

St. Thomas East End Reserves Watershed Existing Conditions Report

Appendix B

Field Briefings





MEMORANDUM

TO: Jean-Pierre Oriol, DPNR Division of Coastal Zone Management (CZM); David Simon, Division of Environmental Protection (DEP); Roy Pemberton, Division of Fish and Wildlife (DFW); and Stuart Smith, Comprehensive and Coastal Zone Planning (CCZP)

CC: Rob Ferguson, NOAA; Marlon Hibbert, NOAA; Anne Marie Hoffman, TNC; Alex Holocek, CZM; Renata Platenberg, DFW; Stephen Hale, DFW; Anita Nibbs, DEP; and Pedro Nieves, CZM

FROM: Anne Kitchell, Horsley Witten Group

DATE: March 7, 2012

RE: STEER Watershed Field Assessment Briefing

An on-the-ground assessment of pollution sources and potential restoration activities was conducted the week of February 26-March 2, 2012 by the Horsley Witten Group in the watershed area draining to the St. Thomas East End Reserves (STEER). This effort is sponsored by the NOAA Coral Reef Conservation Program, and supported by The Nature Conservancy and other members of the STEER Committee. During this week, two public meetings were held to solicit input from local businesses and residents on pollution sources and solutions in the watershed. We are in the process of organizing our field notes and drafting a summary report of our findings for your review within the next few months. However, there are a few items I wanted to bring to your attention in advance that are related to DPNR staff involvement, key watershed issues, and follow-up information needs.

A few members of DPNR staff have assisted in preliminary data collection, project coordination, and field investigations. Their involvement has been critical to our team's ability to efficiently access important sites in the watershed and communicate with the local residents and businesses. Pedro Nieves and Alex Holocek have provided us with a lot of existing watershed mapping information. Alex also spent the week in the field with us; her knowledge of existing conditions proved valuable, as did her assistance with compiling mapping data, coordinating with schools, representing DPNR at one of the public meetings, and safely navigating the watershed. Renata Platenberg and Stephen Hale spent two days in the field as well. Their knowledge of guts and other wetland conditions on the East End was extremely helpful, as was Stephen's attendance at one of the public meetings. Anita Nibbs participated in an initial watershed reconnaissance back in October, and has maintained close communication regarding the project since that time. We know these DPNR staff are extremely busy, and we appreciate the willingness to dedicate a portion of their time to this project.

Some of the key land-based pollution issues that we observed during our assessment are summarized below. There are a number of requests for additional information to help clarify some of these issues prior to drafting of preliminary watershed recommendations.

Stormwater

- Much of what we were looking at in the field relates to how stormwater runoff is currently being managed, or how it could be improved, for existing development. We have mapped the existing stormwater management facilities we observed including: Raphune Vista (detention basin); Cost-U-Less (two detention basins), Price Smart (detention basin), BCB School (detention basin); Ritz Carlton (constructed wetland, two stormceptors, and a small detention basin); and Tutu Park Mall (detention basin). Any information you have on the design, maintenance, and performance of these facilities would be helpful. Who is the appropriate contact for the TPDES program? We will provide you with a new GIS shapefile of existing stormwater facilities.
- There are a few sites where a copy of the site plans for active construction projects would help our understanding of the long-term drainage plans. We are primarily interested in the erosion and sediment control (ESC) and post-construction stormwater management plans for Grandview and for the construction site behind the Curriculum Center/Fire Station/Gomez Elementary School. It appeared during our investigation of the Grandview construction site that runoff is being discharged directly to the gut without an adequate mechanism for stormwater management. In addition, there were open sewer manholes and a construction access road in the gut. Stabilization of some slopes using erosion control blankets and riprap channels was observed. At the construction site behind the Curriculum Center, no ESC practices were observed and extensive excavation and reshaping of the gut channel was occurring. Any clarification you could provide on these issues would be useful.
- The most significant sources of stormwater and illicit discharges (failing septic, cesspools, etc) that we observed within Tier 1 include the Bovoni landfill, the adjacent commercial area south of Bovoni Rd., and the businesses along marina row. A number of good practices were observed at the Independent Boatyard (e.g., ground tarps, dust control, paint chip vacuum systems, and collection sump at slip). Your input on the descriptions and recommendations associated with these sites will be critical.
- One of the more significant sources of TSS in the Tier II portion of the watershed is Heavy Materials (the Quarry). Would it be possible to review a copy of their TPDES industrial permit and stormwater pollution prevention plan (SWPPP) to better understand expectations for on-site management?
- There are a number of opportunities for large and small stormwater retrofit projects at the schools, public housing facilities, and community centers. Prior to and during the field assessment work, we contacted the VI Housing Authority and the School District to inform them of this effort. We are also planning to send them a follow-up letter noting the potential for stormwater and pollution prevention opportunities on these properties. One

concern we have is that there seems to be a trend away from the use of cisterns and rainwater reuse, which is a key strategy for comprehensive stormwater management.

- Residents from our two public meetings identified undersized culverts, particularly on Brookman Rd. where Turpentine Run crosses the road north of the Quarry, as key culprits for flooding issues in the watershed. Road repaving and maintenance was also blamed for flooding issues at the Independent Boatyard. As part of the watershed plan, we intend to discuss the culvert sizing and road maintenance procedures. We are open to any thoughts you might have on engaging DPW or FHWA.
- During our review of existing reports, a hydrologic model comparing changes in drainage patterns in Turpentine Run by Pedro Nieves and Stevie Henry was referenced. Are you aware of this and can we get a copy of a more detailed report?

Wastewater

- We met with VIWMA to discuss the extent and condition of infrastructure associated with the Mangrove Lagoon WWTP and associated infrastructure in the sewer service area. We will provide you with a sewer map based on our meeting that will include the approximate location of trunk lines, pump stations, non-service areas. VIWMA explained the process for treatment at the ML WWTP from aeration/settling/decanting to the UV disinfection prior to discharge offshore in Stalley Bay. We also discussed the process of accepting septic pump-outs (currently accepting without fee) and the challenges associated with accepting vessel pump-out loads (e.g., salt and bilge). We discussed the influence of old pipes, leaking manholes, bad joints, and I&I on the amount of flow coming to the plant during rain events and high groundwater scenarios.
- We anticipate highlighting sewer line infrastructure repair, strategic expansion, and illicit discharge surveys as priorities for watershed management in order to elevate future funding discussions amongst federal partners.
- In addition, we have completed Alex's mapping of all small wastewater package systems for the East End. It would be helpful to fill in the data attributes for small wastewater plants (TPDES permit #, plant type, capacity, effluent monitoring, etc). Please let us know who the best person to coordinate the compilation of that data might be. This information may be useful for the EPA's Clean Watersheds Needs Assessment survey currently underway.

Other Land-Based Sources of Pollution

- We met with VIWMA to discuss pending closure plans for the Bovoni landfill, used oil drop off and household hazardous waste collection programs, as well as constraints on regulated waste that can be burned by WAPA. Despite our inability to secure documentation from EPA or from VIWMA on the administrative orders and mitigation plans concerning contaminated leachate draining from this site, we have enough information to highlight this area as one of the major sources of water quality contamination due to scrap metal disposal into the adjacent mangroves, uncontrolled

leachate drainage, unmanaged stormwater runoff, and methane buildup/combustion, etc. We do have a copy of an administrative order related to scrap metal disposal in the wetland, but we would welcome any additional effort on your part to secure reports/orders related to other issues.

- Based on these discussions with VIWMA, it is our understanding that landfill mitigation alternatives in the watershed include:
 - Previous restoration of a section of white mangrove (within last 5 years)--have there been any monitoring reports of the success of this effort? Any insights you may have on the success of this effort would be useful;
 - Leachate collection system—includes pretreatment and final treatment at WWTP, and would require the relocation of the service road to the east of its current location;
 - Top cover and reshaping of the landfill, which will redirect drainage for a portion of the site into Bovoni/Stalley Bay;
 - Installation of three detention basins to manage surface runoff; and
 - Methane gas system and construction of a gas-to-energy facility (started).

The timeframe for completion/adoption of the closure plan and implementation of many of these actions items is unknown; however, we anticipate highlighting these (particularly the leachate collection and pretreatment) as priority restoration activities in the watershed plan.

- Mapping data of land-based sources of pollution appears limited for the East End. Any assistance you could provide on determining if mapping data exists for regulated discharges (TPDES permits); underground storage tanks, etc would be helpful. Mr. Syed Syedali provided us with a map of wellhead locations, which appears to lose accuracy at small scales, but is suitable for this current effort.
- The Tutu Wellfield Superfund Site is within this watershed area. We have communicated directly with EPA on the status of the cleanup effort. Groundwater contamination issues may limit the options for improving stormwater management in that portion of the watershed.
- Residents from our two public meetings identified trash as one of the key pollution issues in the watershed area. If you are aware of any DPNR public education or involvement activities in the watershed related to trash, please let us know. As part of the watershed plan, we will likely suggest trash prevention and cleanup activities (e.g., cover of roll-away dumpsters and locations for community cleanups).

Natural Areas

- A portion of Turpentine Run spanning between the Clinton Phipps Race Track and Price Smart was walked by DFW and HW staff to get a sense of the impacts on the gut from adjacent development and infrastructure, as well as to identify opportunities for floodplain restoration, gut stabilization, and/or discharge prevention. Portions of the gut network in the Nadir and Frydenhoj subwatersheds were also evaluated; however, no

extensive effort was made to walk the entire drainage network across the East End. We will provide you with a copy of our revised baseline gut GIS shapefile.

- Extensive construction activity appears to have recently taken place in the natural gut behind the curriculum center and Gomez Elementary School. Clarification on the role DFW plays in the permitting of such activities, if any, would help us better understand the permitting process in the USVI.
- No formal natural area/wetland inventory was conducted during this assessment period. We observed conditions of many of the freshwater wetlands and salt ponds in the watershed, but we intend to incorporate into the watershed management plan recommendations from existing studies and by project partners to address wetland restoration and conservation priorities. January Murray has provided management strategies for the Compass Pt. Salt Pond. Any information you can provide on the ecology and status of Tutu Park Marsh (aka, Tutu Reservoir) would be helpful. Originally used as a farm pond, sedimentation and vegetative establishment over time have reportedly led to the loss of storage capacity. There is active and proposed construction in the area draining to the reservoir and it has been recently drained (reportedly). How do you see this marsh from a wildlife conservation perspective?
- In addition to two approved TMDLs for bacteria and dissolved oxygen in Mangrove Lagoon/Benner Bay, there are a number of additional impairments within STEER listed by DPNR in the 2010 Integrated Waters Report. Completion of this study will help provide watershed-based information for use during future TMDL development.
- We have reviewed the conservation strategies presented in the 2005 USVI Marine Resources and Fisheries Strategic and Comprehensive Conservation Plan. The watershed plan will help identify specific activities for managing stormwater runoff, wastewater discharges, and enhancing wetland buffers as emphasized in the 2005 Conservation Plan. Opening of the second false entrance to improve flushing in Mangrove Lagoon has been mentioned by DFW, CZM, and others on the STEER committee. If there is any documentation supporting this management approach that you feel should be reviewed and incorporated into the overall watershed plan, please let us know.
- We have asked TNC to provide us with a summary of the public and non-governmental process for land conservation in the USVI. Please let us know if any additional information on DPNR's interests in land conservation in the watershed is available, beyond what we discussed in October related to the Luton property.

Thank you, again, for the attention DPNR has provided to this watershed assessment project. I look forward to discussing these watershed issues with you further. Please don't hesitate to contact me directly with any questions or comments you may have at 508-833-6600, or via email at akitchell@horsleywitten.com.

Horsley Witten Group

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March 7, 2012

Ms. May Cornwall
Executive Director
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#1 La Grande Princess, Suite BL1
Christiansted, VI 00820

Re: STEER Watershed Field Assessment Briefing

Dear Ms. Cornwall:

As you are aware, an on-the-ground assessment of pollution sources and potential restoration activities was conducted the week of February 26-March 2, 2012 by the Horsley Witten Group in the watershed area draining to the St. Thomas East End Reserves (STEER). This effort is supported by the NOAA Coral Reef Conservation Program (CRCP), The Nature Conservancy, and other STEER members. I wanted to inform you that our meeting with Mr. Steve Aubin and Mr. James Grum was more productive than anticipated. Mr. Aubin clearly is a notable asset for VIWMA; in addition to explaining the Mangrove Lagoon WWTP operations, he also marked up a field map with the locations of trunk lines, pump stations, non-service areas, and potential areas for system improvements and expansion. Mr. Grum was equally patient in his explanations regarding stormwater management, leachate interception, and other mitigation options for the Bovoni landfill.

We are in the process of organizing our field notes and plan to have a draft summary report available for review within the next few months. There are a few items I wanted to bring to your advance attention:

- Mr. Aubin explained the process for treatment at the ML WWTP from aeration/settling/decanting to the UV disinfection prior to discharge off shore in Stalley Bay. He also discussed the process of accepting septic pumpouts loads and the problems associated with accepting vessel pumpout loads (i.e., salt and bilge). We discussed the influence of old pipes, leaking manholes, bad joints, and I&I on the amount of flow coming to the plant during rain events and high groundwater scenarios.
- Based on the information sketched out by Mr. Aubin, we will provide you with GIS sewer service area shapefiles that will include the approximate location of trunk lines, pump stations, non-service areas, and potential expansion plans. In addition, we will provide a shapefile of locations for the small, private wastewater plants in the east end.
- We anticipate highlighting sewer line infrastructure repair, strategic expansion, and illicit discharge surveys as priorities for watershed management in order to elevate future funding discussions amongst federal partners.

March 7, 2012

Ms. Cornwall

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- At this time, we do not have copies of reports documenting required mitigation measures for the Bovoni Landfill (with the exception of the administrative order related to solid waste encroachment in the wetland), and would welcome any additional effort on your part to provide copies. That being said, we do have a general understanding of the major issues including: scrap metal disposal into the adjacent mangroves, uncontrolled leachate drainage, unmanaged stormwater runoff, and methane buildup/combustion, etc.
- Based on our discussions with Mr. Grum and Mr. Aubin, our understanding of landfill mitigation alternatives in the watershed includes:
 - Previous restoration of a section of white mangrove (have there been any monitoring reports of the success of this effort?);
 - Leachate collection system, which includes pretreatment and final treatment at WWTP, which would require the relocation of the service road to the east of its current location;
 - Top cover and reshaping of the landfill, which will redirect drainage for a portion of the site into Bovoni/Stalley Bay;
 - Installation of three detention basins to manage surface runoff; and
 - Methane gas system and construction of a gas to energy facility (started)

Mr. Grum reported the closure plan should be available by the end of the year. The timeframe for finalization/adoption of the closure plan and implementation of many of these actions items is not clear; however, we anticipate highlighting these (particularly the leachate collection and pretreatment) as priority restoration activities in the watershed plan.

- Mr. Aubin discussed the used oil drop off and household hazardous waste collection programs, as well as constraints on regulated waste that can be burned by WAPA.

We appreciate VIWMA's willingness to dedicate a portion of their time to the watershed planning project. I look forward to discussing watershed issues with you further, and recommendations related to your activities. Please don't hesitate to contact me directly with any questions or comments at 508-833-6600, or via email at akitchell@horsleywitten.com.

Sincerely,

HORSLEY WITTEN GROUP, INC.



Anne Kitchell, LEED AP
Project Manager

Cc: Rob Ferguson, NOAA CRCP; Anne Marie Hoffman, STEER Coordinator, TNC