

**COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND RESOURCE  
MANAGEMENT PLAN AMENDMENTS FOR THE SUNZIA SOUTHWEST TRANSMISSION PROJECT  
WITH SPECIFIC REFERENCE TO THE SAN PEDRO VALLEY**

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The focus of this review of the DEIS is the environmental impacts of the proposed SunZia project, specifically the 4C2c “preferred route” through the San Pedro River Valley (SPRV). It should be noted however that many of the following comments are relevant to all routes through the SPRV, including those portions of routes 4A and 4B that traverse the SPRV. Many of the points and documentation are referenced in the “Draft Environmental Impact Statement Contributions for Proposed SunZia Transmission Line Routes Traversing the San Pedro River Valley,” submitted to EPG and BLM by the Cascabel Working Group in July, 2010. For the sake of brevity that document is here attached (referenced herein as CWG) to preclude repetition, but hopefully its substance when referenced will also be reviewed in concert with these remarks. Also attached is a recent Biodiversity Metrics paper that is referenced several times.

**Table 2-1 Environmental Sensitivity Summary:** The categories of the Environmental Sensitivity Summary are too narrow, thereby permitting evaluations based upon less than the sum of the parts. E.g., there may be numerous Cultural and Biological Resources all in close proximity, but so long as ones that are ranked as exclusionary or of high sensitivity are avoided by routes, the impacts can remain low or moderate.

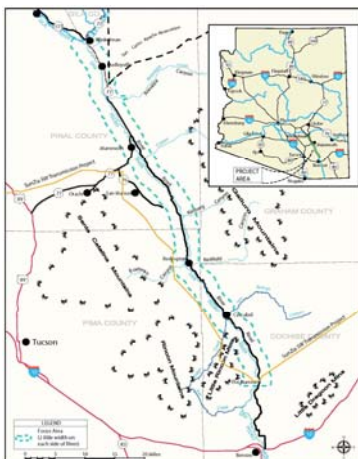
The National Environmental Policy Act, or NEPA, requires analysis of wider concerns, such as the “context,” and “intensity” of the proposed area which “must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.” In evaluating the intensity of the proposed action, it requires that, “Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas” are considered (CEQ NEPA Regulation Section 1508.27 [40 C.F.R. § 1508.27.]).

This wider focus of NEPA is also reflected in the requirement to consider the cumulative impacts associated with a project (40 C.F.R. § 1508.25). “The point [of a cumulative impacts analysis] is that *a large overview should be maintained toward the magnitude of environmental effects, both of the immediately contemplated action and of future actions* [author’s emphasis] for which the proposed action may serve as a precedent or have a cumulatively significant impact.” (*Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 88-89 [2d. Cir 1975]).

Table 2-1 needs to be inclusive of these wider ecological contexts in order to fairly evaluate impacts to biological resources and comply with NEPA requirements. These wider ecological interests are rarely mentioned throughout the DEIS. When they are, such as the issue of fragmentation, the general theory is acknowledged, but since it is not included as data its importance is minimized and under-evaluated.

A category or table of Unique Biological Resources needs to be added to the specific ones enumerated in order to accommodate this NEPA instruction. The following are all categories, followed by their substantiation for consideration, that relate to an environmental sensitivity evaluation of the SPRV routes and should be included as a table in the data layers:

- **Wild and Scenic Rivers** – The San Pedro River is the last major undammed river in the desert southwest and of international renown. In the United States, only 2 percent of the nation’s 5.1 million kilometers of rivers and streams remain free flowing and undeveloped (CWG, pp. 6-8, 34-5).
- **Wildlife Corridors** – The SPRV is recognized as the main Neotropical avian migratory corridor in the Western U.S., and as such is of hemispheric importance. It also functions as an east-west corridor connecting the Rincon-Catalina mountain complex with the Winchester-Galiuro mountain complex within the biologically rich Madrean Archipelago (CWG, pp. 6-8, 36-44).
- **Unfragmented and Intact landscapes** – The Middle SPRV is part one of the largest unfragmented and intact landscapes in the desert southwest, well over a million acres inclusive of no paved roads (CWG, pp. 9-12).
- **Biological Diversity** – The Madrean Archipelago is a hotspot of faunal biological diversity, especially mammalian, avian and reptilian. All of Brown and Lowe’s Southwestern Biotic Formations are represented in the Middle SPRV environs, and six ecoregions converge there (CWG, pp. 17-29).
- **Ecological Services** – The SPRV provides greater ecosystem services than the Middle Rio Grande and the Southwest overall on virtually every metric (Biodiversity Metrics EPA/600/F-11/006 May 2011 www.epa.gov). The services of migrating song birds may be as much as \$5000 per year for each square mile of forest land (Robinson, CWG, Pp. 72-3).
- **Conservation Investments** – The Lower SPRV has an unusually large assemblage of protected status lands and partners. Roughly 192,000 acres have been protected at a cost of \$42,500,000 since the 1970’s, uncorrected for inflation; including 144,000 acres for mitigation (CWG, pp. 14-17; See TNC DEIS comments).
- **Conservation Initiatives** – Due to these unique attributes of the SPRV, a number of conservation initiatives are proposed or in process for the Lower SPRV, almost none of which are even mentioned in the DEIS. Since NEPA requires that a large overview be maintained toward the magnitude of environmental effects, both for the immediately contemplated action and of future actions, proposals that are in process need to be included in the data layers in order to evaluate impacts.



Preeminent among these is the U.S. Fish & Wildlife Service’s Lower San Pedro River Collaborative Conservation Initiative and National Wildlife Refuge proposal. The Service initiates a Land Protection Planning process to study land conservation opportunities, including adding lands to the National Wildlife Refuge System, when wildlife habitat areas of interest are identified in long term resource plans or are brought to their attention. The Service identified the Lower SPRV as having high quality wildlife habitat values and good habitat restoration

potential where wildlife, such as threatened and endangered species or migratory birds, would benefit from long-term habitat protection and management. The proposal is going through the evaluation, planning, and compliance process, including developing a NEPA compliance document, and has already gone through initial scoping. The Director of the USFWS reviewed the evaluation and approved the proposal, as has the Secretary of the Interior.

The “Land Use” data layer in Table 2-1 indicates that National or State Wildlife Refuges are of “high” sensitivity level. The focus area of the Service’s proposal would be paralleled by the 4C2c route for over 30 miles, as the map indicates. The DEIS is especially remiss in failing to identify this proposal and the larger impacts entailed.

There are several other conservation initiatives in various phases of implementation including:

- **The Arizona State Land Reform initiative for the Catalina-Galiuro Corridor**
- **The Pinal County Comprehensive Plan**
- **America’s Great Outdoors Lower San Pedro River conservation initiative**
- **The ongoing US Forest Service Forest Legacy Program**
- **And the ongoing Sonoran Desert Conservation Plan**

All of these initiatives have open space and habitat connectivity components that will be treated below as the issue of fragmentation is addressed. Acknowledgment of their presence in data layers is required up front so that evaluations of impacts are complete.

While larger in context, none of the above are “soft” categories, but rather they are unique, documentable characteristics and required for evaluation within the NEPA guidelines. Further, due to the “unique, highly valued, complex, historic, or protected resources and significant potential conflict with use,” these factors would generally be regarded as of “High Sensitivity.”

NEPA requires that federal planning activities be documented to insure that environmental, economic or social effects are thoroughly evaluated and disclosed to the public. It appears that from the beginning and throughout, this DEIS complies with the strict legalisms of the Endangered Species Act, but fails to perform the large overview required by NEPA toward the magnitude of environmental impacts. The DEIS thereby fails to perform its function both as a basis for public review and for BLM to make a Record of Decision.

It would be particularly astonishing if one agency of the Department of Interior (the USFWS) should come to the conclusion based upon biological determinations and NEPA of the need for long-term habitat protection and management, and another agency of the DOI (the BLM) should come to the conclusion that a major utility corridor adjacent to and through the same area is appropriate. If BLM makes such a determination, it will be, from a legal standpoint at any rate, because the constraints and dictates of NEPA were not appropriately addressed in this DEIS document.

**2.3.2.3 Route Group 4: Subroute 4C2c:** As noted, Subroute 4C2c is 161.2 miles in length, of which approximately 90 miles parallel existing utility corridors. However, it is the “40.3 miles of new access” (cf. Table 2-15), primarily subroutes C201, C441, and C450 (cf. Figure 2-6) through the SPRV that are at issue. Since this portion creates an entirely new corridor (contrary to the directive of collocating infrastructure) and the SPRV is a highly sensitive resource (see above),

this section should be broken out as a separate route. By virtue of including this highly sensitive resource in the midst of miles of low impact areas, all figures re impacts are deceptively skewed. E.g., Figure 2-7 (see below) indicates that areas not requiring new roads and of low slope percentage (likely much of the 90 mile existing infrastructure area) have only 1.6 acres of ground disturbance per mile, whereas areas requiring new access with high slope percentages (likely much of the 40 mile SPRV route through rough country) can have up to 6.7 acres of ground disturbance per mile of new road. Since the SPRV portion of 4C2c is only one quarter of the total, all estimates of impact, which are averaged over the total length of the 4C2c route, are skewed toward the low end. This is an unacceptable and deceptive manner of skewing impacts to what is possibly the most controversial traverse of the entire SunZia project.

**Page 2-45** notes that the final Plan of Development (POD) will only be appended after the right-of-way grant and is not referenced in the current DEIS. Among other issues that would influence review figures (see below), **Table 2-4** states that access and spur road widths will be specified in the POD and are dependent on terrain and construction specifications for selected transmission line routes. Since “this project description is the basis for the analysis of impacts in Chapter 4,” all of those figures are meaningless as a way for the public or the BLM to analyze impacts to particular routes. Those figures are critical for a proposed new infrastructure corridor through the highly sensitive SPRV. In concert with the methodology noted in 2.3.2.3 above, this appears to be another method of obscuring actual impacts.

**Table 2-5** Indicates that access roads with have a minimum of 24 feet and a maximum of 28 feet in width, that the road surface will be gravel, and that it would be graded with a heavy road base to support larger equipment. Much of those standards, especially with regard to a gravel surface and heavy road base, are greater than those extant on the “primitive” (County designation) Cascabel-Redington Road. Thus new access roads could be greater in impact than the current road, and furthermore, the Cascabel-Redington road may well have to be upgraded in order to meet these standards to meet access points. It appears that the fragmenting impact of new and upgraded roads could be extensive. Again, without a POD the DEIS is inadequate to determines such impacts.

**Section 2.4.9.1:** It is noted that “The terrain, separation criteria, and final design will determine the corridor centerline and total width of the right-of-way. ...Once the BLM has issued a ROD, the right-of-way application would be finalized with Project design details and right-of-way width.” “Access roads would be identified in the POD and approved by the BLM before construction.” Again, lacking the information to be included in the POD but not the DEIS – e.g. the location and number of access roads, location and spacing of transmission line towers, location of intermediate substations, and many other particulars – makes it impossible to review and analyze impacts to the new infrastructure corridor proposed through the SPRV. Without this information the DEIS is insufficient as a basis for agency decision making and for public review as required by NEPA.

**2.4.10.1 Access Roads:** It is stated that existing paved and unpaved access roads would be used to the extent practicable, and that because access roads must be sufficient to bear the weight and endure heavy construction vehicle use, existing access roads may need to be upgraded to meet construction requirements. As noted above (Table 2-5), potential upgrades to the

Cascabel-Redington Road, i.e. the application of gravel surface and enhanced road base, would enhance the capacity of this county designated “primitive road.” Increased traffic volume and speeds are of concern to local valley residents, and would also intensify wildlife mortality and fragmenting aspects as many studies have shown. Without the POD information, these impacts are impossible to quantify and evaluate.

Since the Cascabel-Redington road is “Beyond 700 feet from the Project representative centerline, constructing a new road from structure-to-structure” seems nearly certain, though access roads could be built from various locales. Without the POD information, these impacts are impossible to quantify and evaluate.

“Where new roads are required to meet the access needs of the Project, it is anticipated that a single new road would be constructed to serve both 500 kV facilities (Figure 2-31). In locations of steep or rugged terrain, two separate access roads may be required to accommodate construction of the two parallel transmission lines. New roads may be built as either temporary or permanent access.” Since the proposed route through the SPRV is steep and rugged terrain, two separate access roads may be likely, greatly increasing the area of disturbance and fragmenting components. Without the POD information, these impacts are impossible to quantify and evaluate.

Overland drive and crush construction methods are treated as a means of minimizing disturbance. However, in arid zones such methods lead to soil compaction which inhibits revegetation, may permanently destroy crusts on desert soils, and lead to erosion and siltation of important watercourses (Andrews, 1990). Furthermore, revegetation recovery rates in these arid regions are notoriously slow and difficult, and can be altogether unsuccessful (CWG, P. 43).

Again, since “The POD will also document specific plans for the construction, rehabilitation, and/or maintenance of the roads, including general locations of access roads and construction methods (i.e., overland drive and crush, cut and clear, etc.), based on site-specific conditions,” all of these impacts are impossible to evaluate.

**Figure 2-32 Typical Roadway Cut and Fill Conditions:** When the “Cut Slope” and “Fill Slope” are added to road width, the “Disturbance Width,” though it is not measured in the figure, appears to be about double the road width, or around 50 feet of disturbance. Since much of the 4C2c route is extremely rugged terrain, and towers are typically placed on high points, the area of disturbance can be anticipated (despite the lack of an accurate POD) to be considerably greater than the figures estimated. If the 24-28 feet of disturbance figure has been used as it appears, this does not permit accurate information for determining impacts.

It is stated that “In certain areas, it could be necessary to block roads after construction to restrict future access for general and undesired use. ...Methods for road closure or management may include installing locking gates or obstructing the path with earthen berms or boulders.” In remote areas like the SPRV, these measures are ineffective to OHV travel (See Table 2-11 below). Impacts are thereby being grossly misrepresented.

**Access Levels:** “Ground disturbance from upgrading or constructing access was estimated (Table 2-7). Existing roads suitable for access and the general condition for each have been mapped. This information was combined with slope and vegetation classifications, to provide

an estimate of the potential ground disturbance that could result from using existing access roads, upgrading existing roads, or constructing new roads.” Without access to this information, it is impossible to review and analyze impacts in the SPRV. Was the figure of 24 feet of disturbance used in high percentage slope areas, versus the 50 feet of actual impact? This would be significant in the new road and high slope percentage area of the SPRV. In the steep and rugged terrain of the SPRV, would two separate access roads be required to accommodate construction of the two parallel transmission lines?

Also, as Table 2-12 indicates, an average figure of ground disturbance is simply multiplied by the 161.2 mile length of the 4C2c route. Table 2-7 shows that roads per mile in new road and high slope areas such as the SPRV can be over twice that of Access Level 1 areas represented by a majority of the 4C2c route, and the area of disturbance over four times as great. The DEIS provides no basis for analyzing miles of road and area of disturbance in this proposed new infrastructure corridor through the highly sensitive and quality habitat of the Middle SPRV.

**2.4.12 Mitigation:** Selective mitigation (SE) measures (Table 2-11) are cited throughout the DEIS as effective measures for minimizing potential adverse impacts. However, many of these measures are of limited effectiveness, particularly in largely unfragmented and intact areas such as the Middle SPRV represents. At numerous points the recommendation is to avoid such areas and follow existing infrastructure corridors. This recommendation is repeatedly ignored with regard to the SPRV route and SE measures are cited as minimizing impacts, as though the damage is undone. A linear installation of the size and scope of the SunZia project would create fragmenting terrestrial, aerial and aquatic impacts across a 40 mile stretch where no impacts of this scale and scope presently exist between the Rincon-Catalinas and the San Pedro River, an area of several hundred square miles. Once fragmentation of this order occurs there is no going back to previous levels of connectivity, no matter the minimizing efforts. “You break it, you own it” is as applicable to natural communities as it is for human societies.

*Ideally roads and other linear corridors should not be constructed through areas which are important to the survival of species, or remaining wilderness areas. National Parks and conservation areas should also be protected from these structures, which are best sited on land already disturbed.*

*Siting of such projects is significant, and all possible alternatives should be investigated if wildlife values and viable habitats are to be sustained for future generations. Once wildlife suffers the most serious effect of fragmentation it is far more costly to maintain unviable areas, and to breed species back from near-extinction, than it is to leave viable areas of habitat undisturbed while we have the choice. (Andrews, CWG P. 51).*

**SE measure 6** is the most egregiously ineffective mitigation method. Gating or otherwise blocking from public access to sensitive areas as a means to reduce the potential for indirect effects associated with increased traffic is demonstrably ineffective in this area. TNC and Pima County have extensive experience with OHV trespass, especially with proximity to these burgeoning population centers. Policing of roads and gates is virtually impossible in this remote area. Replacing locks and rebuilding gates is routine.

Route 4C2c crosses 6.1 miles of perennial streams and 35.1 miles of intermittent streams (P. 3-67). Off-road vehicles presently trespass and follow washes up and down drainages. With 40 linear miles of cross-drainage roads this practice is bound to increase. Though some ranch roads exist in the area, they are not of the proposed SunZia scale, and typically follow ridge lines rather than crossing multiple drainages, especially over such distances.

OHV destruction of vegetation, compaction of soils and resultant erosive activity can be severe. Some remote and isolated threatened and endangered species of plants may be threatened by off-road vehicle use. The consequence of increased sediment load into streams from disturbed soils is also an extremely important issue. Providing greater opportunity for the illegal collecting of reptiles, including Desert Tortoise, Gila Monster and other species of concern permitted by such access is also a considerable issue (CWG, Pp. 48-51, 94-99).

In such open country as the west SPRV route traverses there is simply no effective method of fencing and gating sufficient to deter OHV trespass. This is really an inmitigable impact, and the DEIS should expound on rather than gloss these effects.

**SE Measure 15** is also of limited effectiveness. It is stated that “To minimize bird collisions, bird diverters would be installed and maintained on groundwires, transmission lines, and/or guywires in areas of heavy bird use (i.e., Rio Grande and other riparian corridors).” It is notable that the SPRV is not referenced, even though avian migration is estimated to be much greater than the Rio Grande or any other area in the Western U.S.

Further, throughout the DEIS consideration of the avian migration corridor appears to be limited to the main-stem river riparian area, apparently reflecting the Rio Grande’s “relatively narrow strips of preferred habitat along the river” (App B2-68). The situation is considerably different in the SPRV, where both Skagen’s study and the CWG compilation of bird lists from various locales and elevations indicate a valley-wide distribution of migration, including many canyon oases and even xeroriparian washes (CWG, Pp. 64-67).

Thus bird diverters would need to be installed not only crossing the river corridor, but along the full 40 mile traverse of two track transmission lines. Even reducing collisions between 50 and 90 percent among this critical and declining population of Neotropical migrants is concerning, but as noted there are still the issues of the effects of inclement weather and nocturnal flight of birds on collision potential. Though birds typically migrate at elevations above those of transmission lines, their nocturnal flight patterns correspond to crepuscular roosting and departure patterns, and lit diverters offer very mixed results.

As EPG’s own study indicates, “The best mitigation from the bird collision perspective is line routing that avoids avian hot spots, travel corridors and migration routes to the extent practicable. Placement of lines at adequate distances from avian resources has been shown to be effective in mitigating potential avian collisions (Brown et al. 1984, 1987 *in* APLIC 1994) (App B2-67). Since the entire SPRV at all elevations is an avian hot spot, travel corridor and migration route, placing transmission lines out of the SPRV altogether is the best mitigation of impacts.

**2.5.3 Route Group 4:** It is stated that “Subroutes 4A and 4B cross a roadless area north of the Galiuro Mountains and south of Aravaipa Creek, potentially allowing new vehicle access to recreationists.” What is the definition of “roadless?” Since there are dirt roads in the area (see

Sky Island Alliance Aravaipa Ecosystem Management Plan Recommendations), the definition is presumably “unimproved” dirt roads, a definition that would be applicable to most of the Middle SPRV, and decidedly to the area between the Rincon-Catalina Mountains and the San Pedro River traversed by 4C2c. Thereby it should be acknowledged that the portion of subroute 4C2c that traverses the SPRV crosses a roadless area west of the San Pedro River, potentially allowing new vehicle access to recreationists.

It is also stated that “The amount of estimated ground disturbance for seven of the eight subroutes is relatively similar and would vary from 5.7 to 6.0 acres per mile.” Again, this figure is an average across many miles and an inaccurate gauge of local biological impacts, which are not subject to averaging. If these figures are available, and the average figures are considered worthy for public review and an ROD, why are the localized figures not included in the DEIS for review, even if not final?

**2.5.4 Selection of the BLM Preferred Alternative:** Though the route selection categories make sense, there is no ranking system as to importance. Are they presented in order of significance, or are they all of equal merit? There are difficulties with the selection of 4C2c either way.

- **Maximize use of existing utility corridors and infrastructure:** The Table 2-12 Alternative Route Comparison indicates that 4C3 (the Tucson route) follows 84% of existing utility or pipeline corridor. 4C2c parallels only 57% of existing utility or pipeline corridor, and it is noted that it only parallels 45% of existing transmission lines. Assuming that this is the first and most important category of selection, the selection of 4C2c is faulty.

Further, though 72 miles of 4C2c parallels existing transmission lines, it is the “40.3 miles of new access” (cf. Table 2-15), primarily subroutes C201, C441, and C450 (cf. Figure 2-6) through the SPRV that are at issue. Since this portion creates an entirely new corridor and the SPRV is a highly sensitive resource, this section should be broken out as a separate route, as should the portions of 4A and 4B that traverse the Galiuro wilderness area. By virtue of including this highly sensitive resource in the midst of low impact areas, all figures re impacts are deceptively skewed. Though impacts can be *numerically averaged* across a 161 mile route, *biological impacts cannot be averaged*. The priority of maximizing existing utility corridors and infrastructure, in concert with the second most important issue – minimizing impacts to sensitive resources – should remove both the SPRV and Aravaipa routes from consideration.

It is stated that, “4A and 4B would require construction through areas where there is less existing access or other development. The construction of new transmission lines through relatively undeveloped areas could also cause cumulative impacts, such as the potential for habitat fragmentation and ground disturbance resulting from future access.” Those are accurate descriptions and applicable considerations, but they also apply to the SPRV portions of 4C2c. The Middle SPRV is also a largely unfragmented and intact area, even if considering the valley bottom with its couple hundred residents and only dirt roads. In particular however, the area between the Rincon-Catalinas and the San Pedro River which 4C2c traverses is an area of several hundred square miles with hardly a residence and nothing but ranch roads – not dissimilar in most respects to 4A and 4B which also contains OHV roads. A linear installation of the size and scope of the



SunZia project would create fragmenting terrestrial, aerial and aquatic impacts across a 40 mile stretch where no such impacts presently exist.

Furthermore, while 4C2c *parallels* Tucson Electric Power Company's 345-kV lines across Allen Flat, it is located 1,800-2,000 feet south of TEP's corridor and does not actually *utilize* it, necessitating construction of an entirely new road to build and maintain the project. Since this portion of about 15 miles is actually not following existing infrastructure or taking advantage of the collocation of existing lines, the actual total percentage of 4C2c following existing infrastructure corridors is below 50%, and where it actually follows existing transmission lines is only about 34%. This should be another factor in the route's removal from consideration.

- **Minimize impacts to sensitive resources:** As the second most important category of consideration, 4C2c is decidedly flawed as a choice. As noted, "Subroute 4C3 would have relatively fewer biological impacts because it would pass through a large area of previous disturbance (Tucson and I-10 northwest of Tucson) (P. 2-101)." Thus, under the DEIS' first two most important categories, the 4C3 route is far and away the frontrunner.

Further, as the discussion regarding the Environmental Sensitivity Summary above indicates, the sensitivity of the SPRV is inadequately evaluated per NEPA categories of consideration. The SPRV's wild river, its function as a major avian and wildlife corridor, its largely unfragmented and intact landscape, its significant biological diversity and ecological services, and the major conservation investments and initiatives therein – all factoring as of "high" sensitivity – should remove it from consideration. Those factors are also largely applicable to the 4A and 4B routes.

- **Minimize impacts at river crossings:** It is noted that "The southernmost crossing of the San Pedro (Subroute 4C2b, 4C2c, or 4C3) would result in the least impact to riparian habitat." This may be accurate for the Tucson 4C3 route, but it is decidedly in error for 4C2c. The DEIS continually disregards the valley-wide character of both the SPRV avian migratory corridor and the riparian/aquatic resources that the proposed 40 miles of installation would traverse. This was routinely explicated throughout CWG's earlier DEIS contributions here appended, and apparently ignored in contradiction to NEPA guidelines.

Throughout the DEIS consideration of the avian migration corridor and watershed resources appears to be limited to the main-stem river riparian area, apparently reflecting the Rio Grande's "relatively narrow strips of preferred habitat along the river" (App B2-68). The situation is considerably different in the SPRV, where both Skagen's study and the CWG compilation of bird lists from various locales and elevations indicate a valley-wide distribution of migration, including many canyon oases and even xeroriparian washes (CWG, Pp. 64-67).

With regard to the watershed, Table 4-14 indicates that 4C2c crosses 6 miles of perennial rivers and 40 miles of intermittent streams. "Subroute 4C2c has 36 percent of the route sensitive to water resources, which, along with 4C2, is the highest sensitivity. This is a result of crossing more mileage of perennial streams and 42 miles of the sole

source aquifer, and having the second longest route (Section 4.5).” “Removal of unique riparian habitat, increased sedimentation, and reduced water quality are among the primary adverse environmental effects on surface water resources that could be associated with the proposed Project (P. 4-52). The Resource Comparison Summary in Table 2-15 indicates that in fact the erosive soils in San Pedro River Valley (C450) are an earth and water resource concern. Table 3-18 indicates that 4C2c crosses 75 miles of Moderate Water Erosion Potential.

Impacts to the San Pedro riparian habitat do not stop at river crossings or at 4 miles from the project center line. Due to erosion and other fragmenting impacts, every crossing of perennial and intermittent streams (many of which also provide connective riparian habitat) along the 40 mile traverse of the SPRV has impacts on the river’s water quality and riparian habitat. Given the hemispheric importance of the San Pedro River, consideration of these issues is requisite for route selection and required by NEPA as well as basic ecological understanding. *“Freshwater ecoregions differ from their terrestrial counterparts in two important and related ways. First, because of the connectedness of freshwater habitats, spatial and functional linkages across large distances are strong, with upstream activities manifested in downstream effects. Second, conservation of a given freshwater site must nearly always occur at the watershed scale (Abell, CWG, pp. 27-9).”*

Again, 4C2c fails to meet the criteria for selection, and it is questionable why 4C2c was selected with this level of potential impact to water resources. It is worthy of note that once again the 4C3 “Tucson” route is the leader in meeting the DEIS standards for selection.

- **Minimize impacts to residential and commercial uses:** This is a valid consideration, but its placement as fourth on the list of considerations for selection is appropriate. It would seem invalid, or at least a calculated urban bias, if this one category were to supersede the impacts to high sensitivity environmental resources. What is the calculus whereby visual and financial impacts to urban and commercial users (who would gain the benefits of the transmission corridor) outweigh the impacts to the environment and the economies of rural residents? This is especially germane when the presumed rationale of the SunZia project is the environmental advantage of reduced carbon emissions. Furthermore, since the BLM is the arbiter and its mission is “To sustain the health, diversity, and production of lands for the use and enjoyment of present and future generations,” rather than to sustain the viewshed of urbanites and the financial gain of commercial users, it would seem that the priority would be obvious.
- **Minimize impacts to military operations within the restricted airspace north of the WSMR.** Apparently 4C2c is not the leader in this category either.

Since the 4C2c route trails in four of the five categories for selection, it is difficult to ascertain the rationale for its selection – unless the bias in favor of urban and commercial users outweighs all other considerations, a bias which would not satisfy NEPA requirements or common sense. If a route were to be selected from the alternatives and by virtue of these

categories, the 4C3 Tucson route is really the only one that passes on the bases of any fair evaluation.

**Table 2-12 Alternative Route comparison:** It is stated earlier and presumably as a basis for this table that, “Temporary roads serve the needs for Project access during the construction phase, but are not anticipated to be necessary for operations or decommissioning purposes. Upon completion of construction activities, temporary access roads would be reclaimed according to the procedures specified in the Final POD (2.4.10.1).” Since in arid zones soil compaction (as a byproduct of heavy equipment used in construction) inhibits re-vegetation, may permanently destroy crusts on desert soils, and leads to erosion and siltation of important watercourses (Andrews, 1990), and since revegetation recovery rates in these arid regions are notoriously slow and difficult and can be altogether unsuccessful, the distinction between temporary and permanent disturbance is suspect (CWG, P. 43). At the least the table should show total acres of disturbance.

Again, figures here are suspect because they are averages over long distances and show no local impacts, even though those subroute section figures are apparently available to construct such averages. It also appears doubtful that the full 50 feet of disturbance is accounted for in these figures for high slope areas, as noted above in comments re Figure 2-32. Finally, areas of disturbance may well be grossly underestimated as is typical for contractors, just as actual costs routinely come in at several times estimates. BMPs may have led to substantial improvements, but a standard figure has been that, “...for each kilometre of transmission line 25-40 ha of land is compacted (Andrews, CWG P. 43).” It should also be considered that there is no consideration for OHV disturbances which can be considerable and, as noted above, are virtually impossible to regulate in remote areas like the SPRV.

**3.1 INTRODUCTION:** It is stated that “...resource data have also been collected outside of the study corridors to indicate regional context. The width of the study corridors along the alternative routes differs for each of the resource disciplines, depending on the area that potentially could be affected (Table 3-1). For display purposes, a 6-or 8-mile-wide corridor (3 or 4 miles on each side of the centerline) is shown on the resource maps (see Map Volume).” A 6 or 8 mile wide corridor indicates a mere token nod to NEPA requirements for assessing impacts in a regional context (See comments for Table 2-1 Environmental Sensitivity Summary above). Not only does it not satisfy the basic requirements of NEPA, it does not satisfy the most basic tenets of ecology. Impacts of an infrastructure installation of this size and scope must be considered on at least a watershed scale.

**3.3.5.1 Erosion Susceptibility:** It is acknowledged that, “Areas of soils that are highly susceptible to water erosion are mostly restricted to the river valleys of the Rio Grande, San Pedro River, and Santa Cruz River.” Table 3-18 indicates that 4C2c crosses 75 miles of Moderate Water Erosion Potential. Since most of the SPRV route occurs in high percentage slope areas, the erosive susceptibility of soils should be sufficient evidence by itself that impacts cannot be limited to 3 or 4 miles from a center line. See CWG, Pp. 45-48 for a discussion of these concerns.

**3.5.4.2 Arizona State-listed Impaired Waters and Unique or Outstanding Waters:** A water quality assessment found that “Tributary washes appear to be sources of high quality

groundwater to the San Pedro River.” Buehman Canyon, which 4C2c crosses, was investigated and designated a “Unique Water” [or OAW] of the State by the Arizona Department of Environmental Quality in 1996, which provides for a high standard of protection of quality. As noted, a permit is needed to discharge to an upstream tributary of an OAW and is only permitted if existing water quality is maintained.

*“The [OAW] determination and finding is based upon the decision criteria for designation including recreational or ecological significance” or is found to be essential for the continued existence of threatened and endangered species as well as possibly providing critical habitat (Arizona Administrative Code [AAC] R18-11-112).*

*Unique waters are granted supplemental water quality protection through an anti-degradation requirement (AAC R18-11-107 [D]). Any new or additional discharge to a ‘unique water’, including its tributaries, is prohibited if that discharge would degrade existing water quality. Site-specific water quality standards can also be applied to unique waters for an added level of protection (AAC R18-11-112) [CWG, p. 75].”*

The only OAS found in Arizona by the DEIS is Cienega Creek which is crossed by the Tucson route. In addition to Buehman Canyon, Aravaipa Creek is also one of “Arizona’s Designated Unique Waters [or OAS]” and within the purview of the DEIS. Aravaipa Creek, Hot Springs Canyon, Redfield Canyon and the San Pedro River are also all “Arizona Waters Potential Candidates for Wild and Scenic River Designations.” Of special significance is that these tributary canyons are predominantly absent exotic species since non-native aquatic vertebrate species are the predominant stressor (CWG, Pp. 75-6). The introduction of exotics into these high quality waters is another concern of opening up new access routes to trespass. These concerns appear beyond the scope of DEIS investigation, but inappropriately so.

**3.6.5.2 Birds:** The avian migratory flyway of the Rio Grande is noted, but peculiarly the same aspect of the San Pedro is ignored. The preeminence of the SPRV Neotropical migratory route in the Western U.S. is well established (See CWG, Pp. 6-8, 62-4). A comparison of ecosystem services, which is a measure of both ecological and economic benefits to humans, shows that the SPRV is considerably higher in the avian metric than the Rio Grande (Biodiversity Metrics EPA/600/F-11/006, May 2011 [www.epa.gov](http://www.epa.gov)).

**3.6.6.5 USFWS Species of Concern / 3.6.6.6 AZGFD Wildlife Species of Concern / 3.6.6.9 Species of Greatest Conservation Need / 3.6.6.10 Pima County (Arizona) Priority Vulnerable Species:** The Lowland Leopard Frog (*Rana Yavapaiensis*) is a BLM sensitive species in Arizona, a Forest Service sensitive species, a USFWS species of concern, an AZGFD WSC, an SGCN in Arizona, and a Pima County PVS (Appendix B1, p. 210). It is noted there that the Lowland Leopard Frog is “known to occur in the Project vicinity... but most of these localities are outside of the Project area of influence (B1-210-11).” In fact, the Lowland Leopard Frog occurs in Buehman, Bullock, Espiritu and Youtcy Canyons, each of which is crossed by the 4C2c route (CWG, p. 78).

Appendix B-1 also notes that threats to the survival of the Lowland Leopard Frog “include human alteration of its aquatic habitats such as through water diversion, groundwater pumping, and development of reservoirs.” It does not mention, as does Pima County’s Sonoran

Desert Conservation Plan for the A-7 Ranch (crossed by the 4C2c route), that increased vehicular use by recreational users in this area would increase sedimentation from disturbed soils in roads and that extirpation of aquatic dependent species such as Longfin Dace and Lowland Leopard Frog would be likely (CWG, p. 82).

This is cited as just one example (time does not permit for greater examination) of either a too narrow study area, or an insufficient resource review, or both. It also indicates an insufficient attention to the impacts of erosion in this sensitive watershed, both by project roads that BMPs and mitigation measures cannot adequately address, nor by trespass vehicles that will be permitted by this new access.

**3.6.7 Biological Resource Conservation Areas:** This list is inadequate to reflect the extent of biological resource conservation areas and partners in the SPRV. A separate listing should be created for proposed new routes through the highly sensitive SPRV that reflects the many partners and \$42.5 million in conservation investment as recently tallied by TNC. See CWG, pages 14-17 for a better but still incomplete listing.

**3.6.8.1 Wildlife Linkages:** The DEIS details the importance of wildlife linkages, noting that “Habitat fragmentation and loss are currently recognized as the principal threats to biodiversity.” Puzzlingly, for an area of such renowned biodiversity as the SPRV, and of such largely unfragmented and intact extent, it finds not a single wildlife linkage. However, there are abundant examples of existing and proposed linkage projects in the valley:

- **AGFD Arizona’s Wildlife Linkages:** From the same Wildlife Linkages Assessment referenced, number 82 was identified between the “Habitat Blocks” of the Rincon-Catalina Mountain and Winchester-Galiuro Mountain complexes from Soza Wash to San Manuel. Its purpose was “to document the connectivity value of these lands before adverse activities are proposed.”
- **AOLT Imperiled Movement Corridors:** Mapped by The Arizona Open Land Trust with TNC, it identified Hot Springs/Paige Canyons and Redfield/Buehman Canyons as main SPRV cross-valley corridors.
- **Sonoran Desert Conservation Plan:** One of the conservation strategies articulated in Pima County’s purchase of the A-7 was to “Maintain relatively unfragmented landscape connections between the Rincon, Santa Catalina, Galiuro and Winchester mountain ranges and through the San Pedro River valley...”
- **Hot Springs Canyon Neighborhood Wildlife Corridor Conservation Easement Project:** Local landowners donated \$2.4M worth of fee simple and conservation easement lands to TNC in order to connect protected upstream core habitats in the Galiuro/Winchester Mountains with those on the San Pedro River and in the Rincon/Catalina complex.
- **Pinal County Open Space and Trails Master Plan:** Pinal County has recognized the unfragmented nature of the Lower SPRV by adopting a plan that identifies much of the area as open space.
- **USFS Forest Legacy Program:** The SPRV was selected as the number-one Forest Legacy Program project in the nation, receiving commendations from Governor Brewer and the

district's Congresswoman Gabrielle Giffords. Habitat fragmentation was a key management issue in their Forest Plan revision, noting that the lower SPRV is a critical link between Coronado National Forest lands in the Catalina Mountains to the west and Galiuro Mountains to the east.

- **USFWS Lower San Pedro Collaborative Conservation Initiative:** While still in the planning stages, the initiative notes that the San Pedro River basin is considered to be a “keystone” transition zone that sustains biodiversity in other eco-regions, and states that “Large infrastructure proposals could degrade habitat quality, increase erosion potential, and bring more water demands to compete with current users.”
- **Arizona State Trust Lands Rincon-Galiuro Corridor:** Approximately 36,000 of state trust land is proposed for conservation status under the state trust land reform initiative for what it calls a “migratory superhighway” that runs across the SPRV between the Rincon and Galiuro mountain ranges.

All of these projects and initiatives, and more, are invested in the Lower SPRV because of its largely unfragmented and intact nature that supports outstanding biodiversity and connectivity between habitat blocks and other eco-regions. Despite the fact that all of these projects and their fragmentation concerns are traversed by the 4C2c and other SPRV routes, the DEIS does not address the issue in any meaningful way. Rather it keeps its focus on a narrow study area of a few miles width, contradicting NEPA directives and standard biological tenets, which should be the point of an objective DEIS evaluation of impacts.

Contrarily, the CWG DEIS contributions for the proposed SunZia routes in the SPRV, delivered in July, 2010, focused on this as the central issue in: Chapter III, B2 “Unfragmented and Intact Landscape” (Pp. 9-12); Chapter III, D “Connectivity” (Pp. 29-37); and Chapter IV, B “Landscape Fragmentation” (Pp. 38-51). Apparently these discussions were ignored or dismissed, but the documentation is extensive and is required for consideration. Instead of the existing “migratory superhighway,” the SunZia project would create a new “superhighway” of access through land which is presently largely unfragmented and intact. If duly considered, the SunZia impacts to fragmentation in the SPRV would implicate a “No Action” response.

**3.6.8.4 Important Bird Areas Lower San Pedro River:** It is stated that “The entire San Pedro River corridor in Arizona is an important movement corridor for avian and other wildlife species.” That should be corrected to “the entire San Pedro River *Valley* corridor.” Both Skagen’s study and the CWG compilation of bird lists from various locales and elevations indicate a valley-wide distribution of migration, including many canyon oases and even xeroriparian washes (CWG, Pp. 64-67).

**3.10.5.1 General Land Use Subroute Summary:** Throughout this section the terms “vacant” and “vacant/undeveloped land” implies a negative bias, not far removed from earlier designations as “wastelands.” Such characterization represents a strong urban bias inappropriate for assessing impacts to such biological diverse areas that provide such economically valuable ecosystem services.

**3.11.11.9 National Wildlife Refuge Subroute Summaries:** It is true that “There are no NWRs located in or near the subroutes in Route Group 4,” but there is a failure to mention throughout

the DEIS that the USFWS Lower San Pedro NWR proposal has been approved by the Service Director and Secretary of Interior and could be a reality in the not distant future. Since this proposal indicates a “high sensitivity” area, route avoidance is the typical and recommended procedure.

**3.13.2.2 Arizona:** “According to the 2009 U.S. Census, population densities within the study area were highest in Pima County, with nearly 108 persons per square mile.” The area traversed by the 4C2c SPRV route has about 200 residents within a relatively unfragmented landscape of hundreds of square miles. Relatively unfragmented and watered valley bottoms, unlike largely uninhabitable mountainous areas, are exceedingly rare in the desert southwest. Though fragmenting components such as a trans-valley dirt road and an 115Kv transmission line exist in the Middle SPRV, a resident population of 200 people in an area of several hundred square miles from Tucson’s eastern Rincon-Catalina flanks to the Galiuro-Winchesters and from the Narrows to San Manuel is remarkable. From the standpoint of fragmenting impacts, this should be noted as a positive attribute, and one that would be negatively impacted by opening new routes of access.

**3.13.9.3 Summary of Inventory Results:** This section focuses on population centers while ignoring the vast landscapes crossed by 4C2c which provide economic livelihood for ranchers and ecosystem services of significant economic value in the southwest and western hemisphere (see Biodiversity Metrics EPA/600/F-11/006 May 2011 [www.epa.gov](http://www.epa.gov)) .

**4.1.1.1 Assessment of Initial Impacts:** The potential vulnerability of each resource as affected by the Project evaluated against the Resource significance, sensitivity, quality and quantity are the appropriate considerations. It is however inappropriate to NEPA’s requirements and basic biological tenets to arbitrarily limit those considerations solely to discrete categories and a few miles from a center line.

The “Resource” is also the Middle SPRV: It has enormous significance by virtue of \$42.5M of legally protected conservation properties (with more proposed), and special status by virtue of its wild river, local and hemispheric connectivity, and as a hotspot of biodiversity. It is of high biological sensitivity as are all desert soils, flora and fauna, as well as being demographically vulnerable due to its location proximate to the Sun Corridor; Its quality is extraordinarily rare, the last of its kind, and of substantive economic value as a working landscape and providing extraordinary ecosystem services; and since such unfragmented intact landscapes and migratory corridors are so rare in the desert southwest, and the SunZia proposal traverses 40 miles in the very heart of that resource while opening up a major infrastructure and trespass corridor, the potential impacts are critical to its ongoing vitality and sustainability.

**4.3.2.3 Soil Resources:** The Indirect impacts of access roads – opening currently inaccessible areas resulting in accelerated rates of erosion; the degradation of the land surface and loss of soils resulting from accelerated soil erosion; and the loss of soil productivity and negative impacts on water quality – are enormous and unacceptable to a resource of such significance, sensitivity, high quality and value as the SPRV. Again, per Table 4-9, the impacts to the SPRV itself are hidden in figures averaged over 161 miles and without the specifics of the POD, which also applies to the SE mitigations.

Further, whatever the advantages of mitigations, there remain immitigable erosive impacts to the SPRV watershed of such high significance, sensitivity, quality and value. What reparations for these immitigable impacts will be made to the public in compensation for losses to these ecosystem services?

**4.5 WATER RESOURCES:** “Removal of unique riparian habitat, increased sedimentation, and reduced water quality” are unacceptable impacts to a resource of such significance, sensitivity, high quality and value as the SPRV.

**4.5.3.4 Route Group 4:** 4C2c crosses 6 miles of perennial rivers, 40 miles intermittent streams, and has 36 percent of the route sensitive to water resources, which is the highest sensitivity. Without a breakdown of locales per a POD, how do we know that this is a result of “more mileage” of the route rather than that these impacts are focused in the SPRV?

“The construction of access roads, staging areas, work areas, and stream crossings could affect perennial and intermittent streams, water bodies, wetlands, wells, and springs,” but there is little mention of mitigation measures. Whatever the advantage of mitigations there may be, again there remain immitigable impacts to the SPRV watershed of such high significance, sensitivity, quality and value. What reparations for these immitigable impacts will be made to the public in compensation for losses to these ecosystem services?

**4.6 BIOLOGICAL RESOURCES:** This is an interesting section, and ordinarily it would be of priority interest. It reviews an abundance of potential negative impacts across the spectrum of biological classifications in a generally sound manner, and makes points throughout that most with concern for the SPRV would assent to. Despite that, very few of these considerations make it into data charts and evaluations. That appears to be because of the presuppositions established in Chapter 2, which was extensively discussed above. When the parameters and categories are set so narrowly, rather than addressing both discrete *and* general attributes, discussions such as these can sound good, but their concerns do not get reflected in the data and evaluations. With the limited time appropriated to review the material, there are only a few limited remarks worthy of attention.

**4.6.2.2 Wildlife:** Illustrating the above point, this section begins with a good generalist discussion of potential fragmenting impacts of the proposed infrastructure corridor. **4.6.3.1 Significant Impacts** also lists “Fragmentation resulting from the addition of new infrastructure to large, currently intact blocks of habitat” as a significant impact. Following is a long list of biological classifications and special status species that are addressed, which is appropriate in itself. But, after returning to the fragmentation issue [**4.6.4.7 Agency-Identified and Other Biological Resource Areas Wildlife Linkages**] and another good discussion of habitat fragmentation, this overarching issue is addressed by the implementation of discrete mitigation measures SE 1, 2, 3, 4, 5, 6, 8, and 14 which “would minimize these effects.” And those “are applicable to each of the wildlife linkages discussed below.”

Whatever the minimizing effects, major fragmentation still occurs, and as a resource of the SPRV’s significance, sensitivity, quality and value, this should recommend avoidance and be reflected in data. Statements such as “Overall, however, impacts of linear features on wildlife are mostly negative and may be difficult to mitigate,” and “fragmentation is currently



recognized as the principal threats to biodiversity” disappear from consideration. Discrete mitigation measures are not adequate to the severity of such overarching impacts.

Perhaps most egregiously, once again this section fails to find a single linkage in the SPRV worthy of mitigating. See the discussion above per 3.6.8.1 and the attendant list of linkages: AGFD Arizona’s Wildlife Linkages; AOLT Imperiled Movement Corridors; Sonoran Desert Conservation Plan; Hot Springs Canyon Neighborhood Wildlife Corridor Conservation Easement Project; Pinal County Open Space and Trails Master Plan; USFS Forest Legacy Program; USFWS Lower San Pedro Collaborative Conservation Initiative; Arizona State Trust Lands Rincon-Galiuro Corridor

**4.6.5.4 Summary of Impact Analysis Results Route Group 4:** The conclusion to this review of impacts to biological resources of the SPRV is that “Impacts to wildlife and existing or future riparian habitat at the San Pedro River crossing would be mitigated through measures SE 1, 2, 3, 4, 8, 12, and 14.” This conclusion is not adequate to the SPRV’s significance, sensitivity, quality and value. And again, with regard to the immitigable impacts, what reparations will be made to the public in compensation for losses to these significant ecosystem services?

**4.14 ENVIRONMENTAL JUSTICE 4.14.1 Introduction:** The basic parameter for consideration here is “by census tracts located within approximately 3 miles of each proposed subroute.” While 3 miles from the project is too narrow for documenting impacts in natural areas, it may well be too wide in urban areas. Natural lands in conservation areas do not need power lines, and their impacts are uniformly deleterious. Urban residents are the primary seekers and beneficiaries of electric power. To apply similar standards to such divergent environments would appear to be an inequitable treatment of the impacted resources.

**4.17 CUMULATIVE EFFECTS:** This section would also ordinarily be of priority interest, but again the parameters of reasonably foreseeable future actions are so circumscribed that the discussion is only worthy of note on selected points. That narrowness is noted first by restricting impacts to the 10-year time line in concert with governmental plans. That may be appropriate to urban contexts, but nature of course does not work on a ten-year horizon. Once unfragmented areas, biological diversity, flight corridors and wild rivers are lost, they are not recoverable by a new ten-year plan.

Second, just as above and throughout, wider categories of impact are simply not considered. These cumulative effects should be addressed for the impacts on the main Neotropical migratory corridor in the Western U.S. (not just discrete species), or linkage issues, biodiversity, wild rivers, conservation and mitigation properties and so on. This failure is in contradiction to NEPA specifically reflected in its requirement to consider the cumulative impacts associated with a project (40 C.F.R. § 1508.25). “The point [of a cumulative impacts analysis] is that *a large overview should be maintained toward the magnitude of environmental effects*, both of the immediately contemplated action and of future actions for which the proposed action may serve as a precedent or have a cumulatively significant impact.” (*Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 88-89 [2d. Cir 1975]). No such “large overview” is presented here, and thus those are not addressed.

**Table 4-30 Past, Present, Future and Reasonably Foreseeable Future Activities within Cumulative Area of Analysis:** Under “Transportation and Access,” the table fails to report that the I-10 Bypass proposal is still an active proposal. While the project and the proposed route through the SPRV, which not incidentally followed a SunZia proposed routes (or vice versa) have been deferred, the project may well become active again as the economy improves and if a new infrastructure corridor is opened in the SPRV.

**4.17.4.3 Earth Resources:** It is noted that unauthorized use of Project access roads by OHVs could lead to loss of surface vegetation and increased erosion rates, but that “implementation of appropriate mitigation measures would reduce these effects.” See **2.4.12 Mitigation** above re SE Measure 6 about the ineffectiveness of this measure in the SPRV. Cumulative impacts of this one issue could be enormously destructive over time. No data is presented on this issue even as numerous areas proximate to large urban areas have experienced virtual devastation from these impacts.

It is stated that “transmission line access roads generally include spur roads that follow contours to structure sites off a main road leading to impacts that are more discontinuous.” Many access roads directly follow transmission lines, and new access routes will be required in the SPRV in any event. Without a POD this statement is meaningless.

**4.17.4.5 Water Resources:** It is stated that “Using BMPs and modernized mitigation measurements, most cumulative effects would be limited and, therefore, not degrade conservation efforts...” This is a speculative statement without substantiation. There is no consideration of the cumulative consequences of the immitigable impacts.

**4.17.4.6 Biological Resources:** “Although these effects [invasive species, erosion, water quality impacts] may occur with current and future development in the cumulative effects analysis area, standard and selective mitigation measures for the proposed Project would minimize any contribution to these cumulative effects to the extent feasible.” It was noted above in the DEIS that “impacts of linear features on wildlife are mostly negative and may be difficult to mitigate.” There is no consideration of the cumulative consequences of the immitigable impacts.

A few comments are in order about the DEIS treatment of bird collision with transmission lines. The DEIS clearly attempts to minimize the severity of the problem by stating that the project would not be expected to present a collision risk significant at the population level to any species in the region, that it would be a small contribution to the overall collision hazard for birds in the Southwest, and that these effects can often be mitigated with bird diverters or similar devices. Further, the statement that “recent research has shown that this risk is often overstated; the incidence of avian collision with power lines is very low,” is a questionable one as it is based on one EPG study that primarily regards Sandhill Cranes amongst a plethora of research, often with contradicting results.

Whatever the veracity (or lack thereof) of the DEIS statements, the issue must be treated as a serious one since the SPRV serves as the main Neotropical migratory corridor in the Western U.S., and the Migratory Bird Treaty Act requires it. The SPRV achieves its reputation not so much by the grandeur of its water resources, but rather by attrition in other routes such as the

Rio Grande and Colorado. As such it is considerably vulnerable, especially to the recognizably declining class of Passerines that serve such a critical biological and economic function in the timberlands of North and South America.

A matter that requires attention and correction throughout the DEIS is the focus given only to the riparian area of the mainstem river. As noted before, both Skagen's study and the CWG compilation of bird lists from various locales and elevations indicate a valley-wide distribution of migration, including the many canyon oases and even xeroriparian washes transected by the 4C2c route (CWG, Pp. 64-67). Thus, a single river crossing is not the only issue, but an additional 40 miles of transit through an active flight corridor. Further, though it is true that Passerine nocturnal migrations are generally at higher elevations, they are often roosting and flocking in crepuscular light and poor weather conditions. All of these issues exacerbate the possibility of significant cumulative impacts to these populations over time. Please reference the treatment of these issues and more in CWG, Pp. 51-73.

**Conclusion:** It is stated that, "Development of the proposed Project, in conjunction with other present and future projects, would contribute to the ongoing fragmentation and loss of natural habitats in the Southwest. All Project subroute alternatives, including the BLM preferred alternative, would have similar cumulative impacts." The first sentence is accurate with regard to the SPRV and Aravaipa routes, but the second sentence is not true of all routes. "Subroute 4C3 would have relatively fewer biological impacts because it would pass through a large area of previous disturbance (Tucson and I-10 northwest of Tucson) [P. 2-101]."

It is also stated that "cumulative impacts would be reduced in most cases when linear utilities, including the proposed Project, are collocated." This is actually another argument in favor of the 4C3 route, since it follows 84% of existing infrastructure routes. Contrarily, if the SPRV route is approved the door is open for other infrastructure projects, as was the clear intent of SunZia's FERC application for a mile-wide EIS survey to accommodate further growth, and as the DEIS is advocating here. Even though the projects must be considered "on a case-by-case basis," no mechanism exists to stop them any more than locked gates will stop OHV traffic on the SunZia service roads. The EIS survey will be complete, objections will have been overcome, and the SPRV will be an established infrastructure. Future projects will not even require an environmental rationale. In relatively unfragmented areas like the SPRV, collocation doubles the impacts to resources because the corridor would attract further exurban growth and development, and the SPRV will become a thoroughly fragmented and altered landscape.

#### **CASCABEL WORKING GROUP CONCLUSIONS:**

The focus of these comments is the 4C2c "preferred alternative" route. CWG believes that a "No Action" response is warranted based on biological criteria. Most of these conclusions are applicable to all routes traversing the SPRV, which of course includes the 4A and 4B "Aravaipa" routes. Though CWG is not here advocating for the 4C "Tucson" route, it is the only route that makes sense from a biological standpoint. The salient points are:

- The wider “context” and overview of the SPRV route, as required by NEPA, indicates that the SPRV is a resource of “high sensitivity” on numerous bases which argues compellingly for avoidance.
- Fragmenting impacts of new roads, erosion, OHV trespass and attendant development would threaten the survival of the San Pedro River as the last major undammed river in the desert southwest
- Fragmenting impacts to the San Pedro River and 40 miles of transmission lines through the SPRV would threaten its function as the main Neotropical avian migratory corridor in the Western U.S., which is of hemispheric importance.
- Fragmenting impacts of new roads, erosion, OHV trespass and attendant development would threaten wildlife linkages between the Rincon-Catalina mountain complex and the Winchester-Galiuro mountain complex, part of over a million acres of largely unfragmented and intact landscape in the Madrean Archipelago.
- Fragmenting impacts of new roads, erosion, OHV trespass and attendant development would threaten this “hotspot” of floral and faunal biological diversity within the Madrean Archipelago.
- Fragmenting impacts of new roads, erosion, OHV trespass and attendant development would threaten \$42.5 million of conservation investments in the Lower SPRV as well as substantial ongoing conservation initiatives by many agencies and NGO partners.
- Fragmenting impacts of new roads, erosion, OHV trespass and attendant development would compromise the social and economic benefits of a working landscape and the highest level of ecosystem services in the desert southwest.
- The selection of the 4C2c route fails on four of the five DEIS criteria: Maximize use of existing utility corridors and infrastructure; Minimize impacts to sensitive resources; Minimize impacts at river crossings; and Minimize impacts to military operations within the restricted airspace north of the WSMR.
- The selection and approval of the Lower SPRV as a potential NWR by the USFWS, which is in process and runs parallel to the SZ proposal for over 30 miles, is contradictory to another DOI agency (BLM) authorizing a major infrastructure corridor.

There is also a troubling component in the DEIS that at times make it appear as an advocacy piece for the applicant, rather than an impartial and objective evaluation of impacts as required by the NEPA process. It is not the point here to make accusations; that will depend on EPG responses to these and many other responders. That said, here are some of these concerns:

- Failure to review larger contextual and overview features of the SPRV resource as required by NEPA.
- Including the SPRV’s 40 miles of new access within 90 miles of low-impact and collocated infrastructure traverse skewing impact averages.

- Failure to include the Plan of Development making it impossible to quantify and evaluate the direct impacts of the project to the SPRV resource.
- Area of ground disturbance appears to be underestimated and underreported for high-slope and rugged terrain such as the SPRV traverse would encounter.
- Failure to include any consideration of the USFWS Lower SPRV initiative in current or cumulative impact reviews.
- Failure to include consideration in current or cumulative impact reviews: The Arizona State Land Reform initiative for the Catalina-Galiuro Corridor; the Pinal County Comprehensive Plan; America's Great Outdoors Lower San Pedro River conservation initiative; the ongoing US Forest Service Forest Legacy Program; the ongoing Sonoran Desert Conservation Plan.
- Mention of the SPRV's significant function as the main avian Neotropical migratory corridor in the West is lacking.
- Throughout the DEIS consideration of the avian migration corridor appears to be limited to the main-stem river riparian area, despite extensive discussion of this point in CWG's DEIS comments submission, the majority of which appears to have been ignored.
- Despite the selection priority to maximize use of existing utility corridors and infrastructure, 4C2c is selected which parallels only 57% of existing utility or pipeline corridor, while 4C3 (the Tucson route) follows 84% of existing utility or pipeline corridor.
- Despite the selection priority to minimize impacts to sensitive resources, the highly sensitive 4C2c SPRV route is selected over 4C3 which "would have relatively fewer biological impacts...."
- Despite the selection priority to minimize riparian and river crossing impacts, 4C2c – having 40 miles of SPRV watershed traverse, crossing 6 miles of perennial rivers, 40 miles of intermittent streams, and 36 percent of the route sensitive to water resources which is the highest sensitivity of all routes – is selected over 4C3 with only one crossing of the SPRV.
- The single selection priority to minimize impacts to residential and commercial uses is deemed sufficient to preclude the 4C3 Tucson route from selection over all other priorities.
- A study area of 3 or 4 miles on each side of the project centerline in a largely unfragmented watershed like the SPRV does not satisfy the basic requirements of NEPA or the most basic tenets of ecology.
- Buehman Canyon, which 4C2c crosses, was excluded from consideration as a "Unique Water" or OAW as designated by the Arizona Department of Environmental Quality, whereas an OAW was discerned at Cienega Creek along the Tucson route.
- While finding linkages across the 4C3 Tucson route, the DEIS failed to find a single wildlife linkage in the SPRV such as: AGFD Arizona's Wildlife Linkages, AOLT Imperiled

Movement Corridors, Sonoran Desert Conservation Plan, Hot Springs Canyon Neighborhood Wildlife Corridor Conservation Easement Project, Pinal County Open Space and Trails Master Plan, USFS Forest Legacy Program, USFWS Lower San Pedro Collaborative Conservation Initiative, Arizona State Trust Lands Rincon-Galiuro Corridor. This also ignored the CWG DEIS contributions which delineated many of these linkages.

- The terms “vacant” and “vacant/undeveloped land” for lands traversed in the SPRV implies a strong urban bias inappropriate for assessing impacts to such biological diverse areas that provide such economically valuable ecosystem services.
- The Summary of Inventory Results focuses on population centers while ignoring the vast landscapes crossed by 4C2c which provide economic livelihood for ranchers and ecosystem services of significant economic value in the southwest and western hemisphere.
- Despite noting that “Overall, however, impacts of linear features on wildlife are mostly negative and may be difficult to mitigate,” there is no discussion of reparations to the public in compensation for losses to these ecosystem services from these immitigable impacts as required by NEPA.
- The parameter for consideration of environmental justice is “by census tracts located within approximately 3 miles of each proposed subroute.” While 3 miles from the project is too narrow for documenting impacts in natural areas, it may well be too wide in urban areas. To apply similar standards to such divergent environments would appear to represent an inequitable and biased treatment of the impacted resources.
- The restriction of cumulative impacts to governmental ten-year plans reflects a bias toward urban contexts, since natural systems do not work on a ten-year horizon.
- The I-10 Bypass project, which had a proposed route through the SPRV, is not mentioned. Though deferred, the project may well become active again as the economy improves and if a new infrastructure corridor is opened in the SPRV.