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MEMORANDUM

TO: Tim Jackson, Plum Creek, Director of Real Estate PN 13-0452

FROM: Gerry Dedenbach, AICP, LEED AP, Director of Planning & GIS Services

DATE: June 20, 2014

RE: Public Facilities Needs, Comprehensive Plan Amendment for Envision Alachua Sector Plan: Alachua County Solid Waste, Recreation/Open Space, Sanitary Sewer, and Public Schools

The tables contained within this memorandum summarize the solid waste, recreation, sanitary sewer, and public schools needed to support the land uses proposed for the Envision Alachua Sector Plan's Comprehensive Plan Amendment. Further, a generalized analysis is provided, which is more fully explained for each type of facility. CHW did not identify facility needs for transportation, transit, or potable water.

The following Tables 1 and 2 identify the general development baseline for the public facility needs analysis. Although the proposal anticipates no more than 70% of the homes being single-family detached units, residential has been assumed as one hundred percent (100%) single-family. Single-family generates more demand on public schools and recreational facilities than multi-family. Therefore, in order to provide a more conservative analysis, single-family was utilized.

TABLE 1: RESIDENTIAL ENTITLEMENTS

Residential	Dwelling Units
Total	10,500

TABLE 2: NON-RESIDENTIAL ENTITLEMENTS

Non-Residential	Square Feet
Manufacturing	8M
Office/Institutional	6M
Commercial	1.5M
Total	15.5M

Potable Water
The Water Supply Data and Analysis report (Revised Section IV.D.1 dated June 2014) forecasts a medium potable water demand at buildout of 4.09 MGD. The capital facilities to serve this demand will likely be an expansion of the Hawthorne water system and development of an additional water plant, including about five additional wells.

The generalized estimated total capital cost of these facilities is about $39 million. Of this estimate, an estimated $32 million would be required by 2035 assuming the demand comes on line in a straight-line increase through project buildout.

Sanitary Sewer
Sanitary sewer requirements are directly related to the amount of the project's projected water demand. The Water Supply Data and Analysis report (Revised Section IV.D.1 dated June 2014) forecasts the wastewater flows at buildout to be between medium and high values of 3.68 and 5.66 MGD, respectively.

In order to accommodate the sanitary sewer demand, Wastewater Treatment Plant ("WWTP") capacity is projected to be 5.1MGD at build-out (2.04MGD in 2035). The projected 5.1MGD WWTP capacity is based on a 1.25 of projected sanitary sewer demand[1]. Proposed Future Land Use Element ("FLUE") Policy 10.4.1 would preclude residential lots from using potable water for irrigation purposes. Further, FLUE Policy 10.4.1 earmarks reclaimed water for industrial, environmental restoration, and agricultural purposes.

All wastewater treated within the Employment Oriented Mixed Use (EOMU) areas (see: Section III. Large Scale Comprehensive Plan Amendment, Tab III.A.1 Proposed Future Land Use Map) will be treated to minimum public-access-reuse standards via onsite facilities or, when feasible, existing facilities (i.e. City of Hawthorne). The storage and distribution system will be developed to maximize the amount of reclaimed water available to potential users during low and peak demand periods. As required by the Alachua County Comprehensive Plan, LOS Standards must be maintained. Therefore, at the DSAP adoption, the Alachua County Capital Improvements Element and Capital Improvements Plan will be amended accordingly to demonstrate fiscal feasibility for LOS maintenance as outlined in the Financial Impact Analysis.

The capital facilities to serve these flows will likely be an expansion of the Hawthorne wastewater system and development of an additional wastewater plant, with treatment to at least minimum public access standards. The generalized estimated total capital cost of these facilities is about $57 million, of which an estimated $39 million would be required by 2035 assuming the flows increase in a straight-line fashion through buildout.

[1] Source: CH2M Hill, *Potable Water Demand, Wastewater Flows and Loads, and Reuse Demand*, 11/15, 2013.

Solid Waste

Alachua County's Capital Improvements Element (CIE), Unified Land Development Code (ULDC), and concurrency system do not identify specific demand standards for non-residential development. Nor is a Residential Equivalency Unit (REU) identified as a basis for determining non-residential demand. In order to estimate non-residential demand, 5.5 lbs per day per 1,000 sf of non-residential REU is applied.

Currently, Alachua County generates approximately 800 tons per day of municipal solid waste[2]. This equates to approximately 292,000 tons per year, of which 32% is recycled[3]. The remaining 68% of solid waste, or approximately 198,560 tons per year, is transported to the New River Landfill in neighboring Union County, Florida. The recycled materials are brought to the Leveda Brown Environmental Park[4].

TABLE 3: SOLID WASTE GENERATION

System Category[1]	2035[6]		Build-out of EASP	
	LBs/Day	Tons/Yr	LBs/Day	Tons/Yr
Existing Demand	640,000	79,424	1.6 million	198,560
Maximum Potential Solid Waste Generated				
Lbs/day = (tons/year x 2,000 lbs) / 365 days Tons/year = (((10,500 units x 2.6 pph) x .73[2] tons/year) x .68[3])	29,702	5,420	74,256	13,550
Lbs/day = ((5.5lbs per day[4] x 15,000 sf) x .68[5]) x 365 Tons/year = ((lbs/day) / 2,000) x 365	22,440	4,095	56,100	10,238

[1] Source: Alachua County Public Works
[2] Alachua County Comprehensive Plan Level of Service (LOS) for Solid Waste: 0.73 tons per capita
[3] 32% of municipal solid waste is recycled and the remaining 68% is taken to the New River Landfill
[4] Alachua County Comprehensive Plan does not identify an LOS for non-residential; formula based on generally accepted solid waste generation rate for non-residential; does not distinguish between non-residential types; LOS is calculated at 5.5lbs per 1,000 sf of non-residential floor area
[5] 32% of municipal solid waste is recycled and the remaining 68% is taken to the New River Landfill
[6] The year 2035 represents the project's development at 40% of complete build-out.

The New River Regional Landfill ("New River") Class I municipal waste facility consists of 300 acres in Union County. The New River Landfill is a joint-venture of three (3) counties: Baker, Bradford, and Union. New River serves three (3) other counties in addition to the member counties. These are Alachua County, Levy County, and Gilchrist County. New River has a Class I capacity of 275,000 tons per year[5]. Based on periodic monthly reporting to the Florida Department of Environmental Protection ("FDEP"), in 2012 New River received an estimated 204,000 tons of Class I solid waste. Therefore, New River has an available Class I solid waste receiving capacity of approximately 71,000 tons. This available capacity does not factor in future expansions. According to the Heart of Florida Solid Waste Working Group *2009 Final Report*[6], expansions to the New River facility will expand its receiving capacity another 50 years. Therefore, New River will be the receive facility for the Plum Creek Envision Alachua project.

If future modifications to the Alachua County solid waste agreement are enacted, collection and disposal may be revisited and likely be in accordance with future policies, as they may be adopted. Determination of those requirements will be done if and when changes occur.

[2] Source: Alachua County Comprehensive Plan Evaluation and Appraisal Report, April 5, 2011.
[3] Source: Alachua County Comprehensive Plan Evaluation and Appraisal Report, April 5, 2011.
[4] Source: Alachua County Comprehensive Plan Evaluation and Appraisal Report, April 5, 2011.
[5] Source: Heart of Florida Solid Waste Working Group, 2009 Final Report.
[6] http://www.heartoffloridasolidwaste.org/pdf/Heart_of_Florida_Final_Report.pdf.

Recreation

The Alachua County Comprehensive plan includes Level of Service (LOS) standards for two (2) types of recreational facilities: activity-based and resource-based. As shown by Table 4 below, if the proposed land uses are fully developed, factoring in the 2010 population, there is a surplus of both types of recreation facilities.

TABLE 4: RECREATION LOS

System Category	Build-out	2035[4]
	Acres	Acres
Existing Activity-Based Recreation Facilities[1]	182.72	±182.72
Existing Resource-Based Recreation Facilities[1]	701.14	±701.14
Existing Demand for Activity-Based Recreation Facilities[2,3]	55.33	59.4
Existing Demand for Resource-Based Recreation Factilities[2,3]	53.33	59.4
Proposed Demand		
Proposed Potential Projected Impacts: Activity-Based ((10,500 dwellings x 2.6 persons per dwelling unit) / 1,000) x 0.5	13.65	5.46
Proposed Potential Projected Impacts: Resource-Based ((10,500 dwellings x 2.6 persons per dwelling unit) / 1,000) x 5	136.5	54.6
Residual Recreational Capacity After Proposed Development		
Activity-Based Recreation Facilities	113.74	117.86
Resource-Based Recreation Facilities	511.31	587.14

[1] Source: *Alachua County Parks Level of Service Projections*, May 2010 as recorded in the Alachua County 2011 Evaluation & Appraisal Report

[2] LOS = 0.5 acres per 1,000 persons within unincorporated Alachua County, 2010 unincorporated population estimate 110,665 (source: 2010 Census Alachua County total population less incorporated population)

[3] The 2035 existing demand is based on a percentage of the BEBR medium projection for Alachua County in 2035. BEBR population projections don't measure to the municipality level. Therefore, the percentage of population within unincorporated Alachua County for BEBR's 2013 population estimate was used to estimate the percentage of population within unincorporated Alachua County for 2035. Since the BEBR medium projection for Alachua County in 2035 is 297,000, 118,800 people are estimated in unincorporated Alachua County in 2035 (source: Bureau of Economic and Business Research, Florida County Population Projections, published 03/29/2013.)

[4] The year 2035 represents the project's development at 40% of complete build-out.

Recreation LOS standards will be maintained through the inclusion of both activity based and resource based recreation facilities. Compliance and recreational offerings will be established during development plan review to ensure adequate supplies are present to meet demand.

Public Schools

The Alachua County comprehensive plan includes LOS standards, measured by student station, for three types of facilities: elementary, middle, and high schools. The proposed residential land uses fall within the Hawthorne Concurrency Service Area (CSA) for elementary, middle, and high school facilities.

Based on current public school capacity, the proposed residential land uses, if/when fully built-out, will result in a deficit of student stations at each CSA level. Continued coordination will occur between Plum Creek and the Alachua County Public Schools as the project moves forward, which may result in the dedication of land for new facilities.

TABLE 5: PUBLIC SCHOOL LOS GENERATION RATES (STUDENT STATIONS)

School-type	Dwelling Units	Student Multiplier[1]	Potential Enrollment from Development	
			2035[2]	Build-out
Elementary	10,500	0.159	668	1,670
Middle	10,500	0.08	336	840
High	10,500	0.142	470.4	1,176
Totals	-	-	1474.4	3,686

[1] Source: Alachua County Public Schools Student Generation Rates for Residential Development, 2014
[2] The year 2035 represents the project's development at 40% of complete build-out.

TABLE 6: PUBLIC SCHOOL LOS (STUDENT STATIONS)

CSA	Projected Demand		Surplus/Deficit	
	2035[2]	Build-out	2035[2]	Build-out
(Elementary) Hawthorne	668	1,670	-592.4	-1,481
(Middle) Hawthorne	336	840	-312.8	-782
(High) Hawthorne	470.4	1,176	-323.2	-808

[1] Source: 2013-2014 Alachua County School Board Five-Year District Facilities Work Program
[2] The year 2035 represents the project's development at 40% of complete build-out.

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Capital Improvement Projections

The following table enumerates specific capital improvement infrastructure items and projects both a midpoint in the development framework (2035) and total build-out, at the fifty year horizon.

Table 7: Capital Improvement Projections

(POTENTIAL FUNDING SOURCES INCLUDE DEVELOPER/CDD, CONNECTION FEES, GRANTS, IMPACT FEES, AND SPECIAL ASSESSMENT, ETC.)

Element Name	Description		Unit Measure	Quantity		Cost Estimate	
	2035[1]	Build-out		2035[1]	Build-out	2035[1]	Build-out
Potable Water	Water Supply and Treatment[3]		various	various	various	$32,135,000	$6,345,000
Sanitary Sewer	Wastewater Treatment and Reuse[4]		various	various	various	$39,121,000	$18,150,000
Solid Waste	Residential		lbs/day	29,702	74,256	(Demands result in a residual surplus)	
			tons/yr	5,421	13,552		
	Non-residential		lbs/day	8,463,620	21,159,050		
			tons/yr	1,544,611	3,861,527		
Recreation	Activity-Based Facilities		acres	5.46	13.65	(Demands result in a residual surplus)	
	Resource-Based Facilities		acres	54.6	136.5		
Transportation[2, 5](potential funding sources also include MMTD fees, gas tax revenues, etc.)							
CR 234 (SR 20 to CR 1474)	None	Traffic calming	various	-	TBD	$0	TBD
SR 20 (SR 329 to US 301)	Extend Bus Service	Extend Bus Service	N/A	Extend Bus Service	-	TBD	TBD
SR 20 (CR 2082 to CR 235)	Reclassify to transitioning or urban	None	miles	3.3	-	$0	$0
SR 331 (US 441 to SR 329) & (CR 234 to US 301)	None	operational improvements[5]	various	-	TBD	$0	TBD
CR 1474 (CR 234 to US 301)	None	operational improvements[5]	various	-	TBD	$0	TBD

1. The year 2035 represents the project's development at 40% of complete build-out.
2. Improvements are identified for segments where the forecasted volumes with the EASP are higher than the generalized service volumes and at least 5% higher than the forecasted volumes in 2035 without the EASP.
3. Potable water improvements include water supply wells, treatment, storage, pumping, site piping and electrical, and trunk lines.
4. Sanitary sewer improvements include a new wastewater treatment plant, improvements to the Hawthorne plant, force mains, and lift stations.
5. Improvements may be considered to maximize roadway capacity *without* adding additional lanes. These improvements may include Transportation System Management (TSM) or Transportation Demand Management (TDM) techniques.

CITY OF HAWTHORNE

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June 3rd, 2014

Mr. Tim Jackson
Plum Creek
PO Box 357700
Gainesville, FL 32635-7700

RE: Envision Alachua Sector Plan Application

Dear Mr. Jackson

The City of Hawthorne is able to provide water and wastewater services to the Employment Oriented Mixed Use lands adjacent to the City limits within the Envision Alachua Sector Plan. Our water facility has a consumptive use permit for 92 million gallons annually with about 50% of available capacity at this time; and the waterline replacement project we will undertake shortly will increase the available capacity. Our wastewater treatment plant has a capacity of .200mgd and we process an average of only about .054mgd; in addition, we have construction plans "on the shelf" for expansion when needed. We anticipate further expansions of these systems as needed.

While we anticipate annexing the adjacent lands, we are in the process of drafting an ordinance that has procedures to allow services to be provided to properties outside the city limits and what the responsibility of the developer to acquire those services are if needed.

Please let us know if you need further information.

Sincerely,

Matthew D. Surrency,
Mayor
City of Hawthorne

Resolution No. 2014-____