

February 12, 2014

United States Forest Service Southwestern Region
333 Broadway SE
Albuquerque, NM 87102

Email Address: objections-southwestern-regional-office@fs.fed.us

Attention: Reviewing Officer, Objections to the Rosemont Copper Project FEIS

Subject: **FORMAL OBJECTIONS TO THE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED ROSEMONT COPPER PROJECT**

Lead Objector: James E. Pepper for the Mountain Empire Action Alliance (MEAA)

Dear Sir/Madam:

Augusta Resource Corporation, the parent company of Rosemont Copper Company, submitted a preliminary Mine Plan of Operations to the Coronado National Forest (CNF) in 2007. The proposed Rosemont Copper Project mine site is located in the CNF on the east side of the Santa Rita Mountains of the Nogales Ranger District in Pima County, Arizona. Jim Upchurch, Forest Supervisor of the CNF, is the Responsible Officer for the subject Final Environmental Impact Statement (FEIS).

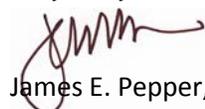
Pursuant to 36 CFR Part 218, the above-listed parties file this Objection to the FEIS and Proposed ROD (including the proposed amendment to the Coronado National Forest Plan) issued by James Upchurch for the Rosemont Copper Project (Project or Mine). The Objectors filed comments on the Draft EIS on or about January 27, 2012 and have fully participated in the Forest Service (USFS)'s review of the Project. Pursuant to 36 CFR 218.8, the parties state that the following content of this Objection demonstrates the connections between the January 27, 2012 comments (or "previous comments") for all issues raised herein, unless the issue or statement in the Draft ROD or FEIS arose or was made after the opportunity for comment on the DEIS closed, as detailed herein. Pursuant to the Administrative Procedure Act, 5 U.S.C. §553-706, and USFS requirements, the Regional Forester's Office must provide a detailed response to each of the issues/objections raised in this Objection.

The formal objections to the FEIS set forth in this document have been prepared by Power Consulting (see following page) under contract to the Mountain Empire Action Alliance and submitted by James E. Pepper, P. O. Box 1326, Sonoita, AZ 85637, Ph. 520-455-5106.

The Mountain Empire Action Alliance

The Mountain Empire Action Alliance (MEAA) is a non-partisan, informal confederation of concerned citizens residing in the greater Sonoita basin -- Elgin, Sonoita, and Patagonia, with a membership consisting of over half of the households in the area. MEAA is committed to sustaining and enhancing the quality of life and economic well-being of this rural and agricultural area; an area known for its scenic landscapes, ranching, abundant wildlife, and the peace and quiet of the wholesome, rural lifestyle it provides.

Very Truly Yours,



James E. Pepper, Convener

Socioeconomic Objections

T. M. Power, Consulting Economist
Power Consulting
920 Evans Avenue
Missoula, Montana 59801
406-721-1391

Contents/Issues Raised in Objections:

- New socioeconomic studies introduced in the FEIS.
- Treating landscape amenities as social, cultural, or aesthetic problems while ignoring their economic importance.
- Concentrating the analysis of the economic values associated protecting natural landscapes on visitors or new in-migrants
- The USFS's use of a Rosemont sponsored economic impact analysis study the details of which the USFS would not make public.
- The USFS internal review of the IMPLAN modeling of the economic impacts of the Rosemont Mine.
- Exaggerating positive economic impacts of the Rosemont Mine by ignoring the volatility and variability copper mining jobs, income, and revenues to governments.
- The size of the existing recreation and tourist economy in the Rosemont Mine study area.
- Minimizing the negative economic impact of the Rosemont Mine on the visitor economy, nature-based recreation, and amenity-supported economic vitality by limiting its analysis to only part of the economic connections associated with high quality natural landscapes.
- The impact of degraded natural landscapes on the attractiveness of the Greater Tucson Area to new residents and businesses.
- The impact of the Rosemont Mine on property values.

1. **Issue: Socioeconomic Impacts:** New socioeconomic studies introduced in the FEIS.

2. **Coalition Comments:**

The Coalition criticized the USFS DEIS for not making use of the results of USDA and USFS economists' research on the economic importance of natural landscape amenities and other sources of environmental services and for doing no economic impact analysis itself. In particular the Coalition criticized the DEIS for:

"Ignoring or misinterpreting the empirical economic research findings of the U.S. Department of Agriculture Forest Service (USFS) researchers who have documented the important economic role that landscape amenities play, including, specifically, in the American desert southwest.

Relying uncritically on economic impact modeling funded by Rosemont and based on Rosemont-specified assumptions and commissioned by a local economic development group. The Coronado National Forest did no economic impact modeling of its own nor did it commission and supervise any economic impact modeling for the DEIS. The USFS did not even inquire about the assumptions and methods used in that outside economic impact modeling before the DEIS embraced it as its own." (p. 104)

3. **USFS Response in FEIS:**

"A number of public concerns pertaining to this section were raised in comments on the DEIS. These concerns pertained to the perceived inadequate analysis of the negative socioeconomic impacts of the proposed project, including property values, amenity values, recreation and regional tourism, impacts to the local astronomy industry, and impacts to environmental justice communities. In response to these comments, the Coronado commissioned an economic research and consulting firm to review and address these concerns in relation to the proposed project (BBC Research and Consulting 2013). Information resulting from the BBC Research and Consulting review is described throughout the document, in both "Affected Environment" (see "Recreation and Tourism") and "Environmental Consequences," primarily under "Property Value," "Recreation and Tourism," and "Social Benefits of Amenities on the Coronado National Forest." (FEIS p. 1053)

The analysis of impacts to socioeconomic and environmental justice issues has been updated based primarily on the information from this work. To this end, two new issue factors have been added:

- Quantitative assessment of economic effect on the astronomy industry has been added to "Issue 11A: Regional Socioeconomics;" and
- Quantitative assessment of economic effect on amenity-based relocation has been added to "Issue 11B: Rural Landscapes." (FEIS p. 1053)

The USFS responded to this criticism of the DEIS in the FEIS by asking a USFS economist (Krista Gebert) to review the Rosemont-funded economic impact analysis (Applied Economics, 2011) and do her own economic impact modeling. In addition the USFS hired an economic consulting firm (BBC Research & Consulting, 2013) to research and analyze three socioeconomic issues associated with the Rosemont Mine. That consulting firm selectively drew on an extensive environmental economics literature developed by USFS and other economists. The result was five new pieces of socioeconomic research released in the FEIS:

- A critique of the Applied Economics Rosemont economic impact analysis and new modeling of those economic impacts. (Krista Gebert, Regional Economists, Northern Region, USFS, "Comparison of Economic Impact Results for the Proposed Rosemont Copper Mine, n.d. [2011]).
- Tourism and Recreation-related Economy (BBC Research & Consulting, Chapter II, 2013)
- Residential and Business Location Choices (Amenity-based Migration) (BBC Research & Consulting, Chapter III, 2013)
- Potential Effects on Property Values and Property Tax Revenues (BBC Research & Consulting, Chapter IV, 2013).

- Potential Effects on the Astronomy-related Economy (BBC Research & Consulting, Chapter V, 2013)

This new socioeconomic analysis made heavy use of a variety of other studies and data sources and the USFS in the FEIS interpreted both their consultants' analysis and the literature and data on which they relied.

4. **Objections:**

The FEIS *does* incorporate analysis of the economic impacts associated with the damage the Rosemont Mine would do to the natural landscape and social and natural amenities. The USFS hired a consulting firm (BBC Research and Consulting) to provide research and analysis of how degrading protected public lands, landscapes, and scenic highways would harm the local economy. BBC submitted a report to the USFS entitled "Additional Socioeconomic Evaluations: Rosemont Copper Project Environmental Impact Statement. (May 14, 2013)" As the title makes clear, this consultants' report was providing "additional" socioeconomic analysis that was not in the DEIS.

Unfortunately this analysis and the research and data sources on which it relies were not circulated to the general public in advance of the FEIS and Draft ROD. That has meant that this new economic analysis received no peer or citizen review before the USFS's interpretation and use of this new material appeared in the FEIS. The 45 day public review period is not adequate time for new modeling and analysis to be critically reviewed, including its assumptions, data sources, methods, etc.

This new scientific material should have been released in a Supplemental Draft Environmental Impact Statement that had a significantly longer review period. That would have allowed the USFS to evaluate the reliability of these consultants' analysis and results. Instead, the USFS has incorporated that analysis into the FEIS without any public review and with deadlines so short for objections to the FEIS that the USFS will never get an adequate review of this new material. This undermines the very purpose of a **Draft** EIS being circulated so that its data, methods, analysis, and conclusions can be thoroughly tested before being used as the basis for an important USFS decision.

Because this new socioeconomic material was not subjected to a reasonable public review, those new analyses should not be treated as reliable information that can safely inform the USFS decision on the proposed Rosemont Mine.

5. **Suggested Remedy:** End the current FEIS and ROD process and draft a Supplemental DEIS containing, among other things, a new socioeconomic section. An adequate public comment period should follow the release of the Supplemental DEIS. Only after that should the FEIS process begin again. This will allow the USFS to prepare a professional and reliable socioeconomic section that will not mislead or confuse USFS decision-makers as they rule on the proposed Rosemont Mine.

1. Issue: Socioeconomic Impacts: Treating landscape amenities as social, cultural, or aesthetic problems while ignoring their economic importance.

2. Coalition Comments:

The Coalition criticized the socioeconomic section of the DEIS for:

“Treating landscape amenities and their degradation as primarily cultural, social, or aesthetic problems with no significant economic implications.

Ignoring or misinterpreting the empirical economic research findings of the U.S. Department of Agriculture Forest Service (USFS) researchers who have documented the important economic role that landscape amenities play, including, specifically, in the American desert southwest.” P. 104

3. USFS Response in FEIS:

“As discussed later in the “Social Benefits of Amenities on the Coronado National Forest” part of this resource section, environmental amenities associated with the Coronado National Forest contribute to the region’s identity, as well as area quality of life. Specific to this discussion, these same amenity characteristics, along with a variety of other characteristics (location, area land and housing prices, area wages, number of bedrooms, bathrooms, etc.), can also influence where people live (migration) and property values (Hand et al. 2008b).” (FEIS p. 1069)

“Whatever the specific characteristics are, analysis of property values in the environmental consequences discussion later in this section assumes that people value proximity to the forest and its resources and that the existence of an open-pit copper mine could result in negative impacts on values to neighboring properties.” (FEIS p. 1069)

“Social Benefits of Amenities on the Coronado National Forest

Environmental amenities associated with the Coronado National Forest contribute to the region’s identity, as well as its quality of life. As previously discussed, regional population growth has brought significant changes in the local and regional quality of life over the past 2 decades; extensive population growth has driven increased demand on forest resources. The region is shifting from a solely commodity-based lifestyle toward a more recreation- and tourism-based way of life.” (FEIS p. 1091, emphasis added)

“Measuring the **social costs** of mining is challenging because of the absence of quantitative values for **social conditions**. Estimating changes in property values is one approach to measuring **social changes**, as it reflects changes in structural attributes of homes and neighborhood quality. To date, there has been limited research completed on open-pit mining operations, especially in the southwestern United States. In order to assess potential impacts to property values, other open-pit mining studies and reported impacts from industrial sites (such as demolition dumps, waste sites, hazardous manufacturing facilities, freight facilities, etc.), landfills, and large-scale feed operations are discussed in the analysis of the proposed mine’s potential impacts.”(FEIS p. 1105, emphasis added)

4. Objections:

The USFS in the FEIS continues to treat landscape amenities and their degradation as well as quality of life and its deterioration as “social” concerns. It does not title a section the “Economic Benefits of Amenities on the Coronado National Forest,” instead it limits itself to talking about the “social benefits or amenities,” “the region’s identity, as well as quality of life,” “influence where people live,” and “lifestyle.”

While USFS economic research was documenting the economic importance of national forest amenities and the ways those amenities contribute to local economic vitality and economic well-being, the USFS in the FEIS translates this research into social, cultural, and aesthetic concerns and, where it focuses on economic impacts, the results are stated not in terms of reduction in economic well-being but in terms of slight reductions in property values and, as a result, relatively trivial declines in the property tax revenues that local and state governments collect. (FEIS pp. 1069, 1107-1108)

The USFS's studies and other studies (e.g. the Hand et al. 2008b study cited by the FEIS) were of the **economic** impact of landscape amenities and environmental services of local economic vitality and economic well-being. In these studies, the impacts on property values was developed in an effort to derive the economic value of landscape amenities from peoples participation in a particular market, the market for land for residential and some commercial uses. The purpose is not to determine how much property tax revenue is gained or lost or how home values change. The purpose is to get a quantitative estimate of the value of various qualitative aspects of a particular location as a place to live and do business.

The USFS refusal to recognize the purpose of these economic studies ultimately trivializes the results of this economic research rather than providing insight into the size, distribution, and dynamic importance of these environmental-economic values. For that reason the conclusions from the new "studies" should be ignored until they have undergone the normal critical public review.

5. Suggested Remedy: If the USFS had circulated these new studies of the role of natural landscapes and degradations of them on surrounding people, families, and communities *before* writing the FEIS and the Draft ROD, the USFS could have avoided this gross misuse and misinterpretation of the work of the USFS's own economic researchers. The new socioeconomic material in the FEIS should be circulated as a Supplemental DEIS to which the public can respond before a new FEIS is prepared. This will allow the USFS to prepare a professional and reliable socioeconomic section that will not mislead or confuse USFS decision-makers as they rule on the proposed Rosemont Mine.

1. Issue: Socioeconomic Impacts: Concentrating the analysis of the economic values associated protecting natural landscapes on visitors or new in-migrants while ignoring the value of those landscapes to existing million-plus residents of the Rosemont three-county study area.

2. Coalition Comments:

The primary conclusion that follows from this review of the DEIS socioeconomic analysis is that it systematically exaggerates the economic benefits while just as systematically dismissing or ignoring the economic costs of the Rosemont Mine. As a result of a series of errors in economic analysis, the DEIS describes the Rosemont proposal as having large economic benefits but no or negligible economic costs. Those economic errors include: Ignoring the economic role that the landscape amenities of the Greater Tucson area play in supporting local economic wellbeing and vitality....(p. 103)

U.S. Department of Agriculture and USFS economic research has demonstrated the economic importance of landscape amenities to local economic vitality. That research has also warned about the negative consequences on local economic vitality and wellbeing associated with commercial development that damages or degrades those landscape amenities. That knowledge developed, over the last several decades, not only by USDA and USFS but many other economists, should serve as part of the foundation for any socioeconomic impact analysis written by the USFS. (p. 106)

3. USFS Response in FEIS:

In the FEIS, the USFS has made use of the work of several economists from both the USFS and the U.S. Department of Agriculture. The USFS and its consultants for the FEIS also made use of several studies by other economists who have recognized and attempted to quantify the connections between protected natural landscapes and the local economy. The primary economic links on which the FEIS focused were the economic impacts of the degradation of natural landscapes on

- recreation and tourism (FEIS pp. 1109-13)
- the in-migration of new residents and businesses (FEIS pp. 1119-22); and
- property values and property tax revenues (FEIS pp. 1105-09).

4. Objections:

Although the comment period on the FEIS did not allow the time necessary to analyze the USFS's new socioeconomic analyses including the appropriateness of the application of the economic literature chosen, the reliability of the data, and the accuracy of the calculations, we have identified serious general conceptual problems with those analyses that indicate that they cannot be relied upon in making a decision on the proposed Rosemont Mine.

Where the FEIS has treated natural landscape degradation as having economic implications, the focus has been on impacts on the level of commercial economic activity in the study region, i.e. on the level of local economic vitality rather than on the contribution those natural landscapes and other environmental qualities make directly to the well-being of visitors, new in-migrants, or existing citizens. In addition, the FEIS has largely ignored the direct contribution the natural landscapes make to existing residents and focuses instead on visitors to the region and new in-migrants. In that sense, the ongoing contribution that those natural landscapes make to the economic well-being of residents, day-in and day-out and across the years is ignored.

One of the new analyses that the USFS incorporated into the FEIS, the hedonic analysis of the impact of degraded landscapes on property values, if done correctly *could* have shed some light on this question but the FEIS interpreted that analysis as primarily identifying the reduction in property tax revenues to

governments. From an economic point of view (as opposed to a real estate point of view), what hedonic analysis seeks to uncover is the economic value to residents of the environmental qualities associated with a particular location. But that is not how the USFS interpreted the hedonic analysis in the FEIS.

The “entry price” that residents pay to gain access to an area with high environmental quality can take several forms. One is that land values in those locations will be higher (“high rent neighborhoods”). Another is that because the area draws more workers who want to enjoy the higher quality of life, wages are likely to be depressed. The “entry price” is the acceptance of a lower wage than could be earned elsewhere. By studying these sacrifices that residents make to gain access to areas with especially attractive environmental qualities, economists can determine the value of those environmental qualities to residents.

The FEIS largely ignores the value of the protected landscapes that characterize the Greater Tucson Area and the direct contribution those landscapes make to the well-being of the region’s million-plus residents. Instead the FEIS socioeconomic section focuses on visitors and in-migrants as if those protected landscapes are valuable only to them and not to existing residents. This reverses reality: The primary beneficiaries of those protected landscapes and victims of degradation of those landscapes are the existing residents, not the visitors or newcomers. In addition what is important is not just the level of commercial economic activity. The natural, social, and cultural environments and institutions are also a vital source of local economic well-being.

This inappropriate focus on impacts on visitors, in-migrants, and only commercial economic values represents a serious bias in the new studies that indicates that the conclusions of new socioeconomic analyses should be ignored until these studies have undergone the usual critical public review.

5. Suggested Remedy: The new socioeconomic analysis that the USFS first circulated in the FEIS should be circulated as part of the Supplemental DEIS with an appropriate review and comment period so that the public can help the USFS correct errors, confusion, and misinterpretations before the USFS uses the socioeconomic analysis in drafting an FEIS and making a decision on the Rosemont Mine.

1. Issue: **Socioeconomic Impacts:** The USFS's use of a Rosemont sponsored economic impact analysis study the details of which the USFS would not make public.

2. **Coalition Comments:** "The USFS relied uncritically on economic impact modeling funded by Rosemont and based on Rosemont-specified assumptions, and commissioned by a local economic development group. The Coronado National Forest did no economic impact modeling of its own nor did it commission and supervise any economic impact modeling for the DEIS. The USFS did not even inquire about the assumptions and methods used in that outside economic impact modeling before the DEIS embraced it as its own.

When during the DEIS comment period the USFS did seek additional information from Applied Economics, Rosemont, and TREO on the assumptions and methods behind the economic impact modeling on which the DEIS relied, the USFS was not willing to share that information with the public despite repeated requests." (p. 103)

"Additionally, credible review and comment of the economic analysis presented in the DEIS has been hindered by the inability of members of the public to obtain the data and assumptions that were given by Rosemont to Applied Economics to use in IMPLAN modeling. This modeling was the basis for the report released by the Tucson Regional Economic Opportunities (TREO), "Economic Impacts of the Rosemont Copper project on Pima County, Arizona. The results of that report have been widely distributed as well as being used in the DEIS and they differ significantly from other analyses about the economic effects of the proposed mine. Further information about attempts to obtain this data is presented in Appendix E." (p. 106-107)

3. **USFS Response in FEIS:** "The Coronado also conducted an internal review of the economic model used in the DEIS. The results of this internal review have been incorporated into this section (see "Analysis Methodology, Assumptions, Uncertain and Unknown Information" in this resource section)." (DEIS p. 1053)

That USFS "internal review" was carried out by USFS Region 1 economist, Krista Gebert in a report entitled "Comparison of Economic Impact Results for the Proposed Rosemont Copper Mine" (Gebert n.d. [2011]). "This report was prepared internally by the Coronado in response to public concerns over the estimated economic impacts expressed in a study by Applied Economics (2011). The additional analysis was meant to provide an increased understanding of the impacts published in the DEIS." (FEIS p. 1056)

4. **Objections:**

The USFS, Applied Economics, TREO, and Rosemont never made public the background information that was provided to the Applied Economics consulting company so that it could proceed with its economic impact modeling. As the USFS response in the FEIS makes clear, the USFS did use this Rosemont sponsored economic impact modeling as "the economic model used in the DEIS." That is, the USFS endorsed and relied upon the Applied Economics modeling for the DEIS but did not seek clarification of the inputs into the modeling itself and when asked by the public to disclose the details being the modeling the USFS adopted as its own in the DEIS, it refused to provide that information. This made it impossible for the public to evaluate the reliability of the DEIS socioeconomic analysis and the reliability of modeling done by Applied Economics. The "internal review" carried out by USFS economist Krista Gebert came to dramatically different conclusions about the projected economic impacts of the Rosemont Mine: Applied Economics estimated the indirect/induced impacts of the mine would involve 1,260 jobs while Gebert estimated 512 jobs.(FEIS, p. 1102) Applied Economics estimated total jobs from Rosemont of 1,694 while Gebert estimated 946.(Gebert, 2011, Table 3)

The USFS points out "the discrepancy in these numbers" and explains it as "due to different analytical techniques and assumptions." (FEIS p.1102) Both Applied Economics and the USFS economist were

using the same “analytical techniques,” i.e. the IMPLAN economic impact model. The USFS does not explain the “different assumptions” that the USFS economist used compared to the assumptions made by Applied Economics. Those assumptions that Applied Economics made using Rosemont provided numbers are what the Coalition sought from the USFS and never obtained. In the USFS response in the FEIS, the USFS still does not provide that information. The USFS, however, continues to rely on Applied Economics’ exaggerated positive economic impacts while refusing to reveal the basis of those impacts.

This continued refusal by the USFS to reveal the assumptions behind the IMPLAN modeling that it adopted as its own in the DEIS renders the FEIS that continues to rely on that Rosemont-sponsored study unreliable. Given that the USFS’s own “internal review” revealed the gross exaggeration of the positive economic impact associated with the Rosemont Mine, those Applied Economics conclusions about the positive economic impacts of the Rosemont Mine can only mislead USFS decision-makers .

5. **Suggested Remedy:** The USFS should stop the FEIS and ROD process and prepare a Supplemental DEIS that either drops the exaggerated positive impacts contained in the Rosemont sponsored economic impact analysis or provide the background information that Rosemont provided to Applied Economics. That socioeconomic modeling of the Rosemont Mine provided in that Supplemental DEIS should be the analysis provided by the USFS economist along with all of the information Rosemont provided for that analysis.

1. Issue: Socioeconomic Impacts: The USFS internal review of the IMPLAN modeling of the economic impacts of the Rosemont Mine.

2. Coalition Comments:

The USFS relied uncritically on economic impact modeling funded by Rosemont and based on Rosemont-specified assumptions and commissioned by a local economic development group. The Coronado National Forest did no economic impact modeling of its own nor did it commission and supervise any economic impact modeling for the DEIS. The USFS did not even inquire about the assumptions and methods used in that outside economic impact modeling before the DEIS embraced it as its own. (p. 104)

The economic impacts of the projected 20-year period of full production were exaggerated by assuming that most of the supplies needed to operate the mine would be produced by and purchased from local business firms. This led to estimates of indirect impacts that were 3 to 5 times too large. The result was total “multiplier” impacts that were twice as large as appropriate. (p. 104)

3. USFS Response in FEIS:

“The Coronado also conducted an internal review of the economic model used in the DEIS. The results of this internal review have been incorporated into this section (see “Analysis Methodology, Assumptions, Uncertain and Unknown Information” in this resource section).” (FEIS p. 1053)

That USFS “internal review” was carried out by USFS Region 1 economist Krista Gebert in a report entitled “Comparison of Economic Impact Results for the Proposed Rosemont Copper Mine” (Gebert n.d. [2011]). This report was prepared internally by the Coronado in response to public concerns over the estimated economic impacts expressed in a study by Applied Economics (2011). The additional analysis was meant to provide an increased understanding of the impacts published in the DEIS.” (FEIS p. 1056)

The Rosemont funded Applied Economics report focused solely on impacts to Pima County, while the Forest Service’s IMPLAN report estimates impacts to the entire three-county analysis area. Thus, when describing the potential economic impacts of the proposed mine as estimated in the IMPLAN models, numbers for both Pima County and the three-county analysis area are often used in this EIS. (FEIS p. 1099)

- Project construction would occur over an approximately 18- to 24-month period, creating an estimated annual average of 594 direct jobs in Pima County and an estimated annual average of 1,221 direct and indirect jobs in the three-county analysis area (Applied Economics 2011; Gebert n.d. [2011]). (FEIS p. 1099)
- Active mining, final reclamation, and closure would create an annual average of 434 direct jobs in the three-county analysis area (Applied Economics 2011; Gebert n.d. [2011]). (FEIS p. 1100)
- Premining, which includes engineering and construction, would provide an annual average of 594 direct jobs and 443 indirect jobs in Pima County; 768 direct and 453 indirect jobs in the three-county analysis area (Applied Economics 2011; Gebert n.d. [2011]). (FEIS p. 1101)
- Labor income, which includes employee wages and benefits, is estimated to be \$29 million in Pima County for direct labor income and \$57 million for indirect labor income during the active mining phase (Applied Economics 2011). In Pima, Santa Cruz, and Cochise Counties combined, the labor income during the active mining phase is

estimated to be \$29 million per year in direct labor income and \$55 million per year in indirect labor income (Gebert n.d. [2011]). (FEIS p. 1103)

4. Objections: The four quotes above (i-iii) from the FEIS are just four examples of the USFS misinterpreting the results of its “internal review” of the IMPLAN modeling. The USFS repeatedly explains the difference between the Gebert USFS modeling and the Applied Economics modeling as being that Gebert focused on a three-county study area and Applied Economics focused on one county, Pima.

Although there was this difference in geographic focus, the large difference in these two differing modeling efforts on which the FEIS relies was not tied to that geographic difference. The USFS (Gebert) estimated 512 indirect/induced jobs from the Rosemont Mine and Applied Economics’ estimated 1,260 indirect/induced jobs, almost two and a half times larger, for the active mining period. This difference was **not** due to three counties versus one county as the FEIS asserts. One would expect that a larger geographic area would estimate large impacts because the larger economy would be more likely to provide services to the mine and to its workers. Yet the three county indirect/induced jobs impact was 60 percent **smaller** than the one county estimate. The major difference between these two IMPLAN modeling efforts is tied to the assumptions made about the mine would purchase the goods and services it needed.

Despite the USFS internal review that confirmed the exaggerations associated with the Applied Economics IMPLAN modeling, the FEIS continues to present those Applied Economics’ claims as legitimate and reliable estimates for Pima County. The USFS Gebert IMPLAN modeling results indicated that those Applied Economics’ claims were **not** reasonable. But the FEIS treats them as having the same reliability and provides a false explanation for the differences between them.

In addition, the FEIS statements in iv. above are simply wrong. It seems likely that the USFS did not even involve its own economist who carried out the internal review in the FEIS’s interpretation of her work. The \$55 million that is said to be Gebert’s estimate of the indirect and induced impacts is actually her estimate of the total impact of Rosemont on labor income. Her estimated of the indirect and induced impacts was \$26 million. What the FEIS should have been comparing was the Applied Economics’ estimate of \$57 million to Gebert’s estimate \$26 million for the indirect and induced impacts and Applied Economics’ estimate of \$81 million to Gebert’s estimate of \$55 million for the total impacts. In addition Applied Economics apparently assumed that the direct impact on labor income was \$23 million, not the \$29 million the FEIS asserted. See Table 3 in Gebert n.d. [2011]

The USFS in its Rosemont FEIS clearly does not understand its own economist’s work and, as a result has not made use of the insights provided by her analysis. As a result the FEIS continues to misuse the Rosemont-funded Applied Economics analysis and continues to significantly exaggerate the positive economic impacts of proposed mine. If the new socioeconomic analysis contained in the FEIS had been circulated as part of a supplemental DEIS and public comment solicited, these USFS FEIS errors could have been avoided.

5. Suggested Remedy: Withdraw the current FEIS, release a supplemental DEIS, and seek public comment before proceeding with the FEIS process and a decision on the Rosemont Mine. This will allow the USFS to prepare a professional and reliable socioeconomic section that will not mislead or confuse USFS decision-makers as they rule on the proposed Rosemont Mine.

1. **Issue: Socioeconomic Impacts:** Exaggerating positive economic impacts of the Rosemont Mine by ignoring the volatility and variability copper mining jobs, income, and revenues to governments.

2. Coalition Comments:

“The DEIS explicitly assumed that “[e]mployment and output projections [for the Rosemont Mine] will not fluctuate over the life of the project.” (p. 704) This is a counter-factual assumption. Throughout the history of copper mining in Arizona and the United States copper mine production and employment have fluctuated substantially over periods as short as ten years or less. This DEIS assumption explicitly assumed away one of the primary economic costs associated with metal mining, the instability and disruption it brings to local employment and payroll. The net result, again, is to exaggerate the local economic benefits by assuming they will be more stable than can reasonably be expected and, as a result, higher levels of employment and payroll over time.” (p. 104-105)

“If the exaggerations associated with the DEIS’s modeling of the economic impacts of the Rosemont Mine are eliminated and the instability in copper mining production and employment are taken into account, the positive economic impacts associated with the proposed mine would be only a quarter to a third of what the DEIS projects.” (p.106)

3. **USFS Response in FEIS:** “It should also be noted that the mining industry, like many industries, is affected by market forces such as supply, demand, and the rising and falling prices of mineral commodities. Thus, the estimated number of jobs created by the proposed mine may fluctuate as a result of changes in the market.” (FEIS p. 1103)

4. Objections:

This USFS response ignores the fact that metal mining is much more volatile than most industries in the U.S. economy. Obviously *all* market-oriented economic activities are subject to the forces of supply and demand and face market prices that change over time. But metal mining has been recognized for over a 150 years as more volatile than most other industries. The phrases “boom and bust” and “ghost towns” did not emerge to characterize clothing, restaurants, retail banking, education, government, or most other types of economic activity. Especially in the Western United States and Arizona, metal mining, or more particularly, copper mining, has been associated with very dramatically fluctuating levels of production, employment, payrolls, and payments to governments.

The Coalition Comments on the DEIS included Appendix D.ii. “Power Comments on DEIS,” which discussed the “Instability of the Economic Impacts of Copper Mining” (pp. 37-40). The USFS in its DEIS simply ignored the dramatic, destabilizing, impacts that fluctuations in world metal prices have on employment, payroll, and mining revenues to governments. That instability is a widely recognized characteristic of metal mining that has plagued Arizona’s copper towns, like all other metal mining communities across the U.S., for over a century.

It is completely misleading for the USFS to respond to these concerns about what the **actual** employment, payroll, and payments from the Rosemont Copper Mine would be as opposed to what the Rosemont Mine hopes they will be by saying that metal mining is just like many other economic activities which are subject to market fluctuations. The USFS’s FEIS simply projects the Rosemont Mine’s hopes of relatively stable employment, payroll, and payments to governments. But there is no reason, given past and relatively recent history, to believe that that is what will actually happen. The USFS has purposely turned a blind eye to one of the most important characteristics of metal mining in general and copper mining in particular, namely its inherent volatility that has plagued Arizona’s copper towns in the past, including the recent past. That volatility and instability are the primary explanation for the relatively rundown character of Arizona’s copper towns and the area surrounding them.

The USFS presentation of employment, payroll, and payments to governments being stable over two decades or more defies present and past behavior in the copper industry. There is no excuse for this misleading characterization and it certainly should not be included in a document intended to accurately inform public decision makers..

5. **Suggested Remedy:** The socioeconomic section of the FEIS should be rewritten as a Supplemental DEIS which includes how the expected instability in the operation of the Rosemont Mine would impact employment, payrolls, and payments to governments. The impact of this instability on local communities should also be discussed. This will allow the USFS to prepare a professional and reliable socioeconomic section that will not mislead or confuse USFS decision-makers as they rule on the proposed Rosemont Mine.

1. **Issue: Socioeconomic Impacts:** The size of the existing recreation and tourist economy in the Rosemont Mine study area.

2. **Coalition Comments:**

“The DEIS understated the size of the visitor economy that could be negatively impacted by degrading the landscape amenities in the Greater Tucson region by focusing primarily on:

- a small area in the immediate vicinity of the mine,
- people engaged in recreation on Coronado National Forest land,
- people engaged in active recreation as opposed to other types of visitors to the Greater Tucson area.” (p. 105)

3. **USFS Response in FEIS:**

In the FEIS the USFS incorporated new analysis of the “Tourism and Recreation-related Economy” carried out by BBC Research & Consulting. That BBC analysis was part of Chapter II of the BBC 2013 report for the Coronado National Forest. The new material on Recreation and Tourism that was added to the “Affected Environment” section is found in pages 1083-1092 of the FEIS.

“Information resulting from the BBC Research and Consulting review is described throughout the document, in both “Affected Environment” (see “Recreation and Tourism”) and “Environmental Consequences...” (FEIS, p. 1053)

4. **Objections:**

Although the comment period on the FEIS did not allow the time necessary to analyze the USFS's new socioeconomic analyses including the appropriateness of the application of the economic literature, the reliability of the data, and the accuracy of the calculations, we have identified serious general conceptual problems with those analyses that indicate that they cannot be relied upon in making a decision on the propose Rosemont Mine.

The FEIS describes the existing socioeconomic setting under the subtitle of “Affected Environment” (pp. 1063-1097) in the first part of the FEIS section on “Socioeconomics and Environmental Justice.” In that section it discusses the economy of and economic conditions in a three-county study area (Pima, Santa Cruz, and Cochise Counties). For instance, the FEIS discusses “Employment” across the study area including “Mine Related Employment,” quantifying all of the mining employment in Arizona as well as in the three counties. It does not limit the discussion to mining activities on USFS land.

But in the section that immediately follows where “Tourism and Recreation Related Employment” are discussed, the FEIS focuses **only** on recreation **on USFS lands**. The USFS in the FEIS downplays the economic role of that recreation activity on Coronado National Forest land. It estimates the employment impacts of people recreating on all Coronado National Forest land are about 800 jobs. That, the FEIS points out, is only 0.15 percent of total jobs in the three-county study area. This leads the USFS in the FEIS to conclude that: “Although recreation activities specific to the Coronado National Forest contribute to the local economy in terms of employment, they do not account for substantial employment numbers in the three-county analysis area. (FEIS pp. 1072-1075, Table 213)

After making this statement, the FEIS returns to a discussion of the “Income Characteristics” across the entire study area, not just economic activity on USFS land. But when the FEIS turns back to “Recreation Related Labor Income,” it again includes **only** income associated with recreation **on USFS lands**. (FEIS pp. 1072-1076) The FEIS then turns back to describing “Economic Output by Industry” across all of the

industries in the existing economy without limiting the attention only to economic activity associated with USFS land.

This focus only on Coronado National Forest lands when discussing all recreation and tourism that is taking place across the entire three-county study area, directly suggests that recreation and tourism make a relatively trivial contribution to the Greater Tucson Area economy. This is startling given that the USFS's recreation and tourism consultant for the FEIS reports that: "According to a 2011 report by Dean Runyan Associates, **the travel industry is the top export-oriented industry** in the state in terms of Gross Domestic Product." (BBC 2013, p. II-1)

The FEIS returns to "Recreation and Tourism" on page 1083 where it finally points out that in the three-county study area there were 6.8 million visitors who spent \$2.6 billion and directly supported more than 27,000 jobs in 2010. That represented about 5 percent of total jobs and 1.6 percent of total economic output. That is a dramatic shift from the earlier emphasis on just recreation on the Coronado National Forest.

The FEIS attempts to estimate the percentage of these visitors who are focused on outdoor recreation, natural areas, touring, etc., what the FEIS calls "nature-based tourism. The USFS includes visitors who primarily were there to engage in outdoor recreation and touring and a small part of the residual "other" category. About 25 percent of visitors to the three-county Rosemont Mine study area were assumed to be such "nature-based" visitors. That led to an estimated 1.7 million overnight visitors, \$684 million in direct spending, and about 7,000 direct jobs attributable to nature-based tourism in the three-county study area. (FEIS p. 1086) That, too, is relatively large compared to the earlier FEIS estimate of the employment associated with recreation on the Coronado National Forest, i.e. the Coronado National Forest recreation-related jobs were only about 11.6 percent of all employment associated with nature-based visitors in the three-county Rosemont Mine study area.

Finally, the FEIS drops its focus from the whole study area to just the Patagonia Census County Division (approximately the northeast half of Santa Cruz County). In this geographic area the number of jobs associated with nature-based visitors falls to 183 from the 7,000 in the three-county study area, 97 percent of the potential nature-based visitor jobs disappear. (FEIS Table 225, p. 1087)

The FEIS continues the pattern from the DEIS of dramatically understating the size of the visitor-related economy that that would be damaged by the industrialization of a significant part of the natural landscape and scenic highways in the Greater Tucson Area. This confused understatement of the relative importance of one of the region's most important industries, seriously distorts the information being provided to public decision-makers.

5. Suggested Remedy: The new socioeconomic analysis should be made part of a Supplemental DEIS and an adequate public review and comment period should be established. This will allow the USFS to correct, among other things, the confused and misleading discussion of the role that the natural landscapes associated with protected lands play in the existing economy of the region surrounding the proposed Rosemont Mine. Only after that should the FEIS process begin again. This will allow the USFS to prepare a professional and reliable socioeconomic section that will not mislead or confuse USFS decision-makers as they rule on the proposed Rosemont Mine.

1. Issue: Socioeconomic Impacts: Minimizing the negative economic impact of the Rosemont Mine on the visitor economy, nature-based recreation, and amenity-supported economic vitality by limiting its analysis to only part of the economic connections associated with high quality natural landscapes.

2. Coalition Comments:

“The DEIS understated the size of the visitor economy that could be negatively impacted by degrading the landscape amenities in the Greater Tucson region by focusing primarily on:

- a small area in the immediate vicinity of the mine,
- people engaged in recreation on Coronado National Forest land,
- people engaged in active recreation as opposed to other types of visitors to the Greater Tucson area.” (p. 105)

“The DEIS dismisses the negative impacts of the mine on the visitor economy and amenity-supported economic development as “not substantial” (p. 736) or “negligible” (pp. 718 and 745). At the same time it characterizes the positive local economic impacts of the mine as “quite modest” (p. 740). The DEIS, however, never places the “quite modest” positive economic impacts in the same context as the “not substantial” negative economic impacts to determine the extent to which one might cancel out the other. The result is that the DEIS emphasizes and, in the process, exaggerates the positive economic impacts despite their small size relative to the overall economy.” (p. 105)

3. USFS Response in FEIS:

In the FEIS the USFS added the results of new analysis of the impacts of the Rosemont Mine on that visitor economy. The USFS hired BBC Research and Consulting to carry out that analysis. One of the topics covered by this new analysis was “Recreation and Tourism.” (FEIS p. 1053) The new analysis of the potential impact of the Rosemont Mine on Recreation and Tourism that had not been presented in the DEIS is found on FEIS pages 1109 to 1113.

4. Objections:

This new analysis was not available to the public for review before the FEIS was published. Although the FEIS schedule has not allowed the Coalition (or any other parties) to analyze the reliability of the methods, data, and calculations of that BBC study, it is clear that it is seriously flawed conceptually.

This new USFS analysis for the FEIS adopts the long discredited “beauty strip” approach to environmental damage. Decades ago the USFS and other forest management agencies responded to public concerns about the clear-cutting of almost all trees from large tracts of forest land by shielding those clear-cuts from view. Along heavily used roads, strips of forest several hundred feet deep were left on either side of the road so that travelers along those roads could not see the clear-cuts. In more varied terrain, landscape architects were employed to shape the clear-cuts so that they could not be seen from many vantage points. The concept behind this effort to screen or hide what was actually being done to the land was that the public concern was not with what was actually being done to the natural landscapes but an ascetic concern about the ugliness of the clear-cuts if one happened to see them. If the degradation of the natural systems could be hidden from view, it was assumed the perceived environmental damage would be eliminated. Hence the reference to the “beauty strips” that hid the actual damage being done to natural systems.

In the new material added to the FEIS without public review, the USFS assumes that as long as the mine site cannot be seen from various locations surrounding the Rosemont Mine, there is no degradation in the experience of nature-oriented visitors and recreationists. For example, the FEIS points out that although

the Rosemont Mine will be visible from portions of highway SR 83 (between 3.4 and 4.9 miles of that road) only about half of the traffic from the Tucson area uses this Scenic Highway route to the Sonoita, Patagonia, and Elgin areas. The other half of visitors arrive in these towns using Highway 82 from which the mine is not visible. In addition, the FEIS points out that the mine is not visible from these communities. (FEIS p. 1110) From this, the USFS concludes that nature-based travel and recreation will not be degraded for the half of travelers to this region who do not see the mine on the way to these destinations.

The USFS does conclude from the new studies it cites “that a perceived degradation of the scenic quality of the landscape may result in a 15 to 50 percent net reduction in tourist visits and corresponding tourist spending.” (FEIS p. 1110) But, apparently, the industrialization of the landscape that is not visible to travelers has no impact on the attractiveness of that place to visitors. The USFS appears to believe that noxious facilities and degraded landscapes can be plentiful in an area (e.g. sewage disposal plants, industrial livestock facilities and slaughter houses, sprawling landfills, huge open pit mines and waste dumps, etc.) as long as they are carefully shielded from view. If they are shielded from view, such facilities will have no impact on the attractiveness of the region to visitors and potential residents and businesses. This is a trivialization of environmental concerns, treating them as simply aesthetic visual concerns with no underlying ecological, social, or cultural impacts.

This same approach is taken by the USFS in the FEIS in analyzing the impact that the Rosemont Mine would have on the Greater Tucson Area nature-based tourism. The USFS estimates that there may be 6,800 jobs associated with that nature-based tourism. The FEIS, however, proceeds to dismiss any significant threat to this significant local industry, concluding that only 14 to 46 of these jobs, would be threatened by the Rosemont Mine (FEIS Table 233, pp. 1112-1113).

The USFS arrives at this trivial impact of the Rosemont Mine on nature-based tourism by using the following assumptions:

- i. Only active recreation on public lands would be affected by the Rosemont Mine. Other types of nature-based recreation can be ignored since they will not be affected.
- ii. Only recreation on lands from which the mine and its waste piles are visible would be impacted.
- iii. Even on lands where the mine and waste dumps were visible, the impact in terms of the degraded value of the recreation would decrease with distance from the mine. (FEIS, pp. 1111-1112)

This allowed the USFS to reduce the nature-based tourism jobs at risk from 6,828 to 14 to 64 jobs. The tool used by the USFS for this trivialization of damage to natural landscape in the Greater Tucson area was the “beauty strip” assumption extended to its extreme. If residents and visitors do not see the open pit and waste dumps **up close** they do not care about the damage that has been done to the natural landscapes. “Out of sight, out of mind” apparently is the “scientific principle” that the USFS is adopting in its management of public lands.

5. Suggested Remedy: The USFS should withdraw the FEIS and issue its new socioeconomic analysis in a Supplemental DEIS on which the public can comment and correct errors and misinterpretations found in the extensive new material the USFS incorporated in the FEIS for the first time. This will allow the USFS to prepare a professional and reliable socioeconomic section that will not mislead or confuse USFS decision-makers as they rule on the proposed Rosemont Mine.

1. Issue: Socioeconomic Impacts: The impact of degraded natural landscapes on the attractiveness of the Greater Tucson Area to new residents and businesses.

2. Coalition Comments:

“The DEIS ignores the fact that the negative economic impacts of the Rosemont Mine do not have to actually reduce the employment or payroll associated with the visitor economy or amenity-supported in-migration of people and businesses. Very small reductions in the growth of these sources of local economic vitality because the natural landscape amenities in the Greater Tucson area have been degraded and it is not as attractive a place to live, work, and do business as it had been, can have negative economic impacts over time that are larger than the positive economic impacts associated with the proposed mine.” (p. 105)

3. USFS Response in FEIS: The USFS acknowledges that degradation of the natural landscapes surrounding the Greater Tucson Area could undermine the long term effort there to maintain and enhance local community vitality and well-being by protecting increasing amounts of the surrounding natural landscapes.

“As previously discussed, residents and area communities have physical and emotional connections to lands on the Coronado National Forest and other public lands. People value proximity and access to the forest because of the recreation opportunities and natural amenities, which enhance overall quality of life. Approximately 63 percent of the lands that surround the Tucson metropolitan area are public lands, and it is these lands that provide a foundation for the area’s recreation and visitor economy and shape how local residents identify with the landscape. The public investment in the public lands that define the area is currently valued at \$2.3 billion (Power 2010). Changes to the public lands that attract visitors and provide for an attractive quality of life for local residents would have the potential to decrease the public investment value of the lands as well as the sense of place that these public lands provide to residents and visitors”. (FEIS p. 1117)

“People are drawn to the region to live, work, and play because of the region’s natural amenities; a real or perceived decline in local environmental quality would likely impact community values and well-being. Thus, construction activities, as discussed above in the “Community Values and Social Trends” part of this resource section, would likely result in a negative impact to the social benefits people derive from the Coronado National Forest’s natural amenities.

Similarly, operation of the mine, as discussed above in the “Community Values and Social Trends” part of this resource section, would likely result in a negative impact to the social benefits people derive from the forest’s natural amenities. The industrial nature of the long-term operation may adversely impact those residents of, and visitors to, the area who have previously identified with the area as an undeveloped, rural landscape. Those members of the community who have an adverse reaction to a change in their perceived quality of life may choose to move from the area. People who are seeking to relocate to a rural community, such as Sonoita or Elgin, may not be attracted to the area and could choose to live elsewhere.

The proposed Rosemont Copper Mine would have a footprint ranging from 6,073 to 8,889 acres, most of which would be on publicly owned land primarily in the Coronado National Forest. This loss of federally owned land available for public use and recreation could adversely impact amenity migration to the area. Whether or not there could be further negative impacts to amenity migration because these lands are not only being lost to public use and recreation but also converted into a surface mine, cannot be determined, based on a 2011 Forest Service analysis (Cordell et al. 2011).” (FEIS p. 1119)

The USFS in the FEIS analyzes the impact on the Rosemont Mine on the attractiveness of the Greater Tucson Area to in-migrating families and businesses by assuming that that in-migration is proportional to

the amount of public land in the region available for “public use and recreation.” The USFS estimates what the “footprint” of the Rosemont Copper Mine would be in terms of acres of public land. This acreage of public land is assumed cease to be available for public use. That “lost acreage of public lands” was then entered into a model developed in a 2011 USFS study (Cordell et al. 2011). That study found a positive correlation between the per capita public land available in a region and the rate of in-migration of new residents. Since the Rosemont Mine would *reduce* the amount of public land, the FEIS using that model projected that the mine would have a negative impact on in-migration to Santa Cruz County. Under the USFS preferred alternative, in-migration would fall by 43 persons a year. This would represent a 0.09 percent decline in Santa Cruz County population. (FEIS Table 235, p. 1120) That model was not applied to Pima County by the USFS in the FEIS because the model was developed for rural (non-metropolitan) counties and Pima County is a Metropolitan Area and Pima and Santa Cruz Counties are a Combined Statistical Area.

As the USFS put it in the FEIS: “Although the Forest Service model cannot be applied to Pima County, which is considered a metropolitan county, impacts anticipated on amenity migration to the greater Tucson area are expected to be negligible. In general, the economies of metropolitan areas are more dynamic and factors influencing domestic net migration more varied than in rural counties. Even if the analysis considered an application of the Forest Service model to Pima County, the impacts would likely be limited: the public land variable is measured as acres per capita, so the impact to Pima County (population 980,263) would be much smaller than the impact to Santa Cruz County; Pima County would lose a small portion of forest and/or rangeland as a result of the mine footprint, but this impact would also be small, relative to the overall population.” (FEIS p. 1122)

The FEIS also points out that the model used to calculate these impacts of the Rosemont mine on the attractiveness of the region to potential in-migrants was not “specific to southern Arizona, nor was it specifically designed to address land use changes from recreation to mining.” (FEIS p. 1122)

The FEIS explains the latter statement about the model not being designed to deal with changes from recreation to mining by saying “Whether or not there could be further negative impacts to amenity migration because these lands are not only being lost to public use and recreation but also converted into a surface mine, cannot be determined, based on a 2011 Forest Service analysis (Cordell et al. 2011).” (FEIS p. 1119)

4. Objections:

Although the comment period on the FEIS did not allow the time necessary to analyze the USFS’s new socioeconomic analyses including the appropriateness of the application of the economic literature, the reliability of the data, and the accuracy of the calculations, we have identified serious general conceptual problems with those analyses that indicate that they cannot be relied upon in making a decision on the proposed Rosemont Mine.

As the USFS points out in the FEIS, the model that the USFS used to estimate the impact of the degraded natural landscape on in-migration that is tied to the pursuit of perceived higher quality of life cannot deal with dramatic changes in land use. That model, at best, can only deal with changes in the amount of land in a region that is in the public domain. If the USFS were to take ownership of land that previously was not in the public domain or some of the land now in the public domain were to “disappear,” the model used in the FEIS might be able to suggest impacts on in-migration. Building and operating a large open pit copper mine with its massive array of waste piles is not like adding to or subtracting from a small number of the total number of acres of land in the public domain. In that sense, as the USFS admits, this is not an appropriate model to be used to evaluate the impact of degraded natural landscapes on the attractiveness of a region to amenity-seeking in-migrants. In fact this is a trivialization of the role that the protected natural landscapes surrounding the Greater Tucson Area plays in maintaining and protecting the quality of life in the region and the contribution that quality of life makes to maintaining the economic vitality of the region and the economic well-being of its residents. The USFS FEIS approach to

this issue is grossly inadequate to the task and should not be relied on in informing any decision with respect to the proposed Rosemont Mine.

In addition, by adopting an approach to this question that categorically excludes bulk of the population of the study area, the Tucson Metropolitan Area, the USFS FEIS turned its back on the population most impacted by the proposed Rosemont Mine. Government agencies in the Greater Tucson Area have put major effort and resources into protecting the unique natural landscapes surrounding this urban area. The Rosemont Mine undermines those efforts and threatens one of the major regional public policies aimed at maintaining and enhancing local economic vitality and well-being.

The importance of protecting local natural landscapes and systems in order to protect local economic vitality and well-being is widely recognized. For instance, the governments of the State of Montana, the Province of British Columbia, the U.S. Federal Government, and the Canadian Federal Government are working to protect the North Fork of the Flathead River that is on the western border of Glacier National Park in the United States but flows out of British Columbia. The North Fork region is known to contain coal and other energy resources. Yet there is wide agreement among governments and citizens that developing those coal resources in this region adjacent to many protected areas and a major wilderness river would not be wise from an economic or environmental point of view. The debate over uranium mining on lands adjacent to the Grand Canyon is another example.

The USFS in the FEIS in effects converts the Rosemont Mine into an innocuous and relatively tiny change in the amount of acreage of protected lands adjacent to Santa Cruz County. Although that allows it to calculate trivial impacts, that result flows from the initial assumption that a large open pit copper mine is a minor modification of the natural landscape. The analysis used by the USFS was built around a false premise and a grossly inappropriate model on which USFS decision-makers cannot safely rely.

5. Suggested Remedy: This new USFS modeling effort to measure part of the negative economic impact of the proposed Rosemont Mine should have been circulated as part of a Supplemental DEIS so that the public could have reviewed it. The USFS also has to develop a more professional and serious approach to evaluating the impacts of degraded natural landscapes on local economic vitality and well-being before proceeding to make a decision on the proposed Rosemont Mine.

1. **Issue: Socioeconomic Impacts:** The impact of the Rosemont Mine on property values.

2. **Coalition Comments:**

The primary conclusion that follows from this review of the DEIS socioeconomic analysis is that it systematically exaggerates the economic benefits while just as systematically dismissing or ignoring the economic costs of the Rosemont Mine. As a result of a series of errors in economic analysis, the DEIS describes the Rosemont proposal as having large economic benefits but no or negligible economic costs. Those economic errors include: Ignoring the economic role that the landscape amenities of the Greater Tucson area play in supporting local economic wellbeing and vitality. (p. 103-104)

3. **USFS Response in FEIS:**

The USFS in the FEIS recognized the Rosemont Mine, as an industrial facility that dramatically changed the natural landscape with its open pit and massive waste piles and intensive use of the existing scenic highway as a haul road, could damage the attractiveness of the region surrounding the mine as a place to live and/or operate a business. One way to measure the damage done to local amenities and economic well-being is to study the impact of noxious facilities on property values. As the USFS stated in the FEIS:

“Measuring the **social costs** of mining is challenging because of the absence of quantitative values for **social conditions**. Estimating changes in property values is one approach to measuring **social changes**, as it reflects changes in structural attributes of homes and neighborhood quality. To date, there has been limited research completed on open-pit mining operations, especially in the southwestern United States. In order to assess potential impacts to property values, other open-pit mining studies and reported impacts from industrial sites (such as demolition dumps, waste sites, hazardous manufacturing facilities, freight facilities, etc.), landfills, and large-scale feed operations are discussed in the analysis of the proposed mine’s potential impacts.”(FEIS p. 1105, emphasis added)

“Although the empirical literature includes many hedonic valuation studies spanning the past several decades, very few studies have focused specifically on the impact of surface mining on surrounding property values. The previous hedonic property value study most relevant to the proposed Rosemont Copper Mine is a 1996 analysis based on the traditional approach of evaluating the sales values of individual properties. “Air Quality and View Degradations due to Copper Mining and Milling: Preliminary Analysis and Cost Estimates for Green Valley, Arizona” (Green Valley study) was published in “Nonrenewable Resources” in 1996 (Kim and Harris 1996). For the purposes of evaluating the potential effects of the Rosemont Copper Mine on nearby property values, there are several advantages in using the information from the Green Valley study. The study focuses specifically on property value effects associated with copper mining and is based on another community in Pima County, on the other side of the Santa Rita Mountains.” (FEIS p. 1105)

The USFS in the FEIS used this Green Valley study to estimate the potential impact of the Rosemont Mine on property values in the vicinity of the mine. It concluded that:

“In aggregate, the best estimate based on available information is that development of the mine would reduce the value of privately owned properties within 5 miles by approximately \$3.2 million, or a little less than 5 percent of their current value. Properties within 1 mile would be the most affected (11 percent decrease in value), followed by those between 1 and 2 miles of the mine (9 percent decrease in value).” (FEIS p. 1107, Table 230)

4. **Objections:**

Although the comment period on the FEIS did not allow the time necessary to analyze the USFS's new socioeconomic analyses including the appropriateness of the application of the economic literature, the reliability of the data, and the accuracy of the calculations, we have identified serious general conceptual problems with those analyses that indicate that they cannot be relied upon in making a decision on the proposed Rosemont Mine.

First of all, note that the USFS in this part of the FEIS does not characterize the study of changes in property values as a study of **economic** impacts. It characterizes the impacts as "social." This is another example of the USFS and the FEIS ignoring or denying the economic impacts associated with degradations in natural landscapes.

Second, the USFS in the FEIS makes abundantly clear that the study that it used to estimate the impact of the Rosemont Mine on property values **was not reliable for this purpose** for many reasons. To quote the FEIS and its supporting consultants' report:

- "One important limitation of the Green Valley study is that the analysis was based on real-estate transactions over a relatively short (4-month) period. Only 20 properties in Green Valley were sold during that period, resulting in an unusually small sample for a hedonic property value study." (FEIS, p. 1105)
- "The Green Valley study is now more than 15 years old, and the typical values of residential property in Green Valley may be quite different from typical property values in proximity to the proposed Rosemont Copper Mine." (FEIS, p. 1105)
- "The Green Valley study found that both dust pollution and viewshed degradation decreased property values "significantly." More specifically, the impact of dust pollution on property values was determined to be greater than that caused by viewshed degradation." (FEIS, p. 1106)
- The Green Valley situation was totally different from that presented by the proposed Rosemont Mine. In the Green Valley a retirement community was located adjacent waste piles. Homes were located so close to the waste piles that the waste piles towered over the homes often completely obscuring the view from the house. In addition wind carried dust from the waste piles some distance to neighboring properties. The "view shed degradation" was not the view of the open pit mine but the blocking of any view from backyards due to the waste piles towering over the homes. (Kim and Harris 1996; BBC Research and Consulting 2013)
- "Applying the Green Valley study relationships between distance from the mine and property values may somewhat understate the potential effects of the Rosemont mine on property values. In addition to the distance variable, the Green Valley study also incorporated a variable to examine the additional effects on property values for homes that faced the tailings bank. This variable, also statistically significant, indicated an additional reduction in property values for properties that did face the tailings banks compared with those that faced east, away from the tailings. Overall, the magnitude of this effect was relatively small compared to the distance variable (about one-third of the distance effect in scale). However, given the limited information in the Green Valley study publication and absent access to the original data, we cannot reliably transfer this effect to potentially impacted properties in proximity to the proposed Rosemont mine." (BBC Research and Consulting, 2013, p. IV-4) That is, **only part** of the negative impact measured by the Green Valley study was applied in the application of this inappropriate study to the Rosemont Mine impacts.
- "The Green Valley study does not provide any information regarding effects on the values of more distant properties. This does not rule out the possibility that values of properties farther from the mine, such as homes or ranches in the Sonoita or Patagonia areas, could also be affected if the proposed mine is developed. The potential reduction in amenity-based migration, discussed previously in this resource section, would tend to reduce demand for housing in the area. That effect could, however, potentially be offset by new demand for housing from workers associated with the proposed mine, since an indefinite number of employees may relocate to the area." (FEIS, p. 1107) The last sentence in this FEIS paragraph was previously contradicted by the FEIS in its projections that all of the workers for the mine could be found among existing residents of the Greater Tucson Area and that there would be no significant increase in the demand for housing in the vicinity of the mine. "Operation of the project is expected to have very little impact

to the availability of housing because the number of workers needed for the operation of the mine and mill (average annual employment is 434 workers) and the resulting population changes (an estimated 0.08 percent increase in the population of Tucson and the Green Valley area if most or all employees relocated) would be far below the number of vacant housing units in Pima, Santa Cruz, and Cochise Counties (more than 60,000 units). Tucson alone had more than 24,000 vacant units (U.S. Census Bureau 2010g). As a result, there would be minimal demands on the local housing supply during the operational phase of the mine. In-migration would result in beneficial long-term impacts to the local housing supply; an increase in population would help offset local housing vacancies, which are estimated to range from 11.9 to 14.3 percent.” (FEIS p. 1101)

These statements by the USFS and its consultant make clear that the transfer of values and relationships from a study of air pollution problems and towering waste piles that dominated views from the backyards of homes in a retirement community could not be reliably applied to the Rosemont Mine and the much more dispersed rural settlement that surrounds it. In addition, the USFS in the FEIS limited any impact from the mine on property values to a five mile radius. The Green Valley study limited the impacts to a 10 mile radius. As cited above, the USFS recognized that its approach in the FEIS did not deal with the impact of the industrialization of this natural landscape, including the open pit, waste piles, congestion of scenic and other highways, night lighting, dust, sound, etc. on a much broader area surrounding the mine.

Because there were only a small number of privately-owned land parcels (576) not owned by Rosemont Copper within the five-mile radius around the mine and the estimated decline in value was so small (less than 5 percent on average), the conclusion the USFS reached in the FEIS was that the degradation in the value of natural landscape amenities due to the Rosemont Mine measured by the decline in property values was exceedingly small compared to the total value of land in the study area. Again, the USFS was able to conclude that the impact of the Rosemont Mine on the landscape values and quality of life in the region surrounding the proposed mine was trivially small.

Finally, the USFS lost its focus on what the property value study was seeking to estimate, namely the degradation in the value of the natural amenities or environmental services provided by the natural landscapes that the Rosemont Mine would degrade. In the end, the USFS in the FEIS used this information to calculate the property tax revenues that would be lost because of its calculation of a small reduction in the value of some property surrounding the Rosemont Mine. (FEIS p. 1108, Table 231) In fiscal year 2010/2011, Pima County collected about \$384 million in property taxes. (Pima County FY 2012/2013 Adopted Budget, p. 16-64) The USFS estimate of the decline in tax collections due to the Rosemont Mine was about \$44,000 or about one-hundredth of one percent. (FEIS, Table 231). That is an astoundingly trivial number.

The USFS acknowledges that the model it used to calculate these impacts was inappropriate and unreliable. The USFS was also clearly confused in this section of the FEIS: It lost track of what it was actually calculating and why. The result is a set of confused and misleading conclusions that should not be used in making any decision concerning the proposed Rosemont Mine.

5. Suggested Remedy: The new socioeconomic analysis circulated for the first time in the FEIS should be circulated as a Supplemental DEIS so that the public can review that analysis in detail and provide recommendations to the USFS to correct and improve the analysis before it is used by the USFS in making a decision on the Rosemont Mine. The FEIS process should be halted and a Supplemental DEIS process begun in its place. This will allow the USFS to prepare a professional and reliable socioeconomic section that will not mislead or confuse USFS decision-makers as they rule on the proposed Rosemont Mine.