

Issue 8.

Maximized Numbers of E-One Grinder Pumps, Misled the Public:

Illogical

Ensures inability to properly maintain

Ensures inability to properly respond to emergency situations

Falsified numbers and unsupported, overly optimistic cost projections to enhance the appearance of economy. (Documented by the Sir Isaac Newton Coalition).

Areas formally reevaluated that came up much cheaper as gravity- how can that happen if gravity is the first choice?

Inappropriately specified E-One residential grinder pumps for neighborhood lift stations.

The current design is impractical and illogical. FKAA engineers know it is a bad design and kept it hidden as well as they could for as long as they could. Public outrage built quickly when FKAA held the first of their small region public information meetings and first divulged with a color coded map that large areas of rather densely populated areas were slated to receive an LPS system using individual grinder pump stations set on private property. Earlier meetings did not divulge that large areas of relatively dense populations were intended to be served by a grinder pump LPS. Maps were displayed at meetings and on FKAA informational web pages that did not differentiate between gravity or LPS neighborhoods. Please see the attached typical map identified as **Exhibit Z** that identifies both LPS and gravity areas as "Centralized", which was understandably interpreted to be conventional gravity service, especially by a public who in large part had never heard of a sewer grinder pump and knew nothing of Low Pressure Sewer systems. The contracts were bid before the public became aware that vast areas were slated for LPS grinder pumps. "Too late", said the County's Wastewater Division Director, engineer Kevin Wilson- "That ship has sailed." The impression was always given that homes in the centralized area would be on gravity collection like the last two FKAA waste water projects ,Big Coppitt and Duck Key. See **Exhibit Z** for an example of what was found posted on the FKAA.com website November 29, 2013. There is no obvious differentiation between gravity and LPS areas. Maps of other islands also showed no division of "centralized" areas. Also on November 29, we found no color coded maps showing grinder neighborhoods for the areas where public meetings have been held and maps were displayed. There was just a place marker note "Under design" on the pages for Big Pine Key. The maps exist but they are not posted to the informational website. They are hung on the wall of an FKAA office- out of public view. The intent of FKAA was to mislead people into thinking they were to connect to a conventional gravity system, and at the time of this writing they are still keeping the intent of some areas hidden.

Looking at the maps that were available until recently- and the only maps posted for Big Pine Key- it seems reasonable that gravity would be used, just like it is used for most of the country in similarly populated regions. Grinder pumps are normally employed in situations where homes are built well below the roadway or where there are finished basements with bathrooms. Even in these situations, a non-grinding sewage pump is less troublesome, does not require a large electrical circuit and is generally less than 20% of the cost of a grinder. Apparently without researching the experiences of other communities with grinder pumps, somebody at FKAA made the executive decision to use as many E/one grinder pumps as possible in the CRS project. A "Decision Tree", reportedly supplied by the local E/One pump distributor, Water Resource Technologies, was said to have been used to decide which homes got gravity and which got a grinder pump. A public record request by the Isaac Newton Coalition for the "Decision Tree" was ignored. Matthews Consulting produced a cost analysis spreadsheet purporting to compare costs over a 20 year period, but the assumptions were grossly unrealistic and heavily weighted to favor grinder pumps. Furthermore, gravity construction costs included a pavement overlay while grinder construction simply patched the trenches, so the comparisons were not "apples to apples". Rational people in some rather densely populated areas demanded a re-evaluation for conversion to gravity. The gravity costs for the comparison were maximized in a rather obvious manner to the knowledgeable observer. Clearly, somebody at FKAA did not want to entertain a loss of grinder pumps. An offer was made by FKAA to convert if the homeowners got together and chipped in the difference. On one revaluation, in spite of maximizing gravity costs, adding a pavement overlay, and adding a percentage for the contractor's paperwork, the change to gravity resulted in a \$28 credit! How does that happen with due diligence to the design and its review and with a stated preference for all gravity? An Injunction request was filed against FKAA and the County by the first organized group of rational people under the Sir Isaac Newton Coalition, and it followed that the County approved funds to convert their area to gravity at an additional cost to the project. While that first group based on Cudjoe Key was vocally disputing the logic and economics of grinder pumps and being ignored, an additional FKAA small region meeting was held that informed another shocked group of citizens that much of their area was also slated for grinders. Public outrage has steadily built since. Over 400 petitioners against individual grinder pumps were ignored by most of the County Commissioners and all of the FKAA Board of Directors. The petitions were not even acknowledged by the large majority of "representatives" receiving them.

Further maximizing the use of the E-One brand grinder pumps was the specifying of residential grinder pumps in "neighborhood lift stations" in the construction contracts for the CRS region. These pumps are not only inappropriate in a neighborhood lift station, they are actually illegal and a threat to public safety because they are not explosion-proof as required by DEP, NFPA, and NEC. They are expected to run about 20 times

more than they would in a single family home setting for which they were designed and are being used for flows far in excess of published maximum recommendations of the manufacturer. By restricting the depth of gravity sewers to 8', the number of neighborhood lift stations required in a given subdivision is further maximized, thereby further increasing the quantity of E-One grinder pumps used.

The Keys are a unique environment, surrounded by the waters that are home to the largest coral reef in North America and are a declared "Area of Critical Concern" with its surrounding waters classified as "Outstanding Florida Waters". Hence the "special" legislation mandating conversion from septic tanks to central sewers and "Advanced Wastewater Treatment", Surely the intent of that legislation and state mandate was not to create widespread discharges of raw sewage to the environment, but that will surely be the result if the current collection system design is built. Roughly 30% of the CRS islands were slated for individual E/one brand grinder pumps to be set on private property in an easement. That is illogical and short-sighted to the extreme. By ignoring many of the regulations governing low pressure waste water collection, and by simply patching LPS trenches instead of repaving roads, and by essentially fudging the numbers for maintenance cost, LPS was made to look very economical compared to gravity collection. Using reasonable, defensible assumptions for maintenance and repair cost, most of the homes slated for grinder would most economically be served in the long term by gravity. Many are more economical as gravity even in the short term. It is as if the intention was to use as many individual grinder pumps as could be justified by good bluffing.

The FKAA is not prepared at all for the demands of maintenance of so many grinder pump stations.

Considering the requirements for routine maintenance as stated below (and not included in present worth analysis), the collection system as permitted is impractical and would require a very significant surcharge above a gravity sewer collection billing rate. Realistically, the maintenance will not be performed as required. Because the E-One grinder pump produces such a low flow rate, and in short spurts of under 10 gallons when installed in the E-one grinder pit, collector force mains throughout whole subdivisions will surely become obstructed by grease and solids, rendering the system inoperable and further increasing repair costs. This is a system that must not be built as designed and E-one brand grinder pumps must be rejected as the specified grinder in any application here. It is unsafe and unsuitable.

Design and Specification Guidelines for Low Pressure Sewer Systems (1981) DEP (incorporated by reference 62-604.300 (j) F.A.C.) states:

“Routine annual inspections of on-lot facilities include removal and/or visual inspection of the PU [pumping unit], controls, warning system and other ancillary items, including the electrical connections. Routine inspection of pressure sewer main appurtenances should be made a requirement. Shut-off, air-release, and pressure-sustaining valves

should be inspected at least once per month and exercised. Maintenance of air release valve assemblies should be performed as dictated by these inspections. Pressure sewer main flushing should be performed as required and with the necessary precautions for preventing cross-connections. “

