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Verbal Testimony of Steven Emerman to the Town of James Island Drainage Council
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Thank you very much for the opportunity to address this drainage council.

I am Dr. Steven Emerman. I was born in Charleston and lived at 9 Devereaux Avenue on the banks of the Ashley River. I have an M.A. from Princeton University and Ph.D. from Cornell University. I was a professor of hydrology for over 30 years. I have studied and worked on issues related to development and hydrology for over 40 years.

I am not anti-development by any means, but the proposed Central Park and Riverland Oaks developments are the most ill-considered development projects that I have ever encountered.

I will talk about two things:

- (1) the consistency of the proposed development projects with either the 2013 or the 2020 City of Charleston Stormwater Design Standards Manuals.
- (2) the wisdom of permitting new developments in advance of the completion of an ongoing drainage study

I am reading from the 2013 stormwater manual:

“Flooding exists in many locations around the City where development densities have increased to the point that stormwater controls have become overwhelmed... The following design criteria shall be used for projects discharging to receiving waters within these areas: The post-development, peak discharge rates are restricted to one-half the pre-development rates for the 2 and 10-year 24-hour storm event or to the downstream system capacity, whichever is less.”

I am emphasizing the last sentence: The downstream system capacity sets a lower bound on the permissible peak discharge rate from a new development.

In order to fulfill this requirement, the downstream stormwater infrastructure must be known and must be in good condition.

In fact, the stormwater infrastructure on James Island is not known. A local resident documented a 48-inch stormwater pipe that was completely blocked by large rocks. The response of the City of Charleston was that the blockage appeared to be deliberate, but that they had no records of such an alteration. The issue is not the impact of this particular pipe, but that the City has not kept records of alterations to the infrastructure, so that the infrastructure is unknown.



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The stormwater infrastructure on James Island is not in good condition. Where the stormwater infrastructure is visible, local residents have documented drainage channels that are nearly full with mud, woody debris, vegetation, and sometimes shopping carts.

It cannot be assumed that the actual stormwater infrastructure is the same as a hypothetical design infrastructure.

I documented 22 significant flooding events on James Island over the past five years. By comparison with precipitation records, the probability of flooding is 10% if there is more than half an inch of rain in 24 hours. That is the actual downstream system capacity. The downstream stormwater infrastructure cannot be relied upon to prevent flooding if there is more than half an inch of rain in 24 hours.

No document from the City or the developers has taken into account the very low value of the actual stormwater capacity, as is required by the stormwater manual.

The irony is that the City and County of Charleston have been carrying out a drainage study in the Central Park / Wambaw Creek watershed in the exact area of the proposed Central Park and Riverland Oaks developments since 2019. We just heard an update on that drainage study from the City of Charleston. Any reasonable person would see something wrong with making decisions regarding stormwater permits in advance of completion of a study that would provide a rational basis for making a decision about the permits.

JUST STOP IT!

Stop taking a bad flooding situation and making it even worse.

This is my recommendation:

- (1) Consider the recommendations of the drainage study.
- (2) Carry out the recommendations as appropriate.
- (3) Verify that the implementation of the recommendations has improved the flooding situation.
- (4) Only then will it be appropriate to consider new developments.

Thank you.