.2
Total Purification Supervisors	**3.0**	**3.5**	**3.0**	**2.0**	**2.8**	**0.2**
Hourly Staff	20.0	18.5	18.0	22.0	19.5	0.5
Staff per Supervisor	*6.7*	*6.3*	*6.0*	*11.0*	*7.7*	*1.0*
Water Distribution						
Distribution Superintendent	1.0	N/A [1]	1.0	1.0	1.0	1.0
Distribution Supervisor	1.0	N/A [1]	1.0	1.0	0.5	1.0
Foreman	3.0	N/A [1]	1.0	N/A [3]	1.0	0.5
Total Distribution Supervisors	**5.0**	N/A [1]	**3.0**	**2.0**	**2.5**	**2.5**
Hourly Staff	21.0	N/A [1]	16.5	29.0[1]	22.8	1.8
Staff per Supervisor	*4.2*	N/A [1]	*5.5*	*14.5*	*10.0*	*5.8*
Support Staff						
Number of FTEs	**0.0**	N/A [1]	**2.0**	**1.0**	**1.5**	**-1.5**
Staff per Support FTEs	*N/A*	N/A [1]	*21.3*	*57*	*39*	
Summary						
Customer Accounts	24,734	N/A [1]	25,350	23,000	24,175	559
Total Supervisors	**8.0**	N/A [1]	**6.0**	**4.0**	**5.0**	**3.0**
Total Support Staff and Supervisors (S&S)	**8.0**	N/A [1]	**8.0**	**5.0**	**6.5**	**1.5**
Total Accounts per S&S	3,091	N/A [1]	3,168	4,600	3,719	-628

Source: WWD and peer data
[1] Certain data could not be provided and verified from EWD
[2] Operations supervisor also functions as the maintenance supervisor at LCWD.
[3] Crew leaders at LCWD handle foremen job functions.

Table 4-13 shows that WPD has second highest staff to supervisor ratio. LCWD has achieved a higher span of control by consolidating the operations and maintenance supervisory functions in one position. However, WPD is currently expanding and modifying plant operations (see **F4.14**), which would make it difficult to combine maintenance and operations management responsibilities. WPD also conducts frequent plant shutdowns and system backups to prepare for potential emergencies (see **F4.14**).

WDD has the second lowest ratio of staff to supervisors because WDD supervisors have the additional responsibility of performing administrative functions and manually completing workorders. However, peers use administrative staff and computers extensively to complete workorders. Instead of having each supervisor perform daily administrative functions, E/D staff rotate office responsibilities (e.g., answering customer calls and coordinating fieldwork) on a regular basis. This serves as adequate cross training and ensures back-up for all E/D technical and administrative functions. In addition, peers rely on crew leaders or leadmen to directly oversee projects, while WDD

uses leadmen and foremen. Crew leaders at LCWD handle all of the onsite duties that are being done by the foremen at WDD. WDD and peers maintain radio communication with all vehicles in their fleet. If problems arise, the first call goes to the distribution superintendent or the distribution supervisor. As a result, the foreman oversight function, other than for administrative activities, becomes redundant.

R4 .11 WDD should consider reducing two foremen positions. The result of efficiency improvements of staff due to training, as well as operational improvements realized by installing and using new technology (see **R4.17** and **R4.14**), should enable WDD to effectively distribute work to cross-trained staff and produce overall improvement in the operations. Increasing crew leader responsibility and accountability for administrative duties and authority will be an important part in reducing operational redundancy and the supervisory burden (see **R4.14**). Additional training should be provided to crew leaders for skill and competency development.

In addition, WDD should train a current foreman, cross-train and rotate administrative responsibilities, or hire an administrative assistant to centralize administrative functions and facilitate the flow and documentation of workorder information. Training a current foreman or periodically rotating administrative responsibilities among the foremen, similar to E/D, would provide additional assistance with operations functions during down time or emergency situations, thereby avoiding the need to call in staff not on duty. Also, WDD would avoid the time and effort involved in the hiring process for a new staff person. However, hiring an administrative assistant would be the least expensive option in terms of salary and could provide someone with more advanced administrative and clerical skills.

Financial Implication: WDD would save approximately $105,000 annually in salaries and benefits by reducing two foreman positions. Hiring an administrative assistant would cost approximately $45,000 annually in salaries and benefits. Therefore, the net financial impact of this recommendation is a cost savings of approximately $60,000 annually.

Overtime and Leave Usage

F4.17 WWD employees work less overtime, on average, than peer departments. **Table 4-14** compares the average overtime and compensatory time earned per employee for WWD and peer departments.

Table 4-14: Average Overtime and Compensatory Time (Hours) per Employee, FY 2000

	WWD	EWD	LCWD	Peer Average	Difference
Distribution Staff	118	117	183	150.0	(32.0)
Purification Staff	139	275	89	182.0	(43.0)
Department Average	128	196	136	166.0	(38.0)

Source: WWD and peers

Table 4-14 reveals that WWD staff earned about 38 hours less overtime and compensatory hours per employee than the peer average, mainly attributed to WWD not being understaffed within its divisions (see **F4.10 and F4.16**). However, leave use also impacts the amount of overtime (see **F4.18**).

F4.18 WWD would benefit from taking steps to reduce the amount of sick leave used by employees. **Table 4-15** compares the average sick and vacation leave used per employee for WWD and peer departments.

Table 4-15: Average Leave Used (Hours) per Employee, FY 2000

Type Of Leave	WWD	EWD	LCWD	Peer Average	Difference
Vacation	143	208	128	168.0	(25.0)
Sick	102	108	115	111.5	(9.5)
Total Leave	**245**	**316**	**243**	**279.5**	**(34.5)**

Source: WWD and Peers

Table 4-15 shows that WWD employees used 143 hours of vacation (3.6 weeks) and 102 hours of sick leave (2.6 weeks). WWD averaged 34.5 hours less leave time per employee than the peer average. However, WWD sick leave usage is high in comparison to a statewide benchmark standard. The Ohio Department of Administrative Services (DAS) reported that state bargaining unit employees used an average of 8 days of sick leave per year compared to WWD average of 13 days. Based on an average employee wage of $17 per hour, the payment of sick leave cost WWD approximately $99,000 in lost productivity.

Peers have policies and procedures in place to enforce sick leave use. For example, Lorain requires staff to fill out a form explaining the reason for sick leave after they have returned to work. WWD maintains a labor agreement that includes requiring a doctor's excuse after three days of continuous sick time. WWD also has an incentive plan to turn in unused sick time and reduce the long term burden on the department. Although WWD has an excuse policy and an incentive, it does not analyze sick leave on a consistent basis and has not enacted additional policies to control sick leave, such as developing a recognition program, using uniform sick leave forms, and requiring sick leave use to be formally reviewed on all employee performance evaluations.

R4.12 WWD should work with the human resources department (HR) to develop additional sick leave policies and ensure they are aligned with city-wide policies and labor agreements. Policies that should be considered to help reduce sick leave usage include:

- Creating recognition programs or other incentives to reward staff for good attendance;
- Requiring all employees to complete a standardized sick leave explanation form;

- Requiring sick leave use to be a component of the employee's evaluation; and
- Analyzing sick leave use trends to identify potential abuse and disciplining employees abusing sick leave, either formally or informally, such as by discussing apparent abuse with the employee or days off without pay.

Financial Implication: If WWD could reduce the amount of sick leave to the statewide average for state bargaining unit employees of about eight days per employee, WWD could realize an annual cost savings of approximately $37,000, assuming an average wage of $17 per hour. This cost savings should be realized through a reduction in overtime costs. Better management of sick leave and improved asset management and planning practices should reduce the need to use overtime (see **operations and maintenance** and **strategic and financial planning** subsections for recommendations on planning and asset management).

Operations and Maintenance

F4.19 The AWWA outlines five key steps to optimizing water quality. These steps include the following:

1. The first step is to understand the distribution system and define its problems. This can be accomplished by analyzing water quality data, reports on system condition, inspection and maintenance records, and operating data. The result of this analysis should be an asset file that describes the physical facilities and their intended uses, including piping, pumps, storage facilities, line and control valves, hydrants, and backflow prevention devices. Water quality problems should be classified as microbiological, chemical/physical, or aesthetic and the causes should be identified. It is important to determine whether the causes of water quality problems are related to interactions within the bulk water, from piping materials, silt/sediment, or from direct chemical/microbial intrusion into the distribution system.

   WWD does not maintain inventory or system condition data in a format that is usable for effective analysis. Without usable data and effective tracking of problems and work completed, WWD is not able to systematically analyze problems for their cause (see **F4.22** and **R4.13**).

2. The second step is to set water quality goals and establish performance objectives. Often, water quality goals should go well beyond merely complying with regulatory requirements. For example, a utility may wish to establish a threshold for Heterotrophic Plate Count (HPC) as an early indicator of microbiological degradation. It is important to establish specific goals for flushing the distribution system. Methods for achieving the goals should address the type of flushing, target velocity, and monitoring.

WWD seeks to meet OEPA standards for water quality, but does not have other goals or performance measures that it uses to assess its operations (see **F4.5** and **R4.5**). WWD does have a formalized flushing program, which the OEPA has commended (see **F4.11**). Also, WWD has demonstrated compliance with OEPA standards (see **F4.2**). Furthermore, WWD is currently working closely with the OEPA on the Surface Water Assessment Program to deal with any nutrients or contaminants that may be in its source water.

3. Step three involves taking the information from the assessment and goal-setting steps and selecting methods that will optimize the quality of the water in the distribution system. Depending on the type of water quality problem, the most appropriate solution may require changes in operations, maintenance, system engineering or management practices. Water quality deterioration within the distribution system is most often a result of interactions between the bulk water and pipe materials, and bulk water chemicals.

   Since WWD does not maintain and track data effectively and has not established formal goals and performance measures, it can not implement this step (see **F4.5** and **R4.5**).

4. Step four is to implement the chosen methods and monitor performance.

   WWD does not monitor performance because it has not performed the first two steps in a systematic or formalized fashion (see **F4.5** and **R4.5**).

5. The last step is to develop standard operating procedures for effective methods and practices.

   Although WPD does have procedures for its plant maintenance activities (see **F4.27** and **C4.1**), WDD has not developed standard operating procedures using this process (see **F4.25** and **R4.16**).

F4.20 Benchmark criteria suggest WWD could reduce the number of water main breaks that occur annually. **Table 4-16** presents six years of data on the number of breaks for each of the WWD's four service zones.

Table 4-16: Water Main Breaks by Zone, 1996-2001

Year	Northwest	Northeast	Southwest	Southeast	Other	Total
1996	18	14	15	15	1	63
1997	13	19	11	15	11	69
1998	13	16	17	16	13	75
1999	26	9	21	7	1	64
2000	26	23	18	14	10	91
2001	9	10	15	10	24	68
Total	**105**	**91**	**97**	**77**	**60**	**430**
Average	*18*	*15*	*16*	*13*	*10*	*72*

Source: Warren Utility Services Annual Reports 1996-2001

Table 4-16 reveals that the average number of water main breaks in the WWD distribution system over the six-year period was 72 per year. WWD had a high year of 91 breaks in 2000 and a low year of 63 breaks in 1996. The significant decrease in water main breaks from 2000 to 2001 can be attributed to WWD reducing the system wide water pressure (see **F4.21**). The most common causes of breaks are weather and ground movement followed by damage caused by corrosive soil, construction activity, or aging. Cities experiencing substantial population growth are especially likely to sustain a large number of water main failures. The AWWA national average number of water main failures per year is 229 per 1,000 miles of pipe, according to a nationwide study or about 23 per 100 miles of pipe. However, large cities and cities in the northeast typically have fewer breaks per 1,000 miles than smaller cities and cities in the other regions. WWD averaged approximately 26 breaks per 100 miles of pipe over the five-year period, putting it slightly above national average (see **R4.13**).

F4.21 **Table 4-17** presents data on the amount of water pumped and accounted for by WWD.

Table 4-17: Unaccounted for Water

Year	Water Pumped (Gallons)	Water Sold (Gallons)	Unaccounted for Water (Gallons)	Water Sold	Accounted For Water	Unaccounted For Water
2001	5,176,684,000	4,780,518,140	327,684,097	92.3%	94.0%	6.3%
2000	5,239,270,000	4,098,044,412	940,508,375	78.2%	82.0%	18.0%
1999	5,304,235,000	4,183,405,826	874,296,380	78.9%	83.5%	16.5%
1998	5,069,924,000	3,793,931,787	887,128,605	74.8%	82.7%	17.5%
1997	5,134,226,000	3,817,833,104	825,681,130	74.4%	82.0%	16.1%
Average	5,184,867,800	4,134,746,654	771,059,717	79.7%	84.9%	14.9%

Source: WWD annual reports

Over the past five years, about 15 percent or more than 770 million gallons of WWD's water was unaccounted for. According to AWWA best practices, cities are able to

achieve unaccounted for water rates of less than 10 percent to as low as three or four percent. WWD showed dramatic improvement in its unaccounted for water percentage from 2000 to 2001, improving by nearly 12 percent. According to the director, WWD reduced unaccounted for water by reducing the system-wide pressure in 2001. Prior to the pressure change, WWD operated with approximately 15 percent unaccounted for water. Although WWD has reduced the unaccounted for water to 6.3 percent, AWWA has identified municipalities that have further reduced unaccounted for water. For instance, Rockville, Maryland and Irving, Texas reported unaccounted water of 4.4 percent and 3.24 percent, respectively.

F4.22 WDD does not have a detailed listing of deferred maintenance projects or an estimate of the total cost of these projects. Therefore, WWD cannot effectively predict replacement needs, prioritize maintenance efforts, or support an on-going capital improvement planning process. A point of diminishing returns eventually occurs where it becomes more cost effective to replace an asset rather than continuing to maintain it. This point is most effectively determined through a regular condition assessment and maintenance program, which includes a systematic analysis of the history of repairs to assets with a decision-making model that takes into account the various cost factors of repair and replacement. Planning with accurate data improves the likelihood of effective decisions.

WWD has numerous assets with a limited life including transmission pipes, water storage tanks, pumps, chemical storage buildings, treatment and filtering systems, vehicles, and other capital investments. Determining the actual useful life of any of these assets depends on a wide variety of factors. For instance, the useful life of a water main depends on the materials and quality of pipe construction, soil conditions, temperature fluctuations, depth at which the pipe is buried, and activities occurring in the general area, such as rail traffic. AWWA determined factors to consider when deciding whether not to replace or repair a pipe, including cost, structural condition of the pipe, disruption of service, and other relevant factors. The lack of monitoring and tracking for deferred maintenance projects and other data (see **F4.23** and **R4.15**) inhibits WWD's ability to predict maintenance needs, prioritize maintenance activities, and efficiently deploy resources. This also limits WWD's ability to effectively identify and communicate to management, the mayor and city council the information they need to make budgetary capital decisions.

The City maintains a license for CarteGraph software. Cartegraph also offers a water module that could be used by WWD to improve its asset management. CarteGraph software contains applications that facilitate the collection, inventory, inspection, analysis, and mapping of asset and work management information. The software can also archive asset-specific data, photographs, maps, maintenance history, and inspections. CarteGraph software can be used to maintain an inventory of assets, help an organization become Government Accounting Standards Board (GASB) statement 34 compliant, help

meet national pollutant discharge elimination system (NPDES) requirements, improve workflow management from request to completion, and facilitate budget planning.

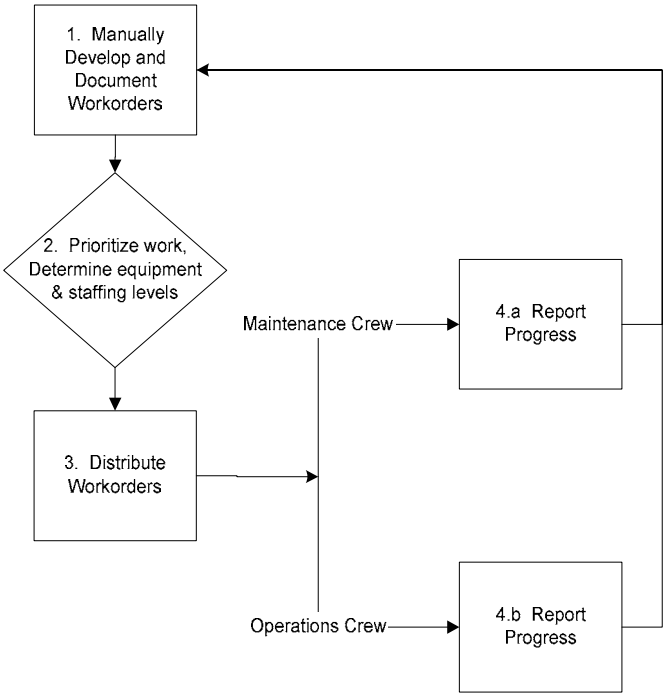
R4.13 WDD should improve its maintenance activities with better long term planning (see **F4.19**), improved tracking of deferred maintenance projects and related costs, and by performing a comprehensive inventory assessment. WDD should start by developing a comprehensive inventory of all equipment, which will allow for physical segregation, security of inventory, and prioritization of responsibilities. Collecting project specific data will enable systematic analysis that can improve decision-making using recommended software. An improved preventative maintenance program will enable WDD to replace or maintain components at such intervals that the total maintenance costs are minimized. WDD should develop policies to support replacement decisions, address deferred maintenance projects, and develop reliable assessments of the remaining useful life of its assets. Pipe replacement and repair programs should always be carefully planned as a part of a capital improvement planning process (see **R4.6**).

Maintenance records and histories of condition assessments should be maintained for the entire inventory of assets in a centralized system that permits easy tracking and analysis. WDD should include in the system a listing and condition assessment of all major assets and their specifications, a formal work order system with time and materials estimates, a record of actual times and materials consumed, schedules for future work activities, and other pertinent data. Cost-benefit modeling techniques should be implemented to help management decide what point in time is the most beneficial to replace an asset. Such modeling techniques and the data to support them can most effectively be facilitated by computer-based maintenance management systems. Use of PM software would facilitate the effective implementation of this recommendation. Improving its PM program should improve WDD's ability to minimize costs, maximize available resources, and improve the ability to efficiently and effectively achieve its mission.

Financial Implication: An initial time investment may be required to complete the necessary inventory assessment. For example, WDD may need temporary clerical support services to assist with assigning identification numbers to infrastructure (i.e., bar codes) and entering all infrastructure data into a PM system. The cost for six months of work at $5.50 per hour would be approximately $7,900. Administrative and E/D staff could also be used to enter this data (see **R4.11**, **R4.14** and **R4.15**). Setting a goal of an additional one percent reduction in unaccounted for water would be consistent with best practices reported in *Municipal Benchmarks* and within recognizable standards set by the AWWA. If WWD could reduce unaccounted for water by one percent through improved asset management, it could achieve a savings of approximately $55,000 annually.

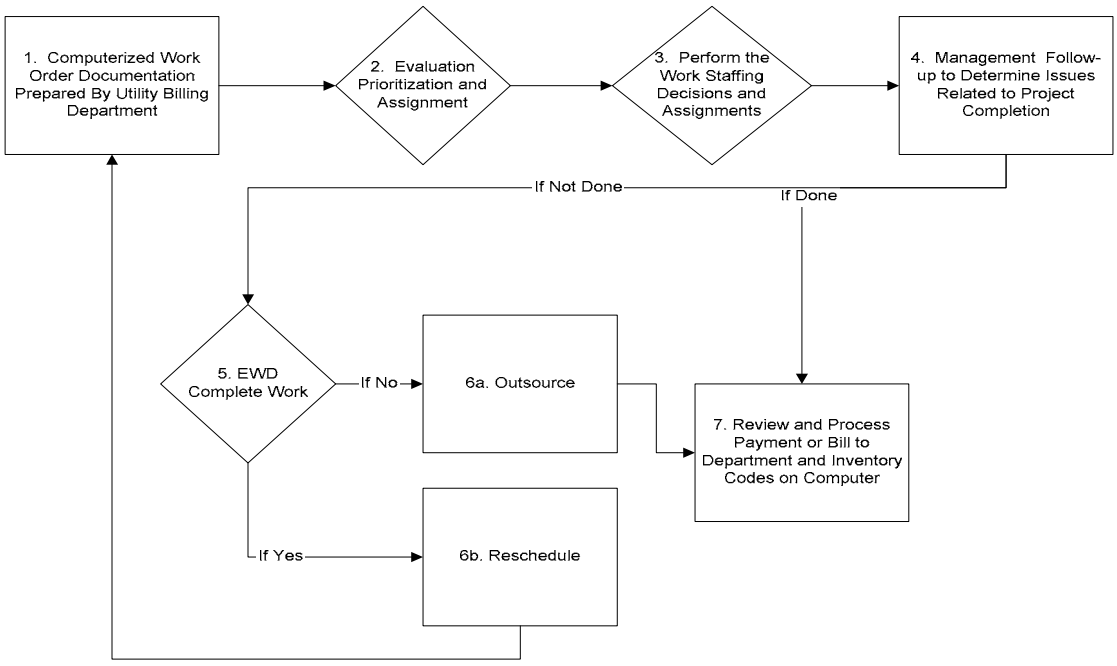
F4.23 **Chart 4-4** depicts the handwritten work order process used by WWD and **Chart 4-5** depicts the technology based workorder process being used by EWD.

Chart 4-4: Work Order Process (WWD)



Source: WDD

Chart 4-5: Work Order Process (EWD)



WDD staff responsible for manual steps 1 to 3 in **Chart 4-4** includes two supervisors and three foremen. **Chart 4-5** documents a technology based approach to workorder processing used by EWD. While the steps in **Chart 4-5** for processing workorders are similar to WWD, the staff required to complete the process is 40 percent lower at EWD (see **F4.16** and **R4.11**). Steps 1-3 are completed by three staff including two supervisors and an administrative staff person at EWD.

As illustrated in **Chart 4-4**, the supervisory personnel start each day by reviewing the previous day's completion of work orders as well as any new documented main breaks or requests for service. The service requests are the then prioritized and organized to determine their level of urgency and the necessary equipment and staffing required to complete each task. Work order documents are handwritten and distributed to the appropriate crews whose progress is documented and forwarded back to the manager for review. WWD maintains hard copies of work orders on file, but this data is not systematically or regularly compiled and analyzed to facilitate more effective management of the process and providing ongoing information for decision-making. **Chart 4-5** illustrates additional processes in steps 5 to 7 that improve operational efficiency by offering a decision process for outsourcing work and a tracking of inventory, equipment and materials being used.

WWD uses various forms and manuals to guide and track maintenance activities. Maintenance requirements for each piece of equipment are in each individual manufacturer's manual. Records of work orders completed and maintenance performed are maintained in various file cabinets. While many field maintenance data sources are available, they are in various forms and locations, and are not integrated into a formal assessment of work actions. The lack of centralized data collection and systematic analysis of the data limits WWD's ability to optimize its maintenance activities.

According to AWWA, high performing water utilities use a work order management software system to assign routine work and track work orders. These systems can also be used to track completion time, cost and other key data to generate performance statistics for evaluating organizational and individual staff performance, and for identifying training needs and areas for improvement in organizational processes. WPC currently uses such a system to facilitate is maintenance work. Many software packages exist, including one from CarteGraph, that would enable both work order tracking and analysis of inventory condition data for making replacement versus repair decisions. Typically, training for individuals to get this type of system up and running is approximately $1,000 per person and available through a variety of sources, like the software supplier or authorized training centers.

R4.14 WWD should purchase and use software for work order tracking and automatic assignment of routine maintenance. The software platform should provide a scalable

solution. Implementing this recommendation should enable WWD to accomplish the following:

- Assess staff performance and training needs;
- Help identify areas for improvement in completing maintenance work;
- Manage workflow more efficiently from request to completion; and
- Facilitate budget planning.

The system should also permit the collection and analysis of asset management data (see **R4.13**) so that work order information can be used to automatically update inventory and condition data based upon work done. Using the results of the tracking as the basis for training activities should keep all staff current with the latest methods for performing maintenance activities, as well as determining the top performing staff members within the organization. Investments in technical applications often pay for themselves in cost savings and operational improvements. WWD should select a system as a part of an overall effort to assess its information technology needs.

Financial Implication: Software for work order tracking and automatic assignment of routine maintenance would be approximately $5,000 in one-time software costs, in addition to training staff and development costs of approximately $2,000 annually for two people ($1,000 per person).

F4.24 WWD does not use a comprehensive infrastructure mapping application. Infrastructure mapping and maintaining an asset inventory are important tools for developing and maintaining an infrastructure condition assessment and can facilitate completion of pipeline maintenance tasks by providing more precise locational information. Operational data, when compiled and stored electronically, offers management an opportunity to analyze asset condition data to make decisions regarding repair or replacement of infrastructure.

AutoCAD is a computerized engineering drawing package tailored for engineering and physical design. The City engineering (EG) and water pollution control (WPC) divisions use AutoCAD software for their mapping while WWD uses hand drawn maps. AutoCAD mapping software is linked to CarteGraph asset management software offering a combination of maps and data creating information displayed in an easy to understand and comprehensive manner. Asset symbols on a map with links to corresponding database records provide the ability to analyze data based on geographic information, allowing patterns to emerge on a map that may not be as obvious in a spreadsheet or other data record, especially for those unfamiliar with infrastructure information such as citizens or city council. Engineering and drafting staff in the water services division perform the mapping and project drawing functions manually for WWD.

Trumbull County has spent $2.1 million to construct a GIS database, much of which can be used by the City. The City already has a CarteGraph computer platform in place, and EG and WPC use CarteGraph asset management models with AutoCAD to map infrastructure. However, AutoCAD must be specially programmed to interface with CarteGraph. Other engineering and asset management software can automatically interface with CarteGraph asset management modules without any special programming. Training for individuals to implement and operationalize this system could be approximately $1,000 per person.

R4.15 WWD should consider an AutoCad or GIS software mapping solution to provide integration of mapping data to the recommended work order and asset management package (see **R4.13**). Integration maximizes the usefulness and availability of accurate information and reduces the need for redrawing maps and plans because of the easily copied electronic format. WWD should work with the technology steering committee (TSC) to develop the technology use plan that should include the consideration of a computer-based asset management system in conjunction with the mapping capabilities of the infrastructure mapping application. WWD should use, wherever possible, existing geographic information to populate a database and build information that would also incorporate asset management information. In addition, WWD should consider the needs for a computerized work order tracking system to perform the management of work order function (see **R4.14**). Some of the County data may need to be configured to fit WWD's dataset. WWD should work with the engineering department to coordinate the initial data entry. With some training, E/D staff from WWD should be capable of completing the data entry. In addition, seasonal (see **R4.13**) or administrative staff (see **R4.11**) could provide further assistance.

Financial Implication: Current version of mapping software costs approximately $7,500 and the cost of seat licenses for three staff would be approximately $9,000 ($3,000 per seat license), which includes upgrades and support. Therefore, total one-time costs would be about $16,500. In addition, training costs would be approximately $3,000 annually for three employees ($1,000 per person). WWD should assess the need for additional annual training after the initial training.

F4.25 According to the water distribution supervisor, an operations and maintenance manual is not maintained by WDD. However, WPD maintains a thoroughly documented operations and maintenance manual that enables all staff to reference the operational requirements at the purification facility. In the event that staff is unsure of a process, the manual is cross referenced at each plant function/maintenance activity with a numbered tag that correlates to a procedure listed in the manual. WPD finds the manual very useful, especially during the backup power supply testing.

APWA recommends departments maintain an operations and maintenance manual to enable employees and management to reference and document processes and activities.

The distribution supervisor indicated that job descriptions have the basic job functions outlined and most of the functions are learned on the job. WDD employee training and development is tracked by the distribution department job site employees in the union, consistent with the suggestion by Ohio Department of Commerce, Division of Occupational Safety and Health (DOSH). Peer water distribution departments maintain operations and training manuals in the superintendent's office and provide information from said manuals for new hires as part of standard practice. WDD staff may be unaware of policies and procedures if they are not written.

R4.16 WDD should create and maintain an operation and maintenance manual describing the functions and most common activities undertaken by each position. In addition, emergency processes detailed in written form provide documentation for new staff to reference during an emergency situation, thereby reducing the likelihood of mistakes. The supervisor should maintain a copy in the distribution department office for reference and update the manual as necessary.

Training and Certification

F4.26 WWD could improve its training program by ensuring each staff person has an annual professional development plan, as recommend by the American Society for Training and Development. Standards for staff training developed by ASTD indicate that 1.81 percent of payroll should be used as a benchmark for training expenses in an organization. While WWD management ensures employees have proper qualifications, staff training needs are not formally assessed outside of certification requirements. Also, WWD does not have a formal, systematic, training program for management and staff. The AWWA strongly encourages water utilities to adopt personnel policies that endorse competence-based training and career development opportunities through attendance at educational, technical and scientific conferences, and other continuing education programs. Competence-based training targets the individual job criteria and qualifications that have been identified by the utility as important.

WWD appropriated $2,000 in the 2003 budget for training. However, nothing was spent for training in 2000 and only $78 was spent on training in 2001. According to the director, training is an area of continuous improvement and a priority. In addition, OEPA has received an application from WWD to perform training in-house to reduce travel costs associated with sending staff to training. The director's active involvement in AWWA has reinforced his commitment to training activities, including a train the trainer program that will benefit WWD as well as neighboring water utilities. The AWWA recommends that personnel development provisions authorize time and adequate funding for training of personnel at all levels of the water utility's operation. Because of the responsibility that community water systems have for the public health and safety of their customers, it is essential that all employees of water utilities acquire the specialized

knowledge and skills needed for the competent and efficient operation of its system and facilities. ASTD notes that staff development programs also can improve employee satisfaction, retention of employees and reduced staffing levels due to increased proficiency (see **R4.9**).

R4.17 WWD should adopt a formal training program. Training and development are vital to an effective learning organization. Continuous learning should be treated as an investment rather than as a cost to be minimized. WWD should focus on how best to invest in its employees to achieve high performance of its mission and strategic goals. To achieve this, WWD should place particular emphasis on the training and development of its employees to ensure that they have the competencies, knowledge, skills, abilities, and behaviors needed to successfully perform and contribute to WWD's mission-critical activities. To design and implement effective training programs, WWD should:

- Identify the competencies needed to achieve WWD's specific mission and goals and measure the extent to which their employees exhibit those competencies;
- Identify training and development needs to be addressed;
- Evaluate the extent to which WWD's programs are actually increasing employees' individual competencies and individual and overall organization performance levels; and
- Formally evaluate employees (see the **human resources section** in the *City of Warren Phase IV* performance audit report*).*

WWD should work with human resources in developing its program and performance evaluations and ensure they are aligned with general city-wide policy. Furthermore, a file with employee training completion and certification information should be kept on each employee for ready reference and future training needs assessment. WDD should coordinate this with the HR department. According to the director, a training program was approved during this performance audit, to help staff understand and use key technology.

Financial Implication: Based on WWD's total payroll ($2.09 million) and the 1999 American Society for Training and Development (ASTD) report indicating average training expenditures of 1.81 percent of total payroll, WWD should spend about $37,000 annually to implement a formal training program.

F4.27 WPD cross-trains staff to perform various functions. Staff schedules are rotated for cross training purposes and require different individuals to follow procedures defined by the maintenance procedures manual. Rotating responsibilities keeps all staff capable of performing the necessary functions for each of the activities in the plant. For example, during the plant shutdown and diesel backup check that occurs weekly, facility operators and plant staff will change their duties every week. This enables the entire staff to

become familiar with and capable of handling the possibility of doing any of the necessary jobs in the event of an actual emergency. In addition, all WPD staff is licensed and certified according OEPA requirements. The superintendent recently received a Class IV certification for water plant operations. Peers maintain similar certification levels appropriate to the purification plant requirements through the OEPA.

C4.1 WPD's procedures manual and extensive labeling throughout the plant provided an added level of process documentation that exceeds practices conducted by the peers and AWWA standards. WPD effectively uses cross-training to ensure adequate staffing in the event of an emergency and coverage when staff are absent. This practice enables WPD to minimize staffing costs while ensuring the ability to respond effectively to emergencies.

Contingency Planning

F4.28 WWD could improve its contingency plan by updating it to reflect construction contingencies and security issues during the plant construction phase of the WPD expansion project. Security issues and safety concerns will change after the project starts. Chapter 3745-85 of the Ohio Administrative Code (OAC) sets forth OEPA requirements for water supply facilities pertaining to emergency planning activities. OAC section 3745-85-05 states that "the contingency plan required by this chapter of the Administrative Code shall be revised and updated as necessary, but at least annually." WWD's contingency plan was last updated in 2001 and meets the requirements of the Ohio Administrative Code (OAC). In March 2002, OEPA recommended WWD may add a temporary addendum to address issues that arise during construction activities at the plant, to notify police and emergency personnel about upcoming construction activities, and to review the plan with respect to terrorist threats.

OEPA requires the contingency plan be updated annually and as circumstances warrant. The overall safety and security issues that pertain to the operations of WWD are addressed in the contingency plan. According to OAC section 3745-85-04 (B), "the contingency plan shall contain a statement of amounts budgeted for emergency use along with a statement showing who can authorize expenditures for such purpose, and under what conditions such authorization and expenditure can occur. WWD's contingency plan does not include any statements of responsibility for emergency purchasing and budgeting. Further, WWD does not have funds budgeted for emergencies that are included in its financial report. One of the most important aspects of any emergency situation is to have individuals, including back-up people, that will be authorized to sign checks for emergency purchases or for the rental of equipment or vehicles. WWD has identified these people in their plan, but has not provided appropriate training on the operational aspects of the emergency and contingency plan. The OEPA reviewed the information contained in the plan and found it to be sufficient for approval of an approximate $11 million revolving loan being used to pay for the plant improvement.

R4.18 WWD should take steps to improve its contingency plan and ensure that it incorporates the ongoing OEPA guidelines and Ohio Administrative Code (OAC) requirements, especially through the construction phase of the WPD plant expansion. WWD should only include procedures that relate directly to emergency operations in the contingency plan. WWD should carefully assess the scope of security and be mindful of disclosing all the security procedures. WWD should update the emergency and contingency plan during the construction phase of the plant expansion. To help with the review of employee's duties, all employees should be trained, at least annually, on the emergency procedures by in-house administrative staff. During this performance audit, the director stated that WWD has updated the contingency plan.

Financial Implications Summary

The following table summarizes performance audit recommendations within this section which contain financial implications that could be reasonably estimated and quantified. Detailed information concerning the financial implications, including assumptions, is contained within the specific findings and recommendations.

Summary of Financial Implications

Recommendation	Estimated Annual Revenue Enhancements	Estimated Annual Cost Savings	Estimated Annual Costs	Estimated One Time Implementation Costs
R4.2 Train eight at $250 per staff to improve the budgeting process.			$2,000	
R4.7 Obtain grant funding for water department.	$100,000 [1]			
R4.9 Consider reducing one laborer position.		$40,000		
R4.11 Consider reducing 2.0 FTE foremen and adding 1.0 FTE administrative staff.		$105,000	$45,000	
R4.12 Reduce sick leave to statewide average.		$37,000		
R4.13 Improve inventory assessment process, thereby reducing unaccounted for water.		$55,000		$7,900
R4.14 Purchase software for work order tracking and automatic assignment of routine maintenance.			$2,000	$5,000
R4.15 Implement mapping infrastructure.			$3,000	$16,500
R4.17 Provide annual training for staff.			$37,000	
Total	**$100,000**	**$237,000**	**$89,000**	**$29,400**

[1] Annual average grant funding for five years.

Conclusion Statement

WWD has the staff and technical expertise required to meet its two mission critical processes, purifying and delivering water to its customers. In addition, WWD is meeting, or is striving to meet, OEPA compliance requirements for water operations. Addressing the following areas would further enhance operations at WWD and ensure quality services for its customers: planning, budgeting process, grant funding, technology and staffing.

Although WWD has developed a capability assurance plan, it should develop and implement a strategic plan with measurable objectives that incorporates AWWA standards to guide operations. The current budgeting process at WWD is reactionary and does not focus on long term objectives, as indicated by the lack of comprehensive and detailed forecasting. Therefore, WWD should improve the budgeting process by providing more detail and using performance measures to support budget requests. WWD should also develop a five year forecast of revenues and expenditures to identify and proactively address potential future problems. APWA standards should be used and a capital improvement planning committee should be established to effectively address current and future capital needs and help direct the capital planning process. Furthermore, implementing a formal process would help WWD identify and obtain potential grant funding from professional organizations and state and federal grant programs. For instance, WWD could obtain approximately $100,000 annually over five years in grant funding from the Ohio Public Works Commission (PWC) to help fund needed capital improvements.

WWD could improve its operations with better use of technology and by developing a technology plan to guide technology acquisition decisions. To enhance preventative maintenance functions, WDD should develop a comprehensive inventory and assessment of all equipment and infrastructure. In conjunction with asset management software, WDD can use inventory condition data to make proactive repair and replacement decisions in a cost effective manner and before emergencies occur. WWD should also be able to reduce unaccounted for water, thereby experiencing cost savings. The efficiency and effectiveness of maintenance operations also could be improved by using software for work order tracking and automatic assignment of routine maintenance. WWD would require a software mapping solution to provide integration of mapping data for the recommended work order and asset management package, which would maximize the usefulness and availability of accurate information and reduce the need for redrawing maps and engineering plans.

Overall, WWD is efficiently staffed. Nonetheless, opportunities exist to further streamline operations, resulting in staffing changes. Technology enhancements, cross training and other training initiatives would allow WDD to reduce one laborer position. Based on peer comparisons, WDD has a high number of supervisory positions. By increasing crew leader responsibilities, implementing and using technology, and reorganizing administrative responsibilities, WDD should consider reducing two foremen positions and hiring an administrative secretary to document and track work order information electronically. Although

WPD currently appears to be adequately staffed, it should use the engineering firm's maintenance and operations plan and compiled maintenance data to fully assess the impact of the plant expansion on current plant maintenance staffing levels, and subsequently determine necessary staffing changes.

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Water Pollution Control Department

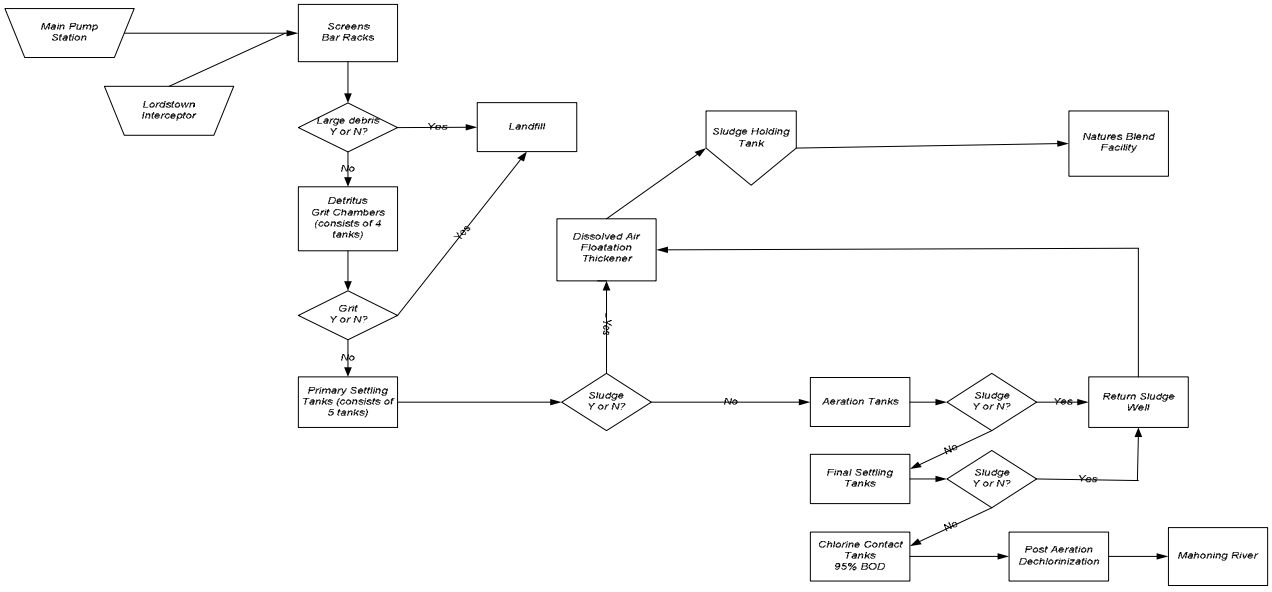
Background

The section focuses on the City of Warren (City) Water Pollution Control Department (WPC), including its administration, laboratory, maintenance, operations, sewer, storm water, and biosolids divisions. For the purpose of illustrating various operational issues, comparisons are made throughout the report with peer wastewater treatment facilities of Lake County-Mentor (LCSD) and the City of Lorain Department of Water Pollution Control (LDWPC). Additional comparisons were made for the Nature's Blend™ biosolids operations to peer facilities of State College, PA, Tacoma, WA and Milwaukee, WI.

Summary of Operations

Sewer departments are traditionally organized within municipal governments as enterprise operations. The department is intended to function similar to a private sector business, relying on charges for services to support the costs of operation. Sewer charges are collected by the water service and office administration divisions and subsequently transferred to WPC. WPC charges customers based upon defined rate structure and water consumption. **Chart 5-1** provides an overview of the wastewater operations of WPC.

Chart 5-1: Flow Chart for WPC Operations



Source: WPC superintendent

WPC's facilities consist of a collection system, seven pump stations, a primary and a secondary treatment building, biosolids processing and disinfecting systems. The collection system is comprised of over 190 miles of sanitary sewer and 20 miles of combined sanitary and storm sewer. This system consists of sewer pipes called laterals and trunks that transport sewage by gravity, or pump stations in some areas, to main interceptors and ultimately to the treatment facility. In some areas of the city, pump stations are installed to elevate the wastewater to a height that gravity can transport the wastewater to the treatment facility. The influent to the treatment facility is broken into two main collection systems. One system comprises sewage that is transported from the City, and the townships of Champion, Howland and Warren. The second system is primarily comprised of sewage flow from the Village of Lordstown.

Processing begins with primary treatment, which uses screens and bar racks to remove wood, paper, and plastic. Once sewage is screened for large debris, it flows into the detritus (loose material) chambers allowing grit to settle to the bottom of the detritus tanks. The large debris along with the settled grit is delivered to the local landfill.

Primary treatment continues as the sewage flows into the primary holding tanks. The holding time in these tanks averages two hours where certain heavy materials will settle naturally to the bottom of the holding tanks. Solids are collected from the bottom of the tanks, while buoyant material flows to the back of the tanks to be removed by scum collectors. This solid debris, or sludge, is sent through a separate process to ensure that most of the wastewater is removed and processed separately. The wastewater moves from the primary tanks into secondary treatment.

Secondary treatment begins with the aeration tanks. Oxygen is pumped in at 7,100 cubic feet per minute to ensure proper breakdown of the remaining solids. The residual liquid remains in the aeration tanks for six hours allowing micro-organisms to feed on the liquid and organically break down the raw sewage remaining in this liquid. Once complete, the residual liquid is moved into the wastewater final tanks. The final tanks allow suspended solids to settle to the bottom of the tanks for removal. Once removed, the solids are pumped into the sludge holding tank. The residual liquids are moved to the chlorine contact tanks, which are used during the recreation season from May to October to satisfy Ohio Environmental Protection Agency (OEPA) bacteria standards listed in the Ohio Administrative Code (OAC) 3745-1-07. After chlorine is added, the residual liquid moves to the post-aeration dechlorinization tank. Sodium bi-sulfite and oxygen are added to the water, so that aquatic life can survive in it and it is discharged into the Mahoning River.

The sludge treatment process runs concurrently with the wastewater treatment process. The sludge is collected in the holding tank from various points in the wastewater treatment process. Then it flows into the dissolved air floatation thickener (DAF) where polymers are added to separate the sludge from the liquids. The liquids are placed back into the primary tanks for further processing. The sludge flows from the DAF into the biosolids facility (Natures Blend™) for further processing necessary to create a fertilizer byproduct.

Environmental Protection Agency (EPA) Regulations and Current Violations

The U.S. EPA authorizes states to issue, modify, revoke, monitor and enforce National Pollutant Discharge Elimination System (NPDES) permits under the U.S. Code Title 33, section 402 of the Clean Water Act (CWA). The Ohio Environmental Protection Agency (OEPA) is the oversight agency for WPC.

Overflows are permitted by OEPA during wet weather conditions for cities operating a combined sewer system. WPC is only experiencing overflows in four permitted areas during excessive wet weather conditions. During these conditions, the combined sewer system will sometimes create a situation in which untreated sewage flows directly into the Mahoning River. To address combined sewer overflows, each city with a combined sewer must provide to OEPA a long-term combined sewer control plan and allocate financial resources for the full implementation of this plan upon its approval. WPC is in the process of developing a plan.

On December 8, 1999, the U.S. EPA promulgated the expansion of the existing NPDES by designating additional sources of storm water for regulation. Storm water runoff creates pollution, known as non-point source pollution, which includes oil and grease, as well as many other pollutants that runoff from highways, streets, and parking lots. Contaminated runoff gets into waterways if it does not flow through the sewer system. These additions to the NPDES are known as Phase II. About 280 municipalities, including Warren, located in urbanized areas operating municipal separate storm sewer systems (MS4s), will be included in the Phase II program in the State of Ohio. All affected entities, unless otherwise specified, are required to obtain permit coverage by March 10, 2003.

Operators of small MS4s, such as the City, are required to develop a storm water management program that implements six minimum measures which focus on a Best Management Practices (BMP) approach. The BMPs chosen by the storm water management program must significantly reduce pollutants associated with storm water runoff when compared to the existing levels. Reductions must be accomplished in a cost effective manner. Each Phase II facility will have from March 10, 2003 until December 8, 2007 to fully implement the BMPs associated with the six control measures. The six minimum control measures include:

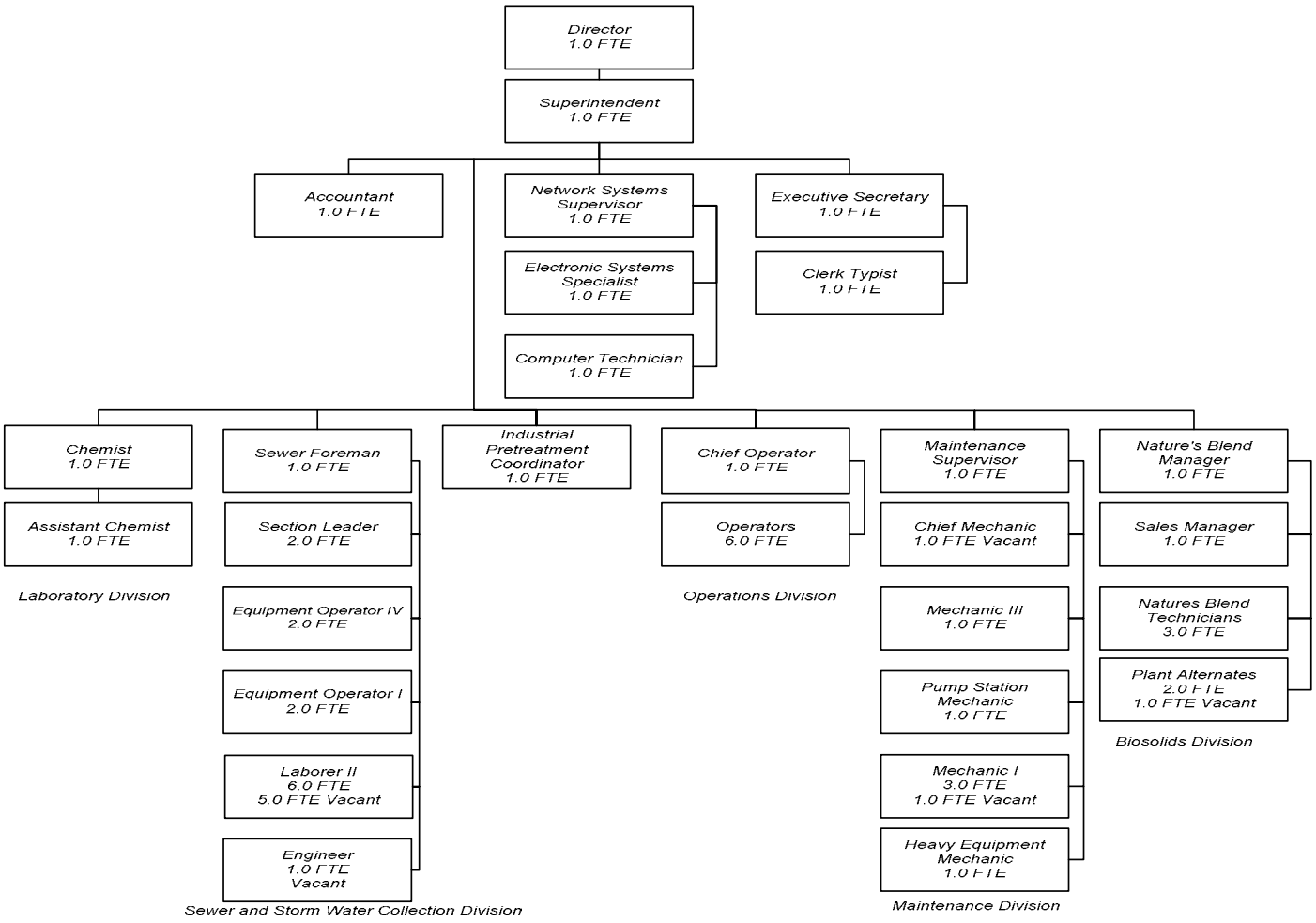
- A public education and outreach program;
- Public involvement and participation;
- Elimination of illicit discharges;
- A construction site storm water runoff ordinance;
- A post-construction storm water management ordinance; and
- Pollution prevention and good housekeeping.

The City is in the planning stage of Phase II storm water management and has formed a committee of private citizens to ensure public awareness of the storm water program and to help determine the revenue necessary to meet the OEPA guidelines. The committee provided feedback to city council's finance committee on how best to design a storm water utility fee for residential, commercial and industrial users. On May 8, 2002, city council passed legislation establishing a storm water utility fee. The fee will provide the necessary funding for the implementation of the Phase II management plan.

Organizational Chart

Chart 5-2 depicts the WPC organizational structure and budgeted staffing levels in full-time equivalent employees (FTE).

Chart 5-2: Organization and Staffing Chart



Source: WPC superintendent, as of September 1, 2002

In addition to the administration division, WPC is organized into five process divisions:

- Sewer and storm water collection;
- Operations;
- Biosolids;
- Maintenance; and
- Laboratory.

The storm water function and staff were transferred from the operations department to WPC in 2000, creating the sewer and storm water collections division. This division was established to comply with OEPA requirements for developing and implementing a Long Term Combined Sewer Plan

(LTCSP) to reduce pollutant discharge into the waterways. The sewer and storm water division is responsible for preventative cleaning and maintenance of the sewer system, portions of which date back to 1895. Cleaning and maintenance tasks are accomplished by flushing lines annually with high- pressure water, inserting foaming and vaporous gas, and using a rotary blade to remove roots and blockages. The storm water responsibilities include completing repairs to catch basins, ditches and culverts. This division also performs dye and smoke testing to find breaks or illegal taps in the sewer system. One goal of the sewer and storm water division is to ensure a constant and even flow of storm water from homes, industries and commercial districts to the treatment center.

The operations division monitors and controls the treatment plant process including analyzing instrument readings and laboratory test results. Industrial Pretreatment, a part of the operations division, is responsible for enforcing the sewer use ordinance for local industries. The sewer ordinance codifies local limits as established by the OEPA. There are 65 industries in the City that discharge to the WPC treatment facility, 10 of which are significant industrial users. The division performs routine inspections and samplings on the significant industrial users to assure compliance with the established local limits.

The biosolids division processes and distributes biosolids resulting from the treatment process as a Class A organic fertilizer (i.e., no detectable pathogens or metals). Instead of hauling the waste to a landfill, the City uses a lime stabilized heat pasteurization method to make an organic fertilizer which is sold to the public through retail outlets as Nature's Blend™. Forty tons of sludge cake is processed daily, resulting in 26 tons of Nature's Blend product per day. The facility's overall capacity is 240 tons per day or 62,400 tons per year.

The maintenance division repairs and services the WPC facilities' equipment, including pumps, valves and buildings, in addition to seven pump stations. Maintenance performs various activities including electrical, plumbing, and automotive repairs.

The laboratory division monitors compliance with OEPA treatment requirements. This division is required to complete and submit monthly operating reports to OEPA showing specific metals and chemicals present in the wastewater at various points before, during and after treatment. Flow sampling is performed both manually and automatically.

Financial Data

Table 5-1 presents WPC's revenues and expenditures for 2000, 2001 and 2002. WPC's primary revenue is from user fees, which are charged to customers based upon their water usage.

Table 5-1: Revenues and Expenditures for WPC

	2000	2001	2000-2001 Percent Change	2002	2001 -2002 Percent Change
Revenue					
Service Revenue[1]	$ 5,808,364	$ 5,830,762	0.4%	$ 5,513,327	(5.4%)
Outside Bulk Service [2]	$ 1,344,450	$ 1,260,755	(6.2%)	$ 1,065,718	(15.5%)
Other Revenue	$ 111,452	$ 257,727	131.2%	$ 307,558	19.3%
Transfers In	$ 0	$ 668,079	100%	$ 1,473,354	120.5%
Total Revenue	**$ 7,264,266**	**$ 8,017,323**	**10.4%**	**$ 8,359,957**	**4.3%**
Expenditures					
Wages	$ 1,710,448	$ 1,852,276	8.3%	$ 1,814,242	(2.1%)
Benefits	$ 833,623	$ 1,034,817	24.1%	$ 1,106,533	6.9%
Debt Service[3]	$ 2,292,901	$ 2,302,557	0.4%	$ 2,303,222	0.0%
Capital Outlay	$ 302,274	$ 47,421	(84.3%)	$ 35,435	(25.3%)
Supplies	$ 371,695	$ 307,696	(17.2%)	$ 241,363	(21.6%)
Maintenance	$ 59,548	$ 47,381	(20.4%)	$ 92,633	95.5%
Other Expenditures[4]	$ 2,354,164	$2,358,255	0.2%	$ 2,291,573	(2.8%)
Transfers Out	$ 27,334	$ 399,000	1359.7%	$ 0	(100.0%)
Total Expenditures	**$ 7,951,987**	**$8,349,403**	**5.0%**	**$ 7,885,001**	**(5.6%)**
Net Revenues over/(under) Expenditures	**$ (687,721)**	**$ (332,080)**	**N/A**	**$ 474,956**	**N/A**

Source: WPC financial statements

[1] Service revenue includes all charges for services including pretreatment, analytical fees, septage hauling, etc.

[2] Outside bulk service is revenue received from Lordstown and Champion accounts.

[3] Debt service is the payments for loans, including an Ohio Water Development Authority loan for the Nature's Blend facility, and loans for the construction of the secondary treatment facility and rehabilitation of the primary treatment facility.

[4] Other expenditures include utilities, training, consultant fees, insurance, administrative charges, travel, legal fees, Trumbull County payments for treatment for Warren residents and other miscellaneous costs.

The decline in service revenue and outside bulk service in FY 2002 could be attributed to reduced water usage, particularly by small commercial customers. Presumably, the reduction in water usage could be a result of the overall economic decline and related population loss experienced in the City and surrounding areas. According to the director of WPC, WPC has initiated a rate study in November 2002 to determine reasons for the decline in revenue. In addition, the effectiveness of the City's collection procedures impacts WPC's service revenue and ability to support operations, which are addressed in the **water service and office administration** section of this report. Explanations for the significant changes in the operating budget include the following:

Increase in "Other Revenue" for FY 2001: The increase in FY 2001 is a result of reimbursements from a biosolids equipment supplier for expenses related to a lawsuit.

Increase in "Transfers In" for FY 2001and decrease for FY 2002: WPC transferred $399,000 from the capital replacement fund to cover its anticipated funding shortfall in FY 2001. The remainder of the increase in FY 2001 is attributed to a General Fund reimbursement for interdepartmental services performed by the data center. The capital replacement funds were again transferred to cover operational costs in FY 2002.

Increase in "Benefits" for FY 2001 and FY 2002: City-wide increases in medical benefits and increased workers compensation costs have contributed to benefit cost increases.

Decrease in "Capital Outlay" for FY 2001 FY 2002: Caused by a decrease in expenditures for capital assets because funding was needed to cover operational costs.

Decrease in "Supplies" for FY 2001 and FY 2002: Costs for lime were reduced from the previous year. In 2000, a heating element malfunction in the biosolids processing facility caused an increase in the amount of lime used. Due to limited funds, WPC did not budget for salt in 2002.

Decrease in "Maintenance" for FY 2001 and increase in FY 2002: The decrease in FY 2001 was caused by a decrease in equipment maintenance since funds were unavailable. In addition, WPC indicated that a number of the maintenance requests did not meet all of the requirements for immediate repair or replacement in 2001. Pumps and the mechanical flights were repaired in FY 2002, primarily contributing to the overall increase in maintenance costs.

Increase in "Transfers Out" for FY 2001: This resulted because of a transfer from WPC's capital replacement fund.

Performance Measures

The following performance measures were used to conduct the review of the WPC department:

- Determine adequacy of strategic, financial and capital planning;
- Assess staffing and the organizational structure;
- Assess policies and procedures;
- Assess leave usage and overtime;
- Assess operational effectiveness of the sewer and storm water division;
- Assess storm water division planning for Phase II to meet EPA requirements;
- Assess operational effectiveness of the maintenance, operations and laboratory divisions;
- Assess facility security; and
- Assess operational effectiveness of the biosolids division.

Findings / Commendations / Recommendations

Strategic, Financial and Capital Planning

F5.1 Although WPC has elements of a strategic plan, it could improve its planning process by developing a formal and written strategic plan that encompasses all of its operations and includes long-term goals to help guide operations in the future. Strategic planning is a tool that can be used to identify, define, and implement the mission and goals of an organization. This process unifies the organization to establish goals and provides accountability when measuring how the organization is achieving its goals. A formal strategic plan should include the following:

- **A vision statement.** While WPC states that its vision is based on providing clean water to its customers, a formal vision statement within a strategic plan has not been developed.

- **A mission statement.** WPC uses the National Biosolids Partnership Program's Code of Good Practice to serve as its mission for its biosolids operations. WPC does have a mission statement in its 1989 annual report to "produce the cleanest water it can while keeping costs within a budgeted amount to serve the community as best as possible." However, a mission statement is not included in the 1999 and 2000 annual reports and is not formally tied to an overall strategic plan.

- **Short and long-term goals** for each department and aspect of operations. WPC has developed goals addressing specific initiatives such as storm water Phase II (see **F5.27**). Nonetheless, formal short and long term goals for each department have not been developed and incorporated in a departmental-wide strategic plan.

- **Action plans clearly identifying how goals will be achieved.** Although WPC has developed plans addressing specific initiatives in the past, such as storm water Phase II (see **F5.27**), nothing is formally tied to an overall strategic plan. Other than stating that "employees of this plant have continued to expand their collective knowledge," the 1989 mission statement does not provide specific actions explaining how WPC plans to achieve its mission.

- **Specific measures and benchmarks** to determine if goals have been fully achieved.

WPC uses performance measurements to assess outputs of operations on a daily basis to comply with EPA requirements and for management information. However, the majority of performance measures are related to outputs (indicators that report the quantity or volume of

services) rather than outcomes (indictors that measure the results, accomplishments, or quality of the service provided). Benchmarking has also not been developed for long-term goals and is not included in a formal strategic plan. Furthermore, methodologies for achieving a benchmark, such as having zero overflows in the City, have not been developed and included in a formal strategic plan. Benchmarking is a valuable tool used for strategic planning. According to the Water Environment Federation, "The most common use of benchmarks is the development and comparison of performance measures. Benchmarking is an important component of many management improvement efforts which involve the development and tracking of performance measures, work process improvements, and communicating management performance to others attempting similar efforts."

The Government Finance Officers Association (GFOA) states that a key responsibility of local governments is to develop and manage programs, services, and their related resources as efficiently and effectively as possible and to communicate the results of these efforts to the stakeholders. Performance measurement, when linked to the budget and strategic planning process, can assess accomplishments on an organization-wide basis. Meaningful performance measurement assists government and citizens in identifying financial and program results, evaluating past resource decisions, and facilitating qualitative improvements in future decisions regarding resource allocation. Performance measures, such as improving the chemical composition of wastewater and reducing overflows, are used in the long-term planning and goal setting process and linked to the entity's mission, goals, and objectives. According to the GFOA, performance measures should:

- Be based on goals and objectives that tie to a statement of mission or purpose;
- Measure program outcomes;
- Provide for resource allocation comparisons over time;
- Measure efficiency and effectiveness for continuous improvement;
- Be consistent throughout the strategic plan, budget, accounting and reporting systems, and to the extent practical, be consistent over time; and
- Be monitored and used in managerial decision-making processes.

Developing a formal, written strategic plan that includes the components mentioned above would provide a guide and framework to assist WPC in improving operations. In addition, a formal, written strategic plan could indicate to City administration a commitment and by WPC to continually strive to provide quality services to its customers.

R5.1 WPC should develop and implement a formal, written strategic plan comprising all aspects of its operations and including clearly defined and up-to-date vision and mission statements, short and long-term goals and objectives, action plans, and performance measures to help guide operations. The plan should include concise statements identifying staff roles for each major component, detailing the connection between daily tasks and WPC's mission and

vision. In developing a strategic plan, WPC should be able to identify required resources to allow management and staff the opportunity to meet goals and expectations. WPC should develop and use additional recognized program and service performance measures, focusing on outcomes and measuring achievement of goals, as an important component of long-term strategic planning and decision making.

F5.2 WPC does not consistently forecast or use a strategic budgeting process that links to a strategic plan or mission statement. Forecasts are only developed for the upcoming year. According to the National Center for Higher Education Management Systems, a strategic budget includes elements that incorporate budgeting in a changing environment, such as the following:

- The base budget;
- Funds for strategic initiatives and innovation;
- The creation and reallocation of assets;
- The maintenance of assets; and
- Contingency funds.

While strategic planning identifies action steps necessary to manage goals and objectives, a strategic budget identifies funding sources to meet them. Linking the budget and strategic plan provides support for budgetary requests, communicates to City officials and citizens the organization's direction, and provides a useful tool to improve performance and accountability. The National Council on State and Local Budgeting (NACSLB) lists the following characteristics of an effective budget process:

- Incorporates a long-term perspective;
- Establishes linkages to broad organizational goals;
- Focuses budget decisions on results and outcomes;
- Involves and promotes effective communication with stakeholders; and
- Provides incentives to government management and employees.

Another vital phase of strategic budgeting involves financial forecasting. A key component in determining future options, potential problems, and opportunities is the realistic forecasting of revenues and expenditures. According to NACSLB, effective financial forecasts exhibit the following characteristics:

- Extend three to five years beyond the budget period;
- Monitored regularly;
- Updated periodically;
- Stated clearly and made available to participants in the budget process;
- Referenced in the final budget document; and

- Analyzed according to variances between previous forecast and actual amounts, identifying influential factors in the forecast.

Effective revenue and expenditure forecasting accomplishes the following:

- Provides an understanding of available funding;
- Evaluates financial risk;
- Assesses the likelihood that services can be sustained;
- Assesses the level at which capital investment can be made;
- Identifies future commitments and resource demands; and
- Identifies the key variables that cause change in the level of revenue.

Lacking a strategic budget, and consistent and reliable forecasting, WPC is unable to adequately plan expenditures or anticipate revenue shortfalls.

R5.2 WPC should develop a strategic budget that links to the strategic plan recommended in **R5.1**. The strategic budget should be updated annually to reflect current priorities and funding needs. Budget goals and outcomes should be identified and prioritized in connection with the strategic plan and measure performance as an integral part of the budget process. WPC should develop financial forecasts, using methods mentioned above, to improve its budgeting and planning activities. The strategic budget should be developed in accordance with the City's formal timetable recommended in the *City of Warren Phase III* performance audit. WPC should draw on the expertise of the finance department and the city auditor in developing its strategic budget. Effective budget practices will identify financial issues to help WPC meet and manage existing challenges.

F5.3 WPC capital improvement planning (CIP) has been postponed due to operational revenue shortfalls. According to the director, WPC only engages in long term capital planning if applicable Enterprise Funds have available revenue, and no revenue is currently available for planning or implementation of projects. However, effectively planning for capital improvements would provide necessary information to the City on priorities and consequences for failing to allocate sufficient resources to meet capital improvement needs. See **F5.4** and **R5.4** for additional revenue discussion. In addition, WPC does not use an ongoing formal process for identifying, prioritizing, planning and seeking input on capital improvement needs.

WPC does not have current capital improvement plans for the sewer and storm water system or for the separation of the combined sewers. WPC contracted with a vendor in 1989 to complete a separation study for the combined sewers in the downtown area. The study was completed in 1992 and included a short and long-range capital improvement plan. This

improvement plan provided for the separation of the combined sewer in the downtown area. The downtown area was divided into three segments with each segment representing a third of the combined sewers. Old Run Regulator, Pine Avenue, and North Park Brick comprise the combined sewer system. WPC has successfully separated Pine Avenue and the Old Run Regulator. Due to budget constraints, the final phase, separation of North Park Brick, has been postponed indefinitely.

According to WPC, budget shortfalls have limited its ability to effectively upgrade the sewer system (see **F5.4** and **R5.4**). According to American Water Works Association (AWWA) best management practices, water treatment facilities should assess their specific infrastructure needs, including the consequences of failing to provide for that infrastructure and develop reasonable plans to align improvement efforts with the Clean Water Act. Until capital improvements are addressed, maintenance and operational costs could continue to rise because of the additional storm water runoff into the sewer system. The storm water runoff contains debris including salt and slag that increases the maintenance and operational costs inside the treatment facility.

According to the *GFOA Practices 9.6*, developing a CIP provides a framework for prioritizing funding needs and sources and integrating projects, time frames and financing mechanisms. An effective plan should project at least five years into the future and should be fully integrated into the overall financial plan and the budget document.

R5.3 WPC should conduct comprehensive planning for necessary improvements on a consistent and periodic basis. The CIP should include at least a priority ranking of key projects, an estimate of project costs and benefits, the impact of not undertaking each project and likely funding sources. WPC management should develop the policies and data necessary to guide the decision-making regarding capital improvements, including criteria used to assess project needs, infrastructure condition data and explanations as to how projects will help accomplish strategic goals and objectives. The capital improvement plan should be reflected in the strategic plan and budget for WPC (see **R5.1** and **R5.2**) to ensure necessary improvements are addressed as soon as financially feasible. The CIP should be the end-product of a process that invites input from key stakeholders and decision-makers and serve as the basis for future capital budget requests from WPC.

Establishing a formal, ongoing, capital improvement process will enable WPC to implement an orderly and routine method of planning and financing for required capital improvements and make capital expenditures more responsive to community needs by informing and involving customers. In addition, by prioritizing projects according to criteria that are embedded in WPC's mission and goals, the CIP could also create a more understandable investment decision making process; improve linkages between capital investments and WPC's long term vision and goals; and make more efficient use of available resources.

Updating and implementing its CIP is critical to the long term success of WPC. WPC should update priorities, needs and costs of projects at least annually. Also, WPC should develop a deferred maintenance listing to identify critical needs, and demonstrate to city council the impact of not undertaking essential projects. Costs for updates and repairs can escalate unnecessarily if appropriate planning processes are not used. Effective planning can be used to help allocate scarce funds adequately and demonstrate the impact of not undertaking necessary capital improvement projects.

Finally, WPC should update and implement the proposed capital improvement plan for the replacement of the aging sewer line infrastructure. Short and long-range capital improvement plans should be continually updated for financial implications to address the needs of the department and the requirements of the OEPA. With an aging infrastructure, on-going analysis should be completed to determine the cost of replacements. The needs of the department and especially the sewer division should be accurately assessed and budgeted by WPC. Implementation of plans to address departmental needs should occur when additional funding becomes available. Failure to undertake necessary capital improvement projects results in deterioration of the system and can lead to inadequate service or service disruptions for the customers.

F5.4 Revenues do not cover WPC's cost of service. To address this issue, WPC contracted for a rate study which is expected to be completed in early 2003. **Table 5-2** compares WPC's annual costs and revenues to peers.

Table 5-2: Costs and Revenues, FY 2001

	WPC	LCSD	LDWPC	Peer Average
Number of Customers	20,836 [1]	35,677	23,685	29,681
Annual Costs [2]	$7,950,403 [3]	$12,787,993	$11,293,352	$12,040,672
Average Cost per customer	$381.57	$358.44	$476.81	$405.67
Annual Revenue [2]	$7,349,244	$12,913,000	$11,106,725	$12,009,863
Average Revenue per customer	$352.72	$361.94	$468.93	$404.63
Surplus/(Deficit) per Customer	**($28.85)**	**$3.50**	**($7.88)**	**($1.04)**

Source: WPC 2001 Financials and peer cities

[1] Includes the number of residential customers served by WPC in Champion and Lordstown.

[2] Costs and revenues include storm water at WPC. However, costs and revenues for peers do not include storm water because peers do not have storm water responsibility. In addition, costs and revenues do not include transfers in or out.

[3] Includes inter-city administrative charges of $1,043,831.

As illustrated in **Table 5-2**, WPC's average cost per customer exceeds average revenue per customer by $28.85, resulting in transfers from other funds to fully offset WPC's operational costs. In addition, WPC's average cost per customer is lower than LDWPC. However, WPC's average cost per customer is six percent higher than LCSD, which can primarily be

attributed to WPC having storm water responsibility and chargeback costs not being reflected in LCSD's costs. The municipalities in Lake County are responsible for storm water and the street department performs storm water functions in Lorain. By excluding the chargeback costs, WPC's average cost per customer declines to $331.47, which is lower than each peer. Salaries and benefits, and debt service costs comprise the majority of WPC's expenditures, which are compared to the peers in **Table 5-3**.

Table 5-3: Salaries/Benefits & Debt Service, FY 2001

	WPC	LCSD	LDWPC	Peer Average
Number of Customers	20,836	35,677	23,685	29,681
Salaries and Benefits	$2,887,093	$5,186,943	$3,619,435	$4,403,181
Debt Service	$2,302,557	$4,478,486	$1,138,729	$2,808,608
Salaries and Benefits per Customer	$138.56	$145.39	$152.82	$148.35
Debt Service per Customer	$110.51	$125.53	$48.08	$94.63

Source: WPC and peer financial information

Although WPC has storm water responsibilities, **Table 5-3** indicates that salaries and benefits costs per customer are lower than both peers. The higher debt service costs at WPC are primarily attributed to the Ohio Water Development Authority loan for the Nature's Blend facility (see **F5.42**) and loans for the construction of the secondary treatment facility and rehabilitation of the primary treatment facility.

Table 5-4 compares WPC sewer rate charges to peers and statewide average data.

Table 5-4: Annual Residential Sewer Rates per 100 Cubic Feet of Water

Cities	1995	1996	1997	1998	1999	2000
WPC (inside city limits)	$1.98	$1.98	$1.98	$1.98	$1.98	$1.98
LCSD[1]	NA	NA	NA	NA	NA	NA
LDWPC	$2.44	$2.44	$2.44	$2.44	$2.44	$2.02 [2]
Trumbull County (Warren residents)[3]	$2.00	$2.50	$2.50	$2.50	$2.50	$2.50
Peer Average	$2.22	$2.47	$2.47	$2.47	$2.47	$2.26
% Lower than Peer Average	12%	25%	25%	25%	25%	14%
Average statewide sewer rates[4]	$2.39	$2.49	$2.60	$2.70	$2.76	$2.84
% Lower than State Average	21%	26%	31%	36%	39%	43%

Source: WPC Director, LCSD, LDWPC Utilities Departments

[1] LCSD charges a minimum flat quarterly amount to residential customers, $46.20 from 1995 to 2000.

[2] Due to a water rate increase, wastewater rates were reduced. These utilities are in a combined department so impact of the rate change is departmental.

[3] Trumbull County services and bills certain Warren residents at a rate that the County determines (see **F5.5** and **R5.5**).

[4] Ohio EPA 2000 Sewer and Water Rate Survey include many smaller wastewater facilities compared to Warren that allocate overhead expenses over a smaller population. As a result, the statewide average sewer rate may be skewed to be higher than Warren.

According to **Table 5-4**, the City's sewer rates are lower than the peers and statewide average rate in each year, even though fixed costs at WPC are allocated over a smaller population than the peers. Allocating fixed costs over a smaller population usually results in rate charges being higher than cities with larger populations. In addition, the statewide average rate has increased each year, whereas WPC rates remained constant. Since 1992, biosolids processing has generated sufficient revenue to cover the cost of services, until recently (see **F5.40** and **R5.26**). The City's relatively low sewer rates appear to be contributing to WPC's operating deficit (see **Table 5-2**). Nevertheless, the effectiveness of the water service and office administration collections activities also impact WPC's revenues and its ability to cover operational costs (see **water service and office administration** section). Moreover, WPC has implemented measures over the years in an effort to operate without an increase in rates charged to customers. For instance, WPC's biosolids program saved approximately $400,000 in landfill costs during FY 2000 (see **F5.40** and **C5.6**).

R5.4 Prior to increasing rates charged to residents, WPC should examine additional opportunities to improve operational efficiency to ensure that it is providing quality services at a minimal cost to residents (see **R5.9**, **R5.10, R5.19,** and **R5.26**). WPC should incorporate changes affecting its operational costs in the rate study and in any subsequent rate adjustments. WPC should also ensure that the rate study addresses revenue needs for the next five years.

Additionally, WPC should work with the water service and office administration divisions to improve the collection rate for sewer fees. An effective process for collecting revenues would help minimize the current deficit. Furthermore, the rate structure should be examined once per year as part of the budget development process to determine if any adjustments should be made. Rates should be based on capital needs and planning (see **F5.3** and **R5.3**) and effectively developed budgets (see **F5.2** and **R5.2**).

F5.5 Based on a contractual agreement, Trumbull County services a portion of Warren due to the location and sewer structure of these areas within the City. However, a portion of the costs incurred by the County to service Warren residents are being subsidized by the City, because WPC charges its rate to these residents as defined by Ordinance 9153, which is less than Trumbull County's rate. Trumbull County bills the City for its services, which in turn bills the residents. The cost of services in 2001 for City residents receiving Trumbull County sewer service was $2.53 per 100 cubic feet of water used, resulting in $233,787 billed to the City for these services. Instead of charging $2.53 to these residents, the City charges its rate of $1.98 per 100 cubic feet of water used, resulting in $181,141 charged to these residents. The difference of $52,646, (22 percent) is subsidized by the City.

Currently, the City and Trumbull County are renegotiating the contract. An initial review of the proposed changes indicates that the maintenance costs will be shared by the City and County, even though Trumbull County is responsible for maintaining this portion of the City.

This change would result in additional costs being subsidized by the City for services that Trumbull County is responsible for providing.

R5.5 Considering that Trumbull County is responsible for providing sewer services for certain Warren residents, the costs of these services and subsequent rate charged to residents should reflect Trumbull County's service costs. Therefore, City Council should consider passing an appropriate ordinance to charge Trumbull County's rate to these residents, which would eliminate the current subsidy by the City. Prior to the change, WPC and Trumbull County should work together to inform the residents of the situation and clearly explain the rationale for the change in rates. If the City decides to continue to charge its rate to residents served by Trumbull County, it would be able to minimize or eliminate the current subsidy by changing its rate structure (see **F5.4** and **R5.4**). In addition, Trumbull County should be responsible for incurring any related maintenance costs because it is responsible for providing these services. This responsibility should be clearly indicated in the ensuing contract.

Financial Implication: Charging Trumbull County's rate to Warren residents served by the County would save WPC approximately $50,000 annually, which is the difference between the rates charged by the City and Trumbull County in 2001.

F5.6 WPC uses activity based costing (ABC) in greater depth and detail than the peers and some other City departments. However, WPC could implement ABC in additional areas, such as Nature's Blend™. Through ABC, an organization can begin to analyze actual dollar costs of identified activities and find opportunities to streamline operations reduce costs or eliminate inefficient activities. ABC enables an organization to disclose value added or non-value added activities. Value added activities are services that a customer is willing to pay for. Non-value added activities may or may not be necessary to provide the desired service, may add costs and create waste, and may be services a customer is not willing to pay for. Sewage processing using environmentally friendly methods is a value added activity. Based on the success of the retail selling process, selling packaged Nature's Blend could be either a value added or non-value added activity (see **F5.40** for further discussion on Nature's Blend).

WPC submits charges to other departments for services rendered by computer network personnel. Only materials and labor are factored into the charge, excluding any overhead. With activity based costing, all factors need to be included in order to fully charge for services. Additionally, Nature's Blend™ expenditures are not fully costed since overhead and some labor are not expensed to that division (see **F5.41** for further discussion). Without accurate costing, management does not have a complete picture of WPC's actual financial position to help guide and make decisions.

R5.6 WPC should perform comprehensive ABC for its activities. The total cost of key processes and activities, including administrative cost, should be allocated to determine the true impact

on WPC and true cost of each division. One step should include applying administrative costs to processes to determine their true impact on the department. Shared costs should be apportioned by some systematic and rational allocation methodology, by percentage or some other reasonable procedure. ABC should be included and prioritized as a strategic goal.

F5.7 Controls for cash payments received for Nature's Blend™ purchases could be improved for small, individual bagged purchases. Cash payments for Nature's Blend™ are received by a clerk who issues a sales slip to the customer using Quickbooks software. The accountant records the transaction and matches it in Quickbooks, an accounting software package used to invoice customers who have accounts with WPC for biosolids sales. The accountant verifies that the cash matches the entry and adds this to the deposit. A deposit slip is prepared and taken with the payment to the Finance Department, where it is entered into the mainframe. Any person with proper access to Quickbooks could easily change the amount of the transaction or even delete it. There is no additional cash control in place to determine if cash was taken or who took it. Implementing a control that would prevent duplication of a numbered receipt in the software would ensure that the cash matched and deposited are equivalent. However, Quickbooks does not have the capability to apply a related control.

R5.7 While WPC does not collect a significant amount of cash for individual bagged purchases, additional cash controls should be implemented which initially require that the clerk sign the receipt listing with the amount paid. This simple control could be used to verify that the cash and deposits are equivalent without adding any cost or cumbersome steps to the process. However, if cash sales for Nature's Blend™ increase significantly, WPC should consider upgrading its software so that effective electronic controls can be implemented. Improving controls will enable WPC to ensure cash is properly accounted for while protecting employees.

F5.8 Grants for WPC are not being sought. Community Development (CD) has a grant writer, whose duties involve only Community Development grants. While neither peer has received grants in the recent years, LCSD is currently applying for a research and development grant from the Ohio Water Development Authority (OWDA) to upgrade one of its treatment plants. Grants from government sources can be used to supplement revenue and further the goals of an organization. For example, grant funding can provide opportunities to address capital improvements needs or improve security without having to issue debt or increase sewer rates. The following Web sites contain information regarding wastewater grants:

- International City/County Management Association (ICMA);
- GrantSource from the State of Ohio;
- EPA (See **F5.27** for storm water funding);
- Public Works Commission and State Capital Improvement Program also known as Issue 2 funding; and

- Software companies for mapping systems. See **water department** section for further information.

Through the EPA and the Catalog of Federal Domestic Assistance, a wastewater grant ranging between $5,000 and $500,000 is available for unique and innovative projects that address the requirements of the NPDES program, with special emphasis on wet weather activities, storm water, combined sewer overflows and sanitary sewer overflows. The average grant award is $100,000 with no matching requirements. Out of the 400 plus proposals sent to the EPA for 2003 grant awards, 30 to 35 projects will be awarded grants. Organizations with existing awards are eligible to compete for new awards. Local governments are eligible to use the grant funds to conduct and promote the coordination and acceleration of activities such as research, investigations, experiments, training, education, demonstrations, surveys and studies relating to the causes, effect, extent, prevention, reduction and elimination of water pollution. The following are examples of specific activities that could be funded through this grant:

- Trends in load reduction due to implementation of a storm water program;
- Best Management Practices including measuring their effectiveness;
- Storm water monitoring techniques;
- Efficient and effective reduction of sanitary sewer overflows;
- Impacts of sewage overflows;
- Impacts of peak wet weather flows on Publicly Owned Treatment Works (POTWs);
- Environmental effectiveness of sewer separation;
- Compliance with Storm Water Phase II;
- Alternative markets or treatments for excess manure;
- Nutrient loading reduction through trading; and
- Ability of conventional or innovative waste water treatment plant (WWTP) processes to treat, remove or render harmless biological, chemical, or radiological agents which could be introduced into the collection or treatment system.

Based on this information, WPC may be able to obtain this grant to fund numerous activities, especially those related to its Storm Water Phase II program (see **F5.27**). According to the EPA, innovative processes, outstanding technological achievements, environmental benefits, cost savings and public acceptance serve as criteria in evaluating the proposals and awarding subsequent grants. Therefore, WPC would have to clearly demonstrate how its proposal meets these criteria.

R5.8 WPC should attempt to maximize revenue by implementing a process for regularly reviewing and applying for grants. An employee at WPC should be designated research grant responsibilities and complete applications, as appropriate. WPC should also draw on the skill

and expertise of any grant-writing professionals working in the city when pursuing grants. Obtaining grants should help offset expenses, providing an opportunity to address capital improvement needs without having to issue debt or increase sewer rates.

Financial Implication: Based on the average grant award and assuming WPC is successful in obtaining the wastewater grant through EPA's competitive application process, WPC could obtain approximately $100,000 in one-time revenue.

Management Staffing and Organizational Structure

F5.9 Staffing levels in the City and the peer cities are presented in **Table 5-5**.

Table 5-5: WPC Staffing as of September 2002

Staffing (FTEs)[1]	WPC	LCSD	LDWPC	Peer Average	Related Finding
Administration[2]	5.0	5.0	5.0	5.0	**F5.9, F5.10, F5.40**
Laboratory	2.0	3.0	3.0	3.0	**F5.33**
Industrial Pretreatment	1.0	3.0	1.0	2.0	**F5.31, F5.32**
Sewer /Storm Water[3]	13.0	7.0	13.0	N/A	**F5.26, F5.27**
Plant Operations and Building Maintenance [4]	7.0	21.0	15.0	14.0	**F5.30**
Equipment Maintenance	7.0 [5]	9.0	12.0	14.5	**F5.35, F5.36**
Biosolids	7.0	3.0	1.0[3]	2.0	**F5.40**
Total	**42.0**	**51.0**	**50.0**	**50.5**	**N/A**
Customers	20,836	35,677	23,685	29,681	**N/A**
Customers per FTE	**496**	**700**	**474**	**587**	**N/A**

Source: WPC, LCSD, LDWPC organization charts

[1] Full time equivalent positions listed do not include vacant positions.

[2] The network systems supervisor, electronic specialist and computer technician are not included in WPC since they also perform citywide technology functions.

[3] Due to a different operation, LDWPC's biosolids process includes one press operator.

[4] LCSD has 8.0 FTEs dedicated solely to building maintenance. In contrast, WPC and LDWPC have other staff provide building maintenance functions when available and necessary. For example, WPC uses two plant alternates and sewer staff to also perform building maintenance activities.

[5] Includes 1.0 FTE whose primary function is automotive maintenance. The peers do not have this function because it is performed by other city departments.

As shown in **Table 5-5,** WPC serves 15.5 percent fewer customers per FTE than the peer average. However, the overall staffing disparity shown in **Table 5-5** is overstated because LCSD and LDWPC do not have storm water management responsibility. The municipalities within LCSD are responsible for storm water operations. In LDWPC, the street department manages storm water functions. For a detailed staffing analysis of the other divisions in **Table 5-5** based on additional workload, output and productivity measures, see each of the individual sections in this report.

Although the network systems supervisor, computer technician, and electronic system specialist perform city-wide technology functions, they are grouped under WPC's organizational structure and also spent about 40 percent of their time on WPC. Centralizing city-wide technology staff under one department would ensure consistency and better coordination of technology throughout the City (see **technology utilization** section in the *City of Warren Phase IV* performance audit report). In addition, none of the peers has any technical specialists for their computers or data acquisition systems. Instead, this function is subcontracted to an outside vendor by the peers. The peers spent an average of $10,000 annually on outsourcing costs for technology and data acquisition functions. However, WPC's supervisor control and data acquisition (SCADA) system appears to be more comprehensive and sophisticated than the peers. The network systems supervisor, computer technician, and electronic specialist already have expertise in WPC's specific technology functions. Therefore, they may be better able to respond to WPC's technology needs than a subcontractor, while incurring minimal costs and time. Moreover, LCSD is currently training an employee to perform more technology functions internally.

R5.9 Since the network systems supervisor, computer technician and electronic specialist perform city-wide technology functions, WPC should transfer this staff to the data processing department to ensure better coordination of technology services (see the **technology utilization** section in the *City of Warren Phase IV* performance audit report). To accurately account for technology services, WPC should be billed, in a manner similar to the other City departments for these services. Furthermore, the City should ensure that the data processing department allocates sufficient time and resources to support WPC's technology needs.

F5.10 The supervisory staffing levels for WPC are compared to peer wastewater departments in **Table 5-6**.

Table 5-6: Analysis of WPC Organization Structure

	WPC [1]	WPC Adjusted [4]	LCSD	LDWPC	Peer Average
Supervisory[2]	7.0	6.0	10.0	5.3	7.7
Administrative[3]	3.0	2.0	1.0	1.7	1.4
Service Personnel	32.0	32.0	40.0	43.0	41.5
Department Total	**42.0**	**40.0**	**51.0**	**50.0**	**50.6**
Supervisory to Staff Ratio	1:5.0	1:5.3	1:4.0	1:8.4	1:5.4
Percent Administrative (Includes Supervisory)	23.8%	20.0%	21.6%	14.0%	18.0%

Source: WPC, LCSD, LDWPC organization charts

[1]The network systems supervisor, electronic specialist and computer technician are not included in WPC since they also perform citywide technology functions.

[2] Supervisory includes director, superintendents and division supervisors

[3] Administrative includes secretaries and accountant

[4] Excludes biosolids manager and accountant because WPC's biosolids program requires more work than the peers, due to processing its waste as a Class A organic fertilizer and the billing, selling, and marketing activities related to Nature's Blend.

Table 5-6 illustrates that WPC has the second lowest ratio of supervisors to staff (1:5.0) and highest percent of supervisor and administrative staff (23.8 percent), indicating potential overstaffing in these positions. However, WPC has developed and implemented a more extensive biosolids program (see **F5.39** and **F5.40**) that has 1.0 FTE manager and 1.0 FTE accountant positions. By excluding these two positions, WPC's percentage of administrative staff is comparable to LCSD.

Although **Table 5-6** shows that LDWPC has a higher supervisor to staff ratio and lower percentage of administrative staff than the adjusted staffing ratios for WPC, other factors impacting workload and effectiveness justify higher supervisor and administrative staffing levels at WPC. For instance, WPC is performing frequent preventative maintenance activities to ensure that the sewer system is functioning effectively and to avoid extensive or emergency repairs, supporting the need for a sewer foreman (supervisor) position (see **F5.22** and **R5.18**). In addition, WPC is planning for the implementation of the Phase II Storm Water Program, which could impact supervisor and administrative staffing levels in the future (see **F5.22** and **R5.18**). Furthermore, a chemist supervisor position is necessary because WPC is handling a significantly higher number of tests per chemist FTE (see **F5.33**).

Whereas these operational factors contribute to WPC having higher supervisor staffing levels than LDWPC, LDWPC has implemented a more streamlined and flatter organizational structure. Lorain has attained a more streamlined organizational structure by having one full-time director overseeing billing, water functions (engineering, purification, and distribution) and water pollution control. The director at Lorain allocates about 30 percent of his time for LDWPC. Although Warren has one director for WPC and another director for water and

billing operations, WPC appears to be providing efficient and effective services as discussed throughout this report (see **F5.21**, **F5.22**, **F5.28**, **F5.29**, **F5.35** and **F5.36**). Moreover, WPC is planning for implementation of its Phase II Storm Water program (see **F5.26** and **F5.27**) and is responsible for storm water while the street department in Lorain manages storm water activities, which may require a full-time director overseeing WPC.

WPC can achieve a flatter organizational structure by effectively addressing the retirement of the superintendent in January 2003. The industrial pretreatment coordinator has been designated to fill the superintendent's position. However, reallocating the superintendent's functions and responsibilities to the sewer foreman, chief operator and maintenance supervisor would result in a flatter and more streamlined organizational structure. A flatter and more streamlined organization structure could increase efficiency and productivity by reducing problems related to hierarchical organizations, such as the distortion of information, ineffective decision-making, a focus on bureaucracy over mission, and high management costs.

While certain operational differences impact the variances in administrative staffing levels, LDWPC functions with a lower percentage of administrative staff by pooling administrative staff to perform clerical functions for numerous divisions. However, administrative staff at WPC could expand the scope of their current functions (**F5.11** and **R5.11**) and help in tracking and monitoring performance measures, such as response and completion times for work orders (see **F5.24** and **R5.20**), to further improve operations and justify the level of administrative staffing.

R5.10 WPC should consider eliminating the superintendent's position by allocating additional management functions and responsibilities to the maintenance supervisor, sewer foreman and chief operator, and adjusting salary levels of these positions to reflect any additional responsibilities. The maintenance supervisor should continue with currently assigned duties and responsibilities but should increase direct communication with the director, and complete all safety training classes as well as coordinate safety programs for the treatment facility.

The chief operator should maintain the current operations at the treatment facility while also monitoring the Nature's Blend biosolids facility. Based upon the chief operator's current understanding of the treatment facility, the position should also maintain the supplies of chemicals, prepare and discuss operating reports with the director, and help the director coordinate processing activities with other municipalities.

The sewer foreman should continue with currently assigned duties. This position is already performing the duties of a supervisor. The only additional duties to be assigned to this position would be to increase communications with the director for departmental needs

including Phase II Storm Water initiatives, sewer line replacements and other capital planning for the sewer and storm water programs.

WPC should provide appropriate salary increases to justify the additional supervisory functions and change job classifications accordingly for the chief operator and sewer foreman. WPC should assess training needs of these employees and provide needed training to ensure that they function effectively with the added roles and responsibilities. Considering the immediate needs to be addressed by WPC (e.g., Storm Water Phase II, biosolids program, etc.), WPC and other utility departments should work together in developing a long-term goal of studying the ability to combine utility functions under one department, with one full-time director overseeing all utility activities. A combined utility department could also allow for pooling of administrative staff, potentially resulting in a more efficient allocation of administrative resources.

Financial Implication: Since the sewer foreman and chief operator positions are not part of the management bargaining unit and are covered by another bargaining unit contract, salaries would require adjustments to reflect supervisory responsibilities. Using the base hourly rate from the management bargaining unit contract, the sewer foreman's salary would increase by $6.58 an hour and the chief operator's salary by $5.83. For a 40 hour week, the annual salary increase would be $25,800. WPC would save approximately $98,400 annually in salaries and benefits by reducing the superintendent position. Therefore, the net financial impact of this recommendation is a cost savings of $72,600 annually.

F5.11 The clerk typist position is not required to perform duties that could assist the executive secretary and the department with data entry, payables and payroll. Under the current job description duties, the receptionist types, files, and occasionally answers telephones. With training, the clerk typist position could be more effective in contributing to the operation of WPC by learning many of the duties of the executive secretary, such as completing payroll, and substituting for the executive secretary when necessary, which is currently the accountant's responsibility. For example, LDWPC's clerk in the Utilities Department has accounts payable responsibilities. Since the clerk typist position's duties are outlined in the collective bargaining agreement, changes or additions to job duties are subject to renegotiations.

R5.11 During future renegotiations, the clerk typist position description and duties should be revised to include functions that would better assist the executive secretary and others with administrative and data entry functions including payroll, payables and data input for the sewer foreman. Since the person in the position does not have the skills necessary, WPC should provide training to ensure the current clerk typist is able to perform the additional functions required to assist WPC.

F5.12 Some job descriptions are not current to reflect technological changes and evolving WPC responsibilities. Job descriptions are written departmentally and reviewed by the human resources department prior to approval (see the **human resources** section in *City of Warren, Phase IV* performance audit report for job description information). Most job descriptions in WPC place emphasis on familiarity with operations instead of skills required for the position. For example, the executive secretary job description has not been updated to reflect requirements for today's technology. LCSD's job description for secretaries at all levels requires word processing and spreadsheet software skills. WPC does not mentioned these skills in its executive secretary's job description.

R5.12 WPC should revise job descriptions on an ongoing basis to reflect needs of the department and current technology. Updated job descriptions are necessary and critical in helping WPC complete the following:

- Articulate job content to employees and supervisors;
- Establish individual performance expectations;
- Provide criteria for recruitment and selection; and
- Minimize legal liability.

By updating job descriptions to reflect current conditions and requirements for each specific job, the employee and management will have a common understanding of performance expectations and job duties. The job description should be used as a measurement tool when conducting performance appraisals. Since job descriptions are task oriented, individuals who are most familiar with the job should be consulted in their development.

F5.13 If WPC does not have a staff person with a Class IV waste water license by August 1, 2003, it will be in noncompliance with EPA regulations. The OAC permits temporary operation of a wastewater treatment plant with a Class III wastewater license. According to the OAC Section 3745-7-02(G) "Class IV public water systems and Class IV wastewater works may be approved by the director to temporarily employ a Class III operator where a Class IV certified operator is required, if the Class III operator has applied for and received approval to take a Class IV examination." The director and superintendent of WPC have Class III licenses and have applied for Class IV licenses and are currently operating the plant with recognized temporary status.

According to the job description for the director, which has been changed since hiring of the current director to reflect the WPC license requirement, the position requires a Class III permit and the director must have the ability to obtain a Class IV certificate within one year of appointment to the position. The burden of obtaining the license is the responsibility of the City, not the individual. Without proper licensure, WPC will remain in noncompliance with the OAC.

R5.13 The safety and service director and the mayor should ensure that an appropriate WPC employee obtains a Class IV license by the permit renewal date. Steps should be taken to accelerate and prioritize the licensing. Having a person on staff with the proper Class IV license requirement will put WPC in compliance with EPA regulations and demonstrate credibility to citizens and oversight officials. If WPC does not have a Class IV licensed employee, it could face potential consequences from the EPA.

Policies and Procedures

F5.14 A hiring policy does not exist in WPC which can hinder efforts to identify the most qualified personnel for vacant positions (see the **human resources** section in *City of Warren Phase IV* performance audit report for further information). When seeking job applicants, WPC relies on internal candidates because of their familiarity with the WPC system. For example, the current superintendent is planning to retire at year end and WPC has identified potential replacements within the department, but has not taken steps to identify and attract qualified external candidates.

According to *Accountability in Human Resource Management*, effective recruiting practices can have a significant positive impact on the organization. Whereas, poorly designed and executed recruiting strategies will have both short-term and long-term negative impacts, such as an inadequate pool of candidates and the possibility of hiring under-qualified staff. Closely related to recruiting, the selection process is equally important. An effective process should select the best candidate from a pool of applicants. An employment policy sets guidelines for recruiting, selection, employment eligibility, appointment, anti-fraternization and anti-nepotism. It also includes a process for evaluating candidates.

R5.14 WPC should work with the human resources department in developing and implementing a hiring policy to identify the key competencies and knowledge necessary to best perform effectively in each position. The policy should be used to identify and attract candidates that best meet the desired skill and knowledge requirements. The policy should include steps to identify qualified internal and external candidates. WPC should identify the required skills and knowledge and evaluate applicants on these criteria.

F5.15 WPC employees do not receive formal performance evaluations after the initial probationary period. However, WPC has developed a performance evaluation form and is attempting to implement a process to evaluate employees. The City's contract with AFSCME Local 74 does not mention performance evaluations. Both LCSD and LDWPC conduct quarterly written evaluations.

Evaluations offer employees feedback by providing a format to communicate goals and expectations. When personnel decisions are clearly and specifically related to job

performance, decisions are more likely to be accepted by employees and the need for third-party intervention and exposure to employment-related claims and lawsuits are reduced (see the **human resources** section in *City of Warren Phase IV* performance audit report for additional evaluation comments). Regular evaluations are important to:

- Ensure employees receive clear feedback on areas for improvement and to identify and document disciplinary problems;
- Provide evidence about the quality of the employee's performance;
- Improve the efficiency and effectiveness of employees in carrying out the tasks found in the job description;
- Improve employee morale; and
- Monitor an employee's success and progress.

Without a formal evaluation process, complacency in performance is viewed as acceptable as long as no violations occur. Expectations or changes in behavior have no opportunity to be documented and formally communicated by management to staff.

R5.15 WPC should provide formal performance evaluations for all employees on at least an annual basis. WPC should draw on the expertise and knowledge of the human resources department in developing an effective evaluation process, which should be conducted by the department manager and division managers. Performance appraisal information can be used to facilitate employee promotions identify training needs and allow for better assessment of employee development needs (see the **human resources** section in *City of Warren Phase IV* for further information).

Behavioral and performance factors should be included in the evaluation. Behavioral factors include teamwork, punctuality, dependability, and cooperation. Performance factors include job knowledge, quality of performance, and productivity. WPC should identify areas for improvement and incorporate employee comments with signatures of both the employee and reviewer.

F5.16 Detailed written policies and procedures are in place for WPC to comply with the Environmental Management System (EMS) that is being developed for the wastewater operation to receive federal EPA certification. According to the *Final Report: The US EPA Environmental Management System Pilot Program for Local Government Entities,* EMS is "a set of problem identification and problem-solving tools that can be implemented in an organization in many different ways, depending on the organization's activities and needs." The EPA invited and helped subsidize 30 pilot facilities, including WPC, to participate in the National Biosolids Partnership development of an EMS. In addition to detailed documented policies and procedures for the entire department, it requires a continued cycle of planning, implementing, reviewing and improving the actions that an organization takes to meet

environmental obligations. The EMS policy is on the intranet for the department's use and is updated as necessary. With the EMS in place, most contingencies will be able to be addressed and WPC employees will have a better understanding of their duties and expectations.

F5.17 WPC is considering International Organization for Standardization (ISO) certification for its wastewater treatment process after it has fully implemented the EMS system. ISO 14001 is a series of international and voluntary environmental management standards to facilitate trade and improve environmental performance worldwide, by addressing the needs of organizations and providing a common framework for managing environmental issues. According to the director, ISO 14001 is more recognizable than EMS and will lend more credibility to the operation, boosting efforts to sell Nature's Blend™. However, according to *Publicizing Your ISO 9000 or ISO 14000 Certification*, "ISO 14001 is not a label signifying a "green" or "environmentally friendly" product. No product label, advertisement or other promotional material should give the impression that a product is 'ISO 14001-certified' or 'ISO 14001-registered.'" ISO will not authorize the use of its logo in connection with material publicizing certification or with product labeling since it would lead to the misconception that ISO carries out certification activities or approves the organization using the logo.

Auditing and certification are conducted independently and a fee is charged for an ISO audit. Failing an ISO audit is even more expensive because of the re-audit and additional follow up costs. ISO audit costs are based on the numbers of permitted operations, acres, square footage and employees. Current efforts to meet EMS standards provide the benefits of quality review without the expense of compliance audits necessary for ISO certification.

C5.1 Successful implementation of EMS has resulted in policies and procedures enabling staff to function more effectively. As a result the expense of pursuing ISO certification may not be necessary. The costs of ISO certification outweigh the benefits, particularly since EMS is already in place. WPC written policies and procedures are a valuable tool for the department and are being implemented by all of the divisions.

Leave Usage and Overtime

F5.18 **Table 5-7** identifies WPC sick leave usage compared to selected peer departments.

Table 5-7: Sick Leave Usage for 2001

	WPC	LCSD	LDWPC	Peer Average
Number of Employees [1]	47	55	52	54
Sick Leave Hours	3,527[2]	5,349	5,069	5,209
Sick Leave Cost	$54,764	$91,652	$89,724	$90,688
Average Sick Leave Hours per Employee	75	97	97	96
Average Sick Leave Cost per Employee	$1,165	$1,666	$1,725	$1,679

Source: Warren, WPC and peers
[1] Employee count varies from **Table 5-5** due to retirements, transfers and terminations.
[2] Excludes one employee who took extended sick leave in 2001.

As shown in **Table 5-7**, the reported sick leave hours per employee for WPC were approximately 22 percent lower than the peer average, and the cost for sick leave use is 31 percent lower than the peer average. According to the director, WPC used 4,173 hours of total sick leave in 2002, compared to total sick leave hours of 4,540 in 2001. In addition, the director states that five employees had extended leave usage in excess of three weeks and were under a doctor's care in 2002. Sick leave used by these employees amounted to 1,176 hours.

Table 5-8 shows that the average number of sick days taken per employee by division in 2001.

Table 5-8: WPC Division Sick Leave Usage for 2001

WPC Division	Number of Employees	Sick Leave Usage In Hours	Sick Leave Usage In Days	Average Sick Days Used Per Employee	Sick Leave Usage Cost
Administration	5	183	23	4	$3,069
Laboratory	2	159	20	10	$3,658
Maintenance	7	621	78	11	$9,321
Operations	14	1,162	145	10	$18,451
Laborers	6	647	81	14	$8,565
Sewer	4	169	21	5	$2,686
Bio-Solids	5	301	38	7	$4,903
Storm Water	4	285	35	9	$4,111
Totals [1]	**47**	**3,527**	**441**	**9.4**	**$54,764**

Source: Warren and WPC
[1] Employee count varies from **Table 5-5** due to retirement, transfer or termination.

Table 5-8 indicates that WPC averaged 9.4 sick days per employee, which is 11.9 percent higher than the Ohio Department of Administrative Services (ODAS) reported average of 8.4 sick days per State of Ohio bargaining-unit employee in 2001. Five of the eight divisions exceeded the ODAS benchmark. In addition, the average number of sick days taken by WPC employees is higher than the Bureau of Labor Statistics (BLS) reported average sick leave days for 12-month governmental workers (4.68 days) and workers in the "operator, fabricator, and laborer" category (3.9 days). According to WPC, when an employee appears to be abusing the sick leave benefit, the issue is discussed between the employee, a union representative (if necessary) and management. The combination of sick leave used, compensatory time taken and vacation time used can create scheduling issues for WPC and likely contribute to the amount of overtime worked (see **Table 5-9** for overtime use).

The Baltimore County Human Resources Department (BCHR) recommends developing an absence control policy that provides for counseling and corrective action for employees with poor attendance records. The BCHR policy is intended to help employees work toward identifying and addressing reasons for excessive absenteeism. According to information obtained from the International Personnel Management Association (IPMA), a "pattern of abuse" in regard to sick leave typically refers to employees who, over a period of time, have violated the organization's attendance policy on numerous occasions. In order to confidently discipline employees with attendance problems, legal experts say the best practice is to have a clearly written policy that specifies the organization's standards and employee requirements. For example, be sure to specify that discipline—including termination—may result from repeated abuse and misuse. Experts recommend keeping the policy flexible, since it is virtually impossible to list every single potential offense. Neither WPC nor the City has developed a written abuse control policy.

Methods for monitoring sick leave abuse vary from one organization to the next, but there are some common guidelines all employers can follow. According to IPMA, the following suggestions are made on how to manage leave abuse cases.

- Recognize the problem and intervene early before it escalates. Managers need to enforce leave policies and take appropriate action.

- Find out why the employee is abusing leave. Talk to employees who are abusing leave and see if their behavior stems from a personal problem. If so, recommend counseling or refer them to the organization's Employee Assistance Program.

- Learn to say "no." Do not allow employees to abuse leave policies. When hearing an inappropriate request to misuse leave, a supervisor can decline the sick leave request.

- Use procedures, regulations, practices and knowledge to benefit management as well as the employee. Supervisors and managers must work with employees to make certain that all employees are aware of leave policies and how to use them.

- Document everything.

WPC has tried to respond to suspected employee leave abuse at the department level and documents leave issues in employee personnel files. However, WPC and the City do not have an abuse control policy, which could make it difficult to ensure that all employees are aware of leave policies and procedures governing the use of leave. In addition, the City does not get involved in monitoring leave usage until a department contacts Human Resources (HR).

F5.19 **Table 5-9** shows overtime paid compared to the peer departments. When employees call in sick, WPC may schedule overtime to fill the necessary job requirements. Neither WPC nor the City actually analyzes sick day use, compensatory time use, or vacation leave to determine how these types of absences affect scheduling overtime.

Table 5-9: Overtime Paid for 2001

	WPC	LCSD	LDWPC	Peer Average
Number of Employees [1] [2]	46	49	46	48
Overtime Hours Reported	2,176	7,442	4,867	6,155
Overtime Paid	$50,804	$187,553	$133,407	$160,480
Average Overtime Reported In Hours per Employee	47	152	106	129
Average Overtime Reported In Cost per Employee	$1,104	$3,828	$2,900	$3,343

Source: WPC, Warren and peer cities
[1] Employee count varies from **Table 5-5** due to retirements, transfers and terminations.
[2] Employees not eligible for paid overtime are excluded from the totals.

Table 5-9 shows that WPC annual overtime usage is 81 hours less per employee than the peer average. In addition, data provided by the WPC director shows that overtime costs decreased by 44 percent from 1997 to 2001. WPC employees are permitted to accumulate a maximum of 180 or 240 hours of compensatory time in lieu of paid overtime. The labor agreement specifies a calculation of actual hours worked by a premium rate of time and one-half. In addition to paying a total of 54.4 weeks of overtime, WPC employees used a total of 25.2 weeks of compensatory time. While WPC overtime paid is less than the peer average, the amount of compensatory time and vacation time used can create the need to assign overtime on a daily basis.

R5.16 Although sick leave and overtime use per employee are lower than the peers, WPC should seek to further improve sick leave management and implement monitoring practices by collecting and analyzing sick leave usage, vacation usage, and compensatory time used including paid overtime. Analysis similar to **F5.18** should be completed on a regular basis to determine how leave usage impacts overtime worked and compensatory time used. An effective analysis will allow WPC to identify patterns of abuse and where WPC needs to coordinate their efforts to control abuse. Reducing sick leave usage could result in a reduction in the amount of overtime worked and compensatory time earned. Reducing sick leave usage should also have a positive impact on the scheduling of daily work assignments. In addition, WPC should work with HR in developing a written abuse policy to clearly specify the standards and employee requirements for leave use, and consequences of leave abuse.

Financial Implication: If it could reduce the amount of sick leave used by one day per employee to be more comparable to the ODAS benchmark, WPC could realize an annual cost savings of approximately $6,100 in sick leave costs, which is based on 2001 data.

Sewer and Storm Water Division

F5.20 WPC is not compliant with the Clean Water Act (CWA). The CWA is a comprehensive set of programs and requirements designed to address the complex problems caused by a wide variety of pollution sources. One of the cornerstones of the CWA is the National Pollutant Discharge Elimination System (NPDES) permit, which regulates the discharge of pollutants into the U.S. waterways. NPDES permits are issued for industrial, municipal, and other point source dischargers. The NPDES permit requires the submission and approval of a Long Term Combined Sewer Plan (LTCSP) for municipalities with a combined sewer system.

On January 11, 2001, the director submitted the LTCSP to the OEPA. On May 11, 2001, the OEPA rejected the LTCSP and provided a checklist of non-compliance items. This checklist requires the director to provide more substantive explanations for the short and long term goals identified in the LTCSP and resubmit the plan for approval. According to the OEPA, as of November 14, 2002, there had been no follow up action or resubmission of the LTCSP by WPC. The director is currently revising the LTCSP to address the OEPA recommended changes. Without an approved LTCSP, WPC is not compliant with either the NPDES permit or the CWA.

R5.17 The director of WPC should promptly provide sufficient information to the OEPA for the approval of the LTCSP. Gaining OEPA approval for the LTCSP will enable City to begin implementing EPA approved measures to control sewer overflows. Without the OEPA approval of the LTCSP, WPC could have their NPDES permit revoked or denied during the

application process. Once the plan is approved, the City should concentrate on updating the existing plans for the necessary long-term capital improvements including the separation of the combined sewer system. (See **F5.3** for more information on capital improvement planning.)

F5.21 WPC uses flow meters to proactively identify system problems. Sanitary flow meters are tools used to detect the sanitary inflow and infiltration into the sewer system. The level of inflow and infiltration can determine if a sewer line is experiencing a problem such as a line break. Contributing factors to breaks include age of the sewer system, components of the soil, average flow, location of the pipes and combined or separate sewer system.

According to the American Public Works Association (APWA), the use of sanitary flow meters to determine inflow and infiltration is considered a best management practice. Excessive inflow or infiltration detected by flow meters creates overflows and potentially causes processing difficulties. In addition, use of flow meters enables WPC, to accurately determine the amount of sewage that is treated for entities outside the City. Sanitary flow meters are the first step in implementing an action plan for the control of overflows. Lake County and Lorain also use flow meters for the sewer operations.

F5.22 **Table 5-10** illustrates staffing levels and sewer performance for WPC and the peers.

Table 5-10: Sewer Performance for FY 2001

	WPC	LCSD	LDWPC	Peer Average
Miles of sewer line maintained	276 [2]	807	560	684
Total number of FTEs [1]	12	6	12	9
Miles of sewer line maintained per FTE	23	134.5	46.7	76.0
Number of customers	20,836	35,677	23,685	29,681
Average customers per FTE	1,736	5,946	1,974	3,298
Number of sewer complaints resolved	217	344	299	321
Average complaints per FTE	18	57	25	36
Number of repairs completed	32	116	25	71
Average repairs made per FTE	2.7	19.3	2.0	7.8

Source: Sewer Foreman

[1] Total number of FTEs does not include the sewer foreman, other division managers and two vacant labor positions at WPC. WPC also performs storm water functions.

[2] Based on an estimate provided by the director, this includes 65.5 miles for the combined sewer area identified in the LTCSP program.

As indicated by **Table 5-10**, the number of sewer lines maintained per FTE, customers per FTE, and complaints per FTE at WPC are lower than the peers. However, WPC is handling

the second highest number of repairs per FTE. A significant factor affecting the differences in staffing levels and ratios is WPC having a combined sewer and storm water department, while LCSD and LDWPC's sole responsibility is sewer operations. The cities within Lake County are responsible for storm water operations and the streets department is responsible for storm water activities in Lorain. Consequently, the additional responsibilities for storm water contribute to the relatively higher staffing levels at WPC. To further assess the performance and staffing of this division, a preventative maintenance analysis was completed in **F5.23**.

F5.23 According to industry standards as reported by *Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards* (Ammons, 1996), best performing sewer maintenance operations complete daily operations and preventative maintenance, such as routine cleanings, inspections, and rooting of the sewer system. Sewer lines are subject to root infiltration, grease, sand, and other heavy material buildup which causes unnecessary leaks and breaks. Minor roots and excessive buildup can be cleared with routine preventative maintenance, such as high pressure flushing, rodding, and the insertion of vaporous gas.

Dye tests and smoke tests are completed on a sewer system to determine illegal tap-ins as well as where portions of the sewer line are in poor condition creating leaks. Once this is determined, the sewer division can proactively plan to repair or replace that portion of the sewer line that is being affected by the minor leaking before it creates a problem for residents.

Table 5-11 compares preventative maintenance activities at WPC to peers.

Table 5-11: Sewer Preventative Maintenance for FY 2001

	WPC	LCSD	LDWPC	Peer Average
Miles of lines maintained	210.0 [1]	807.0	560.0	683.5
Flushing miles completed for FY2001	144.1	375.0	106.0	240.5
Percentage of total miles flushed	69%	47%	19%	35.2%
Average miles per dye test performed	3.3	10.0	N/A	N/A
Average miles per smoke test performed	0.2	N/A	N/A	N/A

Source: Sewer Foreman at WPC and the peer districts.
[1] Excludes miles in the combined sewer area identified in the LTCSP program.

Table 5-11 indicates that WPC's preventative maintenance program is more extensive than the peers, partially explaining the relatively higher staffing levels at WPC (see **F5.21**). According to **Table 5-11**, WPC completed high pressure flushing on 69 percent of its entire system, which is meeting standards identified by *Municipal Benchmarks* and positively

contributes to the effectiveness of services provided to residents. WPC also completes rodding and vaporous gas insertions to help control unnecessary debris buildup. By completing more frequent dye and smoke tests, leaks can be identified and repaired quickly and before they create significant problems for residents. Furthermore, performing preventative maintenance on a consistent basis minimizes the potential for significant and emergency repairs, which could cause major service disruptions and significant repair costs to be incurred by WPC. In addition to the sewer preventative maintenance activities illustrated in **Table 5-11**, the WPC director indicated that staff cleaned and flushed over 617 catch basins and 9,283 feet of storm sewer line in 2001.

According to the storm water committee meeting notes and general information about the proposal obtained from the superintendent, WPC has planned for a very extensive Phase II storm water program, which will affect staffing levels and workloads in the future. An effective Phase II storm water program would benefit the City by providing the following:

- Protecting the wetlands and aquatic ecosystems;
- Improving the quality of receiving water bodies;
- Conserving the water resources;
- Protecting public health; and
- Providing flood control.

R5.18 Based on the staffing and preventative maintenance analyses, WPC should maintain the current staffing levels in the sewer and storm water division. When the Phase II storm water program is fully implemented, WPC should reexamine its staffing levels in conjunction with the additional job functions and responsibilities and determine if vacant positions should be filled. If WPC decides not to fill vacant laborer positions, it should indicate this in subsequent budgets and to City council. To justify any proposed changes in staffing levels, WPC should use performance measures such as average customer complaints resolved, number of catch basin repairs, number of catch basins cleaned, and miles of ditching completed to further evaluate the need for staffing adjustments in this division.

F5.24 According the director, WPC intends to fill its vacant engineer position. However, the engineering department is responsible for responding to and resolving engineering requests for all City departments. Since the engineering department does not have staff certified as professional engineers (P.E.), it contracts with a P.E. depending on the expertise needed. According to the engineering department, a P.E. is not required for WPC. In addition, the engineering department's staffing levels appear to be adequate (see the **engineering, planning and building section** of the City of Warren Phase III performance audit). Further, LCSD and LDWPC use their respective engineering departments to fill all engineering needs. Using the engineering department would allow WPC to allocate additional resources to improve operations as discussed throughout this report.

R5.19 WPC should work with the engineering department to determine how the department can effectively fulfill WPC's needs in a timely manner. Based on current staffing levels in the engineering department, WPC should consider not filling its vacant engineering position. To ensure that WPC's needs are met in a timely manner, WPC and the engineering department should consider establishing a formal agreement outlining responsibilities and response times to provide and fulfill service requests. Additionally, WPC should monitor and document the effectiveness and timeliness of the engineering department's services.

Financial Implication: Using the engineering department and thereby not filling the vacant engineering position would result in an annual cost avoidance of approximately $60,200 in salaries and benefits.

F5.25 Based on a sample review of work orders and according to the sewer foreman, the sewer division at WPC does not always track response times for complaints and completion times for general maintenance and emergencies. According to industry standards as reported by *Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards* (Ammons, 1996), best practice entities track response times to increase operational efficiency for sewer divisions. In addition, the sewer foreman does not consistently obtain all appropriate information from the sewer crew. Therefore, the foreman cannot effectively monitor, evaluate, or improve service work.

R5.20 WPC should consistently and accurately record response and completion times for work orders to provide management information necessary to assess performance. Completion times should be recorded and monitored by the sewer foreman to help ensure that operational efficiency of the repair crew is accurately recorded. This measurement will also provide management with important performance information necessary to evaluate the effectiveness of the work crews assigned. Although data gathering will take some additional time, the resulting information should be compiled to help indicate appropriate staffing levels and crew performance which can be used to ensure an efficient operation. (See **F5.25** for capabilities of the CartêGraph work order system and the benefits of work order management).

F5.26 WPC is in the process of fully transitioning to CartêGraph, which will allow it to enhance its data tracking and monitoring capabilities. For instance, CartêGraph is currently used for work orders to track jobs, dates, and conditions reported and found, but it could be further employed as a costing mechanism after the transition. According to CartêGraph's brochure, *Solutions Powering Public Works*, a public works management system provides the data to consider how decisions may influence current budgets, long-term planning and asset condition by improving an organization's existing practices through automation, better information and system integration. At WPC, only material item descriptions are entered in work orders, while labor and equipment costs are excluded. Therefore, the true cost of

repairs cannot be determined. Also, due to some manipulation problems, the data from the prior software has not been completely loaded into the new software in a usable form. As a result, WPC re-enters key data into the new software. However, data in the prior system can be integrated into the new system, with some manipulation. Further assessment of mapping software and integration with mapping software is in the **water department** section.

According to CartêGraph's brochure, *Solutions Powering Public Works,* a public works management system should be able to:

- Map the system with major pipes, outlets and topography identified;
- Inventory pipes, components and inspections; and
- Schedule maintenance activities.

The Government Accounting Standards Board (GASB) has issued reporting requirements that affect how municipal governments track and report capital fund and capital asset financial information. To comply with GASB 34, a public works management system should include the following:

- The ability to track infrastructure asset inventories;
- A process to schedule inspections and report the results;
- Tools to track the costs of assets and their depreciation; and
- The ability to produce reports on infrastructure and maintenance costs.

Although WPC has the capability to perform the above functions with its software, it is not fully used to help the City achieve compliance with GASB 34.

R5.21 WPC should work with the City's technology department to transfer data from the previous system to the new system, thereby avoiding manual re-entry of previous data. WPC should track additional performance data and costs to maximize the use of its public works management system. Complete data should be entered so projects can be better analyzed for performance and costs. By providing training and updating job functions (see **R5.11**), the clerk typist position should be responsible for inputting data in the system. Using CartêGraph data with mapping software would be a useful tool and eliminate work duplication. CartêGraph's *Getting Started in Public Works Management Guide*, which is available at no cost from their Web site, gives further details on effectively implementing and using a public works management system.

Planning for Storm Water Phase II EPA Requirements

F5.27 The U.S. EPA encourages public awareness and involvement in Phase II activities. One of the six minimum control measures is to establish public education and outreach. Active

participation in Phase II planning and implementation can lead to greater public support and compliance. WPC is actively pursuing community involvement in the planning and implementation of its storm water program. The department has conducted several public interest events to gain active participation in its storm water program and has formed a storm water committee comprised of leaders of schools, churches, businesses, government, and community members. The storm water committee began meeting in December of 2001, and has been actively involved in the establishment of the current rate structure and the selection of the best management practices (BMP). These BMPs will be used by WPC to implement the Phase II action plan. The department has also distributed Phase II pamphlets to the City. WPC's storm water program is progressing in a timely manner and should be ready for submission to the OEPA by the required deadline of March 31, 2003.

C5.2 WPC is commended for its efforts to gain public awareness and acceptance of its storm water program. WPC should continue to keep the community informed about storm water pollutants as well as about other environmental concerns as they arise. WPC is leading the community into acceptance and compliance through greater public awareness and participation in the Phase II planning. Through the members of the storm water committee, the department has gained community viewpoints and opinions.

F5.28 Each municipality that is required to be Phase II compliant will have to establish a revenue source to meet the six minimum measures by implementing OEPA approved Best Management Practices (BMPs). On May 8, 2002, City Council passed a storm water utility fee to establish a residential and commercial rate structure for the entire City. The storm water utility fee is supposed to provide additional revenue for a sufficient system of collections, conveyance, retention, treatment, and release of storm water. However, the storm water utility fee was not accurately developed. The analysis of the necessary financial requirements to support this program contained an insufficient forecast of revenues and expenditures. For example, revenues were incorrectly assessed, causing a $600,000 difference between planned revenue and actual utility billable amounts, due to planning to bill storm water fees to tenants instead of building owners and assessing fees on every parcel of land rather than excluding assessments on undeveloped parcels. Storm water fees are assessed on building structures (not tenants) and developed parcels of land. In addition, various expenditures were labeled as "unknown," so the forecast was unchanged in areas such as employee wages and benefits, supplies, utility billing, and administrative services (see **F5.2** and **R5.2** for additional information on forecasting).

WPC has not investigated Phase II funding sources such as low interest loans and grants available through the OEPA to provide additional support for Phase II implementation. The director indicated that until the Phase II storm water program is fully implemented, revenue sources cannot be fully analyzed by the department for adequacy. However, preplanning for additional revenue needs of the department before a deficit is experienced in this division

would reveal that various revenue sources are available. Revenue sources include $25,000 grants for public awareness and participation through the Ohio Environmental Education Fund to help support environmental education efforts. Recycling grants are available through Recycle Ohio and the Litter Prevention Fund for various amounts to help defray the costs of public participation in recycling programs. Capital improvement projects could be funded through the Public Works Commission grants, as well as below market interest loans through the Water Pollution Control Loan Fund (WPCLF).

R5.22 The WPC director should research additional alternative funding resources for the storm water program, including grants and below market interest loans through the OEPA. As the department finalizes storm water planning, the alternative funding sources should be evaluated for their applicability. The Phase II requirements are mandatory and if the utility fees collected are not adequate to support the proposed program, additional funding sources such as grant opportunities should be researched. See **F5.8** and **R5.8** for additional grants that could be used for Phase II.

Maintenance, Operations and Lab Divisions

F5.29 Levels of total suspended solids (TSS) and biological oxygen demand (BOD) contribute to the purity of the effluent water being discharged into the local waterways. Neither BOD nor TSS is desired in the effluent water because high levels of BOD and TSS can be harmful to lakes and streams. Therefore, wastewater treatment is designed to remove as much of each as possible. BOD is a measure of the oxygen required to decompose organic material. A high level of BOD in a pond or stream threatens the oxygen supply, and therefore the survival of fish in that body of water. TSS includes organic and inorganic particles present in water. High levels of TSS restrict life, coat lake and stream beds, and thereby threaten aquatic life.

Table 5-12 compares total cost of operations, cost per million gallons processed, percentage of TSS removed from local waterways, and the reduction in BOD at WPC to the peers.

Table 5-12: Treatment Plant Operational Efficiency for FY 2001

	Warren	LCSD	LDWPC	Peer Average
Wages & Benefits	$2,887,093	$5,186,943	$3,619,435	$4,403,189
Supplies & Maintenance	$355,527	$698,605	$345,993	$522,299
Other Expenditures[1]	$2,358,255	$2,027,254	$2,428,040	$2,227,647
Total Cost of Operations[2]	$5,600,875	$7,912,802	$6,393,468	$7,153,135
Million Gallons (MG) processed per year	4,568	3,816	5,281	4,549
Cost per MG processed	$1,226	$2,074	$1,211	$1,592
Percentage of Total Suspended Solids (TSS)	97%	98%	90%[3]	94%
Percentage of Reduction of Biological Oxygen Demand (BOD)	95%	95%	92%[3]	94%

Source: Superintendent at WPC and the Peer Districts
[1] For a detailed listing of other expenditures, see **Table 5-1**
[2] Total Cost Includes wages & benefits, supplies & maintenance, and miscellaneous expenses
[3] Weighted average of the Black River Plant and the Philip Q. Maiorana Wastewater Plants percentages

As illustrated in **Table 5-12**, WPC's percentage of TSS removed and reduction in BOD is higher than the peer average, indicating an effective treatment process. WPC is also exceeding the benchmark of 96 percent removal of TSS and 85 percent reduction of BOD reported in *Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards* (Ammons, 1996). In addition to effectively treating the water in the system, WPC appears to be providing services in an efficient manner, as evidenced by the cost per MG processed being 23 percent less than the peer average. Operator efficiency and staffing levels are analyzed in greater detail in **F5.30**.

C5.3 WPC is efficiently providing treatment services without sacrificing the quality of the services provided to the citizens. As a result, WPC is minimizing the costs necessary to provide a high-level of service, showing that funds provided by citizens to support operations are being used effectively.

F5.30 Operators in a wastewater treatment facility perform a variety of tasks depending on the type of treatment process, size of the facility, current security measures, and various other elements. Each facility is unique in the duties and responsibilities assigned to this division. At WPC and the peers, the operators perform security functions, collect samples, monitor treatment process gauges, and perform general assessment walk-throughs of the facility to identify any problems or concerns with the treatment process. **Table 5-13** presents staffing levels and ratios to assess operator efficiency at WPD and peers.

Table 5-13: Operator Efficiency

	WPC	LCSD	LDWPC	Peer Average
Number of FTE Operators[1]	6.0	13.0	14.0	13.5
MG Processed for FY2001	4,568	3,816	5,281	4,549
MG Processed per FTE	761	294	377	337
Facility square footage	71,325	77,151	74,050	75,601
Square footage per FTE	11,888	5,935	5,289	5,600

Source: Chief Operator at WPC and the peer districts

[1] Excludes the Division Supervisor. This also excludes 8.0 FTEs at LCSD that are dedicated solely to building maintenance. In addition to the operators, WPC and LDWPC have other staff provide building maintenance functions when available and necessary. For example, WPC uses two plant alternates and sewer staff to also perform building maintenance activities.

According to **Table 5-13**, the amount of waste water processed and square footage per FTE at WPC is over two times greater than the peer average, indicating a high level of productivity per employee. The high efficiency level of this division can be attributed to the director enhancing the security around the perimeter of the treatment facility by using more security cameras, and implementing pager and closed cellular networks. Accordingly, WPC was able to reduce 2.0 FTE operators from the night shift and now uses only 1.0 FTE for the night shift.

C5.4 Through active and direct involvement, the director of WPC has implemented an efficiently staffed operations division. By reducing 2.0 FTE operators, WPC has realized an annual cost savings of approximately $107,000 in salaries and benefits.

F5.31 WPC operates an in-house industrial pretreatment program. This division completes inspections and collects samples from local businesses to determine types and amounts of hazardous waste being discharged into the treatment facility. Industrial pretreatment programs located inside waste water treatment plants are not required by the State of Ohio. These programs provide for the control of pollutants discharged into the influent wastewater. Each city in the State of Ohio may coordinate its industrial pretreatment program with their regional office of the OEPA or subcontract this service to an independent laboratory. The coordination of the pretreatment program establishes what the treatment facility is able to process in regards to industrial wastes and also coordinates the allowable industrial discharges into the facility's effluent water. The effluent water from WPC is water that is being discharged after treatment into the Mahoning River.

F5.32 According the OEPA industrial pretreatment annual report, WPC had 100 percent of the industries in full compliance for FY 2001, which is above OEPA's benchmark of 94 percent. **Table 5-14** compares the number of permitted industries, number of significant industries inspected, and average worker hours per inspection to the peers.

Table 5-14: Industrial Pretreatment Inspection Efficiency

	WPC	LCSD	LDWPC	Peer Average
Number of industries in compliance	10	17	19	18
Percentage of industries in full compliance	100%	94%	95%	95%
Number of announced inspections completed [1]	10	18	20	19
Number of unannounced inspections completed [1]	10	18	0	9
Total number of inspections completed	20	36	20	28
Number of FTEs completing inspections	1.0	3.0	1.0	2.0
Number of inspections per FTE	20	12	20	14

Source: Industrial Pretreatment Coordinator WPC and Peer Facilities
[1] On significant permitted industries

Table 5-14 illustrates that WPC's inspections per FTE is higher than the peer average, indicative of an efficient pretreatment program. All inspections are completed using an inspection form developed by the industrial pretreatment coordinator. While each form may differ slightly in design, the forms must meet OEPA standards for industrial pretreatment inspections.

F5.33 WPC conducts sampling on significant permitted industries. A significant permitted industry is one that discharges 25,000 gallons or more into the treatment process with reasonable potential to negatively affect the process. The significant permitted industry samples are analyzed and results are compared to local limits established by the OEPA. If a business is discharging hazardous wastes exceeding OEPA limits, WPC can levy a fine or surcharge against the business. Industry surcharges provide revenue to support the processing required on the additional hazardous wastes. **Table 5-15** reflects the number of times each industry is sampled by the industrial pretreatment coordinator at WPC and compares these numbers to the peers. **Table 5-15** also compares the approximate average collection time for each sample.

Table 5-15: Industrial Pretreatment Sampling Efficiency

	WPC	LCSD	LDWPC	Peer Average
Total Number of Industries Permitted	10	18	20	19
Number of industries sampled	10	18	20	19
Number of industries sampled twice a year	4	16	19	17.5
Number of industries sampled four times a year	0	0	1	0.5
Number of industries sampled six times a year	2	0	0	0
Number of industries sampled eight times a year	2	0	0	0
Number of industries sampled ten times a year	2	2	0	1
Total number of samples performed	56	52	42	47
Number of FTEs [2]	1.0	3.0	1.0	2.0
Number of samples per FTE	56.0	17.3	42	23.5
Average worker hours spent collecting samples	2.0	0.8	4.0	2.4

Source: Industrial Pretreatment Coordinator at WPC and Peer Facilities

The number of industrial pretreatment samples collected depends on the hazardous material being discharged into the wastewater by local industries. OEPA requires certain industrial discharges to be sampled more often than others. Since it is sampling various industries 6, 8, and 10 times per year as required by OEPA, WPC collected 56 samples, while LCSD collected 52 samples and LDWPC only collected 42 samples.

Average worker hours spent collecting samples greatly depends upon the environment in which the samples are being gathered and the number of employees assigned to gather the samples. WPC averages 2.0 hours to collect each sample while LCSD only requires 0.8 hours, because it has two more FTEs collecting samples. According to an operational benchmark as reported by *Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards* (Ammons, 1996), the average worker hours spent collecting samples is two hours. WPC is meeting this benchmark and exceeding the peer average of 2.4 hours spent collecting samples.

F5.34 To carry out bacteriological and chemical testing for its own waste water operations, WPC runs a certified laboratory. **Table 5-16** compares the number of microbiological and chemical tests performed annually by WPC and peer waste water districts.

Table 5-16: Annual Laboratory Testing Per FTE

	WPC	LCSD	LDWPC	Peer Average
Bacteriological Tests	670	296	344	320
Chemical Tests	12,000	10,750	14,323	12,536
Total Annual Tests	12,670	11,046	14,667	12,856
Chemist FTEs	2.0	3.0	4.0	3.5
Tests Performed Per FTE	6,335	3,682	3,667	3,674

Source: WPC Department and Peers

Table 5-16 shows that WPC performs an average of 6,335 tests per FTE compared to the peer average of 3,674. Laboratory testing is required by the OEPA to ensure the quality of the treatment process as well as the safety of effluent water being discharged in the local water ways. WPC is satisfying the OEPA requirements as established by their NPDES permit. While WPC performs a significantly higher number of tests per FTE than the peers, the number and complexity of tests completed by wastewater treatment facilities varies depending on the type of treatment process. For example, WPC performs more routine testing throughout the treatment process than the peers to ensure that the sludge introduced into Nature's Blend™ can be used to create and market a Class A organic fertilizer (see the *Biosolids* section for more information). Based on **Table 5-16** and the types of tests performed, WPC appears to be adequately staffed with chemists.

F5.35 Maintenance work orders have remained open during 1999, 2000, and 2001 since the work has not been completed. The maintenance supervisor indicated that work orders are open when the machinery or equipment initially breaks, and the work orders are not closed until the equipment or machine is repaired. Equipment repairs may take a year or longer depending upon how crucial the equipment is to the process. If the work order can remain open because the machinery is not needed, the expense is deferred until more funding is available to the department. Therefore, large numbers of work orders are completed at the beginning of each year when revenue is available. Eventually, WPC will not have funding available to complete routine plant maintenance and there will be no additional budgeted funds available because postponed expenses will comprise the entire maintenance budget. On June 12, 2002, the director of WPC asked City Council to transfer funds from a sewer replacement fund into the maintenance account for preventative and operational facility maintenance.

Although funding could impact the ability to perform maintenance activities, the postponement of maintenance work is also due to WPC not having a comprehensive maintenance plan that details the equipment that needs to be replaced during the current year. The current maintenance system outlines preventative maintenance, but does not detail the replacement of essential parts, does not project when critical equipment need to be replaced, and does not explain the impact of not replacing or repairing equipment.

R5.23 The maintenance supervisor should develop a comprehensive maintenance plan for the department that includes the above mentioned information. By developing a comprehensive maintenance plan, WPC would be able to better justify and support the need for additional funds to perform maintenance activities. In addition, this report identifies potential cost savings that could be used by WPC to perform routine maintenance work.

F5.36 **Table 5-17** compares the maintenance division at WPC to the peer wastewater facilities.

Table 5-17: Maintenance Efficiency for FY 1999, 2000 and 2001

	WPC	LCSD[1]	LDWPC [1]	Peer Average
Average work orders completed during FY 1999, FY 2000, FY 2001	788	583	200	392
Number of FTEs	7.0	8.0	12.0	10.0
Average work orders completed per FTE	113	73	17	39

Source: Maintenance Supervisor at WPC and the peers
[1] LCSD and LDWPC provided rough estimates of the work orders completed by their departments because their system for tracking work orders is not as thorough as WPC.

Table 5-17 indicates that WPC completes 74 more work orders per FTE than the peer average. However, a very detailed preventative maintenance tracking system is in place at WPC that is not in place at the peer districts, thereby impacting the staffing analysis as the peers could only provide estimates of the number of completed work orders. WPC's tracking system provides detailed information for the work orders opened and completed, as well as providing reminders to the maintenance supervisor for orders that need to be completed for the current month. Further, WPC's tracking system outlines the maintenance work orders for all maintenance jobs completed, whereas the peers only detailed major maintenance in their work orders.

F5.37 WPC's maintenance division is efficiently staffed, as reflected in **Table 5-18**.

Table 5-18: Plant Mechanic Workload Comparison

	WPC[1]	LCSD	LDWPC	Peer Average
Plant Mechanics (FTE)	7.0	8.0	12.0	10.0
Facilities Square Feet	71,325	77,151	74,050	75,601
Square Feet per FTE	10,189	9,644	6,171	7,560
Million Gallons (MG) processed per year	4,568	3,816	5,281	4,549
MG processed per FTE	653	477	440	455

Source: Maintenance Supervisor at WPC and the peers
[1] WPC's FTEs do not reflect vacancies in the division (see **F5.37**).

As shown in **Table 5-18**, the facility square footage per FTE is 35 percent higher than the peer average while the MG processed per FTE is 44 percent higher than the peer average. The WPC work order system that outlines preventative maintenance schedules for the entire staff contributes to the efficiency of this division (see **F5.35**). Another factor is the low turnover rate in the department which provides the employees with thorough knowledge and experience with the existing treatment equipment. Based upon **Table 5-18**, the maintenance division is operating very efficiently.

C5.5 Effectively using a detailed preventative maintenance tracking system allows the maintenance division to operate with minimal staff while still performing the necessary work. In addition, the tracking system provides appropriate and thorough management information that can be used to support any needed staffing changes in the future.

F5.38 WPC intends to fill a vacant chief mechanic position in the maintenance division. The division is currently using the mechanic III as an interim chief mechanic. The mechanic III is providing the supervisory functions necessary for this position while also completing the daily requirement of a mechanic III, without falling behind on work expectations and without using a large amount of overtime. This division accounted for approximately 127 hours, or six percent, of the department's total overtime hours in 2001.

F5.36 and **F5.37** indicate that the maintenance division is operating very efficiently, which can be partially attributed to the role of the chief mechanic. At WPC, the chief mechanic focuses on the technical aspects of operations, acts as a "team leader" and coordinates tasks for staff to perform, which allows the maintenance supervisor to focus more on administrative functions and the division to operate with fewer staff than the peers (see **Tables 5-17** and **5-18**). LCSD also has an employee that performs similar functions as WPC's chief mechanic.

As indicated in **F5.36** and **F5.37**, the ratios of work orders per FTE, square footage per FTE and MG processed per FTE are significantly higher at WPC. Furthermore, as the equipment at WPC ages, the workload for the mechanics may increase. As a result, filling the chief mechanic position and operating with 8.0 FTEs would fully ensure that the maintenance division has sufficient resources to handle its workload. By operating with 8.0 FTEs, the ratios of work orders and MG processed per FTE would still be higher than each of the peers, and the square footage per FTE would be higher than the peer average.

R5.24 WPC should either recommend for promotion an existing mechanic to the chief mechanic position or fill the position with a qualified external applicant. Doing so would provide the supervisory support and related functions, and allow the division to maintain its high-level of productivity. In addition, WPC should assess the operational effect of filling the chief

mechanic position to determine if the vacant mechanic position should also be filled (see **Chart 5-2**).

Financial Implication: Based on the chief mechanic salary level in the collective bargaining agreement, filling this position would cost WPC approximately $64,200 in annual salaries and benefits.

Security

F5.39 WPC has security measures in place to protect its wastewater treatment facility including 24 hour video surveillance with 35 cameras, immediate response buttons, two way radios, and a closed cellular network. While WPC has various forms of emergency related documents to refer to for situations that the department has experienced in the past, it does not have a complete written emergency operations plan (EOP) and has not conducted a vulnerability self- assessment. Additionally, WPC has not coordinated with the fire or police departments for emergency situations. The Federal Emergency Management Association (FEMA) identifies basic elements of an EOP that should include:

- Contingency planning and communications;
- Evacuation planning and shelter;
- Facility shutdown and records preservation;
- Community outreach though public information releases and media relations;
- Continuity of management and employee support; and
- Resuming normal operations.

Since WPC has not conducted a formal vulnerability self assessment, there is no documented assurance that the facility security measures are adequate and have been thoroughly analyzed for security threats and unanticipated natural disasters. A comprehensive vulnerability assessment for the plant would provide an ongoing analysis of vulnerability to both intentional threats and natural disasters. Without a thorough assessment of plant security strengths and weaknesses, the City, county, and citizens could experience extensive service problems in the event a major disruption to plant operations occurs.

The director considers security measures previously taken as well as the compilation of past experiences for an EOP to be adequate. However, FEMA strongly encourages businesses both in the public and private sector to establish comprehensive written emergency operation plans and procedures.

R5.25 WPC should take steps to compile a comprehensive written EOP. The director should meet with the EOP contact, and other department directors to plan or coordinate what is to happen when an emergency occurs. WPC should obtain full details of the city emergency response

plan. In conjunction with the EOP, WPC should conduct a vulnerability self- assessment of its entire operation. WPC should thoroughly review information from the Association of Metropolitan Sewer Agencies (AMSA) and obtain additional information concerning free vulnerability self assessment tools (VSAT). Once this assessment is completed and an EOP developed, the director should maintain a comprehensive document to ensure that all future potential security issues are reviewed and resolved. Financial and technical assistance for the vulnerability self assessment completion are available through FEMA, AMSA and OEPA.

Biosolids Division

F5.40 According to the National Biosolids Partnership, environmentally sound methods for managing biosolids include recycling, landfill and incineration. Additional available options are subject to restrictions imposed by the Clean Water Act and the Ocean Dumping Ban Act. Research indicates that surface disposal and crop application are the least expensive options while incineration and landfill are costlier than most recycling methods. In 1997, WPC changed its operations from an incineration and landfill process to the current process of converting waste materials into an organic fertilizer, which avoids costs of regulation and disposal. In addition, WPC's biosolids program saved approximately $400,000 in landfill costs during FY 2000.

C5.6 Pursuing a biosolids program has resulted in landfill cost savings and has met EPA requirements to control pollutants. Furthermore, WPC has been proactive by altering its biosolids operations to be more cost effective, while maintaining an environmentally sound process.

F5.41 Projected revenue for selling Nature's Blend™ does not cover the costs to produce the product, although the WPC biosolids program has helped to minimize landfill costs. Contributing to this are the costs for labor and materials for packaging and selling the product. Up to four plant employees hand bag the biosolids product. WPC is considering purchasing bagging equipment to make the process more efficient and less costly.

The costs and revenue related to the biosolids program in 2002, including staff involved in bagging and selling the product, are presented in **Table 5-19**.

Table 5-19: Costs and Revenues for Selling Nature's Blend™

	Amortizable Costs	Annual Costs	Annual Revenues
Three baggers for three months[1,2]		$36,242	
Salesman		$57,486	
Accountant[2,3]		$23,763	
Advertising for 2001[4]		$3,779	
43,600 Bags	$19,097		
City owned vehicle purchased in 1998	$15,243		
Promotions (mugs)	$510		
Cost of plates and artwork	$11,550		
Anticipated sales for 2002 of Nature's Blend™			$20,000
Total	**$46,400**	**$121,270**	**$20,000**

Source: Warren Union Agreement and WPC Industrial Pretreatment Coordinator

[1]Approximate costs of labor include benefits calculated at 65 percent.

[2]No data is available for time commitments for bagging and sales. All information is from approximations based on interviews. Sometimes additional labor is required from other employees involved with bagging Nature's Blend™.

[3]Accountant's salary and benefits calculated at 40 percent, because this is the amount of time allocated by the accountant for Natures Blend.

[4]Advertising costs for 2001 were used since the year 2002 was incomplete when data was collected.

As illustrated in **Table 5-19**, revenues cover only 16.5 percent of the annual operating costs for selling Nature's Blend™. Consequently, the sales process is currently not cost-beneficial to operate. However, WPC could have a potential to increase revenues as the program gains more public exposure and awareness, and by developing an effective marketing plan and adequately tracking costs (see **R5.27**). Moreover, methodology and data to develop sound and reliable forecasts of revenues is currently difficult because WPC has been actively selling the product for only the past two years. The costs other than labor in **Table 5-19** can be amortized over a period of time depending on how long they apply. For example, the bags, mugs, and vehicle purchased by WPC will be used for several years, while the printing plates and artwork were a one time cost. Furthermore, WPC might need to maintain all three baggers even if it did not sell packaged Nature's Blend™ because their time would need to be spent loading and delivering the bulk product.

To enhance revenues, WPC has sold other cities its bags and other promotional materials. In addition, WPC has approached other cities to encourage them to use sound environmental disposal methods for their biosolids. WPC meets with these city representatives to adjust its material to meet guidelines and instruct them on promotion and public education. At present, O'Fallon, MO and Middletown, PA are partners purchasing these products, spending $11,771 thus far for shirts and mugs.

LCSD, LDWPC, State College and Tacoma do not package their product. State College and Tacoma dispose of their composted product by donating it or selling in bulk to residents and farmers. This minimizes the additional costs of bagging and labor. Only Milwaukee bags

and sells its product. Current problems affecting sales of the biosolids as identified by the marketing personnel in Milwaukee are as follows:

- More producers are marketing and donating material;
- The golf course industry market is declining due to economic problems and are not applying fertilizers to the entire area; and
- The entire retail fertilizer market is down.

Milwaukee has maximized the scale of the production to meet its demand in order to justify the cost of bagging, therefore applying this cost over a larger area. According to Milwaukee, recouping the marketing investment has a long term payback which may not be realistic in today's financial market. Milwaukee's sales are nine to ten million dollars annually. However, remaining financially solvent has been a challenge. Bagging the product is the most costly part of the operation. In their 75 years of production, Milwaukee has created a niche market due to the lower nitrogen level in Milorganite compared to commercial synthetic based products. They primarily market to golf courses, athletic fields and stadiums, in addition to home owners. Milwaukee has stated that creating a niche market is expensive and may not be worth the investment.

As more treatment plants process their wastewater into compost, fertilizer and other products due to EPA regulations, a saturated market for sales could eventually develop and selling biosolids material may become a problem.

Based on current operational costs, projected revenues, and information obtained from other cities, selling packaged Nature's Blend™ may not be cost effective. Nonetheless, the City entered into a 20 year agreement with a distributor to sell packaged Nature's Blend™ effective December 31, 2002. While the agreement clearly defines certain issues, other aspects in the agreement lack clear and specific measures to ensure the distributor is effectively performing all duties, which include the following:

- The distributor agrees to aggressively promote the sale of Nature's Blend™. However, the agreement lacks specific measures to quantify what is meant by aggressively.
- While the distributor agrees to follow up promptly on all sales leads and customer complaints, nothing is stated to clearly define the number of days that would qualify as prompt.
- The agreement states the distributor shall from time to time provide the City with information, but does not indicate if it should be monthly, quarterly, or annually.

By lacking clear and specific measures and stipulations, holding the distributor accountable and assessing its performance could be difficult, which could impact the success of selling packaged Nature's Blend™.

R5.26 Since the City has entered into a 20 year agreement with a distributor and is committed to selling packaged Nature's Blend™, WPC should closely monitor costs and revenues, develop a marketing plan to establish niche markets (see **R5.27**), and use appropriate methodologies to track costs (see **R5.27**). In addition, WPC and the City should amend the current agreement with the distributor to include clear and specific measures and stipulations, thereby ensuring that the distributor effectively sells the product and revenues from the sales process are being maximized for the City. At a minimum, revenues should fully offset WPC's costs to sell packaged Nature's Blend™. While selling packaged Nature's Blend™ will involve additional time and effort from staff, WPC should focus on improving other important aspects of operations, including the following:

- Developing and implementing a strategic plan (see **R5.1**);
- Improving the budgeting and forecasting process (see **R5.2**);
- Conducting comprehensive capital improvement planning (see **R5.3**);
- Researching and obtaining grant funding to offset costs (see **R5.8** and **R5.22**); and
- Compiling a complete EOP (**R5.25**).

F5.42 The biosolids process does not use the business methodologies of adequate costing and market planning. Costs of disposal for the finished biosolids product are not tracked. A large percentage of the plant alternates' time is spent hand bagging the product because a bottleneck exists in the bagging process due to the lack of mechanized bagging equipment, which is costly to purchase and install. The cost of this labor is expensed to the operations division when it should be allocated to the biosolids division. This amount is not precisely determined because the laborers are assigned to different areas of the plant as needed. Therefore, the true cost to bag the product is difficult to determine. Without adequate costing, management cannot appropriately plan or make informed decisions (see **F5.6** for activity based costing).

Although WPC has been proactive in educating the public and pertinent organizations about its biosolids process and has developed a marketing plan incorporating certain essential elements, an up-to-date and comprehensive written marketing plan for Nature's Blend™ does not exist. A marketing plan consists of several elements depending on the need and situation it represents. Starting with an executive summary, certain standard minimal components are essential to an effective marketing plan. According to Mplans.com, these components include the following:

- *Situation Analysis*: Includes a market analysis, a strengths, weaknesses, opportunities, and threats (SWOT) analysis, and a competitive analysis. The market analysis will include market forecast, segmentation, customer information and market needs analysis.

- *Marketing Strategy*: This includes, at least, a mission statement, objectives, and focused strategy including market segment focus and product positioning.

- *Sales Forecast*: Includes enough detail to track sales month by month and follow up with a plan versus actual analysis. This component also includes specific sales by product, by region or market segment, by channels, by manager responsibilities, and other elements.

- *Expense budget*: Includes enough detail to track expenses month by month and follow up on plan versus actual analysis. Normally a plan also includes specific sales tactics, programs, management responsibilities, promotion, and other elements.

WPC has included some of these elements in its marketing plan. However, important items such as a sales forecast and expense budget are lacking in the current marketing plan. In addition to developing the above elements, there should be a review of organizational impact, risks and contingencies, and other pending issues. Although there are specific markets targeted by the salesman under the direction of the WPC director, there is no documentation or long or short term plan. An original outline targeting markets and products was developed but has not been updated since inception of the product. Because Nature's Blend™ competitors are for profit businesses, there is a fear of compromising confidentiality. However, without an updated marketing plan, WPC is unable to evaluate the achievement of identified goals as they evolve and analyze the impediments to their achievement.

R5.27 WPC should adequately cost the processes using appropriate accounting methodologies, and implement a fully developed and updated written marketing plan. Specifically, costs should be more accurately recorded to determine selling, bagging and promotional expenses. Consulting with financial experts to make these determinations may be necessary. If costs are not accurately represented, measurement of financial position cannot lead to accurate diagnosis of problems. By implementing an effective cost methodology, the financial position is more easily measured and management is able to make decisions based on accurate and reliable information.

The biosolids process has already helped the City avoid large landfill disposal costs and costs could be further reduced with an effective marketing program. WPC should work to maximize revenue by more effective marketing to promote its product in additional markets so that revenues at least meet the costs of the retail sales process. WPC should project and

monitor sales and costs of Nature's Blend™ closely to determine if product sales meet projections. An effective marketing plan will not only help the budget process, but also help set benchmarks for sales. If these realistic benchmarks are not achieved, analysis needs to be performed to determine the reason and to reexamine the goals and objectives set. Since planning is about results; specific, measurable and concrete objectives should be tracked and followed up on as necessary.

F5.43 WPC's biosolids' plant is not operating at its optimal capacity of 240 tons a day, and is only processing 40 tons a day. The plant was constructed with outside processing capability as an opportunity for additional revenue. WPC has investigated additional processing by testing sludge from other areas. To date, none have met the product standards that are compatible with its process. Currently, New York City sludge is being tested for compatibility. All product brought in and processed will also have to be removed and disposed of by New York's distributor, saving WPC the disposal expense. Additionally, WPC required the distributor to provide a dryer to prevent the accumulation of product at the plant. By processing sludge from other areas across the country, WPC will be able to provide revenue to offset fixed processing costs.

C5.7 WPC has been proactive, but cautious, by attempting to pursue additional sources of revenue to process sludge from other areas. In addition to increasing revenues, processing sludge from other areas would help to more fully utilize the plant capacity without compromising quality.

R5.28 The biosolids manager should focus on maximizing revenues and plant capacity by obtaining and processing sludge from other municipalities throughout the country. Additional revenue should be weighed against any additional costs (e.g., personnel costs, adding shifts) created by increasing capacity to ensure cost effectiveness. Accurate costing is necessary, providing management with better information to assess the potential financial success of the program (see **R5.27**).

Financial Implications Summary

The following table represents a summary of estimated annual costs, one-time revenue enhancements, estimated annual cost savings, and estimated annual cost avoidance for recommendations in this section of the report. For the purpose of this table, only recommendations with quantifiable financial impacts are listed.

Summary of Financial Implications

Recommendations	Estimated Annual Costs	Estimated One-Time Revenue Enhancements	Estimated Annual Cost Savings	Estimated Annual Cost Avoidance
R5.5 Charging Trumbull County's rate to Warren residents served by the County.			$50,000	
R5.8 Obtain grant funding.		$100,000		
R5.10 Reduce the superintendent position and promote the chief operator and sewer foreman to supervisory positions.			$72,600	
R5.16 Reduce sick leave to ODAS benchmark.			$6,100	
R5.19 Use the engineering department and avoid filling the vacant engineer position.				$60,200
R5.24 Fill the chief mechanic position	$64,200			
Total	**$64,200**	**$100,000**	**$128,700**	**$60,200**

Conclusion Statement

WPC is operating efficiently and effectively in numerous areas. However, WPC should improve certain aspects of its operations to maintain and increase efficiency and service quality. WPC should develop a formal strategic plan to guide organizational and management decisions. WPC needs to improve the use of performance measures used to track work outcomes and employee performance. Developing reliable forecasts of revenues and expenditures would allow WPC to anticipate funding issues. Additionally, capital improvement planning should be conducted on a periodic basis to ensure necessary improvements are addressed as soon as financially possible.

The current sewer rates charged by WPC are not generating adequate revenues to cover operating costs. Prior to increasing rates charged to residents, WPC should examine opportunities to improve operational efficiency to ensure that it is providing quality services at a minimal cost to residents and thoroughly review the rate study currently being conducted. In addition, the City Council should consider passing an appropriate ordinance to charge Trumbull County's rate to residents served by the County and subsequently renegotiate the contract with the County to ensure that the agreement and related costs are equitable and fair, thus eliminating the current annual subsidy of about $50,000 incurred by Warren for residents served by the County. Grant funding should also be researched and pursued periodically to offset costs, such as those costs related to Storm Water Phase II.

Overall, WPC staffing levels throughout its various divisions are appropriate and efficient. For instance, WPC has an effective preventative maintenance program and uses staff to conduct frequent preventative maintenance activities for the sewer system. Performing preventative maintenance on a consistent basis minimizes the potential for significant emergency repairs, which could cause major service disruptions and significant repair costs to be incurred by WPC. To further streamline operations, WPC should reduce the superintendent position through attrition and allocate the position's functions and responsibilities to the sewer foreman, chief operator and maintenance supervisor. Using the engineering department to fulfill requests should allow WPC to avoid filling the engineering vacancy. Furthermore, filling the chief mechanic position should ensure that the maintenance division sustains its high level of efficiency.

WPC has not addressed all of the concerns and compliance topics identified by the OEPA regarding the filing of the NPDES permit and the LTCSP. Therefore, the director of WPC should promptly provide sufficient information to the OEPA for the approval of the LTCSP. Once the plan is approved, the City should concentrate on updating the existing plans for the necessary long-term capital improvements, including the separation of the combined sewer system.

WPC does not maintain a comprehensive written EOP. WPC should coordinate with the City Fire Department, Police Department and the City EOP contact to develop a written EOP. WPC should also complete a vulnerability self assessment of the operations to determine that facility security

plans and procedures are satisfactory. This will provide employees and management the necessary information for responding to emergency situations within the City.

Pursuing a biosolids program has resulted in landfill cost savings of approximately $400,000 in FY 2000 and has met EPA requirements to control pollutants. Although product sales have not proven to be a cost effective method of disposal, the City entered into a 20 year agreement with a distributor to sell packaged Nature's Blend™. However, the agreement lacks clear and specific measures and stipulations to hold the distributor accountable and assess its performance. Since the City is committed to selling packaged Nature's Blend™, WPC should closely monitor costs and revenues, develop a comprehensive marketing plan to establish niche markets, and use appropriate methodologies to track costs. In addition, WPC and the City should amend the current agreement with the distributor to include clear and specific measures and stipulations, thereby ensuring revenues from the sales process are being maximized for the City.

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Community Development Department

Background

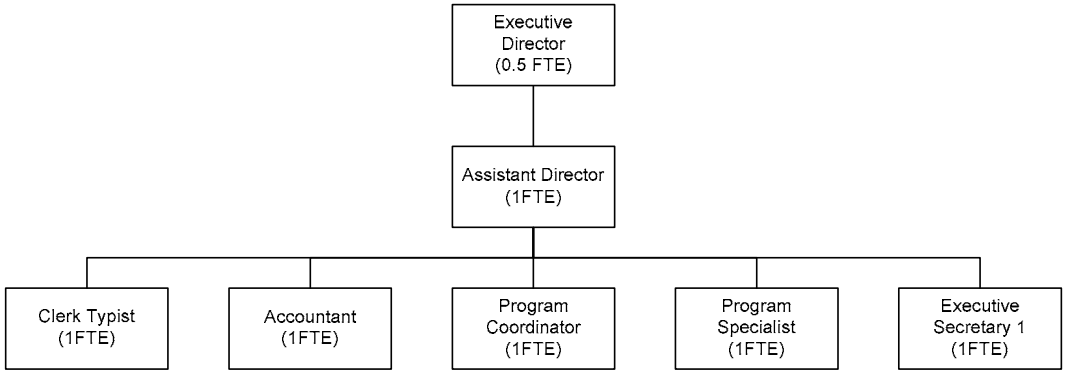
This section focuses on the operations of the City of Warren Community Development Department (CD), which is responsible for conducting and assessing community development activities. Economic development activities are contracted out to Warren Redevelopment and Planning (WRAP).

The City of Warren (City) is classified as an entitlement city by the United States Department of Housing and Urban Development (HUD). HUD's classification is based on a formula ranking community needs, poverty and other economic factors. Comparisons are made throughout the report to three peer entitlement cities: The City of Hamilton Planning Department (HPD), The City of Lima Department of Community Development (LDCD) and The City of Mansfield Community Development Department (MCDD).

Organizational Chart

Chart 6-1 illustrates the organizational structure of CD as well as the staffing levels in full-time equivalents (FTEs).

Chart 6-1: Organizational Chart
As of June 1, 2002



CD's purpose is to eliminate slum and blight in the City through urban renewal and redevelopment. Also, CD serves low and moderate income persons by expanding economic development, providing affordable and decent housing and living conditions, and improving community facilities and services.

The executive director of community development and the assistant director are both members of the Warren Management Association's labor agreement (WMA). All other positions are members of the American Federation of State, County and Municipal Employees (AFSCME) LOCAL #74 collective bargaining unit.

Management of CD consists of an executive director, who is responsible for many high level practices such as organizing and directing administrative department activities; planning, developing and using legal, architectural and other technical consultants that are needed to effectively operate the department; and developing rules and regulations.

The assistant director is responsible for assisting the executive director in managing and directing department operations; coordinating, writing and analyzing grants to ensure the legality and propriety of information used in the consolidated plan and consolidated annual performance evaluation report required by HUD; reviewing environmental and historical programs; and completing awarded grants and the Community Development Block Grant (CDBG) programs.

The accountant is responsible for accounts payable and receivable for grants, working closely with the senior accountant from the finance department for reconciliation purposes and tracking loan repayments collected by Warren Redevelopment and Planning (WRAP).

The program coordinator is responsible for administrating the Community Development Block Grant, directing and instructing sub-recipients, facilitating the Citizens Advisory Committee, guiding specifically assigned programs, supervising and monitoring the HOME program as it relates to the County, and conducting Sunshine and Integrated Disbursement and Information System (IDIS) recording.

The program specialist is responsible for administrating the Housing Opportunities Made Equal (HOME) program, and monitoring housing, demolition and historical reviews after the health department condemns houses. Also, the program specialist conducts lien assessments, lead paint monitoring and IDIS recording.

The executive secretary is responsible for keeping records, conducting customer service and providing administrative support for all department personnel. The clerk typist is responsible for logging and receipting all checks sent to CD from the revolving loan fund, housing repair, WRAP and Sunshine. The clerk typist also writes vouchers for housing checks and serves as the first contact with applicants for the First Time Home Buyer Program or rehabilitating programs. Additionally, the typist sets up appointments for the program specialist and contacts potential contractors.

Further, the executive director, assistant director, accountant, program coordinator, and program specialist are all responsible for coordinating program initiatives at varying levels, recruiting program volunteers, monitoring program performance, completing financial transactions,

developing performance reports and action plans required by HUD, and monitoring compliance with HUD regulations.

Summary of Operations

CD administers annual federal award allocations for programs and projects used to eliminate slum and blight conditions in the City. CD uses HUD grant awards, such as CDBG and HOME, to develop programs and services addressing community needs. HUD grant administration is governed under the Code of Federal Regulations (CFR) Chapter 24 and the Federal Office of Management and Budget circulars. CD receives its HOME funding from the partnership of the City of Warren and Trumbull County Consortium. Also, CD receives its CDBG grant award due to its classification as an entitlement city.

To be allocated HUD awards, CD must complete a consolidated plan every three years. The plan helps CD identify and prioritize funding to address its present housing issues. The plan is used to determine what activities will be funded during the three years and should be used when making all funding decisions. Additionally, CD must submit to HUD an annual review known as the Consolidated Annual Performance and Evaluation Report (CAPER). CAPER is a summary of all actions and activities during the grant year, and it includes a record of the past year's expenditures.

The CDBG grant provides the largest amount of total grant dollars to CD, and is used to fund the following:

- Public Services: (15 percent of the total award) for activities such as training, housing and counseling;
- General Fund: (65 percent of the total award) to fund the Bricks and Mortar program and projects completed by other city departments, such as Engineering, Planning & Building (EPB), and a few sub-recipient applicants. Also, the General Purpose Fund is used to develop sub-recipients engaged in new construction, rehabilitation and repair.
- Administration: (20 percent of the total award) to fund administrative activities as outlined in the HUD grant agreement.

The City of Warren and Trumbull County are joint applicants for HOME funds through a locally organized consortium. Forty percent of the HOME award is allocated to the Trumbull County Planning Commission; the remaining 60 percent is allocated to the CD department, which has historically been approximately $600,000. Of the $600,000, CD allocates 15 percent, or approximately $90,000, to Sunshine of Warren and Trumbull Area (Sunshine), a community housing development organization (CHDO). CD may also allocate a maximum of five percent, or approximately $30,000, for Sunshine operating activities. Sunshine uses this funding to acquire, rehabilitate, and sell properties and to conduct home repair activities. CD allocates 10

percent, or approximately $60,000, for administration of its department, and 70 percent of the funding, or approximately $420,000, for HOME projects.

The HOME grant is used by CD to fund various construction activities throughout the City. The following programs are funded through the HOME program:

- *Down Payment Loan Home Ownership Program*: provides a zero percent interest non-amortizing loan to income eligible applicants that can be applied towards their down payment and or closing costs up to a maximum of $5,000 outside the CD target area, or $7,500 in the CD target area (low-moderate income areas).
- *Single Family Home Rehabilitation Program*: provides a deferred loan up to $25,000 to owner occupants of single-family residential units that are income eligible which can be applied towards the rehabilitation of their property.
- *Rental House Rehabilitation Program*: provides a deferred loan up to $14,999 to owners of rental units whose renters are income eligible, which can be applied towards the rehabilitation of their property.
- *Dollar House Program*: purchases homes, which are rehabilitated and sold through a low-to-moderate income bid for a dollar. Two of the purchased homes are funded with CDBG dollars, while the remaining four homes are funded with HOME dollars.
- *Transitional Housing*: provides homeless women and children with housing units.
- *Youth Build*: assists youth in receiving their general equivalency diploma (GED), job skills and training.
- *CHDO Activity-Sunshine*: consists of a rental rehabilitation program, acquisition for rehabilitation and resale, and City and County housing rehabilitation programs such as: Home Owner and Rental, Home Ownership Loan Program, New Home Construction-(includes Tax Credit Housing, In-Fill and CHDO) and Tenant Based Rental Assistance.

CD uses HUD's IDIS system to administer CDBG and HOME funds. IDIS is used to set up the accounts for the programs and services established in CD's consolidated plan and disburse funds as needed. Disbursements occur when program funds are transferred from a non-interest bearing HUD account to a City account. Funds are used to pay for purchases and to make reimbursements to the City or contractors. CD also uses IDIS to help its financial staff monitor expenditures.

Within the department, CD addresses brownfield issues through the United States Environmental Protection Agency (USEPA) Brownfield Assessment and Demonstration Pilot Grant (BADPG). A brownfield is a site, or portion thereof, that has actual or perceived contamination and a potential for redevelopment or reuse. This pilot program is intended to provide EPA, states, tribes, municipalities, and communities with useful information and strategies as they continue to seek new methods to promote a unified approach to site assessment, environmental cleanup, and redevelopment.

CD received approximately $200,000 in funding for the BADPG during fiscal year 2000. The program was used to identify 35 properties, but only four were included in the pilot for rehabilitation and reuse because CD selected sites that they currently own and/or sites where agreements exist to work with the City. The four sites that were selected are contained within the River Edges-New Environment for Warren (RENEW) plans. This is an overall plan to revitalize the City that includes revitalization of the downtown area with focus on the recreational systems that parallel the Mahoning River. Further, CD recently received preliminary approval for Clean Ohio brownfield funding. This funding supports brownfield restoration, farmland preservation, stream and watershed restoration and protection, open space conservation, outdoor recreation and revitalization of urban areas by returning contaminated properties to productive use. When CD receives funding, its intent is to complete the Mahoning Riverside Remediation Project (former power plant site).

WRAP is a non-profit economic development corporation, which was established in 1980, primarily to guide and further develop the physical, economic and social revitalization of downtown Warren and its central business district (CBD). WRAP has spearheaded CD's economic development practices since the former executive director of CD retired in 2000. The former CD executive director outsourced all economic development initiatives in a three year contract to WRAP. WRAP's staff consists of an executive director, assistant, secretary/bookkeeper and receptionist.

WRAP, with approval from city council, conducts activities such as:

- Underwriting loans and managing programs;
- Processing loans, preparing loan documentation, providing preliminary approval, giving recommendations on loan applications, issuing loan closings, and administering other similar Revolving Loan Funds (RLF) or other loan programs as may be required;
- Participating in all collection proceedings, including loan modifications, workout agreements and institution of legal remedies;
- Conducting economic development activities for all federal, state and local programs, and identifying opportunities and requirements involving urban development, economic incentives, tax exemptions, job credits, annexation, loan funds, environmental requirements and grant funds; and
- Encouraging overall economic development and growth by focusing on downtown revitalization, development and planning, and business loans.

Financial Data

Table 6-1 presents CD's annual expenditures for fiscal year (FY) 2000, 2001 and 2002. CD is funded solely through CDBG and HOME grants and does not receive support from the City's General Fund.

Table 6-1: Expenditures for FY 2000-2002

Categories	2000 (Actual)	2001 (Actual)	Percent Change	2002 (Actual)	Percent Change
Salaries and Wages	$278,672	$261,536	(6.1%)	$196,403	(25.0%)
Fringe Benefits	$92,108	$119,079	29.3%	$133,453	12.1%
Contracted Labor and Service	$93,881	$268,723	186.2%	$229,380	(14.6%)
Supplies	$4,337	$9,658	122.7%	$6,118	(36.7%)
Capital Outlay	$442,304	$307,395	(30.5%)	$43,303	(140.9%)
Totals	$911,302	$966,391	6.0%	$608,657	(41.0%)

Source: Budget reports for FY 2000-2002.

Table 6-1 illustrates significant increases in the following expenditure categories:

- *Salaries and Wages*: The decrease from 2000 to 2001 is the direct result of a long-term executive director retiring in 2001, who had a higher salary than the replacement part-time interim executive director. In addition, the decrease seen during 2001 is also attributed to the one-time payout of severance dollars in 2000. The decrease in 2002 is the result of CD only paying for half of the executive director's salary (see **F6.2** and **F6.3**), as well as transferring costs between the 214 CDBG fund and the 218 administrative fund to fulfill grant requirements.

- *Fringe Benefits*: In 2000, city-wide health insurance costs increased 25 percent and are projected to continue to increase by 25 percent annually until 2003. Also, the fringes that were associated with salaries transferred from the 214 CDBG fund to the 218 fund were also transferred from the 214 fund to the 218 fund.

- *Contracted Labor and Service*: The increase from 2000 to 2001 is partially due to switching the $33,000 National Development Council (NDC) yearly contract expenses from the Project account into the Contracted Labor account. In addition, CD contracted with WRAP in 2001 to conduct loan revision activities, further contributing to the increase. Reimbursements of $46,166 related to the equal employment opportunity coordinator (EEOC) performing CD work in prior years was obtained in 2001. Finally, CD made an insurance payment for administering the lead program in 2001. During 2002, the decrease noted was due to CD not paying for the lead insurance policy that was paid for in 2001.

- *Supplies*: The increase in 2001 is due to the purchase of new software upgrades and supplies. CD budgeted for additional software upgrades in 2002, however the actual decrease seen is due to CD not purchasing software upgrades.

- *Capital Outlay*: The decrease in 2001 is due to minimal road construction and no additional funding for the Street Program. The actual expenditure for 2002 decreased because no expenses were reported for road construction projects, which can be attributed to the timing and closing of road construction projects with which CD was involved.

During the course of this performance audit, numerous changes occurred in CD and the Department either implemented or began to implement certain recommendations. For example, CD has hired a full-time director (see **R6.1**) and urban rural grants coordinator (see **R6.14**).

Performance Measures

The following performance measures were used to conduct the analysis of CD:

- Evaluation of organizational and staffing issues;
- Assessment of strategic planning activities;
- Assessment of programming;
- Assessment of grant management practices;
- Assessment of economic development activities; and
- Evaluation of technology.

Findings / Recommendations / Commendations

Organization and Staffing

F6.1 Community development for the city of Warren consists of 6.5 FTEs, including an interim executive director, assistant director, accountant, program coordinator, program specialist, executive secretary and clerk typist. **Table 6-2** shows the total number of FTEs and the percentage of total employees in each position for CD and peer departments.

Table 6-2: Number and Percent of Employees (FTE) by Classification

	Warren	HPD[1]	LDCD[2]	MCDD[3]	Peer Average
Classification	**FTEs**	**FTEs**	**FTEs**	**FTEs**	**FTEs**
Management[4]	1.5	3.0	3.0	2.0	2.7
Accountant/Financial Officer[5]	1.0	1.0	1.0	1.0	1.0
Program Coordinator	1.0	0.5	3.0	1.0	1.5
Program Specialist	1.0	1.5[6]	3.0	1.0	1.8
Support Staff	2.0	2.0	2.0	3.0	2.3
Total	6.5	8.0	12.0	8.0	9.3
2000 Population	46,832	60,690	40,081	49,346	50,039
Population per FTE	7,205	7,586	3,340	6,168	5,380

Source: Warren and peer Departments.
Note: FTEs are calculated based on a 40-hour work week.
[1] HPD performs planning and economic development activities.
[2] LDCD performs planning and economic development activities.
[3] MCDD performs economic development activities. Mansfield has a separate planning department.
[4] Management for Warren consists of 1.5 FTEs due to the fact that the executive director shares 50 percent of his time with the Engineering, Planning & Building Department.
[5] Accountant/Financial Officer-Titles are used interchangeably between Warren and their peers due to similar job descriptions, responsibilities and duties.
[6] One employee from Hamilton spends 50 percent of his time performing program coordinator job duties, and 50 percent of his time performing program specialist job duties.

As indicated in **Table 6-2**, CD's population per FTE is 33 percent higher than the peer average. Since a major goal of CD is to serve households with low to moderate incomes, staffing levels can be further examined by comparing the number of these households at Warren to the peers. HUD defines low to moderate income as income that does not exceed 80 percent of the area's median income. **Table 6-3** shows low to moderate income households per FTE for CD and the peers.

Table 6-3: Low Income Households per FTE

	Warren	HPD	LDCD	MCDD	Peer Average
Number of Employees	6.5	8	12	8	9.3
Median Household Income	$30,147	$35,365	$27,067	$30,176	30,869
Low-Moderate Income Level	<$24,118	<$28,292	<$21,654	<$24,141	<24,696
Low-Moderate Income Households	7,911	11,293	6,807	8,190	8,763
Low - Moderate Income Households per FTE	1,217	1,411	567	1,024	942

Source: U.S. Bureau of Census, Census 2000
Note: Median household income was based on HUD calculations.

As indicated in **Table 6-3**, CD serves 29 percent more low to moderate income households per FTE than the peer average. Nevertheless, differences in organizational structure and job responsibility contribute to CD's ability to serve a relatively high number of low to moderate income households per FTE. LDCD's and HPD's managers perform planning functions completed by the City's Engineering, Planning and Building Department (EPB), such as developing zoning plans. Mansfield has a separate planning department responsible for these functions. The peers conduct loan functions and economic development activities, with LDCD and MCDD using predominantly management staff to perform these functions. In contrast, CD contracts out economic development and loan functions to WRAP at an annual cost of $102,000, with funding provided through CD's CDBG funds. In addition, the interim executive director at CD also allocates time to EPB (see **F6.2** and **R6.1**).

Based on the data in **Table 6-3** and the differences in organizational structure and job responsibility, CD appears to be adequately staffed to perform its current functions. However, expanding its job functions and role would result in staffing changes (see **R6.1**, **R6.14**, **R6.26** and **R6.28**). Furthermore, the current proposal to combine EPB with CD, creating a consolidated Community Service Department (CS), would also impact CD staffing levels (see **F6.10** and **R6.9**).

F6.2 Although CD employed a full-time executive director in the past, it currently employs an interim part-time executive director. This is due to the retirement of the previous executive director and subsequent departure of his replacement. Currently, the interim executive director splits time between CD and EPB (see **F6.10** for further analysis). By not having a full-time executive director, important management functions may be difficult to perform at CD, such as the following:

- Championing long-term planning, which is needed to provide the vision, mission and goals for the organization;
- Ensuring compliance with regulations;
- Promoting accountability;
- Providing leadership and more effective oversight for CD programs and initiatives;
- Effectively monitoring and accurately coordinating activities with WRAP (see **F6.28** and **R6.26**) and Sunshine (see **F6.22** and **R6.20**); and
- Promoting efficiency and effectiveness in the administration of programs and services.

According to human resources organizations, a competent community development executive director possesses the following qualifications:

- Experience in either community or economic development;
- Effective managerial and interpersonal skills;
- Experience in managing human resources, finances, and policies and procedures; and
- Ability to network with stakeholders to increase funding, job growth and development opportunities.

Peers use full-time directors to conduct planning, organizing, economic development and administrative activities for their departments. LDCD's director performs all economic development activities such as:

- Administrating the Revolving Loan Funds (RLF);
- Negotiating with businesses;
- Presenting proposals to the finance department;
- Conducting loan revisions, completions and closings with banks;
- Guiding loan application processes; and
- Performing tax abatements.

CD outsources all of these economic development activities to WRAP (see **F6.28**). While CD currently accomplishes its tasks, a full-time executive director would allow CD to conduct more program activities (see **F6.17** and **R6.15**), enhance economic development (see **F6.28** and **R6.26**) and provide more guidance when needed. Furthermore, planning efforts, project development, and program creation and implementation may be more effectively and efficiently managed by a full-time executive director.

R6.1 If CD performs loan functions and economic development activities internally (see **R6.26** and **R6.28**), it should consider hiring a full-time executive director to focus on performing these functions and activities. The full-time executive director should be able to fully manage the functions and practices of CD. Additionally, the full-time executive director should help CD ensure that administrative activities are funded appropriately (see **R6.21**), improve program planning (see **F6.14** and **R6.12**), conduct more effective monitoring (see **F6.20** and **R6.18**) and evaluate the success of program outcomes (see **F6.19** and **R6.17**).

Financial Implication: Based on the starting advertised salaries for executive director of CD, less the current interim executive director's 50 percent salary and benefits of $44,290, CD would incur an additional annual cost of approximately $27,500 by hiring a full-time executive director. Funding for a full-time executive director would be available through increases in program income (see **F6.30** and **R6.28**) and previous funding provided to WRAP (see **F6.26** and **R6.28**).

F6.3 Neither CD nor EPB track actual work time for the executive director. Based on observations and additional interviews, the executive director may be spending an unequal amount of time between CD and EPB. Currently, the executive director is fully paid through the General Fund and CD then reimburses the General Fund 50 percent of the salary. While some responsibilities are similar, the lack of monitoring prevents CD from assessing actual time worked for each department and may lead to CD monies funding EPB activities. Tracking the executive director's activities with EPB will allow CD to more accurately reimburse the General Fund and properly allocate CDBG funding for administration. The effect of CD paying for EPB administrative activities with CDBG funding violates HUD grant rules and regulations.

R6.2 Until CD hires a full-time executive director, it should implement a formal tracking system to document the time the interim executive director spends daily within each department to ensure proper allocation of CDBG funding. CD should communicate with EPB to ensure accurate monitoring of the executive director's time. Further, CD and EPB should file individual reports with the finance department for reconciliation to ensure that the executive director's salary is accurately allocated to both departments. Nonetheless, flexibility should be incorporated into the executive director's work schedule to allow for emergencies within each department.

F6.4 CD does not perform succession planning when hiring key personnel. According to *Bliss & Associates Incorporated*, an organization that provides tools to enhance human resources, a succession plan allows new hires to become easily and quickly acquainted with the department, to learn functions by shadowing the current person in the position to reduce the amount of confusion that is experienced within the department during a transition period. Succession planning is essential because of the retirement of the

interim CD executive director and assistant CD director, which occurred during the course of the audit. Succession training will maintain stability when key positions are eliminated, replaced or altered by identifying required managerial development skills and activities. Management should be prepared to realign responsibilities so that all functions are properly covered if an employee leaves or is reassigned. Having written and updated job descriptions (see **R6.6**) ensures new staff members understand job duties.

R6.3 The City and CD should ensure that the selected candidates for the retirement positions of executive director and assistant director receive succession training. The new assistant director should coordinate all activities with the new executive director of CD to ensure proper short and long-term expectations are being met and continued. The executive director and the mayor should forecast goals for the first year. Based on the accomplishment of those goals, additional yearly goals should be proposed to guide the department (see **F6.14** and **R6.12**). Succession planning could ensure stability within CD, leading to more comprehensive long and short-term planning.

F6.5 Within the union contract, CD is required to internally post a job vacancy for ten days. Within this ten day period, any internal employee may bid on the vacancy. If the position is not filled internally, then the job is posted to the public. Although CD does comply with union contracts for the bidding of jobs, an emphasis should be placed on education, experience and skills. It is in CD's best interest to hire the most skilled, trained and competent employees for vacant positions. By not engaging in a more focused hiring process, overall job effectiveness and productivity may be negatively impacted.

R6.4 CD should ensure that the candidates hired for vacant positions have the appropriate level of experience and qualifications (see the **Human Resource** section of the *City of Warren Phase IV* Performance Audit). If CD continues to promote from within, employees whose job functions evolve into positions that are above their level of experience should be given training through seminars or encouraged to seek formal education to effectively perform their job functions (see **R6.24**).

F6.6 CD does not have a written procedure for formally and actively cross-training employees. While CD employees perform certain aspects of other positions within CD, there is no documentation of such activity. Cross-training provides career development by increasing knowledge, skills and experience, and covers departmental leaves and absences. Not documenting cross-training activities may deplete department awareness and efficiency. As a result, new upper level management would be unaware of staffs' ability to complete different job functions within CD.

According to *Cross Training As A Motivational Tool* by Claire Belilos, cross-training is significant for the following reasons:

- Supports absences from employment;
- Prevents the cost of fill-in, part-time employees retained due to extended leaves;
- Prevents stagnation and rejuvenates all employees within the department;
- Offers a learning and professional development opportunity;
- Leads to better coordination and teamwork;
- Increases knowledge, know-how, skills and work performance;
- Improves overall motivation; and
- Leads to the sharing of organizational goals and objectives.

R6.5 CD should develop and implement a formal cross-training program. Cross-training should be carefully planned and presented as a learning opportunity. It should be incorporated in CD's training plan, covering all positions and departments (see **F6.26**). Also, cross-training should be incorporated into all employee job descriptions (see **F6.7**). The cross-training program should begin with the supervisory level and filter down to entry-level positions. Unionized entities face some difficulty in implementing such techniques due to the rigidity of union policies and labor agreements. Therefore, CD should communicate to union representatives the importance of agency-wide cross-training. The benefits, however, are enjoyed by the three main stakeholders: employees, management and customers. Through cross-training, employees enjoy the rewards of added know-how, skills and career opportunities, while management has the ability to use staff in multiple ways to enhance operations.

F6.7 Job descriptions for certified and classified personnel have not been formally revised since initially developed. Updated job descriptions are important for the following reasons:

- To clearly articulate job content to employees and supervisors;
- To establish individual performance expectations;
- To provide criteria for recruitment and selection; and
- To mitigate legal liability.

Updating job descriptions is the responsibility of the City's Human Resources Department (HR). However, CD has a responsibility to provide and verify all appropriate job-specific information. Detailed, formal, and accurate job descriptions provide employees with tangible guidance in performing their job duties and provide management with a basis for evaluating employee performance (see **F6.8**). For further analysis on city-wide job descriptions, see the **Human Resource** section of the *City of Warren, Phase IV* Performance Audit.

R6.6 CD, in conjunction with HR, should update job descriptions periodically. A comprehensive job description will provide the foundation for establishing internal equity within the City and CD. Up-to-date job descriptions should include the following:

- Job title;
- Salary information;
- Job summary;
- Specific responsibilities;
- Knowledge, skills and abilities requirements;
- Qualifying education, training and experience; and
- Supervisory responsibility.

Furthermore, CD should focus on and document any job responsibilities which may change over time.

F6.8 CD does not have a formal procedure for conducting performance evaluations. According to the bargaining unit agreement between the City and staff, departments are only required to conduct performance evaluations on new employees during their probationary period. Therefore, management could exercise its right to conduct evaluations on a regular basis. Periodic and routine evaluations are important for developing employees' skills, establishing communication and shaping performance. Frequent evaluations improve employees' efficiency and effectiveness by providing employees and supervisors the opportunity to discuss strengths and weaknesses.

According to Business and Legal Reports, most evaluation programs should:

- Provide a framework of goals and standards from which to measure performance.
- Serve as a tool to determine salary increases based on worker's contribution to the organization;
- Develop action and training plans to correct performance problems and establish goals for the next time period. Warren does not use its evaluation to develop action or training plans;
- Identify employees who should be promoted or given greater responsibility;
- Serve as a communication tool; and
- Assure a formal time and place for all these events to occur.

Regular evaluations allow employees to understand their strengths and weaknesses and provide employees with a clearer perspective of organizational objectives and job responsibilities. In addition, evaluations will allow employees to identify problematic areas and to better maximize their potential. Without regular performance evaluations, employee morale can decline because employees are not certain about which

performance standards they must meet. Implementing this process will allow employees to better maximize their potential. Frequent evaluations should also allow for the following actions to occur:

- Provide employees with clear feedback on areas for improvement;
- Discover and document disciplinary problems;
- Provide evidence about the quality of employees' professional performance;
- Improve efficiency and effectiveness of the employee to carry out the duties of their job descriptions;
- Improve employee morale; and
- Monitor an employee's success and progress.

Lima's CD director conducts employee evaluations regularly. During a nine month probationary period, employees receive monthly informal monitoring evaluations and one formal and final probation evaluation to assess the performance of the employee. Regular, full-time employees are evaluated annually both by their immediate supervisor and the director. The director uses a standard annual performance evaluation form, development plan and employee performance worksheet. Lima's Performance Evaluation System serves the following purposes:

- Provides supervisors with a mechanism to measure and document each employee's job performance;
- Provides supervisors with a procedure to communicate this evaluation to the employee; and
- Provides a mechanism for supervisors and employees to jointly create a development plan to enable employees to improve their performance.

The evaluation form is used to evaluate the employee's job performance during the most recent evaluation period. The development plan is used to review past plans, as well as to create performance goals for the remainder of the evaluation period. For further analysis, see the **Human Resource** section of the *City of Warren, Phase IV* performance audit report.

R6.7 CD, in conjunction with HR, should adopt a formal policy to require annual performance evaluations for all staff in accordance with the City's Personnel Rules and Regulations. Since the bargaining agreements contain language on performance evaluations, any proposed changes to the evaluation process should be discussed during contract renegotiations. The evaluations should be based on job descriptions (see **R6.6**) in a manner similar to Lima's performance evaluation system, with necessary changes for department-specific issues. CD should use updated job descriptions to develop the criteria and expectations that will be assessed in the performance evaluation. Once the evaluation form has been developed and reviewed by HR, the CD executive director

should complete all evaluations in accordance with City policy. CD should adopt Business Report's performance evaluation procedure and reference Lima's evaluation standards form, which include the following three evaluation components:

- Performance Evaluation Form;
- Development Plan; and
- Employee Performance Worksheet.

Probationary evaluations should occur at the 90 day mark in addition to the required 150 day mark to ensure that new employees understand and meet the responsibilities outlined in the job description. Permanent employees should be evaluated at least annually. The information that is gained through the evaluation process should be used to guide career development, organizational planning and retention efforts.

F6.9 CD does not have a departmental policy and procedures manual. The purpose of a manual is to establish a uniform decision making process and explain routine daily operations. Also, access to a procedures manual is important to ensure continuity and consistent application of department regulations. A manual also helps to preserve institutional memory. In addition, documented and enforced procedures increase the level of accountability throughout the department. The absence of a policy and procedures manual for CD may lead to inconsistent management of grant funds and programs, and potential violations of city, state or federal regulations and requirements.

R6.8 CD should develop a departmental policy and procedures manual, as well as a process for regularly reviewing and updating the manual. Key policy and procedural areas which should be included are:

- Staff training and orientation (see **F6.26**);
- Time allocation policies (see **F6.3**);
- Performance evaluations guidelines (see **F6.8**);
- Employment and pay procedures: This section should refer directly to the city policy and include any departmental issues, as well as policies for hiring, employee benefits, salaries and wages, types of employment, working hours and conditions (office hours, overtime/compensatory pay), termination and grievance procedures, and sexual harassment policies;
- Conflict of interest ;
- Key operational areas (e.g., grants management – see **R6.14**) and general office practices: This section should address major areas of CD operations that are funded through CDBG funds and should include:
  - Guidelines governing travel based on both HUD regulations and city ordinances;

- Controls on the personal use of office phones or procedures limiting long distance calls;
- Guidelines for the use and care of office equipment; and
- Penalties and procedures detailing what will happen if employee abuse occurs.

CD should ensure that the procedures manual is distributed to all employees. Employees should acknowledge and understand the procedures manual through a signed statement that should be maintained in the employee's personnel file. The manual should be reviewed on an annual basis to determine if changes, deletions or additions are needed. Also, the manual should be in accordance with the City's procedures manual.

F6.10 The City is considering combining EPB with CD, creating a consolidated Community Service Department (CS). The purposes for merging the departments include:

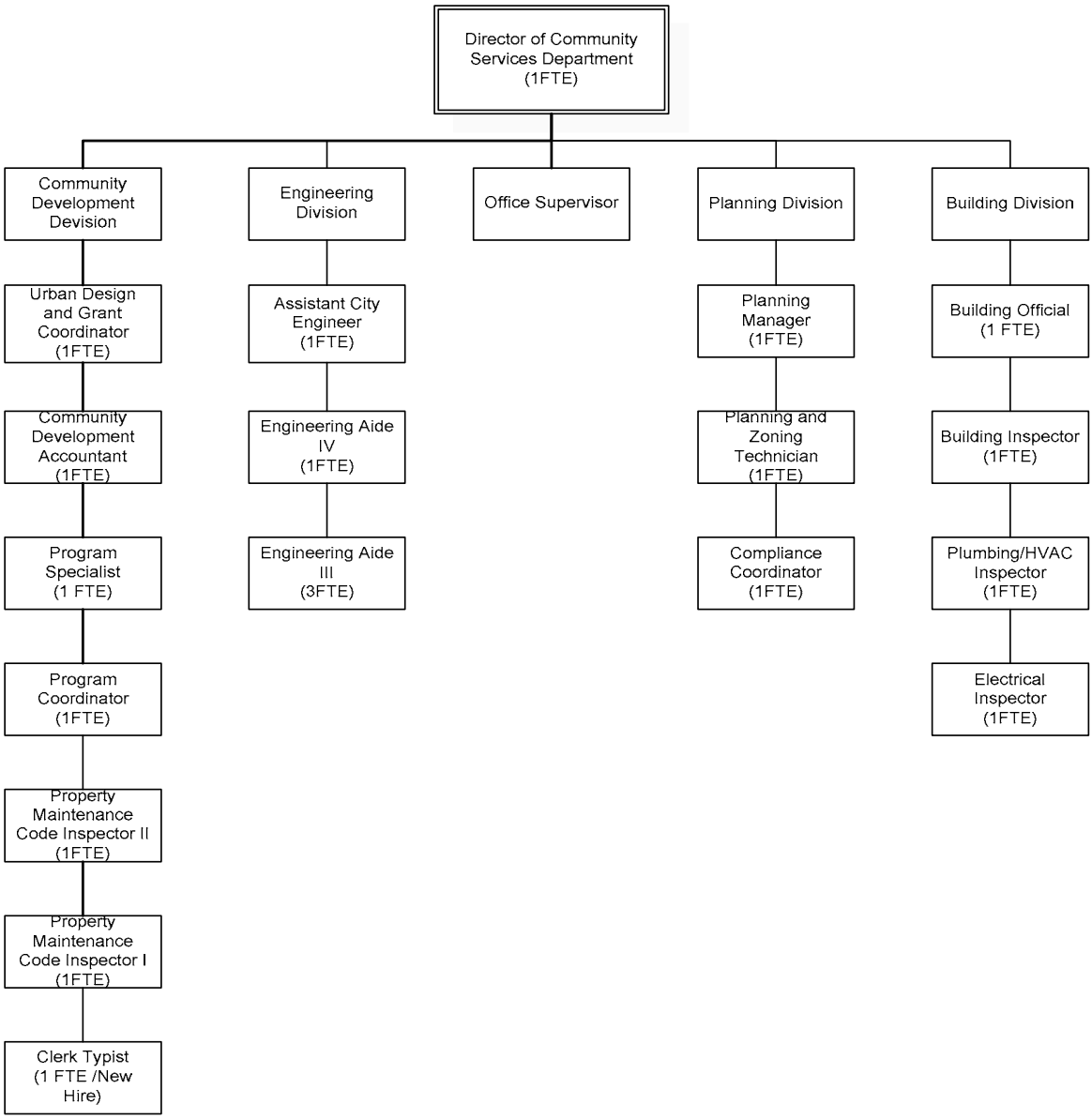
- Reducing General Fund costs to the City by reducing EPB staff;
- Reducing CD's CDBG and HOME administrative costs by reducing clerical staffing levels, thereby pooling clerical staff to support both departments;
- Transferring inspector positions to monitor and execute housing inspections through one department; and
- Issuing permits from a central location.

The proposal is based on several assumptions to save operating costs, which include reducing the number of total FTEs from 26 to 21. The proposal identifies additional cost savings through sharing equipment, as the proposed merger would centralize the permit location. An office supervisor position would be created under the CS Department and the previous building division executive secretary 1 position would be eliminated. A planning manager position would be created to replace the planning director, who is retiring, subsequently creating an entry-level wage bracket. As the assistant director of CD will be retiring, his position would be eliminated. Although there would be three executive secretary positions, one position would be transferred to the Water Department, one position would be kept within CS and the other position would be eliminated. According to the proposal, each position created by the new merger will be filled by an existing staff member.

In addition to cost savings, the proposal identifies several increases in costs, including wage increases for each position and a one-time cost for remodeling the office-site to suit the proposed department. Wage increases are proposed because of additional workload or responsibilities that would be assigned to each position. Each new position will require an accurate and updated job description (see **F6.7**). Creating new positions within the City requires proper notification to HR and all other appropriate departments.

Chart 6-2 illustrates the proposed organizational structure for CS, as well as staffing levels in full-time equivalents (FTEs).

Chart 6-2: Proposed Organizational Chart 2003



Each of the peers operates these functions under different organizational structures. Currently, Mansfield has three separate departments for community development, building and engineering. However, each of these departments is classified under a public works department that also comprises sewer repair, utility collections, water

repair, water and wastewater treatment plants, data processing, streets, parks and vehicle maintenance and repair. In addition, Mansfield has a separate planning department. Lima has a separate community development department that includes planning functions and a public works department, which is comprised of building and zoning, engineering, streets, and parks, recreation and forestry. Hamilton operates one department that comprises the planning division, neighborhood development division (NDD) and construction services division. This department also conducts community development activities. Hamilton also has a public works department, which includes engineering, building, design and maintenance of the street, storm and sanitary sewer systems, parking enforcement, refuse collection and vehicle maintenance.

Although the City has identified some financial impacts of the proposal, it has not fully analyzed the impact on the General Fund and administrative costs comprising CD's funds. In addition, the City has not thoroughly assessed the effect of the proposal on other city departments and other options to reorganize functions that could further streamline operations.

R6.9 Before making a final decision to combine CD with EPB, the City should reassess its city-wide organizational structure. When doing so, the City should consider how its peers structure and coordinate activities, as well as the functions performed by its different departments and the related impact on combining those functions. For example, CD should consider the impact and feasibility of a public works department that combines numerous functions, similar to the peers. In addition, the City should fully assess the financial impact on the General Fund and CD's administrative costs prior to implementing its proposal. If changes are made that include staffing adjustments, the human resources department should be included in the hiring or transfer process to ensure employees have the proper qualifications and skills. Job descriptions should be updated to reflect any changes made.

Planning and Management

F6.11 The assistant director completes the HUD consolidated plan with the help of CD's support staff. However, CD does not document which staff provide specific information for the plan. By not documenting this information, CD may not be using a system of checks and balances to ensure the accuracy of the consolidated plan. Peers accurately document which staff provide specific information for the consolidated plan. For example, HPD completes its consolidated plan with the help of multiple employees and thoroughly documents information to indicate staff that provided it. Each employee is responsible for a portion of the consolidated plan, such as checking the work of the other employees for structure and accuracy, recommendations and review. This process creates constant oversight and a degree of thoroughness that ensures accuracy, completion and proper documentation for the consolidated plan.

R6.10 When completing the consolidated plan, CD should properly document information provided by staff in a manner similar to HPD. Further, employees should be assigned to complete and review other sections of the plan. By conducting a joint effort and reviewing each section, CD will ensure information is accurate and complete, which would provide assistance and guidance for interim or new employees completing the plan. CD should also set guidelines and staff responsibilities for completing the consolidated plan in a departmental policy and procedures manual (see **R6.8**).

F6.12 The Citizens Advisory Committee (the Committee) is responsible for the review and allocation of CDBG and HOME funding to sub-recipients. The Committee consists of 15 individuals; three councilpersons and twelve citizens of Warren appointed by council and the Mayor. Potential sub-recipients initially submit applications for CDBG or HOME funding to CD for Committee approval. CD staff review applications for completeness and provide brief review sheets on each sub-recipient to the Committee. The Committee will meet, present questions to the staff and schedule the interview sessions. After the interview process, the Committee independently decides which projects to fund and at what amount. However, the Committee does not have formal, well-defined criteria to determine allocation of CDBG and HOME funding (see **R6.11**, **R6.17**, and **R6.18**). The decisions of the Committee may be appealed to the city council.

The following is the process for determining allocations to sub-recipients:

- Applicant interview sessions;
- Citizens Review Committee's submission to city council; and
- City council's approval and submission to U.S. Department of Housing & Urban Development.

CD staff review sub-recipients' applications for completeness. Submissions that do not conform to the application guidelines are returned to the applicant for revision and must be returned by a set deadline. In order to limit incomplete applications, CD requires sub-recipients to attend one of two mandatory pre-reviews by the CD program coordinator prior to submission of the final application. Failure of sub-recipients to attend the pre-review sessions will result in their proposals not being forwarded to the Committee for consideration. This process allows CD to provide an explanation of the programs' guidelines, regulations, requirements and technical assistance in completing the application. Further, after the sessions are held, each proposed sub-recipient must meet one-on-one with the program coordinator to sort out final requirements or issues. These sessions help reduce the amount of work required of CD staff to correct problems and enable sub-recipients to meet requirements and be prepared for submission of applications and proposals to the Committee.

C6.1 By providing one-on-one sessions with sub-recipients, CD ensures applications are complete, enabling the Committees to operate more efficiently. Providing the Committee with review sheets on sub-recipients enables the Committee to have accurate and pertinent information on each sub-recipient.

F6.13 The Committee is not required to take into account any of CD's proposals included in the consolidated plan. As a result, the Committee may not be allocating CDBG and HOME funding to meet the needs of the City (see **F6.17** and **R6.15**). In contrast, the HPD Citizen Participation Committee, which is composed of 27 representatives, consistently reviews the previous year's accomplishments listed in the CAPER and the surveys given to the public by the planning department to target the City's high priority needs. These two resources serve as major determinates in funding allocation by providing the Citizen Participation Committee with resource guidelines and ensuring decisions are compatible with HPD's goals.

R6.11 The Committee should consistently and closely review CD's proposals and use the proposals as a guide to determine allocation of CDBG and HOME funding. In addition, the Committee should develop and use defined selection criteria when deciding on funding for programs. These criteria should be based on the consolidated plan and tie into the CD's and the City-wide strategic plan (see **F6.14** and **R6.12**). The Committee should coordinate its objectives with goals outlined in CD's consolidated plan and annual CAPER. This would provide the Committee with a resource guideline and enable the committee to evaluate the CDBG and HOME funding objectives to coincide with CD goals and visions for the upcoming years. By reviewing and using the consolidated plan, the Committee would better ensure that CD's objectives are appropriate and priority needs are being funded.

F6.14 While CD maintains a mission statement as required by HUD, it does not have a strategic plan tied to a City-wide plan. A strategic plan assists a governmental entity to consistently administer its resources and provides structure to decision making within the organization. An effective plan facilitates periodic assessments of a department's mission and provides a basis for understanding those needs. Further, an in-depth strategic plan addresses both short and long-term goals. Strategic plans are important for the following reasons:

- To prioritize cost benefits;
- To develop measurable and realistic goals; and
- To acknowledge planning and budgeting.

Finally, a strategic plan should be fully supported by City officials to ensure an agreement on the goals and provide appropriate funding. For further analysis, see the **mayor's office** section of the *City of Warren, Phase IV* Performance Audit.

R6.12 CD should develop and implement a strategic plan. The department should develop a strategic plan that describes long-term objectives and how staff, funding and resources will help it achieve these objectives. Objectives in a department's strategic plan should stem from a City's strategic plan (see the **mayor's office** section of the *City of Warren, Phase IV* Performance Audit). The plan should also be presented to City officials who should fully support the goals and objectives stated within the plan and ensure that adequate funding is provided. This funding should be based on the initiatives and activities identified in the City's strategic plan. In addition, Warren should establish an annual review and revision process that will allow the strategic plan to evolve with changes, both internal and in the community. Effective strategic planning establishes sound leadership with a staff focus, as well as more effective process for management and staff to accomplish the goals outlined in the plan. The following steps should be taken to develop the planning process:

- Identify and analyze the business environment that the strategic plan must support;
- Define key goals and objectives of the department and establish measurable success factors for those areas;
- Evaluate how existing hardware and software applications support the long-term goals and objectives of the department;
- Research significant industry trends relating to legal organizations or other public sector organizations;
- Determine what technology is needed to help the department achieve its long-term goals and objectives;
- Establish management reporting lines of communication with the Mayor; and
- Develop an implementation plan.

F6.15 CD has not developed benchmarks or performance measures to assess its operational performance. Performance measurement is a management tool that measures work performed and the results achieved, while helping management to plan, budget, and structure the programs and control results. Performance measurement helps to ensure a continuous provision of efficient and effective services and offers the following benefits for local government:

- Strengthens accountability;
- Enhances decision making;
- Improves customer services;
- Enables governments to determine effective resource use; and
- Supports strategic planning and goal-setting.

According to Government Financial Officers Association (GFOA), a successful performance measurement system possesses two important characteristics. First, performance measures should be based on program goals and objectives that tie to a statement of program mission and purpose. Next, they should measure program results or accomplishments and provide for comparisons over time. When attempting to measure both efficiency and effectiveness, performance measures should be reliable, verifiable, and understandable.

The types of performance measures most commonly used in government include:

- **Inputs**: Resources used (what is needed);
- **Outputs**: Activities completed (what is produced);
- **Outcomes**: Results achieved;
- **Efficiency**: How well resources were used; and
- **Quality**: Effectiveness (how much has CD improved).

Each measure is designed to answer a different question. It is not always necessary to use all the measures to determine if an objective is being achieved. Without a performance measurement system, CD is unable to identify its performance level or improve service delivery.

R6.13 CD should develop a methodology to obtain and analyze the results of internal and external performance. The performance measures should be aligned with CD's strategic objectives to effectively evaluate performance. Initially, CD should focus on common indicators. The use and reporting of performance measures should increase CD's efficiency and better inform key stakeholders of CD's performance. Examples of issues that CD should consider measuring include:

- Number of CDBG and HOME applications processed by staff (Input);
- Number of rehabilitations and repairs completed (Output);
- Population served (Output);
- Number of new residents attracted to the City (Outcome);
- Number of sub-recipient grants awarded (Output);
- Number of paint jobs completed (Output);
- Wait time for rehabilitation or repair (Quality);
- Number of neighborhoods successfully rehabilitated (Outcome);
- Number of students graduating from training programs (Outputs);
- Increase in the number of services available through sub-recipients awards (Output); and
- Percentage increase in customer satisfaction levels (Quality).

Grant Management and Programs

F6.16 CD does not have a formal and documented process for grant seeking or grant management. Currently, the assistant director performs grant seeking activities for CD. Prior to being promoted, the assistant director functioned as the urban-rural grants coordinator. The assistant director conducts the same activities as the urban-rural grants coordinator, with some additional supervisory functions. The assistant director's position will be eliminated after his retirement and CD plans to fill the urban rural grants coordinator position. None of the peers employs an assistant director. Peers' chief administrators and other staff positions perform the function of CD's urban rural grants coordinator. If CD employed a full-time executive director (see **R6.1**), the urban rural grants coordinator could focus on performing grant activities, ensuring the consolidated plan is accurate and complete, helping with economic development and conducting essential monitoring activities to ensure grant funds are being spent in the most effective manner.

Although the assistant director applies for grants other than CDBG and HOME, there is no formal tracking mechanism to document time or dollars spent on grant seeking and writing. The lack of documentation makes it difficult for CD to indicate success rates in obtaining grants and hinders the ability of CD to be aware of available grants. Furthermore, due to the pending retirement of the assistant director, an interim or cross-trained employee would not have any documentation to aid in grant seeking activities.

R6.14 Upon the retirement of the assistant director, CD should follow through on plans to eliminate the assistant director position and fill the urban-rural grants coordinator position. In addition to performing and appropriately documenting grant activities and managing HUD grants, the position should assist in developing the consolidated plan, performing appropriate monitoring activities of grant funded programs (see **R6.17** and **R6.18**) and conducting economic development activities (see **R6.26**). Further, the urban rural grants coordinator should develop a set schedule and time allotment for the preparation and completion of the consolidated plan required by HUD (see **F6.13** and **R6.11**). The urban-rural grants coordinator should provide the completed consolidated plan to the Citizens Advisory Committee to ensure regular and clear communication between the department and the Committee.

Financial Implication: Based on the assistant director's salary and maximum starting salary for the urban rural grants coordinator position, CD would save approximately $5,000 annually in salary and benefit costs by eliminating the assistant director position and filling the urban-rural grants coordinator position.

F6.17 CD does not maximize its grant awards to fund the City's high to moderate needs. Included within CD's consolidated plan is a community development needs assessment

which ranks Warren's development needs in the areas of economic development, infrastructure, public services, facilities, youth programs, historic preservation and planning. **Table 6-4** shows high priority needs that are not being addressed and related estimated costs for these needs at Warren and Hamilton.

Table 6-4: High Priority Needs and Estimated Costs

	Warren High Priority Needs	Estimated Dollars Needed to Address	HPD High Priority Needs	Estimated Dollars Needed to Address
Public Services	Crime Awareness	$300,000	-	-
	Health Services	$180,000	-	-
	Other Public Service Needs	$175,000	-	-
Parks and Recreation	Senior Centers	$300,000	Neighborhood Improvements	$30,000
	Youth Centers	$250,000	Youth Center/Neighborhood Facility	$115,000
	Neighborhood Facilities	$300,000	Neighborhood Improvements	$15,000
	Parking Facilities	$150,000		
Housing	-	-	Acquisition	$53,000
Economic Development	Commercial-Industrial Infrastructure	$800,000	-	
	Other Commercial-Industrial Improvements	$500,000	-	-
	Micro-Business	$300,000	-	-
	Other Businesses	$200,000	-	-
	Technical Assistance	$250,000	-	-
	Other Economic Development Needs	$100,000	-	-
Other	Lead Based Paint/Hazards	$350,000	-	-
	Code Enforcement	$125,000	-	-
Totals	15 programs	**$4,280,000**	4 programs	**$213,000**
Low-Moderate Income Households	-	7,911	-	11,293
Dollars per Low-Moderate Household	-	**$541**	-	**$19**

Source: Warren and Hamilton
Note: Data from Lima and Mansfield was not available

As indicated in **Table 6-4**, CD has a significant amount of high priority needs programs that are not being funded as compared to HPD. As a result, CD may not be meeting the needs of the City in the most effective manner. Although the amount of funding provided by HUD and the number of qualified organizations impacts the number of programs CD can implement, the following factors also appear to contribute to the lack of programs addressing the City's high priority needs:

- Not employing a full-time executive director (see **F6.2** and **R6.1**);
- Inconsistent review of the proposals submitted by CD to the Committee (see **F6.13** and **R6.11**);
- Lack of a formal and documented process for grant seeking activities (see **F6.16** and **R6.14**);
- Not evaluating the success of its grant-funded programs (see **F6.19** and **R6.17**);
- Maintaining a large carry-over of CDBG funds and not encumbering HUD funds in a timely manner (see **F6.24** and **R6.22**); and
- Lack of formal and written monitoring procedures to ensure that sub-recipients and contractors adhere to grant guidelines (see **F6.20** and **R6.18**).

Table 6-5 compares the current programs offered by CD to those of the peers.

Table 6-5: Development Program Comparison for FY 2001

Program Area	Warren	HPD	LDCD	MCDD
Public Services	- Fair Housing Counseling - Transportation/ Elderly Services - Minor Home Repair - Character Intervention - Youth Build Services - Job Training - Substance Abuse	- Fair Housing Counseling - Child Care - Crime Prevention - Healthcare and Substance Abuse Service - Youth Construction Activities - Character Intervention	- Fair Housing Counseling - Crime Prevention	- Fair Housing Counseling - Community Health Access Project
Infrastructure Programs	- Street Paving - Sidewalk Repair - Street Light Repair - Water Sewer Repair - Traffic Control - Homeless Structure Repair	- Street Paving - Sidewalk Repair - Street Light Replacement - Public Facilities Services - Homeless Structure Repair - Landscape for entry business district	- Street Paving - Sidewalk Repair - Curb Replacement Program	- Public Service - Sidewalk Repair - Public Improvements

Parks and Recreation	- Park Improvements - Land Requisition	- Park Improvements	- Park Improvements - Recreation Programs	- Park Improvements
Housing	- Planning - Home Ownership - Rental House Rehabilitation - Transitional Housing - Rental Assistance - New Construction - Exterior Paint Program - Acquisition and Rehabilitation for Sale and Rent - Historic Preservation - Emergency Repairs - Property Maintenance(Code Enforcement) - Demolition	- Planning - Home Ownership - Rental House Rehabilitation - Demolition - Historic Preservation - Rental Assistance - New Construction - Habitat Funding	- Counseling for First Time Homebuyer Program - Demolition - Emergency Repairs - Property Maintenance (Code Enforcement)	- Full Rehabilitation - Home Ownership - Rental Rehabilitation - First Time Homebuyer Program - Historic Preservation - Demolition - Program - City Wide Paint Program - Emergency Repairs
Physical Improvements	- City Building Improvement			
Economic Development	- Loan Program for Projects Under $100,000 - Revolving Loan Fund - Tax Abatement - Brownfields	- Façade Improvements - Small and Minority Business Revolving Loan Fund - Brownfields	- Tax Abatements - Microenterprise Loans - Façade Improvements - Small and Minority Business Revolving Loan Program - Brownfields	- Revolving Loan Fund
Other	- None	- None	- Staff Services to Neighborhoods	- None

Source: Warren and peers

As **Table 6-5** illustrates, CD provides a higher number of programs than the peers. Nonetheless, CD has not implemented many programs to address high needs of the City, as outlined in the consolidated plan (see **Table 6-4**). The peers have developed

several programs that could help CD address its high needs identified in **Table 6-4**, including the following:

- **Public Service**: Healthcare and Substance Abuse Services, Community Health Access Project and Crime Prevention
- **Parks and Recreation**: Recreation Programs.
- **Economic Development:** Façade Improvements, Small and Minority Business Loan Fund and Microenterprise Loans.

R6.15 CD should focus on working with the Committee to implement programs and services that address the City's high priority needs. In order to do this, CD should use the consolidated plan as a guideline to identify high priority needs of the City and the Committee should closely review the consolidated plan and other proposals to ensure that the high priority needs have been accurately identified and appropriately funded (see **R6.11**). CD should review funding provided to current programs to determine if funding can be reallocated to implement programs targeting high priority needs. Using a strategic planning process (see **R6.12**) and evaluating the success of current programs (see **R6.17** and **R6.18**) would help CD determine if funding should be reallocated from current programs to address high priority needs.

If CD allocates funding on a timely basis (see **R6.22**), reduces carry-over balances (see **R6.22**) and minimizes administrative costs (see **F6.23**), it could have additional funding available to add several programs similar to those used in the peer cities that address high priority needs. Furthermore, CD should carefully monitor all expenditures not related to direct service delivery, such as administrative costs, to ensure that scarce resources are allocated and expended in the most efficient manner.

F6.18 CD solicits bids for the repair work when a house is selected for rehabilitation. CD is required to take the lowest bidder for a job. The bidding meeting is open to the public, and usually includes at least thirty potential suppliers. Once this meeting has been conducted, the Board of Control, which is composed of the mayor, the safety service director and the clerk of the Board of Control, reviews each bidder that has applied for potential employment. Each bidder must submit proper documentation that supports the requirements mandated by HUD and the Department. Such requirements include the following:

- Registration is documented within the Building Department;
- Documentation of proper lead abatement licenses or documentation that the bidder is going to subcontract out lead abatement activities for repair to a licensed vender, due to non-licensing;
- Documentation of a Non-Collusion Affidavit;

- Documentation of a Bidders' Affidavit; and
- Documentation of a materials contract.

Although CD communicates the need for suppliers to be lead abatement certified, the majority of suppliers do not have proper certification, which minimizes CD's list of potential suppliers. To combat this, CD has offered tuition reimbursement of $585 per supplier to become lead paint abatement certified. However, eight suppliers failed the required test to become certified. As a result, CD incurred approximately $4,700 in expenses without the benefit of receiving additional bids.

C6.2 By proactively offering tuition reimbursement to potential contractors, CD will help ensure that a greater number of bids are received from licensed lead abatement contractors. With more certified contractors, CD can use a larger number of potential suppliers for its repair work, which will create a larger pool from which to select the best quality for the lowest price.

R6.16 CD should require suppliers to receive lead abatement certification before receiving tuition reimbursement, thereby saving costs and ensuring that all bids are obtained from certified suppliers. CD should continue to communicate the procedures to potential suppliers, in turn, limiting the number of ineligible bids.

Financial Implication: By requiring suppliers to receive certification prior to reimbursing them, CD would avoid expenses of approximately $4,700 annually.

F6.19 CD does not evaluate the success of its grant-funded programs. CD outlines the goals and objectives for each funded project in its annual action plan and consolidated plan, but it does not assess whether programs have achieved these goals through a program evaluation process. GFOA defines program evaluation as an examination of current programs to assess performance. Program evaluation is a useful tool to help assess program performance because it can help document if a program is accomplishing its goals and can help identify program areas that need improvement. Program evaluation can also help in the following areas:

- Understanding, verifying or increasing the impact of products or services on customers or clients;
- Improving delivery mechanisms to be more efficient and less costly;
- Producing data or verifying results that can be used for public relations and promoting services in the community;
- Producing valid comparisons between programs to decide which should be retained, in the face of pending budget cuts; and
- Examining and describing effective programs for duplication elsewhere.

Without a program effectiveness evaluation process CD is unable to assess the effectiveness of programs and services or make effective funding decisions. The following is a list of the most common types of program evaluation methods used by organizations:

- **Goal-based Evaluation**: Do programs achieve their overall, predetermined objectives?
- **Process-based Evaluation**: Does the program really work, based on how it is carried out?
- **Outcome-Based Evaluation:** What are the benefits of the program to the client?

R6.17 CD should evaluate the effectiveness of its grant-funded programs on an annual basis. Program evaluation should be an integral component of CD's internal monitoring mechanisms (see **F6.20** and **R6.18**). The goal-based evaluation method would be most appropriate for CD to use to assess its programs since CD has already outlined goals and objectives in the annual plan and consolidated plan. CD could use goal based evaluation to evaluate items such as lead paint abatement by establishing specific measures on how many homes should be painted each year and the associated time line. CD could then track the number of homes painted in a year, the time it took to paint the homes and the associated costs. By comparing actual output and outcomes to the proposed level of service, CD can determine whether it is achieving its annual goals and determine whether the program should be continued, expanded or terminated.

F6.20 While CD maintains manual records for monitoring sub-recipients, it does not have a formal, written monitoring process. A formal monitoring procedure allows entities to assess sub-recipients' effectiveness by providing a performance guideline. The current monitoring process is informal and based on an individual risk assessment. The risk assessment is based on previous year problems, such as untimely feedback of monitoring checklists. Monitoring levels vary from sporadic onsite visits to continual onsite visits, letters and meetings with sub-recipients. Procedures are also not in place to guide appropriate City action if sub-recipient performance is deemed unacceptable. Although CD requires sub-recipients to submit performance reports with each invoice for reimbursement, CD has not required sufficient performance information to make informed management decisions.

HUD provides monitoring guidelines to ensure sub-recipient compliance, including quarterly on-site visits, high level communication and updated files. Further, HUD requires all recipients and sub-recipients to maintain an up-to-date file on spending activities, performance reviews, and other accountability measures. According to HUD these records should include:

- Providing a full description of each activity funded with CDBG dollars;
- Demonstrating that each activity met HUD requirements;
- Documenting the population served (composition, income levels, etc.); and
- Documenting all activities undertaken for low and moderate income persons.

To improve monitoring procedures, HUD suggests CD implement the following activities:

- Perform quarterly on-site reviews with each sub-recipient for compliance with the sub-recipient agreement and HUD guidelines. Upon completion of the visit, potential findings, issues or commendations must be provided in a timely manner to CD. If inconsistencies are found at the time of a site visit, the sub-recipient should be required to submit a corrective action plan which outlines how the sub-recipient will address the issue and the time needed to correct the problem. Updated files on program and project performance need to be maintained.

- Delegate to at least one employee the responsibility for monitoring an entire sub-recipients' financial needs and performance on an ongoing basis. This employee needs to receive, review, and generate reports on the financial performance of all participating projects and entities. HUD recommends that the frequency of such reports should be at least quarterly, and preferably monthly. If any problem appears to be developing for a particular project or entity, more frequent reports should be provided for the problem area.

- Regularly contact all participating entities and conduct periodic onsite inspections. Such monitoring can be very staff intensive, so there will naturally be limits on how frequently such contacts and visits can be made. Staff should be in contact with each participating entity on at least a monthly basis. Site visits should be made on a semiannual basis to ensure that problems can be identified and responded to in a timely manner. When a problem has been identified, more frequent visits may be appropriate. The earlier the problem is identified, the more likely CD will be able to take action to prevent prolonged delays.

- Maintain high levels of communication between the sub-recipient and CD throughout the award period so that potential issues can be addressed through training.

R6.18 CD should develop and implement formal and written monitoring procedures, consistent with the HUD recommendations, to ensure that sub-recipients and contractors adhere to grant guidelines and provide quality services. Hiring a full-time executive director (see **R6.1**) and grants coordinator (see **R6.14**) should assist CD in developing and applying formal monitoring procedures. With formal and clearly defined monitoring procedures in

place, sub-recipients would use federal awards in a manner consistent with the intent of the grant. The current monitoring process should be revised to meet current guidelines, including procedures for monitoring sub-recipients. In addition, consistently monitoring sub-recipients would help CD evaluate the effectiveness and success of its programs (see **R6.17**).

F6.21 CD does not formally track sub-recipients' problems, requests or subsequent resolutions. Information related to office visits, phone calls and paperwork is available, but the data is not compiled or easily accessible. Without a formal system to monitor sub-recipient problems and feedback, information could be lost that would provide valuable information about the management of the grant programs and related funding allocation. LDCD tracks all problems and concerns in an electronic database, ensuring that problems are rectified and funds are used effectively.

R6.19 CD should develop and implement procedures that address the following needs:

- Uniform recording of sub-recipient problems and concerns;
- Monitoring of sub-recipient's progress and follow up; and
- Goal setting for prompt and accurate responses to any problems encountered by sub-recipients.

CD should create a database tracking system to track problems and resolutions, which would effectively organize and compile appropriate data for each sub-recipient. CD would incur no additional costs, as current software could be used to track this data.

F6.22 CD has worked with Sunshine to rehabilitate areas, such as the Alden Estates. However, CD can strive to communicate more effectively with Sunshine on projects to develop, rehabilitate and construct within the City. Sunshine Corporation is the City's only CHDO and, as such, receives 15 percent of HOME grant funding. Sunshine is involved with HOME funding in two areas: Tax Credit Programs and Single Family Home Rehabilitation. While most of Sunshine's work is located in the southwestern and southeastern side of the City, it does not have a strategic housing plan for rehabilitating and constructing specific areas of the City (or county). A strategic plan can help identify specific areas to redevelop, such as a street, city block or neighborhood. Also, Sunshine is the only CHDO in the City and has no competition. As a result, it will always receive 15 percent of HOME funding, regardless of its success rates. The lack of competition for CHDO funding combined with the lack of program evaluation creates a lack of accountability.

R6.20 CD should work with Sunshine to develop a strategic housing plan. This plan should identify and prioritize houses that are eligible for rehabilitation, as well as the individuals that are eligible for tax credits. CD and Sunshine should then work together to

rehabilitate appropriate streets, blocks or neighborhoods. Also, CD should evaluate programs to ensure Sunshine is effectively providing services.

F6.23 According to HUD guidelines, 20 percent of the total CDBG grant may be used towards administrative costs. **Table 6-6** shows the percent of total CDBG funding allocated by CD to administrative costs.

Table 6-6: Amount of Funding from CDBG Funds for Administration

Fiscal Years	Fund Award	Allocation for Administration (20%)	Allocation made by Warren for Administration	Percent used of award	Amount Exceeded	Percent Exceeded
2000	$1,631,000	$326,200	$305,421	18.7%	-	-
2001	$1,662,000	$332,400	$390,011	23.5%	$57,611	3.5%
2002 (January through November)	$1,692,000	$338,400	$346,174	20.5%	$7,774	0.5%

Source: Warren Community Development Department

As illustrated in **Table 6-6**, CD exceeded its CDBG allotted amount for administration costs for the fiscal years 2001 and 2002. Although CD has gone over the allotted amount of administration for both years, CD offsets the excess by using previous years' balances. However, CD does not document or track previous years' administration costs by the related programs. Therefore, CD could be allocating excessive administration costs to certain programs, which could result in future non-compliance with HUD regulations.

R6.21 CD should document and track the amount of previous, current and future administration costs by program, ensuring compliance with HUD regulations and appropriate allocation of administration costs. Additionally, CD should consistently monitor the use of administration costs to ensure they are not excessive and to maximize the amount of funding directly provided to programs and services.

F6.24 CD does not encumber and expend all available grant resources during the fiscal year and maintains a large carry-over of CDBG resources. This practice may lead to untimely allocation of grants. **Table 6-7** illustrates total CDBG grant funds awarded, used and retained by CD in FY 1998, 1999, 2000 and 2001.

Table 6-7: Spent CDBG Grant Balances

Fiscal Year	Amount Authorized	Amount Spent	Current Balance	Percent Spent
1998	$1,599,000	$1,544,923	$54,077	97%
1999	$1,609,000	$1,396,365	$212,635	87%
2000	$1,631,000	$847,179	$783,821	52%
2001	$1,662,000	$892,334	$769,000	46%

Source: Warren Community Development Department

As illustrated in **Table 6-7**, CD expends only a portion of available CDBG resources, which may impact the number of programs funded and CD's ability to address high priority needs (see **F6.17**).

In addition, CD is not encumbering HUD funds in a timely manner, as shown by its timeliness ratio (see **Table 6-8**). The timeliness ratio is a benchmark set by HUD to measure the time required to expend grant funds. IDIS has been modified to enable a grantee to produce a report that shows how much money a grantee needs to draw down by the next 60-day test to reach the maximum 1.5 timeliness ratio standard defined in 24 CFR 570.902. According to HUD, running a local CDBG program in a timely manner helps meet the program goal of improving the lives of residents of the community, particularly those of low and moderate income. Furthermore, delays usually increase costs, primarily because of inflation. **Table 6-8** presents timeliness ratios for CD and the peers.

Table 6-8: Timeliness Ratios of Warren and Peer Comparison

Fiscal Year	Warren	HPD	LDCD	MCDD	Peer Average
1999	1.46	1.31	0.79	1.45	1.18
2000	1.44	1.42	1.07	.88	1.12
2001	1.39	1.52	1.07	.87	1.15
Average Timeliness Ratios	1.43	1.42	0.98	1.07	1.15

Source: HUD Columbus regional Office

As illustrated in **Table 6-8**, CD's timeliness ratio is greater than the peer average for all three years. Although CD currently operates within HUD's timeliness ratio, it is approaching the limit. The following factors could contribute to the high timeliness ratio and large carry-over balances at Warren:

- Inadequately exercising appropriate HUD, State and City guidelines and sound financial practices (see **F6.25** and **R6.23**);
- Lack of formal training on HUD guidelines (see **F6.26** and **R6.24**); and
- Not fully using HUD's Integrated Disbursement Information System (IDIS) (see **F6.31** and **R6.29**).

HPD has recently adopted practices and incorporated initiatives to notify and encourage sub-recipients to meet spending deadlines. According to the HPD Administrator, these 2002 initiatives have helped to reduce its timeliness ratio of 1.52 in 2001. For example, HPD conducts bi-weekly and weekly transactions in order to disburse funds more quickly, makes sub-recipients more aware of the allotted twelve month expiration date through written reminders and draws down larger amounts of funds at one time. Also, LDCD and MCDD are able to allocate HUD funds in a timely manner by informing sub-

recipients that if they do not comply with the time constraint, funding for the next year may not be made available.

As of November 20, 2001, HUD can impose the following corrective actions that could result in reduced future grants for grantees who do not meet performance standards:

- HUD will partially reduce the next grant of any grantee that fails to reach the timeliness standard of 1.5 at the next 60 day test. The grantee's funds will be reduced on a graduated basis, ranging from 15 percent to 30 percent of the amount in excess of the 1.5 performance measure multiplied by the annual grant amount.

- If, at the next 60 day test, a grantee still does not meet the 1.5 standard, the next grant will be reduced by 100 percent of the amount in excess of the 1.5 standard multiplied by the annual grant amount. This would cause a grantee to receive less funding for the next grant year.

R6.22 CD should work to commit funds on an earlier basis and in a timely manner through the following:

- Approving applications for CDBG funds earlier;
- Processing transactions on a bi-weekly or weekly basis;
- Reminding sub-recipients of the spending deadline and assessing potential penalties if sub-recipients consistently miss deadlines; and
- Drawing down larger amounts of funding from IDIS.

Funds should be encumbered in a timely manner and should be directed toward programs that directly benefit residents of the City of Warren. In addition, **R6.23**, **R6.24** and **R6.29** should help CD commit funds in a timely fashion. Incorporating these practices should ensure funding is committed within HUD's timeframe and reduce the chance of losing funding.

F6.25 CD does not always exercise appropriate financial practices and controls. Several instances of improper financial practices and contract controls were identified during

both the course of this performance audit and during the 2002 financial audit and include the following:

- The City is using monies from the Community Development Block Grant Fund for matching of the HOME Investments Partnerships Program. CD should be using non-federal funds for matching of the HOME Program.

- The County is not properly matching its portion of the HOME Investments Partnerships Program. CD should ensure it receives matching funds from the County for the HOME Investments Partnerships Program as prescribed in the Action Plan.

- CD is maintaining excessive cash balances in its HOME fund, which is primarily due to program income not being allocated and repayment of previous loans.

- Disbursements are made by the City Auditor's Office without the executive director's approval.

Each of these instances may show a misunderstanding within the City and County Consortium about sound financial practices. Based on these occurrences, the City and County's lack of financial controls could result in non-compliance with HUD regulations.

R6.23 CD should adhere to sound financial practices to ensure that projects are appropriately monitored and funds are encumbered and allocated in an appropriate manner. The mayor, City Council and Legal Department should ensure that the CD executive director uses existing internal control policies and procedures to reduce unauthorized purchases within CD. Please refer to the Auditor of State's financial audit for further explanation.

F6.26 CD does not have a formal training plan in place to ensure that employees are consistently trained on HUD guidelines, contract policies, IDIS and other computer program use, and other essential topics. HUD requires that grantees ensure that staff understand and comply with HUD regulations. The absence of a formal training program within CD could hinder the ability of staff to perform effectively.

HUD offers training and technical assistance to grantees upon request. Additionally, it offers several seminars and conferences throughout the year, which grantees are encouraged to attend. Other training courses are available from two potential sources:

Cleveland State University's Urban Center offers training in the areas of economic development, and organizational capacity. It also offers public and nonprofit organizations strategic planning, staff development, and goal setting services at varied costs. In addition, Cleveland State University's Continuing Education Department also offers:

- Computer training for software applications at a cost of $175 to $289 for a one day session that includes all handouts.
- Finance and accounting skills for non-financial trainers at a cost of $165 for a one day session that includes all handouts.

Other private firms also offer training opportunities including:

- Seminars in conducting performance evaluations at a cost of $165.
- Seminars in writing policies and procedures at a cost of $159.
- Provides on-site training in accounting and financial, and other training topics.

R6.24 CD should work with its HUD program manager to develop a training plan which encompasses all pertinent training offered by HUD. CD should document who has received training to help ensure that proper IDIS functions are being performed for all actions associated with funding draw downs and record keeping. Although HUD updates its website for IDIS improvements, CD should have at least one employee with IDIS access attend training annually to better improve IDIS practices.

CD should develop descriptive training plans which outline the Department's training objectives for the next fiscal year. The CD plan should include all the required qualifications that are suggested by HUD to satisfy the new reorganization goals and objectives. The plan should be communicated to the staff and updated along with the budget on an annual basis. The formulation of this plan should be included in the long-range strategic planning process to ensure that it is in-line with the goals and objectives established for the department.

Economic Development

F6.27 CD does not aggressively influence the greatest amount of public or private property owners to participate in potential brownfield programs. Currently, CD identifies vacant lots, buildings and brownfields through the BADPG and Clean Ohio Brownfield Program. After an area has been identified, CD hires an EPA qualified consultant to conduct proper phase examinations. While the pilot program estimated 35 properties as potential brownfields, only four sites were included in the pilot program. According to the executive director, this is partially due to private property owners' unwillingness to take part in brownfields projects for concern over EPA sanctions. However, the EPA has developed a number of tools to address the liability concerns of lending institutions, municipalities, property owners, developers, prospective purchasers, and others. For example, EPA may enter into agreements with prospective purchasers of property, providing a pledge not to sue for existing contamination. EPA also issues comfort letters to parties clarifying, among other things, the agency's involvement at a particular site.

MCDD uses the Assessment USEPA Grant, Clean Ohio Revitalization Funds and a Brownfield Revolving Loan Grant. MCDD has an agreement with EPA not to sue potential program participants. This action has helped MCDD maintain support of all of its brownfield involvement and provides public and private brownfield property owners

funding to clean up and rehabilitate their properties, thereby promoting development and civic improvement within the city.

R6.25 CD should actively encourage private property owners to participate in brownfields programs. CD should make private property owners aware of EPA agreements and covenants which protect their direct interest, while allowing brownfield redevelopment to occur. Further, CD should adopt the practices of MCDD and receive a covenant from the EPA not to sue potential Brownsfield participants. Using EPA agreements should allow CD to realize additional brownfield revitalization opportunities. Further, the City would benefit through increased economic development initiatives and civic improvements.

F6.28 Due to the previous turnover in CD's director position and the decision to allocate 50 percent of the current interim executive director's time to EPB (see **F6.2**), CD currently outsources its economic development initiatives and practices to WRAP, for a total cost of $102,000 annually. In addition, the Trumbull County Planning Commission is responsible for establishing and managing tax abatements for the City. Nevertheless, peers do not outsource their economic development initiatives. Each peer coordinates economic development activities through city-based departments or a community development department. However, peers are involved with local and regional organizations to provide additional economic development assistance. Mansfield employs 1.0 FTE to conduct economic development activities, who works directly with the MCDD. Further, MCDD uses the assistance of the Central City Economic Development Council (CCEDC), a 501 C3 organization, to address low to moderate neighborhood development. This is similar to WRAP's internal mission. In addition to performing economic development activities, CCEDC performs housing and neighborhood rehabilitation. CCEDC's functions are completed without HUD funding because CCEDC obtains funding from other sources. In contrast, WRAP is not directly involved with other local or regional entities for support of economic development efforts.

Although CD outsources economic development to WRAP, it does not formally monitor the effectiveness and success of WRAP's activities. For instance, neither CD nor WRAP consistently maintain and track key economic development information, such as jobs created, jobs lost and revenue generated through effective economic development practices. However, peers actively keep track of economic development statistics. For instance, LDCD keeps track of statistics including, but not limited too, job creation, job retention and new businesses attracted annually. In addition, WRAP does not coordinate its activities according to CD's consolidated plan or annual reports, which may lead to lack of accountability and communication.

Table 6-9 provides statistics from the Ohio Department of Development (ODOD) on the number of jobs created and business investments to compare the results of economic development activities at Warren to peers in 2000 and 2001.

Table 6-9: Business Investments and Jobs for 2001 and 2002

	Warren	HPD	LDCD	MCDD	Peer Average
2000 Population	46,832	60,690	40,081	49,346	50,039
Investments	$29,119,000	$138,000,000	$179,065,000	$175,420,000	$164,162,000
New Jobs	80	396	227	182	268
Investments per Capita	$622	$2,274	$4,468	$3,555	$3,281
New Jobs : Population	1:585	1:153	1:177	1:271	1:187

Source: Ohio Department of Development
Note: Ohio Department of Development statistical criteria for this table includes $1,000,000 minimum investments, 20,000 minimum square feet or 50 jobs created.

Overall, **Table 6-9** indicates that activities performed by WRAP to improve the economic development of the City are not as successful as the peers. The amount of business investment per capita in Warren is significantly lower than the peers and more than five times lower than the peer average investment per capita. Additionally, one new job was created for every 585 residents in Warren which is the highest of the peers, indicating that HPD, LDCD, and MCDD are more successful in attracting and creating new jobs than WRAP. It is important to note that the level of investment may create jobs in future years. Jobs lost and retained would provide additional data to measure the effectiveness of economic development activities. Keeping track of economic development information would allow CD to more thoroughly assess economic development practices.

Based on peer comparisons (see **F6.1** and **F6.2**), employing a full-time executive director (see **R6.1**) and urban rural grants coordinator (see **R6.14**) would allow CD to perform economic development activities, thereby eliminating the need for WRAP's current economic development services. The benefits of assuming responsibility for economic development include the following:

- Reallocate funding previously provided to WRAP;
- Provide additional funding and oversight to the RLF and obtain additional program income (see **F6.30** and **R6.28**);
- Communicate the City's needs directly in an economic development plan (see **F6.29** and **R6.27**); and
- Increase accountability, continuity and consistency through CD.

During the course of the performance audit, CD became more involved in economic development practices.

R6.26 The City and CD should consider performing economic development functions internally. By eliminating the current contract with WRAP, CD would realize cost savings associated with the contract and increased program income (see **R6.28**), which should be used to fund the executive director position and additional programs to address the City's high priority needs (see **F6.17** and **R6.15**). However, CD should jointly work with WRAP to develop and execute economic development plans. Further, CD should use WRAP and other appropriate organizations as additional resources to help improve the economic development of the City. CD should also work closely with the Trumbull County Planning Commission to ensure that tax abatements are being used effectively to attract new businesses and industries to the City. While CD should be able to perform economic development activities by hiring a full-time executive director and with assistance from other staff (e.g., urban rural grants coordinator), MCDD employs 1.0 FTE for economic development. Therefore, CD should re-assess staffing resources allocated to economic development after it has performed this function for an extended period of time.

Furthermore, CD should maintain and track economic development information including jobs created, jobs retained and investments made to fully evaluate the success of its economic development activities, especially if the City decides to continue to contract with WRAP for economic development services. CD should use this data and include it in the consolidated plan, annual plan and strategic plan (see **F6.14** and **R6.12**).

Financial Implication: Assuming CD provides similar levels of funding to WRAP when it was only functioning as a sub-recipient for the City ($50,000), the City would save approximately $52,000 annually by performing economic development activities internally.

F6.29 Although MCDD has developed an economic plan, CD and WRAP have not developed a formal economic development plan. An economic development plan provides a blueprint for achieving community objectives by translating a community's broader vision and goals into economic initiatives. Economic development plans provide cities with a tool to determine how economic development needs can be addressed. Further, it should link to a city's strategic plan (see **F6.14**). According to the University of Missouri's community and economic development manual, typical economic development initiatives include the following:

- A strategy that targets compatible businesses and employment opportunities;
- A marketing program that emphasizes community assets;
- Financing tools to aid development, including tax abatement and waivers, grants, low-cost loans, and special taxing districts;

- An inventory of potential sites for development, including appropriate zoning, inventorying hazardous materials and other environmental problems and providing infrastructure improvements;
- An inventory of available public lands, including lease commitments in developments and providing support facilities such as parking, port facilities, and job training; and
- A method to expedite the development approval process and reduce the complexities of existing zoning and building codes.

Economic development programs provide a road map for sustaining a city. The types of economic development programs and incentives the City of Warren offers have a direct impact on its economic status. The lack of economic programming and planning in the City may lead to the following:

- Reduced growth in the commercial and residential tax base;
- Reduced job growth as a result of the City's inability to retain and expand existing business; and
- Inability to attract private investment (see **Table 6-9**).

R6.27 CD should develop an economic development plan for the City and implement the economic development programs outlined in the plan. The economic development plan should include the following:

- *Statement of purpose*: The statement should explain the purpose of the plan, what the City hopes to accomplish and how the activities listed in the plan support and maintain the values of the community. It should also describe the organization established to formulate and carry out the plan for the community.

- *Goals for economic change*: This section of the plan should outline the goals of the proposed plan and how each will be evaluated and monitored for effectiveness.

- *Community analysis*: The analysis should be the basis for determining strategies for change based on current conditions in the community. This portion of the plan should include the history of the community, as well as an assessment of the physical resources, community facilities, institutional resources and social and economic resources.

- *Strategies and tactics for achieving goals*: CD should develop strategies for community and economic change that correspond to the goals established in the earlier sections. Typical strategies for influencing and directing economic change include capturing existing income, retaining and expanding existing economic

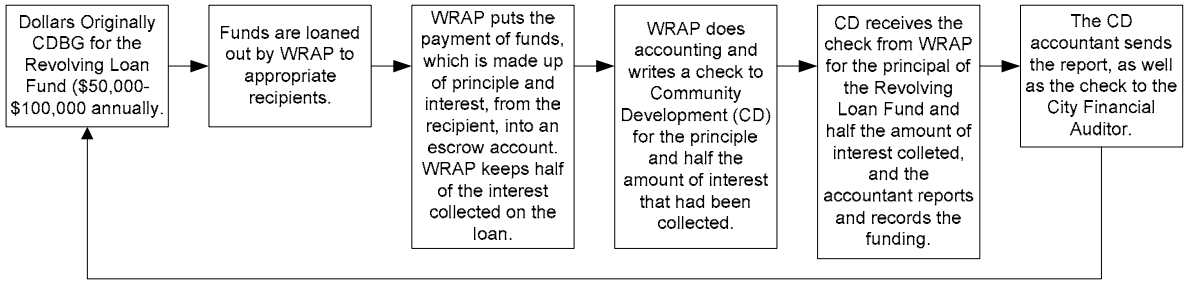
businesses, capturing outside investment, creating new export enterprises and recruiting of compatible enterprises.

- *Action Timetable*: This section of the plan should explain how the CD will reach its specified goals.

The economic development plan should be used to establish economic development programs that meet community needs. Additionally, the economic development plan should be linked to the department's and City's strategic plan (see **R6.12)** to incorporate the plans for economic improvement throughout the city.

F6.30 WRAP has managed the Revolving Loan Fund (RLF) for the City since 2001. Prior to that, the City hired a consulting agency to assist in underwriting loans. **Chart 6-3** illustrates the current flow of funding for RLF.

Chart 6-3: RLF Funding Flow



According to **Chart 6-3** and as related to CD, WRAP is responsible for determining RLF recipients and receives a portion of payment of funds. CD is responsible for documenting the payment received and communicating with the City finance department. Although RLF was formerly conducted through CD, it currently does not have staff trained to manage the RLF. When CD was responsible for economic development, it conducted lending activities to assist small businesses. The benefits of conducting RLF in-house include the following:

- Direct financial control;
- Greater accountability;
- Increased program income; and
- Increased ability to include the RLF in the consolidated plan.

Peers administer loan programs directly and appear to more effectively use their RLFs to attract business investments and create new jobs (see **F6.28**) when compared to Warren.

LDCD's director received specialized training to perform revolving loan functions. By operating its loan program in-house, LDCD is able to realize program income of approximately $750,000 based on HUD's guidelines. Based on HUD's 20 percent limit, LDCD is able to use program income funds of $150,000 to help support administrative costs. In contrast, CD is only able to realize half of the income generated from its RLF, due to the contract with WRAP. WRAP currently receives half of the income generated by the loan repayments to cover its administration expenses. Although the contract stipulates the 50 percent arrangement, WRAP provided approximately $150,000 of the $180,000 earned in program income in 2002 to CD. CD allocated all of the program income back to WRAP to provide additional loans from the RLF. Nonetheless, CD could have used the program income in various ways, such as administration costs and programs to address the City's high priority needs (see **R6.15**).

R6.28 CD should consider amending its contract with WRAP and complete RLF functions in-house, and instead use WRAP for assistance when appropriate. The increased financial control and accountability could allow CD to manage RLF more efficiently. The executive director (see **R6.1**) should be trained in proper RLF practices. The one-time cost of training would be immediately offset by the amount of additional funding available by discontinuing WRAP's contract (see **F6.28** and **R6.26**). Furthermore, CD should fully evaluate using program income in additional areas, such as addressing the City's high priority needs (see **R6.15**).

Financial Implication: Based on the amount of program income earned and provided to CD in 2002, CD would obtain approximately $30,000 annually in additional program income by operating the RLF. In addition, CD would be able to use all of the earned program income, which amounted to approximately $180,000 in 2002, for numerous purposes.

Technology

F6.31 CD enters data into HUD's IDIS, but does not fully use its functions or document HUD security requirements. The system allows a recipient to:

- **Set-up activity:** Establishes an activity account in the system.
- **Commit funds:** Commits funds from each grant or obligates funds to a specific activity. Once committed, funds are not interchangeable between activities.
- **Disburse funds (Draw-downs):** Disbursements can be made only after an account has been set-up in IDIS. Funds are disbursed from the recipient's account to the activity accounts that are set-up in IDIS.

- **Report and track funding and draw-downs by activity and grant:** The reporting component of IDIS allows CD to manage and monitor various programs and activities by tracking disbursements.

CD uses IDIS to manage some portions of its grant administration process, but does not use the IDIS module that matches the recorded financial transaction with the information in the IDIS set-up. Failure to reconcile transactions with set-ups results in poor record keeping. The practice could also keep funds that are available for disbursement from being used and could contribute to the high timeliness ratios and large carry-over balances at CD (see **F6.24** and **R6.22**).

HUD's system controls require the use of passwords, segregation of job duties, and training. Currently, CD has three individuals that have access to IDIS. There is a series of passwords that are used to enter into the system, and all the passwords are unique to each individual. HUD requires CD to change passwords periodically based on frequency of use. Further, HUD also requires one employee to set up accounts and another employee to complete the disbursements. If an employee draws down funding from IDIS, another employee is required to approve the draw down. HUD requires CD staff that have IDIS access to have system training.

There is no documentation within CD that shows who has access to specific IDIS modules, who is authorized to complete a transaction in another's absence, and who has been trained on the system. *The Handbook of IT Auditing* specifies that documentation covering security management, access control and system integrity be in place and maintained. Documentation of this type is also a good management planning tool.

R6.29 CD management should review IDIS and ensure that all modules available are being used to manage HUD grants. As part of this review, system requirements should be documented for access control, segregation of duties and training. This will help to ensure CD employees are accountable for transactions and are in compliance with HUD regulations.

F6.32 CD's account balances in IDIS have not been efficiently reconciled to Finance Department records. This occurs because the Finance Department balances accounts to the general ledger and CD balances to specific projects. The City's New World Systems (NWS) software does not have the capability to generate useable reports. Currently, the CD accountant and the Finance Department's senior accountant each maintain separate spreadsheets to track account balances. The CD accountant spends approximately eight hours each month reconciling spreadsheets with the Finance Department's senior accountant. This duplication of effort diminishes staff performance and increases costs.

The Data Processing Department has obtained several licenses for Crystal Report Writer software. This will allow trained personnel to access data fields in NWS and generate reports to properly and efficiently perform reconciliation procedures. According to the CD employees, if Crystal Software was utilized, the CD accountant would have to spend approximately one hour each month reconciling account balances with the Finance Department.

Both the Finance Department and CD are responsible for the financial management of the CDBG and HOME awards. CD is responsible for initiating all financial transactions and drawing from the proper accounts in IDIS, while the Finance Department is responsible for paying all invoices and monitoring the CDBG and HOME accounts listed in the City's general ledger. Leading technology firms indicate that the use of computer technology for financial record keeping purposes is beneficial. When financial records are reconciled, agencies can ensure that grant awards are appropriately expended and that reimbursements to other governmental funds are made in a timely manner. Without a properly managed reconciliation process, CD and the City are at risk of noncompliance with federal, state and city regulations, inappropriate use of grant funds, and the possibility of expenditures being incorrectly charged to the General Fund.

R6.30 The CD executive director should work with the city auditor and director of technology to identify what reports are needed so the Crystal Software can be used to reconcile IDIS and City accounts on a monthly basis. The City should train one employee to use the software. Upon completion of the training, the employee should train other appropriate city employees, including the CD accountant and the Finance Department's senior accountant. This action will reduce current duplication of effort and reduce reconciliation time. Further, using Crystal Software would provide more efficient and accurate communication between departments.

Financial Implication: A one-time cost of up to $850 for Crystal Software certification training would be incurred. This cost could be paid out of CD grant funds.

Financial Implications Summary

The following chart presents a summary of the estimated cost savings, and recovery costs discussed in this section. For purposes of this table, only recommendations with quantifiable financial impacts are included.

Summary of Financial Implications

Recommendations	Estimated Annual Revenue Enhancements	Estimated Annual Cost Savings	Estimated Annual Costs	One-time Implementation Costs
R6.1 Hire a full-time executive director			$27,000	
R6.14 Fill the urban rural grants coordinator and do not fill the assistant director position		$5,000		
R6.16 Require suppliers to receive certification prior to reimbursement.		$4,700		
R6.26 Perform economic development activities internally.		$52,000		
R6.28 Operate the RLF internally.	$30,000			
R6.30 Obtain Crystal Software training				$850
Totals	**$30,000**	**$61,700**	**$27,000**	**$850**

Conclusion Statement

CD's services are essential to the overall progress, and economic and social well-being of Warren. CD focuses on eliminating slum and blight through urban renewal and redevelopment, and serves low to moderate income households by providing affordable and decent housing and living conditions and improving community facilities and services. CD can enhance certain aspects of its operations, such as organizational and staffing issues, planning activities, program evaluation and monitoring functions, and economic development, to positively impact its purpose, focus and services provided to the citizens of Warren.

Based on the staffing analysis and differences in organizational structure and job responsibilities as compared to the peers, CD appears to be adequately staffed to perform its current functions. However, CD should consider expanding its role, mainly by conducting economic development and RLF activities internally, resulting in the need to hire a full-time executive director. When the current assistant director retires, CD should eliminate the assistant director position and hire a full-time grants coordinator to focus on effectively managing HUD grants, assisting in monitoring program effectiveness and helping with economic development. Prior to implementing the current proposal to combine EPB with CD, it should be fully analyzed to determine the operational impact on other city departments, as well as the financial impact on the General Fund and CD's administrative costs. Additionally, developing cross-training procedures, updating job descriptions, establishing a formal policy for performance evaluations and developing a procedures manual would further enhance internal operations.

To help guide internal operations, CD needs to develop a strategic plan and related goals and objectives. When CD develops a strategic plan, it should be tied to the City's strategic plan and include many aspects of the City's recommended economic development plan. Performance measures should be created and used to ensure that CD is successfully achieving its objectives and goals. In addition, consistent and thorough reviews of CD's proposals and objectives by the Committee would ensure that funding is being effectively allocated to different programs and that goals and objectives developed by CD are appropriate. The Committee should also work with CD to address the City's identified high priority needs. As indicated by the significant number of programs and subsequent funding estimates, high priority needs are not being adequately addressed in the City.

Currently, CD does not consistently and formally evaluate the effectiveness and success of existing programs and does not have a formal, written process to monitor sub-recipients. As a result, CD should evaluate the effectiveness of its grant-funded programs based on goals and outcomes. Developing and using formal monitoring procedures would allow CD to comprehensively evaluate programs and services. CD does not encumber and expend all available grant resources during the fiscal year and maintains a large carry-over of CDBG funds, leading to untimely allocation of grants and thereby potentially impacting the ability of programs to provide services. Therefore, CD needs to exercise appropriate and sound financial practices,

provide formal training on HUD guidelines and fully use HUD's Integrated Disbursement Information System. Taking these steps would help maximize resources allocated to direct services and programs, and ensure that funds are provided to programs in a timely manner.

Considering the relatively low number of new jobs created and business investments made in the City over the last two years, CD should consider taking over economic development activities and management of the RLF from WRAP. In addition to saving costs and generating additional program income, increased accountability, continuity and consistency would be achieved through CD. Nonetheless, CD should use WRAP and other appropriate organizations as additional resources to help improve the economic development of the City. Maintaining and tracking economic development information, including jobs created, jobs retained and investments made is critical to fully evaluate the success of its economic development activities. An economic development plan should be developed to provide a blueprint for achieving community objectives and serve as a tool to determine how economic development needs can be addressed. The plan should link and directly flow from the department's strategic plan.