Pittman Terrace Water Quality Improvement Project

Thursday, February 16, 2017
10:00AM – 12:00PM
Tahoe Douglas Fire Protection District Meeting Room

Meeting Minutes

Attending:

Shannon Friedman, TRPA
Holly Holwager, NDSL
Michael Pook, NTCD
Matt Nussbaumer, NDOT
Rupali Mohansingh, NDOT
Joe Pohl, PTHOA
Monica Grammenos, NTCD
Chris Waechter, NTCD
Domi Fellers, NTCD
Erik Nilssen, Douglas County

After a round of introductions, NTCD addressed background information about the project, including the project's goal which is to treat stormwater for fine sediment particles in the area of Pittman Terrace. The objectives include stabilizing eroding channels and enhancing infiltration in conveyance features, partnering with Pittman Terrace Homeowners (PTHOA), and obtaining Lake Clarity Credits for NDOT and possibly Douglas County. NTCD will stay updated on the upcoming Pittman Terrace pavement project in correlation with this project.

PTHOA provided insight to past Pittman Terrace lakefront beach property quarrels, which were settled with the decision that lakefront beaches are public domain and the responsibility of the State of Nevada and Douglas County. PTHOA asked Douglas County for their stance on the public roads in Pittman Terrace. Douglas County stated the roads in this area are owned by Douglas County, however are not maintained by them because they do not meet current road standards. Douglas County also mentioned a private water main project was underway to address fire protection in the Pittman Terrace area. NTCD was aware of the project and has been in contact with the designers to avoid conflicts and collaborate if possible. It was agreed that paving should not ensue until the private water main is constructed.

Douglas County mentioned this project provides minimal water quality benefits to Douglas County. Douglas County is considering not registering the Pittman Terrace catchment because only one credit would not be enough benefit to merit the high cost for registration, inspection, and maintenance. NTCD pointed out that many of the catchments Douglas County has registered are 2-3 credits so it may be worth it to reevaluate the opportunity for catchment registration.

Only funds from NDEP have been received by NTCD to date. NTCD is hoping to work out any reasons for delay in the release of acquired funding from NDOT and NDSL at this meeting. NDOT, due to extreme weather emergencies has been backlogged and unable to process the funding agreement. NDSL is waiting for the outcome of this meeting to determine construction scheduling and therefore which grant may be applied to the Project.

NTCD performed a hydrology analysis, preliminary PLRM studies, and computed design flows for conceptual analysis. Alternatives for the project were selected based on site visits, known historical issues, and mapping. Alternative 1 is In-Line Direct Infiltration which provides additional infiltration to the existing conveyance system. Alternative 2 is In-Line Ditch Infiltration with Small Basins which is similar to Alternative 1 but includes small basins for greater infiltration. Alternative 3 is to Restore the Channel Through State Parcel which includes creating a channel along NDSL property.

NTCD outlined the area and catchments delineated by GIS of contributing runoff to the Pittman Terrace community. PT-6 is the largest area contributing 350 acres of land, mostly undeveloped to Outfall 2. For this reason, the majority of the improvements for the project will take place around Outfall 2. PT-7 is the second largest area, however runoff treatment is more constrained as there is a steep slope and limited room between U.S. Highway 50 and the Pittman Terrace properties.

Questions were asked about the dirt access road and path to the beach off of Douglas Rd. The dirt road is used to access two homes and possibly pump stations and intakes from private drinking water systems at the lake. NTCD is looking into paving part of the road and decommissioning the rest. The path is also used for potential public access of the beach. Access needs would need to be worked out with the Pittman Terrace homeowners and Douglas County. Utilities in the area include a water main, sewer, electrical, and communications.

For all alternatives, NTCD looked first to placing treatment facilities along U.S. Highway 50 as NDOT is the largest contributor to sediment-laden water. Alternative 1 proposes sediment traps to help capture fine sediment along U.S. Highway 50 in locations where existing drainage inlets (DIs) have no sump. NTCD explained that the existing DI in catchment PT07, which is currently surrounded by two sediment traps on either side of the DI, is proposed to be retrofitted with an off-line infiltration gallery. Additional clean-outs in the form of sediment cans would be provided for NDOT to perform maintenance efficiently. Another improvement suggested for all alternatives is at Outfall 3 on Pittman Terrace, which currently clogs, creating flooding on the road. A larger storm drain vault is proposed in the location of the current Outfall 3 DI to allow for more water retention and infiltration. Space constraints and elevations for the infiltration gallery and storm drain vault will be verified before implementation by NTCD.

PTHOA identified that Outfall 3 does have an outlet pipe and a junction box location under a private stairway on the lake front. NTCD could not find evidence of the pipe during filed visits and therefore believes that it is clogged. NTCD is currently not planning on replacing the existing pipe due to space constraints and funding limitations. PTHOA verified that there are likely utilities running both adjacent to and across the existing storm drain pipe. The credit potential for the proposed vault at Outfall 3 is approximately one credit for Douglas County.

In-line infiltration features are also proposed for Alternative 1 along Friedhoff Road, Flowers Ave, and Douglas Road. Vegetation or rocks with or without under drain are proposed along Friedhoff Road and Flowers Ave. On Douglas Road, wide step pools are proposed along the steep slope for greater infiltration.

Alternative 2 is similar to Alternative 1 except that it includes small infiltration basins along Flowers Ave. Small off-line basins would be more effective in capturing and infiltrating runoff than in-line infiltration features. The size and location of these basins will be determined in the design process. NDOT verified that this Alternative 2 would need to acquire land. A property line survey in a known coordinate system would need to be obtained by NTCD for a more precise estimate of where the proposed improvements would be located on current private property. A property line survey has been provided to NTCD in PDF format but it is not in a known coordinate system and is therefore not useful to use in designing and laying out the Project. . PTHOA mentioned that private Lot F was determined as unusable because it was blocked between Friedhoff Road and U.S. Highway 50. Lot F may be a potential area of interest for this project. TRPA will verify the status of Lot F. NDOT, NDSL, TRPA, NTCD, and Douglas County discussed the possibility of obtaining Lot F by donation and maintaining it for water quality benefits. The process of Douglas County obtaining an easement or ownership of Lot F and signing a maintenance agreement with NDOT appeared to be the favored alternative by the TAC due to Douglas County's faster process of obtaining property. NCTD will approach the land owner of Lot F and begin discussions of land donation or easement.

Alternative 3 proposes to send runoff through a channel on Nevada state land. This alternative would also include in-line treatments along Friedhoff Road, Flowers Ave, and Douglas Road. Similar to what has been done in Kings Beach on Coon Street, the concept is to separate clean forest run off from relatively dirtier highway runoff so that the dirtier run off may be treated more efficiently before comingling. Not as many credits would be obtained in this alternative because PLRM is not designed to calculate fine sediment reduction from SEZ restoration. It was asked if a basin could be built on the parcel instead. NTCD stated basins would not be able to be built because the slope along the state land is too steep. Utilities are also a concern in this alternative, which would require potholing for two proposed culverts
In the alternatives analysis, three evaluation criteria were used: PLRM score, construction cost, and maintenance cost. Alternative 2 came out with the best score, which included easier maintenance, lower construction cost, and the highest PLRM score. Alternative 2 could possibly obtain 11 credits: 10 credits for NDOT and 1 for Douglas County.. Alternative 3 received the lowest score in the evaluation, primarily due to higher construction costs. There was some concern by NDSL by creating a new channel on state land property. PTHOA asked to confirm that Alternative 3 would not be considered for this project, and NTCD confirmed. NTCD asked NDSL to confirm that Alternative 3 would not be considered as an option in formal comments.

Next steps include finalizing an alternative by next week. NTCD discussed the scheduling option of construction in 2017, which included submitting construction plans in May 2017. However, NDOT cannot commit to being able to turn around a permit quickly enough to allow for 2017 construction. Therefore the Project will be on a 2018 construction timeline.

PTHOA commented that the repaving project would not be completed until after this project is completed. NDSL also voiced their concern regarding a change of scheduling for the project, and whether funds could be secured until 2018. NDSL will get back to NTCD about funding options. Alternative 2 was decided by the TAC as the preferred alternative pending obtaining Lot F. If Lot F or the necessary portion of Lot F required to construct Alternative 2 cannot be obtained, then the design will move forward without the construction of small basins, which is Alternative 1.

Action Items:

- TRPA to check on status of Lot F and determine if there are any potential constraints for the private property owner to donate the parcel.
- NTCD to contact private property owner about land donation to Douglas County
- NDOT to check on status of funding agreement and contact NTCD with update
- NDSL to check on status of funding restrictions considering the 2018 construction timing and contact NTCD with options.
- NDSL to formally comment that Alternative 3 is not a viable option

Attachments:
Sign in sheet
Responses to Comments on Alternatives Analysis

Sign In

Name	Agency	Email
Holly Holwager	NDSL	hkholwager@[redacted]lands.nv.gov
Joe Pohl	PT HOA	jpohl58@gmail.com
Rupali Mohansingh	NDOT	rmohansingh@dot.state.nv.us
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Chris Waechter	NTCD	
Erik Nilssen	DC	
Shannon Friedman	TRPA	sfriedman@trpa.org
Domi Fellus	NTCD	

Comments on Pittman Terrace Water Quality Improvement Project				
			Commenter: Holly Holwager, NDSL	**Responder: NTCD Engineering**
Comment #	Document	Page	Alternatives Analysis Comment	Alternative Analysis Response
NDSL-1	Alternative Analysis Report	General	NDSL is not interested in purchasing or receiving donation of parcel "F" in the Pittman Terrace neighborhood.	Douglas County will take ownership or easement of parcel "F" if necessary
NDSL-2	Alternative Analysis Report	16	NDSL is not in favor of constructing a channel on State Land as proposed in Alternative 3.	Alternative 3 will be omitted from the project.

Comments on Pittman Terrace Water Quality Improvement Project				
			Commenter: Ed Skudlarek, NDEP	**Responder: NTCD Engineering**
Comment #	Document	Page	Alternatives Analysis Comment	Alternative Analysis Response
NDEP-1	Alternative Analysis Report	1	Text deletion "and Douglas County"	Douglas County has the potential to receive one credit if they choose to register. Document is final, comments are for 50% design
NDEP-2	Alternative Analysis Report	2	Text edits	Document is final, comments are for 50% design
NDEP-3	Alternative Analysis Report	2	Also mention any roadway engineering constraints – what are, if any, NDOT or Douglas County place limits on putting treatment BMPs within certain areas of their respective ROWs?	No limits are known at the conceptual level. Specific limits for each type of improvement will be accounted for as the design moves forward.
NDEP-4	Alternative Analysis Report	3	Can the area of group A soils be identified on the soils map? I can't pick it out. Can the soils map extent be focused more just on the project area where improvements are proposed?	The soils group within the project improvement area is 7422, which is a Hydrologic Group A soil. the NRCS soil survey is only accurate on a large scale and may not be accurate on a scale beyond 1:24,000. This soil analysis is applicable on a conceptual level only.
NDEP-5	Alternative Analysis Report	4	This section on Catchments applies to HEC-HMS modeling for runoff from design storm events. A description the catchments applicable to the project area and PLRM modeling is needed below.	Potential PLRM credits are discussed in section 4.1 and Appendix B. Appendix B explains the difference between hydrologic and PLRM catchments.
NDEP-6	Alternative Analysis Report	4	Identify the three outfalls considered for treatment BMPs and the PT subbasins that drain to those three outfalls. According to information collected for the SLRP, the NDOT PLRM Catchment 501 is 100 % connected. Maybe that information is presented further down.	Outfalls 2, 3, and 4
NDEP-7	Alternative Analysis Report	4	Text edits	Document is final, comments are for 50% design
NDEP-8	Alternative Analysis Report	7	Text addition "for the catchments identified in Section 2.3"	Document is final, comments are for 50% design

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NDEP-9	Alternative Analysis Report	7	Explain the purpose of the need to calculate peak flow and volumes, so it is clear that the project needs to take into consideration not only treatment for water quality but also passage of stormwater that cannot be treated. This seems like a relevant point, because the Tahoe Basin has recently experienced increased frequency of storm event intensities that are causing unexpectedly serious and damaging erosion.	Calculating peak flow and water volumes at specific recurrence intervals (i.e. 20 year, 1 hour) is standard engineering practice to design the size of conveyance features. County, State, and local regulations require conveyance features to be sized to a particular recurrence interval with the most stringent regulations dictating design. In the case of this project, NTCD is following the County standard of the 25 year, 1 hour storm. The standards for quantifying the treatment of stormwater are separate. In an ideal world, we would infiltrate 100% of the stormwater. In Tahoe, the TRPA has a standard of treating the volume of the 20 year, 1 hour storm. However, on most EIP projects design constraints prohibit the infiltration of the quantity of water produced by this storm. Instead, the treatment facilities are designed to the maximum extent practicable, as big as constraints allow.
NDEP-10	Alternative Analysis Report	7	What does it mean to design to max extent practicable? The mention of treatment facilities in this section is confusing without context. Does treatment facilities refer to conveyances and inlets and outlets? What is the design strategy for controlling offsite runoff passing through the ROW and subdivision and the runoff from the roadway carrying concentrated roadway pollutant load? Is splitting flow in separate but adjacent runoff conveyances feasible or even possible. Generally, how would this be accomplished? In vaults or deep drop inlets with baffles and weirs?	Maximum extent practicable is another was to say as big as possible within the constraints of the project and within a reasonable cost. Treatment facilities are generally separate from conveyance features and, as explained in response to comment NDEP-9, they have different design standards. However, for this project NTCD is proposing to add improvement that both infiltrate (treat) and convey water. In general, NTCD tried to place treatments at the highway first but space is a large constraint. Strategies are explained in each Alternative description. Separating flows is described in Alternative 3.
NDEP-11	Alternative Analysis Report	7	Looks like info for water, sewer and electricity is already known. What utility location info do you not have?	The information presented on utilities in the report is a best guess mainly based on field visits and resident information. In addition to locating the private water systems and the proposed fire intake water line, NTCD is communicating with the following utilities: NV Energy, Southwest Gas, TDD, DCSID, Verizon, Frontier, Charter, Douglas County water. NTCD currently has a 50% response rate

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NDEP-12	Alternative Analysis Report	9	Number one design objective could be to collect and convey the design storm runoff from the watershed through the ROW and subdivision to Lake Tahoe using storm drainage facilities that avoid erosion or minimize it compared to current conditions. The secondary design objective is, where feasible with a safety factor of X%, split as much as possible of the 1" of the runoff volume into treatment BMPs. Another aspect of the alternative treatment strategy is identifying the sites where treatment could be possible but private parcel issues arise.	Project objectives are listed in section 1 and have been set in grant agreements. Design objectives are to pass the 25 year, 1 hour storm and treat run off to the maximum extent practicable. Separating runoff is discussed in Alternative 3. Private parcel issues are discussed with Alternative 2.
NDEP-13	Alternative Analysis Report	9	Text edits	Document is final, comments are for 50% design
NDEP-14	Alternative Analysis Report	11	Can an example from other plan set be provided? I think Washoe County has detail for similar facility in East Incline Village.	Not added. The scale of the drawing and specifics of the detail would not provide for a clear and concise figure.
NDEP-15	Alternative Analysis Report	11	Clogged by what? The location of this is identified as an outfall. If this an outfall for subdivision runoff only, might not be cost effective compared to other improvements, such as basins.	Clogging generally occurs from sediment and pine needles. This improvement could potentially give 1 credit to Douglas County
NDEP-16	Alternative Analysis Report	11	Text edits	Document is final, comments are for 50% design
NDEP-17	Alternative Analysis Report	12	Could postpone work on the basin installation until easements obtained. Which funding source could expenditures be delayed, if any? What field investigation will be done to assure soil has infiltration capacity and space?	NTCD is currently working with NDSL on expenditure delays. NDOT does not have any issues with expenditure delays. CHP and geotechnical investigation may occur on the soils depending on improvement selection.
NDEP-18	Alternative Analysis Report	12	Really – restoration of a former channel? Sounds dicey	Noted.
NDEP-19		16	Text edits	Runoff is from both US Highway 50 and the neighborhood. Document is final, comments are for 50% design
NDEP-20	Alternative Analysis Report	16	Will infiltration or perc tests be done on site?	Yes
NDEP-21	Alternative Analysis Report	17	Douglas County could consider putting a 20 year stormwater assessment district together to pay for the restore/build channel plus culverts part.	Noted.
NDEP-22	Alternative Analysis Report	17	This % value for contingency looks way high. How come?	Using a 35% contingency is standard practice for a conceptual design estimate. Contingency decreases as design detail increases

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Comment #	Document	Page	Alternatives Analysis Comment	Alternative Analysis Response
NDEP-23	Alternative Analysis Report	18	Washoe County personnel have said the infiltration ditch is not maintainable. It is replaceable at the end of its functional life.	The infiltration features proposed in these alternatives will be designed for maintenance.
NDEP-24	Alternative Analysis Report	App A	Add column for outfall number.	Document is final, comments are for 50% design