

SR 40 PD&E Study – Wildlife Crossings Meeting No. 4 Summary

Mtg. Date: March 20, 2007

Time: 9:00 am

Location: US Forest Service Lake George Ranger Station Conference Room

Project: SR 40 PD&E Study

From Silver Springs to US 17 in Marion, Lake and Volusia Counties

Attendees:

Bill Walsh – FDOT

Steve Tonjes – FDOT

Letitia Neal – FDOT

Alex Hull – Inwood

Mandy Rankin – Inwood

Ray Emmett – EMS

Rick Lint – USFS

Meg Roessing – USFS

Jim Thorsen – USFS consultant

Sandy Jacobson – USFS Pacific Southwest
Research Station

Walt McCown – FWC

Brian Scheick – FWC

Terry Gilbert – URS/FWC

Rick Lint with the United States Forest Service (USFS) opened the meeting with welcoming statements and introductions.

Jim Thorsen, a consultant hired by USFS, gave an overview of the purpose of the meeting and mentioned that the questions on the agenda were designed to generate discussion as well give ideas as to what needs to be addressed in the field.

Alex Hull, with Inwood Consulting Engineers, Inc., gave an update on where the PD&E Study stands. He stated that traffic projections were completed as well as the safety analysis. He indicated that they used the results to define the build area. Alex then gave a build segment description. He stated that the official limits of the build section are from Silver Springs to SE 183rd Avenue. Next, Alex gave an overview of the project history and background. He explained that the PD&E Study has been initiated several times before this study and that a Task Force was formed to make recommendations on the project. Alex stated that the right of way analysis is underway and near completion. He mentioned that it looks as though the proposed widening, in the build segment, will happen mostly on the south side although some areas may vary. Alex stated that a second large Public Workshop will be held in June of 2007. He explained that this meeting will be an opportunity to bring the preliminary engineering analysis and proposed wildlife crossings to the public in order to receive input and additional ideas. Alex stated that the three year study is in its second year and that he expects to be ready to make a recommendation by fall of 2007.

Sandy Jacobson, with the USFS Pacific Southwest Research Station, next discussed the research proposal to address the wildlife barrier and diversion fencing issues in the SR 40 PD&E Study. She explained that the Pacific Southwest Research Station in San Dimas

requests problems to solve and that a steering committee selects projects for the group to work on. Sandy further explained that the process is competitive however, the SR 40 project is unique and meets some funding criteria that could make it a strong candidate for selection. She explained that FDOT and the University of Central Florida (UCF) are interested in helping with the research. Sandy stated that the goal of the San Dimas research would be to find many fencing designs that meet the criteria of cost effectiveness, durability, functionality for wildlife, aesthetics, fire management and access for all purposes.

Jim asked when the proposal will go out. Sandy stated that the project would be proposed to San Dimas in October of 2007.

Alex asked when results from the research can be expected. Sandy explained that the research will be ongoing, however time can be negotiated. Alex suggested that commitments be written in the environmental document acknowledging that ongoing research is being done and that the research will be looked at in the design phase of the project.

Sandy suggested that an adaptive management style be used to evaluate and modify the design as it moves along.

Letitia Neal with the Florida Department of Transportation (FDOT) asked if San Dimas sells the fences. Sandy explained that San Dimas works to figure out the design and how to construct the fence and are not in the business to sell the fencing.

Jim asked how the implementation of the fencing works in conjunction with the wildlife crossings. Sandy said that issue will be addressed by the San Dimas research. She also mentioned that the fence will need to address the needs of the target species.

Jim stated that the fencing locations should be thought about when the group is out on their field visits in order to stay ahead of the game. Steve added that it would be helpful to start coordinating closely with UCF. Sandy stated that ideally this project would be tied into the Tahoe National Forest.

Next Sandy discussed new concepts and ideas on wildlife crossings. Sandy indicated that there are numerous efficient ways to address issues that have been done successfully on a national level. She stated that a few big crossings or many small ones seem to be the solution she is gathering from the group's recommendations. She asked why the particular crossing lengths were chosen. Ray Emmett, with EMS, stated that the large opening is to accommodate bears and small species. Terry Gilbert, with URS, gave a brief explanation of why the lengths were chosen. He stated that they started at 1500 ft and worked down from there. He explained that they learned that 50 ft works well in Collier County which made them start to rethink the lengths.

Sandy stated that if there is no fencing, the crossing should be large. She stated that her impression was that the group has been strictly choosing large, small or a combination of both structures. She explained that 28 to 48 inch modified culverts distributed throughout should be

considered. She indicated that the large crossings may not meet the needs of the smaller species.

Jim asked if the smaller culverts needed fencing. Sandy explained that they do need fencing because typically animals are going to cross at the point of intent and are not going to divert.

Letitia asked about the chance of a sand skink swimming through a metal culvert. Sandy explained that the conditions have to be right otherwise it will not. She added that she is not recommending a certain type of structure but rather is trying to figure out if a smaller solution has been overlooked.

Terry listed examples of crossings that work well. He mentioned that the 50 ft crossings at SR 29 work successfully as well as the 125 ft crossings at Alligator Alley.

Next, Sandy gave a clarification of what a culvert is. She mentioned that it could be in the form of trench drains or dry culverts with a native surface. She stated that there is a possibility of cost savings by distributing smaller crossings throughout the project area.

Terry asked if increased predation in relation to the crossings has been researched. Sandy stated that two studies have looked at predation in relation to wildlife crossings. She explained that in one of the cases there was no difference and in the other case there was an indication of increased predation. Sandy mentioned that there are arguments to say that increased predation isn't as bad as it is made to appear. She stated that road kill is worse than an animal being eaten by another animal.

Terry emphasized that he believes the main focus is genetic connection and long term health of a population through a strong mitigation plan. Sandy pointed out that creating structures to provide a genetic connection is different than providing for daily movement. She stated that it is important to know if the mortality rate is significant to the population. Terry mentioned that at the last meeting a long term road kill study was discussed and would be a good thing to do.

Bill Walsh, project manager with FDOT, asked for a definition of the purpose of the mitigation and what is being achieved. He asked if the proposed crossings are prohibiting the smaller species from moving and making it across. Sandy stated that the smaller species' chance to cross and make it are at least as good and are probably better through a crossing structure of some type rather than making it across the road through traffic.

Bill asked if less should be done in other areas in order to put a larger crossing at location F. Sandy stated that it is important to do all that can be done now because she believes that traffic numbers will increase and it won't be cheaper in the future. She added that location F is a choke point that does need a substantial crossing. She stated that longer and bigger is always better however the crossings need to meet the set of objectives.

Jim asked about the time of day the bears cross. Walt McCown, with FWC, stated that time of day was not measured in their research. He explained that if a crossing is built the bears will

cross. He mentioned that location F is an important area to the bear population. Sandy added that location F is more justifiable than other 100 ft structures that are proposed in other areas.

Terry asked what the design year on the project was. Bill stated that the project was scheduled for design in the year 2012 and that the traffic projections are done out to 2035. He added that currently there is no money to fund right of way or construction.

The group took a 15 minute break.

Next, the group discussed the Wildlife Crossing Literature Research completed by EMS. Ray gave an overview of the Wildlife Crossing Literature Research. He explained that they reviewed articles focusing on different wildlife crossing issues. Ray stated that the information was organized into tables by points that are applicable to the project. He explained that the information from the literature research as well as from the last wildlife crossings meetings was used in order to tweak some of the proposed wildlife crossings and fencing locations. Ray passed out maps to the group and Alex passed out sheets with tables comparing the old and new crossings. Next, Ray discussed each of the new crossing alternatives.

Ray started with location A. He stated that the old recommendation was for a 150 foot crossing and the new recommendation is for a 100 ft crossing with additional small culvert crossing structures.

Alex explained that currently a box culvert, at location A, exists and functions as a channel for hydraulic movement. He further indicated that the opening for the new structure should generally not allow downstream flooding. Alex stated that they will need to evaluate and look at both the wildlife and hydraulic issues. Bill added that they could widen in the area and there would be no hydraulic impact however the impact is unknown until they do a complete drainage analysis.

Sandy asked for the width of the chamber to be identified.

Ray explained that the red blocks shown on the maps indicate small culvert crossing structures.

Alex asked how to determine the amount of small culvert crossing structures needed to be efficient. Sandy indicated that a series of box culverts every 150 meters would be sufficient. She added that it is important to come up with a clear objective that would define whether genetic connectivity or daily movement is the focus of the crossings.

Jim asked if fencing would decrease with the small culvert crossing structures. Sandy stated that fencing would still be needed. Rick asked if the lengths of the fences would be affected by the small culvert crossing structures. Sandy indicated that the length would not change however the type of fence and location may be modified. She added that the fencing will need to accommodate the needs of large and small species.

Steve stated that this study may be comparable to what was done to SR 415. He explained that they put chimneys in the structures for light and temperature. Sandy indicated that chimneys are assumed to be good for wildlife and should be researched further. She added that each small culvert crossing structure should be designed with the target species in mind.

Letitia suggested that the group define the objective to design, redesign and modify as research is available.

Terry asked if the FDOT will maintain the crossing structures. Steve indicated that fencing maintenance is already an issue.

Letitia requested that the table in the handout show the objective and list of species for each of the locations. Rick requested that something rudimentary be ready for meeting on Thursday. Alex stated that in the next few days it is important to define the objective in each area.

Brian Sheick, with FWC pointed out that the fencing in location A drops off at an intersection. He asked if it would be better to move it in rather than drop it off. Sandy indicated that there is no easy way to address that issue. She stated that running the fence to open land would be best but is not always possible. She added that the slow down of traffic at the intersection may make the severity of a hit less.

The group next discussed location B. Ray stated the new recommendation is to replace the 100 ft structure with a series of small culvert crossing structures. He explained that the smaller crossings would facilitate the movement of small species. Moreover, he indicated that, due to the traveling range of bears, they could travel to the Ocklawaha Bridge at location C and stay within their traveling range.

Terry expressed concern that once the crossings are dropped to less, it will be more difficult to get the money to make them larger if it is needed.

Alex stated that according to his understanding, the land north of SR 40 and east of SR 315 has a good chance of being connected to the land around SR 40. He suggested that a 50ft crossing along with the small culvert crossing structures be recommended for that area. Sandy agreed with Alex. She stated that the focus should not be on the dimension but rather on the range. She indicated that a larger crossing may be needed due to the long distance between the crossings at location A and location C. She stated that there are at least 3 alternatives to be looked at.

Alex asked how the alternatives should be evaluated. Sandy explained that an evaluation would be based on the criteria for the crossings.

Next the group discussed the arch symbol from location B to location C on the large display board. It was suggested that the symbol indicated a span.

Sandy emphasized the importance of finding a preferred alternative that cost effectively

achieves the objective.

Brian stated that it seems as though daily movement and genetic connectivity are both being looked at as objectives. He added that fire and fuel access management has not been addressed. Jim mentioned that if the fencing is not in private land, it is not an issue.

Bill asked if it is proven that the small species will cross the small culvert crossing structures. Sandy stated that there is evidence that they do cross through the structures and that some species will accept the crossings and some will not.

Jim gave an overview of the plan for the rest of the day. He stated that it is important to continue the discussion on each of the locations before going out to the field. He suggested that the group finish looking at the new recommendations after lunch and spend a full day in the field the next day.

Sandy stated that a project on Interstate 90 has a nice set of objectives and that she has a copy to provide as a reference.

Lunch from 12:15 pm to 1:15 pm

Jim reopened the meeting and let the group know that Thursday's meeting has been moved to the Forest Library and will start at 9:30 am.

Ray started a group discussion on location C. He stated that no modifications have been made to this location and that they are interested in maintaining the same span.

Sandy mentioned that tying fencing into the south side would be difficult. Alex explained a concept, brought up at the last PAG meeting, involving using a gate sensor to allow the gate to open when automated by a vehicle or person. Brian brought up the example of the gate with wheels at Rock Spring Run as an additional idea.

Jim asked if a decision has been made as to whether or not they were recommending to elevate both of the bridges. Alex stated that a decision has not been made. Sandy asked for the height of the lowest bridge alternative. Alex indicated that the height would not be less than 25 feet above the river. He added that some alternatives keep the new bridge at the existing height. Sandy emphasized the benefits of keeping the bridges at the same level. She stated that the bridge is a keystone point that allows for ecosystem processes. She mentioned that one lower bridge could serve as a bird barrier and the ecosystem will have less of a benefit of sunlight. She added that even if the bridge was at 25 ft, the ecosystem would have light.

Next, the group discussed the proposed modifications to location D. Ray stated that the recommendation is to take the crossing from 100 ft to 50 ft and the inclusion of small culvert crossing structures.

Jim commented that location D is an excellent location due to frequent animal crossings by the

bay and flatwoods. Alex mentioned the comments made at the last PAG meeting, by The Nature Conservancy, stating that a crossing in location D does not connect much land and that location E should be looked at again due to the potential to purchase lands and create connectivity between two larger pieces of the forest. This led to a group discussion on the potential of land development in that area. Letitia stated that location E should be in the alternatives to be researched further.

Sandy commented that location D makes sense for distribution even though it is not a huge chunk of land to connect. She stated that if bears are crossing there it would be a good idea to have a crossing. She added that if there is not one at location E, there definitely needs to be one at location D.

Ray suggested that there be a discussion on acquiring land south of location D. Terry agreed.

Sandy stated that everything comes back to the objectives and that it may be more cost effective to put in a crossing as opposed to acquiring land. She indicated that land acquisition in other areas may make more sense than around location D.

Jim asked the rationale for not having a crossing at location E. Walt explained that the bears cross near Church Lake. Sandy commented that since there are more bear mortalities around location E, the focus on reducing the mortalities rather than connectivity. She suggested that a fence be put up rather than a crossing in that area.

The group discussed the challenges involved with fencing and private lands.

Sandy stated that if it is not possible to fence the area between locations D and F, there will be bear mortalities. Walt mentioned the example of the success of the fences at SR 46. Alex suggested that they look into the area further to see if a crossing can work from an engineering standpoint. Steve mentioned that land acquisition must start soon due to the possibility of the land not being available later on.

Next, Alex gave an explanation of the pond alternatives in location E.

Sandy stated that a shelf bolted into a culvert made of hardware cloth would allow water to go up and down.

Ray directed the group's attention to location F. He explained that the original recommendation was to put in one 1,000ft and 2 100 ft crossings. Ray added that the new recommendation has two scenarios. The first would be to have two 200ft, three 50 ft crossings and a series of small culvert crossing structures. The second scenario would be to have one 1,000 ft crossing, two 50ft and a series of small culvert crossing structures.

Meg Roessing with the USFS asked if a 1,000ft crossing accomplishes anything more than a 100ft crossing. Ray explained that smaller crossings in increments across allow for a more consistent connectivity. Sandy added that a longer and higher structure allows for more

ecosystem processes and the ability to burn underneath is much easier.

Jim asked if fencing can be eliminated when there is a crossing at 1,000ft.

Sandy stated that there are clearly two different alternatives and that if the smaller structures are chosen; they would need to be large enough for fire management. She added that if location F is a priority, they are going to have to spend the dollars to build a larger structure or to fence the area and mitigate. She indicated that F warrants a long day of discussion on species and habitat. Sandy stated that the area needs to be looked at further.

Alex explained that the Nature Conservancy and Audubon would like two 1,000ft bridges to go in that area. Sandy stated that if the project only involved that area and money wasn't an issue, the suggested long structures would be the best thing to do. She added that an argument could be made that overall distribution is important.

Next, Alex gave a brief objectives overview stating that the crossings need to allow for bear movement as well as the connectivity of small species.

Sandy emphasized the importance of defining the objectives by looking at the types of species, how to best combine different scenarios of structures for wildlife, land management and aesthetics. She indicated that the final package will meet as many criteria as possible. She stated that there is more work to be done.

Letitia asked if there is a way to look at lengths in order to distinguish them.

Steve agreed with Sandy's suggestion to come up with documentation that lays out the objectives. Sandy added that cost effectiveness should be added to the list of criteria.

The group next discussed location AA also known as the Powerline Easement. Ray indicated that the new recommendations take the crossing from one 300ft crossing to small culvert crossing structures.

Sandy asked Walt if bears cross in that area. Walt stated that the area is high and dry and that there is not a significant mortality rate in that area. Terry added that there is xeric scrub and sand skink in the area.

Sandy shifted the discussion to the objective of safety. She asked when the phase is being planned for widening and when the crossing structure will be implemented.

Alex mentioned that NEPA will need to know why the area outside of the widening needs mitigation. Sandy suggested taking a look at the population effects and reduction of habitat.

Terry stated that there are indirect cumulative impacts as a result of the widening areas. He expressed concern that the widening could result in an increase of road usage through the forest. Bill indicated that the Federal Highway Administration will look at the indirect impacts.

Sandy asked what impacts have been done in the past and then later needed mitigation for. Moreover, she posed the question of whether or not to mitigate for the future. She asked if the rate of increased traffic is going to make a big impact and prohibit wildlife from crossing.

Terry commented that additional road kill studies would address questions and be a systematic way of collecting additional information. Letitia added that the studies suggested by Terry should be done within the project.

Sandy stated that the proposed small culvert crossing structures in location AA seem to be sufficient as long as they are designed for the target species.

Alex outlined what he thinks needs to be done based on the discussion thus far. He stated that the PD&E Study budget needs to be identified, additional research; monitoring and data collection needs to be conducted, identify a plan that is the best guess at the time, develop an implementation schedule, tie a monitoring program into each build phase along with a reevaluation and come out with a NEPA approved document that will be reevaluated with each phase.

Sandy suggested that proactive research be done in order to design mitigation that's species specific and is going to make the forest work as well as it needs to.

Jim asked Sandy where the San Dimas research fits in. Sandy explained that San Dimas comes up with the ideas through research and evaluates the effectiveness.

There was a group discussion on the recommendations at location AA. Sandy asked to keep both alternatives on the table.

Sandy mentioned the noise issue and suggested that the road be paved with a noise absorber. Bill explained that the pavement used in Florida does reduce sound. He added that Federal Highway Administration regulation does not recognize the use of noise absorbing pavement as a noise abatement measure. He indicated that an open graded friction course would slightly reduce noise levels until it ages. He asked to note the noise conversation in the NEPA document.

Ray tuned the group's attention to location G. He stated that they suggest the 100ft structure be replaced with a 50ft crossing and small culvert crossing structures. He mentioned that there is a high bear mortality rate in that area.

Alex asked if there is a Florida Trail in that area. Jim stated that there is not a trail there.

Alex mentioned that there are access roads in the area and that 528 cannot be cut off.

Sandy commented that there needs to be a site specific crossing in that area and that the criteria should be added to the floodplain analysis.

The group discussed the topography of the area and the issues associated with it being a wetland.

Walt mentioned that there is a single culvert that runs from SR 40 to Juniper Springs.

Jim asked if the crossing could be moved to the east 100ft. Walt explained that the area 100 ft to the east is where the culvert is.

Sandy asked how far the animals are coming from. She also posed the question of whether or not they would be able to capture more with a lengthened fence. Ray stated that the fence is based on the mortality areas.

Letitia asked why location H was off the list. Ray stated that they do not want to channel bears into SR 19. Sandy commented that the area needs to be investigated. Sandy agreed that a crossing structure would not be good, but stated that something needs to be done in that area.

Next, Ray discussed location I. He stated that the old recommendation was one 100ft structure and the new recommendation is to use a series of small culvert crossing structures. Sandy stated that a bear crossing needs to be in that location.

The group discussed that location J is no longer being considered because of the lack of public lands.

Location K was the next topic of discussion. Ray mentioned that the only change to the recommendation is the addition of small culvert crossing structures. Sandy mentioned that there may be places to stop the bear at parts of the fence. She said that it would be hard to find a good spot to tie in the ends. She added that in the short term, animals could cross on the outside of fencing however in the long term it could be different.

Brian stated that increased traffic will decrease successful crossings and that there will need to be a safe way in the future.

Meeting Adjourned at approximately 4:30 pm.

cc: File, All Attendees (via e-mail)

Note: The above reflects the writer's understanding of the contents of the meeting. If any misinterpretations or inaccuracies are included, please contact Mandy Rankin at (407) 971-8850 as soon as possible for resolution and revisions if necessary.