

Forest Lakes

Domestic Water Improvement District

Master Plan

July 1, 2003

I. Executive Summary

This plan contains the vision that the Board and staff of the Forest Lakes DWID have for the future of the District. It will be reviewed quarterly and updated annually as new information and circumstance dictate.

The District has made great strides since it was established in 1992. It has gone from a business with limited standards, non-compliant distribution system and deficient administration, to an organization with rules and regulations that create fairness for customers, full ADEQ compliance and a reliable water supply.

This does not mean that we are done. When we stop improving and progressing, we are going backwards. This definitely applies to the water sources, equipment and administration of the Water District. Some of the major improvements needed include:

- Upgrades to over 60,000 feet of water lines
- Improvements in reliability and quality of electrical power
- Water pressure equalization improvements.
- Implement Conservation through Water Meters

The District must also follow all Federal and State rules and regulations. This provides the customers with water that continues to improve in quality. The most recent example is the change in the arsenic limits from 50ppb to 10ppb. This will require the District to reduce the arsenic level in two wells by January 2006.

In addition to capital improvements, the District considers maintenance of existing equipment, facilities and resources very important. It is less expensive to maintain what we have then to replace it; therefore, investments have been made in routine maintenance of water storage tanks, upgrades of administrative rules and plans, etc. It is the intent of the District to continue this policy.

It has been said that we have plenty of water, so why are we worried about conservation? When we look at the problems of our neighbors in other cities and towns on the Mogollon Rim, we see major conservation programs being implemented and in some cases resorting to hauling water. The people of Forest Lakes deserve better than that and therefore must plan ahead to use the resources we have responsibly.

Forest fires continue to be a threat to our community and water is a big part of our protection. During the fires last year, the District provided thousands of gallons of water under emergency conditions. The District is also committed to working with

the Forest Lakes Fire District to improve the number and spacing of the fire hydrants and the volume of water that can be delivered.

As in every business, technology must come into play to improve the effectiveness and efficiency of the organization. The District will be using new technology in the monitoring of wells, meter reading, and administrative systems.

Our current sources of funding are property taxes and fees for various services including the monthly water fee. The District will pursue other sources such as grants to supplement existing monies. With the federal mandate to remove arsenic and the installation of water meters, there may be a need to borrow money, but it is the intent of the Board that this be kept to a minimum and avoided if possible.

During the 2004 annual review of the Master Plan the Board reemphasized the need to set priorities. There is much to do and limited financial resources, therefore the Board established a priority for major projects in the following order:

Compliance with federal law – all changes or modifications to the water system necessary to comply with federal and state law. This includes compliance with the arsenic standard.

Improvements to the existing distribution system – replacement of sub-standard water mains, valves and related equipment.

Water conservation - Installation of water meters and other equipment and administrative programs to encourage the conservation of water.

Implement water rates and fees to maintain adequate funds available to complete federal mandated and operational improvements.

Implement security policies, procedures and devices necessary to protect the water supply and distribution systems.

The following is the schedule of events regarding the Master Plan and the budget process:

July	Budget submitted to the County Board of Supervisors. Prior fiscal year Master Plan progress review.
Oct	Review current Master Plan progress.
Jan	Review current Master Plan Progress.
April	Review current Master Plan progress. Draft revisions to the Master Plan for the next fiscal year.
May	Review the draft budget for next fiscal year.
June	Board approve the budget and Master Plan for next fiscal year.

<i>I. Executive Summary</i>	1
<i>II. Introduction</i>	5
<i>III. DWID Description</i>	5
<i>IV. Vision</i>	7
<i>V. Mission</i>	7
<i>VI. Values</i>	7
<i>VII. Water Production and Distribution</i>	9
Goal 1: Replace and update components of the production and distribution system to enable uninterrupted water supplies	9
Goal 2: Maintain a system that will equalize the water pressure throughout the district	10
Goal 3: Perform maintenance on the production and distribution system	10
Goal 4: Ensure that there is adequate utility and emergency electrical power	11
Goal 5: Maintain and follow a plan to encourage all customers to conserve water	11
Goal 6: Develop and follow security procedures that protect district facilities from unauthorized access and damage	12
Goal 7: Maintain a plan that will provide water to all customers in any emergency	12
<i>VIII. Compliance</i>	12
Goal 1: Comply with all Federal, State and Local water quality rules and regulations	12
<i>IX. Financial Management</i>	13
Goal 1: Maintain and improve sources of revenue	13
Goal 2: Maintain appropriate financial management and reporting procedures	14
<i>X. Administration</i>	14
Goal 1: Maintain District rules and regulations	14
Goal 2: Maintain all planning documents	15
<i>XI. Other Management Issues</i>	15
Goal 1: Establish and monitor contracts for outside services	15
Goal 2: Provide District activity information to the customers	16
<i>XII. Operational Plan</i>	16
Annual Objectives.....	17
Fiscal Year 2006-2007 Objectives:.....	19

Fiscal Year 2007-2008 Objectives:.....	19
Fiscal Year 2008-2009 Objectives:.....	20
Fiscal Year 2009-2010 Objectives:.....	20
Fiscal Year 2010-2011 Objectives:.....	20
Fiscal Year 2011-2012 Objectives:.....	20
<i>XIII. Water District Board Members.....</i>	<i>21</i>

II. Introduction

Forest Lakes is home to full time, seasonal, and weekend residents. Even though we use our property in different ways, there is a common need that we all have and that is water. To continue to provide high quality water at reasonable prices, the Board of Directors and staff at the Forest Lakes Domestic Improvement District (DWID) has developed this Master Plan that provides the foundation for the next five years. The Plan will to be used in operational and financial planning and to inform the public about the projects and efforts being made to keep clean water flowing.

Long range planning is not a one-time event. The plan is an evolving document that will be updated annually as more details become available and conditions change. A few of the conditions that will change the plan are significant increases in the demand for water, the amount of available funds, and policy changes placed on the system by the State and Federal government.

III. DWID Description

The Forest Lakes Domestic Water Improvement District was created in 1992 in accordance with Arizona Revised Statues Title 48 to manage the water supply for all District residents.

A five member Board of Directors is elected by property owners of the District. Term of office is four years with positions expiring on alternating two-year election periods. Daily management of the District is done by a state-certified Water Operations Manager, who is supported by an Office Manager and various part time assistance based on seasonal requirements. The State of Arizona requires a trained and certified operator be on site at all times; therefore, a second certified operator provides part time support to the system.

The source of water for the district includes four wells that can produce over 1000 gallons of water per minute when running at full capacity.

Water is stored in three tanks that have a capacity of 674,000 gallons and then distributed to over 850 residents and 13 commercial customers via 25 miles of pipe. The distribution system has a redundant supply system so that if one tank or well is not operative, water can still be provided to all connections. It should be noted that emergency breaks in a main or service line to a customer will still disrupt the flow of water.

The system also provides water to 73 fire hydrants that are used by the Forest Lakes Fire District to fight local fires as well as assisting the Forest Service to fight forest fires in the immediate area.

The number of connections is increasing at about 2 to 4 per year due to vacant lots becoming occupied. This represents less than one percent increase in connections,

while the increase in water usage between the years 2000 and 2001 was over 18 percent.

Financial resources to operate, maintain and improve the water systems come from customer fees that are collected quarterly and from property tax collected by Coconino County. The District is in compliance with County rules that govern the District. An example of this is the requirement that an annual budget be submitted for review to the County Board of Supervisors.

The District is also in compliance with all applicable rules and regulations published by the State of Arizona. This includes completing all required water sampling and water testing. The Federal Department of Environmental Protection has responsibility for the enforcement of the Safe Drinking Water Act established by the Congress. The enforcement for Arizona is delegated to the Arizona Department of Environmental Quality (ADEQ), which implements Federal rules such as the recent stricter rule governing the amount of arsenic allowed in drinking water. The District must also comply with rules and regulations promulgated by the State Department of Water Resources. An example of this agency's responsibility is the authorization of all well drilling.

The Water District also publishes appropriate rules and regulations, such as criteria for connection, use of water, billing procedures, etc. These rules and regulations provide consistency in the delivery of water, as well as fairness to the users.

The Water District is a non-profit organization; therefore, it is mandatory for all customers to use the system in a responsible manner.

IV. Vision

To provide adequate clean water for domestic use and related services to all customers and to support other community water requirements at a reasonable cost.

V. Mission

The following statements describe the Board's vision for the Water District.

1. The District will provide clean water to all customers in adequate volumes without interruption.
2. All district equipment; production and distribution systems will be maintained at established standards.
3. The District will be in compliance with all rules and regulations established by Federal, State and Local government.
4. Security systems and procedures will be implemented and maintained to protect the water systems from unauthorized access and damage.
5. District administrative policies and procedures and finances will be reviewed annually, maintained and followed.
6. The District will provide water in a cost effective manner and strive to be debt free.
7. A qualified staff will be available to operate and maintain the water system.

VI. Values

The following statements represent the foundation upon which the District is managed.

1. Customers must be treated fairly and with respect.
2. A well-trained and knowledgeable staff is key to a successful water service.
3. A standard of excellence for quality and quantity of water must be maintained.
4. Good business practices and procedures are essential to the system.
5. A Board of Directors that is dedicated and knowledgeable about water systems and works as a team with a highly qualified staff is essential to an effective and efficient water system operation.

6. Water is a critical element to life and a resource issue in the State of Arizona; therefore, it must be used wisely and conserved in accordance with established programs.

VII. Water Production and Distribution

Goal 1: Replace and update components of the production and distribution system to enable uninterrupted water supplies.

Description:

As stated in the DWID Description, the production and distribution system includes four wells, three tanks, approximately 25 miles of various size pipe and assorted pumps and valves to get the water from the ground to each connection.

Maintaining this facility is vital to keep the water flowing.

In the past 5 years 16,000 feet of main distribution pipe were upgraded to six inches or eight-inch pipe. The hydrants and service lines were also upgraded or replaced in these areas.

The system is currently in compliance with all Federal and State rules and regulations.

There remains approximately 60,000 feet of distribution pipe to be replaced or upgraded. Many of these pipes were originally installed on inappropriate bedding with inappropriate pipe material. This has resulted in excessive leaks and pipes that are too small in diameter to provide the volume of water required by the Fire District.

Strategy:

The strategy is to replace a segment of the distribution system each year if funds are available in the Water District Capital Improvement Budget. Fire hydrants and service lines will be upgraded as appropriate with all distribution line improvements. When additional looping can be done in the course of other construction, it will also be accomplished.

Pending financial capability of the District, the following objectives include the pipe upgrades and replacements that are expected within the next five years.

Objective 1: Complete analysis and project plan for West Loop Upgrade

Objective 2: Upgrade water pipes on West Loop

Objective 3: Complete analysis and project plan for Rim Loop Area

Objective 4: Upgrade water pipes in the Rim Loop Area

Objective 5: Replace antiquated fire hydrants in compliance with Master Plan

Goal 2: Maintain a system that will equalize the water pressure throughout the district.

Description

The change in elevation between various areas within Forest Lakes causes the water pressure to vary as much as 40-50 pounds. Connections

at the highest levels are experiencing low water pressure while the connections at the lowest elevations have very high pressure.

Strategy:

There is more than one alternative to resolve this problem; therefore, the initial strategy is to authorize a study by our contracted engineer that will provide a recommended solution with cost estimates.

Objective 1: Install/implement water pressure equalization solution.

Objective 2: SCADA monitoring and Electronic surveillance in place. (On going)

Goal 3: Perform maintenance on the production and distribution system.

Description

The production and distribution systems require routine maintenance that is currently being performed. There are some procedures that should be improved to ensure all

equipment is accounted for and is working properly.

Strategy:

The existing staff will implement necessary changes and improvements as time permits.

Objective 1: Upgrade the mapping of all valves and other key distribution components. (On going - ?% Completed)

Objective 2: Implement and follow a program of exercising all valves on an established schedule. (On going)

Objective 3: Continue to maintain an inventory of all spare parts. (On going)

Goal 4: Ensure that there is adequate utility and emergency electrical power.

Description

APS provides power to Forest Lakes and the well location that is not a true three-phase. This results in greater wear and shortens the life expectancy of all motors.

There are backup generators located at three out of the four wells to provide backup power in the case of APS power outages. The Y2K well doesn't have a backup generator and yet it will become one of the primary wells as demand increases.

Strategy:

Continue to encourage APS to improve the power supply to the wells and provide backup power to all existing wells.

Objective 1: Maintain communications with the appropriate leadership at APS to encourage them to provide three-phase power to all wells.

Goal 5: Maintain and follow a plan to encourage all customers to conserve water.

Description

Many areas of Arizona are under severe water restrictions and laws have been passed that control water usage in these areas. As responsible

managers of a critical resource the Forest Lakes DWID Board should implement a conservation program that is consistent with other parts of the State. Currently there is a flat rate that allows significant water usage abuse. Although there is ample water available at this time, we should still be using this resource responsibly.

Strategy:

Develop methods to encourage the conservation of water that will include the installation of water meters and volunteer conservation programs.

Objective 1: Develop a water conservation program. (On going – ADWR System Water Plan)

Objective 2: Install meters at all connections. (On going)

Goal 6: Develop and follow security procedures that protect district facilities from unauthorized access and damage.

Description

Protection of DWID property from unauthorized access and damage is required to protect property as well as ensuring that all water supplies are protected from contamination by vandals or terrorists.

Strategy:

Install and use electronic monitoring devices and ensure that all authorized persons are properly trained in the emergency procedures for security.

Objective 1: Update the DWID Emergency Plan to include procedures for unauthorized intrusion at any DWID facility. (Updated – Review on going)

Goal 7: Maintain a plan that will provide water to all customers in any emergency.

Description:

The District is obligated to provide drinking water to all customers in the event of an emergency. There must be a plan and procedures to address

various kinds of emergencies and the course of action to deal with the situation.

Strategy:

Review the Emergency Plan annually to ensure that all known situations are addressed and that all appropriate staff is familiar with procedures.

Objective 1: Develop and maintain procedures in the Emergency Plan to fix major water line ruptures or address a natural disaster. (In place)

Objective 2: Maintain contingency agreements with one or more water companies to receive water in the event of a major water outage in the Forest Lakes District, add this information to the Emergency Plan. (In place)

Objective 3: Maintain procedures in the Emergency Plan to address a major contamination event. (In Place)

VIII. Compliance

Goal 1: Comply with all Federal, State and Local water quality rules and regulations.

Description:

The Arizona Department Environmental Quality (ADEQ) requires water samples to be taken during specific periods of time and

tested at a certified laboratory to meet EPA standards. The Federal Environmental Protection Agency (EPA) continues to review the Maximum Contaminant Levels (MCL) of various elements and minerals. The District must also comply with rules governing operator certification and general operation, administration, and facility standards.

Strategy:

The MCL for arsenic changed from 50ppb to 10ppb effective January 2006. The District has two wells above the 10ppb that must be corrected. Treatment/solution alternatives must be reviewed and the most appropriate selected and implemented.

Objective 1: Investigate options to put Snow well back on line.

Objective 2: Continue to compile and publish a Consumer Confidence Report annually according to ADEQ standards. (On going)

IX. Financial Management

Goal 1: Maintain and improve sources of revenue.

Description:

There are two primary sources of funding that support the District: property tax and fees from District customers. These funds are used for

system operations and maintenance and capital improvement. The current method of billing (a flat rate to all residential customers) is unfair to the residents that use a small volume of water. There is also a major shortage of revenue to accomplish the identified capital improvements identified.

Strategy:

Install a billing method that will charge the residential customers based on volume. Investigate and pursue grants, loans or bonds to increase capital improvement funding.

Objective 1: Develop and implement a multi level billing system. (On going)

Objective 2: Identify and secure a grant to pay for SCADA. (Completed Paid for by Distrist)

Objective 3: Continue to pursue sources of loans or bonds to pay for construction (On going)

Objective 4: Conduct a bi-annual rate review to ensure that the District is competitive with other water companies of similar size and that operational expenses can be met. (On going)

Goal 2: Maintain appropriate financial management and reporting procedures.

Description:

An annual budget is developed and approved by the District Board. The budget is then forwarded to the Coconino County Board of

Supervisors for review. Monthly financial reports are produced for review and approval by the District Board. The financial records are audited annually, but not in compliance with Federal standards. The audit should be changed to be in compliance with OMB 133 Circular. This change will improve the chances of acquiring federal grants.

There was a public hearing in 2002 that provided for a three-year water fee increase of 15% in 2003, 10% in 2004 and 5% in 2005. This was the first time in a decade that the fees changed. After 14 years of no tax increases we increased the tax by 18 cents per thousand.

Strategy:

Conduct rate reviews by-annually to ensure that there are adequate funds for operation and maintenance as well as capital improvements. Update the audit procedures to improve the chances of receiving grants.

Objective 1: Continue to develop annual budget by April of each year. (On going)

Objective 2: Continue to develop monthly financial reports. (On going)

Objective 3: Continue to require annual audits of the financial records. The audit will be in compliance with Federal Office of Budget and Management Circular 133. (On going – Compliant)

Objective 4: Continue to produce quarterly billing to all customers in March, June, September and December. (On going)

X. Administration

Goal 1: Maintain District rules and regulations

Description:

Rules and regulations are essential to consistent management of the District business and to maintaining fairness

to all customers. The District has published rules and regulations governing the

connection and use of water, safety practices, personnel procedures, and emergency procedures.

Strategy:

Review all rules, regulations, procedures and planning documents and update as required to ensure they apply appropriately to the current environment.

Objective 1: Continue to review and publish appropriate changes as required to the rules and regulations.

Objective 2: Continue to review and publish all internal administrative policies and procedures as required.

Objective 3: Address anomalies identified by Auditor’s Management Letter. (On going)

Goal 2: Maintain all planning documents.

Description:

The 2003 Master Plan is the first step in documenting a long-range plan. The District Board considers this an important step toward improving the

management of larger projects as well as the routine work.

Strategy:

Annually update and review the Master Plan as necessary. Develop a short-range plan that will be considered during the development of the annual budget. Larger projects will also have more detailed project plans developed by the District staff.

Objective 1: Review and update the District Master Plan annually and monitor progress quarterly. (On going)

Objective 2: Develop and follow project plans for all large projects. (On going)

XI. Other Management Issues

Goal 1: Establish and monitor contracts for outside services

Description:

The District periodically requires technical or professional expertise not available within the District Staff. To

ensure that these services are available at a reasonable cost, contracts are awarded for these services for a period of time. Support is also available through membership in associations and working with other water companies.

Strategy:

Review existing contracts periodically and issue bid requests as necessary. Continue relationships with associations and groups that can provide technical assistance to the District at low or no cost.

Objective 1: Continue to annually review all service contracts, including Engineering and Electrical services, as well as attorney and audit consultants. (On going)

Objective 2: Continue to coordinate activities with ADEQ, ASUA, ADWR, and special districts and report to the Board as appropriate. (On going)

Goal 2: Provide District activity information to the customers.

Description:

The customers are important to the success of the Water District; therefore, it is important that information regarding the activities of

the District be easily accessible by the customer. This is particularly important to the water conservation program.

Strategy:

Utilize newsletters, the Internet, monthly board meetings, and board meetings of other groups to communicate with our customers.

Objective 1: Continue to maintain a customer complaint process that will address all complaints within 1 week after receipt.

Objective 2: Continue to provide articles for the FLOA newsletter and produce a District newsletter when appropriate.

Objective 3: Continue to use the FLOA meetings and FLOA web site to communicate significant activities and future plans to the residents as required.

XII. Operational Plan

The Master Plan contains goals and objectives that will be accomplished over the next five years. To be more specific, the following operational plan contains the specific objectives that will be accomplished each year. Note that the years identified are consistent with the fiscal year of the District which is **July 1st through June 30th**.

In some cases large projects will overlap. In other cases, the objective may need to be repeated. In these cases, the objective will be shown in all years to which it applies or continues.

Annual Objectives

The following objectives will be completed every year of the plan.

Water Production and Distribution

Goal 3: Objective 3: Continue to maintain an inventory of all spare parts and obtain a list of SCADA spare parts.

Compliance

Goal 1: Objective 5: Continue to compile and publish a Consumer Confidence Report annually according to ADEQ standards.

Financial Management

Goal 1: Objective 3: Continue to pursue sources of loans or bonds to pay for construction

Goal 2: Objective 1: Continue to develop annual budget by April of each year.

Goal 2: Objective 2: Continue to develop monthly financial reports.

Goal 2: Objective 3: Continue to require annual audits of the financial records. The audit will be in compliance with Federal Office of Budget and Management Circular 133. **(On going)**

Goal 2: Objective 4: Continue to produce quarterly billing to all customers in March, June, September and December.

Administration

Goal 1: Objective 1: Continue to review and publish appropriate changes as required to the rules and regulations. **(On going)**

Goal 2: Objective 1: Review and update the District Master Plan annually and monitor progress quarterly. **(On going)**

Goal 2: Objective 2: Develop and follow project plans for all large projects. **(On going)**

Other Management Issues

Goal 1: Objective 1: Continue to annually review all service contracts, including Engineering and Electrical services, as well as attorney, auditor and consultants.

Goal 1: Objective 2: Continue to coordinate activities with ADEQ, ASUA, ADWR, and special districts and report to the Board as appropriate. **(On going)**

Goal 2: Objective 1: Continue to maintain a customer complaint process that will address all complaints within 1 week after receipt. **(On going)**

Goal 2: Objective 2: Continue to provide articles for the FLOA newsletter and produce a District newsletter when appropriate. **(On going)**

Goal 2: Objective 3: Continue to use the FLOA meetings and FLOA web site to communicate significant activities and future plans to the residents as required. **(On going)**

The following is a summary of the Administrative Objectives that will be reported on at the quarterly Master Plan review.

Objective	Date	Comments
Provide Project Plans to the board for all projects over \$25,000.	When Necessary	
Compile and publish a Consumer Confidence Report	07/01/07	
Inspect inventory of all spare parts	Quarterly	
Review all service contracts	07/01/07	
Conduct annual financial and operations audit	08/01/07	
Provide quarterly customer billing	Quarterly	
Review all internal policies and procedures	Annually	
Review all rules and regulations	Annually	
Review/Update Master Plan	Quarterly	
Develop annual budget	06/01/07	
Review Grant Status	Quarterly	

Fiscal Year 2006-2007 Objectives:

Water Production and Distribution

Goal 2: Objective 1: Complete an engineering study to identify alternatives and costs to equalize water pressure throughout the District. **(Engineering study completed. Implementation planned for fiscal year 2006-2007. This project will be done when the mains on West Loop are updated.)**

Goal 2: Objective 2: Install/Implement water pressure equalization solution. **(Completed)**

Goal 5: Objective 3: Install meters at all connections. **(Continuing through Years 2006-2009)**

Goal 5: Objective 5: Upgrade the mapping of all valves and exercising of valves and other key distribution components. **(On going)**

Goal 6: Objective 1: Develop a water conservation program. **(Moved to Fiscal Year 2005–2006 continuing)**

Goal 6: Objective 2: Update the DWID Emergency Plan to include procedures for unauthorized intrusion at any DWID facility. **(Revised and Current)**

Compliance

Goal 1: Objective 1: Investigate new water source or technology for water treatment to replace or put back on line the Snow well. **(In Progress)**

Goal 5: Objective 2: Continued usage of the Snow tank. **(In progress)**

Financial Management

Goal 1: Objective 5: Conduct a bi-annual rate review to ensure that the District is competitive with other water companies of similar size and that operational expenses can be met. **(On going)**

Fiscal Year 2007-2008 Objectives:

Water Production and Distribution

Goal 5: Objective 3: Install meters at all connections. **(In progress)**

Goal 1: Objective 5: Replace antiquated Fire hydrants as needed to be in compliance with the Master Plan

Fiscal Year 2008-2009 Objectives:

Water Production and Distribution

Goal 5: Objective 3: Install meters at all connections. **(Continued through Year 2008-2009)**

Fiscal Year 2009-2010 Objectives:

Water Production and Distribution

Goal 1: Objective 1: Finish all prior Water Production and Distribution Goals.

Goal 1: Objective 2: Complete analysis and project plan for West Loop Upgrade.

Fiscal Year 2010-2011 Objectives:

Goal 1: Objective 5: Upgrade water pipes in the Rim Loop Area (Moved to Fiscal Year 2010-2011)

Fiscal Year 2011-2012 Objectives:

Water Production and Distribution

Goal 1: Objective 3: Upgrade water pipes on West Loop **(Moved to Fiscal Year 2011-2012)**

XIII. Water District Board Members
Ben Purtymun, Chairman

Signature and Date

Kyle Huebsch, Member

Signature and Date

John McKnight, Member

Signature and Date

Wayne Rothwell, Member

Signature and Date

Mary Hume, Member

Signature and Date