



City BRT-Follow-up Proposed Stormwater Management Ordinance Changes
Meeting of 09/24/20
Drafted by Kathy Curatolo

Attending: Christian Andrea, Andy Bringardner, Sandra Bottcher, Jay Bowerman, Greg Brisson, Chris Caraca, Christa Carrera, Kathy Curatolo, Leslee Dulmer, David Ellis, Blair Foley, Louis George, Jim Gilliam, Greg Griffin, Andy Holland, Steven Jallad, Falconer Jones, Jon Kukuk, Tom Lykos, Chris Mitchell, Tom Meyers, Craig Mole, Michael Nelson, Mike Richardson, Tom Rodriguez, Matt Sellick, Robin Singer, Kayleigh Smith, Amelia Vasquez

Goal #1:

- Tom Myers explained proposed change #1 refers to the definition of re-development, not significant improvement. Numerous concerns were raised on the proposed percentages which would require meeting the stormwater design criteria. Members asked whether the percentages added to the most recent PP were based upon a formula or were they arbitrary? Tom Meyers responded they were arbitrary. A member also questioned the percentages providing an example explaining that the proposed ordinance would most definitely trigger a stormwater plan for a remodel which would not affect a square footage change putting an undue burden on the homeowner. This proposed change in percentages triggering a stormwater management plan would especially affect the lower appraised homes in the City of Naples. Adding to the homeowner burden, an engineer member shared that a retrofit stormwater plan is more difficult and expensive than tearing down a home completely. Several members urged the City to exempt lower - end homes. Members agreed that changing from 50% to 10% is far too punitive. A request was made to establish some minimum value on residential remodels for requiring the stormwater plan. Seven hundred and fifty thousand was suggested and Tom Meyers shared the City staff will consider this request on lower appraised homes and let us know. Additional comments included that Christa deals with this issue and her rulings are clear about significant improvement to a structure. A member requested that the city staff also provide more clarification on "raise more" to the structure of the furnished floor instead of raise or elevate.

Goal #2:

Tom Meyers shared the design storage volume will not have less than one inch of retention storage volume, nor less than two and one-half inches of dry detention storage volume (based on total site area within the bounded property limits). It was again asked by a CBIA member ...were these increases doubled based upon industry standards or an arbitrary increase? Tom Meyers explained that the doubling made a significant improvement and impact. A member shared that Collier County's standard is 1.5 inches for new developments. Since the City does not have an overall water management system, it seems unfair to place the burden solely on property owners. The retention requirements should be shared between the City and property owners. Dividing the 1.5" would require 0.75" (3/4") to

be stored on private property with the City responsible for storing the other half in rights-of-way, City property or possibly at a storm water treatment plant. The 3/4" of storage would be an increase from the current 1/2" which is an improvement and feasible. CBIA members urged the City staff to further vet this change. Members suggested that if the system is focused on quality and not quantity this may be a better solution. It was also shared by engineers that the one inch of retention is also "dry" retention verses "wet" retention. Dry means storing runoff at least 18" above the wet season water table (wswt) or mean high tide as is the case on the waterfront lots. Underground drainage systems such as rock trenches are considered dry because their bottom is set at 18" above wswt. The word "dry" should be added to the text. A comment following our meeting from a member shared that it is also important to define detention vs retention. Detention is a system which detains or delays discharge into the receiving drainage system, the City's storm water infrastructure. To accomplish this, the system collects runoff, then allows it to discharge or bleed out through a small orifice. The South Florida Water Management District has historically required at least a 3" orifice unless calculations allow for a larger opening. For our small sites, a 3" orifice would be the smallest size. Retention refers to a system that collects water but does not let it discharge or bleed out into the downstream drainage system. Instead runoff remains on-site and slowly drains into the ground. The thinking is to require less storage but keep it all on site rather than letting it slowly discharge. This is good and bad. Good because it keeps that first flush, the most polluted runoff, on site. Bad because if it rains every day, then the system may not have enough time to drain out into the ground. The result is a partially full or full system that will immediately overflow into the receiving roadway swales without treatment. In the past, we have always opted for a retention verses a detention system because it impacts sites the least.

Goal #3:

- Tom Myers shared this goal Includes rainfall runoff from roof drains in the water quality calculations and disregarding permeable greenspace area from the water quality calculations. He shared that staff did calculations that were not outrageous. They can be found on the City of Naples website. A member asked why state a limit? An engineer member stated the City needs to go back to the definition of underground as it includes dry detention so homeowner should get credit for both. This needs to be looked at by staff. An engineer added that there was confusion about Goal #3. Originally, the required 1/2" retention over the site minus the building footprint (roof) was changed to 1" retention over the entire site without credit for the footprint. This would have essentially tripled the amount of storage required for a typical lot in the City. This is not feasible without limiting the buildable footprint well outside the building setbacks. If understood as revised, Goal #3 would allow the permeable (pervious) greenspace to be deducted from the 1" calculation. So, essentially, the City is proposing to store 1" of runoff over the impervious areas (roof, walks, driveways, decks, etc.). If this is the case, CBIA would propose the 1" dry retention requirement be reworded to state 1" dry detention over the total impervious areas instead of the total area minus pervious greenspace. Based on the experience of professionals, this will still more than double the amount of retention we are currently required to store depending on the amount of proposed hardscape areas (driveway, pool decks, walks, etc). Although this is reduced from the original draft of Goal #3, it will still be a challenge on small lots with 7.5' setbacks. Another approach would be to follow the straight-forward South Florida Water

Management District criteria: provide storage for the 1st inch of run-off or 2.5 times the percent impervious, whichever is greater. In this scenario, a site would end up storing more than 1" if the percent impervious is more than 40%. A 50% reduction in volume is allowed if a retention system is utilized but in no case can the volume be less than 1". A third approach is to follow Collier County's requirement: Store the greater of the first 1" or 2.5 x % impervious decreased 75% for dry retention. The County increased that final amount by 50% in 2008. So, at minimum, the County requires 1 1/2" of storage. Splitting this 50 / 50, residents would store 3/4" on site. Since the City does not have an overall water management system, it seems unfair to place the burden solely on property owners. A much simpler approach is to keep the City's current 1/2" of retention over the site but eliminate the credit for the roof area. This will automatically increase and improve water quality storage. There are different ways to come up with retention volumes, but it should be shared between the City and its residents.

Goal #4:

- This goal focuses upon improving the quality of runoff. Concerns raised focused upon maintenance of swales. It needs to be clarified what the City is responsible for and what the homeowner is responsible for in maintenance. A member shared that the County is responsible for scraping the swales every few years. Potentially, homeowners should be responsible for mowing and keeping swales clear. Maintenance by homeowners should be well-defined. Management on the swales should model that being done in the County. It was suggested that French drains are a viable detail which could help with swales working effectively. It was also noted it is important to look at lots upstream and downstream by three houses on either side of the residence being built or remodeled. To do this, much more survey data will be required at an increased cost. Questions which were submitted prior to the meeting included the following: (1) Are you requiring channel drains at the right-of-way line to prevent run off? (2) Will you allow these Hybrid culverts? A member stated that he likes the gravel river, but most municipalities do not allow this. However, when the swale is too deep, and they are not conveying we end up with dead grass and ultimately a weedy area. Noted was that the gravel will probably take some effort to keep weed free. The industry is getting feedback on keeping driveways less than 30" and keeping fill to less than 12" above natural grade. We were used to limiting fill in coastal high hazard areas, but not used to doing that in other areas. Comments as requested following the meeting included agreement that the City should follow County's approach as far as maintenance and could also come up with a master plan allowing culverts or trench drains across elevated driveways. This would alleviate homeowner complaints of dealing with driveways that are always dirty and full of water. Culverts or trench drains in the right-of-way will also help to lessen driveway slopes from the right-of-way to the garage door. The City's drainage consultant should be able to model and design pipes / culvert sizes / trench drain areas under driveways, so property owners will not have the burden of having to analyze the entire street upstream of their own driveway. Limiting fill to less than 12" above natural grade on private property will, in most cases, make it impossible for underground rock trenches to be utilized because the bottom of the rock trench needs to be 18" above the wet season water table. For example, if there is a property on the water with a natural grade at 4.0' (which is pretty typical) and a mean high tide or wswt of 1.0' to 1.5', the bottom of an underground rock trench system would need to be set at 2.5' to 3.0'. A typical underground rock trench is 2'x2' (12" pipe surrounded by stone), so the top of the trench is 4.5' to 5.0'. The trench needs at least 12" of dirt and sod putting the finished grade at 5.5' to 6.0'. This ends up being 18" to 24" above natural grade. This example points to a critical point in that limiting fill to less than 12", the City will eliminate underground systems for a large portion of Port Royal, Royal Harbor and Aqualane Shores. The alternative is open swales which we all know will be not

be well received by Naples taxpayers, will be a constant maintenance issue especially in the rainy season, and will breed mosquitoes. This makes sense since properties need to be able to drain runoff away from the house and into the drainage system, ie. the roadway. The limit on lot filling should be based on the roadway elevation like the County's rules and not existing lot grades. This fill restriction will result in a major impact to the redevelopment of Naples. It will also create properties that are too low vs. development that has previously occurred over the last 20 years. We would create issues similar to houses built in the 60's, 70's and 80's except in reverse. In essence, the City would be forcing properties to be graded lower than their neighbors rather than requiring houses to be built higher. During a flood event, our major concern is flooding not water quality. It is the stormwater engineer's responsibility to design a system that controls run-off, so it does not impact neighbors and direct it towards the roadway drainage system. There needs to be a minimum amount of fill necessary to protect the property from flooding while simultaneously providing a reasonable amount of water quality treatment. Limiting fill to 12" above natural grade is counterproductive to achieving water quality treatment. It is analogous to the design of a septic drain field. Per DEP, the bottom of a drain field is required to be 24" above the wet season water table to be able to filter and treat sewage. An underground storm sewer system works in the same way. It needs to be elevated to properly work. Limiting fill will restrict utilization of underground drainage systems on low lots.

Goal #5:

- The goal is to require roof drainage to be directed to the on-site stormwater management system. No comments were made on this proposed change.

Goal #6:

- Totally new to this goal is the 30% - 70% suggested rule. The goal requires that driveways and sidewalks within the required front yard shall be limited to a maximum of 30% of the area. Several members stated via examples this does not work. Even at a 40% ratio, which is what the County prescribes, it is almost impossible to create circular driveways. Christian Andrea shared a couple of images with the City staff prior to the meeting in which 30% does not work...see attached. He will send over more examples. It was also shared by a member that this percentage does not work for horseshoe driveways. Also shared by a member was that corner lots of 75' by 100' would also not be buildable under this proposed change. Tom Meyers shared that staff would relook at this percentage based on the input provided. A potential idea shared is to have water on driveways drain into the yard which could help increase the percentage. Consideration could be given for channel drains and other options to have water from driveways drain on property. Also allowing pervious materials would help. However, it was noted that there are not that many different permeable product designs currently on the market.

Goal #7:

- This is a homeowner issue not a builder issue. However, it was noted that the City should be doing regularly cycled maintenance on right-of-way swales. It was noted by a member that taxing the local homeowners and giving them a credit for on-site storage will probably not work.

Goal #8:

- This goal requires a landscape plan prepared by a "Design Professional". It was shared that the City might get push back from community, homeowners, landscape contractors etc. as this requirement might be too much to apply to residential units. However, it was noted that

landscape plans prepared by a "Design Professional" does have merit for commercial projects. It is a good idea to define who qualifies as a design professional: Architects, LA's, Civils, Int Designers? A member noted relative to section 50-76 (d) landscape standards that limiting shellstone to 10% would not work as it is used to stabilize dirt in low sunlight. Robin Singer shared that the planning department does not want to see 70% sod but rather a greater degree of landscaping. Noted by members was that percentage quotas are difficult, but all agreed the flexibility is important. Members also noted the need to make sure several studies have been done to analyze what the correct area should be. Robin Singer was open to further discussion and input and making potential changes accordingly.

Members asked whether the right -of-way improvements will be discussed by Council at the same time the residential site stormwater management changes will be determined. Water retention on residential lots continually comes up in the City of Naples. All involved believe that infrastructure needs to be improved. By making incremental changes on residential lots we are "kicking the can down the road." The City must begin to maintain rights-of-way, the greenspace, the parks, and alleys to increase absorption. A member noted the City has several abandoned grassed alleys which could be used for drainage. These are large tracks of land within the city. It was also noted by members that stormwater improvement efforts should be discussed/determined in combination. However, Tom Myers shared right – of -way issues will not be discussed until the November 16th City Council workshop.

It was agreed by all that water quality is of extreme importance. The perception that water in conveyance systems is the solution will never get us to the water quantity levels we all desire. It is far more productive, and solution oriented to look at the quality issue.

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