



# RICHMOND HILL

## MIXED USE CENTER MASTER PLAN

Prepared by  
LAND 4050  
UGA College of Environment + Design  
Fall 2018



# ACKNOWLEDGMENTS

The authors would like to thank the following individuals for providing their valuable time, expertise, and experience which greatly contributed to this plan.

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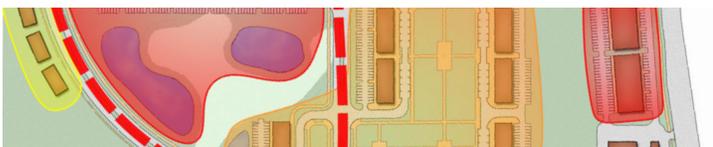
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# 1. INTRODUCTION



LOCATION MAP



## Introduction

### 1.1 PURPOSE

Richmond Hill is a city of 12,632 residents located south of Savannah and along the Ogeechee River. Technically, Richmond Hill is part of the Savannah metropolitan statistical area. However, Richmond Hill has several unique historical and environmental aspects which creates its own character and sense of place. City officials, property owners, stakeholders and the Downtown Development Authority want to create a new mixed-use, pedestrian-friendly space on an existing out parcel. Sitting at the intersection of GA 144 and US 17, the 100 acre site has many unique challenges and opportunities. Our LAND 4050 (Region/Site/Place) studio was assigned to develop design concepts for this property. We were to take into account Richmond Hill's character, community growth, traffic patterns and overall development goals.

### 1.2 CONTEXT

On August 28th-29th, 2018, we traveled down to Richmond Hill to meet with town officials and stakeholders to discuss the project and learn about their overall goals for the site. Our class then completed first-hand inventory of the city and its environs. Finally, we walked the site to familiarize us with its characteristics.

Prior to our site visit, we completed precedent studies of 20 similar town center developments throughout the U.S. These precedent studies helped us understand patterns of mixed-use development. We also drilled down into surrounding demographics and tenant mix of each site. Data from our studies were used as comparables to help suggest a program and possible mix retail and commercial use.

We used our findings from the precedent studies in combination with information gathered from our site visit to develop some initial design concepts. These 20 plans were presented to Scott Allison and Becky Myers in Athens, GA. Scott and Becky took the plans back to Richmond Hill and reviewed them with the stakeholder team.

After receiving feedback from the officials, we refined our designs into four final concepts to meet the city's preferences and respond to site opportunities and constraints. Our class presented the final designs on December 7th, 2018 down in Richmond Hill.



Class walking through site



Visit to Ford Plantation

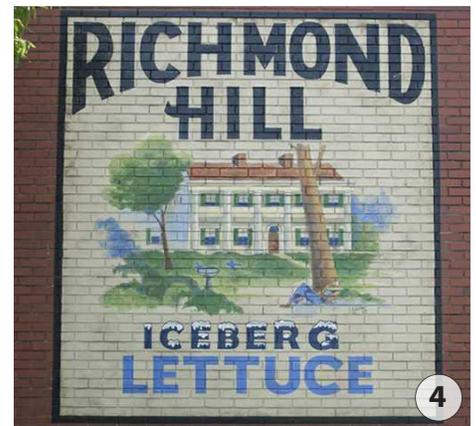
### 1.3 HISTORY OF RICHMOND HILL

#### *A River Through History, The Great Ogeechee River*

- » The first residents, the Guale Indians, created villages along its sandy shoreline.
- » General James Oglethorpe built defense on it during the earliest days of the Georgia colony.
- » The proximity of the Ogeechee was the salient factor in rice evolving as the primary cash crop here in the 19th century.
- » African slaves worked in the rice fields and help build Fort McAllister on the Ogeechee which was known as the “Guardian of Savannah.”
- » After the war and a series of hurricanes in the late 1800s, Richmond Hill fell into a of state economic decline.
- » In 1925, our most famous resident, automobile industrialist Henry Ford and his wife Clara, began purchasing upwards of 85,000 acres of land in Richmond Hill.
- » They built a winter home and began extensive agricultural research with rubber plants, lettuce, soybeans, goldenrod, and more.
- » In the process, they provided much needed employment, housing, medical care and education for local residents.
- » Over the next 25 years, they restored Fort McAllister, dozens of antebellum plantations and were successful in turning Richmond Hill into a thriving community with their impact still being evident today.



Ford Plantation



### 1.4 GOALS

We spoke to stakeholders and city officials to determine some overall goals for the project. The goals are as follows:

- » To create a sense of place; “a mixed-use downtown” type of feel
- » Creating jobs and recreational opportunities for current and future residents
- » Provide a bypass to connect Highway 144 and Highway 17
- » Provide a pedestrian-friendly design
- » Design accommodations that deal with the existing challenges such as the cell tower, power easement, gas line, and wetland
- » Provide a creative solution for housing
- » Create a design that accommodates for people of all ages



Meeting in Richmond Hill



Scott Allison & Becky Myers review plans in Athens

## 1.5 EXISTING DEMOGRAPHICS

The following graphics on the next two pages display an overall community snapshot of the city of Richmond Hill. We discovered the following information by reviewing these documents.

- » Richmond Hill's population is expected to increase by 17% between 2010-2015.
- » The current average household income is \$71,656.
- » 50% of the land area in the city is currently undeveloped.
- » There is currently a 87 million dollar retail gap which is causing consumers to spend their money outside of Richmond Hill.

## 1.6 RICHMOND HILL GAP ANALYSIS

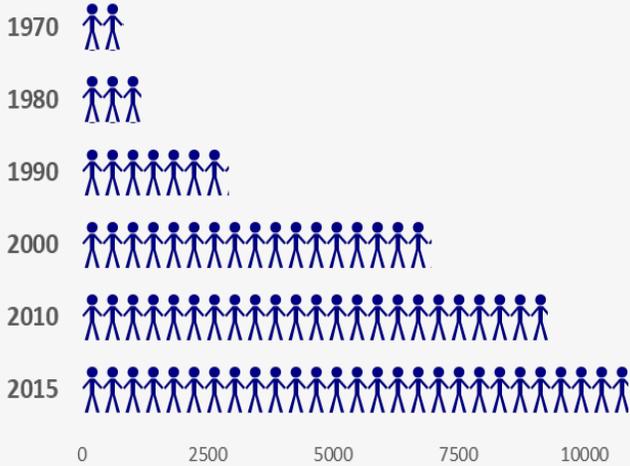
A GAP analysis measures the demand for goods within a defined trade area and compares this demand to the supply currently provided by retailers within the same area. This GAP is calculated for different categories for the trade region and is a valuable metric for determining the retail mix for a new center. A gap or leakage in trade is created when resident's demand for goods exceeds the supply within their trade area. A gap in trade means lost tax revenue for the respective municipality and an opportunity for business growth within this area. By creating developments that meet the trade gap, new retailers increase the region's gross revenues without competing with the existing businesses.

Using Richmond Hill's GAP analysis, we calculated the additional retail square footage that can be supported in various retail categories. This figure is achieved by taking the GAP in dollars for each category and dividing it by revenue per square foot earned for the retail type. The resulting figure is the amount of retail space supported by the trade GAP. Assuming 15 % of building space is administrative, total ft<sup>2</sup> is calculated by multiplying the retail ft<sup>2</sup> by 115%. Adding up all of the retail categories square footage gives us the available retail area of 328,000 ft<sup>2</sup>.

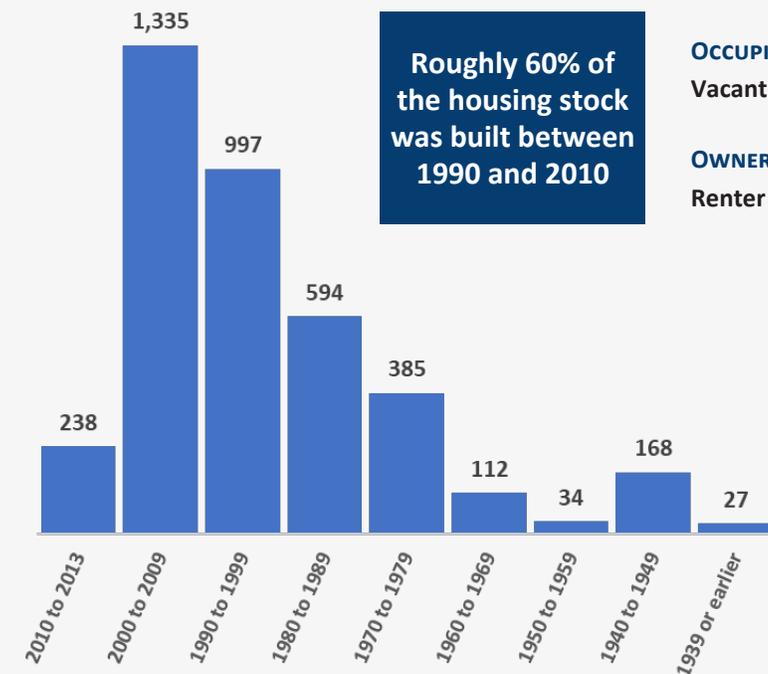


# COMMUNITY SNAPSHOT

## Population Trends

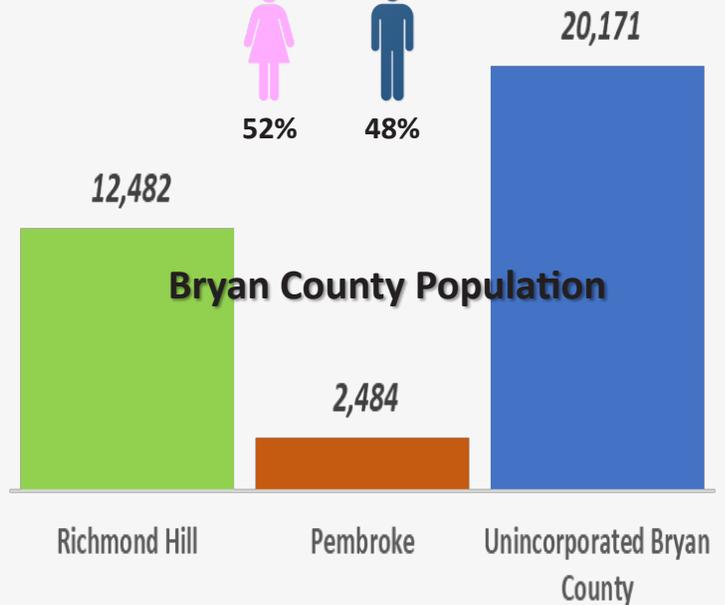
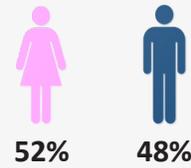


**THE CITY OF RICHMOND HILL** is the largest incorporated city in Bryan County housing roughly 35% of the County's residential population. The 2015 American Community Survey published by the Census reports the population in the city to be 10,872 people. The City saw its largest residential growth between the years 1990 and 2010, experiencing a **216% INCREASE** in population. Growth is still continuing at a steady pace, with an estimated **17% INCREASE** occurring between 2010-2015.



**Roughly 60% of the housing stock was built between 1990 and 2010**

## Gender



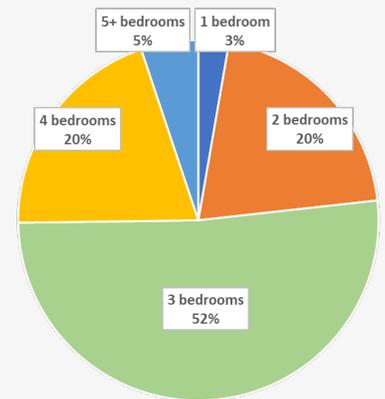
## Housing Characteristics

### Median House Values

|                      |                  |
|----------------------|------------------|
| <b>RICHMOND HILL</b> | <b>\$195,300</b> |
| County               | \$131,500        |
| Georgia              | \$148,100        |

**OCCUPIED UNITS** 93%  
**Vacant Units** 7%

**OWNER OCCUPIED** 50%  
**Renter Occupied** 50%



### NUMBER OF ROOMS

**Number of Housing Units = 3,890**

### AVERAGE HOUSEHOLD SIZE

**OWNER-OCCUPIED 3.25 PEOPLE**  
**RENTER-OCCUPIED 2.7 PEOPLE**

# COMMUNITY SNAPSHOT



## Average Household Income

|                      |                 |
|----------------------|-----------------|
| <b>RICHMOND HILL</b> | <b>\$71,656</b> |
| Bryan County         | \$75,583        |
| Georgia              | \$69,010        |

## Per Capita Income

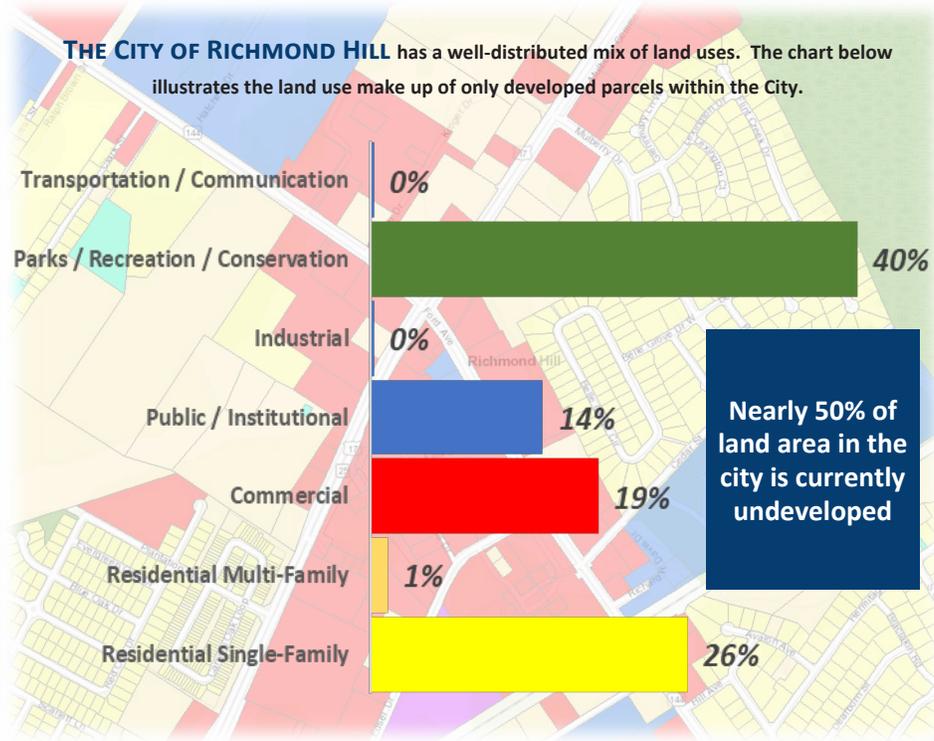
|                      |                 |
|----------------------|-----------------|
| <b>RICHMOND HILL</b> | <b>\$25,055</b> |
| Bryan County         | \$26,934        |
| Georgia              | \$25,737        |

## Other Planning Considerations:

- Anticipated growth*
- Commercial development along major corridors*
- Local history and pride*
- Maximizing tourism opportunities*
- Potential future annexations*

## Land Use and Geography

Latitude 31.94 N  
Longitude 81.31W



### LAND AREA

10.1 Square Miles  
6,400 Acres

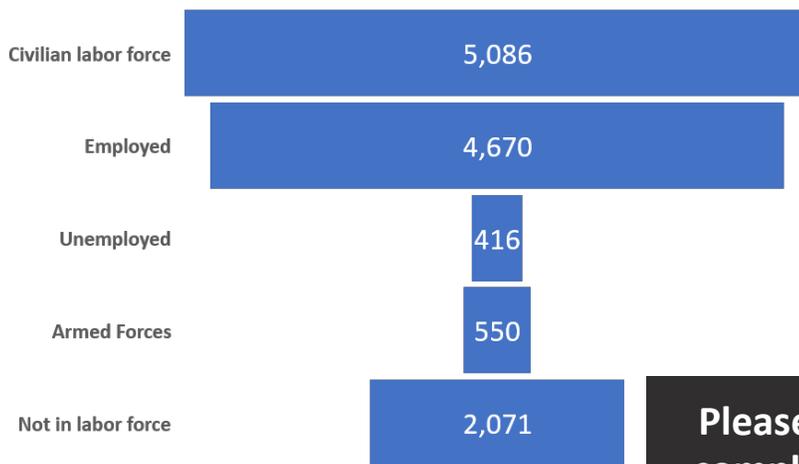
### POPULATION DENSITY

1.7 persons per acre

### AVERAGE ELEVATION

20 Feet above Sea Level

## Labor Force



### AVERAGE COMMUTE TIME

26 minutes

Submit Comments Related to the Comprehensive Plan to:  
Richmond Hill City Hall  
40 Richard R. Davis Drive  
Richmond Hill, Georgia 31324

Roughly 10% of workforce in military

Please take a moment to complete the Community Survey



<https://www.surveymonkey.com/r/rhPlan>

### Retail GAP Summary Regional Trade Area

General Merchandise **\$30 Million**

Limited-Service Restaurants **\$14 Million**

Full-Service Restaurants **\$7 Million**

Furniture Stores **\$6 Million**

Electronics Stores **\$6 Million**

Sporting Goods **\$5 Million**

Automotive Parts **\$4 Million**

Office Supplies **\$4 Million**

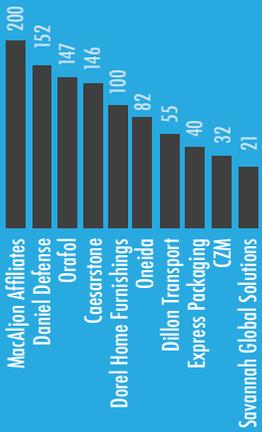
Hardware Stores **\$3 Million**

Women's Clothing **\$3 Million**

Hobby, Toy & Game **\$3 Million**

Home Furnishings **\$2 Million**

### Major Employers by No. of Employees



### Focus Properties



**Richmond Hill Development Opportunity**  
27 Acres

Dallas Daniel  
ddaniel@plantationlumberandhardware.com



**60 Exchange Street**  
1,303 SF - 1,467 SF  
John Gilbert  
912.236.8992



**9701 Ford Ave.**  
1,400 SF - 2,800 SF  
Joe Boblasky  
912.353.7707



**2496 Hwy 17**  
16 Acres  
Bert Brown  
904.724.3900x-409

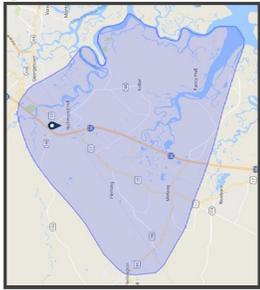
**NextSite**  
chuck@nextsite.net  
205.218.9652

Scott Allison  
sallison@richmondhill-ga.gov  
912.756.9851



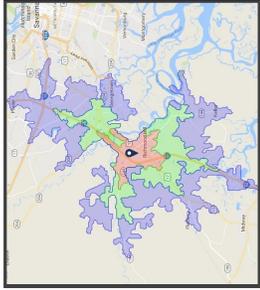
# richmondhillgeorgia

### Demographics/Location

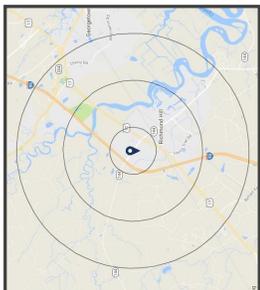


#### Regional Retail Trade Area

2017 Population **37,996**  
Total # of Employees **9,784**  
Median HH Income **\$65,552**  
Average HH Income **\$78,514**



| 5 Min Drive Time            | 10 Min Drive Time | 15 Min Drive Time | 1 Mile Radius               | 3 Mile Radius | 5 Mile Radius |
|-----------------------------|-------------------|-------------------|-----------------------------|---------------|---------------|
| 2017 Population: 8,961      | 22,483            | 65,066            | 2,281                       | 11,076        | 20,999        |
| Total # of Employees: 2,778 | 6,222             | 18,612            | 1,121                       | 3,514         | 5,987         |
| Median HH Income: \$59,327  | \$60,519          | \$62,554          | Median HH Income: \$63,149  | \$63,384      | \$59,637      |
| Average HH Income: \$66,087 | \$72,257          | \$76,688          | Average HH Income: \$71,217 | \$70,663      | \$70,455      |



Residents and visitors of Richmond Hill can enjoy the sandy beaches, visit historic attractions and state parks, or explore numerous trails.

Richmond Hill was once known as Ways Station. It was given its present name after Henry Ford's winter residence in Richmond Hill was built. Ford is credited with the construction of numerous public buildings.

Bryan County has exceptional regional healthcare that includes a Level 1 Trauma Center, Children's Hospital and the Savannah Campus of Mercer University School of Medicine.

Richmond Hill's quality of life is second to none with a top-performing public K-12 school system offering programs like STEM, first-class recreational parks and walking trails, the nearby Atlantic Ocean and abundant outdoor activities like sport fishing and golf.

Richmond Hill is home to several golf courses, including the recently re-designed Pete Dye course at The Ford Plantation.

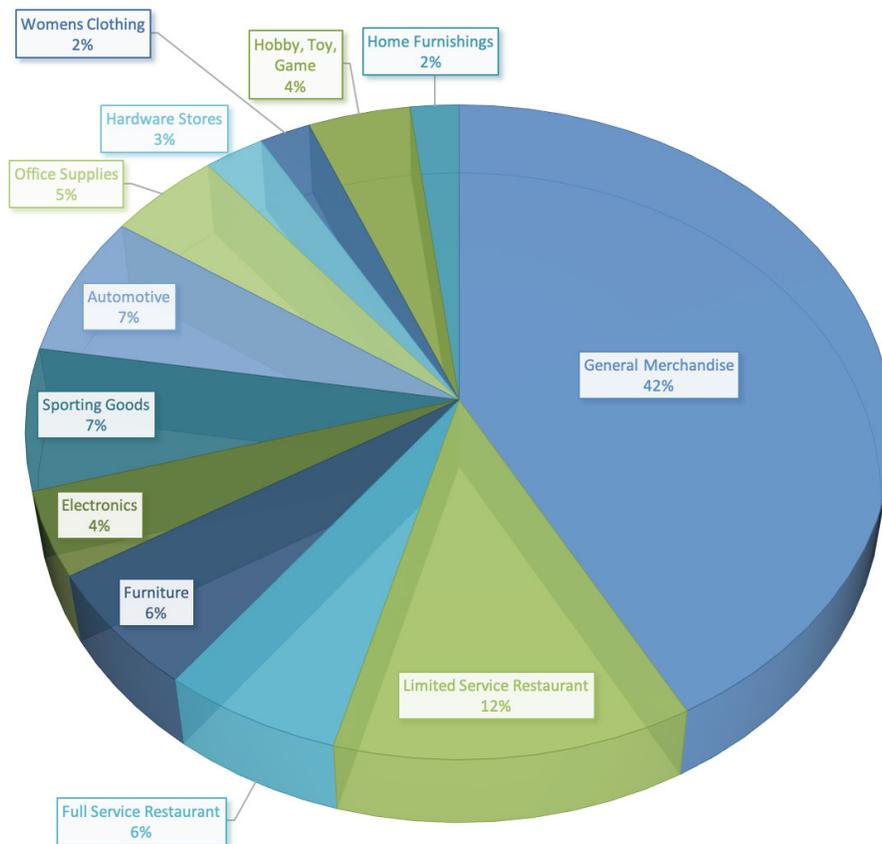


## WHAT CAN RICHMOND HILL SUPPORT?

The following graph explores future business opportunities for Richmond Hill. Taking information from the GAP analysis, the average revenues per square feet were used to calculate supportable area for each use. The possible administrative space required by each use was then added by a constant. The total supportable area for Richmond Hill is 285,749 square feet, with general merchandise taking the largest piece.

| Category                   | GAP in Millions | Revenue per SQ FT. | Supportable Area (SQ FT.) | Area with Admin Space |
|----------------------------|-----------------|--------------------|---------------------------|-----------------------|
| General Merchandise        | 30              | \$250.00           | 120,000                   | 138,000               |
| Limited Service Restaurant | 14              | \$400.00           | 35,000                    | 40,250                |
| Full Service Restaurant    | 7               | \$400.00           | 17,500                    | 20,125                |
| Furniture                  | 6               | \$350.00           | 17,143                    | 19,714                |
| Electronics                | 6               | \$500.00           | 12,000                    | 13,800                |
| Sporting Goods             | 5               | \$250.00           | 20,000                    | 23,000                |
| Automotive                 | 4               | \$200.00           | 20,000                    | 23,000                |
| Office Supplies            | 4               | \$300.00           | 13,333                    | 15,333                |
| Hardware Stores            | 3               | \$425.00           | 7,059                     | 8,118                 |
| Womens Clothing            | 3               | \$500.00           | 6,000                     | 6,900                 |
| Hobby, Toy, Game           | 3               | \$250.00           | 12,000                    | 13,800                |
| Home Furnishings           | 2               | \$350.00           | 5,714                     | 6,571                 |
| <b>TOTAL GAP</b>           | <b>87</b>       | <b>\$347.92</b>    | <b>285,749</b>            | <b>328,612</b>        |

### PERCENTAGE FLOOR SPACE BY TYPE



# 2. PRECEDENT STUDIES

# Precedent Studies

## 2.1 WHY DID WE COMPLETE PRECEDENT STUDIES?

After learning about the Richmond Hill project proposal, our class completed 20 different precedent studies of similar town centers around the United States. This would help us look at a variety of development patterns which could be applied to our site. For each town center site, we found data about the existing land-use, current occupancy, building sizes, the surrounding city's demographics, and streetscape/building designs. All of this information provided us with final takeaways that would then guide our design proposals for Richmond Hill.

## 2.2 PRECEDENT STUDIES AROUND THE UNITED STATES

We chose five of the 20 sites studied, along with another development in Florida as comparable developments. These projects have similar demographics and incomes in their surrounding communities. Doing so guided us as we completed our GAP analysis for Richmond Hill and as we chose which businesses could be supported by the current economy of the city. (The remaining 15 precedent studies can be viewed in the appendix.)



5

Easton Town Center  
Columbus, Ohio



6

Phillips Place  
Charlotte, North Carolina



7

Mizner Park  
Boca Raton, Florida



8

Victoria Gardens  
Rancho Cucamonga,  
California



9

Mercato  
Naples, Florida

## 2.3 VISUAL PREFERENCE STUDY

Using both "good" and "bad" images pulled from our precedent studies, we conducted an online visual preference study. Residents of Richmond Hill then ranked images on a scale of 1-10, with 1 being the worst and 10 being the best. This survey helps us gain an idea of what the residents in the area would like to see in this new development.

# EASTON TOWN CENTER

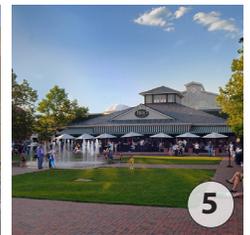
Columbus, Ohio

From the splash pad modeled for small children, local bars for adults, or the quilting store for senior citizens, Easton Town Center has made a major effort for there to be activity for anyone visiting the city. The project has continuously sought out to be the community center of Columbus, Ohio while supporting main stream megastores as well as small local and independent businesses.

## CITY OF COLUMBUS, OH

POPULATION  
274,313

AVERAGE HOUSEHOLD INCOME  
\$73,550



## LAND USE

RETAIL - 43%  
OFFICE - 27%  
RESIDENTIAL - 5%  
HOTELS - 11%

RESTAURANTS - 8%  
ENTERTAINMENT - 4%  
PERSONAL CARE - 3%

TOTAL AREA - 100 ACRES

## STRENGTHS

- Many activities for a range of age groups
- Family friendly open spaces
- Coherent architecture

## WEAKNESSES

- Scale of development too large
- Continuously expanding a site that is already too large
- No shaded parking lots

## ELEMENTS

- Water Play
- Store-front Parking
- Cinema Complex
- Open Green Space

## PRECEDENT STUDIES

PAGE 15

# PHILLIPS PLACE

Charlotte, North Carolina

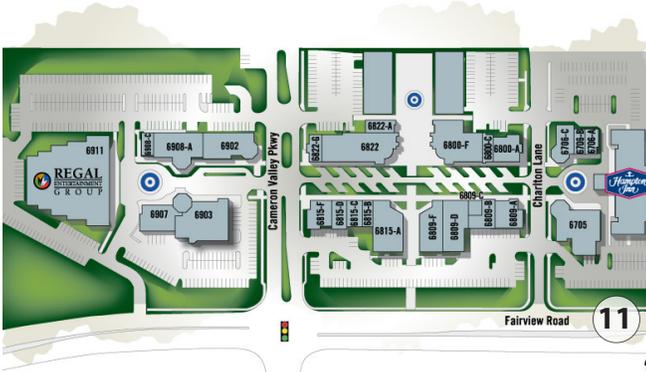
Phillips Place has an abundance of retail stores for a variety of consumers. The property is also located near many other retail stores allowing for convenience. The site also hosts 4 restaurants, a hotel, and cinema for a variety of entertainment options. There is ample parking, as well as outdoor gathering spaces such as the courtyard located in the center of the property. The property is also connected to an adjacent neighborhood for added convenience to the local residents. All of these features allow for this center to flourish.



## CITY OF CHARLOTTE, NC

POPULATION  
274,313

AVERAGE HOUSEHOLD INCOME  
\$73,550



## ELEMENTS

- Main Street Design with Complete Streets
- Water Features
- Open Green Space
- Courtyard

## LAND USE

RETAIL - 27%  
HOTELS - 8%  
RESTAURANTS - 6%  
CULTURAL - 5%

OUTDOOR - 47%  
VACANT N/A - 7%

TOTAL AREA - 15 ACRES

## STRENGTHS

- Geometrically aligned
- Streetscapes and open spaces
- Harmonious architectural design
- Pedestrian-friendly

## WEAKNESSES

- Too much parking
- Edges of the property aesthetically displeasing

# MIZNER PARK

Boca Raton, Florida

Mizner Park is an award winning mixed use development. The park was envisioned as a way to establish a “downtown” for the city of Boca Raton. Serving as a private-public partnership, this site was created as a mechanism for financing and maintaining the development as well as allowing for public amenities and community spaces. The site is centered around a long linear plaza, lined with various mixed-use buildings.



## CITY OF BOCA RATON, FL

POPULATION  
91,702

AVERAGE HOUSEHOLD INCOME  
\$72,970



## ELEMENTS

- Main Street Design
- Water Features
- Cinema
- Live Music
- Open Green Space

## LAND USE

|                   |                       |
|-------------------|-----------------------|
| MIXED USE - 17%   | PEDESTRIAN - 19%      |
| RESIDENTIAL - 4%  | STREET/PARKING - 39%  |
| CULTURAL - 9%     |                       |
| GREEN SPACE - 12% | TOTAL AREA - 12 ACRES |

## STRENGTHS

- Commercially focused
- Human scale
- Major focal point at terminus

## WEAKNESSES

- Too much sun exposure
- Disconnected from surrounding context
- Many areas remain unleased

# VICTORIA GARDENS

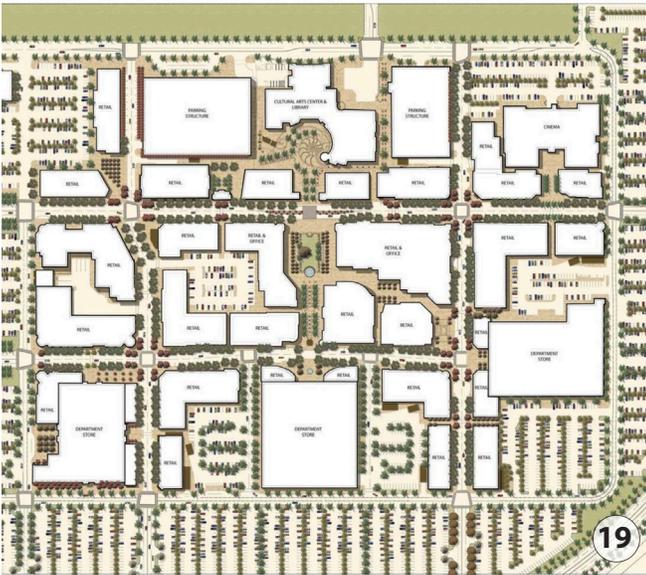
Rancho Cucamonga, California

Victoria Gardens was designed to mimic a downtown that has evolved iteratively over time. This site is a pedestrian-oriented town center located 50 miles east of downtown LA in Rancho Cucamonga, a town at the heart of California's Inland Empire.

## CITY OF RANCHO CUCAMONGA, CA

POPULATION  
173,309

AVERAGE HOUSEHOLD INCOME  
\$79,973



### ELEMENTS

- Main Street Design
- Open-air Center
- Street-scene Dining
- Cultural Center
- Public Library
- Open Green Space

### LAND USE

- RETAIL - 27%
- OFFICE - 1%
- CIVIC - 1%
- CINEMA - 1%
- STREET/PARKING - 45%
- OPEN SPACE - 10%
- STREETSCAPES - 15%
- TOTAL AREA - 175 ACRES

### STRENGTHS

- Aesthetically pleasing
- Pedestrian-friendly
- Spaces for a range of age groups to enjoy

### WEAKNESSES

- Too much parking
- Pedestrians walking too freely
- Development so large that many areas remain unleased

# MERCATO

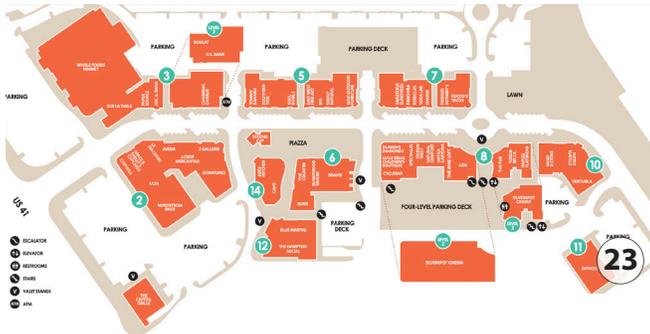
Naples, Florida

Anchored by Whole Foods Market, Nordstrom Rack and Silverspot Cinema, a 12-screen premier-style theater, Mercato offers 12 notable restaurants, over 20 upscale retailers and luxury residential condominiums. Mercato hosts a vibrant year-round event calendar with most events free and open to the public.

## CITY OF NAPLES, FL

POPULATION  
20,980

AVERAGE HOUSEHOLD INCOME  
\$84,830



## LAND USE

MIXED USE - 14%  
OFFICE - 6%  
RESIDENTIAL - 1%  
CINEMA - 2%

STREET/PARKING - 69%  
OPEN SPACE - 8%  
TOTAL AREA - 53 ACRES

## ELEMENTS

- Main Street Design
- Cinema
- Luxury Residential Units
- Dog-friendly Locations
- Live Music
- Open Green Space

## STRENGTHS

- Layout well planned
- Development aligned along bypass
- Hidden Parking
- Existing trees preserved

## WEAKNESSES

- Reliant on higher end retail/commercial use

## 2.3 VISUAL PREFERENCE STUDY

Using both “good” and “bad” images pulled from our precedent studies, we conducted an online visual preference study. Residents of Richmond Hill then ranked images on a scale of 1-10, with 1 being the worst and 10 being the best. This survey helps us gain an idea of what the residents in the area would like to see in this new development.

### Photo Preference Ranking



### Purpose

The purpose of this page is to report the results of a visual preference study. Richmond Hill residents were surveyed for their opinions about existing mixed-use developments. They were asked to rate images from 1, being the worst, to 10, the best. The images at left are the top 5 most liked and the 5 least liked images from the survey. Below are the most common positive and negative comments that the residents gave about the images.

### Top Positive Comments

- Good Street Trees
- Ample Lighting
- Neatness and Cleanliness
- Walkability
- Architectural Interest

### Top Negative Comments

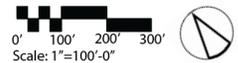
- Streets Narrow or Crowded
- Lack of Lighting or Landscape
- Lack of Character
- Not Enough/Too Much Parking
- Unwelcoming for People

# 3. INITIAL DESIGN CONCEPTS



### *Initial Design Concepts*

After completing our precedent studies and taking a trip down to Richmond Hill, our class created 20 different design concepts. We then presented our concepts to Scott Allison (Assistant City Manager, CED BLA '03) and Becky Myers (Special Projects Manager.) The following concepts are the top 3 concepts chosen by the city of Richmond Hill. The remaining 17 plans can be found in the appendix.



**LEGEND**

- 1 MEDICAL PARK
- 2 PLAZA
- 3 OFFICE
- 4 MIXED USE
- 5 RETAIL/RESTAURANTS
- 6 GREEN SPACE
- 7 THEATER
- 8 GROCERY STORE
- 9 SPORTS FIELDS
- 10 ATHLETIC FACILITY

**TABULAR DATA**

|                           |            |                      |         |                    |       |
|---------------------------|------------|----------------------|---------|--------------------|-------|
| <u>Residential Units:</u> |            | <u>Parking Count</u> |         | <u>Green Space</u> |       |
| Apartments                | 56 units   | Residential          | 126     | % of Site          | 44%   |
|                           |            | Retail               | 1,712.4 |                    |       |
|                           |            | Office               | 233.4   | <u>Plaza</u>       | 7%    |
|                           |            | Theater              | 66.7    | <u>Amenity</u>     | 1.3%  |
| <u>Commercial Uses</u>    |            | Grocery Store        | 187.5   | <u>Green Space</u> | 18%   |
| Retail                    | 372,100 SF | Medical              | 129     | <u>Other</u>       | 17.7% |
| Mixed Use                 | 112,000 SF | Recreation           | 80      |                    |       |
| Medical                   | 25,800 SF  |                      |         |                    |       |
| Office                    | 35,000 SF  |                      |         |                    |       |
|                           |            | Total Required       | 2,535   |                    |       |
|                           |            | Total Provided       | 2,668   |                    |       |
|                           |            | Excess Parking       | 133     |                    |       |

**NARRATIVE**

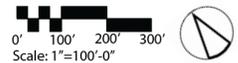
Located just a few minutes south of the metropolitan Savannah area, this Richmond Hill town center design draws inspiration from the grid layout of the nearby historical city. This site is a 100-acre regional attraction that provides a pedestrian plaza and open green space, all anchored with multi-use structures to provide a sense of place within the heart of the city. With spaces and activities that cater to many different age groups such as a movie theater, athletic fields and local eateries, this town center is the perfect addition to this family-oriented community.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

TERESA NGUYEN | OCTOBER 3, 2018





**LEGEND**

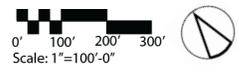
- ① RESIDENTIAL
- ② MIXED-USE
- ③ RETAIL
- ④ GREEN SPACE

**TABULAR DATA**

|                           |           |                      |       |                    |       |
|---------------------------|-----------|----------------------|-------|--------------------|-------|
| <b>Residential Units:</b> |           | <b>Parking Count</b> |       | <b>Green Space</b> |       |
| Single Family Detached    | 21 units  | Residential          | 191   | Total Acreage      | 31.8% |
| Apartments                | 100 units | Retail               | 1,974 | % of Site          | 31.8% |
|                           |           | Amenity              | 60    |                    |       |
| <b>Commercial Uses</b>    |           | Total Required       | 2,225 |                    |       |
| Mixed Use                 | 43,800 SF | Total Provided       | 2,345 |                    |       |
|                           |           | Excess Parking       | 120   |                    |       |

**NARRATIVE**

This plan for the Richmond Hill Town Center is focused on promoting a sense of identity using a radial design that compliments the town plan to increase walkable connectivity throughout town and provides a mixed-use downtown area that can attract new residents and benefit current residents alike. A main corridor goes down the center that can be used for festivals and street events without disrupting traffic of the rest of the site.



**LEGEND**

- 1 TOWNHOMES
- 2 SINGLE FAMILY HOMES
- 3 RESIDENTIAL OVER RETAIL
- 4 RETAIL/RESTAURANTS
- 5 CIVIC BUILDINGS
- 6 MOVIE THEATER
- 7 HOTEL
- 8 BYPASS
- 9 GREENSPACE

**TABULAR DATA**

|   |                  |                      |       |                        |            |
|---|------------------|----------------------|-------|------------------------|------------|
| <b>Residential Units:</b>               |                  | <b>Parking Count</b> |       | <b>Green Space</b>     |            |
| Single Family Detached:                 | 24 units         | Residential          | 516   | % of Site              | 25.5%      |
| Town Homes:                             | 54 units         | Retail/ Mixed Use    | 1,742 | Extended Green Space   | 17.1 acres |
| Apartments:                             | 180 units        | Accommodation        | 187   | Front entry (fountain) | 1.65 acres |
| Hotel:                                  | 150 units        | Recreational         | 80    | Clubhouse/ Pool        | .78 acres  |
| <b>Commercial Uses</b>                  |                  | Civic                | 195   | Walking Trail          | .23 acres  |
| Mixed Use (Retail, Commercial, Office): | 289,279 sq. ft.  | Total Required       | 2,720 | Plaza                  | 1.75 acres |
| Restaurants:                            | 32,142 sq. ft.   | Total Provided       | 2,760 | Park                   | 4.01 acres |
| Accommodation (Hotel):                  | 1,59,996 sq. ft. | Excess Parking       | 40    |                        |            |
| Movie Theatre                           | 37,767 sq.ft.    |                      |       |                        |            |
| Civic                                   | 58,718 sq. ft.   |                      |       |                        |            |

**NARRATIVE**

The driving concept of this master plan is a central town center with two main business districts surrounded by residential communities. The town center is centrally located within the site and serves government and civic purposes. The two business districts each include one "downtown" street with apartments over retail space. Running parallel to the "downtown" streets, restaurants and retail will open onto a central greenspace geared only towards pedestrians. These greenspace areas will encompass the powerline easement putting previously unused space to use. The residential community located off of 1.44 will have two story detached townhomes geared toward younger residents. The residential community located off of HWY 17 will include single family homes with larger lots, a community center, and a pool geared towards families seeking higher end homes. This site will also feature open space amenities, a movie theater, a hotel, and outdoor patios. The entirety of the site will have coastal styled architecture and themes inspired by cities such Key West, Seaside, and Charleston.

# 4. FEEDBACK

# Feedback

Richmond Hill provided us with the following feedback on our plans:

- » Detention area is needed, 10-15 acres - ponds, dry detention, or wetland. Are ponds considered greenspace? Does the city require 40% tree canopy under the landscape ordinance? How many entrances off 144 and 17 will DOT let us have?
- » This project is to give Richmond Hill a downtown. The frontage along 17 and 144 should look like a downtown and draw attention to the project. Many plans don't use 144 and 17 frontage to emphasize to a downtown district.
- » The plan should have a center, either a park, building or water feature - could be a square or a circle. Natural wild greenspace would not be downtown, it could be used on the perimeter as buffer or to increase canopy cover. Streets coming into the center should be straight and tree lined with divided lanes to give a long line of site. This project will not be built at one time, it will be phased in. Frontage will be the first to sell and make the planning statement for the rest of the project (project must turn a profit).
- » Alcorn, Juila - 3rd best plan
  - like the bypass behind CVS, isolate it from access to project and landscape, (also single lane one way)
  - center square align street from 144
- » Bullock, Kinsey
  - like the smaller parking lots scattered rather than the massive ones
  - frontage on 17 needs buildings
- » Fraser, Jordan & Gladstone, Ben
  - too much greenspace which underutilizes the property - the project must turn a profit
- » Mastin, Pete
  - nice cut through, poor use of 17 & 144 frontage
- » Nguyen, Teresa - best plan overall
  - good use of frontage, especially on 17
  - light on residential, could also use a pool rather than sports fields
  - continue the tree allies through the park and take the park street out to 144 through plaza
- » Owens, Jonah
  - poor use of frontage, also big box is next to residential
  - like the central park, but spread the buildings and put parking between them
- » Ricks, Amber - 2nd best plan overall
  - not fond of the residential on 144
  - like the building to parking layout
  - like the frontage use, needs more residential units
  - think the commercial square footage has an arithmetic error

## Feedback

- » Yu, Liangwei
  - interesting road features, like the smaller buildings for phase development
  - cut through would be a race track

# 5. SITE ANALYSIS

# Site Analysis

## 5.1 WHAT SITE ANALYSIS DID WE DO?

Our class dedicated two weeks to completing extensive site analysis. We completed the study of geographical, historical, legal and infrastructural context of the site.

## 5.2 RICHMOND HILL SITE ANALYSIS CONTENTS

- » Real Estate Comparables - pp. 31
- » Traffic Data - pp. 32
- » Street Quality & Walkability - pp. 33-35
- » Current Land Use - pp. 36
- » Power Line Easement Restrictions - pp. 37
- » Wetland Restrictions - pp. 38
- » USGS BlueLine Streams Data - pp. 39
- » National Flood Hazard Layer - pp. 40
- » Existing Vegetation - pp. 41
- » Soil Types & Suitability/Ratings - pp. 42-45

## REAL-ESTATE COMPARABLES



Easton Town Center  
Columbus, Ohio



Phillips Place  
Charlotte, North Carolina



Mizner Park  
Boca Raton, Florida



Victoria Gardens  
Rancho Cucamonga,  
California



Mercato  
Naples, Florida

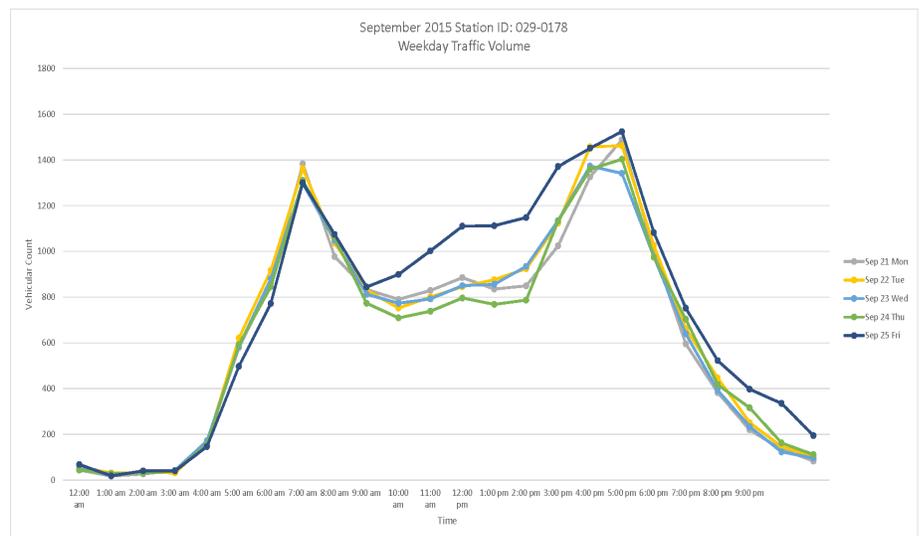
Our comparable town centers were used to suggest possible tenants for the new development.

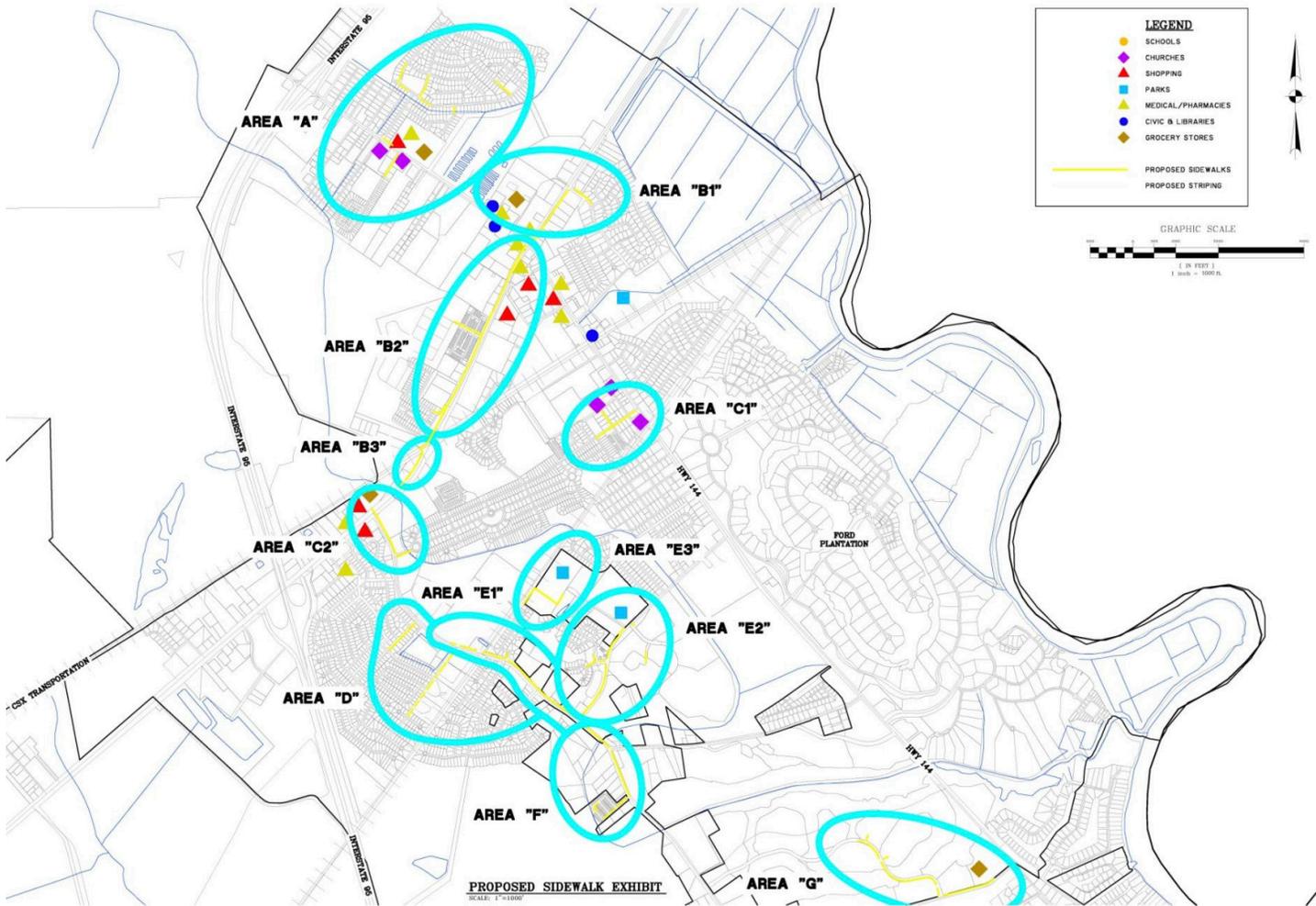
## POSSIBLE RETAIL TENANTS TAKEN FROM COMPARABLES

|  |  |  |  |  |  |
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Traffic patterns suggest that weekday rush hours are times with the highest vehicle count on both HWY 17 and HWY 144, with peaks for both at 7am and 5pm. There is also a smaller rush at midday. Vehicle per day count averages approximately 19,000 on weekdays and 12,000 on weekends.

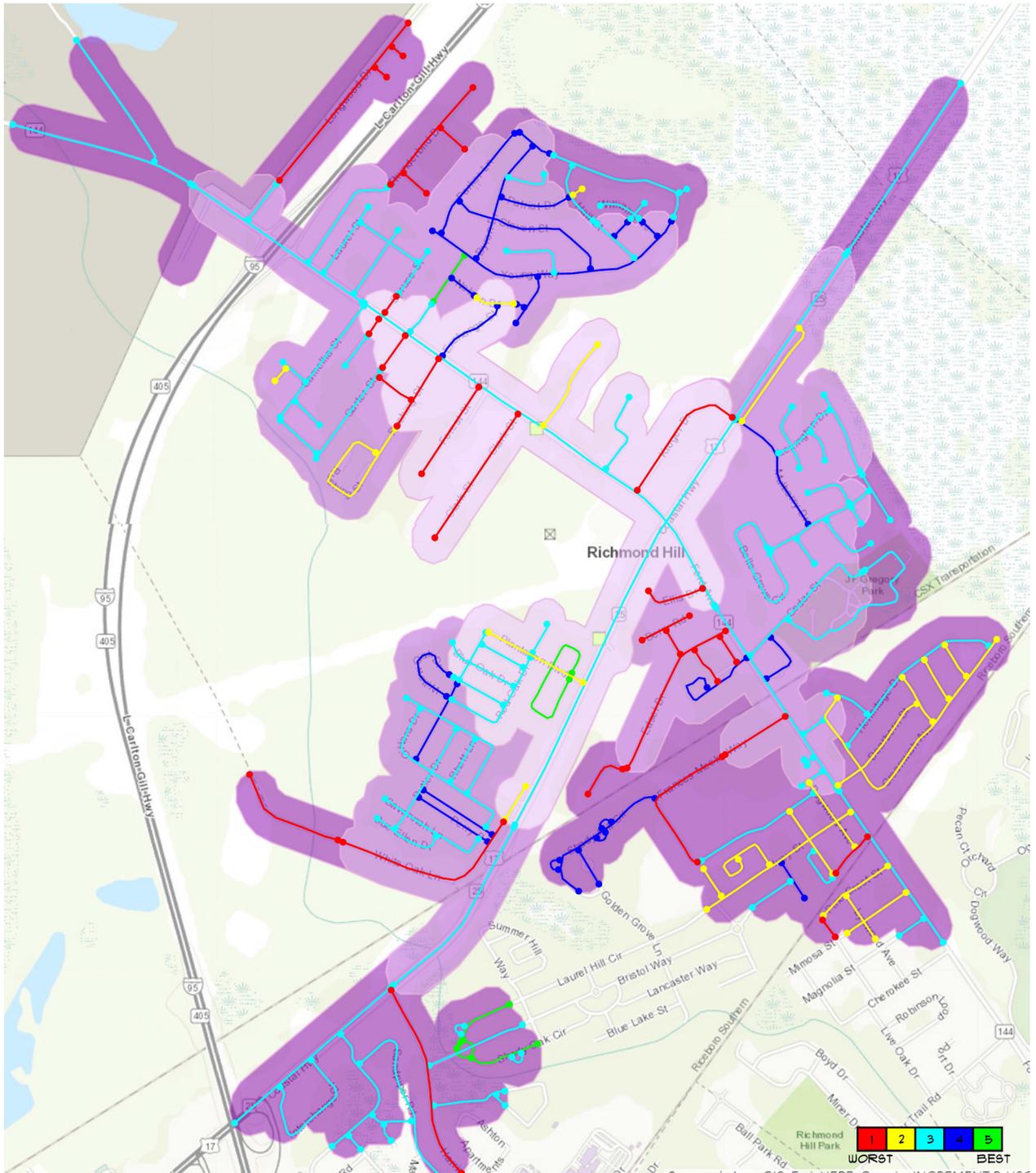




Graphic provided by the city of Richmond Hill

## STREET QUALITY

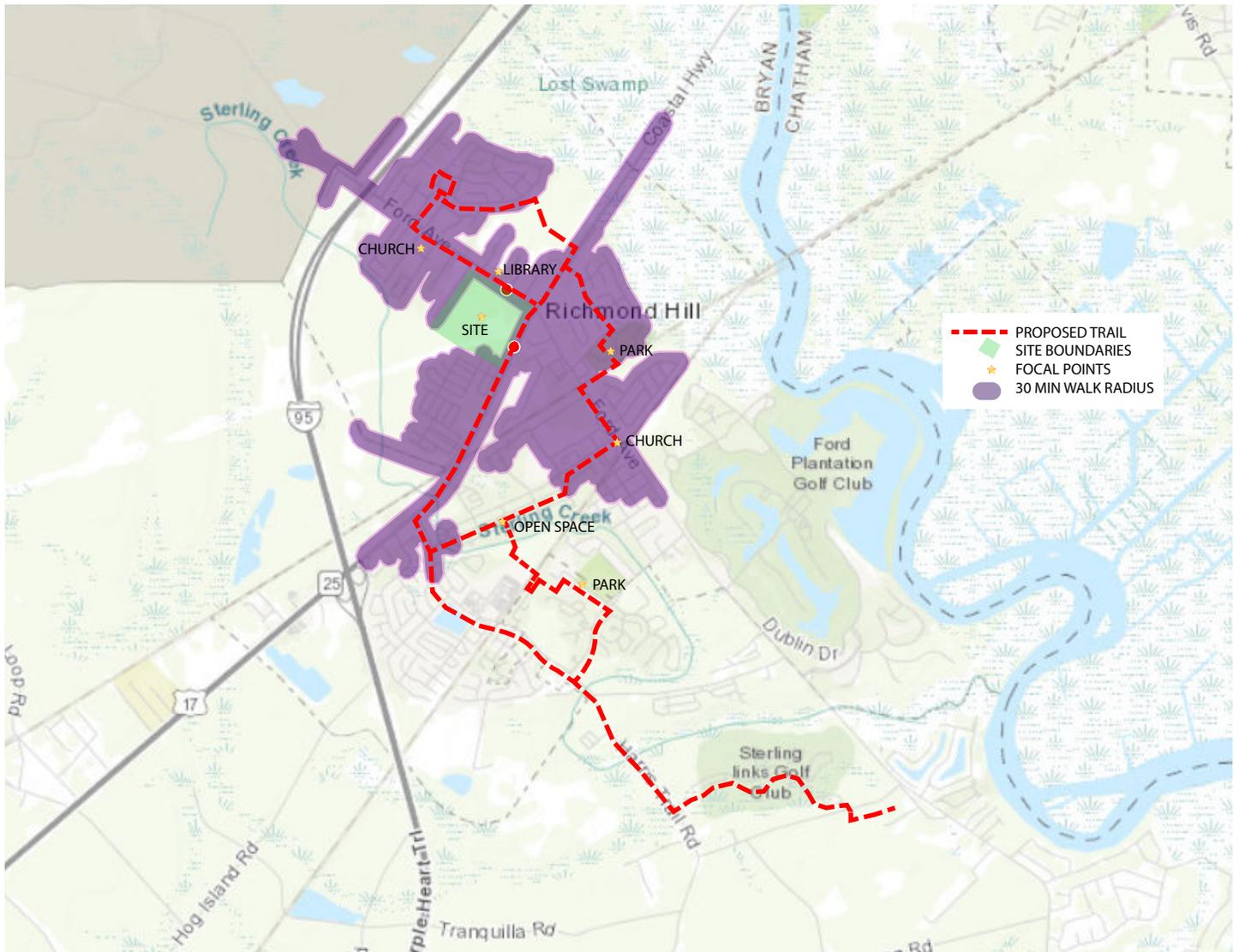
During our initial meeting, Scott Allison provided us with a city sidewalk plan. This plan connected the dots between existing institutions, retail and residential areas. We reviewed the plan and suggested how to better integrate it into the existing city fabric.



## STREET QUALITY SURVEY

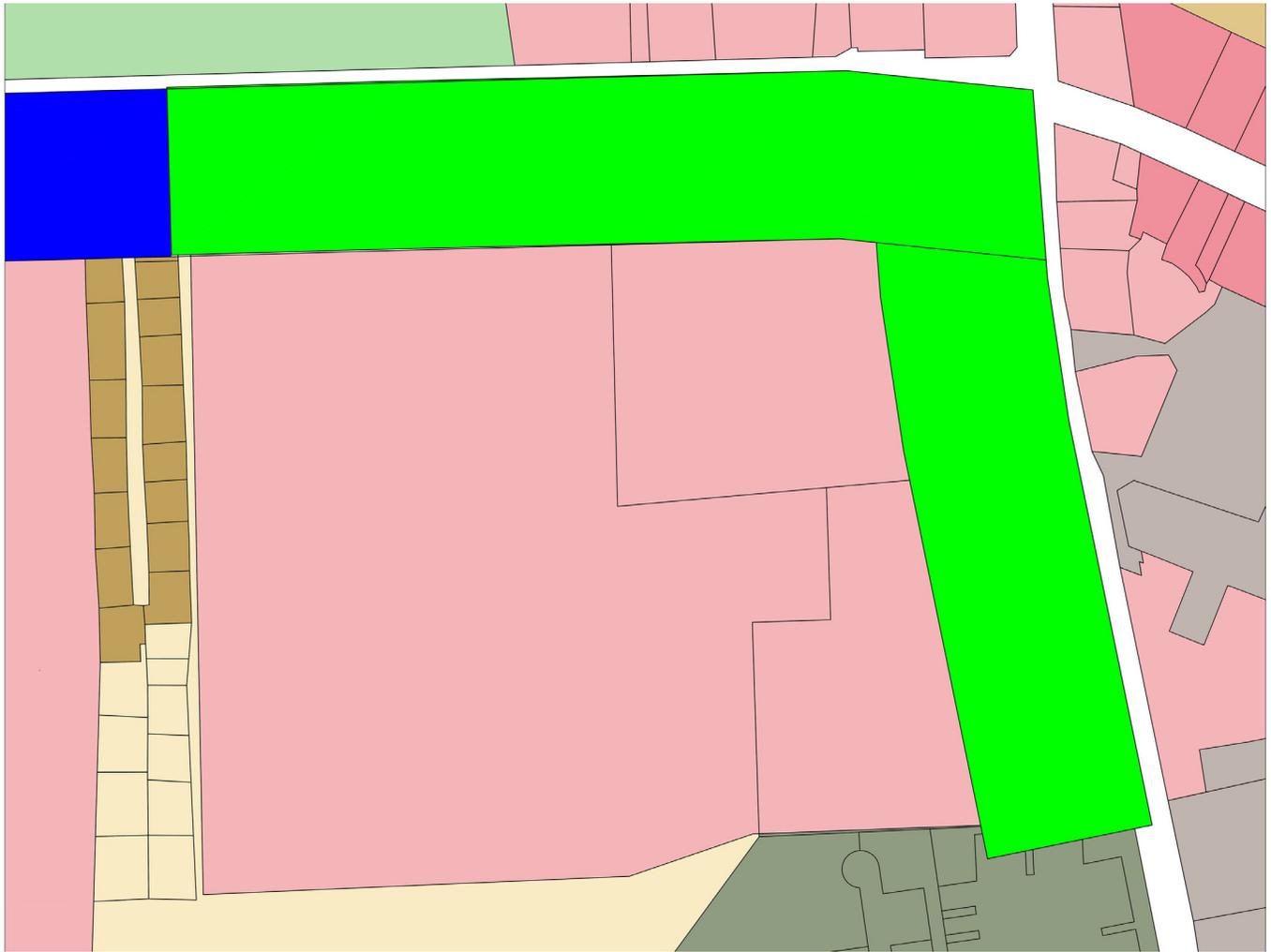
Using ArcGIS Geoplanner, an Esri program, we calculated the immediate 10, 20, and 30 minute walkable area surrounding the site. After establishing the walkable area and using Google Map's drop in feature, we viewed every street individually and rated them from 1-5, 1 being the worst quality street and 5 being the best. Factors to determine the quality of a street included whether or not it had: curbs, sidewalks, trees/other plantings, bike paths, maintenance, and a variety of other factors.

### RICHMOND HILL STREET QUALITY



## WALKABILITY FROM THE SITE

In this diagram, we have developed a potential walking trail system by studying the city's proposed sidewalk plan (displayed on the following page) and overlaying our potential complete street greenway that would connect important areas throughout Richmond Hill. By diverging the path in the more popular areas, we can create more access points as well as the ability to connect major places throughout Richmond Hill. For example, connecting the path to neighborhoods, large shopping areas, city hall and churches throughout Richmond Hill.



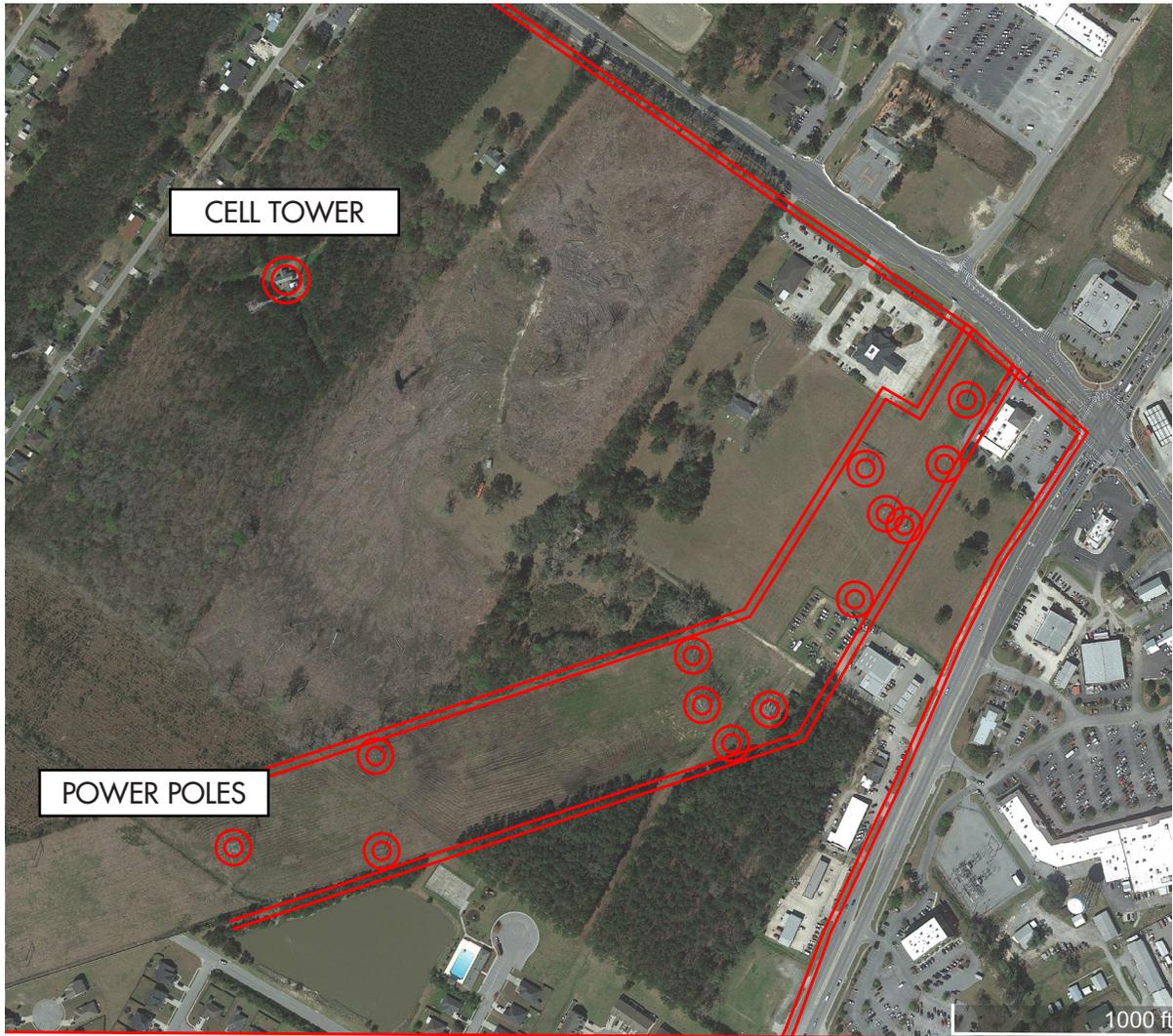
### OVERLAY DISTRICTS

**FORD OVERLAY DISTRICT** - One of the primary purposes of this Ordinance is to extend those design elements, colors, and materials to new construction in Richmond Hill. Antebellum “Plantation Plain” / Ford-Era vernacular architecture and construction is straightforward and functional, drawing its ornament and variety from the traditional assembly of aesthetically accurate materials utilized for the roofing, exterior finish, accent exterior finish, and accent trim colors (shutters, doors, etc.) of a structure.

**GATEWAY OVERLAY DISTRICT** - The Gateway Overlay District is intended to establish an inviting image and welcoming character along the city’s main arterials into and through the community. It will complement the historic character protected by the Ford Overlay by ensuring quality development, creating a harmonious image and minimizing congestion and clutter along these important, highly visible corridors.

### LAND USE LEGEND

- FORD OVERLAY DISTRICT
- GATEWAY OVERLAY DISTRICT
- GENERAL COMMERCIAL
- DOWNTOWN COMMERCIAL
- CONSERVATION PRESERVATION
- INDUSTRIAL DISTRICT
- PLANNED UNIT DEVELOPMENT
- ESTATE RESIDENTIAL DISTRICT
- MANUFACTURED HOME RESIDENTIAL DISTRICT



## POWER LINE EASEMENT RESTRICTIONS

Oursite has a 11.24 acre Power and Gas Line easement running through it. As a part of our site analysis, we discussed what type of development Georgia Power permitted within their development. We are allowed to have temporary storage, walking trails (liability has to be on owner), parking, roads, minimal shrubs (no trees), and dirt roads on the power line easement. As long as there is access for maintenance trucks, any combination of what is listed above is permitted. We are not allowed to have trees, permanent structures, or detention ponds in the power line easement. Anything that will impede Georgia Power from accessing the easement is not allowed. A minimum 25 foot setback is required around all power line poles and towers. A 25 foot setback is required along the easement property line as well. The cell tower on the site is considered in the same category as the power line easement by requiring a 25 foot setback around the tower and buildings.

Source: *Steve Foster, Georgia Power*

In conclusion, anything that impedes truck access to the powerlines is prohibited. Right of way inspections are performed every 3-5 months.



## TOPOGRAPHY / WETLANDS / HYDROLOGY

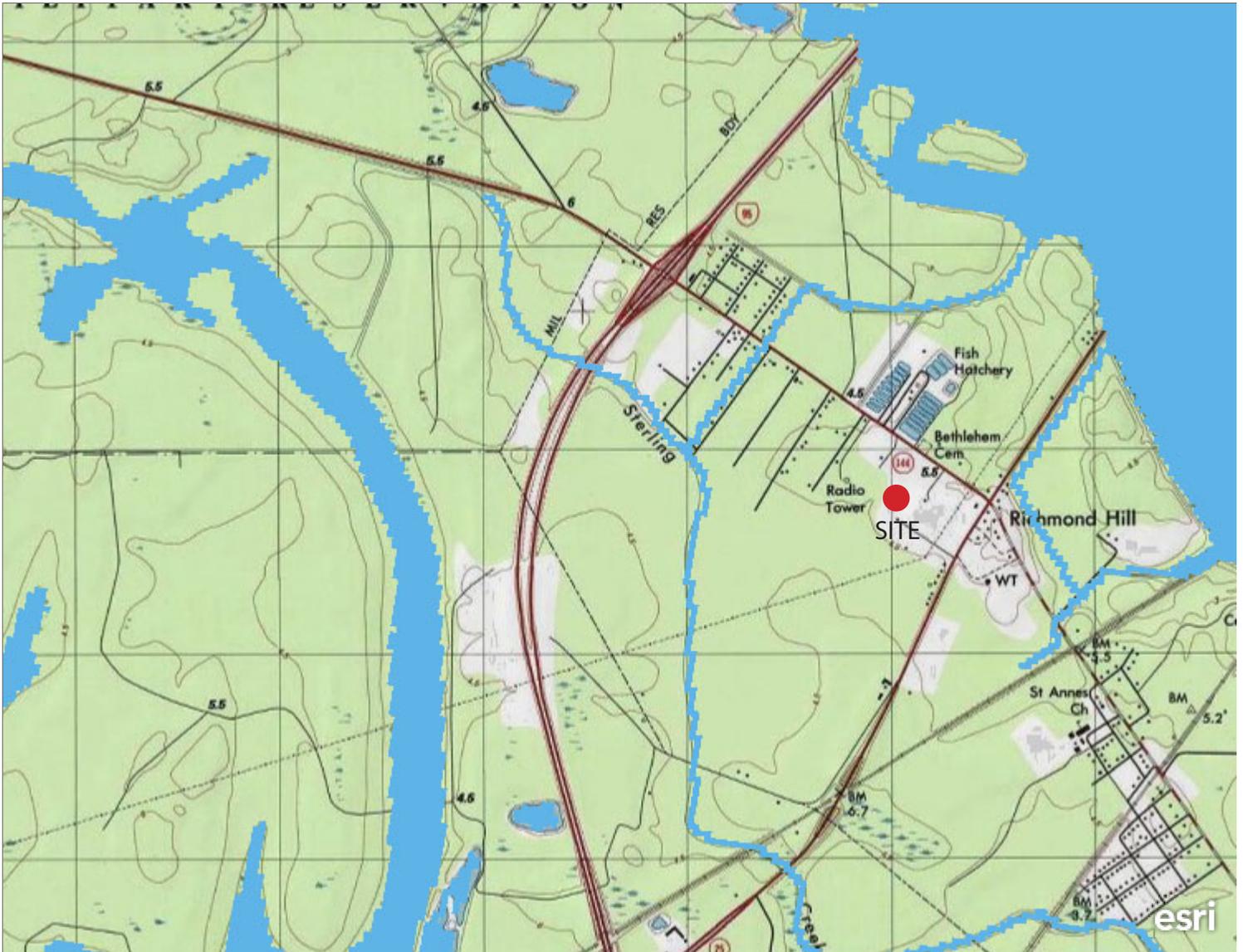
According to the US Fish and Wildlife National Wetlands Inventory Map (<https://www.fws.gov/wetlands/data/mapper.html>), our site contains a 17.37 acre wetland. The map above shows the flow of storm water on the site and the wetland. Water flows from the high point near the intersection of 17 and 144 to the Southwest end of the site. The slope on the site does not exceed 2%.

The following restrictions of the wetland were provided by the Coastal Stormwater to the Georgia Stormwater Management Manual are as follows:

- » The wetland on the site must be protected. Construction of roads across the wetland must be avoided. Planting in the wetland is allowed but the following rules must be followed.
- » Soil disturbance must be minimal when planting in the wetland and hand planting is recommended. If the planting is more than 1/10 th of an acre, a soil and erosion control plan is required. This applies to planting within the 25' buffer of the wetland as well. If the flow of water is disturbed on the site, a permit from the Army Corps of Engineers is required.
- » According to the Erosion and Sedimentation Act of 1975 as amended O.C.G.A. 12-7-6 (b)(15), a 'level spreader' must be used before water enters the 25' buffer of the wetland.

**Source:** Coastal Stormwater Supplement to the Georgia Stormwater Management Manual, Georgia DNR website

**Note:** The USFWS Wetlands Inventory is a high-level analysis to estimate wetland location. Furthermore, detailed investigation should be conducted to accurately locate and delineate all on-site wetlands.



WATER / BLUE LINE STREAM

### USGS BLUE LINE STREAM DATA

USGS shows no blue line streams running through the site. Thus, we do not have to account for stream buffer regulations impacting our development.

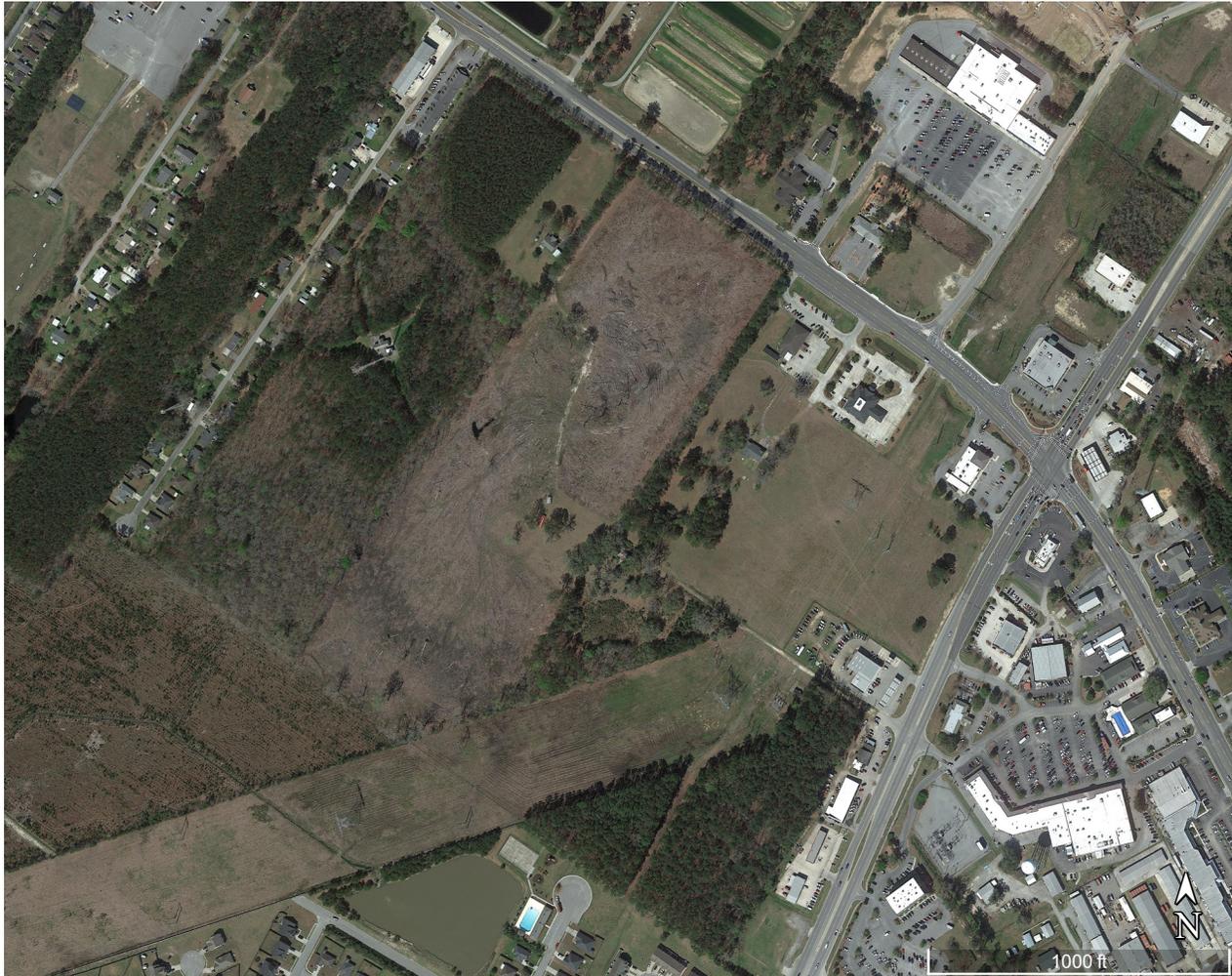
31°57'14.28"N

81°19'19.77"W



### NATIONAL FLOOD LAYER HAZARD (FEMA)

This FEMA floodmap of the site denotes areas which are at risk for flooding. As seen in the map, the majority of the site is considered to have minimal risk of flooding. The bottom third of the site, shown with brown shading, has a 0.2% annual flood risk. This area is a part of the 500 year floodplain. Flooding in this area is considered unlikely.



## MAIN TREE CANOPIES

- Pinus taeda* - Loblolly Pine
- Quercus virginiana* - Willow Oak
- Liquidambar styraciflua* - Sweetgum
- Nyssa biflora* - Swamp Tupelo
- Quercus laurifolia* - Laurel Oak
- Acer rubrum* - Red Maple
- Taxodium distichum* - Bald Cypress

The majority of the site is undeveloped land. The undeveloped land consists of open grassland or wooded areas. Some of the main tree canopies in the area are made up of pines, oaks, sweetgums, maples, cypresses, and swamp tupelos. Forest type groups in the region involves Loblolly/Shortleaf Pine (20.45%), Longleaf/Slash Pine (67.05%), Oak/Gum/Cypress (6.82%), Oak/Hickory (3.41%), and Oak/Pine (2.27%). Out of all the existing vegetation, the matured Live Oaks located in the middle of the site would be the only trees worth saving.

Source : <https://landscape.itreetools.org/maps/locations/>



## SOIL TYPES

| MAP UNIT SYMBOL | MAP UNIT NAME          | Hydro Group | PERCENT OF SITE |
|-----------------|------------------------|-------------|-----------------|
| Cc              | Cape Fear soils        | D           | 20%             |
| Cx              | Craven loamy fine sand | C           | 5%              |
| Oj              | Ocilla complex         | C           | 19%             |
| Pl              | Pelham loamy sand      | B/D         | 9%              |
| Pn              | Pooler fine sandy loam | D           | 19%             |
| Waf             | Wahee sandy loam       | D           | 28%             |

Our site has a combination of six different soil types. Wahee sandy loam makes up a little over a quarter of the site, measuring in at 28%. Cape Fear soils is at 20%, while Ocilla complex and Poller fine sandy loam are each 19%. Pelham loamy sand covers 9% of the land and Craven loamy fine sand has the least percentage, which is 5%. These soil types not only cover the site but they spread at a wide range all over Richmond Hill.

Descriptions of soil properties are found on the next page.

| SOIL TYPE                   | TYPICAL PROFILE   | PROPERTIES AND QUALITIES  |
|-----------------------------|---|---|
| Cc - Cape Fear Soils        | H1 - 0 to 16 inches: loam<br>H2 - 16 to 52 inches: clay<br>H3 - 52 to 62 inches: loamy fine sand  | Slope: 0 to 2 percent<br>Depth to restrictive feature: More than 80 inches<br>Natural drainage class: Very poorly drained<br>Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)<br>Depth to water table: About 0 to 12 inches<br>Frequency of flooding: Rare<br>Frequency of ponding: None<br>Available water storage in profile: High (about 9.6 inches)                     |
| Cx - Craven Loamy fine sand | H1 - 0 to 13 inches: loamy fine sand<br>H2 - 13 to 48 inches: sandy clay<br>H3 - 48 to 58 inches: sandy clay loam<br>H4 - 58 to 80 inches: sandy clay loam                            | Slope: 0 to 2 percent<br>Depth to restrictive feature: More than 80 inches<br>Natural drainage class: Moderately well drained<br>Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)<br>Depth to water table: About 18 to 42 inches<br>Frequency of flooding: None<br>Frequency of ponding: None<br>Available water storage in profile: Moderate (about 7.3 inches)                              |
| Oj - Ocilla complex         | H1 - 0 to 28 inches: loamy fine sand<br>H2 - 28 to 59 inches: sandy clay loam<br>H3 - 59 to 67 inches: sandy clay loam  | Slope: 0 to 2 percent<br>Depth to restrictive feature: More than 80 inches<br>Natural drainage class: Somewhat poorly drained<br>Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)<br>Depth to water table: About 12 to 30 inches<br>Frequency of flooding: None<br>Frequency of ponding: None<br>Available water storage in profile: Low (about 5.5 inches)                           |
| Pl - Pelham Loamy sand      | A - 0 to 6 inches: loamy sand<br>Eg - 6 to 33 inches: loamy sand<br>Btg1 - 33 to 41 inches: sandy loam<br>Btg2 - 41 to 66 inches: sandy clay loam<br>Cg - 66 to 80 inches: sandy loam | Slope: 0 to 2 percent<br>Depth to restrictive feature: More than 80 inches<br>Natural drainage class: Poorly drained<br>Runoff class: Very high<br>Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)<br>Depth to water table: About 0 to 12 inches<br>Frequency of flooding: Frequent<br>Frequency of ponding: None<br>Available water storage in profile: Moderate (about 6.2 inches) |
| Pn - Pooler fine sandy loam | H1 - 0 to 6 inches: fine sandy loam<br>H2 - 6 to 12 inches: sandy clay loam<br>H3 - 12 to 52 inches: clay<br>H4 - 52 to 72 inches: sandy clay loam                                    | Slope: 0 to 2 percent<br>Depth to restrictive feature: More than 80 inches<br>Natural drainage class: Poorly drained<br>Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)<br>Depth to water table: About 0 to 12 inches<br>Frequency of flooding: None<br>Frequency of ponding: None<br>Available water storage in profile: Moderate (about 8.7 inches)                      |
| Waf - Wahee sandy loam      | H1 - 0 to 11 inches: sandy loam<br>H2 - 11 to 56 inches: clay<br>H3 - 56 to 65 inches: sandy clay loam  | Slope: 0 to 2 percent<br>Depth to restrictive feature: More than 80 inches<br>Natural drainage class: Somewhat poorly drained<br>Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)<br>Depth to water table: About 6 to 18 inches<br>Frequency of flooding: None  |



### SOIL SUITABILITY: LOCAL ROADS AND STREETS

| MAP UNIT SYMBOL | MAP UNIT NAME          | RATING           |
|-----------------|------------------------|------------------|
| Cc              | Cape Fear soils        | Very limited     |
| Cx              | Craven loamy fine sand | Very limited     |
| Oj              | Ocilla complex         | Somewhat limited |
| Pl              | Pelham loamy sand      | Very limited     |
| Pn              | Pooler fine sandy loam | Very limited     |
| Waf             | Wahee sandy loam       | Very limited     |

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength, subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

A low depth to a water table causes spills on our site to be classified as limited for road construction. However, as this map shows, these soils are common to Richmond Hill. Because of this, we don't foresee needing any unique construction methods for building roads and streets on the site. Further, more detailed, investigation of the site will be needed as these maps only portray general conditions.



### SOIL SUITABILITY: DWELLINGS WITHOUT BASEMENTS + SMALL COMMERCIAL

| MAP UNIT SYMBOL | MAP UNIT NAME          | RATING           |
|-----------------|------------------------|------------------|
| Cc              | Cape Fear soils        | Very limited     |
| Cx              | Craven loamy fine sand | Not limited      |
| Oj              | Ocilla complex         | Somewhat limited |
| Pl              | Pelham loamy sand      | Very limited     |
| Pn              | Pooler fine sandy loam | Very limited     |

According to the Soil Conservation Service data, the dwellings and small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect

excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility.

A low depth to a water table causes spills on our site to be classified as limited for road construction. However, as this map shows, these soils are common to Richmond Hill. Because of this, we don't foresee needing any unique construction methods for building roads and streets on the site. Further, more detailed, investigation of the site will be needed as these maps only portray general conditions.

# 6. FINAL DESIGN CONCEPTS

## Final Design Concepts

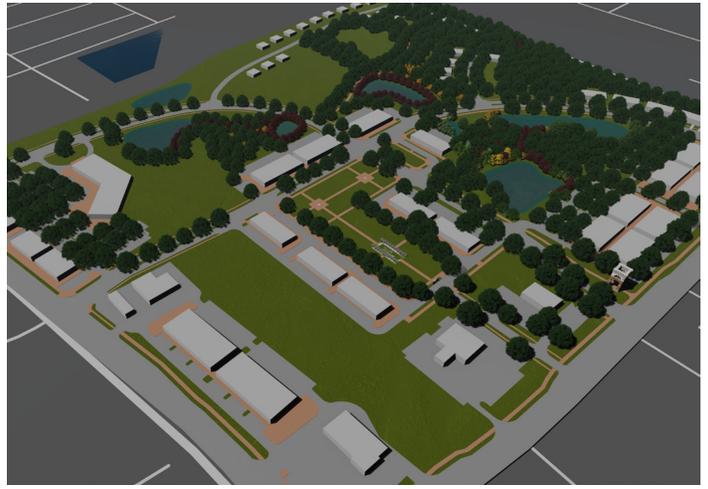
After receiving all the feedback and completing site analysis, we created four final design concepts. On December 7, 2018, we traveled down to Richmond Hill and presented the results of our semester-long study to city officials, the Downtown Development Authority, stakeholders, and property owners.







AERIAL SHOT FROM WEST CORNER OF 144



AERIAL SHOT NORTH CORNER INTERSECTION OF 144 AND 17



AERIAL SHOT FROM SOUTH CORNER OF 17



AERIAL SHOT FROM EAST CORNER



TOWN SQUARE GARDEN



TOWN SQUARE VIEW INTO CENTER



ENTRY FROM PEDESTRIAN TOWER



MAIN ENTRY PEDESTRIAN TOWER



TOWN CENTER SECONDARY ENTRY SIGNAGE



## RICHMOND HILL TOWN CENTER MASTER PLAN

CONCEPT A | DECEMBER 7, 2018

Kayla Bare, Caroline Brock, Sam Hentz Amber Ricks, Liangwei Yu



**UNIVERSITY OF  
GEORGIA**  
College of  
Environment + Design



**LEGEND**

- 1 SINGLE FAMILY RESIDENTIAL
- 2 TOWN HOMES
- 3 BOARDWALK TRAIL SYSTEM
- 4 CENTRAL PLAZA AREA
- 5 RETAIL/ RESTAURANTS
- 6 BIGBOX STORE
- 7 ENTRY / EXIT POINTS
- 8 HOTEL

**TABULAR DATA**

| Residential Units:      |                                   | Parking Count  |                       | Green Space_ (acreage) |                 |
|-------------------------|-----------------------------------|----------------|-----------------------|------------------------|-----------------|
| Single Family Detached  | 22 unit<br>(2025 SF each)         | Residential    | 116                   | % of Site              | 28 %            |
| Town Homes              | 9 B (36 units)<br>(5,000 SF each) | Retail         | 910                   | Wetlands               | 16.49 AC, 29.7% |
|                         |                                   | Restaurant     | 382                   | Easement               | 11 AC, 19.8%    |
|                         |                                   |                | (Shared)              | Retention Ponds        | 6 AC, 10.8%     |
|                         |                                   |                |                       | Open Green             | 22 AC, 39.7%    |
| <b>Commercial Uses:</b> |                                   | Total Required | 1292                  |                        |                 |
| Retail                  | 200,341 SF                        | Total Provided | 1114                  |                        |                 |
| Restaurant              | 51,787 SF                         | Deficient      | -178,                 |                        |                 |
|                         |                                   | Parking        | (Shared Parking Plan) |                        |                 |

**NARRATIVE**

The development works around the wetland and maximizes the useable space on the site. The roads give nice separation between residential and commercial uses. The retail establishments provide visibility and interest to cars on 144. This separation provides privacy for the homes on the site. The central retail district is adjacent to a large public green space at the core of the site. The entrances welcome traffic from 144 and 17 but the curving road slows cars down. The 'complete street' makes the development friendly towards pedestrians and bicyclists.



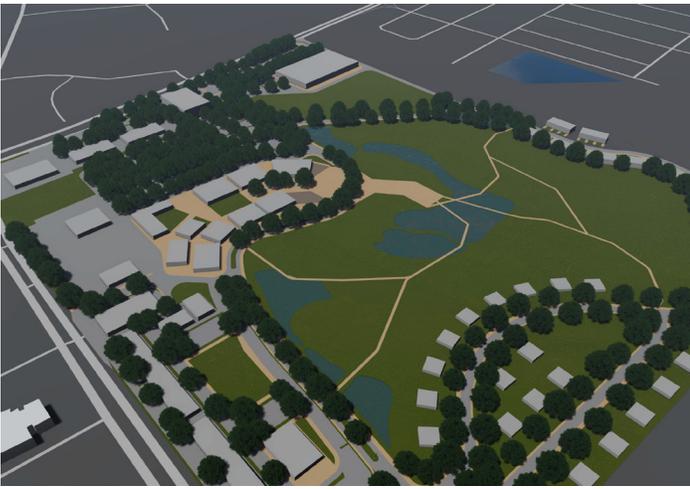
**RICHMOND HILL TOWN CENTER MASTER PLAN**

CONCEPT B | DECEMBER 7, 2018

Julia Alcorn, Jordan Fraser, Stuart Harriott, Peter Mastin, Diana Kim



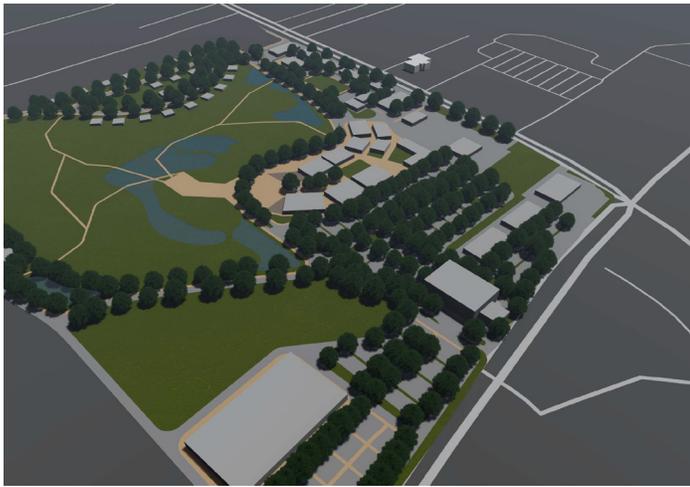
**UNIVERSITY OF GEORGIA**  
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VIEW FROM NORTHWEST CORNER



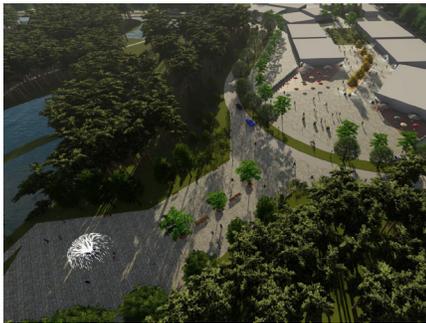
VIEW FROM NORTHEAST CORNER



VIEW FROM SOUTHEAST CORNER



VIEW FROM SOUTHWEST CORNER



VIEW OF CENTRAL PLAZA



VIEW OF SIGN IN MEDIAN



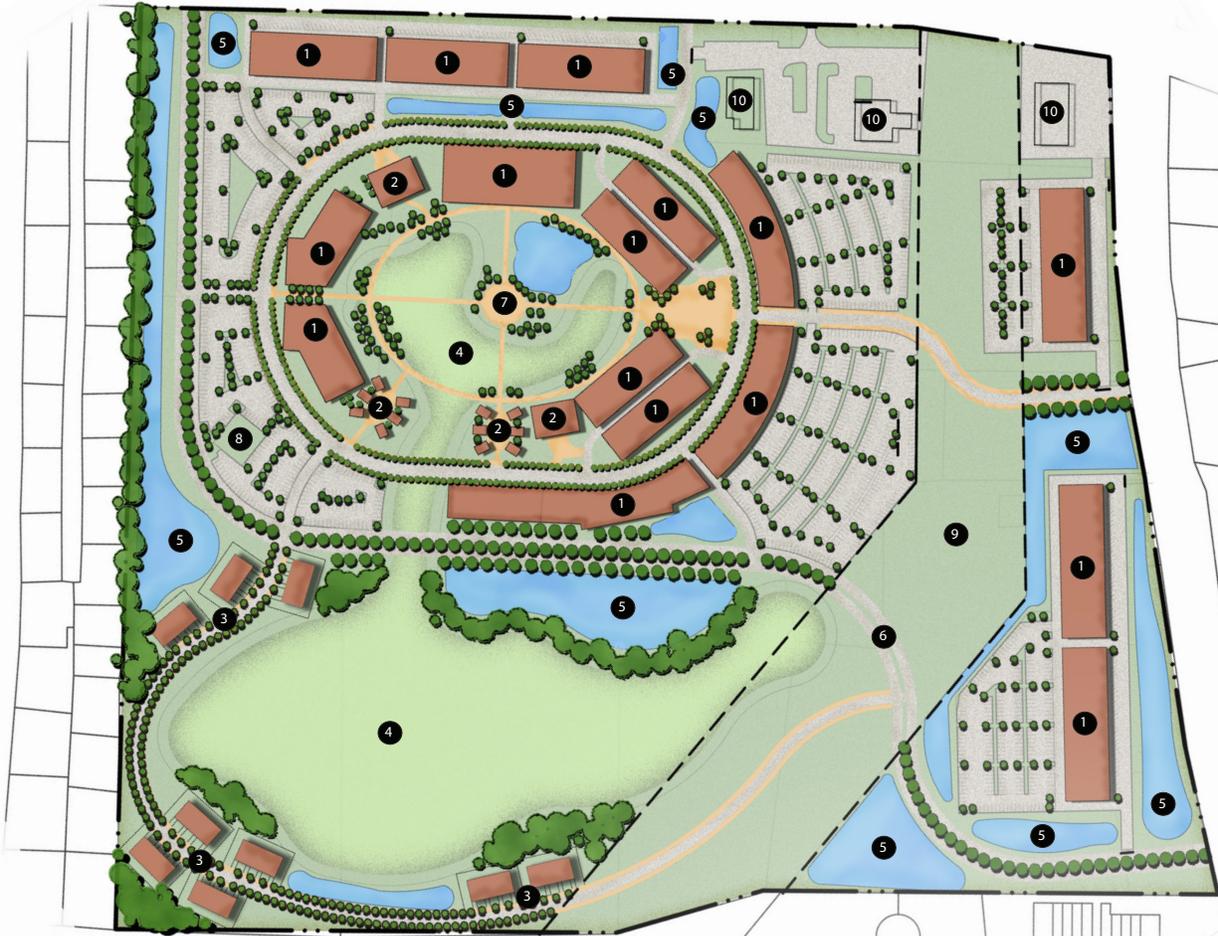
CLOSE UP VIEW OF CENTRAL PLAZA



VIEW OF MAIN ENTRY SIGN



VIEW OF SECONDARY SIGN



**LEGEND**

- 1 MIXED-USE
- 2 RESTAURANT
- 3 TOWN HOMES
- 4 WETLAND
- 5 DETENTION POND
- 6 BYPASS
- 7 BOARDWALKS
- 8 CELL TOWER
- 9 POWER EASEMENT
- 10 PRE-EXISTING BUILDINGS

**TABULAR DATA**

|                           |             |                      |                               |                  |
|---------------------------|-------------|----------------------|-------------------------------|------------------|
| <b>Residential Units:</b> |             | <b>Parking Count</b> | <b>Green Space_ (acreage)</b> | 64.8 AC          |
| Town Homes                | 36 units,   | Residential          | 72                            |                  |
|                           |             | Retail               | 1,494                         |                  |
|                           |             | Medical              | 234                           | % of Site        |
|                           |             | Office               | 317                           | 50.2%            |
| <b>Commercial Uses:</b>   |             |                      |                               | Wetlands         |
| Restaurant                | 17,600 SF   | Total Required       | 2,117                         | Easement         |
| Retail                    | 373, 729 SF | Total Provided       | 1,850                         | 5.1 AC, 15.49%   |
| Office                    | 95,000 SF   | Excess               |                               | 11.24 AC, 10.02% |
|                           |             | Parking              | -267                          |                  |
|                           |             | (Shared parking      |                               |                  |
|                           |             | agreements           |                               |                  |
|                           |             | between office,      |                               |                  |
|                           |             | restaurant and       |                               |                  |
|                           |             | retail)              |                               |                  |

**NARRATIVE**

For the city of Richmond Hill, we wanted to create a live-work-play environment complimented with ample greenspace. The design takes precedence from Downtown Disney, bringing a Coastal Urban feel to Richmond Hill. The downtown portion of the site centers around the existing wetland. To compliment this existing condition, we propose stocking the wetland with native, coastal plant species. A boardwalk will connect the retail buildings around this downtown core. Over 180,000 square feet of retail space will be added along the highway; thus, opportunity will be ripe for the taking. Lastly, townhomes will be added to the south-western portion of the site. This design creates the much wanted downtown space for Richmond Hill.



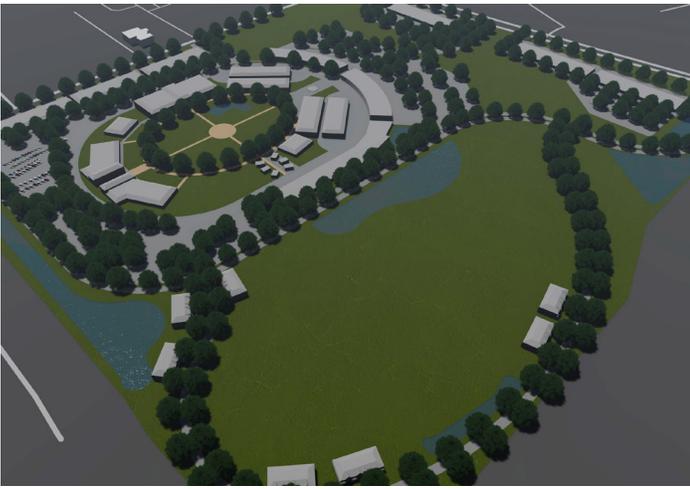
**RICHMOND HILL TOWN CENTER MASTER PLAN**

CONCEPT C | DECEMBER 7, 2018

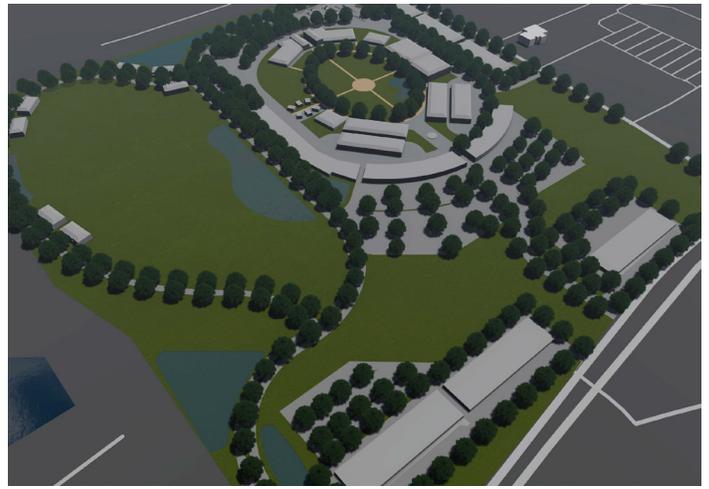
Benjamin Gladstone, Hunter Kim, Teresa Nguyen, Jonah Owens, Chris Rurka



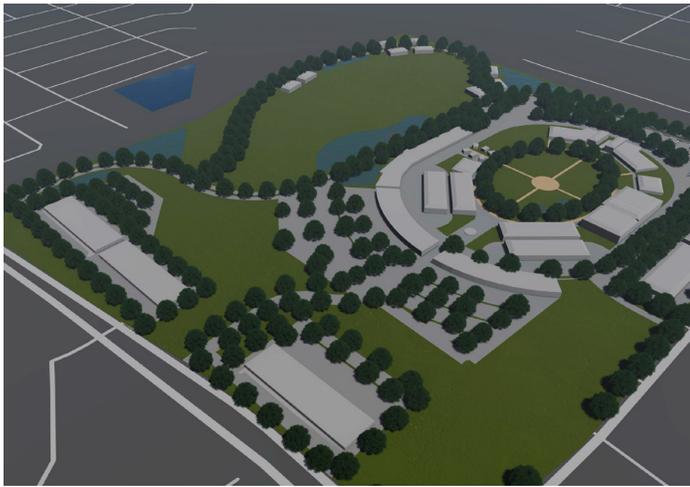
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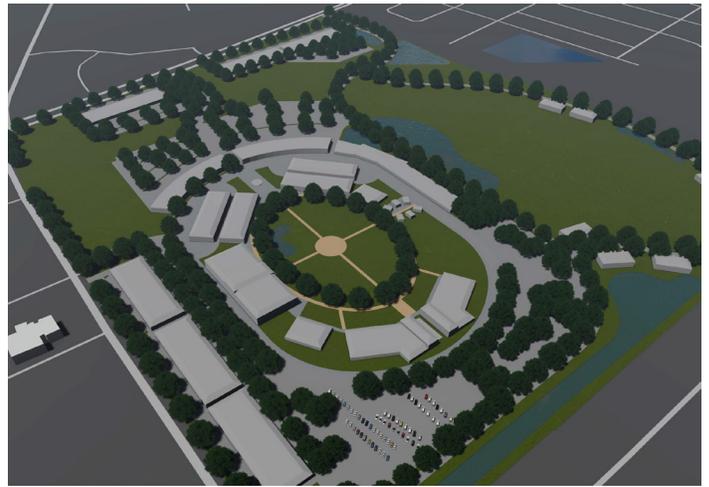
EAST-FACING AERIAL PERSPECTIVE



NORTH-FACING AERIAL PERSPECTIVE



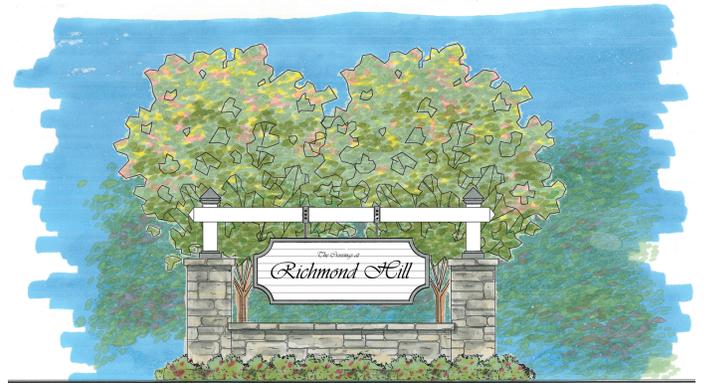
AERIAL SHOT AT THE CORNER OF HIGHWAY 17 & 144



SOUTH-FACING PERSPECTIVE



CENTRAL BOARDWALK PERSPECTIVE



PROPOSED ENTRANCE SIGN



**LEGEND**

- 1 RETAIL
- 2 RESTAURANT
- 3 TOWN HOME
- 4 SINGLE FAMILY HOMES
- 5 STORMWATER POND
- 6 WETLANDS
- 7 BOARDWALK PATH
- 8 CELL TOWER
- 9 POWER EASEMENT

**TABULAR DATA**

|                           |                               |                      |                       |                                 |                  |           |
|---------------------------|-------------------------------|----------------------|-----------------------|---------------------------------|------------------|-----------|
| <b>Residential Units:</b> |                               | <b>Parking Count</b> |                       | <b>Green Space... (acreage)</b> |                  | 46.855 AC |
| Single Family Detached    | 42 units, (2,025 SF each)     | Retail               | 1770                  | % of Site                       | 48.81%           |           |
| Town Homes                | 14 buildings, (5,000 SF each) | Restaurant           | 236                   | Wetlands                        | 14.64 AC, 15.25% |           |
| <b>Commercial Uses:</b>   |                               | Total Required       | 2373                  | Easement/Pasture                | 15.62 AC, 10.02% |           |
| Retail                    | 381,600 SF                    | Total Provided       | 2006                  | Retention Ponds                 | 9.10 AC, 9.48%   |           |
| Restaurant                | 45,489 SF                     | Deficient            | -367,                 | Forest                          | 6.52 AC, 6.79%   |           |
|                           |                               | Parking              | (Shared Parking Plan) |                                 |                  |           |

**NARRATIVE**

This design includes a large bypass for easy traffic flow while also utilizing the space surrounding the wetland and power easement. The plan includes a large retail area which lines the existing highways to attract passing traffic into the site. The plan also includes a scenic multi-restaurant space overlooking the naturalized area which divides the restaurant/retail portion of the site from the residential area. On the residential portion of the plan, there are 42 single family lots and 14 townhome buildings making best use of the space on the west side of the wetland protection area. This plan utilizes every part of the property in accordance to Richmond Hill's needs while also accounting for stormwater management, existing wetland conditions, parking, and bypass traffic.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

CONCEPT D | DECEMBER 7, 2018

Laurel Fox, Devin Butler, Allen McDonald, Mekinsey Bullock, and Stephen Brown



**UNIVERSITY OF GEORGIA**  
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AERIAL VIEW FROM THE CORNER OF HWY 144 AND HWY 17



NORTH FACING AERIAL PERSPECTIVE



EAST FACING AERIAL PERSPECTIVE



SOUTH FACING AERIAL PERSPECTIVE



PERSPECTIVE SHOWING THE BOARDWALK TRAIL THROUGH THE WETLANDS.



PROPOSED DESIGNS FOR ENTRY MONUMENTS

# 7. DEVELOPMENT PRO FORMAS

## *Development Pro formas*

Once our designs were complete, we prepared very high level pro forma analyses of each concept to determine profitability. Each pro forma was developed using some per acre development costs derived from comparable projects. We modeled possible income and expenses based on comparables. Finally, a five-year cash flow for the project was forecasted based on a 7.5% cap rate.

On the residential income statements, we also projected income using a larger-size housing product. This adjustment brought each of the scenarios closer to profitability.

# CONCEPT A

## Income Statement

Retail and Restaurant

| Income     |         | units           | \$/unit | cost        |
|------------|---------|-----------------|---------|-------------|
| Retail (a) | 303,588 | ft <sup>2</sup> | \$15.00 | \$4,553,820 |

### Expense

|                  |       | units | \$/unit | cost      |
|------------------|-------|-------|---------|-----------|
| cost of land (b) | 44.10 | acre  | \$8,800 | \$388,080 |

#### due diligence (c)

|              |       |      |          |          |
|--------------|-------|------|----------|----------|
| surveying    | 44.10 | acre | \$92.00  | \$4,057  |
| planning     | 44.10 | acre | \$151.00 | \$6,659  |
| enviromental | 44.10 | acre | \$91.54  | \$4,037  |
| permit       | 44.10 | acre | \$178.76 | \$7,883  |
| legal        | 44.10 | acre | \$314.00 | \$13,847 |

#### post acquisition costs (c)

|             |         |                 |            |              |
|-------------|---------|-----------------|------------|--------------|
| roads       | 4,605   | ft              | \$1,881.00 | \$8,662,446  |
| water       | 4,605   | ft              | \$101.02   | \$465,221    |
| sewer       | 4,605   | ft              | \$216.09   | \$995,145    |
| stormwater  | 4,605   | ft              | \$28.00    | \$128,947    |
| engineering | 44.10   | acre            | \$765.00   | \$33,737     |
| surveying   | 44.10   | acre            | \$1,017.00 | \$44,850     |
| retail      | 226,685 | ft <sup>2</sup> | \$162.68   | \$36,877,116 |
| restaurant  | 40,000  | ft <sup>2</sup> | \$212.78   | \$8,511,200  |
| medical     | 36903   | ft <sup>2</sup> | \$301.12   | \$11,112,231 |
| ammanities  | 44.10   | acre            | \$2,448.00 | \$107,957    |
| common area |         |                 |            | \$7,675,487  |

### Total

|                       |  |  |  |              |
|-----------------------|--|--|--|--------------|
| Total Income          |  |  |  | \$4,553,820  |
| Total Expense         |  |  |  | \$75,038,900 |
| Margin                |  |  |  | \$70,485,080 |
| Going in cap rate (d) |  |  |  | 6.07%        |

- (a) Rents based upon comparable research and verified in conversations with Bert Brown of Meadows, Inc. Rent rates are a median price of \$15 per sqft. Rents do not include MMM pass through of \$3.50 per sqft.  
 (b) Last cost was derived using comparables.  
 (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator (www.dcd.com).  
 (d) Cap rate was calculated by dividing total income by total expense.

# CONCEPT A

## Income Statement

Residential

| Income                            |         | units           |  | \$/unit | cost         |
|-----------------------------------|---------|-----------------|--|---------|--------------|
| multi family (a)                  | 30000   | ft <sup>2</sup> |  | \$156   | \$4,676,400  |
| SFR (a)                           | 34800   | ft <sup>2</sup> |  | \$142   | \$4,929,072  |
| Expense                           |         | units           |  | \$/unit |              |
| cost of land (b)                  | 10.80   | acre            |  | \$8,800 | \$95,040     |
| <u>due diligence (c)</u>          |         |                 |  |         |              |
| surveying                         | 10.8    | acre            |  | \$92    | \$994        |
| planning                          | 10.8    | acre            |  | \$151   | \$1,631      |
| enviromental                      | 10.8    | acre            |  | \$92    | \$989        |
| permit                            | 10.8    | acre            |  | \$179   | \$1,931      |
| legal                             | 10.8    | acre            |  | \$314   | \$3,391      |
| <u>post acquisition costs (c)</u> |         |                 |  |         |              |
| roads                             | 1127.81 | ft              |  | \$1,881 | \$2,121,415  |
| water                             | 1127.81 | ft              |  | \$101   | \$113,932    |
| sewer                             | 1127.81 | ft              |  | \$216   | \$243,709    |
| stormwater                        | 1127.81 | ft              |  | \$28    | \$31,579     |
| engineering                       | 10.8    | acre            |  | \$765   | \$8,262      |
| surveying                         | 10.8    | acre            |  | \$1,017 | \$10,984     |
| residential                       | 34800   | ft <sup>2</sup> |  | \$106   | \$3,680,100  |
| townhome                          | 30000   | ft <sup>2</sup> |  | \$116   | \$3,480,000  |
| ammenities                        | 10.8    | acre            |  | \$2,448 | \$26,438     |
| common area                       |         |                 |  |         | \$3,448,407  |
| <b>Total</b>                      |         |                 |  |         |              |
| Total Income                      |         |                 |  |         | \$9,605,472  |
| Total Expense                     |         |                 |  |         | \$22,874,273 |
| Margin                            |         |                 |  |         | \$13,268,801 |

## Income for 2750 ft <sup>2</sup> Home\*

|              |       | units           |  | \$/unit  | total        |
|--------------|-------|-----------------|--|----------|--------------|
| multi family | 30000 | ft <sup>2</sup> |  | \$155.88 | \$4,676,400  |
| SFR          | 79692 | ft <sup>2</sup> |  | \$141.64 | \$11,287,575 |
| Income       |       |                 |  |          | \$15,963,975 |
| Expense      |       |                 |  |          | \$22,874,273 |
| Margin       |       |                 |  |          | -\$6,910,298 |

\* Residential Income is generated from a 1200 ft<sup>2</sup> single family home.

Increasing this figure to 2750 ft<sup>2</sup> creates a positive return for the residential portion of the project.

- (a) Residential income was calculated using comparable sales prices for both single family and multi-family developments. Prices were converted to reflect cost per sqft and the total square footage of all units were used to calculate income.
- (b) Land cost was derived using comparables.
- (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator (www.dcd.com).

# CONCEPT A

## Common Area Expenses (a)

|                               |         | units     | \$/unit   | cost                |
|-------------------------------|---------|-----------|-----------|---------------------|
| cost of land (b)              | 41.10   | acre      | \$8,800   | \$361,680           |
| <u>due diligence (c)</u>      |         |           |           |                     |
| surveying                     | 41.10   | acre      | \$92      | \$3,781             |
| planning                      | 41.10   | acre      | \$151     | \$6,206             |
| enviromenta                   | 41.10   | acre      | \$92      | \$3,762             |
| permit                        | 41.10   | acre      | \$179     | \$7,347             |
| legal                         | 41.10   | acre      | \$314     | \$12,905            |
| <u>post acquisition costs</u> |         |           |           |                     |
| roads                         | 4291.95 | ft        | \$1,881   | \$8,073,164         |
| water                         | 4291.95 | ft        | \$101     | \$433,573           |
| sewer                         | 4291.95 | ft        | \$216     | \$927,448           |
| stormwater                    | 4291.95 | ft        | \$28      | \$120,175           |
| entrance                      | 4       | entrances | \$250,000 | \$1,000,000         |
| engineering                   | 41.1    | acre      | \$765     | \$31,442            |
| surveying                     | 41.1    | acre      | \$1,017   | \$41,799            |
| ammenities                    | 41.1    | acre      | \$2,448   | \$100,613           |
| <b>total</b>                  |         |           |           | <b>\$11,123,895</b> |

## Land Use Breakdown

|              | acres     | % of site |
|--------------|-----------|-----------|
| Retail       | 44.10     | 46%       |
| Residential  | 10.80     | 11%       |
| Common Area  | 41.10     | 43%       |
| <b>total</b> | <b>96</b> |           |

## Common Area Distribution

|                     | acres | total | % of total | cost distribution |
|---------------------|-------|-------|------------|-------------------|
| residential acerage | 16.3  | 53.34 | 31%        | \$3,448,407.39    |
| retail acerage      | 37.04 | 53.34 | 69%        | \$7,675,487.41    |
| developed Acerage   | 53.34 |       |            |                   |

- (a) For each concept, common area development costs were proportionally split among uses.  
 (b) Land cost was derived using comparables.  
 (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator ([www.dcd.com](http://www.dcd.com)).

# CONCEPT A

## Five Year Cash Flows

| year    | yr0          | yr1         | yr2         | yr3         | yr4         | yr5          | total        |
|---------|--------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Rent    |              | \$4,553,820 | \$4,553,820 | \$4,553,820 | \$4,553,820 | \$4,553,820  | \$22,769,100 |
| Sales*  |              | \$3,201,821 | \$3,201,821 | \$3,201,821 |             | \$60,717,600 | \$70,323,062 |
| total   |              | \$7,755,641 | \$7,755,641 | \$7,755,641 | \$4,553,820 | \$65,271,420 | \$93,092,162 |
| Expense | \$97,913,173 |             |             |             |             |              | \$97,913,173 |
| ROI     | 0.00%        | 7.92%       | 7.92%       | 7.92%       | 4.65%       | 66.66%       | 95.08%       |

## Five Year Profit

|         |              |
|---------|--------------|
| Income  | \$93,092,162 |
| Expense | \$97,913,173 |
| Margin  | -\$4,821,010 |
| ROI     | -4.92%       |

## Year Five Sale Price

|                    |              |
|--------------------|--------------|
| year 5 rent        | \$4,553,820  |
| going out cap rate | 7.5%         |
| sale price         | \$60,717,600 |

\* Assumes all residential lots and multifamily is sold off evenly across the first three years.

\*Year five sales price is calculated using the year 5 rent revenues and a going out cap rate of 7.5%

# CONCEPT B

## Income Statement

Retail and Restaurant

| Income |            | units           | \$/unit | cost        |
|--------|------------|-----------------|---------|-------------|
| Retail | 215,948.30 | ft <sup>2</sup> | \$15.00 | \$3,239,225 |

### Expense

|                               |         | units           | \$/unit    | cost          |
|-------------------------------|---------|-----------------|------------|---------------|
| cost of land                  | 37.04   | acre            | \$8,800    | \$ 325,952    |
| <u>due diligence</u>          |         |                 |            |               |
| surveying                     | 37.04   | acre            | \$92.00    | \$ 3,408      |
| planning                      | 37.04   | acre            | \$151.00   | \$ 5,593      |
| enviromental                  | 37.04   | acre            | \$91.54    | \$ 3,391      |
| permit                        | 37.04   | acre            | \$178.76   | \$ 6,621      |
| legal                         | 37.04   | acre            | \$314.00   | \$ 11,631     |
| <u>post acquisition costs</u> |         |                 |            |               |
| roads                         | 3,160   | ft              | \$1,881.00 | \$ 5,943,960  |
| water                         | 3,160   | ft              | \$101.02   | \$ 319,223    |
| sewer                         | 3,160   | ft              | \$216.09   | \$ 682,844    |
| stormwater                    | 3,160   | ft              | \$28.00    | \$ 88,480     |
| engineering                   | 37.04   | acre            | \$765.00   | \$ 28,336     |
| surveying                     | 37.04   | acre            | \$1,017.00 | \$ 37,670     |
| retail                        | 191,148 | ft <sup>2</sup> | \$162.68   | \$ 31,095,957 |
| restaurant                    | 24,800  | ft <sup>2</sup> | \$212.78   | \$ 5,276,944  |
| ammenities                    | 37.04   | acre            | \$2,448.00 | \$ 90,674     |
| common area                   |         |                 |            | \$ 7,260,110  |

### Total

|                   |  |     |            |
|-------------------|--|-----|------------|
| Total Income      |  | \$  | 3,239,225  |
| Total Expense     |  | \$  | 51,227,300 |
| Margin            |  | -\$ | 47,988,075 |
| Going in cap rate |  |     | 6.32%      |

- (a) Rents based upon comparable research and verified in conversations with Bert Brown of Meadows, Inc. Rent rates are a median price of \$15 per sqft. Rents do not include MMM pass through of \$3.50 per sqft.
- (b) Last cost was derived using comparables.
- (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator ([www.dcd.com](http://www.dcd.com)).
- (d) Cap rate was calculated by dividing total income by total expense.

# CONCEPT B

## Income Statement

Residential

| <b>Income</b>                     |       | units           |  | \$/unit  | cost         |
|-----------------------------------|-------|-----------------|--|----------|--------------|
| multi family (a)                  | 45000 | ft <sup>2</sup> |  | 155.88   | \$7,014,600  |
| SFR (a)                           | 26400 | ft <sup>2</sup> |  | 141.64   | \$3,739,296  |
| <b>Expense</b>                    |       | units           |  | \$/unit  |              |
| cost of land (b)                  | 16.3  | acre            |  | 8,800    | \$143,440    |
| <b>due diligence (c)</b>          |       |                 |  |          |              |
| surveying                         | 16.3  | acre            |  | 92.00    | \$1,500      |
| planning                          | 16.3  | acre            |  | 151.00   | \$2,461      |
| enviromental                      | 16.3  | acre            |  | 91.54    | \$1,492      |
| permit                            | 16.3  | acre            |  | 178.76   | \$2,914      |
| legal                             | 16.3  | acre            |  | 314.00   | \$5,118      |
| <b>post acquisition costs (c)</b> |       |                 |  |          |              |
| roads                             | 1533  | ft              |  | 1,881.00 | \$2,883,573  |
| water                             | 1533  | ft              |  | 101.02   | \$154,864    |
| sewer                             | 1533  | ft              |  | 216.09   | \$331,266    |
| stormwater                        | 1533  | ft              |  | 28.00    | \$42,924     |
| engineering                       | 16.3  | acre            |  | 765.00   | \$12,470     |
| surveying                         | 16.3  | acre            |  | 1,017.00 | \$16,577     |
| residential                       | 26400 | ft <sup>2</sup> |  | 105.75   | \$2,791,800  |
| townhome                          | 45000 | ft <sup>2</sup> |  | 116.00   | \$5,220,000  |
| ammenities                        | 16.3  | acre            |  | 2,448.00 | \$39,902     |
| common area                       |       |                 |  |          | \$3,261,789  |
| <b>Total</b>                      |       |                 |  |          |              |
| Total Income                      |       |                 |  |          | \$10,754,002 |
| Total Expense                     |       |                 |  |          | \$14,865,385 |
| Margin                            |       |                 |  |          | -\$4,111,383 |

### Income for 2750 ft<sup>2</sup> Home\*

|              |       | units           |  | \$/unit  | total        |
|--------------|-------|-----------------|--|----------|--------------|
| multi family | 45000 | ft <sup>2</sup> |  | \$155.88 | \$7,014,600  |
| SFR          | 60456 | ft <sup>2</sup> |  | \$141.64 | \$8,562,988  |
| Income       |       |                 |  |          | \$15,577,588 |
| Expense      |       |                 |  |          | \$14,865,385 |
| Margin       |       |                 |  |          | \$712,203    |

\* Residential Income is generated from a 1200 ft<sup>2</sup> single family home.

Increasing this figure to 2750 ft<sup>2</sup> creates a positive return for the residential portion of the project.

- (a) Residential income was calculated using comparable sales prices for both single family and multi-family developments. Prices were converted to reflect cost per sqft and the total square footage of all units were used to calculate income.
- (b) Land cost was derived using comparables.
- (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator ([www.dcd.com](http://www.dcd.com)).

# CONCEPT B

## Common Area Expenses (a)

|                               |       | units     | \$/unit      | cost                |
|-------------------------------|-------|-----------|--------------|---------------------|
| cost of land (b)              | 42.66 | acre      | \$8,800.00   | \$375,408           |
| <u>due diligence (c)</u>      |       |           |              |                     |
| surveying                     | 42.66 | acre      | \$92.00      | \$3,925             |
| planning                      | 42.66 | acre      | \$151.00     | \$6,442             |
| enviromental                  | 42.66 | acre      | \$91.54      | \$3,905             |
| permit                        | 42.66 | acre      | \$178.76     | \$7,626             |
| legal                         | 42.66 | acre      | \$314.00     | \$13,395            |
| <u>post acquisition costs</u> |       |           |              |                     |
| roads                         | 4012  | ft        | \$1,881.00   | \$7,546,229         |
| water                         | 4012  | ft        | \$101.02     | \$405,274           |
| sewer                         | 4012  | ft        | \$216.09     | \$866,914           |
| stormwater                    | 4012  | ft        | \$28.00      | \$112,331           |
| entrance                      | 4     | entrances | \$250,000.00 | \$1,000,000         |
| engineering                   | 42.66 | acre      | \$765.00     | \$32,635            |
| surveying                     | 42.66 | acre      | \$1,017.00   | \$43,385            |
| ammenities                    | 42.66 | acre      | \$2,448.00   | \$104,432           |
| <b>total</b>                  |       |           |              | <b>\$10,521,899</b> |

## Land Use Breakdown

|              | acres     | % of site |
|--------------|-----------|-----------|
| Retail       | 37.04     | 39%       |
| Residential  | 16.3      | 17%       |
| Common Area  | 42.66     | 44%       |
| <b>total</b> | <b>96</b> |           |

## Common Area Distribution

|                     | acres | total | % of total | cost distribution |
|---------------------|-------|-------|------------|-------------------|
| residential acerage | 16.3  | 53.34 | 31%        | \$3,261,789       |
| retail acerage      | 37.04 | 53.34 | 69%        | \$7,260,110       |
| developed Acerage   | 53.34 |       |            |                   |

- (a) For each concept, common area development costs were proportionally split among uses.  
 (b) Land cost was derived using comparables.  
 (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator ([www.dcd.com](http://www.dcd.com)).

# CONCEPT B

## Five Year Cash Flows

| year   | yr0 | yr1          | yr2          | yr3          | yr4          | yr5           | total         |
|--------|-----|--------------|--------------|--------------|--------------|---------------|---------------|
| Rent   |     | \$ 3,239,225 | \$ 3,239,225 | \$ 3,239,225 | \$ 3,239,225 | \$ 3,239,225  | \$ 16,196,123 |
| Sales* |     | \$ 3,584,664 | \$ 3,584,664 | \$ 3,584,664 |              | \$ 43,189,660 | \$ 53,943,651 |
| total  |     | \$ 6,823,888 | \$ 6,823,888 | \$ 6,823,888 | \$ 3,239,225 | \$ 46,428,885 | \$ 70,139,774 |

|         |                  |        |        |        |       |        |               |
|---------|------------------|--------|--------|--------|-------|--------|---------------|
| Expense | \$ 66,092,685.00 |        |        |        |       |        | \$ 66,092,685 |
| ROI     | 0.00%            | 10.32% | 10.32% | 10.32% | 4.90% | 70.25% | 106.12%       |

### Five Year Profit

|         |              |
|---------|--------------|
| Income  | \$70,139,774 |
| Expense | \$66,092,685 |
| Margin  | \$4,047,099  |
| ROI     | 6.12%        |

### Year five sale price

|                    |                  |
|--------------------|------------------|
| year 5 rent        | 3,239,224.50 \$  |
| going out cap rate | 7.50%            |
| sale price         | 43,189,660.00 \$ |

\* Assumes all residential lots and multifamily is sold off evenly across the first three years.

\*Year five sales price is calculated using the year 5 rent revenues and a going out cap rate of 7.5%

# CONCEPT C

## Income Statement

Retail and Restaurant

| Income                            |         | units           | \$/unit    | cost          |
|-----------------------------------|---------|-----------------|------------|---------------|
| Retail (a)                        | 535,925 | ft <sup>2</sup> | \$15.00    | \$8,038,875   |
| <b>Expense</b>                    |         |                 |            |               |
|                                   |         | units           | \$/unit    | cost          |
| cost of land (b)                  | 50.98   | acre            | \$8,800    | \$448,624     |
| <u>due diligence (c)</u>          |         |                 |            |               |
| surveying                         | 50.98   | acre            | \$92.00    | \$4,690       |
| planning                          | 50.98   | acre            | \$151.00   | \$7,698       |
| enviromental                      | 50.98   | acre            | \$91.54    | \$4,667       |
| permit                            | 50.98   | acre            | \$178.76   | \$9,113       |
| legal                             | 50.98   | acre            | \$314.00   | \$16,008      |
| <u>post acquisition costs (c)</u> |         |                 |            |               |
| roads                             | 5,811   | ft              | \$1,881.00 | \$10,930,846  |
| water                             | 5,811   | ft              | \$101.02   | \$587,046     |
| sewer                             | 5,811   | ft              | \$216.09   | \$1,255,740   |
| stormwater                        | 5,811   | ft              | \$28.00    | \$162,713     |
| engineering                       | 50.98   | acre            | \$765.00   | \$39,000      |
| surveying                         | 50.98   | acre            | \$1,017.00 | \$51,847      |
| retail                            | 468,729 | ft <sup>2</sup> | \$162.68   | \$76,252,834  |
| restaurant                        | 24,800  | ft <sup>2</sup> | \$212.78   | \$5,276,944   |
| medical                           | 42396   | ft <sup>2</sup> | \$301.12   | \$12,766,284  |
| amenities                         | 50.98   | acre            | \$2,448.00 | \$124,799     |
| common area                       |         |                 |            | \$8,753,603   |
| <b>Total</b>                      |         |                 |            |               |
| Total Income                      |         |                 |            | \$8,038,875   |
| Total Expense                     |         |                 |            | \$116,692,455 |
| Margin                            |         |                 |            | \$108,653,580 |
| Going in cap rate (d)             |         |                 |            | 6.89%         |

- (a) Rents based upon comparable research and verified in conversations with Bert Brown of Meadows, Inc. Rent rates are a median price of \$15 per sqft. Rents do not include MMM pass through of \$3.50 per sqft.  
 (b) Last cost was derived using comparables.  
 (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator (www.dcd.com).  
 (d) Cap rate was calculated by dividing total income by total expense.

# CONCEPT C

## Income Statement

Residential

| Income                     |        | units |  | \$/unit | cost         |
|----------------------------|--------|-------|--|---------|--------------|
| multi family (a)           | 54000  | ft^2  |  | \$156   | \$8,417,520  |
| SFR (a)                    | 43200  | ft^2  |  | \$142   | \$6,118,848  |
| Expense                    |        | units |  | \$/unit |              |
| cost of land (b)           | 7.98   | acre  |  | \$8,800 | \$70,224     |
| due diligence (c)          |        |       |  |         |              |
| surveying                  | 7.98   | acre  |  | \$92    | \$734        |
| planning                   | 7.98   | acre  |  | \$151   | \$1,205      |
| enviromental               | 7.98   | acre  |  | \$92    | \$730        |
| permit                     | 7.98   | acre  |  | \$179   | \$1,427      |
| legal                      | 7.98   | acre  |  | \$314   | \$2,506      |
| post acquisition costs (c) |        |       |  |         |              |
| roads                      | 909.64 | ft    |  | \$1,881 | \$1,711,027  |
| water                      | 909.64 | ft    |  | \$101   | \$91,892     |
| sewer                      | 909.64 | ft    |  | \$216   | \$196,563    |
| stormwater                 | 909.64 | ft    |  | \$28    | \$25,470     |
| engineering                | 7.98   | acre  |  | \$765   | \$6,105      |
| surveying                  | 7.98   | acre  |  | \$1,017 | \$8,116      |
| residential                | 43200  | ft^2  |  | \$106   | \$4,568,400  |
| townhome                   | 54000  | ft^2  |  | \$116   | \$6,264,000  |
| ammenities                 | 7.98   | acre  |  | \$2,448 | \$19,535     |
| common area                |        |       |  |         | \$3,215,354  |
| Total                      |        |       |  |         |              |
| Total Income               |        |       |  |         | \$14,536,368 |
| Total Expense              |        |       |  |         | \$30,719,655 |
| Margin                     |        |       |  |         | \$16,183,287 |

## Income for 2750 ft ^2 Home\*

|              |       | units |  | \$/unit  | total        |
|--------------|-------|-------|--|----------|--------------|
| multi family | 54000 | ft^2  |  | \$155.88 | \$8,417,520  |
| SFR          | 98928 | ft^2  |  | \$141.64 | \$14,012,162 |
| Income       |       |       |  |          | \$22,429,682 |
| Expense      |       |       |  |          | \$30,719,655 |
| Margin       |       |       |  |          | -\$8,289,973 |

\* Residential Income is generated from a 1200 ft^2 single family home.

Increasing this figure to 2750 ft^2 creates a positive return for the residential portion of the project.

- (a) Residential income was calculated using comparable sales prices for both single family and multi-family developments. Prices were converted to reflect cost per sqft and the total square footage of all units were used to calculate income.
- (b) Land cost was derived using comparables.
- (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator ([www.dcd.com](http://www.dcd.com)).

# CONCEPT C

## Common Area Expenses (a)

|                               |         | units     | \$/unit   | cost                |
|-------------------------------|---------|-----------|-----------|---------------------|
| cost of land (b)              | 37.04   | acre      | \$8,800   | \$325,952           |
| <u>due diligence (c)</u>      |         |           |           |                     |
| surveying                     | 37.04   | acre      | \$92      | \$3,408             |
| planning                      | 37.04   | acre      | \$151     | \$5,593             |
| enviromental                  | 37.04   | acre      | \$92      | \$3,391             |
| permit                        | 37.04   | acre      | \$179     | \$6,621             |
| legal                         | 37.04   | acre      | \$314     | \$11,631            |
| <u>post acquisition costs</u> |         |           |           |                     |
| roads                         | 3867.98 | ft        | \$1,881   | \$7,275,669         |
| water                         | 3867.98 | ft        | \$101     | \$390,743           |
| sewer                         | 3867.98 | ft        | \$216     | \$835,832           |
| stormwater                    | 3867.98 | ft        | \$28      | \$108,303           |
| entrance                      | 4       | entrances | \$250,000 | \$1,000,000         |
| engineering                   | 37.04   | acre      | \$765     | \$28,336            |
| surveying                     | 37.04   | acre      | \$1,017   | \$37,670            |
| ammenities                    | 37.04   | acre      | \$2,448   | \$90,674            |
| <b>total</b>                  |         |           |           | <b>\$10,123,821</b> |

## Land Use Breakdown

|              | acres     | % of site |
|--------------|-----------|-----------|
| Retail       | 50.98     | 53%       |
| Residential  | 7.98      | 8%        |
| Common Area  | 37.04     | 39%       |
| <b>total</b> | <b>96</b> |           |

## Common Area Distribution

|                     | acres | total | % of total | cost distribution |
|---------------------|-------|-------|------------|-------------------|
| residential acerage | 8.0   | 58.96 | 14%        | \$1,370,219       |
| retail acerage      | 50.98 | 58.96 | 86%        | \$8,753,603       |
| developed Acerage   | 59.0  |       |            |                   |

- (a) For each concept, common area development costs were proportionally split among uses.  
 (b) Land cost was derived using comparables.  
 (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator ([www.dcd.com](http://www.dcd.com)).

# CONCEPT C

## Five Year Cash Flows

| year    | yr0           | yr1          | yr2          | yr3          | yr4         | yr5           | total          |
|---------|---------------|--------------|--------------|--------------|-------------|---------------|----------------|
| Rent    |               | \$8,038,875  | \$8,038,875  | \$8,038,875  | \$8,038,875 | \$8,038,875   | \$40,194,375   |
| Sales*  |               | \$4,845,451  | \$4,845,451  | \$4,845,451  |             | \$107,185,000 | \$121,721,353  |
| total   |               | \$12,884,326 | \$12,884,326 | \$12,884,326 | \$8,038,875 | \$115,223,875 | \$161,915,728  |
| Expense | \$147,412,110 |              |              |              |             |               | \$ 147,412,110 |
| ROI     | 0.00%         | 8.74%        | 8.74%        | 8.74%        | 5.45%       | 78.16%        | 109.84%        |

## Five Year Profit

|         |               |
|---------|---------------|
| Income  | \$161,915,728 |
| Expense | \$147,412,110 |
| Margin  | \$14,503,618  |
| ROI     | 9.84%         |

## Year Five Sale Price

|                    |               |
|--------------------|---------------|
| year 5 rent        | \$8,038,875   |
| going out cap rate | 7.5%          |
| sale price         | \$107,185,000 |

\* Assumes all residential lots and multifamily is sold off evenly across the first three years.

\*Year five sales price is calculated using the year 5 rent revenues and a going out cap rate of 7.5%

# CONCEPT D

## Income Statement

Retail and Restaurant

| <b>Income</b> |         | units           | \$/unit | cost        |
|---------------|---------|-----------------|---------|-------------|
| Retail (a)    | 391,152 | ft <sup>2</sup> | \$15.00 | \$5,867,280 |

### Expense

|                  |       | units | \$/unit | cost      |
|------------------|-------|-------|---------|-----------|
| cost of land (b) | 27.40 | acre  | \$8,800 | \$241,120 |

#### due diligence (c)

|              |       |      |          |         |
|--------------|-------|------|----------|---------|
| surveying    | 27.40 | acre | \$92.00  | \$2,521 |
| planning     | 27.40 | acre | \$151.00 | \$4,137 |
| enviromental | 27.40 | acre | \$91.54  | \$2,508 |
| permit       | 27.40 | acre | \$178.76 | \$4,898 |
| legal        | 27.40 | acre | \$314.00 | \$8,604 |

#### post acquisition costs (c)

|             |         |                 |            |              |
|-------------|---------|-----------------|------------|--------------|
| roads       | 2,818   | ft              | \$1,881.00 | \$5,301,042  |
| water       | 2,818   | ft              | \$101.02   | \$284,695    |
| sewer       | 2,818   | ft              | \$216.09   | \$608,986    |
| stormwater  | 2,818   | ft              | \$28.00    | \$78,910     |
| engineering | 27.40   | acre            | \$765.00   | \$20,961     |
| surveying   | 27.40   | acre            | \$1,017.00 | \$27,866     |
| retail      | 349,943 | ft <sup>2</sup> | \$162.68   | \$56,928,727 |
| restaurant  | 41,209  | ft <sup>2</sup> | \$212.78   | \$8,768,451  |
| ammenities  | 27.40   | acre            | \$2,448.00 | \$67,075     |
| common area |         |                 |            | \$6,858,218  |

### Total

|                       |  |  |  |              |
|-----------------------|--|--|--|--------------|
| Total Income          |  |  |  | \$5,867,280  |
| Total Expense         |  |  |  | \$79,208,719 |
| Margin                |  |  |  | \$73,341,439 |
| Going in cap rate (d) |  |  |  | 7.41%        |

- (a) Rents based upon comparable research and verified in conversations with Bert Brown of Meadows, Inc. Rent rates are a median price of \$15 per sqft. Rents do not include MMM pass through of \$3.50 per sqft.  
 (b) Last cost was derived using comparables.  
 (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator ([www.dcd.com](http://www.dcd.com)).  
 (d) Cap rate was calculated by dividing total income by total expense.

## CONCEPT D

### Income statement

Residential

| Income                            |         | units           |  | \$/unit | cost         |
|-----------------------------------|---------|-----------------|--|---------|--------------|
| multi family (a)                  | 60000   | ft <sup>2</sup> |  | \$156   | \$9,352,800  |
| SFR (a)                           | 50400   | ft <sup>2</sup> |  | \$142   | \$7,138,656  |
| Expense                           |         | units           |  | \$/unit |              |
| cost of land (b)                  | 21.9    | acre            |  | \$8,800 | \$192,720    |
| <u>due diligence (c)</u>          |         |                 |  |         |              |
| surveying                         | 21.9    | acre            |  | \$92    | \$2,015      |
| planning                          | 21.9    | acre            |  | \$151   | \$3,307      |
| enviromental                      | 21.9    | acre            |  | \$92    | \$2,005      |
| permit                            | 21.9    | acre            |  | \$179   | \$3,915      |
| legal                             | 21.9    | acre            |  | \$314   | \$6,877      |
| <u>post acquisition costs (c)</u> |         |                 |  |         |              |
| roads                             | 2252.51 | ft              |  | \$1,881 | \$4,236,964  |
| water                             | 2252.51 | ft              |  | \$101   | \$227,548    |
| sewer                             | 2252.51 | ft              |  | \$216   | \$486,744    |
| stormwater                        | 2252.51 | ft              |  | \$28    | \$63,070     |
| engineering                       | 21.9    | acre            |  | \$765   | \$16,754     |
| surveying                         | 21.9    | acre            |  | \$1,017 | \$22,272     |
| residential                       | 50400   | ft <sup>2</sup> |  | \$106   | \$5,329,800  |
| townhome                          | 60000   | ft <sup>2</sup> |  | \$116   | \$6,960,000  |
| ammenities                        | 21.9    | acre            |  | \$2,448 | \$53,611     |
| common area                       |         |                 |  |         | \$3,215,354  |
| <b>Total</b>                      |         |                 |  |         |              |
| Total Income                      |         |                 |  |         | \$16,491,456 |
| Total Expense                     |         |                 |  |         | \$37,314,412 |
| Margin                            |         |                 |  |         | \$20,822,956 |

### Income for 2750 ft <sup>2</sup> home\*

|              |        | units           |  | \$/unit  | total         |
|--------------|--------|-----------------|--|----------|---------------|
| multi family | 60000  | ft <sup>2</sup> |  | \$155.88 | \$9,352,800   |
| SFR          | 115416 | ft <sup>2</sup> |  | \$141.64 | \$16,347,522  |
| Income       |        |                 |  |          | \$25,700,322  |
| Expense      |        |                 |  |          | \$37,314,412  |
| Margin       |        |                 |  |          | -\$11,614,089 |

\* Residential Income is generated from a 1200 ft<sup>2</sup> single family home.

Increasing this figure to 2750 ft<sup>2</sup> creates a positive return for the residential portion of the project.

- (a) Residential income was calculated using comparable sales prices for both single family and multi-family developments. Prices were converted to reflect cost per sqft and the total square footage of all units were used to calculate income.
- (b) Land cost was derived using comparables.
- (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator ([www.dcd.com](http://www.dcd.com)).

## CONCEPT D

### Common Area Expenses (a)

|                               |         | units     | \$/unit   | cost                |
|-------------------------------|---------|-----------|-----------|---------------------|
| cost of land (b)              | 46.70   | acre      | \$8,800   | \$410,960           |
| <u>due diligence (c)</u>      |         |           |           |                     |
| surveying                     | 46.70   | acre      | \$92      | \$4,296             |
| planning                      | 46.70   | acre      | \$151     | \$7,052             |
| enviromental                  | 46.70   | acre      | \$92      | \$4,275             |
| permit                        | 46.70   | acre      | \$179     | \$8,348             |
| legal                         | 46.70   | acre      | \$314     | \$14,664            |
| <u>post acquisition costs</u> |         |           |           |                     |
| roads                         | 4803.29 | ft        | \$1,881   | \$9,034,988         |
| water                         | 4803.29 | ft        | \$101     | \$485,228           |
| sewer                         | 4803.29 | ft        | \$216     | \$1,037,943         |
| stormwater                    | 4803.29 | ft        | \$28      | \$134,492           |
| entrance                      | 4       | entrances | \$250,000 | \$1,000,000         |
| engineering                   | 46.7    | acre      | \$765     | \$35,726            |
| surveying                     | 46.7    | acre      | \$1,017   | \$47,494            |
| amenities                     | 46.7    | acre      | \$2,448   | \$114,322           |
| <b>total</b>                  |         |           |           | <b>\$12,339,787</b> |

### Land Use Breakdown

|              | acres     | % of site |
|--------------|-----------|-----------|
| Retail       | 27.40     | 29%       |
| Residential  | 21.90     | 23%       |
| Common Area  | 46.70     | 49%       |
| <b>total</b> | <b>96</b> |           |

### Common Area Distribution

|                          | acres       | total | % of total | cost distribution |
|--------------------------|-------------|-------|------------|-------------------|
| residential acreage      | 21.9        | 49.30 | 44%        | \$5,481,569       |
| retail acreage           | 27.40       | 49.30 | 56%        | \$6,858,218       |
| <b>developed Acreage</b> | <b>49.3</b> |       |            |                   |

- (a) For each concept, common area development costs were proportionally split among uses.  
 (b) Land cost was derived using comparables.  
 (c) Development expenses were calculated using recent quotes on similar projects and the Design Cost Data estimator ([www.dcd.com](http://www.dcd.com)).

## CONCEPT D

### Five Year Cash Flows

| year    | yr0   | yr1           | yr2          | yr3          | yr4         | yr5          | total          |
|---------|-------|---------------|--------------|--------------|-------------|--------------|----------------|
| Rent    |       | \$5,867,280   | \$5,867,280  | \$5,867,280  | \$5,867,280 | \$5,867,280  | \$29,336,400   |
| Sales*  |       | \$5,497,147   | \$5,497,147  | \$5,497,147  |             | \$78,230,400 | \$94,721,840   |
| total   |       | \$11,364,427  | \$11,364,427 | \$11,364,427 | \$5,867,280 | \$84,097,680 | \$124,058,240  |
| Expense |       | \$116,523,131 |              |              |             |              | \$ 116,523,131 |
| ROI     | 0.00% | 9.75%         | 9.75%        | 9.75%        | 5.04%       | 72.17%       | 106.47%        |

### Five Year Profit

|         |               |
|---------|---------------|
| Income  | \$124,058,240 |
| Expense | \$116,523,131 |
| Margin  | \$7,535,109   |
| ROI     | 6.47%         |

### Year five sale price

|                    |              |
|--------------------|--------------|
| year 5 rent        | \$5,867,280  |
| going out cap rate | 7.5%         |
| sale price         | \$78,230,400 |

\* Assumes all residential lots and multifamily is sold off evenly across the first three years.

\*Year five sales price is calculated using the year 5 rent revenues and a going out cap rate of 7.5%

# 8. RECOMMENDATIONS

# Recommendations

## 8.1 PHASING PLANS

After coming up with final design concepts, each group created a phasing plan based on Richmond Hill's GAP analysis and the current financial state.

In essence, all of the phasing plans are identical: construct commercial along 144/17 while simultaneously building the bypass. Increased traffic through the site will create a demand for commercial on the interior.

Finally, once the mixed use component is complete, the residential development can proceed. Adjacency to the various shopping and entertainment areas will spur demand for a residential product on site.

## 8.2 FURTHER RECOMMENDATIONS

While the site certainly has good potential for a mixed-use development, there are several challenges and questions which must be answered prior to moving forward.

First, a conversation needs to take place with the existing property owners to determine a realistic price point and timeframe for selling their land.

Second, Richmond Hill needs to begin to find a developer with sufficient resources to undertake this type of project.

Third, the city should consider how to partner with a private development entity on constructing the bypass. As our proformas indicate, constructing the bypass road and its infrastructure would significantly affect the project's profitability. Cost sharing could create a very advantageous mutual benefit. It benefits both the city and developer.

Fourth, the residential component may need to be different than planned. Comparables have demonstrated that a larger single family home would improve the profitability of the project.

Finally, and most importantly, there needs to be a Phase I environmental delineation on the property. This will help accurately locate any wetland areas, and give further understanding of how it impacts future development.

## 8.3 RECOMMENDED PLANT PALETTE

Upon completing site analysis, we compiled a full list of trees, shrubs and wetland/pond plants that are native to the Richmond Hill area. These native trees and plants would be ideal to specify in the planting plan.



Concept A Phasing Plan recommends creating the bypass roads and building all development along Highway 17 and Highway 144. Once these phases are up and running, the bypass will make the interior of the site much more attractive due to increased traffic, leading to development of Phase 2 and 3.

**LEGEND**

- Phase 1
- Phase 2
- Phase 3

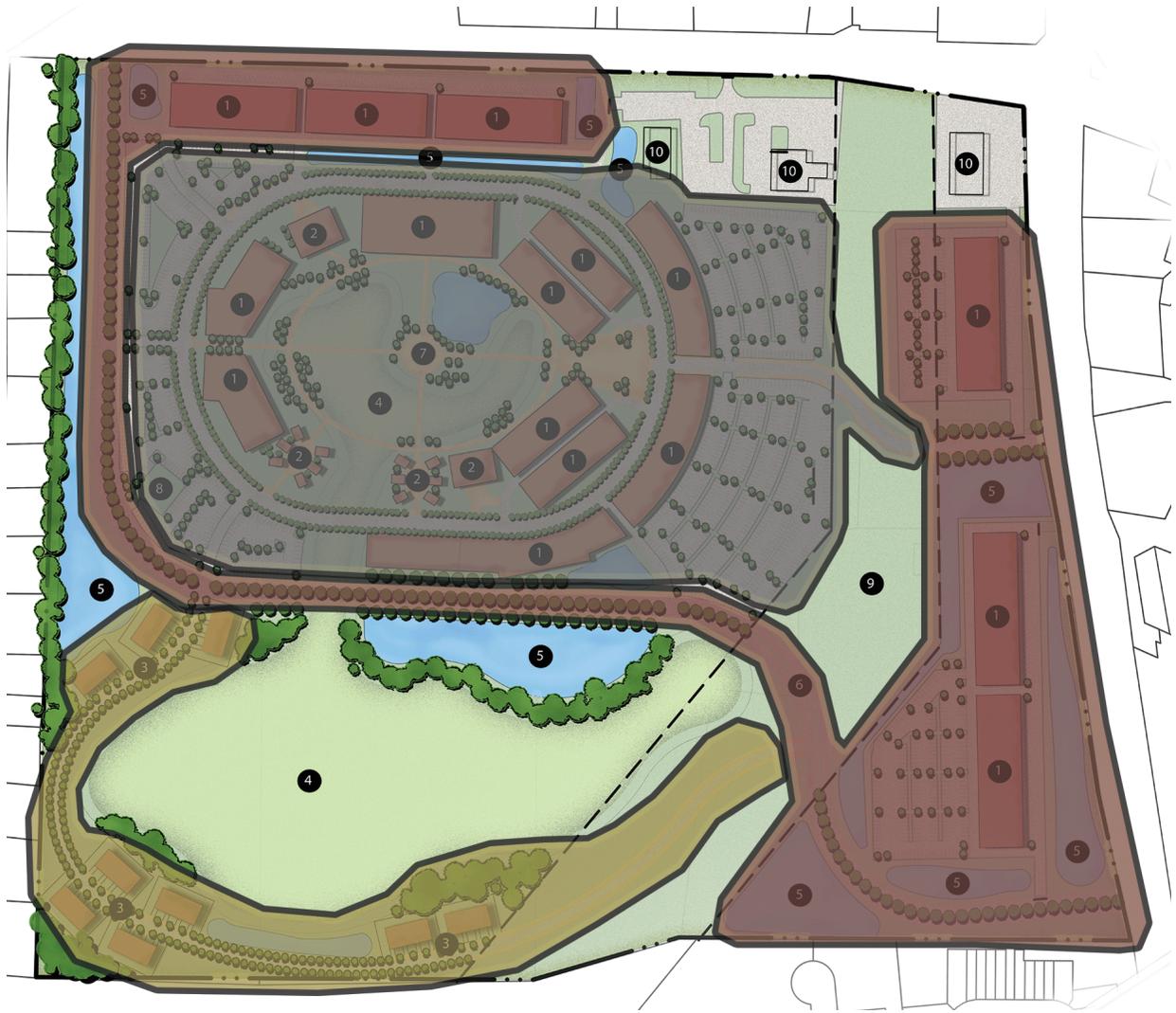


Concept B also proposes initially building the bypass roads and commercial properties along Highway 17 and Highway 144. Once the bypass begins generating an adequate amount of traffic, it will support the commercial development in the interior of the site.

Finally, the third phase consists of the residential components of the plan. The presence of commercial development and increased traffic through the site should help optimise return on residential development.

**LEGEND**

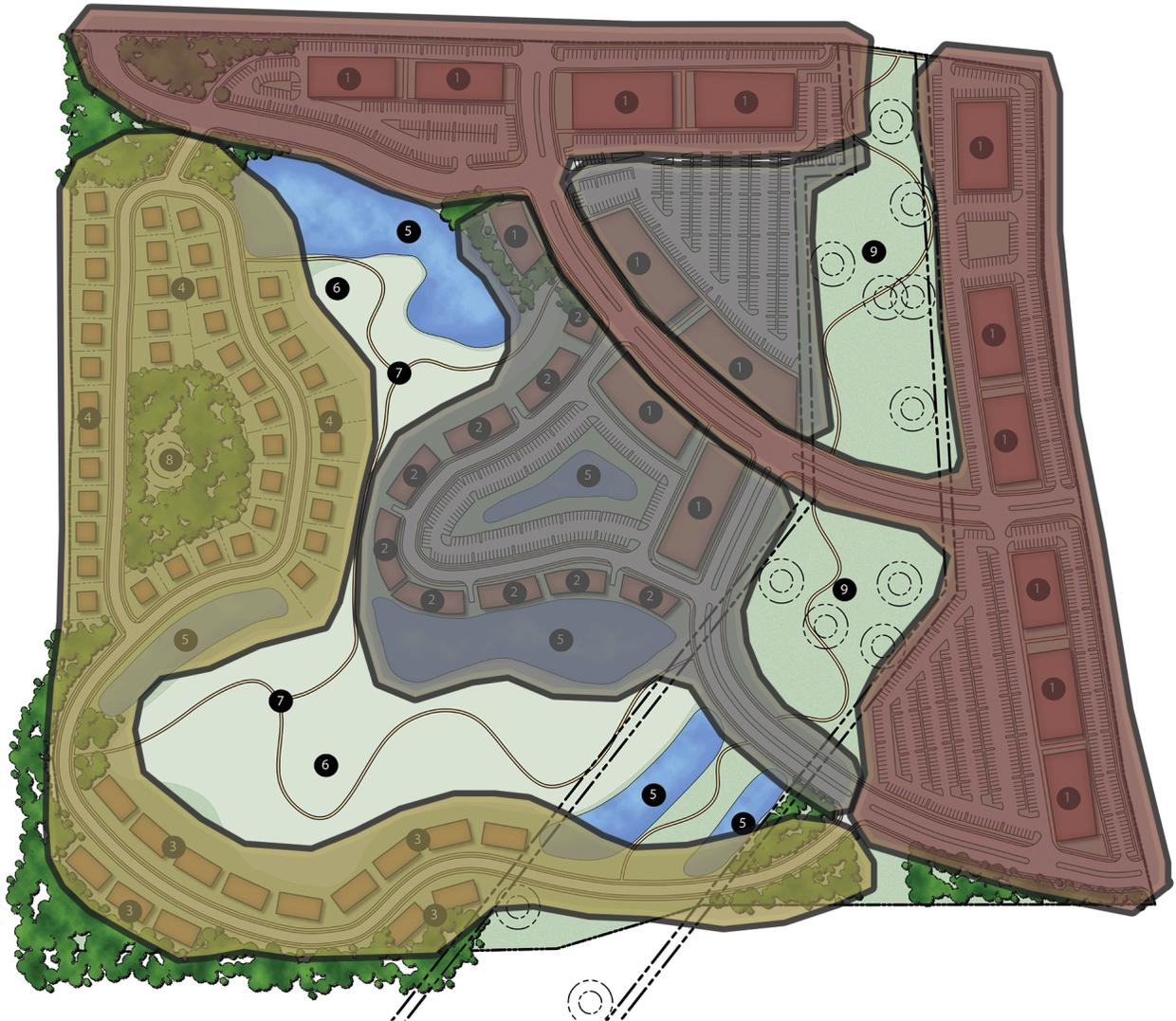
- Phase 1
- Phase 2
- Phase 3



Like the previous concepts, Concept C also develops commercial properties along the Highway 17 and Highway 144 frontage. It also recommends building bypass roads first to generate vehicle trips through the center of the site. Phase 2 is the interior commercial section. And, like the other concepts, residential development is last.

**LEGEND**

- Phase 1
- Phase 2
- Phase 3



Finally, Concept D follows a similar pattern to development as the other three concepts. Commercial properties on Highway 17 and 144 frontage and bypass road first, followed by interior commercial development, with residential development bringing up the rear.

**LEGEND**

- Phase 1
- Phase 2
- Phase 3

# PLANT MATERIAL RECOMMENDATIONS

The following pages contain recommendations on native plant species for the development.



American Beech



American Holly



Bald Cypress



Black Gum



Black Walnut



Chestnut Oak



Eastern Red Cedar



Green Ash



Laurel Oak



Live Oak



Loblolly Pine



Longleaf Pine



Palmetto Palm



Red Maple



River Birch



Southern Magnolia



Southern Red Oak



Spruce Pine



Sugarberry



Swamp Chestnut Oak



Sweetgum



Sycamore



Tulip Poplar



White Oak



Willow Oak

## MEDIUM/LARGE TREES NATIVE TO RICHMOND HILL

| COMMON NAME        | SCIENTIFIC NAME                | SIZE, HxW        | USES                    | OTHER  |
|--------------------|--------------------------------|------------------|-------------------------|--|
| American Beech     | <i>Fagus grandifolia</i>       | 50-80' x 40-60'  | shade/specimen tree     | no plant growth underneath it's canopy           |
| American Holly     | <i>Ilex opaca</i>              | 20-50' x 15-30'  | screening/specimen tree | fruit on female trees                            |
| Bald Cypress       | <i>Taxodium distichum</i>      | 60-100' x 40-50' | specimen tree           | too large for average residential landscapes     |
| Black Gum          | <i>Nyssa sylvatica</i>         | 70-80' x 40-50'  | specimen tree           | leaves color crimson red early in the fall       |
| Black Walnut       | <i>Juglans nigra</i>           | 75-100' x 50-75' | shade tree              | avoid parking lots and plants underneath         |
| Chestnut Oak       | <i>Quercus prinus</i>          | 50-70' x 50-60'  | shade/specimen tree     | deserving of greater landscape use               |
| Eastern Red Cedar  | <i>Juniperus virginiana</i>    | 40-50' x 8-20'   | specimen tree/screening | not shade tolerant                               |
| Green Ash          | <i>Fraxinus pennsylvanica</i>  | 50-60' x 25-30'  | popular shade tree      | upright, spreading habit                         |
| Laurel Oak         | <i>Quercus hemisphaerica</i>   | 60-80' x 60-80'  | shade/street tree       | prefers well-drained, sandy, loose soils         |
| Live Oak           | <i>Quercus virginiana</i>      | 40-80' x 60-100' | specimen tree           | foilage doesn't allow much sunlight beneath      |
| Loblolly Pine      | <i>Pinus taeda</i>             | 80-100' x 20-30' | specimen tree/screening | provides lightly-filtered shade                  |
| Longleaf Pine      | <i>Pinus palustris</i>         | 80-100' tall     | specimen tree           | provides filtered shade                          |
| Palmetto Palm      | <i>Sabal palmetto</i>          | 30-70' x 10-15'  | street/ specimen        | tropical look                                    |
| Red Maple          | <i>Acer rubrum</i>             | 40-50' x 24-35'  | shade tree              | prefers moist soils and full sun                 |
| River Birch        | <i>Betula nigra</i>            | 40-70' x 40-60'  | shade/specimen tree     | exfoliating bark                                 |
| Southern Magnolia  | <i>Magnolia grandiflora</i>    | 60-80' x 40-50'  | specimen tree/screening | leaf litter problem                              |
| Southern Red Oak   | <i>Quercus falcata</i>         | 50+' x 80+'      | shade/specimen tree     | grows well on dry sites and is fairly long-lived |
| Spruce Pine        | <i>Pinus glabra</i>            | 50-60' x 40-60'  | screening/specimen tree | wildlife food source                             |
| Sugarberry         | <i>Celtis laevigata</i>        | 50-70' x 50-70'  | long-lived shade tree   | prefers moist soils in full sun                  |
| Swamp Chestnut Oak | <i>Quercus michauxii</i>       | 50-100' x 25-50' | specimen/shade tree     | abundant acorn production                        |
| Sweetgum           | <i>Liquidambar styraciflua</i> | 80-100' x 40-50' | shade/specimen tree     | fruit production present maintenance problem     |
| Sycamore           | <i>Platanus occidentalis</i>   | 80-100' x 40-50' | shade/specimen tree     | showy plant with it's white bark                 |
| Tulip Poplar       | <i>Liriodendron tulipifera</i> | 80-100' x 30-40' | shade/specimen tree     | needs plenty of room for development             |
| White Oak          | <i>Quercus alba</i>            | 60-100' x 40-60' | shade tree              | foilage blue-green during summer                 |
| Willow Oak         | <i>Quercus phellos</i>         | 40-60' x 30-40'  | shade/specimen tree     | not a street tree                                |

## UNDERSTORY TREES NATIVE TO RICHMOND HILL



American  
Hornbeam



Bigleaf  
Snowbell



Carolina  
Buckthorn



Cherry Laurel



Downy  
Serviceberry



Flowering  
Dogwood



Grancy  
Greybeard



Loblolly Bay



Possumhaw



Red Bay



Sassafras



Southern Sugar  
Maple



Two-Winged  
Silverbell



Yaupon Holly

## UNDERSTORY TREES NATIVE TO RICHMOND HILL

| COMMON NAME           | SCIENTIFIC NAME               | SIZE, HxW       | USES                       | OTHER  |
|-----------------------|-------------------------------|-----------------|----------------------------|--|
| American Hornbeam     | <i>Carpinus caroliniana</i>   | 35-40' x 20-25' | specimen/street tree       | pleasing shape                                       |
| Bigleaf Snowbell      | <i>Styrax grandifolius</i>    | 20' x 10'       | understory tree            | grows along sandy stream banks                       |
| Carolina Buckthorn    | <i>Frangula caroliniana</i>   | 30-40' x 30-40' | excellent specimen tree    | slender branches and an open crown                   |
| Cherry Laurel         | <i>Prunus caroliniana</i>     | 15-30' x 10-20' | specimen tree/ screening   | adapts to a wide variety of sites                    |
| Downy Serviceberry    | <i>Amelanchier arborea</i>    | 15-25' x 15-20' | flowering/specimen tree    | full sun to light shade                              |
| Flowering Dogwood     | <i>Cornus florida</i>         | 15-20' x 15-30' | flowering tree             | produce fruit for birds and wildlife                 |
| Grancy-Greybeard      | <i>Chionanthus virginicus</i> | 15-25' x 15-25' | flowering specimen tree    | does better with good cultural practices             |
| Loblolly Bay          | <i>Gordonia lasianthus</i>    | 30-40' x 20-30' | screening/specimen tree    | mostly used in groupings of 3 and 5                  |
| Possumhaw             | <i>Ilex decidua</i>           | 12-15' x 8-10'  | specimen tree              | multi-stemmed but can be pruned as tree shape        |
| Red Bay               | <i>Persea borbonia</i>        | 20-40' x 15-20' | specimen tree              | evergreen tree with upright-oval form                |
| Sassafras             | <i>Sassafras albidum</i>      | 25-30' x 15-20' | specimen tree              | prefers moist, acid soils and full sun to part shade |
| Southern Sugar Maple  | <i>Acer barbatum</i>          | 35-40' x 25-35' | shade/specimen/street tree | prefers acid soils with adequate moisture            |
| Two-Winged Silverbell | <i>Halesia diptera</i>        | 25' x 15'       | specimen tree              | fall color pleasant yellow                           |
| Yaupon Holly          | <i>Ilex vomitoria</i>         | 12-20' x 8-12'  | specimen tree/ screening   | adapts to a wide variety of sites                    |

# DECIDUOUS SHRUBS NATIVE TO RICHMOND HILL



American  
Beautyberry



American  
Bladdernut



Arrowwood  
Viburnum



Blackhaw  
Viburnum



Bottlebrush  
Buckeye



Deerberry



Dwarf  
Fothergilla



Florida Azalea



Honeycup



Hoptree



Littlehip  
Hawthorn



Mapleleaf  
Viburnum



Mayberry



Oakleaf  
Hydrangea



Painted  
Buckeye



Pinckneya



Rabbiteye  
Blueberry



Red Buckeye



Serviceberry



Sparkleberry



Strawberry  
Bush



Sweet Shrub

## DECIDUOUS SHRUBS NATIVE TO RICHMOND HILL

| COMMON NAME          | SCIENTIFIC NAME               | SIZE, HxW | USES                          | OTHER                         |
|----------------------|-------------------------------|-----------|-------------------------------|-------------------------------|
| American Beautyberry | <i>Callicarpa americana</i>   | 6'x6'     | accent, mixed borders         | plant in groups               |
| American Bladdernut  | <i>Staphila trifolia</i>      | 20'x15'   | woodland edges,               | large palm leaves             |
| Arrowwood Viburnum   | <i>Viburnum dentatum</i>      | 6'x15'    | bogs, screen, hedges          | prefers moist soils           |
| Blackhaw Viburnum    | <i>Viburnum prunifolium</i>   | 15'x15'   | specimen tree                 | drought tolerant              |
| Bottlebrush Buckeye  | <i>Aesculus parviflora</i>    | 12'x15'   | specimen, broad shrub         | large upright blooms          |
| Deerberry            | <i>Vaccinium stamineum</i>    | 6'x12'    | mixed border, woodland        | high tolerance                |
| Dwaft Fothergilla    | <i>Fothergilla gardenii</i>   | 3'x3'     | mass planting, foundation     | prefers moist soils           |
| Florida azalea       | <i>Rhododendron austrinum</i> | 10'x6'    | shade shrub, specimen         |                               |
| Honeycup             | <i>Zenobia pulverulenta</i>   | 5'x5'     | mixed foundation planting     | moist soil, semi shaded       |
| Hoptree              | <i>Ptelea trifoliata</i>      | 15'x15'   | specimen plant                | can be understory             |
| Littlehip Hawthorn   | <i>Crataegus spathulata</i>   | 15'x12'   | shrub border, woodland edge   | tolerates wet soil            |
| Mapleleaf Viburnum   | <i>Viburnum acerifolium</i>   | 6'x10'    | dense shade, understory       | loose branching               |
| Mayberry             | <i>Vaccinium elliotii</i>     | 6'x6'     | screening in partial shade    | tolerates acidic pine soil    |
| Oakleaf Hydrangea    | <i>Hydrangea quercifolia</i>  | 8'x8'     | group planting, partial shade | thrives in shade, moist areas |
| Painted Buckeye      | <i>Aesculus sylvatica</i>     | 15'x10'   | specimen, naturalized areas   | prefers moist soils           |
| Pinckneya            | <i>pinckneya bracteata</i>    | 12'x12'   | specimen plant                | needs moist soil              |
| Rabbiteye blueberry  | <i>Vaccinium virgatum</i>     | 8'x5'     | shrub, border, full sun       | prefers full sun              |
| Red Buckeye          | <i>Aesculus pavia</i>         | 12'x10'   | flowering shrub               | drought tolerant              |
| Strawberry Bush      | <i>Euonymus americanus</i>    | 5'x3'     | forest, shade settings        | unique pink fruit             |
| Sweetshrub           | <i>Calycanthus floridus</i>   | 8'x6'     | specimen, shrub border        | fragrance, fall color         |

## EVERGREEN SHRUBS NATIVE TO RICHMOND HILL



American Holly



Buckwheat Tree



Drooping  
Leucothoe



Dwarf Palmetto



Florida Anise



Gallberry/  
Inkberry



Groundsel bush



Yaupon Holly



Mountain  
Laurel



Needle Palm



River Cane



Saw Palmetto



Southern Wax  
Myrtle



Yellow Anise



Yucca Adam's  
Needle

## DECIDUOUS SHRUBS NATIVE TO RICHMOND HILL

| COMMON NAME         | SCIENTIFIC NAME               | SIZE, HxW | USES                              | OTHER                         |
|---------------------|-------------------------------|-----------|-----------------------------------|-------------------------------|
| American Holly      | <i>Illex opaca</i>            | 20'x15'   | specimen, screening               | full sun, screening           |
| Buckwheat Tree      | <i>Cliftonia monophylla</i>   | 15'x12'   | screening, specimen               | full sun                      |
| Drooping Leucothoe  | <i>Leucothoe fontanesiana</i> | 6'x6'     | mass planting, backdrop           | prefers moist soils           |
| Dwarf palmetto      | <i>Sabal minor</i>            | 5'x5'     | groupplanting, tolerant           | tropical look, high tolerance |
| Florida anise       | <i>Illicium floridanum</i>    | 10'x5'    | shade specimen                    | requires pruning              |
| Gallberry/Inkberry  | <i>Ilex glabra</i>            | 6'x6'     | mass planting                     | wildlife plant                |
| Groundsel bush      | <i>Baccharis halimifolia</i>  | 10'x10'   | specimen, shrub border, dry spots | drought tolerant              |
| Yaupon Holly        | <i>Ilex vomitoria</i>         | 20'x20'   | shrub, screen                     | tolerant                      |
| Mountain Laurel     | <i>Kalmia latifolia</i>       | 15'x10'   | specimen, understory massing      | prefers moist soils           |
| Needle Palm         | <i>Rhapidophyllum hystrix</i> | 10'x10'   | single, specimine                 | very hardy palm               |
| River Cane          | <i>Arundinaria gigantea</i>   | 10'x20'   | Naturalized, screen, pond         | native bamboo                 |
| Saw Palmetto        | <i>Serenoa repens</i>         | 5'x5'     | hedge, barrier plant              | drought tolerant              |
| Southern Wax Myrtle | <i>Morella cerifera</i>       | 15'x15'   | screening, hedge, specimen tree   | tolerant                      |
| Yellow Anise        | <i>Illicium parviflorum</i>   | 15'x10'   | screening, hedge                  | full sun                      |
| Yucca Adam's Needle | <i>Yucca filamentosa</i>      | 4'x3'     | borders, dray spaces, sloped      | tolerant                      |

# WETLAND/POND PLANTS NATIVE TO RICHMOND HILL



Arrow Arum



Arrow Head Plant



Beebalm



Black Eyed Susan



Duck Potato



Foam Flower



Goldenrod



Joe-Pye Weed



Lizards tail



Lotus Plant



River Cane



Smartweed



Squirrel Cord



Swamp Hibiscus



Water Willow

## WETLAND/POND PLANTS NATIVE TO RICHMOND HILL

| COMMON NAME      | SCIENTIFIC NAME                 | SIZE              | USES                   | OTHER                  |
|------------------|---------------------------------|-------------------|------------------------|------------------------|
| Arrow Arum       | <i>Peltandra virginica</i>      | 2' tall spreading | pond plant, wetland    | in pond                |
| Arrow Head Plant | <i>Sagittaria latifolia</i>     | 4' x 2'           | pond plant, wetland    | in pond                |
| Beebalm Plant    | <i>Monarda didyma</i>           | 3' x 1'           | flower bed, wetland    |                        |
| Black Eyed Susan | <i>Rudbeckia hirta</i>          | 3' x 1'           | flower bed, wetland    |                        |
| Duck Potato      | <i>Sagittaria latifolia</i>     | 4' tall spreading | pond plant, wetland    | in pond                |
| Foam Flower      | <i>Tiarella cordifolia</i>      | 1' x 1'           | wetland border         |                        |
| Goldenrod        | <i>Solidago gattingeri</i>      | 6' x 3'           | wetland, meadow        |                        |
| Joe-Pye Weed     | <i>Eutrochium fistulosum</i>    | 6' x 3'           | wetland, flower bed    |                        |
| Lizards Tail     | <i>Saururus cernuus</i>         | 2' x 2'           | pond plant, wetland    | in pond                |
| Lotus plant      | <i>Nelumbo nucifera</i>         | 8' x 6'           | pond plant only        | no deeper than 6 ft    |
| River Cane       | <i>Arundinaria gigantea</i>     | 8' x 6'           | wetlands, pond borders |                        |
| Smartweed        | <i>Polygonum pennsylvanicum</i> | 4' spreading      | wetlands, ponds        | great for ducks, birds |
| Squirrel Corn    | <i>Dicentra canadensis</i>      | 1' x 6"           | wetlands, meadows      |                        |
| Swamp Hibiscus   | <i>Hibiscus coccineus</i>       | 10' x 6'          | pond, wetland          | in pond                |
| Water Willow     | <i>Justicia americana</i>       | 4' x 2'           | pond, wetlands         | in po                  |

# 9. APPENDIX

# *Appendix*

## **9.1 BOOKLET IMAGE CITATIONS**

## **9.2 PRECEDENT STUDIES**

## **9.3 INITIAL DESIGN CONCEPTS**

## **9.4 PRO FORMA COMPARABLES**

# 9.1

## BOOKLET IMAGE CITATIONS

# Appendix

## BOOKLET IMAGE CITATIONS

[https://en.wikipedia.org/wiki/Richmond\\_Hill,\\_Georgia](https://en.wikipedia.org/wiki/Richmond_Hill,_Georgia)

1. Photo by Teresa Nguyen
2. Photo by Donnie Longenecker
3. <https://www.exploregeorgia.org/city/richmond-hill>
4. <https://coastalcourier.com/coastal-living/iceberg-lettuce-is-se-georgia-staple/>
5. <http://www.ma-architects.com/portfolio/easton-town-center>
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15. Drawn by Ben Gladstone
16. <http://fulcrumconstruction.com/projects/victoria-gardens-monet-ave-2-0-rancho-cucamonga-ca/>
17. <http://www.christiebeniston.com/victorianew-gallery/>
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21. <https://jbpix.com/2011/03/07/jessie-michaels-cohen-at-mercato/>
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23. <https://www.mercatoshops.com/pdfs/directoryMap.pdf>

# 9.2 PRECEDENT STUDIES

The following pages contain summaries of all the mixed use projects we studied as possible precedents for this project.

# KINGSLEY

Fort Mill, SC

Kingsley is a 50-acre mixed-use development located just 25 minutes South of Charlotte.

The site includes retail shops, restaurants, recreational facilities, hotel accommodations, and apartments while maintaining a walkable complete-street environment. Kingsley prides itself in honoring the textile industry that once occupied this area.

## CITY OF FORT MILL, SC

POPULATION  
96,210

AVERAGE HOUSEHOLD INCOME  
\$103,230



1

## ELEMENTS

- Complete Streets
- Water Features
- Street-scene Dining
- Hotel Accommodations
- Office Complex
- Outdoor Amphitheater

## LAND USE

- RETAIL - 19%
- HOTEL - 5%
- RESTAURANTS - 8%
- OFFICE - 8%

- STREET/PARKING - 37%
- OPEN SPACE - 16%
- WATER - 7%

TOTAL AREA - 51 ACRES

## STRENGTHS

- Aesthetically pleasing
- Walkable Streets
- Honors Textile Industry

## WEAKNESSES

- Not Enough Parking
- Poor Vehicular Access
- Lacks a Wide Range of Tenants

## PRECEDENT STUDIES

PAGE 95

# STORRS CENTER

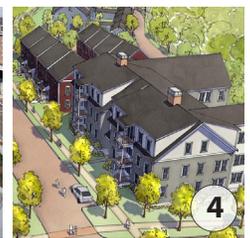
Hartford, CT

Storrs Center lies just steps away from the University of Connecticut. This mixed-use development provides student housing, commercial services, restaurants, and more. It's proximity to the University solidifies its usefulness and success.

## CITY OF HARTFORD, CT

POPULATION  
124,320

AVERAGE HOUSEHOLD INCOME  
\$32,095



## ELEMENTS

- Compact Development
- University Housing
- Children's Learning Center
- Greek Orthodox Church
- Large Supermarket
- Main Town Square

## LAND USE

|                 |                             |
|-----------------|-----------------------------|
| RETAIL - 23%    | PARKING: 235,200 SQ. FT.    |
| MIXED USE - 48% | NATURE PRESERVE: 20.5 ACRES |
| OFFICE - 2%     |                             |
| CULTURAL - 2%   |                             |
| EDUCATION - 2%  | TOTAL AREA - 47.7 ACRES     |

## STRENGTHS

- Compact and walkable
- Many retail and restaurant options
- Close proximity to a university

## WEAKNESSES

- Lack of mature trees
- Not enough variety in building styles
- Too many tall buildings causes a loss of the sense of human scale.

# FAIRFAX CORNER

Fairfax, VA

Fairfax Corner is a mixed-use shopping center planned to have a traditional “main street” feeling. It offers a range of style shopping at both national chains and local boutiques. It also hosts a state of the art movie theater and a variety of chain and local restaurants. Fairfax Corner combines rentable office space and residential living to make it an ideal place to live, work, eat and shop.

## CITY OF FAIRFAX, VA

POPULATION  
23,620

AVERAGE HOUSEHOLD INCOME  
\$104,065



## ELEMENTS

- Assorted Dining Options
- Theatre
- Public Plaza with Spash Pad and Stage
- Pedestrian-Centered Design
- Upscale Shops
- Apartments
- Office Spaces
- Numerous Medical Practices

## LAND USE

- RETAIL - 7%
- RESIDENTIAL - 6%
- DINING- 3%
- CINEMA - 4%
- STREETS/PARKING - 61%
- PEDESTRIAN SPACE - 13%
- GREEN/OPEN SPACE - 6%
- TOTAL AREA - 34.8 ACRES

## STRENGTHS

- Public plaza is a nice central location
- Pedestrian-friendly
- Wide range of options and activities

## WEAKNESSES

- Lack of usable greenspace
- Amount of parking is disruptive
- Newer addition to development feels detached from original center

# NATIONAL HARBOR

Prince George's County, MD

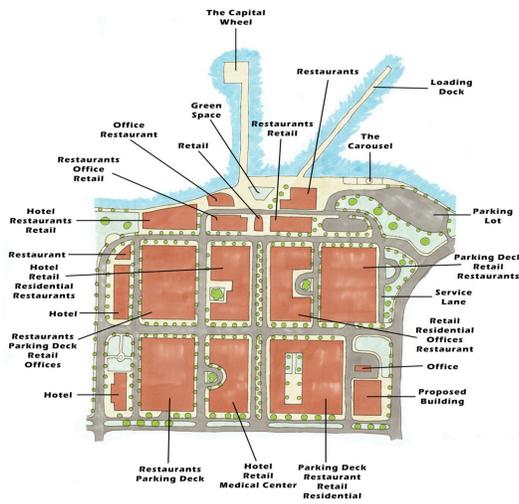
National Harbor is a successful multi-use waterfront development that is based on a grid system, which allows easy circulation for residents and visitors. Numerous of retail stores, restaurants and hotels are surrounded by public space or green areas located within the streets of National Harbor. Along the banks of the Potoma River are dining areas, outdoor public art, entertainment venues and an observation wheel that provides fun for all ages.



## CITY OF PRINCE GEORGE'S COUNTY, MD

POPULATION  
4,279

AVERAGE HOUSEHOLD INCOME  
\$70,595



5

### ELEMENTS

- Grid Street Design
- Outdoor Public Art
- Waterfront Dining
- Entertainment Venues
- The Capital Wheel

### LAND USE

- RETAIL - 15%
- OFFICE - 3.5%
- CIVIC - 1.5%
- RESTAURANTS - 20%
- STREET/PARKING - 35%
- OPEN SPACE - 15%
- STREETSCAPES - 10%
- TOTAL AREA - 350 ACRES

### STRENGTHS

- Pleasant views and attractions
- Pedestrian-friendly
- Plenty of entertainment venues

### WEAKNESSES

- Parking decks seem overwhelming
- No good size green space
- Development scale too large

# WASHINGTON TOWN CENTER

Robbinsville, NJ

Also known as Robbinsville Town Center, this development is the first neo-traditional planned community in the state of New Jersey. Designed to be pedestrian oriented, residences are located within walking or biking distance to mixed use and retail areas. Small green spaces are spotted throughout the development to serve as shared open space for the residents.

## CITY OF ROBBINSVILLE, NJ

POPULATION  
48,405

AVERAGE HOUSEHOLD INCOME  
\$100,932



## ELEMENTS

- Mixed-Use and Retail Frontage
- Green Spaces
- Residential Areas
- Complete Streets
- Consistent Building Styles



## LAND USE

|                   |                      |
|-------------------|----------------------|
| RETAIL - 1.4%     | RESIDENTIAL- 44.2%   |
| MIXED USE - 2.35% | GREEN SPACE - 52.05% |

TOTAL AREA - 144 ACRES

## STRENGTHS

- Variety of restaurants and retail
- Pedestrian-friendly
- Village aesthetic throughout

## WEAKNESSES

- Lacking adequate parking space
- Lacking mature trees

# SANTANA ROW

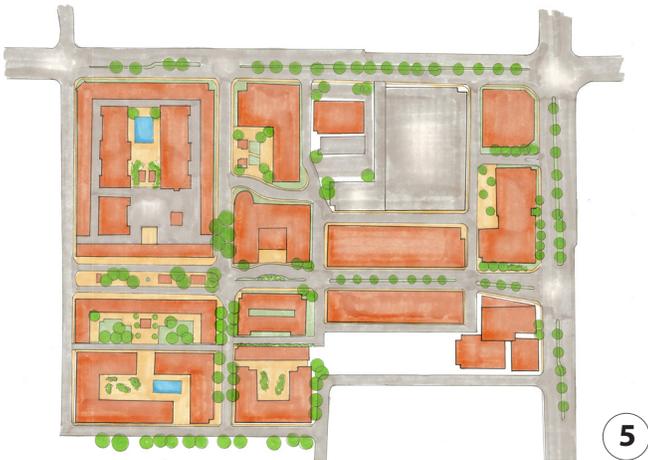
San Jose , CA

Santana Row is an upscale multi-use development offering the finest in shopping, dining, and living. Located in San Jose, CA, this development offers a pedestrian friendly, bustling community for both locals and tourists.

## CITY OF SAN JOSE, CA

POPULATION  
1.025 MILLION

AVERAGE HOUSEHOLD INCOME  
\$110, 040



## LAND USE

|                                   |                           |
|-----------------------------------|---------------------------|
| RETAIL - 8.2%                     | STREET/PARKING - 21 %     |
| OFFICE - 0.8%                     | OPEN SPACE - 7.3%         |
| RESIDENTIAL OVER<br>RETAIL- 19.3% | STREETSCAPES - 21.8%      |
| OFFICE OVER RETAIL-<br>3.7 %      | RESIDENTIAL- 17%          |
| RESTAURANT - 0.8%                 | TOTAL AREA - 22.152 ACRES |

## STRENGTHS

- Aesthetically pleasing
- Pedestrian-friendly
- Successful sequence of space

## WEAKNESSES

- Lack of centralized green space
- Large buildings may be out of human scale

## ELEMENTS

Main Street Design  
High-end Shopping and Dining  
High-end Residential  
Hotel

5

## PRECEDENT STUDIES

# CELEBRATION TOWN CENTER

Celebration, FL

Celebration Town Center is a successful example of a waterfront shopping center. Celebration is located just south of Orlando, FL. The average income is high, allowing this town center to utilize a large variety of retail and residential options for visitors. The main street axis opens up a large space for numerous activities that change from season to season. A large percentage of the site is used for both retail and restaurants. This creates a very desirable property along side the water.



CITY OF CELEBRATION, FL

POPULATION  
7,427

MEDIAN HOUSEHOLD INCOME  
\$92,670



4

ELEMENTS

- Main Street Design
- Central Axis Streetscape
- Street-scene Dining
- Hotel on the Water
- Water-Front Plaza

LAND USE

|                         |              |
|-------------------------|--------------|
| RETAIL - 24%            | OFFICE - 22% |
| RESTAURANT - 31%        | CIVIC - 2%   |
| MIXED USE - 6%          | CINEMA - 9%  |
| RESIDENTIAL - 6%        |              |
| TOTAL AREA - 0.40 ACRES |              |

STRENGTHS

- Unique Use of Central Axis
- Successful hidden parking
- Aesthetically pleasing
- Variety of Activities
- Water-Front

WEAKNESSES

- Architecture is inconsistent
- Lacks Geometry

# SEASIDE TOWN CENTER

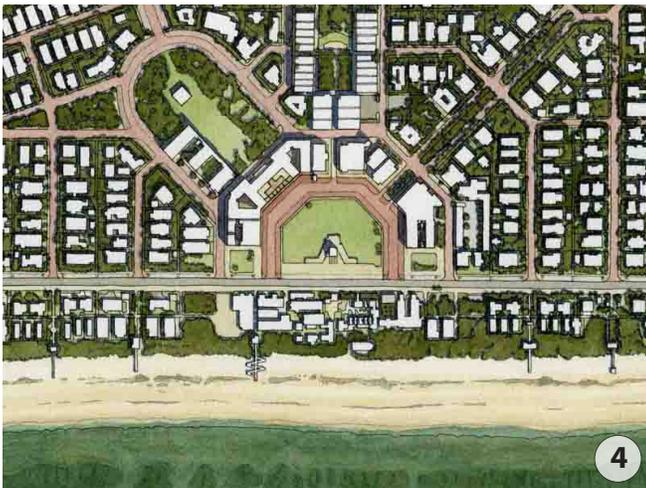
Seaside, FL

Seaside Town Center is located on the Gulf of Mexico. It creates a resort destination for people visiting all across the United States. It provides the town with essential places such as the post office and grocery store along with amenities such as a stage area and public shops.

## CITY OF SEASIDE, FL

POPULATION  
11,473

AVERAGE HOUSEHOLD INCOME  
\$110,111



## ELEMENTS

Concert Stage  
Public Park  
Local Shops  
Restaurant  
Grocery Store  
Theatre  
Post Office



## LAND USE

BUILDINGS - 28%  
STREETS/  
PARKING - 54%  
STREETSCAPE - 3%

LANDSCAPE/OPEN  
SPACE: 15%

TOTAL AREA - 5.17 ACRES

## STRENGTHS

- Accessible
- Harmonious in materials and color
- Diverse range of amenities

## WEAKNESSES

- Doesn't offer much of an attraction to visitors in terms of architecture/layout
- Not enough shade
- No hotels or accommodations in the town center

# SOUTHSIDE WORKS

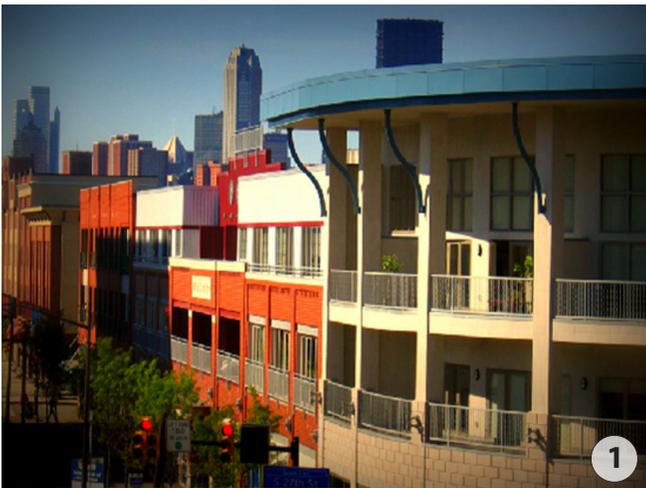
Pittsburgh, PA

Southside Works is an excellent example of a modern mixed use community. The beauty of the development is enhanced by varied and attractive architecture styles line complete streets. The ample green space allows for multiple forms of recreation. The site location is near a body of water, attracting a variety of businesses and opportunities.

CITY OF PITTSBURGH, PA

POPULATION  
303,624

AVERAGE HOUSEHOLD INCOME  
\$44,707



ELEMENTS

- Modern Design
- Historic buildings
- Street-scene Shopping
- Cultural Center
- Movie Theater
- Open Green Space



LAND USE

- RETAIL - 17%
- OFFICE - 32%
- CIVIC - 1%
- CINEMA - 1%
- OPEN SPACE - 3.7%
- TOTAL AREA - 37.2 ACRES

STRENGTHS

- Aesthetically pleasing
- Pedestrian-friendly
- Dense urban infrastructure with green space

WEAKNESSES

- Issues with debt
- Pedestrians walking too freely
- Development so expensive that many areas start to foreclose

# ATLANTIC STATION

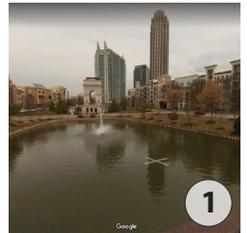
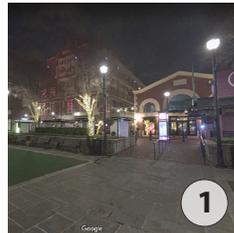
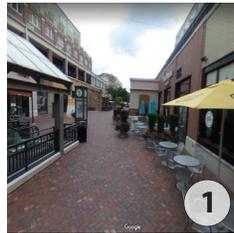
Atlanta, Georgia

Originally a brownfield development, the Atlantic Station is an upscale commercial and residential area. At its heart is an open air mall and cultural museums. Its density of mix-use retail surrounded by public space or green areas increases both value and desirability of the area.

## CITY OF ATLANTA, GEORGIA

POPULATION  
486,290

AVERAGE HOUSEHOLD INCOME  
\$55,322



## LAND USE

RETAIL - 17%  
OFFICE - 3%  
CIVIC - 1%  
CINEMA - 3%

STREET/PARKING - 46%  
OPEN SPACE - 10%  
STREETSCAPES - 20%

TOTAL AREA - 128 ACRES

## STRENGTHS

- A lot of retail and restaurants
- Originally a brownfield development
- Main attraction is in the central location

## WEAKNESSES

- Too much parking
- The only main district is developed
- Lack of street lights and pedestrian crossings

## ELEMENTS

- Retail Hub at the Center
- Open-air Center
- Street-scene Dining
- Cultural Center
- Open Green Space

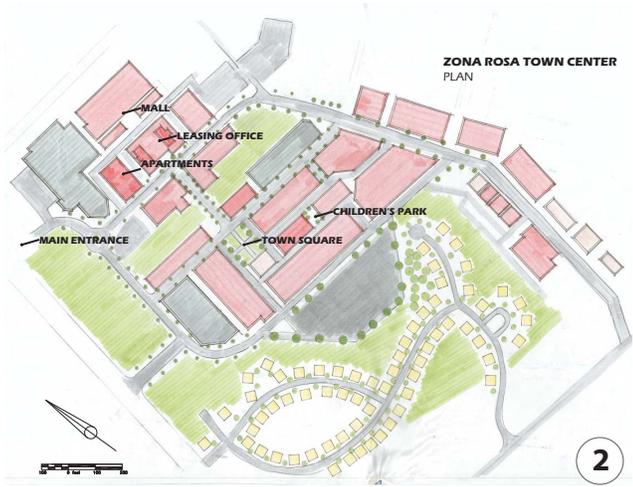
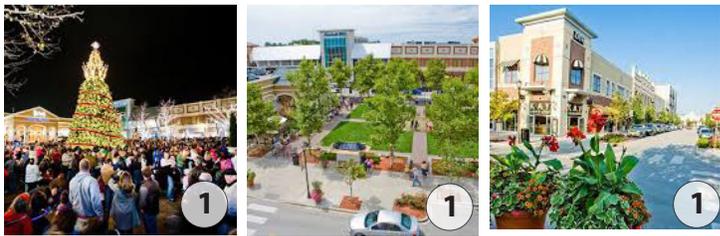
# ZONA ROSA

Kansas City, MO

The development opened in 2004 with a total of 11.48 acres of development and expanded the South District in 2009 doubling in size. The development does not include the Prairie Point-Wild Berry neighborhood but the two are very connected. Zona Rosa Town Center was designed by Steiner & Associates. The smaller, specialized boutiques are in the Central District and service retail is in the South District. The town square and children's park are in the Central District.



Kansas City, Missouri  
 POPULATION  
 488,943  
 AVERAGE HOUSEHOLD INCOME  
 \$45,375



LAND USE

- RETAIL - 48%
- OFFICE - 3%
- FOOD - 19%
- CINEMA - 13%
- STREET/PARKING - 15%
- PUBLIC - 2%
- TOTAL AREA - 22.5 ACRES

STRENGTHS

- Aesthetically pleasing
- Pedestrian-friendly
- Public Square

WEAKNESSES

- No grocery store for residents
- Minimal protected pedestrian area
- No Park

ELEMENTS

- Walkable Mall
- Public Green Square
- Vehicle bypass
- Apartments
- Condensed Parking

# COUNTRY CLUB PLAZA

Kansas City, MO

The Country Club Plaza is a Spanish Architectural themed city plaza consisting mostly of retail space and restaurants. Its wide streets and gridded layout allow for high pedestrian and vehicle traffic, allowing for visitors to explore the plaza comfortably.

## CITY OF KANSAS CITY, MO

POPULATION  
488,943

AVERAGE HOUSEHOLD INCOME  
\$45,375



## ELEMENTS

Upscale Shops  
Assorted Dining Options  
Theater  
Grid Design  
Apartments  
Office Spaces

## LAND USE

|                  |                        |
|------------------|------------------------|
| RETAIL - 23%     | STREET/PARKING - 41%   |
| RESIDENTIAL - 4% | PEDESTRIAN SPACE - 11% |
| DINING - 9%      | GREEN/OPEN SPACE - 6%  |
| OFFICE - 4%      |                        |
| CINEMA - 2%      | TOTAL AREA - 55ACRES   |

## STRENGTHS

- Grid pattern makes for easy navigation
- Variety of building styles/textures
- Well maintained

## WEAKNESSES

- Not enough shade
- Limited green space
- Narrow sidewalks
- Minimal gathering spaces, detached from the center

## PRECEDENT STUDIES

PAGE 106

# MARKET COMMON

Clarendon, Virginia

Market Common is a mixed-use development located in a suburb of Alexandria, Virginia. The ground floor is occupied by businesses. Apartments are located on the remaining floors. The central green space provides a great amenity to the shoppers and residents of Market Common.

CITY OF CLARENDON, VIRGINIA

POPULATION  
722,764

AVERAGE HOUSEHOLD INCOME  
\$147,991



ELEMENTS

- Central Green Space
- Retail Frontage
- Luxury Apartments
- Street Trees
- Central Location

LAND USE

|                       |                    |
|-----------------------|--------------------|
| RETAIL - 26%          | RESIDENTIAL-14%    |
| OFFICE - 10%          | PUBLIC SQUARE - 2% |
| RESTAURANTS - 10%     | PARKING - 38%      |
| TOTAL AREA - 12 ACRES |                    |

STRENGTHS

- Central Green Space
- Pedestrian Scale
- Coordinated Architecture

WEAKNESSES

- Lack of parking
- Value engineering of central green space programming

# THE VILLAGE GREEN

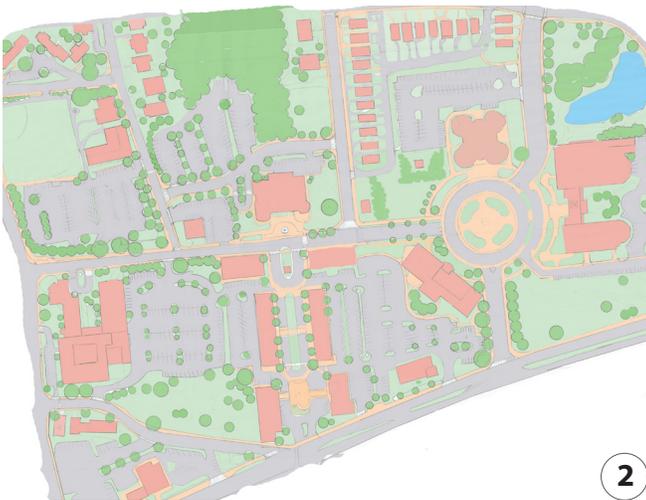
Smyrna, GA

Village Green is a successful town center in part of its large central plaza and gathering areas around downtown retail. It's ample sidewalks and pedestrian connections allow its residents and visitors to get around with ease. Its density of mix-use retail surrounded by public space or green areas increases both value and desirability of the area.

## CITY OF SMYRNA, GA

POPULATION  
56,664

AVERAGE HOUSEHOLD INCOME  
\$64,889



## ELEMENTS

- Main Street Design
- Open-air Center
- Street-scene Dining
- Cultural Center
- Public Library
- Open Green Space



## LAND USE

RETAIL - 24%  
OFFICE - 1%  
CULTURE 2%  
LIBRARY- 1%

STREET/PARKING - 48%  
OPEN SPACE -15%  
STREETSCAPES - 10%

TOTAL AREA - 33 ACRES

## STRENGTHS

- Aesthetically pleasing
- Pedestrian-friendly
- Spaces for a range of age groups to enjoy

## WEAKNESSES

- Too much parking
- Pedestrians walking too freely
- Poor residential connection to retail spaces

# SUWANEE TOWN CENTER

Suwanee, GA

Suwanee town center is a new urbanist development designed to serve as a hub to the Suwanee community. The project succeeds by providing a large central green for events and leisure. Behind this green lies mixed use buildings around a city hall building with homes in the back of the property.

## CITY OF SUWANEE, GA

POPULATION  
19,549

AVERAGE HOUSEHOLD INCOME  
\$83,780



## ELEMENTS

- Main Street Design
- Open-air Center
- Event space
- Cultural Center
- Town hall
- Open Green Space

## LAND USE

- RETAIL - 7%
- OFFICE - 3%
- CIVIC - 4%
- RESIDENTIAL - 6%
- STREET/PARKING - 20%
- OPEN SPACE - 50%
- STREETSCAPES - 10%
- TOTAL AREA - 23 ACRES

## STRENGTHS

- Aesthetically pleasing
- Pedestrian-friendly
- Creates center for community

## WEAKNESSES

- Limited parking for large events
- Large surface parking lots

# DULUTH TOWN CENTER

Duluth, GA

Duluth is a culturally diverse and vibrant place where families, businesses, and lives thrive. With sidewalks and bikeways that connect all areas of the city, celebrations such as Barefoot in the Park Fine Arts Festival, Duluth Fall Festival, concerts, dining delights, multiple entertainment and shopping venues, make Duluth an active, prosperous community.

## CITY OF DULUTH, GA

POPULATION  
26,600

AVERAGE HOUSEHOLD INCOME  
\$62,613



## ELEMENTS

- Main Street Design
- Open-air Center
- Pedestrian Friendly Sidewalk
- Cultural Center
- Public Library
- Open Green Space



## LAND USE

RETAIL, CIVIL AND BUSINESS - 63.45%  
RESTAURANT - 36.55%

TOTAL AREA- 12.77 ACRES

## STRENGTHS

- Aesthetically pleasing
- Pedestrian-friendly
- Gathering place

## WEAKNESSES

- Streetscape
- No consistent sidewalk
- Brownfield

# Appendix

## PRECEDENT STUDY CITATIONS

### **Kingsley**

1. <https://www.kingsleyfortmill.com/places/>

### **Storrs Center**

1. <http://casestudies.uli.org/wp-content/uploads/2016/09/DSC00340-01.jpeg>
2. [http://casestudies.uli.org/wp-content/uploads/2016/09/storrscenter\\_ct\\_20.jpg](http://casestudies.uli.org/wp-content/uploads/2016/09/storrscenter_ct_20.jpg)
3. <https://www.storrscenter.com/images/gallery/2.jpg>
4. <https://www.storrscenter.com/images/gallery/1.jpg>
5. Drawn by Kayla Bare

### **Fairfax Corner**

1. <http://www.d3i-usa.com/portfolio/fairfax-corner/>
2. <http://m.peterson.propertycapsule.com/property/output/center/detail/id:165/>
3. <https://www.urban-ltd.com/fairfax-corner/>
4. <https://www.rentlingo.com/rentals/camden-fairfax-corner-3-fairfax>
5. Drawn by Caroline Brock

### **National Harbor**

1. <https://www.visitmaryland.org/list/10-cant-miss-things-to-do-national-harbor>
2. <https://washington.org/find-dc-listings/visit-national-harbor>
3. <https://www.google.com/maps/place/Waterfront+St,+Fort+Washington,+MD+20744/@38.7825745,-77.0165321,3a,75y,296.17h,90t/data=!3m4!1e1!3m2!1sSyW5UljLAVJaGEhyYpj5oA!2e0!4m2!3m1!1s0x89b7364bab743:0xbce670c28efc6022>
4. <https://www.pinterest.com/pin/426364289701871978/>
5. Drawn by Stephen Brown

### **Washington Town Center**

1. <http://www.realcentralnj.com/washington-town-center-robbinsville>
2. <http://sharbell.com/commercial-community/washington-town-center/>
3. Drawn by Kinsey Bullock

### **Santana Row**

1. <http://parkcobuilding.com/my-product/santana-row-parking/>
2. <https://www.sanjose.org/listings/santana-row>
3. <https://www.yelp.com/biz/hotel-valencia-santana-row-san-jose>
4. [https://www.tripadvisor.com/LocationPhotoDirectLink-g33020-d2390435-i264822004-Santana\\_Row-San\\_Jose\\_California.html](https://www.tripadvisor.com/LocationPhotoDirectLink-g33020-d2390435-i264822004-Santana_Row-San_Jose_California.html)
5. Drawn by Laurel Fox

# Appendix

## PRECEDENT STUDY CITATIONS

### Celebration Town Center

1. <https://s3-media1.fl.yelpcdn.com/bphoto/1T0EyuYUevEovWSg3yb0pw/l.jpg>
2. <https://www.experiencekissimmee.com/blog/how-celebrate-4th-july-kissimmee>
3. [http://media2.trover.com/T/57cda66474a3516d69006aaa/fixdw\\_large\\_4x.jpg](http://media2.trover.com/T/57cda66474a3516d69006aaa/fixdw_large_4x.jpg)
4. Drawn by Jordan Fraser

### Seaside Town Center

1. <https://sowal.com/story/seaside-central-square-named-one-of-worlds-most-beautiful-spaces>
2. <https://bluwaterlife.com/2011/07/seaside-style/>
3. [https://sweeteyecandycreations.typepad.com/sweet\\_eyecandy\\_creations/2011/05/seaside-weekend.html](https://sweeteyecandycreations.typepad.com/sweet_eyecandy_creations/2011/05/seaside-weekend.html)
4. <https://www.dpz.com/projects/7903>

### Southside Works

1. <https://southsideworks.com/>

### Atlantic Station

1. <https://www.atlantamagazine.com/news-culture-articles/atlantic-station-undergo-major-expansion/>

### Zona Rosa

1. <https://www.zonarosa.com/>
2. Drawn by Pete Mastin

### Country Club Plaza

1. <http://www.missouribusinessalert.com/industries/68450/2016/01/04/highwoods-to-sell-kansas-city-country-club-plaza-for-660-million/>
2. [https://commons.wikimedia.org/wiki/File:Country\\_Club\\_Plaza,\\_KC\\_MO\\_-\\_general\\_view\\_1.JPG](https://commons.wikimedia.org/wiki/File:Country_Club_Plaza,_KC_MO_-_general_view_1.JPG)
3. <https://www.expedia.com/Country-Club-Plaza-Kansas-City.d6143482.Vacation-Attraction>
4. <https://do816.com/venues/country-club-plaza>
5. Drawn by Allen McDonald

### Market Common

1. <https://www.stayarlington.com/directory/the-market-common-clarendon/>
2. <http://www.jacobsryan.com/New%20Pages%202013/513%20-%20Urban%20Design%20People%20Places%20-%20Market%20Common%20Clarendon.html>
3. <https://www.flickr.com/photos/bozzuto/4686327754/>
4. <https://www.regencycenters.com/property/detail/60789/Market-Common-Clarendon>
5. Drawn by Jonah Owens

### The Village Green

1. <https://www.yelp.com/biz/farmers-insurance-rodolfo-rojas-smyrna-2>
2. Drawn by Amber Ricks

# Appendix

## PRECEDENT STUDY CITATIONS

### Suwanee Town Center

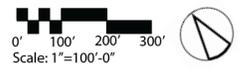
1. <https://usanovawp.wordpress.com/2012/05/25/madison-park-at-suwanee-town-center-suwanee-georgia/>
2. <http://www.suwanee.com/explore-suwanee/downtown/town-center>
3. <https://www.explorewinnett.org/directory/listing/suwanee-town-center-park>
4. <https://www.exploregeorgia.org/suwanee/outdoors-nature/parks/suwanee-town-center>

### Duluth Town Center

1. [https://en.m.wikipedia.org/wiki/Duluth,\\_Georgia](https://en.m.wikipedia.org/wiki/Duluth,_Georgia)
2. Drawn by Liangwei Yu

# 9.3 INITIAL DESIGN CONCEPTS

As a point of departure for our design discussions, each member of the class developed a concept plan. Those plans are contained in the following pages.



**LEGEND**

- ① Retail
- ② Community Building
- ③ Townhomes
- ④ Single Family Housing
- ⑤ Green Space

**TABULAR DATA**

|                           |             |                       |              |                    |        |
|---------------------------|-------------|-----------------------|--------------|--------------------|--------|
| <u>Residential Units:</u> |             | <u>Parking Count</u>  |              | <u>Green Space</u> |        |
| Single Family Detached    | 75 units    | Residential           | 173 spaces   | % of Site          | 24.25% |
| Town Homes                | 11 units    | Retail                | 1,738 spaces |                    |        |
|                           |             | Amenity               |              |                    |        |
| <u>Commercial Uses</u>    |             | <u>Total Required</u> |              |                    |        |
| Retail                    | 382,566 SF. | Total Provided        | 1,758 spaces |                    |        |
|                           |             | Excess Parking        | 1,982 spaces |                    |        |
|                           |             |                       | 224 spaces   |                    |        |

**NARRATIVE**

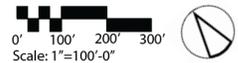
This Town Center Plan considers the site's history and current features to create a community with access to green space and a link to the greater Richmond Hill area. The utility corridor on site is re-imagined into a lush greenway that can connect the new Town Center with its neighbors. Bike and pedestrian paths meander through this corridor and provide residents with opportunities for travel and outdoor recreation. Preservation of the site's history is a priority in this Town Center plan. Building reuse and tree-saving design preserves some of the site's historical resources.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

KAYLA BARE | OCTOBER 3, 2018





**LEGEND**

- 1 Welcome Center
- 2 Community Center
- 3 Mixed Use
- 4 Drive-Thru Restaurant
- 5 Hotel
- 6 Single Family Detached
- 7 Town Homes
- 8 Town Square

**TABULAR DATA**

|                           |             |                      |              |                    |       |
|---------------------------|-------------|----------------------|--------------|--------------------|-------|
| <b>Residential Units:</b> |             | <b>Parking Count</b> |              | <b>Green Space</b> |       |
| Single Family Detached    | 15 units    | Residential          | 150 spaces   | % of Site          | 30%   |
| Town Homes                | 40 units    | Retail               | 1,464 spaces | Stormwater Pond    | 0.3%  |
| <b>Commercial Uses</b>    |             | Amenity              | 210 spaces   | Park               | 9.5%  |
| Retail/Office             | 327,249 SF. | Hotel                | 450 spaces   | Greenspace         | 21.6% |
| Restaurant                | 76,749 SF.  | Restaurants          | 504 spaces   | Plaza              | 1.6%  |
| Hotel                     | 117,000 SF. | Total Required       | 2,778 spaces |                    |       |
| Amenity                   | 56,200 SF.  | Total Provided       | 2,908 spaces |                    |       |
|                           |             | Excess Parking       | 130 spaces   |                    |       |

**NARRATIVE**

Drawing inspiration from nearby historic town centers, this design seeks to integrate the feeling of southern city charm and modern functionality into a cohesive city center. Providing a residential sector and amenities as well as a mixture of retail/restaurant and open public spaces, this 100-acre site would be able to host a myriad of functions and draw life into the heart of the town will giving Richmond Hill a recognizable identity. Included is a three-story hotel, taking advantage of the convenient location off of I-95 to draw visitors into the town. The two squares draw inspiration from the lush garden squares of Savannah, and vary spatially so they can provide a range of daily activities and town events.



**LEGEND**

- 1 HOTEL
- 2 OFFICE
- 3 RESIDENTIAL
- 4 RETAIL
- 5 RESTAURANT
- 6 PLAZA
- 7 BREWERY
- 8 WOODED AREA
- 9 PARK
- 10 GREEN SPACE
- 11 STAGE

**TABULAR DATA**

|                           |                             |                        |                         |
|---------------------------|-----------------------------|------------------------|-------------------------|
| <b>Residential Units:</b> | Apartments: 141 units       | <b>Parking Count:</b>  | Residential: 438 spaces |
|                           | Hotel: 95 units             |                        | Retail: 780 spaces      |
|                           |                             |                        | Office: 631 spaces      |
| <b>Commercial Uses:</b>   | Retail: 196,542 sq. ft.     |                        | Restaurants: 835 spaces |
|                           | Office: 202,374 sq. ft.     |                        | Brewery: 658 spaces     |
|                           | Restaurants: 62,590 sq. ft. | <b>Total Required:</b> | 3,342 spaces            |
|                           | Brewery: 32,890 sq. ft.     | <b>Total Provided:</b> | 3,346 spaces            |
|                           |                             | <b>Excess Parking:</b> | 4 spaces                |

|                      |                   |             |
|----------------------|-------------------|-------------|
| <b>Green Space</b>   | <b>% of Site:</b> | 34.05%      |
| Fountain:            |                   | .245 acres  |
| Natural/Wooded Area: |                   | 10.33 acres |
| Park/Playground:     |                   | 12.83 acres |
| Greenspace:          |                   | 10.89 acres |
| Plaza:               |                   | 2.52 acres  |
| Stage Area:          |                   | 1.65 acres  |

**NARRATIVE**

Richmond Hill needs a place with that downtown feel and this 100-acre lot will provide that sense of place. All the different amenities will attract tourists from all ages, as well as the locals. The bypass runs right through the middle of the site to lure people in as they ride by. The site consists of office spaces for businesses like the post office or bank, hotels that provide a place for tourists to stay, retail stores for various ages to shop, restaurants that consist of plazas for eating, and a brewery that will draw in the military personnel. To get away from the crowd, the park provides the perfect place to relax and for the children to play. There is also a stage to host concerts or display shows. A big movie screen is situated behind the stage for movie night out on the open green space. This site is filled with attractions to keep Richmond Hill thriving.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

STEPHEN BROWN | OCTOBER 3, 2018





**LEGEND**

- ① Residential
- ② Mixed Use
- ③ Retail
- ④ Senior Living
- ⑤ Green Space
- ⑥ Plaza
- ⑦ Amenity

**TABULAR DATA**

|                           |             |                      |      |                    |          |
|---------------------------|-------------|----------------------|------|--------------------|----------|
| <b>Residential Units:</b> |             | <b>Parking Count</b> |      | <b>Green Space</b> |          |
| Single Family Detached    | 51 Units    | Residential          | 505  | Total Site Area    | 109.2 AC |
| Apartments                | 299 Units   | Mixed Use            | 916  | % of Site          | 36.8%    |
| Senior Living             | 82 Units    | Retail               | 942  | Greenspace         | 40.2 AC  |
|                           |             | Amenity              | 26   | Plaza              | .82 AC   |
| <b>Commercial Uses</b>    |             |                      |      |                    |          |
| Retail                    | 255672.8 SF | Total Required       | 2265 |                    |          |
| Mixed Use                 | 289522.1 SF | Total Provided       | 2389 |                    |          |
|                           |             | Excess Parking       | 124  |                    |          |

**NARRATIVE**

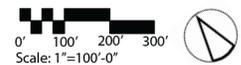
At its core, this design revolves around pedestrian access. The approximately 109AC lot is equipped with 10' sidewalks and large greenspaces geared towards connecting residential areas to retail and mixed use. The design also features space for retail, restaurants, offices, and banks, as well as almost 300 apartments, 82 senior living units, and 51 detached residential units. Outdoor amenities are prominent in the design with over 8AC of greenspace and a plaza.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

KINSEY BULLOCK | OCTOBER 3, 2018





**LEGEND**

- ① Residential
- ② Mixed Use
- ③ Retail
- ④ Green Space

**TABULAR DATA**

|                           |            |                      |       |                    |          |
|---------------------------|------------|----------------------|-------|--------------------|----------|
| <b>Residential Units:</b> |            | <b>Parking Count</b> |       | <b>Green Space</b> |          |
| Single Family Detached    | 57 Units   | Residential          | 141   | Total Site Area    | 109.2 AC |
|                           |            | Retail               | 3,100 | % of Site          | 4.98%    |
| <b>Commercial Uses</b>    |            |                      |       | Greenspace         | 4.98AC   |
| Retail                    | 590,272 SF | Total Required       | 1,398 |                    |          |
| Mixed Use                 | 900,000 SF | Total Provided       | 1,398 |                    |          |
| Office/Mixed Use          | 167,464 SF | Excess Parking       | 0     |                    |          |
| Existing Retail           | 68,071 SF  |                      |       |                    |          |

**NARRATIVE**

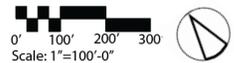
The city of Richmond Hill has a beautiful and rich history that is reflected in every corner of the city. The new town-center should reflect and respect this history while adding a creative element to the city that attracts families, young adults, and senior citizens alike. The design is built around a city center surrounded by mixed use buildings with retail and residential apartments. The center focuses on being completely walkable encouraging easy access for young adults and senior citizens. The remaining outer rings focus on the retail aspect with a few office spaces meant to generate major revenue for the city of Richmond Hill. The last focus is on residential space to have a place for young adults and their families, but still close to all essentials for home.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

DEVIN BUTLER | OCTOBER 3, 2018





**LEGEND**

- ① RETAIL
- ② APARTMENTS
- ③ SINGLE FAMILY HOMES
- ④ TOWNHOMES
- ⑤ PARK/ GREENSPACE

**TABULAR DATA**

|                           |                 |
|---------------------------|-----------------|
| <b>Residential Units:</b> |                 |
| Single Family Detached    | 88 units        |
| Town Homes                | 87 units        |
| Apartments                | 200 units       |
| <b>Commercial Uses</b>    |                 |
| Retail/ Restaurants       | 504,000 sq. ft. |

|                      |              |
|----------------------|--------------|
| <b>Parking Count</b> |              |
| Residential          | 668 spaces   |
| Retail               | 1,963 spaces |
| Total Required       |              |
| 2,631 spaces         |              |
| Total Provided       |              |
| 2,748 spaces         |              |
| Excess Parking       |              |
| 117 spaces           |              |

|                    |             |
|--------------------|-------------|
| <b>Green Space</b> |             |
| % of Site          | 14.89%      |
| Park               | 14.98 acres |

**NARRATIVE**

Based upon the design of Savannah's historic squares, this town center aims to create a retail hub within Richmond Hill in order to encourage residents to stay in-town for their shopping experiences and create a revenue influx for the City of Richmond Hill. The goal of this design is to create a diversified downtown experience for the Richmond Hill community through the inclusion of retail shopping, apartments, town homes, and single family homes.



**LEGEND**

- ① RETAIL
- ② APARTMENT
- ③ GREENSPACE
- ④ AMENITY

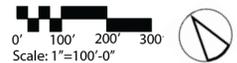
**TABULAR DATA**

|                                  |                 |                      |       |                    |     |
|----------------------------------|-----------------|----------------------|-------|--------------------|-----|
| <u>Residential Units:</u>        |                 | <u>Parking Count</u> |       | <u>Green Space</u> |     |
| Apartment                        | 95              | Residential          | 143   | % of Site          | 47% |
| <u>Commercial Uses (sq. ft.)</u> |                 | Retail               | 1,107 |                    |     |
| Retail                           | 553,449 sq. ft. | Amenity              | 37    |                    |     |
|                                  |                 | Total Required       | 1,249 |                    |     |
|                                  |                 | Total Provided       | 1,411 |                    |     |
|                                  |                 | Excess Parking       | 162   |                    |     |

**NARRATIVE**

This Richmond Hill Town Center conceptual design features a main bypass along a circular path. The bypass connecting highway 17 and 144 will attract people into the space. The space holds over half a million square feet of single story retail/restaurants in the Central Portion. Splitting the retail is a large open space for activities, events, and a splashpad. The goal of this mixture of open space and retail is to attract people and have them stay and enjoy it in a social manner.

Lastly, The Southwest corner of the site will house a mixture of age groups in two story apartments. The apartments will be separated by existing vegetation. The entire site will hold lots of greenspace for both the residents and people visiting Richmond Hill.



**LEGEND**

- 1 SINGLE FAMILY HOUSING
- 2 COMMERCIAL DEVELOPMENT
- 3 TOWNHOMES
- 4 APARTMENT
- 5 SENIOR LIVING
- 6 CORPORATE
- 7 MIXED USE
- 8 MEDICAL
- 9 ATHLETIC FIELD

**TABULAR DATA**

|                                  |                |
|----------------------------------|----------------|
| <u>Residential Units:</u>        |                |
| Single Family Detached           | 10 units       |
| Town Homes                       | 56 units       |
| Apartments                       | 32 units       |
| Senior Living                    | 32 units       |
| <u>Commercial Uses (sq. ft.)</u> |                |
| Retail                           | 61,440 sq. ft. |
| Mixed Use                        | 54,400 sq. ft. |
| Medical                          | 20,180 sq. ft. |
| Office                           | 38,081 sq. ft. |

|                      |     |
|----------------------|-----|
| <u>Parking Count</u> |     |
| Residential          | 342 |
| Retail               | 320 |
| Amenity              | 132 |
| Total Required 975   |     |
| Total Provided 1085  |     |
| Excess Parking 110   |     |

Green Space 50.11 acres  
% of Site 53%

**NARRATIVE**

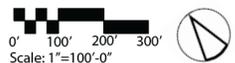
The new community of Richmond Hill is a collection of urban pods held together by a main thoroughfare that mimics the seven-mile bend. One of the main solutions that the design proposes is its appeal to younger populations. Today, recent college graduates and young professionals are looking for affordable, sustainable, and walkable work-live communities. To satisfy these needs, the design proposes urban-like pods, designed for many different uses, that are constructed from reusable and state of the art shipping containers. The shipping containers offer a plethora of design typologies that reinvents the conventional standard of commercial, residential, and corporate spaces. Some are used to create intimate and efficient spaces, while others are used to create a sense of sustainability and comfort. With a combination of these different uses, this new urban development brings a whole new look and functionality to Richmond Hill.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

BENJAMIN GLADSTONE | OCTOBER 3, 2018





**LEGEND**

- ① Mixed-Use Residential
- ② Hotel
- ③ Retail
- ④ Medical
- ⑤ Brewery
- ⑥ Office
- ⑦ Restaurant
- ⑧ Baseball Fields
- ⑨ Greenspace

**TABULAR DATA**

|                           |           |                       |                    |       |
|---------------------------|-----------|-----------------------|--------------------|-------|
| <b>Residential Units:</b> |           | <b>Parking Count</b>  | <b>Green Space</b> |       |
| Apartments                | 117 units | Mixed-Use             | % of Site          | 14.5% |
| <b>Commercial Uses</b>    |           | Residential           |                    |       |
| Retail                    | 46,053 SF | Retail                | 370 spaces         |       |
| Mixed Use                 | 59,220 SF | Restaurant            | 185 spaces         |       |
| Medical                   | 32,198 SF | Office                | 500 spaces         |       |
| Office                    | 89,372 SF | Brewery               | 141 spaces         |       |
| Restaurant                | 37,510 SF | Medical               | 160 spaces         |       |
|                           |           | <b>Total Required</b> | 2,319 spaces       |       |
|                           |           | <b>Total Provided</b> | 2,630 spaces       |       |
|                           |           | <b>Excess Parking</b> | 311 spaces         |       |

**NARRATIVE**

The intent of this design is to create a mixed-use town center based around a central green space and to highlight amenity space with the use of pocket parks, open plazas, and recreational fields. Using a hub and spoke concept, this plan utilizes areas for retail, mixed-use residential, medical facilities, and office space. A bypass connecting 144 and 17 runs through central area of the site, drawing the public into the space creating a downtown like feel for the Richmond Hill area.



**RICHMOND HILL TOWN CENTER MASTER PLAN**  
STUART HARRIOTT | OCTOBER 3, 2018





**LEGEND**

- ① Retail
- ② Park
- ③ Residential
- ④ Amenity
- ⑤ Mixed Use

**TABULAR DATA**

|                           |           |                      |      |                    |         |
|---------------------------|-----------|----------------------|------|--------------------|---------|
| <u>Residential Units:</u> |           | <u>Parking Count</u> |      | <u>Green Space</u> |         |
| Single Family Detached    | 88 Units  | Residential          | 1184 | % of Site          | 21.1%   |
| Town Homes                | 138 Units | Retail               | 92   | Stormwater Pond    | .398AC  |
| Apartments                | 500 Units | Amenity              | 170  | Greenspace         | 23.39AC |
|                           |           |                      |      | Plaza              | 3.88AC  |
| <u>Commercial Uses</u>    |           | Total Required       | 2246 | Amenity            | 3.77AC  |
| Retail                    | 38272 SF  | Total Provided       | 2884 |                    |         |
| Mixed Use                 | 103200 SF | Excess Parking       | 368  |                    |         |
| Office                    | 32400 SF  |                      |      |                    |         |

**NARRATIVE**

Richmond Hill is a growing community. The beautiful landscapes and historical charm attract new and diverse residents. Families, singles, and elderly will need a variety of places to live at a range of prices. This community design incorporates single family housing, town homes and apartments located near each other and the central down town area. Residents can enjoy a lively down town area rimmed with shops, restaurants and apartments. The central plaza serves as a community gathering space, perfect for events, festivals and community gatherings. Adjacent to the central square is a lush park full of magnificent Savannah live oaks and walking trails. The population of Richmond Hill has a space in which to live, work and recreate.



**LEGEND**

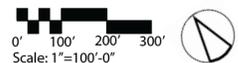
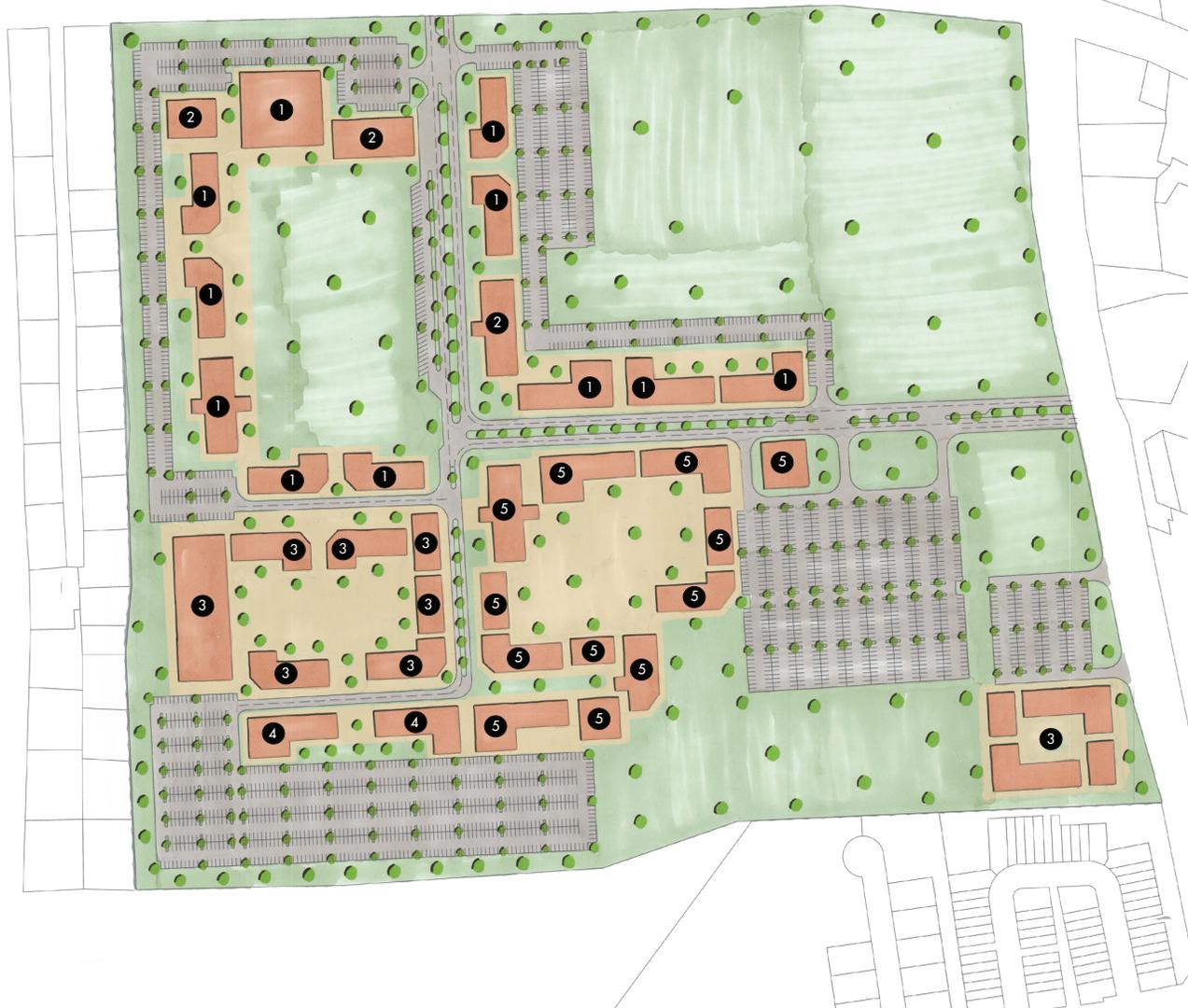
- ① Retail
- ② Mixed Use
- ③ Greenspace
- ④ Residential
- ⑤ Hotel
- ⑥ Civic Space

**TABULAR DATA**

|                           |           |                      |       |                    |        |
|---------------------------|-----------|----------------------|-------|--------------------|--------|
| <b>Residential Units:</b> |           | <b>Parking Count</b> |       | <b>Green Space</b> |        |
| Single Family Detached    | 12 Units  | Residential          | 114   | % of Site          | 9%     |
| Town Homes                | 10 Units  | Retail               | 679   | Park/Playground    | 1.35AC |
| Apartments                | 20 Units  | Restaurants          | 240   | Greenspace         | 9.09AC |
| Senior Living             | 10 Units  | Hotel                | 75    | Plaza              | 4.4AC  |
|                           |           | Office               | 120   |                    |        |
| <b>Commercial Uses</b>    |           | Total Required       | 1,238 |                    |        |
| Retail                    | 169,800SF | Total Provided       | 1,238 |                    |        |
| Restaurants               | 60,000 SF | Excess Parking       | 1,238 |                    |        |
| Hotel                     | 1,500 SF  |                      |       |                    |        |
| Office                    | 30,000 SF |                      |       |                    |        |

**NARRATIVE**

This Town Center Plan reflects the need for a central community center with access to a main plaza and nearby greenspace. It focuses on the multiple retail and mixed used units near the Town Plaza to create a sense of place for people, to give people a place to stay and enjoy the culture and community of Richmond Hill.



**LEGEND**

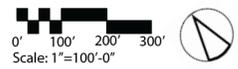
- 1 RETAIL
- 2 RESTAURANT
- 3 APARTMENT
- 4 HOTEL
- 5 MIXED USE

**TABULAR DATA**

|                           |                 |                      |       |                    |       |
|---------------------------|-----------------|----------------------|-------|--------------------|-------|
| <b>Residential Units:</b> |                 | <b>Parking Count</b> |       | <b>Green Space</b> |       |
| Apartments                | 300             | Residential          | 965   | 31.15 acres        |       |
| Hotel                     | 182             | Retail               | 859   | % of Site          | 28.5% |
|                           |                 | Restaurant           | 692   |                    |       |
| <b>Commercial Uses</b>    |                 |                      |       |                    |       |
| Retail                    | 429,492 sq. ft. | Total Required       | 2,516 |                    |       |
| Restaurant                | 87,860 sq. ft.  | Total Provided       | 2,666 |                    |       |
|                           |                 | Excess Parking       | 150   |                    |       |

**NARRATIVE**

The site shows a concept focusing on central gathering spaces throughout the site in multiple areas. Creating a broad arrangement of separate spaces will create a sense of a bigger and more diversely applicable site. It houses multiple plazas and two large parks that connect the site through a series of walking trails. The central residential area allows for convenient access throughout the whole site.



**LEGEND**

- 1 RETAIL
- 2 RESTAURANT
- 3 OFFICE SPACE
- 4 TOWNHOMES
- 5 SOCCER FIELD
- 6 BASKETBALL COURT
- 7 PEDESTRAIN BRIDGE
- 8 PARK
- 9 HOTEL
- 10 BREWERY
- 11 CIVIC

**TABULAR DATA**

|                           |                |                       |               |                     |                 |
|---------------------------|----------------|-----------------------|---------------|---------------------|-----------------|
| <u>Residential Units:</u> |                | <u>Parking Count:</u> |               | <u>Green Space:</u> |                 |
| Town Homes:               | 211 units      | Residential:          | 512 spaces    | % of Site:          | 15.34%          |
| Apartments:               | 5 units        | Retail:               | 140 spaces    | Extended Park:      | 86,044 sq. ft.  |
|                           |                | Amenity:              | 272 spaces    | Amenity:            | 334,695 sq. ft. |
|                           |                | Office:               | 46,953 spaces |                     |                 |
| <u>Commercial Uses</u>    |                | Total Required:       | 1,025 spaces  |                     |                 |
| Retail:                   | 74,442 sq. ft. | Total Provided:       | 1,036 spaces  |                     |                 |
| Hotel:                    | 15,031 sq. ft. | Excess Parking:       | 11 spaces     |                     |                 |
| Office:                   | 46,953 sq. ft. |                       |               |                     |                 |

**NARRATIVE**

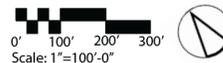
The development is oriented around compact affordable living. The unique housing clusters are surrounded by large open parks and restaurants and shops. The pedestrian path that cuts through the middle of the site promotes walking around and gives access to the development from other neighborhoods across Highway 144. The soccer complex can be used by residents, but the full-sized fields can also be used for youth tournaments. Visitors to the tournaments can stay at the hotel. The office buildings provided space for new or established businesses.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

PETER MASTIN | OCTOBER 3, 2018





**LEGEND**

- 1 MIXED USED RESTAURANT/ RETAIL
- 2 OFFICES
- 3 APARTMENTS
- 4 HOTEL
- 5 BOX STORE RETAIL
- 6 STAGE
- 7 GREENSPACE
- 8 PLAZA/ HARDSCAPE

**TABULAR DATA**

|                           |                 |                       |              |                     |            |
|---------------------------|-----------------|-----------------------|--------------|---------------------|------------|
| <b>Residential Units:</b> |                 | <b>Parking Count:</b> |              | <b>Green Space:</b> |            |
| Apartments:               | 39 units        | Residential:          | 198 spaces   | Total Acreage:      | 36.7 acres |
| Hotel:                    | 338 units       | Hotel:                | 208 spaces   | % of Site:          | 36.7%      |
| <b>Commercial Uses:</b>   |                 | Retail:               | 125 spaces   |                     |            |
| Restaurant:               | 84,160 sq. ft.  | Office:               | 766 spaces   |                     |            |
| Retail:                   | 274,980 sq. ft. | Restaurant:           | 840 spaces   |                     |            |
| Office:                   | 153,240 sq. ft. | Total Required:       | 3,217 spaces |                     |            |
|                           |                 | Total Provided:       | 3,262 spaces |                     |            |
|                           |                 | Excess Parking:       | 45 spaces    |                     |            |

**NARRATIVE**

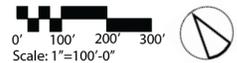
This site was designed in a grid style drawing inspiration from downtown Savannah, particularly Forsyth Park, including a large open green space, hardscape plaza spaces, and a large outdoor stage for community events. The central green space is lined by retail, restaurants, and office spaces connected by wide, shaded pathways, undisturbed by any vehicle traffic. This site will serve as the communities' town center, drawing people in from I-95 to shop, eat, and work within a comfortable, walkable space while also providing Richmond Hill with a central place for community events and sense of town identity. The design includes a 2-story hotel and apartment building and includes a box store to attract more traffic in from the highway and bypass.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

ALLEN MCDONALD | OCTOBER 3, 2018





**LEGEND**

- 1 LANDMARK FOUNTAIN
- 2 FORD PLAZA
- 3 HOTEL
- 4 RESTAURANT
- 5 FAST FOOD RESTAURANT
- 6 RETAIL
- 7 MIXED-USE
- 8 CENTRAL PARK
- 9 BIG BOX STORE
- 10 SINGLE FAMILY HOUSING

**TABULAR DATA**

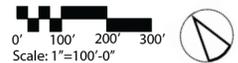
| Residential Units:              | Parking Count        | Green Space       |
|---------------------------------|----------------------|-------------------|
| Single Family Detached 30 units | Residential 60       | Total Acreage 35% |
|                                 | Retail 1,500         | % of Site 35%     |
|                                 | Office 520           |                   |
|                                 | Restaurants 370      |                   |
|                                 | Hotel 175            |                   |
|                                 | Total Required 2,620 |                   |
|                                 | Total Provided 2,800 |                   |
|                                 | Excess Parking 180   |                   |

**Commercial Uses**

|            |            |
|------------|------------|
| Retail     | 338,000 SF |
| Medical    | 30,000 SF  |
| Office     | 100,000 SF |
| Restaurant | 26,500 SF  |
| Hotel      | 150 rooms  |

**NARRATIVE**

The New Urban plan radiates from the intersection and contains a plethora of uses. A large fountain reminiscent of fountains at the Bellagio is located at the intersection of 144 and 17 to be a new landmark. A hotel will be located at this intersection as well. Next there is a "restaurant ring" with multiple shared plazas for outdoor café use. Following the restaurants, there are the "retail and office rings" centered on a large nine-acre park. Located in the back of the plan, far from the traffic, there are lots for single family housing. Lastly to detour the 144-17 intersection the plan boasts a four lane bypass. At the center of Richmond Hill stands a new urban core, to be the center of the town.



**LEGEND**

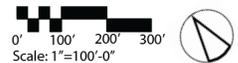
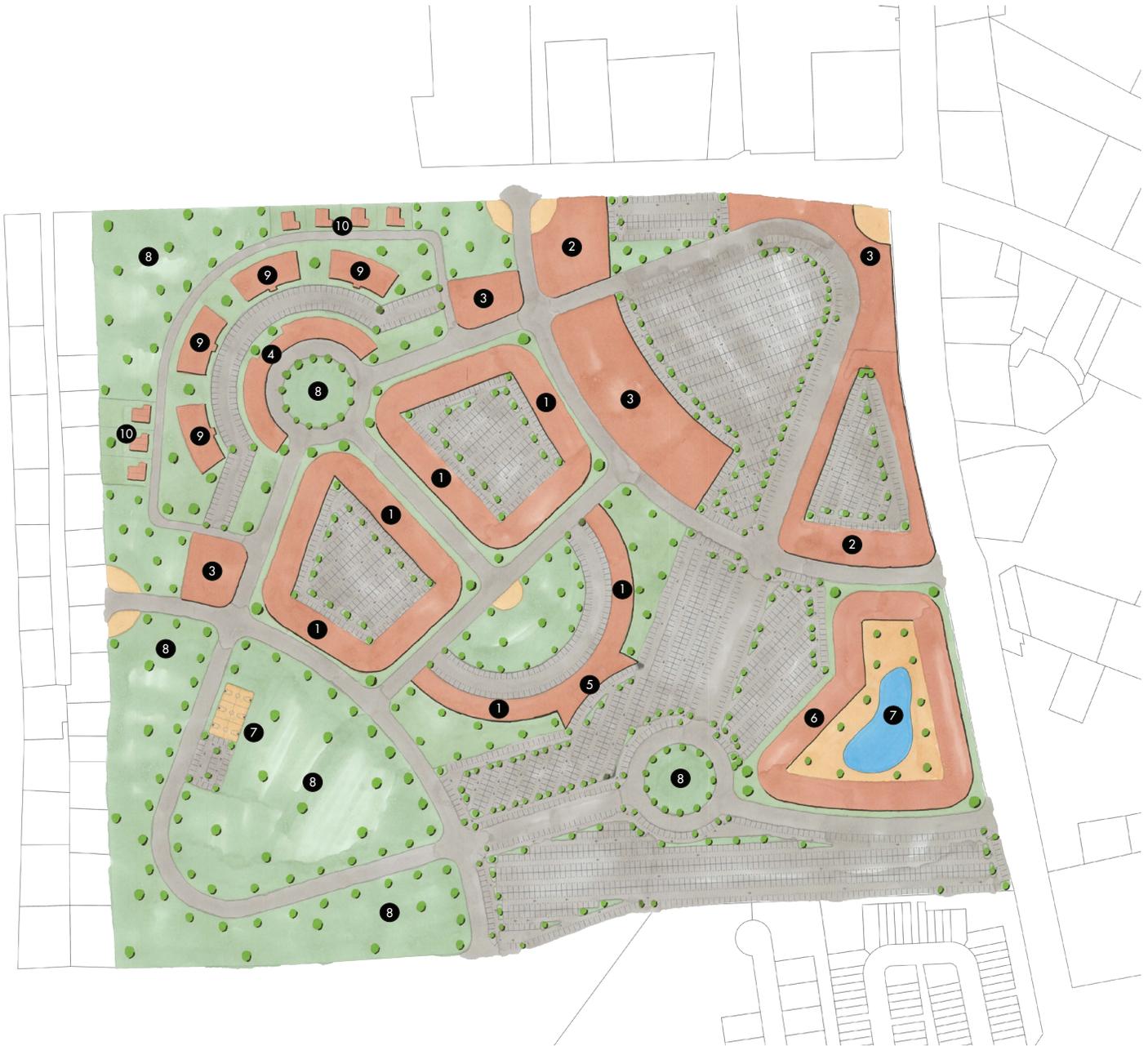
- ① MEDICAL CENTER
- ② OFFICES
- ③ RESIDENTIAL CLUBHOUSE
- ④ COMMUNITY FARM
- ⑤ TOWNHOMES
- ⑥ MIXED USE DOWNTOWN
- ⑦ HOTEL
- ⑧ SHOPPING CENTER

**TABULAR DATA**

| <u>Residential Units:</u> |            | <u>Parking Count</u> |            | <u>Green Space</u> |         |
|---------------------------|------------|----------------------|------------|--------------------|---------|
| Singe Family Detached     | 87 UNITS   | Residential          | 250 SPACES | % of Site          | 23%     |
| Town Homes                | 76         | Retail               | 600        | Stormwater Pond    | 1.8 AC. |
| Apartments                | 150        | Amenity              | 150        | Extended Park      | 15.374  |
| Senior Living             | 40         |                      |            | Park/Playground    |         |
|                           |            | Total Required       | 1660       | Greenspace         | 25 AC   |
|                           |            | Total Provided       | 1700       | Plaza              |         |
|                           |            | Excess Parking       | 40         | Amenity            | 7.1     |
| <u>Commercial Uses</u>    |            |                      |            |                    |         |
| Retail                    | 150,000 SF |                      |            |                    |         |
| Mixed Use                 | 90,000 SF  |                      |            |                    |         |
| Medical                   | 75,000 SF  |                      |            |                    |         |
| Office                    | 55,000 SF  |                      |            |                    |         |

**NARRATIVE**

FOLLOWING THE FORM OF A SAVANNAH SQUARE, THIS NEO-TRADITIONAL DEVELOPMENT BRINGS ABOUT NOSTALGIA FOR A TOWN THAT ONCE EXISTED. THIS PLAN CREATES A HISTORIC FEELING CENTRAL BUSINESS DISTRICT THAT REFLECTS THE FORD INFLUENCE ON RICHMOND HILL. WALKABILITY AND CONVENIENCE ARE INTEGRAL WITH MANY AMENITIES AND FEATURES ON THE SITE WHICH GIVES RESIDENTS LITTLE REASON TO DRIVE.



**LEGEND**

- ① RETAIL
- ② RESTAURANT
- ③ OFFICE
- ④ COMMUNITY CENTER
- ⑤ BREWING
- ⑥ HOTEL
- ⑦ AMENITY
- ⑧ GREENSPACE
- ⑨ APARTMENTS
- ⑩ SINGLE FAMILY LIVING

**TABULAR DATA**

|                                  |                 |                      |                    |                   |
|----------------------------------|-----------------|----------------------|--------------------|-------------------|
| <b>Residential Units:</b>        |                 | <b>Parking Count</b> | <b>Green Space</b> | <b>26.8 acres</b> |
| Single Family Detached           | 7 units         | Residential          | % of Site          | 27%               |
| Hotel                            | 95 units        | Hotel                |                    |                   |
| Apartments                       | 80 units        | Retail               |                    |                   |
| <b>Commercial Uses (sq. ft.)</b> |                 | Restaurant           |                    |                   |
| Retail                           | 288,390 sq. ft. | Office               |                    |                   |
| Restaurant                       | 149,168 sq. ft. | Brewing              |                    |                   |
| Office                           | 238,112 sq. ft. | Community Center     |                    |                   |
| Community Center                 | 23,395 sq. ft.  | Total Required       | 3063               |                   |
| Brewing                          | 4,180 sq. ft.   | Total Provided       | 2959               |                   |
| Hotel                            | 143,541 sq. ft. | Excess Parking       | -104               |                   |
| Amenity                          | 111,031 sq. ft. |                      |                    |                   |

**NARRATIVE**

The Richmond Hill Hub incorporates residential townhomes, commercial retails and offices, diverse restaurants, community center, hotel and green spaces. The entire area is designed to attract the surrounding community and enrich its historical and future prosperities.

The bypass which connects highway 144 and 17 will bring people into this Richmond Hill Hub. With two large shopping malls, offices and restaurants near the bypass, those who drive along the bypass will have the option to shop, work and eat. At the end of the bypass, there is a 95 room luxury hotel which includes a swimming pool and other amenities. At the north side of the Richmond Hill Hub is a community center surrounded with apartment buildings and single residential lots. The focal point of the proposed residential area is the green space connected to the center gathering area. Existing green space includes recreation fields and trails which is located at the west side of Richmond Hill Hub.



**RICHMOND HILL TOWN CENTER MASTER PLAN**

LIANGWEI YU | OCTOBER 3, 2018



# 9.4 PRO FORMA COMPARABLES

The *conceptual estimator*, a tool developed by BNi Publications, was used to estimate construction costs for our project. We first located comparable project types. These project costs were then adjusted, using the software, for location and date of construction. Estimates were then applied to our site to develop rough budget pro formas.

| Comp Lot: |            |         |            |                                  |
|-----------|------------|---------|------------|----------------------------------|
| MLS       | Acre       | Price   | Price/Acre | Address                          |
| 181455    | 42.57      | 375,000 | 8809.02044 | 1194 Quacco RD, SAV              |
| 187358    | 6          | 190,000 | 31666.6667 | 20 Cottonvale RD, Savannah       |
| 121717    | 7.26       | 220000  | 30303.0303 | 174 Vidalia Rd, Savannah         |
| 126768    | 2.5        | 174900  | 69960      | 6976 US Highway 17 Richmond Hill |
| 189855    | 2          | 200000  |            | 0 Leroy Coffey Hwy, Fleming      |
| 131016    | 7          | 700000  |            | 13991 Highway 144, Richmond Hill |
| 196378    | 13.65      | 160000  | 11721.6117 | 0 Hill Rd, Richmond Hill         |
| AVG:      | 11.5685714 | 288,557 | 30492.0658 |                                  |

| Comp Townhome |         |         |            |                                |
|---------------|---------|---------|------------|--------------------------------|
| Date Sold     | SQFT    | Price   | Price/SQFT | Address                        |
| 7/3/18        | 1500    | 328,159 | 218.772667 | 803 Ferguson Ln, Richmond Hill |
| 11/7/18       | 1461    | 256000  | 175.22245  | 307 Ferguson Ln, Richmond Hill |
| 11/1/18       | 1507    | 180000  | 119.442601 | 415 Ferguson Ln, Richmond Hill |
| NA            | 1725    | 189,900 | 110.086957 | The Commons, Richmond Hill     |
| AVG           | 1548.25 | 238,515 | 155.881169 |                                |

| Comp House |            |         |            |                                       |
|------------|------------|---------|------------|---------------------------------------|
| Date Sold  | SQFT       | Price   | Price/SQFT | Address                               |
| 6/15/18    | 1746       | 233,900 | 133.963345 | 205 Ohara Dr, Richmond Hill           |
| 5/4/18     | 1481       | 284900  | 192.37002  | 334 Laurel Hill Circle, Richmond Hill |
| 11/5/18    | 1528       | 179,900 | 117.735602 | 390 Summer Hill Way, Richmond Hill    |
| 8/30/18    | 1503       | 199,900 | 133.000665 | 28 Nelson Dr, Richmond Hill           |
| NA         | 1532       | 224,900 | 146.801567 | 360 Boyd Dr, Richmond Hill            |
| NA         | 1508       | 190,000 | 125.994695 | 100 Brisbon Hall Dr, Richmond Hill    |
| AVG        | 1549.66667 | 218,917 | 141.644316 |                                       |

**Developer**

Trident Sustainable Group  
210 E. Bay Street, Savannah, GA 31401  
www.tridentsustainability.com

**Project Team**

**Architect:**

Paul McKeever, AIA  
4843 Coldstream Drive, Atlanta, GA 30360

**Structural Engineer:**

RWP Engineering  
31 W. Congress Street, Savannah, GA 31401

**Mechanical & Electrical Engineer:**

Dulohery Weeks  
333 Commercial Drive, Savannah, GA 31406

**General Contractor:**

R Peacock Construction  
128 Habersham Street, Savannah, GA 31401

**Project General Description**

**Location:** Savannah, Georgia

**Date Bid:** May 2012

**Construction Period:** Aug 2012 to May 2013

**Total Square Feet:** 2,588

**Site:** .06 acres.

**Number of Buildings:** Two.

**Building Sizes:** First floor, 994; second floor, 994 (1,988 sq. ft. conditioned); garage, 600; total, 2,588 sq. ft.

**Building Height:** Garage, 11'10"; basement; first floor, 11'6"; second floor, 10'6"; total, 26'.

**Basic Construction Type:** New/Wood frame.

**Foundation:** Slab-on-grade.

**Exterior Walls:** Brick, CMU.

**Roof:** Membrane. **Floors:** Concrete, wood.

**Interior Walls:** Wood stud drywall.

Photo Courtesy of China Fanagan



Photo Courtesy of Angela Hopper Photography



| DIVISION                      | COST           | % OF COST   | SQ.FT. COST     | SPECIFICATIONS   |
|-------------------------------|----------------|-------------|-----------------|--|
| GENERAL REQUIREMENTS          | 47,585         | 15.64       | 18.39           | —  |
| CONCRETE                      | 16,058         | 5.28        | 6.20            | —  |
| MASONRY                       | 12,114         | 3.98        | 4.68            | Unit.  |
| WOOD, PLASTICS & COMPOSITES   | 56,007         | 18.41       | 21.64           | Rough carpentry, finish carpentry.   |
| THERMAL & MOISTURE PROTECTION | 41,993         | 13.81       | 16.23           | Dampproofing & waterproofing, weather barriers, roofing & siding panels, membrane roofing. |
| OPENINGS                      | 33,063         | 10.87       | 12.78           | Doors & frames, windows, hardware.   |
| FINISHES                      | 35,513         | 11.68       | 13.72           | Plaster & gypsum board, tiling, ceilings, flooring, painting & coating.                    |
| SPECIALTIES                   | 650            | 0.21        | 0.25            | Signage, shelving.   |
| FURNISHINGS                   | 20,216         | 6.65        | 7.81            | —  |
| PLUMBING                      | 11,813         | 3.88        | 4.56            | Piping & pumps, fixtures.  |
| HVAC                          | 15,500         | 5.10        | 5.99            | Air distribution, equipment.   |
| ELECTRICAL                    | 13,663         | 4.49        | 5.28            | —  |
| <b>TOTAL BUILDING COSTS</b>   | <b>304,175</b> | <b>100%</b> | <b>\$117.53</b> | —  |
| EARTHWORK                     | 2,210          |             |                 | —  |
| EXTERIOR IMPROVEMENTS         | 1,000          |             |                 | Pavers, landscaping.   |
| UTILITIES                     | 7,250          |             |                 | Water, sanitary sewerage   |
| <b>TOTAL PROJECT COST</b>     | <b>314,635</b> |             |                 | (Excluding architectural and engineering fees)   |

**UPDATED ESTIMATE TO JUNE 2015: \$127.99 PER SQUARE FOOT**

| Regional Cost Trends   |             |            |                |             |            |                |             |            |
|--|-------------|------------|----------------|-------------|------------|----------------|-------------|------------|
| <i>This project, updated to June 2015 in the selected cities of the United States.</i> |             |            |                |             |            |                |             |            |
| EASTERN U.S.   | Sq.Ft. Cost | Total Cost | CENTRAL U.S.   | Sq.Ft. Cost | Total Cost | WESTERN U.S.   | Sq.Ft. Cost | Total Cost |
| Atlanta GA   | \$134.60    | \$348,350  | Dallas TX      | \$130.21    | \$336,991  | Los Angeles CA | \$174.10    | \$450,583  |
| Pittsburgh PA  | \$169.72    | \$439,224  | Kansas City KS | \$175.57    | \$454,361  | Las Vegas NV   | \$159.47    | \$412,719  |
| New York NY  | \$216.53    | \$560,389  | Chicago IL     | \$182.88    | \$473,301  | Seattle WA     | \$174.10    | \$450,583  |

For more information on this project and similar projects visit [www.dcdarchives.com](http://www.dcdarchives.com)

**Architect**

Pate Design Group, Inc.  
4168 Abbotts Bridge Road, Duluth, GA 30097  
www.patedesigngroup.com

**Construction Team**

**Structural Engineer:**

Trillium Structures, Inc.  
1255 Buford Highway, #201, Suwanee, GA 30024

**General Contractor:**

Ashley Construction, Inc.  
3005 Dixie Highway, Erlanger, KY 41017

**Mechanical Engineer:**

Granade Engineering Group, LLC  
12345 Greenmont Walk, Alpharetta, GA 30009

**Electrical Engineer:**

Lastinger and Associates, Inc.  
6290 Abbotts Bridge Road, #401, Duluth, GA 30097

**Interior Designer:**

Z-Space, Inc.  
501 N.E. 13th Street, #5, Fort Lauderdale, FL 33304

**Project General Description**

**Location:** Wilder, Kentucky

**Date Bid:** June 2010

**Construction Period:** June 2010 to Nov 2010

**Total Square Feet:** 5,500 **Site:** 0.659 acre.

**Number of Buildings:** One.

**Building Size:** First floor, 5,500; total, 5,500 square feet.

**Building Height:** First floor, 20'; total, 20'.

**Basic Construction Type:** New/Type VB.

**Foundation:** Slab-on-grade.

**Exterior Walls:** CMU, brick, stone.

**Roof:** Metal, membrane. **Floors:** Concrete.

**Interior Walls:** Metal stud drywall.



| DIVISION                       | COST           | % OF COST   | SQ.FT. COST     | SPECIFICATIONS   |
|--------------------------------|----------------|-------------|-----------------|--|
| PROCUREMENT & CONTRACTING REQ. | 108,351        | 12.49       | 19.70           | General conditions, modifications.   |
| CONCRETE                       | 62,924         | 7.26        | 11.44           | Cast-in-place, structural precast, grout, tilt up.   |
| MASONRY                        | 74,491         | 8.59        | 13.54           | Unit.  |
| METALS                         | 72,112         | 8.32        | 13.11           | Structural steel, erection, joist & decking, fabrications, pipe & tube railings.   |
| WOOD, PLASTICS & COMPOSITES    | 9,720          | 1.12        | 1.77            | Lumber package, rough framing, miscellaneous.  |
| THERMAL & MOISTURE PROTECTION  | 76,300         | 8.80        | 13.87           | EFS, fireproofing, asphalt shingles, siding, built-up roof, single-ply membrane roofing, sheet metal roofing, accessories, sealants. |
| OPENINGS                       | 56,464         | 6.51        | 10.27           | Doors & frames, specialty doors & frames, entrances, storefronts, & curtainwalls, windows, hardware.                                 |
| FINISHES                       | 152,896        | 17.63       | 27.80           | Drywall, tiling, ceilings, polished concrete, flooring, painting & coating.  |
| SPECIALTIES                    | 18,818         | 2.17        | 3.42            | Toilet accessories & compartments, fireplace, signage, fire extinguishers & cabinets, awnings.                                       |
| FIRE SUPPRESSION               | 33,817         | 3.90        | 6.15            | —  |
| PLUMBING                       | 77,650         | 8.95        | 14.12           | Piping & pumps, fixtures.  |
| HVAC                           | 61,979         | 7.15        | 11.27           | —  |
| ELECTRICAL                     | 61,700         | 7.11        | 11.22           | —  |
| <b>TOTAL BUILDING COSTS</b>    | <b>867,222</b> | <b>100%</b> | <b>\$157.68</b> |  |
| EARTHWORK                      | 20,552         |             |                 | Earth moving.  |
| EXTERIOR IMPROVEMENTS          | 59,706         |             |                 | Asphalt paving, landscaping, planting.   |
| <b>TOTAL</b>                   | <b>947,480</b> |             |                 | (Excluding architectural and engineering fees)   |

**UPDATED ESTIMATE TO JUNE 2011: \$161.43 PER SQUARE FOOT**

**Regional Cost Trends**  
*This project, updated to June 2011 in the selected cities of the United States.*

| EASTERN U.S.  | Sq.Ft. Cost | Total Cost  | CENTRAL U.S.   | Sq.Ft. Cost | Total Cost  | WESTERN U.S.   | Sq.Ft. Cost | Total Cost  |
|---------------|-------------|-------------|----------------|-------------|-------------|----------------|-------------|-------------|
| Atlanta GA    | \$163.35    | \$898,440   | Dallas TX      | \$163.35    | \$898,440   | Los Angeles CA | \$209.48    | \$1,152,117 |
| Pittsburgh PA | \$178.73    | \$982,999   | Kansas City KS | \$169.12    | \$930,150   | Las Vegas NV   | \$190.26    | \$1,046,418 |
| New York NY   | \$230.62    | \$1,268,386 | Chicago IL     | \$205.63    | \$1,130,977 | Seattle WA     | \$203.71    | \$1,120,408 |

For more information on this project and similar projects visit [www.dcdarchives.com](http://www.dcdarchives.com)

**Architect**

Bonsall Shafferman Architects & Space Planners  
1640 Valley Center Parkway, Bethlehem, PA 18017  
www.bsaia.com

**Project Team**

**Structural Engineer:**

4G Engineering, LLC  
1209 Hausman Road, #A, Allentown, PA 18104

**General Contractor & Cost Estimator:**

Ondra-Huyett Associates  
7584 Morris Court, #210,  
Allentown, PA 18106

**Mechanical Engineer:**

Burkholders Heating  
& Air Conditioning, Inc.  
383 Minor Street,  
Emmaus, PA 18049

**Electrical Engineer:**

Liberty Engineering, Inc.  
7535 Windsor Drive, #B203,  
Allentown, PA 18195

**Project General Description**

**Location:** Allentown, Pennsylvania

**Date Bid:** Aug 2013

**Construction Period:** Sept 2013 to Mar 2014

**Total Square Feet:** 6,107 **Site:** .124 acres.

**Number of Buildings:** One.

**Building Sizes:** Basement, 1,257; first floor, 3,892; mezzanine, 958; total 6,107 square feet.

**Building Height:** Basement, 8'; first floor, 12'; mezzanine, 8'; total, 9'3".

**Basic Construction Type:** New.

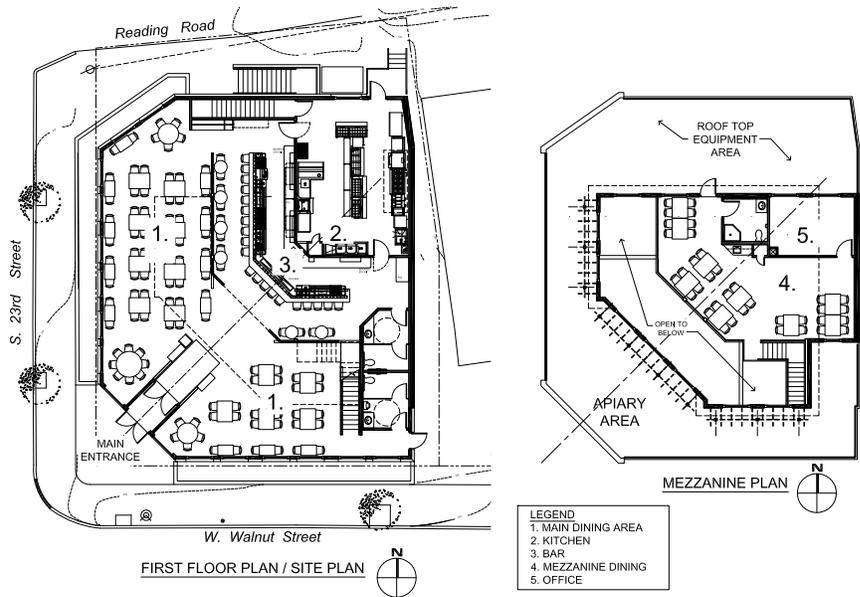
**Foundation:** Cast-in-place, slab-on-grade.

**Exterior Walls:** CMU, brick.

**Roof:** Asphalt shingles, membrane.

**Floors:** Concrete, wood.

**Interior Walls:** Metal stud drywall.



| DIVISION                      | COST               | % OF COST   | SQ.FT. COST     | SPECIFICATIONS   |
|-------------------------------|--------------------|-------------|-----------------|--|
| GENERAL REQUIREMENTS          | 157,770            | 11.76       | 25.83           | —  |
| CONCRETE                      | 97,479             | 7.26        | 15.96           | Forming & accessories, reinforcing, cast-in-place, precast.  |
| MASONRY                       | 48,596             | 3.62        | 7.96            | Unit.  |
| METALS                        | 116,492            | 8.68        | 19.08           | Structural metal framing, decking, cold-formed metal framing, fabrications.  |
| WOOD, PLASTICS & COMPOSITES   | 235,620            | 17.56       | 38.58           | Rough carpentry, finish carpentry, architectural woodwork.   |
| THERMAL & MOISTURE PROTECTION | 81,330             | 6.06        | 13.32           | Dampproofing & waterproofing, weather barriers, roofing & siding panels, membrane roofing, flashing & sheet metal, joint protection. |
| OPENINGS                      | 83,806             | 6.24        | 13.72           | Doors & frames, entrances, storefronts & curtain walls, hardware, glazing, louvers & vents.  |
| FINISHES                      | 144,140            | 10.74       | 23.60           | Plaster & gypsum board, tiling, ceilings, flooring, painting & coating.  |
| SPECIALTIES                   | 32,132             | 2.39        | 5.26            | Interior, exterior.  |
| CONVEYING SYSTEMS             | 12,488             | 0.93        | 2.04            | Dumbwaiter.  |
| FIRE SUPPRESSION              | 28,500             | 2.12        | 4.67            | Water-based fire-suppression systems.  |
| PLUMBING                      | 45,000             | 3.35        | 7.38            | Piping & pumps, equipment, fixtures.   |
| HVAC                          | 87,000             | 6.49        | 14.25           | Piping & pumps, air distribution, central HVAC equipment.  |
| ELECTRICAL                    | 138,000            | 10.29       | 22.60           | Medium-voltage electrical distribution, lighting.  |
| COMMUNICATIONS                | 11,700             | 0.87        | 1.91            | Data, audio-video.   |
| ELECTRONIC SAFETY & SECURITY  | 22,000             | 1.64        | 3.60            | Detection & alarm.   |
| <b>TOTAL BUILDING COSTS</b>   | <b>1,342,053</b>   | <b>100%</b> | <b>\$219.76</b> |  |
| EARTHWORK                     | 111,900            |             |                 | Site clearing, earth moving, excavation support & protection.  |
| EXTERIOR IMPROVEMENTS         | 18,850             |             |                 | Bases, bollards & paving, site improvements, planting.   |
| UTILITIES                     | 23,620             |             |                 | Water, sanitary sewerage, fuel distribution.   |
| <b>TOTAL PROJECT COST</b>     | <b>\$1,496,423</b> |             |                 | (Excluding architectural and engineering fees)   |

**UPDATED ESTIMATE TO DECEMBER 2014: \$225.93 PER SQUARE FOOT**

**Regional Cost Trends**

*This project, updated to December 2014 in the selected cities of the United States.*

| EASTERN U.S.  |             |             | CENTRAL U.S.   |             |             | WESTERN U.S.   |             |             |
|---------------|-------------|-------------|----------------|-------------|-------------|----------------|-------------|-------------|
|               | Sq.Ft. Cost | Total Cost  |                | Sq.Ft. Cost | Total Cost  |                | Sq.Ft. Cost | Total Cost  |
| Atlanta GA    | \$176.15    | \$1,075,762 | Dallas TX      | \$170.41    | \$1,040,683 | Los Angeles CA | \$227.85    | \$1,391,474 |
| Pittsburgh PA | \$222.11    | \$1,356,395 | Kansas City KS | \$229.76    | \$1,403,168 | Las Vegas NV   | \$208.70    | \$1,274,544 |
| New York NY   | \$283.38    | \$1,730,573 | Chicago IL     | \$239.34    | \$1,461,633 | Seattle WA     | \$227.85    | \$1,391,474 |

For more information on this project and similar projects visit [www.dcdarchives.com](http://www.dcdarchives.com)

## ARCHITECT

DFD  
2425 East Camelback Road, #400  
Phoenix, AZ 85016  
www.dfd-architecture.com

## FILE UNDER

COMMERCIAL  
Scottsdale, Arizona

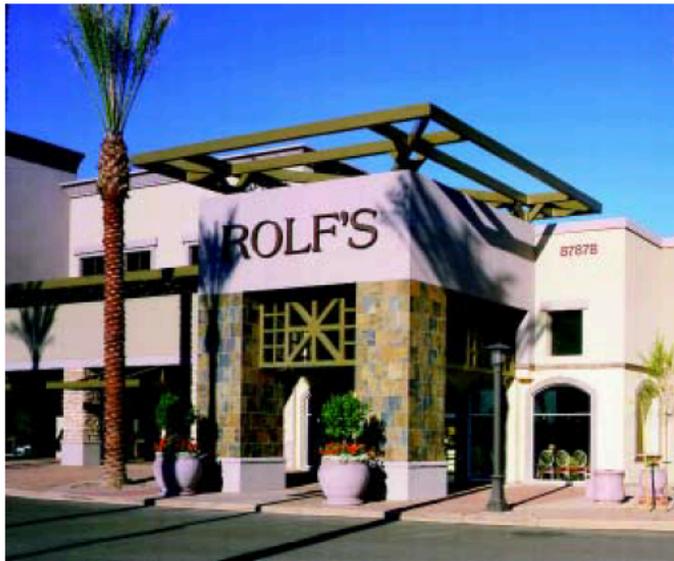
### CONSTRUCTION TEAM

**GENERAL CONTRACTOR: The Renaissance Co.**  
4636 East University, #245, Phoenix, AZ 85034

**STRUCTURAL ENGINEER: TLCP Structural Engineers**  
2802 East Indian School, Phoenix, AZ 85011

**ELECTRICAL & MECHANICAL ENGINEER:**  
**Peterson Associates**  
7201 North Dreamy Draw, #200, Phoenix, AZ 85020

**LANDSCAPE ARCHITECT: IDEA, Inc,**  
815 North 1st Avenue, #6, Phoenix, AZ 85003



### GENERAL DESCRIPTION

**SITE:** 17.55 gross/14.76 net acres.

**NUMBER OF BUILDINGS:** Six: main A & B; pads, C, D, E & F.

**BUILDING SIZES:** Main A & B, 91,371; pad C, 15,752; pad D, 12,767, pad E, 12,519; pad F, 6,000; total, 138,409 square feet.

**BUILDING HEIGHT:** Varies 20' to 36' total.

**BASIC CONSTRUCTION TYPE:** New/V-N.

**FOUNDATION:** Concrete.

**EXTERIOR WALLS:** EIFS, architectural stone, slate tile.

**ROOF:** Metal, membrane.

**FLOORS:** Exterior pavers.

**INTERIOR WALLS:** Gypsum board.

## THE SHOPS AT GAINNEY VILLAGE

Date Neg.: Feb 1999 • Construction Period: Nov 1999 to Jan 2001 • Total Square Feet: 138,409

| C.S.I. Divisions (1 through 16) | COST              | % OF COST   | SQ.FT. COST    | SPECIFICATIONS   |
|---------------------------------|-------------------|-------------|----------------|--|
| 1. BIDDING REQUIREMENTS         | 604,965           | 6.14        | 4.37           | Bonds & certificates, general conditions.  |
| 1. GENERAL REQUIREMENTS         | 55,853            | 0.57        | 0.40           | 1 Modification procedures, field engineering, quality control, construction facilities & temporary controls, contract closeout.                                  |
| 3. CONCRETE                     | 1,035,689         | 10.51       | 7.48           | 3 Formwork, reinforcement, accessories, cast-in-place, curing.   |
| 4. MASONRY                      | 973,885           | 9.88        | 7.04           | 4 Masonry & grout, accessories, unit, stone, simulated masonry.  |
| 5. METALS                       | 2,538,402         | 25.76       | 18.34          | 5 Structural framing, joists, decking, fabrications, ornamental.   |
| 6. WOOD & PLASTICS              | 51,880            | 0.53        | 0.38           | 6 Rough carpentry.   |
| 7. THERMAL & MOIST. PROTECT     | 660,944           | 6.71        | 4.78           | 7 Waterproofing, insulation, EIFS, membrane roofing, flashing & sheet metal, joint sealers.  |
| 8. DOORS & WINDOWS              | 546,825           | 5.55        | 3.95           | 8 Metal doors & frames, entrances & storefronts, special windows.  |
| 9. FINISHES                     | 1,417,707         | 14.39       | 10.24          | 9 Metal support systems, lath & plaster, gypsum board, tile.   |
| 10. SPECIALTIES                 | 15,900            | 0.16        | 0.11           | 10 Fire extinguishers, postal.   |
| 11. EQUIPMENT                   | —                 | —           | —              | 11 —   |
| 12. FURNISHING                  | —                 | —           | —              | 12 —   |
| 13. SPECIAL CONSTRUCTIONS       | —                 | —           | —              | 13 —   |
| 14. CONVEYING SYSTEMS           | —                 | —           | —              | 14 —   |
| 15. MECHANICAL                  | 632,906           | 6.42        | 4.57           | 15 Fire protection, plumbing, HVAC.  |
| 16. ELECTRICAL                  | 1,318,881         | 13.38       | 9.53           | 16 Basic materials & methods, service & distribution, lighting.  |
| <b>TOTAL BUILDING COST</b>      | <b>9,853,837</b>  | <b>100%</b> | <b>\$71.19</b> |  |
| 2. SITE WORK                    | 1,217,388         |             |                | 2 Demolition, preparation, earthwork, paving & surfacing, utility piping materials, water distribution, sewerage & drainage, landscaping. Included in Site Work. |
| LANDSCAPING & OFFSITE WORK      | —                 |             |                |  |
| <b>TOTAL PROJECT COST</b>       | <b>11,071,225</b> |             |                | <i>(Excluding architectural and engineering fees)</i>  |

UPDATED ESTIMATE TO DECEMBER 2001: \$79.99 PER SQUARE FOOT

| Project Data          |                         |                               |                             |
|-----------------------|-------------------------|-------------------------------|-----------------------------|
| Case Number:          | TMP-1046                | Project Name:                 | The Shops At Gainey Village |
| Building Use:         | Commercial              | PDF in DCD Magazine:          |                             |
| Target Building Size: | 468,729                 | Site Size:                    | 764,478                     |
| Target Building Cost: | \$ 73,569,892           | Target Building Sq. Ft. Cost: | \$ 156.96                   |
| Target Project Cost:  | \$ 76,253,792           | Non-Building Cost:            | \$ 2,683,900                |
| Foundation:           | Concrete                | Interior Walls:               | Gypsum                      |
| Exterior Walls:       | Insulated Finish System | Floor Type:                   | Concrete                    |
| Roof Type:            | Membrane                | Project Type:                 | New                         |
| Target Location:      | GA - SAVANNAH           | Target Date                   | NOVEMBER 2020               |

| Targeted Building Costs                  |                |                  |                      |  |
|--|----------------|------------------|----------------------|--|
| Code Name                                | Percent        | S/F Cost         | Cost                 |  |
| - 00 Bidding Requirements                | 6.14%          | 9.64             | \$ 4,516,739         |  |
| <b>Bidding Requirements</b>              | <b>6.14%</b>   | <b>\$ 9.64</b>   | <b>\$ 4,516,739</b>  |  |
| - 01 General Requirements                | 0.57%          | 0.89             | \$ 417,005           |  |
| <b>General Requirements</b>              | <b>0.57%</b>   | <b>\$ 0.89</b>   | <b>\$ 417,005</b>    |  |
| - 03 Concrete                            | 10.51%         | 16.50            | \$ 7,732,574         |  |
| <b>Concrete</b>                          | <b>10.51%</b>  | <b>\$ 16.50</b>  | <b>\$ 7,732,574</b>  |  |
| - 04 Masonry                             | 9.88%          | 15.51            | \$ 7,271,139         |  |
| <b>Masonry</b>                           | <b>9.88%</b>   | <b>\$ 15.51</b>  | <b>\$ 7,271,139</b>  |  |
| - 05 Metals                              | 25.76%         | 40.43            | \$ 18,952,004        |  |
| <b>Metals</b>                            | <b>25.76%</b>  | <b>\$ 40.43</b>  | <b>\$ 18,952,004</b> |  |
| - 06 Wood & Plastics                     | 0.53%          | 0.83             | \$ 387,342           |  |
| <b>Rough Carpentry</b>                   | <b>0.53%</b>   | <b>\$ 0.83</b>   | <b>\$ 387,342</b>    |  |
| - 07 Thermal & Moisture Protection       | 6.71%          | 10.53            | \$ 4,934,685         |  |
| <b>Thermal &amp; Moisture Protection</b> | <b>6.71%</b>   | <b>\$ 10.53</b>  | <b>\$ 4,934,685</b>  |  |
| - 08 Doors & Windows                     | 5.55%          | 8.71             | \$ 4,082,659         |  |
| <b>Doors &amp; Windows</b>               | <b>5.55%</b>   | <b>\$ 8.71</b>   | <b>\$ 4,082,659</b>  |  |
| - 09 Finishes                            | 14.39%         | 22.58            | \$ 10,584,765        |  |
| <b>Finishes</b>                          | <b>14.39%</b>  | <b>\$ 22.58</b>  | <b>\$ 10,584,765</b> |  |
| - 10 Specialties                         | 0.16%          | 0.25             | \$ 118,711           |  |
| <b>Specialties</b>                       | <b>0.16%</b>   | <b>\$ 0.25</b>   | <b>\$ 118,711</b>    |  |
| - 15 Mechanical                          | 6.42%          | 10.08            | \$ 4,725,350         |  |
| <b>Mechanical</b>                        | <b>6.42%</b>   | <b>\$ 10.08</b>  | <b>\$ 4,725,350</b>  |  |
| - 16 Electrical                          | 13.38%         | 21.01            | \$ 9,846,919         |  |
| <b>Electrical</b>                        | <b>13.38%</b>  | <b>\$ 21.01</b>  | <b>\$ 9,846,919</b>  |  |
| <b>Total Building Costs</b>              | <b>100.00%</b> | <b>\$ 156.96</b> | <b>\$ 73,569,892</b> |  |

Important Note: All Non-building costs were targeted using location and date only.

| Targeted Non Building Costs     |                     |
|---------------------------------|---------------------|
| Code Name                       | Cost                |
| + 02 Site Work                  | \$ 2,683,900        |
| <b>Total Non Building Costs</b> | <b>\$ 2,683,900</b> |

**Total Project Costs \$ 76,253,792**

***This Statement of Probable Cost is based on project cm011116 selected from the DCD Archives located at [www.constructionworkzone.com](http://www.constructionworkzone.com) (<https://www.constructionworkzone.com>).***

***Note to User: This Statement of Probable Cost is a conceptual cost based on an actual building in the Conceptual Estimator and is not final estimate. DC&D Technologies, a Div. of BNi Publications accepts no responsibility or liability for how the Conceptual Estimator is used, nor for the conclusions drawn by the Users as a result of the use and manipulation of the data in the Conceptual Estimator.***

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| Project Data          |                       |                               |                      |
|-----------------------|-----------------------|-------------------------------|----------------------|
| Case Number:          | TMP-1046              | Project Name:                 | Youells Oyster House |
| Building Use:         | Commercial            | PDF in DCD Magazine:          |                      |
| Target Building Size: | 24,800                | Site Size:                    | 5,388                |
| Target Building Cost: | \$ 5,131,667          | Target Building Sq. Ft. Cost: | \$ 206.92            |
| Target Project Cost:  | \$ 5,277,021          | Non-Building Cost:            | \$ 145,354           |
| Foundation:           | Cast-In-Place         | Interior Walls:               | Metal Stud Drywall   |
| Exterior Walls:       | Concrete Masonry Unit | Floor Type:                   | Concrete             |
| Roof Type:            | Asphalt Shingles      | Project Type:                 | New                  |
| Target Location:      | GA - SAVANNAH         | Target Date                   | NOVEMBER 2020        |

| Targeted Building Costs              |         |          |            |  |
|--------------------------------------|---------|----------|------------|--|
| Code Name                            | Percent | S/F Cost | Cost       |  |
| - 01 General Requirements            | 11.76%  | 24.33    | \$ 603,272 |  |
| Adminstrative Requirements           | 8.95%   | \$ 18.52 | \$ 459,400 |  |
| Execution & Close Out                | 0.29%   | \$ 0.59  | \$ 14,630  |  |
| Performance                          | 1.98%   | \$ 4.10  | \$ 101,654 |  |
| Quality Requirements                 | 0.54%   | \$ 1.11  | \$ 27,588  |  |
| - 03 Concrete                        | 7.26%   | 15.03    | \$ 372,735 |  |
| Cast-in-Place                        | 2.35%   | \$ 4.86  | \$ 120,528 |  |
| Forming & Accessories                | 2.87%   | \$ 5.93  | \$ 147,031 |  |
| Precast                              | 0.15%   | \$ 0.30  | \$ 7,456   |  |
| Reinforcing                          | 1.90%   | \$ 3.94  | \$ 97,720  |  |
| - 04 Masonry                         | 3.62%   | 7.49     | \$ 185,819 |  |
| Unit                                 | 3.62%   | \$ 7.49  | \$ 185,819 |  |
| - 05 Metals                          | 8.68%   | 17.96    | \$ 445,436 |  |
| Cold-Formed Metal Framing            | 1.35%   | \$ 2.80  | \$ 69,454  |  |
| Decking                              | 0.84%   | \$ 1.73  | \$ 42,872  |  |
| Fabrications                         | 1.68%   | \$ 3.48  | \$ 86,287  |  |
| Structural Metal Framing             | 4.81%   | \$ 9.95  | \$ 246,823 |  |
| - 06 Wood, Plastics, and Composites  | 17.56%  | 36.33    | \$ 900,951 |  |
| Architectural Woodwork               | 1.98%   | \$ 4.09  | \$ 101,413 |  |
| Finish Carpentry                     | 5.85%   | \$ 12.10 | \$ 299,980 |  |
| Rough Carpentry                      | 9.73%   | \$ 20.14 | \$ 499,557 |  |
| - 07 Thermal and Moisture Protection | 6.06%   | 12.54    | \$ 310,985 |  |
| Dampproofing & Waterproofing         | 0.24%   | \$ 0.50  | \$ 12,442  |  |
| Flashing & Sheet Metal               | 0.37%   | \$ 0.77  | \$ 19,142  |  |
| Joint Protection                     | 0.24%   | \$ 0.49  | \$ 12,068  |  |
| Membrane Roofing                     | 2.19%   | \$ 4.54  | \$ 112,479 |  |
| Roofing & Siding Panels              | 2.70%   | \$ 5.59  | \$ 138,695 |  |
| Weather Barriers                     | 0.31%   | \$ 0.65  | \$ 16,159  |  |
| - 08 Openings                        | 6.24%   | 12.92    | \$ 320,453 |  |
| Doors & Frames                       | 1.23%   | \$ 2.55  | \$ 63,325  |  |

|      |  |                |                  |                     |
|------|--|----------------|------------------|---------------------|
|      | <b>Entrances,Storefronts,Curtain Walls</b> | <b>1.67%</b>   | <b>\$ 3.46</b>   | <b>\$ 85,702</b>    |
|      | <b>Glazing</b>                             | <b>0.06%</b>   | <b>\$ 0.12</b>   | <b>\$ 2,875</b>     |
|      | <b>Hardware</b>                            | <b>0.43%</b>   | <b>\$ 0.88</b>   | <b>\$ 21,883</b>    |
|      | <b>Louvers &amp; Vents</b>                 | <b>0.06%</b>   | <b>\$ 0.13</b>   | <b>\$ 3,116</b>     |
|      | <b>Windows</b>                             | <b>2.80%</b>   | <b>\$ 5.79</b>   | <b>\$ 143,551</b>   |
| — 09 | Finishes                                   | 10.74%         | 22.22            | \$ 551,154          |
|      | <b>Ceilings</b>                            | <b>1.05%</b>   | <b>\$ 2.18</b>   | <b>\$ 54,083</b>    |
|      | <b>Flooring</b>                            | <b>3.09%</b>   | <b>\$ 6.39</b>   | <b>\$ 158,460</b>   |
|      | <b>Painting &amp; Coating</b>              | <b>2.88%</b>   | <b>\$ 5.96</b>   | <b>\$ 147,807</b>   |
|      | <b>Plaster &amp; Gypsum Board</b>          | <b>3.11%</b>   | <b>\$ 6.43</b>   | <b>\$ 159,450</b>   |
|      | <b>Tiling</b>                              | <b>0.61%</b>   | <b>\$ 1.26</b>   | <b>\$ 31,355</b>    |
| — 10 | Specialties                                | 2.39%          | 4.95             | \$ 122,865          |
|      | <b>Exterior</b>                            | <b>1.98%</b>   | <b>\$ 4.09</b>   | <b>\$ 101,367</b>   |
|      | <b>Interior</b>                            | <b>0.42%</b>   | <b>\$ 0.87</b>   | <b>\$ 21,497</b>    |
| — 14 | Conveying Systems                          | 0.93%          | 1.93             | \$ 47,751           |
|      | <b>Dumbwaiters</b>                         | <b>0.93%</b>   | <b>\$ 1.93</b>   | <b>\$ 47,751</b>    |
| — 21 | Fire Suppression                           | 2.12%          | 4.39             | \$ 108,977          |
|      | <b>Water-Based Fire Suppression Sys.</b>   | <b>2.12%</b>   | <b>\$ 4.39</b>   | <b>\$ 108,977</b>   |
| — 22 | Plumbing                                   | 3.35%          | 6.94             | \$ 172,068          |
|      | <b>Equipment</b>                           | <b>0.98%</b>   | <b>\$ 2.04</b>   | <b>\$ 50,473</b>    |
|      | <b>Fixtures</b>                            | <b>1.97%</b>   | <b>\$ 4.09</b>   | <b>\$ 101,329</b>   |
|      | <b>Piping &amp; Pumps</b>                  | <b>0.39%</b>   | <b>\$ 0.82</b>   | <b>\$ 20,266</b>    |
| — 23 | HVAC                                       | 6.48%          | 13.41            | \$ 332,666          |
|      | <b>Air Distribution</b>                    | <b>2.54%</b>   | <b>\$ 5.26</b>   | <b>\$ 130,390</b>   |
|      | <b>Central HVAC Equipment</b>              | <b>3.11%</b>   | <b>\$ 6.43</b>   | <b>\$ 159,450</b>   |
|      | <b>Piping &amp; Pumps</b>                  | <b>0.83%</b>   | <b>\$ 1.73</b>   | <b>\$ 42,826</b>    |
| — 26 | Electrical                                 | 10.28%         | 21.28            | \$ 527,677          |
|      | <b>Lighting</b>                            | <b>2.98%</b>   | <b>\$ 6.17</b>   | <b>\$ 152,950</b>   |
|      | <b>Medium Voltage Dist.</b>                | <b>7.30%</b>   | <b>\$ 15.11</b>  | <b>\$ 374,727</b>   |
| — 27 | Communications                             | 0.87%          | 1.80             | \$ 44,738           |
|      | <b>Audio-Video</b>                         | <b>0.52%</b>   | <b>\$ 1.08</b>   | <b>\$ 26,766</b>    |
|      | <b>Data</b>                                | <b>0.35%</b>   | <b>\$ 0.72</b>   | <b>\$ 17,972</b>    |
| — 28 | Electronic Safety and Security             | 1.64%          | 3.39             | \$ 84,122           |
|      | <b>Detection &amp; Alarm</b>               | <b>1.64%</b>   | <b>\$ 3.39</b>   | <b>\$ 84,122</b>    |
|      | <b>Total Building Costs</b>                | <b>100.00%</b> | <b>\$ 206.92</b> | <b>\$ 5,131,667</b> |

Important Note: All Non-building costs were targeted using location and date only.

| Targeted Non Building Costs |                                      | Cost             |
|-----------------------------|--------------------------------------|------------------|
| — 31                        | Earthwork                            | \$ 105,365       |
|                             | <b>Earth Moving</b>                  | <b>\$ 98,397</b> |
|                             | <b>Excavation Support/Protection</b> | <b>\$ 4,426</b>  |
|                             | <b>Site Clearing</b>                 | <b>\$ 2,542</b>  |
| — 32                        | Exterior Improvements                | \$ 17,749        |
|                             | <b>Bases, Bollards, Paving</b>       | <b>\$ 7,062</b>  |
|                             | <b>Planting</b>                      | <b>\$ 1,412</b>  |
|                             | <b>Site Improvements</b>             | <b>\$ 9,275</b>  |
| — 33                        | Utilities                            | \$ 22,241        |

|                          |              |
|--------------------------|--------------|
| Fuel Distribution        | \$ 6,827     |
| Sanitary Sewerage        | \$ 9,416     |
| Water                    | \$ 5,998     |
| Total Non Building Costs | \$ 145,354   |
| Total Project Costs      | \$ 5,277,021 |

***This Statement of Probable Cost is based on project cm141140 selected from the DCD Archives located at [www.constructionworkzone.com](http://www.constructionworkzone.com) (<https://www.constructionworkzone.com>).***

***Note to User: This Statement of Probable Cost is a conceptual cost based on an actual building in the Conceptual Estimator and is not final estimate. DC&D Technologies, a Div. of BNi Publications accepts no responsibility or liability for how the Conceptual Estimator is used, nor for the conclusions drawn by the Users as a result of the use and manipulation of the data in the Conceptual Estimator.***

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**Project Data**

|                                  |                                  |  |  |
|----------------------------------|----------------------------------|--|--|
| <b>Case Number:</b>              | <b>TMP-1046</b>                  | <b>Project Name:</b>                     | <b>UPMC Hampton<br/>Outpatient<br/>Center</b>              |
| <b>Building Use:</b>             | <b>Medical</b>                   | <b>PDF in DCD<br/>Magazine:</b>          |  |
| <b>Target Building<br/>Size:</b> | <b>42,938</b>                    | <b>Site Size:</b>                        | <b>168,577</b>   |
| <b>Target Building<br/>Cost:</b> | <b>\$ 11,332,761</b>             | <b>Target Building<br/>Sq. Ft. Cost:</b> | <b>\$ 263.93</b>   |
| <b>Target Project<br/>Cost:</b>  | <b>\$ 12,766,206</b>             | <b>Non-Building<br/>Cost:</b>            | <b>\$ 1,433,446</b>  |
| <b>Foundation:</b>               | <b>Cast-In-Place</b>             | <b>Interior Walls:</b>                   | <b>Metal Stud<br/>Drywall<br/>Concrete,<br/>Reinforced</b> |
| <b>Exterior Walls:</b>           | <b>Masonry, Brick,<br/>Block</b> | <b>Floor Type:</b>                       | <b>Concrete,<br/>Concrete/Metal<br/>Deck</b>               |
| <b>Roof Type:</b>                | <b>Membrane</b>                  | <b>Project Type:</b>                     | <b>New</b>   |
| <b>Target Location:</b>          | <b>GA - SAVANNAH</b>             | <b>Target Date</b>                       | <b>DECEMBER 2020</b>                                       |

**Targeted Building Costs**

| <b>Code Name</b>                                | <b>Percent</b> | <b>S/F Cost</b> | <b>Cost</b>       |
|---|----------------|-----------------|-------------------|
| - 00 Procurement and Contracting<br>Require     | 0.14%          | 0.38            | \$ 16,405         |
| <b>Building Permit</b>                          | <b>0.14%</b>   | <b>\$ 0.38</b>  | <b>\$ 16,405</b>  |
| - 01 General Requirements                       | 10.90%         | 28.76           | \$ 1,235,103      |
| <b>CO 4 RFCO Corrections</b>                    | <b>-0.00%</b>  | <b>\$ -0.00</b> | <b>\$ -124</b>    |
| <b>Dump Site Equipment</b>                      | <b>0.04%</b>   | <b>\$ 0.09</b>  | <b>\$ 4,020</b>   |
| <b>General Conditions &amp; Fee</b>             | <b>8.82%</b>   | <b>\$ 23.28</b> | <b>\$ 999,488</b> |
| <b>OFCI Allowance</b>                           | <b>0.08%</b>   | <b>\$ 0.21</b>  | <b>\$ 9,187</b>   |
| <b>PL 3 Credit</b>                              | <b>-0.02%</b>  | <b>\$ -0.05</b> | <b>\$ -2,005</b>  |
| <b>Site Office &amp; Technology</b>             | <b>0.13%</b>   | <b>\$ 0.34</b>  | <b>\$ 14,584</b>  |
| <b>Temp Power</b>                               | <b>0.40%</b>   | <b>\$ 1.06</b>  | <b>\$ 45,575</b>  |
| <b>Temp Utilities</b>                           | <b>0.10%</b>   | <b>\$ 0.28</b>  | <b>\$ 11,850</b>  |
| <b>WCPR 18 First FI Chg</b>                     | <b>0.01%</b>   | <b>\$ 0.02</b>  | <b>\$ 924</b>     |
| <b>WCPR 20 2nd FI Chg</b>                       | <b>0.08%</b>   | <b>\$ 0.22</b>  | <b>\$ 9,577</b>   |
| <b>WCPR 21 3rd FI Chg</b>                       | <b>0.06%</b>   | <b>\$ 0.15</b>  | <b>\$ 6,604</b>   |
| <b>WCPR 31</b>                                  | <b>0.05%</b>   | <b>\$ 0.14</b>  | <b>\$ 6,098</b>   |
| <b>WCPR 32 3rd FI Chg</b>                       | <b>1.14%</b>   | <b>\$ 3.01</b>  | <b>\$ 129,325</b> |
| - 03 Concrete                                   | 4.96%          | 13.09           | \$ 562,041        |
| <b>Admixture</b>                                | <b>-0.82%</b>  | <b>\$ -2.18</b> | <b>\$ -93,434</b> |
| <b>Concrete Moisture<br/>Mitigation</b>         | <b>1.02%</b>   | <b>\$ 2.69</b>  | <b>\$ 115,583</b> |
| <b>Footers Install</b>                          | <b>0.32%</b>   | <b>\$ 0.84</b>  | <b>\$ 36,035</b>  |
| <b>Footers Mat</b>                              | <b>0.37%</b>   | <b>\$ 0.98</b>  | <b>\$ 42,244</b>  |
| <b>Foundation Walls &amp; Piers<br/>Install</b> | <b>0.92%</b>   | <b>\$ 2.44</b>  | <b>\$ 104,631</b> |
| <b>Foundation Walls &amp; Piers<br/>Mat</b>     | <b>0.46%</b>   | <b>\$ 1.22</b>  | <b>\$ 52,406</b>  |
| <b>Reinforcing</b>                              | <b>0.79%</b>   | <b>\$ 2.08</b>  | <b>\$ 89,134</b>  |
| <b>Slab On Deck Install</b>                     | <b>0.36%</b>   | <b>\$ 0.96</b>  | <b>\$ 41,011</b>  |
| <b>Slab On Deck Mat</b>                         | <b>0.65%</b>   | <b>\$ 1.72</b>  | <b>\$ 74,028</b>  |
| <b>SOG Install</b>                              | <b>0.32%</b>   | <b>\$ 0.83</b>  | <b>\$ 35,708</b>  |

|             |  |               |                 |                   |
|-------------|--|---------------|-----------------|-------------------|
|             | <b>SOG Mat</b>                         | <b>0.46%</b>  | <b>\$ 1.22</b>  | <b>\$ 52,233</b>  |
|             | <b>Stair A Closure Plate</b>           | <b>0.01%</b>  | <b>\$ 0.02</b>  | <b>\$ 1,036</b>   |
|             | <b>Stairs Install</b>                  | <b>0.05%</b>  | <b>\$ 0.14</b>  | <b>\$ 5,798</b>   |
|             | <b>Stairs Mat</b>                      | <b>0.05%</b>  | <b>\$ 0.13</b>  | <b>\$ 5,627</b>   |
| <b>- 04</b> | Masonry                                | 2.62%         | 6.92            | \$ 296,923        |
|             | <b>Cast Stone Veneer</b>               | <b>1.70%</b>  | <b>\$ 4.47</b>  | <b>\$ 192,100</b> |
|             | <b>CMU Foundations</b>                 | <b>0.76%</b>  | <b>\$ 2.02</b>  | <b>\$ 86,593</b>  |
|             | <b>Mobilization</b>                    | <b>0.08%</b>  | <b>\$ 0.21</b>  | <b>\$ 9,115</b>   |
|             | <b>Mock Up Panel</b>                   | <b>0.04%</b>  | <b>\$ 0.11</b>  | <b>\$ 4,558</b>   |
|             | <b>Submittals</b>                      | <b>0.04%</b>  | <b>\$ 0.11</b>  | <b>\$ 4,558</b>   |
| <b>- 05</b> | Metals                                 | 8.57%         | 22.63           | \$ 971,733        |
|             | <b>Joist &amp; Deck</b>                | <b>0.59%</b>  | <b>\$ 1.55</b>  | <b>\$ 66,590</b>  |
|             | <b>Misc Metals</b>                     | <b>1.67%</b>  | <b>\$ 4.40</b>  | <b>\$ 189,107</b> |
|             | <b>RFI 93 Added Steel At Columns</b>   | <b>0.02%</b>  | <b>\$ 0.06</b>  | <b>\$ 2,621</b>   |
|             | <b>SS Detail Dwgs &amp; Engr</b>       | <b>0.31%</b>  | <b>\$ 0.81</b>  | <b>\$ 34,956</b>  |
|             | <b>Structural Erection</b>             | <b>2.03%</b>  | <b>\$ 5.37</b>  | <b>\$ 230,383</b> |
|             | <b>Structural Steel</b>                | <b>3.99%</b>  | <b>\$ 10.53</b> | <b>\$ 451,965</b> |
|             | <b>WCPR 12 Elevator Steel</b>          | <b>-0.01%</b> | <b>\$ -0.02</b> | <b>\$ -731</b>    |
|             | <b>WCPR 13 Unistrut Rails</b>          | <b>-0.05%</b> | <b>\$ -0.12</b> | <b>\$ -5,185</b>  |
|             | <b>WCPR 29 Railing Mods</b>            | <b>0.02%</b>  | <b>\$ 0.05</b>  | <b>\$ 2,026</b>   |
| <b>- 06</b> | Wood, Plastics, and Composites         | 5.58%         | 14.72           | \$ 631,978        |
|             | <b>Casework</b>                        | <b>4.97%</b>  | <b>\$ 13.12</b> | <b>\$ 563,310</b> |
|             | <b>Exterior Trim</b>                   | <b>0.04%</b>  | <b>\$ 0.11</b>  | <b>\$ 4,877</b>   |
|             | <b>Rough Carpentry</b>                 | <b>0.51%</b>  | <b>\$ 1.34</b>  | <b>\$ 57,411</b>  |
|             | <b>Window Stools</b>                   | <b>0.06%</b>  | <b>\$ 0.15</b>  | <b>\$ 6,381</b>   |
| <b>- 07</b> | Thermal and Moisture Protection        | 8.12%         | 21.44           | \$ 920,532        |
|             | <b>Caulking</b>                        | <b>0.10%</b>  | <b>\$ 0.28</b>  | <b>\$ 11,850</b>  |
|             | <b>Exterior Panels</b>                 | <b>5.78%</b>  | <b>\$ 15.26</b> | <b>\$ 655,299</b> |
|             | <b>Fireproofing</b>                    | <b>0.27%</b>  | <b>\$ 0.70</b>  | <b>\$ 30,080</b>  |
|             | <b>RFI 88 Added Scupper</b>            | <b>0.02%</b>  | <b>\$ 0.05</b>  | <b>\$ 1,989</b>   |
|             | <b>Roof Sys Chg to PVC</b>             | <b>-0.04%</b> | <b>\$ -0.09</b> | <b>\$ -4,010</b>  |
|             | <b>Roofing</b>                         | <b>1.67%</b>  | <b>\$ 4.42</b>  | <b>\$ 189,684</b> |
|             | <b>WP &amp; DP</b>                     | <b>0.31%</b>  | <b>\$ 0.83</b>  | <b>\$ 35,640</b>  |
| <b>- 08</b> | Openings                               | 9.81%         | 25.88           | \$ 1,111,358      |
|             | <b>Access Doors</b>                    | <b>0.00%</b>  | <b>\$ 0.01</b>  | <b>\$ 551</b>     |
|             | <b>Added Window Fils &amp; Drywall</b> | <b>0.01%</b>  | <b>\$ 0.03</b>  | <b>\$ 1,137</b>   |
|             | <b>Automatic Entrances</b>             | <b>0.14%</b>  | <b>\$ 0.37</b>  | <b>\$ 15,951</b>  |
|             | <b>CW &amp; SF</b>                     | <b>7.63%</b>  | <b>\$ 20.15</b> | <b>\$ 865,018</b> |
|             | <b>CW Angles &amp; Anchors</b>         | <b>0.01%</b>  | <b>\$ 0.02</b>  | <b>\$ 978</b>     |
|             | <b>Door Frames Install</b>             | <b>0.09%</b>  | <b>\$ 0.24</b>  | <b>\$ 10,403</b>  |
|             | <b>Door Frames Mat</b>                 | <b>0.20%</b>  | <b>\$ 0.53</b>  | <b>\$ 22,944</b>  |
|             | <b>Doors Install</b>                   | <b>0.09%</b>  | <b>\$ 0.23</b>  | <b>\$ 9,964</b>   |
|             | <b>Doors Mat</b>                       | <b>0.43%</b>  | <b>\$ 1.14</b>  | <b>\$ 48,742</b>  |
|             | <b>Front Entry CW 4 &amp; SF 4</b>     | <b>0.00%</b>  | <b>\$ 0.01</b>  | <b>\$ 564</b>     |
|             | <b>Hardware Install</b>                | <b>0.53%</b>  | <b>\$ 1.39</b>  | <b>\$ 59,846</b>  |
|             | <b>Hardware Mat</b>                    | <b>0.64%</b>  | <b>\$ 1.69</b>  | <b>\$ 72,661</b>  |
|             | <b>Misc Door Changes</b>               | <b>0.02%</b>  | <b>\$ 0.06</b>  | <b>\$ 2,599</b>   |

|    |                               |        |          |              |
|----|-------------------------------|--------|----------|--------------|
| 09 | Finishes                      | 16.09% | 42.46    | \$ 1,823,068 |
|    | Added VCT in IDFs & MDF       | 0.01%  | \$ 0.03  | \$ 1,190     |
|    | Austins Playroom Tile         | 0.03%  | \$ 0.08  | \$ 3,257     |
|    | Ceramic Tile                  | 1.05%  | \$ 2.76  | \$ 118,496   |
|    | Flooring                      | 1.46%  | \$ 3.85  | \$ 165,479   |
|    | Framing DW Ceilings           | 12.58% | \$ 33.20 | \$ 1,425,594 |
|    | Paint & Patch Relocated Items | 0.01%  | \$ 0.03  | \$ 1,213     |
|    | Painting                      | 0.93%  | \$ 2.46  | \$ 105,449   |
|    | Wallcovering                  | 0.02%  | \$ 0.06  | \$ 2,390     |
| 10 | Specialties                   | 1.92%  | 5.06     | \$ 217,212   |
|    | Added Quest Shelf             | 0.01%  | \$ 0.02  | \$ 669       |
|    | Allowance OFCI Items          | 0.08%  | \$ 0.21  | \$ 9,115     |
|    | Allowance Site Mailbox        | 0.03%  | \$ 0.08  | \$ 3,646     |
|    | Coat Rack                     | 0.00%  | \$ 0.00  | \$ 175       |
|    | Code Required Signage         | 0.05%  | \$ 0.13  | \$ 5,722     |
|    | Corner Guards Install         | 0.16%  | \$ 0.42  | \$ 17,940    |
|    | Corner Guards Mat             | 0.61%  | \$ 1.60  | \$ 68,791    |
|    | Courier Box Per WCPR 33       | 0.01%  | \$ 0.03  | \$ 1,421     |
|    | Cubical & TV Track Mat        | 0.09%  | \$ 0.23  | \$ 9,663     |
|    | Cubicle & TV Track Install    | 0.02%  | \$ 0.04  | \$ 1,732     |
|    | Fire Ext Install              | 0.01%  | \$ 0.02  | \$ 884       |
|    | Fire Ext Mat                  | 0.02%  | \$ 0.05  | \$ 2,036     |
|    | Lockers & Benches             | 0.10%  | \$ 0.25  | \$ 10,938    |
|    | Mailbox Allowance             | -0.02% | \$ -0.06 | \$ -2,507    |
|    | Misc Specialty Items Install  | 0.01%  | \$ 0.03  | \$ 1,200     |
|    | Misc Specialty Items Mat      | 0.02%  | \$ 0.04  | \$ 1,872     |
|    | Projection Screen             | 0.05%  | \$ 0.12  | \$ 5,302     |
|    | Toilet Accessories            | 0.11%  | \$ 0.30  | \$ 12,851    |
|    | Toilet Accessories Install    | 0.18%  | \$ 0.48  | \$ 20,442    |
|    | Toilet Accessories Mat        | 0.07%  | \$ 0.18  | \$ 7,837     |
|    | Toilet Accessory Chg          | 0.14%  | \$ 0.37  | \$ 15,888    |
|    | Toilet Partition Supports     | 0.07%  | \$ 0.20  | \$ 8,376     |
|    | Toilet Partitions             | 0.12%  | \$ 0.31  | \$ 13,217    |
| 11 | Equipment                     | 0.27%  | 0.71     | \$ 30,541    |
|    | Eyewash Missing 1087          | 0.01%  | \$ 0.02  | \$ 1,038     |
|    | Kitchen Hampton Lane Work     | 0.25%  | \$ 0.67  | \$ 28,790    |
|    | Sanitary Basket Hoist         | 0.01%  | \$ 0.02  | \$ 713       |
| 12 | Furnishings                   | 0.07%  | 0.19     | \$ 8,322     |
|    | Added Acrylic At Decor Glass  | 0.04%  | \$ 0.11  | \$ 4,808     |
|    | Added Curtains To Exam Rms    | 0.02%  | \$ 0.05  | \$ 2,212     |
|    | Credit For Wood Wall Desks    | -0.02% | \$ -0.05 | \$ -2,012    |
|    | Entrance Mats Install         | 0.01%  | \$ 0.01  | \$ 567       |
|    | Entrance Mats Mat             | 0.01%  | \$ 0.02  | \$ 735       |
|    | Ergo Wood Wall Desks          | 0.02%  | \$ 0.05  | \$ 2,012     |
| 14 | Conveying Systems             | 1.75%  | 4.62     | \$ 198,252   |
|    | 2 Elevators Material          | 0.75%  | \$ 1.99  | \$ 85,317    |
|    | Car 1 Labor                   | 0.21%  | \$ 0.54  | \$ 23,289    |

|      |  |               |                 |                   |
|------|--|---------------|-----------------|-------------------|
|      | <b>Car 2 Labor</b>                       | <b>0.21%</b>  | <b>\$ 0.54</b>  | <b>\$ 23,289</b>  |
|      | <b>Elevators Design Engr Layout</b>      | <b>0.59%</b>  | <b>\$ 1.55</b>  | <b>\$ 66,358</b>  |
| - 21 | Fire Suppression                         | 1.44%         | 3.81            | \$ 163,615        |
|      | <b>Sprinklers</b>                        | <b>1.44%</b>  | <b>\$ 3.81</b>  | <b>\$ 163,615</b> |
| - 22 | Plumbing                                 | 6.65%         | 17.55           | \$ 753,531        |
|      | <b>Abv Slab Drain Vent Pipe Lab</b>      | <b>0.68%</b>  | <b>\$ 1.80</b>  | <b>\$ 77,478</b>  |
|      | <b>Abv Slab Drain Vent Pipe Mat</b>      | <b>0.47%</b>  | <b>\$ 1.23</b>  | <b>\$ 52,867</b>  |
|      | <b>Abv Slab Gas Pipe Lab</b>             | <b>0.11%</b>  | <b>\$ 0.29</b>  | <b>\$ 12,305</b>  |
|      | <b>Abv Slab Gas Pipe Mat</b>             | <b>0.10%</b>  | <b>\$ 0.25</b>  | <b>\$ 10,938</b>  |
|      | <b>Abv Storm Pipe Lab</b>                | <b>0.28%</b>  | <b>\$ 0.74</b>  | <b>\$ 31,903</b>  |
|      | <b>Abv Storm Pipe Mat</b>                | <b>0.20%</b>  | <b>\$ 0.53</b>  | <b>\$ 22,788</b>  |
|      | <b>Abv Water Pipe Lab</b>                | <b>0.72%</b>  | <b>\$ 1.91</b>  | <b>\$ 82,035</b>  |
|      | <b>Abv Water Pipe Mat</b>                | <b>0.48%</b>  | <b>\$ 1.27</b>  | <b>\$ 54,690</b>  |
|      | <b>Close Out</b>                         | <b>0.02%</b>  | <b>\$ 0.05</b>  | <b>\$ 2,279</b>   |
|      | <b>Coordination &amp; Submittals</b>     | <b>0.38%</b>  | <b>\$ 1.00</b>  | <b>\$ 42,841</b>  |
|      | <b>Demobilization</b>                    | <b>0.02%</b>  | <b>\$ 0.06</b>  | <b>\$ 2,735</b>   |
|      | <b>Dom Cold Water Insulation</b>         | <b>0.17%</b>  | <b>\$ 0.45</b>  | <b>\$ 19,262</b>  |
|      | <b>Equipment Lab</b>                     | <b>0.15%</b>  | <b>\$ 0.40</b>  | <b>\$ 17,319</b>  |
|      | <b>Equipment Mat</b>                     | <b>0.24%</b>  | <b>\$ 0.64</b>  | <b>\$ 27,345</b>  |
|      | <b>Faucet Gooseneck Chg S1</b>           | <b>0.02%</b>  | <b>\$ 0.05</b>  | <b>\$ 2,048</b>   |
|      | <b>Fixtures Lab</b>                      | <b>0.20%</b>  | <b>\$ 0.53</b>  | <b>\$ 22,788</b>  |
|      | <b>Fixtures Mat</b>                      | <b>0.52%</b>  | <b>\$ 1.38</b>  | <b>\$ 59,248</b>  |
|      | <b>Flr Rf Drains &amp; Cleanouts Lab</b> | <b>0.08%</b>  | <b>\$ 0.22</b>  | <b>\$ 9,571</b>   |
|      | <b>Flr Rf Drains &amp; Cleanouts Mat</b> | <b>0.16%</b>  | <b>\$ 0.42</b>  | <b>\$ 18,230</b>  |
|      | <b>Insulation Lab</b>                    | <b>0.20%</b>  | <b>\$ 0.52</b>  | <b>\$ 22,332</b>  |
|      | <b>Insulation Mat</b>                    | <b>0.08%</b>  | <b>\$ 0.22</b>  | <b>\$ 9,571</b>   |
|      | <b>Mobilization</b>                      | <b>0.12%</b>  | <b>\$ 0.32</b>  | <b>\$ 13,673</b>  |
|      | <b>Quest Sink Chg</b>                    | <b>0.02%</b>  | <b>\$ 0.05</b>  | <b>\$ 1,979</b>   |
|      | <b>Raise Atrium Fixture</b>              | <b>0.01%</b>  | <b>\$ 0.02</b>  | <b>\$ 742</b>     |
|      | <b>Site Water Gas &amp; Fire Lab</b>     | <b>0.15%</b>  | <b>\$ 0.40</b>  | <b>\$ 17,319</b>  |
|      | <b>Site Water Gas &amp; Fire Mat</b>     | <b>0.12%</b>  | <b>\$ 0.31</b>  | <b>\$ 13,217</b>  |
|      | <b>UG Sanitary &amp; Storm Lab</b>       | <b>0.36%</b>  | <b>\$ 0.96</b>  | <b>\$ 41,018</b>  |
|      | <b>UG Sanitary &amp; Storm Mat</b>       | <b>0.24%</b>  | <b>\$ 0.64</b>  | <b>\$ 27,345</b>  |
|      | <b>WCPR 14 CRS Space</b>                 | <b>0.32%</b>  | <b>\$ 0.85</b>  | <b>\$ 36,299</b>  |
|      | <b>WCPR 7 Piping Changes</b>             | <b>0.02%</b>  | <b>\$ 0.05</b>  | <b>\$ 2,236</b>   |
|      | <b>WCPR 7 Plumbing Fixtures</b>          | <b>-0.01%</b> | <b>\$ -0.02</b> | <b>\$ -867</b>    |
| - 23 | HVAC                                     | 8.54%         | 22.54           | \$ 967,993        |
|      | <b>1st FI Duct</b>                       | <b>0.67%</b>  | <b>\$ 1.76</b>  | <b>\$ 75,655</b>  |
|      | <b>1st FI Equipment</b>                  | <b>0.42%</b>  | <b>\$ 1.11</b>  | <b>\$ 47,726</b>  |
|      | <b>1st FI Piping</b>                     | <b>0.21%</b>  | <b>\$ 0.55</b>  | <b>\$ 23,635</b>  |
|      | <b>1st FI VAVs &amp; GRDs</b>            | <b>0.20%</b>  | <b>\$ 0.53</b>  | <b>\$ 22,788</b>  |
|      | <b>2nd FI Duct</b>                       | <b>0.67%</b>  | <b>\$ 1.76</b>  | <b>\$ 75,655</b>  |
|      | <b>2nd FI Equipment</b>                  | <b>0.42%</b>  | <b>\$ 1.11</b>  | <b>\$ 47,726</b>  |
|      | <b>2nd FI Piping</b>                     | <b>0.21%</b>  | <b>\$ 0.55</b>  | <b>\$ 23,635</b>  |
|      | <b>2nd FI VAVs &amp; GRDs</b>            | <b>0.20%</b>  | <b>\$ 0.53</b>  | <b>\$ 22,788</b>  |
|      | <b>3rd FI Duct</b>                       | <b>0.67%</b>  | <b>\$ 1.76</b>  | <b>\$ 75,655</b>  |

|      |                            |        |          |              |
|------|----------------------------|--------|----------|--------------|
|      | 3rd FI Equipment           | 0.53%  | \$ 1.39  | \$ 59,658    |
|      | 3rd FI Piping              | 0.30%  | \$ 0.80  | \$ 34,546    |
|      | 3rd FI VAVs & GRDs         | 0.20%  | \$ 0.53  | \$ 22,788    |
|      | ATC                        | 1.28%  | \$ 3.37  | \$ 144,656   |
|      | Basement Equipment         | 0.32%  | \$ 0.83  | \$ 35,795    |
|      | Basement Piping            | 0.21%  | \$ 0.55  | \$ 23,608    |
|      | Boiler Filters             | 0.03%  | \$ 0.08  | \$ 3,317     |
|      | Gen Cond                   | 0.16%  | \$ 0.42  | \$ 18,230    |
|      | Insulation                 | 0.57%  | \$ 1.51  | \$ 64,717    |
|      | Mobilization               | 0.08%  | \$ 0.21  | \$ 9,115     |
|      | Project Mgt                | 0.28%  | \$ 0.74  | \$ 31,903    |
|      | Rigging                    | 0.06%  | \$ 0.17  | \$ 7,110     |
|      | Roof Equipment             | 0.42%  | \$ 1.11  | \$ 47,726    |
|      | Roof Work                  | 0.12%  | \$ 0.32  | \$ 13,673    |
|      | SM Basement Duct           | 0.08%  | \$ 0.21  | \$ 9,115     |
|      | SM CAD Draw & Coord        | 0.08%  | \$ 0.21  | \$ 9,152     |
|      | SM Job Startup             | 0.03%  | \$ 0.07  | \$ 3,190     |
|      | TAB                        | 0.13%  | \$ 0.35  | \$ 15,040    |
|      | WCPR 15R2 VAV Cost         |        |          |              |
|      | Adjust                     | -0.01% | \$ -0.01 | \$ -608      |
| — 26 | Electrical                 | 10.49% | 27.68    | \$ 1,188,589 |
|      | Added Cable Tray Per       |        |          |              |
|      | UPMC                       | 0.05%  | \$ 0.13  | \$ 5,431     |
|      | BIM                        | 0.16%  | \$ 0.42  | \$ 18,230    |
|      | Branch Lighting            | 0.52%  | \$ 1.38  | \$ 59,248    |
|      | Branch Power               | 1.36%  | \$ 3.58  | \$ 153,589   |
|      | Ele Chg Per RFI 114        | 0.02%  | \$ 0.05  | \$ 2,350     |
|      | Ele For Added Kiosks       | 0.01%  | \$ 0.03  | \$ 1,335     |
|      | Elevator Power             | 0.08%  | \$ 0.21  | \$ 9,115     |
|      | Emergency Generator        | 0.64%  | \$ 1.68  | \$ 72,009    |
|      | Encellum Lighting Control  | 0.27%  | \$ 0.70  | \$ 30,080    |
|      | Feeders                    | 0.40%  | \$ 1.06  | \$ 45,575    |
|      | Fixtures                   | 3.22%  | \$ 8.49  | \$ 364,602   |
|      | Grounding                  | 0.11%  | \$ 0.29  | \$ 12,305    |
|      | MDP & Panels               | 0.97%  | \$ 2.55  | \$ 109,381   |
|      | Mechanical Power           | 0.55%  | \$ 1.44  | \$ 61,982    |
|      | Preconstruction Layout     | 0.16%  | \$ 0.42  | \$ 18,230    |
|      | Primary Service            | 0.40%  | \$ 1.06  | \$ 45,575    |
|      | RFI 96 Power For Door Oper | 0.01%  | \$ 0.04  | \$ 1,550     |
|      | RFI 99 Added Receptacles   | 0.01%  | \$ 0.04  | \$ 1,653     |
|      | Secondary Service          | 0.60%  | \$ 1.59  | \$ 68,363    |
|      | Site Lighting              | 0.47%  | \$ 1.23  | \$ 52,867    |
|      | WCPR 15R2 Inside Space     | 0.08%  | \$ 0.20  | \$ 8,699     |
|      | WCPR 15R2 Outside Space    | 0.04%  | \$ 0.10  | \$ 4,340     |
|      | WCPR 15R2 Staff Lounge     | 0.11%  | \$ 0.30  | \$ 12,777    |
|      | WCPR 16 Radient Heat       |        |          |              |
|      | Power                      | 0.02%  | \$ 0.07  | \$ 2,815     |
|      | WCPR 8 Cable Tray Data     |        |          |              |
|      | Lights                     | 0.25%  | \$ 0.65  | \$ 28,031    |
|      | WCPR Site Lighting         | -0.01% | \$ -0.04 | \$ -1,544    |
| — 27 | Communications             | 1.02%  | 2.71     | \$ 116,158   |

|      |   |                |                  |                      |
|------|---|----------------|------------------|----------------------|
|      | <b>Extend Comm Conduits</b>               | <b>0.13%</b>   | <b>\$ 0.35</b>   | <b>\$ 14,947</b>     |
|      | <b>Nurse Call</b>                         | <b>0.13%</b>   | <b>\$ 0.34</b>   | <b>\$ 14,584</b>     |
|      | <b>Telecom</b>                            | <b>0.26%</b>   | <b>\$ 0.68</b>   | <b>\$ 29,168</b>     |
|      | <b>Telecom Service</b>                    | <b>0.43%</b>   | <b>\$ 1.15</b>   | <b>\$ 49,221</b>     |
|      | <b>WCPR 25 Added Data Drops</b>           | <b>0.01%</b>   | <b>\$ 0.02</b>   | <b>\$ 1,018</b>      |
|      | <b>WCPR 27 Sound Masking</b>              | <b>0.02%</b>   | <b>\$ 0.06</b>   | <b>\$ 2,524</b>      |
|      | <b>WCPR 28 Nurse Call</b>                 | <b>0.04%</b>   | <b>\$ 0.11</b>   | <b>\$ 4,695</b>      |
| — 28 | <b>Electronic Safety and Security</b>     | <b>1.05%</b>   | <b>2.78</b>      | <b>\$ 119,407</b>    |
|      | <b>Access Control</b>                     | <b>0.14%</b>   | <b>\$ 0.36</b>   | <b>\$ 15,496</b>     |
|      | <b>Area Of Rescue</b>                     | <b>0.08%</b>   | <b>\$ 0.21</b>   | <b>\$ 9,115</b>      |
|      | <b>Fire Alarm</b>                         | <b>0.66%</b>   | <b>\$ 1.74</b>   | <b>\$ 74,743</b>     |
|      | <b>Security &amp; Intrusion Detection</b> | <b>0.18%</b>   | <b>\$ 0.47</b>   | <b>\$ 20,053</b>     |
|      | <b>Total Building Costs</b>               | <b>100.00%</b> | <b>\$ 263.93</b> | <b>\$ 11,332,761</b> |

Important Note: All Non-building costs were targeted using location and date only.

| <b>Targeted Non Building Costs</b> |                                      |                   |
|------------------------------------|--------------------------------------|-------------------|
| <b>Code Name</b>                   |                                      | <b>Cost</b>       |
| — 02                               | <b>Existing Conditions</b>           | <b>\$ 16,254</b>  |
|                                    | <b>Dump Site</b>                     | <b>\$ 8,083</b>   |
|                                    | <b>Site Demo</b>                     | <b>\$ 8,171</b>   |
| — 31                               | <b>Earthwork</b>                     | <b>\$ 322,778</b> |
|                                    | <b>Clearing &amp; Grubbing</b>       | <b>\$ 8,173</b>   |
|                                    | <b>Erosion &amp; Sedimentation</b>   | <b>\$ 33,450</b>  |
|                                    | <b>Foundation Excavation</b>         | <b>\$ 48,494</b>  |
|                                    | <b>Hammer Out Rock</b>               | <b>\$ 11,672</b>  |
|                                    | <b>Mobilization</b>                  | <b>\$ 15,212</b>  |
|                                    | <b>Retaining Wall Infill</b>         | <b>\$ 2,627</b>   |
|                                    | <b>RFI 83 Controlling Trap</b>       | <b>\$ 2,756</b>   |
|                                    | <b>Site Excavation</b>               | <b>\$ 197,314</b> |
|                                    | <b>Undercut For Waterline</b>        | <b>\$ 3,079</b>   |
| — 32                               | <b>Exterior Improvements</b>         | <b>\$ 607,843</b> |
|                                    | <b>Added Landscaping RFI 116</b>     | <b>\$ 2,214</b>   |
|                                    | <b>Added Site Table</b>              | <b>\$ 2,292</b>   |
|                                    | <b>Asphalt Concrete Paver Credit</b> | <b>\$ -15,163</b> |
|                                    | <b>Concrete Paving Install</b>       | <b>\$ 4,003</b>   |
|                                    | <b>Concrete Paving Mat</b>           | <b>\$ 5,649</b>   |
|                                    | <b>Landscaping</b>                   | <b>\$ 160,039</b> |
|                                    | <b>Memorial Area Rework</b>          | <b>\$ 2,294</b>   |
|                                    | <b>Misc Con Pads Etc Install</b>     | <b>\$ 3,753</b>   |
|                                    | <b>Misc Con Pads Etc Mat</b>         | <b>\$ 8,106</b>   |
|                                    | <b>Pavers</b>                        | <b>\$ 44,481</b>  |
|                                    | <b>Paving</b>                        | <b>\$ 214,751</b> |
|                                    | <b>Retaining Wall</b>                | <b>\$ 51,207</b>  |
|                                    | <b>Sidewalks &amp; Curbs Install</b> | <b>\$ 67,718</b>  |
|                                    | <b>Sidewalks &amp; Curbs Mat</b>     | <b>\$ 39,413</b>  |
|                                    | <b>Site Furnishings Install</b>      | <b>\$ 1,014</b>   |
|                                    | <b>Site Furnishings Mat</b>          | <b>\$ 13,563</b>  |
|                                    | <b>WCPR 29 Added Bollards</b>        | <b>\$ 2,508</b>   |

|      |                                  |                      |
|------|----------------------------------|----------------------|
| — 33 | Utilities                        | \$ 486,570           |
|      | Added Valves Per ACHD            | \$ 7,781             |
|      | Allowance Tap Fees               | \$ 9,115             |
|      | Credit For Utility Tap Allowance | \$ -9,115            |
|      | Foundation Drain                 | \$ 2,509             |
|      | French Drain Chg                 | \$ 4,136             |
|      | RFI 26 Mixing Valves             | \$ 10,395            |
|      | Sanitary Sewer                   | \$ 62,220            |
|      | Storm Sewer                      | \$ 338,248           |
|      | Water Line                       | \$ 55,098            |
|      | Water Valve & Yard Drain         | \$ 3,685             |
|      | WCPR 10 Gas Meter Landscape      | \$ 2,498             |
|      | <b>Total Non Building Costs</b>  | <b>\$ 1,433,446</b>  |
|      | <b>Total Project Costs</b>       | <b>\$ 12,766,206</b> |

*This Statement of Probable Cost is based on project md181114 selected from the DCD Archives located at [www.constructionworkzone.com](http://www.constructionworkzone.com) (<https://www.constructionworkzone.com>).*

*Note to User: This Statement of Probable Cost is a conceptual cost based on an actual building in the Conceptual Estimator and is not final estimate. DC&D Technologies, a Div. of BNi Publications accepts no responsibility or liability for how the Conceptual Estimator is used, nor for the conclusions drawn by the Users as a result of the use and manipulation of the data in the Conceptual Estimator.*

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| Project Data          |                  |                               |                           |
|-----------------------|------------------|-------------------------------|---------------------------|
| Case Number:          | TMP-1046         | Project Name:                 | Liberty Village - House I |
| Building Use:         | Residential      | PDF in DCD Magazine:          |                           |
| Target Building Size: | 1,500            | Site Size:                    | 43,560                    |
| Target Building Cost: | \$ 187,885       | Target Building Sq. Ft. Cost: | \$ 125.26                 |
| Target Project Cost:  | \$ 201,844       | Non-Building Cost:            | \$ 13,959                 |
| Foundation:           | Cast-In-Place    | Interior Walls:               | Wood Stud Drywall         |
| Exterior Walls:       | Wood             | Floor Type:                   | Wood                      |
| Roof Type:            | Asphalt Shingles | Project Type:                 | New                       |
| Target Location:      | GA - SAVANNAH    | Target Date                   | DECEMBER 2020             |

| Targeted Building Costs              |         |          |           |  |
|--------------------------------------|---------|----------|-----------|--|
| Code Name                            | Percent | S/F Cost | Cost      |  |
| — 01 General Requirements            | 16.90%  | 21.17    | \$ 31,750 |  |
| Architectural Fees                   | 0.49%   | \$ 0.61  | \$ 912    |  |
| Final Cleaning                       | 0.22%   | \$ 0.27  | \$ 411    |  |
| Finance Charges                      | 2.67%   | \$ 3.35  | \$ 5,018  |  |
| Insurance                            | 0.22%   | \$ 0.27  | \$ 411    |  |
| Land                                 | 6.31%   | \$ 7.91  | \$ 11,861 |  |
| Permits                              | 0.53%   | \$ 0.67  | \$ 1,004  |  |
| Project Signs                        | 0.05%   | \$ 0.06  | \$ 91     |  |
| Sales Costs                          | 6.07%   | \$ 7.60  | \$ 11,404 |  |
| Temporary Utilities                  | 0.34%   | \$ 0.43  | \$ 639    |  |
| — 03 Concrete                        | 10.34%  | 12.96    | \$ 19,433 |  |
| Cast-In-Place                        | 7.43%   | \$ 9.31  | \$ 13,959 |  |
| Slabs                                | 2.91%   | \$ 3.65  | \$ 5,474  |  |
| — 04 Masonry                         | 0.85%   | 1.06     | \$ 1,597  |  |
| Brick                                | 0.85%   | \$ 1.06  | \$ 1,597  |  |
| — 06 Wood, Plastics, and Composites  | 33.06%  | 41.41    | \$ 62,120 |  |
| Cabinets                             | 2.13%   | \$ 2.66  | \$ 3,994  |  |
| Countertop/Marble                    | 0.87%   | \$ 1.09  | \$ 1,642  |  |
| Deck/Porch                           | 1.44%   | \$ 1.80  | \$ 2,701  |  |
| Finish Carpentry                     | 1.87%   | \$ 2.34  | \$ 3,513  |  |
| Rough Carpentry                      | 20.35%  | \$ 25.48 | \$ 38,227 |  |
| Siding                               | 6.41%   | \$ 8.03  | \$ 12,043 |  |
| — 07 Thermal and Moisture Protection | 4.45%   | 5.58     | \$ 8,363  |  |
| Gutters & Down Spouts                | 0.44%   | \$ 0.55  | \$ 821    |  |
| Insulation                           | 1.44%   | \$ 1.80  | \$ 2,701  |  |
| Sheet Metal/Flashing                 | 0.34%   | \$ 0.43  | \$ 639    |  |
| Shingles/Roofing                     | 1.67%   | \$ 2.09  | \$ 3,138  |  |
| Waterproofing                        | 0.57%   | \$ 0.71  | \$ 1,064  |  |
| — 08 Openings                        | 7.11%   | 8.90     | \$ 13,349 |  |
| Finish Hardware                      | 0.31%   | \$ 0.38  | \$ 577    |  |
| Glazing                              | 0.27%   | \$ 0.33  | \$ 502    |  |
| Interior Door & Trim                 | 2.43%   | \$ 3.04  | \$ 4,562  |  |
| Overhead Doors                       | 0.70%   | \$ 0.88  | \$ 1,323  |  |

|      |                                |                |                  |                   |
|------|--------------------------------|----------------|------------------|-------------------|
|      | <b>Vinyl Windows</b>           | <b>3.40%</b>   | <b>\$ 4.26</b>   | <b>\$ 6,386</b>   |
| — 09 | Finishes                       | 11.51%         | 14.42            | \$ 21,623         |
|      | <b>Carpet</b>                  | <b>2.21%</b>   | <b>\$ 2.77</b>   | <b>\$ 4,151</b>   |
|      | <b>Drywall</b>                 | <b>5.83%</b>   | <b>\$ 7.30</b>   | <b>\$ 10,948</b>  |
|      | <b>Painting</b>                | <b>2.86%</b>   | <b>\$ 3.59</b>   | <b>\$ 5,383</b>   |
|      | <b>Resilient Flooring</b>      | <b>0.61%</b>   | <b>\$ 0.76</b>   | <b>\$ 1,140</b>   |
| — 10 | Specialties                    | 0.44%          | 0.55             | \$ 821            |
|      | <b>Insect Protection</b>       | <b>0.36%</b>   | <b>\$ 0.46</b>   | <b>\$ 684</b>     |
|      | <b>Toilet/Bath Accessories</b> | <b>0.07%</b>   | <b>\$ 0.09</b>   | <b>\$ 137</b>     |
| — 11 | Equipment                      | 0.56%          | 0.70             | \$ 1,049          |
|      | <b>Food Service</b>            | <b>0.56%</b>   | <b>\$ 0.70</b>   | <b>\$ 1,049</b>   |
| — 22 | Plumbing                       | 6.31%          | 7.91             | \$ 11,861         |
|      | <b>Plumbing</b>                | <b>6.31%</b>   | <b>\$ 7.91</b>   | <b>\$ 11,861</b>  |
| — 23 | HVAC                           | 4.13%          | 5.17             | \$ 7,755          |
|      | <b>HVAC</b>                    | <b>4.13%</b>   | <b>\$ 5.17</b>   | <b>\$ 7,755</b>   |
| — 26 | Electrical                     | 4.35%          | 5.44             | \$ 8,166          |
|      | <b>Electrical</b>              | <b>3.88%</b>   | <b>\$ 4.87</b>   | <b>\$ 7,299</b>   |
|      | <b>Lighting</b>                | <b>0.46%</b>   | <b>\$ 0.58</b>   | <b>\$ 867</b>     |
|      | <b>Total Building Costs</b>    | <b>100.00%</b> | <b>\$ 125.26</b> | <b>\$ 187,885</b> |

**Important Note: All Non-building costs were targeted using location and date only.**

| <b>Targeted Non Building Costs</b> |                                 | <b>Cost</b>       |
|------------------------------------|---------------------------------|-------------------|
| <b>Code Name</b>                   |                                 |                   |
| — 02                               | Existing Conditions             | \$ 1,277          |
|                                    | <b>Site Cleaning</b>            | <b>\$ 1,277</b>   |
| — 31                               | Earthwork                       | \$ 3,923          |
|                                    | <b>Excavation/Backfill</b>      | <b>\$ 2,737</b>   |
|                                    | <b>Finish Grading</b>           | <b>\$ 1,186</b>   |
| — 32                               | Exterior Improvements           | \$ 8,759          |
|                                    | <b>Driveway Paving</b>          | <b>\$ 821</b>     |
|                                    | <b>Landscaping</b>              | <b>\$ 4,106</b>   |
|                                    | <b>Sidewalks</b>                | <b>\$ 3,832</b>   |
|                                    | <b>Total Non Building Costs</b> | <b>\$ 13,959</b>  |
|                                    | <b>Total Project Costs</b>      | <b>\$ 201,844</b> |

***This Statement of Probable Cost is based on project RS070343 selected from the DCD Archives located at [www.constructionworkzone.com](http://www.constructionworkzone.com) (<https://www.constructionworkzone.com>).***

***Note to User: This Statement of Probable Cost is a conceptual cost based on an actual building in the Conceptual Estimator and is not final estimate. DC&D Technologies, a Div. of BNi Publications accepts no responsibility or liability for how the Conceptual Estimator is used, nor for the conclusions drawn by the Users as a result of the use and manipulation of the data in the Conceptual Estimator.***

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