CHW
Professional Consultants

January 25, 2017

Rick Melzer, PE, CFM
City of Gainesville - Public Works Department
405 NW 39th Avenue
Gainesville, Florida 32609

RE: South Main Street – Design Principles and Analysis

Dear Rick:

CHW has been retained by the CRA to help in the design and plans preparation for the CRA's South Main Street project. The foundation of this project was laid in 1996 when the City of Gainesville committed itself to revitalizing it's "south gate" by acquiring the first of the land that is now known as Depot Park. This process has taken two decades of planning, design, and construction but has led to the completion and opening of Depot Park, the construction of the new Cade Museum, the new RTS bus facility, new businesses along the South Main Street corridor, and a redesign and reconstruction of Main Street, north of this project, from a state owned arterial to a City owned thoroughfare, built on a more pedestrian scale. We hope to continue these successes through this re-visioning and reconstruction of South Main Street from SW 16th Avenue to Depot Avenue.

With this letter, you should have received a set of design schematics and typical sections for South Main Street. These items are being presented to you to assist in continuing collaboration that has occurred over the last two years between the CRA and its design professionals, City of Gainesville staff, GRU, City leaders, and the public. We are hoping to establish constructive communication between Public Works and the CRA as we move into finalizing design and developing construction plans. This letter is intended to help establish design intent and the parameters used to achieve that intent.

Understanding that after this project is constructed Public Works will be expected to maintain the new facility, we first turned to the City's 2015 Engineering, Design, and Construction Manual (EDCM). Chapter 5, which covers Roadway Design, begins by stating the following:

> *The geometric design of a roadway shall consider the needs of drivers, bicyclists, and pedestrians implementing 'complete streets' elements. Opportunities shall be maximized to promote interconnectivity of modes. Where feasible, particularly in conjunction with land development or redevelopment, the design shall incorporate pedestrian scale blocks to create*

a gridded transportation network and facilitate the movement of all users. Geometrics shall be designed in accordance with the Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways "Florida Greenbook," the guidance of the Institute of Transportation Engineers "Designing Walkable Urban Thoroughfares: A Context Sensitive Approach," and other provisions contained herein.

"Complete streets" is an urban planning concept that advocates for designing transportation facilities based on their context, the area that they serve and the primary uses within that area. This is a simplification of the concept but considering that volumes have been written about "complete streets" and this letter is not an attempt to rehash that literature, this simplification is understandable. This concept has been fully embraced by the FDOT, which officially adopted the concept in 2014. The Department is currently incorporating this policy into its manuals and publications. In April of this year the Department will release its Complete Streets Handbook and in November it will release its new Design Manual. The Design Manual will fully integrate context sensitive design into its procedures and recommendations and will replace the FDOT's Plans Preparation Manual (PPM). At the 2016 Design Training Expo, a presentation was given by the FDOT's State Roadway Design office entitled, *Complete Streets: What you can already be doing?* The idea presented was that many of the changes and updates that are underway can already be implemented through existing manuals and publications. The presentation pointed specifically to a handful of chapters in the PPM for state highway system (SHS) projects and Chapter 19 of the Florida Greenbook (Greenbook) for local projects. What we are endeavoring to accomplish, and submit for your consideration, are the following:

- Design and prepare construction documents that are consistent with the EDCM
- The EDCM promotes complete streets for roadway design
- The EDCM defers to the Greenbook for roadway design guidance
- FDOT is in the process of overhauling its design principles and guidance to incorporate context sensitive design
- FDOT advocates the use of the Greenbook Chapter 19 as appropriate guidance for local street projects implementing a "complete streets" design procedure

We put forth that designing the new South Main Street based on guidance from Chapter 19 of the Greenbook is consistent with FDOT design policy, the City of Gainesville planning policy, the EDCM, and the history and context of the project area. This is most probably a departure from conventional transportation design considerations from the Public Works viewpoint as the chapters from the Greenbook that are historically utilized for roadway design purposes are Chapters 3 and 4. We submit that in this case, those chapters are not appropriate for this project. If we are to continue to transform the project area from a blighted, undesirable, contaminated side of town to a featured and celebrated destination, as is the hope of stakeholders, we should utilize the principles of context sensitive design to promote safety, quality of life, and economic development for all ages, abilities, and uses ranging from:

- Cyclists
- Motorist
- Transit Riders
- Freight handlers
- Pedestrians

This direction was determined after many months of public meetings, internet and paper surveys, and design workshops. This massive data collection effort pointed to the desire of the public to have a facility that would accomplish the following, in no particular order:

- serve as a southern access to downtown
- allow existing businesses to access the corridor
- provide ample on-street parking
- enhance pedestrian and bicycle facilities and make them more user-friendly
- beautify the corridor by increasing green space and undergrounding utilities
- create a destination on the south side of town

The balance of these elements lend themselves to the principles of context sensitive design. Below, this letter will guide you through the design process to date.

Chapter 19 of the Greenbook, Section E covers design elements that are to be considered when implementing context sensitive design. Section E is broken into ten subsections that we will review here. They are:

- E.1 – Design Controls
- E.2 – Sight Distance
- E.3 – Horizontal Alignment
- E.4 – Vertical alignment
- E.5 – Cross Section Elements
- E.6 – Cul-de-sacs and Turnarounds
- E.7 – Pedestrian Considerations
- E.8 – Bicyclist Considerations
- E.9 – Transit
- E.10 – Clear Zone

E.1 – Design Controls

This subsection considers the factors of design speed, movement types, and design vehicles. Typically design speeds are set to be as high as practical. This is not the case in context sensitive design. Design speeds are set to establish a safer and more comfortable environment for pedestrians and cyclists. The philosophy is used in conjunction with movement types to establish a design speed within the range of 20 to 35 MPH. After reviewing the data that was collected, it was determined that the most consistent movement type for South Main Street would “Low,” as described in the Greenbook. Based on the project’s basis of design, we are recommending a

design speed of 30 MPH with a posted speed of 25 MPH. The primary design vehicle for the corridor is the passenger car. Although special consideration has been given in certain areas. Specifically, the City Bus was selected as the design vehicle for 13th Avenue and 13th Road as these two streets provide access to the bus depot. The proposed roundabout was also designed to accommodate the City Bus. The WB-62 truck was utilized as the design vehicle at the access for Ridgeway Truss. The School Bus was utilized as the design vehicle when considering access to the new Cade Museum and the proposed back-in angle parking slip lane that is adjacent to that site. Many of these instances are presented as exhibits in the plans that you have received. We are continuing to work with users along the corridor to ensure that they are provided with safe, adequate access. It should be noted that Chapter 19 acknowledges and allows for, "Regular encroachment of turning vehicles into opposing lanes." We have worked to minimize those occurrences but some accommodation must be considered when balancing access against pedestrian and cyclist considerations.

E.2 – Sight Distance

We will be utilizing guidance in Chapter 3 of the Greenbook to address stopping sight distance. Passing sight distance will not be a concern as passing will be restricted by raised medians and traffic separators. We will be evaluating intersection sight distance using the Greenbook Chapter 3 C.9.b (as directed) but with the understanding that there will be a two-step stopping movement as is described in Chapter 19 E.2.c of the Greenbook.

E.3 – Horizontal Alignment

We are currently proposing to utilize existing mainline geometry; so minimum centerline radius should not be a concern. We will be following curb return radii guidance found in Table 19-1. However, for intersections where we are already designing for larger vehicles (mentioned above) we have increased the return radii to better accommodate those vehicles.

E.4 – Vertical Alignment

We are not currently proposing any changes in vertical geometry, but if we proposing a profile change, we will utilize Chapter 3 C.5 of the Greenbook to design it.

E.5 – Cross Section Elements

We are proposing 11 FT travel lanes for the redesign. As can be seen in Table 19-2 this is consistent with a "Low" Movement Type. We are also proposing medians throughout the length of the project. The medians are 10 to 11 FT wide and will primarily be used to control access, create pedestrian refuge, and allow for street trees. This is consistent with Table 19-3 in the Greenbook. We are still reviewing the three, proposed left turn lane locations along the project to best determine how to accommodate movements at these locations and which design vehicle should control the design. It is likely that we will not be able to generate the 14 FT recommended in

Table 19-3 for a median with turn lane but we should be able to generate the minimum width in these three cases. We are not proposing any right turn lanes along the corridor, at this time. The parking lane width that is currently proposed exceeds the width given in Table 19-4. As we continue to finalize our access and left turn solutions, we may reduce the parking lane down to 8 FT.

E.6 Cul-de-sacs and Turnarounds

We are not proposing any of these elements in the design.

E.7 – Pedestrian Considerations

Developing a walkable facility has been a primary goal of this design. We have endeavored to generate an aesthetically pleasing, safe border for pedestrian use. We are proposing sidewalk widths between 8 and 12 FT. This should allow us to accommodate a furniture zone, a walking zone, and a shy zone. Mid-block crossings are being proposed as are curb extensions. These elements will be reviewed in greater detail as we move forward in the design and plans preparation process, but we intend to use best practices to accomplish a successful border design.

E.8 – Bicyclist Considerations

Since we are proceeding with a “Low” movement design, we are proposing bicycle lanes for South Main Street. The proposed bicycle facilities will be compliant with guidance found in Chapter 9 of the Greenbook. The bicycle lanes will vary between 5 and 6 FT, not including the gutter pan. Within the limits south of the proposed roundabout, we are also including a 3 FT wide door swing separation between the bicycle lane and parking lane. We are recommending the placement of sharrows in the back-in angle parking slip lane adjacent to the new Cade Museum. Speeds in this area will be lower than the mainline and we are not proposing to prohibit cyclist from entering this area. We are not currently proposing a shared use path along the corridor.

E.9 – Transit

Transit stops are being considered but have not been fully vetted with RTS. We will provide transit facilities that are Greenbook compliant and met the requirements of RTS.

E.10 – Clear Zone

As is noted in the Greenbook, applying horizontal clearances, based on clear zone requirements for rural highways, is not supportive of context sensitive design. In the interest of a safe and uniform corridor we are intending to place roadside features as far as practicable from the face of curb, with the understanding that Chapter 19 of the Greenbook, in this type of design scenario, allows for a minimum setback of 1.5 FT from the face of curb. In most cases, there will be 5 to 8 FT from the edge of travel to the face of curb.

There are two critical design elements that are not covered specifically in Chapter 19 of the Greenbook but should be discussed. They are drainage and utilities.

Drainage

We have only just recently begun the conversation about drainage. It is not the goal of the project to reconstruct the entire stormwater system. However, we are aware that there will be a need to make modifications to that system as it may be necessary to relocate inlets along the roadway. It is our intent to accomplish this work based on direction found in Chapter 4 of the EDCM. It should also be noted that this project has the potential to actually decrease the amount of runoff currently generated by this section of South Main Street due to the amount of greenspace that we are introducing along the corridor. It is too early to be certain, but we may have opportunity to introduce some LID BMPs in some of these green spaces to help improve water quality as well.

Utilities

The primary concern along the corridor, in regards to utilities, has been related to how the overhead utility service impacts the aesthetics of the project area. Electrical design efforts to this point have consisted of trying to determine the feasibility of undergrounding the electrical utilities along South Main Street from SW 16th Avenue to Depot Avenue. These efforts have consisted of meetings with GRU Electric and the CRA, including on-site investigations and an on-site meeting with GRU Electric.

The existing electrical utilities, television, and internet services, are distributed along the corridor using both wooden and concrete utility poles. These poles are in close proximity to the roadway and located within the sidewalk. The existing telephone distribution for AT&T is currently installed underground but may require some modifications during the reconstruction of South Main Street.

The proposed undergrounding of the existing utilities would require installation of conduits for each utility within the public right-of-way, easements for pad mounted above-ground equipment, below-grade distribution boxes, and underground conduits from the right-of-way to each existing service point on private property or to riser poles set back from the South Main Street right-of-way. It is estimated that four or five easements may be required for the undergrounding of primary conductors to these riser poles. These easements would need to be procured by the CRA, working with GRU, from private property owners along the corridor for the mix of utility services that currently serve the sites overhead. All utility providers would utilize the conduits within the right-of-way for their primary and trunk line conductors. Installation of conduits from the right-of-way to each existing service point would be paid for by the CRA.

We trust that the information provided in this letter is useful to you in interpreting the design that has been presented and the intent of the project. We look forward to moving this project forward in a cooperative effort to provide the safest, most functional facility for the context of the area it serves.

Sincerely,
CHW

James Flegert, PE
Senior Project Manager

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