



## MEMORANDUM

**Date:** December 18, 2015

**To:** Tanja Gerhartz, Economic Development Director

**Organization:** City of Winter Garden

**From:** Ian Lockwood, PE  
Cindy Zerger, AICP, ASLA  
Ken Ray, RLA

**Project:** Dillard Street Concept Design  
Winter Garden

**Re:** Summary of Dillard Street Conceptual Design

### Introduction

The purpose of this memo is to summarize the thought processes and considerations that informed the design concept for Dillard Street, between Plant Street and Colonial Drive (State Road 50). The design concept was developed during two open and public workshops that occurred from October 5<sup>th</sup> to 8<sup>th</sup> and from November 16<sup>th</sup> to 19<sup>th</sup>, 2015. During the process, there were many opportunities for the public, stakeholders, and City staff to provide input and feedback.. The process culminated in a final public meeting during which there was a broad consensus to move forward with the design concept.

### Opportunity

Dillard Street is a 1-mile long, north south, treeless, five-lane street that extends from Colonial Drive to Plant Street on the eastern edge of downtown Winter Garden. The street is composed of five motor vehicle travel lanes, many driveways, narrow sidewalks, unsightly utility poles, and overhead wires. It is the main approach to the downtown and negatively contributes to the image of the City. The underground infrastructure is old and in poor condition. The current design encourages high speeds and aggressive driver behavior and simultaneously discourages walking and cycling. The current design of Dillard Street is a physical and psychological barrier in the City and is a deterrent to investment and development along its length. Its current condition also limits the interest in development in areas to the east of Dillard. With the need to replace the underground utilities and the lack of character above the ground, there is great opportunity is to redesign the street, address the problems, and foster better outcomes economically, socially, recreationally, functionally, and aesthetically.

## **Community Values**

The people who attended the public workshops recognize that the street and area have untapped potential. Participants mentioned they see a lot of people using the street today but envision even more people using it the future. They value the street's proximity to Plant Street and would like to similarly reflect the historic character of the area through the conceptual design for Dillard Street. Many people mentioned they like the old train tracks and numerous small business along the street and recognize the street could better support the local businesses through slower speeds, better access, and multi-modalism. They see the south end of Dillard Street as the gateway into the city and the north end of Dillard Street as the gateway into the downtown and like the idea of having few stops along the street but being able to cross the street comfortably on foot, on a bike, or in a car.

During the workshops, people described the current barrier effect that the street has today. Participants complained about the poor aesthetics such as the enormous expanse of asphalt, lack of trees, uncomfortable sidewalks, lack of crossing locations, and ugly overhead utilities. Additionally, participants mentioned they did not like the speeding and feeling of danger along the street.

People described their desire for a street that was at a pedestrian scale, easy to cross, comfortable to walk and bike along, inclusive of people with disabilities, and connected to the history of the community. Many mentioned an interest in large street trees that would canopy over the street and sidewalks for both aesthetic and shade. There was a desire for gateway treatments at Plant Street and at Colonial Drive and places for art and benches in between. People mentioned an interest roundabouts at Plant Street, Smith Street, and at Story Road to slow speeds yet allow all modes to flow efficiently. People frequently mentioned the need for slower motor vehicle speeds, and also the desire to retain the ability to turn left in and out of businesses. People understand the importance of environmentally responsible street design and mentioned the conceptual design should use native plants for the landscaping, permeable paving where feasible, and green infrastructure for stormwater treatment. People wanted a bike facility that was separated from the car traffic. Finally, there was a lot of support to bury the overhead utilities for aesthetic reasons and hurricane resilience. In doing so, people also encouraged the design team to consider stubbing out the underground utilities at properties so that the street will not need to be torn up to for redevelopment; this will be helpful in cost savings and maintaining a consistent character of the street once it is reconstructed. .

## **Feasibility of Five-Lane to Three-Lane Road Diet and Roundabouts**

Currently, the daily traffic volumes on Dillard Street range from approximately 14,500 vehicles per day at the north end to about 17,300 vehicles per day at the south end. Three-lane streets around the country and locally successfully carry more traffic than Dillard Street carries today. For example, Edgewater Drive, in Orlando, is a three-lane street that used to for four and five lanes wide; it currently carries 16,000 to 21,000 cars per day. Some three-lane streets can over 25,000 cars per day. However, it is not so much the number of lanes that dictates the car-carrying capacity for Dillard Street. It is the intersections at the north and south ends.

At the north end, a one-lane roundabout at Plant Street was tested to see if it was feasible to change the signalized intersection into a roundabout. The analysis showed that a single lane roundabout would handle the traffic volumes easily. During the peak hours, the roundabout will process the cars far more efficiently than the current traffic signals. The roundabout would also:

- i) Reduce cars idling at the intersection, reducing air pollution and gas consumption;
- ii) Reduce the impervious area (because the turn lanes would be unnecessary);
- iii) make it easier for pedestrians, cyclists, and trail users to cross Dillard Street and Plant Street in any direction;
- iv) Provide a great entrance feature to the downtown;
- v) Reduce speeding;
- vi) Improve aesthetics,
- vii) Save maintenance money; and
- viii) Increase safety.

The roundabouts at Story Road and Smith Street would also be single-lanes roundabouts but would have less traffic than at Plant Street. They will also efficiently process traffic, even during the peak hours. The roundabout at Smith Street will help the intersection at Plant Street; it will make it easier for northbound motorists to turn left into the downtown. With the roundabouts and better access to connecting streets the downtown street network will be better utilized and Plant Street will be relieved. The distribution of motor vehicles on the street network will become even more important when the parking garage is built. Additionally, the roundabout at Smith Street will be helpful in providing wayfinding to the parking garage.

The roundabouts may require some land acquisition of adjacent corners at the intersections to accommodate the roundabout, sidewalks, and trail.

At the south end of Dillard Street, the signalized intersection at Colonial Drive constrains how much traffic can use Dillard Street. The Florida Department of Transportation (FDOT) recently widened the intersection to its ultimate configuration. Consequently, it will not be widened again for the foreseeable future. Also, the City negotiated as much “green time” as they could possibly get. So, there is effectively a cap on the maximum amount of traffic that can pass through the intersection from Dillard Street.

There are four lanes on the southbound approach at the intersection (i.e., a left-turn lane, a through-left-turn lane, a through lane, and a right-turn lane). The southbound approach receives about 12% of the green time at the intersection. In other words, each lane is stopped for about 88% of the time and flowing for about 12% of the time. Assuming, drivers are paying attention and each of these lanes were to deliver cars to the intersection for the entire 12% of the green-time, then the maximum volume of cars that could be processed by each lane would be 12% of the maximum volume of a continuously flowing lane. Thus, the maximum traffic volumes that could be processed by all for lanes would be 4 x 12% or 48% of the maximum volume of one lane. Consequently, 48% of one southbound lane along Dillard Street could deliver all the traffic to the four southbound lanes at the intersection that could be accommodated by the signals. However, lanes don't come in fractions so we'd round up to one lane. One lane could deliver twice as much traffic as the intersection could handle. Even if one were to

assume that another 6% could turn right-on-red, then one southbound lane on Dillard Street could still easily feed the four lanes at the intersection.

The bottom line is that the road diet from five-lanes to three-lanes and the three roundabouts are feasible.

### **Separated Bikeway**

The separated bikeway are proposed to be a two-way, 10-foot wide, facility that is placed on the east side of the street. The reasons for the two-way operation are:

- i) One-way facilities on both sides of the street would require more right-of-way width and the width was not available unless on-street parking was eliminated; and
- ii) It is consistent with the two-way facility along Plant Street.

The reason for the 10-foot width was selected is the right-of-way is constrained to 80 feet. 12-foot would have been ideal, but due to the design concept's mostly flush edges along the bike lanes, the "shy zone" along the edges will be smaller and the 10-foot width is adequate and meets bikeway design standards.

The reasons for placing the bikeway on the east side of Dillard Street include:

- i) The constraint of the electrical substation makes the eastern alignment easier;
- ii) to add value to the businesses and neighborhoods due to increased access;
- iii) To better connect the West Orange Trail and the downtown to the east side of the street; and
- iv) To connect farther south, past Colonial Drive, to the wide sidewalk that passes under the Turnpike on the east side.

### **On-Street Parking**

Given the 80-foot right-of-way, on-street parking is feasible on one side of the street. It was placed on the east side of the street, north of Story Road, and on the west side of the street, south of Story Road. The choice of sides was based on redevelopment potential and available existing parking. South of Story Road, the blocks on the east side of Dillard Street are larger than on the west side. If the eastern blocks redevelop, they provide opportunities for adequate off-street parking. Given that assumption, on-street parking is on the west side of Dillard. North of Story Road, the redevelopment will most likely occur on the east side, so on-street parking was placed on the east side. However, there is also redevelopment potential on the west side. If all the owners of the properties on one or more blocks on the west side of the street were to agree to donate an eight to ten-foot addition to the right-of-way prior to the reconstruction of the street, on-street parking could be added to those blocks on the west side of the street.

Typical parking spaces should be 23-feet long; spaces next to bulbouts should be 20 feet long. The shape of the bulbouts provide the equivalent of about 3-feet of maneuvering space. Valley gutters are placed between the parking spaces and the travel lane. The valley gutters are important because they:

- i) Optically narrowing the street;
- ii) Lower the profile of the street, which benefits the street aesthetically and helps with flood control during large storm events;
- iii) Allow a change in material for the parking spaces (i.e., permeable paving);
- iv) Provide flexibility on the edge of the street (i.e., if a parking space needs to be removed or if a bulbout needs to be expanded, then there are no major changes needed for catch basins);
- v) Help with street cleaning (i.e., the trash, sand, etc. migrates to the valley gutter where it is easier for a street sweeper to pick it up compared to when the trash migrates into far corners); and
- vi) help with developing rain gardens and other green infrastructure.

Midblock bulbouts are a minimum of 29-feet long, at the sidewalk or bike lane side. The maximum number of parking spaces in a row is four. Every bulbout has a minimum of one tree. The reason the trees and parking share the same row is to save right-of-way width and to allow the trees to canopy over the street sooner than if the trees were placed further away from the travel lanes.

### **Flush Median**

A flush median was designed between the northbound and southbound travel lanes. This flexible space will:

- Retain and improve left turn access to businesses and side-streets,
- Accommodate emergency response vehicles
- Provide opportunities to create midblock pedestrian refuges, and
- Allow for vehicles to pass those who are parallel parking

The concept is to optically narrow the street with a median provide more flexibility, and design something that is more visually appealing than a conventional two-way dual left-turn lane. The flush median uses minimal pavement markings (and reduced the associated maintenance costs) by using header curbs, material changes, and three raised islands such that the flush median and its numerous uses are apparent to motorists. However, some ambiguity is desirable as for the use of the flush median so than no one user group or function monopolizes the space. It is supposed to be a multi-purposes space. Ambiguity will help reduce speeds and encourage higher levels of communication and respect between various user groups. The flush median's width also allows for a nice transition into the splitter islands at the three roundabouts.

### **Power lines**

Currently, there are power poles and lines down both sides of the street. The poles also carry some "small utilities" such as telephone service and cable vision. During the construction of the project, the small utilities should be buried, the power lines can be consolidated on taller poles located on the east side of the street, and all the conduits needed to bury the power lines should be installed and stubbed out to every property. Over time, existing buildings can then bury their power service and new buildings

will be constructed with their power service underground. With the conduit in place, it will be relatively easy for new businesses to tap into underground power service and powerlines and utility poles can be phased out.

Interim utility poles should be accommodated on the east side given the electrical substation is on the east side. The poles can be located in the landscape space between the bikeway and the sidewalk. This will allow for street tree placement next to the travel lanes; conflict between trees and the power lines is minimized and the trees will visually obscure the power lines. The species of trees planted in the landscape space under the power lines should be slow-growing ensuring that the that the power lines will be removed before the trees grow tall enough to create conflicts with the power lines.

### **Paving Materials**

The section of Dillard Street, between Smith Street and Plant Street, should be brick similar to Plant Street in downtown. South of Smith Street to Morgan Street, the travel lanes should be asphalt and the flush median will be brick. The idea of his material change is to optically narrow the street, improve the aesthetics, and discourage speeding. Between Morgan Street and Colonial Drive the travel lanes are brick as part an entrance and arrival experience as people enter on to Dillard at the south

The parking spaces and hardscape elements within the landscape strips should be permeable pavers. The eight-foot-wide sidewalks were designed to be brushed concretewith a four-foot square construction paving pattern

### **Plant Materials**

The plant materials should be those approved by the Florida Native Plant Society. With the exception of the palm trees south of Story Road the trees next to the travel lanes, in the center island of the roundabouts, and in the short medians/refuge islands should be canopy trees. The trees between the bikeway and sidewalk should be ornamental and accent trees that will also provide shade over the sidewalk over time. Accent trees should be used to help enhance the roundabouts as signature elements of the street. The low plants in the rain gardens and planting beds should be a combination of native grasses and ground cover.

### **Entry Feature at Colonial Drive**

The entry feature has four key components:

- i) A frame of tall palm trees on both sides of Dillard Street:
- ii) brick paving;
- iii) An island/refuge, at the north end of the bricked area, to help pedestrians cross between the mall and the new development on the north-east quadrant of the intersection and to define the end of the entrance feature; and
- iv) A seating area on the north east corner of the intersection with an object or focal point. The object should be tall, highly noticeable, artistic, and designed to indicate one's arrival to Winter Garden. The object should be able to be appreciated by pedestrian when they are close to it as well as by motorists driving by on Colonial Drive.

### **Entry Feature at Plant Street**

All three roundabouts should have trees around them and in the center island. The center island should be slightly mounded. Its ground cover should be uninviting to pedestrians, in order to discourage anyone from walking onto the center island. The center islands should incorporate artistic elements. The artistic elements should be designed so optimum viewing is from the sides and not from close up. All elements should be designed so that they discourage people from crossing into the center island to interact with the art. The Plant Street roundabout should incorporate signature artistic elements, signifying arrival into the downtown area. Roundabouts should include lighting of the trees and art so that they are conspicuous and attractive at night.

### **Accessibility for Pedestrians**

Currently, pedestrians can cross Dillard Street at Plant Street, at Colonial Drive, and at three other locations. The crossings are inconveniently spaced for most pedestrians, so, often pedestrians cross at random locations along the whole corridor. The design concept provides thirteen crossing locations, making it far more convenient and safe to cross Dillard Street. The three roundabouts will accommodate pedestrians safely and comfortably. Additionally, several refuge islands were designed with the intent that pedestrians can cross half the street at a time. Care was taken to block as few driveways as feasible. If people still choose to cross randomly, the three-lane section will make it easier for people to cross compared to the existing five-lane section.

Flush curbs were used along the street wherever feasible. This will help people in wheel chairs, pushing carriages, or with other mobility impairments use the street more comfortably. It will also help if the street were ever used for a parade or special event. Vertical curbs were used to define driveway edges, side streets, roundabouts, and to protect planters.

### **Build-to-Line**

A built-to-line was placed six feet back from the edge of the right-of-way on both sides of the street. The idea is that the City's codes would be updated to include this provision. When new buildings get built along Dillard Street, the buildings will be required to locate their front façades and front doors at the build-to-line. There would also be a ground floor glazing requirement and a few related form-based code provisions. Over time, this will increase the engagement of the buildings along the street, make a better looking street, offer higher levels of natural surveillance, and make a more walkable and coherent street. The desire is that within the six feet, the four feet closest to the sidewalk, will be used for sidewalk, making the sidewalk 12-feet wide. The remaining two feet allow for architectural variations.

### **Combining Driveways**

The concept design combined several pairs of easily combinable driveways by using common sense. Some driveways were literally side by side and two interruptions of the sidewalk and bike lanes was undesirable. Other sites had several driveways in a row and fewer driveways would be fine. Other

driveways were simple really wide and could be narrowed. Other situations involved several narrow sites, each with its own driveway, one after another. Combining a few driveways just made sense and would result in more off-street parking and a nice walking and cycling experience.

However, these changes were done in concept (i.e., without working with the individual property owners. This work will need to take place as the concept design gets refined. The key considerations would include: i) working with the property owners on redoing the businesses' parking/site plans; ii) making the changes with little or no cost to the businesses; iii) ensuring that the businesses remain more or less whole in terms of parking supply; iv) recognizing that the street section will add value to their business; and v) assist the businesses with any related legal and survey needs for cross-access agreements, permits, etc.

### **Block Structure**

The concept plan anticipated future redevelopment and planned for two future street connections to Dillard Street and two parallel streets. These streets should occur regardless of any specific redevelopment plan. One street connection would occur near downtown in an old industrial area (i.e., continuing Tremaine Street on the east side of Dillard Street but with two-way operation). The second connection would occur on the grounds of a church (i.e., continuing Morgan Street on the east side of Dillard Street).

In the north-south direction, the south end of Winter Street would be realigned to the west such that it could be extended southward to Colonial Drive. The proposed Morgan Street extension would then terminate into the new part of Winter Street. The idea was to plan the street connections ahead of the developers planning efforts and encourage a finer-grain block structure.

On the large redevelopment site, where the old hotel was torn down and is being replaced by a Wawa and other uses, a new north-south street is recommended to connect the site with Morgan Street. This street would help Dillard Street and the site by providing another way to access the site.

### **Alleys and Off-Street Parking**

For redevelopment, rear parking is recommended and alleys are recommended as an option. This would be part of the form-based code as well. This would allow for the area to extract more value from Dillard Street's section. Side parking and front parking should be prohibited in order to not interrupt the engaging building facades.

### **Access Near Colonial Drive**

At the south end of Dillard Street, there is Colonial Drive. It carries over 60K cars per day. As previously mentioned, at the traffic signals, the southbound approach of Dillard Street gets about 12% of the green time which is about 28 seconds out of a cycle length that is over a three minutes long. Consequently, every one of the 28 seconds counts. During peak times, back-ups occur because Dillard Street has delivered more cars than the signals can handle. To exacerbate things on the southbound approach,

there are some driveways on the east side of Dillard Street near the intersection. One driveway leads to a fast food restaurant on the corner and two driveways lead to a strip mall.

Drivers turn left into the driveways from the same left turn lane that feeds the traffic signals. Not surprisingly, driveway-bound drivers frequently need to wait for a gap in the northbound traffic and they end up blocking the majority of drivers who are heading to Colonial Drive and some of 28 seconds of green time doesn't get used. This infuriates some of the drivers who get held up or miss their green light and sometimes leads to poor driver behaviors. Also, drivers will turn left out of the three driveways onto Dillard Street and muck up the approach to the intersection as well.

A four-foot wide median is recommended to prevent left turns in and out of the restaurant's driveway. This is the main exception to the design concept's access-friendly approach. The four-foot dimension is recommended to be created by narrowing each of the four southbound lanes. It is recommended that the two mall driveways be combined and located far enough to the north such that lefts in and out of the mall and restaurant could occur without affecting the signalized intersection at Colonial Drive, benefiting the mall, the restaurant, the signalized intersection, and the driveway traffic. It is suggested to internally connect the mall site and the restaurant site. In that way, drivers going to and from the restaurant could easily turn left in and out. Similarly, the restaurant's driveway would serve right-in and right-out turns for both the mall and the restaurant. However, the internal connection is not mandatory.

### **Next Steps**

The next steps include:

- i) identifying funding and grant opportunities;
- ii) refining the design, particularly as it effects private property and access;
- iii) designing the utilities changes and engineering the corridor; and
- iv) identifying and obtaining the needed permitting.

