

**Summary of Issues and Alternatives Development Meeting
Cooperating Agency and Interdisciplinary Team Meeting
Rosemont Copper Project EIS
Coronado National Forest
Meeting Agenda
May 13, 2009, 9:00 am - 4:30 pm**

Location: Coronado Supervisor's Office, 300 W. Congress, Tucson, AZ Room 4B

Attendees: See Sign-In Sheet

Goals: To provide an update to the cooperating agencies on the results of scoping, status of issue identification, and development of alternatives.

Agenda:

9:00 am – 12:00 pm

Scoping Summary

Presenter: Tom Furgason

Company: SWCA Environmental Consultants

Issue Identification Process

Presenter: Tom Furgason

Company: SWCA Environmental Consultants

Preliminary Issues to be tracked in the EIS

Presenter: Bev Everson

Agency: Coronado National Forest

Alternative Development in NEPA

Presenter: Matt Petersen

Company: SWCA Environmental Consultants

Purpose and Need and Decision Framework

Presenter: Teresa Ann Ciapusci

Agency: Coronado National Forest

1:00 pm – 4:30 pm

Alternative Responsive to Public Input

Presenter: Kathy Arnold

Company: Rosemont Copper Company

Workshop for Cooperating Agencies to assist in the development of alternatives

Facilitator: Matt Petersen

Company: SWCA Environmental Consultants

<u>Last Name</u>	<u>First Name</u>	<u>Company</u>
Kriegel	Debby	USFS
Sebesta	Deborah	USFS
Soroka	Geoff	SWCA
Jones	Larry	USFS
Farrell	Mary	USFS
Emmett	Tami	USFS
Ciapusci	Teresa Ann	USFS
Furgason	Tom	SWCA
Keyes	Walt	USFS
Gillespie	William	USFS
Ortman	Dale	SWCA
Henderson	Orlanthia	Town of Sahuarita
Moore	Daniel	USDI BLM
Elek	Art	USFS
Ellett	Kent	USFS
Davis	Sarah	USFS
Coyle	Charles	SWCA
Fyffe	Nicole	Pima County
Arnold	Kathy	Rosemont Copper Company
Jacobs	David	AZ State Lands Dept
Sejkora	Bob	AZ State Parks
Turner	Dennis	AZ Dept of Environmental Quality
Roth	Mindee	USFS
Marques	Joseph	Town of Sahuarita
Sturgess	Jamie	Rosemont Copper Company

Proposed Rosemont Copper Project ID Team Meeting Sign-In

Date 5/13/09 Alternatives

First Name	Last Name	Role	Initials
Alan	Belauskas	Noise	
Andrea	Campbell	NEPA Compliance/FOIA Officer	
Bev	Everson	ID Team Leader	
Bob	Lefevre	Air Resources, Clean Water Act	
Camille	Ensle	Presentation	
Cara	Bellavia	Social & Economic Environments	
Chris	LeBlanc	Heritage	
Dave	Morrow	Air Resources	
Deanne	Rietz	Hazardous Waste	
Debby	Kriegel	Light (Night Skies)	DIC
Deborah	Sebesta	Vegetation, Reclamation, Wildlife	Deborah
Eli	Curiel	Hazardous Waste, Mining	EC
Geoff	Soroka	Vegetation, Reclamation, Wildlife	MS
George	McKay	Access/Lands/Realty	
Glenn	Dunno	Data Management	
Harmony	Hall	External Communications	
Heidi	Orcutt-Gachiri	Tech Editing	
Heidi	Schewel	Media	
Janet	Jones	Admin Support	
Jeanine	Derby	Forest Supervisor	
Jeff	Connell	Social & Economic Environments	
Jennifer	Ruyle	Forest Planner	
Jerome	Hesse	Geology	
Joe	Ezzo	Heritage	
John	Able	Communications Team	
John	MacIvor	SWCA Project Leader	
Keith	Graves	Recreation, Social & Economic Env.	
Ken	Kertell	Wildlife Resources	
Kendall	Brown	Range	
Kendra	Bourgart	Team Admin Asst	
Kristen	Cox	Light (Night Skies)	
Lara	Mitchell	Data Management	
Larry	Jones	Wildlife Resources	✓
Marcie	Bidwell	Recreation	
Mary	Farrell	Heritage	✓ MAF
Melissa	Reichard	Team Admin Asst	
Ralph	Ellis	Transportation/Engineering	
Reta	Laford	Deputy Forest Supervisor	
Rion	Bowers	Clean Water Act Compliance	

Roxane
Salek
Shane
Suzanne
Tami
Teresa Ann
Tom
Tom
Walt
William

Raley
Shafiqullah
Lyman
Griset
Emmett
Ciapusci
Furgason
Skinner
Keyes
Gillespie

Mailing Database
Hydrologist, Hydrogeologist
Fire/Fuels
Heritage
Access/Lands/Realty
Ecosystem Management & Planning
SWCA Project Manager
Water Resources/Riparian
Transportation/Engineering
Heritage

DC
JAL 5/13/09
CF
JWK
WBU
F

D

CHAMAN SUZZA

Proposed Rosemont Copper Project ID Team Meeting
 Guest Sign- In

Date 5/13/09 Alternatives

First Name	Last Name	Company & Role
Oclanthis	Henderson	Town of Sahuarita
DANIEL	MOORE	BLM
Larry	Jones	USFS
ARIT	EIEK	USFS
Kent	Ellett	"
SARAH	DAVIS	USFS
WALT	KEYES	USFS
Charles	Cyke	SWCA
Kathy	Arnold	Rosemont
Nicole	Fyffe	Pima County
David	Jacobs	ASLD
DAVID	Pfandt	Town of Sahuarita
Bob Sykes	'	ASPB
Mary	Farrell	FS
Wittie	Citospio	CWA
DENNIS	TURNER	ADEQ
Mindee	Roth	USFS - Coconino NF
Joseph	Manquez	Town of Sahuarita
Sami	Shugart	Rosemont

Scoping Summary Rosemont Copper Project

May 13, 2009

Overview of Scoping

- Official period: March 13th, 2008 – July 14th, 2008
- 6 Open House Meetings

Tucson	March 18
Green Valley	March 19
Patagonia	March 20
Vail	April 5
Sahuarita	April 22
Elgin	April 23
- 3 Public Hearings

Elgin	May 12
Sahuarita	June 7
Tucson	June 30

Public Meetings

- Provided information packets, CD's, maps, applicable regulations and laws, proposed action, etc.
- Provided public the opportunity to gather information and provide comments verbally and written
- Interact with lead agency, proponent, 3rd party consultant

Types of Submittals

- Forest Service comment forms
- Unique letters (handwritten and typed)
- Emails
- Faxes
- Form letters
- Hearing comments (recorded on transcript by court reporter)
- Phone Hotline (recorded on transcript)

Methodology

1. Assigned a unique identifying number to each submittal (e.g. 1, 2, 3, etc.)
2. Identified pertinent individual comments *numerically* in order of appearance in submittal
3. Assigned individual comments to one of the *resource categories* (i.e. socioeconomics, water resources) and *sub categories*
 - Sub categories were developed based on the resource categories based on the subject matter contained in the comment.

Resource Category

- Two or three letters
- Example:
 - AQ = Air Quality
 - WR = Water Resources
- Analysis Team identified 31 Resource Categories

Resource Category

ALT	Alternatives	PHS	Public Health and Safety
AQ	Air Quality	PRP	Process and Procedure
CC	Climate Change	RCL	Reclamation
CUL	Cultural Resources	REC	Recreation
FIR	Fire Management	RIP	Riparian
FOI	FOIA Request	SOC	Socioeconomics
GRA	Livestock Grazing	SOL	Soils and Geology
HZ	Hazardous Waste	SSS	Special Status Species
JUS	Environmental Justice	TEC	Technical Feasibility
LGT	Light Pollution	TRA	Transportation and Access
LU	Land Use	VEG	Vegetation
MLO	Locatable Minerals	VRM	Visual Resource Management
NO	Noise	WL	Wildlife and Habitat
OTH	Other	WLD	Wilderness
OUT	Out of Scope	WR	Water Resources
PAL	Paleontology		

Sub Category

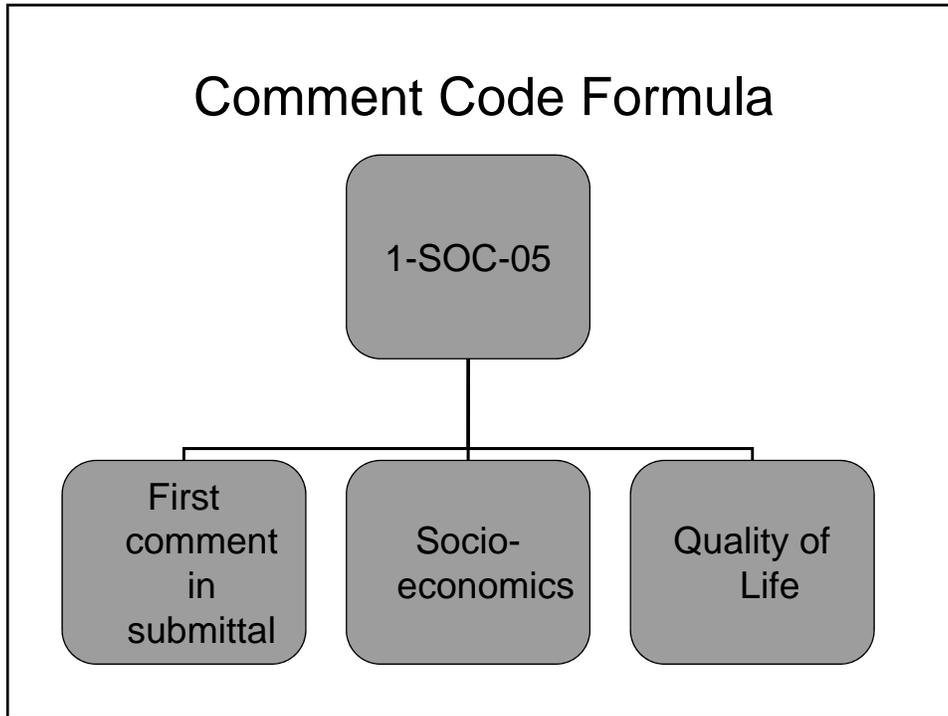
- 2 digit number
- Common Codes
 - 01 = general
 - 99 = cumulative impacts/effects
- 9 Resource Categories had more than the Common Codes

Sub Category

AQ	Air Quality	PRP	Process and Procedure
	01 general		01 general
	02 emissions		02 Scoping Meetings
	99 cumulative effects		03 NEPA process
			04 Cooperating Agencies
OTH	Other		05 Working Groups
	01 general		06 Regulations
	02 in opposition		07 Monitoring and Compliance
	03 in support		08 Trustworthiness
	04 Request copy of DEIS		09 Third Party Selection
			10 FL Plan Revision
		RCL	Reclamation
			01 general
			02 bonding
			99 cumulative effects

Sub Category

SOC	Socioeconomics	TRA	Transportation and Access
	01 general		01 general
	02 economy		02 increase in traffic volume
	03 tourism		03 scenic highway
	04 land value		04 road deterioration
	05 quality of life		99 cumulative effects
	06 jobs	WR	Water Resources
	99 cumulative effects		01 general
TEC	Technical Feasibility		02 aquifer quality
	01 general		03 aquifer quantity
	02 financial feasibility		04 surface water
			05 CAP recharge
			06 contamination/pollution
			07 stormwater runoff



Comment Codes

1-WR-03

2-WR-02

3-AQ-01

4-WR-06

5-TRA-01



YOUR COMMENTS ARE IMPORTANT!

RECEIVED MAR 18 2009

PUBLIC COMMENTS FOR THE PROPOSED ROSEMONT COPPER PROJECT ENVIRONMENTAL IMPACT STATEMENT

If you would like to make a comment or be added to our mailing list, please fill out this form and hand it to any of our staff or mail it to the address provided. You are also welcome to write a letter or send e-mail to: comments@uswestern.com or us@uswestern.com. Thank you!

COMMENT: I am primarily concerned about the design and implementation of a sustainable monitoring plan. Consider the following issues:

- (a) accuracy and reliability of mineralogical, biological, and other data resources underlying the proposed project in areas accessible to the project;
- (b) any quality specialists the consultant should employ (soils and vegetation) in particular to monitor for direct or indirect impacts on the project site and environs;
- (c) potential impacts and land use consequences, especially related to arsenic, lead, thiomyl, and uranium;
- (d) impacts of any road building activities to make the project site accessible.

NAME: Dr. Joel L. Fisher (my resume is attached)

EMAIL: phon - 520-625-9299

ADDRESS: 2665 E. Genevieve Way
Green Valley, AZ 85614

PLEASE ADD ME TO THE MAILING LIST (circle one): YES NO

Please be advised that comments and personal information associated with them, such as names and addresses, become the property of the U.S. Forest Service. If you do not wish to have your personal information be the property of the U.S. Forest Service, you may request that your comments be handled as confidential. If you do not wish to have your personal information be the property of the U.S. Forest Service, you may request that your comments be handled as confidential. If you do not wish to have your personal information be the property of the U.S. Forest Service, you may request that your comments be handled as confidential. If you do not wish to have your personal information be the property of the U.S. Forest Service, you may request that your comments be handled as confidential. If you do not wish to have your personal information be the property of the U.S. Forest Service, you may request that your comments be handled as confidential.

Red Flag Comments

- Politically sensitive comments – from any official
- Threats of harm to anyone in the FS, the proponent or 3rd party contractor, or anyone else for that matter
- Any FOIA requests
- Any proposals for new alternatives
- Any notice of appeals or litigation
- Any from a governmental agency or entity (federal, state, local)
- And finally, any “crazy or loony” ones, including religious ones.

Attachments to Comments

- Examples include photos, resumes, reports, maps
- Attachments were NOT coded
- Scanned as pdf document
- pdf file name is based on Record ID # and unique comment code.
- Saved all pdf documents in same folder to be linked to database

Comment Database

Microsoft Access - [Committer Contact Information]

Rosemont Copper Project EIS
Scoping Comments

Committer Contact Information

Submittal Type: **US Comment Form** [Edit] Record ID: **001**

Date Received: **3/18/2008** Find Record Number: [] [Search]

Commenter Type: **Individual** [Edit]

First Name: **Dr. Joel L.** Last Name: **Fisher**

2nd First Name: [] 2nd Last Name: []

Organization: [] Phone: []

Address: **2265 E. Genevieve Way**

City: **Green Valley** State: **AZ** Zip: **85614**

Email: [] Notes: []

Check here if contact information is to be kept private.
 Check here to add to mailing list.

[Previous] [Next] [Exit]

Record: **14** of 11093

Comment Database

Microsoft Access - [Comments]

Rosemont Copper Project EIS
Scoping Comments

Comments

001

Dr. Joel L. Fisher [Edit] [Lookup list]

2265 E. Genevieve Way
Green Valley AZ 85614 [Find] [Record number]

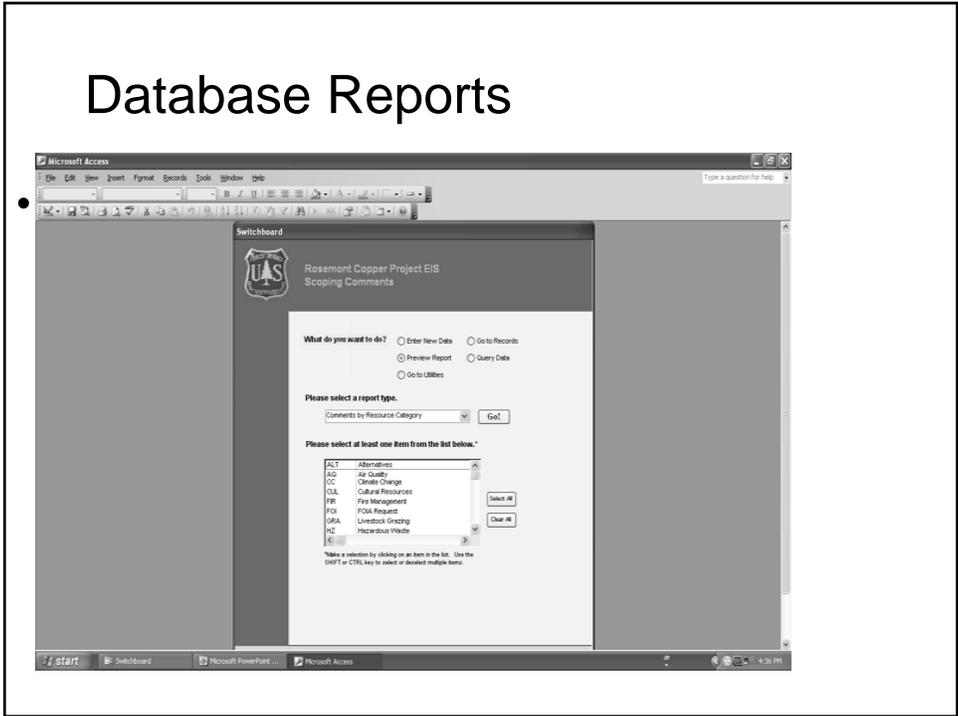
Comment	Comment Text	Category	Code
1	I am primarily concerned about the design and implementation of a suitable monitoring plan which addresses the quantity and quality (chemical mineralogical, biological, of any groundwater resources underlying the propose project or aquifers accessible to the project.	VIR	03
2	I am primarily concerned about the design and implementation of a suitable monitoring plan which addresses the quality (chemical mineralogical, biological) of any groundwater resources underlying the propose project or aquifers accessible to the project.	VIR	02

Attachment: Attachment File name: **f_1_VIR_03**

Attachment: Attachment File name: []

Record: **14** of 5
Record: **14** of 11093

Database Reports




Rosemont Copper Project EIS
 Scoping Comments

Comments by Resource Category

VEG Vegetation

ID 10559

Form Letter 16+

Comment	Comment Text	Category	Code
4	The impacts to the plants by mining operation is completely unacceptable.	VEG	01
<input type="checkbox"/> Attachment			
Attachment file name			
Mayrene Reichardt			
1	We have approximately 13 acres with 100- Oak trees of two varieties. Many of these Oaks have been here for a very long time and are very large trees. My questions are: When the water table drops, what assumptions do we have that these trees will not die? If this does happen, how does one place a value on these trees?	VEG	01
<input type="checkbox"/> Attachment			
Attachment file name			
Elizabeth Webb			
19	"Salvage and Transport MAY be considered" p11. Note: Tech I think salvage and transport of sensitive vegetation. MUST be required as part of the permit.	VEG	01
<input type="checkbox"/> Attachment			
Attachment file name			
20	Unless it is somewhere I have not seen it yet, I have not seen anything mentioned about noxious weeds and I know Buffle grass is on the list for the Santa Rita. Also, I thought that I am not sure there was an executive order for noxious weeds. I would like to request that an inquiry be performed on this.	VEG	01
<input type="checkbox"/> Attachment			
Attachment file name			
Mary Reperning			
6	coating the bridge with dust, affecting their photosynthesis and absorption of moisture, such as it is,	VEG	01
<input type="checkbox"/> Attachment			
Attachment file name			

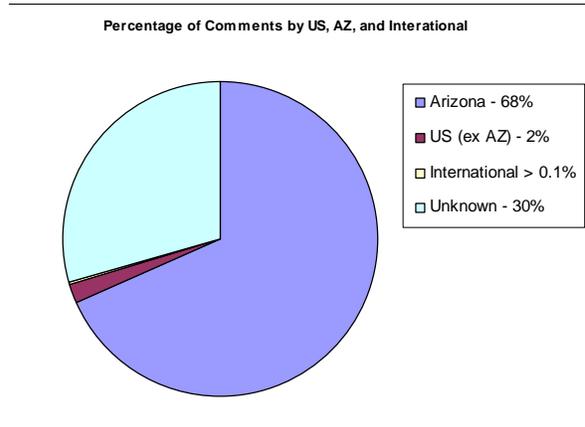
Monday, October 06, 2008 Page 1 of 26

Demographic Results

- Over 11,000 Submissions

- Submissions from 47 States plus the District of Columbia

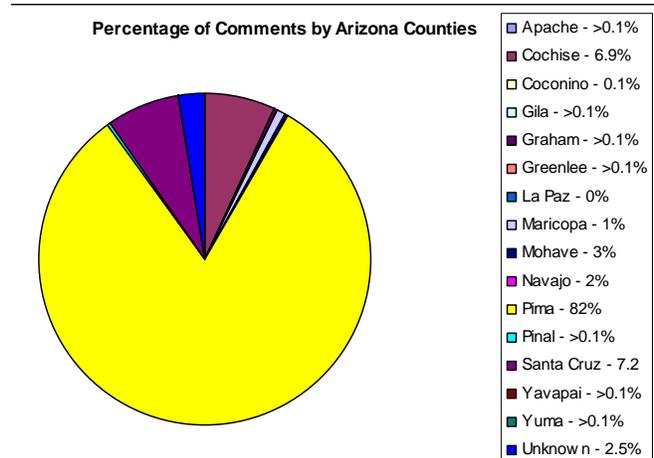
- Submissions from 11 foreign countries



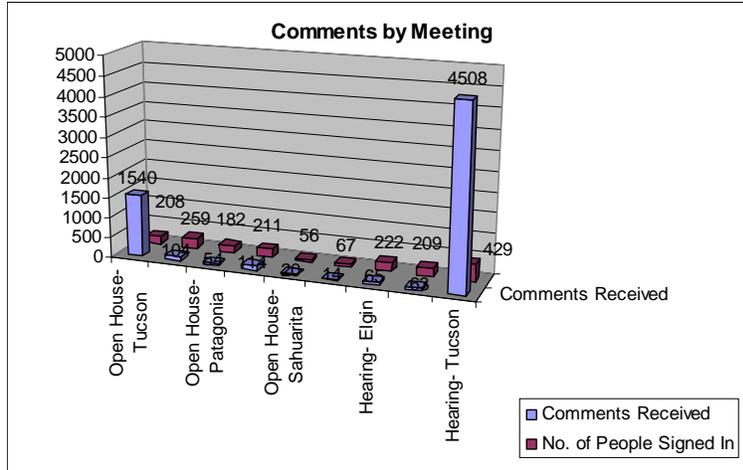
Demographic Results - Arizona

- Submissions from all counties except La Paz

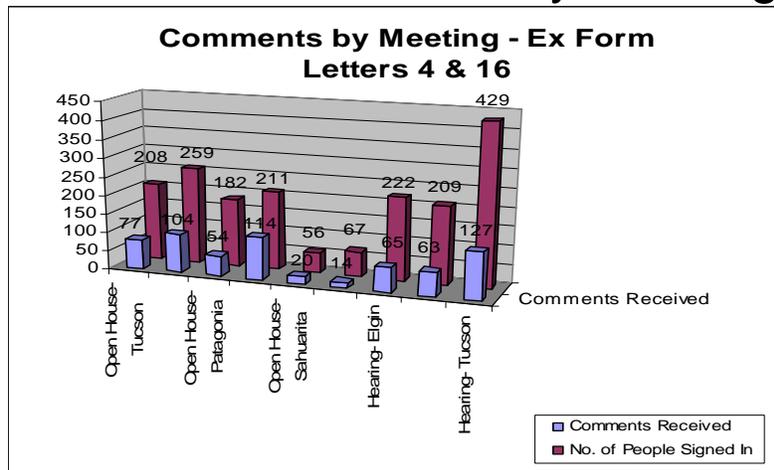
- About 96% of all comments from Arizona came from Pima, Cochise, and Santa Cruz Counties



Results - Comments by Meeting



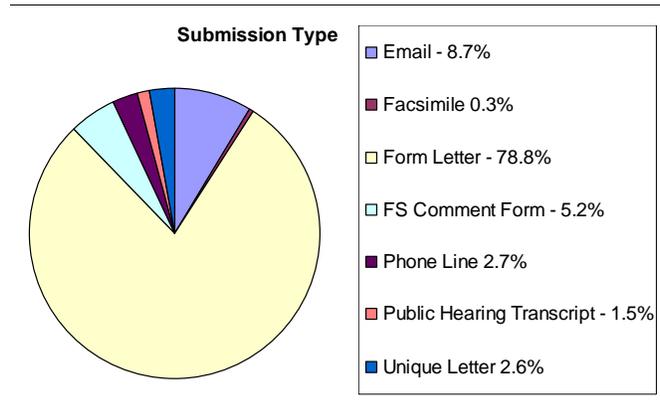
Results - Comments by Meeting



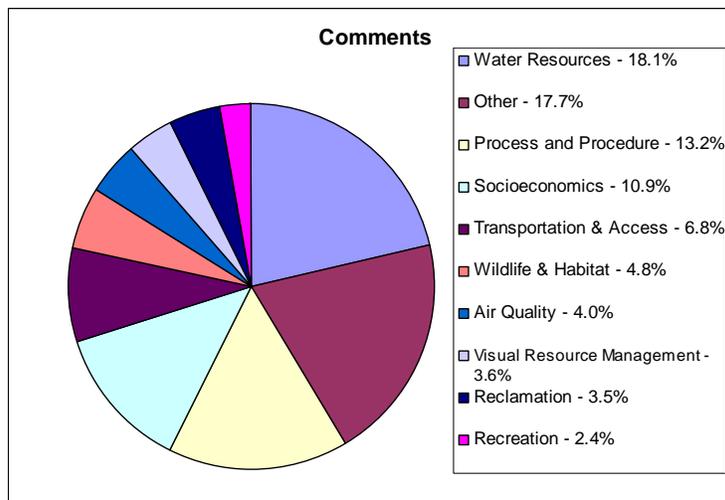
Results-Comments by Submission Type

- 25 unique form letters were received

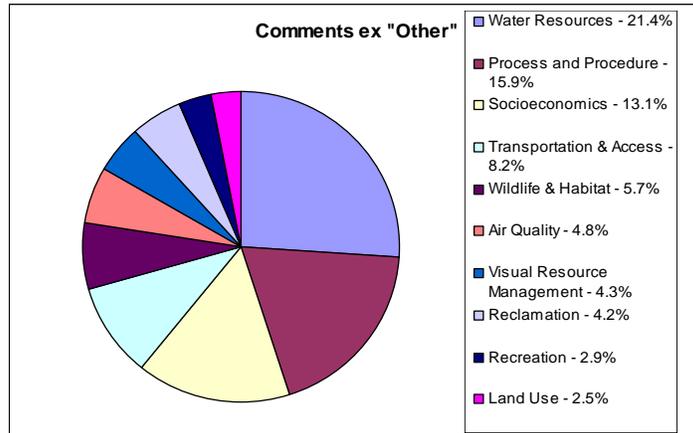
- Two form letters comprised 91% of the form letter volume



Comments by Resource Category



Comments by Resource Category



Results

- Over 11,000 comment submittals
- 1 to 150 comments per submittal
- 16,219 unique comments
- Satisfy NEPA requirements (40 C.F.R. 1501.7)
- Satisfy FS requirements (36 C.F.R. 220)

40 C.F.R. 1501.7

NEPA requirements 40 C.F.R. 1501.7

- **An early and open process** for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.
- As soon as practicable after its decision to prepare an environmental impact statement and before the scoping process the lead agency shall publish a **notice of intent** (Sec. 1508.22) **in the Federal Register**
- (a) As part of the scoping process the lead agency shall:
 - Invite the participation of affected Federal, State, and local agencies, any affected Indian tribe, the proponent of the action, and other interested persons (including those who might not be in accord with the action on environmental grounds)
- (b) As part of the scoping process the lead agency may:
 - Hold an **early scoping meeting or meetings** which may be integrated with any other early planning meeting the agency has. Such a scoping meeting will often be appropriate when the impacts of a particular action are confined to specific sites

Council on Environmental Quality Memorandum on Scoping

The regulations relating to scoping are very simple.

They state that "there shall be an early and open process for determining the scope of issues to be addressed" which "shall be termed scoping," but they lay down few specific requirements. (Section 1501.7).

They require

- an open process with public notice;
- identification of significant and insignificant issues;
- allocation of EIS preparation assignments;
- identification of related analysis requirements in order to avoid duplication of work; and
- the planning of a schedule for EIS preparation that meshes with the agency's decision-making schedule. (Section 1501.7(a)).

The regulations encourage but do not require, setting time limits and page limits for the EIS, and holding scoping meetings. (Section 1501.7(b)).

Aside from these general outlines, the regulations left the agencies on their own.

CEQ's Memorandum on Scoping

1. Start scoping after you have enough information
2. Prepare an information packet
3. Design the scoping process for each project
4. Issuing the public notice
5. Conducting a public meeting
6. A few ideas to try :Hotline, use of moderator

Pitfalls

1. Closed meetings
2. Contacting interested groups
3. Tiering
4. Scoping for unusual programs

Forest Service NEPA Regs

36 C.F.R. 220 supplement CEQ regulations

Forest Service Manual 1900 – Planning

Chapter 1950 – Environmental Policy and Procedures

1950.3 It is Forest Service policy to:

- a. Give early notice of upcoming proposals to interested and affected persons (40 CFR 1501.7 and 36 CFR 220.4(e));
- b. Give timely notice to interested and affected persons, Federal agencies, State and local governments, and organizations of the availability of environmental and accompanying decision documents (36 CFR 220.5(h), 36 CFR 220.6(f), and 36 CFR 220.7(d));
- c. Make documents available to the public free of charge to the extent practicable (40 CFR 1506.6(f))

Forest Service NEPA Regs

1950.41 - Authority to Act as Responsible Official to Comply With NEPA

For each Forest Service proposal the responsible official shall coordinate and integrate NEPA review and relevant environmental documents with agency decision-making as follows:

Ensure that an appropriate level of scoping occurs
(36 CFR 220.4(e))

Summary of Public Participation

- Open Houses in six locations
- Public Hearings in three locations
- Website with information in addition to handouts at each meeting
- Fax
- Email
- Snail-mail
- Phone Hotline
- Both written and verbal comments recorded

Issue Identification Process Rosemont Copper Project

May 13, 2009

Comment Themes

- SWCA Resource Specialists
 - Read all comments
 - Developed **105** “Comment Themes” that reflect issues contained within 31 resource categories

Comment Themes

- Forest Service Interdisciplinary Team
 - Reviewed all Comment Themes
 - Evaluated themes with criteria contained in 1900.01 regulations
 - Evaluated using *Worksheet 1* and *Worksheet 2*

Worksheet 1 – Issue

Worksheet 1 (cont.)		
Theme #	Team Member(s):	
Issue Screening Questions	1. Is the statement within the scope of the proposed action?	<input type="checkbox"/> No -This comment theme does not need to be considered further. Document this on cover sheet. <input type="checkbox"/> Yes – This comment theme may be an issue that needs to be considered further. Continue screening using questions 2 and 3 below.
	2. Is the statement a point of disagreement, debate, or dispute about the Proposed Action based on effects?	<input type="checkbox"/> No <input type="checkbox"/> Yes- This comment theme may be an issue that needs to be considered further. Continue screening using question 3 below and complete Significance screening on Worksheet 2.
	3. Does the statement establish a cause and effect relationship of effects to the Proposed Action?	<input type="checkbox"/> No -This comment theme does not need to be considered further. Document this on cover sheet. <input type="checkbox"/> Yes- This comment theme may be an issue that needs to be considered further. Continue screening and complete Significance screening on Worksheet 2.

Worksheet 1 determined comment theme as:

- “Issue”
- or
- “Non Issue”

Document rationale or notes here:



Worksheet 2 – Significant?

Comment Disposition of Potential Issues Worksheet 2 Significance Screening		
This worksheet is intended to consider all processed comments representing a particular Category and Theme that were determined to be potential issues on Worksheet 1 and screen for NEPA Significance.		
Theme#	If "yes" on ALL of the below, it is Significant-please complete Worksheet 3 If "no" on ANY of the below, it is Not Significant-please complete Worksheet 4	
Team Member(s):		
Consideration:	Determination	Rationale
Is the issue relevant to the decision to be made?	<input type="checkbox"/> No <input type="checkbox"/> Yes	
Do existing laws, regulations or policies allow for discretion in decision to be made?	<input type="checkbox"/> No <input type="checkbox"/> Yes	
Is the issue supported by scientific evidence and/or can it be analyzed? <small>i.e. The nature of this issue is not conjectural or speculative.</small>	<input type="checkbox"/> No <input type="checkbox"/> Yes	

Worksheet 2 determined comment theme as:
 – “Significant” (may to lead to an alternative)
 or
 – “Non-Significant” (not likely to lead to an alternative)

Comment Themes

- Forest Service Interdisciplinary Team review of SWCA’s 105 issue themes resulted in carrying forward 45 “Comment Themes”

Cause and Effect Analysis

- SWCA Resource Specialists
 - Reviewed 45 Comment Themes
 - Developed Cause and Effect and Issue Statements using *Worksheet 3*

Worksheet 3

- Worksheet 3 Cause and Effect exercise

Comment Disposition of Potential Issues
Worksheet 3
Significant Issue Elements

This worksheet is intended to consider all processed comments representing a particular Category and Theme that were determined to be Issues on Worksheet 1 and Significant on Worksheet 2. This worksheet is intended to document the elements of a complete issue statement.

Issue: _____
Comment # 1: _____

Your Member(s): _____

Issue	Magnitude/Extent/Duration	Direct Impacts/Effects	Indirect Impacts/Effects

Print to Measure Change
Worksheet 3 will be used to generate the appropriate cause and effect statements.

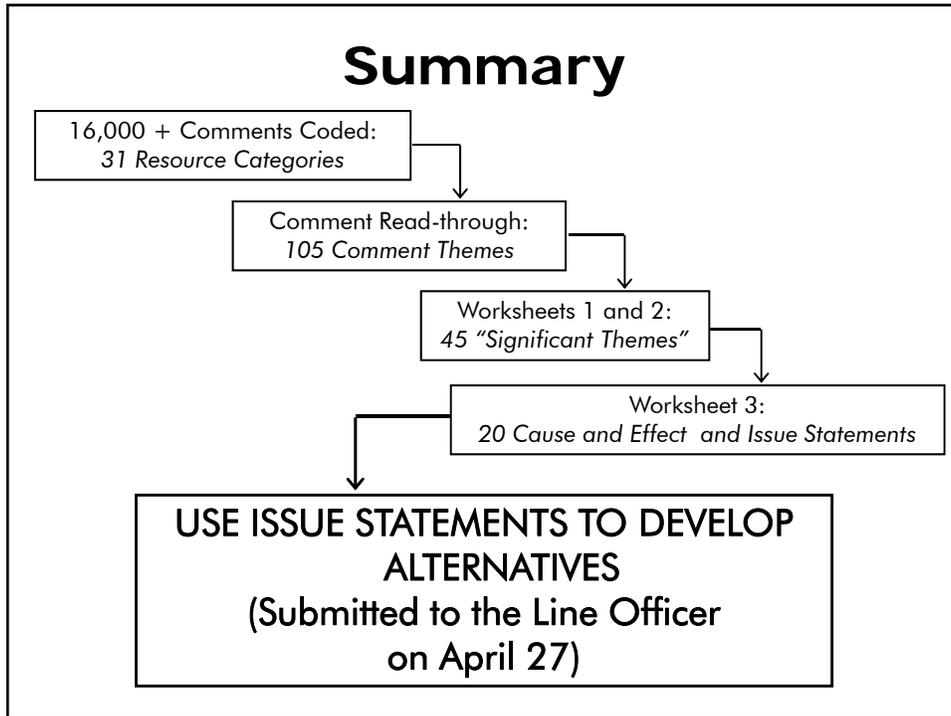
Cause
 Magnitude
 Extent
 Duration
 Direct Impacts/Effects
 Indirect Impacts/Effects

Worksheet 3

- SWCA Resource Specialists
 - Combined **45** Comment Themes into **20** Cause and Effect Statements

Issue Statements

- SWCA Resource Specialists
 - Developed **20** Issue Statements based upon Cause and Effect exercise
 - Issue statements outline Cause and Effect and Direct and Indirect Effects



Rosemont Copper Project Proposed Action

Preliminary Issues for Guiding Alternative Development in the Environmental Impact Statement

On March 30, 2009, the interdisciplinary team recommended to the Coronado National Forest Supervisor, Jeanine Derby, twenty "Significant Issues" to be carried forward in the Environmental Impact Statement analysis, including:

- Air Pollution
- Archeological Resources
- Local Economic Activity, Quality of Life and Environmental Justice
- Outdoor Lighting

- Livestock Grazing
- Noise and Vibration
- Reclamation Plan
- Recreation Disturbance or Loss of Recreational Opportunities

- Impacts to Riparian Habitat

- Soils

- Special Status Species

- Transportation

- Climate Change

- Visual Impacts

- Acid Rock Drainage

- Pit Lake

- Storm Water Control

- Wilderness

- Wildlife Habitat

Of the recommended "Significant Issues", twelve were retained as "Issues That Drive Alternative Development" (including some combinations of the former "Significant Issues"), as follows:

- Air (formerly Air Pollution)
- Heritage Resources (formerly Archeological Resources)
- Night Skies (formerly outdoor lighting)
- Noise and Vibration

•Recreation (Formerly Recreation
Disturbance or Loss of
Recreational Opportunities)

•Riparian Habitats (formerly
Impacts to Riparian Habitat)

•Plants and Animals (formerly
Special Species Status and Wildlife
Habitat)

•Transportation

•Water (formerly Mine Area
Groundwater, Acid Rock Drainage,
Pit Lake and Storm Water Control)

- Visual
- Reclamation Plan
- Soils

Other issues formerly identified as "Significant", along with potential issues addressed previously by the interdisciplinary team as "Not Significant" or as "Non-Issues" are currently being reclassified as "Issues Addressed in Effects", "Issues Addressing Process", and "Issues Out of Scope for the Analysis"

Alternatives Development

*“. . .all agencies of the Federal Government shall . . .study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources”
NEPA Section 102(2)(e)*

An alternative is a substitute for a lead agency's Proposed Action that accomplishes the action in another manner

The purpose of an alternative is to provide another option to the decision-maker that will accomplish the Purpose and Need of the project while minimizing potential adverse environmental impacts

CEQ guidelines require alternatives as part of an EIS (i.e., major Federal Action)

Types of Alternatives

- Primary Alternative
 - A substitute for the proposed action that meets purpose and need with a completely different strategy
- Secondary Alternative
 - Uses a similar strategy as a proposed action for meeting purpose and need but with differences in site location, size, operation, or other factors

Primary Alternative

- Coal-fired plant vs. a nuclear power plant
- Water conservation vs. construction of new dam and reservoir
- Staggering arrivals and departures vs. enlarging an airport

Secondary Alternative

- Changing the site location of a nuclear power plant
- Finding alternative sites for a new dam and reservoir
- Enlarging different key runways at an airport

. . . agencies shall:

(a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated

40 CFR 1502.14

Range of Alternatives

- Subject to the rule of reason
- An agency is not required to consider every extreme possibility which might be conjectured
- A No Action Alternative must be included

“Reasonable” alternatives can include alternatives that are considered “undesirable” by the lead agency or are outside of the lead agency’s jurisdiction

Alternatives That Should Be Considered

- A “reasonable” alternative that is suggested by the public or an agency
- An alternative that addresses specific resource concerns or issues
- An alternative that provides a more comprehensive benefit in terms of meeting project Purpose and Need than the original Proposed Action

Alternatives That Should Not Be Considered

- Implementation is speculative and impacts cannot be reasonably analyzed
- **Alternative results in similar or greater harm than another alternative**
- Alternative is as defective as one already rejected by agency
- Alternative is dependent on technological advances when the agency action must achieve short-term results
- **Alternative is not consistent with the purpose of the agency action**

Six Steps to Developing Alternatives

- Examine project purpose and need
- Review public, agency, and stakeholder scoping
- Eliminate alternatives suggested during scoping that do not meet purpose and need
- Eliminate alternatives suggested during scoping that do not decrease environmental impacts
- Review remaining alternatives to determine entire range of feasible alternatives
- Pick a representative sample of the full range of “reasonable alternatives”

What Can Proponent Contribute to the Alternatives Formulation Process?

- Provide information regarding technical, financial or other limitations relevant to potential alternatives
- Ensure that project purpose and need is adequately understood by the lead agency and contractor
- Provide technical data as necessary to develop alternatives
- Fully develop Proposed Action before alternatives development process begins (do not change Proposed Action after alternatives are formulated)
- Review strategies for meeting Purpose and Need the minimize resource impacts (both primary and secondary)
- Don't be afraid of alternatives!

Keys to Effective Alternatives Development Workshops

- Understand that a positive impact on one resource, usually means a negative impact on another (no perfect answers, just intelligent choices!)
- Work cooperatively towards finding alternative solutions to resource conflicts
- Do not waste time on alternatives for decisions outside the scope of the project
- Do not discuss issues or details unrelated to project alternatives (stay on task)
- Put questions or issues that require additional research or coordination to be answered or resolved in a "parking lot"

Alternatives Brainstorming

Alternative Elements

Relocate tails & waste to West side of ridge
Relocate the tailings pile/waste rock to Sycamore Cyn
Relocate the tailings around some Arch sites
Relocate OHV recreation to east side of SR 83
Remove ridge behind the pit
Slurry line pump the tails
Conveyor belt transfer of ore and waste rock
Underground mine
Backfill Pit
Partial Backfill
Use CAP water with groundwater backup
Water retention dam in Barrel Canyon (or the canyon that facilities move to)
Surfacing of Roads
Land Exchange
Government/Forest Service purchase the mine for US future consumption

Mitigations

Lining tails & waste
Create wetland
Final reclamation to include trees, roads and trails on top of tails
Trucks hauling acid have a Spill Plan
Relocate legal public access roads
Need to preserve access to: Gunsight, AZ Trail and Sycamore
Public easement from Rosemont
Add public road section across primary and secondary access
Some way to re-establish ownership boundaries after operation at their cost
Authority of Small Tracks to sell small FS allotments amidst the private parcels
Compensatory land designations
Different slopes based on what reclamation is for (i.e. livestock, vegetation, erosion)
Smaller top, less slope of tails and waste
One Right-of-Way for utilities and roads
Alter trucking schedule around school buses
Convert ranch stock ponds to wildlife water areas
Create water features
Reconfigure/design toe of piles
Relocate popular trails
Co-locate a communication tower to improve coverage
Identify water sources for fire and installing hookups for both wildland and structural engines

Alternatives

01 General

Record ID	Comment Number	Commenter Type	Comment Text
160	106		<p>Scoping Alternatives</p> <p>This section of the scoping document identifies twelve (12) alternatives in addition to the proposed project. These alternatives reflect a range of strategies to significantly reduce adverse environmental impacts: no action, alternative uses of public lands reduction of project scale, alternative types of mining, alternative locations for selected elements to the proposed project; transportation types and routes, timetable; and alternative processing technologies. This list is not intended to be exhaustive, and during the preparation of the Draft EIR other alternatives will surely be generated and evaluated accordingly. The following alternatives are generally listed in order of preference as regards reducing or eliminating adverse environmental impacts. Those alternatives with the least impact are listed first, with the successive alternatives listed in terms of likely increases in the type, magnitude, extent, and significance of adverse impacts. Note also that some alternatives could be used in combination, particularly with respect to placement of spoils, transportation types and routes, and processing technologies, particularly with respect to water use and recycling. This discussion does not address these possible combinations, however during the preparation of the Draft EIS such combinations should be fully explored in order to identify alternatives (and sub-alternative combinations) which result in significant reductions in adverse environmental impacts.</p> <p>Alternative 1: No Action. NEPA requires the consideration of the "No Action" alternative. Assessment of this "no action" alternative should not simply state that there will be no impacts, but should list the impacts avoided as a result of the alternative as well as the public benefits of "no action." In the case of a large, open-pit copper mine and processing facility, the "No Action" alternative will obviously eliminate the many adverse and potentially significant environmental impacts associated with the project as proposed, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. In all likelihood, the "No Action" alternative will be determined to be the "environmentally superior" alternative as well.</p>
160	107		<p>Alternative 1A: Alternative Uses of Public Lands. This alternative is a variation of the NEPA requirement to assess the "No Action" alternative (see above), and, in fact, could be incorporated into that alternative. Under this alternative, alternative uses of public lands would be considered in contrast to those set forth in the description of the "Proposed Action" in the Notice of Intent (NOI). According to the NOI, "Project-related activities to be addressed in the EIS include, but are not limited to, the following:</p> <p>Construction, operation and reclamation of an ore-processing plant, tailings, waste rock and leach facilities on NFS land adjacent to the mine." Inasmuch as these uses are not appropriate uses of public lands, this alternative explores the public benefits of alternative uses of NFS lands to those listed above rather than simply the passive alternative of "no action". Such uses could include, but not be limited to the following (individually, and, as applicable, in combination):</p> <p>Public acquisition of privately held property within the northern range of the Santa Rita Mountains to provide in-perpetuity conservation of important open space lands within the greater Tucson region. Such public acquisition could also involve a land exchange with Augusta.</p> <p>Incorporation of the northern range of the Santa Rita Mountains, particularly that portion of the range within the Cienega creek watershed, into Las Cienegas National Conservation Area (LCNCA). The LCNCA provides an ideal model for utilizing land exchange and intergovernmental cooperation as a means of achieving long-term conservation of open space lands. Coronado National Forest lands are contiguous to LCNCA and BLM and the State of Arizona are already partners in LCNCA.</p> <p>Enhanced grazing lands in conjunction with the Ranch Conservation element of the Pima County Sonoran Desert Conservation Plan.</p> <p>These and similar alternatives would eliminate or significantly reduce the many adverse and environmental impacts associated with the uses proposed for NFS lands in the MPO. Conceivably, one of these alternatives could be determined to be the "environmentally superior" alternative as well.</p>

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Record ID	Comment Number	Commenter Type	Comment Text
160	108		<p>Alternative 2: Limited Project. Under this alternative, mining excavation and placement of all spoils would be limited wholly to fee simple lands and patented mining claims, and thus provide maximum protection of all public trust lands - National Forest, Bureau of Land Management, and State of Arizona. This alternative would prohibit placement of all spoils and overburden on public lands thus protecting the five square miles of public land designated for permanent mine tailings, facilities, waste rock storage, and open pit excavation proposed in the current Mine Plan of Operation.</p> <p>Due to the reduced area of disturbance as well as the reduced scale and level of mining and processing activity, as well as eliminating the deposition of overburden and spoils on public land, this alternative would likely result in substantial reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).</p>
160	109		<p>Alternative 3: In-Situ Mine. In-situ means "in the natural or original position." This alternative involves obtaining the desired material with only minimum physical disturbance of the mine site, as the ore is leached in its existing underground location. The alternative consists of a series of injection wells and recovery wells. These wells, constructed with acid-resistant casings, penetrate the copper-bearing ore, and are sealed from the surface through the ore zones. A weak, acid leach solution is pumped through the cracks in the ore, dissolving the copper into a concentrated solution, which in turn is pumped up through the injection well for processing. A continuous ring of recovery wells surround the injection wells to prevent leach solution from escaping. This alternative thus avoids the excavation of ore rock and the disposal of overburden and tailings. Processing can take place off-site thus minimizing adverse impacts at the mine site. When the copper ore body is depleted any hazardous materials remaining in the ore zone are flushed out through pumping and rinsing with fresh water. Once the wells are cleaned, they are filled with cement and the land returned to its former use.</p> <p>Due to the reduced area of disturbance as well as the absence of overburden and spoils on public land, this alternative would likely result in substantial reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).</p>
160	110		<p>Alternative 4: Underground Mine. This alternative would involve sinking mine shafts to subterranean levels containing ore and then constructing horizontal tunnels, called adits, to reach the underground ore deposits. Through the use of this alternative, the large, highly visible open-pit excavation would be avoided, along with the surface deposition of a large volume of overburden waste rock. Modern underground mining technologies utilize blasting with explosives and typically utilize heavy-duty mechanical cutting equipment. Use of robotic technologies may be feasible. Ore is extracted via mechanical rail conveyances, thus the ore can be removed from the immediate mine site to off-site locations for processing. Reclamation of this underground mining alternative would involve closure of the shafts and tunnels, as well as reclamation of mine tailings.</p> <p>Due to the reduced area of disturbance as well as the reduced magnitude and extent of overburden and spoils on public land, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).</p>

Alternatives

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Record ID	Comment Number	Commenter Type	Comment Text
160	111		<p>Alternative 5: Continuous Pit Backfill. Under this alternative the project would utilize a continuous backfill technology, whereby the open pit would be progressively filled with the waste rock, spoils, and overburden generated as the excavation proceeds. This alternative would thus eliminate the waste material placed on public lands, although at the project outset might warrant temporary and very limited storage of such materials on adjoining public lands. This alternative would also eliminate the open pit at the completion of extraction.</p> <p>Due to the reduced area of disturbance as well as eliminating the long-term effects of overburden and spoils on public land, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).</p>
160	112		<p>Alternatives 6 through 10 are concerned with alternative modes and routes for transporting materials - including ore, waste rock and tailings - equipment, and personnel to and from the mine site. These alternatives include the use of rail transportation, mechanical conveyances, and hydraulic conveyances as well as alternative vehicular routing in order to reduce the potential adverse impacts of the proposed project.</p> <p>Alternative 6: Rail Transport of Ore, Spoils and Tailings from the Mine Site. Under this alternative, all material - ore, spoils, tailings, and waste rock would be transported from the site via a new rail line constructed to the mine site. Overburden would be stockpiled on site for use during the reclamation phase. The ore would be transported to a processing site, and the so-called waste material could then be utilized off-site in other industrial processes, including but not limited to crushed rock for construction use, construction land fill, road base construction, and similar industrial uses.</p> <p>Due to the long-term effects of eliminating overburden and spoils on public land, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic and public safety; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).</p>
160	113		<p>Alternative 7: Rail Transport of All Ore from the Mine Site. Under this alternative, all ore would be transported to an off-site processing location, preferably adjacent or near an existing smelter. Transport from the mine site would be via a new rail line constructed between the mine site and a main rail line. Two routing options exist - one connecting to the north, the other to the west.</p> <p>Due to the relocation of the processing facility to a more appropriate off-site location, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic and public safety; night lighting/visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).</p>
160	114		<p>Alternative 8: Mechanical Conveyance of Ore to Rail Head. This alternative is similar to Alternative 7 but would utilize some form of mechanical conveyance, such as a mine cart conveyor system, down the west side of the Santa Rita Mountains to a rail head for shipment on the existing rail line connecting Nogales and Tucson. This alternative could be undertaken in conjunction with all other alternatives (see above), and could be used for shipment of both the ore product and the so-called waste materials.</p> <p>Due to the conveyance of ore to a rail head for shipping to an off-site processing facility, and the removal of processing from the on-site operations, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic and public safety; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyles; energy uses; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).</p>

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Record ID	Comment Number	Commenter Type	Comment Text
160	115		<p>Alternative 9: Hydrological Conveyance of Wet Ore Concentrate to Processing Site West of the Santa Rita Mountains. This alternative is similar to Alternative 8, but would utilize some form of hydrologic/pipeline conveyance down the west side of the Santa Rita Mountains to a processing/drying site near Santa Rita Road. According to the Applicant, 89% of the water could be returned to the mine area for reuse. The ore product could then be trucked to the Port of Tucson railhead at Kolb & I-10 or to a railhead on the existing rail line connecting Nogales and Tucson. This alternative could be undertaken in conjunction with other mine-type and processing alternatives (see above).</p> <p>Due to the hydrologic conveyance of ore to a rail head for shipping to an off-site processing facility, and the removal of processing from the on-site operations, this alternative would likely result in reductions in a variety of impact categories, including, but not limited to surface and groundwater resources; toxic materials, emissions and airborne toxic dust; noise; vehicular traffic and public safety; night lighting; visual quality; recreation; wildlife and wildlife habitat; regional rural economy, property values, and lifestyle; energy use; historic and cultural resources; and effects on local emergency services. (Relevant Comment numbers: 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 3A, 3B, 4A, 4B, 5, 6, 7, and 10).</p>
160	116		<p>Alternative 10: Loop Road Circulation System. This alternative would utilize either a tunnel through or a summit road over the Santa Rita Mountains so that full ore trucks would road through a tunnel or over the top so that full trucks would go west to I-19, north to I-10, and then to the Port of Tucson railhead at Kolb and I-10; empty trucks would return on the East side of the Santa Rita Mountains via SR83.</p> <p>This alternative would likely result in reductions in a variety of impact categories, including, but not limited to emissions; noise; vehicular traffic and public safety; recreation; and effects on local emergency services. (Relevant Comment numbers: 2B, 2D, 3B, and 10).</p>
160	117		<p>Alternative 11: Modified Time-Table. The following alternatives address extensions or other changes in the timetable for mine operations which could result in reduced impacts:</p> <ul style="list-style-type: none"> a. Extend Mine lifetime to 40 or 50 years b. Suspend mining operations during high winds c. Suspend mining operations during extreme drought conditions d. Suspend mining operations during periods of excellent "seeing conditions" at the surrounding dark-sky observatories.
160	118		<p>Alternative 12: Alternative Processing Technologies. In addition to the alternatives listed above, the Draft EIS should expand the range of technical alternatives within the various processes and techniques proposed in the MPO and alternatives to the MPO as augmented in this scoping document and in subsequent alternatives generated through scoping and the formal environmental assessment phase. Such technical alternatives must be generated by an independent set of consultants with demonstrable expertise in mining technology and a proven record for successfully utilizing alternative mining methods and technologies which significantly reduce adverse environmental impacts.</p>
1544	1	Individual	<p>Why does the mine need to use clean/fresh/virgin water? Why can't they use gray water? Wouldn't everyone win if they piped gray water from the cities, used it, recharged it, and added to the fresh water supply.</p>
1545	1	Individual	<p>The tailings from the mine are going to be mixed with polyers to keep them from blowing around. Polymers are plastics that are made from oil and they do not degrade. So 30-50- years from now we will have this huge pile of dust and plastic? How about mixing the tailings with something else? Something that will bio-degrade and still perform the dust retention function.</p>
1610	2	Individual	<p>This TEP proposal provides another option to provide power to Rosemont Copper. This project provides for double-circuit 138 kV transmission lines to go southwest from the Vail substation to a new Cienega substaion in Phase 1 and a new Mountain View substation in Phase 2 to the south of Interstae 10, next to State Route 83 that goes directly to the Rosemont Copper mine (see enclosure 4).</p> <p>Q-51. Will the proposed Mountain View substation be considered as a power source for Rosemont Copper? Q-52. How much power will be available at the Mountian View substation, if Phase 2 is ever build, after servicing its distribution demands? Q-53. When is the Mountain View substation to be operational?</p>

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Record ID	Comment Number	Commenter Type	Comment Text
1649	4	Individual	<p>Also, if Rosemont is not processing any ore at the site (per the Rosemont Copper web-site) and other mining companies discuss removing the tailings (Freeport-McMoRan Copper & Gold Inc from the area to use for other purposes ...</p> <p>http://www.fcx.com/envir/environmental.htm</p> <p>"Freeport's environmental experts have demonstrated for years that the tailings material can be readily revegetated or reclaimed with native forestry and agricultural plants. When mining is complete, the deposition area will be valuable high ground suitable for many applications. One emerging project, however, can put the material to positive economic use in the short term. During the past several years, Freeport Indonesia has been collaborating with scientists from Indonesia's leading technological research university, Institute Teknologi Bandung (ITB) - the Bandung Institute of Technology's Research and Industrial Affiliation Institute - on tailings' use as raw material for the construction and manufacturing of concrete, bricks, pipes and other infrastructure products. The results so far have been promising. According to the researchers, the properties of the material are conducive to construction applications and the crushed rock offers cost advantages over other basic material."</p> <p>Has Rosemont Mine - looked for alternatives / other options to completely remove the tailings that would be dumped on Public lands - not leaving any "dangerous" refuse on the property at all ---- removing the need to use any Forest Service Lands - and limiting the mine to private property.</p>
1649	5	Individual	<p>Is Rosemont Mining Corp going to use the ISO 14001 Standards for Environment Management? International Standards to make sure that employees, customers, and nearby communities feel that the company is following the fulfilling their commitment.</p> <p>http://www.iso.org/iso/iso_catalogue/management_standards/iso_9000_iso_14000/iso_14000_essentials.htm</p> <p>"ISO 14001:2004 gives the generic requirements for an environmental management system. The underlying philosophy is that whatever the organization's activity, the requirements of an effective EMS are the same.</p> <p>This has the effect of establishing a common reference for communicating about environmental management issues between organizations and their customers, regulators, the public and other stakeholders.</p> <p>...</p> <p>ISO 14001:2004 can also be used to meet external objectives:</p> <p>provide assurance on environmental issues to external stakeholders - such as customers, the community and regulatory agencies comply with environmental regulations support the organization's claims and communication about its own environmental policies, plans and actions provides a framework for demonstrating conformity via suppliers' declarations of conformity, assessment of conformity by an external stakeholder - such as a business client - and for certification of conformity by an independent certification body."</p>
1700	5	Individual	Can the tailings be shipped to Rosemont or the Augusta Resources country?
1713	1	Individual	Why is CAP water not good enough for the "mine"
1715	2	Individual	Why doesn't Rosemont use CAP water?
1773	2	Individual	Given the mine is as lonf term as projected, can't there be a requirement of them to create/pave their own road?
1837	1	Individual	<p>Rosemont will not put a lining under the tailings.</p> <p>Comment from Georgette Valle</p> <p>A non porous lining should be placed under the Rosemont Mine tailings.</p>

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Record ID	Comment Number	Commenter Type	Comment Text
1840	2	Individual	I have heard that the mining company will not be putting a lining under the tailings pile. What impact will that have on the environment?
1842	2	Individual	I would hope that the Forest Service will require that any mines on their land, including the Rosemont Copper Project, will be required to return the material that is left after processing to the pit.
1957	21	Individual	it seems much more reasonable, safe, and certainly less intrusive on valuable Forest land, for the Forest Service to require Rosemont to simply switch the primary and secondary access routes in its Plan. The new access road coming from Route 83 would not need to be nearly as wide if it were only a secondary access route, thus saving Forest land, and the very heavy and hazardous mine traffic flows could be routed south and northbound along I-19, instead of Route 83. The existing road from the west would need improvement, but, again, I emphasize, Rosemont already recovers all its investment in less than three years, and a little additional road-grading expense is nothing compared to the terrible suffering engendered by a school bus-acid truck collision along Route 83 (and please don't make the mistake of thinking that's not going to happen.).
1960	8	Individual	IF YOU APPROVE FOR THE ROSEMONT MINE TO GO INTO PRODUCTION, THEY SHOULD ONLY BE ALLOWED TO USE CAP WATER (NO GROUNDWATER). REMEMBER, THIS IS A FOREIGN COMPANY THAT WILL BE REMOVING OUR PRECIOUS METAL TO BE SHIPPED OVERSEAS. WHY IN THE WORLD WOULD WE ALLOW THEM (FOREIGN ENTITY) TO DESTROY OUR GROUNDWATER BASIN.
2106	7	Individual	Mines of this proposed magnitude have historically required rail service to transport the resulting ore to the smelter. I cannot conceive of the amounts of ore all being transported via truck. Where would such a rail line originate from and what additional environmental damage would result from its construction and use?
2126	8	Individual	IF YOU APPROVE FOR THE ROSEMONT MINE TO GO INTO PRODUCTION, THEY SHOULD ONLY BE ALLOWED TO USE CAP WATER (NO GROUNDWATER). REMEMBER, THIS IS A FOREIGN COMPANY THAT WILL BE REMOVING OUR PRECIOUS METAL TO BE SHIPPED OVERSEAS. WHY IN THE WORLD WOULD WE ALLOW THEM (FOREIGN ENTITY) TO DESTROY OUR GROUNDWATER BASIN.
2216	7	Individual	I would also like to know why the Rosemont Mine is not going to build a railroad to move the ore? I believe there were several in the area that could be redeveloped.
2244	4	Individual	Does the mine use solar? What is their energy conservation plan?
2255	7	Individual	All mines have a rail spur to deliver and transport its goods and products, in order to sustain the mining operation. The only reason why they haven't included it, is because its their first mining venture. This spur would add to the motoring public SAFETY. by removing the ore trucks from the highway! The state govt.would then main obstacle and the state(gov.) is notoriously easier to deal than the federal govt. Paving the road and adding a Spur running parallel to the Helvatia road after leaving the turcks in Sahuarita. This spur would remove ore shipments from SR83, not to mention ACID and REAGENTS which are Extremely HAZARDOUS.
2263	1	Individual	Water is precious in the Tucson area. Currently many golf courses are required to use effluent for their water source. I would like to propose that Rosemont mine use effluent (refined sewer water) as an alternative to groundwater, or in combination with groundwater. Pima County is already studying the use of effluent by the public to meet future water needs, it would make more sense to use it for mining operations than our limited groundwater supplies.
2265	11	Individual	As the proposal includes the construction of a CAP water line from Avra Valley to Sahuarita as well pipe lines from the new wells to the Rosemont property why would Augusta not propose to connect these two projects and use the CAP water for their operation?
2284	17	Individual	Wouldn't it be better and less intrusive on the current SR83 travelers to improve it before opening the mine so it can handle the additional volume of heavy trucks, perhaps make it a concrete highway in the section supporting heavy trucks?

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Record ID	Comment Number	Commenter Type	Comment Text
2289	2	Individual	The mine should put in a railroad spur from the line along I-19 traveling over to as close to the mine as possible and then truck the supplies over the mountain via the secondary road. This way all the traffic will be off the roads and only a few trains a day will handle all the traffic at a much lower fuel cost. Every 4 trucks will fill one hopper and so a train of 60 cars will take 240 trucks to fill. This is 12 hours of operation for the mine. So there would be two trains a day or so. This would not add the traffic load to Highway 83 nor to I10 or I19. The mine could get either the UP to run the line or have the Port of Tucson run it. Trains are 10 times more efficient for moving this high volume of material, saving a large amount of diesel fuel, and they would not clog up the Highway with the trucks. This would also eliminate the noise impact of the mine traffic on the highway.
2305	18	Individual	In their report Rosemont notes that open pit mining is being investigated to determine if passive contamination will be achieved. If the land must be raped of its resources why not use situ mining instead of open pit? The Copper Development Association wrote about In Situ Leaching: "In situ" literally means "in place." With in situ mining, a diluted sulfuric acid and ferric sulfate solution is injected down holes drilled into the ore body. The solution flows through cracks in the rock under pressure, leaching the copper from the rock into the solution. The solution is then pumped to the surface to recover the copper, using solvent extraction techniques. Tests show that recovery rates normally achieved with heap and dump leaching could also be approached with in situ mining. There are significant cost advantages of this operation which include: the surface need not be disturbed with anything other than pump and piping installations, no waste piles are created, start-up is relatively fast, equipment needs are reduced significantly, fluid control is more easily automated than solid batch processes, and we can mine deep, relatively low grade and complex ore bodies.
2366	4	Individual	Unless they bring in water from the ocean, and desalinate it if necessary for mining operations. The oceans are supposed to rise with global warming, not fall. So that supply wouldn't be exhausted, and after the mine closes after 20 years, the desalination plant and or transport pipe or canal could be used for homeowners, who surely will not be able to afford such a thing on their own. Not Pima county, not Tucson, not Green Valley, not Sahuarita, not even Arizona could afford such an expense now. Whether the mine could, they would have to decide.
2371	8	Individual	IF YOU APPROVE FOR THE ROSEMONT MINE TO GO INTO PRODUCTION, THEY SHOULD ONLY BE ALLOWED TO USE CAP WATER (NO GROUNDWATER). REMEMBER, THIS IS A FOREIGN COMPANY THAT WILL BE REMOVING OUR PRECIOUS METAL TO BE SHIPPED OVERSEAS. WHY IN THE WORLD WOULD WE ALLOW THEM (FOREIGN ENTITY) TO DESTROY OUR GROUNDWATER BASIN.
2381	17	Individual	I would suggest that Augusta's planners have not thoroughly researched the project. I propose that they examine Sycamore Canyon to the North of their project. This large canyon could accept all or nearly all of the waste, including tailings that would come out of the proposed pit. It would also not be visible from either Highway 83 to the East or from the Santa Cruz Valley to the West. The canyon for the most part is rather barren of plant growth, has no water, and is poor terrain for both wild life and cattle. A perfect dump space.
2381	19	Individual	The Rosemont ore body is ideally suited to an underground method of mining called sublevel caving. The technique is called VCR or Vertical Crater Retreat. This method is being used by Vale/Inco at the Stobic Mine in Canada. An underground approach to the Rosemont project eliminates the need for thousands of acres of public land for dump space, as the method produces very little waste rock. The caved area at the surface would be relatively small compared to an open pit and would be confined to Augusta's private land, not the public's. The caved area would not be as offensive to the line of sight from Highway 83, as a large open pit would be. Tailings could be deposited in Sycamore Canyon as discussed above.
2396	5	Individual	To alleviate traffic on public roads, a system of private roads on forestry land, maintained by Augusta may be a better alternative than allowing the mine's equipment to damage the public roads.
2400	11	Individual	Use existing Helvetia Mine road from the west side of the Santa Ritas for egress for mine employees and mine haul trucks.

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Record ID	Comment Number	Commenter Type	Comment Text
2400	12	Individual	Establish railspur for transportation of ore. This would eliminate mine traffic from our public roads, going thru housing, school sites and Adding to the congestion of an already severely congested area.
2400	13	Individual	A conveyor belt or slurry pipe could be use to transport to the trucks over the mountain or Directly to railspur.
2405	5	Individual	I propose that Highway 83 should not be used for the Rosemont Mines primary access. The better and safer alternative is to use Santa Rita Road as the primary access to the mine.
2423	5	Individual	I recommend that no current road/highway systems in existence be usable for that enterprise.
2453	19	Individual	I note the great interest in alternative energy - solar, wind, geothermal, etc. Perhaps some of these could be used at the mine? At any rate the copper and other minerals will be a boost to the construction of alternative energy generators.
2470	29	Individual	Where is the railroad spur?
2480	4	Individual	Solar panels on tailings/crater: As a gesture of good will, why don't the planners install solar collectors on the mine crater and tailings to contribute to non-polluting energy production?
2591	20	Individual	Has any consideration been given to the possibility of using processed waste water as a major source of water for mine use? If it is good enough for the people of Orange County in California to drink, perhaps it could be a reasonable alternative for the mine.
2617	51	Individual	We understand that there are numerous copper mines that were closed down when the value of copper dropped. Further we are dismayed that a new mine is even being considered before the possibility of re-opening up an existing mine. 1. Why don't you choose to be a proud reflection your motto to "respect the land" and persuade the mining companies to re-open the closed mines, operate where their environmental impact would be less and where the residents would welcome them? 2. Also, don't we have mine sites that could be re-opened that have a smelter on site? That way the ore would not have to be shipped to China. What's wrong with this picture? What am I missing here? It seems too obvious. Please clarify this. 3. Why do we choose to tear open the earth so quickly? Why don't we take advantage and "recycle" our mines as we are being taught to recycle our bottles and cans? Wouldn't the people in those communities be more grateful?
2634	23	Business	The proposed Rosemont ore body is in an environmentally sensitive area and would be better left in the ground.
2644	20	Individual	If the mining operation does come to fruition it would seem to us that the company should build and pay for their own paved road from the mine site to the Box Canyon Road, and pay to improve the Box Canyon road with a paved surface, and straightened curves, to Continental and the railroad to Mexico at that point. This would seem to have the least amount of impact and be the most direct route to ship the concentrated ore out of the country completely avoiding using Route 83, and avoiding possible hazardous materials loads on Route 82. The same Box Canyon route would be available to receive those hazardous materials required by the mining operation. Water from the extended C.A.P. canal could parallel the new Box Canyon/Continental road and be piped along the bottom of the Box Canyon Wash, then up and along the new road leading to the mine site. This entire route is in remote, mostly undeveloped country, until reaching Continental.
2666	12	Organization	The simplest solution suggested so far is to limit the mine to daytime operation only.
2673	1	Individual	The bulk of the concerns are summarized as water, environmental, misrepresentations of the Rosemont Project information and the failure of Rosemont to utilize an alternative mining approach that would have a smaller footprint and be less invasive on all concerned.

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2673	21	Individual	<p>An underground mine could be used as an alternative to extract the copper bearing ore. To reduce the impact of the tailings the underground mine could start with the primary shaft at the maximum surveyed depth of the ore deposit. The initial extraction (mining) would begin at the maximum depth and then work upwards to the top of the copper bearing ore. The project would be continuously refilling after the extraction of the ore from the bottom up with excess material and waste. Rosemont Project representatives have indicated that a new mechanical process was going to be used to reduce the tailings debris to a moisture content of 15%. The reuse of the damp tailings should stop or reduce any in-hole dust and conceivably provide a good material for compaction to be used for the rising floor for the ever elevating mining process. The need for pumping invasive ground water out of the underground mine would lessen as the mine developed and work progress onto higher portions of the ore which would be the reverse of an open pit mine.</p> <p>An underground mine that utilized the tailings as part of the ongoing process would alleviate some of the concerns for major unsightliness, excessive overburden striping, a pit catching storm and ground water with the associated pumping and subsequent discharge. The on going concern with all large projects is the set aside for final cleanup and remediation as required. The underground mining alternative suggested above would greatly remove some of the concerns since most of the remediation is concurrent with the conintuing extraction.</p>
2673	33	Individual	We request a no action decision on the proposed Rosemont Copper Mining Projects.
2721	12	Individual	Mine closure – An effective use of the plus 3,000 acres of mine tailings and waste rock would be to level tem and use them for solar arrays. The Forest Service could lease these areas for a fee to private companies for power generation.
2736	26	Government	Could Rosemont use CAP water directly instead groundwater? What would be the effect?
2736	32	Government	If Rosemont directly used CAP water, where would the pipeline be located? What if Rosemont used CAP water directly and pumped groundwater when CAP water is not available.
2745	1	Individual	Alternative One is to require commercially-available Central Arizona Project (CAP) water and no groundwater to be used by Rosemont Copper for this action.
2745	2	Individual	Alternative Two is an alternative electricity plan to supersede those in the Mining Plan of Operations (MPO) in section 2.7 that does fails to meet the operational needs for Rosemont Copper
2745	15	Individual	Alternative One is a solution that avoids almost all these impacts will still permitting the Rosemont Copper Mine. The only way to avoid impacting the groundwater is for Rosemont Copper NOT to used ground water as required by Alternative One.
2745	16	Individual	Alternative Two provides a new way to provide adequate and continuous electrical power to the Rosemont Copper mine without impacting the local electricity "sink" in Tucson due to inadequate electricity available for this mine and other large consumers in southern Arizona. Alternative two is to build an electrical generation plant on site, using natural gas from large El Paso natural Gasline that runs parallel to Insterstate Highway 10 (I-10) with less air pollution, less water demands, and removable ease project reclamation upon completion of the mining operations.
2745	17	Individual	Overview of Alternative One: Rosemont Copper can commercially purchase adequate amounts of CAP water to meet all its needs. CAP water can be used by this mine in the same manner as ground water. Rosemont will need to purchase CAP water to meet its expected requirements and provide the necessary infrastructure to deliver CAP water to the mine. This will result in an underground pipe that will, after burial, have little resultant cumulative environmental impact. This pipeline will need environmental surveys; will probably impact a large number of Native American cultural resources, some animal and plant habitats, and usual construction mitigations including dust and noise control actions. In general, pipeline mitigations are significantly less onerous than water depletion impacts on the future of these communitis. If Rosemont Copper demand is less than the quantity of CAP water purchased, then it can "sell" that CAP water to local water utility companies for recharge or to satisfy other needs, thus recooping some capital pipleine expenses.

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2745	18	Individual	Please see attachment 1 for a detailed discussion of this alternative and elements that are required to be included in the draft EIS. Alternative One is recommended.
2745	20	Individual	Overview of Alternative Two. Rosemont Copper did not have a viable electricity plan in the MPO, section 2.7 This alternative provides a new electricity plan that results in less air pollution, less water resources consumed for electricity generation and results in almost no footprint after reclamation. This alternative is a local, air-cooled, natural gas turbine generation plant on site of the mining operation. An underground natural gas line to connect with the El Paso Natural Gas line to the north, parallel to Interstate 10, has a smaller footprint than any of the options proposed in the MPO.
2745	21	Individual	Please see Attachment (2) for discussion of this alternative and elements that are required to be included in the Draft EIS. Alternative Two is recommended.
2760	7	Government	Reasonable alternatives could include, but are not necessarily limited to, alternative sites or alternative designs for major mining facilities (e.g. waste rock piles or tailings impoundments), smaller project, other viable ore bodies, different pit geometries, and pit backfilling; as well as any alternatives evaluated for purposes of obtaining a Clean Water Act Section 404 permit, pursuant to 40 CFR Part 230.
5286	22	Individual	In view of the already poor condition of Route 83, and the very high potential for disastrous conflict between school buses, sulfuric acid trucks, and wide loads on a narrow, twisting, mountain road, it seems far more reasonable and safe for the Forest Service to require Rosemont to simply switch its proposed primary and secondary access routes. An access road coming west from Route 83 would need neither to be as wide, nor as improved, if it were only to be a secondary access route, thus saving some of our CNF land, and much of the very heavy and hazardous mine traffic flows could be routed north- and southbound along I-19, instead of along Route 83. The existing road from the west would need improvement, but, again, I emphasize, Rosemont already recovers its investment in less than three years, and a little additional road-improvement expense is nothing compared to the terrible suffering which would be engendered by a school bus-acid truck collision along Route 83. This alternative would also save Rosemont the expense of constructing a very complex intersection at Route 83, which will be hazardous no matter how carefully planned, because it would be on a Route 83 downgrade. If this were only a secondary access road, a much less complex intersection would be required.
5286	23	Individual	An even better alternative would be to oblige Rosemont to use the existing Rosemont Junction road for this access road, instead of constructing an entirely new road through our pristine Forest land, as their MPO proposes. If there's already an existing road which goes almost directly to the mine, why ruin even more of our Forest to build a new one?
6720	2	Individual	Alternative one, limit mining excavation and placement of all spoils to fee simple lands under the ownership of Rosemont. Under this alternative the applicant could demonstrate their commitment to land stewardship through providing maximum protection of all public land surrounding their path in a few simple area. In effect, this alternative would prohibit placement of all spoils and overburden on public lands, thus protecting five square miles of public land designated for permanent mine tailings, facilities, waste rock storage, and open-pit excavation proposed in the current Mining Plan of Operation.
6720	3	Individual	Alternative 2, utilize a continuous backfill technology, whereby the open-pit is progressively filled with waste rock and spoils, and overburden generated as the excavation proceeds. This alternative might warrant some interim and very limited storage of waste material on adjoining public land, but would essentially protect all public lands. This alternative would not result in an open-pit completion of extration, surely a preferable outcome with the current proposal.
6720	4	Individual	Alternative 3, this is my favorite. Remove all spoils, tailing, and waste rock, from the site via a new rail line constructed to the mine sites. This so called waste material could then be reutilized as a resource, a positive resource offsite in other industrial processes, including but not limited to crushed rock for construction use, construction landfill, road met construction, similar industrial uses, some may be even requiring radioactivity material. This alternative can clearly promote conservation through minimizing waste materials, while the rail transportation would avoid the significant public safety impacts resulting from the proposed truck traffic on highway 82.

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6842	1	Individual	<p>Water is the most important issue in this entire process. Our water is our life. Without water -- it's more important than copper. And we need to protect the groundwater that is now being depleted at one inch a week. 48 -- four feet a year, approximately one inch a week the water table is lowering in the Tucson Active Management Area. That is required for sustaining life. Copper is not required for sustaining life.</p> <p>Therefore, a business should be able to set up a plan to buy -- plan to put in the pipes to import CAP water because mines, it doesn't matter whether it's CAP water or groundwater to operate the mine. So the water could be procured by the company to operate the mine, and, therefore, that alternative should be one considered by the Forest Service that I'm now recommending to be looked at seriously because it does seem to be extremely reasonable.</p>
6842	2	Individual	<p>The second alternative involved Section 2.7 of their plan which discusses the electrical supply for the mine. It states that adequate electricity is not available. The preferred TEP approach calls for turbines to be running in Nogales so that Rosemont Copper can operate its mine. I don't want to go through the electrical problems to get power in Santa Cruz County, because I've been working on that for the last nine years, but that is another alternative.</p> <p>And my alternative would be to put in a natural gas line to the mine from I-10 and then put in trailers which could hold the power plant. They have their own power plan operating the mine, and when it's over in 19 years, the trucks drive away and the power plant disappears.</p> <p>95 percent of the power they buy from TEP comes from coal-fired power and, therefore, the CO2 and other options need to be considered, and it's clearer if you use natural gas.</p>
6863	2	Individual	<p>A pricing model that would be considered probably beneficial to them would be something that did underground mining with reusing the tailings back in the mine to keep it from collapsing like the West Virginia mine did. Something different would go along with the fact that, in their study, they only used \$1.50 copper, which I gather now copper's worth three, four dollars.</p> <p>That would benefit us all by they would get their minerals when they wanted them and they would protect our visual impact on the Sonoita Highway. They would probably reduce everything else that's going on it. Without that kind of consideration, I would have to say no-action would be my favorite.</p>
6885	1	Individual	<p>Instead of storing cap water and using groundwater, I think a better alternative would be to pump the CAP water directly to the east side of the Santa Rita's into a man made lake. Rosemont can then pump directly from the lake for their processes. The lake can also be used for public recreation and wildlife water source. As an added benefit it may help prevent the groundwater levels from lowering north of the mine. It would also eliminate concerns from over pumping in Sahuarita and the planned use of community water storage areas. I propose a study be completed with this option as the primary source for the Rosemont Mine water source. It seems like a good alternative to pumping groundwater directly from a few close wells in Sahuarita, and would benefit the mine and the public.</p>
6975	11	Individual	<p>PROPOSAL : SATELLITE OPERATION The shut down Twin Buttes Mine could make an EXCELLENT choice of a satellite milling / processing facilities with the ore and over burden transported to the Twin Buttes site . Via covered conveyor belt. THIS PLAN WAS UNDER SERIOUS CONSIDERATION BY ANACONDA FOR THIS VERY PROPERTY, USING THE TWIN BUTTES FACILITIES AND THEN PRICE OF COPPER FELL! SOUND FAMILIAR?? This would mitigate damage done to US FOREST SERVICE PROPERTY THAT AUGUSTA WANTS TO TURN INTO TAILINGS AND WASTE DISPOSAL SITE. I WOULD REQUEST THAT YOU CONSIDER EACH PROPOSAL AND ANSWER THE SPECIFIC PROPOSALS. Please contact me if I could be of any assistance and I would make my well available to assist in monitoring.</p>

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7134	15	Business	<p>3. The "alternatives" analysis, specifically the "no action" alternative, which is one of the keystones of the NEPA process, must be thoroughly explored</p> <p>Alternatives are "the heart of the environmental impact statement." 40 C.F.R. ss1502.14. We want to reiterate that nothing in and no interpretation of the Mining Law of 1872 excuses the Forest Service from robustly evaluating a range of reasonable alternatives. Indeed, as the Court of Appeals for the Ninth Circuit has stated:</p> <p>NEPA requires that the federal agencies include a detailed statement of "alternatives to the proposed action" in any recommendation or report on actions significantly affecting the quality of human environment. 42 U.S.C. ss 4332(2)(C)(iii). Additionally, the statute mandates that the agencies "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." Id. Ss 4332(2)(E). The "alternatives" section is "the heart of the environmental impact statement." 40 C.F.R. ss 1502.14. "The consideration of alternatives requirement... guarantee[s] that agency decisionmakers have before them and take into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost benefit balance." Bob Marshall Alliance, 852 F.2d at 1228 (internal quotation marks, punctuation, and citation omitted) (emphasis in original). Pit River Tribe v. United States Forest Service, 469 F.3d 768 (9th Cir. 2006).</p> <p>Such alternatives should include both site alternatives and technological alternatives. For example, Rosemont Copper Company had proposed using a dry tailings method that has never been used in the United States. Particularly given that this would be a first time use in the United States and in this climate, the DEIS should analyze other alternatives to that technology, along with their probable environmental effects, including the additional water alternative technologies would require.</p> <p>We ask the Forest Service to ensure a comprehensive analysis of the "no action" alternative; the one automatically required alternative in all environmental impact statements. 40 C.F.R. ss1502.14(d). Agencies, at times, tend to give short shrift to the actual analysis on the "no action" alternative, to the detriment of both their own decisionmaking and the public's understanding of the potential impacts of the proposed action. See, for example, inadequate treatment of the "no action" alternative in NEPA documents prepared by the Forest Service in Pit River Tribe v. United States Forest Service, Id., and City of Tenakee Springs v. Clough, 915 F.2d 1223 (9th Cir. 1990) The analysis in the DEIS should comprehensively evaluate the future of the affected geographic area in light of such plans as the detailed and comprehensive Sonoran Desert Conservation Plan adopted by Pima County, Pima and Santa Cruz County economic projections and other local, state, tribal and federal planning processes that affect the area. This evaluation must be compared to equally detailed analyses of the same areas should the proposed mine be approved and commence operations.</p> <p>We also remind the Forest Service that it has an obligation to analyze reasonable alternatives that might, in whole or in part, lay outside of the agency's own authority. "An agency's refusal to consider an alternative that would require some action beyond that of its Congressional authorization is counter to NEPA's intent to provide options for both agencies and Congress." National Wildlife Federation v. National Marine Fisheries Service, 325 F. Supp. 2d, 1143 (W.D. Wa. 2002).</p> <p>Finally, the Forest Service must explain in the DEIS how each of the alternatives considered in it and decisions based on it will or will not achieve the requirements of Sections 101 and 102(1) NEPA and other environmental laws and policies. 40 C.F.R. ss. 1502.2(d).</p>
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7151	27	Organization	Lining all mine facilities, including waste rock piles and berms, should be included as an alternative in the EIS.
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7151	31	Organization	<p>The alternatives in the EIS must include complete or partial back-filling of the open pit. The EIS should determine how much additional expense it would be to backfill the pit:</p> <p>How much additional time would be required in the overall life of the mine to include complete or partial backfilling? How would backfilling of the pit help protect or harm water quality in the watershed? How deep would this reduce the likelihood of aquifer contamination post-mining?</p>
7184	11	Individual	<p>Alternative: Insulate the bottom of the tailings heap and dam in Barrel Canyon with an impermeable liner. Run perforated piping above the liner and below the tailings at each layer of limestone so that any and all run-off from the heap can be captured and disposed of properly. This would be a responsible and innovative approach to mitigating the majority of pollution problems associated with hard-rock mining. It would also be an exact method for measuring of and recording time tables for the speed of leaching and types of pollutants generated over the next 100 years or more. Rosemont would have to be responsible for monitoring the site and disposing of contaminants for that period of time.</p>
7200	2	Organization	<p>The EIS must identify and evaluate all reasonable alternatives to the Rosemont Project. Development of alternatives for the proposed action is the heart of the EIS. 40 C.F.R. SS 1502.14. Council on Environmental Quality (CEQ) regulations call on the Forest Service to "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated," "[d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits," "[i]nclude the alternative of no action," and "[i]nclude appropriate mitigation measures not already included in the proposed action or alternatives." Id. SS 1502.14 (emphasis added).</p> <p>For the Rosemont Copper Project EIS, the Forest Service must include the no-action alternative in their discussion and evaluation of reasonable alternatives. Considering the vast environmental impacts that are likely to occur should it move forward, the Sierra Club firmly believes this is the only appropriate alternative for this project. However, should the Forest Service reject this alternative, they must include a justification for the rejection as well as a discussion of mitigation measures that will adequately offset the impacts of the proposed action.</p>
7277	2	Government	<p>The Department believes that presentation of alternatives analyzed in the Environmental Impact Statement should include a description of water use by all elements of each alternative, including ancillary facilities, and should include best water conservation strategies for the technology used, by alternative. Analysis of alternatives should include direct, indirect, and cumulative effects to water supplies and rights to water.</p>
7429	6	Individual	<p>Extrapolating from the information in the Mine Plan of Operations, a truck would be entering or leaving the highway at the access road about every three minutes around the clock. Many of these would be very heavy trucks. Furthermore, this does not include employees entering or leaving the plant during shift change. (Note that "trip" as counted in the Plan is a round trip, in other words a truck entering and a truck leaving.)</p> <p>The plan also states that traffic would be staggered to reduce the numbers in the early morning and when school buses are operating, meaning that it would be even heavier at other times. The highway would become virtually unusable for regular traffic at certain times.</p> <p>Over half of these trucks (65%) will be tractor trailers taking copper concentrates to the railhead at Benson for shipment to a smelter. Because of the quantity of weight of concentrates, the usual means of transportation from Arizona mines is by rail. Most copper mines in Arizona have constructed rail spurs for this purpose. Arizona smelters are designed to accept concentrates delivered by rail. The plan to transport concentrates by truck is both unusual and unnecessary, as well as being expensive.</p>
7429	9	Individual	<p>Augusta must be required to review other possibilities, such construction of a rail spur, as other mines have done, or an alternative roadway to I-10, or both. A rail spur would be an economical and safe way or bringing many other bulk materials (fuel, acid and explosives) to the site as well as transporting both copper and moly concentrates to smelters.</p>

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7429	12	Individual	<p>Given the problems arising from transportation of concentrates, Augusta must be required to evaluate new methods of processing concentrates from sulfide ores.</p> <p>Specifically, Augusta must be required to consider use of on site high pressure/high temperature leaching of copper concentrates. This process is a new method of extracting copper from sulfide ores. It offers a low cost alternative to conventional smelting and refining. It is currently being used on a commercial scale at several locations around the world and in Arizona at the Morenci Mine and at the Bagdad Mine, both owned by Freeport-McMoRan.</p> <p>The process in use at Freeport’s mines was refined and tested over a four year period at the Bagdad Mine before construction of the commercial scale plant at Morenci. Traditionally, copper concentrates from copper sulfide ores have been processed at smelters and refineries. The concentrate pressure leach process bypasses both of these steps and parallels the oxide process, producing cathode copper on site.</p> <p>In pressure leaching of sulfide ores, the ore is milled and processed on site to produce concentrates in the same way it would if it were to be sent to the smelter. Instead of being sent to a smelter and refinery, the concentrate is mixed into a slurry and processed at high pressure and temperature in a leach vessel. This produces copper bearing solution that can be combined with the solution from the oxide circuit and sent to the SX/EW facility.</p> <p>The pressure leaching step also produces sulfuric acid, which can be used in the oxide heap leach circuit, reducing or eliminating the need to purchase and transport acid to the site. The entire process takes place on site.</p> <p>This new process appears well suited to a greenfield operation, particularly one with no convenient access to a smelter and refinery.</p> <p>An internet search reveals additional information on this new technology.</p> <p>The advantages of this system for the operator are: Cost savings by eliminating the fees paid to a smelter and then to a refinery for processing and for the purchase of sulfuric acid for oxide ore processing, also purchased from a smelter. This seems particularly relevant for a company that does not own a smelter or refinery.</p> <p>Cost savings from transportation of concentrates to smelter and transportation of acid from smelter to mine site.</p> <p>Acid production can be managed to match consumption in the heap leach by control of temperature in the leach vessel.</p> <p>Full use of SX and EW capacity through management of parallel systems. And increased ability to manage production levels.</p> <p>Environmental Impacts: A primary impact would be reduction of traffic. Trucking the concentrates accounts for about 65% of all traffic. Importing acid account for an additional 10%. A reduction of 75% of the traffic, including some of the heaviest vehicles, could be significant. This would be balanced by an increase in trucks leaving the mine carrying cathodes, but this would be considerably less than the concentrates.</p> <p>The overall impact on air quality and water quality would likely be positive, as the concentrates would not be processed in a smelter. Sulfur emissions would presumably all be captured as acid. A review of the environmental permitting for the Bagdad and Morenci pressure leach operations would be instructive.</p> <p>The negative would be the addition of the pressure leach tank and possibly an increase in the size of the SX/EW, increasing the overall land use, all of which would, of necessity, be on public land.</p>

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7430	2	Organization	<p>Some suggested steps to mitigate the potential harm from light pollution from the mine's all night operation include:</p> <ol style="list-style-type: none"> 1. Use fully shielded or full cutoff lighting fixtures, aimed directly downward. 2. For all road, dirt road, and parking lot lighting, both inside and outside the pit, use 55 watt induction lamps with motion sensor controls to reduce energy consumption and light pollution at the same time. 3. Exterior lighting on any buildings or trailers should be fully shielded and limited to egress lighting, using the lowest level of light sufficient for the purpose.
7562	8	Individual	<p>An underground mine could be used as an alternative to extract the copper bearing ore. To reduce the impact of the tailings the underground mine could start with the primary shaft at the maximum surveyed depth of the ore deposit. The initial extraction (mining) would begin at the maximum depth and then work upwards to the top of the copper bearing ore. The project would be continuously refilling after the extraction of the ore from the bottom up with excess material and waste. Rosemont Project representatives have indicated that a new mechanical process was going to be used to reduce the tailings debris to a moisture content of 15%. The reuse of the damp tailings should stop or reduce any in-hole dust and conceivably provide a good material for compaction to be used for the rising floor for the ever elevating mining process. The need for pumping invasive ground water out of the underground mine would lessen as the mine developed and work progress onto higher portions of the ore which would be the reverse of an open pit mine.</p> <p>An underground mine that utilized the tailings as part of the ongoing process would alleviate some of the concerns for major unsightliness, excessive overburden striping, a pit catching storm and ground water with the associated pumping and subsequent discharge. The on going concern with all large projects is the set aside for final cleanup and remediation as required. The underground mining alternative suggested above would greatly remove some of the concerns since most of the remediation is concurrent with the continuing extraction.</p>
7649	1	Individual	What are the options, Alternative to this site? Why not: Ajo, Kingman, Ruby, San Manual, Bisbee
7650	1	Individual	ALTERNATIVE 1 - Only Use CAP Water Resources.
7650	3	Individual	Alternative 1 uses water resources only from the Central Arizona Project (CAP). Ground water is neither required for mining nor for Rosemont Copper.
7650	6	Individual	The Forest Service analysis must show which Alternative, the only CAP-water or the proposed and deficient water resource plan; best mitigates all direct and cumulative indirect and cumulative indirect water withdrawal impacts on ground water. This "CAP water only" Alternative needs to be fully evaluated so all decision makers have real options to consider before making their Record of Decision in this matter.
7650	7	Individual	.ALTERNATIVE 2 - A New Electrical Plan.
7650	10	Individual	This ALTERNATIVE uses natural gas from an El Paso Gasline parallel to I-10 to fuel air-cooled gas turbines at the mine to also eliminate transmission losses from distant power plants. This is a reasonable ALTERNATIVE to provide power for Rosemont Copper with less air and water pollution by an underground gasline instead of transmission along Scenic Highway SR 83 or across Green Valley.

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7650	23	Individual	Under ALTERNATIVE 1, Rosemont would be required to obtain allocations and permits, develop and build pipeline, and pump CAP water directly to the mine so that TAMA ground water will NOT be significantly impacted. Under ALTERNATIVE 1, less direct and cumulative indirect electricity will used as ground water is not be pumped out of the ground and CAP water is pumped into the ground for recharge. Many MW-hrs of 24/7 electrical power will be saved. Under ALTERNATIVE 1, subsidence and ground water impacts due to Rosemont Copper operations are avoided. There will be no impacts on local wells in the vicinity of Sahuarita, other than local wells closer to the mine where the mine pit will lower the water table byits large and half-mile deep cone of depression. Under ALTERNATIVE 2, the resultant electrical load will be decreased based on using ALTERNATIVE 1 for direct delivery of CAP water, thus reducing the overall cumulative negative impacts by using CAP water only. There are presently inadequate electrical resources in Pima and Cochise Counties to meet the continuous electrical demands of Rosemont Copper. To meet Rosemont Copper's electrical demand, ALTERNATIVE 2, uses local generated power dedicated to this mine to relieve other in Pima County demand. Constructing a natural gasline from the I-10 El Paso Natural Gasline corridor directly to Rosemont, under ALTERNATIVE 2, avoids new transmission lines, has a smaller carbon imprint, and pollutes less air to generate the mine's electricity. Less visual impacts result with no impacts on Scenic Highway SR 83. Natural gas turbines are small, fairly inexpensive, and can be mobile, so Rosemont Copper can remove its power plant after it closes. When assessing ALTERNATIVES 1and 2, the synergistic effect needs to be considered as both are better together; however, each can be standalone.
7650	24	Individual	Rosemont Copper proposes a "system" of an infrastructure, buildings, earth transportation, processing buildings, and other component elements. The most important interfaces to this system are water and electricity; otherwise, most operations are within the Rosemont Copper system. Every interface requires careful analysis, as each impacts all other elements withing. These two Alternatives provide a way for isolation fo each (water and electricity) so that a sensitivity analysis for each ALTERNATIVE (and other impacts) can be performed. The Operations Research process provides ways with linear algebra, models and validated operations research tools to make accurate assessments of interacting elements, including transportation elements within and external to the system boundaries. Such analysis requires OR specialists, usually mathematicans experienced in this field of analysis. Allocation of measurable objective resources for each element determined by such analysis is commonly performed in the mining industry using standard Operations Research processes and computer models. This usual Systems Engineering task makes a series of objective trade and sensitivity studies, also called cost/benefit, trade-off, optimization or objective assessments.
8607	2	Individual	There is a passable road from Rosemont through the Santa Ritas to a railroad spur at Sahuarita.
8884	1	Individual	I would like the review committee to consider instead of doing an open pit mine at the proposed Rosemont project, to do a deep underground copper mine, similar, a, to what the Resolution Copper Mining Company is doing in Superior, Arizona, so that we could eliminate tailings and, um, then we could maybe fill -- use some of the other materials to fill other open pits, as they propose to do. Anyway, if you would please consider that as an alternative, um and give us pros and cons of that, I would really appreciate it.
11047	23	Individual	I propose a dome which can be opened and closed and used in conjunction with solar still desalination distilling to produce more fresh water. This should prevent more flying animal deaths as well as as saving on ground water pumping. It will also save on electricity for water production as the water would be produced on site for the employees to drink and shower in and gravity feed could be used from the tanks.
11082	13	Individual	I think a fish habitat would be nice for reclamation. How about a nice lake that is safe in the pit for boating, fishing and so forth? I have no idea what the reclamation would be to make that happen safely though, but it would be nice to have a lake and recreation such as the Catalinas have. If the safe thing doesn't work out, I like the idea of a Solar Farm because no one would see it and the land would have already been raped so why not use it for some good?

**ROSEMONT COPPER PROJECT
DRAFT DEIS TEXT FOR USE IN ALTERNATIVE DEVELOPMENT (5/13/2009)**

Purpose of and Need for Action

The General Mining Act of 1872 confers a statutory right to enter upon public lands open to location in pursuit of locatable minerals, and under valid existing mining claims to conduct mining activities, in compliance with federal and state statutes and regulations. The Multiple-Use Mining Act of 1955 confirms the ability to conduct mining activities on public lands, locate necessary facilities, and conduct reasonable and incidental uses to mining on public lands, including National Forest System lands. Forest Service mining regulations at 36 C.F.R. Part 228 subpart A (36 CFR 228A), correspondingly recognizes the rights of mining claimants.

Rosemont Copper Company is entitled to conduct operations that are reasonably incidental to exploration and development of mineral deposits on its mining claims pursuant to the United States Mining Laws. Under regulations of the Secretary of Agriculture, Rosemont Copper Company must conduct mining operations in accordance with the regulations at 36 CFR 228A, and with a Plan of Operations that has been approved by the Forest Service.

The Forest Service is required to respond to a proposed Plan of Operations to conduct mining operations pursuant to the Mining Laws. Under 36 CFR 228.5, the Forest Service must determine whether to approve the Plan of Operations submitted by Rosemont Copper Company as it is proposed, or to require changes or additions deemed necessary to meet the requirements of the regulations for environmental protection.

The purpose of the Agency's proposed action and the evaluation of alternatives to it are to determine if changes or additions to the Plan of Operations are required to meet the requirements of the regulations for environmental protection set forth in 36 CFR 228.8.

**ROSEMONT COPPER PROJECT
DRAFT DEIS TEXT FOR USE IN ALTERNATIVE DEVELOPMENT (5/13/2009)**

Decision Framework

Forest Service

The National Environmental Policy Act requires Federal agencies to prepare an environmental impact statement prior to undertaking a major Federal action significantly affecting the quality of the human environment. NEPA also requires Federal agencies to study, develop, and describe appropriate alternatives to any proposal which involves unresolved conflicts concerning alternate uses of available resources.

A proposed Plan of Operations is a starting point in the environmental impact statement process and is one of the alternatives considered. Forest Service mining regulations and policies establish a process to approve a Plan of Operations for mining activities on National Forest System lands and to ensure such plans minimize adverse environmental impact. Feasible alternatives which allow the claimant to reasonably exercise their statutory rights and vested property rights in minerals, while seeking to minimize adverse environmental impacts on National Forest surface resources, are also included in the statement as alternatives.

The regulations implementing NEPA also require that a no-action alternative be included in an environmental impact statement. Forest Service Handbook 1909.15 Chapter 14.2 clarifies that the no-action alternative provides a baseline for estimating the effects of other alternatives. The no-action alternative presents that no action or activity would take place from the planning effort, thus no Plan of Operations would be approved.

Although the Forest Service may reasonably regulate mining activities to protect surface resources, there are statutory and constitutional limits to its discretion when reviewing and approving a Plan of Operations. The Forest Service cannot categorically prohibit mining activity or deny reasonable mineral operations under the mining laws. Selection of a no-action alternative is outside the discretion of the Responsible Official.

In practice, if the originally proposed Plan of Operations does not meet all applicable requirements, the Forest Service works with the mining applicant to develop an acceptable legally-compliant Plan of Operations as an alternative to be considered during the NEPA process, thereby precluding selection of the no-action alternative.

The Forest Supervisor of the CNF, the Responsible Official for this project, has determined that preparation of an environmental impact statement is required for approval of the proposed Plan of Operations under Forest Service regulations governing locatable mineral activities on National Forest System lands (36 CFR 228A) and Council on Environmental Quality (CEQ) regulations implementing the NEPA (40 CFR 1500-1508).

**ROSEMONT COPPER PROJECT
DRAFT DEIS TEXT FOR USE IN ALTERNATIVE DEVELOPMENT (5/13/2009)**

Given the purpose and need, including recognition of the rights of mining claimants, the Responsible Official, reviews the proposed action, the other alternatives considered in detail, and the environmental consequences in order to make the following decisions:

1. Whether or not to approve the Proposed Plan of Operations for lands within the National Forest jurisdiction.
2. Whether or not to notify Rosemont Copper Company of changes or additions to the Proposed Plan of Operations, as represented by an alternative considered in detail, necessary to minimize or eliminate adverse environmental impacts from mineral development activities on National Forest System lands, as required by Forest Service regulations (36 CFR 228A).
3. Whether or not approval of a Plan of Operations, represented by the proposed action or alternative considered in detail, will be consistent with the Forest Plan. If the activity is not consistent with the Forest Plan the Responsible Official will decide how the Forest Plan will be amended.

Prior to approval of a Plan of Operations, the Forest Supervisor would require financial assurance or a reclamation bond to ensure that Forest lands involved with the mining operation are reclaimed in accordance with the approved Plan of Operations and reclamation requirements (36 CFR 228.8 and 228.13).

Following issuance of this DEIS, the CNF will accept comments on it that will be considered in producing a Final Environmental Impact Statement (FEIS). Following issuance of the FEIS the Forest Supervisor will issue a decision on Rosemont Copper Company's proposal in a Record of Decision (ROD). The ROD may contain changes or additions to the Plan of Operations necessary to minimize or eliminate adverse environmental impacts from the proposed mineral development on National Forest System lands. This decision will be subject to appeal. Rosemont Copper Company may appeal the decision pursuant to 36 CFR 215 or 251. Other parties may appeal the decision pursuant to 36 CFR 215.

Following resolution of any appeal, Rosemont Copper Company must change their Proposed Plan of Operations as described in the ROD and resubmit it to the Forest Service along with a reclamation bond or other financial assurance that is required. Once the Forest Service determines that the Proposed Plan of Operations has been changed as required, and that the bond or financial assurance instrument is acceptable, it will notify Rosemont Copper Company that its Plan is approved.

***NOTE: DECISIONS REQUIRED TO BE MADE BY COOPERATING
AGENCIES AS PART OF THIS EFFORT NEED TO BE DEFINED.***



Alternatives Developed from Issues and During Scoping – Rosemont Copper

Mine Plan of Operations

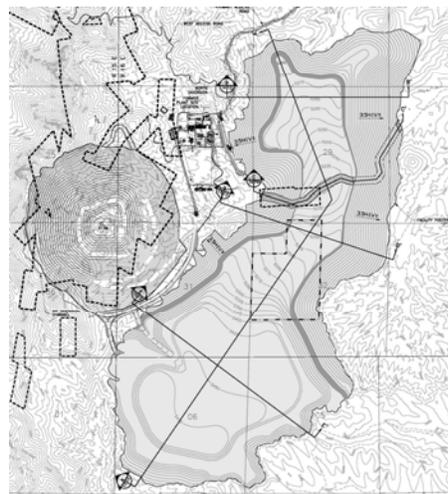
End of mine life



Area of discussion



Area already
addressed

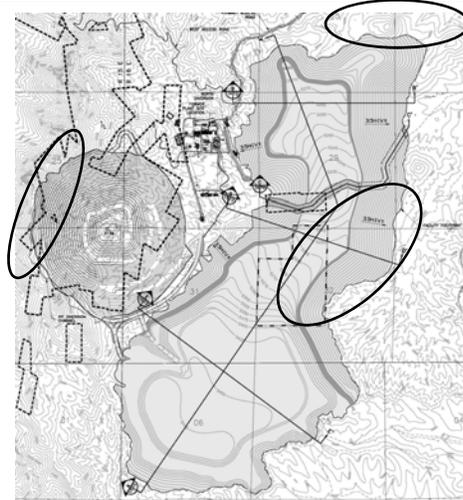


Mine Plan of Operations

Visual

End of mine life

-  Area of discussion
-  Area already addressed

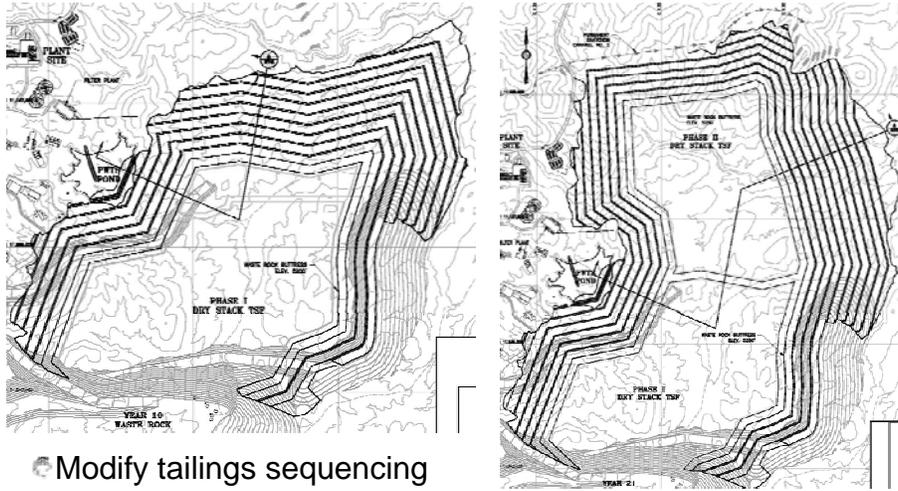


Visual

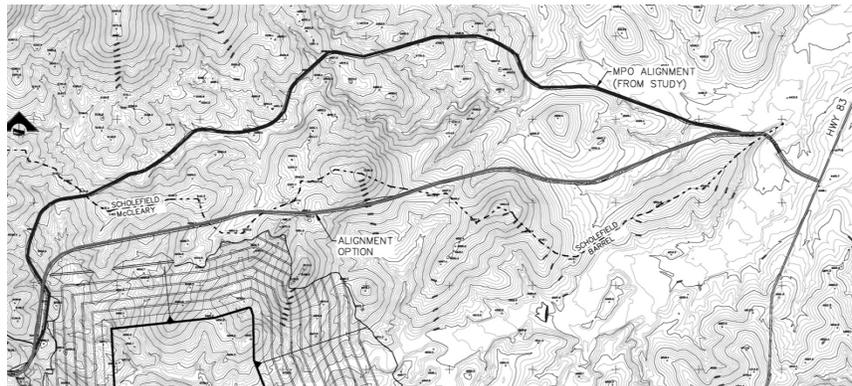
- Increase slope diversity on the perimeter of the waste rock and tailings areas
 - Vary slope angles, aspects, and contours
 - Align offslope drainage management to approximate terrain
 - Increase diversity of landscape surface soil and vegetation texture
- Increase priority to establish vegetation on the pit highwall



Visual



Visual

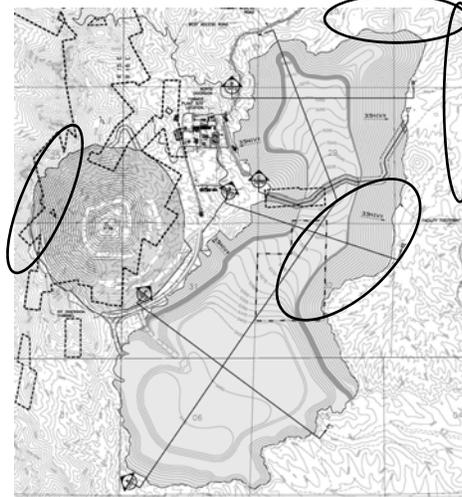


Mine Plan of Operations

Transportation

End of mine life

-  Area of discussion
-  Area already addressed



Transportation

- Upgrade design of State Highway 83 and Access Road Intersection to improve safety factors possible designs include
 - Divided highway pass-through lane
 - Dedicated turn lanes with an acceleration lane
- Establish program for employee and construction labor carpooling with off-site park and ride areas

Transportation

Possible Mitigation Items:

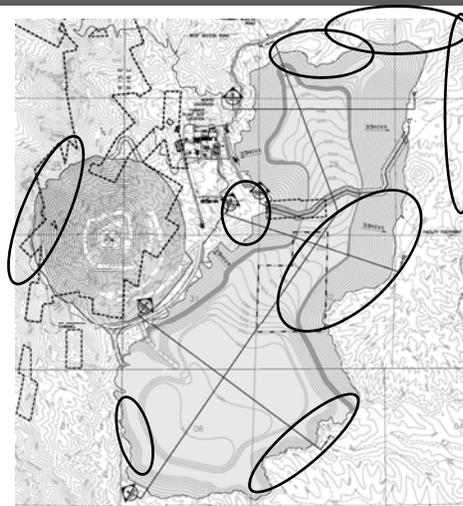
- Provide design for truck turnouts along Highway 83
- Provide design for up to five school bus turnouts
- Participate in establishing Park and Ride areas
- Provide design for Acceleration/Deceleration lane for ADOT consideration

Mine Plan of Operations

Plant and Animals

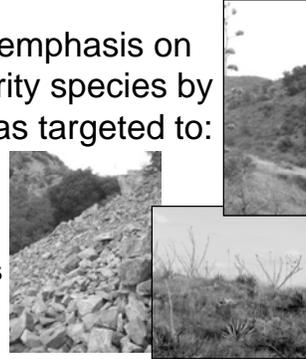
• End of mine life

- Area of discussion
- Area already addressed



Plants and Animals

- Upgrade the Rosemont Ranch livestock water system with goal of one permanent surface water source in each of the individual pastures
- Upgrade the Reclamation Plan with emphasis on wildlife, native plants, and other priority species by identifying a habitat mosaic with areas targeted to:
 - Wildlife – vegetated travel corridors
 - Bats – agave
 - Snails – talus slopes and springs
 - Leopard frogs – perennial water sources
 - Livestock ranching



Plants and Animals

Possible Mitigation Items:

- Provide fenced livestock exclosures for highest value riparian habitat on Rosemont Ranch private lands
- Implement specified areas of off-site mitigation to meet permit conditions or stipulations of ACOE, FWS, BLM, and other cooperating agencies such as the AGFD
 - Identify and protect with fencing, that portion of the stock ponds in leopard frog habitat that would provide protection for frog habitat within the pond area
 - Upgrade protection of selected bat habitat on Rosemont Ranch private lands

Mine Plan of Operations

Recreation

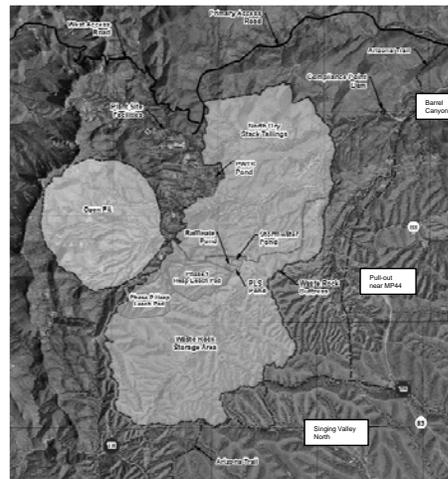
End of mine life

-  Area of discussion
-  Area already addressed



Recreation

- Re-align Arizona Trail
- Re-align east access road
- Re-align west access to maintain recreation access
- Provide water station for horses along Arizona Trail
- Commit to place west side private lands in AZGF cooperative landowner program – safety permitting



Recreation

Possible Mitigation Items:

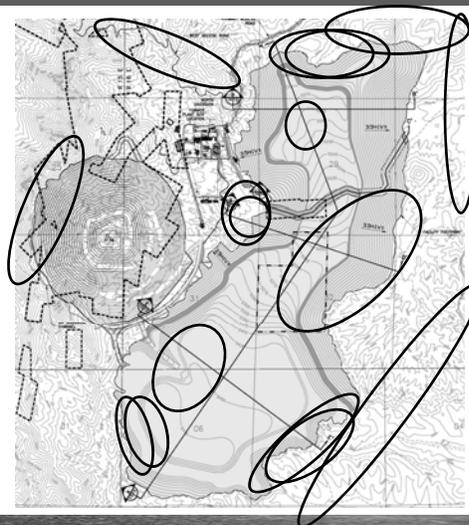
- Provide interpretive kiosks along the Arizona Trail (through a grant)
- Public access or development covenants on private lands within forest boundaries where safety permits
- Develop new recreational trailhead on the east side of SR 83
- Complete additional Arizona Trail segment up to "Sentinel Peak" with an observation point

Mine Plan of Operations

Water

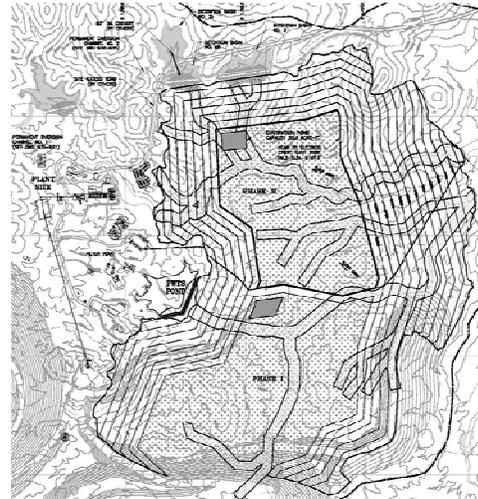
• End of mine life

- Area of discussion
- Area already addressed



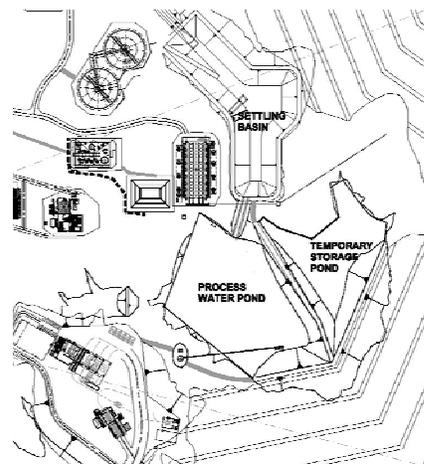
Water

- Revise the construction sequence for tailing storage to consolidate water management system and maintain downgradient flows to the maximum extent practicable
- Eliminate central drain and realign underdrain and surface water diversion networks
 - improve spring management and routing with underdrains
 - improve sediment management system with diversion design
- Increase number of SW ponds



Water

- Change design of PWTS pond
 - Add process water storage
 - Provide secondary/tertiary containment
 - Segregate process/stormwater circuits
 - Double liner on process water system
- Expanded size of tailings filter plant
- Relocate raffinate pond
- Realign pit diversion
- Relocated thickeners (minimize potential for differential settling)



Water

Possible Mitigation Items:

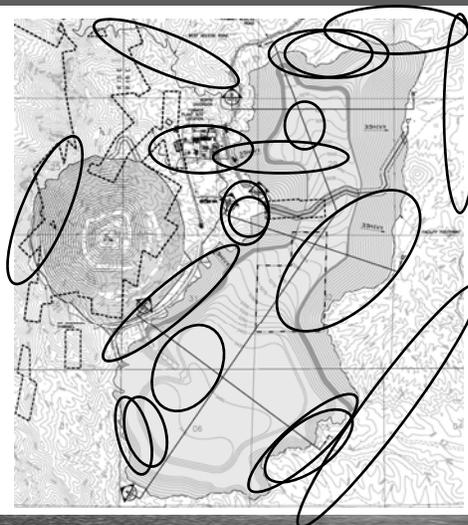
- Implement the Sahuarita area residential well protection program currently under consideration
- Purchase and pre-store CAP water within Tucson Active Management Area at nearest available recharge site

Mine Plan of Operations

Air

- End of mine life

- Area of discussion
- Area already addressed



Air

Establish truck specifications to reduce emissions

- Include Tier II diesel engines for haulage equipment
- Investigate using larger haul trucks to reduce road miles
- Increase ratio of water trucks to haul trucks



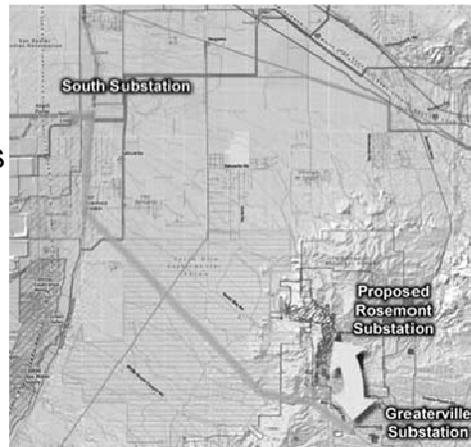
Reorient internal haul road system to facilitate dust control

- Cover dry stack tailings conveyor at transfer points
- Set and enforce speed limits throughout operation access and haul road system

Air

Limit on-site generation of construction power - power from Greaterville

- Submerge fill for fuel tanks to reduce VOC emissions
- Use low sulfur diesel fuel
- Secondary acid mist controls in the electrowinning tankhouse



Air

Possible Mitigation Items:

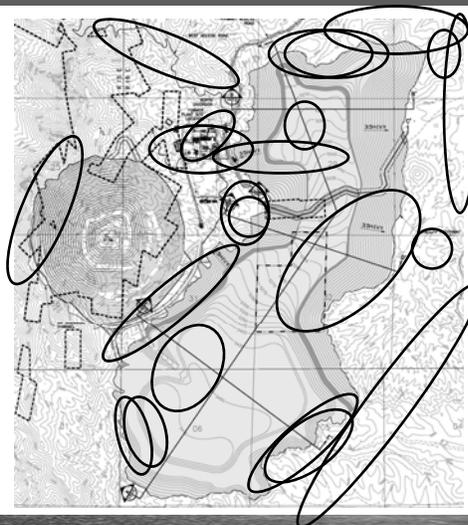
- ☛ Commit to develop a dust management program for Santa Rita Road
- ☛ Develop a dust management program for Forest Service Roads on the west side of SR83
- ☛ Water sprays on gravel access road
- ☛ Car pooling for employee and contractor transportation
- ☛ Relocate Arizona Trail during construction of perimeter berm to maintain distance between public and operations areas

Mine Plan of Operations

Heritage Resources

☛ End of mine life

- Area of discussion
- Area already addressed



Heritage Resources

- Provide visitor center near administration area and proposed trailhead at closure to provide information regarding heritage resources

- Avoid ball court in “Trail Creek” area

Possible Mitigation Items:

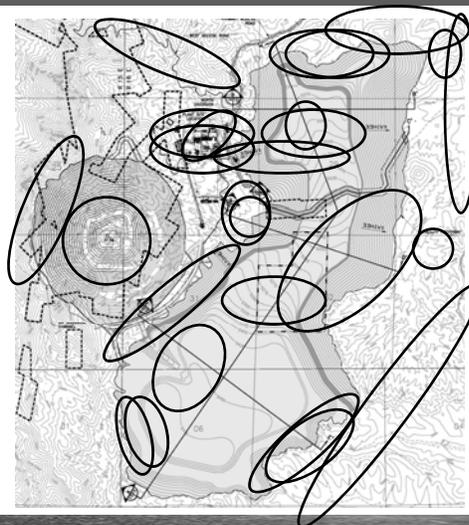
- Test historical and archaeological sites and do data recovery within project area
- Develop interpretive kiosks for cultural/historical sites along the Los Colinas segment of Arizona Trail

Mine Plan of Operations

Night Skies

- End of mine life

- Area of discussion
- Area already addressed



Night Skies

- Hooded fixtures and directional lighting
- Assign light management program to a designated light monitor
- Minimize decorative lighting



Possible Mitigation Items:

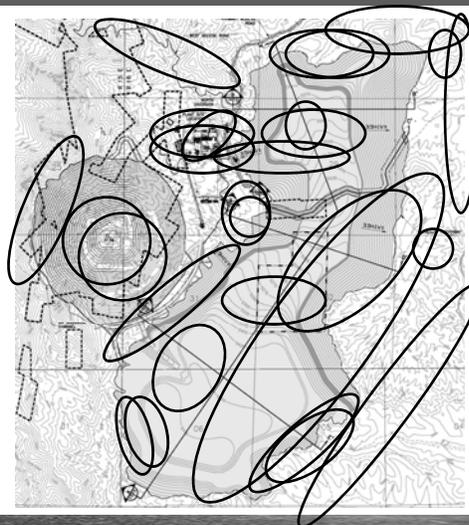
- Monitoring, auditing, and reporting of light emissions

Mine Plan of Operations

Noise and Vibration

- End of mine life

- Area of discussion
- Area already addressed



Noise and Vibration

- ☐ Attenuated backup alarms – electronically modulated alarms
- ☐ Sequenced blasting using computerized controls and/or time delay technology
- ☐ Daylight hours only for blasting
- ☐ Prohibit jake-brake use on the eastern access road
- ☐ Enforce speed limits on operations

Possible Mitigation Items:

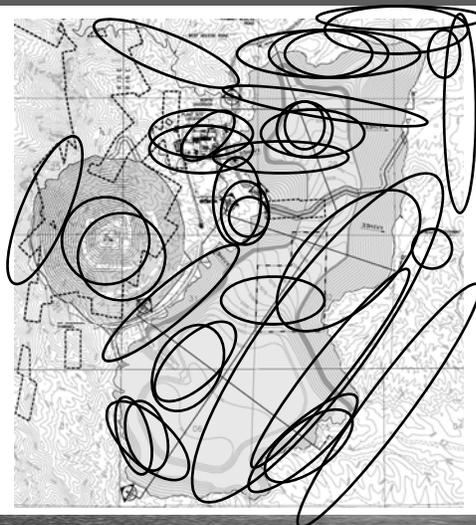
- ☐ Monitor for noise levels at claim boundary
- ☐ Monitor for blasting effects

Mine Plan of Operations

Riparian Habitat

- ☐ End of mine life

- Area of discussion
- Area already addressed



Riparian Habitat

- ☐ Realign access road to reduce riparian impacts
- ☐ Increase number and size of stormwater retention ponds to allow development of seasonal riparian features
- ☐ Redesign of surface water management features on top of the waste rock and tailings facilities to provide seasonal riparian areas following closure
- ☐ Phased tailings placement to leave McCleary Canyon open as long as possible during operations

Riparian Habitat

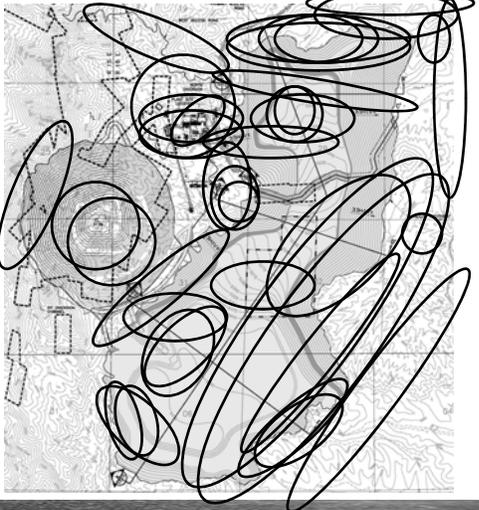
Possible Mitigation Items:

- ☐ Provide fenced exclosures for highest value riparian habitat on private lands
- ☐ Exclude selected areas from livestock grazing that would have the potential for priority high quality riparian use during reclamation and post-mining
- ☐ Fence off a portion of livestock water areas for priority wildlife areas
- ☐ Identify and exclude a portion of the stock ponds in leopard frog habitat that would provide protection for frog habitat within the pond area

Mine Plan of Operations

Reclamation

- ☐ End of mine life
- Area of discussion
- Area already addressed



Reclamation

- ☐ Increase slope diversity

<ul style="list-style-type: none"> • Contours • Drainage management • Texture 	<ul style="list-style-type: none"> • Vegetation types • Trees mosaics • Scree/talus slopes
--	---
- ☐ Design and implement reclamation mosaic targeted to:

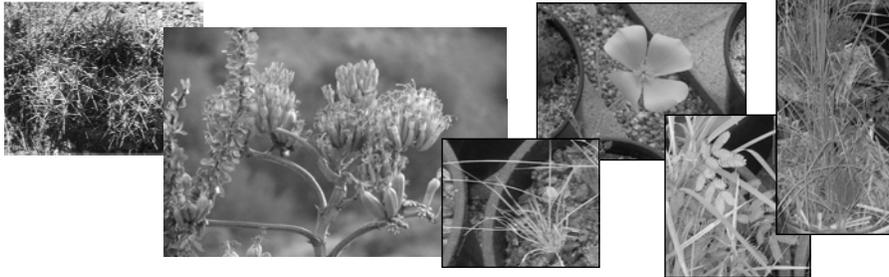
<ul style="list-style-type: none"> • Ranching • Wildlife • Leopard Frogs 		<ul style="list-style-type: none"> • Snails • Bats
---	---	--
- ☐ Include “water features” in design to coordinate with stormwater system and provide opportunity for varying uses and habitats
- ☐ Provide areas where lower impact recreation uses may be appropriate



Reclamation

Possible Mitigation Items:

- Include tree seeds in reclamation seed mix
- Replant agave species from nursery stock

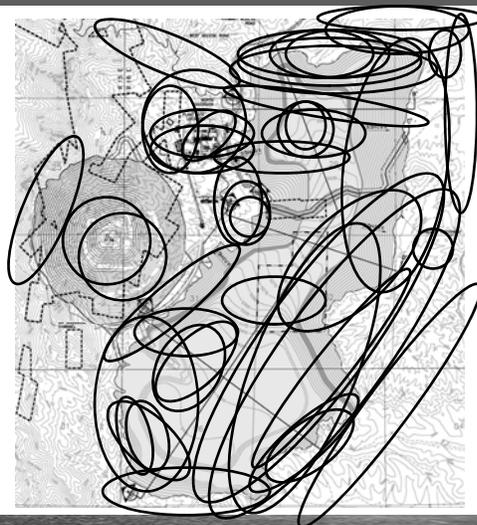


Mine Plan of Operations

Soils

- End of mine life

- Area of discussion
- Area already addressed



Soils

- ☛ Install test plots prior to mining to establish baseline conditions and soil treatment techniques – i.e. shallow ripping, deep ripping, surface placement
- ☛ Identify and utilize soil stockpile areas
- ☛ Integrate grubbing waste as organic matter into soil matrix
- ☛ Optimize soil placement for aspect

Socioeconomics

- ☛ Maximize metal recovery, reduce stripping ratio of waste rock to ore, extend economic life of project, and maximize economic benefit of project to proponent and to public
- ☛ Provide valuable copper, molybdenum, silver, and gold for societal use
- ☛ Provide third party financial assurance for closure, reclamation, and post closure monitoring

Socioeconomics

Possible Mitigation Items:

- Develop community endowment program for \$25 million permanent endowment and \$500,000 annual contribution during mine life
- Support research into sustainable mineral development technologies
- Consider contributions of infrastructure development at close of mine life



ROSEMONT COPPER

Resourceful.



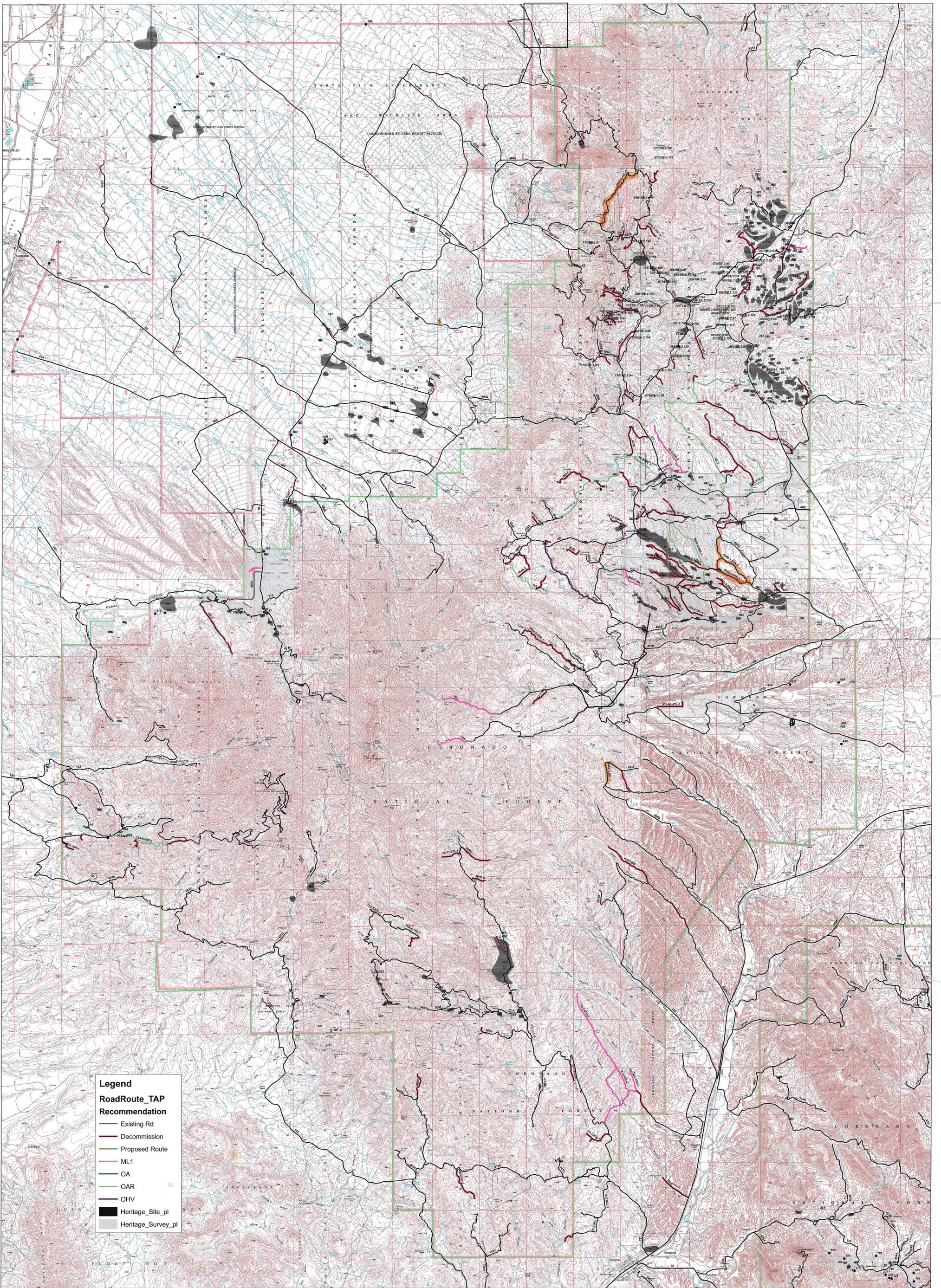
Thank you

www.rosemontcopper.com

ALTERNATIVE DRIVERS ←

- ① Fill pit + facilities w/ waste rock
 - store in upland areas (out of Barrel + McCleary etc)
 - short-term issues w/ storage of waste rock, but long term ^{benefits} (PLANTS/ANIMALS, WATER, RIPARIAN, CULTURAL, VISUAL, RECREATION)
- ② Export waste rock to mission or Senitz mine (ditto)
- ③ Place waste + tailings in upland areas staying out of riparian areas (w/ orange red pen)
- ④ Red outline Sycamore Canyon - cultural, biological + water resources
- ⑤ Red circled springs of concern to BLM - hydrological connections unknown?
- ⑥ Blue area - lower priority for waste rock fill than the pit + leach area.
- ⑦ Leopard frog sites along Oak Tree to protect (offsite)
- ⑧ Crest is a visual resource ~~XX~~
- ⑨ Box Canyon is sensitive visually + biological

More on #1: Rationale is to have temporary impacts only to Barrel + Riparian + area to the SE if the alternative of using mission or Turn Peates for waste rock is not feasible. The pit would be backfilled at end of the 20 years with waste that was stored.



Legend

RoadRoute_TAP Recommendation

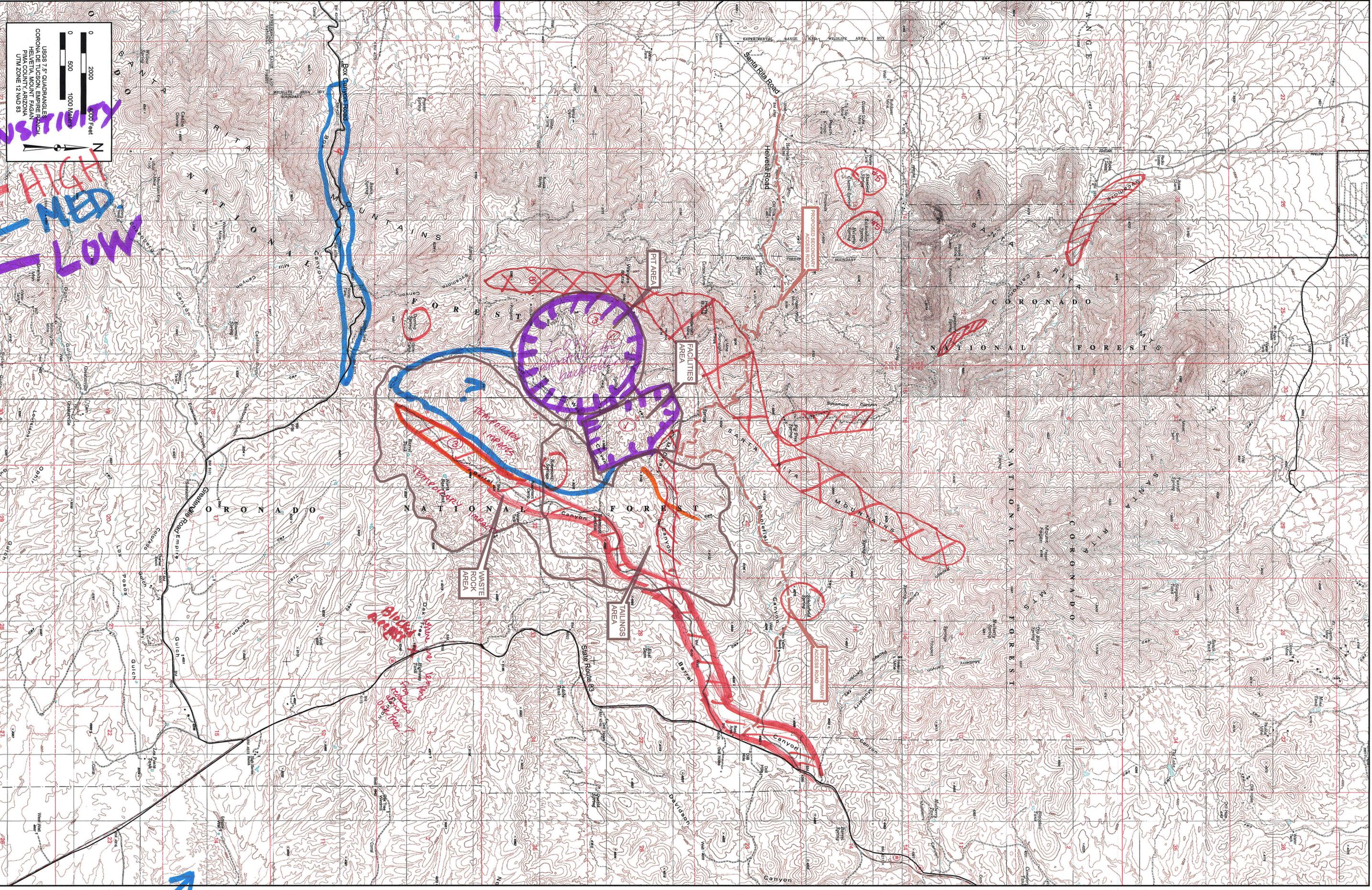
- Existing Rd
- Decommission
- Proposed Route
- ML1
- OA
- OAR
- OHV
- Heritage_Site_pl
- Heritage_Survey_pl

EXPORT WASTE TO MISSION MINE OR SIERRITA MINE OR TWIN BUTTES

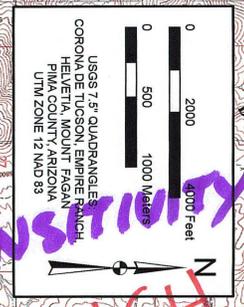
Jim Stewart

Larry Jones

Dr. John Fournier

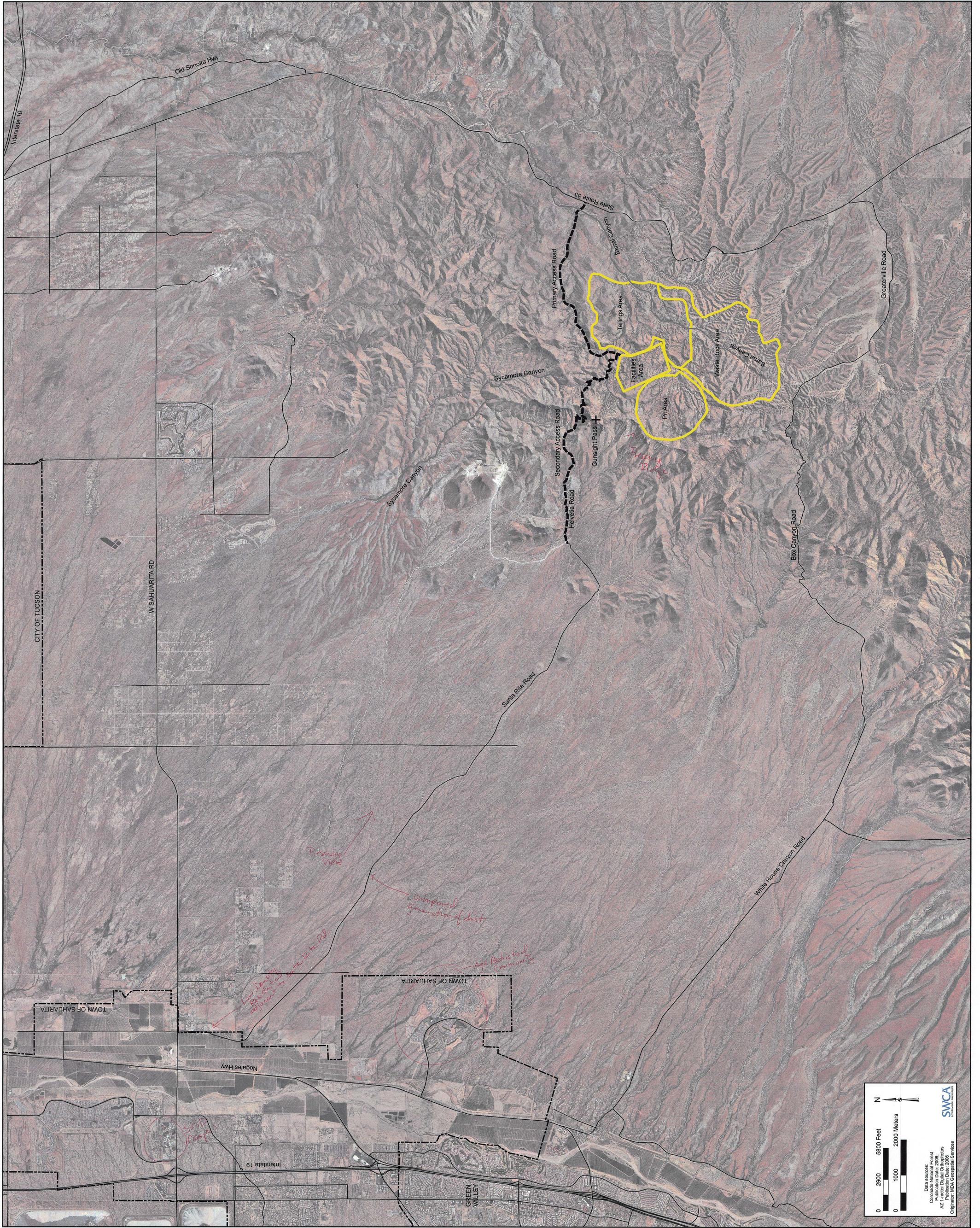


SENSITIVITY
HIGH
MEDIUM
LOW



VIEW 10

Red is CRITICAL CONCERN!



Interstate 10

Old Sonora Hwy

CITY OF TUCSON

W SAHUARITA RD

TOWN OF SAHUARITA

Nogales Hwy

Interstate 19

GREEN VALLEY

Sanita Rita Road

Secondary Access Road

Primary Access Road

State Route 83

Sycamore Canyon

Sycamore Canyon

Helvella Road

Gunnsight Pass

Prospect Pit

Tailings Area

Facilities Area

Pit Area

Maricopa Rock Area

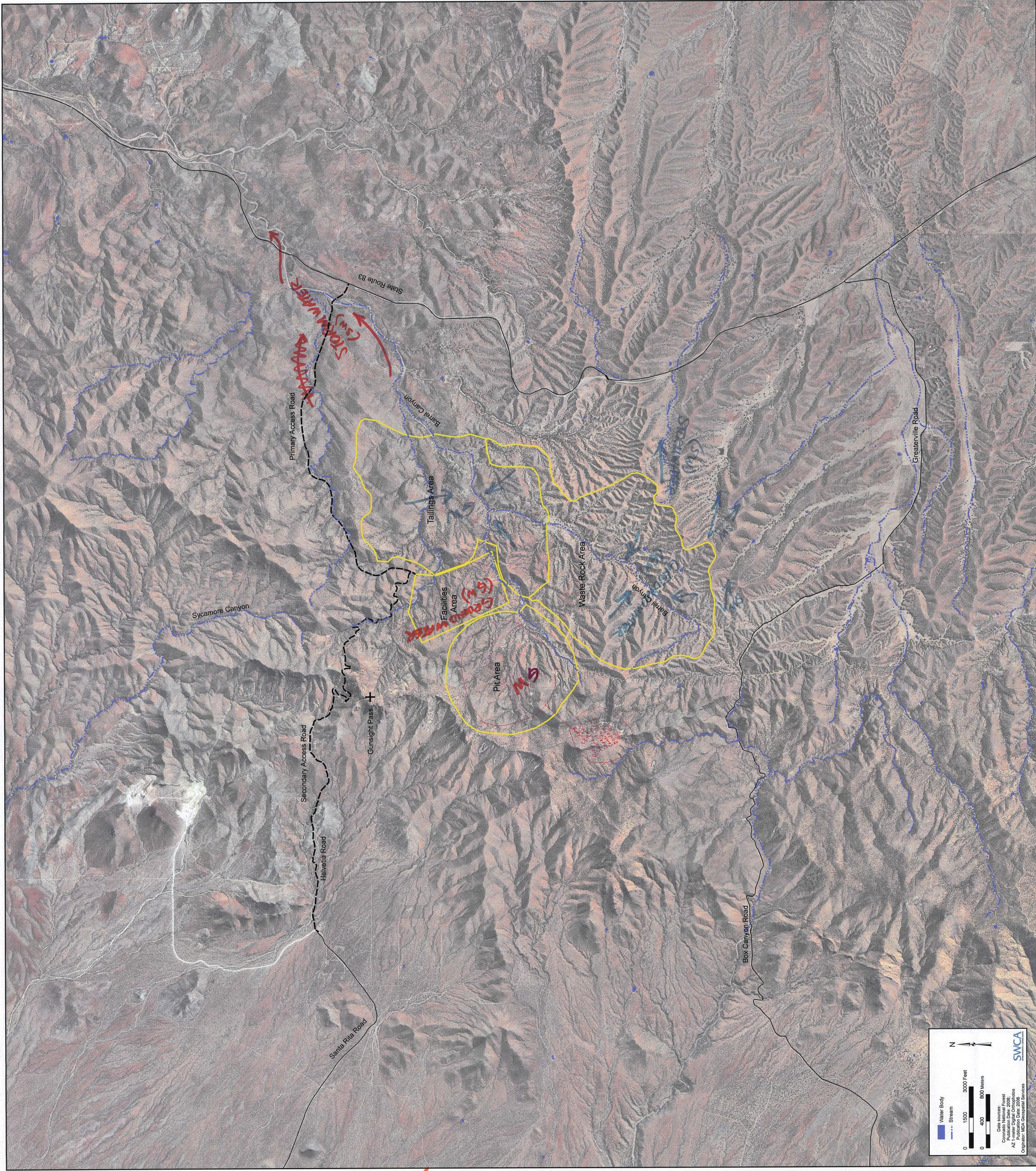
Barrel Canyon

White House Canyon Road

Box Canyon Road



SWCA
 Data sources:
 Corson National Forest
 AZ 1-meter Digital Orthophotos
 Publication Date: 2006
 Originator: MDA Geospatial Services



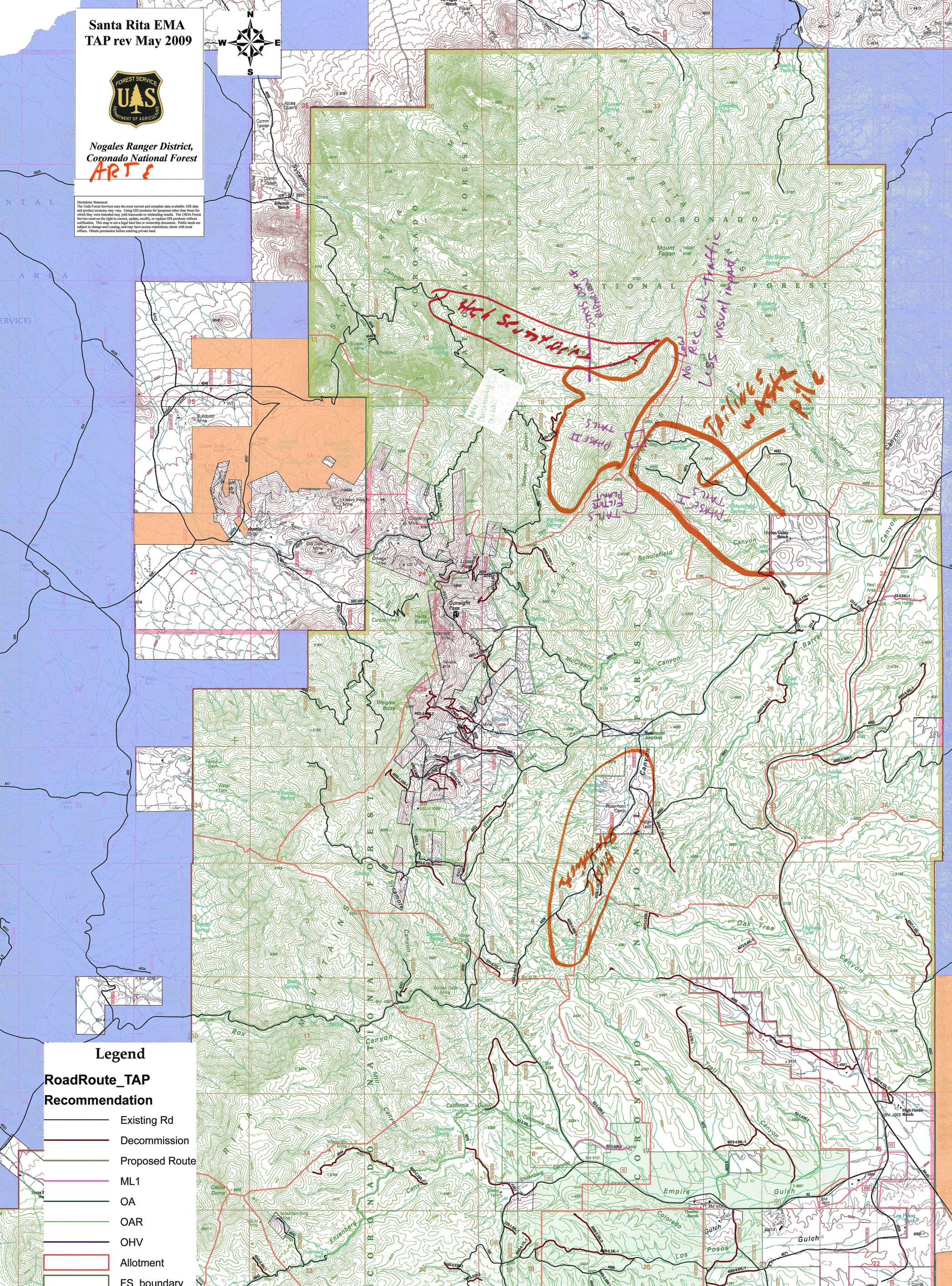
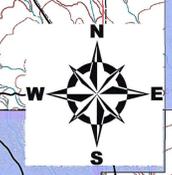
DENNIS TURNER 602/771-4501

**Santa Rita EMA
TAP rev May 2009**



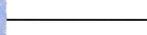
**Nogales Ranger District,
Coronado National Forest**
ARTE

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Legend

**RoadRoute_TAP
Recommendation**

-  Existing Rd
-  Decommission
-  Proposed Route
-  ML1
-  OA
-  OAR
-  OHV
-  Allotment
-  FS_boundary

