

United States Army
Corps of Engineers

Albuquerque District

MAY 1979

*Walt Knut
Plan Form*

MIDDLE RIO GRANDE FLOOD PROTECTION BERNALILLO TO BELEN, NEW MEXICO INTERIM FEASIBILITY REPORT

VOLUME III



1941 FLOOD

APPENDICES D-E-F

- COMMENTS & RESPONSES
- HYDROLOGY & HYDRAULICS
- FISH & WILDLIFE CONSIDERATIONS

ER 1165-2-27 Establishment of Wetlands

APPENDIX D
COMMENTS & RESPONSES

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SECTION A

Federal Government Agencies

- U.S. Department of the Interior, Office of the Secretary
- U.S. Department of the Interior, Fish and Wildlife Service
- U.S. Department of the Interior, Bureau of Reclamation
- U.S. Department of the Interior, Bureau of Indian Affairs
- U.S. Department of Agriculture, Soil Conservation Service
- U.S. Department of Agriculture, Forest Service
- U.S. Environmental Protection Agency
- U.S. Department of Transportation, Federal Highway Administration
- U.S. Department of the Air Force
- U.S. Department of Housing and Urban Development





United States Department of the Interior

OFFICE OF THE SECRETARY
SOUTHWEST REGION
POST OFFICE BOX 2088
ALBUQUERQUE, NEW MEXICO 87103

ER-79/141

MAR 23 1979

District Engineer
Corps of Engineers, U. S. Army
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Sir:

This is in response to your request for our review of the draft environmental statement for the Middle Rio Grande Flood Protection Project, Bernalillo to Belen, New Mexico.

We have reviewed the draft statement and find that there are several areas which could be improved in describing the environmental impacts of the project. Our comments on the draft statement are provided as General Comments and Specific Comments as follows:

GENERAL COMMENTS

The statement should be revised to fully address and evaluate the environmental impacts of the related Federal actions that will be required as a result of this project. Public lands administered by the Bureau of Land Management (BLM) are within the project area. The BLM lands to be impacted with construction of the proposed project, are located in T9N, R3E, Section 7, Lots 1, 2, and 3; T9N, R2E, Section 12, Lots 1, 2, and 3; and T9N, R2E, Section 13, Lots 1, 2, 3, 4, 5, and 6 which are located in the Albuquerque West unit on the west side of the river and in the Albuquerque East unit on the east side of the river.

These public lands are 309.35 acres in size. The area has been designated an Environmental Educational Area by BLM and is to be used in conjunction with the Albuquerque Public Schools. A Cooperative Agreement on the Rio Grande Environmental Educational Area has been entered into between the Superintendent of the Albuquerque Public Schools, and the District Manager of the Albuquerque District, BLM. A right-of-way permit would be required from BLM for any use of this land.

The project area does include lands of the Sandia and Isleta Indian Pueblos. The project as presently proposed does not provide for any increased flood protection of these lands above that presently available. It should be recognized that if any construction activities does take place on these lands a right-of-way permit from the Bureau of Indian Affairs would be required.

A number of recreational and natural areas have been cited in the report. Some of these areas have received matching funds from the Land and Water Conservation

Fund. The Land and Water Conservation Fund Act of 1965, as amended, Section 6(f) states that no property acquired or developed with assistance from the Fund shall be converted to other than public outdoor recreation uses without the approval of the Secretary of the Interior. If such conversion is anticipated, the State official responsible for the Land and Water Conservation Fund should be contacted to initiate the process for obtaining approval of the Secretary of the Interior. The responsible official in New Mexico is William S. Huey, Cabinet Secretary, New Mexico Natural Resources Department (Villagra Building, Santa Fe, New Mexico 87503). Coordination efforts related to conversion should be indicated in the appropriate sections of the statement.

In general, the statement adequately addresses fish and wildlife resources and the impacts that will likely occur with project implementation. The statement includes specific information and coordinated planning inputs previously provided by the U. S. Fish and Wildlife Service. We are pleased to note that considerable effort and consideration has been given to fish and wildlife habitat loss and the need for mitigation and compensation as part of project planning.

SPECIFIC COMMENTS

Project Description

Page 1-6, Paragraph 1.11 - The first sentence states that in the Albuquerque Unit fill would be placed on either the landward or riverward side to increase the levee height. Placing fill on the landward sides of the levee would avoid conflict with the Environmental Education Area. It is stated in the last sentence of this paragraph that the random fill source would be from the area between the levee and the channel. The location of any borrow areas within the Environmental Educational Area would severely impact the integrity of the area. It should be clearly stated whether any borrow material is proposed from this area.

Page 1-7, Section 1.14 - It is stated that random fill is to be excavated to depths of 4 feet or just above the ground-water level. The analysis of ground-water impacts should include assessment of the magnitude and significance of the changes in evaporation losses as a result of decreased depth to the water table.

Page 1-12, Paragraph 1.29 - It is stated that 6 months to 2 years is required for construction of any given section of the project. The time period necessary for construction of the total project should be given with an indication of the sequence of construction of the various sections.

Page 1-14, Paragraph 1.37 - Considering all the surface disturbance resulting from the project a further discussion of revegetation is warranted. For example, information should be included on whether revegetation would be through artificial or natural means and the estimated time required for such revegetation.

We note that recommendation #8 of the Fish and Wildlife Service's Fish and Wildlife Coordination Act Report requested that borrow sites be converted to palustrine wetlands. We understand that such wetland development is part of Alternative Plan B and will be proposed for authorization along with other project features. This should be clarified in this and other applicable sections of the statement.

Mention is made that denuded areas would be grassed where feasible. Recommendation #5 of the Fish and Wildlife Service's Fish and Wildlife Coordination Act Report indicated that grasses, shrubs, and trees of value to fish and wildlife resources should be used for revegetation. Areas such as haul roads and borrow pits would benefit from plantings of shrubs and trees in addition to grasses. Haul roads may be utilized by off-road vehicles. These roads, if planted with trees, would be restored to pre-project condition in shorter time. Thus, tree growth may discourage motor vehicle uses.

Page 1-15, Paragraph 1.38 - The permanent loss of riparian/woodland from the Environmental Education Area would be 6.44 acres and 0.76 acres on the West and East units respectively.

Page 1-15, Paragraph 1.39 - The Fish and Wildlife Service in close coordination with the Corps of Engineers and the New Mexico Department of Game and Fish utilized a system to determine relative habitat values of the riparian woodland. Estimates of necessary acreages of management areas are also projected and displayed in the Fish and Wildlife Service Coordination Act Report. Results indicated that 750 acres of management area would be required for partial compensation of woodland losses. It is indicated in this paragraph that an independent evaluation of mitigation and compensation measures was developed separately by the Corps of Engineers which resulted in differing measures for mitigation and compensation. These measures are discussed in this section of the statement. The differences between the two analyses should be highlighted with a brief discussion of how the proposed compensation measures included in this paragraph were determined and why they are being proposed.

Environmental Setting Without the Project

Pages 11-33 and 11-34, Paragraphs 2.87-2.91 - This discussion of historical floods does not support the project purpose of controlling floods likely to result from intense weather activities. It is indicated that construction of Cochiti Reservoir has provided protection to the Albuquerque Greater Urban Area from spring runoff originating in the Rio Grande Drainage above Cochiti Reservoir. These sections should be revised to document and discuss the types of floods for which the project is being proposed to provide protection.

Page 11-40, Paragraph 2.102 - Mention is made that the greatest factor influencing riparian woodlands has been introduction of tamarisk and Russian olive. Undoubtedly, these introductions have significantly contributed to alterations of plant communities. However, the Fish and Wildlife Service has concluded that past alterations to the riverine ecosystem from agricultural and urban uses has had a far greater influence on the riparian woodlands and associated habitats. This should be recognized in the statement.

Page 11-44, Paragraph 2.113 - The plant specie *Petalostemum scariosum* is listed as being proposed for endangered status under the Endangered Species Act of 1973. The possible impacts which could occur to this plant from construction of this project should be discussed.

Relationship of the Proposed Action to Land-Use Plans

Page 11-3, Paragraph 3.06 - It is stated in the last sentence of this paragraph

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that management of riverine areas is proposed as a benefit to wildlife. It should be clarified that management of the riverine areas is part of the plan for mitigation and compensation of wildlife resource losses due to the project and will not provide for benefits to wildlife.

The Probable Environmental Impact of Constructing, Operating, and Maintaining the Project

The proposed project does not appear to involve an undue commitment of mineral resources; however, a brief summation of the affected sand and gravel resources in this section would improve the statement.

Page IV-4, Paragraph 4.10 - The Fish and Wildlife Service's report recommended that compensation lands be acquired as part of project cost and that these lands and appropriate operation and maintenance funds be provided to the New Mexico Department of Game and Fish. It is indicated in this section that borrow areas may be allowed to decrease in size due to siltation. It should be clarified whether operation and maintenance funds will be provided to insure continued mitigation and compensation effects after project development.

Page IV-7, Paragraph 4.16 - No mention is made of probable impacts that may occur to fishery resources in the drains resulting from removal of overhanging cottonwood trees. These possible impacts were discussed in the Fish and Wildlife Service report which indicated such impacts as altering water temperatures with the elimination of overhanging shading and possible loss of food sources due to removal of the trees. These possible impacts should be recognized in the statement.

Page IV-9, Paragraph 4.19 - We note that compensation for fish and wildlife losses can be attained by implementing recommended measures. Continued coordination with our Fish and Wildlife Service will be beneficial during the advanced planning stages of the project to identify the specific requirements necessary to provide the required compensation. In this regard we note that the Corps of Engineers is currently including fish and wildlife measures in documents proposing authorization for construction.

Page IV-10, Paragraph 4.21 - The Fish and Wildlife Service's Report recommends purchase of fallow fields for management to attain riparian habitats. Theoretically, such management is required to compensate for resource values lost due to project construction. The management potential of existing woodlands is less than the management potential of fallow fields. This relates to the number of acres of management areas required to compensate losses. Therefore, less areas of fallow fields (greater management potential) would be required for compensation. This paragraph should be expanded to adequately consider these concepts of management requirements.

Page IV-10, Paragraph 4.22 - Mention is made that consideration for drain improvement structures such as logs, rocks, low flow dams, and trees be installed for enhancement to improve the aquatic community and recreational use. The Fish and Wildlife Service's report recommended that drain improvement structures be provided to compensate for expected degraded drain conditions. This paragraph should be clarified to indicate that at least a portion of the proposed drain improvement features will be required for compensation of project-caused losses.

Page IV-11, Paragraph 4.23 - This section should be expanded to discuss the impacts of the project on the Environmental Educational Area in terms of recreational and educational values that could be lost.

Page IV-12, Paragraph 4.24 - It is stated that the upper one-third of the bicycle trail, presumably the Paseo del Bosque Bikeway, would be removed during levee rehabilitation. This bikeway has been designated a National Recreation Trail. We recommend that an alternate route be provided for this affected section of the bikeway during levee rehabilitation so that the bikeway will remain continuous and not disrupt recreational use. This should be discussed in the statement.

Alternatives to the Proposed Action

This section discusses the impacts of a number of structural alternatives necessary to attain the Standard Project Flood protection which is a design flow of 69,000 - 72,000 c.f.s. or the 700 year flood.

The discussion of structural alternatives should be expanded to include an analysis of the impacts of alternatives necessary to attain a Standard Project Flood protection of a different design flow. For example a structural alternative of providing for a design flow of 42,000 c.f.s. or the 270 year flood would minimize many of the identified impacts particularly in the Albuquerque Unit. A full discussion of the impacts of viable structural alternatives for different design flows would greatly improve the statement.

Coordination with Others

Page IX-2 - The list of federal agencies and individuals coordinating and consulting on this project should include the Bureau of Land Management.

We appreciate the opportunity to review this statement.

Sincerely,


Raymond P. Churan
Regional Environmental Officer

United States Department of Interior, Office of the Secretary:

With the recommendation of providing 42,000 cfs flood protection, where economically justified, along the Rio Grande from Bernalillo to Belen by raising and rehabilitating the levees along the channel, no work will be proposed for the Albuquerque unit levees. The BLM lands in the area of the Albuquerque unit levees will not be impacted by the recommended plan.

It is understood that since Isleta Pueblo lands are included in the proposed project, a right-of-way permit from the Bureau of Indian Affairs would be required.

Responses to the specific comments within the letter are found in the Revised Draft Environmental Impact Statement.



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Field Supervisor
Ecological Services
U.S. Fish and Wildlife Service
Suite C
3530 Pan American Highway, NE
Albuquerque, New Mexico 87107

March 20, 1979

District Engineer
Corps of Engineers, U.S. Army
P. O. Box 1580
Albuquerque, New Mexico

Dear Sir:

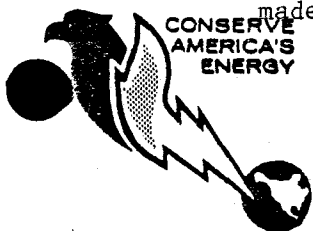
This letter responds to your February 2, 1979 letter requesting the Service's comments on the draft Interim Feasibility Report, Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico. My office has been delegated responsibility to comment on the Draft Feasibility Report. In addition, your letter requested the Service's comments on the draft environmental statement. Comments on the draft environmental statement will be provided through Department of the Interior channels.

We have reviewed the draft feasibility report and have the following comments for your consideration.

General Comments:

The close coordination and working relationship between our respective agencies throughout the planning process has resulted in the development of the project including fish and wildlife resource protection and compensation measures. For the most part, these measures are included in the draft feasibility report. Some issues still remain concerning specific sizes of management areas; however, it is viewed that during the General Design Memorandum (GDM) phases of the project further coordination and review by the Service and more precise plans by the Corps (such as locations of borrow areas) will facilitate more detailed mitigation/compensation plans.

The interim feasibility report refers to environmental quality on pages 3, 99, 117-119, 127, and 130. On page 3, mention is made that no EQ plan emerged from the Stage 2 formulation process.



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D-7

letter 2
page 1 of 5

The draft feasibility report appears to be lacking in addressing Environmental Quality Objectives, plans, and tradeoffs and in meeting requirements of the Water Resources Council's Principles and Standards of 1973. The primary intent of Principles and Standards is to require equal planning process consideration of EQ as well as NED objectives. The resulting plan or multiple objective plan was meant to be developed from both sets of objectives (NED and EQ). In this regard, our office provided inputs to establish EQ Plan objectives by letter dated August 31, 1977.

Specific Comments:

Page 33. Planning Constraints. Mention should be made of the Fish and Wildlife Coordination Act and specific requirements for protection, mitigation or compensation of project-caused losses.

Page 37. Formulation and Evaluation Criteria. Environmental criteria are listed without mention of enhancement of fish and wildlife resources. Most of the listed Environmental Criteria have to do with resource protection. Equal consideration of EQ objectives would require equal emphasis for enhancement of fish and wildlife resources.

Page 107. Summary of Plan A. Mention is made of mitigative/compensative measures for fish and wildlife habitat losses. Essentially, Plan A is the plan addressed in the Service's June 1978 report. This plan would require management of 750 acres of fallow fields to achieve partial compensation for riparian woodland losses. Also, this plan would require conversion of 300 acres of borrow pits to wetlands in order to achieve the remaining necessary compensation.

Page 108. Plan B. Many features of Plan B incorporate concerns of the Fish and Wildlife Service. In fact, recommendations 2, 3, 5, 6 (partially), 7, 8 (partially), and 10 presented to the Corps in June 1978 are included in Plan B.

Page 114. Table 21. This table presents separate itemizations of project costs for wetland creation and mitigation. The Service's June 1978 report, the Corps' draft environmental statement and draft feasibility report discuss both features as needed mitigative/compensative measures. Thus, these features are deemed necessary to offset project-caused losses and should be included at project cost. Further, we are concerned that other mitigative features (such as those required to protect railroads, ditches, irrigation structures, etc.) are not similarly itemized.

Page 119. Environmental Quality. Mention is made that "Plan B is the plan addressed by the U. S. Fish and Wildlife Service in their coordination act report...". This statement should be clarified (see previous comment, page 108, Plan B) to indicate that many of the fish and wildlife resource tradeoffs found in Plan B are the result of close coordination and cooperation with the Service and address many of the Service's specific recommendations presented in the June 1978 Fish and Wildlife Coordination Act Report.

Page 121-122. Cost Apportionment. Although not specifically mentioned in this section, Appendix Tables B-11 and B-12 specify that authorizations will be requested for fish and wildlife mitigation operation and maintenance costs. This is considered necessary to facilitate management that will undoubtedly contribute to compensation for resource losses expected to occur with the project.

Page 130. Table 27, Summary Comparison of Plans. Under Environmental Quality, no mention is made of enhancement objectives. Further, there is no mention made concerning management of riparian woodlands for compensation.

Page 136. Compliance with Executive Order 11988. Mention is made that revegetation of remaining borrow areas and haul roads would occur naturally in 2-3 years. This statement is not consistent with other statements in the draft environmental statement and feasibility report. Also, no mention is made regarding length of time required to approach present quality values. We are also concerned about the statement that fish and wildlife enhancement would occur. It is our view that mitigative/compensative measures if adequately implemented would offset project-caused losses, and that no enhancement would occur.

Page 138. Conclusions (tentative). Except for remaining specific differences in sizes of management areas, the Fish and Wildlife Service is in general accord that Plan B should be recommended for development.

Page B-64. Appendix, Environmental Effects, Plan B. Mention is made that acquisition and management of 250 acres of riparian woodland would offset the remainder of adverse impacts created by Plan B. Since we have not evaluated the Corps' mitigation plan, we cannot at this time agree or disagree with this statement. Further coordination will be required to develop mutually agreeable acreages.

Appendix plates B-1, B-3, B-6, B-10, B-12, B-14 and B-17. These plates show specific borrow sites occurring within the floodplain of the Rio Grande. cursory examination indicates that many of the borrow sites may be located in areas of significant riparian habitat values. Mention is made in the report that borrow sites will be located in sparsely vegetated area. Further, on plate B-3, a borrow pit appears to be located within the Oxbow marsh area. We understand that borrow pit locations are tentative pending further planning and coordination.

Appendix F. Public Involvement. The inclusion of the Service's June 1978 Coordination Act Report in the Feasibility Report is appreciated.

Appendix H. Evaluation of U.S. Fish and Wildlife Service Coordination Act Report. The Fish and Wildlife Service is somewhat perplexed as to the need for this section of the Appendix. The Service's June 1978 report was provided early enough in the planning process to allow inclusion of many Service concerns in project planning. (See previous comments on Page 108, Plan B and Page 119, Environmental Quality.) The Service's report was based on existing project information obtained from the Corps of Engineers prior to the issuance of the report. Also, of necessity, the report was based on maximum impacts due to lack of specific information such as location of borrow pits, depths, contours, etc. In fact, this report (recommendations 1,3,4, and 5) identified means of lessening impacts, thereby if implemented would lessen the losses and thus the size of management areas required to compensate for losses.

The Service is presently discussing with Corps' Planners remaining issues regarding mitigative/compensative measures. Further, it is believed that the proposed 2-year study of floral and fauna abundance will be helpful during future project planning and for development of more detailed mitigative/compensative plans for project-caused losses.

Appendix I. Analysis of Mitigation and Compensation Measures. The Service is concerned that information provided in this section of the Appendix has not been coordinated with the Fish and Wildlife Service and the New Mexico Department of Game and Fish. Without adequate coordination, the Corps' independent mitigation/compensation plan may not be considered adequate for meeting the requirements of the Fish and Wildlife Coordination Act.

Again, many of the ideas discussed in Appendix I consider Plan B and many of the Service's recommendations, thus, the selected plan may result in less impacts to fish and wildlife resources and perhaps smaller management area requirements.

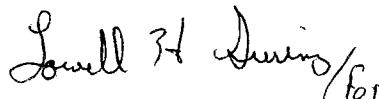
Specific comments could be made regarding agency interpretations of consumptive and nonconsumptive uses, resource values, revegetation potential, biological resources, marsh development and woodland management. However, these comments would more properly be addressed to the Corps' draft compensation plan and not to the draft feasibility report.

Portions of this compensation plan addresses the amounts of marshlands and riparian woodlands needed for management to compensate for project-caused losses. The rationale used to project present and future values of impact areas, estimates of management potentials, and ratio of habitat values lost to required size of compensation areas should be provided for coordinated review by wildlife agencies.

The opportunity to comment on the draft interim feasibility report is appreciated.

We are returning the draft environmental statement and feasibility reports as requested.

Sincerely yours,



Robert D. Pacific
Field Supervisor

Enclosures

cc: (w/o encls)

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Regional Director, FWS, Ecological Services, Albuquerque, New Mexico
Area Manager, Phoenix, U. S. Fish and Wildlife Service, Phoenix, Arizona

United States Department of Interior, Fish and Wildlife Service:

A plan which best addresses the EQ objectives is identified in the Plan Selection Section of the Main Report. The WRC Principles and Standards were followed explicitly and environmental considerations were included in the planning process. Referenced sentence on page 3 of the Main Report has been deleted,

The Fish and Wildlife Coordination Act should not be viewed as a planning constraint but as a tool by which the viewpoint of the Secretary of Interior through the Fish and Wildlife Service can be inputted into the planning process.

The comments concerning the mentioning of enhancement of fish and wildlife resources under environmental criteria in the Main Report was noted and appropriate changes were made.

Concur with the comment on Summary of Plan A.

Concur with the comment on Plan B.

The costs for correcting or altering the structural features of railroad embankments, ditches, irrigation structures are included in the project costs for each unit in Table 21 of the Main Report and they are itemized in Tables B-1 through B-7 and B-10 through B-11 of Appendix B. Mitigation costs are determined on each plan as a whole and not on a unit-by-unit basis. Its itemization is found in Tables B-8 and B-12 of Appendix B.

Concur with the statement that wetland creation was a part of the mitigation measures. The benefits have been correspondingly adjusted.

Table 27 of the main report contains all of the planning objectives as was mentioned in the main text. Under the general heading of environmental enhancement are the specific objectives for the creation of new wetlands and increasing the wildlife habitat in the flood plain. Management of woodlands is considered under the proposed mitigation compensation measures.

With regard to the comment on Compliance with Executive Order 11988, revegetation will have been initiated within 2 to 3 years. Maturity in some cases, as stated in the EIS, will take 15 to 40 years to be attained. The term "enhancement" is used in such a way to mean that when maturity of the revegetated areas occur the situation will be better than what presently exists because management for fish and wildlife purposes will have been an integral part of the project. No apparent habitat management is presently in effect for the same area for fish and wildlife purposes as indicated by the uncontrolled encroachment of urbanization into the habitat.

Further coordination with Fish and Wildlife concerning further plan development is welcomed and encouraged.

The indicated borrow pit within the Oxbow area is no longer being considered.

Responses to the other specific comments of the Fish and Wildlife Service can be found in the Environmental Impact Statement.



United States Department of the Interior
BUREAU OF RECLAMATION

SOUTHWEST REGION
HERRING PLAZA BOX H-4377
AMARILLO, TEXAS 79101

IN REPLY
REFER TO: 150
125.1

Colonel Bernard J. Roth
District Engineer
Albuquerque District
Corps of Engineers
P. O. Box 1580
Albuquerque, NM 87103

Re: Draft of Proposed Interim Feasibility
Report, Middle Rio Grande Flood
Protection, Bernalillo to Belen,
New Mexico, and Draft Environmental
Statement

Dear Colonel Roth:

The Southwest Regional Office of the Bureau of Reclamation has reviewed the subject statement. We apologize for our lateness in responding; however, the enclosed review comments are forwarded for your consideration in finalization of the subject environmental statement, the interim feasibility report, and appendices.

Sincerely yours,

Robert H. Weimer
Regional Director

Enclosure

SOUTHWEST REGION - U.S. BUREAU OF RECLAMATION
REVIEW COMMENTS
MAIN REPORT

Page 14, last line - Vehicular access to the river is required to repair or replace channelization facilities included in the comprehensive plan for flood control and water conservation provided by the Flood Control Acts of 1948 and 1950. These same facilities must be maintained in a similar manner regardless of what level of flood protection is eventually provided.

Page 16, line 17 - How a management program will insure that the oxbow, the remaining wetland in the Albuquerque area, will be retained in its natural state is not understood. Whenever the river's overbank areas are inundated, deposition of the coarser sediment occurs and a portion of the wetland is destroyed. Evidence of this is shown by the river sediment surveys of 1962 and 1972. During this 10-year period, the right or west overbank area, which includes the wetland, aggraded over 1.8 feet and the left or east overbank area aggraded 0.3 feet, while the cleared channel degraded 0.6 feet. It should be noted that this aggradation occurred during a period of below normal runoff. If a major flood had occurred, a larger deposition could be expected.

Page 17, line 14 - Irrigation, in recent years, has not reduced the amount of overflow into the bosque although controlled releases from flood control reservoirs may have caused some reduction. During the 21-year period from 1957 to 1977, the acreage irrigated has fluctuated only from 50 to 60 thousand acres. Therefore, irrigation depletion of the water supply has not increased in recent years. The major reason for reduced overbank flow is that the river flow available has decreased nearly 30 percent since 1943.

Page 31, line 1 - The downstream rate of aggradation is also dependent upon the amount of degradation that occurs upstream. The rate of aggradation is determined by the decrease in sediment transportability in the downstream direction.

Page 31, line 4 - Suspended sediment and bedload are not synonymous. Sediment movement is defined by its type of motion: (1) the contact load which rolls or slides along the streambed, (2) the saltation load which takes short jumps, and (3) suspended load which remains in suspension for appreciable lengths of time.

Page 31, line 6 - It is inferred that upstream reservoirs have significantly reduced the rate of aggradation in the study area. This is questionable since the only reservoir probably effective during the 1962-72 period was Jemez Reservoir. Considerable aggradation has been experienced on the Rio Chama below Abiquiu Dam; therefore, it is unlikely the reservoir would have much effect in the Albuquerque area. Cochiti Reservoir was not as yet operable, and Galisteo Reservoir was only placed in operation near the end of the period.

The implication is that trapping of sediment by these reservoirs is going to resolve sediment problems on the Rio Grande below Cochiti. The relationship between channel work and sediment detention on sediment transport and aggradation needs to be brought out. The reduced rates of aggradation have occurred at least in part and maybe primarily from the more than 17 years of channel work on the river. A discussion of this coupled with the sediment reduction via reservoirs is needed.

Also, our studies indicate that the average rate of aggradation during the 1962-72 period was .026 feet per year and for the 1936-62 period a .043 feet per year.

Page 31, line 27 - Was consideration given in the study to the fact that the riverbed in the Albuquerque area is predicted to be lowered approximately 4 feet? The required levee height increase of 2-3 feet is less than the expected lowering of the riverbed.

Page 43, line 12 - Channel improvement should enhance the operation of drains and wasteways. The effect would be minimal at the diversion structures.

Page 55, lines 1 and 9 - Unclear.

Page 106, line 26 - Drain connection has been completed.

Page 109, line 7 - The report states that "Specific design features of these manmade wetlands would be held in abeyance until development of final plans," but there is no mention whether any protection will be provided for the "new wetlands." If there are no means of protection, then whenever there would be flow in the area between the cleared channel and levees some deposition would occur in the borrow areas. Maintenance of these borrow areas could prove very expensive.

Page 109, line 25 - See comment for page 14.

Page 111, line 10 - The Middle Rio Grande Conservancy District is in the process of formulating a resolution accepting sponsorship of the project under certain conditions.

Page 119, line 15 - It should be noted that the once-abundant marshes refer to conditions preceding the formation of the Middle Rio Grande Conservancy District in 1929.

Appendices

Page A-61 - Reference to proposed connection of the Corrales main canal with the Arenal canal and eliminating the "Oxbow's" water supply. The Bureau has determined it has no authority or responsibility in the issue and that any such proposal is the responsibility of the Middle Rio Grande Conservancy District. Mention of the Bureau of Reclamation in regard to the connection is incorrect and should be removed.

It should be pointed out that the City of Albuquerque has in the past and could in the future arrange for water supply for the "Oxbow" by use of the city's San Juan-Chama water.

Page B-83, third paragraph - Change reference of "water accounting for the Upper Rio Grande Basin" to accounting of the San Juan-Chama Project water in New Mexico.

Draft Environmental Statement

Page II-26, paragraph 2.72 - Revise statement that "...levees averaging about 1,000 feet wide..."

Page II-40, paragraph 2.103 - Last full sentence seems incomplete.

Page II-19, IV-12, and IV-13, Cultural Resources - Because the proposed plan includes installation of jetty fields, haul roads, borrow pits, highway approach changes, and disturbance of riparian woodland, we recommend that on-site cultural resource surveys be completed in advance of construction so that impacts may be determined and/or avoided with respect to potential archeological sites.

General

Reclamation recognizes the desirability of providing additional flood protection within the project area.

United States Department of Interior, Bureau of Reclamation: The comment concerning vehicular access to the river was appreciated and the text has been appropriately ammended.

Preserving the environment so that the existing wetlands can remain in their natural state does not mean preserving the wetlands in their present state. As you have pointed out the natural processes of the environment of the river are gradually filling up the wetlands with sediment and thus are destroying the wetlands. Our management program plans on safeguarding these natural processes in the vicinity of the wetlands in the study area.

The information concerning reasons for reduced overbank flow in the river is appreciated and the report has been changed appropriately.

The first two comments concerning aggradation are concurred with and the text has been appropriately changed. However, the comment concerning the rate of aggradation in the river and the effect which dams have on it is subject to debate. Dams containing sediment pools whereby water flow is slowed sufficiently so that it's suspended sediments settles out by gravitational force is an efficient and direct way of lowering the water sediment content. Another major instrument in lowering the sedimentation of the river is by erosion control of the surrounding drainage area. Proper land use practices is a major element in erosion control. The aggradation numbers shown in the report are only meant to illustrate trends. The exact aggradation rates varies with the reach of the Rio Grande measured. Generally the aggradation rates are lower for the reach above Albuquerque when compared to the river reach below Albuquerque extending to Bernardo.

The channel hydraulics, which this flood control study uses, assumes a stable channel bottom condition.

Concur with the statement that once abundant marshes refer to conditions preceding the formation of the Middle Rio Grande Conservancy District in 1929.

The specific design features of the created wetlands will be finalized in the advanced planning stage. The designs at the finalization of this stage should be complete with measures for their protection and maintenance as well as their construction.

The comments citing typographical errors and updated technical information have been incorporated into the appropriate text.



United States Department of the Interior

Rights Protection
and Engineer

BUREAU OF INDIAN AFFAIRS
ALBUQUERQUE AREA OFFICE
P. O. BOX 8327
ALBUQUERQUE, NEW MEXICO 87198

MAR 7 1979

Bernard J. Roth, District Engineer
Albuquerque District, Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Mr. Roth:

Thank you for making the draft of the proposed interim feasibility report titled Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico, and the accompanying draft environmental statement available for review and comment. The major role of the Bureau of Indian Affairs in this circumstance is to provide assistance to the Indian people of the Sandia, Isleta, and other Indian Pueblos along the Rio Grande in evaluating the benefits and disadvantages of the proposed flood control plan and prepare joint recommendations for your consideration.

With respect to the lands of the Sandia Indian Pueblo, it is noted that they are included within the area designated as the "Bernalillo Unit" of the proposed plan. The plan states the existing levee "is in very good condition and provides protection from flows up to 30,000 cfs which is the 133-year frequency flood. No action other than development of a warning system and emergency evacuation plan is recommended for the Bernalillo Unit."

The "Corrales Unit" levee rehabilitation work includes "reconstructing the existing levee and increasing its height an average of 4.3 feet over its entire length to provide the required Standard Project Flood Protection." This unit includes a reach of levee approximately 21,000 feet long located directly opposite the "Bernalillo Unit." This results in an unequal condition in which the Sandia Pueblo lands would be protected only to a flow of 30,000 cfs on the east side of the river, while the "Corrales Unit" on the west side of the river, would be protected from flows of 42,000 to 72,000 cfs.

At the Isleta Pueblo, Plans "A" and "B" include raising and rehabilitating the levees on both banks of the river upstream from the Isleta Pueblo with the exception of a 9,000-foot reach on the east bank immediately upstream from the Pueblo in the area identified as "Isleta



Save Energy and You Serve America!

D-20

letter 4
page 1 of 2

Unit-East." The added protection upstream and on the west bank of the river would increase the severity of the flood damage to this unprotected area.

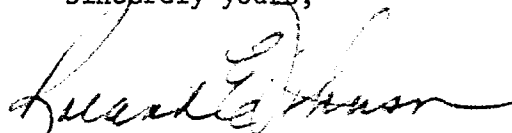
The unprotected area located 1.5 miles downstream from the Isleta Pueblo including the "Isleta Marsh" and identified as the "Belen Unit-West" is designated in Plan "B" as a "wetland." Plan "B" designates this area to remain unprotected and proposes to increase the "wetlands" by establishing new areas created by the removal of earth materials for the levees and left to be inundated by the prevailing water table in this vicinity. This area would also be subjected to greater flood damage than that at present.

I am advised that the tribal authorities are presently considering the report and have scheduled a meeting with someone from your office to discuss the proposed plan. The affected Indian Pueblos will probably make their comments and recommendations to you after this meeting.

It is my opinion that the lands of the Sandia and Isleta Pueblos located within the Rio Grande flood plain should be provided the same flood protection level as other adjoining lands. Our review of the proposed plans indicates that this protection would not be provided as the plan is now scoped.

I am providing the above information to the Pueblos for inclusion in their deliberations. It would be inappropriate to make further comment until the Pueblos have completed their review and determined what level of flood protection they feel is needed for their lands.

Sincerely yours,



Deputy Area Director

United States Department of Interior, Bureau of Indian Affairs:

The letter of comment is concurred with except for the fact that all of the study units in the recommended project were evaluated for economic feasibility without bias of land ownership. Growth and development on Indian reservations are limited to the Indian populations. Projections show these to have the lowest growth rate for the study area due to this limitation to Indian land development. Limited development precludes economic feasibility of increased protection.

Corps personnel have met with the appropriate Isleta Pueblo Indian leaders as cited in Appendix C.



United States
Department of
Agriculture

Soil
Conservation
Service

Box 2007
Albuquerque, NM
87103

February 26, 1979

Colonel Bernard J. Roth
Department of the Army
Corps of Engineers
P. O. Box 1580
Albuquerque, NM 87103

Dear Colonel Roth:

The draft interim feasibility report and environmental statements for the Middle Rio Grande Flood Protection project have been reviewed by members of our staff. We appreciate the opportunity to see these reports in draft form and hope that our comments might be useful in preparing the final report and environmental statement. As requested, we are returning both copies.

Our review of the "main report" elicited the following comments:

1. The plan should be expanded to present additional information on flooding potentials from side drainages.
2. Page 29, Item a, is unclear as to the meaning of "potential for flooding" or "impede existing drainage into the Rio Grande." We suggest this item be explained.
3. Page 15, "without" condition, states that development has been unaffected by "inadequate flood protection." We agree that development will go on at very high rates without concern for flooding. We do not agree with Table 29 on page 131 which states that property values will be increased due to flood protection. We believe that the demand for valley land is so high, and values have become so inflated, that the factor of additional flood protection will not add incremental value in the marketplace. We suggest that these contradictions be rectified in the final reports.

From our view of the Draft Environmental Statement, we would pose the following comments or questions:

There is sufficient, detailed, descriptive or explanatory material concerning natural resources to understand almost all of the stated impacts or purposes. However, we suggest that the final EIS should provide additional clarification about:



1. The utilization of borrow pits as managed wetland habitats. It is our opinion that excavation to below the top elevation of average high water table will provide reliable and valuable wetlands. Considering the overall lack of wetlands within the project area, and their known value as wildlife habitats, esthetic and recreation resources, would indicate that the creation of new wetlands would be a project purpose which is in the public interest.
2. We suggest that the negative impacts of the loss of tree vegetation have been consistently overstated. From the point of view of wildlife habitats within the project area, the characteristic is of a monotypic bosque, lacking in species diversity, foliage-height diversity and age diversity. As wildlife habitat, the bosque would be benefited by additional openings to provide herbaceous ground cover and additional openings to provide needed wetlands.

Considering the present bosque from esthetic and recreational perspectives also suggests that diversification of the dense, older tree communities would improve their utility and attractiveness.
3. It is unclear if the existing Paseo del Bosque bikeway along the east levee would be destroyed, and if so, would it be reconstructed?
4. We question item 136, page I-14, the placement of downed trees within the floodway for the benefit of wildlife. Would this material be anchored in some way or could it float away during periods of flood?
5. There appears to be considerable indecision about various mitigation measures such as wetlands, fishing ponds, recreational trails and landscaping. Our opinion would be that these types of project purposes should be maximized. The citizens and elected officials of the Albuquerque Greater Urban Area have repeatedly demonstrated their interest in utilizing the Rio Grande floodway for these purposes. This project provides many opportunities for single and joint-venture accomplishment, and we feel that these opportunities should be aggressively pursued.
6. We found that Section II-P-1, Plant Communities, was particularly well detailed and helpful in understanding the historic changes along the valley. Combined with Section IV-C, which describes the probable project induced impacts, a rational basis for prediction

is established. We suggest that a good case can be made for the overall improvement through created diversity of the existing plant communities as will be brought about by the proposed project.

7. We suggest that further detail should be provided for Q-1, 2.139, on page II-59, listing the recreation areas to describe the recreation facilities and capacities provided. Also "b", "Hunting Opportunities", would be more meaningful if expressed as a percentage of the land which is available for public hunting.
8. Page III-3, item 3.05, should be corrected to indicate that the lands acquired for Candalaria Farms Park are outside the east levee but within the historic floodplain.
9. On page V-1, under Adverse Effects, Wildlife, again we feel that the first sentence overly stresses the negative side of tree clearing. Very probably, there will be, over time, very little actual loss of vegetation. To paraphrase, a change of vegetation is synonymous with a change of habitat for wildlife species.

As summary, if fully implemented, the selected project alternative could substantially improve the environment of the valley, primarily through flood control, but also through improved esthetic, outdoor recreation and wildlife habitat values. Conversely, if only the flood control aspects are implemented, there will be environmental and social values lost.

Thank you for the opportunity of commenting on these draft reports.

Sincerely,

Harold C. McCrossen

A. W. Hamelstrom *for*
State Conservationist

Attachments (3)

United States Department of Agriculture, Soil Conservation Service:

Comments 1 and 2: This report addresses flood protection problems and feasible alternative solutions to flooding from the Rio Grande only. Flows from side drainages feeding into the Rio Grande are addressed only so far as they contribute to the discharge of the Rio Grande at any certain point in the study area. Flooding of valley areas by side drainages and arroyos are addressed under "Problems and Needs" in the Main Report and in Section F of Appendix A to a level of detail which demonstrates that the levees along the main channel of the Rio Grande do or do not have an impact upon this type of interior flooding problem.

Comment 3: The statement that property values will be increased due to the flood protection is directed toward areas in the study reach that are currently unprotected or have extremely low levels of protection.

The remainder of the comments are addressed in the Environmental Impact Statement.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Region 3
517 Gold Avenue SW
Albuquerque, New Mexico 87102

3500
FEB 26 1979



Colonel Bernard J. Roth
District Engineer
Department of the Army
Albuquerque District, Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

We have reviewed the draft "Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico" report and draft EIS. Our comments are as follows:

1. We were pleased to note that some of the proposed revegetation of disturbed areas will be to trees and other woody vegetation. Suggest utilizing species that are especially suited to providing cover, food and habitat for birds and mammals endemic to this area.
2. Suggest utilizing adapted tree species for planting as cover and screening around burrow pits, especially where burrow pits are to be developed for recreation purposes or marsh areas.
3. A source of additional technical assistance in forestry and related resources would be the State Forester of New Mexico who is cooperating with our agency through the Urban Forestry Program.
4. Suggest you give some consideration to the harvest and sale, as firewood, of woody species that cover areas scheduled for construction. This would tend to reduce disposal costs, subsequent air pollution, and in general improve the esthetics of construction areas.
5. The management, treatment and uses of the upper reaches of the watersheds draining into this Rio Grande River segment were given cursory treatment in your report, although the results have considerable effect on storm runoff levels. Ownerships include the Cibola National Forest, the Bureau of Land Management, Indian Tribal lands, State and private.

2
3500/Roth/FEB 26 1979

6. The report states the 100 + year storm will be adequately handled by the reconstructed higher levee system with corresponding overlap levees. Does the proposed toe drainage system have the same capability, thus avoiding property damage from the landward side of the levee system during the same intensity storm?

We appreciate the opportunity to review and comment on this draft proposal.

Sincerely,



THOMAS G. SCHMECKPEPER
Acting Regional Forester

United States Department of Agriculture, Forest Service: Responses to comments 1 through 4 are found in the Environmental Impact Statement.

Comment 5: Concur. In addressing the impacts of arroyo drainage into the Rio Grande and the current status of studies on the issue, discussion was expanded to include the contribution of all cooperating agencies in managing the watershed areas.

Comment 6: The toe drain would be engineered and designed along the levee to adequately handle drainage for which the rehabilitated levees were designed for.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Cibola National Forest
10308 Candelaria NE
Albuquerque, New Mexico 87112

1950
February 15, 1979

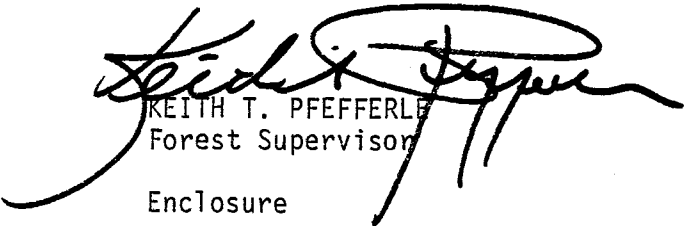


Bernard J. Roth, Colonel, CE
District Engineer, Dept. of the Army
Albuquerque District, Corps of Engineers
P.O. Box 1580
Albuquerque, New Mexico 87103

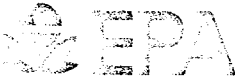
Dear Colonel Roth:

We appreciate the opportunity to review the draft environmental statement. We have no comments at this time and, as requested, are returning the draft.

Sincerely,


KEITH T. PFEFFERLE
Forest Supervisor

Enclosure



April 6, 1979

Colonel Bernard J. Roth
District Engineer
U.S. Army Corps of Engineers
P.O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

We have completed our review of the Draft Environmental Impact Statement on the proposed Middle Rio Grande Flood Protection project from Bernalillo to Belen, New Mexico. This Federal action would provide a higher degree of protection to flood-threatened areas of the Rio Grande Valley. This increased protection would be accomplished largely by rehabilitating and/or raising the existing levee system and installing additional bank protection works.

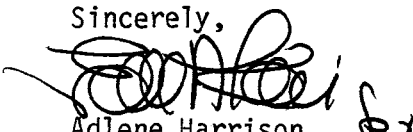
Approximately 92 miles of levee in a 60-mile reach would be raised an average of 4 feet. With the exception of levees in the Albuquerque Unit, existing levees would be torn down and rebuilt to higher structural standards. Mitigative and compensatory measures involving grassing, planting of trees and shrubs, marsh development, woodland management, and woodland acquisition are planned to restore aesthetic and wildlife values impacted as a result of the project activity.

We classify your Draft Environmental Impact Statement as LO-1. Specifically, we have no objections to the project as it relates to Environmental Protection Agency's (EPA) legislative mandates. The statement contained sufficient information to evaluate adequately the possible environmental impacts which could result from project implementation. Our classification will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions, under Section 309 of the Clean Air Act.

Definitions of the categories are provided on the enclosure. Our procedure is to categorize the EIS on both the environmental consequences of the proposed action and on the adequacy of the Impact Statement at the draft stage, whenever possible.

We appreciated the opportunity to review the Draft Environmental Impact Statement. Please send our office two copies of the Final Environmental Impact Statement at the same time it is sent to the Office of Federal Activities, U.S. Environmental Protection Agency, Washington, D.C.

Sincerely,


Adlene Harrison
Regional Administrator (6A)

Enclosure

ENVIRONMENTAL IMPACT OF THE ACTION

LO - Lack of Objections

EPA has no objections to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER - Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to re-assess these aspects.

EU - Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

ADEQUACY OF THE IMPACT STATEMENT

Category 1 - Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2 - Insufficient Information

EPA believes the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3 - Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement. If a draft statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make a determination.

U. S. Environmental Protection Agency: The letter from EPA is appreciated and no further response to it is deemed necessary.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
NEW MEXICO DIVISION
117 U.S. COURT HOUSE
SANTA FE, NEW MEXICO 87501
REGION SIX

February 22, 1979

IN REPLY REFER TO

HA-NM

Colonel Bernard J. Roth
District Engineer
Department of the Army
Albuquerque District, Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

We have reviewed the Middle Rio Grande Flood Protection Interim Feasibility Report and the Draft Environmental Statement for the flood control work proposed on the Rio Grande from Bernalillo to Belen. The following comments are offered for your consideration in developing the final reports:

The increased levee height in the vicinity of State Roads 6, 47 and 49 (Belen, Los Lunas and Isleta) will increase the chances for structural damage to the bridges. Under existing conditions, these structures are capable of passing any flow up to the Standard Project Flood without inundation of the Superstructure. This is reflected in Plates 25 and 26 and is the result of combined flow through the structure and over the approach roadway. The increase in levee height will eliminate the over-bank flow and concentrate it under the bridges. The results are infringement on normal freeboard and/or inundation of the superstructure for flows in excess of Q100. We seriously doubt that these bridges could withstand inundation and would expect an increased risk and a shorter structural life.

In conjunction with the above, we did note that there was very little discussion as to the method of analysis of bridge waterway, potential increase in debris buildup and general criteria for determining the adequacy of existing structures. These items should be coordinated with the State Highway Department and discussed in the body of the reports.

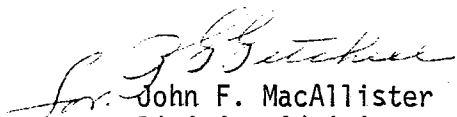
- more -

The geometrics for the grade modification at the structures (Plates B-9 and B-16) are not adequate for the type of highway facilities involved. We would anticipate that much longer approaches would be required, and again would suggest close coordination with the State Highway Department. Since the approaches on US 66 and US 85 are in developed areas, they would be more sensitive to change and should be updated in the final report.

The cover letter does explain the President's proposed rules regarding water policy. We would suggest that the explanation be expanded to cover the current method and discussed at the public hearing. Our concern is the reference to non-Federal funding. We are afraid that most local officials interpret that to mean non-Corps funding but assume FHWA, HUD or other Federal funds could be used for their share. This would not be the case.

We hope these concerns will be addressed to the extent possible in the final report.

Sincerely yours,


for John F. MacAllister
Division Administrator

United States Department of Transportation, Federal Highway Administration: The comment concerning the effect which raising the height of the levees would have on increasing the flow below bridges in the Belen, Los Lunas, and Isleta areas is concurred with.

Since no bridges are planned to be raised with the recommended 42,000 cfs flood protection plan, the comments concerning Plates B-9 and B-16 are no longer applicable.

The comment concerned with cost apportionment is concurred with and the appropriate text of the final report will be clarified.

A discussion of method of analysis of bridge waterway is found in Appendix E, on page E-30.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1606TH AIR BASE WING (MAC)
KIRTLAND AIR FORCE BASE, NEW MEXICO 87117



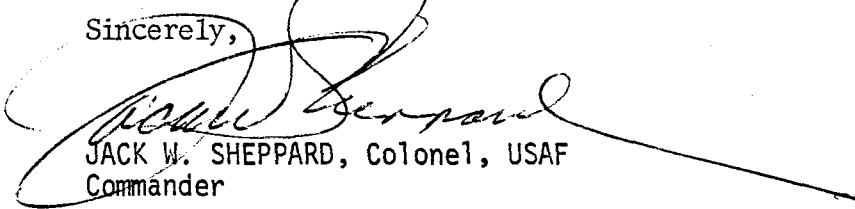
FEB 23 1979

Col Bernard J. Roth, District Engr.
Albuquerque Dist., Corps of Engrs.
P.O. Box 1580
Albuquerque, NM 87103

Dear Colonel Roth,

We appreciate the opportunity to review your proposed interim feasibility report, Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico. Since the report does not directly impact Kirtland Air Force Base, we have no substantive comments to offer.

Sincerely,


JACK W. SHEPPARD, Colonel, USAF
Commander



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FT. WORTH REGIONAL OFFICE
1100 COMMERCE STREET
DALLAS, TEXAS 75202

April 20, 1979

REGION VI

IN REPLY REFER TO:

Mr. Jasper H. Coombes, Chief
Engineering Division
Albuquerque District
Corps of Engineers
Department of the Army
P.O. Box 1580
Albuquerque, New Mexico 87103

Dear Mr. Coombes:

The Draft Environmental Impact Statement for Middle Rio Grande
Flood Protection, Bernalillo to Belen, New Mexico, was
reviewed in the Dallas Regional Flood Insurance Administration
Office and in the Department of Housing and Urban Development's
Dallas Area Office. No objections to the proposed project
resulted from those reviews.

Sincerely,

Victor J. Hancock
Environmental Clearance Officer

letter 11

PRESENTATION FOR PUBLIC MEETING, MIDDLE RIO GRANDE FLOOD PROTECTION
PROJECT, NEW MEXICO, MARCH 12, 1979

GOOD EVENING, LADIES AND GENTLEMEN, MY NAME IS ROBERT D. PACIFIC, I AM
FIELD SUPERVISOR OF THE ECOLOGICAL SERVICES FIELD OFFICE, UNITED STATES
FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR, ALBUQUERQUE, NEW
MEXICO. I REPRESENT THE REGIONAL DIRECTOR, FISH AND WILDLIFE SERVICE,
ALBUQUERQUE, NEW MEXICO.

MY OFFICE HAS RESPONSIBILITY FOR REVIEW OF WATER DEVELOPMENT PROJECTS
AND RELATED FEDERAL ACTIVITIES IN THE STATE OF NEW MEXICO. THE NATIONAL
ENVIRONMENTAL POLICY ACT OF 1969 REQUIRES FEDERAL AGENCIES TO COMMENT ON
ENVIRONMENTAL STATEMENTS FOR MAJOR FEDERAL ACTIONS THAT MAY CAUSE SIGNIFICANT
IMPACTS TO THE ENVIRONMENT. THESE COMMENTS ARE PART OF THE NEPA PROCESS.

ANOTHER FEDERAL LAW, "THE FISH AND WILDLIFE COORDINATION ACT REQUIRES
THAT "...WHENEVER ANY STREAM IS PROPOSED TO BE MODIFIED BY ANY DEPARTMENT
OF THE UNITED STATES, SUCH DEPARTMENT FIRST SHALL CONSULT WITH THE FISH
AND WILDLIFE SERVICE TO INSURE THE CONSERVATION OF WILDLIFE RESOURCES.

"WILDLIFE CONSERVATION SHALL RECEIVE EQUAL CONSIDERATION WITH OTHER
FEATURES OF WATER-RESOURCE DEVELOPMENT PROGRAMS. "

AS REQUIRED BY THE COORDINATION ACT, THE SERVICE HAS PROVIDED THE DISTRICT ENGINEER WITH OUR VIEWS ON THE MIDDLE RIO GRANDE FLOOD PROTECTION PROJECT IN A REPORT DATED JUNE 7, 1978. THIS REPORT WAS DEVELOPED IN COORDINATION WITH THE NEW MEXICO DEPARTMENT OF GAME AND FISH. COPIES OF THE REPORT CAN BE OBTAINED FROM MY OFFICE. IN ADDITION, A COPY OF THE REPORT IS PUBLISHED IN THE CORPS' INTERIM FEASIBILITY REPORT, DATED FEBRUARY 1979.

OUR REPORT DOCUMENTED EXPECTED IMPACTS AND LOSSES TO FISH AND WILDLIFE RESOURCES THAT WOULD RESULT FROM CONSTRUCTION OF THE PROPOSED ALTERNATIVES. THE REPORT WAS BASED ON AVAILABLE ENGINEERING DATA AND REPRESENTS MAXIMUM IMPACTS AND/OR LOSSES.

IMPLEMENTATION OF THE PROPOSED MIDDLE RIO GRANDE FLOOD PROTECTION PROJECT WILL CAUSE FISH AND WILDLIFE RESOURCE LOSSES. A LARGE VARIETY OF FISH AND WILDLIFE ARE DEPENDENT ON HABITATS SUCH AS STREAMS AND WOODLANDS WITHIN THE PROJECT AREA.

SPECIFICALLY, THESE HABITATS INCLUDE THE GROUND WATER INTERCEPTOR DRAINS, THE RIO GRANDE, THE WETLANDS, AND THE RIPARIAN WOODLANDS FOUND ADJACENT TO THE RIO GRANDE.

OUR PRIMARY CONCERN IS FOR LOSSES EXPECTED TO OCCUR ON A MAXIMUM OF 750 ACRES OF THE COTTONWOOD-WILLOW RIPARIAN HABITAT. COTTONWOOD-WILLOW WOODLANDS (COMMONLY CALLED BOSQUES) SUPPORT A SIGNIFICANT DIVERSITY OF WILDLIFE. THE COTTONWOOD-WILLOW VEGETATION TYPE AND ASSOCIATED WILDLIFE SPECIES HAVE UNDERGONE EXTENSIVE IMPACTS IN THE SOUTHWEST. THIS WOODLAND TYPE WITHIN THE ALBUQUERQUE METROPOLITAN AREA REPRESENTS ONE OF THE LAST REMAINING LARGE WOODLAND TRACTS. THUS, THE ALBUQUERQUE AREA IS UNIQUE IN HAVING SUCH A RESOURCE WITHIN ITS BOUNDARIES. THIS HABITAT PROVIDES VARIATION TO THE SURROUNDING DESERT, PROVIDES MIGRATORY CORRIDORS FOR MIGRATORY BIRDS AND HABITATS FOR RESIDENT WILDLIFE.

WE HAVE REQUESTED THE CORPS OF ENGINEERS TO IMPLEMENT THE FOLLOWING SPECIFIC RECOMMENDATIONS DESIGNED TO PREVENT OR COMPENSATE FOR EXPECTED FISH AND WILDLIFE RESOURCE IMPACTS:

1. THAT "IN KIND" COMPENSATION FOR RIPARIAN WOODLAND DESTRUCTION BE PROVIDED. THE SERVICE REQUESTS UP TO 750 ACRES OF LANDS BE PURCHASED AND MANAGED AS RIPARIAN WOODLANDS TO REPLACE HABITAT CARRYING CAPACITY LOST TO THE PROJECT.
2. THAT CERTAIN BORROW PIT SITES BE CONVERTED TO WETLANDS.

3. THAT AN INTER-AGENCY TEAM OF BIOLOGISTS BE CREATED TO SELECT BORROW PIT SITES BEFORE CONSTRUCTION.

4. THAT BECAUSE OF THE UNIQUENESS OF THE RIPARIAN WOODLAND IN THE PROJECT AREA, THE SERVICE RECOMMENDS A MINIMUM OF TWO YEARS FOR A DETAILED STUDY TO MORE ACCURATELY DETERMINE PLANT AND ANIMAL COMPOSITION AND DETERMINE CONSTRUCTION ACTIVITY IMPACTS SUCH AS NOISE AND HUMAN DISTURBANCE.

5. THAT UNIQUE HABITATS AND WILDLIFE AREAS, SUCH AS BIRD NESTING AREAS, BE COMPENSATED FOR IF IMPACTED BY CONSTRUCTION. A SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION TO IDENTIFY VALUABLE WILDLIFE HABITAT.

6. THAT LEVEES, HAUL ROADS AND JETTY FIELDS BE PLANTED TO NATIVE GRASSES, SHRUBS AND TREES OF VALUE TO WILDLIFE. ADDITIONALLY, THAT EVERY EFFORT BE TAKEN TO BLOCK HAUL ROADS, BY VEGETATIVE CONCEALMENT AND BY CREATING BARRIERS.

7. THAT MINIMUM CONSTRUCTION TAKE PLACE IN THE BOSQUE. THIS WOULD INCLUDE SUCH MITIGATION AS PLACEMENT OF HAUL ROADS, BORROW PITS, AND JETTY FIELDS IN SPARSELY VEGETATED AREAS.

8. THAT DRAIN HABITAT IMPROVEMENTS, WHICH WILL INCLUDE PLACING OF LOGS AND ROCKS, LOW FLOW DAMS AND TREES BE INSTALLED TO COMPENSATE FOR THE DEGRADED DRAIN CONDITIONS.

9. AND THAT NO CONSTRUCTION IMPACTS, EITHER DIRECTLY OR SECONDARILY, BE ALLOWED TO ALTER THE THREE IDENTIFIED PALUSTRINE WETLANDS IN THE PROJECT AREA.

AS MENTIONED, THESE RECOMMENDATIONS WERE PRESENTED TO THE CORPS OF ENGINEERS IN JUNE 1978. THIS WAS EARLY ENOUGH IN THE CORPS' PLANNING PROCESS TO ENABLE THE CORPS PLANNERS TO INCORPORATE OUR CONCERNS IN THE PROJECT PLANS THAT ARE BEING DISCUSSED TONIGHT.

MITIGATION AND COMPENSATION FOR FISH AND WILDLIFE LOSSES IS INCLUDED IN PROJECT PLANS. HABITAT MANAGEMENT AREAS COMPRISED OF WETLANDS AND RIPARIAN WOODLAND ARE INCLUDED AS AN INTEGRAL PART OF THE PROJECT PLAN BEING RECOMMENDED FOR AUTHORIZATION BY THE CORPS OF ENGINEERS. THE MANAGEMENT AREAS IDENTIFIED IN THE EIS ARE THE RESULT OF THE CORPS INDEPENDENT EVALUATION OF FISH AND WILDLIFE IMPACTS. WE RECOMMEND THAT THIS INDEPENDENT EVALUATION BE COORDINATED IN THE NEAR FUTURE WITH THE FISH AND WILDLIFE SERVICE AND NEW MEXICO DEPARTMENT OF GAME AND FISH TO RECEIVE THE BENEFIT OF OUR EVALUATION OF THE CORPS' PROPOSALS.

THE SERVICE ALSO RECOMMENDS THAT OPERATION AND MAINTENANCE FUNDS BE PROVIDED SO THAT THE RIPARIAN WOODLANDS AND WETLANDS BE MAINTAINED THROUGH THE PROJECT LIFE.

WE STRONGLY URGE THE CORPS OF ENGINEERS TO INITIATE THE 2-YEAR INTENSIVE SURVEY OF FISH AND WILDLIFE RESOURCES IN RIPARIAN HABITATS OF THE STUDY AREA.

SEVERAL OF OUR RECOMMENDATIONS INVOLVE MITIGATION OF EXPECTED LOSSES SUCH AS LOCATING HAUL ROADS AND BORROW PITS IN AREAS OF SPARSE VEGETATION AND DESIGNING PROJECT FEATURES SUCH AS LEVEE ALIGNMENTS TO AVOID WETLAND AREAS. THESE MITIGATION RECOMMENDATIONS HAVE RECEIVED FAVORABLE CONSIDERATION BY THE CORPS OF ENGINEERS' PLANNERS. ALTERNATIVE B APPEARS TO MAKE SPECIAL EFFORTS TO AVOID UNNECESSARY LOSSES.

SHOULD THE PROJECT BE AUTHORIZED, THE CORPS OF ENGINEERS WOULD CONTINUE DEVELOPING MORE SPECIFIC PLANS DURING ADVANCED PLANNING STAGES. OUR RESPONSIBILITIES FOR IMPLEMENTATION OF THE FISH AND WILDLIFE COORDINATION ACT CONTINUE, EVEN THROUGH THE CONSTRUCTION PHASES OF PROJECT DEVELOPMENT. MY OFFICE WILL CONTINUE TO WORK CLOSELY WITH THE CORPS OF ENGINEERS ON THIS FLOOD CONTROL PROJECT TO INSURE ADEQUATE FISH AND WILDLIFE PROTECTION AND CONSIDERATION IS INCLUDED IN PROJECT DESIGNS.

Presentation by Mr. Robert D. Pacific at Middle Rio Grande Flood
Protection Study Public Meeting of March 12, 1979.

As stated, the Fish and Wildlife Service and the Corps of Engineers have worked closely to identify potential impacts of project construction, to develop methods of protecting resources, and to offset unavoidable adverse impacts to the riparian ecosystem. At the onset of project planning major goals and considerations established by the Corps were to impact as little as possible on the riparian ecosystem, to restore a portion of marshes historically lost through agricultural and urban development as water resource projects, and, if possible, to enhance wildlife and recreational resources. The creation of marshes, the possible construction of recreational track, grassing landscaping and landscaping of project areas disturbed by project construction, and possible creation of fish habitat enhancement structures were the result of these established goals. Also, compensation measures were developed based on measures that would best contribute to the integrity and quality of the riparian ecosystem. Many of the recommendations made by the Service are governing considerations included in project planning. Since the recommended plan has been changed to a lower degree of flood protection, impacts have been correspondingly reduced as have compensatory measures. The Corps will continue its close coordination with the Service through all phases of project planning and construction so that riverine resources may receive maximum protection and consideration.



SECTION B

State Government Agencies

- State Planning Division, Department of Finance and Administration
- State of New Mexico Natural Resources Department, Forestry Division
- State of New Mexico, Department of Game and Fish
- State of New Mexico, Health and Environmental Department, Environmental Improvement Division
- State of New Mexico, State Engineer Office
- New Mexico State Highway Department



PLANNING DIVISION
(STATE CLEARINGHOUSE)
PROJECT NOTIFICATION AND REVIEW SYSTEM
GENERAL REVIEW AND COMMENT FORM

Review of:
S.A.I. No. 9 02 11 042

TO: Review Agency Bureau II Kate Wickes

Agency Address _____ City _____ Zip _____

FROM: Planning Division, Department of Finance and Administration

Address 505 Don Gaspar City Santa Fe, NM Zip 87503

SUBJECT: (Project Title) Middle Rio Grande Flood Protection Bernalillo to Belen

Because of your possible interest in this project it has been submitted to you for review and comment. Please complete this form and return to Planning Division, Dept. of Finance and Administration by 3-8-79 (date)

(To be Completed by the Reviewer)

- 1. Are you aware of any programs which have similar goals and objectives to the proposed plan? Yes _____ No X
If yes, who provides these programs? What populations are being served?
- 2. In your estimation, do these programs preclude the need for the proposed program? Yes _____ No X
- 3. Is the proposed plan incompatible with existing or planned programs you are aware of? Yes _____ No X If the answer is yes, in what way is the proposed program incompatible?
- 4. Does the proposed program conform with a comprehensive plan developed for the area in which it is located? Yes X No _____
- 5. In your opinion, is the population being served in critical need of, or large enough to warrant, the proposed action? Yes X No _____ If no, explain.
- 6. Does the proposed plan conflict with any applicable statute, order, rule or regulation (federal, state, local) with which you are familiar? Yes _____ No X If yes, cite the conflicting statute, order, rule or regulation.
- 7. Describe any suggestions on means of improving or strengthening the proposed program.
- 8. Is the information contained in the application and information forms consistent?
yes
- 9. On the basis of the above evaluation, convey your general conclusion by checking the appropriate statement or statements:
 No interest in or comment on this project
 Proposal is supported
 Proposal is considered nonessential, as explained below
 Additional information is desired, as described below
 Conference desired with applicant

10. Remarks or additional comments.

letter 13
page 1 of 2

SIGNATURE OF REVIEWER Kate Wickes
TITLE Planner
DATE March 5, 1979

PLANNING DIVISION
(STATE CLEARINGHOUSE)

MIS

REVIEW CERTIFICATION FORM

STATE PLANNING DIVISION
DEPT. OF FINANCE AND ADMINISTRATION
505 DON GASPAR
SANTA FE, NEW MEXICO 87503
(505) 827-2073

TO: Department of the Army
SUBJECT: _____ PRELIMINARY REVIEW
 _____ FINAL REVIEW
 _____ STATE/AREA PLAN
 X E.I.S.

DATE: March 9, 1979

PROJECT TITLE: Middle Rio Grande Flood Protection Bernalillo to Belen

APPLICANT: Department of the Army

FEDERAL CATALOG NO: 12.106

FEDERAL AGENCY: Department of Defense

SAI NUMBER: 9 02 11 042

PROPOSED FUNDING (PER 424 FORM)

AMOUNT

FEDERAL	\$ _____
APPLICANT	_____
STATE	_____
LOCAL	_____
OTHER	_____
TOTAL	_____

FOR FINAL APPLICATION ONLY:

REVIEW RESULTS:

- The application is supported.
- The application is not in conflict with State Areawide or Local plans.
- Comments are attached for submission with this application.

You may now submit your application package, this form and all review comments to the Federal or State Agency(s) from whom action is being requested.

Please notify the Planning Division (Clearinghouse) of any changes in this project. Refer to the SAI number on ALL correspondence pertaining to this project.

Alfredo Lobato
TECHNICAL ASSISTANCE
AND RESEARCH

Anita Eisenberg
PLANNING DIVISION

Approved July, 1978
Secretary, DFA

D-47

letter 13 2 - white
page 2 of 2 1 - to applicant
1 - for Federal Agency
1 - yellow - SPD copy

Planning Division (State Clearing House): No response necessary.





STATE OF NEW MEXICO
NATURAL RESOURCES DEPARTMENT
FORESTRY DIVISION
P.O. BOX 2167 SANTA FE 87503
827-2312



RAYMOND R. GALLEGOS
STATE FORESTER

BRUCE KING
GOVERNOR

WILLIAM S. HUEY
SECRETARY
OF NATURAL RESOURCES

I - COOPERATION
203

February 28, 1979

Colonel Bernard J. Roth, CE
District Engineer
Corps of Engineers
P.O. Box 1580
Albuquerque, NM 87103

Dear Colonel Roth:

Your ref: SWAED-EU, February 21, 1979, Draft Feasibility Report, Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico.

1. Thank you for the opportunity to review the draft Interim Feasibility Report, including appendices and the draft Environmental Statement.
2. We assume that editorial changes will be made, in-house, including typographical and spelling errors.
3. Some specific comments follows:
 - a. In the discussion on page 28 of the Main Report, it may be appropriate to mention watershed restoration measures carried out by the U.S. Forest Service on Cibola National Forest lands in the Bernalillo watersheds.
 - b. The discussion of sediment on page 30 might be enhanced by data from the sediment studies currently being conducted by the Soil and Water Conservation Division, Department of Natural Resources, State of New Mexico.
 - c. There is an inconsistency in the base maps used to illustrate the plan. For example: The plate used to show Indian lands indicates a different watershed/hydrologic project boundary, northwest of Cochiti and Jemez Dams, than does plate 15 - which includes the

Borrogo and Peralta drainages on the Santa Fe National Forest. In addition, the land status map, plate 16, does not cover all of the project, nor does it include lands of the Santa Fe National Forest. A portion of the land status map of New Mexico, published by the Bureau of Land Management (1:500,000, 1972, revised 1973) is attached to illustrate this point.

- d. In the appendix, page A-46, the discussion of Waste-water Management Problems indicates that the Environmental Improvement Agency is the designated planning agency. This, and other references to State agencies, needs to be corrected in view of the reorganization of State Government and subsequent renaming of some State agencies. In this case, it should read the Environmental Improvement Division of the Health and Environment Department.
- e. On page A-78, in the summary of the section on Arroyo and Sheet Flow Runoff, interior flooding is recognized as a significant problem. It is difficult to conceive that this problem is ".....completely unrelated to the Rio Grande and its existing levee system". We feel strongly that this plan and the plans for controlling interior runoff should be integrated - at least to the point of discussing and analyzing how one effects the other. Perhaps it is "old hat", but two basic flood control problems come to mind:
 - (1) How do interior flood waters get through the levees - at all stages of the main stem?
 - (2) What happens if the standard project flood is exceeded and flood waters are trapped behind the levees? We feel that reexamination and evaluation of this section, beginning on page A-75 is in order.
4. In reviewing the draft Environmental Statement, it appears that the Division of State Forestry through its Urban and Community Forestry and other programs may be able to provide assistance during vegetation modification periods of the plan.
5. We are pleased to see the provision for use of project facilities for wildlife habitat, and recreation opportunities. However, we feel strongly that upstream watershed rehabilitation and improvement, planned and implemented

Colonel Bernard J. Roth
February 28, 1979
Page 3

by upstream landowners/managers should be discussed in the plan - in particular, those measures that will reduce flood peaks in the project area.

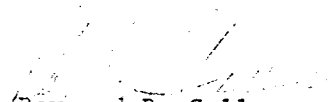
6. Please change your mailing list:

From: Robert Adams
New Mexico State Forestry Dept.
P.O. Box 2167
Santa Fe, NM 87503

To: Raymond R. Gallegos, State Forester
Division of State Forestry
P.O. Box 2167
Santa Fe, NM 87503

If we can provide additional information or further review, please feel free to call on this office.

Sincerely,


Raymond R. Gallegos
State Forester

RRG/tdh

Atch: (1)

Enc.: (2)

1. Feasibility Report (Vols. I & II)
2. Draft EIS

cc: Bill Troxel, FS, R-3, S&PF

State of New Mexico, Natural Resources Department, Forestry Division:

Comment 3.a. Concur. The discussion was expanded where cited and also in Appendix A.

Comment 3.b. Concur, but detail was only presented to illustrate generalized trends of channel aggradation and degradation.

Comment 3.c. Concur. The maps were corrected in the final report.

Comment 3.d. Concur. The correction of titles was made in the final report.

Comment 3.e.(1). Interior flood waters reaches the main stem via ditches, canals, and drains. These conveyances get through the levees through overlap levees or culverts equipped flap gates which lets water flow in only one direction.

Comment 3.e.(2). If the standard project flood were exceeded, the flood situation would be the same with the levees as without them--total inundation of the flood plain. The levees would be topped, then breached and most likely destroyed, thus not likely to trap water behind levee except where it would occur under existing levee conditions.

Response to the comments on the Environmental Impact Statement is found in the EIS.

State of New Mexico

GOVERNOR
BRUCE KING

DIRECTOR AND SECRETARY
TO THE COMMISSION
HAROLD F. OLSON



DEPARTMENT OF GAME AND FISH

STATE CAPITOL
SANTA FE
87503

STATE GAME COMMISSION

F. URREA, JR., CHAIRMAN
ALBUQUERQUE

ROBERT H. FORREST
CARLSBAD

J.W. JONES
ALBUQUERQUE

ROBERT P. GRIFFIN
SILVER CITY

DR. FRANKLIN B. ZECCA
GALLUP

March 23, 1979

Colonel Bernard J. Roth
District Engineer
Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

The New Mexico Department of Game and Fish has reviewed the Draft Environmental Statement and Interim Feasibility Report, Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico, and I wish to make the following comments:

The Department has coordinated our evaluation of the proposed project with the U. S. Fish and Wildlife Service. This effort resulted in the report by the U. S. Fish and Wildlife Service that is included in Appendix G of the Interim Feasibility Report. I concur with the contents of this report and believe that cooperative planning during the next two years will result in the development of more detailed proposals for mitigating measures for wildlife and wildlife habitat.

I wish to express my appreciation in that the planning process to date, has developed considerations for wildlife protection and that the requirements of the Fish and Wildlife Coordination Act of 1965 can be achieved in the final plans.

Thank you for the opportunity to review and comment upon the draft statement and interim report.

Sincerely,

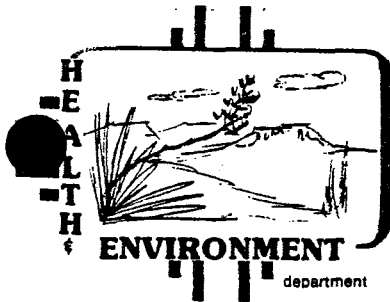
A handwritten signature in dark ink, appearing to read "Harold F. Olson", with a small flourish at the end.

Harold F. Olson
Director

cc: U. S. Fish & Wildlife Service

letter 15

State of New Mexico, Department of Game and Fish: No response is necessary. The letter and your continued cooperation and strong coordination is appreciated.



Bruce King
GOVERNOR

STATE OF NEW MEXICO

ENVIRONMENTAL IMPROVEMENT DIVISION
P.O. BOX 177-LOS LUNAS, NM 87031

George S. Goldstein, Ph.D.
SECRETARY

Larry J. Gordon, M.S., M.P.H.
DEPUTY SECRETARY

Thomas E. Baca, M.P.H., Director

March 22, 1979

Colonel Bernard J. Roth, District Engineer
Corps of Engineers, Albuquerque District
P.O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

I have recently been asked to write this letter on behalf of concerned farmers and citizens in Eastern Valencia County. The intended purpose is to inform you of environmental problems existing with the high water table and river run-off which are present throughout the Valley in Eastern Valencia County, and give our opinion on the proposed levy build-up.

The first major problem deals with water pollution and improperly functioning sewage disposal systems. This problem is increasing daily as rapid development occurs throughout the Valley. This problem primarily occurs during the Spring run-off and irrigation season. At this time, the water table generally rises approximately two to three feet. It is apparent that in areas adjacent to the river that the water table is rising each year. In areas where the seasonal high used to be two to four feet, the water table has been observed as high as ten inches. This rise means that many of the existing sewage disposal facilities are actually submerged in the water table and the sewage is either rising to the surface or backing up into the homes with the end result being extensive water pollution and a potential health hazard for residents and neighbors.

*High level
channel.*

A second major problem exists when the river run-off comes down during the Spring. There are some 2000 acres or more in area where flooding occurs between the river channel and the ditch levy. These areas are generally lower than the actual river channel and when flooding occurs, results in the pooling and standing of water where mosquito larvae and adult mosquitoes are bred by the billions. Control of this situation is very difficult and extremely expensive, especially when abnormal amounts of run-off occur. When this situation occurs, the potential for disease which can be transmitted by mosquitoes is increased considerably.

Letter to Colonel Bernard J. Roth
March 22, 1979
Page Two

During 1973, the year when excessive amounts of run-off existed, light trap surveillance of adult mosquitoes along the river exceeded 250 mosquitoes per trap. This is an extremely large amount of mosquitoes in view of the fact that 25 or more from one trap is sufficient to classify the area as heavily infested.

There are also numerous areas along the ditches and in other areas throughout the Valley where dirt has been borrowed to construct ditches and roads resulting in several areas where the water table, during the irrigation and run-off season, rises above the surface and provides a habitat for excessive mosquito breeding. In order to eliminate problems of this nature, it is generally felt that channelling of the river would eliminate a lot of underground seepage into the water table, thereby helping to lower the water table. It is also felt that channelling of the river would eliminate these flood-prone areas which would also help to eliminate mosquito breeding in the area. It is our feeling that if the river is properly channelled, that it would act as a major drain for the whole Valley and would ultimately result in more water being available for irrigation, recreation, and wildlife in the southern portions of the State. From our viewpoint, building up the levees on both sides of the river will do very little or nothing to eliminate the problems which we are discussing. These problems will only get worse as times goes on since the water table will continue to rise and flooding will continue to increase as soil deposits accumulate in the river channel creating more potential flooding and mosquito breeding areas between the banks and the levy.

We are therefore strongly supporting a changed plan which would require that the river be dredged rather than building up the levees as proposed.

If you have any questions concerning this letter, please feel free to contact me in Los Lunas at 865-9797.

Sincerely,


Kenneth M. Cable
Environmentalist

KMC/cms

cc: Dan Vigil, Env. Supervisor
File

State of New Mexico, Health & Environment Department, Environmental Improvement Division: From examination and evaluation of a full range of flood control alternatives, as discussed in the main report, channel improvement by dredging was determined to be economically infeasible and only a temporary solution to the problem since the channel would have a tendency to fill with sediment again requiring continuing maintenance. The Corps cannot recommend to Congress economically infeasible projects.

The alternative of channelization will be reviewed during post-authorization studies to ascertain its economic viability at that time.



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

March 8, 1979

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503

Colonel Bernard J. Roth
District Engineer
Albuquerque Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel:

By letter dated 2 February 1979 you transmitted for review and comment a draft of your interim feasibility report on "Middle Rio Grande Flood Protection, Bernalillo to Belen." The following comments are offered.

Page 18. The last paragraph implies that the Bureau of Reclamation has recently proposed to remove vegetation from the Oxbow area and from the Isleta Marsh. The proposal concerning the Oxbow was for a cooperative project by the Bureau of Reclamation, the State of New Mexico and the Middle Rio Grande Conservancy District, and the only vegetation removal involved would have been clearing of right-of-way for the works proposed to be constructed. The Bureau has since withdrawn from the proposal. We are not aware that the Bureau of Reclamation has proposed any vegetation removal in the Isleta Marsh.

Pages 30-33. The report discusses the problem of continued aggradation of the Rio Grande and the effects of aggradation on channel capacity and operation of the irrigation works. On page 33, the report lists one of the planning objectives as "reduced aggradation of Rio Grande streambed." At page 90 the report discusses the relation of a reservoir on Tonque arroyo to aggradation of the Rio Grande and the paragraph concludes "Therefore, control of sediment was not a significant factor in plan selection for detailed assessment and evaluation." The report does not indicate whether or not the installation of gates on Galisteo Reservoir was considered as a measure to reduce flood flows and sediment inflow to the study reach.

Page 33. Near the center of the page the following phrase appears, "which may impeach or otherwise affect delivery of such waters." It is suggested that the word "impeach" be changed to "impede".

Colonel Bernard J. Roth
March 8, 1979
Page Two

Page 114 and page 123. The tables at these pages reflect that under Plan B as compared with Plan A the local interests capital cost would be \$214,000 more and their annual costs would be \$32,000 more, of which \$20,000 would be for increased operation and maintenance costs. The report assumes (pages 115 and 116) that the added environmental and fish and wildlife habitat benefits equal these increased costs. The project sponsor can consider the validity of this assumption in choosing between Plan A and Plan B.

Page A-45. The following sentences appear in the second paragraph.

While there appears to be sufficient quantity of water in this deep aquifer, nothing is known about its quality below the level now being pumped. It is also conceivable that future pumping demand could drop the water tables below an economical pumping level.

The first sentence permits an inference that the quality of water below the level now being pumped is inferior. There are data available which indicate good quality water to depths of 1300 feet, considerably below the level now being pumped. (Shell oil test near Los Lunas, T. 7N, R. 2E, Sec. 7). The USGS Hydrologic Investigation Atlas HA-510 states that freshwater extends to a depth of 3500 feet in the Albuquerque basin. With respect to the second sentence, it is difficult for us to conceive that the future demand for municipal and industrial water, even in the Albuquerque area, could drop the water table below an economical pumping level for these purposes under continued coordinated management of the surface and ground water sources. It is suggested that the sentences be deleted.

Page A-46. The last sentence of the first paragraph states that the amount of water available to the Middle Rio Grande Conservancy District for irrigation "is solely dependent on winter snowfall in the upper Rio Grande and the San Juan River Basins." The Middle Rio Grande Project receives water from spring and summer thunderstorms which contribute to the supply available to the District for irrigation. It is suggested that this sentence be revised by substituting the word "largely" for the word "solely".

Page A-48. The first full paragraph implies that the Bureau of Reclamation has recently proposed to remove vegetation from the Oxbow area. Please refer to the above comment on page 18 of the main report.

Colonel Bernard J. Roth
March 8, 1979
Page Three

Page A-61. In the first incomplete paragraph the following sentence appears:

The Middle Rio Grande Conservancy District and the Bureau of Reclamation now propose to connect the Corrales main canal with the Arenal canal downstream, thereby eliminating the "oxbow's" water supply.

Please refer to the above comment on page 18 of the main report.

Page B-87. The report states that the Rio Grande Compact Commission was established in 1939 for the purpose of effecting an equitable apportionment of the Rio Grande waters among the states of Colorado, New Mexico and Texas. This statement is incorrect and should be modified. The Rio Grande Compact of 1939 made an equitable apportionment of the waters of the Rio Grande among the three states; the Rio Grande Compact Commission, created by the compact, administers the compact.

Page B-88. It is suggested that the first paragraph be rewritten about as follows:

New Mexico water rights are based on the doctrine of prior appropriation. All of New Mexico's ground and surface waters belong to the public and are subject to appropriation in accordance with law. The surface water code provides that an appropriation of surface water may be initiated after 1907 only by application to and approval of the State Engineer. When the State Engineer finds that an underground water source has reasonably ascertainable boundaries and so proclaims, he assumes jurisdiction over the appropriation of ground water within the basin and supervises its appropriation and use. The Rio Grande Compact also imposes certain constraints on the use of waters in the Rio Grande stream system.

Table 25A at page 124B presents federal and non-federal costs for three different levels of flood protection, i.e., protection from the 700-year flood, the 270-year flood and the 100-year flood. The information contained in Table B-13 on page B-58 and Table 19 on page 94 indicates that an option in which no flood protection in addition to the existing protection from the 270-year flood is provided in the Albuquerque units and in which protection from the 700-year flood is provided in all other units of Plan A or B would have considerable merit from the sponsor's point of view under current cost-sharing policy. Table B-13 reflects that the

Colonel Bernard J. Roth
March 8, 1979
Page Four

capital cost to the sponsors for protection from the 700-year flood for all units of Plan B other than the Albuquerque units would be about \$2.0 million, while the figures given in Table 25A show that the sponsor's capital costs for protection from only the 270-year flood for all units would be about \$1.5 million. Table 19 shows that the additional average annual benefits from protection of all units, other than the Albuquerque units, from the 700-year flood instead of the 270-year flood would amount to \$280,000 per year. Thus, less than two years of average annual benefits would compensate the additional capital cost to the sponsor.

While the Corps' policy of providing protection from the standard project flood in urban areas seems well-founded, it is appropriate that the decision on the level of flood protection to be provided be made by the local sponsors. The report should include analyses such as that set forth above in order that the sponsor has available information on all options worthy of consideration.

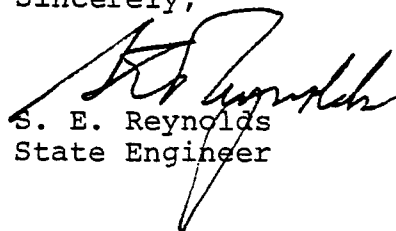
Table 25A reflects substantially higher State and local contributions to project capital cost under the President's Water Policy initiatives of June 6, 1978. Press accounts indicate that the local interests are inclined to forego protection from floods in excess of the 270-year event because of the limited financial resources of the local governments, and particularly because of the \$6.5 million cost of bridge modifications needed for the Albuquerque units to protect against the 700-year flood. In this connection it is noteworthy that by opting for protection from the 270-year flood instead of the 700-year flood, the local interests capital costs would be reduced by the \$6.5 million cost of bridge modification under current cost-sharing policy, but would be reduced by only \$3.5 million under the policy proposed by the President. The local share of capital costs (exclusive of State costs) for protection from the 270-year flood would be \$4.5 million more under the proposed cost-sharing policy. Your report demonstrates that additional flood protection in the Middle Valley is badly needed; it would be unfortunate if a modification of cost-sharing policy made it impossible to proceed with the work proposed.

We believe that the current cost-sharing policy is appropriate; however, the State is aware of the President's proposals and will establish its position on them when the Congress is given an opportunity to consider those proposals.

Colonel Bernard J. Roth
March 8, 1979
Page Five

We appreciate very much the opportunity to review and offer comment on your excellent report.

Sincerely,



S. E. Reynolds
State Engineer

SER:pt

State of New Mexico, State Engineer Office: Comments of pages 18, A-48, A-61: Concur. Corrections were made to the text.

Comments of pages 30-33: Galisteo Reservoir was considered in the planning process only in its present design. Tonque dam, as proposed, would have also had an ungated design, like Galisteo dam.

Comments of pages 33: Concur. Correction was made.

Comments of pages 114 and 123: Concur. In addition to plans A and B is the recommended plan C gives the sponsor additional choice.

Comments of page A-45: Concur. The text was appropriately corrected.

Comments of page A-46: Concur. The text was changed as indicated.

Comments of page B-87: Concur. The corrections were made.

Comments of page B-88: Concur. The corrections were made.

NEW MEXICO
STATE HIGHWAY DEPARTMENT



COMMISSION
JIM DENISON
CHAIRMAN, HOBBS
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FRED L. O'CHESKEY
CHIEF HIGHWAY ADMINISTRATOR

M - TECH. SERV.

P. O. BOX 1149
SANTA FE, NEW MEXICO
87503

March 6, 1979

Colonel Bernard J. Roth
District Engineer
Department of the Army
Albuquerque District, Corps of
Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

We have reviewed the draft report and the draft EIS for "Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico," and we offer the following comments for your consideration in preparing the final documents.

1. The report states that only two highway bridge locations will require modification; yet, the water surface profiles indicate pressure flow for all bridges except I-40. The Department is particularly concerned about the bridges at Isleta, Los Lunas and Belen, which have been designed to accommodate a flood of 20,000 cfs. Any flood control proposal that would permit higher flows to be contained in the river channel will increase the risk of damage to these structures.

We request that you evaluate in greater detail the effects of both the 270 year and 700 year floods on all highway bridges within the project limits. This evaluation should also contain your assessment of the potential risk for damage at each location.

2. The City of Albuquerque and the State Highway Department are jointly developing two projects to replace substandard river bridges at Bridge Street and Central Avenue. Current plans would only replace one of the two existing structures at each location. Funding under the Federal Highway Bridge Replacement Program is anticipated.

Colonel Bernard J. Roth
Page 2
March 6, 1979

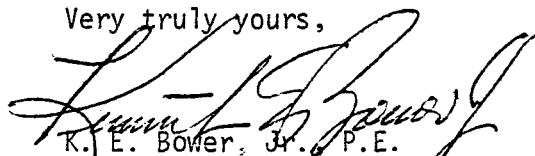
Increasing the flood protection at these two locations from the present 42,000 cfs to that proposed by your 700 year SPF will require complete replacement of both bridges at each location. In addition, constructing the new bridges at approximately five feet higher elevation will require extensive reconstruction of roadway approaches. We anticipate the higher roadway will create serious problems with access.

Attached is a sheet which compares the bridge replacement work with that required for the 700 year SPF. You will note the cost increases from \$6,804,000.00 to \$21,803,000. As stated by the Federal Highway Administration in their February 22 letter to you, federal highway funds cannot be utilized for bridge construction required by a flood control project. State and local funds of this magnitude are not available.

3. Previous Corps of Engineers flood control projects have required the reconstruction of existing highway facilities. We are aware of instances where this reconstruction has been funded by the flood control project. We believe that the modification of highway bridges can be funded as part of your proposed project and ask that this aspect be addressed in greater detail.

In summary, the State Highway Department appreciates the opportunity to review and comment on the flood control proposals. Should you desire to meet and discuss any aspect of our comments further, we will be pleased to do so.

Very truly yours,



R. E. Bower, Jr., P.E.

Director - Technical Support Division

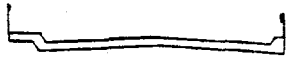
KEB:mmb

Attachment(s)

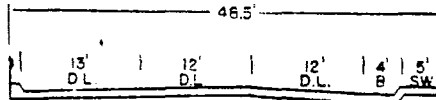
cc: John Whitman, Deputy Highway Administrator
for Program Development
Project Development Director
Environmental Program Manager
Engineer of Technical Services
City of Albuquerque
FHWA

Central Avenue / Rio Grande Bridge

A - BRIDGE REPLACEMENT PROJECT ONLY



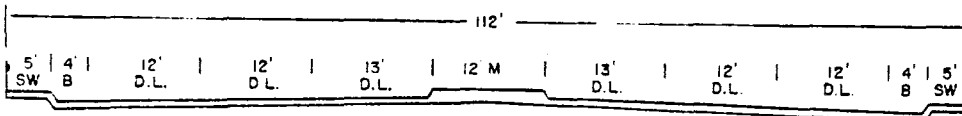
existing bridge to remain



remove existing bridge · build new bridge

Cost including approaches = \$ 3,766,000.

B - C of E - FLOOD PROJECT PROPOSAL

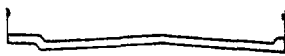


remove both existing bridges, build new bridge at 5' higher elevation

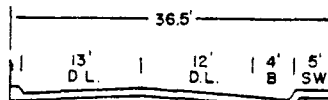
Cost including approaches = \$ 11,828,000.

Bridge Street (Barelas) / Rio Grande Bridge

C - BRIDGE REPLACEMENT PROJECT ONLY



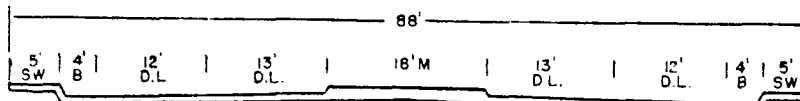
existing bridge to remain



remove existing bridge · build new bridge

Cost including approaches = \$ 3,038,000.

D - C of E - FLOOD PROJECT PROPOSAL



remove both existing bridges, build new bridge at 4.5' higher elevation

Cost including approaches = \$ 9,975,000.

D.L. = driving lane
M = median

SW = sidewalk
B = bikepath

letter 18
page 3 of 3

State of New Mexico, Highway Department: Comment 1. Concur. Any increase in flow under the bridges will increase the risk of damage to the bridges. For the recommended plan of designing for a channel flow of 42,000 cfs by increasing levee heights, all of the bridges were determined to be capable of passing such a flow without the cost of raising the structure.

Comment 2. Not applicable since the recommended plan will require no modifications to the Albuquerque units which will presently pass 42,000 cfs.

Comment 3. If the Federal government is to share in the costs of reconstructing highway facilities, it has to be by the expressed consent of Congress.

C OF E - PUBLIC HEARING - MARCH 12, 1979
RIO GRANDE FLOOD PROTECTION
STATEMENT OF N. M. STATE HIGHWAY DEPARTMENT

ON MARCH 6, 1979, THE DEPARTMENT FURNISHED THE CORPS OF ENGINEERS WRITTEN COMMENTS ON THE FLOOD PROTECTION PROPOSALS. BRIEFLY, OUR CONCERNS ARE:

HIGHWAY BRIDGES BELOW ALBUQUERQUE SUCH AS THOSE AT ISLETA, LOS LUNAS AND BELEN ARE DESIGNED FOR A FLOOD OF 20,000 cfs. ANY IMPROVEMENT THAT WOULD PERMIT HIGHER FLOWS WITHIN THE RIVER CHANNEL WILL GREATLY INCREASE THE RISK FOR DAMAGE TO THESE BRIDGES. THE DEPARTMENT BELIEVES THIS ASPECT NEEDS FURTHER EVALUATION BY THE CORPS.

THE DEPARTMENT AND THE CITY ARE JOINTLY DEVELOPING TWO PROJECTS TO REPLACE SUBSTANDARD RIVER BRIDGES. ONE IS THE BRIDGE STREET OR BARELAS BRIDGE, THE OTHER IS THE CENTRAL AVENUE OR OLD TOWN BRIDGE. THE USE OF FEDERAL HIGHWAY BRIDGE REPLACEMENT FUNDS IS ANTICIPATED.

THE PROPOSAL TO INCREASE PROTECTION TO THE 700 YEAR SPF WILL INCREASE THE COST OF THESE PROJECTS FROM 6.8 TO 21.8 MILLION DOLLARS. MORE IMPORTANT IS THE FACT THAT FEDERAL HIGHWAY FUNDS CANNOT BE USED FOR WORK REQUIRED BY A FLOOD CONTROL PROJECT.

THE REQUIREMENT FOR NON-FEDERAL OR LOCAL FUNDING MAY BE MISLEADING. NUMEROUS FLOOD CONTROL PROJECTS REQUIRE THE RELOCATION OR ADJUSTMENT OF HIGHWAYS AND BRIDGES. THE DEPARTMENT IS AWARE OF INSTANCES WHERE THE COST OF THIS WORK WAS PART OF THE FEDERAL FLOOD CONTROL PROJECT. WE BELIEVE THE REQUIREMENT FOR LOCAL PARTICIPATION SHOULD BE CLARIFIED AND EXPANDED UPON IN THE REPORT.

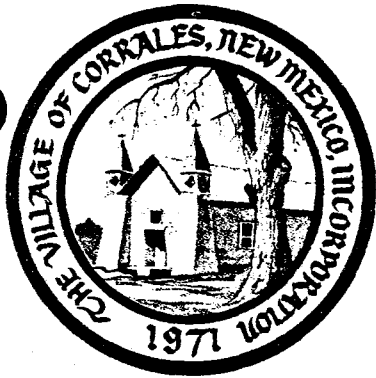
Statement of the N.M. State Highway Department Presented at the
Public Hearing on March 12, 1979: See response to N.M. State Highway
Department letter of March 6, 1979.

SECTION C

Local Government Agencies

- Village of Corrales
- Middle Rio Grande Council of Governments of New Mexico
- Valencia County Commissioners
- Sandoval County Commissioners
- Village of Bosque Farms
- City of Albuquerque, Third Council
- City of Albuquerque, Parks and Recreation Department





ANN B. DUNLAP
MAYOR

VILLAGE OF CORRALES

P. O. BOX 707
TELEPHONE (505) 897-0502
CORRALES, NEW MEXICO 87048

MAYOR PRO TEM
CLIFFORD PEDRONCELLI

COUNCIL MEMBERS
THOMAS N. GENTRY
ROBERT J. EICHHORST
REBECCA CAPUTO
CLIFFORD PEDRONCELLI

March 22, 1979

COLONEL BERNARD ROTH
CORPS OF ENGINEERS
ALBUQUERQUE DISTRICT
P. O. BOX 1580
ALBUQUERQUE, NEW MEXICO 87103

Dear Colonel Roth:

Having the information from two public hearings concerning the Corps' Interim Feasibility Report on Middle Rio Grande Protection the Village Council has directed me to make the following statements on the Village's behalf.

1. The Village is extremely concerned with the low level of Corrales' levee protection i.e. 7500 c.f.s. We would request raising our protection to a minimum of at least 30,000 c.f.s. and preferably to 42,000 c.f.s.
2. The reports' described environmental impact on the Bosque of rehabilitating the levees is too great and we would strongly urge that at least the mitigation alternatives in Plan B be selected. We would prefer to see further study into alternatives to lessen the environmental impact even more.
3. As a small municipality of less than 3,000 residents (estimated population) serving a valley of some 8,000 - 10,000 our budget is limited. Our entire general fund budget for FY 78-79 was \$151,298.22. The bulk of these monies go to salaries and expenses to sustain a small administration plus fire and police protection. In addition, we put what money we can into road service, dog control, recreation, and library. There is no fat that we can find in our budget and could not contribute a significant amount to the local share of the project, much as we might like to.

COLONEL BERNARD ROTH
CORPS OF ENGINEERS

4. We continue to endorse further study of channelization of the river. We sense hopeful alternatives in the following suggestions made at the public hearings.
 - a. Channelization would not adversely affect the current irrigation system since it has co-existed since ca. 1930 with a much deeper river bed.
 - b. The prediction that natural channelization could occur within 20 to 25 years coupled with the estimated time scale of 5 to 20 years for the levee rehabilitation project raises the possibility that channelization could make the rehabilitation of many of the levees unnecessary before the project is even finished. This factor should be seriously considered in the economic evaluation of the various alternatives.
 - c. Channelization has a large advantage over levee rehabilitation in its potential for lowering the water table to the benefit of adjacent farm lands and septic systems. Corrales, like Bosque Farms and other agricultural areas, feel that farm land is "developed" land and deserves protection from underground waters as well as river waters.
 - d. The above points suggest that a desirable alternative to massive levee rehabilitation would be moderate upgrading of some levees along with some mechanical channelization, both designed to assist natural channelization produced by a controlled clear water release from the upstream dams.

One of our citizens had the further suggestion that the combination of a Tonque dam and levees designed for a maximum flow of 30,000 c.f.s. would give Corrales protection at approximately the same level that Albuquerque currently enjoys. The construction of Tonque dam would also extend this level of protection to Bernalillo and aid in the channelization process by removing some of the silt load from the river.

In summary, we appreciate very much the work that you have all done to investigate flood protection alternatives. We stress that our first priority is the raising of the flood protection for the Village of Corrales to a minimum flow rate of 30,000 c.f.s. The rehabilitation of the levees alone seems to us to be the least desirable choice except on a cost basis. Some combinations of moderate improvement of the levees, channelization and construction of Tonque dam would appear to give the additional benefits of maximum preservation of the woodlands and lowering the water table on the lands adjacent to the river. While it is hard to establish cost/benefit ratios for the preservation of the Bosque and for aiding agriculture in the valley, both are a part of our cultural heritage in Corrales and we hold them to be valuable.

COLONEL BERNARD ROTH
CORPS OF ENGINEERS

Such benefits must be considered in assessing the final cost of any plan. We urgently request that you give these alternatives serious consideration.

Sincerely,



ANN DUNLAP, MAYOR
VILLAGE OF CORRALES

AD:jm

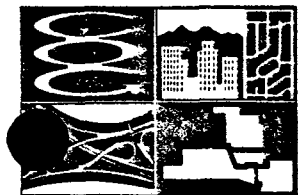
cc: MRG Board, Executive Director & Attorney
Bob Fischer, Mayor Bosque Farms
Hilario Torres, Mayor Bernalillo
Richard Aragon, City Mgr. Belen
Max Mondragon, Sandoval Co. Commission
Marion Cottrell, Councillor, Albuquerque
Tom Hoover, Councillor, Albuquerque

Village of Corrales, New Mexico: (1) Concur with your need for added flood protection

(2) The environmental impact of the 42,000 cfs plan (Plan C) is less damaging than the environmental impact of Plan A and B mentioned in the letter.

(3) As the sponsor of the project, the Middle Rio Grande Conservancy District is responsible for non-Federal requirements.

(4) The flood control alternatives which are suggested by the Village were evaluated in sufficient detail to determine that they were either economically infeasible or undesirable when compared to the recommended plan. The natural scour of the river is unpredictable so that natural degradation is not a dependable mode of flood protection.



Middle Rio Grande Council of Governments of New Mexico

Suite 1320 • 505 Marquette Avenue N.W. • Albuquerque • New Mexico • 87102 • (505) 243-2819

April 10, 1979

BOARD OF DIRECTORS

- *H. J. Torres, Chairman
Town of Bernalillo
 - *Thomas W. Hoover, Vice Chairman
City of Albuquerque
 - *Richard Aragon
City of Belen
 - Pat Baca
City of Albuquerque
 - Nadyne Bicknell
Bernalillo County
 - Emiliano Castillo
Village of Los Lunas
 - *Marion M. Cottrell
City of Albuquerque
 - Jim S. Deilenev
City of Albuquerque
 - Ann Dunlap
Village of Corrales
 - Augustin Eichwald
Village of Cuba
 - Robert W. Fisher
Village of Bosque Farms
 - *Lawrence G. German
Albuquerque Public Schools
 - William V. Hereford
Albuquerque Metropolitan Arroyo
Flood Control Authority
 - *Thomas Klein
Torrance County
 - Clifford Lear
City of Grants
 - Julian Luna
Valencia County
 - Rosita Martinez
Sandoval County
 - *Salvador Milan
Village of Milan
 - James Paxton Morris
Bernalillo County
 - *David Rusk
City of Albuquerque
 - *Arturo Sais
MRG Conservancy District
 - Juven G. Sanchez
Bernalillo County
 - *David M. Santillanes
Bernalillo County
 - Laura Threet
Albuquerque Public Schools
- ## ASSOCIATE MEMBERS
- Public Service Co. of N.M.
Joseph M. Zanetti
Representative
 - Rio Rancho Estates
Floyd Bailey
Representative
 - Hub RC&D
Debbie Hays, Chairperson
 - *Executive Board
 - Albert I. Pierce
Executive Director

Col. Bernard J. Roth
District Engineer
Corps of Engineers
Federal Building
517 Gold Ave., S.W.
Albuquerque, NM 87103

SUBJECT: Middle Rio Grande Flood Protection
Bernalillo to Belen, New Mexico

Dear Col. Roth:

This is to provide a summary of the collective comments, concerns and recommendations of the local general and special purpose units of government in the area of the subject study which are members of the Middle Rio Grande Council of Governments.

The attached individual letters, resolutions, etc., contain within them a general consensus of all the affected governmental entities, that while recognizing the prudence and desirability of providing Standard Project Flood protection (72,000 cfs), a weighing of the extremely high local costs associated with this level of protection against the probability of occurrence (700 years) results in a conclusion that support of this additional protection is just not economically feasible for the communities of the Middle Rio Grande.

There is also a strong consensus that additional protection in certain portions of the study area are necessary and urgent. This consensus includes the view that there should be a standard level of protection throughout the area and that that level of protection should be consistent with that currently afforded the Bernalillo County/City of Albuquerque area, i.e., 42,000 cfs.

There is also a strong consensus that needed work to accomplish this level of protection should be expedited in every way possible. The area under consideration is a rapidly urbanizing area in which a doubling of population is projected within the next 15 years. Many of the public and private investments in place, planned and expected lie within areas which might be severely impacted, should a major extended storm occur within the study area.

April 10, 1979

There are several other concerns which are, at least in part, outside the scope of the Corps' study which we feel must be addressed in relation to any improvements to the Rio Grande water course. There is a major concern regarding the local flooding from sources other than the river and from which relief, through draining into the river, cannot be provided because of the present configuration of the river and adjacent irrigation and drainage facilities.

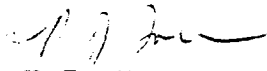
In addition, there is considerable concern that the present height of the riverbed above many of the surrounding areas has contributed to raising the water table. There is evidence that this increases the hazards to public health through interaction with septic tanks and other private disposal systems. Additional consideration of lowering the riverbed in some fashion that would allow adequate drainage is needed.

It is our collective judgment that additional work is needed to resolve these questions, while at the same time giving consideration to other environmental concerns which are expressed in the report. In short, it seems that we must find a balance between protecting and improving existing wildlife and natural vegetation and the needs of residents in terms of protecting capital investments and the public health and welfare.

Finally, it is our position that the conditions cited above emphasize the urgency of moving ahead with the project to protect the Middle Rio Grande area and that every effort should be made, with all concerned, to accelerate this project and that some of the more technical questions can be resolved during the design phase without delaying appropriate approvals and commitments of resources to accomplish the needed work to provide a consistent level of protection to 42,000 cfs.

We, the members of the Board of Directors of the Middle Rio Grande Council of Governments and other local officials throughout the area, stand ready to work with you, our Governor, our Congressional Delegation and others to advance this project as rapidly as possible.

Yours sincerely,



H.J. Torres, Chairman
MRGCOG Board of Directors

Attachments: Copies of Position Papers:
Sandoval County
Valencia County
City of Albuquerque
Bernalillo County
Village of Bosque Farms
AMAFCA

cc: Senators Pete V. Domenici and Harrison Schmitt
Representatives Manuel Lujan and Harold Runnels
Governor Bruce King

Middle Rio Grande Council of Governments of New Mexico: Concur with the recognition that SPF protection is prudent and desirable.

Concur with the flood protection needs for areas outside of Albuquerque and that these proposed corrections need to be done expeditiously.

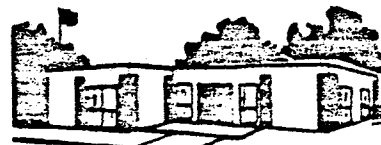
The Middle Rio Grande Flood Protection Study did address local flooding from sources other than the Rio Grande from the prospective of impacts which may be induced by modification of the existing levee system. Also included are studies prepared by other which address local flooding problems.

While it is recognized that high water table problems may be reduced by channelization this alternative is shown to be economically infeasible. Post-authorization studies will review all alternatives to determine their viability at that time.



P. O. Box 1119
 Los Lunas, New Mexico 87031

VALENCIA COUNTY COMMISSIONERS



VALENCIA COUNTY SUB-OFFICE
 320 East High
 Grants, New Mexico 87020

March 8, 1979

CLOVIS BACA
 CHAIRMAN
 JULIAN LUNA
 VICE CHAIRMAN
 PATRICIA Z. SANCHEZ
 MEMBER

SOSTENO C. CHAVEZ
 COUNTY MANAGER

To: COG
 SUBJECT: Valencia County Government's position on
 U.S.. Corps of Engineers Study

The County of Valencia along with the municipalities of
 Los Lunas, and Belen and their citizens
 express the following position concerning the latest
 U.S. Corps of Engineer's Flood Protection Study:

Our local governments, collectively, trust the wisdom
 of the U.S. Corps of Engineer's expertise and intell-
 egeence in preparing the report on our flood needs.

The general consensus among our local governing
 bodies is that we endorse the Study and pray that
 the actual construction will be soon forthcoming.

We further feel that, without an undue burden, the
 Middle Rio Grande Conservancy District should logically
 be our sponsor and to help support our thoughts we
 ask the following questions;

1. What service is now being provided class B
 property owners by the MRGCD?
2. What percentage of the MRGCD budget is now
 used to service class B property owners?

RECEIVED

4 MAR 1979

COUNCIL OF GOVTS.

D-78

letter 22
 page 1 of 2



P. O. Box 1119
Los Lunas, New Mexico 87031

VALENCIA COUNTY COMMISSIONERS



VALENCIA COUNTY SUB-OFFICE
320 East High
Grants, New Mexico 87020

CLOVIS BACA
CHAIRMAN
JULIAN LUNA
VICE CHAIRMAN
PATRICIA Z. SANCHEZ
MEMBER

Page 2

SOSTENO C. CHAVEZ
COUNTY MANAGER

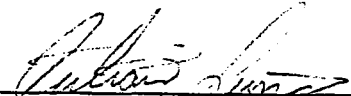
To: COG

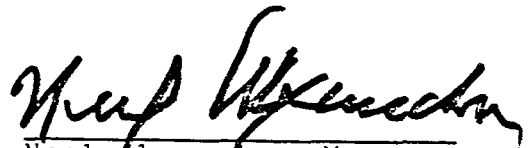
SUBJECT: Val. Co. position

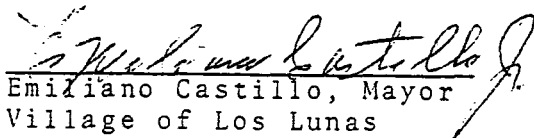
3. What is the dollar amount now being paid to the MRGCD, in form of taxes, by the class B property owners?
4. How much money has been spent by the MRGCD for flood or levee inspection and maintenance during the last three years?

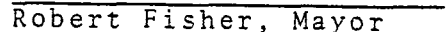
These questions are asked to further determine what way local governments can expedite the flood protection project.

Our emphasis and our concerns are to be moved forward as rapidly as possible to increase flood protection for our communities. In this regard, it would be our recommendation that this project be approved and the Corps of Engineers proceed.


 Julian Luna, Chairman
 Valencia County Commission


 Neel Alexander, Mayor
 City of Belen


 Emilian Castillo, Mayor
 Village of Los Lunas


 Robert Fisher, Mayor
 Village of Bosque Farms

Valencia County Commissioners: Letter of comments and concern is appreciated.

The Corps does not have the data nor would it be appropriate for the Corps to respond to questions regarding the MRGCD.

SANDOVAL COUNTY
BOARD OF COUNTY COMMISSIONERS

COMMISSION

MAX G. MONDRAGON
CHAIRMAN

JAMES ROGER MADALENA
ROBERT W. JOHNSON



SECRETARY
NETTIE LUCE

SANDOVAL COUNTY COURTHOUSE
P. O. BOX 40
BERNALILLO, NEW MEXICO
87004

February 23, 1979

To the Board of Directors
of the Middle Rio Grande
Council of Governments of
New Mexico
505 Marquette Ave., N.W.
Suite 1320
Albuquerque, NM 87102

RECEIVED

01 MAR 1979

SUBJECT: Comments, suggestions and recommendations
regarding the U.S. Corps of Engineers Study of Flood Protection needs along the Middle
Rio Grande COUNCIL OF GOVERNMENTS

We the undersigned, representing Sandoval County, the municipalities of Bernalillo, Corrales and the citizens thereof having considered the proposals being made by the U.S. Corps of Engineers, offer the following comments and request the Board's consideration of including these in the recommendations to be made by the Board to the Corps:

It is our position that additional flood protection is needed from the Rio Grande in the area of Bernalillo and Corrales.

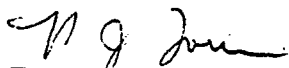
It is also our view, based on the experience of many residents of these areas over a long period of time, that the suggested or proposed standard project flow of 72,000 cubic feet per second (CFS) is excessive under present conditions and would result in undesirable changes at an unnecessary cost. It is therefore our position that there should be a standard level of protection all along the Rio Grande from above Bernalillo to south of Belen and that that level of protection should be equal to that currently provided within the Albuquerque/Bernalillo County area, i.e., 42,000 CFS.

We believe that there are more suitable alternatives to the levee system proposed by the Corps of Engineers. While recognizing the reasons and justifications for the proposed design put forth by the Corps of Engineers it is our position that other alternatives should be more fully explored, i.e., the creation of a channel which would accommodate 40,000 CFS which would lower

the bed of the river without increasing the height of the levees except in those areas necessary to bring the level of protection to a standard level of protection throughout the area.

Being aware of the environmental concerns and considerations expressed in the Corps' study, it is our position that these evaluations have not been as complete or as detailed as may be required. For example, it is our local experience that the aggrading of the Rio Grande and the present height of the river bed above many of the surrounding areas has resulted in raising the water table. We are concerned that this in turn increases the hazards to public health through interaction with septic tanks and other private disposal systems. We also feel that channelization or otherwise effectively lowering the river bed and the associated water table will not have a negative effect on the Bosque or other environmental considerations since the experience of many who have lived in the area for a number of years, with their families going back several generations, indicates that vegetation would not be destroyed by reducing this water table to a reasonable level. We, therefore, feel that further investigation of potential environmental consequences is needed.

We would like to emphasize to all concerned that these positions and expressed concerns should not in any way detract from expeditious processing of the study and moving forward as rapidly as possible with increasing flood protection along the Rio Grande. In this regard, it would be our recommendation that a project be approved by the appropriate authorities as soon as possible and the Corps proceed with alternative design considerations and environmental analyses immediately. We believe that these considerations can be resolved to everyone's satisfaction without delaying the project or appropriate approvals to proceed with a project to increase our level of protection to 42,000 CFS.



H.J. Torres, Mayor
Town of Bernalillo



Max Mondragon, Chairman
Sandoval County Commission



Ann Dunlap, Mayor
Village of Corrales

Sandoval County, Board of County Commissioners: Comment on additional flood protection. Concur. Comment on level of protection. The plan recommended by the District Engineer is levee rehabilitation for Corrales, Mountainview, Isleta West, Belen East and Belen West for a design flow of 42,000 cfs.

Channel improvement through dredging was looked at and evaluated in sufficient detail to deem economically infeasible. The alternative will be re-evaluated during post-authorization studies.

VILLAGE OF BOSQUE FARMS

1455 WEST BOSQUE LOOP

AREA CODE 505
869-6611

BOSQUE FARMS, NEW MEXICO 87068

MAILING ADDRESS—P.O. BOX 658, PERALTA, N.M. 87042

March 29, 1979

The Honorable H. J. Torres
Mayor, Town of Bernalillo
Chairman, Board of Directors
Middle Rio Grande Council of Governments
505 Marquette Avenue, NW
Suite 1320
Albuquerque, New Mexico 87102

Re: U.S. Corps of Engineers Study of Flood Protection
Needs Along the Middle Rio Grande

Dear Mayor Torres:

At a regular meeting on March 8, 1979, the Governing Body of the Village of Bosque Farms unanimously approved the statements in a memo dated February 23, 1979, of Sandoval County, Bernalillo and Corrales regarding the above-mentioned subject as those ideas which most closely reflect the thoughts and goals of this Village and its Governing Body.

This valley requires suitable protection from flooding from the Rio Grande as well as from arroyos and irrigation systems. The choice of 42,000 C.F.S. as a compromise flow rate in the river is a reasonable compromise considering costs, protection, frequency of flooding, etc. We would emphasize, however, that all sources of flooding and flood waters should be studied by federal agencies considering these problems - i.e., flooding is flooding is flooding ---- etc.

Our Governing Body is also deeply concerned about the rising water table in our valley area. As the river silts and rises, the water table also rises causing health problems regarding septic and water systems as well as the loss or damage to valuable farm lands. We strongly urge that the Corp of Engineers reconsider the parameters involving dredging and/or channelization as a method of flood protection which will also lower the water table and provide increased flow under existing bridges. Environmentally, I believe the foliage will grow better with a deeper and thereby stronger root system.

We all have great need for suitable and practical flood pro-

The Honorable H.J. Torres
March 29, 1979
Page Two

tection in the Middle Rio Grande. Please keep this Village
posted as to progress on this project.

Sincerely,

Robert W. Fisher

Robert W. Fisher
Mayor

RWF:lf
cc: Village Council
Planning & Zoning Commission

Village of Bosque Farms, New Mexico: Concur with your desire for increased flood protection in your vicinity of the study reach. Your support and response is appreciated.

The alternative of channel dredging is discussed in the main report. The alternative was evaluated in adequate detail to determine it is economically infeasible. However, if this study progresses into the post-authorization phase channelization will be re-evaluated to ascertain its feasibility at that time.

CITY of ALBUQUERQUE
THIRD COUNCIL

COUNCIL BILL NO. R-318

ENACTMENT NO. _____

SPONSORED BY: Marion M. Cottrell
Thomas W. Hoover

1 RESOLUTION
2 SUPPORTING THE DEVELOPMENT OF FLOOD CONTROL PROTECTION IN THE RIO GRANDE
3 VALLEY FROM BERNALILLO TO BELEN TO EQUAL THAT PROVIDED IN THE CITY OF
4 ALBUQUERQUE.

5 WHEREAS, the existing capacity of the Rio Grande Channel through
6 Bernalillo County and the City of Albuquerque is 42,000 cfs; and

7 WHEREAS, the frequency of exceedence of this capacity is
8 statistically once in 270 years; and

9 WHEREAS, the level of flood control protection for adjacent
10 communities in the urbanizing area is considerably less than that
11 provided within the City of Albuquerque; and

12 WHEREAS, the U.S. Army Corps of Engineers has completed new studies
13 on Middle Rio Grande Flood Protection which requires a 70,000 cfs channel
14 for the Standard Project Flood with a rate exceedence of once in 700
15 years; and

16 WHEREAS, the cost to the City of Albuquerque, County of Bernalillo,
17 and the State of New Mexico would be approximately \$12,000,000 for
18 rebuilding and replacing bridges crossing the river at Highway 66 and
19 Highway 85; and

20 WHEREAS, the fiscal impact on the City to maintain adequate
21 transportation corridors connecting the City appears unrealistically high
22 if flood control protection for the Standard Project is undertaken.

23 BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF
24 ALBUQUERQUE:

25 Section 1. The City of Albuquerque supports the development of
26 flood control protection for the Bernalillo to Belen portion of the Rio

Underlined Material = New
Bracketed Material = Deletion

Underbracketed Material = New
[Bracketed Material] = Deletion

1 Grande at least equal to that currently provided by the Corps of
2 Engineers for the City of Albuquerque consistent with the various local
3 government policies and concerns and including the environmental aspects
4 of the proposed Plan B for the areas outside of Albuquerque.

5 Section 2. The City of Albuquerque has an acceptable level of flood
6 protection and believes that the costs of constructing a flood control
7 system to protect the City from the Standard Project Flood of 70,000 cfs
8 exceed the benefits to be derived from the lower risk of flooding.

9 Section 3. That it shall be the policy of the City of Albuquerque
10 that all new river crossings or the replacement, rebuilding or
11 significant alteration of currently existing crossings shall be so
12 constructed as to allow the safe passage of the Standard Project Flood.

13 Section 4. The City of Albuquerque urges the Congress of the United
14 States to require the integration of flood control projects with
15 watershed management for both flood control and conservation.

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1 PASSED AND ADOPTED this 5th day of March, 1979.

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Patrick J. Baca
Patrick J. Baca, President
City Council

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APPROVED this 12th day of March, 1979.

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David Rusk
David Rusk, Mayor
City of Albuquerque

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ATTEST:

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Mary Lou Longue
City Clerk/Recorder

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Underscored Material = New
[Bracketed Material] = Deletion

City of Albuquerque, Third Council: The Corps economic evaluations that the costs of constructing a flood control system to protect the city from the Standard Project Flood do not exceed the benefits derived from such a project. In fact, increased benefits far exceed increase costs to provide Standard Project Flood protection. However, the Corps recognizes the fiscal impact on local interests and appreciates the position taken by the City.



City of Albuquerque

PARKS AND RECREATION DEPARTMENT
1801 4th STREET, N.W. ALBUQUERQUE, NEW MEXICO 87102
(505) 766-7427

March 5, 1979

Colonel Bernard J. Roth, C. E.
District Engineer
Department of the Army
Albuquerque District
Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

The Parks and Recreation Department appreciates the opportunity you extended to review the Middle Rio Grande Flood Protection, Interim Feasibility Report. As an agency, we are concerned with provision of leisure services for Albuquerque residents; preservation of open space; and conservation of natural resources. The City adopted the City Edges Study in 1975 which contained recommendations regarding land use along the reaches of the Rio Grande in Bernalillo County. One of the objectives of the study was to establish a Nature Center along the Rio Grande and adjacent bosque area. As a result, the City has purchased 170 acres, known as Candelaria Farms which borders Middle Rio Grande Conservancy District right-of-way in the Candelaria Road area.

Subsequently, the City and State Natural Resources Department have had a Master Plan prepared which indicates use of the bosque immediately west of Candelaria Farms as a part of the Nature Center. (Copy of Master Plan attached.) Funds for the development of the interpretive center and first phase of the Nature Center have been appropriated by the State Legislature.

Also, by agreement with the Middle Rio Grande Conservancy District and Bureau of Reclamation, the City has been granted

Colonel Bernard J. Roth, C.E.
Page 2

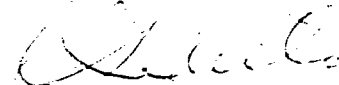
March 5, 1979

the right to develop, administer, operate, and maintain recreational bike trails along Albuquerque Riverside Drain from Bridge Boulevard to Montano extension per enclosed agreement.

Therefore, I am concerned about what affects renovation of the levees and treatment of the bosque within the levee system would have on Candelaria Farms Nature Center and the bike trail. Also, the State Natural Resources Department is vitally concerned about the disposition of the bosque lands. Permanent crossing of the levees and use of trails within the bosque are integral to the integrity of the Nature Center development program.

This is to request that both Mr. Bill Huey, Secretary of the Natural Resources Department, and I be kept informed throughout the planning and development process of renovation of the Rio Grande System to avoid potential problems involving service to City, County, and State residents.

Sincerely yours,



ORLANDO D. SEDILLO, Director
Parks and Recreation

ODS:js

Copy to: Bill Huey, Secretary, Natural Resources Department
Robert L. Burgan, Planner, Parks and Recreation
Janet Saiers, Education Coordinator, Parks and Recreation

AGREEMENT CONCERNING THE CONSTRUCTION
AND MAINTENANCE OF BIKEPATHS ON
CONSERVANCY DISTRICT LANDS

THIS AGREEMENT made and entered into this 13 day of January 1975, by and between the Middle Rio Grande Conservancy District hereinafter called "District" and the City of Albuquerque hereinafter called "City."

WITNESSETH:

WHEREAS the District is operating and maintaining certain rights-of-way for ditches, canals, drains, and so forth, legal title to the same being vested in The United States of America, and;

WHEREAS the City desires to use portions of said properties for bikepaths and the District does not object to such use and assumes no responsibility of any nature in connection with such use, and;

WHEREAS any Agreement connected with use of the District works is subject to the approval of The United States of America acting through the Bureau of Reclamation hereinafter called "Bureau" which will not be a party to this Agreement and assumes no liability of any nature under the terms hereof,

NOW, THEREFORE, in consideration of the mutual covenants herein contained and other good and valuable consideration, it is specifically understood and mutually agreed as follows:

1. Term, District's Consideration, Land Description

The District, subject to the approval of the Bureau, without warranty of title to the properties or right to allow the use contemplated hereunder, does hereby allow the City for a period of twenty-five (25) years such period being subject to the City's option to renew for a like period, the right and privilege of developing, administering, operating and maintaining recreational bike trails along various properties of the District all as more fully described on a map attached hereto and made a part hereof.

2. City's Consideration, City's Option to Renew

The City hereby agrees to pay to the District for the right of the use of such heretofore described portions of lands the sum of One and no/100ths Dollars (\$1) per year for a period of twenty-five (25) years, with an option to renew this Agreement for a consecutive period of twenty-five (25) years. The City will give notice in writing by registered or certified mail of its intent to exercise this option at least ninety (90) days prior to the end of the initial twenty-five (25) year period.

3. Assignment of Agreement

The City shall not assign any of its interest in this Agreement without approval of the Bureau and the District.

4. Construction, Maintenance and Paths

The City, at its expense, may construct and maintain paths within the heretofore described portions of lands after submittal of the plans and specifications therefore to the District and Bureau for their approval prior to the commencement of construction. Nothing contained in this Agreement shall be construed to require the City's constructing a greater length of paths than available funds permit, nor shall this Agreement prevent the use of adjacent District or Bureau property for other purposes which will not interfere with the uses by the City contemplated hereunder.

letter 26

5. Time for Consideration of Paths

The City may construct such paths within reasonable time after the execution of this Agreement as the available funds permit. The reasonableness of the time shall be determined in light of such factors as the scheduling of the construction of other City projects, and the problems related to the contracting for the construction of the paths.

6. Use of Paths, Use Specified by Sign, Fees

Such paths shall be primarily for the use of bicycles and other non-motorized modes of transportation not inconsistent with the use of the paths by bicycles and such use shall be specified by the City on signs placed by the City at its expense, in appropriate places along the paths. Such signs shall not be placed where they interfere with the access to, the construction of, or the regular maintenance of the works of the District, Bureau or the City. The City may charge reasonable fees for the use of the paths by the public and such fees will accrue to the City for the purpose of maintaining and operating the paths and related facilities.

7. Recreation Use Subordinate to Primary Use of Properties

The parties acknowledge that the primary use of the licensed area to be used by the City is for the purpose of providing irrigation, channelization and flood control facilities in connection with the official operations of the District and the United States of America. Therefore, use of such properties by the City is secondary and subordinate to said primary use. The City shall not at any time use, or permit the public to use, the licensed area in any manner that will materially interfere with or impair the primary use of the licensed area by the District or The United States of America, and all rights necessary and incidental to such primary use are specifically reserved hereby.

8. City not Required to Erect Fences

The City shall not be required to construct and maintain fences beside the paths or on any part of the District's land.

9. Signs Denoting Participation of the District

The City, at its expense, shall post signs along the paths to designate that the District was the agency making the portions of lands available for recreational purposes. Such signs shall be subject to the same restrictions specified in Section 6 above.

10. Related Structures or Improvements

Subject to the conditions hereafter set forth, the City shall have the right to construct, maintain, and operate in close proximity to the paths, structures or improvements which are incidental and related to the use of the paths. Such structures or improvements may include but shall not be limited to rest stops, lights or concession stands. The District and the Bureau, before construction or modification of any improvements is begun, shall have submitted to them plans for such construction for their approval and shall have the right to disapprove the plans and locations of such structures or improvements to be erected. The cost or expenses incurred in constructing, maintaining, and operating such structures shall be borne by the City, and any payments, profits rents, or receipts received from such structures or improvements shall accrue to the City. The City shall have the right of access to construct, maintain and operate such structures or improvements provided the same does not interfere with the District's or Bureau's operations and maintenance of District works.

11. City to Determine the Public's Use of Paths, Related Facilities

The City shall be solely responsible for the upkeep, maintenance and use of the paths and related structures and improvements together with their policing and administration as the City deems advisable.

12. Indemnification

The City agrees to exercise due diligence to protect said property from damage and agrees to indemnify the District and The United States of America for any damage or alteration to the premises not contemplated under the terms of this Agreement and not otherwise approved by the District or The United States of America when such damage or alteration is caused by an act of the City, its agents or representatives; and the City agrees to hold the District, its officers and directors, officially and individually and The United States of America, its agents and representatives, harmless from any and all liability of any nature that may arise from personal injury or damage to persons or property by virtue of the City's operations hereunder, provided, the City assumes no liability and undertakes no indemnification of the District or others for injury to persons or damage to property which may result from flooding resulting from breaching or overflow of any levee unless such breaching or overflow is caused by an act of the City not contemplated in this Agreement and not otherwise approved by the District; provided further that the City agrees to hold the District harmless for damage to improvements installed by the City on the said premises if such damage results from necessary maintenance work or operations conducted with due care by the District or from flooding not caused by negligence on the part of the District.

13. Termination by the District or the Bureau

This Agreement may be terminated as to all or any portion of the property either by the District or the Bureau covered hereunder upon ninety (90) days notice in writing to the City if such termination is determined necessary for the protection of persons or property, for protection of the improvements of the District, or the Bureau or for the proper conduct of the work. In this event the parties hereto shall consult with the City prior to such termination and give full consideration to the wishes of the City in reducing the possible adverse effects on the City's bikeway system. Such termination shall be effective only if the District determines that such termination is necessary by a decision of a majority of the Board of Directors of the District, or if the Bureau determines such termination is necessary by a decision of the Secretary of the Interior of The United States of America or his authorized agent. In the event of such termination, the District and the Bureau shall allow the City one hundred twenty (120) days to remove at the City's option such of the improvements installed by the City on the said premises during the operation of this Agreement as may be susceptible of being removed without damage to the property of the District.

14. Termination by the City

The City may terminate this Agreement as to all or any portion of the property covered hereunder upon ninety (90) days notice in writing to the District and to the Bureau if such termination is found desirable by the Mayor of the City. In the event of such

termination by the City, the City may at its option during the period of one hundred twenty (120) days following the ninety (90) day notice period, remove any structure or improvement or installation of whatsoever nature other than the asphalt paths, placed on the heretofore described portion of lands by the City during the operation of this Agreement; provided that no structure or improvement shall be removed by the City if the removal of it would significantly damage the property of the District or of the Bureau and provided further, that the District shall not have any liability to indemnify the City for any structure or improvement remaining on the portions of land in this Agreement if this Agreement is terminated by and on the initiative of the City.

15. The Expiration of the Agreement

At the expiration of this Agreement the City shall have the same right to remove any structure or improvement as specified in Section 14 above.

16. Amendments

It is recognized that in the operations under this Agreement, because of its very nature, certain problems may arise which are not foreseeable. In such event, negotiations will be held between the parties and amendments in writing duly executed to this Agreement will be entered into after full discussion to cover such conditions as mutually agreed by all necessary parties, the same to become a part of this Agreement on execution subject to the approval of the Bureau.

IN WITNESS WHEREOF, this Agreement is duly executed by the parties hereto.

MIDDLE RIO GRANDE CONSERVANCY DISTRICT
A subdivision of the State of New Mexico

By W. J. Caste
President

ATTEST:

[Signature]
Secretary

CITY OF ALBUQUERQUE, NEW MEXICO
A municipal corporation

By Harry E. Kinney
Mayor

ATTEST:

Mary Lou Coyle
City Clerk, Recorder

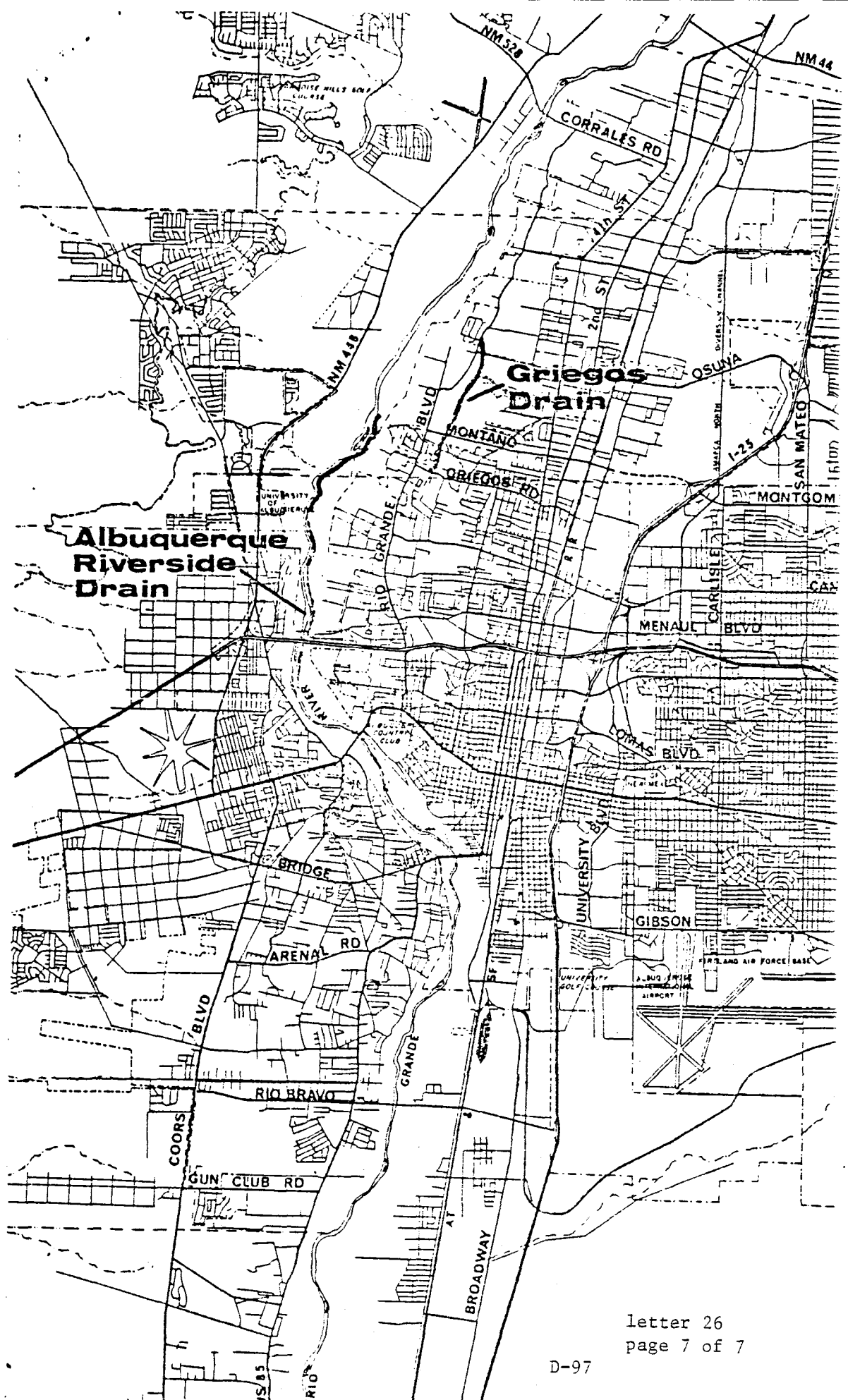
APPROVED AS TO FORM:

[Signature]
City Attorney

APPROVED:

THE UNITED STATES OF AMERICA

By R. W. Radabaugh
Project Superintendent
Upper Rio Grande Basin Projects
Bureau of Reclamation



City of Albuquerque, Parks and Recreation Department: The recommended plan of levee rehabilitation for a designed flow of 42,000 cfs would not effect the Albuquerque levees. Therefore, the Candelaria Farms Nature Center, the recreational bike trails along the Albuquerque Riverside Drain, and the bosque lands along the Albuquerque levees would not be altered or impacted upon. If any foreseeable impacts on the Candelaria Farms projects are detected in the advanced planning stages, every effort will be made to coordinate with the Parks and Recreation Department of the City of Albuquerque.

SECTION D

Regional Agencies

- Albuquerque Metropolitan Flood Control Authority
- International Boundary and Water Commission
- East Valencia Soil and Water Conservation District
- Middle Rio Grande Flood Control Association



RESOLUTION 1979-1
RELATING TO RIO GRANDE LEVEES

WHEREAS, the U. S. Army Corps of Engineers has completed a comprehensive study describing the Rio Grande's flood threat to the Middle Rio Grande Valley; and

WHEREAS, the governments, organizations, and people of the Middle Rio Grande Valley have participated extensively in the conduct of this study; and

WHEREAS, the study reveals inadequacies in flood protection for reaches of the Rio Grande within the geographic boundaries of the Albuquerque Metropolitan Arroyo Flood Control Authority; and

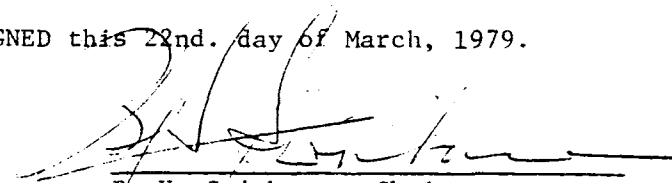
WHEREAS, the consensus of local governments favors a 42,000 cfs level of protection.

NOW THEREFORE BE IT RESOLVED:

That, the Board of Directors of the Albuquerque Metropolitan Arroyo Flood Control Authority recognizes the need for levee improvements along portions of the Rio Grande within the Authority's geographic boundary; and

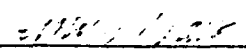
That, the Authority recommends authorization of a Federal project to protect people and property from flood flows of at least 42,000 cfs.

PASSED, ADOPTED AND SIGNED this 22nd. day of March, 1979.


B. H. Swinburne, Chairman
Board of Directors

(SEAL)

APPROVED:


Assistant Secretary-Treasurer

letter 27

Resolution of the Albuquerque Metropolitan Arroyo Flood Control

Authority: The resolution establishing the position of the Authority is appreciated.



OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO
IBWC BUILDING
4110 RIO BRAVO
EL PASO, TEXAS 79902

Colonel Bernard J. Roth
District Engineer
Albuquerque District, Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

Your Ref: SWAED-EU

Your February 2, 1979 letter provided a draft copy of your proposed interim feasibility report, Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico, and a draft environmental statement for our review and comments.

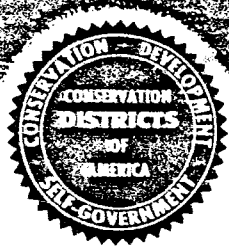
We find that the viable levee alternatives analyzed in the report would, if implemented, not have an effect upon our projects or jurisdiction, and that the report and environmental statement appear to fully describe the proposed work.

We will temporarily retain the draft report and statement for reference purposes and return them to you upon receipt of the final documents.

Sincerely,

George R. Baumli
Division Engineer
Investigations & Planning Division

International Boundary and Water Commission: Concur with your findings.



East Valencia Soil and Water Conservation District

P.O. Box 68 - Los Lunas, New Mexico 87031

April 9, 1979

Colonel B.J. Roth, District Engineer
Department of the Army
Albuquerque District, Corps of Engineers
P.O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

The flood hazard along the middle Rio Grande Valley has been of concern over the years to the Board of Supervisors of the East Valencia Soil and Water Conservation District.

The Board is elected by the landowners of the District which is roughly bounded by the Isleta Reservation to the north, the Socorro County line to the south, the Manzano Mountains to the east, and to the west by the Lucero Uplift. Several members of the current Board have farmed in close proximity to the Rio Grande River for a number of decades and thus have intimate knowledge of the river environment and the flood problems involved.

The basic cause of the flood hazard is the increasing silt build-up in the normal river bed over the years, resulting in the river bed now being several feet higher than the surrounding terrain. Thus, during high river flows, severe crop damage occurs in certain areas of the Rio Grande Valley caused by the resulting higher water table. This higher water table also creates a health hazard by increasing mosquito habitat and septic tank system malfunction. During these flood conditions, heavy runoff pressure is exerted on the Middle Rio Grande Conservancy District drainage system.

It is understood that the Corps of Engineers plans to alleviate the flood hazard problem by hauling material to build up and strengthen the levees along both sides of the river. The alternative is to build up and strengthen the levees by use of the accumulated silt material build-up in the normal river bed. Simply building up the levees without removing silt build-up in the river bed will:

1. Raise the normally high water table even higher during flood periods with resultant serious effect on cropland and septic systems.
2. Damage the Bosque area because of high current flows through it during river flooding.
3. Increase flows through the Middle Rio Grande Conservancy District drainages with high probability of damage to them.

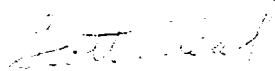
Neither approach to levee build up will result in a long term solution to the flood hazard problem but silt removal from the river bed has distinct advantages as discussed above.

In order to strengthen the levees with accumulated material removed from the river bed and at the same time protect the natural river environment and the Bosque area from serious damage, careful planning will be necessary (see attached sketch). The silt deposits built up over the years in the river bed are various soils ranging from sand to clay and are typical of the soils in the entire valley area which themselves resulted from river silt deposits over years past. Thus material to be moved from the stream bed to the levees will require some mixing to insure proper levee build up.

The natural Bosque area between the normal stream bed of the river and the levees is extremely important and must be preserved to the maximum possible during river bed silt removal. It acts as a natural barrier to protect the levees against damaging currents during flood periods and is significant to wild life habitat during non-flood periods.

Removing the silt build-up in the river bed would greatly enhance the ability of the river to carry flood waters while relieving the heavy flows through the Bosque, thus protecting them and their wildlife.

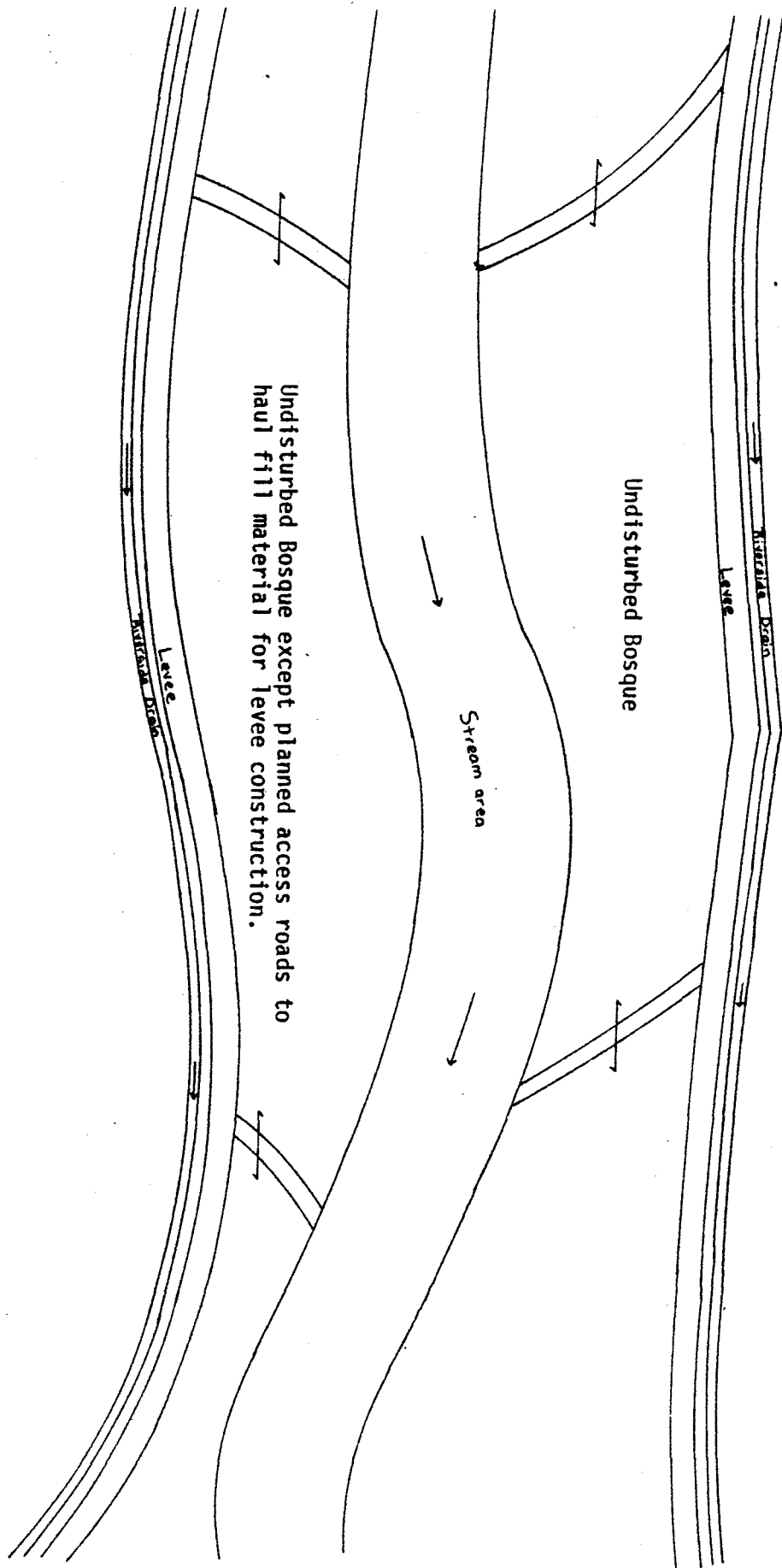
Sincerely,



For The Board of Supervisors
Scott Edeal, Chairman, EVSWCD

Attachment

- cc: Lt. John W. Morris, Chief of Engineers, Washington D.C.
- General Manager, Middle Rio Grande Conservancy District, Albuquerque, N.M.
- The Honorable Bruce King, Governor, State of N.M.
- Senator Pete V. Domenici, Washington D.C.
- Senator Harrison H. Schmitt, Washington D.C.
- Congressman Manuel Lujan Jr., Washington D.C.
- Congressman Harold Runnels, Washington D.C.
- Mr. A.W. Hamelstrom, State Conservationist, SCS, Albuquerque, N.M.
- Mr. Audi Miranda, Division Director, Natural Resources Dept., Soil and Water Conservation Division, Santa Fe, N.M.
- Mr. Bill Bixby, Environmental Protection Agency, Albuquerque, N.M.
- Mr. Albert I. Pierce, Executive Director, Middle Rio Grande Council of Governments, Albuquerque, New Mexico



Undisturbed Bosque except planned access roads to haul fill material for levee construction.

Undisturbed Bosque

Stream area

Levee

Levee

Levee

East Valencia County Soil and Water Conservation District: In the recommended plan of levee rehabilitation designed to pass 42,000 cfs, the material for the embankment will come from three general sources: existing levee, designated borrow areas between the levee and channel bed, and the channel bed. The volume of material taken from the channel, however, will not be enough to alter the present characteristics of the channel and will not alleviate the high water table problem. Besides the enormous costs, the other major problems with channel dredging would be the disposal of the excess material not used for levee rehabilitation and the magnitude of operation and maintenance of the dredged channel.

During periods of high flow, the river depending on channel characteristics will scour in places and aggragate in others. Dependability of what will occur in the Rio Grande is questionable even with a project which involves dredging the channel. Because of the high sediment load of the waters of the Rio Grande, channel dredging would be required on frequent interval.



Middle Rio Grande Flood Control Association

510 SECOND STREET NW, ROOM 205 • ALBUQUERQUE, NEW MEXICO 87102

March 22, 1979

Col. Bernard J. Roth, District Engineer
Albuquerque District, Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

These comments are in response to your letter of February 2, 1979, transmitting your Interim Feasibility Report on a plan to protect the Middle Rio Grande Valley from a standard project flood of 72,000 cubic feet per second. The report contains cost information on a smaller project that would protect against flows of 42,000 c.f.s. It also contains the cost of protecting against the 100-year flood.

The report has been discussed by a great many entities since its release on February 2nd. There has been widespread support for increased flood protection in areas outside of Albuquerque, but no one seems to be in favor of the plan to protect the valley against the standard project flood. You have been quoted as stating that this degree of protection would be prudent. I agree, but I realize that it cannot be achieved at this time.

The consensus, as a result of the many meetings, including the public hearing on March 12, plainly is in favor of a plan that would give the areas outside of Albuquerque the same protection Albuquerque now has - namely, protection against floods of 42,000 c.f.s. I agree, and I feel confident that when the essential information on the lesser plan has been developed it will be found feasible.

I feel that the studies made for the report are in sufficient detail and are thorough. I agree with your analysis of dredging, a remedy still being advocated by several people. I consider the problems of spoil disposal, as well as the cost, entirely unacceptable.

Colonel Bernard J. Roth
March 22, 1979
Page 2

I am disappointed that nowhere in the report, is there any mention of water conservation. In fact, the objective adopted for plan selection is its direct antithesis. The development of additional wetlands and the acquisition of additional lands to be developed as woodland will increase water use.

I disagree with the high values placed on wildlife habitat by the Fish and Wildlife Service. Wildlife values are subjective, and it is doubtful if the acreage that would be permanently removed from the woodland category warrants all the furor the environmentalists are making. Under the lesser plan it should amount to about 200 acres. The value of the water salvaged by this clearing, if properly evaluated, should more than offset any wildlife values lost. In any event, the matter should be kept in proper perspective. It amounts to less than 4 percent of the total woodland and less than $\frac{1}{2}$ of 1 percent of the water consuming area in the project. Certainly it is an insignificant item when compared with the possible loss of life, and the potential destruction of more than $2\frac{1}{2}$ billion dollars worth of property. My feeling is that you have gone farther than intended by current directives in your efforts to overcome the objections of the environmental groups.

I find no mention in the report of the maintained floodway and low-flow channel now in operation throughout the project area. Continued maintenance of the engineering works that control the channel flows is essential to the proposed levees. Without it, sediment deposition will cause avulsions that will breach the levees and flood the areas they are designed to protect.

Thank you for the opportunity to comment on the report. It will be returned separately.

Sincerely,



RALPH CHARLES
Consultant

Middle Rio Grande Flood Control Association: Concur with your comment on the level of flood protection.

Water conservation is an underlying issue in determining the amount of water needed for the wetland creation. Priorities have to be put on water use in determining conservation practices. Since wetlands are relatively scarce, they are considered valuable. However, as times change, values will change and priorities readjusted.

The proposed plan of raising and rehabilitating the levees along the Rio Grande will not alter the channel physical characteristics. The Bureau of Reclamation will continue to have access to the channel and their corresponding channel project facilities.

In response to the comment on mitigation, the degree of compensation that may be required as a consequence of impacts incurred as a consequence of providing increased flood protection are, at this point in the planning process, general gross estimates based on the severest foreseeable condition. More detailed planning as well as further investigation will more accurately define compensation needs.





Middle Rio Grande Flood Control Association

510 SECOND STREET NW, ROOM 205 • ALBUQUERQUE, NEW MEXICO 87102

March 15, 1979

Col. Bernard J. Roth, District Engineer
Albuquerque District, Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

Thank you for the opportunity to comment on your Interim Feasibility Report on a plan to provide flood protection for the Middle Rio Grande Valley between Bernalillo and Belen.

The report presents plans for protection against the standard project flood of 72,000 c.f.s. Plan B, favored in the report, would also enhance the environmental values of the project area through acquisition of additional woodland, creation of additional wetlands, and the management of the fishery and wildlife resources. It presents the costs of protecting the valley against both 72,000 c.f.s. and 42,000 c.f.s., the level of protection now provided Albuquerque.

Since its release on February 2nd the report has been discussed by a great many organizations. The Middle Rio Grande Conservancy District, the logical sponsor, has agreed to sponsor a project to provide a level of protection somewhere between 42,000 c.f.s. and 72,000 c.f.s. depending upon the desires of the local entities involved.

The Albuquerque City Commission is satisfied with the flood protection it now has. However, it will support the rest of the valley in securing the additional protection the residents want up to the 42,000 c.f.s. level. The Middle Rio Grande Council of Governments, the Bernalillo and Valencia County Commissions, and the Mayors of Corrales, Bernalillo and Bosque Farms have pointed out the need for a higher level of protection, and voiced support for a plan that would protect against the 42,000 c.f.s. flood. The consensus is clearly in favor of providing the rest of the valley with the level of protection Albuquerque now has.

Col. Bernard J. Roth
March 15, 1979
Page 2

We feel that the studies made for the report were comprehensive and the analyses made in the studies were quite thorough. The evaluations of the many alternatives considered, as well as the assessments of the impacts of the various measures proposed, are sound and appear to be adequate for any determinations of feasibility desired.

The Middle Rio Grande Flood Control Association agrees with your conclusion that protection from the standard project flood would be prudent, but feels it is not attainable at this time. The association has been involved with the flood problems of the middle valley for 32 years and its members are deeply concerned over the danger from rainstorm floods in the Corrales, Mountain View, Isleta, and Belen reaches of the river. We strongly urge you to proceed with a plan that will protect these areas from the 42,000 c.f.s. flood wherever it is financially feasible. Where found not feasible, the highest level of flood protection found financially justified should be provided.

We believe that the benefit-cost comparison of the 42,000 c.f.s. plan will be favorable, and that the lesser amount of woodland required for levee construction will make the project less objectionable to the environmental groups.

Many sections of the levees involved in this project are in poor condition and constitute a serious hazard. We urge you to expedite completion of the report in every way possible.

Sincerely,

R. F. Mather
President

Middle Rio Grande Flood Control Association: Concur with your evaluation of the consensus of people favoring increase flood protection.

Your concern for the flood control needs of the valley is appreciated.



SECTION E

Special Interest Groups

- Central New Mexico Audubon Society
- Albuquerque Wildlife Federation
- American Association of University Women
- Sierra Club
- The Atchison, Topeka and Santa Fe Railway Company
- The University of New Mexico, Department of Biology
- New Mexico Wildlife Federation





Central New Mexico Audubon Society

POST OFFICE BOX 30002 — ALBUQUERQUE, NEW MEXICO 87110

12 March 1979

Colonel Bernard J. Roth
District Engineer
Corps of Engineers
P.O. Box 1580
Albuquerque, NM 87103

Dear Colonel Roth;

With regard to the Corps of Engineers' Middle Rio Grande Flood Protection study, we feel the best way to prevent flood damage is sound flood plain and watershed management. Unfortunately many areas along the Rio Grande are extensively developed making flood plain management difficult and very expensive. Flood plain management should be implemented in areas which presently lie within the flood plain and for which insufficient flood protection presently exists or is not justified on a present benefit to cost ratio.

Watershed management should be improved on the tributaries of the Rio Grande. While this would not completely eliminate flood flows, it would reduce them and perhaps even more important, it would greatly reduce the amount of sediment presently being discharged into the Rio Grande which is a major problem. Watershed management will enhance the land resource and in the long run provide better rangeland for both livestock and wildlife. In spite of the fact that much of the watershed is in private ownership or is Indian land, we feel this alternative deserves much more consideration and study.

Another non-structural way to improve flood protection is through channel improvement by speeding up the degradation process through controlled discharges of spring runoff at Cochiti Dam. While this alternative would not provide the desired protection it could coupled with watershed improvement provide much improved flood protection in the future.

We feel the present Albuquerque east and west levee systems provide adequate flood protection for the city. From this study it appears that additional flood protection needs to be provided for the Corrales, Mountainview, Isleta west and Belen east and west units. The best alternative appears to be levee rehabilitation and it would seem prudent to provide protection to these areas equivalent to that presently provided to Albuquerque.

We would favor the approach outlined in plan B in which Isleta marsh is left intact, 250 acres of riparian woodland are acquired and 125 acres of wetland would be developed. We highly endorse the mitigation measures as summarized on page I-28 of appendix I. A good biological study of the area is needed as little comprehensive data is presently available. Sound management of the bosque is sorely needed, in addition to the measures outlined on page I-25 of appendix I the removal of small trees for transplanting should also be restricted.

It might be valuable to seed the disturbed areas to promote establishment of desirable plant species and to discourage undesirable ones.

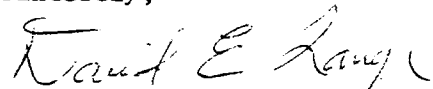
We have a specific comment with regard to one levee, the lower end of the Corrales unit. As designed, flood protection would not be provided between the end of the overlap levee to the end of the Corrales unit. At the present time a small farm and the Albuquerque Christian Children's Home which consists of three permanent buildings and several trailer homes would be affected. Two options are available.

1. End the Corrales levee at the end of the overlap levee (at section # 452) and raise the overlap levee to provide backflow protection. The lands within the flood plain below this point should then be zoned as flood plain and the present buildings should be moved to higher ground.
2. Construct the overlap levee, I2, starting at the end of the Corrales levee unit hence providing flood protection to this area.

In arriving at a decision the benefit to cost ratio for each alternative should be considered as well as the environmental effects.

Thank you for the opportunity of commenting on the report and DES on Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico.

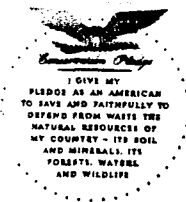
Sincerely,



David E. Lange
President

cc. Senator Pete Domenici
Senator Harrison Schmitt
Representative Manuel Lujan, Jr.
Representative Harold Runnels
Dr. Dede Armentrout, Southwest Regional Representative, National Audubon Society

Central New Mexico Audubon Society: All alternatives for flood protection from the Rio Grande between Bernalillo and Belen, including non-structural alternatives, were fully evaluated. Those areas which are not sufficiently developed to economically justify a structural alternative for flood protection, flood plain management would be recommended for implementation. While watershed management would not be a part of the recommended plan, this type of management is normally a part of small watershed flood protection plans recommended by USDA, Soil Conservation Service, along the Rio Grande. Channel degradation through natural scour of water flow is theoretically feasible. The capacity of the channel is barely sufficient to carry the necessary volume of water to effectively scour without flooding low lying unprotected areas. Also releases from Cochiti dam and other Corps projects must be in accordance with reservoir regulations approved by the Rio Grande Compact Commission. In regard to flood protection along the Rio Grande, the recommended plan is to rehabilitate the levees at Corrales, Mountainview, Isleta on the west bank, and Belen to an equivalent level of protection presently enjoyed by Albuquerque. This plan will include keeping Isleta marsh and the Oxbow area intact. The Corps has reviewed the situation of the vulnerability of the small farm and the Albuquerque Christian Children's Home to flooding. Both are located above the SPF flood plain.



Albuquerque Wildlife Federation

1914-1952 GAME PROTECTIVE ASSN. / 1952-1972 ALBUQUERQUE WILDLIFE & CONSERVATION ASSN. / 1973 ALBUQUERQUE WILDLIFE FEDERATION
ORGANIZED BY SPORTSMEN IN 1914 TO PROTECT AND PERPETUATE
OUR WILDLIFE AND NATURAL RESOURCES
P. O. Box 1234
Albuquerque, New Mexico 87103



March 11, 1979

RESOLUTION

Whereas, the Corps of Engineers is planning to raise the levees between Bernalillo and Belen, New Mexico, to protect against a flood that would occur once every 700 years

Whereas, this project could destroy or disturb up to 750 acres of bosque which is a rare and unique habitat in New Mexico

Whereas, this bosque is not only a major migratory route for many species of birds, but is home for many mammals and other species of wildlife

Whereas, many people in the Albuquerque area use this bosque for hunting, fishing, birdwatching, and other forms of recreation

Whereas, the cost to the people of the Albuquerque area would be \$8 million or more with inflation

Whereas, this project is only a stopgap measure which would lead to more development in the floodplain, and eventually to more need for flood protection and additional costs

Whereas, the real problem is poor management of the river and watershed, which is leading to increased siltation, causing a perched river and thus increased flood threat

Whereas, we believe there are other alternatives that have not been considered seriously enough by the Corps in their project planning, such as flushing the river with periodic high flows to wash the silt out of the river, and land treatment in the watershed which would slow down the siltation rate

Whereas, the Corps, in their planning, has not done everything to minimize harm to the floodplain, according to the President's Executive Order on Floodplain Management

Whereas, the Corps has not planned this project according to the Water Resource Council's Principles and Planning, integrating an environmental quality plan into its national economic development plan to form a multiple objective plan

Whereas, the Albuquerque Wildlife Federation recognizes the need for some flood protection for the project area

March 11, 1979

Now, therefore, be it resolved that the Albuquerque Wildlife Federation opposes the plan as presently proposed by the Corps of Engineers, and recommends that the Corps look into other alternatives such as high flushing flows, watershed land treatment, or a combination of measures to minimize disturbance to the riparian bosque, and planning for incentives that will discourage people from building in the floodplain.

Respectfully Submitted,

*Roberta Dye, President
Albuquerque Wildlife Federation*

Albuquerque Wildlife Federation: Many of the points mentioned are valid for the SPF plan for flood protection and are not valid for the recommended 42,000 cfs flood control plan. Development in the flood plain is occurring without regard to the existing flood hazard. Consequently, flood control measures are not related to flood plain development in this reach of the Rio Grande. As in the previous responses to similar comments concerning channel scouring with increased flows, it is infeasible to scour the channel with high flows because of the danger of flooding low lying areas, and because rarely is there an adequate supply of water to scour the channel because of the State prior appropriation water laws.

Contrary to what is stated, the Corps has followed the WRC Principles and Standards in planning this project and has formulated multiple objective plans which are displayed in the report and accompanying appendices. Also the report contains an entire section dealing with the President's Executive Order 11988 on flood plain management.

The revised flood control design levels cost and number of acres destroyed or disturbed are located in the main report and Appendix B.

The Corps planners have considered non-structural alternatives which would have the best chances of feasibility. The evaluation of these alternatives are found in the main report.



American Association of University Women
Albuquerque Branch
Albuquerque, New Mexico

28 February 1979

Department of the Army
Albuquerque District Corps of Engineers
P. O. Box 1580
Albuquerque, New Mexico 87103

Gentlemen:

Thank you for sending so promptly a copy of the draft reports, etc., on the proposed flood protection project for the Middle Rio Grande area from Bernalillo to Belen, New Mexico.

Because I did not request them until late in February, I and the others interested will not have time to completely review, or comment on, them by March 1, 1979. We do expect to have a representative of our organization attend the public meeting on March 12, 1979.

Our group will be starting a two-year study expected to include water resources and their management in July 1979 and feel the material sent will be helpful for background. Because study of the process by which such projects are developed as well as the details of this particular project are of interest to us, we would like to retain this material and would also appreciate receiving a copy of the final report.

Thank you,

Betty J. Benson, President
Albuquerque Branch AAUW
7909 Hendrix NE
Albuquerque, NM 87110

American Association of University Women: Your interest in water resource and flood control problems of the area is appreciated.



SIERRA CLUB

ALBUQUERQUE GROUP
P.O. BOX 25271
ALBUQUERQUE, NEW MEXICO 87125

March 25, 1979

HAND DELIVERED

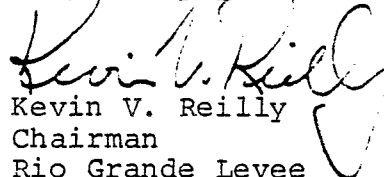
Colonel Bernard Roth
Albuquerque District
Corps of Engineers
United States Army
Federal Building
Albuquerque, New Mexico

Dear Colonel Roth:

We enclose an original and two copies of the comments of the Rio Grande Chapter of the Sierra Club on the Corps' proposed project to raise the levees along the Rio Grande from Corrales to Belen.

We appreciate the assistance which you and your staff have provided.

Very truly yours,


Kevin V. Reilly
Chairman
Rio Grande Levee
Task Force

COMMENTS OF THE RIO GRANDE CHAPTER OF THE
SIERRA CLUB ON THE CORPS OF ENGINEERS'
DRAFT FEASIBILITY REPORT AND
DRAFT ENVIRONMENTAL IMPACT STATEMENT
CONCERNING MIDDLE RIO GRANDE FLOOD PROTECTION
FROM BERNALILLO TO BELEN

The Sierra Club submits the following comments on the Corps of Engineers' Draft Feasibility Report and Draft Environmental Impact Statement concerning increased flood protection along the Rio Grande from Bernalillo to Belen. The Albuquerque Chapter of New Mexico Citizens for Clean Air and Water, the New Mexico Mountain Club, and the University of New Mexico Mountain Club join in these comments.

The plan recommended by the Corps in its draft Report would rebuild or raise the levees along the Rio Grande from Bernalillo to Belen to provide protection from a flood of approximately 72,000 cubic feet per second (c.f.s.), a flood which the Corps estimates may occur only once in 700 years.

I

The Sierra Club is strongly opposed to any plan which would rebuild the levees in this stretch of the Rio Grande

to provide protection for a flood expected to occur but once in 700 years. We are opposed primarily for two reasons.

A

We also oppose the Corps' proposed project because it would cause severe damage to the riparian and woodland habitats of the Rio Grande. The Rio Grande Valley is the only major flyway for migratory birds for nearly 300 miles to the west and for over 100 miles to the east. In addition, the Rio Grande bosque environment is unique in New Mexico. The Draft Environmental Impact Statement states that if the proposed project is carried out, 750 acres of bosque will be destroyed by the creation of borrow pits for material to construct the levees, haul roads to carry the material and construction equipment to the levees, and by the area taken up by the rebuilt levees themselves. Of this 750 acres, 281 acres will be permanently lost as a bosque ecosystem because they will be covered by the levees or will be adjacent to the levees and will have to be kept clear for maintenance purposes. The remaining acreage will be allowed to return to bosque, but this process will take at least 40 years. In the meantime, severe

damage will be done to the transient and permanent populations of wildlife.

The destruction of the bosque will significantly reduce the habitat of a wide variety of wildlife which currently live in the bosque, including quail, pheasant, raccoon, beaver, and foxes. In addition, the destruction of the bosque will provide fewer nesting and feeding areas for migratory birds and this may have adverse effects on many species of these birds, including the rare and endangered whooping crane. The creation of haul roads will open up the remaining area of the bosque to motor bikes and other off-road vehicles, which will further adversely affect the aesthetics and wildlife environment of the river. We feel that the adverse environmental impacts of this project are magnified by the fact that this riparian wildlife environment exists in an increasingly urbanized area where it has special value and thus should be damaged only for the most compelling of reasons. We do not feel that protection from a flood expected to occur but once every 700 years is sufficient to justify this destruction.

We note with a great deal of concern that, on plate B-3 of Appendix B to the Draft Report, a borrow site has been

placed in the middle of the Ox-bow wetland area. We have been told by an employee of the Corps that plate B-3 is in error. We expect this error to be corrected in the final report.

The Corps' Draft Environmental Impact Statement does contain a plan to mitigate the environmental damage which the project would cause. The Fish and Wildlife Service also has proposed a mitigation plan. If the levee plan were to be carried out, the mitigation plan of the Fish and Wildlife Service must be implemented. Mitigation plans, however, are poor substitutes for leaving the natural environment intact and are not able to make whole in any real sense the damaged environment. Furthermore, the Corps has not given--and apparently cannot give--any assurances that the mitigation plan which it has proposed would be carried out.

Both the Corps and the Fish and Wildlife Service mitigation plans call for the management of the bosque environment by a governmental agency. We recognize the need for proper management of wildlife in the bosque and endorse the concept that this management ought to be provided for. Such a management plan should not be made contingent

upon the approval of the Corps' levee project: It ought to be done whether or not the proposed project is approved.

B

We also oppose the proposed project because it would be extremely expensive. The Corps has stated that the proposed level of flood protection would cost the taxpayers 48 million dollars at current values. Construction on the project, if it were approved as drafted, would not begin until 1983; and if inflation continues to be with us, the cost of the project in 1983 will be considerably greater than 48 million dollars. Of that 48 million dollars, the Corps' documents state that 8.5 million dollars will have to be provided by the local taxpayers. If the changes in water policy proposed by President Carter in June go into effect, the state and local contribution to this project would increase to 12 million dollars.

The Corps' draft report attempts to justify the cost of the project by the use of benefit/cost ratios for various stretches of the project area. We note that many of these ratios are low and that they are based upon broad, un-

substantiated assumptions concerning both future development in the flood plain and the monetary value of that development. The Sierra Club views these ratios with skepticism. The projected extent and value of development in the flood plain is purely conjectural and, in our opinion, self-serving. The Corps has been given the responsibility to see that inappropriate development does not occur in flood plains. We expect this obligation to be carried out. We feel that the preparation of such benefit/cost ratios should not be left to the agency which will benefit if the project is approved, even if those ratios are reviewed by the Office of Management and Budget. These ratios should be prepared in the first instance by an agency independent of the Corps.

Even if we assume for the moment that the Corps' benefit/cost ratios are on the whole accurate, we have far more pressing needs in our community than providing protection from a flood which will occur but once every 700 years. In this day of limited budgets and resources, the need for the proposed flood protection does not justify the expenditure of scarce public funds that could be better spent elsewhere.

Despite the high cost of the proposed plan, it would still not provide complete protection for the project area if the 700 year flood were to occur. The levee project will only provide protection from river flooding. If a storm of the magnitude required to cause a 700 year flood occurred over Corrales, for example, much of the damage to Corrales would be done by water flowing through the village toward the river. This damage from "sheet flow" would not be prevented by the rebuilt levees. The levee system, in fact, might actually aggravate the problem by preventing water on the landward side of the levees from reaching the river.

II

The Albuquerque City Council and the Middle Rio Grande Council of Governments have endorsed a modified version of the proposed plan. These bodies have opposed raising the level of flood protection currently provided to Albuquerque but have endorsed raising the level of protection for the areas north and south of Albuquerque to that of Albuquerque. Albuquerque currently is protected from a flood of 42,000 cubic feet per second, a flood expected to occur once every 270 years.

The Sierra Club agrees that the Albuquerque area needs no greater degree of protection than it now has. Indeed, the Corps of Engineers in its August 1976 revision of its "Plan of Study" for the Albuquerque Greater Urban Area stated, at page 40, that the levees protecting Albuquerque are adequate from the standpoint of both capacity and structure. We have not seen any data which adequately explain why the Corps has changed its position on the adequacy of the Albuquerque levees in less than three years.

The Sierra Club does not endorse the idea that all of the levees between Corrales and Albuquerque and between Albuquerque and Belen should be rebuilt to provide 270 year flood protection. Many of these areas are not in the process of becoming urbanized. We feel that nothing should be done to the existing levee system except in the areas of extensively developed communities such as Corrales and Belen. The Corps estimates that the levees in Corrales provide protection from a flood expected to occur once every 19 years and the levees in Belen provide protection from a flood expected to occur once every 26 years. It may well be that these two populated communities and perhaps some others in this stretch of the river

should have greater protection than they currently have. However, any project to rebuild these levees should be part of an overall coherent approach to flood plain management and erosion control in the Middle Rio Grande area.

It is the Sierra Club's position that man-made devices to control the flow of the river should be kept to an absolute minimum. The flooding of a river is a natural and necessary process, much like forest fires caused by nature. A river flood removes silt from the riverbed and reduces the danger of disastrous floods, much in the same way that periodic fires caused by nature prevent the build-up of undergrowth in a forest which, if allowed to remain, would greatly increase the damage caused by later fires. Man-made devices, such as levees, are, at best, stop-gap and temporary measures that very often, in the long run, merely aggravate the problem which they were created to cure.

The current situation in the Rio Grande is a good example of the results of man's efforts to control the river. The three dams immediately up-river from Albuquerque--Cochiti, Jemez and Galisteo dams--were built for flood protection.

They have decreased the peak flows of water through the Rio Grande and have thus decreased the ability of the river to carry silt from the riverbed. In addition, the existing levee system has constricted the bed of the river and has prevented sediment from being deposited by the river on the land to the landward sides of the levees. These two constrictions on the river--plus the increased erosion of the watershed area--have caused the Rio Grande to "silt-up," with the result that the bed of the river is in many places a number of feet higher than the land to the landward sides of the levees. In a natural environment, the bed of the river would be in the lowest area in its valley. In the present situation, if the levees of this elevated river channel were breached by a flood, the flood would do much more damage to the surrounding area than a flood occurring in an untampered-with channel. The only permanent solution is for us to learn to live with the river and to keep artificial controls on the river to an absolute minimum.

Thus, any reconstruction of levees along the river must be part of an overall coherent approach to flood plain management and erosion control.

The most important element of this approach must be a strong--and strongly enforced--system of flood plain zoning to severely limit and prevent further development within the flood plain of the river in areas not already extensively developed. Under the current system, all of us are subsidizing the few who choose to live in the flood plain by paying for a levee system to protect those people. A strong plan of flood plain zoning for areas in the flood plain not extensively developed would eliminate the need for greater flood protection in the undeveloped or less developed areas.

Secondly, this comprehensive approach should include an aggressive program of watershed management. Overgrazing and poor construction practices have caused increased erosion in the Rio Grande watershed. This erosion has caused large amounts of sediment to be carried into the river. In addition, the lack of vegetation prevents precipitation from being absorbed into the watershed: The water quickly runs off the watershed into the river, thus increasing the flow of the river and the danger of flooding. This program of watershed management should include the strict control of grazing, timber cutting, farming and construction practices to decrease substantially the ero-

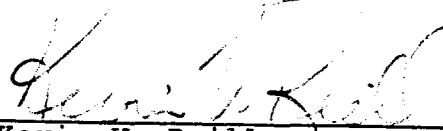
sion of the watershed. An intensive program of seeding, planting and terracing the watershed should be undertaken in those areas where erosion has already occurred. Small catchment dams should be constructed along the tributaries of the Rio Grande to slow the flow of water into the river. This plan for watershed rehabilitation would, of course, cost money; but it could go a long way toward reversing the alarming trend of increased erosion and aggradation of the riverbed currently present in the Rio Grande.

Thirdly, this comprehensive approach should provide for the controlled release from Cochiti dam of large amounts of water of sufficient velocity to carry away the silt in the riverbed and thus to degrade the channel. This plan for controlled release would have to be carefully coordinated so it would not jeopardize water rights and so it would not damage the irrigation systems along the river. If the bed of the river were lowered by a number of feet, the danger of a flood of a capacity sufficient to top the existing levees would be greatly diminished.

In conclusion, the Sierra Club strongly feels that the reconstruction of the levees in the communities to the

north and south of Albuquerque should be part of a comprehensive approach of flood and erosion control, as outlined above. Any reconstructed levees in this area should be kept as small as is necessary to protect the property already located in the flood plain in these communities. In addition, there should be guarantees from the federal government that the mitigation plan recommended by the Fish and Wildlife Service for the environmental damage to be caused by levee reconstruction in these communities will be implemented.

Rio Grande Levee Task Force,
Rio Grande Chapter,
Sierra Club

By 
Kevin V. Reilly,
Task Force Chairman
P. O. Box 25271
Albuquerque, New Mexico 87125

Submitted: March 26, 1979

Sierra Club: A drafting error of showing the Oxbow area as a borrow area has been corrected.

The cost and benefit figures used in the study were calculated by an independent consulting firm. As noted in the report, all units of the flood protection project have greater than unity benefit-to-cost ratios or, when added to the project, increase the net annual benefits of the total project based on existing potential damage in the flood plain.

The projections of future development were formulated by the Bureau of Business and Economic Research of the University of New Mexico. So far, the projections have been shown to be correct and are accepted by many local planning groups.

Reference to the statement that the Albuquerque levees were adequate from the standpoint of capacity and structure was misinterpreted. The levees were constructed for a designed 42,000 cfs flow in the Rio Grande in 1958. The meaning of the referenced statement is that conditions of the levee in 1976 have not changed so as to make the levees inadequate to pass that designed flow.

Besides the proposed rehabilitation of levees, the proposed plan also includes flood plain management in Isleta East, and implementation of a flood warning system for the Bernalillo Unit for flows which exceed the design of the levee.



The Atchison, Topeka and Santa Fe Railway Company

A Santa Fe Industries Company

900 Polk Street, Amarillo, Texas 79171 • Telephone 806 376-5131

February 22, 1979

File: 15-18130

Corps of Engineers
P. O. Box 1580
Albuquerque, N.M. 87103

Attention: Col. Bernard J. Roth, District Engineer

Re: Review of Draft - Middle Rio Grande Flood Protection, Bernalillo
to Belen, N.M. (1979)

Gentlemen:

Your letter dated 2 February 1979 and attachments has been sent to this office for reply.

As requested, we have made a cursory review of the draft of your proposed interim feasibility report, Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico and submit our comments herewith.

Our line of railroad is located within the project area all the way from Bernalillo through Belen and the activities of the Rio Grande have been of considerable interest to our railroad. This line of railroad was originally constructed in 1880 as a part of our transcontinental transportation system including major yard facilities at Albuquerque and Belen.

Our review indicates that the project as reported in the draft will not interfere with our railroad operations, and that there may be a levee tie-in at the Isleta and Belen crossings and that in plan "B", Belen Unit West, there may be a short railroad grade adjustment to provide protection from a water surface resulting from the calculated standard project flood. At such time as the project is funded for construction, we will appreciate as much advance notice as possible to coordinate our requirements involving contracts and other details. One concern we have is the possible blockage of flow at railroad bridge outlets.

It is noted that the design criteria for the project uses the flow resulting from the calculated standard project flood which is greater than the 50,000 cfs flow design used by the Middle Rio Grande Conservancy District for the river reach below Albuquerque. It is also noted that after the proposed project is completed, degradation is predicted to occur within the limits of the project.

Corps of Engineers
February 22, 1979
Page 2

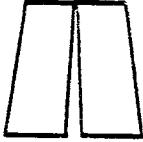
The Draft is most informative and very well presented, and we note that the project does not include the activities of other agencies such as the SCS watershed planning West of Belen. We appreciate the opportunity to review the Draft and present our views and as requested, we are returning the Draft to you. We will appreciate receiving one copy of future reports on this project for our record on projects involving our line of railroad.

Sincerely yours,

E. C. Honath
AGM-Engineering

Enclosures

The Atchison, Topeka and Santa Fe Railway Company: The importance that the Santa Fe plays in the past and continued growth and development of the area is recognized. The only impact which the proposed 42,000 cfs project would have on the Santa Fe routes would be a short railroad grade adjustment for a levee tie-in with the Belen Unit-West levee in the Isleta marsh area. As the planning process continues, coordination will be maintained with your company.



THE UNIVERSITY OF NEW MEXICO □ ALBUQUERQUE, NEW MEXICO 87131
DEPARTMENT OF BIOLOGY □ TELEPHONE 505: 277-3411

12 March 1979

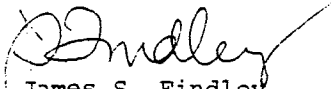
The Honorable Ann Dunlap, Mayor
The Village of Corrales
Corrales, N.M. 87048

Dear Mayor Dunlap:

The purpose of this letter is to provide you with a comment regarding the proposed levee reconstruction plan currently under consideration by the Army Corps of Engineers. My intent is that you may introduce this statement into the record at tonight's hearing on this subject.

In reviewing the report of the Corps, especially the environmental section, I noted with interest the list of agencies, officials, and others that had been advised of the availability of the report. My concern is that the Biology Department at the University of New Mexico has never been consulted in the preparation of the limited environmental study, and is not included on the list of agencies notified of the report. This omission seems to me to be important because the UNM Biology Department specializes in environmental biology, has a national reputation in this subject, and has a large staff of people whose specialties for many years have involved the environment and life of the Rio Grande Valley. Obviously it makes sense to utilize local experts. I would hope that when the definitive impact study, as recommended by the Fish and Wildlife Service, is planned, local expertise, including that of the many interested and concerned specialists in our department, is involved.

Sincerely,


James S. Findley
Professor and Chairman

University of New Mexico, Department of Biology: Response can be found in the Environmental Impact Statement.

NEW MEXICO WILDLIFE FEDERATION

300 VAL VERDE, S.E.
ALBUQUERQUE, NEW MEXICO 87108
TELEPHONE: (505) 265-7372

June 11, 1979

Southwestern District Office
Army Corps of Engineers
P.O. Box 1580
Albuquerque, N.M. 87103

Dear Sir:

We respectfully request your attention and action on the enclosed resolution (8), which was adopted by the New Mexico Wildlife Federation at their annual convention.

Sincerely,



Eldon D. Hale
President

EDH:mk

enc.

letter 49
page 1 of 3



*Dedicated to the Wise Use and Management of Our Wildlife Resources
and the Natural Environment Upon Which All Life Depends*

D-140a

Resolution Number 8

Corps of Engineers Middle Rio Grande Flood Control Project

WHEREAS, the Corps of Engineers is planning to raise the levees between Bernalillo and Belen, New Mexico, to protect against a flood that would occur once every 700 years; and

WHEREAS, this project could destroy or disturb up to 750 acres of bosque which is a rare and unique habitat in New Mexico; and

WHEREAS, this bosque is not only a major migratory route for many species of birds, but is home for many mammals and other species of wildlife; and

WHEREAS, many people in the Albuquerque area use this bosque for hunting, fishing, birdwatching, and other forms of recreation; and

WHEREAS, the cost to the people of the Albuquerque area would be \$8 million or more with inflation; and

WHEREAS, this project is only a stopgap measure which would lead to more development in the floodplain, and eventually to more need for flood protection and additional costs; and

WHEREAS, the real problem is poor management of the river and watershed, which is leading to increased siltation, causing a perched river and thus increased flood threat; and

WHEREAS, we believe there are other alternatives that have not been considered seriously enough by the Corps in their project planning, such as flushing the river with periodic high flows to wash the silt out of the river, and land treatment in the watershed which would slow down the siltation rate; and

WHEREAS, revegetation of the watershed east of Bernalillo along with grazing restrictions has demonstrated the viability of reducing watershed erosion; and

WHEREAS, this action has provided more infiltration and has reduced heavy water runoff; and

WHEREAS, the Corps, in their planning, has not done everything to minimize harm to the floodplain, according to the President's Executive Order on Floodplain Management; and

WHEREAS, the Corps has not planned this project according to the Water Resource Council's Principles and Planning, integrating an environmental quality plan into its national economic development plan to form a multiple objective plan; and

WHEREAS, the New Mexico Wildlife Federation recognizes the need for some flood protection for the project area;

NOW, THEREFORE, BE IT RESOLVED that the New Mexico Wildlife Federation, at its 59th Annual Convention in Farmington, New Mexico on April 6, 7 and 8, 1979, opposes the plan as presently proposed by the Corps of Engineers, and recommends that the Corps look into other alternatives such as high flushing flows, watershed land treatment, or a combination of measures to minimize disturbance to the riparian bosque, and planning for incentives that will discourage people from building in the floodplain.

New Mexico Wildlife Federation: The Albuquerque District Engineer is recommending rehabilitating the levees to protect the Middle Rio Grande area against a flood flow of 42,000 cubic feet per second. The recommended project would disturb approximately 260 acres of riparian woodland. However, there exist areas within the woodland that have little or no vegetation, both adjacent to the levees and in areas where borrow areas could be located, and it would be doubtful that all of the 260 acres disturbed would result in loss of valuable habitat.

The District Engineer's recommendations requires that the local sponsor for the project must publicize the availability of flood plain information in areas concerned and cooperate with zoning and other regulatory agencies in adopting such regulations as may be necessary to insure compatibility between future development and protection levels provided by the project. The recommended project was planned in full compliance with Executive Order 11988 as documented on pages 159 to 167 of the main report.

The report recognizes the need of proper watershed management in improving the quality of the riverine environment and decreasing runoff. Also, proper watershed management is a vital part of the watershed plans proposed by the USDA Soil Conservation Service and Department of Interior Bureau of Land Management for areas within the Corps study boundaries.

Adequate water for "flushing" the river is very infrequently available. Appropriation of surface waters in the State of New Mexico dictates water's use and availability. Also the effectiveness of flushing is questionable over large reaches of the river

as periodic high flows may simply redistribute sediment rather than flush it clean. Therefore, this technique cannot be depended upon for maintaining channel capacity.

The recommended plan for flood control on the Rio Grande is modification of the plan referenced in this letter and accounts for many of the concerns for the flood plain.



SECTION F

Individuals

- R.B. and Teddy Hulett
- Jan A. Cummings
- Nina M. Clark
- Muriel T. and James S. Findley
- Quincy W. Shaw
- Rufus H. Carter, Jr.
- R.S. Nanninga
- Kristin Rauch
- John Rawlins
- C.H. Diebold
- Petition



P.O. Box 755
Corrales, N.M. 87048
March 22, 1979

Col. Bernard Roth, District Engineer
Albuquerque District, Corps of Engineers
P.O. Box 1580
Albuquerque, New Mexico 87103

RE: Albuquerque study for
flood control for the Rio
Grande River

Dear Sir:

We have attended one of your very informative meetings pertaining to the above referenced study and have given great thought to your proposals and feasibility study of this problem.

While we feel you have indeed done a splended job with this report, we, as citizens, feel that an alternative proposal of channelization of the river should be looked into also in great detail. As concerned citizens we would rather see this avenue pursued further before any recommendation of the above study is given a "do pass" recommendation.

We will appreciate your forwarding our views (our understanding was that all citizen input would accompany your file) when you conclude this study. Thank you.

Sincerely yours,


R.B. Hulett

Teddy Hulett

D-141

letter 38

Letter from R.B. Hulett and Teddy Hulett: Concur with the need for increased flood protection. The evaluation for channel dredging to provide flood protection is found in the main report.

1613 Bayata Lane N.W.
Albuquerque, N.M.

March 9, 1979

Colonel Bernard J. Roth
Colonel, C.E.,
District Engineer
Albuquerque District Corps of Engineers

Dear Colonel Roth:

As a resident of Corrales (with a temporary mailing address in Albuquerque) I want to be counted as one who is in favor of dike and related flood defense improvement which would protect Corrales from a river flow capacity of up to 42,000 c.f.s.

Sincerely yours,

Jan A. Cummings

Jan A. Cummings
(male)

P.S. I want also to commend you for your good presentation and even better question banking at the Corrales community meeting on March 7, 1979.

You seem to both think and speak with fairness, pragmatism, and good sense.
(I was neutral on the subject before the meeting.)

Letter from Jan A. Cummings: Your participation in the public meetings is commendable and the need for added flood protection is concurred with.

PO Box 1554
Corrales, NM 87048

3-20-79

Albuquerque District, Corps of Engineers
PO Box 1580
Albuquerque, NM 87103

Attention: Colonel Bernard J. Roth

Gentlemen:

Subject: Flood Protection for Corrales

Please provide Corrales with the same flood protection afforded
Albuquerque; namely, 42,000 cfs.

I attended the meeting held recently in Corrales, and appreciated
your presentation of the facts.

Sincerely,



Nina M. Clark

Letter from Nina M. Clark: No response necessary.

12 March 1979
P.O. Box 44
Corrales, N.M. 87048

The Honorable Ann Dunlap, Mayor
The Village of Corrales
Corrales, New Mexico

Dear Mayor Dunlap:

The purpose of this letter is to put on record certain remarks concerning the proposal by the Army Corps of Engineers to rebuild the levees on the river side of the Corrales Riverside drain. We hope that you will enter this letter into the record of the hearings to be held tonight in Albuquerque.

We are concerned that the ACE plan does not address itself adequately to two problems:

(1) Much of the flooding in Corrales comes from heavy rainfall on the West Mesa with attendant runoff down the several arroyos that empty into the Corrales floodplain. The ACE plan addresses itself only to flooding which may result from high water in the channel of the Rio Grande resulting from local rainfall in a restricted "uncontrolled area" below Cochiti, Jemez, and Galisteo resevoirs. While we obviously would like to be protected from flooding from any source, we feel that the most likely flooding in our area is from West Mesa runoff and from snowmelt. The latter is presumably taken care of by the existent dams, and the former is not dealt with by the ACE plan.

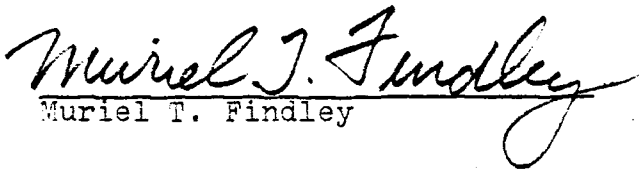
(2) The riverside area in Corrales harbors one of the very few remaining stands of Rio Grande cottonwood gallery forest. At best, the extent of this type of forest was very limited, to parts of Arizona, New Mexico, and adjacent Texas. Most of this forest has been sytematically destroyed (much of it by the Corps of Engineers and other Federal agencies). None of this destruction has been preceded by an adequate environmental impact study with the goal of assessing how much of this habitat is left, what unique species are being destroyed, and the like. The present case is no exception. The fact that biologists employed by the Corps have made studies is completely irrelevant because of the obvious conflict of interests. This is not to impugn the competence and sinceraty of these biologists, its simply to point out that you don't hire a fox to recommend measures to protect chickens. letter 41
D-147 page 1 of 1

Mayor Dunlap - 2

We certainly do not suggest that someones home be put in jeopardy simply to save a few trees. Our own home, in which we have lived for 18 years, which we built with our own hands, and in which we have raised our four children, is subject to flooding if the riverside levees fail. We do suggest that before a possibly irreplaceable natural resource is subjected to destruction by Army bulldozers an adequate impact study be ordered and alternative ways of providing added protection be seriously studied.

As a final note, as one who has reviewed and participated in many environmental impact studies, one of us (Jim) is fully aware that a commercial enterpreneur (such as the ACE in this case) can buy any kind of impact study that is wanted. It would seem especially important in this case that the contractor who conducts the impact study be selected by an independent and impartial body, and that the contractor not be a commercial environmental assessment company.

Sincerely,


Muriel T. Findley


James S. Findley

James S. and Muriel T. Findley: The recommended plan does not address the arroyo flooding west of Corrales. As indicated in the report, this watershed was studied and flooding problems addressed in a work plan report prepared by the Soil Conservation Service.

The environmental importance of the bosque area is recognized. The information and analysis contained in the EIS and report is given wide distribution for review and comment. This review is comprehensive and thorough as evidenced by letters contained in this appendix.

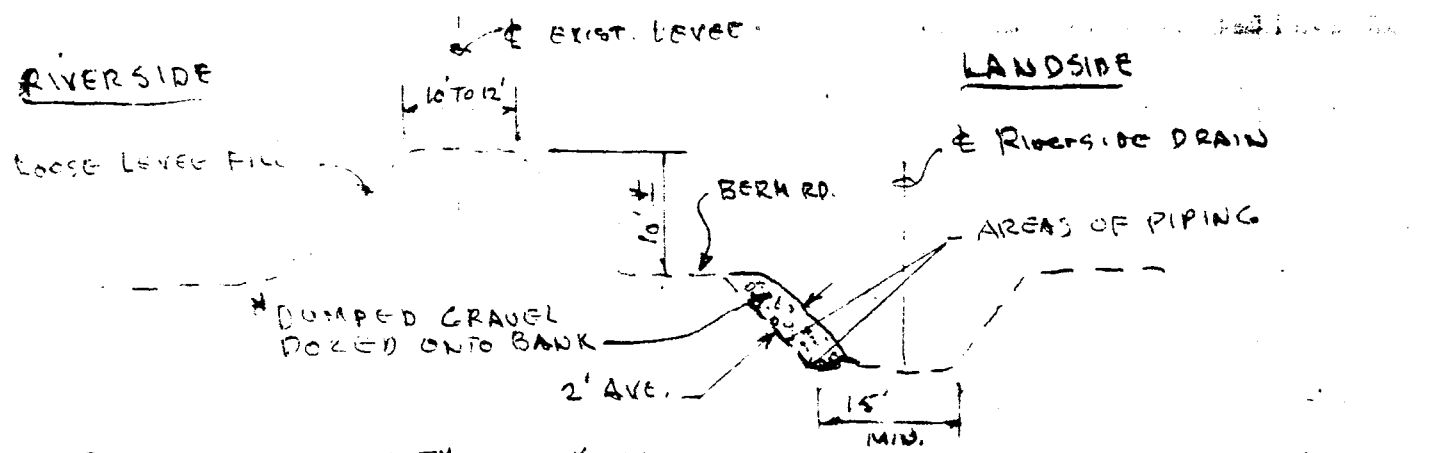
- Dear Mayor Dunlap

I believe that Corrales levee needs emergency repair work to pass a sustained flow of 5,000 - 7,000 C.F.S. Piping under ^{the} levee and erosion of ditch bank by seepage, and sand boils has been severe at the 5,000 c.f.s flow. This condition occurs with flood waters barely up on levee toe. We cannot expect to reach anywhere near levee capacity without remedial work at the land-side toe.

This ~~idea~~ idea of releasing a controlled 5,000 c.f.s. ~~to~~ could be fictitious under certain circumstances such as delayed turn-off caused by extended low temperatures in the snow-pack areas. This possibility could cause high pool elevations well into the summer flood season - What I am trying to say is that if Jemez or Cochiti Dam should spill, we have little to begin a flood fight.

I realize there are a lot of 'ifs' & 'coulds' involved in this type of discussion that leads people to sit back and wait to see what happens. BUT - if emergency type repair work is available thru Government ~~we~~ we need and should get it done.

Justification would be - Original rehab. work by Federal Agency (1954?) did not include levee design for piping condition, but only to raise levee to pass 17,000 \pm c.f.s. for short flood peak duration and so local maintenance responsibility does not include this toe feature



* PIT-RUN GRAVEL WITH ENOUGH SAND TO ACT AS FILTER.
Rough EST $\frac{14' \times 2.0'}{27} = 1 \pm \text{cy} / \text{LIN. FT.} \times 1500 \text{ LF.} = \underline{1500 \text{ CY GRAVEL}}$

Respectfully yours
 Quincy W. Shaw
 Corrales 235

Quincy W. Shaw: Emergency work under Public Law 84-99 is not meant to be a permanent solution to the flood control problem at Corrales. The proposed plan in this report is designed for a project life of 100 years to protect against a designed flow of 42,000 cfs. Installation of toe-drains should alleviate a major portion of the problem of land side sloughing of the levee embankment. Design measures of the proposed plan is found in Appendix B.

RUFUS H. CARTER, JR.
CIVIL ENGINEER

814 Rio Vista Circle, S.W. ♦ Phone (505) 242-7474
Albuquerque, New Mexico 87105

February 26, 1979

Bernard J. Roth, Col. C.E.
c/o Albuquerque District
Corps of Engineers
P.O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Roth:

Reference your letter SWAED-EU dated February 2, 1979
and the enclosures thereto.

Comments offered for your consideration are as follows:

1. Main Report, p.5: Paragraph at the bottom of
the page entitled "Rio Grande and Tributaries, Albuquerque,
New Mexico and Vicinity, Review Report on Survey for Flood
Control dated June 1953."

A survey report dated in the mid-1940's was the basic
survey for flood control for which the review was dated in
1953. While this report did become House Document 249, its
compilation and content predates June 1953 by some years.

2. Main Report, p.30, paragraph at the bottom of the
page. That a sediment pool is already formed at Jemez
Reservoir is obvious. When and if trap efficiency attains
90% is not stated. Current conditions do not so indicate
unless flow in the stream is much greater than normal (a
flood flow), or gates at the outlet works are closed thus
forming a pool, or both. On February 18, 1979, low flow
was passing through the dam with little if any impedance.
That inflow at "tail water" probably dropped much of its
particulate content is acknowledged. However, as the flow
meandered through the sediment bed, with obvious increase
in depth and velocity, particulate matter from within the
reservoir was picked up and moved through the outlet
conduit and on downstream. Then the question arises: what
portion of Jemez Creek flow passes unimpeded through the
outlet conduit with little or no net particulate loss? And
what portion of Jemez Creek flow is retained for sufficient
time for the finer particles to drop out? Of the latter,
how much is moved on through the dam during the next low
flow period?

At the time Jemez Dam was designed, the outlet stilling basin was deliberately set deep in the bed of the stream. It was assumed that, ultimately, downstream channel erosion would quite fully expose the stilling basin. With no visible change, this stilling basin is as deeply incised as when construction was complete.

3. Main Report, p.30 and 31. Section entitled: Rio Grande Aggradation. Only the most casual mention is made of Galisteo Dam. With the ungated 10-foot I.D. conduit as the sole means of control the same questions can be asked for Galisteo as were asked for Jemez Reservoir. Visible evidence less than half a mile below the flip bucket shows little or no channel degradation. There is evidence of siltation in the reservoir basin but low flow appears to carry as much through the outlet conduit as may be deposited at or near "tail water"; thus no net loss of particulate matter.

4. Appendixes: Appendix A, Section F, pp. A-79 and A-80. Many of the numbers here stated cannot be reconciled with numbers appearing on pp. 30 and 31 of the Main Report.

5. There seems to have been little thought as to any shape of the channel between the vegetative strips or jetty-jacks along the Rio side of the levees. Then, too, hydraulic equations in current use cannot and do not predict the formation of sand bars, the deflection of downstream motion to lateral motion, the swirling in eddies that may generate pot holes, the motion of sand waves along the bottom, the depth to which bed scour can or will occur, or any number of other factors.

It is acknowledged that manual removal of material to deepen Rio Grande channel to any substantial degree is economically unreasonable. However, with some physical help, Rio Grande can help itself.

Groins, V-shape in plan with the open end upstream, if properly set and appropriately spaced can assist the Rio in helping itself. The closed tip of the V may or may not be fully closed, but should be depressed several feet compared with the elevation of the groin at the levee toe. Such groins should be deeply bedded or supported to withstand bed scour of up to 40 or 50 feet depending on whether or not SPF flow is considered.

6. Whether or not the Rio Grande can accommodate and move tributary sediment arriving at its bed, and at the same time assist in deepening and shaping its own channel is an open question. There is little doubt but that some mechanical removal of sediment will be required. However, this can be limited, but disposal may be a serious problem.

While Highway 40 bridge at Bernalillo and other bridges are deemed safe under SPF conditions, there appears to be no consideration of trash, whole cottonwood trees for instance, that can and probably do move with flood flow. Impact of a tree against a bridge is tremendous, and it will cause accumulation of other debris increasing lateral pressure on the bridge. Accumulated trash can, and, in Rio Grande, probably will intensify bed scour.

7. Main Report, p. 57, Section entitled Levee Rehabilitation Plus Tonque Reservoir in which it is indicated that a dam on Tonque Arroyo would reduce the peak flow of the SPF from 74,000 c.f.s. to 55,000 c.f.s. While various assumptions leading to this conclusion may be valid, it is doubtful that a reservoir intercepting 119 square miles (Table 4, p.48) of drainage area can really knock 19,000 c.f.s. off a peak in the Middle Rio Grande Valley. Equally valid assumptions can be made that would all but nullify Tonque Reservoir. Much of the Tonque Arroyo drainage area is the east slope of the Sandia Mountains and may well be in a totally different storm inflow pattern. That a reduction in peak flow of 19,000 c.f.s. in Rio Grande amounts to no vast saving in earthwork is acknowledged.

8. It is noted that there is little or no comment on Tijeras Arroyo at the division between the Albuquerque East and the Mountain View units. Evidence of substantial anticipated Tijeras Arroyo flow is demonstrated by the length of and clearance under the bridge that connects the Sandia Area of Kirtland Air Force Base with the "South Mesa" research and experimental areas. Any flow contribution to Rio Grande consistent with the size of this bridge opening will surely be visible and appreciable. The reach of Tijeras Arroyo from I-25 to Rio Grande is concrete lined and also carries flow from the South Diversion Channel. With supercritical flow from this channel entering Rio Grande there is bound to be turbulence from energy dissipation with resulting bed scour of totally unpredictable proportions.

9. There seems to be some confusion since the term "bed load" is undefined in documents under review. One system of identification separated solids in suspension from those particles, usually the larger ones, that bounced along the bed of the stream or that moved in the stream bed by rolling or other motion directly attributed to the energy of flow.

10. No comments are offered on the Environmental Statement.

Overall, this is an exceptionally good report. I trust the

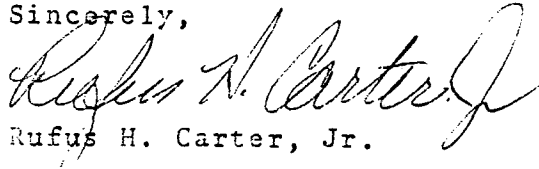
Colonel Roth, page 4

above comments will be of value.

As requested, the Main Report, Appendixes and Environmental Statement, all in Draft Form, are herewith returned.

The opportunity for review and comment is appreciated.

Sincerely,

A handwritten signature in cursive script, appearing to read "Rufus H. Carter, Jr.", written in dark ink.

Rufus H. Carter, Jr.

Enclosures

Rufus H. Carter, Jr.:

Comment 1. Concur.

Comment 2. Trap efficiency of the reservoir is highly variable. When there is no storage and inflow equals outflow, the erosion within the reservoir often causes the sediment outflow to exceed the inflow. For inflows greater than 40 cfs, a storage pool is maintained sufficient to retain inflows for approximately 24 hours to permit optimum deposition of the sediment load. When a permanent pool is present the trap efficiency approaches 100 percent. For the 21 1/3 year period of observation, the trap efficiency was 63.4 percent with only about 19 percent operation. Suspended sediment sampling at the gaging station below the dam gives estimates of the sediment contributed to the Rio Grande by the Jemez River and provides information needed to calculate sediment yield of the watershed and trap efficiency of the reservoir.

Comment 3. The trap efficiency varies at Galisteo Dam with the flow in the creek. If the flow is sufficient to cause a pool behind the ungated structure, the sediment trap efficiency is increased. When inflow equals outflow there is little sediment trap effectiveness.

Comment 4. The figures in the Tables assumes a 90 percent trap efficiency for Jemez Dam. All of the numbers agree.

Comment 7. The decrease of peak SPF flow of 19,000 cfs at Bernalillo was made assuming the storm to be located as in transposition 5 as shown on Plate E-9.

Comment 8. Tijeras Arroyo as it enters the Rio Grande is a part of the south diversion channel constructed by the Corps of Engineers and

operated and maintained by the Albuquerque Metropolitan Flood Control Association. Its designed outflow capacity is 37,000 cfs.

Comment 9. Bedload includes the contact load, which is that material which rolls or slides along the streambed, the saltation load which is that material which takes short jumps, and suspended load which is that material which remains in suspension for appreciable amounts of time.

19 March, 1979

Bernard J. Roth
Colonel, CE
District Engineer, U. S. Corps of Engineers
Albuquerque District,
P. O. Box 1580
Albuquerque, New Mexico 87103

Dear Col. Roth,

re: Middle Rio Grande Flood Protection, Bernalillo
to Belen, New Mexico.

I have reviewed the Draft and feel the recommended levee improvement alternative is the best solution to providing the needed flood protection for the Middle Rio Grande Valley.

It is gratifying to me that the communities and agencies in the Middle Rio Grande Valley have, in general, supported a program of flood protection for the area at the 270 year potential flood frequency level, as projected by the Corps Draft Feasibility Report.

It is conceivable, though, that failure to undertake the SPF level of flood protection may someday prove disastrous.

If the philosophy of today's community leaders concerned with flooding from the Rio Grande were the same as existed in the 1920s there is no question but that the SPF level of protection would be advocated. The levee system originally constructed by the MRGCD with subsequent supplemental works (dams and levee improvements by the Corps and channelization of the Rio Grande and rehab of the MRGCD works by the Bureau of Reclamation) have been strong positive forces contributing to flood protection of the Middle Rio Grande Valley. Valley residents may be too complacent over the potential flood threat as a result of this work.

The desire of a great number of people to increase the recreation, aesthetic, wild life habitat, and nature preservation uses of the Rio Grande has been expressed. I do not feel these uses conflict with the flood protection program. In my judgement, these uses can be provided for, if properly planned, as flood protection is improved. Once provided for, these uses will need to be managed, otherwise the abuses through non-management will tend to deteriorate these uses and in time they can no longer be enjoyed. Planning and operation for these uses would most appropriately come from those individuals and agencies interested in and responsible for them.

MRGFP, Bern. to Selen, N. Mex.

19 March, 1979

I realize it is impossible to go beyond what local citizens are willing to fund in a flood protection program. However, with the growth potential of the Rio Grande Valley we may regret not striving for a higher level of flood protection. Maybe we will be fortunate in that a combination of increased levee strength, anticipated degradation of the channel a reality, and time will prove adequate.

I would hope in the detailed planning that special attention can be given to material selection sites so as to augment the anticipated degradation of the channel coming from the operation of Cochiti Dam.

Sincerely yours,

R. S. Nanninga

R. S. Nanninga
Route 9 Box 845
Albuquerque,
New Mexico 87105

Letter from R. S. Nanninga: Concur with your assessment of the need for increased flood control. Every effort is being made in planning this project to coordinate with responsible fish and wildlife and other environmentally knowledgeable people. This should result in a flood control project which is as environmentally compatible as possible.

March 25, 1979

To Whom It May Concern:

I have been following with some interest the process and proposal for additional flood protection along the Rio Grande.

I would like to make known to you that I have serious doubts that the wildlife and wildlife habitat have been given enough consideration in the planning.

Please do not build or rebuild anything that will ultimately do more harm than good. I would like there to be trees and plants and grasses for years and years to come.

With proper planning and care I think we can have both flood control and a natural wildlife habitat program.

I am especially concerned

about the Oxbow area in Albuquerque.
It is a treasure used by many
people in the city who highly
value a little bit of "wild" close
to home.

I urge you to consider the
suggestions of the Sierra Club (I
am not a member but heard them
speak at two of your meetings).

I urge you to go slowly
and carefully and not plan
for just today's but for many
tomorrows in New Mexico.

Sincerely,

Kristin Rauch
Kristin Rauch
1525 San Carlos SW
Albuq N.M. 87104

Letter from Kristin Rauch: The proposed project designed for a flow of 42,000 cfs would not effect the Oxbow area or the Isleta Marsh, as stated in the EIS. Growth projection to the year 2030 were considered in the planning processes of this study which resulted in the project proposal. The setting and growth projections are described in Appendix A.

March 24, 79
A.L.C. N.M.

To Whom This may concern

Dear Sirs,

Please include my
comment on the proposed Red Bank
Flood control program soon to be sent
to Congress.

I am opposed to alteration
of the current flood control protection
& levee system. I recommend that
nothing be done that might in any way
worsen the water pool & wildlife habitat.
I feel that the drastic reduction that
has taken place in natural habitat since
the Corps original acquisition was a
mistake that has got to cease. I feel
that anything that can't be accounted for
momentarily is invariably understood.
This is certainly true of the land.
The problem is man. I'd like the Corp's in
this case to resist a man-made & especially
conscious perspective - I'd like to see

more concentration on water ~~releases~~
water releases, on restrictions on
capital improvements within floor plans
and a more conscientious use of water shed
lands that would reduce salt runoff.

Thank You,
John Rainbird

511 Copper Hill
Albany N.Y.
52102

Letter from John Rawlins: The release of water from Cochiti Dam below the flood protection level is not within the authority of the Corps of Engineers. The Corps can only release what water becomes available. Therefore, the opportunity to scour the river channel is not always available. Zonings which restrict developments and capital improvements in the valley flood plain is in the jurisdiction of the local governments, whether they be city or county.

To: U.S. Engineers
Albuquerque N.M.

March 22, 1979

From Dr C.H. Diebold
Box 330 RFB 3
Los Lunas N.M.

I find the pertinent material in the appendices of the Middle Rio Grande Flood Interim Feasibility Report

I note that in the Valencia County portion labeled Belen East and Belen West - actually from Isleta to the railroad bridge south of Belen that plan A proposes 232000 feet of toe drains on the land side of the levees adjacent to the Riverside drains. The toe drains are 12 inch perforated pipe. Obviously it is expected that water will come from these drains. How many cubic feet per second will it increase the flow of the Riverside Drains? What will be the effect on the height and duration of flow? In Bosque Farms there is a problem of sloughing in the banks of the Riverside Drain without additional flow. I wonder if the farmers problems will not be increased in respect to high water tables.

According to the Valencia County soil survey based on field work roughly 10 to 20 years ago there were at least 9000 acres of valley land affected by water tables within 5 feet of the surface. High enough to affect crop yields, workability of the soil and adversely affect septic tank fields. At the present time I estimate an even larger acreage is adversely affected by high water tables due to failure to properly maintain both the riverside and interior drains. Surely a study that proposes to spend over 25 million in federal funds should evaluate its effect on water tables in Valencia County.

Is there any data on the current rate of aggradation of the stream channel in Valencia County. On what page of the report? I heard years ago without verification that water tables and stream gradient in Valencia County of the Rio Grande was affected in part by the rock formation at San Acacia in Socorro County? As a farmer I am interested in lowering water table by degradation of the channel.

As a Valencia County resident I am more concerned about flash floods from Hell Canyon than I am about flash floods originating above Albuquerque. This report proposes to do nothing to reduce flood flows from Hell Canyon. I find the projected standard flood flow of some 60,000 cubic feet per second from local tributaries below Galisteo, fantastic.

I note from 104 to 114 acres of cropland would be expropriated. Where?

I note 125 acres of wet land would be created. What is the consumptive use and whose water rights are involved?

As for the writer I need two more days to understand this report. I was out of the United States from ~~XXXXXX~~ November 10 to March 15 helping small farmers with irrigation ditch loss problems in Pakistan. I was unaware of the report until March 21.

I worked on flood control surveys for the U.S. Forest Service from 1937 thru 1942. From 1944 thru 1966 I worked as soil scientist - survey party leader Valencia County, assistant state soil scientist and soil survey supervisor primarily out of Albuquerque. I am the expert on water tables in the Middle Rio Grande Valley.

Mrs Diebold and I have operated continuously an irrigated farm near Peralta beginning with 70 acres in 1954 and 100 acres since 1964. In addition I have from time to time served as an expert witness on water problems,

C.H. Diebold

Letter from Dr. C.H. Diebold: The toe-drains should not increase flow significantly in the riverside drains over what is being drained into them under existing conditions. However, the tile drains should decrease the amount of sloughing into the ditches, and enhance seepage at the base of the levee. Therefore, the duration of high flow in the drain should be decreased and water level increased.

Aggradation of the channel is discussed in the main report and in Appendix A.

Flooding from Hell's Canyon is addressed in the USDA Soil Conservation Service report "Upper Rio Grande Basin, Water and Related Land Resources", 1973.

The acreage needed to be acquired for flood control would be where new overlap levees are proposed to be constructed.

Under Plan C, 75 acres of wetlands would be created requiring the purchase of 300 acre-feet of water rights by the sponsor.

Your interest in the report and flood control problems of the area is appreciated.

March 19, 1979

Some of the problems present in the Rio Grand Valley today which are a direct result of a high water table are, (1) Premature failure of septic tank drainfields which results in health hazards and high cost to the home owner, (2) Stagnant ponds which become breeding areas for mosquitoes. This problem is severe along the banks of many canals in the conservancy district, (3) Increasing salinity in the soil resulting in the destruction of farm land, (4) A high water table along with water seeping out from the river bed causes erosion of drainage ditches. This results in higher costs for constant maintenance of these ditches.

In most years water in the M R C D is in very short supply. During these dry years channeling of the river would conserve water. Channeling would also allow the riverside drains to flow more freely into the river near Belen. This conservation of water would be of great benefit to residents as well as helping preserve wetlands in the southern end of the district. In wet years channeling would provide flood protection.

We the undersigned strongly support the view held by the Middle Rio Grande Conservancy District, that the Rio Grande river should be channeled from Bernalillo to the end of the conservancy district to the south. This action would provide flood protection while at the same time reduce the devastating effects of a high water table in the adjacent river valley.

I Donald Braught having farmed here in Bosque Farms since 1944 and always having a problem of high water table could much rather see the river channeled than the Dikes raised, channeling the river would keep our water level down where as raising the dikes would raise the drainage canal which would in turn raise the water level of our farming ground and maybe even destroy it for farming

D. L. Braught

opening land here since 1935 and never had a high water table problem, I am in favor of helping to do something done.

I realize the potential health hazards associated with high water table and the secondary effects noted in the accompanying letter. These problems, especially the mosquito population, can not only concern people, but become a significant reservoir of some animal diseases.

Joe B. Baker, DVM
90 Box 795
Alameda NM

If the water table gets any higher it will be catastrophic. I repaired some of my canals recently and the pest holes filled halfway full of water. Originally I built them 15 years ago and I believe the water table has risen about 1 foot in this period of time and this was during a drought period. What will happen during a wet period?

The high water table is costing citizens thousands, perhaps millions in extra dollars by having to put in elaborate septic tank systems to pass the Environmental Protection Agency's standards. I have personally been affected by this too.

Lita Mc Carthen
Rt. 3, Box 714
Los Lunas, New Mexico 87031

We the undersigned strongly support the view held by the Middle Rio Grande Conservancy District, that the Rio Grande river should be channeled from Bernalillo to the end of the conservancy district to the south. This action would provide flood protection while at the same time reduce the devastating effects of a high water table in the adjacent river valley.

I have lived since 1951 in Bosque Farms, New Mexico. One of our most persistent problems is that of high water table. In 1973 during a period when the river was unusually high, the riverside drain was checked to prevent a high flow of water which was causing severe erosion along the banks of the drain. By the end of the summer about 50 acres of my alfalfa was completely killed. Several of my neighbors had the same experience. I fear that if the plan submitted by the Corps of Engineers to raise the levees is adopted much more water will flow in the riverside drains and the result will be more disastrous than in 1973. It is my hope that you please reconsider a plan to channel the Rio Grande River.

Gary De Sant

2905 McNew Rd
Bosque Farms, New Mexico
87068

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Art Joganin RT 4 Box 1340 Los Lunas, N. Mex.
I am a full time farmer operating 160 acres in vegetables mostly with a little alfalfa and corn. I have farmed in this area since 1957.

Raymond J. Jernett 209 S. Santa Fe Ave. Los Lunas, N. Mex.
I farm 130 acres with 3/4 mile of access to the water table. I am concerned that the water table would cause more erosion into the fields. This lowering of the water table would cause the water table to rise and cause the water table to rise under the farm land.

Robert Vann 1135 Cinders Lane NE, Los Lunas
I live approximately three quarters of a mile west of the river and the water table is presently 4' from the surface, any increase in the height of this water table will interfere with the drainage field of my septic tank.

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Edwin O. Goddard Rt. 3 Box 1150 Los Lunas N.M. 87031

Sherlee Sutton P.O. Box 606 Peralta N.M. 87042

We have recently built a \$90,000 home on the Bague Farms area and have planned to live here for sometime. We have had continuous problems with our septic tank and feel that it is a waste that the river be channelled. The water table is extremely high in this area (2 feet down and you can get water). We have planted numerous trees and have found that the high water table causes the roots (tap root) to rot. The only solution to these problems is to have the river channelled thereby reducing the water table.

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Thomas E. Linn Los Lunas New Mexico

Henry J. Sutter - P.O. Box 606 Pennington, N.M.
We need flood protection, and the best solution
is channeling the river.

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J. C. Romero - Box 92 - Peralta N.M.

Huck de Smet - 2405 McNew Rd Bosque Farms N.M.

I have been a land owner for 12 years in Bosque Farms High water table has caused me many problems in my farming operation 1) Loss of crops 2) water comes to surface - no crops will grow, 3) Septic tank will not work properly. Due to high water table.

Mrs. Ferrol C. Murray 940 Cypress Road Bosque Farms

I think this is a very good idea.

Mildred Killough 2330 McNew Rd - Bosque Farms

Wayne Gustin 210 MITCHELL Bosque Farms

Joe W. Killough 2830 McNew Rd - Bosque Farms 87068

Mrs. Alice G. McCann Rt # 3, Box 937

Los Lunas, N.M. 87031

Mrs Arthur M. Spitz Rt # 3 Box 944 Los Lunas, N.M. 87031

Mrs Betty Thompson Rt # 3 Box 933 Los Lunas, N.M. 87031

Ken Jones

Rt # 3 Box 967 Los Lunas, N.M. 87031

Harold Richard 6221 Howe Dr SW Albany, N.M. 87105

H. Elliott

Box 944

Los Lunas, N.M. 87031

Los Lunas, N.M. 87031

Los Lunas, N.M. 87031

Los Lunas, N.M. 87031

Los Lunas, N.M. 87031

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Mr. & Mrs. Bill Gausley	Mrs. & Mrs. Walter Sturges
Mr. Ray Gilliam	Mr. & Mrs. Van Emmon
W. L. Alberta Lassiter	Mrs. & Mrs. Leeland Singer
Mr. & Mrs. A. B. Bernal	Mr. & Mrs. George Prather
Mr. & Mrs. Orlay E. Hampton	Mr. & Mrs. Jerry Compaug
Claudia May - Jr.	1735 W. 82
Comita Compaug	Bill Thorne
John & Jan Gaudin	Mrs. & Mrs. Gary A. Watt
Joe Roberts	755 Boque Farms Blvd.
Mrs. Roberts	Mr. & Mrs. Selby Eave
C. C. Truitt	230 Diego Lily
Ruth Truitt	Boque Farms
Mr. & Mrs. M. Thompson	Wayne Krawack
Mrs. The Robert & Haughey	7770 Betty Lane
W. S. Kendall	Boque Farms, N. M. 87068
Opal M. Kendall	Mr. & Mrs. Sheryl D. Stanley
A. J. Berthold	David Rice
James J. Jones	Don Stumler
Bill J. Johnson	
John	
W. H. Harris	
Bob Hill	
Danny Gray	
Morris Smith	
New Smith	
Mr. & Mrs. E. J. Hayes	

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Richard A. Wayne Rt 3 Box 1152 Los Lunas N.M. (landowner)
High water table has already caused added expense in the construction of my home, any rise would be disastrous to my area. With the current water table, I hit water at $7\frac{1}{2}$ to 3 feet when digging postholes. It's even less than that on nearby property.

Philip A. Mann Rt 3 Box 1173 Los Lunas
New Mexico 87031

The high water table made it quite a problem in installing septic tank. Water table on property is now three feet below surface.

Allen K. Tuba Rt 3 Box 1175 Los Lunas N.M.

Charles P. Fulton Rt 3 Box 798 Los Lunas, N.M. 87031
Charles P. Fulton

Barbara R. Allen Rt 3, Box 798 L L, N.M. 87031

Genie A. Benard Rt 3 Box 797 Los Lunas 87031

Glenn S. Brooks Rt 3 Box 797 Los Lunas N.M. 87031

Richard Mann Rt 3 Box 797 Los Lunas N.M. 87031

John M. Mann Rt 3 Box 797 Los Lunas N.M. 87031

The high water table made it difficult to install a septic tank and drain field.

James Klumy Rt 3 Box 1154 Los Lunas N.M.

Allen K. Tuba Rt 3 Box 1175 Los Lunas N.M.

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Lawrence R. Page LT 3 Box 1176 LOS LUNAS 87031

Charlotte Steinbaugh Box 147 PERALTA, N.M. 87042

Wayne K. King Box 776 PERALTA N.M. 87042

C. E. McQueen Box 626 PERALTA N.M. 87042

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Etta C. D'Amico
Carl R. Chamberlain
Waymon Shore
Fred G. Richardson
Annette L. Wright
Ronald C. Wright
Elida G. Petri
A. G. Pobi
Albert G. and Lavada Krause
Alice & Joyce Hinton
Mrs. J. J. Amador
John W. Whigham
Kathryn M. Philgrims
Manuel R. Duran
Fannie M. Duran

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- Ronald B. Watson P.O. Box 403 Paralta N.M. General Contractor
 one land owner
- Jawell F. Sutton Rt 6 Box 413 Las Lunas Landowner
- Lennie P. Sutton Rt 6 Box 410 Las Lunas Land owner
- David C. ... 3717 Ken. Road ...
 Albuq
- Bill E. Britz 1816 North Lane, S.W. Albuq Land owner
- Walter L. ... 4609 ... Albuq Land owner
- Ernest A. ... 5516 Territorial N.M. Albuq Land owner
- ... 11315 ... Albuq Land owner
- ... 358 ... Albuq
- ... 3901 35th St. Albuq
- ... Belen.
- ... Shannon
- ... (Builder)
- ... 10th St. ...
- Kerry ... Albuquerque, N.M.
- ... 1070 ... 457065
- Trish Sutton Rt. 6 Box 410 Las Lunas, N.M. Landowner
- Clara Clark Rt. 3 Box 970 Las Lunas, N.M.
- Debra ... Rt 3 Box 948 ... 87021
- Maria ... P.O. Box 352 ...
- ... 87021
- ...

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Nelsons Byrnes RT 5 Box 413 L.L.
 Lucy Kennedy RT 4 Box 3026 LOS LUNAS
 Mike B. Lopez RT 4 Box 943 L.L.
 Ron Uepp RT 2 Box 568 h.L.
 Albert Placencio Rt. 1 Box 1086 L.L.
 Frank V. Kempf, Jr. Rt 5 Box 52 h.L.
 Joseph B. Thomas 5413 LEWIS CTNW, Albuquerque
 Charles E. Luagon P.O. Box 861 Los Lunas
 Al Brantley RT. 3 Box 180 LL NM
 Yolanda O. Jimenez RT 2 BOX 504 LH
 Steve R. Balok 1411 Los Lentos N.E. LOS LUNAS.
 Preston Robert 1411 Los Lentos N.E. Los Lunas
 Dennis A. Torres RT 2 Box 922 Los Lunas
 Michael Zamora RT. 2 Box 982 Los Lunas
 Shirley M. Thomas NAPA Highway 49
 Jeff W. Lente Salita NM.
 Jonetzel Alexander 460 S. Bosque LP B7
 Kenneth [unclear] RT 3 Box 151 LL NM
 Kenneth Jart RT 4 Box 1046 Los Lunas
 Joanna Rader RT 4 Box 397 Los Lunas, N.M.
 Lucy W. Hatcher RT 4 Box 1252 Los Lunas N.M.
 Judy Lawrence 2128 Bellamab. Dr.
 Ed M. Knox RT 4 Box 310.
 Carolyn Houston RT. 2 Box 246 Los Lunas
 Warren Barnes Box 695 Los Lunas
 Post & Post RT 4, Box 600 Los Lunas 87031
 Kendall Conner RT 3 Box 766 Los Lunas 87031

Gary Suplee RTS Box 419 Los Lunas

J B Whit - Schln Rd Los Lunas

Paul Fells 276 Vista Larga SW, Los Lunas.

Marcelino Baca RTS Box 253 - Bld

Vance R See P.O. Box 1333, Belen

Robert G. Higgins RT. 4 BOX 297 LOS LUNAS, N.M.

José Stewart Box 467 Belen N.M. 87002

~~John E. ...~~ Rt. 4, Box 908 Los Lunas N.M. 87031

Oraige Ford Rte 3 Box 1031 Los Lunas, N.M. 87031

Johnny Gulch Rt. 4, Box 704 Los Lunas N.M., 87031

Rose Carolyn Ruler L.F.D. 1, BOX 302 Belen N.M. 87002

H. L. Jones P.O. Box 155 Peralta, N.M. 87042

Petition to Channel Middle Rio Grande River

We the undersigned strongly support the view held by the Middle Rio Grande Conservancy District, that the Rio Grande river should be channeled from Bernalillo to the end of the conservancy district to the south. This action would provide flood protection while at the same time reduce the devastating effects of a high water table in the adjacent river valley.

Ray E. Sanchez	Catherine D. Perca
Mark Lee Pardo	Luciano Romero
M. M. Cordova	David B. Buttery
William J. Cordova	Fabio Comrie
Pete A. Carbon	Joe Cruz
Felix Baca	John C. Marries
Paula J. Baca	Celalaida Y. Aldrete
James Marquez	Leungo S. Priego
Ramon S. Priego	J. Castell
William S. Priego	E. Priego
Walter M. Priego	R. Westfeld
John Gonzalez	Richard D. Jones
Benjamin Gonzalez	Guillermo M. Duran
John K. Kyles	John D. ...
Alice Archondo	Julius S. Padilla
Patricia Cordova	Debbie Priego
Pula R. Priego	
Alice J. Priego	
Wendy ...	
Leslie Kirby	
...	
Lawrence Clark	
Kenneth Stokes	
Helen M. ...	
...	
Walter S. Baca	
Atilano Chavez	
Trinidad ...	
Marvin Perca	
Peter ...	
Richard ...	
Pete ...	
...	
...	
...	

Petition to channel the Middle Rio Grande

We the undersigned strongly support the view held by the Middle Rio Grande Conservancy District, that the Rio Grande river should be channeled from Bernalillo to the end of the conservancy district to the south. This action would provide flood protection while at the same time reduce the devastating effects of a high water table in the adjacent river valley.

Joel Arana

Dylveste Cisneros

Selma Benitez

William Arana

E. Flanagan

Helen Handley

Justo Brigg

Robert Ulibarri

Delfino Chavez

Stephan Abeyta

Esposito

Thomas C. Esquivel

Rodriguez

Affred Edwin Esquivel

Kathy M. Esquivel

R. Horato

Leo Horato

Luis Horato

Jo Maria

Barbara Flett

Jacobo Rosales

Wanda Miranda

Gonzalo

Richard Handley

Petition to channel Middle Rio Grande River

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J.C. Vallesos Rt 2 Box 786 L L. N. Mex
Luis R. Bica Rt 2 Box 795 Los Lunas, N. Mex 87031
Paul S. Moya St Rt 7 Box 324 - Bldg, N. M. 87002
Jesus (Cherie) Sanchez 1121 South Main N. M.,
Racho Vallesos Rt 2 Box 796 L L.

Pat Suresher Rt 4 Box 1017 L.L. N. Mex
Luis Sanchez Rt 2 Box 624 L L N. Mex
Julian Vallesos Rt 2 Box 796 L L

Margaret A. Abayta P.O. Box 572 Ugenta N.M.
Leticia Lucato Rt 7 Box 59 Ugenta N.M.
Cecilia Romero Rt 7 Box 48 A Ugenta
Oralia Romero Rt 7 Box 49 Ugenta
E. Lutean Yugo Rt 7 Box 25 Ugenta N.M.
Angie Chavez St Rt 7 Box 27 1/2 Ugenta N.M. 87062
Derecia Cardona P.O. Box 627 Ugenta N.M.
Mildred Hammer St Rt 7 Box 44 B Ugenta N.M.
Biscuita Romero St Rt 7 Box 51 Ugenta N.M.
Felipe Trevi N. Esperanza - Belen N.M. 87002
Elena M. Valle P.O. Box 772 Belen N.M. 87002
C. Valle 165 Michelle Ugenta N.M.
Marilyn Trevi 104 Esperanza - Belen N.M. 87002
Martin A. Valle 2501 Box 332 Belen N.M. 87002



Petition to channel the Middle Rio Grande River

We the undersigned strongly support the view held by the Middle Rio Grande Conservancy District, that the Rio Grande river should be channeled from Bernalillo to the end of the conservancy district to the south. This action would provide flood protection while at the same time reduce the devastating effects of a high water table in the adjacent river valley.

- | | | |
|---|---------------------|---------------------------------------|
| 1 | Clarence Jaramilla | Star Rt. 7, Box 67, Belen, N.M. |
| 2 | Nora Jaramilla | Star Rt 7, Box 67, Belen N.M. |
| 3 | Glenn Jaramillo | Star Rt. 7 Box 66-C Belen N.M. |
| 4 | Fammie Jaramillo | Star Rt 7 Box 66 C Belen N.M. |
| 5 | Russell Sanchez | St Rt 7 Box 67B Belen |
| | Ruby A Jaramill | St Rt 7 Box 67C Belen 87002 |
| | Patsy Jaramillo | St Rt 7 Box 67C Belen |
| | Mary S Jaramillo | Star Rt 7 Box 67B Belen |
| | Albert Jaramillo | Star Rt 7 Box 67B Belen |
| | Beradine Ontanavage | Belen, N.M. |
| | Darlene Jaramillo | Belen, N.M. |
| | Ray P. Jaramillo | St. Rt. 7 Box 66 B, Belen, N.M. 87002 |
| | Debbie R. Jaramillo | St. Rt. 7 Box 66 B, Belen, N.M. 87002 |
| | Clayton Jaramillo | St. Rt. 7 Box 67 Belen N.M. 87002 |
| | Vincent Carrillo | Gen Del Vegueta N.M. 87062 |
| | Salomon Martinez | Rt. 2 Box 318 - Los Lunas N.M. |
| | Euphie J Martinez | Rt 2 Box 318 - Los Lunas, N.M. 87031 |
| | Juanita Jaramilla | Gen Del Vegueta, N.M. 87062 |

Petition To Channel Middle Rio Grande River

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⁸⁷⁰⁰²
Eduardo Jimenez 201 Camino Belen N.M.
Eddie Lopez Rt. 7 Box 91 Belen ⁸⁷⁰⁰²
Manuel Jimenez 207 Desoto ave Belen N.M.

B. E. Crankford 1635 EDITH DR. Belen N.M. ⁸⁷⁰⁰²
Johnny Priego 418 Cambridge Belen N.M.
Orlando Thomas 51 Rt 7 Box 489 Vega N.M.
Jesus C. Flores
Hermineo Jaramillo Belen

Martin Chang RFO2 Box 335 Belen N.M.

Art 20 Rio Comunita Belen N.M.

Gary Davis Rt. 7 Box 336A George

Ron Egejala Route 6 Box 588 Albuq. N.M. 87105

Jerry G. Flores Rt. 1 Box 342

Samuel Sanchez 728 West Vivian Ave. B.

Andrew E. Salas Rt 7 Box 402 Rescue N.M. ⁸⁷⁰⁰⁶

PETITION TO Channel Middle Rio Grande ^{River}

We the undersigned strongly support the view held by the Middle Rio Grande Conservancy District, that the Rio Grande river should be channeled from Bernalillo to the end of the conservancy district to the south. This action would provide flood protection while at the same time reduce the devastating effects of a high water table in the adjacent river valley.

Amos Cochran	Mr. Narciso Pina
Arthur B. Cordova Jr.	Deborah Lopez
Ignacio C. Sanchez	Charles Pardo
Emie Chavez	Randa St. Julian
Roy Chavez	Mr. Juan Carlos
C.R. McDonald	Nick Tapera
Larry Bryson	David R. Jaramilla
W. L. Cassie	
Ed Johnson	
Clifton Corant	
Albert Paul	
Art Kelling	
Rubino B. Gallegos	
John R. Bampton	
Ben Chavez	
Amelio Chavez	
Juan L. Chavez	
Pedro B. Salas	
Herbert Miller	
Augustin Barajas	
Barry D. Lee	

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Jerry Sanchez as a long time resident of the Rio Grande valley, I must
-strongly agree that the river should be channeled - not
only to provide flood protection but to lower the presently
high water table.

Rosemary Apodaca

Joseph P. Alderete

William L. Luthel

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Petition To Channel Middle Rio Grande River

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<i>[Signature]</i>	<i>[Signature]</i> ²³⁶ <i>[Address]</i>
Russell Blumenshine ^{RT 2 Box 1345 LOS LUNAS}	<i>[Signature]</i> ^{RT 2 Box 368}
Alonso <i>[Signature]</i> ^{RT 2 Box 908 LOS LUNAS}	<i>[Signature]</i> ^{Los Lunas, N.M. 87030}
Jay Garcia ^{PO Box 546 Pecos, N.M.}	Diana Keebler ^{Rt 6, Box 834 Los Lunas, N.M.}
Michael <i>[Signature]</i> ^{P.O. Box 25 L.A.M. N.M.}	Rafael Candelaria ^{Rt 4 Box 130 Los Lunas, N.M.}
Gregory Martinez ^{Rt 6 Box 855}	J. Scott Edcal ^{Los Lunas, N.M.}
Leonard J. Chavez	Albert Chavez ^{Rt 6 Box 77 Los Lunas, N.M.}
David Mora	Jane J. Strong ^{Rt 6 Box 78 Los Lunas, N.M.}
Elizabeth G. Peña	Demetrio B. Chavez ^{Road 6 Box Los Lunas, N.M.}
Juan Porco	Julian Silva ^{Rt 6 Box 7 Los Lunas, N.M.}
Don R. Berger	Mr. Ramon Torres ^{Rt. 2, Box 50 Los Lunas, N.M.}
D.C. Goodman	
Richard A. Fernandez ⁸⁶⁵⁵¹⁴⁷	
Paul Bayle ^{Rt 4 Box 847 87031}	
Greg Gray	
James W. Walker	
C. R. Hughes	
Juan Ariza	

Petition to Channel Middle Rio Grande River

We the undersigned strongly support the view held by the Middle Rio Grande Conservancy District, that the Rio Grande river should be channeled from Bernalillo to the end of the conservancy district to the south. This action would provide flood protection while at the same time reduce the devastating effects of a high water table, in the adjacent river valley.

William Dewey Jr.

- Charles ... St Rt 7 Box 119A Belen
- Frank B. Sabalson 633 N. 3rd Belen, N.M.
- Samuel ... Box 17 Box 303.2 122 ... 7006
- Prodesta Velazquez 257 E ... Belen N.M.
- Ted ... Rt 1 Box 301 Belen N.M.
- Floriano ... St R. 4 Box 119 Belen
- Wesley ... RFD Box 184 Belen
- Leon ... R1 Box 183A
- Juan C. ... RFD Box 166F Belen
- Robert ... RFD Box 551
- Robert ... Jaritas
- Charlie ... Gen. Del. Belen N.M.
- Eufemia ... 517 E. Rankin Belen, N.M.
- Alis ... Gen Del Bosque
- Tillio ... St Rt 127 Belen
- Mrs ... 517 E Rankin Belen
- Mr Frank ... RFD Box 324 Belen
- Mr ... 411 N 10th St Belen N.M.
- Paula ... St Rt 7 Box 116 Belen

Plan to Channel Middle Rio Grande River

We the undersigned strongly support the view held by the Middle Rio Grande Conservancy District, that the Rio Grande river should be channeled from Bernalillo to the end of the conservancy district to the south. This action would provide flood protection while at the same time reduce the devastating effects of a high water table in the adjacent river valley.

Richard C. Jogle	Belen, N.M.
Kathleen D. Jogle	" "
Alveta Bacon	Belen, N.M.
Laura Bacon	" "
Orlando Gabaldon	" "
Josie Gabaldon	" "
R. J. Bolen	Belen, N.M.
R. J. Bolen	Belen, N.M.
Spalding Bolen	Belen, N.M.

Petition: The problems and damages attributable of the high water table of the valley will be investigated in greater detail in the Phase I of the General Design Memorandum study should Congress authorize it.