

**Forest Lakes**

**Domestic Water Improvement District**

**Master Plan**

**June, 2018**

## **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:

- **1 - Upgrade our system to ensure continued high quality water at the required volume throughout the system. Each upgrade is coordinated with the FLFD to assure compliance of our joint agreement addressing hydrant spacing and pressure and timely ADEQ approval.**
- **2 - Continue to upgrade the remaining 62% of our 26 mile distribution system. (137,280 feet of water lines require upgrading).**
- **3 - The improvements in reliability and quality of electrical power has allowed us to eliminate the requirement for three phase power at the Snow Well. In 2016 completed energy audit to assure continued cost effective operations.**
- **4 - Continue to implement our water conservation program.**

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 resulted in taking the Snow Well off line, plus requiring the District to blend the water from two wells to reduce the arsenic level by January 2006. A new arsenic treatment system was installed and operational at the Snow Well the-second Quarter 2014 returning us to full capacity.

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 fire seasons our District has provided thousands of gallons of water under emergency conditions. We support ongoing fire training and system validations during periodic fire hydrant tests at no cost to the FLFD. The FLDWID has signed a joint agreement with the Forest Lakes Fire District to improve the fire hydrants spacing and increasing the volume of water delivered.

As in every business, technology must come into play to improve the effectiveness and efficiency of the organization. The District is using new technology in the monitoring of each of the wells pumping and backup generator system, meter reading, and administrative systems.

Our current sources of funding are property taxes and fees for various services including the monthly basic service and a water usage fees. The District will pursue other sources such as grants to supplement existing monies where possible. It is the intent of the Board to schedule improvements as funds are available keeping borrowing to a minimum and avoided if possible.

**During our 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.**

**Improvements to the existing distribution system – replacement of sub-standard water mains and related equipment to increase flow.**

**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:**

<b>June</b>	<b>Board review / approve the budget and Master Plan for next fiscal year. Budget submitted to the County Board of Supervisors.</b>
<b>Sept</b>	<b>Review current Master Plan progress.</b>
<b>Dec</b>	<b>Review current Master Plan Progress.</b>
<b>Mar</b>	<b>Review current Master Plan progress. Draft revisions to the Master Plan for the next fiscal year.</b>
<b>May</b>	<b>Review the draft budget for next fiscal year.</b>

<b><i>I. Executive Summary</i></b>	<b>- 2 -</b>
<b><i>II. Introduction</i></b>	<b>- 4 -</b>
<b><i>III. DWID Description</i></b>	<b>- 5 -</b>
<b><i>IV. Vision</i></b>	<b>- 6 -</b>
<b><i>V. Mission</i></b>	<b>- 6 -</b>
<b><i>VI. Values</i></b>	<b>- 7 -</b>
<b><i>VII. Water Production and Distribution</i></b>	<b>- 7 -</b>
<b><i>VIII. Compliance</i></b>	<b>- 11 -</b>
<b><i>IX. Financial Management</i></b>	<b>- 12 -</b>
<b><i>X. Administration</i></b>	<b>- 13 -</b>
<b><i>XI. Other Management Issues</i></b>	<b>- 14 -</b>
<b><i>XII. Operational Plan</i></b>	<b>- 15 -</b>
<b><i>XIII. Water District Board Members</i></b>	<b>- 18 -</b>

## **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 Statutes 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 Administrative Assistant and various part time or full time assistance based on seasonal requirements. The State of Arizona requires a trained and certified operator be on site or available at all times; therefore, a second certified operator provides necessary support to the system.

The source of water for the district includes four wells that can produce approximately 1000 gallons of water per minute when running at full capacity. There is 37% of completed upgrades to the system.

Water is stored in three tanks that have a capacity of 685,000 gallons and then distributed to over **876** residents and 14 commercial customers via 26 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 92 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.

Financial resources to operate, maintain and improve the water systems come from customer fees that are collected monthly 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. (yearend review indicated we need to schedule a review of these documents)
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.<sup>[P]</sup><sub>[SEP]</sub>

## **VII. Water Production and Distribution**

**Goal 1: Replace and update components of the 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 26 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.

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

There remains approximately 62% of 26 miles of distribution pipe to be replaced or upgraded.

**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: Engineering of the Main Trunk Line to be completed with Painted Sky Engineering 2018-2019.**

**Objective 2: First Phase of Main Trunk Line Upgrade 2019-2020. Replace undersized water lines.**

**Objective 3: Second Phase of Main Trunk Line Upgrade 2020-2021. Continuing the replacement undersized water lines.**

**Objective 4: Engineering for Wildcat Trail Upgrade 2021-2022. Complete the installation of undersized water lines.**

**Objective 5: Wildcat Road Upgrade 2022-2023. Replace undersized water lines not meeting initial requirements of 500GPM.**

**Goal 2: Maintain a system that provides required level of 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; our contracted engineer identified an alternate water routing process.

**Objective 1: The upgraded pipe size will aid in providing required volume throughout the district and improve fire support capabilities.**

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

**Description**

The production and distribution systems require routine maintenance that is currently being performed according to manufacturer. This requirement increases with each system upgrade with additional valves and hydrants added to our system.

**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. Mapping complete including 179 main line valves and 92 hydrant valves and 68 blow off valves. On Going.

**Objective 2:** Implement and follow a program of exercising all valves on an established schedule. On Going. Initial exercising was done during the mapping updating process complete in June 2010.

**Target is a 2 year exercising valve program but must be completed every year.**

**Objective 3:** Continue to maintain an inventory of all spare parts adjusting requirements based on usage data. (On going - part of daily operations)

**Objective 4:** Hydrant Testing every 5 years, last testing was 2017.

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

**Description**

APS provides power to Forest Lakes and we have backup generators at well sites.

**Strategy:**

Pumps and generators are monitored by our SCADA system to assure continuous operation.

**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 for the basic service plus a usage charge per one thousand gallons used. Although there is ample water available at this time, we should still be using this resource responsibly.

**Strategy:**

Develop additional methods to encourage the conservation of water.

**Objective 1: Develop a water conservation program. (Ongoing review annually– ADWR System Water Plan)**

**Objective 2: Monitoring our new meter system and communicating on possible leaks in a timely manner. (On going – at least monthly with our billing system)**

**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:**

Installed 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 annually)**

**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 review annually)**

**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:**

Monitor system on monthly basis in compliance with ADEQ.

**Objective 1: 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. There is also a limited amount of revenue to accomplish the identified capital improvements.

**Objective 1: Consider a multi-level billing system, after 5 years of data is collected.**

**Objective 2: Conduct a periodic rate review to ensure that the District's operational expenses can be met. (On going annually)**

### **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.

There was a public hearing in 2002 that provided for a three year water fee increase of 15% in 2003, 10% in 2004, and a 5% in 2005.

We switched from a flat rate with installation of meters to monthly usage billing in 2008. Due a reduction of our annual property tax income by 158K between 2009/2010 and 2013-2014 we were required increase our base rate by \$3.00 per month and adjust tax rate to \$1.60 per thousand in 2013.

#### **Strategy:**

Conduct rate reviews 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 – April)

**Objective 2:** Continue to report financial status monthly. (On going)

**Objective 3:** Continue to require annual audits of the financial records. The audit is conducted internally in compliance. Circular 133. (On going – compliant - August)

## **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. (Annually)**

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

**Objective 3: Address anomalies identified by Internal Audit with CPA closing Financials at end of Fiscal Year. (Annually)**

**Goal 2: Maintain all planning documents.**

**Description:**

The 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.**

**Objective 2: Develop and follow project plans for all large projects over \$50,000. (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, RWAA, ADWR, and special districts and report to the Board as appropriate. (On going- reviewed annual.)**

**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. In accordance with rules and regulations.**

**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 FLDWID 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 1<sup>st</sup> through June 30<sup>th</sup>**. 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.

The following is a summary of the Objectives that will be reported as identified during monthly meetings.

Objective	Date	Comments
-----------	------	----------

Forest Lakes Domestic Water Improvement District

Provide Project Plans to the board for all projects over \$50,000.	Monthly	Status approved plans monthly
Compile and publish a Consumer Confidence Report	March	
Inspect inventory of all spare parts	March	Part of annual operation
Review all service contracts	Annually	Recommend in April with budget
Conduct annual financial and operations audit	August	
Provide monthly customer billing	Monthly	On monthly spreadsheet presented at Board Meetings

Review all internal policies and procedures	January	Identify target month target 3 <sup>rd</sup> Qtr.
Review all rules and regulations	January	Identify target month target 3 <sup>rd</sup> Qtr.
Review/Update Master Plan Develop annual budget in April	Quarterly  April	Approved in June. Reviewed in September. December & March
Review Grant Status	Annually	After requirement is defined
Budget submitted to County Board of Supervisors	June	
Review and update water conservation program.	March	Communicate _ FLOA newsletter or Dist. letter

Forest Lakes Domestic Water Improvement District

Monitor and report on meters operation -including potential leaks	Monthly	
Review and update as required DWID Emergency Plan	June	
Review and Update Special Use Permit with National Forest Service	Annually	Renewal permit on going
Review and update as required contingency agreement with one or more water companies	February	
Maintain procedure in the Emergency Plan to address a major contamination event	Annually	Identify target month 2 <sup>nd</sup> or 3 <sup>rd</sup> quarter Standing IGA with Heber Water District
Coordinate activities with ADEQ, RWAA,ADWR and special districts	On Going	
Maintain and report customer complaint process	Monthly	Included in monthly manager report
Yearly review of capital equipment	April	To support budget planning
Continue to provide articles for the FLOA newsletter	Quarterly	Water conservation on going priority / service
Update District Web page annually	On Going	Includes all Documentation
LCR Coalition	Annually	Review With Lawyer

**Fiscal Year 2017-2018 Objectives**

Goal 1: Objective 1: Engineering of the Main Trunk Line to be completed with Tetra Tech 2017-2018.To replace undersized water lines.

**Fiscal Year 2018-2019 Objectives**

Goal 1: Objective 1: Engineering of Main Trunk Line Upgrade. To replace undersized water lines.

**Fiscal Year 2019-2020 Objectives**

Goal 1: Objective 1: First Phase of the Main Trunk Line Upgrade. To replace undersized water lines.

**Fiscal Year 2020-2021 Objectives**

Goal 1: Objective 1: Second Phase of Main Trunk Line Upgrade. To replace undersized water lines.

**Fiscal Year 2021-2022 Objectives**

Goal 1: Objective 1: Engineering for Wildcat Road Upgrade. Replace undersized water lines not meeting initial requirements of 500GPM.

**Fiscal Year 2022-2023 Objectives**

Goal 1: Objective 1: Wildcat Road upgrade. Replace undersized water lines not meeting initial requirements of 500GPM

### **XIII. Water District Board Members**

**Lou St. Germain, Chairman**

---

Signature and Date

**Mary Hume, Vice Chairman**

---

Signature and Date

**Ray Grimmett, Member at Large**

---

Signature and Date

**Paul Studer, Treasurer**

---

Signature and Date

**Sally Rottier, Secretary**

---

Signature and Date