

Phase I Irrigation Plan

November 2012



Table of Contents

- 1. Introduction..... 3
- 2. Background / History 5
- 3. Charts 7
 - 3.1. Organizational Chart 7
 - 3.2. Stakeholder Chart..... 7
- 4. SWOT Analysis 8
 - 4.1. Strengths 8
 - 4.2. Weaknesses 11
 - 4.3. Opportunities..... 15
 - 4.4. Threats..... 17
- 5. Goals and Objectives 19
- 6. Implementation and Evaluation 21
- 7. Strategic Vision..... 22



Introduction

1. Introduction

The issue of irrigation in Lakewood Ranch has been an on-going dialogue among residents, civic organizations, the Homeowners' Associations, Lakewood Ranch Town Hall, the Community Development Districts, Braden River Utilities, and virtually every governance board or committee. For years, the residents of Lakewood Ranch have expressed concerns regarding irrigation water pressure, water quality, once-per-week watering restrictions, and watering time allotment.

While much progress and service improvements have been made recently on the system as a whole, from both a residential and common area perspective, opportunities exist to continue the improvement momentum.

On August 1, 2012, Lakewood Ranch Community Development Districts 1, 2, 4, and 5 (CDD's) and the Lakewood Ranch Inter-District Authority (IDA) met for a strategic workshop to discuss irrigation issues and to establish a strategic vision for the community with regard to irrigation. An engineering firm, Atkins North America, Inc., was hired to conduct the meeting and to guide the discussion of the group toward strategic thought and direction with regard to irrigation issues. Ultimately, the Boards reached the consensus that the IDA should assume a greater role in the Lakewood Ranch irrigation system similar to a government utility authority/company in order to manage the individual District responsibilities and infrastructure as one, unified utility system. Part of that recommendation included forming an irrigation group with both internal and external members that would guide the community toward a common vision for its irrigation system.

Initially, the Irrigation Initiative Team was comprised of IDA staff: Executive Director Eva Rey, Operations Director Ryan Heise, and Chief Financial Officer Steve Zielinski. These members met each week for approximately one month to develop a matrix of tasks and initiatives ranging from smaller, incremental steps such as establishing educational workshops to broad, over-arching and long-term solutions such as capital infrastructure improvements. The matrix of tasks was then divided into three different phases based on several factors such as funding/resource requirements and length of time estimated to accomplish. The first phase of the matrix contains tasks that could be considered "low hanging fruit". In other words, tasks that could be accomplished or implemented immediately or in the near future that would require little or no funding and would primarily require staff time and resources.

Then, after the initial matrix of tasks was developed and the Team needed to begin assigning the tasks and working through them, Bob Simons with Braden River Utilities (BRU) was invited to participate on the Team to assist with implementing and resolving some of the tasks on the matrix. Finally, Gary Glass, Director of Community Association Services was asked to work on the tasks that relate to the Homeowners' Associations.

The Team then began working on a plan to develop a roadmap for the future of the utility system and this document is the first step. So, is this a strategic plan or a tactical plan? The answer is – both. A strategic plan focuses on the future and asks questions such as; "where do we want to go?" or "what do we want to



be?” However, a tactical plan will focus on the present and establishes how to incrementally execute the strategic vision. Tactical plans are operational and functional in nature and will enhance the overall strategic plan by taking the smaller steps necessary to achieve goals of the agency and, therefore, the community.

This plan for Phase I of the matrix provides for a disciplined and tactical approach to resolving the on-going irrigation issues in Lakewood Ranch. The plan is a living document to be updated regularly as the Team progresses through the plan and completes the assigned tasks. Quarterly progress/status reports will be distributed to the Boards until Phase I of the Plan is completed. The first phase of the overall plan is expected to take approximately two years to complete all of the recommended tasks.



Background / History

2. Background / History

In May, 2009, the Lakewood Ranch Inter-District Authority issued a Request for Proposals to select a consultant to explore and evaluate the Lakewood Ranch irrigation system and the numerous complaints surrounding the system and the service delivery of irrigation water to residents and for the common area properties throughout the community. Azad Shah, P. E. with CSA Central Group, Inc. was selected to perform the study.

The entire study was divided into four phases with the final report for Phase IV being provided to the IDA in March 2012. A summary of the major findings and conclusions for each of the phases are as follows:

- Phase I work primarily pertained to reviewing Schroeder-Manatee Ranch (SMR's) Water Use Permit (WUP) from Southwest Florida Water Management District (SWFWMD); and reviewing other readily available material such as past reports commissioned by Braden River Utilities (BRU). Phase I work can be summarized as gaining a better understanding of regulatory environment in which LWR was working within as it pertained to irrigation.
- Phase II work involved reviewing irrigation water pricing methodology used by BRU; developing a memorandum of understanding for the purchase of water from SMR; reviewing irrigation water withdrawal sources dedicated to the IDA and their connections to the distribution system pipeline network; and providing an update to the availability of reclaimed water.
- The Phase III study recommended readily implementable solutions to resolve the billing discrepancies, such as: installing an additional meter along the western periphery of the IDA's system, shutting certain valves along the IDA's southern boundary, resolving double accounting of water withdrawn from Kent Lake, and metering water supplied to the golf course recharge lakes through the IDA's system. The phase IV report was broken down into three major sections: A review of randomized demand distribution, evaluate existing system design including pipe sizes and recommend changes to infrastructure and/or water resources.
- The Phase IV findings and conclusions were:
 - 1) Irrigation demands on average are about 200 % of schedule compliant demands and most likely the cause of low pressure.
 - 2) Existing schedules do not provide the required water for sufficient duration, which indirectly and inadvertently may have promoted non-schedule complaint irrigation.
 - 3) New reclaimed sources do not change the hydraulic model unless directly tied into the pipeline infrastructure, rather than delivered through existing pumps via lakes. Regardless of



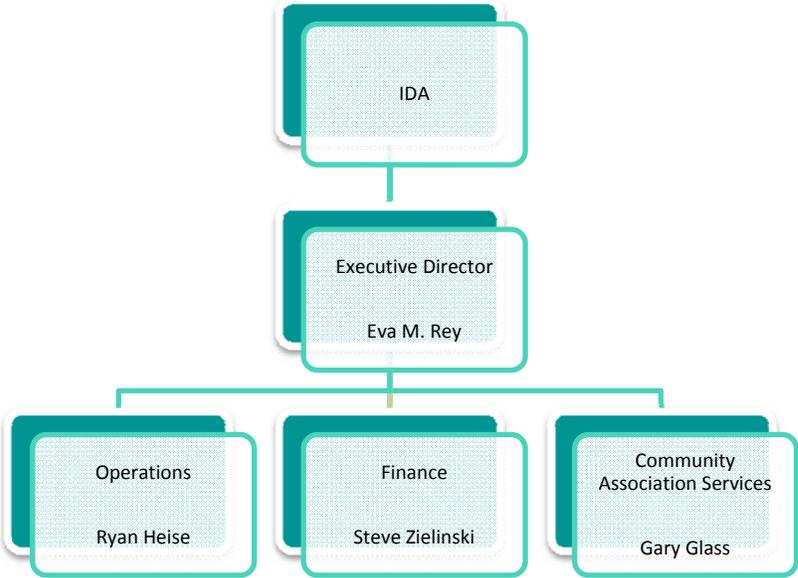
schedule for delivery of reclaim water, it is likely to be first blended with the surface water sources such as Lake Uihlein, Kent Lake or other SMR lakes.

- 4) Twice a week watering will assist with neighborhood runtime duration and not create appreciable stress on water supplies.
- 5) Typical engineering solutions for resolving pressure deficiencies consist of increasing the source pressure and/or reducing pressure loss in the distribution network. Given the IDA has no control over these sources, only distribution network improvements were considered.
- 6) Pipeline improvements will help improve pressure demands under current scenario of non-schedule compliance, "irrigation without irritation." These improvements were divided into three phases and were associated with an opinion of probable costs. Before the project is shovel ready, require as part of the final design to fully calibrate the hydraulic model so that recommendations included in this report can be refined and updated for final design. With each phased improvement it is recommended that low pressure is confirmed or dismissed at problem areas before moving on to the next phase.
- 7) A separate pipeline improvement phase was specific to allow for randomized irrigation to be functional, which is possible when reclaimed water becomes available. Random irrigation in association with the recommended pipeline improvements has been listed as the final recommendation.
- 8) In addition to the final report, Mr. Shah conducted an overall presentation and summary review of his study on March 22, 2012 for interested Board members and residents.

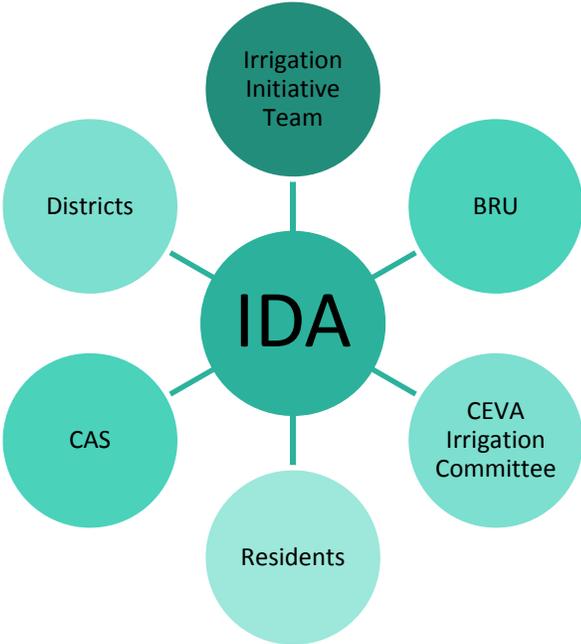


Organizational/Stakeholder Charts

3. Charts 3.1. Organizational Chart



3.2. Stakeholder Chart



SWOT Analysis: Strengths, Weaknesses, Opportunities, and Threats

4. SWOT Analysis

4.1. Strengths

4.1.1. Staff Knowledge and Experience

Over the past several years, staff has gained invaluable experience and knowledge of the irrigation system in Lakewood Ranch. In particular, Operations staff has worked to identify system defects and to find blow-off valves (large valves found at the end of mainlines within neighborhoods used for flushing irrigation) for maintenance purposes. Staff has also learned how to respond to repair issues and has developed a relationship with local vendors who are capable of assisting with repairs and improvements. Also, as-built plans and system schematics have been collected and added to the document inventory.

4.1.2. Continuity (Staff and Board)

There has been consistency and continuity on the District Boards and the Inter-District Authority throughout the duration of the irrigation system issues and the resulting irrigation study. Many Board members have been involved at some level since the very beginning of Lakewood Ranch as a residential development. Therefore, direction and decisions which are now and will continue to face the Boards can be made with consideration of the historical background. Continuity provides for a familiarity with the ongoing problems, improvements that have been made, and an overall understanding of the system as a whole.

4.1.3. Head Start on Common Area System Upgrades

For the last three budget years, the Operations Department has been working to upgrade the common area irrigation systems to the newest and most efficient “smart” technology. These upgrades include:

- 4.1.3.1. Conversion of irrigation heads to the appropriate delivery system such as spray or microjet where appropriate or needed. When a smaller area needs irrigation or where mixed planting require varying irrigation amounts, the conversion of the irrigation heads to the most appropriate style/type will reduce the amount of water needed and eliminates waste.
- 4.1.3.2. Conversion of controller clocks from “Unik” to remotely controlled clocks will also eliminate waste and provide for better water management based on current



weather conditions. Unik clocks operate using a battery system and can only be controlled manually. In the event these controllers require adjustment, it must be done at each clock location. There are still 133 Unik controllers throughout Lakewood Ranch. As each controller is converted, they are linked to and managed by Lakewood Ranch soil moisture sensors. Operations staff has been working with a smart irrigation technology company called Water Optimizer, Inc. for these upgrades to the controllers.

- 4.1.3.3. Weather stations (by Tucor, Inc.) have been installed in Lakewood Ranch and are currently located in Districts 1, 2, 4, and 5. The stations communicate with the controllers and set watering times and amounts based on current weather and soil moisture conditions. Conversely, Unik controllers are scheduled to run at the same time each week and for a specified unit of time. However, the weather station controlled clocks will take into account the amount of rainfall received and the level of moisture in the soil before allowing the irrigation heads controlled by a particular clock to run. By doing this, Operations has been able to drastically reduce water usage in the common areas that have been converted to this system. As an example, controllers in District 5 went from September 3, 2012 to October 1, 2012, almost a full month, before running an irrigation cycle by using the condition of the soil as the indicator to determine the need for irrigation.

4.1.4. Irrigation Study Continuity (Azad Shah, P.E.)

Since being selected in 2009 to perform a comprehensive irrigation study for the IDA, Azad Shah, P.E. has been the lead consultant and has performed all four phases of the irrigation study. Through this, Mr. Shah became very familiar with the system, its infrastructure, billing history, water quality, water pressure, and all of the general problems experienced by the residents of Lakewood Ranch. While there may be future opportunities to utilize Mr. Shah's services, there are no immediate plans to do so. Recognizing that the end of Phase IV of the Irrigation Study may have marked the conclusion of the partnership with Mr. Shah, special attention was given to collecting and owning all data, maps, and functional hydraulic modeling associated with previous studies.

4.1.5. Progress Regarding Resident Understanding of Areas of Responsibility between Operations/CAS and Districts/HOA/BRU

Initially, when pressure and water quality issues were raised with the Districts, the overall community expectation was that it was the responsibility of the Districts, and therefore the Operations Department, to resolve these issues. Since that time, advancements in communications and education have been made to include staff presentations to the residents, the formation of the CEVA Ad Hoc Irrigation Committee, and more involvement of Braden River Utilities (BRU) in working with the community to resolve system



complaints. Through these efforts, a greater understanding of ownership and jurisdictional responsibilities has emerged. Ultimately, this understanding will allow the parties to more sharply focus on the tasks and operational processes under their control.

4.1.6. Organized Emergency On-Call Program for System Breaks

The Lakewood Ranch Operations Department emergency answering service is uniquely prepared to provide 24 hour service for irrigation that is not functioning properly. Residents are able to report items such as: residential irrigation that they are unable to shutdown, common area irrigation running for long periods of time, common areas with broken sprinkler heads, and major mainline irrigation leaks. All of these items are handled with sensitivity and, at a minimum, the resident or person reporting the concern will receive a phone call relaying the status of the situation. Some discretion is left to the responding staff for determining whether or not the emergency call requires immediate attention. A broken sprinkler head called in at 11:00pm may not be considered an emergency, mostly due to the fact that all irrigation zones water for a set period of time. However, when a sprinkler head is broken and the zone has been running for an extended period of time, perhaps throughout the night, the break will require attention. Examples of common irrigation service calls include:

- 4.1.6.1. Irrigation zone running for extended period of time – typically a result of a valve that is unable to close.
- 4.1.6.2. Residential irrigation system broken mainline – typically a result of a weekend landscape project.
- 4.1.6.3. Residential irrigation running and homeowner out of town – typically called in by neighbor or real estate agent.
- 4.1.6.4. Broken sprinkler head in common area.
- 4.1.6.5. Non-functioning new construction service line – becoming less frequent due to overall build-out of Phase I.

4.1.7. Knowledgeable Service Providers Regarding Common Area Properties and LWR Systems

Since the IDA Operations Department does not have utility management equipment or personnel educated in utility systems management, staff has relied on local vendors and contractors with the experience necessary to manage the Districts' infrastructure. The success of these relationships is illustrated by an incident that took place in District 2, in the Muirfield neighborhood whereby a break occurred at approximately 3:00am and through the emergency, on-call system, a repair vendor was dispatched and the issue was isolated by 5:00am and resolved by 3:00pm.

4.1.8. Organized Mapping System for Zones and Schedules



Over the last few years, Operations staff has worked to develop a library of maps that illustrate the complexity of the irrigation system and are used to plan preventative maintenance activities, to plan for system upgrades, and to use as educational diagrams. For instance, after receiving several inquiries regarding the times in which common area irrigation occurs in District 4 (Greenbrook) due to pedestrian activities, staff developed a color-coded scheduling map to show residents when/where irrigation is scheduled to occur based on the approved times issued by BRU. This map is distributed to residents and is also posted on the website, on the District 4 webpage, so that residents can plan their exercise activities to avoid the areas being irrigated.

4.1.9. Routine Flushing of System

Each irrigation mainline within a neighborhood is "flushed" at a minimum of three times a year. Flushing the water system entails sending a rapid flow of water through the water mains and is performed primarily to remove sediment in pipes. Flushing may occur more frequently for neighborhoods which have had historical issues with large amounts of sediment found within their residential irrigation systems. However, not all neighborhoods have the infrastructure that allows for flushing, while others have infrastructure that requires substantial repair. The neighborhoods that cannot be flushed are tracked and will be considered for future upgrades and repairs.

4.2. Weaknesses

4.2.1. Limited Budget

In the current fiscal year (FY2013), the budget capability of the Districts and the Inter-District Authority is limited. As the Phase I Irrigation Plan was not yet developed, no provisions were made for possible expenditures to execute the plan in the current fiscal year. However, the budget does support on-going irrigation controller upgrades as well as tasks only requiring personnel resources.

Another budgetary weakness includes a limited ability to generate funding for improvements and system management in future fiscal years due to the community's sensitivity to increases and other projects that will also require funding such as the construction of the maintenance facility.

4.2.2. Limited Staff and Resources

The organizational structure for the IDA is such that every employee, or Full-Time Equivalent (FTE), has been assigned specific duties and areas of responsibilities for various areas of maintenance throughout Lakewood Ranch. Many employees serve in several different capacities or "wear many different hats". As such, there is no IDA staff dedicated solely to ensuring the integrity of the irrigation/utility system or the maintenance thereof.



While this level of staffing, combined with the use of vendors, has provided for a mechanism to repair and manage the system at an acceptable level, as the system infrastructure ages, more personnel and resources will be required to maintain the same level of service over time. This may include professional engineering services as well as equipment purchases for recurring repair activities.

4.2.3. Multiple Districts as Owners of System Infrastructure

The lack of a unified system and ownership structure within Lakewood Ranch presents several different challenges to the system. The most prominent of which is the disparity of age of infrastructure between Districts and the location of critical pipes and mainlines that the entire system needs to function properly.

For instance, each Community Development District owns its own pipes and infrastructure, yet, each District depends somewhat on the infrastructure of a neighboring District to deliver its irrigation water. As explained by Mr. Shah during the presentation of his final report, if the Districts were to consider his proposed improvements by District to resolve some of the pressure problems experienced over the years by residents throughout Lakewood Ranch, improvements in one District may benefit another. For instance, the proposed improvements to District 1 are estimated at \$260,198. However, some of the District 1 improvements, such as the segment connecting the neighborhood of Crest in District 1 to Vistas in District 4 are expected to improve the pressure and irrigation water delivery in Vistas (District 4). Also, significant irrigation mainlines run through District 1 to all other Districts yet any repair or maintenance of these lines is currently the responsibility of District 1. One could argue that any improvements to these lines benefit all of Lakewood Ranch Phase I and the cost should, therefore, be borne by all.

As stated previously, some Districts' infrastructure is older and requires more maintenance while others' is newer and requires less. The estimate given by Mr. Shah for improvements to District 2 irrigation pipes is \$787,140, whereas that for District 5 is \$393,283. So, even though some of the proposed improvements benefit all Districts and the entire irrigation system throughout Lakewood Ranch Phase I, managing the system on a district-by-district basis causes more of a financial hardship in some areas than it does in others. Whereas, if the system were to be considered a unified system, capital improvements that benefit all could be shared equally by all, as is the case with typical municipal utility systems.

4.2.4. Limitations of Authority

The Districts of Lakewood Ranch Phase I are simply utility customers of Braden River Utilities and have no real authority to set policies or rules governing the system, even though the bulk of the system infrastructure is owned by the Districts. The Districts have no regulatory authority, do not conduct any of the meter reading to determine usage, do not



control the usage rates, and do not own or control any of the regulatory agency permits associated with the system.

4.2.5. Funding

4.2.5.1. Improvements Budgeted by Individual Districts

Currently, each individual District budgets for any repair and maintenance of their pipes, system technology, or other irrigation infrastructure on an annual basis. And, since the level of service is determined by the budgeted dollars for such activities, it is highly probable that each District will approach enhancements or improvements from different perspectives. Therefore, it is possible to have varying levels of service throughout the community depending upon the ability of Districts to budget for a desired level of service.

4.2.5.2. Different Levels of Participation/Varying Amounts of Infrastructure Owned

As discussed in Paragraph 4.2.3., there exists a disparity in the age, condition, and value of the irrigation system in and among the different Districts. Yet, the system remains interconnected and Districts are depended upon one another for their irrigation water. This also creates a funding dilemma in that individual Districts retain the ability to make budgetary decisions that may impact their neighboring District or the system as a whole by choosing to improve or by not improving a particular portion of the system that all others are dependent upon.

4.2.6. Lack of Residential Metering

4.2.6.1. Cannot Currently Invoice Residents Based on Usage

A significant challenge to staff over the years has been educating residents on 1) where their irrigation water comes from and 2) how the water is billed to each resident. On many different occasions, residents have expressed the belief that irrigation water is “free” so they can use as much as they want or that they pay for their irrigation water through their County potable water bill. Few realize that they actually pay for this significant expense through their annual District Operations and Maintenance (O&M) assessment.

Due to the lack of residential metering, there is a disconnect between the amount of water being used by an individual parcel and the amount that is budgeted annually by the District for this expenditure. By using historical, monthly mainline meter readings by Braden River Utilities, staff estimates how much irrigation water each District will use based on irrigable acreage of the parcels within that District. This is the amount charged to each parcel through the annual



O&M assessment. Again, this does not, and cannot, represent actual usage amounts. Without metering, there is no way to determine usage on a parcel or even a neighborhood level.

Because of the irrigation system design and the lack of metering, there exists the opportunity for individual parcels to utilize much more water than is allowable since “everyone pays equally” even when there is disparity in usage. However, if parcel owners were to pay for irrigation water by usage, the motivation to conserve water where possible and adhere to prescribed schedules would come from seeing how much water is actually being used on a monthly basis.

4.2.6.2. Cannot Identify Problems at a Parcel Level

For almost all utility systems, the first sign of a leak or a line problem is when there is a meter reading anomaly causing an extraordinarily high utility bill to the parcel owner. However, in Lakewood Ranch Phase I, there are no residential meters and, therefore, there is no ability to identify leaks or breaks unless the break is visual or results in a significant drop in pressure. Currently, there is a very real possibility that many of these small leaks exist throughout the entire system that have yet to be identified which, almost certainly, result in wasted irrigation water and cost to the Districts.

Furthermore, BRU has customers outside of Phase I, such as Town Center Owners Association (TCOA) who are not metered, yet the irrigation water flows through Phase I to reach these areas. Without proper metering, the same potential for system leaks exists outside of Phase I that may still impact the usage amount billed to Lakewood Ranch Phase I.

4.2.7. Aging Infrastructure

The Lakewood Ranch Phase I irrigation mainline system is composed of PVC piping and the standard design life expectancy of PVC pipeline infrastructure is estimated at 50 years. However, there are many other components to the system that have largely been neglected such as exercising isolation valves and replacing those that are not functioning. The Districts currently lack an asset management system that will allow the Operations Department to inventory, maintain, and replace critical mainline infrastructure. However, these systems are necessary for a well operating system. Long-term facility planning, asset management systems, succession planning, and public education are keys to meeting the service and financial challenges facing the irrigation utility system.

4.2.8. Lack of Personnel with Utility Background and/or Education



Most utility systems operate with an experienced staff to include trained operators and professional engineers. While the IDA staff employs knowledgeable irrigation technicians and maintenance managers, there are no employees who previously worked for a public or private utility system or who have received education regarding the management or maintenance of a utility system. Therefore, the bulk of experience and system knowledge currently employed to manage the system has been gained primarily through trial and error rather than through education or experience.

4.2.9. IDA Operations Department not Properly Equipped for Significant System Failures/Mainline Breaks

Significant breaks or mainline failures require the assistance of outside vendors to resolve. Although significant expense is saved in not owning costly equipment that would allow staff to internally manage large mainline repairs, there are also significant disadvantages. Most concerning is the inability of Operations staff to contact and obtain a contractor for after-hours emergencies. Very few vendors or providers are willing to operate on a 24-hour, on-call basis. Staff will continue to track the quantity of large repairs and the associated costs in order to perform a cost benefit analysis of the IDA owning equipment required for these types of repairs.

4.3. Opportunities

4.3.1. Kimley-Horn and Associates, Inc. Landscape Master Plan

During the October 2012 Board meetings, each of the Community Development Districts approved the development of a master landscape plan through the efforts of staff and professional landscape architects, Kimley-Horn and Associates, Inc. (KHA). Included in this master plan will be irrigation system components to be upgraded or improved upon that will provide for a more efficient irrigation system within the common areas of the Districts. Furthermore, the plan is expected to select “Florida Friendly” plant palettes for the common areas that require less maintenance and irrigation, which will ultimately reduce overall maintenance costs.

4.3.2. Development of Operational Plan to Include Preventative Maintenance

As suggested by Atkins North America, Inc. during the Irrigation Strategic Meeting in August 2012, one of the tasks assigned to the Operations Department for Phase I of the overall Irrigation Plan is the development of an annual Operations and Maintenance Plan. Included in this plan will be preventative maintenance components for the system that will assist staff in becoming more familiar with the overall system, will better provide for annual budgetary requirements for maintenance activities, and will also help to identify opportunities for improvement in both infrastructure and service delivery.



4.3.3. CEVA ad hoc Irrigation Committee

As a result of a strategic planning session conducted by the Country Club / Edgewater Village Association (CEVA) in March 2011, the Association made the decision to form an ad hoc committee to investigate the source of the on-going irrigation system problems, work with the necessary stakeholders on possible resolutions, and communicate the results back to the members of the Association.

As discussed in Paragraph 4.1.5., the overall community understanding of ownership and jurisdictional boundaries is an Irrigation Plan strength that cannot be minimized. This compartmentalization of jurisdictions and relational understanding has been developed through coordination of efforts by both the CEVA Ad Hoc Committee and the Operations Department. The Ad Hoc Committee has agreed to communicate to the residents of CEVA on various irrigation issues, even if those issues are the responsibility of the IDA or the Districts. The Operations Department has also agreed to provide periodic updates back to the Ad Hoc Committee on significant items that affect the residents of the Country Club.

Furthermore, through the assistance of BRU, CEVA, and Community Association Services (CAS) staff, opportunities have been developed to reduce residential irrigation water use through the utilization of "smart" irrigation technology. A pilot program is currently underway for a number of residential lots in the Mizner neighborhood aimed at testing the effectiveness of smart irrigation technology. The results of this program are predicted to result in measurable water savings, and may lead to a much wider use of this technology throughout the community. Also, CEVA is currently working on distributing additional information for grant/funding opportunities available to individual parcel owners for upgrades to home irrigation systems when installing smart irrigation technology.

4.3.4. Reclaimed Water

Reclaimed water as a source of irrigation water officially came on-line and available to portions of Lakewood Ranch Phase I on November 6, 2012 as provided by Braden River Utilities (BRU) who is purchasing the reclaimed water from the City of Sarasota and Aqua Utilities. In addition, agreements were recently approved with the City of Bradenton for BRU to begin purchasing reclaimed water from the municipality. While this source is not currently available, BRU is working to build the appropriate infrastructure for delivery of reclaimed water from Bradenton in approximately one year. In order to fund the construction of the reclaimed water delivery system from the City of Sarasota, BRU increased usage rates by 50%, which was effective October 1, 2012. It is unknown at this time if there will be any future usage rate increases needed to continue to build the reclaimed delivery system.

The reclaimed water will be pumped into basins in the area; in particular Lake Uihlein for Lakewood Ranch Phase I, then from there the water will be pumped into the irrigation



system. The reclaimed water is expected to provide a cleaner water source for irrigation purposes. This, in turn, will hopefully resolve some of the issues experienced by residents with regard to clogged filters and salt/mineral deposits on homes, cars, and vegetation. In addition, reclaimed water as an irrigation water source is encouraged by SWFWMD instead of a system in which only ground water is used.

4.3.5. CCNA Contracts

In early 2012, each of the Districts and the IDA issued a Request for Qualifications (RFQ) using the Consultants' Competitive Negotiation Act (CCNA) process for selecting engineers, architects, surveyors, and landscape architects. Entering into agreements with several different professional firms for these services will provide the Districts and the IDA the opportunity to engage outside professionals to assist staff, District Boards, and the IDA with services that are necessary to effectively manage and maintain the utility system. As discussed in Paragraphs 4.2.2. and 4.2.8., there are currently no staff members with working knowledge/experience or education regarding the management of such a system. However, these professional services contracts can provide the professional experience and guidance necessary to effectively improve and manage the system.

4.3.6. Website

The website (www.lakewoodranchgov.org) offers many opportunities to provide information and educational opportunities to the residents of Lakewood Ranch. For instance, several tasks of the Phase I Irrigation Plan include web pages dedicated to educational subjects such as water conservation and Florida Friendly landscape choices. The website can also notify residents of upcoming meetings and workshops and provide a location for documentation regarding the irrigation system and the Irrigation Plan.

4.3.7. Interlocal Funding Agreement

A possible solution to the funding difficulties described in Paragraphs 4.2.3., 4.2.5.1, and 4.2.5.2. is the development and approval of an interlocal funding agreement between all Districts and the IDA that would prescribe the method in which improvements to the system were made and budgeted.

A funding agreement will also provide for a single agency, the Inter-District Authority, to take the lead on maintenance activities and establish a decision-making authority for those issues which cross jurisdictional boundaries. This agreement is the first step in establishing the IDA as the lead agency for irrigation (utility system) related issues just as the current Interlocal Agreement between the IDA and the Districts does for all other cross-jurisdictional management services.

4.4. Threats



4.4.1. Time

As residents and Board members alike can attest, the community as a whole has been discussing and trying to manage irrigation issues for many years. To this point, an IDA Visioning Retreat was conducted in July 2009 in which the topic of “irrigation” was consistently mentioned throughout the Retreat as a significant issue for the community and many members expressed a hope and a desire that the problems would be resolved soon. More to the point, many had envisioned that the issues would be resolved by 2012. Therefore, time is of the essence.

4.4.2. Failure to View the System as Whole/Singular

During the Irrigation Strategic Workshop in August 2012, one singular concept was generally accepted and agreed upon; that the utility system needs to be viewed as a whole, unified system in order for it to be successful in resolving irrigation issues. The concept of “unity” was also voiced repeatedly at the IDA Visioning Retreat in July 2009 from an overall community standpoint – Lakewood Ranch as one, unified community. While there were varying visions of how that was to be accomplished, the overall sentiment was that Lakewood Ranch will be a stronger, more organized community when there is agreement and collaboration between all parties. A divided community cannot come together to resolve the problems at hand.

4.4.3. Lack of Terms of Service Agreement with BRU

As recently as April 2012, representatives of the IDA continue to request a terms of service agreement with BRU for delivery of irrigation water. The request is based on the desire to adopt performance standards for the commodity/services received from BRU and the need to have a mechanism in place for accountability and commitment to a particular level of service. Since BRU is not a public utility, does not provide potable water, and is not regulated by the State of Florida Public Service Commission, there are currently no established controls or guarantees for the provided services.



Goals and Objectives

5. Goals and Objectives

The following is a matrix of tasks (objectives) for Phase I of the Irrigation Initiative Plan. These tasks have been identified as the “low hanging fruit” that can be completed in a relatively short period of time and with a limited budget. In addition, most items can be completed solely with staff time and resources.

Included on the chart of tasks is a column indicating the priority of the task, whether or not the task will require funding, who the task is to be performed or managed by, general comments, and a report of any progress that has already been made on the task to date.

TASK #	TASK	PRIORITY	\$	ASSIGNED	COMMENTS	PROGRESS	COMPLETED
1	Summary of Phase IV Report	1		Operations		<ul style="list-style-type: none"> •On Sept Agenda •Completed 	✓
2	Atkins (Facilitator) Report of August 1 st Meeting	1		Atkins		<ul style="list-style-type: none"> •8/19/12 - Received from Atkins; staff reviewing. •Completed 	✓
3	Present Phase I Plan to Boards	1		Team		<ul style="list-style-type: none"> •Scheduled for November Bd Mtgs 	
4	TCOA Mainline Metering	1		BRU/Ops		<ul style="list-style-type: none"> •11/8 - BRU exploring alternatives to take TCOA out of the loop so that their irrigation water does not pass through LWR Phase I. 	
5	Consumption Education	1		Eva/Jessica	<ul style="list-style-type: none"> •Conservation page on site •Swag from County Ext and SWFMD •U of F links; educational materials •Grant Opportunities 		
6	Establish Allocation Methodology for a Unified System	1		Steve			
7	Residential SWFMD Soil Moisture Program	1		Community Association Services	<ul style="list-style-type: none"> •Meet w/Bob Simons •Understand cost impact to residents •BRU cost contribution 	<ul style="list-style-type: none"> •8/28 - Meeting request sent •9/10 - Met w/Bob - CAS to work with Mizner neighborhood •10/2 - Bob met w/Mizner reps •10/9 - SMR reviewing waiver •10/15 - Waivers distributed to residents •11/8 - Waivers in to BRU. Install scheduled for week of 11/12. 	
8	Irrigation Controller Upgrades & Moisture Sensors / Weather Stations in Common Areas	1	\$	Operations	<ul style="list-style-type: none"> •Ongoing •\$64,710 Budgeted for FY2013 •Target date of 9/30/14 for all upgrades 	<ul style="list-style-type: none"> •8/29 - Ryan to present landscape architect/beautification plans at Sept. Board meetings •10/10 - Ryan to discuss common area watering at Oct CEVA meeting 	



9	Convert from Rotor to Spray Heads where needed	1	\$	Operations	<ul style="list-style-type: none"> •Ongoing •Prioritize areas based on pedestrian traffic, turf variety, budget 		
10	WMD Variance for smart technology upgrades	1	\$	Operations	<ul style="list-style-type: none"> •Combine with educational information/communication on variance; what residents will see, how it works, etc. •Paperwork previously filled out for specific vendor. Ops to re-fill information and turn in. 		
11	Stakeholder Relationship Building	1		Everyone	<ul style="list-style-type: none"> •Ongoing 		
12	GIS Analysis of irrigable area	2		BRU	<ul style="list-style-type: none"> •BRU conducting GIS analysis of Phase I; Staff to confirm billing accuracy 	<ul style="list-style-type: none"> •9/10 - Bob Simons reported BRU working on analysis •11/8 - Priority for BRU. Within 3 mos. 	
13	Semi-annual public meetings and educational workshops	2		Eva	<ul style="list-style-type: none"> •Planned for March & September 	<ul style="list-style-type: none"> •Present plan to December CEVA Landscape Meeting 	
14	Irrigation Project Page on website	2		Eva	<ul style="list-style-type: none"> •January 2013 	<ul style="list-style-type: none"> •11/8 - BRU will provide information for webpage. 	
15	Water Quality Testing and Analysis (Post Reclaimed)	2	\$	Ops and Contractors	<ul style="list-style-type: none"> •Quarterly Testing 		
16	Florida Friendly Landscape Conversion	2	\$	Operations (Common) CAS (Residential)	<ul style="list-style-type: none"> •Work with landscape architect on beautification plan •CAS to work on updating landscape palette and encourage FF residential landscaping 	<ul style="list-style-type: none"> •8/29 - Gary to contact IFAS for possible workshop to HOA's •10/18 - All districts approved plan 	
17	Installation of Pressure Monitoring Devices	2	\$	BRU/Ops		<ul style="list-style-type: none"> •9/10 - Met w/BRU. They are purchasing an additional 6 for a total of 10. Will also utilize ours if necessary. BRU offered software to take readings if necessary. 11/8 - Installation in progress. 	
18	Analysis of current meters – identify where/if more are needed	3	\$	Atkins/BRU	<ul style="list-style-type: none"> •Golf courses, Lake Uihlein, etc. •Value of moveable strap-on meters •Professional services have not been budget for FY13 •Plan for FY14 expenditure 		
19	New Hydraulic Model	3		Atkins		<ul style="list-style-type: none"> •9/10 - Received files from LPA & Atkins testing •10/3 - Files OK released final LPA payment •10/10 - Will run model after reclaimed sources and model is needed 	
20	Twice per week watering for residential properties	3		BRU	<ul style="list-style-type: none"> •Ask BRU what it will take. What can we do? 	<ul style="list-style-type: none"> •11/8 - Conservation, conservation, conservation. Smart technology. 	
21	D6 Participation	3		Operations	<ul style="list-style-type: none"> •Connected to our system through mainline 	<ul style="list-style-type: none"> •11/7 - Irrigation systems conveyed to D6 from Developer/HOA 	
22	Add staff in FY14	3	\$	Steve	<ul style="list-style-type: none"> •Develop job description and justification •Utility Mgt Experience 		
23	Monitor BRU Water Use Permit	3		Operations	<ul style="list-style-type: none"> •Suggested by Atkins during strategic workshop 	<ul style="list-style-type: none"> •9/12 - Requested copy from BRU •11/8 - Requested again 	
24	Develop Annual Operations and Maintenance Plan	3		Operations	<ul style="list-style-type: none"> •Suggested by Atkins during strategic workshop 		



Implementation and Evaluation

6. Implementation and Evaluation

6.1. Implementation

Implementation of the Phase I Irrigation Plan largely consists of completing the Goals and Objectives (tasks) as outlined in Section 5 of this plan. The overall Plan is divided into three distinct phases, each with their own set of tasks, proposed outcomes, and timelines.

The specific Goals and Objectives of Phase I of the plan have already been prioritized and those items needing additional funding have been identified. However, as development of a funding plan or agreement is included in Phase I of the plan, many of the tasks which require additional funding will need consideration in this regard.

6.2. Evaluation

As indicated in Section 1 of the Irrigation Plan, quarterly status reports will be provided to all Boards for their review and input. Each quarterly report will evaluate the status of each of the tasks and include any additional information or comments that may be relevant to the tasks. The evaluation of the tasks and the issuance of quarterly reports will continue until all Phase I tasks are resolved and staff is prepared to present the Phase II Plan to the Boards.



Strategic Vision

7. Strategic Vision

As indicated previously, the overall strategic plan to resolve irrigation issues in Lakewood Ranch is organized into three very distinct phases. Phase I of the plan as presented herein represents the “low hanging fruit” or, in other words, those activities/projects that are attainable in the present/near future. The plan also provides for a tactical approach to achieving the goals and objectives for Phase I and establishes the framework for future phases. Therefore, the only questions left to answer at this point are the very reasons that strategic plans are developed: “where do we want to go” or “what do we want to be”?

The most apparent and common theme throughout the Phase I Plan is the suggestion that the irrigation system is, and should be considered, a single, unified utility system. Furthermore, the system must be managed as a singular system in order to remove competing interests and jurisdictional conflicts which, in turn, will result in operational efficiency and a clearly defined authority structure.

To better understand what the proposed unified utility system would ultimately look like, the following characteristics are provided for consideration:

7.1. One Authority

During the August 1, 2012 Strategic Workshop, all Districts generally agreed that the most logical entity for organizing irrigation projects and acting on behalf of the Districts on irrigation issues was the Inter-District Authority (IDA). This was a significant first step in establishing a Utility Authority responsible for governing all irrigation/utility related issues in the community. As expressed at the Workshop, the IDA was created for this very reason many years ago; to address cross-jurisdictional issues. However, there are certain limitations with regard to utilizing the IDA as a long-term custodian of the utility system. The most significant constraint is the ability to bond capital improvements should significant improvements be needed or are recommended. The benefit of operating a municipal utility system is the ability to finance through a tax-exempt general obligation or revenue bond issues. However, as experienced through the financing of the new maintenance facility, the nature of the IDA is such that financing through those means may not be an option.

Other legislative alternatives to the IDA as the Utility Authority exist which may allow for the creation of a separate Lakewood Ranch Utility Authority that could also be explored during Phase II of the Irrigation Plan. There are currently over 26 different special-purpose districts in Florida which were created pursuant to Chapter 189, Florida Statutes, which relate to utility/water systems. These districts were created solely to own, manage, and operate various types of utility systems.



Finally, the question of infrastructure ownership must be addressed if the system is to have/be a singular Utility Authority. The recommendation of the Irrigation Initiative Team would be to ultimately transfer or convey all ownership and responsibility rights of the entire utility system to the resulting Authority. In other words, create and operate a separate governing entity that manages all aspects of the utility and relieve the Community Development Districts of their current budgetary and long-term obligations to repair, replace, and maintain the irrigation infrastructure.

7.2. Installation of Residential Metering

Another trait of municipal (and private) utility systems is the ability to wholly operate and fund system improvements through usage rates. Currently, all irrigation system related expenditures, including the cost of irrigation water, are budgeted for and expended entirely by each of the respective districts. There is currently no correlation whatsoever between the amount of water an individual parcel may use per year and the amount the same parcel pays each year in the annual O&M Assessment. The amount allocated to each lot is simply based on irrigable area and historical Phase I billing data from BRU. This type of usage/billing system promotes waste and inhibits the Districts' ability to identify areas of extreme use and system breaks at the parcel level. Furthermore, a tiered rate system could be developed in which those parcels using the most water would pay at a higher rate per gallon thereby encouraging conservation of irrigation water and also ensuring those who use more water contribute more to the maintenance of the system via user fee revenues.

Clearly, it is not possible to convert to resident metering system overnight, especially given our current structure and jurisdictional constraints. Therefore, a phased approach culminating in a self-funded and sustaining system must be considered. However, in order to achieve this goal, all Districts must come together and agree on the best strategy. More particularly, the Districts must address, and agree upon, the funding mechanism necessary for each phase of the plan.

7.3. Phased Funding/Budgeting

During Phase I, the Irrigation Initiative Team does not suggest any immediate funding methodology changes. In the immediate future, it is expected that maintenance and/or upgrade activities are to be funded by the owner of the related infrastructure. However, should the need arise for improvements which are considered to be "global" to the entire system, the funding methodology discussion should be accelerated to address the expenditure.

One of the activities set forth in the Phase I Goals and Objectives is the development of the assessment methodology for Phase II and then Phase III of the overall plan. While the methodology has not yet been developed, the intent is to gradually shift the budgetary burden from the Districts to the users/consumers of the irrigation water.



The envisioned transition to the next phase with regard to funding is to establish a fund within the IDA budget structure that would provide for a mechanism for all Districts to contribute to operation of the utility in a uniform, agreed upon methodology. This would be similar in nature and function to the current use of Exhibit “A” to the Interlocal Agreement. Again, the contribution methodology would have to be vetted and approved by all Districts before proceeding. In addition, the recommended infrastructure improvements suggested by Mr. Shah should not be considered before the funding agreement(s) are in place. The interconnectedness of the system mandates consideration of the community-wide benefits resulting from the improvements when they are made.

Finally, the Authority should gradually convert to the above referenced residential metering system in phases. A possible mid-point between a District funded system and a residential metered system is a neighborhood metering system. At the very least, the Districts could begin narrowing the gap between an actual water usage methodology and the irrigable area methodology.

In conclusion, the strategic visions discussed above are provided as a basis for discussion for all of the Lakewood Ranch Community Development Districts and the Inter-District Authority in an attempt to move the community toward an agreed upon and final resolution for all of the systematic problems that have been experienced and reported over many years. The Irrigation Initiative Team has put forth this Plan and its Visions for the future in the hopes that collaborative and productive dialogue ensues.

