



SAN MARCOS WATER QUALITY PROTECTION WORK GROUP MEETING MINUTES – JULY 18, 2017

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1. Call to order.

Nathan Pence called the meeting to order at 9:09. Mr. Pence provided opening comments and thanked the Work Group members for their participation and contribution to transparency and the public process.

2. Public comment.

There were no public comments.

3. Presentation of the San Marcos Water Quality Protection Work Group charge.

Alicia Reinmund-Martinez provided an overview of the Work Group charge, including an introduction to the EAHCP's adaptive management process. Dr. Chad Furl presented a review of the physical and ecological impacts associated with increased rates of sedimentation that is being experienced in the San Marcos River. Melani Howard provided a presentation of the City of San Marcos and Texas State University's performance data from EAHCP sediment removal efforts to date under measures 5.3.6 and 5.4.4. Dr. Furl and Ms. Reinmund-Martinez provided a summary stating that sediment removal efforts have proven time-intensive, costly, and problematic, and, overall, a reactive strategy to the problem of excessive sediment loading in the San Marcos. John Gleason introduced the Water Quality Protection Plan (WQPP) developed by his firm on behalf of the City of San Marcos in support of the City's EAHCP water quality protection measure. This WQPP provided the original basis for some of the ideas for retrofits that are being considered today by the Work Group, specifically, stream restoration and BMPs in the Sessom Creek watershed.

4. Presentation and possible endorsement of EAHCP staff recommendation of the Sessom Creek watershed as the priority for the City of San Marcos' "Impervious Cover/Water Quality Protection" (HCP §5.7.6) project implementation.

Dr. Furl provided an overview of the criteria used and analyses undertaken to prioritize which of the contributing watersheds to the San Marcos River (Sessom, Willow Springs, Purgatory, and Sink creek watersheds) should be targeted for EAHCP water quality protection implementation, identifying Sessom as exhibiting some of the highest problem indices (e.g., percent impervious cover, highly erodible land, average channel slope, etc.).

Dr. Ben Schwartz provided an overview of the nature of the watersheds in relation to the recharge zone as well as efforts to date to monitor sediment loading to the river. Dr. Schwartz did comment that in the lower Purgatory there is a well that gets inundated during large storm events in which endangered species have been recorded. Dr. Schwartz also commented that springs around lower Sessom discharge into a concrete channel which is not appropriate to be considered habitat; however, the springs do reflect connectivity into the aquifer (to a limited extent) suggesting this reach is not totally without habitat value.

Mr. Gleason introduced information on the existing conditions in the middle Sessom Creek watershed and presented his team members Pat Hartigan (primary white paper author and technical lead on the Sessom Creek analysis) and Lee Sherman (primary author of the retrofit section of the WQPP). Mr. Hartigan discussed exposed wastewater lines in the watershed and other geomorphological evidence observed in the watershed indicating major problems with instability and erosion.

Dr. Furl discussed the Sessom Creek confluence with the river, noting that the confluence flows into the Spring Lake dam reach which provides habitat for Texas wild-rice and is the only area of the river where the TPWD State Scientific Area stretches from bank to bank. Dr. Furl also presented the latest published bio-monitoring mapping for Texas wild-rice showing stands growing in the confluence area.

Mr. Hartigan provided an overview of the other watersheds, noting the Willow Springs, Purgatory, and Sink creek watersheds variously exhibit comparatively less instability and some retardation of flows from Soil Control Service dams.

Dr. Schwartz commented on Sink Creek, noting that the tributaries coming off Hillside Ranch Apartments (1 and 2; accessible off Ramsey Street) are like Sessom, rapidly downcutting and contributing to sediment flows to Spring Lake.

Shaun Condor commented that since the City will already be out working on the wastewater line project it would be good to get both projects (wastewater lines and water quality protection) done at the same time.

Charlie Kreidler commented that, although Sessom Creek watershed may be the priority for this exercise, the other watersheds should also be considered through the EAHCP process to head off the development of hydrologic problems in them that are like Sessom once they become more urbanized. Mr. Gleason commented that City of San Marcos land development regulations would govern this development.

Glenn Longley stated he has no problem prioritizing Sessom Creek watershed; Dr. Schwartz seconded Dr. Longley's endorsement. There was no opposition.

5. Presentation and possible endorsement of prioritizing the proposed list of water quality protection projects identified for implementation in the chosen watershed.

Ms. Reinmund-Martinez presented the proposed list of water quality protection projects identified for implementation in the chosen watershed. Dr. Furl provided an overview of the prioritization of the middle reach of the Sessom Creek watershed over either the upper or lower reaches of the watershed.

Mr. Hartigan discussed the proposed stream restoration for "Reach 2" (the middle reach), noting that the project would be based on natural design principles and that fluvial geomorphology and equilibrium theory will be applied to create stable channels.

Dr. Longley asked what specific techniques would be used to stabilize the channel. Dr. Aarin Teague asked what the Rosgen stream classification is; Mr. Sherman explained they are not proposing to use the Rosgen model, but rather a process-based methodology focused on the end goal of establishing a channel in equilibrium.

Dr. Teague asked what the proposed riparian buffer width would be; Mr. Sherman replied they do not know yet. Dr. Schwartz mentioned that there is extensive *Ligustrum* [an invasive exotic species] growth in the watershed just upstream from LBJ, would part of the plan involve removal? Ms. Howard answered that, on a volunteer basis, off the Windmill Tributary, for about 6 months they've been removing Chinese tallow, *Ligustrum*, and Chinaberry, and spreading seed, and thus far, it has been working—so she'd envision continuing these volunteer efforts.

Mr. Hartigan brought up that while stream restoration is a major focus, drainage issues and public safety will also require attention in the scope of the project. Mr. Hartigan reviewed the evaluation criteria used in the assessment of various water quality protection projects under consideration

(sediment loads and load reductions, cost, and cost effectiveness). Mr. Hartigan proceeded to present each of the individual projects under consideration and the various performance metrics calculated for them.

Dr. Teague commented that the research that went into the WERF guidelines was highly variable and based on a wide variety of case studies, meaning that following these guidelines should be understood to involve a high degree of uncertainty.

Ben Schwartz asked if there were any opportunities to install BMPs upstream of the middle reach to preemptively mitigate erosive flows hitting the middle reach. Mr. Hartigan answered that there were around a half a dozen smaller scale opportunities, including some major ones (e.g., “The Gulch” and “Sessom Creek Wet Pond”) that are under consideration through the Water Protection Plan (WPP) process. Dr. Schwartz commented that Dr. Weston Nowlin’s class studied the pond and found that there was no loss of loading in the pond and the average residence time was 12 minutes, with the caveat that this was an unpublished class project.

Open Intermission for Comments and Questions from the Public and the Work Group

Dr. Longley asked what the wastewater renovations plans are for the City. Mr. Condor answered that the City will put a stub out to the west of LBJ, bore a sewer line all the way west. Existing sewer will be cut out and filled with foam. Dr. Teague asked if the City has an MS4 permit; Ms. Howard answered that yes. Dr. Teague asked if the streets in the area affected provide the conveyance; Mr. Condor answered that there are no streets around the wastewater line work.

Ken Diehl commented that there is an MS4, 319, HCP, and funds from City for sewer relocation; there has been a significant effort to delineate those costs and activities, and this collaboration needs to be clear. Mr. Pence responded that as Program Manager it falls to him to ensure that HCP funds are being used appropriately; while the collaboration is complex and challenging, the team has been holding bimonthly planning and coordination meetings. It is on us as project managers to observe and maintain appropriate boundaries. While a challenge, Mr. Pence expressed he feels that this will pay off in the end.

Dr. Teague asked if there is a delineated floodplain associated with the project area (“AE zone” in FEMA terminology); Mr. Sherman responded that he does not believe there is, Mr. Condor and Mr. Hartigan also added that there is not. Dr. Teague asked about permitting costs and whether a Nationwide 27 permit would be required. Shaun Payne answered that the EAHCP is consulting with HDR to assess whether this will be necessary and it appears to be likely. Ms. Reinmund-Martinez added that this will become more clear over the course of the Preliminary Engineering Report exercise. Dr. Teague also asked whether any cultural resources are expected to be encountered during the work, which will also have impact on permitting. Ms. Reinmund-Martinez answered that the EAHCP is consulting with Amaterra to consider this question.

Dr. Kreitler commented that stream restoration addresses Sessom Creek, but does not address the urban runoff problem above the creek. Alicia answered that in the previous discussion the City would be considering projects in other areas upstream through 319 processes. Dr. Longley added the question of whether there have been any efforts to capture rainfall onto new development. Mr. Hartigan responded that there are some options being considered through other processes (besides EAHCP) but that overall the strategy of achieving equilibrium is itself a response to the reality of limitations on controlling existing hydrology.

Dr. Kreitler asked about the issue of flow velocity in relation to Texas wild-rice. Mr. Sherman responded it is not clear whether high or low velocity is the issue, since wild-rice may benefit from

clearing sediment. Ms. Howard commented that the primary problem at the confluence is not scouring, but rather deposition of sediment that can bury wild-rice stands.

Dr. Teague asked what a flood looks like in Sessom Creek; does the creek overbank? Dr. Schwartz responded that it goes quickly from no or base flow to inundating the road. When it overbanks, it's in the road in the lower reach. In the middle and upper reaches he has not observed how the creek behaves.

Mr. Diehl asked if there has been any consideration of land use restrictions associated with water quality protection (e.g., impervious cover limitations, conservation easements, etc.). Mr. Hartigan responded that the answer is yes in the recharge zone. The City has a 20% impervious cover limit in the recharge zone; San Marcos River Foundation (SMRF) also emphasizes land conservation. Dianne Wassenich stated the new Land Development Code which is being finalized should also include enhanced water quality protection measures, while SMRF is buying land above Spring Lake in rural areas. Mr. Hartigan commented that the City is adopting an increased focus on headwater protection which should play a role in preventing "future Sessoms."

Dr. Kreidler asked whether the group had consulted the City of Austin Department of Watershed Protection. Mr. Sherman answered that he has professional connections with the director of the department and is in correspondence with him.

Dr. Teague asked the elevation of the watershed. Mr. Sherman and Mr. Hartigan answered that they could provide this information to Dr. Teague later in the day if it would be helpful.

Dr. Schwartz asked if the City had talked to any of the apartment complexes to inquire whether they would be interested in working with the City on some of the smaller BMPs. Ms. Howard answered that there have been beginning efforts to engage the apartments with other projects (litter, etc.) but had not begun conversations about BMP work. Mr. Sherman commented that the situation is somewhat fortunate in that there is a lot of development left to go, allowing for some problems to be avoided. Once urbanization takes place, then all that is left is redevelopment regulations. Mr. Sherman added that he guessed he is hopeful for the day when we all have flying cars and streets can be taken out. Ms. Wassenich discussed redevelopment districts in the Land Development Code process and the problem with that is that even old apartment complexes are too profitable to incentivize redevelopment.

Mr. Hartigan commented that rigorous study was conducted by HDR for the City of Austin based on critical shear stress value for central Texas streams; if you capture this much volume and hold it for 48 hours, you obtain a stream protection curve factoring volume and stream protection and to control it for urbanization. A study is available, which Alicia will send to the Work Group along with the thesis referenced in the white paper.

Mr. Gleason noted that the majority proportion of sediment coming out of the watershed comes from the instream load and not upstream runoff, hence the strategic emphasis on stream restoration rather than upland sources.

Dr. Schwartz asked about the bike lane project and its relation to this work. Mr. Condor answered that the bike sidewalk will not run through the Sessom Creek watershed. Ms. Wassenich asked about whether pervious pavement was being considered; Mr. Condor answered that the City has been experiencing maintenance issues with this material, but is open to considering it. Mr. Sherman noted that current formulations are tricky to implement and he is not aware of satisfactory, cost effective substitutes. Mr. Diehl mentioned that load bearing has also cropped up as an issue with certain pervious pavement materials in relation to accessibility for large fire trucks, and that this should be considered.

Dr. Kreidler asked whether it might be an option to leave out option 3A since it seems least effective. Dr. Schwartz commented what happens if certain options are left out; would the City pick up the bill on what is left out? Ms. Howard and Ms. Reinmund-Martinez answered that the EAHCP could cover the cost of projects 2 and 3B.

Mr. Condor motioned to endorse the proposed prioritization of water quality protection projects; Jackie Poole seconded the motion. There was no opposition.

Mr. Diehl asked what the monitoring expectations are for the EAHCP; Dr. Furl answered that this is already underway through Expanded Water Quality Monitoring operations, but a specific project will also be undertaken through the Applied Research Program.

Dr. Schwartz commented that this comes down to Texas State University and the City continuing to work together and with the apartment complexes to retrofit existing sources of impervious cover. With the steep narrow stream channel, the issue of fixing the hydrology will persist.

6. Questions and comments from the public.

There were no public comments or questions.

7. Adjourn.

Ms. Reinmund-Martinez adjourned the meeting at 11:48 a.m.