

March 14, 2008

To: Dean Block
From: Michael J. Munson
Subject: Summary of West Charlotte waste water flow analysis

I have now had an opportunity to tabulate the data that Tom Mansfield pulled together regarding properties in the West Charlotte area. At the beginning, we identified a fairly large area, extending from the west side of Route 7 on the east to the railroad tracks on the west, extending north along Greenbush Road to include the Clemmons and Braun properties, and extending south along Greenbush Road to include the Burns property and the Gaujac property. A total of 89 parcels were identified, although three were actually parts of other included parcels. All but six of the parcels currently have some development. Tom provided a map of these parcels.

Estimated flows: In many cases the information Tom generated included a design flow for an engineered waste water system on the property, and that was assumed to match the actual flow. In most other cases the size of the existing residence (or residences) was provided, and a design flow was estimated on the basis of the Vermont Waste Water rules. In the remainder of the cases, mostly non-residential or combined uses, flows were estimated on the basis of assumed number of persons and the per-person flows from the Vermont Waste Water Rules. Ultimately, an estimated flow was generated for each of the developed properties, based on current use and development. The total flow for the 89 parcels was 42,385 gpd.

Potential flows for a Community System: All development in West Charlotte is served by in-ground waste water treatment and disposal. In many cases the soils are not really conducive to such systems, and in some cases off-site systems have been created. The reason for this present planning effort is the feeling that the limited available capacity of sub-surface treatment and disposal should be committed to accommodating existing development before being made available to future development. Implicit in this is the expectation that the systems serving at least some existing development are likely to fail, and that those properties should be likely candidates for connection to a municipal/community system, should one be created.

This study was not intended to include a detailed, property by property evaluation. Instead, available information on documented failures, existence of engineered systems (where available), lot size, and general soils information, was used to classify properties into three general classes: Where engineered systems were documented, where off-site systems were documented, or where soils were conducive to in-ground or mound systems, the properties were classified as not likely to connect to a community system. Where there was a documented failure of an existing system with no recorded remedy, and where lot size/soil conditions are not conducive to in-ground or mound systems, the property was classified as likely to connect to a community system. Where

there was no technical information regarding the existing system and where lot size and soil conditions did not clearly support in-ground or mound systems, the property was classified as a questionable connection to a community system. The intent was not to identify specific properties that would be connected to a community system, but rather to estimate the percentage of total existing flow that might need to be accommodated by a municipal/community system. A conservative estimate of demands for a municipal/community system would be the sum of flows for properties likely to connect or questionable to connect to such a system.

With that in mind, the flows from all properties classified as likely or questionable connections to a community system were totaled and converted to a percent of the total estimated existing flow. The results are as follows:

Total Estimated Existing flow:	42,385 gpd
Potential connections to a community system:	
Likely	8,675 gpd
Questionable	8,260 gpd
Total	16,935 gpd
Potential connections as percent of total flow	40%

Potential sub-surface treatment and disposal capacity available: There have been several tabulations of potential capacity in the West Charlotte area, the most recent being that by Civil Engineering Associates, Inc., dated Jan 26, 2007. This study first notes that the existing town owned system has a designed capacity of 4,999 gpd, of which a total of 1,552 gpd have been allocated to the town office, library, fire station, senior center, and infiltration, leaving a balance of 3,447 gpd.

The study then identifies a total of nine additional sites and provides estimated potential treatment capacities for each, as follows:

A.	Old Lantern-Hill	560 gpd
B.	Old Lantern-West	4,200 gpd
C.	Old Lantern-South	2,880 gpd
D.	Burns-Southwest	1,000 gpd
E.	Burns-North Triangle	960 gpd
F.	Burns-Town WW-North	5,240 gpd
G.	Burns-Town WW-East	14,600 gpd
H.	Burns-Town WW-South	200 gpd
I.	Burns-Flea Market	2,260 gpd
	Totals	31,900 gpd

It is not clear whether or not the estimated capacities of the sites on the Burns Property include or are net of the 1,552 gpd of allocated flows from the town office, library, fire station, senior center, and infiltration, as noted above. At this point it will be assumed

that the estimated capacity is not net of the currently allocated flows, so the net potential capacity must be reduced to 30,348 gpd.

When 40 percent of estimated existing West Charlotte flows (roughly 17,000 gpd) is deducted, there is just over 13,000 gpd of potential capacity that can be used to support future development.