


MEMORANDUM FOR THE RECORD

4/20/2004

SUBJECT: Independent Technical Review (ITR) for the Southwest Valley Flood
Damage Reduction Feasibility Report

The ITR for the subject project has been completed within the Albuquerque District. The back-check of technical review comments and their corresponding responses has been completed. In addition, the comments generated during public review have also been addressed to the reviewers satisfaction. There are no additional comments or points of clarification required. Thus, the ITR is complete for the subject document.


Anthony J. Apodaca III
ITR Team Leader
Plan Formulation

COST ENGINEERING BRANCH CIVIL WORKS ESTIMATE REVIEW CHECKLIST

PROJECT: SOUTHWEST VALLEY FLOOD REDUCTION STUDY

PROJECT LOCATION: Bernalillo County, New Mexico

ESTIMATE REVIEWER: _____ DATE: 13 February 2004

DESIGN FIRM: Resource Technologies DESIGN LEVEL: Feasibility

ANTICIPATED CONTRACT: _____

1. OWNER AND DIRECT COST ITEMS:

✓ Is the estimate developed using MCACES Software?

✓ Check the Title Page to determine estimate submittal stage, adequate construction duration, correct labor rates and any material sales taxes.

✓ Evaluate Govt Furnished Equipment and Contingency.

✓ Review Prime contractor markups: Field Overhead (5-20% ^{15%} or \$18-22,000/month), Home Office Overhead (4-10% ^{9%}), Profit (6-9% ^{7%}), Bond (0.9-1% ^{1%}) and NM Gross Receipts Tax, ^{5.9%} Rule of thumb: the larger the project, the lower the markups).

✓ Review Subcontractor markups: Field Overhead (5-12%), Home Office Overhead (4-10%) and Profit (6-10%) ^{Total 25%}

✓ Confirm adequate Prime Contractor and Subcontractor assignments to the construction and detailed items.

✓ Ensure the estimate is in accordance to the Civil Works Breakdown Structure.

N/A Make sure the estimate follows the Bid Schedule.

N/A If the estimate includes building demolition, ensure asbestos and lead abatement have been considered.

✓ Check titles and subtitles to ensure quantities and unit measurements are correct.

✓ Check the labor rates for appropriate Building/Heavy or Highway/Utility.

2. DETAIL COST ITEMS: Pay particular attention to major systems and large cost items. If adequate time is available, check to ensure the items follow standard or specified construction practices.

N/A Check the Prime Contractor Overhead detail. Does it include a superintendent, time clerk, quality control, safety personnel, mechanical and electrical inspectors, survey crew, NAS scheduling, mobilization and demobilization, etc?

Used 15% for FOOT ✓

- N/A Check the Specification's Division 1's to confirm any unusual requirements such as construction phasing, utility support of buildings, etc.
- ✓ Check the unit cost, excluding contingencies to determine reasonableness.
- N/A Check the construction duration and determine the need for labor overtime?
- ✓ Check detail that has been overridden in materials or production rates.
- ✓ Check and question crews, production rates and equipment intended for major items.
- ✓ Check to ensure that major excavation and backfill items considered shrinkage and swell.
- ✓ Is site and equipment access adequate?
- ✓ Are borrow sites needed, available and locations noted?
- ✓ Unusual conditions: Consider construction duration, access, weather and season, water (surface and ground), soil conditions, crew availability, rural areas, environmental concerns.
- ✓ Check any contractor quotes. Does the quote consider materials, freight, installation and subcontractor markup? Was the name, telephone number and location of the quote provided? Was the subcontractor markup included within the quote?
- N/A Mechanical Equipment: Check material costs of major items, ensure the detailed equipment reflects the equipment list provided on the project plans.
- N/A Electrical Equipment: Check material costs of major items, ensure the detailed equipment reflects the equipment list provided on the project plans.
- N/A HTRW: Check cost items for asbestos abatement, lead abatement, PCB's.
- N/A Testing: Ensure costs are included for testing concrete, soils, pavements, HTRW, HVAC Balancing, electrical start-up.
- ✓ Provide comments to appropriate designers where drawing and specifications errors are noted.

Check detail material costs for:

- ☒ Hot Mix Bituminous Pavement.
- ☒ Aggregates, Rock and Base Course for locale.
- ☒ Non-expansive imported fill delivered.
- ☒ Concrete for 3,000 psi, 4,000 psi and 650 psi flex strength.
- ☒ Standard Reinforcing Steel and epoxy coated reinforcing steel.
- ☒ Miscellaneous steel and steel members.
- ☒ Large quantities of utility pipe.
- ☒ Major mechanical and electrical equipment.

3. BIDDER CONSIDERATIONS:

- N/A {
- ☐ Check bidder's list to establish degree of bidder competition.
 - ☐ Consider whether the prime contractor is a general contractor or a specialty contractor.
 - ☐ Consider the time length for bidders to obtain subcontractor quotes and prepare their bids.
 - ☐ Consider availability of subcontractors in the construction area.
 - ☐ Consider the final plans and specifications quality and how they might impact the bidders.

4. Upon review completion, coordination should be made with the lead estimator.

REVIEW COMMENTS

CERTIFICATION OF LEGAL REVIEW

As District Counsel, I have reviewed the Draft Feasibility Report and Environmental Assessment for the Southwest Valley Flood Damage Reduction Project, Albuquerque, Bernalillo County, New Mexico. I concur with the conclusions and recommendations contained in the Draft Feasibility Report and EA. In my opinion, the conclusions and recommendations are consistent with Corps policies and legal authorities.

Darrell R. Riekenberg 23 Feb 04

Darrell R. Riekenberg
District Counsel
Albuquerque District

**CERTIFICATION OF QUALITY ASSURANCE REVIEW
SOUTHWEST VALLEY FEASIBILITY STUDY**

Review comments and the explanation of the resolution are as follows:

I have reviewed the Southwest Valley Flood Damage Reduction Study economic appendix and portions of main report.

I do not have substantive comments

My comments are as follows:

- I made minor editorial comments regarding the writeup and tables that were submitted on a paper copy.
- Overall, the naming of the alternatives by level of protection is not appropriate-in fact the benefits would indicate them to be at a greater level of protection than nomenclature.
- The cost breakdowns do not include costs for Plans and Specifications.
- Pg. 13 indicates a list of assumptions of dams not built, operations of dams, assumptions regarding future conditions that differed from the previous district reports. It then indicates specific HQ approval to all these assumptions, followed by a paragraph that some of the assumptions are from the sponsor. Indicate which are which, is HQ telling us to use all the assumptions indicated. If not, explain why we are assuming each one.
- The smallest project has greater benefits than the other two. Needs an explanation as to why this would be-doesn't make intuitive sense.
- Optimizing at the smallest alternative indicates that a smaller alternative may actually be optimal. Why were none examined?
- The nature of the hydrology and hydraulics analysis does not lend itself to a valid measurement of project performance. Suggest these tables be dropped.

Resolution of issues was accomplished as follows:

Bullet 2 – concur, changed alternatives to appropriately fit the project.

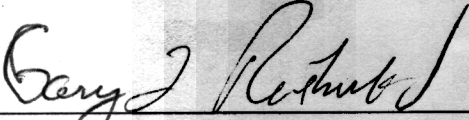
Bullet 3 – concur, will include in cost breakdown of project.

Bullet 4 – concur, noted in the report.

Bullet 5 – concur, see section 5.4

Bullet 6 – concur, see section 5.4

As noted above, all concerns resulting from the quality assurance review of the project have been considered.



Gary Rutherford, Project Manager, Economist

11/04/03

Date

**CERTIFICATION OF QUALITY ASSURANCE REVIEW
SOUTHWEST VALLEY FEASIBILITY STUDY**

Review comments are as follows:

I have reviewed the Southwest Valley Flood Damage Reduction Study

My comments are as follows:

SEE ATTACHED 5 HANDWRITTEN PAGES

Champe Green
Champe Green, Ecologist

10/22/03
Date

Julie Hall, Chief – Environmental Resources Section

Date

MEMORANDUM TO Champe Green, CESPA-PM-LE

SUBJECT: Responses to ITR Comments for Southwest Valley Flood Reduction Draft DPR

1. Pages 54-58 are preceeded by "5...". Why?

Response: Concur. Document clean-up had not been completed when submitted for ITR review. Pagination has been corrected for draft.

2. Page 59: Hydrology. "Summer" does not include month of May.

Response: Concur. For purposes of water budget, no changes, but will update report.

3. Page 61. Water quality. Reference to Table 5.2 should be Table 6.2.

Response: Concur. Document corrected.

4. Page 65. Biological resources. First sentence reads awkward.

Response: Concur. Sentence now reads, "Construction activities within the riparian area of the west bank of the Rio Grande would be confined to the maintained power line ROW (near Metzger Road)."

5. Page 66. Second paragraph under "Birds" needs citation.

Response: The paragraph has been removed from the document as incorrect and unnecessary to the discussion.

6. Page 67. Acknowledge discrepancy in number of species observed between Hink and Ohmart (1984) and Hubbard (1987) bird studies.

Response: These are separate studies. The difference in the order of magnitude between the studies is not significant. No change needed.

7. Page 67. Should BISON-M be the most up-to-date source of info for fish, reptiles, amphibians, and small animals?

Response: These sections completed by prior author no longer with Environmental Resources Section. While not necessarily the most up-to-date sources are cited, they are still valid.

8. Section 6.5. In general, no mention is made of a FWS CAR.

Response: Concur. Reference to preparation of CAR added to document under Section 6.5, Biological Resources, Surveys.

9. Page 69. SWFL info less detailed than that for Bald Eagle and RGSM. Why?

Critical habitat does not exist for SWFL as it was struck down by courts.

Response: Info on SWFL was abbreviated as no potential habitat is within project area. Finding is a no affect based on absence of suitable or potential habitat. No additional documentation needed. Info on court decision striking down critical habitat designation added.

✓ 10. Page 71. Section 6.8. No discussion on noise levels. Concur.

Response: Discussion on noise levels added.

✓ 11. Page 71. Section 6.8, 2nd paragraph. Why is this relevant?

Response: This discussion has been removed from the text as it is unnecessary.

✓ 12. Page 72. How about NPS lands – Sec. 6.10?

Response: Department of Interior added as Federal landowner.

✓ 13. In general – under Section 6, Existing Conditions, pp.54-73, some subsection discuss effects of proposed action, some don't. Discussion of effects should be addressed in Section 7 only. For example, see page 59, Section 404 discussion, also page 65, 2nd full paragraph, 3rd full paragraph, page 66, first partial paragraph, and 2nd paragraph on page 68, first partial paragraph on page 73; section 6.12 first paragraph page 73.

Response: Concur. All "effects" discussions have been removed from Section 6. Section 7 effects discussion has been filled out for all specific resources discussed in 6.

(Note: Section 7 was not completed when submitted for ITR. The completed discussion will be presented for review.)

✓ 14. Section 7.01 (7) incomplete.

Response: Concur. ITR reviewer given draft with the discussion in this section not completed. Completed section will be presented for review and comment.

✓ 15. Section 7.01 (7.1.1). More discussion on conclusion of no significant impact would seem warranted.

Response: Concur. Discussion added to justify this finding for the resources addressed.

✓ 16. Section 7.04 p 74. Believe a more convincing case for 2nd sentence of first paragraph would be made if NMNPS or NMFO websites were cited.

Response: Website for New Mexico Rare Plants cited.

✓ 17. Section 7.06 page 74. Should be "0.25 miles" instead of "0,5 miles. Same comment on first partial paragraph on page 75.

Response: Concur. Document changed per comment.

✓ 18. Page 75. SWFL Should mention suitable as well as potential habitat.

Response: Concur. Document changed per comment.

✓ 19. Page 75. RGSM –was Platania's research and monitoring consulted. Numbers of RGSM captured and reported don't seem to jive as stated.

Response: Concur. First sentence of this paragraph removed because reference to one October sampling effort not sufficient to support findings.

✓ 20. Page 75. First paragraph under RGSM, life history of red shiner is very different than RGSM, not pelagic spawner dependent on flow spikes.

Response: Concur. Sentence changed to state that the "water quality needs" of the red shiner, fathead minnow, and RGSM are similar. Any reference to "similar life histories" with respect to the red shiner and RGSM have been removed.

✓ 21. Section 7.07 (7.1.5). No discussion on effects of noise.

Response: Concur. Effects discussion has been added.

✓ 22. No list of preparers.

Response: Preparer list has been added to document.

✓ 23. No draft FONSI included.

Response: Draft FONSI not needed for Division review of Draft DPR.

✓ 24. Sections required by NEPA in the integrated report should be noted with an asterisk.


Response: This is no longer necessary.

Ernie Jahnke, Biologist
Environmental Resources Section

April Sanders, Project Manager
Planning Section


CERTIFICATION OF LEGAL REVIEW

As District Counsel, I have reviewed the Final Feasibility Report and Environmental Assessment/FONSI for the Southwest Valley Flood Damage Reduction Project, Albuquerque, Bernalillo County, New Mexico. I concur with the conclusions and recommendations. In my opinion, the documents are consistent with Corps policies and legal authorities.


Darrell R. Riekenberg
District Counsel
Albuquerque District

SOUTHWEST VALLEY FLOOD DAMAGE REDUCTION FEASIBILITY STUDY
POSITION PAPER – FLOW CRITERIA
TECHNICAL REVIEW CERTIFICATION

Civil Planning 
Phillip C. Boatwn, P.E.

Project Management..... 
Sandy Rayl

Hydrology and Hydraulics 
Bruce Beach, P.E.

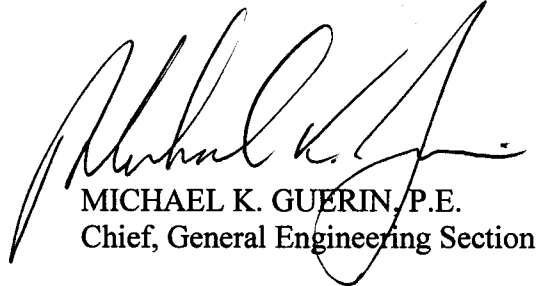
CESPA-EC-EC

12 November 2003

MEMORANDUM FOR CHIEF, CIVIL WORKS PLANNING SECTION, PM-PC,
(ATTN: APRIL SANDERS)

SUBJECT: Certification Of Quality Control Review, Southwest Valley Feasibility Study

1. The subject document has been reviewed. A marked-up copy of the study with my review comments was given to Phil Boawn this morning. Comments were not provided in electronic format due to time constraints, as we did not have an assembled document to review until 7 November. In order to expedite future reviews, please provide us with a complete, bound document and set up the project in DrChecks.
2. Please ensure that the comments are incorporated into the document. Please annotate any comments that you do not concur with, or take exception to, and provide them to me.
3. Earthwork quantities for proposed improvements to the Isleta Drain have been computed and independently checked.
4. Please contact me at 3420 if you have questions on this. Thank you.



MICHAEL K. GUERIN, P.E.
Chief, General Engineering Section

**CERTIFICATION OF QUALITY ASSURANCE REVIEW
SOUTHWEST VALLEY FEASIBILITY STUDY**

Review comments and the explanation of the resolution are as follows:

I have reviewed the Southwest Valley Flood Damage Reduction Study H&H Report Future Conditions With Project, Volume III.

I do not have substantive comments. Overall I am impressed with the highly professional analysis that was done.

My comments are as follows:

- There were editorial comments in the copy of the report that I received from Steve Boberg, made by Steve. I concur with these comments. I added some additional editorial comments and flagged them in the same way.
- Section 18.04. I questioned the concept of ponds without outlets.
- Section 19.02. Pond 730 is not described.

Resolution of issues was accomplished as follows:

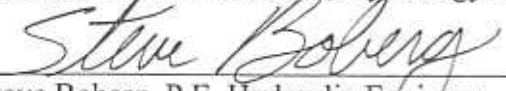
- The editorial comments will be incorporated with the necessary corrections made to the text.
- The concept of ponds without outlets will not be included for consideration in the Federal Project.
- Pond 730 will be described however; will not be included for consideration in the Federal Project.

As noted above, all concerns resulting from the quality assurance review of the project have been considered.



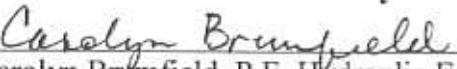
Bruce C. Beach, P.E. Chief, Hydrology and Hydraulics Section

22 Oct 2003
Date



Steve Boberg, P.E. Hydraulic Engineer

21 OCT. 2003
Date



Carolyn Brumfield, P.E. Hydraulic Engineer

10/17/2003
Date

CERTIFICATION OF ASSURANCE REVIEW SOUTHWEST VALLEY FEASIBILITY STUDY

Significant concerns and the explanation of the resolution are as follows:

- 1) Development densities that should be used for future conditions in various areas of the drainage basin.
- 2) Direction for integrating new sub-basins into the existing model based on the revised assumptions outlined in the position paper.
- 3) How best to handle storm water breeches from the Arenal Canal (failure due to overtopping rather than freeboard encroachment).
- 4) How and where to properly introduce irrigation flows into the Isleta Drain due to failure of the Arenal Canal.
- 5) Routing techniques and locations for major flow paths.

Resolution of issues was accomplished via a seamless review process involving numerous telephone consultations and in depth review / consultation meetings between the A/E, Albuquerque District, and non-Federal sponsors to the satisfaction of all involved.

As noted above, all concerns resulting from the quality assurance review of the project have been considered.



Bruce C. Beach, P.E. Chief, Hydrology and Hydraulics Section

22 Oct 2003

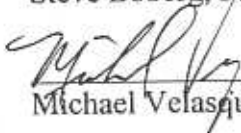
Date



Steve Boberg, P.E. Hydraulic Engineer

21 Oct. 2003

Date



Michael Velasquez, Hydraulic Engineer

21 Oct 2003

Date

October 30, 2003

Steve Boberg, P.E.
U.S. Army Corps of Engineers
Albuquerque District
4101 Jefferson Plaza NE
Albuquerque, NM 87109



**RE: QA/QC for Southwest Valley Flood Damage Reduction Plan
RTI Project No. 03-080**

Dear Mr. Boberg,

In our effort to produce the future hydrologic condition "without" and "with project" flood plain maps for the Southwest Valley, Resource Technology, Inc. has modified the AHYMO and K-ROUTE models and flood plain mapping for the federal interest project area. With regard to Sections 13, 22 and 23 of Volume III of the Plan, which are specific to the Federal Plan, our internal QA/QC procedures are detailed below.

The AHYMO model revisions to account for the revised land development densities were completed by Mr. Gordon Mossberg, P.E. The results of these runs were reviewed by Mr. Elvidio Diniz, P.E. Mr. Mossberg and Ms. Trisha Korbas, E.I., modified the input data to the K-ROUTE models and Ms. Korbas subsequently ran the revised K-ROUTE models. The K-ROUTE results were reviewed by Mr. Michael Smith, P.E. and Mr. Diniz. The corresponding floodplain extent was mapped by Mr. Richard Waters, and reviewed by Mr. Diniz.

Primary K-ROUTE modeling for "with project" conditions was performed by Ms. Susan Lime, E. I. with input, supervision and preliminary quality control checks by Mr. Michael Smith, P.E. This iterative modeling process was performed multiple times until all of the project conditions and flood frequencies for a particular model were fulfilled. At this point, Mr. Elvidio Diniz, P.E. performed a final quality control check of the K-ROUTE modeling results.

The "with project" flood plain extent mapping was also performed by Mr. Richard Waters. The primary mapping duties for the entire Southwest Valley project from inception have been performed by him or under his direct supervision. Preliminary quality control checks were performed by Mr. Smith, and the final in-house quality control checks were performed by Mr. Diniz.

After the completion of each major iteration (four in all), a meeting was scheduled with the Technical Advisory Committee (TAC) to discuss the results. These meetings provided an opportunity for an informal, external cursory review of the results during the discussions for each iteration.

Sincerely,

RESOURCE TECHNOLOGY, INC.

A handwritten signature in black ink, appearing to read "Elvidio V. Diniz", is written over the printed name and title of the signatory.

Elvidio Diniz, P.E.
President and Principal

Civil Engineering - Environmental Sciences - Water Resources - Landscape Architecture - Planning

**STATEMENT OF QUALITY ASSURANCE
SOUTHWEST VALLEY FEASIBILITY STUDY**

COMPLETION OF QUALITY ASSURANCE REVIEW

Resource Technology, Inc. has completed the analysis in support of the Southwest Valley Feasibility Study located in Bernalillo County, New Mexico. Notice is hereby given that all quality control activities, appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan have been completed. Compliance with established policy, principles and procedures, utilizing justified and valid assumptions, was verified. This included review of assumptions; methods, procedures, and material used in analysis; alternatives evaluated; the appropriateness of data used and level of data attained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy. The analysis was accomplished by Resource Technology, Inc. and the independent technical review was accomplished by Resource Technology, Inc. Their quality control certification is attached. The District has completed a quality assurance review and the subject project is in compliance with the contract requirements. The undersigned recommends certification of the quality assurance process for this product.



Bruce C. Beach, P.E. Chief, Hydrology and Hydraulics Section

31 Oct 03
Date

CERTIFICATION OF QUALITY ASSURANCE REVIEW SOUTHWEST VALLEY FEASIBILITY STUDY

Review comments and explanation of their resolution are as follows:

I have reviewed the Southwest Valley Flood Damage Reduction Feasibility Study.


The report is generally considered to be a highly professional document. My comments are limited to the following:

- Consider adding short paragraph at end of your Project Summary explaining what has transpired since August 2002.
- In the Future Without Project chapter, was the Adobe Acres, Phase III project completed in 2001? Please update description.
- The Future Without Project Zoning paragraph describes the West Mesa area west of Coors and south of Central as being largely undeveloped. There are several new subdivisions in this area, as well as older ones such as Westgate. Considering describing the area as lightly developed, or largely undeveloped but with several, sporadic, moderately sized subdivisions.
- Future Without Project Economic Analysis write up regarding vacant land on page 47, states vacant land north of Rio Bravo is 37% of vacant land. I believe this should be of total land.
- Economic write-up states that economics were conducted using November 2000 price levels. Is this a typo? If not, is this acceptable?
- In the Recommendations paragraph, it should refer to the National Economic Development plan, not Nation Economic Development plan.
- Also in the Recommendations paragraph, it refers to the Damage Reduction Project in the city of Albuquerque. Is it indeed all contained within the city?
- Last paragraph in Recommendations states the conclusions reached are based on latest policies for restoration projects. Should this not be for flood damage reduction projects?

Resolution of issues was accomplished as follows:

- The comments were addressed with the necessary corrections made to the report.

As noted above, all concerns resulting from the quality assurance review of the project have been considered.



Anthony J. Apodaca III, Plan Formulation

23 Oct. 2003
Date

**CERTIFICATION OF QUALITY ASSURANCE REVIEW
SOUTHWEST VALLEY FEASIBILITY STUDY**

Review comments and the explanation of the resolution are as follows:

I have reviewed the Southwest Valley Flood Damage Reduction Study Real Estate Gross Appraisal.

I do not have substantive comments. The work product more than adequately met the requirements of *ER 405-1-12, Chapter 4*.

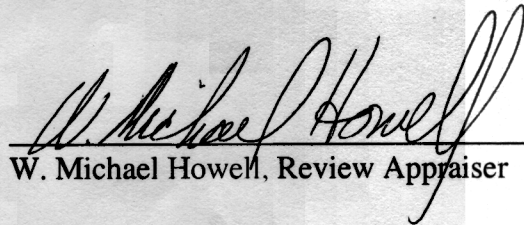
My comments are as follows:

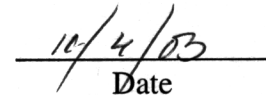
- The general real estate footprint of the project was reduced after completion of the Gross Appraisal. However, the unit values (value per square foot, value of improved property, etc.) were still appropriate for the level of study and remaining areas.

Resolution of issues was accomplished as follows:

- I was readily able to use the information within the report to complete the Real Estate Plan without further modification of the original document prepared by the non-Federal Sponsor.

As noted above, all concerns resulting from the quality assurance review of the project have been considered.


W. Michael Howell, Review Appraiser


Date

CERTIFICATION OF QUALITY ASSURANCE REVIEW SOUTHWEST VALLEY FEASIBILITY STUDY

Review comments and explanation of their resolution are as follows:

I have reviewed the Southwest Valley Flood Damage Reduction Feasibility Study.

The report is generally considered to be a highly professional document. My comments are limited to the following:

- Consider adding short paragraph at end of your Project Summary explaining what has transpired since August 2002.
- In the Future Without Project chapter, was the Adobe Acres, Phase III project completed in 2001? Please update description.
- The Future Without Project Zoning paragraph describes the West Mesa area west of Coors and south of Central as being largely undeveloped. There are several new subdivisions in this area, as well as older ones such as Westgate. Considering describing the area as lightly developed, or largely undeveloped but with several, sporadic, moderately sized subdivisions.
- Future Without Project Economic Analysis write up regarding vacant land on page 47, states vacant land north of Rio Bravo is 37% of vacant land. I believe this should be of total land.
- Economic write-up states that economics were conducted using November 2000 price levels. Is this a typo? If not, is this acceptable?
- In the Recommendations paragraph, it should refer to the National Economic Development plan, not Nation Economic Development plan.
- Also in the Recommendations paragraph, it refers to the Damage Reduction Project in the city of Albuquerque. Is it indeed all contained within the city?
- Last paragraph in Recommendations states the conclusions reached are based on latest policies for restoration projects. Should this not be for flood damage reduction projects?

Resolution of issues was accomplished as follows:

- The comments were addressed with the necessary corrections made to the report.

As noted above, all concerns resulting from the quality assurance review of the project have been considered.

Anthony J. Apodaca III, Plan Formulation

Date