Item	Date	Task	Risk and its cause	Consequence	Consequence rating	Evidence for consequence rating	Likelihood rating	Evidence for likelihood rating	Uncertainty rating	Risk Rating	Decision(s) Affected	Risk Management Options	Recommendation	Study Tasks Affected	Outcome	Notes
Id number	*Date entry was last updated*	*This is the task, decision, problem, question, issue, event, hazard or opportunity that is to be managed.*	*Briefly identify the risk. Considering the entry in column C, what can go wrong and how can it happen?*	*Describe the consequence of the column D risk. If things do "go wrong" in the way described what is the specific consequence for the study or project outcomes? (List the most significant consequence first if more than one.)*	*If the most significant consequence in column E occurs what is its potential magnitude?*	*Enter specific evidence used to support the consequence rating in column F.*	*What is the likelihood that the most significant consequence in column E will occur?*	*Enter specific evidence used to support the likelihood rating in column H.*	*How great is the uncertainty about either the consequence or likelihood of the risk identified in column D?*	*Qualitative risk rating from lookup table.*	*Identify all the decision criteria that could be affected by the risk identified. If an important decision not represented among the decision criteria is affected identify it here.*	*Enter options for reducing the risk.*	*Identify any preferred course for managing the risk. Tolerate the risk is the default option.*	*For study risks identify any other study tasks that could be affected by the outcome of the risk identified for this entry.*	*Describe the result of the risk management action.*	*Make note of any significant information not provided in the other cells.*
PLAN-1	28-Jun-12	Plan Formulation/Limited Array of Alternatives	Pilot program allows the PDT to use professional judgement to determine the measures and alternatives that make the most sense without doing the additional analysis to rule out a vast array of alternatives that we would never actaully implement.	The potential consequence is an issue with ER 1105-2-100 that could result in the requirement to step back and engage in more detailed modeling to "prove" the professional judgement choice is the right choice.	Medium	Additional time and funding would be necessary to approve/certify additional models to complete the additional analysis in order to quantify the differences between alternatives.	Low	However, coordination with the vertical team has allowed the PDT to take a path of conceptual modeling that allows for analysis limited in scope and scale comminserate with the likely scope and scale of the ecosystem restoration that could be justified based on environmental resources of significance.	Low	Low		Options for reducing the risk include incorporating vegetation and aquatic models to prove the underlying science and quantify the comparisons instead of discussing them qualitatively in the context of the report.	tolerate the risk			
PLAN-2	28-Jun-12	ATR	Other than the ATR lead, the ATR team has not had the same indoctrination process into the new paradigm and will face the same problems as the PDT with regard to not knowing what is expected until they make a submittal.	Potential consequence is issues raised in ATR have already been addressed by the PDT and vertical team and determined to be withint the tolerable limits.	Medium	Affects would be across multiple disciplines. Additional time and funding would be necessary to resolve comments and provide documentation of those decisions to satisfy ATR comments.	Low	The ATR lead participated in the scoping workshop and several vertical team meetings. It is expected that the ATR lead and the ECO-PCX can guide the rest of the ATR team into the new paradigm.	Medium	Low		Passive training of the ATR tam by incorporating the team into all vertical team meetings. Could increase ATR costs, but will assist in manageing schedule and be a lower cost in the long run than trying to "educate" them after the fact. May be percieved as a loss of independence in ATR and vertical team review.	incorporate ATR team into vertical team meetings and IPRs as well as DPs			
ENV-1	29-Jun-12	Avian IBI Modeling	Model has not specifically been used as it is being applied for the WSC study.	Results of modeling may not exhibit significant differences between WSC and reference reaches.	High	The incremental cost analysis is dependent on our abilitiy to quantify differences in restoration measures resulting in changes to the avian community. If the model does not have the ability to quantify significant differences, we lose the ability to quantify the incremental benefits.	Low	My best professional judgement of the existing habitat conditions is that the WSC are missing the vertical habitat layers required of many migratory, resident, and wintering bird species. At a minimum, I anticipate significant differences between canopy nesting, canopy feeding, and non-native bird species populations between WSC and the reference reaches.	Low	Medium	After model development with the spring avian survey data, follow up with a fall bird survey, and modify sampling protocol if necessary.	Conduct fall bird survey.				
ENV-2	29-Jun-12	Constrained project area	The confined project area and H&H constraints may limit the aerial extent of habitat restoration alternatives	Habitat restoration efforts may not provide habitat patches large enough to support avian species that will provide enough "lift" for environmental benefits.	Low	Although size of habitat may exclude the potential for birds that require unfragmented habitats, many edge species that would benefit from enhanced aquatic and riparian would still benefit from restoration efforts.	High	Best professional judgement and scientific literature justify the likelihood rating	Low	Medium	Work with H&H to maximize habitat patch size and incorporate adjacent habitat features as much as possible.	Tolerate Risk	Alternative Formulation			
ENV-3	29-Jun-12	Observer bias in b ird survey	Using multiple teams with differing members may introduce bias in data collection for the avian surveys	Increased variability in raw data resulting from observer bias may decrease the ablility to detect significant differences in parameters used in the Avian IBI modeliing process.	Medium	Observer bias is known is known to influence data accuracy and precision.	High	Observer bias is inherent in most field work as observers differ in sight, hearing, and identification abilities.	Low	High	Randomize observer assignments between sampling locations and data recorder staff. Utilize the same observers and data recorders for each sampling session.	Cycle each observer through each creek or reference reach during the course of the sampling season so that each observer samples each creek with the same effort. Rotate data collection personnel with avian observers. Utilize the same observers and recorders when possible.	Data Collection for Avian IBI	With few exceptions, the same observers were used for most of the spring sampling session. Teams were rotated through each sampling location throughout te season. Recorder assignments were also rotated to vary the teams.	Statisitical analysis of observer bias in data collected during the spring sampling session resulted in no statistically significant differences in the number of species observed by each observer/recorder or the number of birds observed by each observer/recorder by sampling location.	
ENV-4	29-Jun-12	Capturing avian use of WSC and reference reaches	Birds are identified by sight and sound. Many birds are cryptic or relatively quiet, specifically during migration as many neotropical species migrate at night.	May not capture all species utilizing WSC or the reference reaches	Medium	Although it would be ideal to identify all birds in the study area and greater benefits could potentially be realized, the WSC and reference reaches will be compared to each other. The probability of missing a species is assumed to be the same across both the reference reaches and the WSCs	High	The spring 2012 migration was uncharacteristic. Favorable weather and winds resulted in birds overflying normal fallout. Birdwatchers throughout the state noticed lower numbers of birds observed in historical bird migration hotspots.	Medium	High	Conduct fall survey to capture fall migrant data.	Conduct fall survey to capture fall migrant data.	Data Collection for Avian IBI			
REC-1	25-Jun-12	Conceptual Planning for recreation facilities and paradigm planning	Feasibility is at conceptual level plus paradigm study results in even greater conceptual planning so site-specific geotech/HH/ER unknowns will require risk-based decisions throughout the planning process resulting in cost/quantity variability.	Quantities provided early in the planning process may not be accurate	Low	Recreation development at ecosystem restoration projects should be totally ancillary.	Medium	Nature of conceptual planning	Low	Low	Recreation plan formulation and justification may be jeaporadized	Refine unknown with greatest consequence ratings to reduce risk	Refine unknown with greatest consequence ratings to reduce risk	none		

REC-2	25-Jun-12	Conceptual Recreation Planning takes consideration of environmental planning efforts in a very preliminary stage.	As study progresses, environmental measures will be polished and current planned recration facilties may no longer be in scope/compliment ecosystem efforts	Recreation measures may become devoid of ecosystem policies concerning recreation	Medium	Currently minimum facilities such as trails are planned and can be redesigned.	Low	The environemntal and recreation planners are working in tandem.	Low	Low	Recreation plan formulation and justification may be jeaporadized	Consistently work in tandem with environmental planners to keep recreation plans current to scope/appropriateness.	Consistently work in tandem with environmental planners to keep recreation plans current to scope/appropriateness.	none		
REC-3	25-Jun-12	COSA provided contractor-powered recreation surveys/analysis	In effort to reduce recreation costs by utilizing existing data, these surveys/analysis will forego recreation planning tasks such as public workshops or surveys and this data may have flaws	May misrepresent the communities visual preferences, willingness to travel, etc.	Low	Recreation development at ecosystem restoration projects should be totally ancillary.	Low	Methods used are similar to USACE procedures	Medium	Low	Recreation plan formulation and justification may be jeaporadized	If concerns with surveys/data present themselves, seek support with SARA.	If concerns with surveys/data present themselves, seek support with SARA.	none		
REC-4	25-Jun-12	Representation of WSCRP CP workshop stakeholders represent that of the whole	Views represented by a part may not represent the whole, a common risk with surveys	May misrepresent the communities as a whole	Low	Recreation development at ecosystem restoration projects should be totally ancillary.	Low	Methods used were as thorough as USACE workshops	Low	Low	Recreation plan formulation and justification may be jeaporadized	If concerns with surveys/data present themselves, seek support with SARA.	If concerns with surveys/data present themselves, seek support with SARA.	none		
HH13	28-Jun-12	No trees place in the channel within 50 feet of any bridge.	Trees could cause damage to bridges.	Damages to bridges and flow through bridges.	Medium	Consistant damage from lack of maintenance.	Medium	Consistant damage from lack of maintenance.	Medium	Medium	Criteria remains the same.	QC on the model assuring this remain true and consistent.	Avoid if possible for best results.	Hydraulic modeling.	Results in the model are consistent.	
HH12	28-Jun-12	Us Manning's roughness developed from the Mission Reach SARIP document.	These values may not be as accurate as necessary.	New modeling parameters will need to be established for final design.	Low	Consistant in the area for usage.	Low	Sensitivity analysis and experience.	Low	Low	Criteria remains the same.	None.	Tolerate the risk.	Hydraulic modeling.	Adjust in the design phase of the project.	
HH11	28-Jun-12	Combine model from 4 models into one model.	Boundary conditions could cause a difference in the 1% flood elevation.	Boundary conditions could cause a difference in the 1% flood elevation.	Low	Boundary conditions control the model's starting water surface elevation.	Low	Experience.	Low	Low	Criteria remains the same.	None.	Tolerate the risk.	Hydraulic modeling.	The use of the combined model provides less uncertanties and iterations for ER parameters.	
HH10	28-Jun-12	Excavation quantities determined and measured by the hydraulic model.	Quantities could have errors and not as accurate as using civil design tools.	Quantities and costs would be wrong.	Low	enter specific evidence used to support the consequence rating in column F.	Low	Most of the projects with similar tasks have good estimates for excavation.	Low	Low	Decision to use hydraulic model is not as accurate as civil tools.	Civil Design completes the measured quantities.	Tolerate the risk.	Civil design and cost estimating.	Costs are adequate.	
HH9	28-Jun-12	No pools, riffles, and runs will be designed in the hydraulic model in order to expedite the planning and modeling process.	The 1% chance flood elevation could be affected.	The design cost could increase and the time for more modeling will increase.	Low	Some models show adjustments and are more sensitive, which couls raise the 1% chance flood elevation.	Low	Sensitivity analysis was completed by the local sponsor.	Low	Low	All hydraulic designs would need to be adjusted as well as the excavation quantities.	Place the pools, riffles, and runs into the model now.	Tolerate the risk.	Hydraulic modeling.	No results at this time.	
HH8	28-Jun-12	Criteria for design of the pilot channel: Do not allow the rise in the 1% chance flood elevation from existing conditions to project conditions. Do not excacvate into the channel flood banks and or do not increase the flood bank slope.	Flood issues and slope stability issues.	Flood issues and bank stability issues which could cause slides.	High	No rise in BFE's. Local slides can occur in the area based on Mission Reach.	Medium	FEMA maps. Local boring data.	Medium	Medium	Design of the hydraulic model is based on this criteria.	In placing the pilot channel, lowering the 1% chance flood and stay away from excavating the flood banks.	This is a high priority for H&H and geotechnical design.	Hydraulic modeling.	No rise in the 1% chance flood and the hydraulic model did not excavate into the flood banks.	
HH7	28-Jun-12	Minimize excavation cost by placing pilot channel at the center on the channel and at the existing channel thalweg elevation.	If the channel needs to be placed at a lower elevation, the cost for excavation increases and the slope of the channel is not consistent.	Costs will increase and stream could become unstable.	Low	Increase in cost have occurred on previous projects similar t this project.	Medium	The evidence is based on experience.	Medium	Medium	The design criteria for not allowing the 1% chance water surface elevation could be affected.	Prevent the 1% chance flood elevation from rising.	Tolerate the risk.	Some risk in quantifing excavation.	No rise in 1% chance flood water surface elevation.	
HH6	28-Jun-12	Excavation of pilot channel under bridges could expose bridge piers. Assume all bridge have concrete on the flood banks to the top of the pilot channel.	Piers could lose their integraty and become unstable. Concrete under bridges in the Hec Ras model was used to help protect the bridge piers and lower the water surface elevation for the 1% chance flood.	Bridge fails if piers not protected with structural safety requirements.	High	Historically, bridges allowed to scour create structural deficiencies.	Medium	Photos of other bridges failing.	Medium	Medium	A decision needs to be made during the design phase of the project.	Designing structural pier protection with new structural based on pilot channel construction.	This is a high priority for structural design.	Very little risk involved during this planning phase.	Adjust the final Hec Ras model based on the structural design.	
HH5	25-May-12	Use existing FEMA hydrology and hydraulic models with broad review.	There may be modeling errors and there may be some difference of opinion on how to develop models.	If the models contains errors while defining the models during this planning effort, then this will require more time and effort to resolve issues.	Medium	The amount of time needed to resolve this issue could affect the overal schedule.	Medium	There is a likelihood that this will occur somewhere in the model.	Medium	Medium	A decision will need to be made to use the Corps model for comparison purposes only.	Adjust the existing conditions models with with corrections for comparison purposes only. The final models during the design phase of the project could show differences from the original FEMA models.	Tolerate the risk.	Very little risk involved during this planning phase.	Adjust the model for purposes of planning for the Corps ER effort with QC efforts.	

HH4	25-May-12	Hydraulic Data - Possible lack of detail in HEC-RAS hydraulic models resulting in either delays to add data sufficient to develop ER evaluations or errors in water surface profile development when final design is performed.	Required detail in the HEC-RAS models is unknown since no detailed reviews have taken place. The estimated time to complete the H&H models is 8 to 12 months. The vertical team is dictating the schedule which is providing only 6 months to complete the H&H modeling and analysis. This compressed schedule could impact the quality of work and is dependent on the geomorphology plan form being delivered on schedule. Add new bridges to the existing conditions HEC-RAS model along with additional cross sections as needed where new ER structures are located.		Medium	The amount of time needed to resolve this issue could affect the overal schedule.	Medium	There is a likelihood that this will occur somewhere in the model.	Medium	Medium	Since there is a study constraint to not raise existing (without -project) water surface elevations, the existing models will be used to identify any changes in water surface elevations, but it will not be used to quantify the economics of flood risk. The PDT will not be quantifying any FRM benefits as part of this ER study, but will note any areas where lower water surface elevations result from the NER plan. Data provided is dependent on local sponser.	Adjust the existing conditions models with with corrections for comparison purposes only. The final models during the design phase of the project could show differences from the original FEMA models.	Tolerate the risk.	Very little risk involved during this planning phase.	Adjust the model for purposes of planning for the Corps ER effort with no delays in the schedule.	
HH3	25-May-12	Hydrologic Data - Reviewing the HMS model and parameters.	Possible errors in the model. Verify future land use data and parameters	If the models contains errors while defining the models during this planning effort, then this will require more time and effort to resolve issues.	Medium	The amount of time needed to resolve this issue could affect the overal schedule.	Medium	Not likely to occur.	Medium	Medium	A decision needs to be made to correct any hydrologic errors in the model. This is a critical path item.	If no errors, use model as is.	Tolerate the risk.	Very little risk involved during this planning phase.	Adjust the model for purposes of planning for the Corps ER effort with no delays in the schedule.	
HH2	5-Mar-12	Multiple scenarios in creating ER benefits	Could cause increase in cost and delays in the schedule.	If the modeling effort doesn't balance the objective goals in incorporating ER features by raising the water surface elevation from existing conditions.	Medium	The amount of time needed to resolve this issue could affect the overal schedule.	Medium	There is a likelihood that this will occur somewhere in the model.	Medium	Medium	ER is the purpose of this project and it is critical to have success.	Flexability in placing the pilot channel and tree placement.	Tolerate the risk.	Moderate risk.	Adjust the model for purposes of planning for the Corps ER effort with no delays in the schedule.	
HH1	29-Feb-12	Geomorphology - Delivery dates of geomorphology study for each creek.	The geomorphology study has critical deliverable dates. If these deliverables are not on made on time, then this will impact the entire schedule. The quality of work is at risk due to a very tight schedule.	If the geomorphology deliverables are delayed, then the H&H schedule could be delayed as well.	High	No evidence to support this rating, just a possibility.	Medium	There is a possibility that this will occur somewhere during the deliverables.	Medium	Medium	The is a critical path item.	On time delivery.	Tolerate the risk.	The is a critical path item.	The geomorphology was delivered on schedule.	
CIV-1	27-Jun-12	Using sponsor and/or city provided topographic, utility, property boundary, road, bridge, as-built, and structures data. (No topographic/planametric survey will be performed.)	Data may not reflect the most current topographic, utility, etc. Data necessary to produce quantities and cost estimates may be missing or inadequate.	Study level quantities and cost estimates may not adequately reflect actual project costs.	High	Unknown utilities that will require relocation in order to construct project can be very costly.	High	Past experience using GIS and other sponsor provided data. On past projects, while walking project sites comparing available data with what is actually at the project sites, discrepancies are typically found. Topographic data is usually provided for studies by means of LIDAR and flight data. These methods do not adequately depict ground elevations beneath water surfaces or in heavily wooded areas. Specific to this study, there are sanitary sewer invert elevations that are clearly incorrect within the GIS data provided.	High	High	Quantities and relocations necessary for the study alternatives, which affects study costs and the benefit to cost ratio.	Risk could be reduced by having a utility coordination meeting with all applicable utility companies. Good engineering judgment and contingencies can also be used to reduce risk.	Recommend the risk management option.	Cost, Real Estate, Economics, and Cultural Resources.	All utilities within the study area would be identified to determine impact by the various alternatives. The Cost Estimate would better reflect study costs and the true benefit to cost ratio.	Not proposing a topographic/planametric survey as a risk management option because of the cost associated with them. Surveys are typically performed during PED.
CIV-2	27-Jun-12	In order to meet schedule and budge constraints, there will be no site visits.	Site visits are valuable for designing and estimating quantities for utility relocations. Not all existing data will be accurate and usually site visits help identify incorrect data. Site visits also help identify items to be demolished that are not illustrated within existing data provided to the Corps for this study.	Study level quantities and cost estimates may not adequately reflect actual project costs.	High	Depending on what is found during the site visit, study level quantities and cost estimates can increase greatly. For example, if during the site visit, it is apparent that a fiber optic line is crossing beneath a creek within the study area that will need to be relocted to meet design criteria, the study cost will significantly increase.	High	Past experience using GIS data. When walking the sites, comparing available data with what is actually at the project sites, typically additional structures/pavement/utilities are found.	High	High	Quantities and relocations necessary for the study alternatives, which affects study costs and the benefit to cost ratio.	Risk could be reduced by having a utility coordination meeting with all applicable utility companies. Risks could also be reduced by performing a site visit. Good engineering judgment and contingencies can also be used to reduce risk.	Recommend having a utility coordination meeting with all applicable utility companies and using good engineering judgment and contingencies to reduce risk.	Cost, Real Estate, Economics, and Cultural Resources.	All utilities within the study area would be identified to determine impact by the various alternatives. The Cost Estimate would better reflect study costs and the true benefit to cost ratio.	Due to schedule and budget constraints, the civil section cannot perform a site visit. Would need SARA to coordinate the utility meeting with all applicable utility companies.

CIV-3	27-Jun-12	Relying on H&H to produce channel footprints and cut/fill quantities using HEC-RAS.	Accuracy of the cut/fill quantities is typically better when laid out in Microstation and using the Inroads software. Channel footprints are typically better defined using Microstation and Inroads rather than HEC-RAS. Curves and channel alignment vary from what is typically laid out in HEC-RAS.	Cost estimates may not adequately reflect actual project costs. Channel footprint may change during PED which could affect project costs and the number of utility relocations. Change in the channel footprint can also negatively affect Recreation and Environmental layouts for the study, which could affect study benefits.	High	If the actual channel footprint produced during PED by a Civil Engineer restricts or limits the number plantings and recreational items accounted for during the study, then the benefits associated with these items will decrease, negatively affecting the benefit to cost ratio. Significant variances in actual cut/fill quantities can have a major impact on the overall study cost.	High	Past experience laying out channels and comparing HEC-RAS outputs to Microstation and Inroads outputs.	High	High	Cost estimates may not adequately reflect actual project costs. Channel footprint may change during PED which could affect project costs, the number of utility relocations, and environmental & recreation layouts.	Risk could be reduced by placing higher contingencies for cut/fill quantities.	Recommend the risk management option.	Cost, Real Estate, Economics, Environmental, Recreation, and Cultural Resources.	The higher contingency placed on the cut/fill quantities should compensate for the difference in costs determined during PED.	
COST-1	28-Jun-12	Utility Relocations	Some of the areas where the channel is being excavated out is already deep, going deeper could result in more uitily relocations	It would add cost to the project	Medium	The more utilities that are relocated the greater the cost associated	Low	In most instances the pilot channel will probably not have to be lowered	Medium	Medium	Any area that did require more utility relocations would be more costly					
COST-2	28-Jun-12	Electrical and Comm Lines	At this level we are assuming no elec or comm lines are being affect by the channel modifications	Project cost will increase and utility companies will have to be contacted to coordinate	Medium	Information available did not show these lines so it was assumed none would be affected	Medium	When on site there were manholes for these lines within in the possible affected area that may have to be looked into	Medium	Medium						
COST-3	28-Jun-12	First rough working estimate based on numbers from similar projects in the area	When project is put into MII and more detailed cost analysis goes into it those costs may change	Depending on how work will be completed cost could fluctuate in either direction	Low	Availability of necessary materials in the area could be at a different rate and finding a place to haul off excess concrete debri from channels	Medium	There will be a significant amount of concrete and other debris to haul off, need to be sure local area for disposal is available	Low	Medium	If there is not a local place that can take all the concrete debris recommend finding a way to recycle it					
RE-1	28-Jun-12	Applicable to AL, AP, MA and SP conceptual design reaches. Task: Provide RE most accurate map of all design work within a conceptual reaches ROW alignment(i.e.,bankfull pilot channel, bankfull benches, riparian meadows, woody vegetations, utilities, and trails)	Inaccurate ROW alignment of conceptual reaches.	If RE is not provided this information early, RE analysis and assessment of the real estate requirements will be inconsistent with the study/project. **H Rating in Column F.**	High		Medium	Communication with PDT disciplines. **H Rating in Column J.**	High	High		Continuous communication				
RE-2	28-Jun-12	Applicable to AL, AP, MA and SP conceptual design reaches. Task: Define, Identify all the utility relocations within the conceptual reaches.	Unforseen knowledge of utility relocations can delay project.	Engage facility owners early in project meetings. **H Rating in Column F.**	High		Medium	Communication with PDT disciplines. **H Rating in Column J.**	High	High		Early knowledge of utility relocations				
RE-3	28-Jun-12	Applicable to AL, AP, MA & SP conceptual design reaches. Task: Define, Identify access haul roads, borrow, disposal and staging areas for construction purposes.	Important to define real estate requirements early, can delay project.	If borrow, disposal, and staging areas are on private landowners property, acquisitions could be delay. **M Rating in Column F.**	Medium		Medium	RE will make certain these project features are not overlooked. **M Rating in Column J.**	Medium	Medium		Early detection of project features importation				
RE-4	28-Jun-12	Applicable to MA conceptual design reaches. Task: Wetlands.	Definite location of wetland needs to be defined. If wetland cannot occur on FEMA buyout area, PDT will have to decide on a location requiring add'l ROW.	Determine if City of San Antonio has some agreement or other interest in the FEMA buyout area. May envision property to remain free grass land area. **H Rating in Column F.**	High		Medium	Unknown concurrence by City of San Antonio for FEMA buyout area. **H Rating in Column J.**	High	High		Confirm FEMA buyout area with City of San Antonio				
RE-5	28-Jun-12	Applicable to AL and AP conceptual design reaches. Question: Missouri Pacifiic Railroad Applicable to SP conceptual design reach. Question: Southern Pacific Railroad Road Are there any easements/agreements existing in place between the RRs and City of San Antonio for existing creeks O&M work within the RRs ROW?	Corps & SARA's RE will have to discuss with City of San Antonio representative relative to RR's ROW in these areas. Due to Federal interest in project, RR will have to provide SARA a perpetual railroad easement assignable for construction and O&M purposes within the RRs ROW.	RR will insist on using their acquisition forms which by Federal standards are non-standard documents. Non-standard documents require approval thru SWD for HQ. **H Rating in Column F.**	High		High	Previous dealings with RRs support likelihood rating. **H Rating in Column J.**	High	High		Define specific work on the RRs ROW early. Check on any existing agreements the RRs have with the City of San Antonio for O&M purposes in the creeks. Early detection of instruments required from the RRs in their road ROW.				

RE-6	28-Jun-12	Applicable to SP conceptual design reaches. Question: TXDOT ROW - IH 35 S Access Road and underneath IH 10 E ROW MA conceptual design reaches. Question: TXDOT ROW - IH 10 W Access Road Are there any easements/agreements existing in place between TXDOT and City of San Antonio for existing creeks O&M work within TXDOT ROW?	Corps & SARA's RE personnel will have to discuss with City of San Antonio representative relative to TXDOT's ROW in these areas. Due to Federal interest in project, TXDOT will have to provide SARA a perpetual assignable road easement for construction and O&M purposes within the TXDOT ROW.	TXDOT will insist on using their acquisition forms whicb by Federal standars are non-standard documents. Non-standard documents require approval thru SWD for HQ. **H Rating in Column F.**	High		High	Previous dealings with TXDOT support likelihood rating. **H Rating in Column J.**	High	High		Define specific work on the TXDOT ROW early. Check on any existing agreements TXDOT have with the City of San Antonio for O&M purposes in the creeks. Early detection of instruments required from TXDOT in their road ROW.				
CUL-1	28-Jun-12	Conducting cultural resources surveys during PED rather than during feasibility	Conducting the cultural resources surveys during PED means not knowing the real impacts of cultural resources to the overall project cost and schedule	If significant (eligible) cultural resources are identified the project schedule will lengthen whiel investigations take place (investigations could take a year or more) and costs could be higher than estimated if more resources are identified than assumed.	Medium	While the invstigations could be lengthy, other elements of PED require time, too and CR can be happeing concurrently with other apsects of project design. Therefore consequences are not high.	High	The liklihood of encountering significant sites in this region is considered high based on experience at Mission Reach where 5 sites have been located during construciton (3 others were located during feasibility)	Low	High	Specific decisions should not be impacted, only schedule and cost	none	Risk is tolerable	none	Surveys will be conducted in PED	I would suggest that cultural resources surveys be undertaking immediatley upon the start of the PED pahse to minimize the impact to the overall schedule.