

## CITY OF VALDOSTA - STORMWATER COMMITTEE (SWC)

Meeting No. 5 – Level of Service Discussion  
March 23, 2010 5:30 PM  
City Hall Annex – Multi-Purpose Room

### List of Attendees

- Elliot Norwood – District 1
- David Morgan (for Angela Wall) – Southern Georgia Regional Commission (SGRC)
- Dan Deaver – Engineer
- Elton Cowart – District 6
- Ginny Holton - Community
- Danny Parkinson – District 4
- Sonny Vickers – District 3 Councilman
- Alan Sanderson – District 5
- Connie Ledbetter – Community
- Matt Phelps (for Jeff Lovell) – At Large/Engineer
- Kevin Tolliver – City of Valdosta – Assistant City Engineer
- Can Denizman – VSU
- Steve Sedgwick – CDM
- Patrick Victor – CDM
- José Maria Guzman – CDM
- Sandeep Gulati – CDM
- Von Shipman – City of Valdosta – City Engineer
- Emily Davenport – City of Valdosta – Stormwater Superintendent
- Jason Scarpate – City of Valdosta – Assistant Director of Utilities
- Kelly Bell – City of Valdosta – Utilities Department

### Absent

- Danny Sermons - Community
- Danny Rountree – Contractor
- Henry Calhoun – Community
- Henry Hicks – City of Valdosta – Director of Utilities
- Rodney Flucas – District 2

### Summary

Based on the discussions of our past meeting, CDM proposed the level of service (LOS) below, and let the participants discuss:

#### Proposed Level of Service

1. Arterial Roadway LOS: arterial roads shall have less than 0.5 ft of water at stream crossings for the 50 year/24 hour design storm (8.4 inches)
2. Collector Roadway LOS: collector roads shall have less than 0.5 ft of water at stream crossings for the 50 year/24 hour design storm (8.4 inches)
3. Local Roadway LOS: local roads shall have less than 0.5 ft of water at stream crossings for the 5 year/24 hour design storm (5.5 inches)
4. Structural Flooding LOS: No new structures shall be built below the 100 year flood elevation. This elevation is associated with the 100 year/24 hour storm with a depth of 9.1 inches
5. The City shall implement a citywide control of the total volume released by new residential and commercial developments.

CDM evaluated 30% of the City's streams as of March 2010, and was able to estimate the implications of the above LOS. It is possible that once the citywide analysis will be complete the implications would change, but this is a good first indicator of the implications so far. The results of the evaluation are expressed as percent of roads not in compliance based on the LOS above. As shown in the attached presentation, the most significant results can be summarized as follows:

- Arterial Roads: 75% compliance
- Collector Roads: 66% compliance
- Local Roads: 90% compliance
- Structures: No metric necessary, since it is proposed for NEW structures.

The group agreed on the Collector LOS being 50 years, as proposed given the arguments exposed by CDM: (1) collector roads are important routes within the City and need to be passable under storm conditions; (2) the fact that these roads are likely to be upgraded to Arterial roads with the upcoming City growth, and it makes sense to start planning for the Arterial LOS; and (3) the fact that based on the results presented by CDM, there is no change in terms of number of roadway projects if the City decides between a 25 and 50 year level of service.

In addition to the main topic above, the following topics were discussed among the committee members:

- Relationship between rainfall and floods: Several members asked questions regarding the relationship between rainfall storms and flood events. Mr. Guzmán explained that the engineering method adopted by CDM considers a design storm, which is based on long term statistics of local rainfall gages. The assumption is that the total duration of the storm is 24 hours, with a peak intensity at hour 12. Once the rainfall hits the ground, the analysis splits between runoff generated by pervious areas and impervious areas. For impervious areas, engineers estimate the ground slope, and minimal/non-existent infiltration, which generate a significant amount of runoff. In pervious areas, engineers subtract the volume of water that is absorbed by the soil, which is dependent on how wet the soil is when the storm starts. The remaining volume is then routed similarly to the impervious surfaces, by considering terrain slope and roughness. The combination of the pervious and impervious runoff, generates the total runoff generated by the watershed which is then routed to the stream. The engineering model estimates the depth of flow in the stream and therefore establishes an estimated peak water elevation for that particular storm. In a brief summary, there is a close correlation between the rainfall storm, and the water elevation in the creeks.
- Boundary Conditions: Ms. Holton asked whether the elevation of the Withlacoochee River is taken into account when CDM estimates the flood levels within the City. Mr. Guzmán explained that currently CDM considered the USGS data to create statistical estimates of the Withlacoochee River level for specific recurrence intervals. Those values are then used as the boundary condition for the stream model at the confluence with the Withlacoochee River.
- Overall Benefits and Impacts of Project Implementation: Mr. Deaver suggested that as the City, we should evaluate projects before implementation, to ensure that no stage increase, or flood conditions worsen in other areas. A typical example is the evaluation of culvert improvements, to make sure that increased culvert capacity does not increase flooding conditions downstream. Mr. Shipman explained that the City contracted CDM to evaluate the list of projects and determine their impact. He also mentioned that in the past, the City always tried to improve downstream roadway crossings first, and then implemented upstream projects to prevent specifically this issue. An example of this is the flooding of Drexel Park that became more frequent after the culvert improvements on Iola Drive and William Street.

- Stormwater storage associated with roadway projects: Ms. Holton asked the group, if the roadway improvement projects included the construction of storage areas to alleviate flooding. Mr. Shipman explained that in the State of Georgia this is not a requirement, but that it might be necessary to start addressing this issue within the jurisdiction of Valdosta. Mr. Scarpate added that in Florida regulations require same criteria to roadway impervious areas, and buildings. Mr. Victor added that in most cities where CDM has worked in the past, there is this particular requirement.
- Construction Funding: Mr. Parkinson asked the group if the funding source for the implementation of these projects is clear. In fact, the committee had been discussing the implementation of multiple projects, but the issue of cost had not been discussed in detail. Mr. Shipman explained that the projects will be funded by City's Special Purpose Local Option Sales Tax (SPLOST) currently allocated to stormwater. Mr. Guzman explained that in order to have the overall cost estimate it will be necessary to complete the evaluation of the entire City. As of March 2010, CDM has evaluated only 30% of the streams, which just gives a general idea of the projected costs. On this issue Mr. Deaver also reminded the group of the importance of planning ahead to prevent tearing up roads more than once: the City should consider upcoming roadway projects to implement stormwater projects in coordination with this, and other capital improvement projects.
- Focus on Arterial Roads: Ms. Holton suggested that the City should focus on Arterial roads first, in cases where several roads do not meet the LOS in a particular area. This way the funds would be allocated to the most critical roads first.
- Withlacoochee Flooding: Since this is the most severe flooding problem within the City, the group discussed again how the City could better prepare to prevent future floods. Mr. Victor reminded the group that the Ms. Holton suggested that the City should focus on Arterial roads first, in cases where several roads do not meet the LOS in a particular area. This way the funds would be allocated to the most critical roads first.
- Collector Roads Level of Service: Mr. Guzman presented to the group an evaluation of the results obtained to date in the analysis of 30% of the City's streams. Based on such results, there are 11% of the Collector roads that flood for more than 0.5 feet of water for the 10 year storm, while 33% of the same roads flood by more than 0.5 feet for the 25 and 50 year storms. Mr. Vickers pointed out that it is important to consider the cost implications of selecting a specific LOS, to prevent us from creating an extensive list of projects without funding considerations. Mr. Guzman pointed out that the engineering analysis shows that the cost difference comes when the Collector road LOS goes beyond the 10 year recurrence, but that there is no implication of selecting between 25 or 50 years. In fact the current results show the same number of roads that would require to implement future projects.
- Lowndes County: The group discussed the impacts of the decisions made within the City, as they relate to Lowndes County. Ms. Holton mentioned that last year the county saw immense damage associated with the Withlacoochee River floods and that they might be willing to consider similar measures like the ones taken by the City of Valdosta.

It was agreed as a group, that it would be beneficial to have an additional meeting to further discuss. The committee asked CDM to provide additional information, to reinforce the discussion before preparing a proposition to the City Council. Our next meeting is scheduled for Tuesday April 20<sup>th</sup> 2010 at 5:30PM at the same location, when we will discuss the SWC recommendation to City Council. If you have any questions please contact Emily Davenport at 229-259-3592.