CPA 2016-00007

MORRIS DEPEW
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LANDSCAPE ARCHITECTS

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November 17, 2016

RECEIVED
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COMMUNITY DEVELOPMENT

Mr. Brandon D. Dunn
Planning Division
Lee County Department of Community Development
P.O. Box 398
Fort Myers, FL 33902-0398

RE: Insufficiency Letter dated October 21, 2016
Timber Creek CPA2016-00007 (Text/Map Amendment Application)

Dear Mr. Dunn:

The purpose of this letter is to provide a response to the review comments dated October 21, 2016 for the Natural Resources Comments. A submittal was made Tuesday November 15, 2016 that neglected to include all of the materials from Progressive Water Resources addressing the question from DNR regarding the Enhanced Lake Management Plan. Please see the response below prepared by Progressive Water Resources.

Review/Comment:

NATURAL RESOURCES COMMENTS:

Staff cannot complete the review of the Timber Creek ELMP because a description or map of sampling locations was not located. The applicant should monitor their outfalls and the interior lakes. Additionally, Table 2 should be modified to include PQL, accuracy and precision. Once these additions are made a review of the Timber Creek ELMP can be completed.

Response:

In PWR's previously submitted September 2016 ELMP Section 2, Surface Water Quality Monitoring, it states that "*immediately after operational completion of the proposed stormwater outfall lake (see Figure 2), quarterly (March, June, September, and December) water quality sampling will be conducted at the discharge leaving the lake control structure(s).*" Please note that the September **ELMP Figure 2** identified the proposed stormwater outfall location (control structure location).

In addition, under Section 3, General Provisions, the September 2016 ELMP states that "*there are five proposed (5) master irrigation system pumps (SW-1, SW-2, SW-3, SW-4 and SW-5) that will "repump" groundwater supplies and retained stormwater (surface water) for irrigation of the residential development. The recycling of surface water quantities is expected to further improve water quality on the property and maintain high water quality in the lakes.*"

As stated in the ELMP, the proposed recycling of stormwater for irrigation is anticipated to provide additional surface water quality treatment since dissolved nutrients and compounds that may be introduced into the stormwater management system can then be withdrawn by the irrigation pumps and applied to lawn and landscaped areas, thereby reducing overall nutrient loading. When needed during high demands or during the

dry season, the stormwater lakes may require limited and temporary augmentation with groundwater that will also be repumped for lawn and landscape irrigation, further reducing nutrient loading of the stormwater management system.

Since Natural Resources' question above requests that the interior lakes also be monitored, the ELMP has been modified (see the attached updated November 2016 ELMP) to include quarterly water quality sampling of each of the five (5) lakes where surface water pumps will withdraw water supplies for residential irrigation. The updated **ELMP Figure 2** now proposes five (5) surface water quality sampling locations to afford a more comprehensive review of surface water quality of the interconnected stormwater management system, from north to south, towards the final outfall.

Please note that the final stormwater management system outfall occurs on the southern-most lake (outfall lake) as shown in updated **ELMP Figure 2**. Therefore, PWR respectfully requests to remove the originally proposed outfall sampling location since the outfall lake itself (which supplies the system outfall) is now included as one (1) of the five (5) surface water quality sampling locations, i.e., sampling both the outfall lake and the outfall would be redundant. As proposed in the November 2016 ELMP, the updated stormwater management system water quality monitoring program provides additional assurance that State water quality requirements will be met and maintained.

It should also be noted that the September 2016 **ELMP Table 2** previously included the proposed minimum Method Detection Limit (MDL) for each of the surface water quality analytes. The Practical Quantitation Limit (PQL) for each parameter (analyte) may vary between laboratories, however the PQL typically equates to 4 times the MDL. This statement has been included in the updated November 2016 ELMP.

Sincerely,
MORRIS-DEPEW ASSOCIATES, INC.

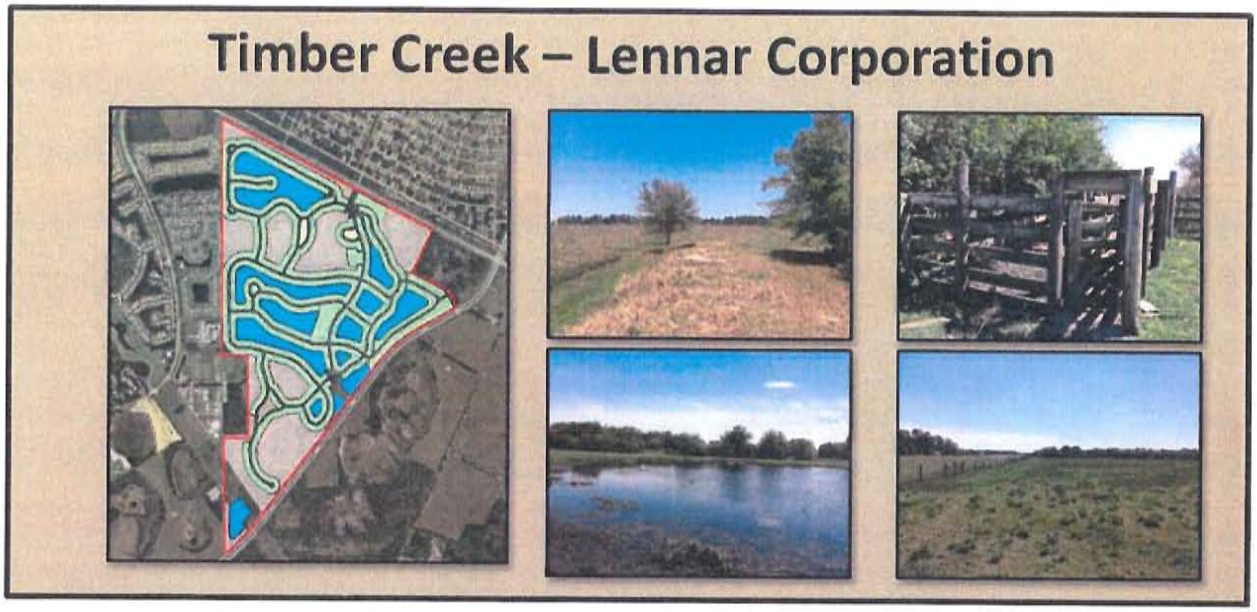
Tina M. Ekblad

Tina M. Ekblad, MPA, AICP, LEED® AP BD+C
Planning Director

Enclosure:
Cc: Steven C. Hartsell, Esq
Terrey Dolan
Russell R. Smith
Dalton Drake
Ted B. Treesh
Shane Johnson
David Brown, PE

Enhanced Lake Management Plan

For Timber Creek



November 2016

Progressive Water Resources, LLC
6561 Palmer Park Circle, Suite D
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Table of Contents

Introduction

The proposed residential development (i.e. Timber Creek) demonstrates a substantial net benefit to the water resources within the project area as compared to the previous agricultural land use. The subject property site was previously characterized as a "grandfathered" farming operation with a decades-long history as a row crop, container flower farm and cattle grazing operation. The historical farming operation was not required to have a stormwater management system for flood control and water quality treatment purposes, nor was it required to monitor surface water quality. Benefits of the residential development over the historic conditions include:

1. Reduced groundwater withdrawals as a result of the conversion of the site from a farming operation supplied solely by groundwater to a conjunctive use (recycled stormwater and groundwater) residential irrigation system;

2. The use of a centralized master irrigation system that precludes individual homeowner irrigation wells and controllers/timers to enhance overall community-wide water conservation;

3. The connection to public utilities for both potable supply and wastewater, thereby preventing the installation of numerous private wells and septic tanks and associated sanitary hazards;

4. The improved opportunity for increasing recharge to the Surficial Aquifer System, otherwise known as the Water Table Aquifer, through the elimination of the historic network of drainage ditches and the construction of engineered stormwater detention ponds.

6. The elimination of the permitted Water Table Aquifer withdrawals historically used by the farming operations thereby dramatically decreasing potential drawdown impacts on nearby environmental features including wetlands.

Collectively, these improvements represent a much higher standard of water resource protection as compared to the currently authorized land use.

The change in land use, coupled with the management practices contained within the Enhanced Lake Management Plan (ELMP) herein, provides for a high standard of water resource protection. For ease of use and understanding, the proposed ELMP contains several sections that address key elements, with each of the main ELMP sections in turn having subsections that provide specificity regarding the management actions necessary to safeguard the water resources. Where applicable, Best Management Practices (BMPs) are provided in bold text to highlight the water resource protection measures included in this ELMP.

Section 1. Historic Surface Water Hydrology

To better understand the proposed water resource management actions contained within this ELMP, it is important to understand historic surface water flows on the property. The land surface elevations on the site range from approximately 20.2 feet above the North American Vertical Datum (NAVD 88) in a wetland in the northern section of the property to approximately 26.2 feet NAVD 88 in the eastern side of the property. Therefore, the property is relatively flat with a slight topographic gradient to the west, southwest and exhibits several isolated wetlands in the north and southern sections of the property. Historically, stormwater was conveyed away from the centrally located farming operations by interconnected (north-south and east-west) drainage ditches that transected the farm fields as illustrated by **Figure 1**.

The subject property is fairly isolated in regards to historic surface water drainage patterns based on the Southeast Lee County DRGR Major Flowways Map, produced from National Resources Conservation Service (NRCS) hydric and transitional soils data and 1953 aerial photography. The South Florida Water Management District (SFWMD) indicates that the site, as well as areas immediately east of Daniels Parkway, is within the Six Mile Cypress Sub-Watershed.

Section 2. Water Resources Best Management Practices

As the project evolves from predominately a "construction phase" to "partial construction" and ultimately to a "post-construction" residential phase, the BMPs must also evolve to maintain water resource protection. Construction of the proposed development may take up to 10 years, depending on market conditions. However, after initiation of construction, the vast majority of major earthwork is anticipated to be completed by the end of the 5th year.

A. Construction Phase BMPs

During construction of the proposed development, the greatest potential for impacts is associated with increased turbidity and/or potential spills of fuel/oils (hydrocarbons), otherwise known as Volatile Organic Compounds (VOCs) used to power earthmoving equipment, etc. Specific BMPs associated with the construction phase are provided below. The Developer will be responsible for maintaining compliance with all ELMP BMPs and requirements until such time that control of the development is transitioned to the Homeowner's Association (HOA) and/or Community Development District (CDD).

Construction Phase BMPs

1. The site's general contractor shall be responsible for assuring that each contractor or subcontractor evaluates the work area before construction is initiated to determine if

site conditions may pose particular problems for the safe and secure handling of any regulated substances.

2. If any regulated substances are stored on the construction site during the construction process, they shall be stored in a location and manner which will minimize any possible risk of release to the environment. There will be no intention to use, handle, produce or store regulated substances in violation of the Lee County Land Development Code Section 14-477 Stormwater Pollution Prevention Plan (SWP3) criteria.

3. Each contractor/subcontractor shall familiarize themselves with the manufacturer's safety data sheet supplied with each material containing a regulated substance and shall be familiar with procedures required to contain and clean up any releases of the regulated substance. Any tools or equipment necessary to accomplish the same shall be available in case of an accidental release.

4. In the event of a spill of a regulated substance, the contractor/subcontractor will immediately notify the Developer, who will in turn notify the Lee County Division of Natural Resources Director at (239) 533-8109 and the FDEP South District Office at (239) 344-5600. Additional measures, such as those described in the Lake Maintenance Plan (Section 3), may also apply.

5. Upon completion of construction, all unused quantities of regulated substances and their containment systems shall be completely removed from the construction site.

6. Proper turbidity abatement measures, as required by the SFWMD, the Florida Stormwater Sedimentation Control Inspector's Manual standards, and the FDEP National Pollutant Discharge Elimination System (NPDES) permit criteria will be maintained while construction is ongoing or until adequate vegetation or other stabilization measures have been established.

B. Post-Construction Phase BMPs

After Lee County Certificate of Compliance or SFWMD stormwater management system certification is completed in a particular phase of the development, the primary focus of the ELMP will be maintaining the stormwater management system lakes, since all runoff will be routed to these features for treatment. It is also anticipated that the Developer will establish and create an HOA and/or a CDD that will be responsible for the maintenance of all aspects of the stormwater management system including the lakes and associated stormwater conveyance and control components, in perpetuity. At a minimum, the operation and maintenance of the stormwater management system and water quality testing will require compliance with the terms and conditions as contained within the ELMP.

Additional details on BMPs, including the monitoring of surface water is provided in the Lake Maintenance Section (Section 3).

Section 3. Lake Maintenance

A. General Provisions

Proper lake maintenance is an integral aspect of this ELMP since stormwater runoff is directed to these features for treatment and attenuation. As previously described, the lakes will be excavated into the top of the Water Table Aquifer. As an added protection to underlying groundwater resources, the excavation of the lakes will not penetrate underlying clays or limestone, whichever is encountered first. In addition, the groundwater withdrawn from onsite wells will be used to augment five (5) of the lakes proposed for use in the master irrigation system as shown in **Figure 2**.

There are five proposed (5) master irrigation system pumps (SW-1, SW-2, SW-3, SW-4 and SW-5) that will "repump" groundwater supplies and retained stormwater (surface water) for irrigation of the residential development. The recycling of surface water quantities is expected to further improve water quality on the property and maintain high water quality in the lakes. The stormwater lakes must be maintained in perpetuity and the following management actions are proposed. Specific post-construction BMPs are also provided.

B. Nuisance and Exotic Vegetation Control

The HOA and/or CDD will be responsible for the removal (in perpetuity) of all nuisance and exotic vegetation from the stomwater management system as defined by the Lee County Land Development Code.

Nuisance and Exotic Vegetation Control BMPs

1. Lakes must be inspected annually and any prohibited vegetation must be removed by the use of hand-clearing or appropriate treatment. Only aquatic approved compounds may be utilized in the stormwater management system lakes.

2. Herbicides and/or algaecides may only be applied by a licensed professional applicator, who meets the requirements of Lee County, and in accordance with manufacturer specifications. All applicable local, state and/or federal guidelines and requirements will also be followed.

C. Littoral Vegetation Preservation

Littoral zone vegetation is required to be installed by the Developer and maintained by the HOA and/or CDD, in perpetuity, in all of the lakes within the project area, unless prohibited by the Federal Aviation Administration. Littoral zones provide habitats for wading birds, fish, and aquatic invertebrates. Littoral vegetation also helps to stabilize lake shorelines and prevents erosional problems.

Littoral Vegetation Preservation BMPs

1. Littoral plants that die will be replaced in accordance with Lee County Land Development Code requirements. The presence of littoral plants throughout the lakes is desirable and may help to improve the water quality within the lakes.

2. The spread of littoral plants will be encouraged throughout the designated planted littoral shelves.

3. Mechanical trimming, mowing or the use of herbicides on desirable littoral plants will be prohibited. Any trimming or removal of vegetation required to promote the survival and viability of littoral vegetation will be performed by hand or by approved aquatic herbicides and methods.

D. Fertilizer Application

Strict adherence will be maintained with Lee County's Fertilizer Ordinance. Individual lot owners shall be prohibited from applying fertilizer to their lots. Any person(s) applying fertilizers must have received a limited certification in compliance with Florida Statute 482.1562 prior to application of any and all fertilizers. Additionally, fertilizer content and application rate must be in compliance with Lee County's Fertilizer Ordinance.

Fertilizer Application BMPs

1. All professional landscape businesses must register with Lee County prior to performing landscape fertilization services within unincorporated Lee County.

2. At least one (1) employee of a firm employed to perform landscape fertilization services must be a Certified Professional Landscaper.

3. Proof of completion of a Lee County-approved BMP training program must be provided to the Division of Lee County Natural Resources.

4. At least one (1) BMP-trained employee must be on site while fertilizers are applied. A registration decal provided by the division must be displayed on all company vehicles.

E. Erosion Protection and Lake Bank Maintenance

Lake banks are generally susceptible to erosion due to overland flow of stormwater runoff, wave action, and the natural seasonal fluctuation of water levels. Accordingly, lake banks within the project are designed to minimize this potential for erosion.

Erosion Protection and Lake Bank Maintenance

1. Lake banks will be inspected annually to identify areas of erosion. Once identified, the erosion will be repaired and the source of erosion shall be eliminated if possible.

2. Where excessive erosion occurs, repair of the lake banks and/or enhancement of stabilization measures may be necessary.

F. Lake Education Program

A narrative explaining the benefits of littoral vegetation, lake maintenance, and surface and groundwater quality will be made available to residents.

Lake Education Program BMPs

1. Lake experts will be encouraged to attend the HOA and/or CDD meetings annually to discuss the lake system operation and maintenance requirements.

2. Individual homeowners within the property will be informed that they are prohibited from removing or trimming littoral vegetation.

3. Additionally, the homeowners will be made aware of the extreme importance related to the elimination of any introduction of hazardous materials or substances into the lakes.

G. Pesticide, Herbicide or Fungicide Applications

All applications of pesticides, herbicides, algaecides and/or fungicides shall be applied by a licensed professional applicator, meet the requirements of Lee County, be applied in accordance with the manufacturer's specifications, and shall meet all applicable local, state and/or federal guidelines and requirements. Only approved aquatic herbicides may be used to treat the stormwater management system.

Pesticide, Herbicide, Algaecide or Fungicide Application BMPs

1. Individual lot owners shall be prohibited from applying pesticides, herbicides and/or fungicides to their lots. These activities will only be performed by certified contractors approved by the HOA and/or CDD.

2. The use of any chemical product in a manner that will allow airborne or waterborne entry of such products into the surface water management system is prohibited. This rule shall not apply to the use of chemical agents by certified lake management specialists for the control of algae and nuisance vegetation within the stormwater management system lakes. However, application of such agents shall be in compliance with the requirements of Lee County, applied in accordance with the manufacturer specifications, and meet all applicable local, state and/or federal guidelines and requirements.

3. Pesticides, fungicides, and herbicides will be used only in response to a specific problem and in the manner and amount recommended by the manufacturer to address the specific problem. Broad application of pesticides, fungicides and herbicides as a preventative measure is strongly discouraged.

Section 4. Surface Water Quality Monitoring Program

A. General Data Quality Objectives

All water quality samples will be collected in accordance with Chapter 62-160, Florida Administrative Code (F.A.C.), and the FDEP's Standard Operating Procedures (SOPs) DEP-SOP-001/01 FQ 1000 Field Quality Control Requirements.

All surface water quality samples will be collected in accordance with FDEP-SOP-001/01 FS 2100 Surface Water Sampling. A summary of the proposed surface water sampling schedule is provided in the attached **Table 1**.

B. Surface Water Monitoring Goals

The purpose of the surface water monitoring program is to assure stormwater discharges from the subject property meet all applicable requirements of the SFWMD Environmental Resource Permit (ERP) program authorized pursuant to Part IV of Chapter 373, F.S. and all applicable requirements of Chapter 62-302, F.A.C., Surface Water Quality Standards before discharging any water off-site. Additionally, monitoring of the lakes will allow management actions to assure the lakes' health for the residents' enjoyment. Please note that additional surface water quality parameters may be required if the FDEP

determines that the subwatershed or FDEP Water Body Identification (WBID) No. 3258C becomes impaired.

C. Surface Water Quality Monitoring

Immediately after the operational completion of the proposed stormwater management system (see **Figure 2**), five (5) lakes will be sampled quarterly (March, June, September and December). Surface water quality grab samples will be collected per FDEP protocol and analyzed by a NELAC/TNI-certified laboratory. The surface water quality parameters to be tested are listed below and summarized in **Table 2**. In addition, **Table** 2 also includes the laboratory's minimum Method Detection Limit (MDL) Please note that the Practical Quantitation Limit (PQL) for each parameter may vary between laboratories, however the PQL typically equates to 4 times the MDL.

- **Field Parameters: Depth of Water, Dissolved Oxygen Saturation (% and mg/L), pH, Temperature and Specific Conductivity.**

- **Lab Parameters: Total Nitrogen, Nitrite + Nitrate, Ammonium, Ammonia, Total Kjeldahl Nitrogen, Total Phosphorus, Chlorophyll-a, and Ortho-phosphate.**

Quarterly surface water quality monitoring shall be continued for a minimum of five (5) years after operational completion of the stormwater management system. After five (5) consecutive years of testing, a request for discontinuation or reduction in the monitoring requirements will be proposed to the Lee County Natural Resources Department if it can be demonstrated that water quality is being maintained within applicable State standards.

D. Water Quality Data Reporting and Analysis

Surface water data will be submitted to Lee County Department Natural Resources staff in an approved electronic format within 30 days of receiving the water quality results from the contract laboratory. The submittal will include all field notes, field and laboratory water quality data results and all previously collected water quality data, i.e., the period of record. The submittals will also include a brief narrative on the most recent sample collection, sample chain of custody, descriptions of any re-testing of erroneous values, and any water quality exceedances.

By **March 1 of each year**, a Water Quality Summary Report for the preceding calendar year shall be supplied to Lee County Natural Resources staff that summarizes the surface water testing results for the development. The results will include a summary table that lists all the field and laboratory parameters for the monitoring location. Laboratory parameter concentrations that fall below the Practical Quantitation Limit (PQL) for that parameter will be reported with no value; however a value qualifier of "I" (between the MDL and PQL) or "U" (below the MDL) will be included in the table.

All water quality data for the analytes listed in **Table 2** that are detected in concentrations above the laboratory PQL will be reviewed, graphed and statistically analyzed for trends and exceedances above two (2) standard deviations of the mean of all values. Any reported concentrations above the Maximum Contamination Level (MCL) will be clearly identified as well as remedial actions that were used to timely reduce that particular analyte's concentration. Details regarding remedial actions are provided in the Remedial Actions section of this ELMP

E. Remedial Actions

In the unforeseen event that significant surface water impacts (as defined below) are identified as a result of a hydrocarbon spill or pesticide/herbicide application at the property, the Developer or designee of the HOA and/or CDD will notify the Director of the Natural Resources Division within no less than 12 hours (or next business day). If a spill or release "presents an immediate threat to human health and/or the environment" the FDEP Office of Emergency Response ("OER") will be contacted within 24 hours. Guidance outlining the definition of a release as well as reporting procedures is presented in the OER Web page located at:

http://www.dep.state.fl.us/per/reportable incident.htm.

The Developer or their successor(s) will coordinate contamination assessment and remediation efforts with Lee County and will comply with applicable local, state, and federal permitting requirements. The initial phase of the remediation plan may consist of temporary monitoring wells installed for short-term temporal monitoring of potential subsurface impacts and to evaluate the horizontal and vertical distribution of the impacted area. Based on the findings of the initial phase, if necessary, a comprehensive assessment may be required.

In Conclusion

The information and technical requirements in this ELMP are provided to the Developer or designee of the HOA and/or CDD to assist with the understanding of the importance of a well maintained and fully functioning stormwater management system. The lakes within the development are not only required by state law, but can be a source of beauty and enjoyment for the residents while maintaining the value and integrity of the water resources.

TABLES

Table 1

Water Quality Sampling Schedule

Date	Sample Type	Sample Location
January-31	N/A	N/A
February-28	N/A	N/A
March-31	Surface Water	5 Stormwater Lakes*
April-30	N/A	N/A
May-31	N/A	N/A
June-30	Surface Water	5 Stormwater Lakes*
July-31	N/A	N/A
August-31	N/A	N/A
September-30	Surface Water	5 Stormwater Lakes*
October-31	N/A	N/A
November-30	N/A	N/A
December-31	Surface Water	5 Stormwater Lakes*

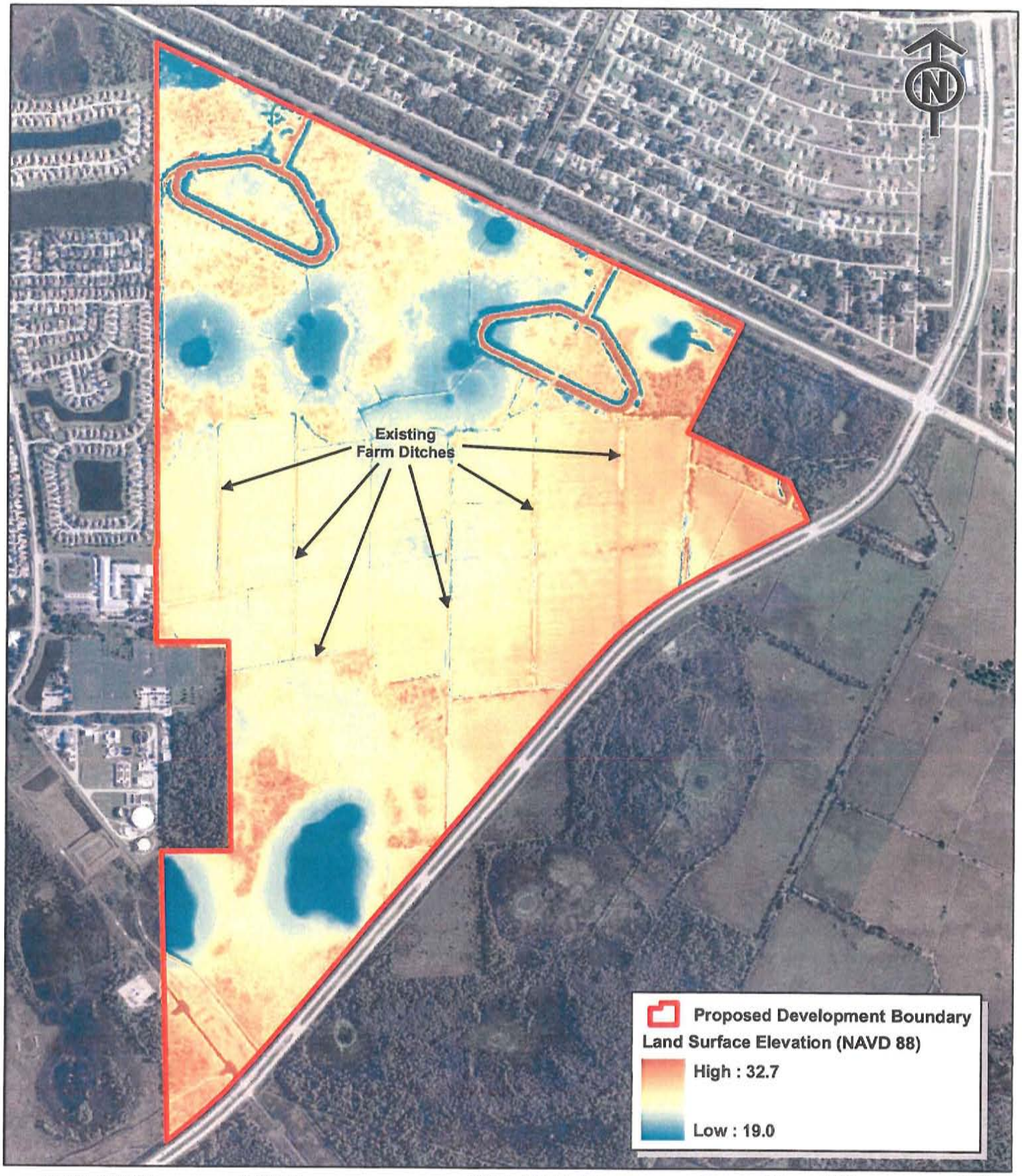
*See Figure 2 for surface water quality sampling locations.

Table 2

Surface Water Quality Analytes and Schedule for Sampling

Field Parameters			
Parameter	**Units**	**MDL**	**Sampling Frequency**
Depth of Water	Feet	NA	Quarterly
Dissolved Oxygen	mg/L	NA	Quarterly
pH	SU	NA	Quarterly
Temperature	Deg C	NA	Quarterly
Specific Conductivity	µs/cm	NA	Quarterly
Laboratory Parameters (Nutrients)			
Total Nitrogen	mg/L	CALC	Quarterly
Nitrite + Nitrate	mg/L	0.004	Quarterly
Ammonium	mg/L	CALC	Quarterly
Ammonia	mg/L	0.012	Quarterly
Total Kjeldahl Nitrogen	mg/L	0.05	Quarterly
Total Phosphorus	mg/L	0.008	Quarterly
Chlorophyll-a	mg/L	0.62	Quarterly
Ortho-phosphate	mg/L	0.002	Quarterly

FIGURES



Scale: 1:13,200 8/3/2016 Image: ESRI Aerial 0 600 1,200 2,400 Feet

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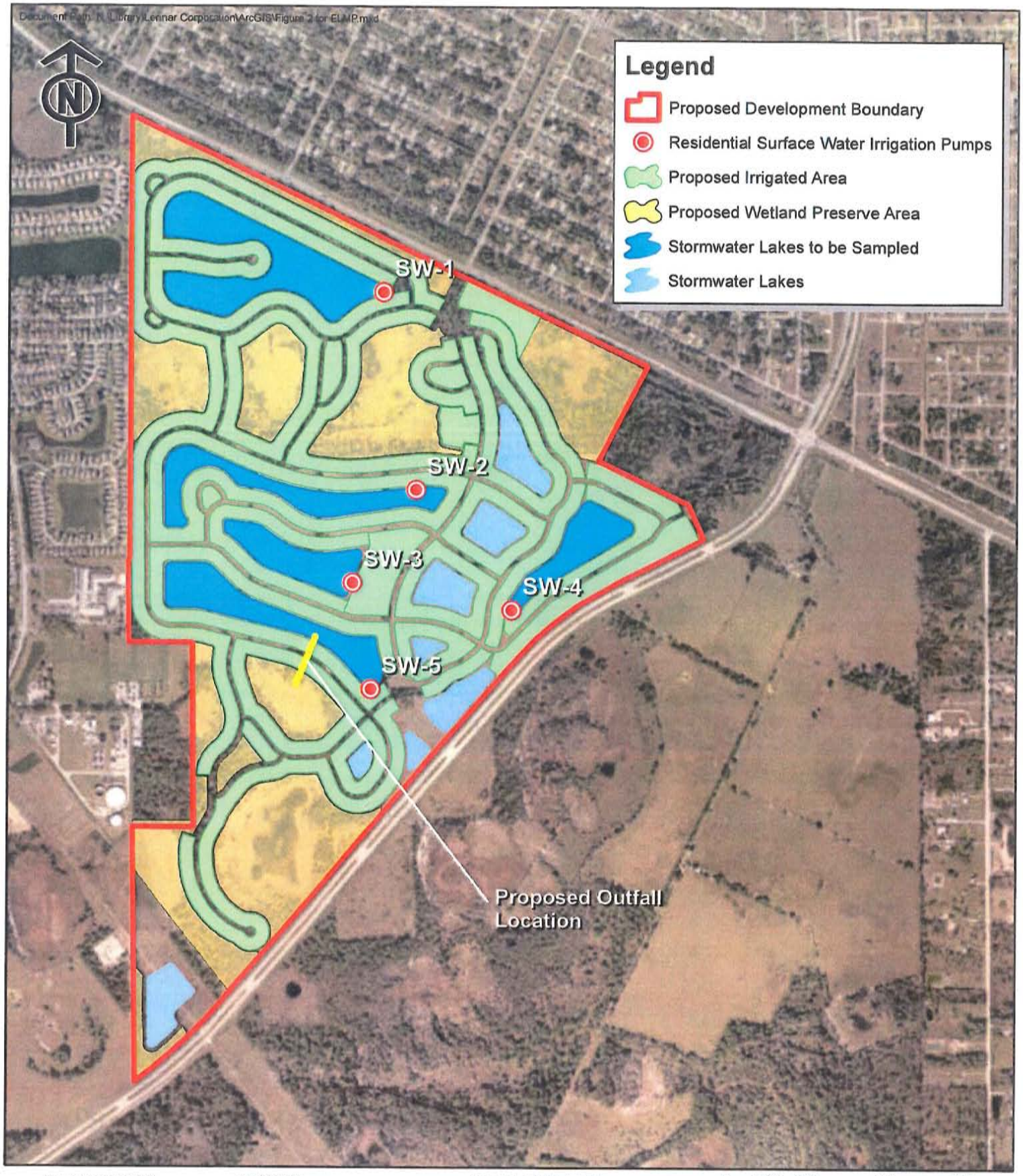
Figure 1
Lennar Corporation - Timber Creek
Site Topography

Progressive Water Resources
Integrated Water Resource Consultants



Scale: 1:15,000 11/4/2016 Image: ESRI Aerial 0 0.075 0.15 0.3 0.45 Miles

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Figure 2
Lennar Corporation - Timber Creek
Proposed Surface Water Quality Sampling Locations

Progressive Water Resources
Integrated Water Resource Consultants