

## **I. INTRODUCTION AND PRELIMINARY COMMENTS SUBMITTED ON BEHALF OF SWOP AND ESTHER AND STEVEN ABEYTA.**

The April 2018 Environment Assessment (“2018 alleged EA”) is, in fact, not a stand-alone Environmental Assessment prepared in accordance with the National Environmental Policy Act (“NEPA”) requirements and the regulations of the Federal Highway Administration (“FHWA”). It is instead the document merely combines the previous 2015 EA for Sunport Extension Project and the proposal (Technical Study (2014) cited in 2018 alleged EA, § 2.1.1, at 5) to make improvements to Woodward Road (“Woodward” or “Woodward corridor”).

Plainly, the Technical Study regarding Woodward was *not* an Environmental Assessment. Rather, it was a Bernalillo County study prepared to support the County’s (“County” or “Lead agency” or “BernCo”) contention that the Woodward improvements qualified as a “categorical exclusion” (“CE”) from the FHWA requirement to conduct an EA on such a project. Significantly, for an examination of the 2018 alleged EA, the FHWA rejected that contention. Mr. Gregory Heitmann, FHWA, letter to Mr. Tom Church, NMDOT (July 21, 2016).

In the letter, the FHWA suggested that one option for BernCo, if it wanted to pursue the project, would be combining the Woodward CE with the Sunport Extension EA as “a single EA.” The County has not, in fact, done this. Rather, BernCo has merely repackaged the two documents without any significant additional study or analysis – and, most notable, without ever replying to the extensive comments the New Mexico Environmental Law Center (“NMELC”) submitted on behalf of SouthWest Organizing

Project (“SWOP”) and San Jose neighborhood residents, Esther and Steven Abeyta. Jonathan Block, Staff Attorney, New Mexico Environmental Law Center, comments conveyed by letter to Peter Hinkley, AECOM (September 21, 2015) (“NMELC Comments”), in Appendix A, attached hereto. The 2015 NMELC Comments included a Human Impact Partners (“HIP”) study and analysis of the proposed project. Significantly, although BernCo/AECOM sent one of the co-authors, Sara Satinsky, an invitation to attend the July 19, 2018 public meeting on the 2018 alleged EA on July 16, 2018 (less than three days until the meeting), BernCo/AECOM has also yet to respond to the HIP comments – a matter addressed in the letter from HIP which is attached at the end of these comments.

The FWHA also required the County to present “a single EA at a public hearing.” Although a public meeting was held on July 19, 2018, the County failed to address any of the comments NMELC and HIP previously submitted, and did not present any new analysis that was done in support of a single EA. In fact, a new, single EA has yet to be prepared. When or if it is prepared; another hearing, which fully examines the issues raised here, should be held—at which the public allowed to question the presenters. Note also, that what BernCo/AECOM styled as a “public hearing” was, in fact, merely a comment opportunity, as BernCo/AECOM did not allow anyone participating to question any of the presenters. BernCo/AECOM had prepared an hour-long presentation. They also apparently lined up a couple of commenters, former BernCo Commissioner, Mr. Art de la Cruz and the man who replaced him, Mr. Steven Quezada, who they knew they could depend upon to follow the County line on development. Mr. Quezada, a former

T.V. actor on the show *Breaking Bad* was true to his acting form. BernCo posted his performance to their website on the project. Curiously, the comments of the members of the public who attended the meeting – the people who provide the money to pay the salaries of the County employees and any money paid to elected officials – were not given any “air time” on the County website. Perhaps the County’s taste in video drama, much like its taste in NEPA process, is strictly grade B.

What BernCo/AECOM hold out a new EA (dated April 2018) does demonstrate a few things. First and foremost, it shows that the proposed project has no real transportation purpose. Second, it demonstrates there is no need for the project. Third, it reveals that, in the absence of a purpose or need, the alternative analysis is meritless (which should have resulted in BernCo/AECOM selecting the “no build” alternative). Fourth, it makes quite clear that even if a purpose and need could be found, the (alleged) EA utterly fails to establish that the preferred alternative is acceptable in light of the known and unknown adverse environmental consequences. For those reasons we will refer to the document as the “2018 alleged EA” throughout these comments.

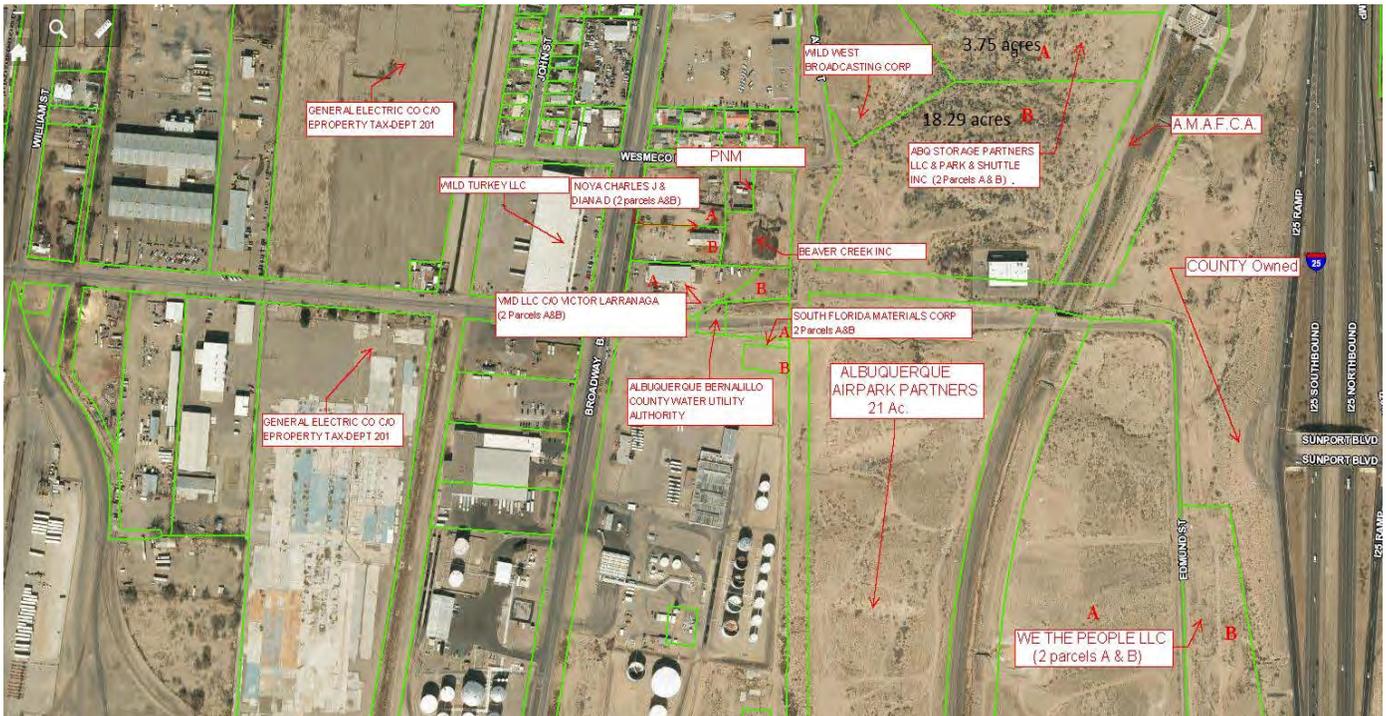
## **II. COMMENTS ON THE 2018 ALLEGED EA.**

### **A. The 2018 Alleged EA Fails To Establish A Purpose Or Need For The Proposed Project.**

“[A]lthough significant environmental impacts are expected by the project, the purpose and need section should justify why the impacts are acceptable based on the projects importance”. FWHAs Guidance “The Importance of Purpose and Need in Environmental Documents” December 18, 1990 - FHWA Environmental Toolkit

(Purpose Guidance Document). The 2018 alleged EA not only fails to demonstrate the importance of the proposed project but struggles to find any cogent reasons for spending 20 Million dollars to “improve road connectivity”. *Id.* at 2.2.1. The proposed project is neither part of a regional or area wide transportation plan that will facilitate future capacity, nor is it a connecting link. Instead, it “dead ends” at 2<sup>nd</sup> street, a street already overburdened and incapable of handling any increased traffic volume. Rather than creating better traffic volumes, it adds traffic to an already dangerous intersection, where there no sidewalks or drainage, marginal shoulders and dangerous curves with poor sight lines in both the North and South direction (as seen in the following photographs).

Rather than promoting new economic centers, the project, as a whole, appears to primarily benefit a Sunport parking lot owner East of I-25 who has three lots on Woodward that could be accessed via a new Sunport exit onto Broadway.



The lots Albuquerque Airport Partners and ABQ Storage Partners, LLC and Park & Shuttle own total 43.04 acres. The owners use the same business address shown below.



In addition to the failure of the 2018 alleged EA to analyze the easily foreseeable consequential environmental impacts of the project being the development of such large parking lots on Woodward, as mentioned *infra*, such massive parking lots would not meet the design standards in the proposed Overlay Plan which the County claims it will adopt to stimulate redevelopment of the area from heavy industrial to light industrial and office uses and will create a large amount of traffic, noise, and air and light pollution.

Simply drawing yellow lines on an aerial photograph (2018 alleged EA at Figure 2.1) does not create a transportation plan. The 2018 alleged EA fails to explain how these “new” traffic patterns will enhance capacity, linkage, address transportation demand, foster employment, and promote beneficial land uses, correct safety issues or correct roadway deficiencies. No evidence is provided that any of these goals-- which are necessary to establish the need for the project-- will be achieved. *See also* NMELC

Comments at 4, § II.A, and at 4-5, § II.A.2. The suggestion that one of the purposes and needs of the project is to improve pedestrian and bicycle facilities and connectivity borders on the absurd. Even if there is a need (cycling or walking to the airport?) this assertion relies on yet-to-be designed and funded pedestrian and bicycle trails along 2<sup>nd</sup> street. However, this is impossible unless and until 2<sup>nd</sup> street undergoes redevelopment. The alleged need to improve emergency access, a very weak need for a \$20 million dollar project, is, nevertheless, unconvincing. Increasing traffic in some places as much as 72% will not enhance emergency vehicle access. 2018 alleged EA at Table 2.1.

The FHWA Purpose Guidance Document cited above states that, “At times it is possible that no alternative meets all aspects of the project purpose and need for the project at acceptable costs and levels of environmental impact relative to the benefits which would be derived from the project.” Here, the proposed project not only fails to establish a purpose and need, but whatever needs that might be addressed by the project are, quite clearly, completely outweighed by adverse environmental impacts that would result.

**B. Because There Is No Demonstrated Purpose Or Need For The Project, The Alternatives Analysis Is Flawed.**

In the absence of establishing a well-defined purpose and need, the evaluation of alternatives becomes an effort to find a solution where there is no problem. The 2018 alleged EA offers no transportation “solutions” but, instead, in creating a new access to the airport, confers benefits on some landowners (for parking lots and truck terminals) while imposing burdens and new hazards on the neighborhood. The FHWA Purpose

Guidance Document states, “without a well-defined, well established and well justified purpose and need, it will be difficult to determine which alternatives are reasonable, prudent, and practicable, and it may be impossible to dismiss the no built alternative.” This is precisely the situation here. The project should be abandoned and the no build alternative selected.

The FHWA NEPA Implementation Guidance (November 5, 1993), “Development of Logical Termini,” highlights the fundamental flaw in the proposed project’s attempt to establish purpose and need. The FHWA Guidance states, “In order to insure meaningful evaluation of alternatives” a proposed project “shall have an independent utility or independent significance, *i.e.*, be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made.” The proposed project fails this test completely. Without future improvements to 2<sup>nd</sup> Street, the project is a \$20 million dollar segment with no destination and no utility. It is no more than a public works project disguised as a highway project. If stimulating new land uses near the airport is the purpose and need that BernCo is seeking to address, project funding should be sought from other State or Federal programs not from the FHWA. *See also*, NMELC Comments at 9-11, § II.F.

**C. The 2018 Alleged EA Fails To Demonstrate That The Project Can Proceed Without An EIS.**

The existing conditions and the construction activities within the proposed project and the adjacent properties disclose the presence or highly likely presence of hazardous substances and petroleum products under conditions that pose a material threat of future

release. Most of named properties along the Woodward corridor should be have been designated as having a Recommended Environmental Condition (“REC”). This is a designation of the condition of a property involved in a proposed project that can only be properly accessed by conducting a full-scale Environmental Impact Study of the project area. Given this fact, a finding of insignificant environmental impact cannot be justified.

The Initial Site Assessment dated March 2017 (ISA) failed to address the concerns raised with regard to the prior 2015 Environmental Assessment (“2015 EA”) and failed to reexamine the three RECs recommended in the 2015 EA. The technical document used as part of the proposed Woodward corridor was prepared in support of a Categorical Exclusion (CE). It is not an EA and fails to meet American Society for Testing Materials International (“ASTM”) standards for a Phase I Environmental Site Assessment. This seriousness of this issue is explained as follows.

- 1. The EA fails to address the previous concerns raised with regard to the 2015 EA analysis of the South Valley Superfund Site, the Schwartzman landfill, the Duke City fueling site and the Chevron property.**

- a. South Valley Superfund Site.**

No firm plans or costs projections are set forth, as was the case in the 2015 EA. Again, the 2018 alleged EA, based upon the 2017 ISA, makes vague assurances that discussions continue about how to design the project “in order to avoid and/or determine mitigation measures required for any impact of the roadway extension”. ISA at 7-4. It is acknowledged that these measures will be significant, including protection and/or abandonment of wells, relocation of wells, and the lining of pipelines. ISA at 7-5.

## **PHOTO of existing well ?**

Again, as in the 2015 EA, there is no explanation of how the costs of mitigation could be calculated in the absence of any of a Preliminary Site Investigation (PSI). This is the kind of issue an EIS would address. Thus, an EIS is required for this project before FHWA can reasonably assess the feasibility of it.

### **b. Duke City Refueling.**

This property has a history of discharges of petroleum and five (5) fuel dispensers are within the Right of Way (“ROW”). No active release was found during the “site reconnaissance.” Clearly, surface examination alone is inadequate to meet ASTM standards. *See* item 2 *infra*. A PSI should be conducted as part of an EIS before and not during construction as the 2018 alleged EA suggests.

### **c. Schwartzman Landfill.**

Apparently, no new information has been acquired since the 2015 ISA. All of the assessment documents on this project to date have admitted that the landfill buffer is not well defined. No plan exists to prevent landfill gas migration. There is no knowledge of the actual range of contents in the landfill and, therefore, what dangers excavation of it may present to workers and the public (particularly the where the excavation would be adjacent to I-25). It remains a REC and only an EIS can determine where the boundary is and if it is possible to conduct construction safely along the proposed ROW.

### **d. Chevron.**

Again designated as a REC in the 2018 alleged EA, the Chevron site is acknowledged as one where there is known contamination of groundwater and it is

adjacent to the proposed route. The ISA recommends that BernCo seek landowner liability protection. This recommendation is a clear signal§ that further testing needs to be done. The ISA suggests “discussions” to determine mitigation measures. ISA at 4.2. No liability protection and no mitigation design can occur in the absence of an EIS.

**2. The 2017 ISA is fatally flawed because it does not meet the requirements of the ASTM Standards Practice for Environmental Assessments.**

ASTM defines a REC as, “the presence or likely presence of any hazardous substances or petroleum products, in, on, or at a property: (1) due to the release to the environment; (2) under conditions indicative of the release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.” ISA at 1-3, § 1.2 The ISA contractor asserts it was hired to identify RECs related to past and current practices, yet fails to recommend RECs for numerous sites within the projected ROW and adjacent properties. The nature of the “recognizance” performed on the preferred alternative was limited to searching regulatory data bases, sporadic telephone calls, mail questionnaires, and “drive-by” inspections. ISA at 4-21. Despite uncovering evidence of prior petroleum releases from leaking underground storage tanks, regulated RCRA sites, and evidence of lead in soils, the ISA does not recommend RECs for properties within the ROW on Woodward and for thirteen (13) sites adjacent to the Woodward ROW.

Along Broadway, within the proposed project, the ISA identified the hazardous waste “benzene” at the Chevron property. However, it determined not to designate it as a REC, as no hazardous waste was “observed.” ISA at 4-9. Similarly with Ever Ready Oil.

As no hazardous waste was “observed” within the ROW, the ISA also does not deem it as a REC, despite the ISA noting Ever Ready Oil’s known history of handling “ignitable hazardous waste, corrosive hazardous wastes, lead and mercury.”

The same failure to designate a REC applies to JTC, Inc. at 248 Woodward (“no observation”) and Contech Construction at 150 Woodward (“not listed on a database indicative of a release”).

Each of these is an example of the complete and utter failure of the 2018 alleged EA to assess the preferred alternative in accordance with ASTM standards. Those standards are quite explicit in not requiring the actual presence or release, but merely a material threat of a future release, as triggering the REC designation. The proposed Sunport/Woodward Road project calls for digging to a depth of twenty (20) feet. The threat of a release at some or all of these properties is evident. Each of the ROW and adjacent properties with any prior history of hazardous chemical and other substances or petroleum should have been designated RECs and, in so doing, should have disqualified the preferred alternative and required that the no built alternative have been selected.

Upon close examination of the ISA, it is difficult to imagine a road segment that could be a worse candidate for the kind of project being proposed here. As a result, given the unknown risks and costs of the project, certainly, even the wisdom of expending the money needed to prepare a very much needed EIS must be questioned.

The EA and its supporting ISA fail to comply with FHWA Guidance that calls for maps clearly delineating the extent of the hazardous waste sites in relation to the alternatives, information on the number and types of sites, and the relative costs of

cleanup and justification for not avoiding the sites. FHWA Checklist for Addressing Hazardous Wastes in EIS at Table 5.4.1. None of these tasks were performed as part of the ISA and would need to be included in an EIS of the preferred alternative.

FHWA issued a guidance document, “Interim Guidance – Hazardous Waste Sites Affecting Highway Project Development (August 1988). (*FHWA Interim Guidance*)”. It requires that an EA adequately investigate for the presence of known or unknown hazardous substances or wastes. *FHWA Interim Guidance* at 11-13. Here the limited investigation through local interviews and cursory drive-by field reviews fails to meet this standard. The “FHWA Supplemental Hazardous Waste Guidance” (January 16, 1997) (*Supplemental Guidance*) calls for the “early” testing of the preferred alternative to confirm and estimate the contamination cleanup. It provides that, “In some cases, the extent of the contamination problem found through limited testing could lead to a reconsideration of the preferred alternative and the selection of another alternative.” *Supplemental Guidance* 2 at 2. In this case, even the flawed ISA discloses the threat of possible contamination, yet there is no recommendation to reconsider the alternative.

The FHWA Supplemental Guidance further provides that, “It is necessary, prudent, and cost effective to provide this lead time by conducting a base of limited testing of the preferred alternative for the final environmental document.” *Supplemental Guidance* 2 at 2-3. The FWHA should not give a tacit approval to the EA by issuing a FONSI in this case (which presumably would be the final environmental document pertaining to the project). Instead, it should either permanently reject the project or direct BernCo to proceed with an EIS that includes such testing. In order facilitate such testing,

the *Supplemental Guidance* urges the lead agency to gain voluntary access to the property. This seems unlikely in this case; especially along the Woodward corridor, given the poor record the ISA recounts in receiving responses from property owners. ISA at 6-2, Table 6.1.

Failure to do testing prior to ROW acquisition subjects the County, as lead agency and then owner of the ROW, to liability for the subsequent clean-up of any contaminated properties that emerge during construction. In this context, it is important to note that it is not uncommon for disturbed waste to emerge *after* construction is completed.

Potential liability in such a situation is the subject matter of FHWA's Interim Guidance ("*Interim Guidance*"). The *Interim Guidance* describes how liability for cleanups under CERCLA might attach in the case of ROW acquisition and how liability could attach to BernCo unless it meets the "due care" standard or can assert the "innocent landowner" defense. Neither is likely to be available with regard to the ROW acquisitions necessary for the proposed project. There is no better illustration than that found in the ISA. ISA at 1-2. There, the contractor advises BernCo to seek landowner liability protection. Even the contractor AECOM/URS wants to distance itself from this inadequate ISA by stating that it, "cannot warrant or guarantee that not finding indicators of hazardous materials means that hazardous materials do not exist on the subject site" ISA at 1-8.

Failures to designate RECs and failure to conduct on-site testing along Sunport and the Woodward corridors invites the possibility of subsequent disclosure or discharge of hazardous materials and the potential liability attaching to BernCo.

FHWA's "Guidance on Limitation of Claims Notice" under 23 USC 139(l) sets forth procedures that allow Federal agencies to assert a 180-day time limit for seeking judicial review of Federal Agency decisions on highway projects, including EA and EIS documents. Question E-11, "SAFETA-LU Environmental Review Process – Final Guidance" (issued jointly by the FHWA and DOT). If BernCo were to avail itself of this much abbreviated statute of limitations, it could escape liability for damage resulting from hazardous waste discharges that occur or are discovered after the expiration of 180 days of the notice.

Proceeding with the preferred alternative under these circumstances could create a new hazardous waste cleanup site with no responsible party. That would, potentially, put the new site at the bottom of a very long list of unfunded Superfund cleanup sites.

Under the circumstances described above, the proposed Sunport Extension/Woodward Road Improvement Project should be abandoned and the no build alternative selected. The reasons for this conclusion follows from the above analysis:

1. The EA fails to establish that the proposed project has a purpose.
2. The EA fails to establish that the proposed project is needed.
3. In the absence of an established purpose or need the selection of the preferred alternative and the alternative analysis is flawed and the no build alternative should be selected.
4. Even if purpose and need can be said to exist the EA fails to establish that the preferred alternative justifies the adverse environmental consequences' that would result.

5. The EA discloses a clear threat of adverse environmental consequences. No FONSI should be issued and an EIS is a necessary requirement for the project.

6. The consequences of proceeding with the preferred alternative without an EIS could trigger new hazardous substances discharges in a setting in which no party or governmental entity would be responsible for the cleanup.

When considering the hazardous waste issue in the Sunport Extension/Woodward Road corridors, BernCo and AECOM would do well to heed these words and be very “interested” in the difficult unknowns in the proposed project:

Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns -- the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones.

Secretary of Defense Donald H. Rumsfeld (February 12, 2002).

### **III. THE MYTH OF DESIGN OVERLAYS AND THE HYPE OVER TRAILS.**

#### **A. Design Overlays and Hike/Bike Trails In An Industrial Wasteland.**

The 2018 alleged EA, and the comments of a few people and the presenters at the July 19, 2018 public meeting, highlight the (alleged) “necessity” of developing Sunport Boulevard, via Woodward Road, down to 2<sup>nd</sup> Street, as well as the lack of viable alternatives to get from Broadway to Sunport Boulevard except up Woodward Road past Edmund Street. Significantly, however, other related planning documents do not support the rationales presented in the 2018 alleged EA and the presenters and a few commenters at the July 19<sup>th</sup> public meeting.

For example, the *Sunport Boulevard Extension Broadway to I-25 Alignment Study: NMDOT Combined Phase A/B Report* (November 2010) (“*Combined Phase A/B Report*”) – which is the basis for the three (alleged) EAs produced so far – makes it quite clear that there is no justification under current planning scenarios for extending Sunport beyond Broadway. See *id.* at 3 (“Study Limits”), and at 4 (“Project Location Map”). This clear statement in the *Combined Phase A/B Report* is probably why the three references to it in the 2018 alleged EA ignore the Study Limits section and imply that the *Combined Phase A/B Report* concerns the extension of Sunport Boulevard down to 2<sup>nd</sup> Street. It is a convenient way to attempt to make it appear as if there were an actual EA of the now combined Sunport Extension/Woodward Improvement Project – when, in fact, there is none (hence our use of the moniker, “2018 alleged EA”).

The 2018 alleged EA also discusses the “San Jose/Mountain View Design Overlay Standards” (“SJ/MV Overlay”). The SJ/MV Overlay is in “process” and is supposed to “work in tandem with existing zoning designations.” 2018 alleged EA at 41. However, the County, while stating that it does not have the SJ/MV Overlay finished, has already produced the 2014 *Sunport Commerce Center Design Overlay*<sup>1</sup> (“*Center Design Overlay*”), which overlaps the area of the proposed Sunport Extension and covers almost the entire area between I-25 and 2<sup>nd</sup> Street and Woodward to Rio Bravo. See *Center Design Overlay* at 2 (map). The actual role of the oft-promised SJ/MV Overlay is questionable, though. The 2018 alleged EA states that current land uses “are permitted

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<sup>1</sup> A PDF copy of the *Sunport Commerce Center Design Overlay* is located at the end of the Appendix to these comments.

by the existing zoning and encouraged in the planning documents for the area.” (Emphasis supplied). See 2018 alleged EA at 46 (item 4.13 in the table).

The 2018 alleged EA tries to give the impression that much of the area is “light industry”. See, e.g. 2018 alleged EA at 41 (“the Southwest Area Plan ... identifies a major light industrial corridor in the Project area”). Most of the entire area between I-25 and 2<sup>nd</sup> Street south of Woodward, however, is M-2 Heavy Industry; the “major” M-1 Light Industry area is north of Woodward and west of I-25 at the Woodward/Edmund intersection area. See *Center Design Overlay* at 34 (map). The SJ/MV Overlay, on the other hand states that it is, “intended to positively influence development patterns and enhance the character of the area.” *Combined Phase A/B Report* at 60. It is difficult to see how the County intends to both encourage existing land use, almost all of which is M-2 Heavy Industry, while “positively” enhancing “the character of the area” already severely scarred by industrial blight: old, ugly unpainted and poorly maintained industrial facilities, heavy truck traffic, noise, industrial chemical and petroleum odors, asphalt processing odors, dust from graveling and concrete rubble and the odors from these activities, and the chemical and fuel emissions from the railroad yard.

The *Center Design Overlay* provides some very useful additional information for evaluating the veracity and utility of the 2018 alleged EA.

The “Commerce Center” area is divided into two parts. One part is east of Broadway and will contain “heavy industry and airport support services”. *Center Design Overlay* at 29. Directly contradicting the promises of the 2018 alleged EA and the supposedly “positive enhancement” the SJ/MV Overlay promises, these businesses, the

*Center Design Overlay* states, “may have a deleterious impact on the overall development of the area.” *Id.* at 42. The other part is west of Broadway and will have a “similar” character (it is zoned in the same manner) but with an emphasis on “light to clean industries.” *Id.* at 29.

The *Center Design Overlay* states that is will, “Promote sustainable development through the recruitment of clean industry as well as the use of best practices in the design of landscape and the built environment.” *Id.* at 1. Apparently, having design overlays will convert an area zoned M-2 Heavy Industry (with the noxious characteristics described above) into an area with M-1 and “clean” characteristics. Alternatively, this implies that the County – despite constant statements to the contrary about not being able to change zoning – can prevent or discourage heavy industry where it is a permitted (and “encouraged”) activity.

The *Center Design Overlay* also states that extending Sunport Boulevard to 2<sup>nd</sup> Street “could attract additional interest for airport-related cargo and other businesses.”<sup>2</sup> *Center Design Overlay* at 27. At the same time, however, it points out that the railroad easement on 2<sup>nd</sup> Street limits access to and from 2<sup>nd</sup> Street for any businesses located east of the tracks. *Id.* at 41. In other words, those businesses (and the new, additional traffic

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<sup>2</sup> This is an interesting statement given that the parcels of undeveloped (and possibly brownfield) land on Woodward Road between Broadway and 2d Street include several owned by Sunport parking facilities east of I-25. This means that BernCo should be well aware – and making the FHWA aware – that the likely uses of the area include very large car parking facilities that will bring unanalyzed amounts of additional traffic (autos, jitneys, and perhaps busses), 24/7 year-round noise and transport pollution, as well as light pollution from all night lighting on high poles or towers for each parking area. This should be a very pleasant overlay on the existing industrial scene that, surely, local residents will enjoy. This is a very likely and unanalyzed set of consequential (adverse environmental) impacts due to the Sunport/Woodward Road improvement project that the 2018 alleged EA conveniently ignores.

they create) would have to look for a way to get out of the area other than using 2<sup>nd</sup> Street.

The *Center Design Overlay* provides a very useful map that ostensibly shows the “Potential gateway signage locations,” yet also shows an entire network of proposed streets in the *Overlay* area. *Id.* at 11. Most of the network of proposed streets is in the southern part of the Sunport Commerce Center near Rio Bravo. This means that BernCo believes that future businesses will move into and out of the area using Rio Bravo. Curiously, one of the East-West streets shows an arrow pointing West when the street reaches the railroad, which it cannot get across. This southern area is also the location of the “Sector Development Mountain View Transit-Oriented Development Zone” (SD/MV-TOD), the purpose of which is, “to provide higher density residential and mixed-use development with retail and employment in a pedestrian-oriented area and with ready access to commuter rail and other transit amenities.” *Center Design Overlay* at 33. Apparently, the County was able to re-zone an area in the South Valley to accommodate this new and very different use.

Most interesting of all, though, is the proposed extension of Stock Drive across the South Diversion Channel to a terminus at Edmund, which is re-routed to angle up to the current Sunport/I-25 terminus. *Sunport Commerce Center Design Overlay* at 11. While not exact, this looks quite similar to a rejected alternative route (Alternative D) for the Sunport Extension, rejected in part because crossing the South Diversion Channel would require a too-steep grade and a too-skewed crossing. Apparently, both these problems

were solved in 2014, with Stock Drive crossing the Channel perpendicularly and Edmund providing access to Sunport Boulevard.

Finally, much of the “positively enhanced” industrial landscape depends on providing sidewalks, bike lanes, and multi-use trails. The bike path down Woodward is touted as connecting the existing Riverside Trail with the Sunport by way of a recently-built extension from the Riverside Trail to 2<sup>nd</sup> Street and Woodward. *Combined Phase A/B Report* at 49; see photos below. However, this extension passes along the southern boundary of a facility for industrial “Port-a-Potties” and, it is fair to say, absolutely reeks with highly offensive odors. On the other side is a company that handles construction rubble. Bordering the trail, it contains on-site rubble piles easily 30’ high which, on windy days, occasionally stream offensive smelling dust. Few people will find this an appealing biking or hiking trail.



**Porta-potties on 2d Street adjacent to the bike trail.**



**Construction material facility on 2d Street near intersection with Woodward Road**



**Aerial view of 2d Street and Woodward Road showing Porta-potties, construction materials site pictured above and the entrance to the riverside trails**

Trails are also proposed along the South Diversion Channel and the San Jose Drain. *Sunport Commerce Center Design Overlay* at 5 (map). The San Jose Drain is especially problematic. In 2009 and 2010, Amigos Bravos, a New Mexico non-profit with the mission of enhancing, protecting and preserving state water quality, conducted water quality monitoring in the San Jose Drain just south of the former GE facility. The monitoring revealed extremely high levels of *E.coli* and Arsenic. The Arsenic apparently originates from a now-defunct facility that treated lumber with creosote and other chemicals. The bottom of the San Jose Drain is a thick, tar-like muck. Neither the Drain nor the Channel is very attractive in itself as a place to walk or ride a bike, nor for the immediate views of industrial sites, sounds, and disagreeable odors.

**B. Design Overlays Instead Of Environmental Justice.**

The Project 2018 alleged EA claims it will improve connectivity from industrial areas along Broadway Boulevard and Second Street to I25 and the Sunport, which may attract additional businesses to the area. As described previously, as well as in the supplemental comments of Steven and Esther Abeyta at the end of these comments, community concerns have been expressed about the potential adverse impacts of additional industrial development. Community residents of San Jose and Mountain View have been told over the course of the Sunport/Woodward project development that potential mitigation measures for these concerns will include existing zoning and land use mechanisms to review and regulate development and the San Jose/Mountain View Design Overlay standards, which have yet to be completed. They are also told that additional businesses in the area may also have positive economic impacts. Yet, these

design overlays cannot control expansions of polluting businesses in the area absent a zoning change and the relocation of the most polluting industries.

The adjacent San Jose and Mountain View neighborhoods have a relatively high proportion of low-income and minority residents and have been subject to the impacts of older industrial uses in the area that have caused pollution. Residents of these neighborhoods are concerned that the Project would attract additional undesirable, polluting, or nuisance businesses to the area. To address these concerns, the County is preparing the San Jose/Mountain View Design Overlay standards, which are intended to positively influence development patterns and enhance the character of the area. Unless and until there are zoning changes that will prohibit further industrial development coupled with the creation of a buffer between the affected communities and the existing industries and cumulative impact pollution controls, design overlays are just lipstick on a pig—much like the lovely bike/hike trails threaded between piles of Porta-potties and giant piles of construction waste.

#### **IV. SUPPLEMENTAL COMMENTS OF STEVEN AND ESTHER ABEYTA**

##### **A. COMMENTS ON THE 2018 ALLEGED EA (“EA”) BY SECTION.**

###### **1.1 Purpose and Need.**

The Sunport Extension road project is not necessary because improvements to I-25 and Rio Bravo Blvd. Improving access for industrial development seems to be the main motive for developing the project. There will be no traffic congestion relief because the project will increase traffic on 2<sup>nd</sup> Street going southbound which is a single lane unimproved congested roadway. Multimodal transportation will be dangerous traversing

the Sunport Extension because riding a bicycle next to a semi-truck at 45 MPH is extremely hazardous and risky. Walking on sidewalks next to semi trucks accelerating their engines to get up the 7% grade is too deafening and may damage pedestrian hearing without ear protection.

### **1.3 Public Involvement throughout the Process.**

Throughout the process the public was against the project because our concerns were never adequately addressed. The concern of traffic increases was only stated as a fact and no improvements to south Broadway Blvd and south 2nd Street were addressed. The GE superfund site remediation wells may be relocated and how this will affect the water remediation was not answered and remains unanswered today. At many meetings we were silenced and not allowed to speak or ask questions; instead we were referred to posters and to use sticky-notes. This is not adequate public involvement.

#### **2.1.1 Development of the Current Project.**

Outdated studies are used to justify the project even though improvements are being made to Rio Bravo Blvd and I-25 that correct traffic issues. Access studies to airport are old. Today access to the Sunport from Southwest Albuquerque is easy because there are 6 access points (1. Rio Bravo then University Blvd to Sunport, 2. Rio Bravo then I-25 to Sunport, 3. Gibson Blvd then I-25 to Sunport, 4. Gibson Blvd to Yale Street, 5. Gibson Blvd to Girard Blvd, 6 Rio Bravo then University Blvd then Randolph Road to Yale Street). Adding a seventh access point will disrupt current routes because of dealing with traffic from Sunport to I-25. There is mention of the proposed South Diversion Channel Multi-Purpose Trail will connect to the Sunport Extension. There is no

explanation how the trail connection will be built. Planners usually choose a logical and less expensive route that handles access from both directions instead of two separate pedestrian bridges from the Sunport Extension to the Multi-Purpose Trail on the South Diversion Channel. Therefore, access to a multimodal trail should not be a consideration to build the Sunport Extension.

## **2.2 Project Purpose and Need.**

The project was conceived in in the late 1980s and may have made sense in that point of time. Today the project is not needed because there are 6 access points to the airport. Routing traffic from I-25 to Woodward Road then 2nd Street will only add more traffic congestion to an already busy intersection of 2nd Street and Rio Bravo Blvd. 2nd Street is a single lane roadway with no sidewalks or drainage system and very narrow shoulder about 8 to 12 inches. 2nd Street is in need of many repairs. South Broadway is aging two lane highway with no sidewalks and storm drainage and is in disrepair. Adding an additional 10,000 vehicles traveling southward on 2nd Street and an additional 20,000 vehicles traveling southward on Broadway Blvd is a disaster in the making. I strongly believe both 2nd Street and Broadway need to be improved prior to any construction of the Sunport Extension. It is stated in the Environmental Assessment to improve access to economic centers and related commercial and industrial development through a more direct roadway link from the Sunport and I-25 to Broadway Boulevard and Second Street. This is the first instance of truth specifying the real reason for the Sunport Extension. The county wants to have the area developed even if it means attracting recycled asphalt

plants, hot mix asphalt plants, petroleum storage facilities, metal shredding facilities, cement batching facilities or any other company that can build in M-2 and SU-2 zoning.

### **3.4 Preferred Alternative**

The EA states that a steep, 7-percent profile grade would be necessary. Heavy-truck traffic would experience a slow climb from Broadway Boulevard to I-25; however, the two eastbound uphill lanes would provide adequate capacity, with the outside lane available for slow-moving vehicles. Then in section 3.4.1.2 Bicycle and Pedestrian Accommodations it states two bike lanes (one in each direction) would be included. I myself am an experienced bike rider and ride my bicycle to work every day. I personally feel it is extremely dangerous to ride a bicycle along the side of a semitruck traveling at speeds of 45 MPH. Whom in good conscious can recommend the Sunport Extension as a safe alternative traveling east of I-25.

### **4.9 Cultural Resources**

The EA states On June 3, 2016, the SHPO concurred that the proposed Woodward Road Improvements would have no adverse effect on any historic property listed, or eligible for listing, on the NRHP. There is a history that is not mentioned in the EA. The route of the Sunport Extension is on a historical site of great significance that tells the sacrifice a community endured for the building of nuclear weapons for the safety of the country. Then our community transitioned in to air craft engine parts. We are a patriotic community that suffered with environmental wastes to serve our country. Many died as a result of the contamination. The location and placement of the many injection and

extraction remediation wells tells the story of San Jose and the price the community paid for our country's freedom. This site should be preserved to tell our story of suffering.

#### **4.10 Air Quality**

The EA states Principal sources of CO in the project study area are vehicular traffic on the street system as well as emissions from industrial sources of the area. Under certain conditions, high traffic volumes result in localized impacts—or “CO hot spots”—which are detrimental to the health of people who are exposed. The San Jose neighborhood will be impacted by an increase in semitruck traffic emitting more air pollution in an area that is dealing with environmental justice issues. In addition to that we will be ground zero for new industrial companies applying for air permits. Regardless of the amount of emissions the air permit will be approved. The Sunport Extension will be the impetus that attracts these industrial companies to the area. For the EA to state there will be reductions in future emissions should be a red flag demonstrating the eagerness to complete the project even if disingenuous statements are purported.

#### **4.11 Noise**

The EA specifies; State and federal policy stipulates that when traffic noise impacts occur, noise abatement must be considered and implemented if found to be feasible and reasonable. As easily predicted San Jose will not receive any noise mitigation. This is another reason the Federal Highway Administration must insist on an environmental impact statement to be completed. The community is supposed to endure additional noise because of the imposition of an unnecessary road project.

#### **4.14 Socioeconomics and Environmental Justice**

The EA states; Executive Order 12898, regarding Environmental Justice, seeks to prevent federal policies and actions from creating disproportionately high or adverse health or environmental impacts to minority or low-income populations. The community is already dealing with a disproportionately high or adverse health or environmental impacts to minority or low-income populations because of legacy air quality issues, environmental racism. The San Jose and Mountain View neighborhoods is where the city and county locate most of the polluting industries. We have high levels of PM 10, PM 2.5, Volatile Organic Compounds. The San Jose neighborhood has 12 railroad tracks with Petro-chemical tankers queued by the hundreds. We have an asphalt plant, major petroleum storage facilities, cement manufacturing, marble cutting, construction material disposal, metal shredding, several hazardous chemical storage facilities, and three superfund sites. So, San Jose is not your typical neighborhood because of these visible disparate impacts evidenced by ground, air, and water pollution that are constants in our daily lives due to heavy truck traffic and railroad shipments idling then loading onto truck, industrial and traffic noise, dust, and chemical odors which cause burning in the eyes, nose and chest. The Sunport Extension will worsen these disparate impacts that already burden our community.

#### **4.20 Hazardous Materials**

Please see the attached document in Appendix A, “Air Force Plant 83” that chronologically details the history of that site. It is a recognized environmental concern (REC) and there may be new hazardous waste yet to be unearthed. The Schwartzman

Landfill is a construction hazard due to potential methane gas releases during excavation. There were no laboratory tests of soil borings of the hazardous waste areas in the Sunport Extension and Woodward Road corridors performed as part of the Environmental Assessment. The EA only mentions visual site reconnaissance and internet research. This is insufficient and required an EIS be performed covering the entire project.

#### **4.22 Indirect Effects**

The indirect effects will be long lasting and irreversible causing irrevocable harm. How many more people need to get sick in the communities of San Jose and Mountain View? Our own county will not stop the scourge. Our Environmental Health Department has done nothing to protect the community by denying new air permits. The Environmental Health Department tells us they must approve all air permits and cannot deny permits if emissions are within statutory limits. The project will only increase the air pollution that has damaged so many people in our communities.

*The EA states that the conclusion of this analysis is that the Project could induce growth in the surrounding area. The extent of positive economic effects or negative community impacts depends on the degree to which the County engages in proactive planning and land development controls.* The community has engaged public officials as evidenced with documents quoted in the Environmental Assessment. We (the community) have engaged in countless battles opposing new polluting companies from locating in the area however to no avail. In 2017 we attempted to get protections through the City of Albuquerque's new comprehensive plan and integrated development ordinances through meetings and documents and were not successful. The land is zoned

M-2 and SU-2 the most permissive zoning codes in the county. The community was told by an official from GE if we wish to change the zoning we need to purchase the land and request a zone change with the proper officials. Past performance is a good indicator of future results; we have a legacy of great magnitudes of pollution as evidenced by 2 superfund sites in our neighborhood. The future looks bleak if the Sunport Extension is built.

My message is for the New Mexico Department of Transportation and Federal Highway Administration: our local county government will not help us stop the project or reduce adverse land uses. The onus of protecting the communities of San Jose and Mountain View is in your hands, and either you will help us or marginalize us like our local county government officials are doing now. Now, Albuquerque Mayor Tim Keller is opposing this project and has written to the FHWA and project proponents stating that opposition.

#### **4.23 Cumulative Impacts**

In New Mexico Administrative Code at “Title 20, Environmental Protection, Chapter 11 Albuquerque - Bernalillo County Air Quality Control Board” there is no mention of cumulative impacts. Yet, in San Jose and Mountain View, we suffer from the cumulative impacts I described in section 4.14 above. These state regulations implement the laws that are supposed to protect us. San Jose and Mountain View are not your typical neighborhoods because we are saturated with many industrial companies and we are subjected to a multitude of emission sources. Depending on the wind direction and smelling the air residents can identify the source of emissions. We know the difference

between chlorobenzene, sulfur, train emissions, diesel truck emissions, gas engine emissions, steel shredding, smell of a hot mix asphalt, refineries, sewage treatment facility, sawdust, production of fertilizing mulch, airport emissions, and much more. We know everything about cumulative impacts because we live in our neighborhoods. We have presented the concept of cumulative impacts to the Environmental Health Department and to Albuquerque - Bernalillo County Air Quality Control Board as of today's date we have not received any protections that address cumulative impacts and the Sunport Extension will not address our concerns on cumulative impacts it will do like the other departments and deny cumulative impacts exist in our neighborhood of San Jose and Mountain View. It is sad to report according to the adjudicatory guidelines; in order for us to present evidence of cumulative impacts to the Albuquerque - Bernalillo County Air Quality Control Board we need to hire a toxicologist, health scientist, and an attorney.

We need an environmental impact statement completed to address cumulative impacts of the proposed project in this case – one that includes all of the current the emission sources and future sources; not just vehicle emissions from the project because the EA has already mentioned indirect effects.

## **5.0 Public Involvement Process**

We have had several meetings on the Sunport Extension over the years at some public advertised meetings we were silenced and not allowed to speak publicly or ask questions to the presenters. We were told we have to go to easels and write our concerns on post-it sticky notes. In fact at the latest public advertised meeting on July 19, 2018 we

were able to present our ideas verbally, however we were not allowed to ask any questions to the presenters. The Environmental Assessment talks about public engagement then we are engaged with reality and stifled from asking questions because the presenters may say the truth and jeopardize the project, this is a classic Bernalillo County tactic. These are our notes of the meetings and some of our comments:

**5.1 Public Involvement Meeting Dates: Esther's notes on the months and year BernCo states in the 2018 alleged EA.**

**June 3, 2010** – Public Meeting held at Bernalillo County Public Works  
The 3 Signup sheets from the 2011 EA showed most of the people where business, industry and San Jose and Mountain View's city and county assistant representatives, and other government agency representatives.

**October 18, 2011** – Public Hearing held at East San Jose Elementary School 39 members of the public attended. This is the meeting I heard of the road project a day before the meeting from Angela West of Mountain View. The meeting was documented by a stenographer. At the end of the meeting I requested a hard copy of the 2011 EA from URS. Submitted via email written comments.

**Because of the public comments submitted at the public hearing BernCo had the following meetings:**

**January 26, 2012** – meeting held at Bernalillo County Public Works with San Jose and Mountain View Neighborhood Associations. The meeting was set up by Commissioner De La Cruz's Assistant Dolores Herrera. We were shown a calendar with designs and was told we could pick the design on the side of the Sunport extension wall. The meeting

was also to discuss the location of the February meeting. BernCo told us they will notify the community of San Jose via mail in English and Spanish.

**February 9, 2012** a meeting was held at Herman Sanchez Community Center. In response to comments received from the October 18, 2011 Public Hearing. 51 members of the public attended. Public was allowed to make comments out loud.

**Various dates – Small Group/Neighborhood Association Meetings.** We have no idea what this refers to and could not find out who was in these small groups or where the meeting were held.

**August 2013** – San Jose & Mountain View Neighborhood Association Meetings.

**September 18, 2013 Public Involvement Meeting** was held at East San Jose School to provide project related information and a status update on the revised EA document. According to EA 85 members of the public attended. The public was given a PowerPoint presentation, then was told "there would be no questions or comments out loud, questions or comments would be addressed at the stations on a post it note or on an easel pad.

**April 2015 South Valley Transportation Public Meeting.** Meeting was hosted by Mid-Region Council of Governments to share information about the many transportation projects planned for the South Valley.<sup>3</sup> Yet another public meeting where the public was told, “there would be no questions out loud, questions would be addressed at the stations.” One station for the Sunport Extension/Woodward and the other for 2nd St road

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<sup>3</sup> Below is a link to Mid-Region MPO that will be explained at the meeting:  
<http://www.mrcog-nm.gov/latest-news/1242-meeting-to-focus-on-south-valley-transportation-improvements>

projects in and around the development of Valle de Oro. The public could not ask questions out loud but Thaddues Lucero asked for everyone in the room to introduce themselves. BernCo, ABQ Transit, and NMDOT gave PowerPoint presentation on the road projects. The majority of the road projects talked about where in the Unincorporated Bernalillo County with the exemption of Woodward in the city. It was mentioned each road project will have its own meeting at a later date. The Woodward Road project is a separate project from the Sunport and Woodward would have to be built first.

**August 5, 2015 – Public Hearing** on the release of the revised July 2015 EA. The Public Hearing was held at Mountain View Community Center.

**Not mentioned in the 2018 EA - Woodward Road Improvements November 18, 2015.** Public Meeting regarding Woodward Road Improvements was held on November 18, 2015 at Herman Sanchez Community Center. The purpose of the meeting was to discuss proposed improvements to Woodward Rd between 2<sup>nd</sup> St. and Broadway. BernCo was going to share information on:

- Project background and development process
- Roadway widening and improvements alternatives
- Results of coordination with BNSF Railway regarding crossing and transfer operations.

This was a meeting where the public was allowed to speak.

**Steven and Esther's comments at the Woodward Road, November 15, 2015 meeting:**

1. When we spoke about undocumented hazardous wastes we were referred to the appendix on the Sunport Extension Environmental Assessment that deals with recognized environmental concerns. We indicated we were specifically speaking about the undocumented hazardous waste and not documented hazardous waste from all the companies from American Car Foundry all the way to GE. The County feels there is no need for any additional assessments of environmental waste.

2. We asked about the project segmentation and was told that Woodward has a categorical exclusion, yet we are being referred to the Sunport EA. The County stated that going forward all projects with the NM Federal Highway Administration will utilize Categorical Exclusions.

3. We spoke about how quiet railroad crossing was unobtainable because of safety for the remote operators who are on the ground and signaling has to be used. The County stated they are planning to meet with BNSF officials. We do not feel it is right for BernCo and URS/AECON to make locked door decision with BNSF of other entities without including the community of San Jose. The other concern I have with BernCo and URS/AECON meeting with BNSF – BernCo is going to negotiate some sort of railroad queueing scheme with Gandy Dancer and BNSF. A scheme where the community of San Jose is selected for all the queueing of railroad cargo and this will increase railroad activity at night in the neighborhoods of San Jose vs the community of Mountain View.

4. We asked about being locked out from turning north on William when traveling east on Woodward and we were told that traffic channelization will not be utilized.

BernCo stated on May 16, 2013 at a meeting that the quiet railroad crossing design may affect the ability (of the residents in the San Jose Community) to turn from William St onto Woodward St. that indicates quiet crossing does not allow left turns.

5. We asked about being able to turn east on Woodward from William St and we were told about the use middle traffic lanes on Woodward. This is a questionable response because of railroad quiet crossing guidelines and the statement BernCo made in 2013.

6. We spoke about traffic being backed up at Woodward when utilizing the intermodal facility and we were told that “timed deliveries” will continue as usual and non-essential deliveries will be done at night. This is another example of BernCo negotiating on behalf of the project and not finding a solution to improve the conditions the community is dealing with. The noise (train honking) is already burdensome at night and additional non-essential deliveries will only exasperate the noise. Noise levels that will affect the residents of San Jose from sleeping.

7. The County spoke about a double turning lane from 2<sup>nd</sup> street thus giving us the impression there is going to be more traffic than what is projected. We feel we are being misled.

8. Councilor Benton stated that there should be road, bike lane, landscaping, and then sidewalks in complete streets model. The County stated the project will have road, bike lane, sidewalk, then landscaping Councilor Benton stated the landscaping is a barrier from traffic.

## **6.0 Final Observation.**

There are many inconsistencies in the Environmental Assessment and some of the impacts are mentioned however the impacts mentioned always come to the same conclusion that there are no impacts. We the residents living in San Jose and Mountain View neighborhoods are opposed to the project because it will significantly impact our neighborhoods. We are told traffic will be reduced traveling north on Broadway Blvd and 2nd Street and increase on southbound traffic. Our traffic issues have always been related to southbound traffic and the project that is supposed to bring traffic relief will only increase traffic. We are in the process of road improvements on Rio Bravo Blvd to I-25 that is addressing the traffic issues of gaining access to I-25. The project is not needed and should be tabled.

There should not be a finding of “no significant impact” because the project will have a significant impact two environmental justice neighborhoods for many lifetimes. Instead, the FHWA should entirely reject this project. If FHWA will not do that, it should require an Environmental Impact Study (EIS) for the reasons above.

## **V. CONCLUSION.**

The Letter from HIP that follows these Comments and the documents contained in the Appendix are hereby incorporated by reference.

# APPENDIX

## A

### CONTENTS:

1. 2018 Comment Letter from HIP
2. Comments submitted in 2015 which include HIP comments.
3. Comment letter on Woodward Project
4. FHWA Letter to NMDOT rejection 2015 EA
5. Report on Air Force Plant 83

July 26, 2018

Mr. Peter Hinckley, AECOM  
6501 Americas Parkway NE, #900  
Albuquerque, NM 87110  
By email to: [peter.hinckley@aecom.com](mailto:peter.hinckley@aecom.com)

**Subject:** Comments on Sunport Boulevard Extension and Woodward Road Improvements  
Environmental Assessment

Dear Mr. Hinckley:

Human Impact Partners submits the following comment on the April 2018 Environmental Assessment about the Sunport Boulevard Extension and Woodward Road Improvements. As this letter will accompany comments that New Mexico Environmental Law Center (“NMELC”) will submit on behalf of SouthWest Organizing Project (“SWOP”) and Esther and Steven Abeyta, we have forwarded it to Attorney Jonathan Block to file with the NMELC comments.

### **Background and Qualifications**

Human Impact Partners is a recognized national leader in the field of Health Impact Assessment (HIA), a process used to assess possible impacts of a Sunport Boulevard Extension project, as described in earlier iterations. We co-founded and have led the Society of Practitioners of Health Impact Assessment and have co-authored widely cited guidance for the field, including: *Minimum Elements and Practice Standards for Health Impact Assessment*,<sup>1</sup> *Guidance and Best Practices for Stakeholder Participation in Health Impact Assessments*,<sup>2</sup> and *Promoting Equity through the Practice of Health Impact Assessment*.<sup>3</sup>

Human Impact Partners provides tools that empower communities to transform the places people live and play to support healthy living by increasing community awareness of social and environmental factors that diminish or impair health, and identifying policies and practices that are available to enhance and promote health in decision making. We have conducted public health research projects, including HIA and Health in All Policies projects, on the local, state and federal levels – with experience supporting communities across the country from Hawaii to Maine. Findings from our research and our recommendations have been applied by decision makers to

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<sup>1</sup> Bhatia R, Farhang L, Heller J, Lee M, Orenstein M, Richardson M and Wernham A. (2014). *Minimum Elements and Practice Standards for Health Impact Assessment, Version 3*. Retrieved from: <https://hiasociety.org/resources/Documents/HIA-Practice-Standards-September-2014.pdf>

<sup>2</sup> Stakeholder Participation Working Group of the 2010 HIA in the Americas Workshop. (2011). *Best Practices for Stakeholder Participation in Health Impact Assessment. Oakland, CA, October 2011*. Retrieved from: <https://hiasociety.org/resources/Documents/guide-for-stakeholder-participation.pdf>

<sup>3</sup> Heller J, Malekafzali S, Todman LC, and Wier M. (2013). *Promoting Equity through the Practice of Health Impact Assessment*. Retrieved from: <https://hiasociety.org/resources/Documents/HIA-Promoting-Equity.pdf>

integrate health benefits into policymaking, planning, and project design and implementation. To date, HIP has conducted over 50 HIA projects in many domains, including transportation and land use. We have also provided training and technical assistance to government agencies and non-governmental organizations in over 30 states as they conduct their first HIAs. HIP has successfully assisted these partners as they apply the HIA process to identify potential health benefits, and develop policies to improve health and reduce health inequities.

### **Previous Comment on Revised Environment Assessment for Proposed Sunport Boulevard Extension**

Human Impact Partners prepared a comment letter and report that were submitted as part of public comment in September 2015 about a Revised Environmental Assessment (REA) for the proposed Sunport Boulevard Extension. The letter and report highlighted significant issues that were not adequately addressed in the County's Environmental Assessment document for the proposed extension.

Human Impact Partners conducted the HIA with residents of the San Jose neighborhood, local advocacy organizations, and the New Mexico Department of Health, from June to November 2013. The draft HIA analyzed Bernalillo County's first publicly available Environmental Assessment for the Sunport Boulevard extension project, which was released in September 2011, in anticipation of an expected public comment period. However, the comment period was postponed, and nearly two years later in July 2015, the county released an REA. After a review of the REA, the HIA report was finalized in September 2015. Although updated data for measures gathered in 2013 for the HIA may be available, the data presented in the HIA remains valid and supports the findings described in this summary.

To date, we have not received specific responses to the significant issues raised in that comment letter and report. Significant issues identified at the time are summarized in a table from our original comment letter and report, which is provided here on the following page:

<b>Summary Table: Significant Issues with the Revised Environmental Assessment (REA) dated July 2015</b>	
<b>Traffic congestion</b>	<ul style="list-style-type: none"> <li>- Evidence does not support or is insufficient to support the stated purpose and need for the extension to relieve congestion</li> <li>- Data generally demonstrates traffic volumes have stayed the same or decreased in recent years</li> <li>- The REA recommends building the extension even though data it provides suggests benefits if the extension is not built compared to if Alternative A is built. These benefits include: 1) greater reduction in vehicles for roadways predicted to have poor Level of Service in 2035 and 2) less traffic in 2035 for a segment of 2<sup>nd</sup> Street south of Woodward Rd – an important segment where increased volumes could contribute to new congestion, which the REA does not discuss</li> <li>- Data is inconsistent or absent; for example: 1) using different roadway segments in tables that model 2035 data for the No Build Alternative and Alternative A and 2) providing projected 2018 traffic volumes only for Alternative A, but not other alternatives</li> <li>- Fails to provide substantive data on how improved access to economic centers will further contribute to vehicle traffic</li> </ul>
<b>Air quality</b>	<ul style="list-style-type: none"> <li>- Fails to provide data on the amount or type of emissions permitted for sources in the neighborhood today, where a Health Impact Assessment found residents who make up less than one percent of the city's population bear much greater shares – from six to 11% – of permitted levels for seven pollutants that affect health</li> <li>- Fails to provide monitoring or modeling data on pollutants associated with vehicle traffic, such as particulate matter, ozone, and nitrogen dioxide</li> <li>- Fails to predict future emissions for areas impacted by the project, including future industrial air emissions</li> </ul>
<b>Cumulative impacts</b>	<ul style="list-style-type: none"> <li>- Fails to consider cumulative impacts as defined in the spirit of the EPA definition for the NEPA process</li> <li>- Fails to describe cumulative impacts to each subject area in the REA or the additive effect from combining these individual cumulative impacts</li> <li>- Fails to consider negative cumulative impacts from Alternative A or positive cumulative impacts from other alternatives</li> <li>- States that a Design Overlay Plan will mitigate negative impacts of the extension. However, the Plan is proposed – not adopted – and has not been made available to the public prior to the comment period for the REA</li> </ul>
<b>Multi-Modal Access</b>	<ul style="list-style-type: none"> <li>- Fails to consider negative impacts of Alternative A on multi-modal accessibility from increased vehicle traffic</li> <li>- Does not achieve a stated aim of the project to improve pedestrian and bicycle connectivity by not including sidewalks for the entire length of the extension</li> </ul>
<b>Transparency of Data</b>	<ul style="list-style-type: none"> <li>- Does not provide important data, including: <ul style="list-style-type: none"> <li>o Impacts to congestion from increased traffic on 2<sup>nd</sup> Street after the preferred alternative is implemented</li> <li>o Parallel data to compare traffic on Alternative A and other alternatives in 2018</li> <li>o Data to compare 2035 traffic projections for the same roadway segments under Alternative A and No Build</li> <li>o Air quality monitoring – with the exception of carbon monoxide – or modeling</li> <li>o Data to compare cumulative impacts between Alternative A and other alternatives</li> <li>o Data to compare impacts in multi-modal access for the alternatives</li> <li>o Impacts of the extension to the health and well-being of neighbors living adjacent to the extension, including those it mentions are in six single-family homes located 550 feet north of Alternative A</li> </ul> </li> </ul>
<b>Alternative Routes Considered</b>	<ul style="list-style-type: none"> <li>- Insufficiently demonstrates that Alternative A should be the preferred option (<i>see issues in this table</i>)</li> <li>- Fails to provide transparent justification for eliminating the TSM/TDM Alternative</li> </ul>

## **Comment on April 2018 Environmental Assessment about proposed Sunport Boulevard Extension and Woodward Road Improvements**

Human Impact Partners has reviewed the most recent Environmental Assessment, about the proposed Sunport Boulevard Extension and Woodward Road Improvements, dated April 2018, and finds that the issues we raised in the original comments (as summarized in the table on the previous page) have been inadequately or incompletely addressed.

We continue to urge for the recommendations described in our original comment and report, which were developed by Health Impact Assessment participants, including community members. In particular, we urge for more fully assessing the environmental impacts of the proposed extension on environmental and human health, including reasonable alternatives (including a No Action alternative) that would avoid or minimize adverse impacts or enhance the quality of the human environment.

Should you have any questions, please contact Lili Farhang at 510-452-9442, x101.

Sincerely,

A handwritten signature in cursive script that reads "Lili Farhang".

Lili Farhang, MPH  
Co-Director  
Human Impact Partners



September 21, 2015

Mr. Peter Hinckley, URS/AECOM,  
6501 Americas Parkway NE, #900  
Albuquerque, NM 87110  
By email to: [peter.hinckley@aecom.com](mailto:peter.hinckley@aecom.com)

RE: Critical Comments of SouthWest Organizing Project [SWOP] and Esther and Steven Abeyta on the Bernalillo County-URS/AECOM ["BernCo/URS"] Sunport Extension Project Revised Environmental Assessment ["REA"]

Dear Mr. Hinckley:

New Mexico Environmental Law Center (Jon Block, Staff Attorney) hereby submits the following critical comments on the Sunport Extension project REA on behalf of the SouthWest Organizing Project ["SWOP"] and two representative members of the organization, Esther and Steven Abeyta, who are residents of the San Jose community--a community adjacent to the project that would receive potential project impacts.

SWOP was founded in 1980 by young activists of color to empower communities in the Southwest to achieve racial and gender equality and social and economic justice. SWOP is a multi-racial, membership organization with a Board of Directors elected directly from its membership. SWOP seeks to redefine power relationships by bringing together the collective action, talents, and resources of people within the communities with which it works. These are, primarily, low-income communities of color. SWOP helps these communities take control of their land and resources based upon the notion that all families have the right to healthy, sustainable environments in which to live, work, and play.

Esther Abeyta is former President of the San Jose Neighborhood Association. She and her husband Steven, who are members of SWOP, have been concerned with environmental issues in their community for a number of years. Most recently, they have been working to address issues surrounding the impacts of the Sunport Project on the San Jose community, and cumulative impacts on San Jose from industrial and transportation air pollution.

## I. SUMMARY OF OBJECTIONS TO THE REA.

The Bernalillo County/URS [“BernCo/URS]” (Revised) Environmental Assessment dated June 2015 [“REA”] fails to adequately assess and address mitigation of the impacts of the proposed extension of Sunport Boulevard (the “proposed project”) on the residents of the San Jose neighborhood and residents of adjacent areas of the Albuquerque’s south valley between I-25 and the Rio Grande River (the “project study area” or “project area”) in the following significant ways (which are supplemented by additional critical comments after this preliminary section and in the Health Impact Assessment [“HIA”] attached hereto as Exhibit 1 ):

**1. The REA fails to adequately demonstrate the need for the proposed project and fails to justify having only Alternative ‘A’ or “No build.”** The REA does not support the need for transportation system connectivity, access, congestion relief, improved access to yet to be defined economic centers, or create (within the proposed project) improved pedestrian and bicycle connectivity. There was no true group of alternatives presented to the public in the Environmental Assessment [EA] Process. Alternative ‘A’ was pre-selected as the sole possible alternative. This choice was made without providing any meaningful cost-benefit analysis to support it. Moreover, the 2015 Revised EA eliminates all of the alternatives presented in the 2010 EA except ‘A’-- leaving the sole alternatives as “build” (using alternative A) or “no build.” *See generally and compare* the 2010 EA *and* the 2015 Revised EA.

**2. The REA fails to assess, evaluate and mitigate the cumulative impacts of the project.** The “codependent” project to improve Woodward Road (“Woodward”) is not included or evaluated by the REA. In addition, numerous other related projects are mentioned in relation to the Sunport Extension project, yet there is no cumulative impact analysis of these projects. Furthermore, the assessment of the impacts of the proposed project on the project study area is also flawed and incomplete. An Environmental Impact Statement (“EIS”) assessing the cumulative impact of all of these projects—including, but not limited to, enhanced noise, traffic, air quality studies--are necessary to determine whether these projects will significantly affect the human and natural environment, and, if so, what mitigation measures are necessary.

**3. The REA fails to assess the impact of the proposed project on the foreseeable redevelopment of the project study area for industrial use.** No State or local regulations are in place to guide such foreseeable development. The REA does not address the consequences of the unplanned and unregulated industrial development of the project study area. The mitigation of the proposed project’s impact on the project study area cannot be evaluated until substantive land use plans and regulations are developed and adopted. An EIS is needed to evaluate the impacts of the yet-to-be-developed plans and regulations. The air quality analysis in the REA only covers

Carbon Monoxide [“CO”] despite complaints from the San Jose community concerning increased diesel emissions from semi trucks, large semi-trailer rigs, tank trucks and heavy equipment trucks. The community has voiced concern about additional chemicals in the already polluted air that will also follow the increase in heavy industrial facilities in the now vacant brownfield areas near San Jose. This is overlooked by the County in its pollution projections. There is no cumulative impact analysis of this likely scenario--and segmenting out Woodward only allows these real impacts to be disregarded in the REA.

4. **The REA fails to address the feasibility, costs and consequences of the proposed project, which has impacts upon two active Superfund remediation sites and at least one historic closed landfill.** Without a defined plan for the required relocation of remediation facilities, and an incursion into an inactive, pre-Resource Conservation and Recovery Act [“RCRA”], i.e., unregulated landfill, it is impossible to gauge the extent of potential impacts the alignment of the proposed project may have on the project study area and, significantly, upon the ongoing required remediation and landfill control efforts. Of particular concern is a potential methane explosion during construction. This poses a substantial occupational and public health and safety risk.

5. **The REA fails to adequately address the impacts upon the environmental justice communities adjacent to the project area.** The REA fails to consider the potential adverse project impacts on the public health and safety of persons residing in the San Jose community. These potential adverse health impacts on an already pollution-burdened environmental justice community are extensively addressed in the attached HIA, the comments, criticisms and recommended findings of which are incorporated by reference (along with the entire study) in these critical comments. *See generally*, HIA, Exhibit 1, attached hereto.

6. **In the course of the REA process, BernCo/URS failed to consider and adapt to the special needs of the residents and families comprising the environmental justice communities around the project study area, denying these communities meaningful public participation in the National Environmental Policy Act [“NEPA”] process for this project.** When dealing with environmental justice communities, particularly communities in which there are English language communication difficulties for many of the residents, additional steps need to be taken to assure that the greatest number of interested persons is able to participate in the NEPA process. BernCo/URS failed to provide adequate notice and an opportunity for public hearing, in part by failing to adequately address the language communication issues, failing to provide Spanish language translations of the REA and relevant documents for the predominantly Spanish-speaking communities, and failing to hold public meetings and hearings at times and locations suited to the needs to working

families. This failure existed throughout the process and should be the basis for the Federal Highway Administration [“FHWA”] directing BernCo/URS to conduct a full-scale EIS on the projects at issue that is designed to be inclusive, given the special needs of the potentially more affected communities.

## **II. DEFFICIENCIES IN THE REA.**

### **A. Project Purpose and Need Are Lacking In The REA.**

#### **1. REA provides no evidence of the need to “fill a gap” – a regional transportation plan is needed.**

The REA claims that the project is needed to connect the Sunport to north/south access on Broadway and 2<sup>nd</sup> and that a “gap” now exists. REA at 7. Yet, such a connector now exists just one mile North of the proposed project. *Id.* at 8. But the proposed “gap” that is allegedly being filled stops before the yet-to-be-approved-and-evaluated improvements to Woodard Road. It then proposes that this new traffic route proceed on minor state highways--Broadway and 2<sup>nd</sup>--with no plan for improvements on Broadway and 2<sup>nd</sup> that would bring traffic from I-40 West, thereby creating a real connector which avoids the I-40/I-25 interchange.

Rather than “filling a gap”, the proposed project is, plainly, one small piece of a yet-to-be-developed regional transportation plan. Hence, it is premature and not needed now. Moreover, in the context of a “piece” along with the others described in the REA cumulative impacts section, there is a clear indication that the Sunport Extension project is but a segment of a much larger group of projects with unevaluated individual and cumulative impacts.<sup>1</sup> See generally section G below. Without planning and the assessment of the impacts of an enhanced connection, there is no basis to contend that the proposed project is needed at this time, and it does not fulfill its stated purpose.

#### **2. REA provides no evidence of the need for “improved access”.**

The stated purpose of the improved access has not been documented. REA at 8. No traffic studies were done to show how congestion might be relieved. No studies were done on whether the proposed project improves access when it proceeds along minor highways and neighborhood streets. The REA claims the traffic study “illustrates certain failing conditions “(LOF- F). REA at 10. In fact, the table shows LOF-

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<sup>1</sup> NMDOT and FHWA must realize that the proposed short section of highway from I-25 down Woodward Road--which terminates at the Rio Grande--is intended to be “improved” by a bridge across the river? Given the on-going and scheduled highway improvements for the west side of the river—and the proposed, enormous Santolina development—a bridge would provide a more direct route for delivering road-building materials made in the South Valley (cement, asphalt, etc.) to the projects on the western side of the river.

F on only three (3) of sixteen (16) routes studied. The need to relieve congestion as a purpose of the project has not been established.

There is no evidence provided in the REA to support the purpose of the project delineated therein for “long range connectivity,” “completing a link” or to “balance traffic” within the South Valley—or that such purposes will ever be achieved. REA at 10. No study has established that access to “economic centers” will be improved. In fact, no such “economic centers” have even been identified, nor is the impact on the project study area of “enhanced access” been addressed. *See generally* sections E and F below.

**3. The REA provides no evidence to support “secondary needs”.**

The REA provides no data to support the alleged “secondary” needs for “improved bicycle and pedestrian facilities” and “connectivity” and “emergency access.”. REA at 11-12. The REA contains no evaluation of how such alleged improvements will connect to anything outside the proposed project area. The claimed connectivity can only be realized, if at all, with the construction of the Woodward improvements. Ironically, there are not within the scope of the REA. As no firm assurances exist that the “improvements” will be made, these secondary purposes are not needed at this time, nor will the project meet those stated purposes.

**B. “No Build” Alternative Inadequately Addressed -- REA §3.2 – at 24.**

Since the REA has not established that the needs and purposes of the proposed project will be met, the “No Build” alternative should be adopted. Significantly, the “No Build” alternative, which BernCo/URS offer to the public, contains no analysis of potential positive impacts of not undertaking the project. It comes across to REA readers—as was stated in the Public Hearing in Mountain View on August—as a veiled threat to the affected community: if you do not accept this project your roads will never be upgraded, you will get no curbs or sidewalks, your flooding and drainage issues will not be addressed, you will get no bike lanes, etc. Given the fact that this project, as noted below and in the attached HIA, will result in an increase of noise, traffic and pollution, it is a major defect that the REA lacks any analysis of positive impacts of “No Build” and poses that alternative in solely negative terms. In short, the REA provides no meaningful analysis or even fair representation of the impacts of “No Build.”

**C. No Evidence In The REA Supports The “Preferred Alternative—  
It Is Just A Very Expensive Road To Nowhere -- REA §3.3 – at 24-25.**

After eliminating the other alternatives, the preferred alternative (Alternative A) is a costly one, requiring a grade of 7% (the “maximum” allowable) with twin bridges over the existing AMAFCA South Diversion Channel, twin bridges over Edmunds Street, and a storm drainage system. REA at 25. It also requires land acquisition from

two active Superfund remediation sites and an historic landfill, the relocation of remediation wells and the construction of a “codependent” improvement project on Woodward that is not analyzed in the REA.

The REA states that the Woodward improvements “are **likely** to consist of four travel lanes, along with pedestrian and bicycle facilities.’ REA at 29 (emphasis added). No firm plans are in place, nor has the Woodward project been officially agreed to or funded by BernCo. Moreover, the original 1991 EA, an extremely detailed engineering analysis of the alternatives, chose Alternatives D or H--a choice to which the BernCo raised no objection at the time. The engineered projections for the roads, grades and costs of those choices are compared with other alternatives in the 1991 EA--yet BernCo/URS chose not use this comprehensive study as a starting point for the REA. Instead, it raises issues with these alternative as if they were never viable—despite the direct evidence to the contrary contained in the 1991 EA. *Compare* Molzen-Corbin & Associates, *Sunport Transportation Corridor Study - Broadway Boulevard To Albuquerque International Airport - Environmental Assessment* [“1991 EA”] (July 1991) at 3-4 to 3-8; engineering plats Exhibits 1.3, 1.4. 3.14 through 3.27 *with* REA at 5; §3.1 at 21-23.

It is highly unlikely that the analysis and bases for the engineered choice of D or H in 1991 have changed substantially. In fact, given the changed status of what is now the BNSF yard, there could be fewer issues with these previously preferred alternatives than existed at the time they were selected as the best alternatives. At the same time, no consideration is given in the REA for the potential impacts of traffic waiting for train crossings due to the “improvements” to Woodward Road. The “improvements” will use traffic channelization. This is essentially a barrier. Residents utilizing William Street to access Woodward Road will have only one directional option: turn west. When freight trains use the Inter-Modal to move railcars in and out of that facility--a process takes as long as 20 minutes but could be even longer--traffic will be forced to turn on William Street. Traffic seeking an alternative route will be funneled into the San Jose neighborhood. One reason for this is that road channelization will not allow U-turns. Thus, the use of the Woodward Road “improvements” --a necessary segment of the entire Sunport Extension project -- will create additional traffic in the San Jose neighborhood, traffic snarls at the railroad crossing, and dangerous driving by frustrated drivers attempting to find a way to turn East.

With no evidence in the REA as to how or when this costly one-half mile road will serve area-wide transportation needs, the proposed project remains premature, lacking the necessary connection to area-wide transportation needs to justify the cost and expense of the project.

**D. REA Inadequately Addresses Environment, Effects and Mitigations.**

**1. Air Quality is inadequately addressed – §4.10.**

Air Quality data for CO was only obtained south of the project area and not within it. REA at 44-45. Air Quality baseline data for the project study area should be established and modeling done to measure the impact of the proposed project. The REA states that the modeling done demonstrates that the project development “would not cause or contribute to air quality exceedances.” *Id.* at 46. This in no way measures the air quality impacts upon the residents of the project study area due to increased traffic the REA concedes will occur. *Id.* at 28. No assessment is made of the impact of increased truck traffic to and from foreseeable industrial development in the study area. An EIS is needed to make this assessment and to pose and evaluate possible mitigation measures-- such as the regulation of truck routes and truck weight limitations. *See also* HIA at iv, 24. The REA relies solely on area-wide regulation of transportation related pollutants. REA at 46. This in no way addresses the site-specific impacts of increased traffic on the project area. As no assessment has been made, no mitigation alternatives have been posed and analyzed. This needs to be done in an EIS for the proposed project, the projected Woodward improvements, and all of the related and reasonably foreseeable projects. *See* section G below (addressing cumulative impacts).

Similarly, the REA does not address the impacts of toxic pollutants on the project study area. Instead, it relies solely on area-wide modeling. The REA states, in pertinent part, that, “under the build and no build scenarios there may be localized areas where VMT [Vehicle Miles Traveled] would increase...and therefore it is possible increases and decreases in MSAT [Mobile Source Air Toxics] may occur.” *Id.* at 48. Without supporting these assertions with data, the REA merely conjectures where increases and decreases might occur in the study area, then asserts “even where increases do occur, they will be substantially reduced in the future due to the implementation of EPA’s vehicle and fuel regulation.” If this were in fact true, the conclusion only pertains to the metropolitan area. There is no data to supporting this conclusion--and no modeling to indicate that such a forecast can be said to apply—in relation to a particular neighborhood facing increased traffic and new development by heavy, polluting industries. An EIS must be conducted to evaluate the impacts of this situation upon the communities that are near the project area. It should include a site-specific analysis assessing the potential for increased toxic air pollutants that would affect a population that already receives a disproportionate share of the impacts of “discharged pollutants.” HIP at iv-v, 6.

**2. Noise inadequately addressed --REA §4.11 at 49**

The REA noise impact analysis and related traffic projections were performed on within an extremely limited site-specific portion of the project area. No area-wide

analysis was performed. There is no evaluation of the noise impacts related to the Woodward project—or the many other projects connected to the Sunport Extension Project. *See G* below (cumulative impacts). The modeling that was done addresses the intersections affecting only nine (9) residences. Even that highly restricted study reveals noise levels exceeding 67dBA in two (2) out of six (6) samples. In all cases, undertaking the proposed project results in noise levels that are higher than those under the “no build” alternative. Yet, the REA neither provides nor evaluates any mitigation measures. In some cases, the REA concedes that there are no viable mitigation measures. REA at 51. In an utterly bizarre twist, the described traffic analysis reaches the conclusion that these nine (9) residences will suffer increased noise from increased traffic on Broadway rather than from the proposed project. REA at 50. This in no way addresses the impacts of the proposed project and the conceded increased traffic it will generate in the project study area as a whole. Nor does it evaluate the noise impacts of the Woodward improvements, other scheduled and reasonably foreseeable road projects, and the foreseeable industrial redevelopment that have been “segmented” out of the scope of the project. *See G* below (discussing segmentation). An EIS with a noise analysis that includes the noise impacts of all of this development needs to be conducted and it needs to include, as Category B receptors, the San Jose residences along Bethel Avenue, that is, west of Broadway and north of the proposed project. REA at 62.

The REA points out that BernCo code does not specify noise limits for transportation source. Absent such limits, coupled with effective truck restrictions and related controls, noise mitigation cannot be achieved. BernCo needs to implement effective land use and transportation codes through comprehensive planning for the industrial redevelopment likely to result from the proposed project. These should be required to be in place prior to the FHWA and NMDOT approving any federally funded road project in this area.

**E. Communities and Use Inadequately Addressed -- REA §4.13 at 54-56.**

The REA states that the preferred alternative is consistent with existing and proposed land use plans. REA at 54. However, none of the approved land use plans directly address the project study area. The REA concedes that the plan referred to--Bernalillo County/International Sunport Area Plan--is south of the project study area. The REA relies on a yet-to-be approved and adopted Design Overlay Plan. No such proposed overlay plan was available to the public prior to or during the Public Hearing and is not part of the REA. The REA offers this yet-to-be approved and adopted plan as evidence of both compliance with existing plans and as a mitigating factor in the implementation of the proposed project.

Despite frequent summaries of its content, no copy of the proposed plan is included in the REA and, significantly, was not part of the public process on the REA. The REA claims that the Design Overlay Plan provides standards and guidelines for “architectural character, building design, parking and access, and landscaping, fencing and walls; lighting and signage....” REA at 56. These are merely aesthetic and design regulations. They do not and cannot address the issues of increased noise, air pollution and disparate land uses that will accompany the industrial redevelopment of the project area absent a zoning classification change. The zoning in the area has not been updated in many years and favors highly industrial, polluting uses. Although the REA admits that, “while the zoning will articulate the allowable uses” it “cannot be predicted with certainty whether or what businesses might move to the area....” REA at 62.

As noted in comments to the earlier draft REA, Gregory Heitmann, FHWA, in his letter dated May 23, 2014 to Blake Roxlau, New Mexico Department of Transportation [“NMDOT”], stated, in pertinent part, “The Design Overlay may have a positive impact but they are not enacted. Also, what if they don’t work? Isn’t the Design Overlay a voluntary program with incentives? The REA acknowledges that the design overlay is strictly voluntary. REA at 55.

No protections are in place or being implemented to prevent the project study area from repeating its history of “unsightly vacant land and legacy industrial uses.” REA at 62. Without changing zoning, “overlays” are no more effective in eliminating heavy industrial eyesores than is lipstick used to “beautify” a pig.

Bernalillo County has the authority and resources to adopt substantive controls such as a revised land use plan specifying coherent requirements for locating new industrial uses, traffic flow restrictions including weight limits, and noise controls including operating hour restriction for truck traffic and loading dock operations.

To effectively deal with these issues, BernCo must prepare an EIS for the proposed project, the Woodward improvements, the numerous other related projects listed in the REA cumulative impacts section, and the reasonably foreseeable project that will follow all of these. BernCo also needs make an advance and firm funding commitment that include money for the development of a comprehensive land use plan and the re-zoning of the project study area. These should be implemented prior to FHWA and NMDOT approval for the undertaking any of these projects.

**F. Indirect and Cumulative Impacts Inadequately Addressed - REA §§ 4.22 & 4.23 – at 70-79.**

The REA is flawed in failing to address indirect and cumulative impacts because it fails to assess the impacts of the Woodward improvements and all of the other known and reasonably foreseeable regional highway improvements that will have a significant

environmental impact on the project study area, and which flow from the Sunport Extension project. The REA cites federal regulations that define indirect impacts as “project effects that occur later in time or away from the immediate project area” (REA at 74). It makes no mention here of the “codependent” Woodward improvements which would abut the proposed project. Furthermore, the impacts of the Woodward project on the Sunport project have not been assessed. REA at 74-76.

Failure to include the Woodward improvements, the other already approved and scheduled projects, and other reasonably foreseeable future regional highway improvements within a cumulative impact evaluation, violates the intent, if not the substance, of Federal Highway Administration (FHWA) directives and guidelines. In his letter of January 28, 2015, Blake Roxlau, NMDOT, “in consultation with the FHWA” insisted upon certain “conditions” BernCo/URS had to meet to “ensure that the Sunport Blvd. [R]EA is completed adequately.” He further stated, in pertinent part, “An analysis of traffic impacts to Woodward and specific mitigation plans shall be included in the [R]EA”. This has not been done. Instead, the REA references the Environmental Commitment in Section 5 of the REA. REA at 76-77. That section simply asserts that a “stand alone” NEPA document will be prepared for the Woodward improvements the effort associated with it will be a Categorical Exclusion [“CE”]. This entirely schematic and superficial treatment of the requirements set out by the FHWA (and passed on to BernCo/URS by the NMDOT) is a major deficiency in the REA and shows that this project is “not ready for prime time”.

Mr. Roxlau also required, in pertinent part, that, “The project termini shall be described in the [R]EA and include all Woodward Ave. improvements.” This is consistent with FHWA guidance in *Development and Evaluation of Alternatives*<sup>2</sup> requiring that an EIS or FONSI “connect logical termini and be of sufficient length to address environmental matters on a broad scope” and “have independent utility or independent significance”. *See generally*, FHWA Environmental Review Toolkit - NEPA and Transportation Decisionmaking.<sup>3</sup> This has not been done here and violates the intent of FHWA guidance on “segmentation” whereby smaller projects are evaluated separately without considering the cumulative impacts of the related foreseeable or, in this case, “codependent” projects.

Mr. Roxlau also stated that a “signed agreement between the County and City of Albuquerque shall be completed that outlines jurisdiction and maintenance responsibilities for Woodward Ave. This agreement shall include a commitment to fund the Woodward improvements and outline sources of funding”. This agreement is not in place. Existing correspondence does not evidence a legal agreement by the

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<sup>2</sup> <https://www.environment.fhwa.dot.gov/projdev/tdmalts.asp> (accessed September 18, 2015).

<sup>3</sup> <https://www.environment.fhwa.dot.gov/projdev/pd3tdm.asp> (accessed September 18, 2015).

respective authorities of the two governing bodies to fund and maintain the Woodward improvements. Agreements to agree by lesser public officials do not constitute the City-County Memorandum of Understanding [“MOU”] that Mr. Roxlau (and Mr. Heitmann of the FHWA) stated as one of the necessary requirements prior to approvals and construction on Woodward Road—which they also state must be completed prior to the Sunport Extension project.

The REA fails to meet both explicit requirements and the directives of the FHWA. Thus, it cannot be the basis for a FONSI. An EIS must be prepared which demonstrates that all these requirements have been met, else the project would not be approved. Moreover, the REA fails to assess “the incremental impact of an action when added to other past, present or reasonably foreseeable actions regardless of what agency or person undertakes such action. REA at 76 (citing 40 CFR 1508.8(b)). As it stands now, the REA does not meet the Council on Environmental Quality (“CEQ”) requirements under the NEPA for addressing cumulative impacts. BernCo/URS need to conduct a full-scale EIS to correct that deficiency.

#### **G. Project Segmentation And Inadequate Cumulative Impact Analysis.**

The fact that the REA forecasts that the Woodward analysis will be conducted as a CE further illustrates that a non-cumulative segmentation of two interdependent projects is underway. According to FHWA guidance a CE is not appropriate where there are “significant environmental impacts “and/or “substantial controversy on environmental grounds.” 23 CFR 771.117(b)(1) and (2); *see also*, FHWA - NEPA Toolkit.<sup>4</sup>

The White House CEQ guidance dated November 23, 2010 calls for a CE to be supported by documentation showing that similar actions in the past have not produced significant impacts. It encourages agencies to review their CE issuances. The United States Department of Transportation has done that as part of a study completed November 27, 2012 (FHWA Publication No. FWHA-HEP 13-003). That study surveys the recent history of CE issuances under 23 CFR 77.117 (c) and (d). An examination of the survey reveals that CE issuances constitute 90% to 99% of the NEPA decisions in transportation programs of the majority of State DOTs and transit activities. However, none of the activities approved through the use of CE’s by State agencies would cover the magnitude of the improvements contemplated by the Woodward project. When coupled with the proposed project, the use of a CE is clearly inappropriate. Moreover, it is also questionable as to whether a CE is appropriate in a project area--such as Woodward Road—where there is a documented history of improper hazardous waste disposal and a closed, unregulated landfill.

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<sup>4</sup> <https://www.environment.fhwa.dot.gov/projdev/docuce.asp> (accessed September 18, 2015).

Significantly, whether by design or not, a separate EA for the proposed project and a CE on the adjacent necessary interdependent Woodward improvements assures that, through segmentation, the cumulative impact of these two projects will not be examined.

Within the REA cumulative impacts section, there are a host of related projects without any analysis of the cumulative impacts of these projects, individually and collectively, upon the communities adjacent to the project area. Among these are the following funded and near-term projects, which are, clearly, directly related to the Sunport Extension project and the Woodward Road project, yet cumulative impacts have not been analyzed—and this is only list of the approved projects:

- 2nd Street, County Line to Woodward Bike/Ped facilities (Late term)
- 2nd Street, Sandia Salida to Woodward Multi-use Trail (Near term Phase 1 funded)
- San Jose Drain, Rio Bravo to Woodward Bike/Ped facilities (Near term)
- S. Diversion Channel, Rio Bravo to Gibson Bike/Ped facilities (Late term)
- University Blvd, Rio Bravo to Gibson Bike/Ped facilities (Funded)
- 2nd Street, Sandia Salida to Woodward Roadway improvements (Near term)
- I-25/Gibson Interchange reconstruction (Near term)
- 2nd Street/Rio Bravo Intersection improvements (Near term)
- Rio Bravo, Coors to University Adaptive traffic signals (Near term)
- I-25, Sunport to Gibson Auxiliary Lanes( Funded)
- NMRX Railroad, Crossing Broadway Safety improvements (Funded)

The proposed project and the Woodward improvements should be part of an EIS which includes both projects and assesses the cumulative impacts of both projects as well as all of the other transportation projects described in the REA § 4.23 and those reasonably foreseeable as a consequence of going forward on all these projects.

#### **H. Inadequate Consideration Of Superfund Sites, Landfills, Hazardous Materials -- §4.20 at 68-73.**

##### **1. The REA does not assess potential hazardous waste impacts.**

The REA fails to assess the impact the proposed project will have on ongoing remediation at the GE site, the Chevron site, and the Schwartzman landfill. There is neither evidence the project area is “ready for reuse” under the Superfund Redevelopment Initiative, nor is there a plans to fund projects to support the reuse or development of a Master Plan for redevelopment. REA at 73.

The original City of Albuquerque Environmental Assessment for the Sunport Transportation Corridor (1991) recognized that there were a variety of environmental hazards associated with the landfills, superfund sites, and the properties that would be in within the right-of-ways of the various proposed roads across I-25 and into the South Valley. The study includes detailed plats of these issues as well as a chart showing each type of problem with a reference number to the plat. See 1991 EA at Exhibits 4.9 and 4.11. There was also an additional study conducted to assay the “impaired” properties traversed by the chosen route. Marron, Taschek & Knight, Inc., *Supplemental Report on the Identification of Potentially Impaired Properties Along The D, H, and B Alternatives of the Sunport Project Area* (June 1991).<sup>5</sup>

No assessment has been made regarding the feasibility, cost or potential consequences of intruding on these sites. In fact, the Initial Site Assessment takes note (without analyzing or referencing any research or actual data) of the existence of hazardous waste issues throughout the project area. See Sunport Boulevard Extension, Phase 1 Initial Assessment (June 9, 2010) at 4-4 through 4-10. This listing of items in the EDR and RCRA CORRACTS databases--when taken in light of the earlier studies of the site for the 1991 EA--indicates that there are very serious potential public health and safety hazards involved in this project that should be fully analyzed under an EIS.

As should be clear from both these references, Woodward Road is also known to have hazardous materials on the properties and, potentially, in the construction right-of-way. These, too, will not be assayed properly absent an EIS including Woodward Road (and any scheduled or reasonably foreseeable projects that have potential hazardous waste issues). Caution in dealing with the historic conditions of the project area—much of which was occupied by an unregulated landfill and may contain methane gas—is imperative to assuring occupational and public and health and safety.

## **2. South Valley Superfund Remediation System Inadequately Addressed -- REA at 71-72.**

Here, the REA calls for avoidance of wells “where possible” and projects that, prior to any specific design, the proposed project will, with regard to one monitoring well, “space over the well,” and that access to the well for maintenance will not be

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<sup>5</sup> As noted above, the 1991 EA recommended a D/H alternative--a route BernCo/URS rejects in the REA, yet one to which the County had no objection in 1991. It is a southern route with intersections on Broadway. Significantly, Woodward Road (Alternative ‘C’) was considered in 1991 and rejected at the preliminary phase. Compare 1991 EA at 1-7 to 1-11, 2-1 to 3-8, Exhibits 1.3 and 1.4, Exhibits 3.14 to 3.27 (engineering analysis showing D & H viable); and REA at 5 and §3.1, at 21-23; with City of Albuquerque, *Responses to Comments on the Environmental Assessment and Study Recommendations - Sunport Transportation Corridor Study* (September 1991).

affected. There is no evidence that this can be accomplished nor is there any discussion of which remediation water lines and wells will be relocated, what the costs might be, and whether it could adversely affect the remediation system as a whole. The REA states that this will be done “per guidance by GE and EPA.” REA at 72 and 83.

The REA asserts that planning for these unknown impacts has occurred by meetings between the parties. But examination of the referenced “Appendix B-Superfund Stakeholder Meeting Minutes” reveals that no coordinated effort has been undertaken to assess the relocation of the remediation lines and wells or the impact on the landfill site. The minutes of the April 1, 2010 meeting list numerous “action items” none of which are produced or evaluated in the REA. Similarly, the minutes of the December 13, 2010 meeting, entitled “Location Facility on **Woodward Avenue**” (emphasis added), lists a host of issues to be resolved, and which call for generalized assurances to be forwarded to EPA. REA Appendix B, 2d page of minutes, item VI(h). Although some preliminary cost estimates were prepared, many issues remain unresolved. The actual projections are vague. REA Appendix B (January 12, 2011, Email from John Billiard to Roxanne Blatz).

Based on this incomplete record, EPA issued a letter dated April 5, 2010, “acknowledging” that the County of Bernalillo has met with GE representatives and identified various items....” REA Appendix A. Although EPA goes on to say that the County “has made due diligence **to date**,” the letter, from Michael Hebert, EPA Region 6, Remedial Project Manager, completely fails to examine any of the specific efforts undertaken (or those undertaken and not completed) nor does it constitute an affirmative declaration that the proposed project will not have a significant environmental impact on the project study area and its residents. *Id.* (emphasis added). The information offered regarding the GE site clearly demonstrates that an EIS is required to assess the yet undisclosed remediation facility reconfiguration and its impact.

### **3. Inadequate analysis on impacts to or from the Chevron site.**

Based on the REA, the impacts of and on the wells associated with the former Chevron bulk fuels terminal have not been adequately planned. Such impacts as might result cannot be assessed. Chevron may or may not request formal closure of the remediation site. REA at 72. The sole analysis of possible impacts is found in the referenced minutes to the Superfund Stakeholder meeting. Those minutes indicate uncompleted tasks, incomplete coordination, and no firm mitigation plans. For example, in the minutes of December 13, 2010, it states “The Department of Defense and Department of Energy will need to be informed.” REA, Appendix B, 2d page of minutes, IV (f). There is no evidence this has been done or what the results of such a consultation might entail.

It is clear that there is one active well (designated HL-02) south of the proposed alignment. How the project may have an impact upon the well is not addressed except to say that it will be “protected.” REA at 72. Significantly, and contrary to this assertion in the REA, the letter of April 5, 2011 from the EPA makes no reference to the Chevron facility (or the Schwartzman Landfill) and only addresses the GE site. Hebert letter, *supra*, REA Appendix A. The EPA has not reviewed this aspect of the proposed project and an EIS should be prepared to disclose the potential impacts and mitigation measures needed to protect this remediation facility and safeguard and protect the residents of the neighborhood and the South Valley.

#### **4. No assessment of closed landfill impacts -- REA at 73-74.**

The REA is devoid of any assessment of the impact intrusions by the proposed project will have on the Schwartzman Landfill. A study of such impacts apparently must wait for a Preliminary Design Assessment that will only take place immediately prior to construction. This lack of analysis comes despite the fact that the representative of the Landfill whom the County consulted stated, in pertinent part, “there is not a well defined boundary”, and that testing would be required to look for residual waste, and that utility work must follow Landfill Interim Guidelines “in order to prevent landfill gas migration”. Initial Site Assessment Update at 4-3 (reporting conversation with Suzanne Busch).

It is unclear whether the Interim Guidelines can address the potential for gas migration to an adjacent superfund remediation site or are capable of dealing with other unknown consequences that will follow upon opening a closed landfill containing undetermined waste. The REA does not address this issue. It should be assessed in an EIS. As mentioned earlier, this is a serious issue given the potential adverse consequences to occupational and public health and safety due to a construction-related methane gas explosion. Failure to conduct any analysis of the impacts of intruding into a closed, pre-RCRA, unregulated and undefined landfill clearly ignores significant potential adverse environmental impacts within the project area and provides a compelling reason for a full-scale EIS on this project, Woodward and all related ones.

#### **I. REA Fails To Consider Adverse Health Impacts.**

The Health Impact Assessment attached hereto as Exhibit 1, and incorporated by reference herein as part of and supplementing these critical comments on the Sunport Extension project, sets out specific findings on adverse, unconsidered or improperly evaluated health impacts of the proposed project. These are summarized in the following table:

<b>Summary Table: Significant Issues with the Revised Environmental Assessment (REA)</b>	
<b>Traffic congestion</b>	<ul style="list-style-type: none"> <li>- Evidence does not support or is insufficient to support the stated purpose and need for the extension to relieve congestion</li> <li>- Data generally demonstrates traffic volumes have stayed the same or decreased in recent years</li> <li>- The REA recommends building the extension even though data it provides suggests benefits if the extension is not built compared to if Alternative A is built. These benefits include: 1) greater reduction in vehicles for roadways predicted to have poor Level of Service in 2035 and 2) less traffic in 2035 for a segment of 2<sup>nd</sup> Street south of Woodward Rd – an important segment where increased volumes could contribute to new congestion, which the REA does not discuss</li> <li>- Data is inconsistent or absent; for example: 1) using different roadway segments in tables that model 2035 data for the No Build Alternative and Alternative A and 2) providing projected 2018 traffic volumes only for Alternative A, but not other alternatives</li> <li>- Fails to provide substantive data on how improved access to economic centers will further contribute to vehicle traffic</li> </ul>
<b>Air quality</b>	<ul style="list-style-type: none"> <li>- Fails to provide data on the amount or type of emissions permitted for sources in the neighborhood today, where a Health Impact Assessment found residents who make up less than one percent of the city’s population bear much greater shares – from six to 11% – of permitted levels for seven pollutants that affect health</li> <li>- Fails to provide monitoring or modeling data on pollutants associated with vehicle traffic, such as particulate matter, ozone, and nitrogen dioxide</li> <li>- Fails to predict future emissions for areas impacted by the project, including future industrial air emissions</li> </ul>
<b>Cumulative impacts</b>	<ul style="list-style-type: none"> <li>- Fails to consider cumulative impacts as defined in the spirit of the EPA definition for the NEPA process</li> <li>- Fails to describe cumulative impacts to each subject area in the REA or the additive effect from combining these individual cumulative impacts</li> <li>- Fails to consider negative cumulative impacts from Alternative A or positive cumulative impacts from other alternatives</li> <li>- States that a Design Overlay Plan will mitigate negative impacts of the extension. However, the Plan is proposed – not adopted – and has not been made available to the public prior to the comment period for the REA</li> </ul>
<b>Multi-Modal Access</b>	<ul style="list-style-type: none"> <li>- Fails to consider negative impacts of Alternative A on multi-modal accessibility from increased vehicle traffic</li> <li>- Does not achieve a stated aim of the project to improve pedestrian and bicycle connectivity by not including sidewalks for the entire length of the extension</li> </ul>
<b>Transparency of Data</b>	<ul style="list-style-type: none"> <li>- Does not provide important data, including:               <ul style="list-style-type: none"> <li>o Impacts to congestion from increased traffic on 2<sup>nd</sup> Street after the preferred alternative is implemented</li> <li>o Parallel data to compare traffic on Alternative A and other alternatives in 2018</li> <li>o Data to compare 2035 traffic projections for the same roadway segments under Alternative A and No Build</li> <li>o Air quality monitoring – with the exception of carbon monoxide – or modeling</li> <li>o Data to compare cumulative impacts between Alternative A and other alternatives</li> <li>o Data to compare impacts in multi-modal access for the alternatives</li> <li>o Impacts of the extension to the health and well-being of neighbors living adjacent to the extension, including those it mentions are in six single-family homes located 550 feet north of Alternative A</li> </ul> </li> </ul>
<b>Alternative Routes Considered</b>	<ul style="list-style-type: none"> <li>- Insufficiently demonstrates that Alternative A should be the preferred option (<i>see issues in this table</i>)</li> <li>- Fails to provide transparent justification for eliminating the TSM/TDM Alternative</li> </ul>

## **J. REA's Consideration of Environmental Justice Is Inadequate.**

Although the REA notes that San Jose is a low-income, minority community and has some of the highest concentrations of low-income, minority residents in the South Valley, the REA does not even take cognizance of this fact as indicative of there being more severe economic and environmental justice impacts on this community--and then actually looking at them in relation to the project at issue. While the REA acknowledges that San Jose is a community subject to special consideration of environmental justice issues, the entire REA §4.14 merely makes blanket descriptive statements without any substantive analysis of the potential impacts of the Sunport Project upon the residents of San Jose and Mountain View. It is they who already suffer disproportionately adverse environmental conditions as compared to persons living in other Albuquerque communities.

This lack of substance is telling: not only is there no analysis and discussion of existing data showing adverse health conditions on persons living in San Jose, there is no discussion of the adverse impacts which BernCo/URS admit will exist due to this project--increased traffic, noise, and related pollution. This is discussed in more detail within the HIA incorporated in these comments. *See generally*, HIA attached hereto. At the same time, the shallowness and inadequacy of the REA is highlighted in this regard where the authors note that there is data showing the adverse health conditions in the San Jose community.

This failure of BernCo/URS to properly consider the San Jose community was no sudden change or temporary lapse. From the inception of EA process--when the San Jose Neighborhood association was not invited to participate in meetings and notices were sent to someone who was neither a member of the organization or its leadership--through a series of meetings with the community which were on short notice, held at times when working people had difficulty attending, discussed documents not translated into Spanish, did not allow people to ask questions or comment, and, ultimately, a Title VI investigation of the BernCo/URS conduct of the NEPA process---all of which and more is properly part of the record of this project--BernCo/URS has shown defensiveness, hostility and a lack of respect for the people of San Jose.

The REA acknowledges San Jose and Mountain View as environmental justice communities and cites health statistics from the 2011 Place Matters HIA, stating, in pertinent part, "There have been demonstrated community and public health concerns in San Jose and Mountain View." REA at 57. Yet, other than observing these statements to be facts, it does nothing with them--it does not review or analyze them to see what can be learned about the health of these communities and then relate that information to the proposed project impacts. The intention of the NEPA is to require a public process in which agencies at all levels of government cooperate to provide the decision-

maker with the information necessary to give a hard look at the effects of federally funded, undertaken, or permitted actions upon the human and natural environment. The intention was that there be adequate information to take such a hard look rather than hardly looking at all as is the case with the REA.

The REA notes that public health improvements will come with sidewalks and bike lanes on Woodward. REA at 63. However, there is no analysis of the potential *adverse* health and safety impacts of increased foot and bicycle traffic along a street that will be filled with semi-trucks, double and triple semi-trailers, oil tank trucks, heavy equipment trucks and a variety of other vehicle traffic in an area that already has air carrying cement dust, asphalt related chemicals and other petrochemicals, as well as pm2 through pm10 particulates. The REA gives no consideration to the negative health and safety impacts of the project that creates this situation.

The REA states, in pertinent part, “There are transportation facility concerns that impact public health. Sunport Blvd. and Woodward Rd. lack facilities for pedestrians and non-motorized vehicle use. There are no sidewalk or bike lanes.” *Id.* at 58. Yet, as the community already told BernCo in earlier comments, bike lanes and sidewalks--on a highway with a steep grade and many 18-wheelers--are not safe options for bikers or pedestrians. Moreover, there is no reason why constructing such facilities could not take place without a Sunport Extension project. *See, e.g.* REA at 62, stating in pertinent part, “No change to existing conditions would occur with “No Build”--which is no more than a veiled threat: if you do not support this project, you do not get any improvements--no improved drainage, no curbs, no sidewalks, no bike lanes.

Why should it take a highway project to provide an environmental justice community with sidewalks and bike lanes--and perhaps even locate these in a manner that improves public health and safety rather than further jeopardizing it by bringing in more pollution from heavy industries and traffic?

Executive Order [“EO”] 13045, Protection of Children From Environmental Health and Safety Risks, requires federal agencies -- such as the Department of Transportation -- to assess health risks to children. The Sunport Extension project REA does not assess risks. The REA states that East San Jose Elementary would not experience an environmental health and safety risk from the project that would have a disproportionate impact upon the children. REA at 58. However there is no assessment or data to back up this assertion. The Department of Transportation, as an agency subject to EO13045, has an obligation to require more than such blanket assertions where there may be health and safety risks to children. An Environmental Impact Study of the project would properly include the necessary data collection and a proper assessment.

EO 13166 addresses the need for federal agencies to provide access to persons with limited English proficiency. The BernCo/URS EA and REA process failed to provide access to persons with limited English proficiency, especially at the public hearing on the REA and the public meeting held in San Jose. REA at 58. No translation of the entire REA and related documents was available to persons for a reasonable period of time prior to an adequately noticed public hearing.<sup>6</sup>

Providing only the executive summary of an over 500-page document in one's first language is like being told you have to sit at the back of the bus. Moreover, holding meetings on short notice, during the dinner hour of working families--many of which have both parents working different shifts, many of whom have English as a second language and low-levels of English language proficiency--does not meet the intentions CEQ guidelines for conducting such meetings, nor the intention of EO 13166--or the Congressional intentions underlying the NEPA. In fact, whether by design or not, the net effect of such actions is to shut out a large portion of the population from the communities which would received the greatest adverse impacts of the project at issue and are already receiving disproportionately large adverse environmental impacts from nearby heavy, polluting industry and superfund sites. The working residents of San Jose and Mountain View--no matter where they are from, no matter what language is their first language--deserve to receive the same notice and opportunity to be heard that would, no doubt, be accorded to residents of the more affluent Albuquerque neighborhoods.

The REA attempts to minimize (unfortunately in words only) the potential adverse impacts that will follow on the Sunport Extension and Woodward Road projects. REA at 62. The language used, however, notes that San Jose is an industrial area and that BernCo/URS cannot guarantee the type of business that will move into the area as the result of the development. It also says that overlay zoning "may" result in positive impacts. However, overlay zoning--requiring the *voluntary* beautification of a chlorine gas plant parking lot or the façade of petrochemical plant is no more effective in mitigating the odors than painting flowers on a pigsty. It is also important to note that even if it were substantive, the overlay zoning referred to in the REA has not been approved--it is just window-dressing to make it *appear* that BernCo/URS plan to mitigate impacts on the affected communities.

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<sup>6</sup> The transcript of the August 2015 Public Hearing held in Mountain View is also replete with citizen complaints--as well as those of elected officials and past and present community leaders pointing out the lack of notice, document availability, time to read the key documents, and the lack of a public hearing held in San Jose on the revised, substantially enlarged EA.

Without going through the public approval process for overlay zoning, going through that same process to change the existing industrial zoning, or even obtaining agreements from “brown field” property owners to put covenants in their respective deeds limiting the uses to no more than light, non-polluting industry--the BernCo/URS plans will just place more adverse environmental impacts upon the already disproportionately burdened environmental justice communities that will receive the brunt of the Sunport Extension, Woodward Road and numerous other related and reasonably foreseeable projects that flow from the Sunport project.

The bottom line is that only a full-scale Environmental Impact Study could, at this stage, provide an opportunity for people in the most affected communities to have a voice in shaping these projects--and provide them with an opportunity to find ways to mitigate the additional adverse impacts on their already burdened communities.

### **III. CONCLUSIONS**

The REA “Conclusions” are incorrect. REA at 89-90. The foregoing critical review and that in the HIA reveal, in pertinent part, but not limited to, the following:

1. The REA fails to adequately demonstrate the need for the proposed project; therefore, the “No Build” alternative should be selected;
2. The conclusion that yet-to-be specified avoidance and mitigation techniques would not significantly impact groundwater, hazardous materials or remediation efforts underway in the superfund sites and adjacent properties within the project area, is not supported by the analysis done to date; an EIS is required and necessary to perform this analysis;
3. The reliance on yet to be determined projected Woodward improvements, where no firm agreements exist and where no cumulative analysis of the codependent project has been completed, necessitates an EIS which assesses the cumulative impact of both projects taken together;
4. The air quality analysis fails to consider hazardous air pollutants and cumulative impacts of air pollutants, does not adequately address CO “hot spots”, is limited to the project study area, and places unwarranted reliance on area-wide air quality controls. A comprehensive air quality analysis needs to be performed as part of an EIS to determine whether there are significant air quality impacts from the projects;
5. No land use plan or transportation related regulations exist to mitigate the potential for significant adverse environmental impacts associated with what is a foreseeable reindustrialization of a neighborhood already burdened with a “legacy” of heavy, polluting industrial uses;

6. It is patent that the environmental justice considerations dovetail with adequate consideration and analysis of the cumulative impacts of the proposed projects. By artificially dividing the project into two parts (which even the project proponents describe as “co-dependent”), it is evident that what should properly be recognized as a single project has been segmented to avoid an adequate analysis of the impacts of the whole project upon the residents of nearby communities. These communities are recognized—even within the REA—as already burdened by economic disadvantages, air pollution, noise, adverse health impacts, lack of sidewalks, traffic controls, and situated in an area zoned to allow heavy, polluting industries. Moreover, the REA indicates that there are a number of other road projects in the works —projects the REA links to the project at issue and the Woodward project—yet, significantly, it makes no attempt to analyze the direct, indirect, individual and cumulative impacts of these projects upon the residents of the adjacent communities.

From the foregoing, the FHWA should conclude with that either this project should not be built, or that a full-scale environmental impact study is necessary.

Respectfully submitted:

**SOUTHWEST ORGANIZING PROJECT  
&  
ESTHER AND STEVEN ABEYTA**

BY:



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Incorporated attachment:  
Exhibit 1, Health Impact Assessment of Sunport Project

September 21, 2015

Dear reader:

This document summarizes: 1) significant issues that are insufficiently addressed in the revised Environmental Assessment for the proposed Sunport Boulevard extension and 2) relevant key findings from a Health Impact Assessment (HIA) of the proposed extension.

Human Impact Partners conducted the HIA with residents of the San Jose neighborhood, local advocacy organizations, and the New Mexico Department of Health, from June to November 2013. The draft HIA analyzed Bernalillo County's first publicly available Environmental Assessment for the Sunport Boulevard extension project, which was released in September 2011, in anticipation of an expected public comment period. However, the comment period was postponed, and nearly two years later in July 2015, the county released a revised Environmental Assessment (REA). After a review of the REA, the HIA report was finalized in September 2015. Although updated data for measures gathered in 2013 for the HIA may be available, the data presented in the HIA remains valid and supports the findings described in this summary. The full HIA follows this summary.

Please contact Sara Satinsky at 510-452-9442, ext. 104 should you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Sara Satinsky'.

Sara Satinsky, MPH, MCRP  
Senior Research Associate  
Human Impact Partners

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### SUMMARY OF SIGNIFICANT ISSUES

The Bernalillo County Public Works Division is proposing to extend Sunport Boulevard from its current end at Interstate 25 to the intersection of Broadway Boulevard and Woodward Road. However, residents of the San Jose neighborhood are concerned that the project, planned as a four-lane divided highway connecting to roads that go through the neighborhood, will increase traffic, harming their health and well-being.

The neighborhood of about 4,000 people in south Albuquerque already bears a disproportionate environmental burden, from past hazardous chemicals and other materials that contaminated soil and water, and air pollution from traffic and industry. San Jose is racially and ethnically diverse, younger, with lower income and higher unemployment than the county as a whole, and meets the U.S. Environmental Protection Agency's criteria for an environmental justice neighborhood. The neighborhood is in an area that has among the highest death rates in the county from several health conditions, including cancer, diabetes, and conditions related to heart disease.

#### **Findings**

The summary table below lists significant issues with the revised Environmental Assessment (REA) that are described in this document.

<b>Summary Table: Significant Issues with the Revised Environmental Assessment (REA)</b>	
<b>Traffic congestion</b>	<ul style="list-style-type: none"> <li>- Evidence does not support or is insufficient to support the stated purpose and need for the extension to relieve congestion</li> <li>- Data generally demonstrates traffic volumes have stayed the same or decreased in recent years</li> <li>- The REA recommends building the extension even though data it provides suggests benefits if the extension is not built compared to if Alternative A is built. These benefits include: 1) greater reduction in vehicles for roadways predicted to have poor Level of Service in 2035 and 2) less traffic in 2035 for a segment of 2<sup>nd</sup> Street south of Woodward Rd – an important segment where increased volumes could contribute to new congestion, which the REA does not discuss</li> <li>- Data is inconsistent or absent; for example: 1) using different roadway segments in tables that model 2035 data for the No Build Alternative and Alternative A and 2) providing projected 2018 traffic volumes only for Alternative A, but not other alternatives</li> <li>- Fails to provide substantive data on how improved access to economic centers will further contribute to vehicle traffic</li> </ul>
<b>Air quality</b>	<ul style="list-style-type: none"> <li>- Fails to provide data on the amount or type of emissions permitted for sources in the neighborhood today, where a Health Impact Assessment found residents who make up less than one percent of the city’s population bear much greater shares – from six to 11% – of permitted levels for seven pollutants that affect health</li> <li>- Fails to provide monitoring or modeling data on pollutants associated with vehicle traffic, such as particulate matter, ozone, and nitrogen dioxide</li> <li>- Fails to predict future emissions for areas impacted by the project, including future industrial air emissions</li> </ul>
<b>Cumulative impacts</b>	<ul style="list-style-type: none"> <li>- Fails to consider cumulative impacts as defined in the spirit of the EPA definition for the NEPA process</li> <li>- Fails to describe cumulative impacts to each subject area in the REA or the additive effect from combining these individual cumulative impacts</li> <li>- Fails to consider negative cumulative impacts from Alternative A or positive cumulative impacts from other alternatives</li> <li>- States that a Design Overlay Plan will mitigate negative impacts of the extension. However, the Plan is proposed – not adopted – and has not been made available to the public prior to the comment period for the REA</li> </ul>
<b>Multi-Modal Access</b>	<ul style="list-style-type: none"> <li>- Fails to consider negative impacts of Alternative A on multi-modal accessibility from increased vehicle traffic</li> <li>- Does not achieve a stated aim of the project to improve pedestrian and bicycle connectivity by not including sidewalks for the entire length of the extension</li> </ul>
<b>Transparency of Data</b>	<ul style="list-style-type: none"> <li>- Does not provide important data, including: <ul style="list-style-type: none"> <li>o Impacts to congestion from increased traffic on 2<sup>nd</sup> Street after the preferred alternative is implemented</li> <li>o Parallel data to compare traffic on Alternative A and other alternatives in 2018</li> <li>o Data to compare 2035 traffic projections for the same roadway segments under Alternative A and No Build</li> <li>o Air quality monitoring – with the exception of carbon monoxide – or modeling</li> <li>o Data to compare cumulative impacts between Alternative A and other alternatives</li> <li>o Data to compare impacts in multi-modal access for the alternatives</li> <li>o Impacts of the extension to the health and well-being of neighbors living adjacent to the extension, including those it mentions are in six single-family homes located 550 feet north of Alternative A</li> </ul> </li> </ul>
<b>Alternative Routes Considered</b>	<ul style="list-style-type: none"> <li>- Insufficiently demonstrates that Alternative A should be the preferred option (<i>see issues in this table</i>)</li> <li>- Fails to provide transparent justification for eliminating the TSM/TDM Alternative</li> </ul>

Based on findings from our Health Impact Assessment (HIA) conducted on the first Environmental Assessment released in September 2011, as well as an analysis of the revised Environmental Assessment, Human Impact Partners concludes that the county's proposed project and revised Environmental Assessment of the project is lacking in key areas. Not only does the San Jose neighborhood *not appear* to suffer from the traffic congestion used to justify the extension, but the extension could harm public health, through increased air emissions and unsafe streets. Additionally, despite requirements from the Council on Environmental Quality that cumulative impacts be considered in an environmental assessment, the revised Environmental Assessment fails to undertake meaningful cumulative impacts analyses in each of the subject areas it covers, nor does it discuss the additive effect of these individual impacts.

### **Congestion and Stated Need for the Extension**

The REA identifies congestion relief as one major reason for the extension (page 1, paragraph 5). However, the evidence presented does not support this stated need and is insufficient in at least three ways.

First, the REA states that over the past few years, traffic volumes have decreased due to the economic recession and a significant drop in air travel through the Sunport airport (page 18, paragraph 1). With the exception of the Rio Bravo Boulevard road segment, data provided in the REA generally demonstrates a historical trend of traffic volumes that have either stayed the same or have decreased over time from 2008 to 2011 (page 18, table 2-2).<sup>1</sup> Recent construction on Rio Bravo Boulevard in 2011 and 2012 (page 25, paragraph 2) has likely improved volume-to-capacity ratios for this roadway segment, though the REA does not provide current traffic volume data for Rio Bravo Boulevard after the construction.

Second, data in the REA for future traffic volumes suggests greater reduction in vehicles – an estimated 397 vehicles total during peak hours and for roadways having a Level of Service (LOS) of D, E, or F for 2035 – if the extension is not built compared to if the preferred version (Alternative A) is built, based on data provided.<sup>2</sup> Further data cited by the REA suggests the 2<sup>nd</sup> Street road segment south of Woodward Road will have less traffic in 2035 under the No Build Alternative compared to if the preferred version of the extension were built (tables 2-1 and 3-2).<sup>3</sup> Increased volumes on this particular segment of 2<sup>nd</sup> Street could contribute to new congestion by increasing traffic backups in two ways: while more vehicles wait at Woodward Road and William Street for railcar changes at the nearby BNSF intermodal rail, or while more vehicles wait to begin to navigate the Rio Grande bridge crossing near 2<sup>nd</sup> Street and Rio Bravo Boulevard. The REA fails to discuss either of these potential impacts. It simply states, “The No Build Alternative would not meet the purpose and need for connectivity, improving the transportation system continuity or easing area traffic congestion” (page 25, paragraph 3).

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<sup>1</sup> Comparing 2008 with 2011 data, average weekday traffic volumes have increased only for the Rio Bravo Boulevard roadway segment, between Broadway Boulevard and I-25, from 30,820 vehicles per day in 2008 to 32,345 vehicles per day in 2011.

<sup>2</sup> The preferred alternative will reduce congestion (as measured by 2035 projected traffic volumes and poor Level of Service) for Broadway Boulevard, north of Woodward Road and for Rio Bravo Boulevard, Broadway Boulevard to I-25, while the No Build Alternative will reduce congestion for Broadway Boulevard, south of Woodward Road; Woodward Road, east of 2<sup>nd</sup> Street; and 2<sup>nd</sup> Street, from Rio Bravo Boulevard to Woodward Road.

<sup>3</sup> As noted in this summary, the REA is not systematic in how it refers to the same road segments under different alternatives. In the absence of data in different years for the same road segments, this statement must assume that where Table 2-1 refers to “2<sup>nd</sup> Street, Rio Bravo to Woodward” and Table 3-2 refers to “2<sup>nd</sup> Street, south of Woodward” it refers to the same segment of road.

Third, traffic data is sometimes absent and when provided is inconsistent. A comparison of the preferred alternative (Alternative A) with the No Build Alternative is modeled for 2035, but the REA uses different roadway segments for both 2<sup>nd</sup> Street and Woodward Road, making it impossible to compare projected traffic volumes under the two alternatives for each of these roadways without assuming they refer to the same segment of road, which they may not. For 2<sup>nd</sup> Street, table 2-1 refers to the segment from Rio Bravo Boulevard to Woodward Road but table 3-2 refers to the segment south of Woodward Road. For Woodward Road, table 2-1 refers to the segments from 2<sup>nd</sup> Street to Broadway Boulevard but table 3-2 refers to the segment east of 2<sup>nd</sup> Street. Further, the REA only provides projected 2018 traffic volumes for Alternative A and does not provide projected 2018 traffic volumes for the No Build Alternative or for other alternatives.

The REA also fails to provide substantive data on whether and how improved access to area economic centers, which could encourage more development, may add to traffic congestion.

### Air Quality

The REA acknowledges air emissions sources in the area today – including industry, an airport, and Air Force base – but does not provide data on the amount or type of emissions permitted for each source. It also fails to provide monitoring or modeling data on pollutants associated with vehicle traffic, such as particulate matter, ozone, and nitrogen dioxide. Absent monitoring or modeling data for these pollutants, it is difficult to evaluate the air quality impacts from the combination of existing sources, future traffic, and emissions related to development.

Indeed, the REA fails to predict future emissions for the neighborhood adjacent to the extension or the wider area impacted by the project. Instead, it generally states that the extension meets the federal National Ambient Air Quality Standards for carbon monoxide (page 46), and “the proposed Sunport Extension project is included in the MRCOG FY 2014 to FY 2019 TIP. The TIP conforms to the current State Implementation Plan for Air Quality developed by the Albuquerque – Bernalillo County Air Quality Control Board as required by the CAA.” (page 46, paragraph 2). It further states that modeling of air emissions associated with future industrial air emissions was considered outside the scope of the REA (page 88), discounting the necessity of considering cumulative impacts for air quality.

Based on data provided by Human Impact Partners, the resident panel involved in the HIA came to the conclusion that the proposed project was likely to harm the health of San Jose residents – particularly children, older people and other sensitive populations – in a place that already permitted high levels of air pollution and has other contaminants. The table below highlights that *while San Jose residents make up less than one percent of the City of Albuquerque’s population, the community bears a much greater share of permitted pollution for seven important types of pollutants.* The REA also does not address how the proposed project may contribute to this existing disparity.

<b>Total tons of emissions allowed in San Jose and percent for City of Albuquerque, by pollutant, 2012</b>						
Hazardous Air Pollutants (HAPS)	Sulfur Oxides (SOx)	Particulate Matter 2.5 (PM2.5)	Carbon Monoxide (CO)	Nitrogen Oxides (NOx)	Particulate Matter 10 (PM10)	Volatile organic compounds (VOCs)
76.8 <b>(11%)</b>	76.8 <b>(11%)</b>	57.0 <b>(11%)</b>	734.4 <b>(10%)</b>	571.3 <b>(7%)</b>	65.0 <b>(7%)</b>	295.3 <b>(6%)</b>

*Source: City of Albuquerque Environmental Health Department, July 2012.*

It is imperative, said one resident, to “protect the health, safety, (and) lifestyle of the people that live in the community,” and the extension is an opportunity to illustrate how future development can protect and improve spaces where residents gather.

### **Cumulative Impacts**

The county's REA consistently fails to consider the *cumulative* impacts of adding more traffic and pollution to existing conditions. It fails to describe impacts to each of the subject areas that it covers – such as air quality, noise, socioeconomics and environmental justice that include public health and safety – as well as the additive effect from combining these individual cumulative impacts. Cumulative is defined here in the spirit of the Environmental Protection Agency definition for the NEPA process, as *incremental environmental impacts of an individual project combined with the environmental impacts caused by past projects, the environmental impacts caused by other current projects and the environmental impacts caused by reasonably foreseeable future projects*.

In assessing cumulative impacts, the REA states that the extension will result in positive cumulative impacts from increased economic development, without providing data to support the statement (page 79, paragraphs 2 and 5). It fails to consider possible negative cumulative impacts, stating, “The County has prepared the San Jose/Mountain View Design Overlay plan, which when adopted could mitigate impacts from future new development” (page 79, paragraph 2). Details of the Design Overlay Plan and how it may mitigate impacts are absent.

Without changes to the underlying zoning designation, it is unlikely the Design Overlay Plan will mitigate environmental pollutants from future businesses locating along Woodward Road. Design overlay only addresses the visual aesthetics of design, rather than operational elements of businesses. In fact, the REA states, “Although adherence to adopted design overlay requirements would not be a voluntary process, the presence of the design overlay does not erode property rights of landowners within existing zoning controls” (page 55, paragraph 4).

The REA states that the County’s proposed – but not adopted – Design Overlay Plan will also mitigate negative impacts of Alternative A. The Design Overlay Plan was not completed and made available to the public for review or input prior to the comment period for the REA. The not yet adopted document remains an idea but not a definite plan until it is approved. Further, the REA states that Alternative A is in close proximity – approximately 550 feet – to six single-family homes located east of Broadway Boulevard on the north side of Wesmeco Drive (page 62, paragraph 3).

### **Multi-Modal Access**

Through the HIA process, residents found that the proposed extension would make streets less safe for pedestrians and bicyclists through increased traffic. The REA fails to consider negative impacts of Alternative A to multi-modal accessibility from increased vehicular traffic. Additionally, by not providing sidewalks for the entire length of the extension – only 700 feet of it – the REA misses an opportunity to realize a stated aim of the project to improve pedestrian and bicycle facilities and connectivity (page 9, paragraph 3). The REA cites lack of demand for accessing businesses on the east side of Interstate 25 as the reason without providing information to support the statement (page 27, paragraph 2).

### **Alternative Routes Considered**

The REA does not sufficiently demonstrate that Alternative A should be the preferred route for the extension. According to projections provided in the REA, when compared to the No Build Alternative, total vehicles per hour during peak hours would increase under Alternative A

along roadways having a Level of Service of D, E, or F. The REA also does not provide transparent justification for eliminating an alternative for Transportation System Management/Transportation Demand Management (TSM/TDM). Of the TDM, the REA states that no large employers are actively sponsoring TDM initiatives in the study area and of the TSM, it says the alternative would provide “modest and localized improvements” in the operations of the overall existing transportation system, without providing data to substantiate the statement or to compare the TSM alternative with other alternatives (page 23, paragraphs 4 and 5). The REA also fails to consider the negative cumulative impacts that might result from Alternative A and the positive cumulative impacts that might result from the selection of alternatives D or H, both located further from residential areas, a TSM/TDM Alternative, or No Build Alternative.

### **Transparency of Data**

The REA does not provide the data needed to substantiate a number of statements made in the report. The REA does not include data to assess: 1) impacts to congestion from increased traffic along 2<sup>nd</sup> Street as a consequence of implementing the preferred alternative; 2) parallel traffic comparisons between Alternative A and other alternatives for 2018; 3) 2035 traffic projections under Alternative A compared to the No Build Alternative for the same roadway segments; 4) air quality monitoring – with the exception of carbon monoxide – or modeling; 5) a comparison of cumulative impacts between Alternative A and other alternatives; 6) a comparison of projected improvements, or detractions, in multi-modal access for Alternative A and other alternatives; and 7) impacts of the extension to the health and well-being of neighbors living adjacent to it - residents living in six single family homes 550 feet north of Alternative A.

### **RECOMMENDATIONS\***

The recommendations below come from a variety of sources. Fourteen were developed by the HIA resident panel in response to their analysis of the impacts of the first environmental assessment released in September 2011. They are included here because they continue to be relevant to the significant issues that remain in the REA (as described in this document).

In making these recommendations, we take a broad perspective that includes both the half-mile extension itself and the future economic development that will follow. As such, many recommendations would be implemented after the proposed extension is built, and with an emphasis on preventing future environmental hazards.

### **Overall**

1. The county should more thoroughly and transparently reconsider Alternatives D and H, not only Alternative A, and mitigations.
2. The city and county should improve public information-sharing about the proposed extension and related planning. Specific actions include:
  - a. Publicly share plans to meaningfully involve the San Jose neighborhood in ongoing planning for the Sunport Boulevard Extension, to ensure that resident perspectives help shape future development.
  - b. Increase communication between city and county, as well as directly to residents, including but not only through the San Jose Neighborhood Association, and ensure communication is in culturally appropriate methods and languages. Publicly and immediately share formal and informal plans for the extension and development in the surrounding area. Specifically, share information on whether there is a vision – and what it is – for promotion of commercial and industrial development along the

extension, such as zoning documents or plans ranging from the short-term to long-term (e.g., five-year plans, thirty-year plans, and so forth).

*If the Sunport Boulevard Extension is built:*

### **Environmental Hazards**

3. The city and county should require that future permitting processes for the San Jose neighborhood include the completion of cumulative impact assessments that more accurately consider health impacts. Cumulative is defined in the spirit of the Environmental Protection Agency definition for the NEPA process, as *incremental environmental impacts of an individual project combined with the environmental impacts caused by past projects, the environmental impacts caused by other current projects and the environmental impacts caused by reasonably foreseeable future projects.*
4. The City of Albuquerque Air Quality Division should improve air quality monitoring and enforcement of existing air quality regulations in the San Jose neighborhood as follows:
  - a. Collect baseline information throughout the neighborhood on actual air quality emissions. If the information is collected by City or County agencies, it should be validated by outside organizations.
  - b. After the extension is completed, regularly monitor air quality at sensitive sites such as schools and community centers. Commit to retrofitting these facilities (e.g., provide upgrades to building thermal performance and ventilation systems) to keep indoor air pollutant levels below applicable state and federal standards, and mitigate exceedances found at baseline levels, if pollution levels surpass what is harmful to human health.
  - c. Add an air monitor in San Jose where vulnerable populations congregate. The monitor should measure the six criteria pollutants (ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead), as well as volatile organic compounds.
5. The city and county should ensure compliance with and enforcement of existing noise standards. To do so, the city and county should collect baseline noise measurements in the community of San Jose to ensure standards are not being exceeded.
6. The city and county should consider revising noise control ordinances to set the standard for traffic-related noise, at 65 dBA or less for daytime and 55 dBA or less for nighttime.

### **Safety from Injuries and Collisions**

7. The city should prohibit heavy trucks on residential streets in San Jose neighborhood.
8. The city and county should implement appropriate traffic calming features to slow trucks on roads that will see increased traffic from the Sunport Boulevard Extension.
  - a. Examples of traffic calming to consider are reduced speed limits, rumble strips, and landscaping.
  - b. Example locations for reduced speed limits are Broadway Boulevard traveling down the hill by Bethel Avenue and San Jose Avenue.
9. The city and county should create facilities to protect and encourage pedestrians and bicyclists on roads near the Sunport Boulevard Extension that will experience increased traffic during and after its construction. Actions include:
  - a. Building sidewalks with storm drainage. Example locations are Broadway Boulevard headed to Woodward Road, on Wesmeco Drive, on Arno Street, and John Street.
  - b. Extending the bike lane on Broadway further into the San Jose neighborhood.

- c. Adding traffic lights at the intersections of William Street and Woodward Road, as well as Second Street and Woodward Road.
10. The City of Albuquerque Transit Department should ensure that the 16/18 bus route is maintained during and after construction of the Sunport Boulevard Extension. Also, the city should build bus shelters where the bus is used but there are not currently shelters to protect riders – for example, on William Street, Woodward Road, and Broadway Boulevard.

### **Miscellaneous Recommendations**

11. Bernalillo County Public Works should include drainage facilities when building the Sunport Boulevard Extension.
12. To advance the economic prosperity of residents in the San Jose neighborhood, the Bernalillo County Economic Development Department should require businesses locating along Sunport Boulevard Extension to develop plans and commitments for local hiring, job training, and educational programs. For example, the city and county could work with businesses to start a GED program with instructors in the community that is free for low-income residents of the San Jose neighborhood.
13. To ensure San Jose residents are actually able to access workforce development and job training programs as well as access new jobs created in the community, the Bernalillo County Economic Development Department should require that businesses locating along Sunport Boulevard Extension *not ask* about applicants' history of arrest in job applications and interviews.<sup>4</sup>
14. The Bernalillo County Economic Development Department should establish a living wage (e.g., modeled on the living wage ordinance in Santa Fe) and require jobs created by businesses relocating or locating along the Sunport Boulevard Extension to pay such wages. In addition to paying a living wage, all permanent jobs (including part-time and full-time permanent jobs) created by business located near the extension should provide full health benefits.

### **Additional Recommendations**

At the conclusion of the HIA process, the Steering Committee and project partners proposed additional recommendations to supplement those from the resident panel. These recommendations were not vetted in the same way, but are listed here as they provide valuable suggestions for appropriate parties to consider as well.

They include:

- Consider completing an Environmental Impact Statement to more fully assess the environmental impacts of the extension on environmental and human health, including reasonable alternatives (including a No Action alternative) that would avoid or minimize adverse impacts or enhance the quality of the human environment.
- The county, MRCOG, or other appropriate party should do a comprehensive traffic study that includes roadways connected to or near the extension that will be affected by it. The study should assess changes in traffic and how those are expected to affect air

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<sup>c</sup> Two members of resident panel abstained from this vote

<sup>4</sup> There was not unanimous agreement on this proposal; however, the majority of residents on the resident panel voted in favor of it.

quality and noise. The study should consider potential short-term and long-term development (e.g., five-year plans, thirty-year plans, and so forth) that will and/or could take place if the extension is built.

- Absent discussion of cumulative impacts in this document, planning agencies and other authorities could consider a moratorium on approving projects that will result in new environmental hazards in the community.
- The city and county should draft relevant plans and commit funding to ensure pedestrian- and bicycle-safety measures and improvements on roadways such as Second Street that connect to the extension and will experience increased traffic or congestion, regardless of the alternative chosen. Plans should redesign these roadways for neighborhood pedestrian, bicycle, and vehicular safety, and to avoid increased cumulative air emissions. This should be done prior to completion of the extension in this environmental justice community.
- A specific way to implement the Steering Committee recommendation about public input is for the county to form and fund a Community Advisory Council that regularly provides input and feedback on plans for the proposed extension.
- Improvements to pedestrian and bicycle facilities on adjacent roadways that the extension will affect, such as Woodward Road, should be put in place when the extension is built.
- The County should consider building sidewalk adjacent to the entire length of the extension, rather than for only 700 feet.
- The appropriate body should provide voluntary relocation of residents living in housing that is the closest to the extension.
- The appropriate body should involve impacted residents in identifying requirements for developments within the boundaries of the Design Overlay Plan.

# Shining a Light on Health: How the Sunport Boulevard Extension Project Will Affect Health and Well-Being

September 2015

By Human Impact Partners, with the participation of residents of the San Jose neighborhood

With support from  
Bernalillo County PLACE MATTERS  
New Mexico Health Equity Partnership–Santa Fe Community Foundation  
New Mexico Department of Health  
SouthWest Organizing Project



NM HEALTH EQUITY PARTNERSHIP



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## I. Introduction

The Bernalillo County Public Works Division is proposing to extend Sunport Boulevard approximately one-half mile from its current end at Interstate 25 to the intersection of Broadway Boulevard and Woodward Road. There it would join Woodward, which eventually ends at Second Street. The Sunport Boulevard Extension (the extension) would be a four-lane divided highway.

The county indicates that the extension will reduce congestion on Rio Bravo Boulevard, Gibson Boulevard and their interchanges with I-25; improve traffic flow by providing another east-west arterial; and continue the development of the street system envisioned in planning documents, which date to the 1980s.

If built, the extension will connect to roads that go through the neighborhood of San Jose in Albuquerque. Over the past two years, neighborhood residents have expressed concerns about the planning processes for the extension, especially the public participation process, and the scope of impacts examined in the county's environmental assessment. San Jose's population is racially and ethnically diverse, younger, lower income, and with higher unemployment than Bernalillo County overall. It has a long history of environmental degradation from industrial and auto pollution, including the designation of two Superfund sites, and meets the criteria of the U.S. Environmental Protection Agency of an environmental justice neighborhood.

San Jose residents approached Human Impact Partners (HIP) about leading a Health Impact Assessment (HIA) of the proposed extension. Residents wanted to understand how the project would impact their health and well-being and to identify recommendations they could submit to the county to mitigate negative health effects or enhance positive effects.

This report summarizes the HIA. It focuses on three key areas: exposure to environmental hazards, safety from injuries and collisions, and social connectedness. Section II gives background information on San Jose, with a focus on the history of environmental issues and current demographics. Section III provides greater detail on the extension, including proposed alternatives, related planning processes, and findings from the county's environmental assessment report. Section IV describes existing conditions and predicts effects if the extension is built as proposed. Section V includes recommendations to decision makers and Section VI concludes the report.

### About This HIA

Human Impact Partners led this Health Impact Assessment to understand how the proposed extension will impact the health and well-being of residents of the San Jose neighborhood. According to the National Academies of Sciences, HIA is "a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, or project on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects." The fundamental purpose of this HIA is to inform decision-makers before they decide on the extension proposal.

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· "To be classified as an environmental justice community, residents must be a minority and/or low income group; excluded from the environmental policy setting and/or decision-making process; subject to a disproportionate impact from one or more environmental hazards; and experience a disparate implementation of environmental regulations, requirements, practices and activities in their communities." Source: Environmental Protection Agency, Region 6. Frequently Asked Questions. <http://www.epa.gov/region6/6dra/oejta/ej/ejfaq.htm>

The HIA work was supported with funding from the W.K. Kellogg Foundation. Data was collected from June to November 2013, in anticipation of an environmental assessment public comment period soon after. However, the environmental assessment was revised and released approximately two years later, in July 2015. The HIA report was mainly drafted based on the original environmental assessment; however, it was completed in September 2015 to speak to significant issues identified in the original environmental assessment and still unaddressed or insufficiently addressed in the revised document.

Guiding the HIA process was a steering committee that included Human Impact Partners, a resident of the San Jose neighborhood, Bernalillo County PLACE MATTERS, New Mexico Department of Health, New Mexico Health Equity Partnership–Santa Fe Community Foundation, and the SouthWest Organizing Project. Early in the HIA planning process, the steering committee decided to use a consensus model. This approach seeks to meaningfully engage residents through a participatory research process, particularly when limited resources are available to weigh in on a proposal and a relatively short decision-making timeline is expected. The model is adapted from an approach that originated in Denmark to guide elected officials in science and technology decisions and stimulate public discussion of these issues.

For this HIA, the model included two meetings attended by a panel of residents likely to be affected by the decision (resident), members of the steering committee, and other stakeholders, as well as technical experts on the subjects under assessment (subject experts) who joined one of the meetings. The 10 panel members were all residents of the San Jose neighborhood and were identified and recruited by personal outreach from steering committee members. The HIA timing was initially targeted around an expected release of the EA in late Fall or early Winter 2013. The first meeting of the resident panel was on August 17, 2013. Panel members explored the connectedness between transportation and health, learned about the consensus process and how it could be used for the extension, and came to consensus on priority issues. From input at that meeting, the steering committee finalized the scope of the HIA.

At the second meeting, on September 14, 2013, panel members first examined demographic information about the neighborhood in the three issue areas. Then residents talked with experts in air quality and economic development, who provided a context for how these issues were relevant to the proposed extension. Residents also heard about resources for information on safety from injuries and collisions. Then they worked to reach consensus on likely effects the extension would have on factors that shape health, and came to consensus on recommendations to be included in the HIA.

HIP conducted the research and drafted the report, prepared materials for and helped facilitate the meetings and managed the overall process. Local steering committee members organized the meetings and facilitated portions of the agenda; provided feedback on the HIA's pathways and scope of research, and tracked the extension process. Resident panel members received a stipend of \$100 for their participation at each meeting. At both meetings we provided breakfast and lunch, simultaneous Spanish interpretation, and all materials in English and Spanish. The second meeting also provided child care for participants.

Extensive research recognizes that health is a product of social, environmental and economic conditions that create opportunities for individuals, families and communities to lead healthy lives. We defined health in this broader context, leading the scope of research in the HIA to focus on three key areas: exposure to environmental hazards; safety from injuries and collisions; and social connectedness. See Appendix B for HIA pathway diagrams.

We examined more than 50 indicators and findings were derived through a range of methods. We reviewed the literature on the key areas of interest, conducted limited secondary data analysis and mapping of local data, and gathered statistics from administrative reports and government websites.

### **About Human Impact Partners**

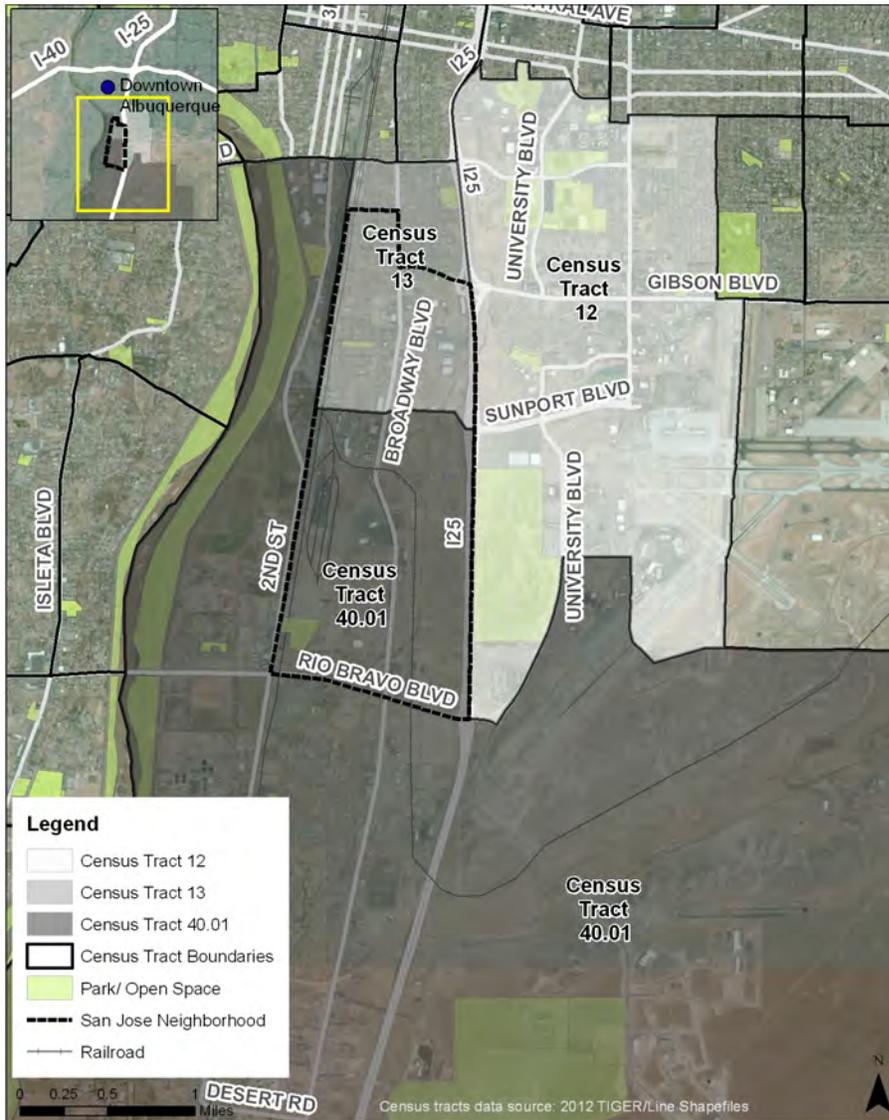
Human Impact Partners is a 501(c)3 organization based in Oakland, Calif. HIP's mission is to transform the policies and places people need to live healthy lives by increasing the consideration of health and equity in decision-making. Through research and advocacy, we help organizations and public agencies use innovative data, processes, and tools that evaluate health impacts and inequities to challenge the inequities that harm the health of our communities. Through training and mentorship we also build the capacity of impacted communities and their advocates, workers, public agencies, and elected officials to conduct health-based analyses and use them to take action.

Our work is guided by the definition of health established by the World Health Organization in 1946: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." We are one of the few organizations in the United States conducting health-based analyses with an explicit focus on uncovering and then addressing the policies and practices that make communities less healthy.

## II. Background

The study area for this HIA is the San Jose neighborhood of Albuquerque, as identified by the San Jose Neighborhood Association. This area is bounded on the south by Rio Bravo Boulevard, on the west by the Santa Fe railroad tracks, on the north by Kathryn Avenue, and on the east by Broadway Boulevard, Gibson Boulevard and Interstate 25.

**Map 1. San Jose neighborhood**



Source: Human Impact Partners, December 2013.

Below we describe a brief history of environmental issues in San Jose and an overview of the neighborhood's demographics.

## IIA. History of Environmental Issues in San Jose

San Jose has been next door to industrial and commercial operations for over a century. The neighborhood began as a primarily agricultural area in the early 1800s, became an industrial area with the arrival of the Atchison, Topeka and Santa Fe Railroad in 1880, and entered a period of decline in the mid-20<sup>th</sup> century. Today, land use policies continue to reflect this legacy by permitting rail lines and industry close to homes.<sup>1</sup>

The Environmental Protection Agency lists two Superfund sites in San Jose, both considered national cleanup priorities. The South Valley site is a one-mile radius around a public well being treated for groundwater contamination. In 1978 testing was done in response to resident complaints and detected chemicals called volatile organic compounds, which can be toxic to humans. The contamination was attributed to historic industrial and commercial operations, in particular the byproducts of decades of chemical and manufacturing activities by Univar and General Electric.<sup>2</sup> In the 1980s, 20 private wells and two municipal wells were taken offline and in 1994 two municipal wells were plugged and permanently abandoned.<sup>2,3,4</sup> There have also been efforts to clean up underground aquifers that were contaminated. In 2009, a five-year review found signs of contaminants and recommended that treatment continue. Residences are in close proximity to the site – at least one is within the site’s borders and additional residences are adjacent to the site.<sup>2</sup>

A second Superfund site in the neighborhood is the Atchison, Topeka & Santa Fe (AT&SF) site. It has been undergoing cleanup of groundwater and soil since 1990 to correct contamination to it and is due for review in 2013, but is not now approved for reuse. The AT&SF site is the former home to a plant where the railway used chemicals such as creosote, which is harmful to human health.<sup>2,5</sup>

In 1972 the plant was demolished and contaminated debris from the structure was unsafely dumped into a nearby wastewater reservoir. The resulting contamination threatened groundwater and the soil. A hazardous liquid that dissolves in groundwater and slowly seeps towards the underlying bedrock was released. Additional risks were posed by zinc in the soil and toxic concentrations of air pollutants known as polynuclear aromatic hydrocarbons (PAH). The company, renamed BNSF, was ordered to remove the debris from the reservoir in 1990. Corrective actions have included soil and water treatment, removing or capping contaminated soil and sludge, and replacing groundwater. Under an agreement between BNSF, EPA, and the New Mexico Environment Department, the site is restricted to future industrial and commercial activities as a tradeoff for relaxed on-site capping standards.<sup>6</sup>

There is a strong tradition in the South Valley and in San Jose of community involvement in identifying potential environmental hazards, including efforts led by organizing groups, a local church, and residents alike.

In the 1960s, two local political organizations, the Black Berets and Brown Berets, sought to address a foul-smelling sewage treatment plant affecting residences in San Jose, organizing a neighborhood tour for officials.<sup>7</sup> More recently, active groups have included the SouthWest Organizing Project, a national pioneer of the environmental justice movement that continues in the South Valley today.<sup>8,9</sup>

Separately, a local church played a key role in a lawsuit filed by the New Mexico Attorney General that resulted in a multi-million dollar settlement with Chevron-Texaco.<sup>10,11</sup> Similarly, in 2004, South Valley residents and Amigos Bravos, a statewide conservation organization, pushed for important revisions to the Water Quality Control Commission’s surface water

quality standards.<sup>12</sup> As recently as 2008, South Valley residents were involved in an effort urging the Bernalillo County Air Quality Control Board to adopt an environmental justice resolution and consider cumulative impacts of pollution.<sup>13</sup>

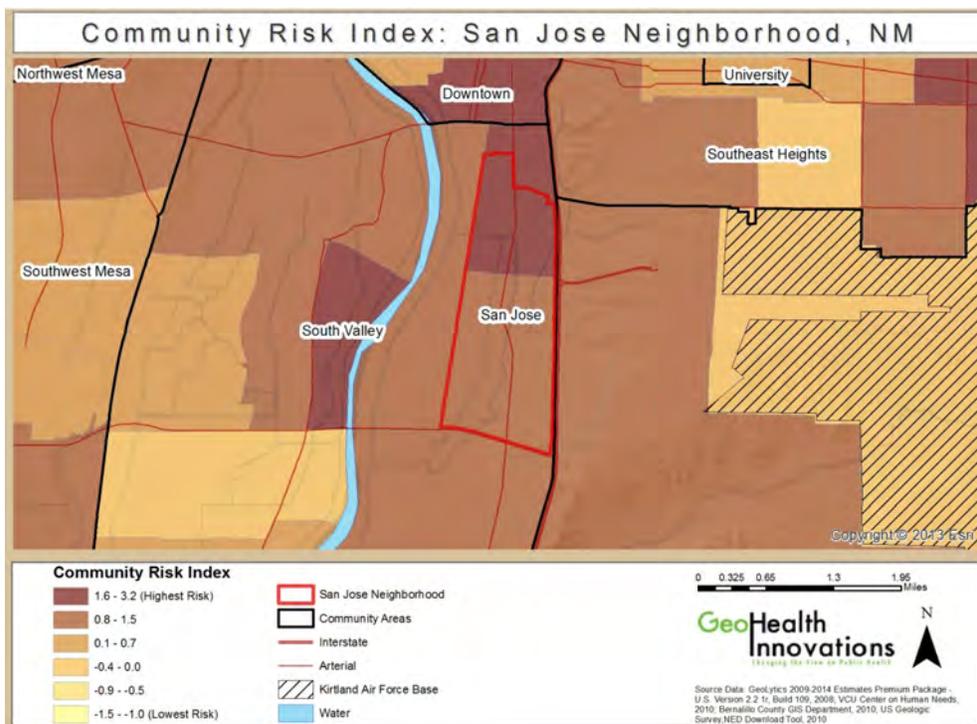
In the 1990s and 2000s, the now-defunct Albuquerque San Jose Community Awareness Council played an instrumental role in advocating for the environmental concerns of the community.<sup>14</sup> Growing from volunteers based in a neighborhood church to a state-funded environmental educational program, the council has been credited with many successes.<sup>15,16</sup> The record of public comment on the AT&SF plan shows that the council provided a strong, professionally informed presence on behalf of San Jose residents in the decision-making arena.<sup>17</sup>

More recently San Jose residents have urged consideration of the potential health effects of proposed projects such as an indoor dirty material recovery facility and a newly acquired Vecenergy bulk gasoline terminal.<sup>18</sup> Residents also have participated in a community-operated air-quality monitoring project in partnership with the SouthWest Organizing Project and Global Community Monitor.<sup>18,19,20</sup>

## IIB. San Jose Today

A picture is worth a thousand words. The map of San Jose below depicts the neighborhood's *community risk index*, among the highest in Bernalillo County. Risk is defined here as a single measure that is created by combining several economic, educational, and social factors such as unemployment, education, and crime.<sup>1</sup>

**Map 2. Community risk index by census tract, San Jose neighborhood, Albuquerque, 2010**



<sup>1</sup> For the full list of factors included in the index, see: <http://www.societyhealth.vcu.edu/Page.aspx?nav=214>

Table 2 describes demographics in the neighborhood. (Data often are not available for this exact area, and in those cases we use the closest approximations available.) Overall, San Jose makes up less than one percent of the county population. However, compared to Bernalillo County it is a younger neighborhood, with a larger portion of the population under age 18, and one with a much higher proportion of non-whites (it is predominantly Hispanic/Latino).

Nearly 1 in 4 families in San Jose lives in poverty; the median income is 60 percent that of Bernalillo County overall. Less than half of residents have a high school diploma or equivalent, in a county where jobs often require the equivalent of a high school degree or higher (see Table 1). Unemployment is nearly one-third higher in the neighborhood than within the county overall.

**Table 1. Example of minimum education level required for jobs in Bernalillo County, October 2, 2013**

Minimum Education Level	Percentages for Bernalillo County
Not Specified	N/A
High School Diploma or Equivalent	50 %
Vocational School Certificate	3%
Associate's Degree	11%
Bachelor's Degree	30%
Master's Degree	5%
Doctorate Degree	1%
<i>Source: New Mexico Department of Workforce Solutions, October 2, 2013.</i>	

San Jose residents spend less time, on average, getting to work than county residents overall. More residents take public transportation to work when compared to the county, and a larger portion does not have access to a car.

**Table 2. Demographics of San Jose neighborhood and Bernalillo County, NM**

Indicator	San Jose neighborhood	Bernalillo County
Population <sup>a</sup>	4,301	655, 306
Age <sup>21</sup>	33%	24%
Non-white population <sup>21</sup>	97%	58%
Hispanic / Latino population <sup>21</sup>	94%	48%
Median household income (in 2011 dollars) <sup>a</sup>	\$28,507	\$48,231
Income below poverty in the past 12 months <sup>22</sup>	13%	24%
Less than a high school diploma or equivalent <sup>a</sup>	53%	13%

<sup>a</sup> For health data, from the New Mexico Department of Health, and per the recommendation of staff at that agency, the report uses Small Area 7. For demographics and environmental hazards, we use census tract 13. For crime data, we use the San Jose Neighborhood Association boundary and report information only from the Albuquerque Police Department; this excludes the portion of the neighborhood in the Bernalillo County Sheriff Office's jurisdiction.

**Table 2 (continued)**

<b>Indicator</b>	<b>San Jose neighborhood</b>	<b>Bernalillo County</b>
Unemployment <sup>22,24</sup>	10.9%: 2007-2011 estimate 6.2%: 2006-2010 estimate	7.3%: 2007-2011 estimate 4.2%: 2006-2010 estimate
Time spent traveling to work <sup>22</sup>	19 minutes	22 minutes
Public transportation to commute <sup>22</sup>	6%	2%
Access to a motor vehicle <sup>22</sup>	8%	6%
<i>Sources: American Community Survey, 2006-2010 and 2007-2011.</i>		

High crime rates have decreased over time both in the San Jose neighborhood and Albuquerque overall, but remain an area of focus today. Recent rates for reported violent crimes are lower, but property crime rates are higher in San Jose than in the city overall.

Reported violent crimes in the neighborhood are an estimated 3 per 1,000 people compared to an estimated 8 per 1,000 people in the city overall; however are likely an undercount in the neighborhood.<sup>§</sup> Reported property crimes are an estimated 21 per 1,000 people in the neighborhood compared to an estimated 5 per 1,000 people in the city overall.<sup>§</sup>

In both Albuquerque and Bernalillo County, gross receipts dipped during the national recession in 2008, though the city experienced a larger dip than the county (see table 3).<sup>-</sup>

**Table 3. Tax revenues for City of Albuquerque and Bernalillo County, FY2007-2011**

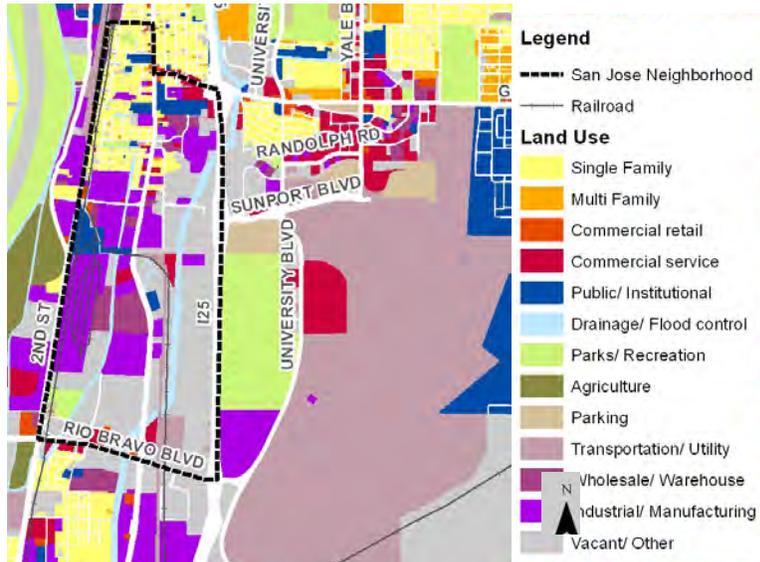
Municipally Imposed Gross Receipts Tax Revenues, City of Albuquerque and Bernalillo County, Fiscal Years 2007 to 2011 (in millions of dollars)					
	2007	2008	2009	2010	2011
City of Albuquerque <sup>26</sup>	\$188.6	\$177.9	\$154.2	\$132.0	\$ 144.5
Bernalillo County <sup>27</sup>	\$100.1	\$95.8	\$91.7	\$89.1	\$89.7
<i>Sources: City of Albuquerque, 2012 and Bernalillo County, 2008 to 2011.</i>					

Zoning in San Jose allows various residential uses in the northern part of the neighborhood, and various types of industrial and heavy manufacturing uses in the southern part. In terms of how land is actually used, it is primarily a mix of vacant properties or other uses, industry, and homes (39% vacant or other, 29% industrial, 10% residential). There is some commercial land use (4%), but overall there are few commercial or retail opportunities for residents, either for jobs or as consumers (see map 3).<sup>§</sup>

<sup>§</sup> For San Jose neighborhood estimated crime rates are derived from crime frequencies provided by the Albuquerque Police Department (APD) and population estimates from the U.S. Census. These numbers are likely an undercount. They include reported crimes in the APD jurisdiction, which does not include areas of San Jose that are in the jurisdiction of the Bernalillo County Sheriff's Department. Also, they include only reported crimes. Many crimes may go unreported. A limitation is that the estimates approximate the population of the area served by Albuquerque Police Department, using U.S. Census information. Estimates of crime rates for the City of Albuquerque are reported from the FBI's Uniform Crime Reporting system.

<sup>-</sup> Sales tax revenue is a major source of revenue for local, state, and federal governments. In New Mexico, sales tax revenue is measured in gross receipts revenue. Gross receipts revenues are not readily available at the level of the San Jose neighborhood; however, they are available for the city and county overall.

**Map 3. Land use in and around San Jose neighborhood**



Source: Human Impact Partners, December 2013.

### Snapshot of health in San Jose

A recent study in the *American Journal of Public Health* that focused on women, summarized the importance of social conditions in thinking about demographics and health outcomes:

*"... Higher rates of both poor health outcomes and higher risk behaviors in women of color and low-SES women should be seen as reflective of adverse social circumstances rather than individual failing. In a similar way, data on lower rates of adverse health outcomes and risk behaviors in White and more affluent women should be seen as reflective of the privileges and advantages that accompany membership in a dominant social group."*

- Dehlendorf et al. *AJPH*, October 2013, vol 103, no 10

From that perspective, we summarize current health conditions in San Jose and related costs.

**San Jose's health area has among the highest rates in the county of deaths from several health conditions.** It ranks first in deaths from cancer as well as conditions related to hardened arteries and high blood pressure, second in deaths from diabetes as well as respiratory diseases related to flu and pneumonia, and sixth in deaths from heart disease.<sup>29</sup>

**Living with these conditions has costs for residents, and a large proportion of neighborhood residents do not have health insurance.** The average cost of cancer treatment is \$150,000.<sup>30</sup> One-year costs for patients with atherosclerosis, or hardened arteries, average approximately \$13,000.<sup>31</sup> Costs associated with stroke average \$15,000 per person, and the American Diabetes Association estimates around \$8,000 in annual cost for a person with diabetes is.<sup>32,33</sup> For a person who experiences heart failure, costs to cover medication and hospital are an estimated \$8,500.<sup>34</sup> Approximately one-fourth (24.3%) of residents in the neighborhood do not have health insurance; a higher proportion than for the county overall (19.8%).<sup>35</sup>

<sup>29</sup> Based on death rates – meaning deaths per 100,000 people – that have been adjusted for age during the period 1999-2011 across small areas in Bernalillo County.



The proposed extension would include:

- A median divider
- Bridges over the Albuquerque Metropolitan Arroyo Flood Control Authority South Diversion Channel and over Edmunds Street
- A combination of retaining walls and fill sloping to grade

The extension also crosses the South Valley Superfund site, described above.

The county is undertaking the proposed extension in cooperation with the New Mexico Department of Transportation and the Federal Highway Administration. The estimated cost is between \$17.1 million and \$17.9 million. Not included in the cost are proposed, but unfunded, improvements for Woodward Road, which connects to the Sunport Boulevard Extension.

Currently the project is undergoing environmental assessment. Funds have been allocated but the assessment must be completed before the county can complete design and construction by the projected fall 2017 completion date.

### **III.B. The Proposed Extension in Context**

Over time, various planning processes for the city, county and region have shaped the San Jose neighborhood. Below are several key plans that mention the proposed extension. In these documents, the project is considered a “committed improvement,” one that has dedicated funding and is expected to be built.<sup>37</sup>

*Mid-Region Council of Governments (MRCOG) 2035 Metropolitan Transportation Plan*, approved in June 2011. The Metropolitan Transportation Plan is a long-range planning document, updated every four years and projecting 20 years in the future. It identifies transportation needs, goals, and a framework to meet these needs.

*MRCOG FY 2012 to FY 2017 Transportation Improvement Program*. The Transportation Improvement Program is a plan for implementing needs identified in the Metropolitan Transportation Plan. It is updated twice a year and covers projects intended to begin six years into the future. It also lists anticipated federal, state, and local money for the projects.<sup>38</sup> For the proposed extension, the plan estimates the cost at nearly \$18 million.

*New Mexico Statewide Transportation Improvement Program*. The state has its own version of the Transportation Improvement Program, since federal funds go through the state to regional agencies like MRCOG. The state plan, current as of September 2013, includes the proposed extension, listing state sources of funding to contribute to the nearly \$18 million estimated cost.

Additional plans that touch on the San Jose neighborhood include the comprehensive plan, and various area and sector plans. See Appendix A for a summary.

#### **About Environmental Assessments and Environmental Impact Statements<sup>39, 40, 41, 42</sup>**

*Environmental Assessment* is a brief public document that agencies use when the magnitude of impacts from a project are uncertain. It has three purposes: to provide sufficient evidence and analysis for agencies to determine whether to prepare a more in-depth report, known as an Environmental Impact Statement; to help an agency identify alternatives and mitigation measures if a more in-depth Environmental Impact Statement is not needed; and to help an agency prepare an Environmental Impact Statement, if one is needed. An Environmental

Assessment is made publicly available, and after public comments are received and considered, a final decision is made to either: 1) prepare a more in-depth Environmental Impact Statement because the Environmental Assessment showed that the project will have significant impacts, or 2) make a Finding of No Significant Impacts, known as a FONSI, meaning the project proceeds without preparing an Environmental Impact Statement. The Sunport extension project is currently in the environmental assessment phase.

*Environmental Impact Statement* is a detailed analysis that a federal agency must prepare if it is proposing a major federal action that will significantly affect the quality of the prospective, meaning future, human environment. The statement is prepared after an Environmental Assessment finds that the project will have significant impacts, or if an agency decides to skip an EA entirely because it considers a project environmentally controversial and goes directly to preparing the Environmental Impact Statement. The statement should discuss significant environmental impacts and reasonable alternatives (including a No Action alternative), which would avoid or minimize adverse impacts or enhance the quality of the human environment. The regulatory requirements for an Environmental Impact Statement are more detailed than the requirements for an Environmental Assessment.

*Sources: Council on Environmental Quality, 2013; US Department of Transportation, 2013; US Environmental Protection Agency, 2013.*

### **III.C. The Proposed Extension: Environmental Assessment Background and Findings**

In September 2011, Bernalillo County Public Works released an environmental assessment for the Sunport Boulevard extension project. Prepared by the URS Corp., the document primarily describes the project's history, purpose and need; design alternatives for the extension; and the affected environment, projected effects and proposed mitigations. In July 2015, the county released a revised environmental assessment report for the same project.

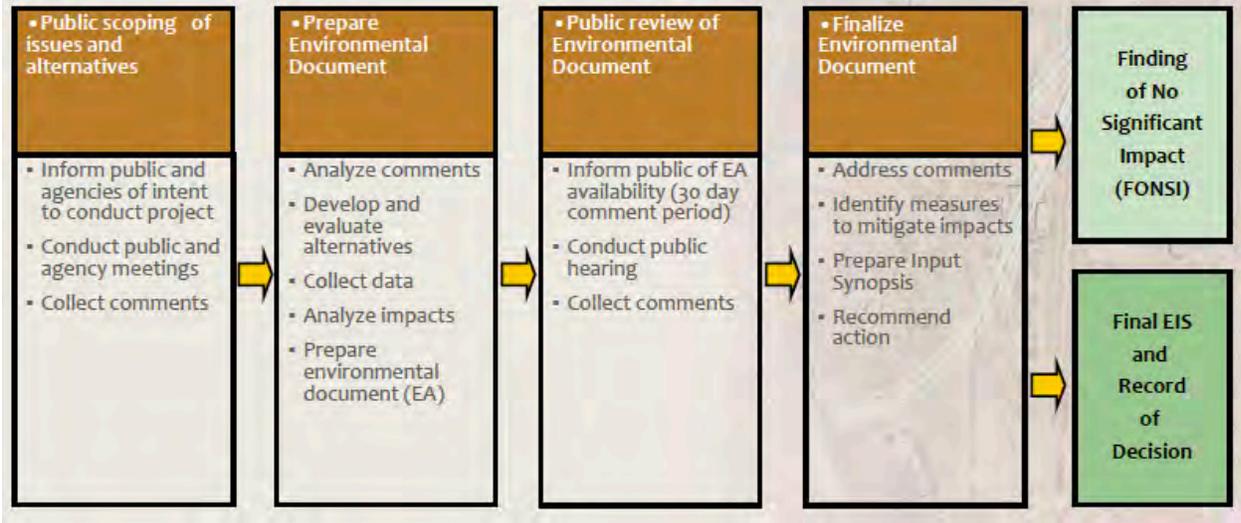
According to the 2011 assessment, the need for and purpose of the Sunport Boulevard Extension are to:

- Reduce traffic congestion on the adjacent arterial streets of Rio Bravo Boulevard, Gibson Boulevard and their interchanges with I-25.
- Connect elements of the area's transportation network by providing another east-west arterial roadway connecting Broadway Boulevard and I-25.
- Continue the development of the planned transportation system and incorporate Sunport Boulevard between Broadway Boulevard, I-25 and Albuquerque International Sunport Airport as envisioned in previous planning documents dating to the 1980s.

Draft environmental assessment findings that are particularly relevant to the HIA are described in Table 4. They include findings for traffic congestion, air quality, noise, bike lane access, bus access, economic development, monitoring of remediation on Superfund land, communities and land use, socioeconomics and environmental justice, and cumulative impacts.

The graphic below, from the county's Public Works Division, describes key points in the environmental assessment process for the extension.<sup>45</sup> In September 2011, the county released the first draft of the assessment. The revised assessment was made publicly available in mid-July 2015, with a subsequent public comment period ending in September 2015. The county intends to submit the report to relevant federal and state agencies for final approval with a request for a Finding of No Significant Impact (FONSI), unless significant impacts are identified during the public comment period. If a FONSI is requested, an Environmental

Impact Statement will not be required, meaning the county will be able to access allocated funds to begin design in 2014-2015 and construction in 2016-2017.



Source: Bernalillo County Public Works, (n.d.).

<b>Table 4. Summary of Key Findings from Sunport Boulevard Extension Environmental Assessment</b>	
<b>Topic</b>	<b>Future effects under Alternative A</b>
<b>Traffic congestion</b>	<ul style="list-style-type: none"> <li>- More traffic by 2030 or 2035.</li> <li>- Extension will help decrease overall congestion and reduce traffic on Broadway Boulevard to the north of Sunport Boulevard and Woodward Road. Traffic volumes on Broadway Boulevard to the south of Sunport Boulevard and Woodward Road will increase.</li> </ul>
<b>Air quality</b>	<ul style="list-style-type: none"> <li>- Extension will not raise carbon monoxide emissions above the federal threshold criteria.</li> <li>- Extension is not expected to seriously affect overall air quality.</li> <li>- A dust control plan will be in place during construction.</li> </ul>
<b>Noise</b>	<ul style="list-style-type: none"> <li>- No anticipated noise impacts, so no plans to reduce noise impacts.</li> </ul>
<b>Bike lane access</b>	<ul style="list-style-type: none"> <li>- The half-mile extension will include five foot bike lanes on each side, to eventually connect Broadway Boulevard with University Boulevard</li> <li>- The bike lanes will be part of a future connectedness to the Riverside Trail.</li> </ul>
<b>Bus access</b>	<ul style="list-style-type: none"> <li>- Will look into making it easier to transition from one transportation type to another.</li> <li>- Will consider different forms of transportation, including how to get people to the airport.</li> </ul>
<b>Economic development</b>	<ul style="list-style-type: none"> <li>- New access to land for potential businesses will spur industrial redevelopment and the cumulative impact will be positive for economic and commercial growth.</li> </ul>
<b>Monitoring of remediation on Superfund land</b>	<ul style="list-style-type: none"> <li>- Road option will only impact a portion of the Superfund site and Chevron facility.</li> <li>- If needed, Woodward Road option (Alternative A) will relocate water lines and monitoring wells associated with remediation for the site.</li> </ul>
<b>Communities and land use</b>	<ul style="list-style-type: none"> <li>- Land use will not be significantly affected as it is primarily vacant land.</li> <li>- Preferred option is consistent with area planning and will conform to predicted growth of the area.</li> <li>- Extension will provide additional access to the area of the planned industrial corridor.</li> <li>- Preferred option will incorporate bicycle lanes and make provisions for future sidewalks</li> </ul>
<b>Socio-economics and environmental justice</b>	<ul style="list-style-type: none"> <li>- Residents will experience changes to traffic volumes (<i>see Traffic Congestion above</i>). Forecasted decreases in traffic volumes north of Woodward Road will result in an overall positive impact to these neighborhoods.</li> <li>- The preferred option is located within areas of Interstate highway right-of-way, vacant land, manufacturing, or special use zoned property, and is unlikely to disproportionately impact the neighborhood.</li> <li>- The project is not expected to impact community cohesion, displace people, or in other ways disproportionately and adversely impact minority or low-income populations.</li> </ul>
<b>Cumulative impacts</b>	<ul style="list-style-type: none"> <li>- Cumulative impact will be positive for economic growth (<i>see Economic Development</i>).</li> <li>- A cumulative impact to alternative transportation will result from the preferred option.</li> <li>- No significant cumulative impacts are anticipated from the preferred option.</li> </ul>

## IV. Findings

The HIA focused on how the proposed extension would affect three key areas:

- Exposure to environmental hazards
- Safety from injuries and collisions
- Social connectedness

In this section we describe findings related to each of these areas – how they relate to health, what the environmental assessment says, and resident panel analysis and discussion of potential effects of the proposed extension. Table 5 briefly summarizes our findings about existing conditions.

### **Table 5. Summary of Existing Conditions**

#### **Exposure to Environmental Hazards**

##### *Stationary Sources:*

- San Jose has numerous facilities producing hazardous environmental emissions and a high density of those facilities compared to other census tracts in the county.
- As of July 2012, the City of Albuquerque had permitted 17 sites in San Jose as stationary sources of air pollution. Data on permitted emissions illustrate that San Jose makes up less than one percent of Albuquerque's total population, yet the neighborhood bears a disproportionate share of permitted emissions for seven of eight pollutants reported.
- In 2012, the South Valley air monitor registered levels of ozone and PM10 that exceeded both primary and secondary health standards.

##### *Mobile Sources:*

- Average weekday traffic in the project area is heaviest on the east-west corridor of Rio Bravo Boulevard – about 32,000 vehicles a day– at the southern section of the neighborhood, and south of the proposed project.
- Cars are the majority of vehicles on these roadways but there are a large number of heavy trucks on Broadway Boulevard.
- The project area does not appear to suffer from traffic congestion, with exceptions such as Rio Bravo Boulevard west of I-25.

##### *Noise:*

- Despite the presence of many sources of noise, data are not available on baseline noise levels.

#### **Safety from Injuries and Collisions**

##### *Collisions:*

- Collisions between automobiles and either pedestrians or bicyclists are relatively infrequent in San Jose. Those that do occur tend to cluster in the north edge of the neighborhood.

##### *Facilities for pedestrians and bicyclists:*

- Facilities for walking and bicycling in the neighborhood are scarce. The entire project area currently has only three blocks with designated bike lanes.

#### **Social Connectedness**

- Gathering places in and near the neighborhood include churches, community centers, homes of friends and family, schools, parks and playgrounds. Residents did not mention gathering at restaurants or other retail areas.

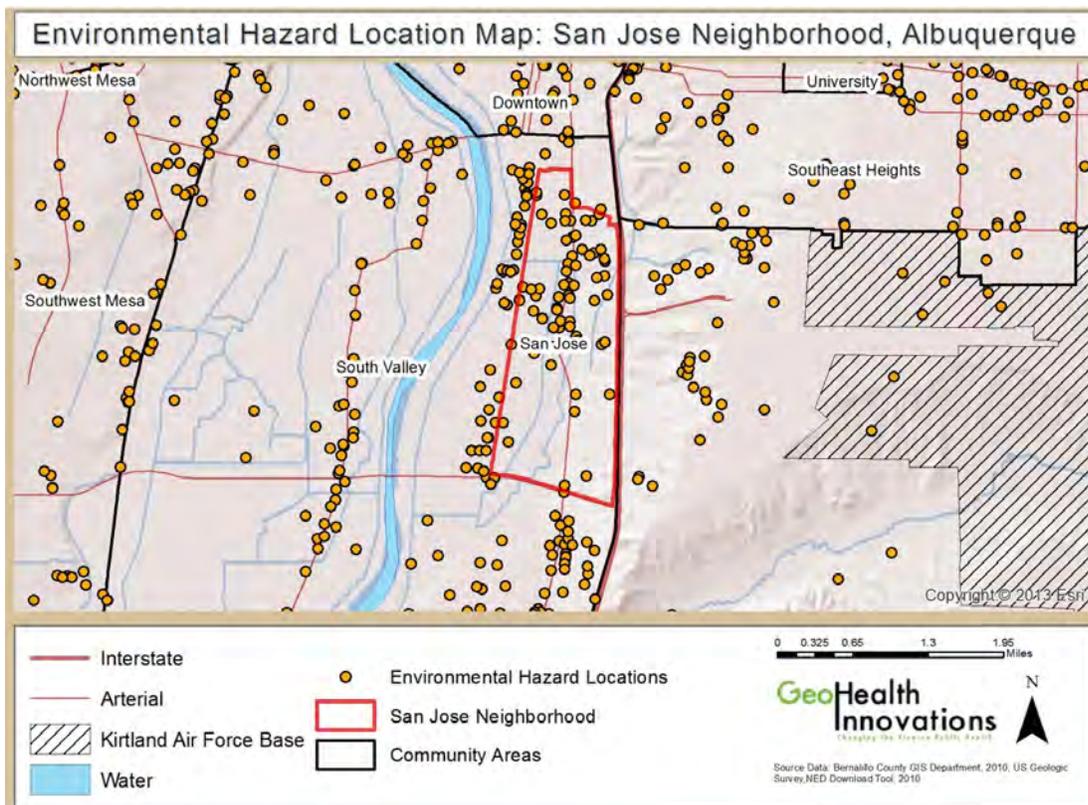
- Residents perceive the neighborhood as less close-knit today than in the past and as a place with a negative reputation owing in part to crime, which has decreased over time but remains relatively high.
- Residents want future development to protect and improve these gathering spaces, including parks and a health facilities and markets, schools and workplaces. They want to preserve and expand the ability to breathe and walk in the environment, safety from traffic and the scenery.

## IVA. Exposure to Environmental Hazards

There is a wide range of potential environmental hazards in the neighborhood. Conventional practices in environmental hazards management address risks individually, segregating hazards from different chemical pollutants and from different exposure pathways. But human health depends on the cumulative effect of all exposures. As stated by Alves et al (2012):

In reality, people are exposed to mixtures of pollutants or to the same pollutant through a variety of media, including the air, water, and food. It is now more recognized than before that environmental exposure to pollutants occurs via multiple exposure routes and pathways, including inhalation, ingestion, and dermal absorption.....Consequently, to arrive at a realistic assessment of exposure risks, regulatory authorities arguably should consider cumulative stressors and exposure data derived from cumulative risk assessment.“

Map 5. Environmental hazard locations in San Jose, 2010



Map 5 shows numerous facilities producing hazardous environmental emissions throughout the neighborhood. Facilities include hazardous chemicals dumpsites, locations contaminated by hazardous materials, railroad depots, discharge permit locations, petroleum storage sites, industrial and manufacturing sites, stationary air pollution sources, Superfund sites, and interstates and arterial roads. The density of these facilities relative to the rest of the city and county is high: *San Jose has a greater density of hazards per square mile compared to many other areas of the county.*

San Jose stands to benefit from a more holistic assessment of environmental and social risks. Given the area's many hazardous facilities, it is insufficient to only examine the incremental

contribution of a single project to the neighborhood's burden of environmental exposure and risk. Local agencies charged with analyzing proposed projects should consider how exposures from multiple sources may act together over time to expose residents to increased health risks.

With cumulative impacts in mind the next section describes conditions for various hazardous exposures in San Jose.

**Existing Conditions: San Jose has a disproportionate burden of facilities producing hazardous environmental emissions**

*Air Quality: Exposure to Stationary Sources of Air Pollution*

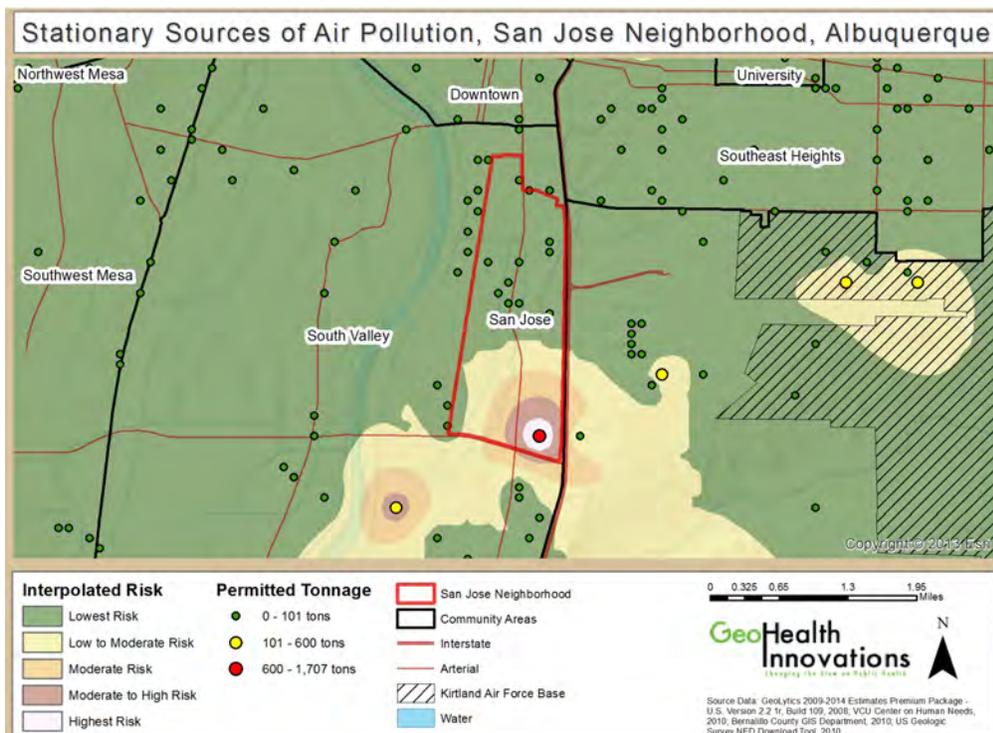
There are two key categories of sources for air pollution: stationary sources and mobile sources. Mobile sources include vehicles, such as cars, trucks or airplanes. Stationary sources are fixed sites such as factories or refineries.<sup>45</sup>

As of July 2012, the City of Albuquerque had approved permits for 17 sites in San Jose that are stationary sources of air pollution. As there is no data available on actual emissions for these sites, Table 6 below shows the total tons of pollutants (by type) permitted in the air quality permits issued for San Jose.

The table also shows what share these permitted emissions in San Jose make up of the city's overall total. For example, the neighborhood of San Jose has seven percent of the City of Albuquerque's total permitted emissions for PM10 and 11 percent for PM2.5, two types of airborne fine particles that can penetrate deep into lungs.

*These data illustrate that San Jose makes up less than one percent of the City of Albuquerque's population, but bears a much greater share of permitted pollution. The neighborhood bears a disproportionate share of the permitted emissions in the city for seven of eight pollutants reported.*

**Map 6. Stationary sources of air pollution in San Jose neighborhood, 2010**



**Table 6. Total tons of emissions allowed in San Jose and percent for City of Albuquerque, by pollutant, 2012**

Particulate Matter 10 (PM10)	Particulate Matter 2.5 (PM2.5)	Carbon Monoxide (CO)	Nitrogen Oxides (NOx)	Hazardous Air Pollutants (HAPS)	Sulfur Oxides (SOx)	Volatile organic compounds (VOCs)	Lead (Pb)
65.0 <b>(7%)</b>	57.0 <b>(11%)</b>	734.4 <b>(10%)</b>	571.3 <b>(7%)</b>	70.0 <b>(28%)</b>	76.8 <b>(11%)</b>	295.3 <b>(6%)</b>	0.0 <b>(0%)</b>

*Source: City of Albuquerque Environmental Health Department, July 2012.*

Data from the Prosperity air monitor in the South Valley – the closest monitor to San Jose, about four miles away – show that the neighborhood has recently been subject to outdoor air concentrations close to or exceeding the maximum levels accepted by national air quality standards. In 2012, the South Valley air monitor on some days exceeded both the primary and secondary standards meant to protect public health and welfare for levels of ozone and PM10, respectively.<sup>46,47</sup> The violations have not been consistent enough for the area to merit the EPA’s official designation of non-attainment for air quality. Nevertheless, the information here suggests attention should be paid to the high levels of these pollutants.

For the last decade, the South Valley monitor has registered ozone levels approaching the national standard for all of the last decade.<sup>48</sup> Additionally, according to EPA data, a recent spike in PM10 levels in San Jose cannot be explained by exceptional events such as wildfires or weather.<sup>49,50</sup> This information directly contradicts the environmental assessment’s suggestion that the excessive PM10 levels can be attributed to fires and high winds. In the context of cumulative impacts,<sup>4</sup> additional development that even marginally exacerbates the ambient levels of these pollutants could exceed safe margins.

There were no violations in 2012 for ambient levels of carbon monoxide (CO), a main point of focus in an Air Quality Review report for the extension.<sup>49</sup> Bernalillo County had high concentrations of CO in the past, but has been in attainment since 1996. According to the EPA’s national database, no area in the country has been under a non-attainment designation from CO levels since 2010, reflecting advances in emissions controls.<sup>51</sup>

*Air Quality: Exposure to Mobile Sources of Air Pollution*

Nationally, nearly 20 percent of the population lives near high volume roads where daily average traffic is 25,000 vehicles or more, and where the concentration of mobile source air pollutants is typically elevated, posing health concerns.<sup>52</sup> In the US, minority and low-income households are more likely to live near these high volume roads or in an area with higher traffic density than white or higher income populations.<sup>52</sup>

The neighborhood of San Jose is adjacent to I-25 and numerous arterial roads with heavy traffic. Data from MRCOG demonstrate that average weekday traffic in the project area is highest on the east-west corridor of Rio Bravo (approximately 27,000 vehicles), which is at the southern section of the neighborhood, and south of the proposed project. Traffic along Broadway Boulevard in the project area is highest north of Gibson Boulevard headed into downtown

\* The EPA has proposed reducing the federal standard for PM2.5 to 12 µg/m3, following guidance from their scientific advisory committee. This is important because historic assessment of air pollution is based on prior standards. Assessment of future projects and conditions should be based on new standards that are coming into practice.

(17,000 vehicles), and is generally greater than traffic on Second Street. Traffic data for local roads are unavailable, and all of the roads between Second and Broadway Boulevard in and around Gibson Boulevard are considered local roads.<sup>53</sup>

In terms of what types of vehicles are traveling on these roads, MRCOG maintains limited vehicle classification data; only about 30% of traffic volume counts also collect vehicle classification counts. Table 7 reflects the total traffic volume by vehicle type for a very limited number of streets in the project area.

**Table 7. Percent of traffic counts by vehicle type<sup>54</sup>**

Street segment (year of count)	Auto	Heavy trucks	Pick-up / Bus / 2-axle	Motorcycle
2 <sup>nd</sup> St, south of Avenida Cesar Chavez (2010)	65%	5%	29%	<1%
2 <sup>nd</sup> St, south of Woodward (2012)	72%	4%	24%	<1%
Broadway Boulevard, south of Woodward (2011)	59%	11%	30%	<1%
Broadway Boulevard, north of Avenida Cesar Chavez (2009)	64%	8%	27%	<1%
Gibson Boulevard, west of I-25 (2010)	71%	7%	21%	<1%

*Source: Mid-Region Council of Governments, 2009-2012.*

Most vehicles on these roadways are cars, but there is a large proportion of heavy trucks on Broadway Boulevard. Local residents say the official counts may undercount the trucks actually using these streets.

The environmental assessment listed traffic congestion as a main reason for the proposed extension. But the project area does not appear to suffer from traffic congestion, with a few exceptions, such as Rio Bravo Boulevard west of I-25. The MRCOG report “A Profile in Congestion” indicates:

- West of I-25, Gibson Boulevard has "minor" congestion
- West of I-25, Rio Bravo Boulevard has "severe" congestion to Second Street
- Second Street and Broadway Boulevard have no or minimal congestion

Planners expect Rio Bravo Boulevard will get more congested with future population growth. The level of congestion should be considered relative to the Albuquerque region and reflects conditions across the peak period only.<sup>55</sup>

#### *Noise*

Sound is frequently described in terms of peak levels or as an average over varying time periods. The City of Albuquerque Noise Ordinance<sup>56</sup> sets maximum allowable noise levels for residential areas as 55 A-weighted decibels, or dBA, in the daytime and 50 dBA at night (A-weighted decibels express the relative loudness of sounds. High frequencies, which our ears are more sensitive to, are given more weight.) For industrial areas the maximums are 75 dBA in the daytime and 70 dBA at night. Bernalillo County sets maximum levels for residential areas as 55 dBA in the daytime and 45 dBA at night, with the same higher levels for industrial areas as in the city. The County also has specific regulations for motor vehicles.

No noise data are available for San Jose. The environmental assessment identifies noise sources in the vicinity as traffic on I-25 and Broadway Boulevard, aircraft at the airport and Kirtland Air Force Base, trains on the rail spurs servicing the bulk fuels terminals, and noise associated with industrial and commercial activities of the area. Similarly, the Albuquerque/Bernalillo County

Comprehensive plan found excessive noise levels near several residential areas, specifically in neighborhoods near the airport, adjacent to I-25, by certain arterial streets, as well as industrial areas. However, staff at the city’s planning and environmental health departments were unable to provide the data behind these findings or more recent information, highlighting an opportunity for stronger data collection and publication.

**Why It Matters: Exposure to environmental hazards affects health and well-being, particularly for vulnerable populations**

*Exposure to Air Pollution*

The EPA identifies six criteria air pollutants that can be detrimental to human health, and for which the EPA is required by the Clean Air Act to set standards to protect public health and welfare. They are ozone, carbon monoxide, particulate matter, nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide, and lead. The EPA also identifies six priority mobile source air toxics but there are no standards for these contaminants, which include benzene, butadiene, formaldehyde, acetaldehyde, acrolein, naphthalene, and diesel exhaust.

Information about current levels of criteria air pollutants comes from a network of air quality monitors across the nation. Exposure to air pollutants at levels below existing standards also may result in health impacts for those with existing health conditions. The EPA regulates both mobile and stationary emissions of these pollutants. A 2013 study reported that that very few monitors used to enforce the priority air pollutant standards are located near populations along high-volume roadways, adding that although “current federal law requires ‘hotspot’ analysis for CO and PM<sub>2.5</sub> when building new transportation infrastructure in non-attainment areas there is currently no method to enforce possible violations of the NAAQS alongside existing transportation corridors or in attainment areas lacking air quality monitors.”<sup>52</sup>

Studies on the health effects associated with distance from traffic look at air pollutants as a mixture to examine their cumulative effects.<sup>57</sup> In 2008 a report by the Health Effects Institute concluded that current evidence is sufficient to say that exposure to traffic-related air pollution exacerbates asthma. The report adds that although evidence is yet sufficient, traffic-related air pollution could cause onset of childhood asthma, non-asthma respiratory symptoms, impaired lung function, and premature death.

Studies link vehicle emissions to lung disease;<sup>58</sup> asthma symptoms;<sup>59,60,61</sup> medical visits for asthma;<sup>62</sup> asthma prevalence and incidence;<sup>63,64,65,66,67</sup> and heart disease.<sup>68,69</sup> It’s not yet possible to attribute the cumulative effects of roadway proximity and non-cancer health effects to one or more specific kinds of vehicles or pollutants. Table 8 is a summary of health effects of selected urban air pollutants relevant to the proposed extension.

**Table 8. Summary of health effects of selected urban air pollutants relevant to Sunport**

<b>Pollutant</b>	<b>Examples of Sources</b>	<b>Health Effects</b>	<b>Maximum Allowed*</b>
<i>Nitrogen Dioxide (NO<sub>2</sub>)</i>	Combustion processes in vehicles and industrial operations	Increased risk of acute and chronic respiratory disease; reduced visibility.	100 ppb (1hr) 53 ppb (annual average)

Table 8 (continued)

Pollutant	Examples of Sources	Health Effects	Maximum Allowed*
<b>Particulate Matter (PM<sub>2.5</sub>)</b>	Motor vehicles, fireplaces, cooking stoves, power generation, construction, and industrial activities	Impaired lung function; exacerbation of acute and chronic respiratory ailments including bronchitis and asthma; excess emergency room visits and hospital admissions; premature arteriosclerosis; premature death.	15 ug/m <sup>3</sup> (annual average)
<b>Diesel exhaust</b>	Diesel engines	Probable increased risk of cancers (see: International Agency for Research on Cancer list for Group 2A substances). Health effects associated with particulate matter (see list above) that is emitted in combustion.	N/A

\* Under Federal Air Quality Standards

Air quality does not affect everyone the same way, and some groups are more sensitive to adverse health effects. Groups of people that are particularly sensitive to the health effects of air pollutants include the elderly and the young, those with asthma, and groups with other exposures linked to cardiovascular or respiratory diseases.<sup>70</sup> Poorer populations and people of color tend to live closer to sources of air pollution, and poverty may increase susceptibility to the health effects.<sup>71</sup>

*Exposure to noise*

According to the World Health Organization’s Guidelines for Community Noise,<sup>72</sup> which reviews a substantial amount of the research on noise and health, long-term exposure to moderate levels of noise can harm sleep, school and work performance, raise blood pressure and increase the chance of cardiovascular disease. A significant body of research in that report and in other public health literature looks at traffic noise. According to the literature:

- *Sleep:* Traffic noise has been linked to poor sleep.<sup>73</sup> A lack of sleep may have consequences including fatigue, impaired endocrine and immune system and psychological effects.<sup>74</sup>
- *Annoyance:* Reports of annoyance are the most widely studied noise impact<sup>75</sup> and the relationship has been quantified.<sup>76</sup> Annoyance is related to several health effects associated with noise, including elevated blood pressure, circulatory disease, ulcer and colitis.<sup>75</sup>
- *Learning and educational performance:* Chronic road noise can affect cognitive performance of children, including attention span, concentration, memory and reading ability.<sup>77,78</sup>
- *Hypertension:* Traffic noise and high blood pressure have a dose-response relationship; increased traffic noise increases the likelihood and severity of high blood pressure. <sup>79</sup> People who live near chronic road noise (more than 20,000 vehicles a day) are twice as likely to have hypertension – men almost four times as likely.<sup>80</sup>
- *Heart attack:* Increases in neighborhood noise, including traffic, at levels above 50 to 60 dBA increase the risk of heart attack.<sup>81,82,83,84</sup>

## **Review of Environmental Assessment: The assessment of impacts Sunport Boulevard Extension will have on air quality, noise and cumulative impacts is incomplete**

### *Air Quality*

The environmental assessment and accompanying air quality review state that the EPA designates Bernalillo County as an attainment area for all air pollutants identified in federal standards, and that previously carbon monoxide was the largest pollutant of concern in the county. However, the discussion of traffic-related air quality impacts focuses solely on carbon monoxide notably omitting nitrogen dioxide and PM2.5, which are associated with traffic. These could also be assessed to understand whether overall emissions and exposure levels may change. Focusing attention on a pollutant that is already successfully managed obscures more significant hazardous pollutants that are less well managed, including ozone and particulate matter.

Importantly, federal standards for maximum acceptable levels of both nitrogen dioxide and PM2.5 were recently lowered, reflecting scientific consensus that current standards do not protect health. While the county's modeling methodology for carbon monoxide is acceptable, there are no baseline monitoring data reported for any of these other pollutants, nor are traffic data modeled to show emissions for these pollutants in the future.

The additional discussion about industrial pollution in the air quality review states that industrial pollutants are a potential concern, but then places responsibility on the airport and other sources outside the project sponsor's control. Little data are presented to support this assertion. Also, there is no discussion in the original EA of how extension and associated development will contribute to air pollution. Nor is there discussion of whether the cumulative impact of these hazards will exceed existing standards.

Alleviation of traffic congestion in the region is argued as a main reason for the project. However, the environmental assessment does not provide any data to show existing congestion. The Mid-Region Metropolitan Planning Organization and Mid-Region Council of Governments of New Mexico identify a set of measures and criteria that are used to illustrate current congestion (volume-to-capacity ratio, speed differential, crash rates, daily volume, delay analysis).<sup>35</sup> Traffic volumes are the only data the assessment cites to support the assertion of current congestion. Also notable is that the original assessment only identifies congestion outside the project area, though MRCOG makes congestion data available for both Gibson Boulevard and Rio Bravo Boulevard (see above), two places in the project area but not included in the original EA.

Another reason for the extension, according to the environmental assessment, is to increase access to the airport via Sunport Boulevard to "[benefit] the proposed industrial corridor in the area and [provide] incentive for light industrial development."<sup>36</sup> The envisioned industrial development would be in the southern portion of the neighborhood, stretching from east of Second Street to west of I-25, and south of Woodward Road, along the neighborhood's more heavily trafficked streets. Any future plans, such as the proposed extension, must balance economic opportunity with protection of health and safety.

### *Noise*

There is no analysis of current noise exposure in the environmental assessment, and therefore we are unable to say whether the area will comply with federal or local noise standards once the project is built. Also, as with all analyses in the environmental assessment, there is no discussion of the potential impacts that future development enabled by the extension will have on noise in the adjacent neighborhood.

### *Cumulative Impacts*

Discussion of cumulative impacts of the project focuses on how the project will benefit the neighborhood by alleviating future congestion, improving the transportation network and future pedestrian/bike networks and encouraging economic and commercial growth. However, evidence is insufficient to support these assertions within the San Jose neighborhood.

The assessment also does not examine how changes resulting from the extension could have harmful cumulative impacts. For example, the report says the Sunport will enable economic development by providing access to businesses, but does not discuss how increased traffic, truck emissions, or other hazards might result. The original assessment states only that "No significant cumulative impacts are anticipated from the Preferred Alternative."

Furthermore, in describing recent projects in the area, the discussion only focuses on transportation-related projects and how those have improved the area. There is no recognition in the original EA of how transportation or land use (for example, the 17 permitted stationary sources of air pollution) has contributed to San Jose's status as an environmental justice community. Nor is there recognition of disproportionate environmental burdens that may be made heavier by the extension, or that existing air quality monitors may be insufficient to comply with recent EPA requirements that air monitors be located near highest, instead of average, source of pollution. Finally, there is no discussion of how the project may influence community exposure to multiple pollutants.

In sum, in the environmental assessment there seems to be a limited understanding of how to look at cumulative impacts. Various hypothesized benefits of the project are discussed as "a cumulative impact" in alternative transportation or in economic development. No supporting analysis or data are provided to show how these benefits may accrue.

### **Resident Analysis: Air quality and cumulative impacts are projected to worsen with the arrival of the Sunport Boulevard Extension**

In reviewing the data, literature and analysis of the original environmental assessment, the resident panel reached consensus on the following set of findings for cumulative impacts and air quality. Though noise was important, the panel recognized there was very limited information on which to make judgments about how noise might change as a result of the project.

Consistent with thinking about cumulative impacts, the resident panel believed it was important to consider not only the contribution to environmental hazards of the proposed extension, but also of all the commercial and industrial development that would be enabled by it. To focus only on the effects of the extension itself would perpetuate the short-sighted pattern of failing to consider cumulative effects of environmental hazards.

In this context, the resident panel considered existing qualitative and quantitative information, as well as personal experience, to reach consensus about the impacts of the proposed extension and development spurred by it. Panel analysis includes the following:

- The evidence is *moderate to strong* that cumulative environmental hazards – and hence air quality – will worsen due to the Sunport Extension and all of the associated commercial development that will result from the Sunport being built.
- These increases are *certain*, as the Sunport will open the door to businesses locating in the area, with accompanying increases in trucks and other traffic.

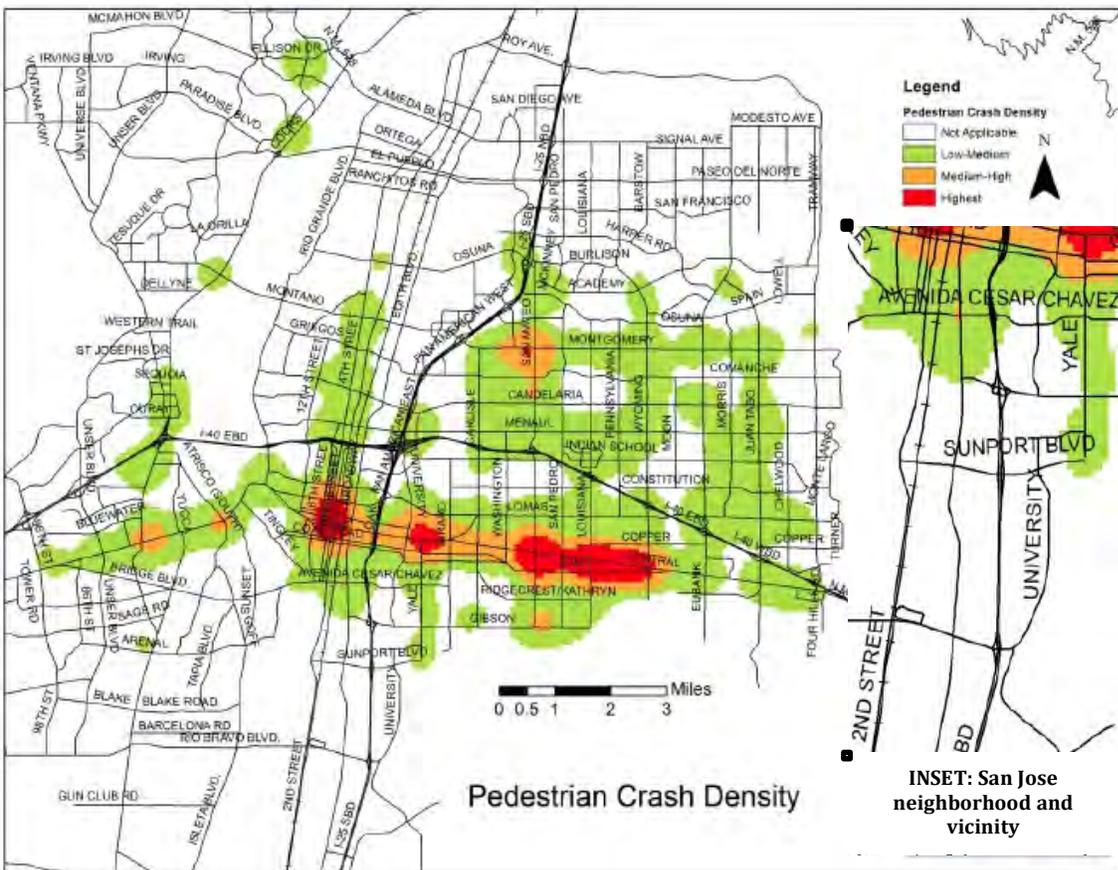
- Using the limited information available about future exposures, any increases in environmental exposures are *likely* to harm the health of residents, particularly those who are low income, the elderly and young, pregnant women and their unborn children, those living closest to the hazards, and those with underlying health conditions.
- Using the limited information available about future exposures, most people in San Jose – more than 70 percent – will be affected by these impacts, and the effects will range from *moderate to severe* depending on existing vulnerabilities.

## IV.B. Safety from Injuries and Collisions

**Existing Conditions: Pedestrian and bicycle crashes are relatively infrequent in San Jose, and facilities for walking and bicycling are scarce**

Traffic-related deaths are slightly higher in the area that includes San Jose, as compared to Bernalillo County – 3.2 pedestrian deaths per 100,000 residents, compared to 2.7 per 100,000 in the county). In absolute numbers, there have been relatively few collisions between vehicles and pedestrians reported in recent years in San Jose. Map 7 shows where crashes involving pedestrians cluster in Albuquerque. In San Jose, the north edge has a low-medium cluster and elsewhere in the neighborhood there are no clusters recorded for crashes involving pedestrians.

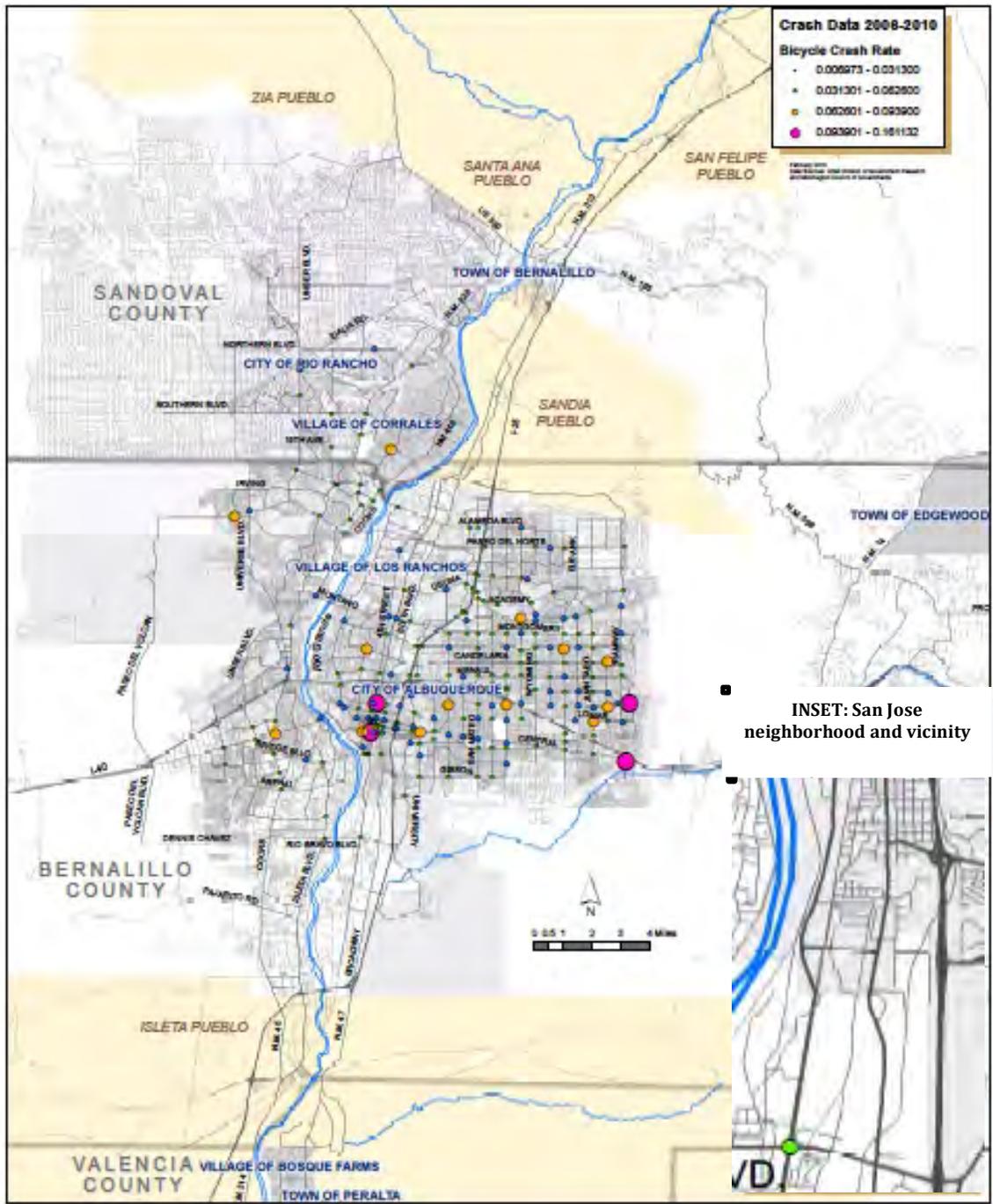
**Map 7. Pedestrian crash density, 2000-2010**



Source: Adapted from Mid-Region Council of Governments, July 2012.

A relatively low rate of crashes involving bicyclists is reported for San Jose compared to the county. Map 8 shows the intersection of Rio Bravo Boulevard and Second Street, where crashes tend to occur in the project area.

Map 8. Bicycle crash rate, 2006-2010



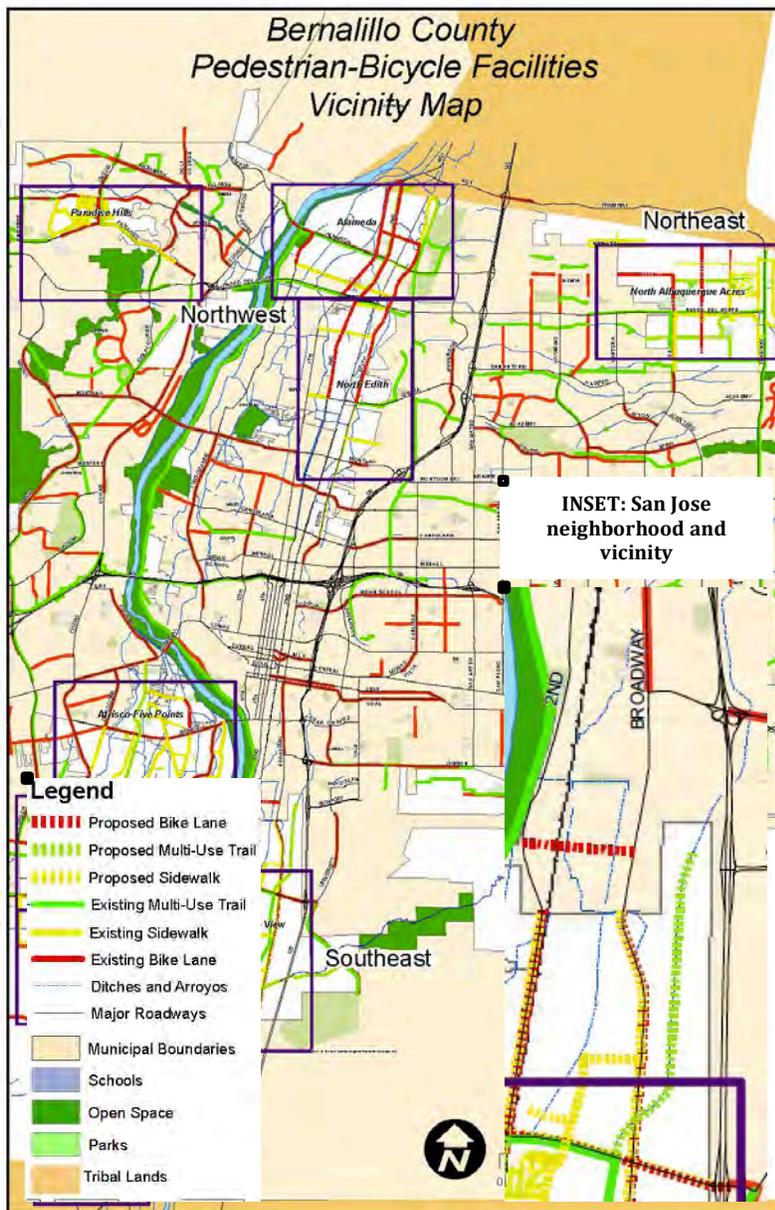
Source: Adapted from UNM Division of Government Research and Mid-Region Council of Governments, February 2013.

A chief cause of crashes is the absence of facilities for pedestrians and bicyclists, such as sidewalks and bicycle lanes. There are few sidewalks or designated bike lanes in the neighborhood, and little connectedness between those that do exist, as illustrated in Map 9. The project area currently has three blocks with designated bike lanes (on Broadway Boulevard from Kathryn Avenue to Gibson Boulevard). There are additional spaces for bicycling, but they

are not designated lanes. In these instances, cyclists are given a wide shoulder (as on Rio Bravo Boulevard), or can ride on what's known as a bike route, designed with the intention that bicyclists and cars share it (as for 3 blocks on Edith Boulevard).

Among facilities that do exist, access is a problem. To get to these spaces, bicyclists who start in the neighborhood ride with cars on streets lacking designated lanes, wide shoulders, or bike routes. Access also is an issue for the multi-use Paseo del Bosque Trail – also called the Riverside Bike Path – adjacent to the Rio Grande. For residents of San Jose, the trail is west of Second Street, so they have to cross the railroad tracks and property and walk or bicycle to an access point, such as the heavily trafficked Rio Bravo Boulevard.

**Map 9. Current and proposed future pedestrian and bicycle facilities in Bernalillo County**

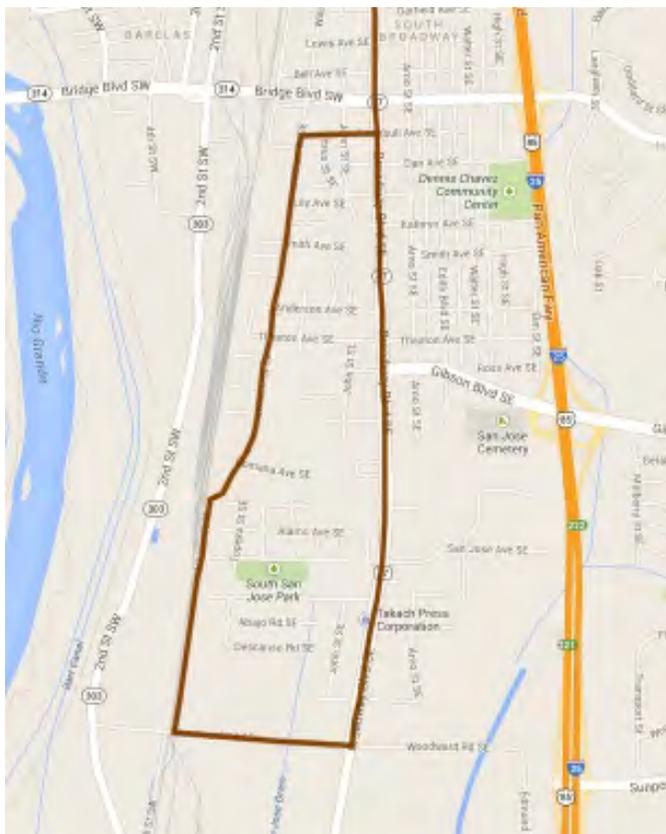


Source: Adapted from Bernalillo County, 2012.

## Why It Matters: Safety affects use and the health benefits from it

People walk or bicycle for various reasons, including recreation, to get to work and school or to run errands, or as part of a journey that also includes trains or buses. For some, particularly those without access to private vehicles, walking, bicycling and/or public transit become important means of transportation. This is the case in San Jose, where approximately one in 12 residents do not have access to a car. One in 16 use public transportation to commute to work – a proportion three times higher than in the county as a whole. Four bus routes serve San Jose, though only one (the 16/18 “B-U-G”) goes downtown every day. The route in the neighborhood follows a loop through the neighborhood that includes more heavily-trafficked streets, such as Woodward Road and Broadway Boulevard, so that users must walk or bike on or across these streets to reach the bus stops.

**Map 10. Bus route for Route 16/18 in the San Jose neighborhood**



Sources: UNM Information Technologies, 2013 and City of Albuquerque, 2012.

People also walk or bike if there are “trip attractors” – schools, parks, healthcare institutions, restaurants, grocery stores or childcare. According to the Mid-Region Council of Governments, “In general there is a scarcity of restaurants, grocery stores, and other retail that is associated with generating pedestrian activity” in the San Jose neighborhood.<sup>86</sup>

Walking and bicycling are good for public health. Physical activity can help prevent or treat overweight or obesity; reduce risk of chronic diseases, such as cardiovascular disease, type-2 diabetes, and some cancers; improve mental health; and increase chances of living longer.<sup>87</sup> Walkable neighborhoods are more likely to meet national physical activities guidelines compared to the least walkable neighborhoods.<sup>88</sup>

It is important, then, to understand factors that may promote or threaten safety from injury for pedestrians or bicyclists. Key factors are the speed of traffic, types of vehicles, characteristics of the user, and road design.

A 2004 report by the World Health Organization and World Bank finds “a large amount of evidence of a significant relationship between average speed and crash risk.”<sup>88</sup> Specifically, for every 1 kilometer per hour (approximately 0.6 mph) increase in traffic speed, there is a four to five percent increase in fatal crashes.<sup>89</sup> A pedestrian has a 90 percent chance surviving a car crash if the car is traveling 30 kilometers per hour (approximately 18 mph) or less. That pedestrian has a less than a 50-50 chance of surviving if the car is traveling 45 kilometers per hour (approximately 28 mph) or more.<sup>89</sup>

The speed of cars on the extension and adjacent roads are important to collisions and resulting injuries to pedestrians and bicyclists in the neighborhood. On Interstate 25, it is legal to drive 75 mph outside of Albuquerque, and 65 mph inside the city limits. The extension is designed for 45 mph, so drivers will have to quickly reduce speeds upon entering the San Jose neighborhood. Speeds within the neighborhood are further reduced depending on the particular roadway. For example, currently the speed on Broadway Boulevard is 40 mph.

Research finds that the type of vehicle “strongly influences” risk of severe injury and pedestrian death.<sup>90</sup> The chance of a vehicle-related injury being fatal increases by as much as 370 percent when the vehicle is a truck.<sup>91</sup> Even light trucks (vans, SUVs, pickups, etc.) are associated with three times higher risk of severe injuries for pedestrians than lighter cars, and two times higher mortality rates.<sup>36</sup>

The pedestrian matters, too – older people and children are particularly vulnerable as car speed increases. Road design also is important. The World Health Organization/World Bank report, “If separation (giving pedestrians protected places to walk) is not possible, road management and vehicle speed management are essential.”<sup>92</sup>

Good planning now can help prevent future collisions and the injuries that may result from them. The extension and surrounding streets can be designed to manage speed and ensure safety for pedestrians and bicyclists with traffic calming measures such as lower speed limits, more signals, sidewalks, bulbouts, speed bumps, traffic circles or chicanes, landscaped medians and marked pedestrian crosswalks. One expert says sidewalks “are an absolute necessity along all through-streets serving developed areas.”<sup>93</sup> He reported that accidents with pedestrians were 2.5 times more likely on streets without sidewalks than streets with them.<sup>93</sup> Other important features that can increase a sense of safety include trees on streets and space between streets and sidewalk, as by parked cars.<sup>93</sup> For bicyclists, bike lanes and routes reduce injuries or and crashes by half compared to roads without them.<sup>94</sup>

**Review of Environmental Assessment: The extension includes short stretches of sidewalks and a bicycle lane that will be isolated from the few existing facilities in adjacent areas, and impacts to bus access are not discussed**

#### *Impacts to Pedestrian and Bicycle Facilities*

The preferred Woodward Road option would include 700 feet of sidewalks along the half-mile extension that will not connect to existing sidewalks. The same preferred option also includes a five-foot wide bike lane on each side of the extension. The environmental assessment does not say if the bicycle lane will run the entire length of the extension. The bike lanes will connect to

Broadway Boulevard and University Boulevard, but since those stretches of those two streets have no direct connectedness to other bike lanes, they would be isolated.

The assessment does not predict how the extension may change traffic volumes, collisions, or the usability of adjacent streets for pedestrians or bicyclists.

#### *Impacts to Bus Access*

There is no mention in the environmental assessment of how the extension would affect resident's access to bus stops and buses.

#### **Resident Analysis: Pedestrian and bicyclist safety on nearby streets will decrease**

In reviewing the data, literature and environmental assessment, the resident panel reached consensus on the following findings for safety from injuries and collisions. Overall, the panel seeks to maintain the relatively low number of deaths and to prevent future collisions, and residents agreed that safety from injuries and collisions is already a problem in San Jose. Panel analysis includes the following:

- The evidence is *likely, but more information is needed* that the extension will *decrease* safety on nearby streets. It will be more dangerous for pedestrians and bicyclists if the proposed extension is built as planned.
- Decreases in safety are *likely* to harm the health of residents, particularly those who are low-income, bus users, people lacking access to cars, children who walk or bicycle to school, and bicyclists.
- Most people in San Jose will experience these changes, and the associated health effects will range from *not severe* to *moderate*.

#### IV.C. Social Connectedness

##### **Existing Conditions: Residents gather in both public and private spaces in the neighborhood and nearby and want to protect and improve these spaces**

Social connectedness among residents of a given community is a measure of solidarity and the ability to translate social ties into common good.<sup>8</sup> Limited information is available on the social fabric of San Jose today. To fill this gap, we used qualitative research methods with a photo and mapping activity to gather input from the resident panel, based on their personal experiences.

Resident panelists had various perspectives about whether social connectedness is an issue today for the San Jose neighborhood. The panel agreed that whether residents feel that social connectedness is lacking depends on one's experiences, age, and where in the neighborhood one lives. Residents perceive that the neighborhood is less close knit now than in the past and that the neighborhood has a negative reputation, owing partly to crime, which remains relatively high although it has decreased over time. Some residents said they felt safe at night; others did not.

All residents on the panel agreed that social connectedness is valuable. They also agreed that future activities that directly or indirectly affect the neighborhood should seek to improve social connectedness.

Answering two sets of questions about San Jose today, residents wrote responses that Human Impact Partners then grouped into themes. We found two main themes. First, residents gather in an array of places in or near the neighborhood, including private spaces like churches or homes of friends and family as well as public spaces like community centers, schools, parks or playgrounds. Second, residents want to protect and improve several aspects of the neighborhood – health facilities, markets, schools, workplaces, the ability to breathe and walk outdoors, safety from traffic, and the scenery.

Asked where residents gather, many named private spaces such as churches or homes, including the San Jose Parish as well as churches outside of San Jose. Churches were described as “the place community gather to worship-pray & grow in their faith,” with others calling them “cultural assets to protect” and special places that represent the community or that “represent my people.” One resident also spoke about access to church, wishing “*to be able to drive to the church, but more to be able to walk to the church and not breathing all those chemicals.*” Homes of friends and family, again both inside the San Jose neighborhood and elsewhere in the city, are places that residents visit, eat, talk, and celebrate. No residents mentioned gathering socially at sporting events or arts events – two measures used in City of Albuquerque’s Citizen Perception Survey to assess quality of life. Neither did they mention gathering at restaurants or bars.

Public spaces where residents mentioned gathering include the Herman Sanchez Community Center and public parks, though with reservations. Of the community center, one resident said it was a “good source of community” and multiple comments noted that children, in particular, use the center. One observation included, “*People take their children to the after/before school program - so their child does not go to an empty house after school.*” In describing parks, residents identified them as places to gather for celebrations or for children to play, and expressed concerns about the safety of parks in the San Jose neighborhood. Comments included, “*[The parks] do not feel safe. Not clean,*” and one resident described going to a park outside of the San Jose neighborhood, saying it is far but that they do so because of problems in San Jose.

Looking at the other main theme about what residents want to protect and improve, physical aspects were mentioned. Residents want to protect health facilities and markets, as well as jobs and schools. Comments included, *“Protect health facilities,”* and *“we need to have an opportunity to excel learn and bloom.”* Of jobs, one resident also said, *“we need to hire even those with a criminal conviction.”* About aspects to improve, they included both daily needs and conditions in the physical environment of the neighborhood. One resident said, *“[Market] is needed.”* Speaking to neighborhood conditions, residents said currently, the trains’ contamination and noise affects the ability to breathe and walk in the area, identifying it as an area for improvement: *“[Improve] Because of the noise. Because the black powder enters the house.”* Two powerful statements from residents capture the sentiment well. They said, *“Our view of the scenery is sacred”* and *“We need to protect the health safety lifestyle of the people that live in the community.”*

### **Why It Matters: The social fabric of a neighborhood is associated with myriad health-related factors**

Social connectedness shapes factors that influence individual health behaviors and ultimately health outcomes. It is a buffer to stress and influences health status itself.

A 1998 study using national data reported that higher levels of social mistrust were associated with higher levels of violent crime involving guns.\* The relationship also went the other way: Neighborhoods with higher rates of group membership had lower levels of gun crimes.<sup>96</sup>

Neighborhood social connectedness influences individual behaviors. In a 2008 study of six U.S. communities, less socially cohesive neighborhoods were associated with behaviors like increased depression, smoking, and not walking for exercise. The study adjusted for a bevy of factors like socioeconomic characteristics, neighborhood problems, and race and ethnicity.<sup>97</sup>

Social connectedness or social capital – the benefit gained through cooperation – also influences individual health outcomes. Research has shown that social capital is associated with lower levels of general health and well-being, lower cardiovascular and cancer mortality, lower suicide rates, and lower rates of violent crime.\*

This also is reflected in the relationship between social connectedness and overall health. A 2006 journal article found that people who reported a severe lack of social support were more than twice as likely to report fair or poor health than people who said they did not lack social support.<sup>98</sup> Looking at it another way, people living in communities with high levels of social trust are four times less likely to report fair, bad or very bad health than people living in communities without it.<sup>98</sup>

The effect of social capital on health may vary with income level. A systematic review of literature on the interactions between social capital and socioeconomic inequalities found evidence in a dozen studies that social capital might buffer negative health effects of low socioeconomic status and in five studies that social capital has a stronger positive effect on health for people with a lower socioeconomic status.<sup>99</sup>

### **Review of Environmental Assessment: There is no analysis of impacts to social cohesion or connectedness**

The environmental assessment report says: *“The project is not expected to impact community cohesion . . . ”* It continues by describing topics covered elsewhere in this report, such as impacts to minority or low-income populations, but offers no evidence to support the assertion on cohesion.

**Resident Analysis: The extension is unlikely to affect overall social cohesion**

Based on personal experiences, residents predicted that social connectedness is likely to stay at the same level of low importance to the neighborhood if the proposed extension is built. One resident suggested that the extension could marginally bring together the neighborhood around efforts to understand and improve the project. However, the group said that it does not anticipate changes to social connectedness from the project. Residents added it is important in any future projects to protect and improve the places where people gather.

## V. Recommendations For Sunport HIA:

The recommendations below come from a variety of sources. Fourteen were developed by the HIA resident panel in response to their analysis of the impacts of the first environmental assessment released in September 2011. They are included here because they continue to be relevant to the significant issues that remain in the REA (as described in this document).

In making these recommendations, we take a broad perspective that includes both the half-mile extension itself and the future economic development that will follow. As such, many recommendations would be implemented after the proposed extension is built, and with an emphasis on preventing future environmental hazards.

### Overall

1. The county should more thoroughly and transparently reconsider Alternatives D and H, not only Alternative A, and mitigations.
2. The city and county should improve public information-sharing about the proposed extension and related planning. Specific actions include:
  - a. Publicly share plans to meaningfully involve the San Jose neighborhood in ongoing planning for the Sunport Boulevard Extension, to ensure that resident perspectives help shape future development.
  - b. Increase communication between city and county, as well as directly to residents, including but not only through the San Jose Neighborhood Association, and ensure communication is in culturally appropriate methods and languages. Publicly and immediately share formal and informal plans for the extension and development in the surrounding area. Specifically, share information on whether there is a vision – and what it is – for promotion of commercial and industrial development along the extension, such as zoning documents or plans ranging from the short-term to long-term (e.g., five-year plans, thirty-year plans, and so forth).

*If the Sunport Boulevard Extension is built:*

### Environmental Hazards

3. The city and county should require that future permitting processes for the San Jose neighborhood include the completion of cumulative impact assessments that more accurately consider health impacts. Cumulative is defined in the spirit of the Environmental Protection Agency definition for the NEPA process, as *incremental environmental impacts of an individual project combined with the environmental impacts caused by past projects, the environmental impacts caused by other current projects and the environmental impacts caused by reasonably foreseeable future projects.*
4. The City of Albuquerque Air Quality Division should improve air quality monitoring and enforcement of existing air quality regulations in the San Jose neighborhood as follows:
  - a. Collect baseline information throughout the neighborhood on actual air quality emissions. If the information is collected by City or County agencies, it should be validated by outside organizations.
  - b. After the extension is completed, regularly monitor air quality at sensitive sites such as schools and community centers. Commit to retrofitting these facilities (e.g., provide upgrades to building thermal performance and ventilation systems) to keep indoor air pollutant levels below applicable state and federal standards, and mitigate exceedances found at baseline levels, if pollution levels surpass what is harmful to human health.

- c. Add an air monitor in San Jose where vulnerable populations congregate. The monitor should measure the six criteria pollutants (ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead), as well as volatile organic compounds.
5. The city and county should ensure compliance with and enforcement of existing noise standards. To do so, the city and county should collect baseline noise measurements in the community of San Jose to ensure standards are not being exceeded.
  6. The city and county should consider revising noise control ordinances to set the standard for traffic-related noise, at 65 dBA or less for daytime and 55 dBA or less for nighttime.

### **Safety from Injuries and Collisions**

7. The city should prohibit heavy trucks on residential streets in San Jose neighborhood.
8. The city and county should implement appropriate traffic calming features to slow trucks on roads that will see increased traffic from the Sunport Boulevard Extension.
  - a. Examples of traffic calming to consider are reduced speed limits, rumble strips, and landscaping.
  - b. Example locations for reduced speed limits are Broadway Boulevard traveling down the hill by Bethel Avenue and San Jose Avenue.
9. The city and county should create facilities to protect and encourage pedestrians and bicyclists on roads near the Sunport Boulevard Extension that will experience increased traffic during and after its construction. Actions include:
  - a. Building sidewalks with storm drainage. Example locations are Broadway Boulevard headed to Woodward Road, on Wesmeco Drive, on Arno Street, and John Street.
  - b. Extending the bike lane on Broadway further into the San Jose neighborhood.
  - c. Adding traffic lights at the intersections of William Street and Woodward Road, as well as Second Street and Woodward Road.<sup>c</sup>
10. The City of Albuquerque Transit Department should ensure that the 16/18 bus route is maintained during and after construction of the Sunport Boulevard Extension. Also, the city should build bus shelters where the bus is used but there are not currently shelters to protect riders – for example, on William Street, Woodward Road, and Broadway Boulevard.

### **Miscellaneous Recommendations**

11. Bernalillo County Public Works should include drainage facilities when building the Sunport Boulevard Extension.
12. To advance the economic prosperity of residents in the San Jose neighborhood, the Bernalillo County Economic Development Department should require businesses locating along Sunport Boulevard Extension to develop plans and commitments for local hiring, job training, and educational programs. For example, the city and county could work with businesses to start a GED program with instructors in the community that is free for low-income residents of the San Jose neighborhood.

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<sup>c</sup> Two members of resident panel abstained from this vote

13. To ensure San Jose residents are actually able to access workforce development and job training programs as well as access new jobs created in the community, the Bernalillo County Economic Development Department should require that businesses locating along Sunport Boulevard Extension *not ask* about applicants' history of arrest in job applications and interviews.<sup>4</sup>
14. The Bernalillo County Economic Development Department should establish a living wage (e.g., modeled on the living wage ordinance in Santa Fe) and require jobs created by businesses relocating or locating along the Sunport Boulevard Extension to pay such wages. In addition to paying a living wage, all permanent jobs (including part-time and full-time permanent jobs) created by business located near the extension should provide full health benefits.

### **Additional Recommendations**

At the conclusion of the HIA process, the Steering Committee and project partners proposed additional recommendations to supplement those from the resident panel. These recommendations were not vetted in the same way, but are listed here as they provide valuable suggestions for appropriate parties to consider as well.

They include:

- Consider completing an Environmental Impact Statement to more fully assess the environmental impacts of the extension on environmental and human health, including reasonable alternatives (including a No Action alternative) that would avoid or minimize adverse impacts or enhance the quality of the human environment.
- The county, MRCOG, or other appropriate party should do a comprehensive traffic study that includes roadways connected to or near the extension that will be affected by it. The study should assess changes in traffic and how those are expected to affect air quality and noise. The study should consider potential short-term and long-term development (e.g., five-year plans, thirty-year plans, and so forth) that will and/or could take place if the extension is built.
- Absent discussion of cumulative impacts in this document, planning agencies and other authorities could consider a moratorium on approving projects that will result in new environmental hazards in the community.
- The city and county should draft relevant plans and commit funding to ensure pedestrian- and bicycle-safety measures and improvements on roadways such as Second Street that connect to the extension and will experience increased traffic or congestion, regardless of the alternative chosen. Plans should redesign these roadways for neighborhood pedestrian, bicycle, and vehicular safety, and to avoid increased cumulative air emissions. This should be done prior to completion of the extension in this environmental justice community.
- A specific way to implement the Steering Committee recommendation about public input is for the county to form and fund a Community Advisory Council that regularly provides input and feedback on plans for the proposed extension.

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<sup>4</sup> There was not unanimous agreement on this proposal; however, the majority of residents on the resident panel voted in favor of it.

- Improvements to pedestrian and bicycle facilities on adjacent roadways that the extension will affect, such as Woodward Road, should be put in place when the extension is built.
- The County should consider building sidewalk adjacent to the entire length of the extension, rather than for only 700 feet.
- The appropriate body should provide voluntary relocation of residents living in housing that is the closest to the extension.
- The appropriate body should involve impacted residents in identifying requirements for developments within the boundaries of the Design Overlay Plan.

## VI. Conclusion

This HIA shines a light on numerous environmental and social conditions – including environmental exposures, safety, and social connectedness – in the San Jose neighborhood that could be affected by the proposed extension. In light of these findings and based on their own experiences in the community, residents are definite in their belief that air quality and safety will worsen as a result of the extension and the industrial and commercial development that will follow.

Numerous questions remain for the residents of San Jose: Are the purpose and need for the project transparent and being met? Will the Sunport Extension be further developed to the west of Rio Grande? Will new environmental hazards be introduced? What benefits will residents experience? Will community health and exposures get worse or better? What will the city and county do to protect the most vulnerable?

The community engagement process for the extension and the draft environmental assessment leave these questions unanswered, and have not facilitated trust within the community that such issues will be addressed in the future. Consequently, we suggest a more precautionary approach for the city and county. We propose a set of recommendations to mitigate the potential harms that may result from the extension and the development it will enable, as well as a series of recommendations that create opportunities for improved health and well-being for the residents of San Jose. Over time, we intend to monitor whether these recommendations are adopted and implemented in response to the concerns raised herein.

As project proponents, the City of Albuquerque and Bernalillo County have a duty to consider how residents and neighborhoods will be protected from new harms that result from the development they advocate. With San Jose's long and well-known history of environmental hazards and poor health, now is an opportune time to consider whether a *no new hazards* approach is warranted for the neighborhood. Such an approach would begin the process of reassuring community members that their health and well-being – now and in the future – are valued and prioritized in the community they call home.

## VII. References

- <sup>1</sup> Quigley W. "Area's Industrial Legacy Poses Health Risks." *Albuquerque Journal*. March 18, 2013. Available at: <http://www.abqjournal.com/179609/biz/areas-industrial-legacy-poses-health-risks.html>. Accessed September 28, 2013.
- <sup>2</sup> US Environmental Protection Agency. 2013. South Valley (Bernalillo County), Albuquerque, New Mexico. Available at: <http://www.epa.gov/region6/6sf/pdffiles/south-valley-nm.pdf>. Accessed September 3, 2013.
- <sup>3</sup> US Geological Survey. 2006. Volatile organic compounds in the nation's ground water and drinking-water supply wells – a summary. Available at: <http://pubs.usgs.gov/fs/2006/3048/pdf/fs2006-3048.pdf>. Accessed September 30, 2013.
- <sup>4</sup> Uyttebrouck O. "GE to Clean S. Valley Site." *Albuquerque Journal*. August 8, 2009. Available at: <http://www.abqjournal.com/news/metro/0812109metro08-08-09.htm>. Accessed October 10, 2013.
- <sup>5</sup> Agency for Toxic Substances and Disease Registry. Toxicological Profile for Wood Creosote, Coal Tar Creosote, Coal Tar, Coal Tar Pitch, and Coal Tar Pitch Volatiles. 2002. Available at: <http://www.atsdr.cdc.gov/toxprofiles/tp85.pdf>. Accessed September 30, 2013.
- <sup>6</sup> US Environmental Protection Agency. 2013. AT&SF Albuquerque Superfund Site, Bernalillo County, South Valley Area, New Mexico. Available at: <http://www.epa.gov/region6/6sf/pdffiles/atsf-albuquerque-nm.pdf>. Accessed September 30, 2013.
- <sup>7</sup> Faber DJ. 1998. *The Struggle for Ecological Democracy: Environmental Justice Movements in the United States*. New York, NY: Guilford Press.
- <sup>8</sup> Southwest Research and Information Center. Richard Moore on Environmental Justice and the New Mexico Environment Department. Available at: [http://www.sric.org/voices/2005/v6n2/r\\_moore\\_2005.php](http://www.sric.org/voices/2005/v6n2/r_moore_2005.php). Accessed September 30, 2013.
- <sup>9</sup> Meiklejohn D, Padilla P, Jantz E. 2007. Environmental justice in New Mexico: Efforts and successes in litigation, the legislature, and administrative rule-making. The State of Environmental Justice in America 2007 Conference.
- <sup>10</sup> Carlson C. "Groups Reach Deal in Superfund Case." *Albuquerque Journal*. January 12, 2006. Available at: <http://www.abqjournal.com/news/metro/424021metro01-12-06.htm>. Accessed September 30, 2013.
- <sup>11</sup> Abeyta E, Richards K. Disparities, Place, and Health. 2011. Presentation at New Mexico Environmental Health Association Conference. Available at: <http://www.nmeha.org/Resources/Documents/Health%20Disparities%20in%20San%20Jose%20Kitty%20and%20Ester.pdf>. Accessed September 30, 2013.
- <sup>12</sup> Amigos Bravos. 2013. Building a Rivers Movement. Available at: <http://amigosbravos.org/building-rivers-movement#>. Accessed September 30, 2013.
- <sup>13</sup> Rodriguez J-C. "Air Quality Panel Eyes "Environmental Justice."" *Albuquerque Journal*. November 14, 2008. Available at: <http://www.abqjournal.com/riorancho/14121006596west11-14-08.htm>. Accessed September 30, 2013.
- <sup>14</sup> Olson E. 2003. What's on Tap? Grading Drinking Water in U.S. Cities. Available at: [http://doultonusa.com/grading\\_drinking\\_water\\_us\\_cities.pdf](http://doultonusa.com/grading_drinking_water_us_cities.pdf). Accessed September 30, 2013.
- <sup>15</sup> Zoll MH, Boyce JK. 2003. The New Environmental Activists. Available at: [http://www.peri.umass.edu/fileadmin/pdf/New\\_Environmental\\_activists.pdf](http://www.peri.umass.edu/fileadmin/pdf/New_Environmental_activists.pdf). Accessed September 30, 2013.
- <sup>16</sup> Cohen TM, Bleaky DR. 1997. Addressing Environmental Justice Under the National Environmental Policy Act at Sandia National Laboratories/New Mexico. Available at: <http://www.osti.gov/scitech/servlets/purl/477673>. Accessed September 30, 2013.
- <sup>17</sup> US Environmental Protection Agency. 2002. Record of Decision, AT&SF Albuquerque Superfund Site, Albuquerque, New Mexico. Available at:

[http://www.epa.gov/region6/6sf/newmexico/atsf/nm\\_atstf\\_rod\\_200206.pdf](http://www.epa.gov/region6/6sf/newmexico/atsf/nm_atstf_rod_200206.pdf). Accessed September 30, 2013.

<sup>18</sup> Wright M. 2012. "Esther and Steven Abeyta." *alibi.com*. Available at: <http://alibi.com/feature/41341/Esther-and-Steven-Abeyta.html>. Accessed September 30, 2013.

<sup>19</sup> Garcia E. 2012. "South Valley Woman Fighting for Better Air Quality." *KOB Eyewitness News*. Available at: <http://www.kob.com/article/stories/S2819327.shtml>. Accessed September 30, 2013.

<sup>20</sup> Breathe In New Mexico. 2013. San Jose Data Update. Available at: <http://www.breatheinnm.org/?p=332>. Accessed September 30, 2013.

<sup>21</sup> American Community Survey. Table DP-5. Demographic and Housing Estimates. 2007-2011, 5-year estimates. Census Tract 13, Bernalillo County, New Mexico.

<sup>22</sup> American Community Survey. Table DP-3. Selected Economic Characteristics. 2007-2011 American Community Survey 5 year Estimates. Census Tract 13, Bernalillo County, New Mexico. [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_11\\_5YR\\_DP03&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_5YR_DP03&prodType=table)

<sup>23</sup> American Community Survey. Table DP-2. Selected Social Characteristics in the United States 2007-2011, 5-year Estimates. Census Tract 13, Bernalillo County, New Mexico. [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_11\\_5YR\\_DP02&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_5YR_DP02&prodType=table)

<sup>24</sup> U.S. Census Bureau. DP03: Selected Economic Characteristics in the United States. 2006-2010. American Community Survey 5-year Estimates.

<sup>25</sup> S. Masek at the Albuquerque Police Department, personal communication, October 30, 2013.

<sup>26</sup> City of Albuquerque. Annual Information Statement. 2012. <http://www.cabq.gov/dfa/documents/investor-documents/2012-annual-information-statement.pdf>

<sup>27</sup> Bernalillo County: Bernalillo County. Comprehensive Annual Financial Reports from 2008 to 2011. <http://www.bernco.gov/cafr/>

<sup>28</sup> Sites Southwest Inc. 2007. Mountain View Sector Development Plan. Available at: <http://www.svpartners.org/pdf/MVSDP%20REVISION%20W%20EDITS.pdf>. Accessed October 25, 2013.

<sup>29</sup> Bureau of Vital Records and Health Statistics, New Mexico Department of Health. Query Results for Mortality Data by NM Small Areas, Years 1999 to 2011. Available at: <http://ibis.health.state.nm.us/query/result/mort/MortSarea/AgeRate.htm>. Accessed November 1, 2013.

<sup>30</sup> National Cancer Institute. Cancer Prevalence and Cost of Care Projections. <http://costprojections.cancer.gov/annual.costs.html#f1>. Accessed August 29, 2013.

<sup>31</sup> Ohsfeldt RL, Gandhi SK, Fox KM, Bullano MF, Davidson M. 2010. Medical and cost burden of atherosclerosis among patients treated in routine clinical practice. *J Med Econ*;13(3):500-7

<sup>32</sup> Swartz K. 2010. Projected Costs of Chronic Diseases. *Health Care Cost Monitor*. The Hastings Center. Available at: <http://healthcarecostmonitor.thehastingscenter.org/kimberlyswartz/projected-costs-of-chronic-diseases/>

<sup>33</sup> American Diabetes Association. 2013. Economic costs of diabetes in the U.S. in 2012. *Diab. Care*. 1-14.

<sup>34</sup> Braunschweig F, Cowie MR, Auricchio A. 2011. What are the costs of heart failure? *Europace* 13:ii13-ii17

<sup>35</sup> New Mexico Community Data Collaborative. Available at: <http://nmcdc.maps.arcgis.com/home/index.html>. Accessed November 1, 2013.

<sup>36</sup> URS Corporation. 2011. Sunport Boulevard Extension: Environmental Assessment. Prepared for: Bernalillo County Public Works. Available at: [www.bernco.gov/upload/images/public\\_works/projects/SunportEASept2011.pdf](http://www.bernco.gov/upload/images/public_works/projects/SunportEASept2011.pdf). Accessed October 25, 2013.

- <sup>37</sup> Mid Region Council of Governments. 2011. 2035 Metropolitan Transportation Plan. Available at: [http://www.mrcog-nm.gov/images/stories/pdf/transportation/2035\\_mtp/Final\\_Approved/CompleteMTPLocalFedApproved\\_Dec\\_2012.pdf](http://www.mrcog-nm.gov/images/stories/pdf/transportation/2035_mtp/Final_Approved/CompleteMTPLocalFedApproved_Dec_2012.pdf). Accessed October 25, 2013.
- <sup>38</sup> Mid-Region Council of Governments. 2012. Transportation Improvement Program Policies and Procedures for the Albuquerque Metropolitan Planning Area: Main Document - 2012 Revisions. Available at: [http://www.mrcog-nm.gov/images/stories/pdf/transportation/tip/TIP\\_Policies\\_Procedures\\_Main\\_Document\\_2012\\_Revisions.pdf](http://www.mrcog-nm.gov/images/stories/pdf/transportation/tip/TIP_Policies_Procedures_Main_Document_2012_Revisions.pdf). Accessed October 25, 2013.
- <sup>39</sup> US Environmental Protection Agency. Environmental Assessments & Environmental Impact Statements. Available at: <http://www.epa.gov/reg3esd1/nepa/eis.htm>. Accessed November 15, 2013
- <sup>40</sup> US Department of Transportation, Federal Highway Administration. NEPA Documentation. Available at: <http://www.environment.fhwa.dot.gov/projdev/docuea.asp>. Accessed November 15, 2013.
- <sup>41</sup> Council on Environmental Quality, Executive Office of the President. December 2007. A Citizen's Guide to the NEPA: Having Your Voice Heard. Available at: [http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/planning/planning\\_docs.Par.53208.File.dat/A\\_Citizens\\_Guide\\_to\\_NEPA.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/planning/planning_docs.Par.53208.File.dat/A_Citizens_Guide_to_NEPA.pdf). Accessed November 15, 2013.
- <sup>42</sup> US Environmental Protection Agency. National Environmental Policy Act (NEPA). Available at: <http://www.epa.gov/compliance/basics/nepa.html#process>. Accessed December 2, 2013.
- <sup>43</sup> Bernalillo County Public Works, (n.d.). Sunport Boulevard Extension Project. Available at: <http://www.bernco.gov/sunport>.
- <sup>44</sup> Alves S, Tilghman J, Rosenbaum A, Payne-Sturges DC. 2012. U.S. EPA authority to use cumulative risk assessments in environmental decision-making. *Int. J. Environ. Res. Public Health* 9:1997-2019.
- <sup>45</sup> US Environmental Protection Agency. 2013. Pollutants and sources. Available at: <http://www.epa.gov/ttnatw01/pollsour.html>.
- <sup>46</sup> US Environmental Protection Agency. 2013. Data interactive map. Available at: [http://www.epa.gov/airquality/airdata/ad\\_maps.html](http://www.epa.gov/airquality/airdata/ad_maps.html). Accessed October 25, 2013.
- <sup>47</sup> US Environmental Protection Agency. 2013. National Ambient Air Quality Standards (NAAQS). Available at: <http://www.epa.gov/air/criteria.html>. Accessed October 25, 2013.
- <sup>48</sup> US Environmental Protection Agency. 2013. Ozone. Available at: <http://www.epa.gov/airquality/airtrends/ozone.html#ozloc>. Accessed October 25, 2013.
- <sup>49</sup> US Environmental Protection Agency. 2013. Airdata interactive map. Available at: [http://www.epa.gov/airquality/airdata/ad\\_maps.html](http://www.epa.gov/airquality/airdata/ad_maps.html). Accessed October 25, 2013.
- <sup>50</sup> US Environmental Protection Agency. 2013. Treatment of data influenced by exceptional events. Available at: <http://www.epa.gov/fedrgstr/EPA-AIR/2007/March/Day-22/a5156.htm>. Accessed October 25, 2013.
- <sup>51</sup> US Environmental Protection Agency. 2013. Carbon monoxide information. Available at: <http://www.epa.gov/oaqps001/greenbk/cindex.html>. Accessed October 25, 2013.
- <sup>52</sup> Rowangould GM. 2013. A census of the US near-roadway population: Public health and environmental justice considerations. *Transport Res D-TR E* 25:59-67.
- <sup>53</sup> Mid-Region Council Of Governments. 2012. Traffic Flow Map 2012. Available at: <http://www.mrcog-nm.gov/transportation/metro-planning/traffic-counts>. Accessed October 25, 2013.
- <sup>54</sup> Mid-Region Council of Governments. Summary Statistics Printout of Vehicle Classification Counts, 2009-2012.
- <sup>55</sup> Mid-Region Council Of Governments. 2013. A Profile in Congestion. Available at: <http://www.mrcog-nm.gov/images/stories/pdf/transportation/CMP/a-profile-in-congestion-2012.pdf>. Accessed October 25, 2013.

- <sup>56</sup> City of Albuquerque. 2001. Noise Ordinance. Available at: <http://www.nonoise.org/quietnet/cqe/ordin.htm#12>. Accessed October 25, 2013.
- <sup>57</sup> Delfino RJ. 2002. Epidemiologic evidence for asthma and exposure to air toxics: linkages between occupational, indoor, and community air pollution research. *Environmental Health Perspectives* 110(S4): 573-589.
- <sup>58</sup> Brunekreef B, Janssen NA, de Hartog J, Harssema H, Knappe M, van Vliet P. 1997. Air pollution from truck traffic and lung function in children living near motorways. *Epidemiology* 1997(8):298-303.
- <sup>59</sup> Kim JJ, Smorodinsky S, Lipsett M, Singer BC, Hodgson AT, Ostro B. 2004. Traffic-related air pollution and respiratory health: East Bay children's respiratory health study. *American Journal of Respiratory and Critical Care Medicine* 170:520-526.
- <sup>60</sup> Lin S, Munsie JP, Hwang SA, Fitzgerald E, Cayo MR. 2002. Childhood asthma hospitalization and residential exposure to state route traffic. *Environmental Research* 88:73-81.
- <sup>61</sup> Venn AJ, Lewis SA, Cooper M, Hubbard R, Britton J. 2001. Living near a main road and the risk of wheezing illness in children. *American Journal of Respiratory and Critical Care Medicine* 164:2177-2180.
- <sup>62</sup> English P, Neutra R, Scalf R, Sullivan M, Waller L, Zhu L. 1999. Examining associations between childhood asthma and traffic flow using a Geographic Information System. *Environmental Health Perspectives* 107(9):761-767.
- <sup>63</sup> Gauderman WJ, Avol E, Lurmann F, Kuenzli N, Gilliland F, Peters J, McConnell R. 2005. Childhood asthma and exposure to traffic and nitrogen dioxide. *Epidemiology* 16(6): 737-743.
- <sup>64</sup> Jerrett M, Shankardass K, Berhane K, Gauderman WJ, Kunzli N, Avol E, Gilliland F, Lurmann F, Molitor JN, Molitor JT, Thomas DC, Peters J, McConnell R. 2008. Traffic-related air pollution and asthma onset in children: a prospective cohort study with individual exposure measurement. *Environmental Health Perspectives* 116(10):1433-1438.
- <sup>65</sup> Kim JJ, Huen K, Adams S, Smorodinsky S, Hoats A, Malig B, Lipsett M, Ostro B. 2008. Residential traffic and children's respiratory health. *Environmental Health Perspectives* 116(9):1274-1279.
- <sup>66</sup> McConnell R, Berhane K, Yao L, Jerrett M, Lurmann F, Gilliland F, Kunzli N, Gauderman J, Avol E, Thomas D, Peter J. 2006. Traffic, susceptibility, and childhood asthma. *Environmental Health Perspectives* 114:766-772.
- <sup>67</sup> McConnell R, Islam T, Shankarass K, Jerrett M, Lurmann F, Gilliland F, Gauderman J, Avol E, Kuenzli N, Yao L, Peters J, Berhane K. 2010. Childhood incident asthma and traffic-related air pollution at home and school. *Environmental Health Perspectives* 118(7):1021-1026.
- <sup>68</sup> Hoffmann B, Moebus S, Mohlenkamp S, Stang A, Lehmann N, Dragano N, Schmermund A, Memmesheimer M, Mann K, Erbel R, Jockel KH, Heinz Nixdorf Recall Study Investigative Group. 2007. Residential exposure to traffic is associated with coronary atherosclerosis. *Circulation* 116:489-496.
- <sup>69</sup> Hoffmann B, Moebus S, Stang A, Beck EM, Dragano N, Mohlenkamp S, Schmermund A, Memmesheimer M, Mann K, Erbel R, Jockel KH, Heinz Nixdorf Recall Study Investigative Group. 2006. Residence close to high traffic and prevalence of coronary heart disease. *European Heart Journal* 27:2696-2702.
- <sup>70</sup> American Lung Association. 2013. Impacts on Your Health. Available at: <http://www.lung.org/healthy-air/outdoor/protecting-your-health/impacts-on-your-health/>. Accessed October 25, 2013.
- <sup>71</sup> American Lung Association. Disparities in the Impact of Air Pollution. Available at: <http://www.stateoftheair.org/2013/health-risks/health-risks-disparities.html>. Accessed October 25, 2013.
- <sup>72</sup> Berglund B, Lindvall T, Schwela DH. 1999. Guidelines for Community Noise. World Health Organization. Available at <http://www.who.int/docstore/peh/noise/guidelines2.html>. Accessed October 25, 2013.

- <sup>73</sup> Griefahn B, Marks A, Robens S. 2006. Noise emitted from road, rail and air traffic and their effects on sleep. *Journal of Sound and Vibration* 295:129-140.
- <sup>74</sup> WHO Regional Office for Europe. 2005. Quantifying burden of disease from environmental noise: Second technical meeting report. Bern, Switzerland.
- <sup>75</sup> Passchier-Vermeer W, Passchier WF. 2000. Noise exposure and public health. *Environmental Health Perspectives* 108 Suppl 1:123-131.
- <sup>76</sup> Miedema HME, Oudshoorn CGM. 2001. Annoyance from transportation noise: relationships with exposure metrics DNL and DENL and their confidence intervals. *Environmental Health Perspectives* 109(4):409-416.
- <sup>77</sup> London Health Commission. 2003. Noise and Health: Making the Link. Available at [http://www.london.gov.uk/lhc/docs/publications/hia/evidencesummary/noise\\_links.pdf](http://www.london.gov.uk/lhc/docs/publications/hia/evidencesummary/noise_links.pdf). Accessed October 25, 2013.
- <sup>78</sup> Stansfeld SA, Berglund B, Clark C, Lopez-Barrío I, Fischer P, Ohrstrom E, Maines MM, Head J, Hygge S, van Kamp I, Berry BF. 2005. Aircraft and road traffic noise and children's cognition and health: a cross-national study. *Lancet* 365:1942-9.
- <sup>79</sup> Van Kempen EM, Kruize H, Boshuizen HC, Amelin CB, Staatsen B, de Hollander A. 2002. The association between noise exposure and blood pressure and ischemic heart disease: A meta-analysis. *Environmental Health Perspectives* 110:307-317.
- <sup>80</sup> Barregard L, Bonde E, Ohrstrom E. 2009. Risk of hypertension from exposure to road traffic noise in a population-based sample. *Occup Environ Med* 66(6):410-5.
- <sup>81</sup> Selander J, Nilsson MT, Gluhm G, Rosenlund M, Lindqvist M, Nise G, Perhagen G. 2009. Long-term exposure to road traffic noise and myocardial infarction. *Epidemiology* 20(2):1-8.
- <sup>82</sup> Babisch W, Buele B, Schust M, Kersten N, Ising H. 2005. Traffic noise and risk of myocardial infarction. *Epidemiology* 16:33-40.
- <sup>83</sup> Babisch W. 2006. Transportation noise and cardiovascular risk: Updated Review and synthesis of epidemiological studies indicate that the evidence has increased. *Noise and Health* 8:1-29.
- <sup>84</sup> Babisch W. 2008. Road traffic noise and cardiovascular risk. *Noise Health* 10:27-33.
- <sup>85</sup> Mid-Region Council of Governments. 2011. Congestion Management Process Atlas. Available at: <http://www.mrcog-nm.gov/transportation/metro-planning/congestion-management-process/31-transportation/technical-services>. Accessed October 25, 2013.
- <sup>86</sup> Mid-Region Council of Governments. 2013. East San Jose Pedestrian Composite Index Analysis.
- <sup>87</sup> US Centers for Disease Control and Prevention. 2011. Physical Activity and Health. Available at: <http://www.cdc.gov/physicalactivity/everyone/health/index.html>. Accessed October 25, 2013.
- <sup>88</sup> Frank L, Andresen M, Schmid T. 2004. Obesity relationships with community design, physical activity, and time spent in cars. *American Journal of Preventive Medicine* 27(2), 87-96.
- <sup>89</sup> World Health Organization and The World Bank. 2004. World report on road traffic injury prevention. Geneva: World Health Organization. Available at: <http://whqlibdoc.who.int/publications/2004/9241562609.pdf>. Accessed October 25, 2013.
- <sup>90</sup> Roudsari B, Mock C, Kaufman R, Grossman DB, Henery B, Crandall J. 2004. Pedestrian crashes: higher injury severity and mortality rate for light truck vehicles compared with passenger vehicles. *Inj Prev* June; 10(3):154-158.
- <sup>91</sup> Kim JK, Ulfarsson GF, Shankar VN, Mannering FL. 2010. A note on modeling pedestrian-injury severity in motor-vehicle crashes with the mixed logit model. *Accid Anal Prev* 42:1751-8.
- <sup>92</sup> World Health Organization and The World Bank. 2004. World report on road traffic injury prevention. Geneva: World Health Organization. Available at: <http://whqlibdoc.who.int/publications/2004/9241562609.pdf>. Accessed October 25, 2013.
- <sup>93</sup> Ewing R, Kreutzer R. 2006. Understanding the relationship between public health and the built environment: A report prepared for the LEED-ND Core Committee. Available at: <http://www.usgbc.org/Docs/Archive/General/Docs3901.pdf>. Accessed October 25, 2013.

<sup>94</sup> Reynolds CCO, Harris MA, Teschke K, Cropton PA, Winters M. The impact of transportation infrastructure on bicycling injuries and crashes: a review of the literature. *Environmental Health* 2009;8:47.

<sup>95</sup> Echeverría S, Diez-Roux A, Shea S, Borrell LN, Jackson, S. 2008. Associations of neighborhood problems and neighborhood social cohesion with mental health and health behaviors: the multi-ethnic study of atherosclerosis. *Health & Place* 14(4):853-865.

<sup>96</sup> Kennedy BP, Kawachi I, Prothrow-Stith D, Lochner K, Gupta V. 1998. Social capital, income inequality, and firearm violent crime. *Soc Sci Med* 47(1):7-17.

<sup>97</sup> Echeverría S, Diez-Roux A, Shea S, Borrell LN, Jackson, S. 2008. Associations of neighborhood problems and neighborhood social cohesion with mental health and health behaviors: the multi-ethnic study of atherosclerosis. *Health & Place* 14(4):853-865.

<sup>98</sup> Poortinga W. 2006. Social relations or social capital? Individual and community health effects of bonding social capital. *Soc Sci Med* 63:255-270.

<sup>99</sup> Uphoff EP, Pickett KE, Cabieses B, Small N, Wright J. 2013. A systematic review of the relationships between social capital and socioeconomic inequalities in health: a contribution to understanding the psychosocial pathway of health inequalities. *Int J Equity Health* 12:54.

## **VIII. List of Appendices**

- Appendix A. Additional Key Planning Documents that Affect San Jose
- Appendix B. Pathway Diagrams
- Appendix C. Explanation of Terms Used in Resident Predictions
- Appendix D. Overview of Sunport HIA process

## Appendix A. Additional Key Planning Documents that Affect San Jose

*Area plans:* Two area plans, in particular, are of interest. Adopted in 1998 and updated in 2000, the *Southwest Area Plan* sought to guide future development by addressing general land use, transportation, drainage, and public services. The original plan dates back to when the airport was still known as Albuquerque International and before ground was broken on Mesa del Sol. The plan is of particular relevance to the HIA because the environmental assessment cites it as one explanation for the extension. The current version of the plan also mentions a vision for “a major light industrial corridor with office and commercial uses is planned generally east of Second Street, south of Woodward Road, and west of Interstate 25,” modifying a vision expressed in the original 1988 plan.

Also of interest is the *Bernalillo County/International Sunport Station Area Sector Development Plan*, adopted in 2009. The plan lays out a vision for the future for select areas adjacent to the Rail Runner train station on Second Street. This vision includes human scale development, a multiuse area with access to employment and entertainment, and a safe pedestrian and bicycling environment. The southernmost edge of the San Jose neighborhood as defined for the HIA is in the boundary area for the station, meaning it is within a quarter mile of the station, although it is not immediately adjacent to the station and is not a main neighborhood focused on in the plan.

*Complete Streets resolution and plan:* Adopted in 2011 by the Mid-Region Council of Governments, the *Complete Streets resolution* aims to “safely mov[e] people of all ages and abilities along and across the roadway: pedestrians, bicyclists, motorists, and transit users. Complete Streets make it safe to walk to school, a nearby cafe, a senior center, or cross the street to reach a bus stop. Complete streets are made safe to bicycle to work, a neighborhood park or connecting trail.”<sup>§§</sup> The Complete Streets resolution applies to the San Jose neighborhood, which is in the MRCOG jurisdiction. Similarly, a recently drafted *South Yale Complete Streets Master Plan* includes areas on Yale Boulevard that are north of Gibson Boulevard on the east side of I-25. It is mentioned here as a plan of interest; although just outside of the project area for this HIA, it provides a glimpse of recent efforts in a nearby neighborhood to improve conditions for all who use the roads.

*Comprehensive plan:* The comprehensive plan is the main planning document for the City of Albuquerque and unincorporated parts of Bernalillo County. Planning documents are ranked and the comprehensive plan is the top rank, meaning all lower ranking documents must be in accordance with the vision and guidance described in this plan.

*Design overlay zone:* The HIA project area is not in a design overlay zone; however, the space for the proposed extension is in the *Sunport Boulevard Design Overlay Zone*. The Design Overlay Zone controls signage.

*Sector plans:* The project area closely aligns with the neighborhood focused on in the *South Broadway Neighborhoods Sector Development Plan*, dating to 1986, and is part of an area today known as the South Broadway Redevelopment Zone. The plan declared the area blighted and set out to promote economic development and redevelopment. It also noted environmental concerns at the time about developing industrial zoned land in the neighborhood for heavy industry. Near the proposed extension, the neighborhood north of Gibson Boulevard SE,

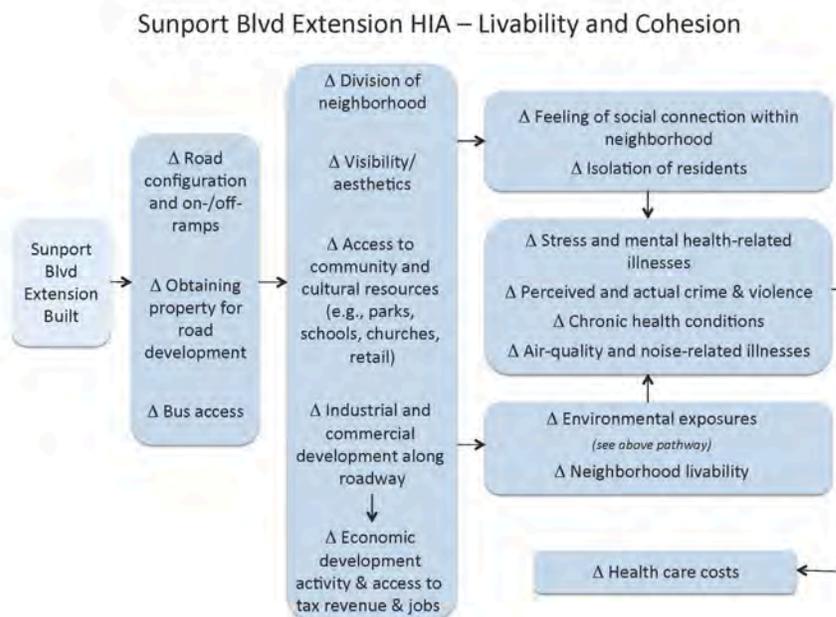
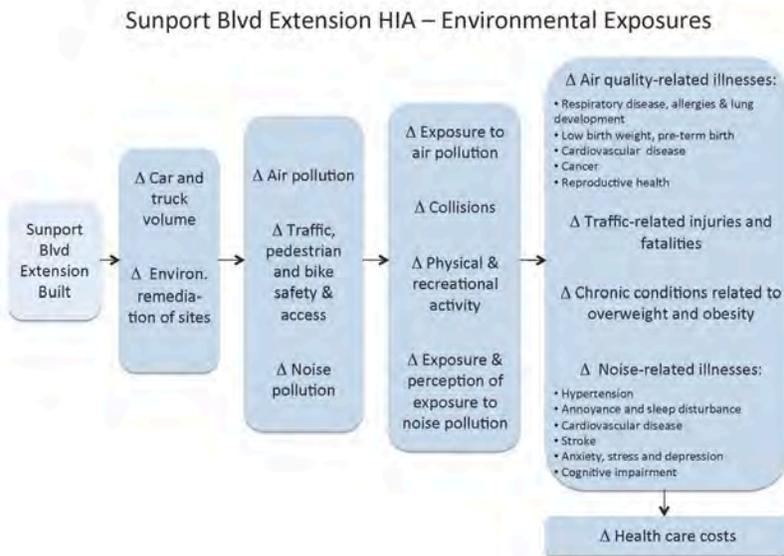
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<sup>§§</sup> Mid-Region Council of Governments. 2012. Bernalillo County Pedestrian and Bicyclist Safety Action Plan. Available at: [www.bernco.gov/upload/images/public\\_works/pedestrian%20safety%20action%20plan%20\(BCC%20final\).pdf](http://www.bernco.gov/upload/images/public_works/pedestrian%20safety%20action%20plan%20(BCC%20final).pdf). Accessed October 25, 2013.

although not included in the HIA project area but near it, is in the *South Yale Sector Development Plan*, adopted in 2009.

## Appendix B. Pathway Diagrams

The diagrams below illustrate the issues brainstormed for this project. Ultimately, residents prioritized the following topics for analysis: exposure to environmental hazards; safety from injuries/collisions; and social connectedness, with additional interest in economic development.



## Appendix C. Explanation of Terms Used in Resident Analysis

### *Likelihood*

- Certain = information says the extension definitely will cause changes or stay the same (causal)
- Likely = logically possible and has a lot of supporting information, though some uncertainty
- Possible = logically possible but with limited or uncertain supporting information
- Unlikely = logically not possible and lots of information against it

### *Severity*

- Severely = potentially life-threatening or permanently disabling, or could affect sensitive groups like children
- Moderately = big effects on well-being, livelihood or general functioning
- Not severely = short-term effects that that are reversible or can be managed

### *Number of People*

- Everyone in San Jose = around 4,000 people
- Most in San Jose = 7 out of 10 people in San Jose, or around 3,000 people
- Some in San Jose = half of people in SJ, around 2,000 people
- Few in San Jose = less than 1 in 10 people in SJ – 400 people or fewer

## **Appendix D. Overview of Sunport HIA Process**

Following is a summary of the key steps of the Health Impact Assessment process as they apply to the Sunport Boulevard Extension Project HIA.

### Screening: Deciding Whether To Do an HIA

Before the start of the HIA, from approximately September 2011 to January 2013, residents followed the environmental assessment process for the Sunport Boulevard Extension. In September 2011, Bernalillo County released an Environmental Assessment report about the proposed extension, finding that it was expected to have no significant impacts to the environment and health. Approximately six months later, in March 2012, San Jose neighborhood resident Esther Abeyta sent a letter on behalf of the San Jose Neighborhood Association to the Federal Highway Administration. The letter challenged the adequacy of the County Environmental Assessment, in particular around the assessment of environmental justice issues.

Screening for the HIA was primarily from February to April 2013. People and organizations involved in screening included: a resident of the San Jose neighborhood, members of Bernalillo County PLACE MATTERS, SouthWest Organizing Project, the New Mexico Health Equity Partnership–Santa Fe Community Foundation, and Human Impact Partners. In February 2013, Esther Abeyta began conversations with the New Mexico Health Equity Partnership–Santa Fe Community Foundation and Human Impact Partners about the potential value of a Health Impact Assessment on the extension and whether there was an upcoming decision that could benefit from the additional information an HIA could provide. The group started conversations with SouthWest Organizing Project and Bernalillo County PLACE MATTERS. Together, it was decided to move forward with the HIA after two additional letters were received. One was a reply from the Federal Highway Administration to Esther Abeyta in March 2013 saying the issue was being investigated and that the office in Washington, DC alerted both their New Mexico Division office and the New Mexico Department of Transportation about the matter. The other was a letter in April 2013 from the Federal Highway Administration’s New Mexico Division to the New Mexico Department of Transportation that suggested changes to the Environmental Assessment report. From the HIA perspective this suggested a possible decision to inform. After this point, the group reached out to the New Mexico Department of Health while forming a project Steering Committee.

### Scoping: Determining the HIA Research Focus

This HIA used a “rapid” approach to maximize community participation in a short timeframe. The approach included assembling a panel of 10 residents who were identified and invited by the Steering Committee as neighborhood residents potentially affected by the project. Panelists offered a sample of perspectives from residents in the neighborhood.

The panel convened two times, first on August 17, 2013 for five hours to learn about HIA, discuss the proposed Sunport Boulevard Extension project, and identify key questions on which the HIA would focus (also known in the HIA process as “Scoping”). The panel also refined diagrams hypothesizing the connections between the proposal and potential health outcomes that were drafted by Human Impact Partners and Steering Committee.

Key topics of focus for the HIA that came out of this first meeting included: exposure to environmental hazards, safety from injuries and collisions, and social connectedness.

The panel included both English- and Spanish-speaking residents and so the meeting included simultaneous English and Spanish interpretation and materials available in both languages. For

this meeting, the Steering Committee designed and helped facilitate a process in which the resident panel could learn, engage, and deliberate.

#### Assessment and Recommendations: Gathering Information, Making Predictions, and Identifying Strategies for Improvement

After the first meeting, the Steering Committee recruited subject matter experts and a researcher in the key topics of focus for the HIA. The experts included one health economist and assistant professor in family and community medicine from the University of New Mexico, and one retired air quality expert who previously worked also with the university, the Environmental Protection Agency, and the Albuquerque-Bernalillo County Air Quality Control Board. A HIP staff member with background in pedestrian and bicycle planning also spoke about research related to safety.

During a second meeting of the resident panel approximately one month later, on September 14, 2013, and that lasted for approximately eight hours, the subject matter experts and researcher spoke to these topics, and the resident panel reviewed existing conditions data collected by Human Impact Partners during the one month period. Using both sources of information, as well as reflecting on experience, the panel came to consensus on the likely impacts of the development on health, and identified a set of recommendations that could mitigate potentially negative health impacts.

As with the previous meeting, this second meeting was conducted simultaneously in English and Spanish, and the Steering Committee designed and helped facilitate a process in which the resident panel could learn, engage, deliberate, as well as come to consensus and provide data for residents to consider in their decisions.

#### Reporting: Synthesizing Findings

Human Impact Partners drafted this report based largely on the original environmental assessment and coordinated gathering feedback from experts from whom the Steering Committee invited review and comment. Those reached out to included subject matter experts from the in-person Scoping meeting, former staff of the County public health department, staff at the state public health department, and a representative of a neighboring community. San Jose neighborhood resident and Steering Committee member Esther Abeyta facilitated gathering feedback from the resident panel on the draft report. After the release of the revised Environmental Assessment report, and given a relatively short time period for review and public comment on it, an addendum was drafted to highlight lingering issues raised in this initial draft that seemed unresolved in the revised EA. This document will be submitted as public comment to the revised Environmental Assessment report.

## Participation in Steps of HIA

The table below illustrates the capacity in which key stakeholders participated in the Health Impact Assessment process.

Step of HIA Process	Resident Panel	Subject Matter Experts or Researchers	Steering Committee	Human Impact Partners
<b>Screening</b>			L	L
<b>Scoping</b>				
Pathway development	P		P	L
Finalizing of issues to focus on in the HIA	L		P	P
<b>Assessment</b>				
Gathering existing conditions information				L
Review of existing conditions information	P		P	L
Conversation about key research	P	L		P
Literature review				L
Identification of likely impacts	L		P	P
Consensus on likely impacts	L		P	P
<b>Recommendations</b>				
Identification of recommendations	L		P	P
Consensus on recommendations	L		P	P
Identification of supplementary recommendations			L	P
<b>Reporting</b>				
Writing and finalizing				L
Review	P	P	P	
<b>Monitoring / Evaluation</b> (to be done)				

L = lead, P = participant

Esther & Steven Abeyta  
2419 William Street, SW  
Albuquerque, NM 87102

-A-  
(2)

December 3, 2015

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6501 Americas Parkway, # 900  
Albuquerque, NM 87110  
[peter.hinckley@aecom.com](mailto:peter.hinckley@aecom.com)

Rodrigo Eichwald  
Bernalillo County  
2400 South Broadway  
Albuquerque, NM 87102  
[rleichwald@bernco.gov](mailto:rleichwald@bernco.gov)

RE: Woodward Road project

Dear Mr. Eichwald and Mr. Hinckley:

We are writing to you concerning the proposed extensive expansion of Woodward Road, converting it from a neighborhood street adjacent to the GE superfund site and related contaminated properties, including abandoned, leaking underground storage tanks, and the Schwarzman pre-RCRA landfill. As you should recall, and we incorporate in this letter by reference, we submitted comments on what you have called the “co-dependent” and “related” Sunport Extension Project which have a direct bearing on what you are proposing for Woodward Road and its impact on us and the community in which we live.

Plainly, this project falls outside a “categorical exclusion” from the National Environmental Policy Act due to its size and impacts upon this community and the environment. Additionally, this project—again, by your own words cited above—is part and parcel of the entire group of road and road-related projects within the larger Sunport Extension Project. That means you have also failed to properly include all of these projects under a single Environmental Assessment [EA] properly addressing interactions and interconnections of the projects and, importantly, the cumulative impacts of the entire project.

As we did in the referenced comments, we again ask that this project, the Sunport Extension and all the related projects you listed in the Sunport Extension Project Revised EA be subject to a single environmental impact statement. We believe that your failure to do so is violation of the National Environmental Policy Act. We also think that it is not appropriate under the NEPA for you to go forward with the Woodward Project prior to completely addressing all of the comments that you received on the “related” and “co-dependent” Sunport Extension Project.

Please note that your response to these comments should be sent to Mr. Juan Reynosa and our attorney Jon Block. They are cc-ed below with their email addresses.

Thank you.

Esther and Steven Abeyta

cc: [jblock@nmelc.org](mailto:jblock@nmelc.org)  
[juan@swop.org](mailto:juan@swop.org)



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**New Mexico Division**

4001 Office Court Drive  
Suite 801  
Santa Fe, NM 87507  
505-820-2021

July 21, 2016

In Reply Refer To:  
PPM-NM  
ENVI 3

**SUBJECT: Sunport Boulevard Extension CN A300160  
And Woodward Road CN A300161 Environmental Documents**

Mr. Tom Church  
Cabinet Secretary  
New Mexico Department of Transportation  
PO Box 1149  
Santa Fe, NM 87507

Dear Secretary Church:

The Federal Highway Administration New Mexico Division Office (Division) has received and reviewed the National Environmental Policy Act (NEPA) documents for the Bernalillo County subject projects. The Sunport Boulevard Extension project was analyzed as an Environmental Assessment (EA) for its NEPA consideration, and Bernalillo County via the New Mexico Department of Transportation (Department), has requested a Finding of No Significant Impact (FONSI) for the project. The Woodward Road project was analyzed as a Categorical Exclusion (CE), and final signature from the Division has been requested. The Woodward Road project is discussed as a "co-dependent" project in the Sunport Boulevard Extension EA and noted as an environmental commitment that would be developed as a separate project to be open to traffic prior to the completion of the Sunport Boulevard Extension.

The Division's review of the FONSI request concluded that producing individual projects with separate NEPA documents constitutes a segmentation issue. Segmentation in this respect pertains to an evaluation of the Sunport Boulevard Extension project and its relationship to the Woodward project. Individual NEPA documents for the Sunport Boulevard Extension project and the Woodward Road project is construed as incrementally analyzing impacts materially linked to both projects.

Ultimately, the Division is unable to approve the NEPA decision documents based on the segmentation considerations relative to NEPA procedural requirements. The Division proposes that the information in the Woodward Road CE be combined with the Sunport Boulevard Extension EA and be presented to the public as a single EA at a public hearing. Planning requirements would also call for amending the State Transportation Improvement Program (STIP) to reflect a single project. Several options exist for consideration, as we discussed during the project meeting on Monday, July 18, 2016. Among these options include: pursuing a single

EA as proposed in the preceding paragraph, elevating the NEPA level of effort to an Environmental Impact Statement, or withdrawing the project altogether.

The Division acknowledges the critical link that the Sunport Boulevard Extension comprises in the Interstate 25 South Corridor. We are committed to working with you and Bernalillo County to evaluate the corridor and advance solutions. If you have questions on this matter, please do not hesitate to contact the Division Environmental/Realty Specialist, Greg Heitmann. He can be reached via email at [greg.heitmann@dot.gov](mailto:greg.heitmann@dot.gov) or by phone at (505) 820-2027.

Sincerely,



Gregory L. Heitmann  
Environmental Specialist

For: J. Don Martinez  
Division Administrator

cc:

Mr. Blake Roxlau, Environmental Program Manager, NMDOT

Mr. Ken Murphy, P.E., Acting District 3 Engineer, NMDOT

Ms. Priscilla Benavidez, P.E., District 3 Design Manager, NMDOT

INSTALLATION RESTORATION PROGRAM  
PHASE I - RECORDS SEARCH

AIR FORCE PLANT NO. 83  
Albuquerque, New Mexico

Prepared For  
UNITED STATES AIR FORCE  
HQ AFESC/DEV  
Tyndall AFB, Florida  
and  
HQ ASD/PMD  
Wright Patterson AFB, Ohio

December 1983

Prepared By  
ENGINEERING-SCIENCE  
57 Executive Park South, Suite 590  
Atlanta, Georgia 30329

## NOTICE

This report has been prepared for the United States Air Force by Engineering-Science for the purpose of aiding in the Air Force Installation Restoration Program. It is not an endorsement of any product. The views expressed herein are those of the contractor and do not necessarily reflect the official views of the publishing agency, the United States Air Force, nor the Department of Defense.

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## EXECUTIVE SUMMARY

The Department of Defense (DOD) has developed a program to identify and evaluate past hazardous material disposal sites on DOD property, to control the migration of hazardous contaminants, and to control hazards to health or welfare that may result from these past disposal operations. This program is called the Installation Restoration Program (IRP). The IRP has four phases consisting of Phase I, Initial Assessment/Records Search; Phase II, Confirmation and Quantification; Phase III, Technology Base Development; and Phase IV, Operation/Remedial Actions. Engineering-Science (ES) was retained by the United States Air Force to conduct the Phase I, Initial Assessment/Records Search for Air Force Plant No. 83 under Contract No. F08637-80-G0009-5009.

### INSTALLATION DESCRIPTION

Air Force Plant No. 83, otherwise known as General Electric Aircraft Engine Business Group's Albuquerque Plant, is located in the southern portion of Albuquerque, New Mexico. The plant site is approximately one mile due west of Kirtland Air Force Base. The facility is comprised of approximately 30 major buildings which cover 586,790 square feet within a 33-acre area.

Surrounding land uses include residential to the north, heavy and light industrial to the west (including the Eidal Manufacturing Plant, which manufactures tractors; a vacant manufacturing plant; and a construction equipment storage yard), light industrial to the south (including a packing plant and an auto salvage yard), and light and heavy industrial and residential to the east (including Texaco's oil storage facility; a deep freeze locker storage facility; Conoco's storage facility; a vacant lot, and a small residential area). The area within one-fourth mile of the plant is populated by less than 1,000 people.

General Electric Company (GE) operates industrial facilities at Air Force Plant No. 83. GE has been at Plant No. 83 since 1967, when the Air Force assumed ownership of the plant from the Atomic Energy Commission (AEC).

GE operations at Air Force Plant No. 83 involve the manufacturing of aircraft engine parts, sub-assemblies, and spare parts for military and commercial jet engines. Operations include machining, fiber laminate composition, investment casting, and shrouds and seals manufacturing.

Prior to 1967, there were three separate occupants in the area now occupied by GE. From 1948 to 1951, Fidal Manufacturing Company, a machine shop and heavy equipment builder was the first known occupant of the plant site. Buildings No. 5 and No. 11 were the only buildings on the site during that period. In 1951 the site was purchased by the AEC. From 1951 until about 1967, American Car and Foundry, Incorporated (ACF) served as the AEC contractor. Manufacturing operations included forming, welding, plating, and machining metal parts and structures, and molding and machining plastics. Just prior to the Air Force's purchase and GE's subsequent occupation of Plant 83, Dow Chemical Company joined with ACF in the operation of a portion of the facility for about 6 months. This was done for the purpose of training Dow on how to duplicate ACF's methods and skills so that the same products could be thereafter manufactured by Dow at the AEC's Rocky Flats Plant. Dow was not permitted during this time to institute any changes in the methods, materials, processes or practices being used.

#### ENVIRONMENTAL SETTING

The environmental setting data reviewed for this investigation indicate that the following elements are relevant to the evaluation of past hazardous waste management practices at Air Force Plant No. 83:

1. The normal annual precipitation is 7.77 inches; the net precipitation is -54.23 inches and the 1-year, 24-hour rainfall event is estimated to be 1.25 inches. These data indicate that there is little or no potential for precipitation to infiltrate the surface soils on the plant property. Also, there is a slight potential for runoff and erosion.
2. There is limited area on the plant property where natural soils are exposed. Most of the plant property is covered by asphalt or concrete. The natural soils on the property are typically clayey

- or sandy loam with low permeability values. These data indicate that recharge by precipitation infiltrating the soils will be slow.
3. Surface water in the vicinity of the plant may recharge the shallow water-table aquifer or may flow downstream in the San Jose Drain to the Rio Grande River.
  4. Clay is a dominant lithologic unit under the plant which may limit the vertical migration of ground water.
  5. Alluvial deposits of sand, gravel, cobbles and clay underly the plant. Water levels are approximately 15 to 20 feet below ground within the shallow alluvial deposits.
  6. Water levels within the deeper alluvial deposits and the Santa Fe group (undivided) are approximately 35-50 feet deep. These data indicate that a shallow water-table aquifer exists under the plant and a potential exists for the horizontal and vertical migration of ground water from the shallow water-table aquifer to the regional water-table aquifer.
  7. Ground-water contamination has been detected in shallow monitoring wells on the plant property.
  8. The direction of ground-water flow within the shallow water-table aquifer cannot be determined based on available data.
  9. The regional ground-water flow direction is east and northeast from the plant to major water producing wells for the City of Albuquerque.
  10. The operation of wells SJC and SJ6 may impact the ground-water conditions underlying the plant in both the shallow and regional water-table aquifers.
  11. The plant is located in a "declared underground water basin" which is the sole source aquifer for Albuquerque's water supply.
  12. There are no Federally- or state-listed endangered or threatened species which inhabit the plant property.

#### METHODOLOGY

During the course of this project, interviews were conducted with plant personnel (past and present) familiar with past waste disposal practices; file searches were performed for past hazardous waste activities; interviews were held with local, state and Federal agencies; and

a field tour was conducted at past hazardous waste activity sites. All suspected sites were investigated and five sites were identified as potentially containing hazardous contaminants resulting from past activities (Figure 1). These sites have been assessed using a Hazard Assessment Rating Methodology (HARM) which takes into account factors such as site characteristics, waste characteristics, potential for contaminant migration, and waste management practices. The details of the rating procedure are presented in Appendix E and the results of the assessment are given in Table 1. The rating system is designed to indicate the relative need for follow-on investigations.

#### FINDINGS AND CONCLUSIONS

The following conclusions have been developed based on the results of the project team's field inspection, review of base records and files, and interviews with base personnel. Each of the five sites listed below were ranked using the HARM system and were determined to have a sufficient potential for environmental contamination to warrant some degree of follow-on investigation.

North Parking Lot

Hazardous Waste Storage No. 1

Hazardous Waste Storage No. 3

Hazardous Waste Storage No. 4

Underground Cyanide Vault

#### RECOMMENDATIONS

A program for proceeding with Phase II of the IRP at Air Force Plant No. 83 is presented in Chapter 6. The Phase II recommendations are summarized as follows:

North Parking Lot

- Soil Sampling, Install and Sample Monitoring Wells.

Hazardous Waste Storage No. 1 - Soil Sampling, Install and Sample Monitoring Wells.

Hazardous Waste Storage No. 3 - Soil Sampling, Install and Sample Monitoring Wells.

Hazardous Waste Storage No. 4 - Soil Sampling, Install and Sample Monitoring Wells.

TABLE 1

SITES EVALUATED USING THE HAZARD ASSESSMENT  
RATING METHODOLOGY  
AIR FORCE PLANT NO. 83

Rank	Site	Operating Period	Final HARM Score
1	North Parking Lot	1979-1980	64
1	Hazardous Waste Storage No. 1	1954-Present	62
2	Hazardous Waste Storage No. 3	Late 1950's to Present	60
4	Hazardous Waste Storage No. 4	Mid 1970's-1981	54
5	Underground Cyanide Vault	Mid 1950's to Late 1970's	51

USAF PLANT NO. 83  
 GENERAL ELECTRIC ALBUQUERQUE PLANT  
**SITES OF POTENTIAL  
 ENVIRONMENTAL CONTAMINATION**

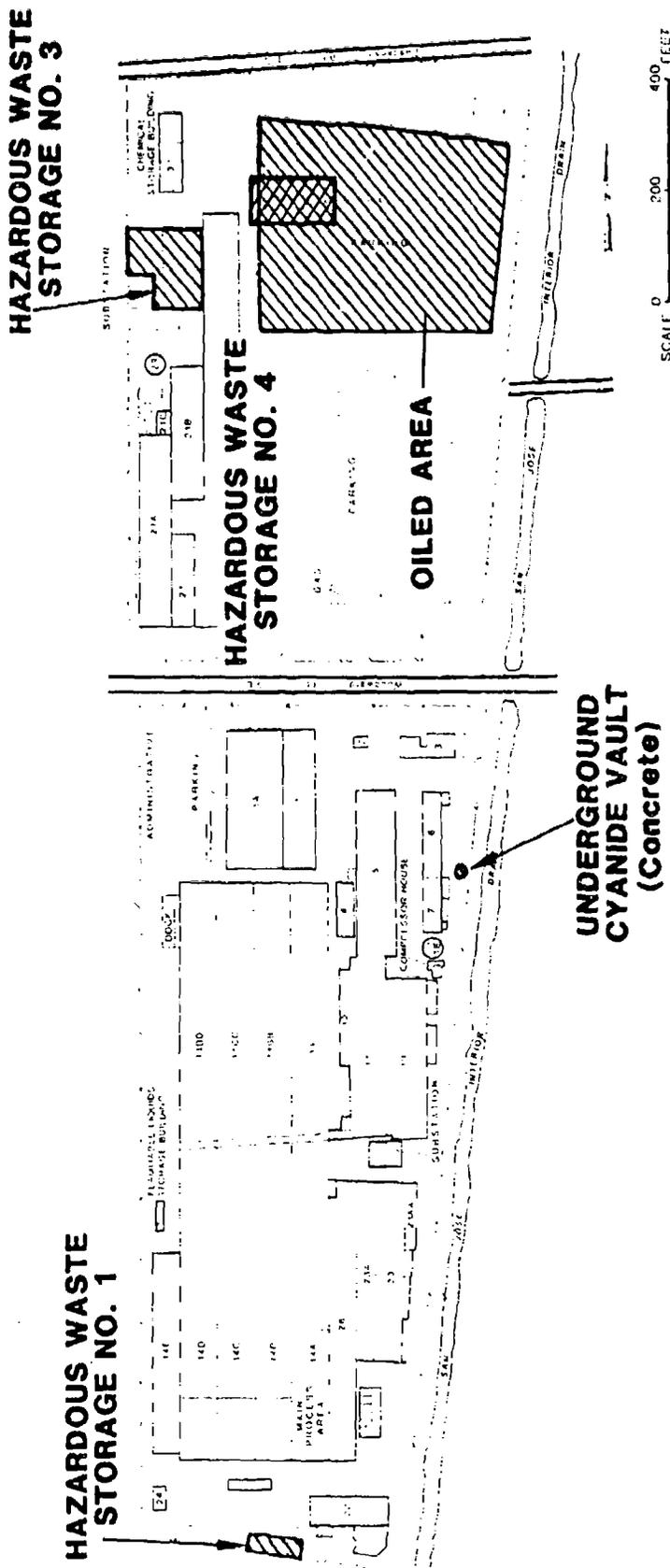


FIGURE 1

SOURCE: USAF PLANT NO. 83 DOCUMENTS

Underground Cyanide Vault

- Locate, investigate and analyze contents. If leakage has occurred, install and sample monitoring wells.

CHAPTER 1  
INTRODUCTION

BACKGROUND

The United States Air Force, due to its primary mission of defense of the United States, has long been engaged in a wide variety of operations dealing with toxic and hazardous materials. Federal, state, and local governments have developed strict regulations to require that disposers identify the locations and contents of past disposal sites and take action to eliminate hazards in an environmentally responsible manner. The primary Federal legislation governing disposal of hazardous waste is the Resource Conservation and Recovery Act (RCRA) of 1976, as amended. Under Section 6003 of the Act, Federal agencies are directed to assist the Environmental Protection Agency (EPA) and under Section 3012, state agencies are required to inventory past disposal sites and make the information available to the requesting agencies. To assure compliance with these hazardous waste regulations, the Department of Defense (DOD) developed the Installation Restoration Program (IRP). The current DOD IRP policy is contained in Defense Environmental Quality Program Policy Memorandum (DEQPPM) 81-5, dated 11 December 1981 and implemented by Air Force message dated 21 January 1982. DEQPPM 81-5 reissued and amplified all previous directives and memoranda on the Installation Restoration Program. DOD policy is to identify and fully evaluate suspected problems associated with past hazardous contamination, and to control hazards to health and welfare that resulted from these past operations. The IRP will be the basis for response actions on Air Force installations under the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, and clarified by Executive Order 12316. CERCLA is the primary federal legislation governing remedial actions at past hazardous waste disposal sites.

## PURPOSE AND SCOPE OF THE ASSESSMENT

The Installation Restoration Program has been developed as a four-phased program as follows:

- Phase I - Initial Assessment/Records Search
- Phase II - Confirmation and Quantification
- Phase III - Technology Base Development
- Phase IV - Operations/Remedial Actions

Engineering-Science (ES) was retained by the United States Air Force to conduct the Phase I Records Search at Air Force Plant No. 83 under Contract No. F08637-80-G0009-5009. This report contains a summary and an evaluation of the information collected during Phase I of the IRP and recommendations for follow-on actions.

The goal of the first phase of the program was to identify the potential for environmental contamination from past waste disposal practices at Air Force Plant No. 83, and to assess the potential for contaminant migration. The activities that were performed in the Phase I study included the following:

- Review of site records
- Interview of personnel familiar with past generation and disposal activities
- Surveys of types and quantities of wastes generated
- Determination of estimated quantities and locations of current and past hazardous waste treatment, storage, and disposal
- Definition of the environmental setting at the plant
- Review of past disposal practices and methods
- Field tour of plant facilities
- Collection of pertinent information from Federal, state, and local agencies
- Assessment of potential for contaminant migration
- Development of follow-on recommendations.

ES performed the on-site portion of the records search during October 1983. The following team of professionals were involved:

- R. E. Mayfield, Environmental Engineer and Project Manager, MSCE, 6 years of professional experience
- M. I. Spiegel, Environmental Scientist, BS Environmental Science, 6 years professional experience
- H. D. Harman, PG, Hydrogeologist, BS Geology, 8 years professional experience.

More detailed information on these three individuals is presented in Appendix A.

#### METHODOLOGY

The methodology utilized in the Air Force Plant No. 83 Records Search began with a review of past and present industrial operations conducted at the plant. Information was obtained from available records and files, as well as interviews with past and present plant employees from the various operating areas. Those interviewed included current and past personnel associated with ACF, Dow and General Electric Company. A listing of the plant interviewee positions and approximate years of service is presented in Appendix B.

Concurrent with the plant interviews, the applicable Federal, state, and local agencies were contacted for pertinent plant-related environmental data. The agencies contacted and interviewed are listed below and additional information is included in Appendix B.

- o U.S. Department of Energy (DOE)
- o U.S. Environmental Protection Agency (EPA), Region VI
- o U.S. Geological Survey (USGS), Water Resources Division
- o U.S. Department of Defense DOD, Defense Logistics Agency
- o U.S. Army Corps of Engineers
- o Middle Rio Grande Conservancy District
- o New Mexico State Engineers Office
- o New Mexico Health and Environment Department (NMHED)
- o City of Albuquerque, Water Resources Department
- o City of Albuquerque, Water Systems Division

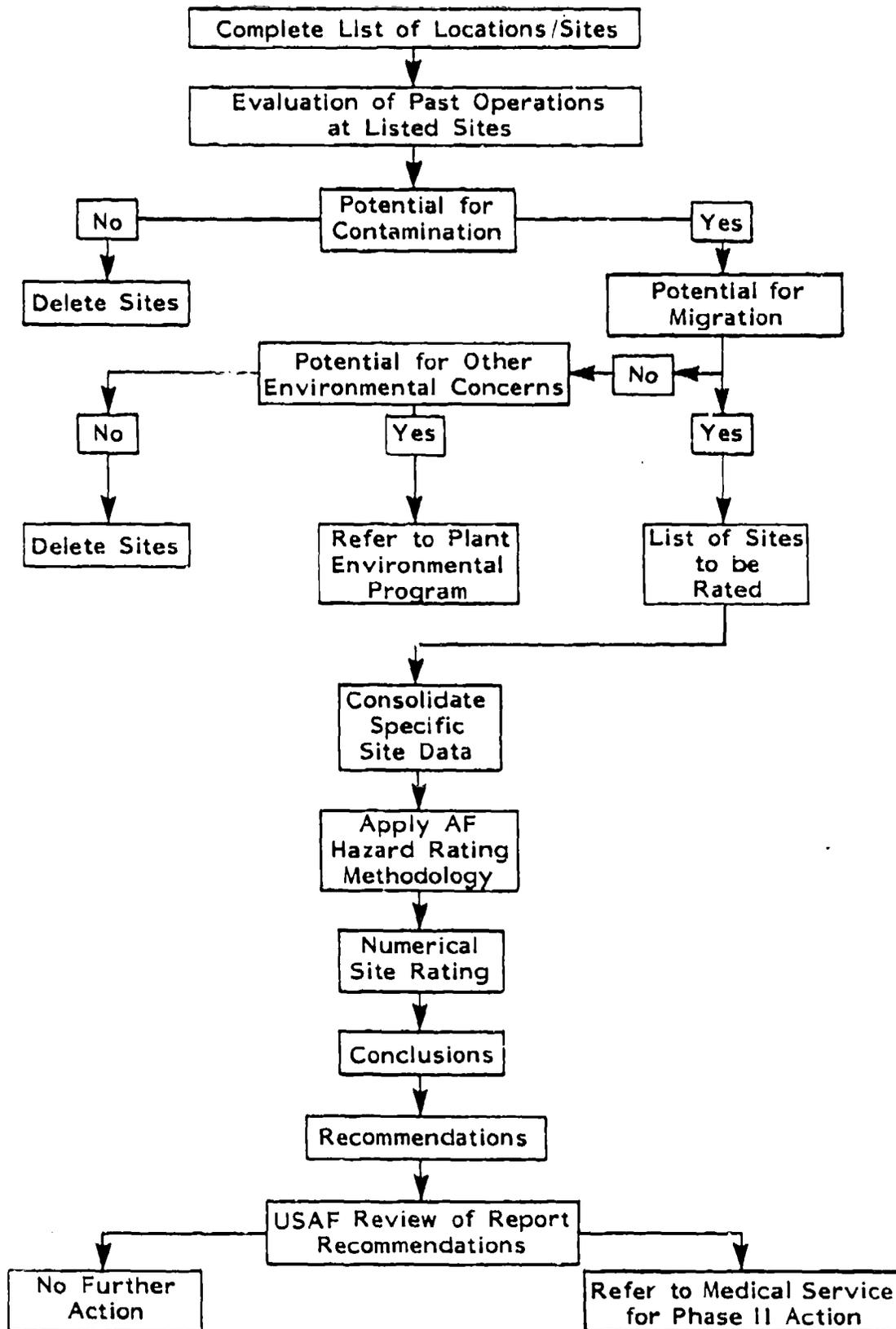
The next step in the activity review was to identify all sources of hazardous waste generation and to determine the past management practices regarding the use, storage, treatment, and disposal of hazardous materials from the various operations at the plant. Included in this part of the activities review was the identification of any past disposal sites and other possible sources of contamination such as spill areas.

A general ground tour of the identified sites was then made by the ES Project Team to gather site-specific information including: (1) visual evidence of environmental stress; (2) the presence of nearby drainage ditches or surface water bodies; (3) visual inspection of these water bodies for any obvious signs of contamination; and (4) past waste management site conditions.

A decision was then made, based on all of the above information, whether a potential existed for hazardous material contamination at any of the identified sites using the Decision Tree shown in Figure 1.1. If no potential existed, the site was deleted from further consideration. For those sites where a potential for contamination was identified, a determination of the potential for migration of the contamination was made by considering site-specific conditions. If no potential for contaminant migration exists but other environmental concerns were identified, the site was referred to the plant environmental protection program. If there were no further environmental concerns identified, then the site was deleted. If the potential for contaminant migration was considered significant, then the site was evaluated and prioritized using the Hazard Assessment Rating Methodology (HARM). A discussion of the HARM system is presented in Appendix E. The sites that were evaluated using the HARM procedures were also reviewed with regard to future land use restrictions.

PHASE I INSTALLATION RESTORATION PROGRAM

DECISION TREE



CHAPTER 2  
INSTALLATION DESCRIPTION

LOCATION, SIZE AND BOUNDARIES

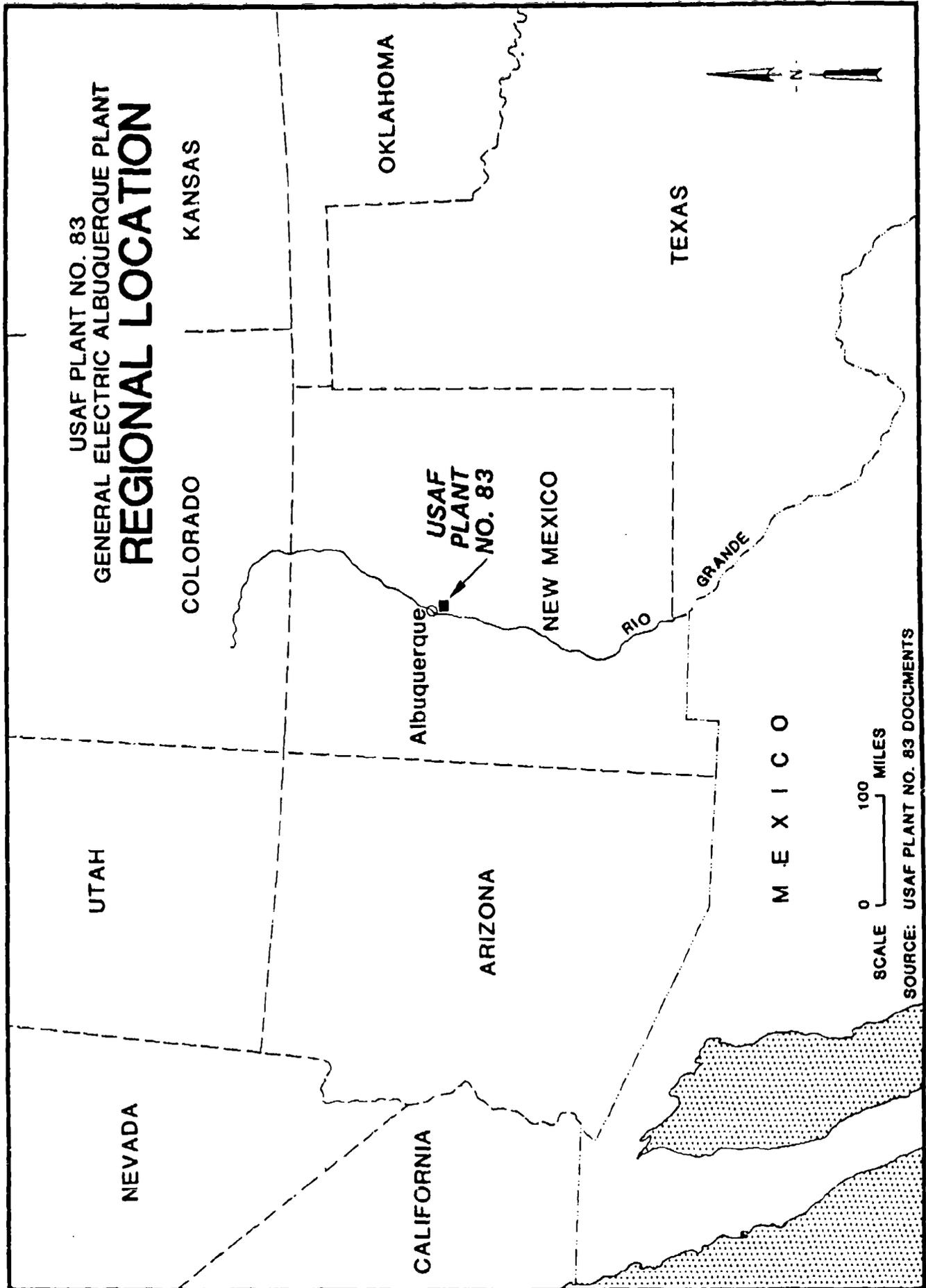
Air Force Plant No. 83, otherwise known as General Electric Aircraft Engine Business Group's Albuquerque Plant, is located in the southern portion of Albuquerque, New Mexico (Figure 2.1). The plant site is approximately one mile due west of Kirtland Air Force Base (Figure 2.2). The facility is comprised of approximately 30 major buildings which cover 586,970 square feet within a 33-acre area (Figure 2.3).

Surrounding land uses include residential to the north, heavy and light industrial to the west (including the Eidal Manufacturing Plant, which manufactures tractors; a vacant manufacturing plant; and a construction equipment storage yard), light industrial to the south (including a packing plant and an auto salvage yard), and light and heavy industrial and residential to the east (including Texaco's oil storage facility; a deep freeze locker storage facility; Conoco's storage facility; a vacant lot, and a small residential area). The area within one-fourth mile of the plant is populated by less than 1,000 people.

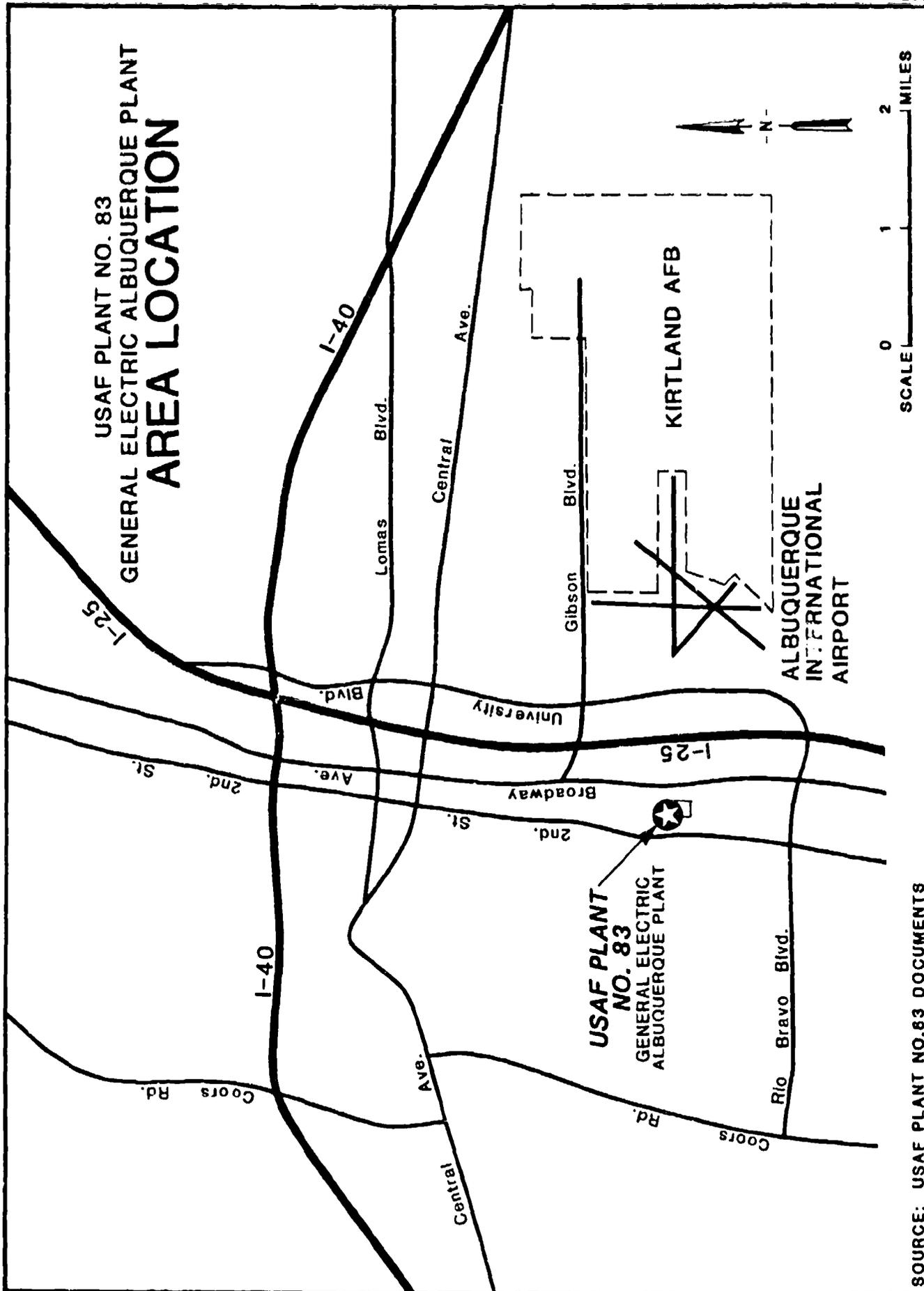
HISTORY

General Electric Company (GE) operates industrial facilities at Air Force Plant No. 83. GE has been at Plant No. 83 since 1967 when the Air Force assumed ownership of the plant from the Atomic Energy Commission (AEC).

GE operations at Air Force Plant No. 83 involve the manufacturing of aircraft engine parts, sub-assemblies, and spare parts for military and commercial jet engines. Operations include machining, fiber laminate composition, investment casting, and shrouds and seals manufacturing.



SOURCE: USAF PLANT NO. 83 DOCUMENTS

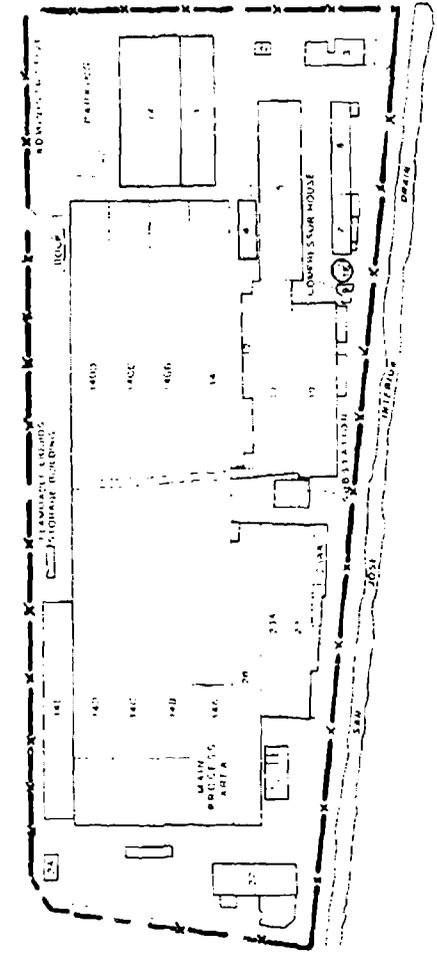
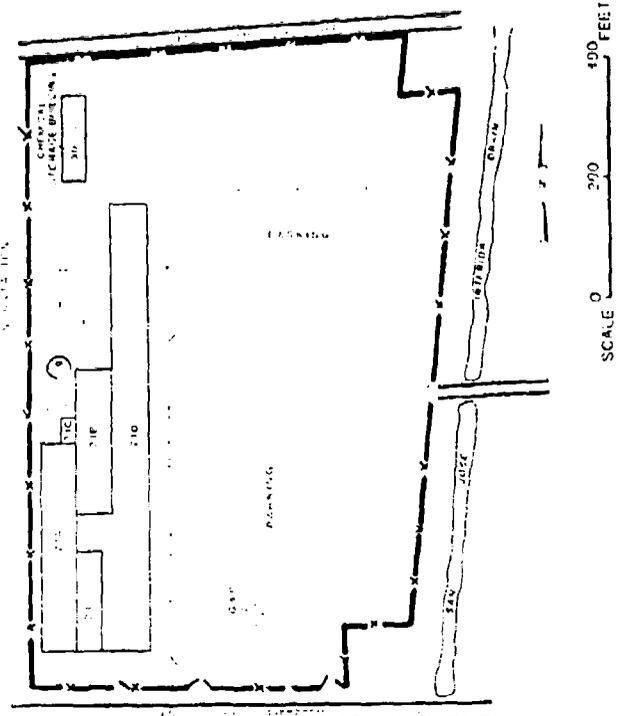


**USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT  
AREA LOCATION**

**USAF PLANT  
NO. 83  
GENERAL ELECTRIC  
ALBUQUERQUE PLANT**

SOURCE: USAF PLANT NO.83 DOCUMENTS

# USAF PLANT NO. 83 GENERAL ELECTRIC ALBUQUERQUE PLANT SITE PLAN



SOURCE: USAF PLANT NO. 83 DOCUMENTS

Prior to 1967, there were three separate occupants in the area now occupied by GE. From the late 1948 to 1951, Eidal Manufacturing Company, a machine shop and heavy equipment builder, was the first occupant of the plant site. Buildings No. 5 and No. 11 were the only buildings on the site during that period. In 1951, the site was purchased by the AEC. From 1951 until about 1967, American Car and Foundry (ACF), Incorporated, served as the AEC contractor. Manufacturing operations included forming, welding, plating, and machining metal parts and structures, and molding and machining plastics. Just prior to the Air Force's purchase and GE's subsequent occupation of Plant 83, the Dow Chemical Company joined with ACF in the operation of a portion of the facility for about 6 months. This was done for the purpose of training Dow on how to duplicate ACF's methods and skills so that the same products could be thereafter manufactured by Dow at the AEC's Rocky Flats Plant. Dow was not permitted during this time to institute any changes in the methods, materials, processes or practices being used.

A chronology of the facility construction is depicted on Figure 2.4.



CHAPTER 3  
ENVIRONMENTAL SETTING

The environmental setting of USAF Plant No. 83 is described in this chapter with an emphasis on the identification of natural features that may promote the movement of hazardous waste contaminants. Environmental conditions pertinent to this study are summarized at the conclusion of this chapter.

METEOROLOGY

The climate of Albuquerque is characterized by a large number of sunny days and low humidity. Temperature extremes may vary from a high of 100°F on summer days to a low of 15°F on winter nights. This "Arid Continental" type of climate is usually dry with brief but heavy thundershowers occurring from July to September. Very little rainfall occurs during the winter months (National Oceanic and Atmospheric Administration (NOAA), 1983). Selected meteorological data for Albuquerque are summarized in Table 3.1.

Two climatic features of interest in determining the potential for movement of contaminants are net precipitation and rainfall intensity. Net precipitation is an indicator of the potential for leachate generation and is equal to the difference between precipitation and evaporation. Rainfall intensity is an indicator of the potential for excessive runoff and erosion. The one-year, 24-hour rainfall event is used to gauge the potential for runoff and erosion. Net precipitation at Plant No. 83 is minus (-) 54.23 inches as determined from meteorological records. Normal annual precipitation at the Albuquerque International Airport for the period 1941-1970 is 7.77 inches (NOAA, 1983) and the mean annual lake evaporation for the area is 62 inches (NOAA, 1979). The negative value of net precipitation indicates that there is little or no potential for precipitation to infiltrate the surface soils on the plant property. The presence of asphalt and concrete covering a

TABLE 3.1

CLIMATIC CONDITIONS FOR USAF PLANT NO. 83

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>TEMPERATURE (°F)</u>	35.2	40.0	45.8	55.8	65.3	74.6	78.7	76.6	70.1	58.2	44.5	36.2
Normal												
<u>PRECIPITATION (Inches)</u>	0.30	0.39	0.47	0.48	0.53	0.50	1.39	1.34	0.77	0.79	0.29	0.52
Normal												
Maximum Monthly	1.32	1.42	2.18	1.97	3.07	1.71	3.33	3.30	1.99	3.08	1.45	1.85
<u>SNOWFALL (Inches)</u>	9.5	8.2	13.9	8.1	1.0	0.0	0.0	0.0	T	0.9	9.3	14.7
Maximum Monthly												

Note: T = Trace  
 Period of Record: 1941-1970  
 Source: NOAA, 1983

majority of the plant property further reduces infiltration. The one-year, 24-hour rainfall event in the area of the plant is estimated to be 1.25 inches (NOAA, 1963). This value indicates that there is a slight potential for runoff and erosion. Although the one-year, 24-hour rainfall event is small, the presence of asphalt and concrete covering a majority of the plant property increases the potential for runoff and erosion.

#### GEOGRAPHY

Plant No. 83 is located in the Basin and Range Physiographic Province (Figure 3.1). Within the Basin and Range Province it is located in the northern portion of the Mexican Highland Section (Wells, et al., 1981). The plant is further located in the Rio Grande Valley between the West Mesa and East Mesa (Figure 3.2). The Rio Grande is the major river flowing south through the valley.

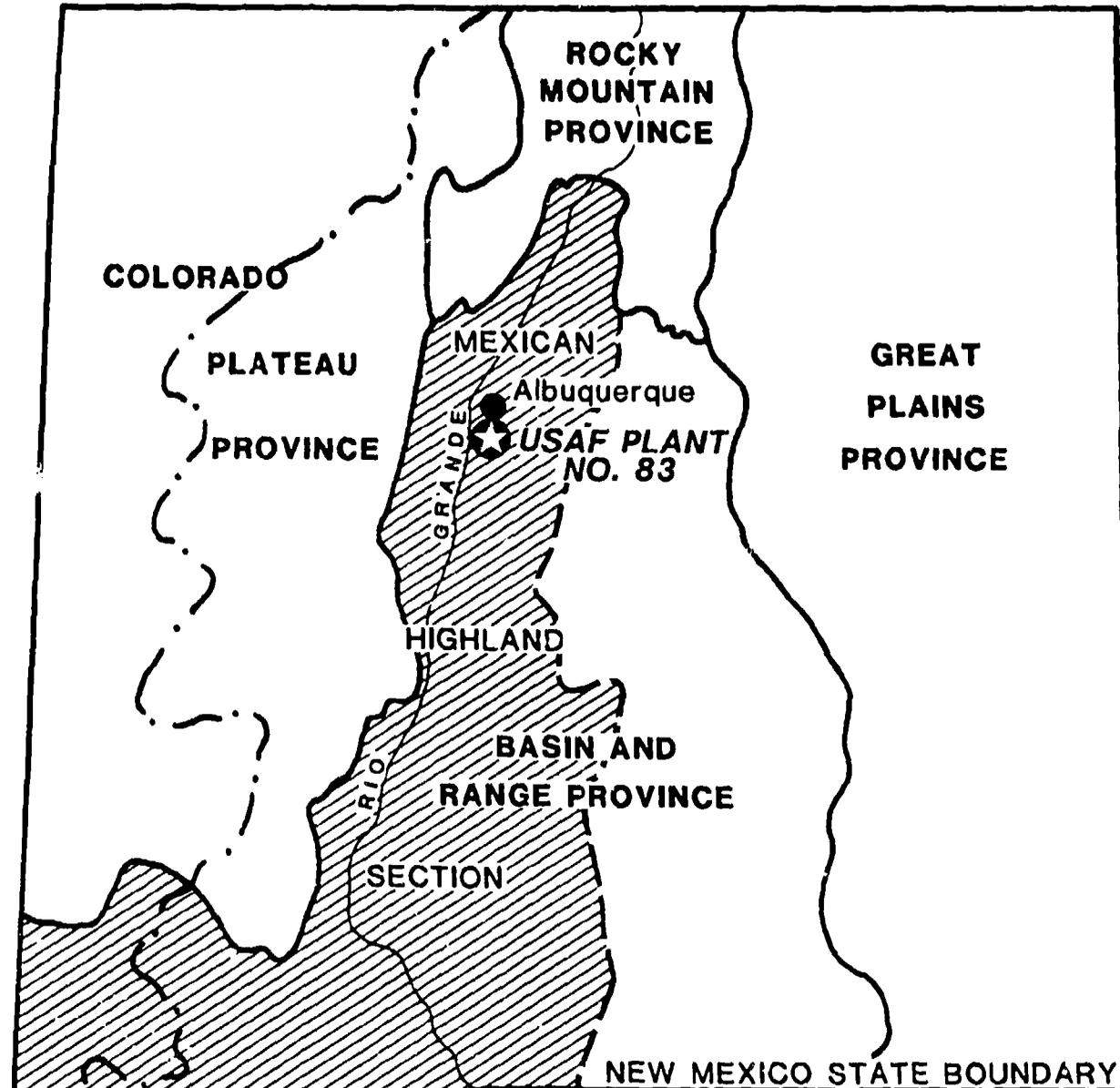
#### Topography

The topography of the general area in which the plant is located is quite spectacular with three major topographic features. These features are the Sandia Mountains, the East and West Mesas and the Rio Grande Valley. The Sandia Mountains, rising to a crest of 10,682 feet above the National Geodetic Vertical Datum of 1929 (NGVD), are the most spectacular features of the area. From the foothills of the mountains the land surface gradually descends to the East Mesa with an average elevation of 5,000 feet NGVD. The West Mesa, across the Rio Grande, and the East Mesa comprise another major topographic feature of the plant area. The third major topographic feature of the area is the Rio Grande Valley. The valley is approximately four miles wide near the plant. The plant is located approximately 0.7 miles east of the Rio Grande in what is called the South Valley of Albuquerque. The land surface of the plant itself is relatively flat with an average elevation of 4,940 feet NGVD. The immediate area surrounding the plant is developed for industrial uses.

#### Soils

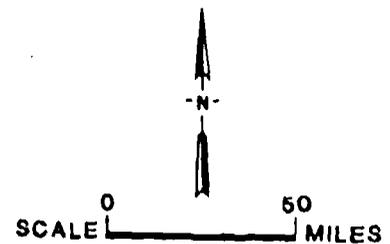
The natural exposed surface soils of Plant No. 83 are limited in area. Only areas near the administration buildings (1A, 1 and 3) and

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT  
**REGIONAL PHYSIOGRAPHIC FEATURES**



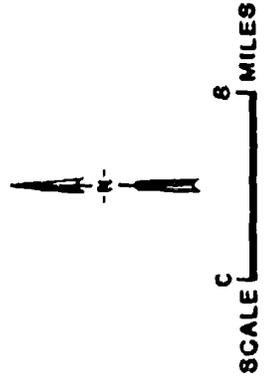
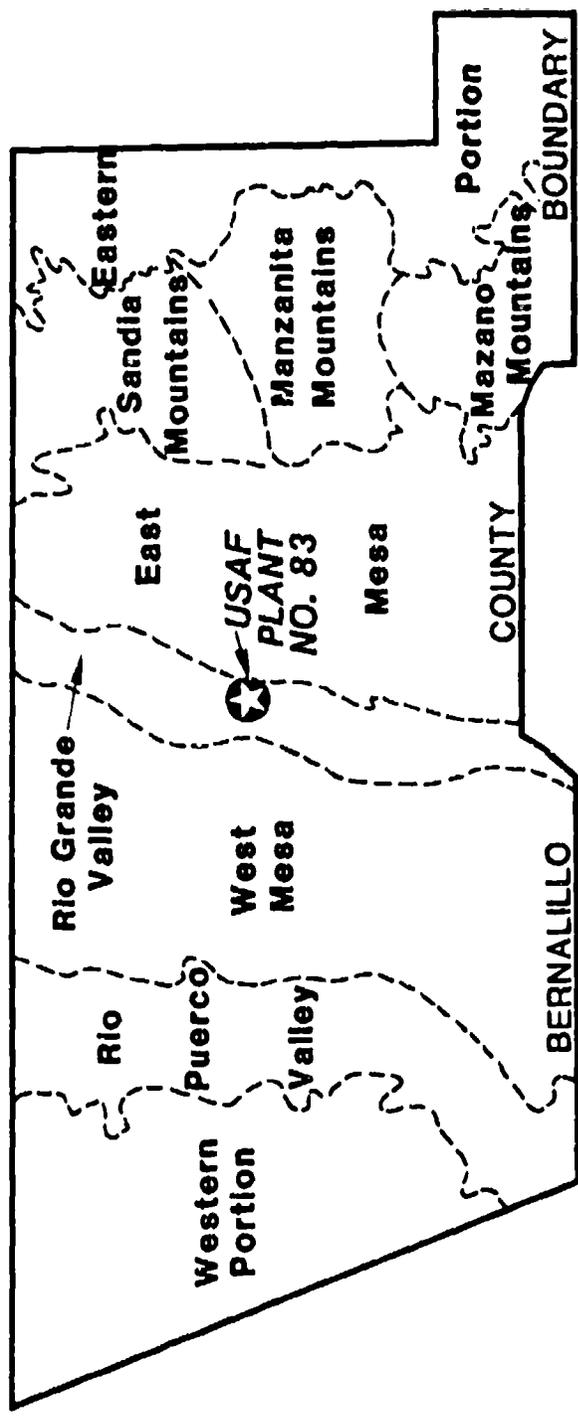
**LEGEND**

- CONTINENTAL DIVIDE
- PROVINCE BOUNDARY
- ▨ SECTION LIMITS



SOURCE: WELLS, LAMBERT AND CALLENDER, 1981

USAF PLANT NO. 83  
 GENERAL ELECTRIC ALBUQUERQUE PLANT  
**LOCAL PHYSIOGRAPHIC FEATURES**



SOURCE: USDA, SCS, 1977

the extreme northern portion of the plant have exposed soils; all other areas are covered by asphalt or concrete. The natural soils are characterized by clayey and sandy loam. Loam is a soil with varying proportions of clay, sand and organic matter. The soils are mapped on Figure 3.3 and their descriptions and engineering properties are summarized on Table 3.2. The soil property of concern in assessing the potential for surface-water infiltration is permeability. The permeability values for the type soils in the area of the plant range from 0.00042 centimeters per second (cm/sec) to 0.0014 cm/sec (Hacker, 1977). The actual values at the plant may vary from these type soil values due to increased percentages of localized sand underlying the plant. The values indicate that surface water will move relatively slowly through the surface soils of the plant. The Soil Conservation Service (SCS) has ranked the type soils underlying the plant as having severe use limitations for septic tank absorption fields. The SCS has noted wetness and slow percolation as reasons for the severe use limitations.

#### SURFACE-WATER RESOURCES

USAF Plant No. 83 is located in the Rio Grande Drainage Basin. In the Albuquerque area a system of ditches, drains and canals in the valley regulates the directions and flow rates of surface water to and from the Rio Grande. The system, maintained by the Middle Rio Grande Conservancy District, was constructed to alleviate problems related to drainage, flood control and irrigation of crop land in the Rio Grande Valley (Shah, 1983). Levees and riverside drains protect areas in the valley from floods.

#### Drainage

Drainage from Plant No. 83 is controlled by twelve discharge outfall points from the plant property to the San Jose Drain which borders the plant on its eastern side. Fourteen previously open discharge outfall points were plugged in 1978. The outfalls are connected to above-ground and underground drain lines which control the storm drainage and permitted discharges from the plant. Figure 3.4 shows the surface drainage map for the plant. The San Jose Drain flows south through a fully concreted ditch north of Woodward Road and an unlined ditch south of Woodward Road. The unlined portion supports

TABLE 3.2

## SOILS DATA FOR USAF PLANT NO. 83 AND VICINITY

Symbol on Figure 3.3	Unit Description	Depth Below Ground (inches)	<sup>1</sup> Permeability (centimeters/second)	Septic Tank Absorption Field Use Limitations
Gd	Gila loam, moderately alkali	0-60	$4.2 \times 10^{-4}$ to $1.4 \times 10^{-3}$	<sup>2</sup> Severe: wet
Gk	Glendale loam	0-60	$1.4 \times 10^{-4}$ to $4.2 \times 10^{-4}$	Severe: percolation 'slow
Ga	Glendale clay loam	0-60	$1.4 \times 10^{-4}$ to $4.2 \times 10^{-4}$	Severe: percolation slow

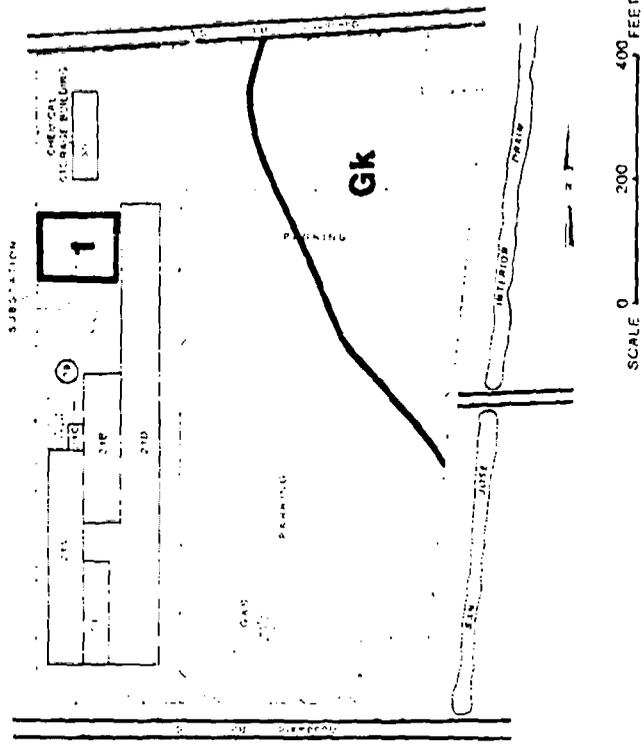
## Note:

Actual values at plant may vary from reported vicinity values due to increased percentage of localized sand underlying the plant.

<sup>2</sup> Severe soil limitation indicates that soil properties are so unfavorable and so difficult to correct or overcome that major soil reclamation, special design, or intensive maintenance are required.

Source: Hacker, 1977

USAF PLANT NO. 83  
 GENERAL ELECTRIC ALBUQUERQUE PLANT  
**SOILS MAP**



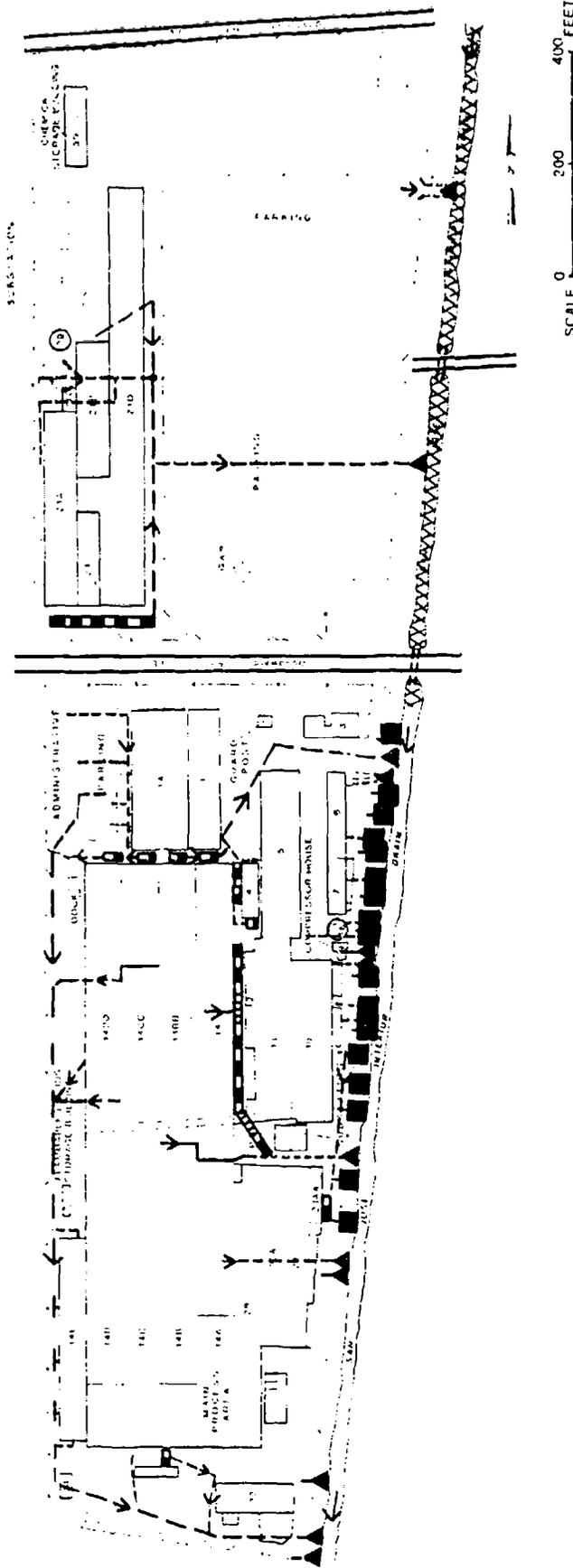
**LEGEND**

- Gd** GILA LOAM, MODERATELY ALKALI
- Gk** GLENDALE LOAM
- Gm** GLENDALE CLAY LOAM

NOTE:  
 1. SANDY F. L. WAS OBSERVED DURING SITE VISIT (OCTOBER 1983)

SOURCE: USDA, SCS, 1977

# USAF PLANT NO. 83 GENERAL ELECTRIC ALBUQUERQUE PLANT SURFACE DRAINAGE MAP



## LEGEND

- ABOVE SURFACE DRAIN LINE
- - - UNDERGROUND DRAIN LINE
- ▢ SURFACE TRENCH (STEEL PLATE COVER)
- ▣ SURFACE TRENCH (GRATING COVER)
- ▲ DRAIN OUTFALL
- DRAIN OUTFALL (CLOSED)  
(Closed in 1978)
- DIRECTION OF DRAINAGE FLOW
- XXX CONCRETE LINED

NOTE: SEE FIGURE 3.6 FOR OPEN DRAIN OUTFALL NUMBERS  
SOURCE: USAF PLANT NO. 83 DOCUMENTS

FIGURE 3.4

abundant vegetation. Upstream of the plant the San Jose Drain controls water flow from the San Jose Drain storm sewer catchment basin. Water in the San Jose Drain moves rapidly in the drain section south of discharge outfall numbers 004 and 005, but moves relatively slowly in the drain section north of these outfalls. Discharges from outfalls 004 and 005 near Building 10 increase the water flow south of Building 10. Within the slow moving section of the drain surface water may infiltrate to the shallow water-table aquifer. Recharge from area drainage ditches to the shallow water-table aquifer has been reported by Bjorklund and Maxwell, 1961. During the 1920's and 1930's, prior to the construction of the ditches in the area, ground water recharged the natural surface streams. The ditches were installed to lower the high ground-water levels and reduce marshy and wet areas. The San Jose Drain was installed in 1934 (Shah, 1983).

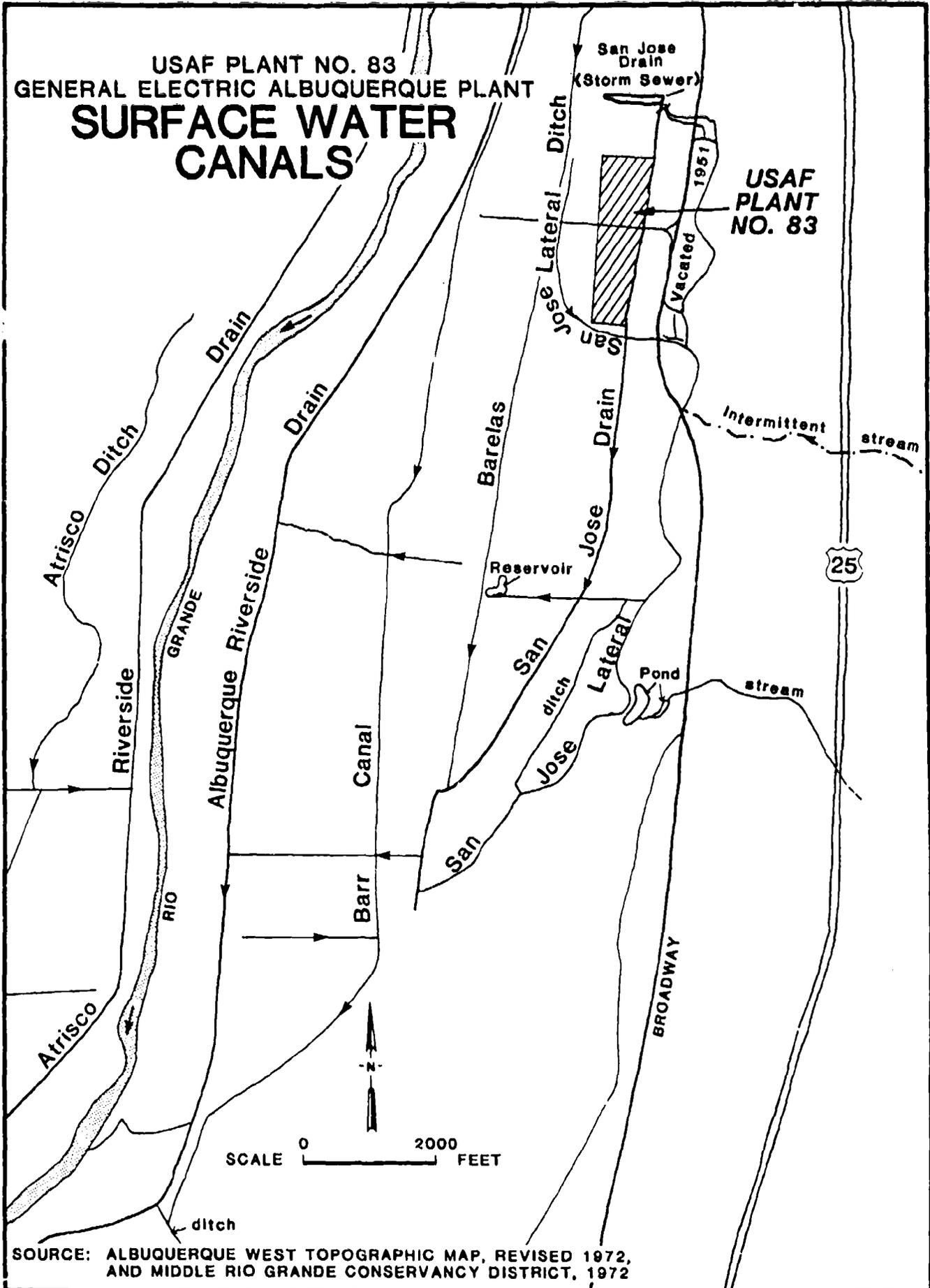
Water moving rapidly from the plant along the San Jose Drain flows south and southwest toward the Rio Grande. Figure 3.5 shows the surface-water drainage system south of the plant. Along its approximately four mile route from the plant to the Rio Grande, water from the Barelás Ditch, Barr Canal and Albuquerque Riverside Drain joins water in the San Jose Drain. Water is pumped from the San Jose Drain and other canals and ditches near the Rio Grande for irrigation purposes.

#### Surface-Water Quality

The general surface-water quality of the Rio Grande and local canals and drains in the Albuquerque area has been described as good, with suspended sediment the only problem (Bjorklund and Maxwell, 1961). Within Bernalillo County surface-water quality problems have been reported by Jercinovic, 1982 and McQuillian, et al., 1982. These problems were petroleum-product contamination and nitrate contamination within canals and drainage ditches.

In the immediate vicinity of the plant the New Mexico Environmental Improvement Division (NMEID) obtained two grab water samples from the San Jose Drain downstream from the plant (McQuillian, et al., 1982). The location is shown on Figure 3.6. Trace amounts of three organic contaminants were found. These contaminants were trichloromethane, 1,2-dichloroethane and 1,1,1-trichloroethane (Table 3.3). The highest concentration of 1,2-dichloroethane was 0.002 mg/l which is well below

USAF PLANT NO. 83  
 GENERAL ELECTRIC ALBUQUERQUE PLANT  
**SURFACE WATER CANALS**



SOURCE: ALBUQUERQUE WEST TOPOGRAPHIC MAP, REVISED 1972,  
 AND MIDDLE RIO GRANDE CONSERVANCY DISTRICT, 1972



the NMWQCC Human Health Standard of 0.02 mg/l. There are no standards for trichloromethane or 1,1,1-trichloroethane. The source of these three organic contaminants has not been identified. No sampling of the San Jose Drain upstream of the plant was conducted at the time of the downstream sampling.

Water quality sampling of the twelve water discharge outfall points into the San Jose Drain are conducted by the plant (Figure 3.6). These twelve discharge points are sampled according to the National Pollutant Discharge Elimination System (NPDES). The results of recent sampling are shown in Table 3.3. The allowable discharge limits for oil and grease has been exceeded on six occasions while the allowable discharge for chemical oxygen demand has been exceeded on five occasions. The stations at which these excesses were detected were station numbers 001, 002, 003, 008 and 010. The station at which the most excess occurred was station number 003 on August 1, 1983.

#### Surface-Water Use

The surface water of the Albuquerque area is used mainly for irrigation purposes. The Middle Rio Grande Conservancy District maintains the ditches, canals and drains for irrigation uses as well as for drainage and flood control. Water flow control gates are controlled by the District to allow farmers to use their allocated amounts of water. Other uses of surface water include limited warm water fishery, livestock and wildlife watering and secondary contact recreation.

The plant discharges its storm water and NPDES permitted waters into the San Jose Drain. Municipal type waste water is discharged into the Albuquerque sewage system. The waste water treatment facility is located approximately one mile northwest of the plant on the Rio Grande. No problems have been noticed by Albuquerque from the plant's discharge into the city waste water treatment facility (Holley, 1983).

#### GROUND-WATER RESOURCES

The ground-water resources of the Albuquerque area are generally abundant and are of good quality except in deposits less than 100 feet deep. Reports by Pjorklund and Maxwell (1961), Reeder, et al. (1967), New Mexico State Engineer (1974), Albuquerque District, U.S. Army Corps of Engineers (1979), McQuillan, et al. (1982), McQuillan (1982) and

TABLE 3.3  
SURFACE-WATER QUALITY DATA  
USAF PLANT NO. 83

(Parameter analyses are presented in milligrams per liter)

Station Identification	Date (m-d-y-yr)	PR (6.0-9.0) <sup>1</sup>	Oil and Grease (15)	CO <sub>2</sub> (100)	TOC (sparged) (50)	Trichloromethane	1,2-Dichloroethane (0.02) <sup>2</sup>	1,1,1-Trichloroethane (0.01) <sup>2</sup>	Meaning
San Jose Drain (RHRID)	9/15/82	NA	NA	NA	NA	0.002	0.002	0.007	ND
San Jose Drain (RHRID)	9/21/82	NA	NA	NA	NA	ND	ND	0.001	ND
001 (JFDRS)	9/1/82 <sup>3</sup>	8.0	ND	ND	NA	NA	NA	NA	NA
	1/1/83	8.3	7	125 *	NA	NA	NA	NA	NA
	2/1/83	8.0	ND	39	NA	NA	NA	NA	NA
	3/1/83	7.8	ND	25	NA	NA	NA	NA	NA
	5/1/83	8.1	82 *	334 *	NA	NA	NA	NA	NA
	6/1/83	7.8	ND	ND	NA	NA	NA	NA	NA
	7/1/83	7.7	ND	ND	NA	NA	NA	NA	NA
	8/1/83	7.1	2	ND	NA	NA	NA	NA	NA
	5/1/83	7.1	70 *	197 *	NA	NA	NA	NA	NA
	9/1/82	8.4	ND	30	NA	NA	NA	NA	NA
	1/1/83	8.2	1	39	NA	NA	NA	NA	NA
	2/1/83	7.9	ND	28 *	NA	NA	NA	NA	NA
	3/1/83	8.2	ND	ND	26	NA	NA	NA	NA
5/1/83	8.7	ND	ND	25	NA	NA	NA	NA	
6/1/83	8.5	ND	560 *	1310 *	NA	NA	NA	NA	
7/1/83	8.1	ND	ND	ND	NA	NA	NA	NA	
8/1/83	7.2	7.6	ND	NA	2	NA	NA	NA	
9/1/82	7.6	7.8	ND	NA	4	NA	NA	NA	
1/1/83	7.8	7.8	ND	NA	1	NA	NA	NA	
2/1/83	7.8	7.9	ND	NA	4	NA	NA	NA	
5/1/83	7.9	7.7	ND	NA	4	NA	NA	NA	
6/1/83	7.7	7.7	ND	NA	ND	NA	NA	NA	
7/1/83	7.6	7.3	ND	NA	ND	NA	NA	NA	
8/1/83	7.3	7.6	ND	NA	ND	NA	NA	NA	
9/1/82	7.6	7.8	ND	NA	2	NA	NA	NA	
1/1/83	7.8	7.8	ND	NA	2	NA	NA	NA	

(Not analyzed in NPDES sampling)

Notes: 1. NPDES maximum permit requirements  
2. New Mexico Water Quality Control Commission Regulations, Human Health Standards for Ground Water (no standards for other organics listed). Standards listed are for present and potential future use of ground water as domestic and agricultural water supply.  
3. Period lasting through month indicated, maximum values reported.

See Figure 3.6 for station locations

ND = None Detected Spargin: A chemical analysis procedure in which an air diffuser is used to create large bubbles.  
NA = Not analyzed  
m-d-y-yr = month-day-year \*Analyses in which standards have been exceeded.  
mu = standard units

Source: USAF Plant No. 83 documents and McQuillan, et al., 1982.

TABLE 3.3 (Continued)  
 SURFACE-WATER QUALITY DATA  
 USAF PLANT NO. 83

Parameter analyses are presented in milligrams per liter

Station Identification	Date (m-d-y)	pH (su)	Oil and Grease (15)	CO <sub>2</sub> (100)	TOC (Sparged) (50)	Trichloroethane (0.02)	1,1,1-Trichloroethane	Benzene (0.01)
005 (continued)	2/1/83	7.8	2	NA	2			
	5/1/83	7.9	ND	NA	1			
	6/1/83	7.7	ND	NA	8			
	7/1/83	7.6	1.4	NA	1			
	8/1/83	7.3	ND	NA	ND			
	3/1/83	7.0	4	370 *	NA			
008	(NO WATER DISCHARGE FROM 1/1/83 TO 8/1/83)							
009	1/1/83	7.1	70 *	NA	NA			
010	3/1/83	7.0	27 *	NA	NA			
022	5/1/83	8.2	ND	NA	NA			
	6/1/83	7.5	4	NA	NA			
024	9/1/82	8.4	ND	0	NA			
	1/1/83	8.2	2	NA	NA			
	2/1/83	8.3	ND	NA	NA			
	3/1/83	8.5	ND	NA	NA			
	5/1/83	8.2	3	NA	NA			
	6/1/83	8.2	ND	NA	NA			
	7/1/83	7.6	1	NA	NA			
	8/1/83	7.9	2	NA	NA			
025	9/1/82	7.2	0	0	NA			
026	(NO WATER DISCHARGE FROM 1/1/83 TO 8/1/83)							
	(NO WATER DISCHARGE ON 9/1/82 NOR FROM 1/1/83 TO 8/3/83)							

(Not analyzed in WPOES sampling)

Notes: 1. WPOES maximum permit requirements  
 2. New Mexico Water Quality Control Commission Regulations, Human Health Standards for Ground Water (no standards for other organics listed). Standards listed are for present and potential future use of ground water as domestic and agricultural water supply.  
 3. Period lasting through month indicated, maximum values reported.

See Figure 3.6 for station locations

ND = None detected Sparged: A chemical analysis procedure in which an air diffuser is used to create large bubbles.  
 NA = Not analyzed  
 m-d-y-yr = month-day-year \*Analyses in which standards have been exceeded.  
 su = standard units

Source: USAF Plant No. 83 documents and McQuillen, et al., 1982.

Hudson (1982) describe the ground-water resources of the area. Studies by the U.S. Geological Survey (USGS) and the U.S. Environmental Protection Agency (EPA) are in-progress and are related to the generally designated area of "known and suspected ground-water pollution by organic compounds in the San Jose area of the South Valley of Albuquerque, New Mexico" (McQuillan, et al. 1982). Plant No. 83 is located in this generally designated area, the boundary of which has not been defined. Owners and occupants of Plant No. 83 have been named as one of the many potentially responsible parties of the ground-water contamination in the South Valley (Wright, 1983). The investigation of this area by EPA is being conducted under the authority of Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). Some potentially responsible parties in the area have voluntarily completed an investigation or are presently investigating the ground-water conditions underlying their property. This report is Phase I of the Air Force investigation of Plant No. 83.

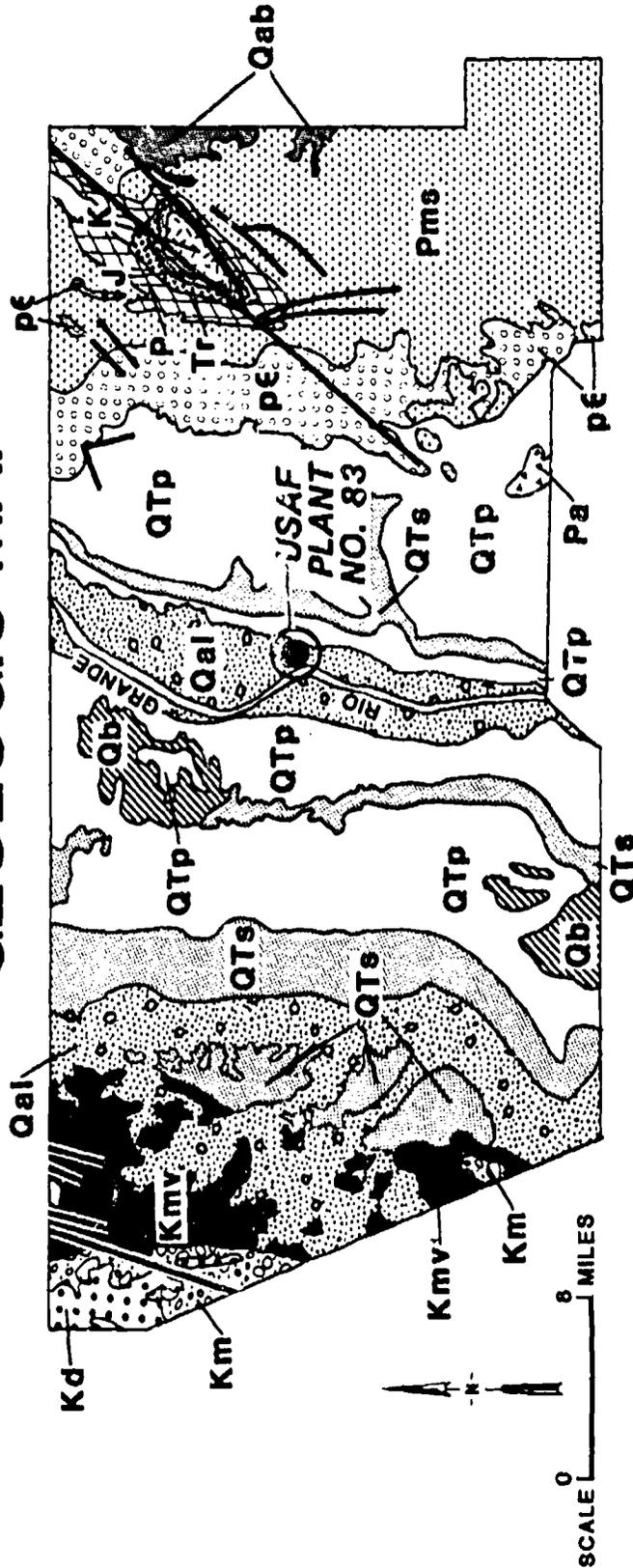
#### Hydrogeologic Units

Geologically, USAF Plant No. 83 is located in the outcrop area of Recent Alluvial deposits of sand, gravel, cobbles and clay. These deposits are approximately 120 feet thick underlying the plant. Other near-by geological outcrops include both unconsolidated sediments and consolidated rocks. The consolidated rocks consist of sedimentary, igneous and metamorphic units. Figure 3.7 is a geologic map of the area showing the numerous geologic outcrops while Figure 3.8 is a structural block diagram showing the approximate subsurface locations of selected geologic units. Table 3.4 summarizes the geologic units and their water-bearing characteristics. The Pediment/Santa Fe Group (undivided) are the major geologic units of concern in the area. These units are important because the City of Albuquerque withdraws its water supply from these units.

The Alluvial deposits underlying the plant have been penetrated by numerous soil test borings, three NMEID monitoring wells and two plant water wells. The log of test boring number 5 is shown on Figure 3.9. Clay is a dominant lithologic unit in this boring. Clay was also encountered by the three NMEID monitoring wells (SV8, SV9 and SV15) on the plant property. The clay is important as a semi-confining unit by

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT

# GEOLOGIC MAP

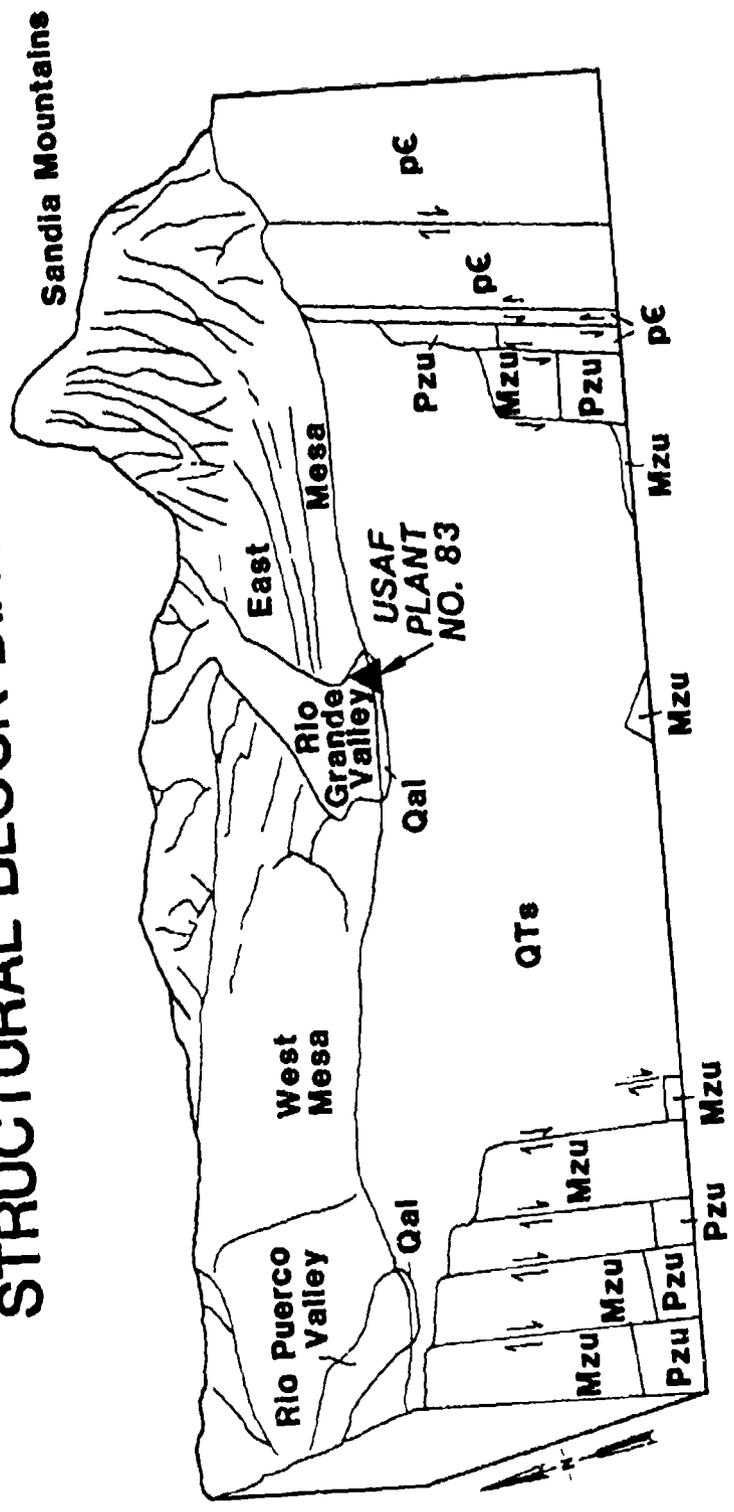


**LEGEND**

Qal	ALLUVIUM	Kd	DAKOTA SANDSTONE	P	PERMIAN ROCKS, UNDIVIDED
Qab	ALLUVIUM AND BOLSON DEPOSITS	Km	MANCOSA SHALE	Pa	ABO SANDSTONE
Qb	BASALT FLOWS	Kmv	MESAVERDE GROUP, UNDIVIDED	Pms	MADERA LIMESTONE AND SANDIA FORMATION, UNDIVIDED
QTP	PEDIMENT	J	JURASSIC ROCKS, UNDIVIDED	pC	PRECAMBRIAN ROCKS, UNDIVIDED
QTS	SANTA FE GROUP, UNDIVIDED	Tr	TRIASSIC ROCKS, UNDIVIDED	—	FAULT
K	CRETACEOUS ROCKS, UNDIVIDED				

SOURCE: DANE AND BACHMAN, 1965

USAF PLANT NO. 83  
 GENERAL ELECTRIC ALBUQUERQUE PLANT  
**STRUCTURAL BLOCK DIAGRAM**



- LEGEND**
- Qal** ALLUVIUM
  - QTs** SANTA FE GROUP, UNDIVIDED
  - Mzu** SEDIMENTARY ROCKS, UNDIVIDED (SHALE & SANDSTONE)
  - Pzu** SEDIMENTARY ROCKS, UNDIVIDED (LIMESTONE, SANDSTONE, SHALE)
  - pε** GRANITIC AND METAMORPHIC ROCKS, UNDIVIDED
  - //** FAULT WITH DIRECTION OF MOVEMENT
- HORIZONTAL SCALE 0 4 MILES

NOTE: APPROXIMATE LOCATION OF USAF PLANT NO. 83 IN ALBUQUERQUE AREA  
 SOURCE: BJORKLUND AND MAXWELL, 1961

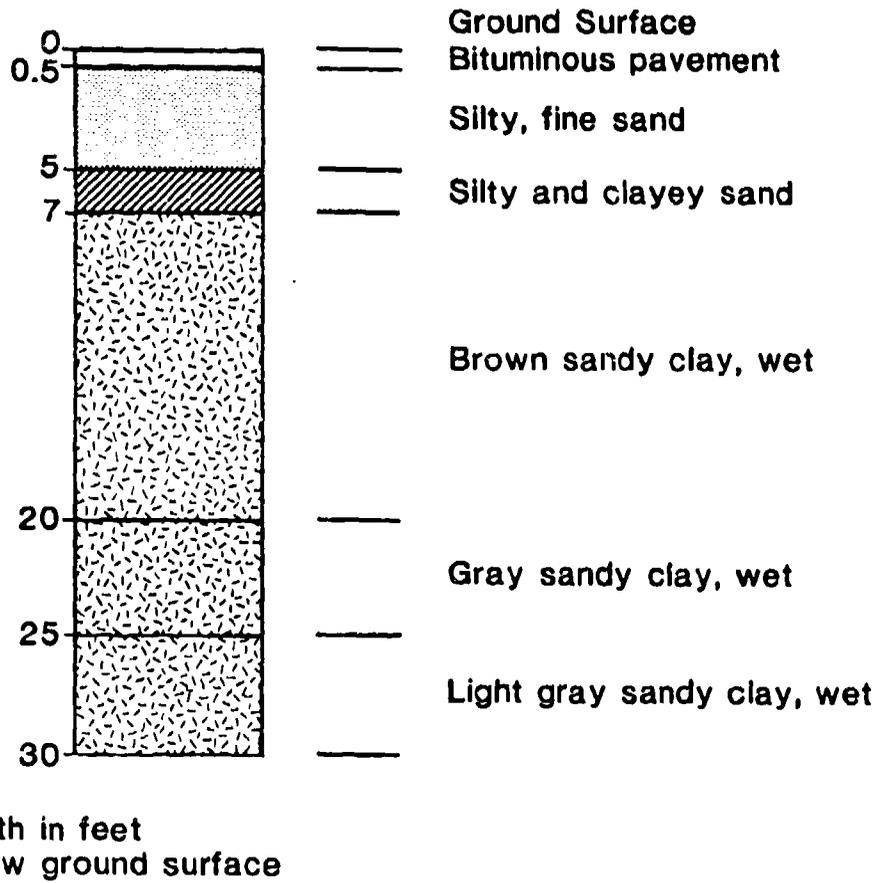
TABLE 3.4  
HYDROGEOLOGIC UNITS AND THEIR WATER-BEARING CHARACTERISTICS  
IN THE VICINITY OF USAF PLANT NO. 83

Era	System	Series	Unit	Approximate Thickness (feet)	Hydrogeologic Classification	Lithology	Water-Bearing Characteristics
Cenozoic	Quaternary	Recent	Alluvium	120	Unconfined Aquifer	Sand, gravel, cobbles and clay.	Readily transmits water. Some wells yield as much as 3,000 gpm.
			Tertiary	Pliocene	>9,000	Unconfined Aquifer	Sand, gravel and cobbles with clay. Unconsolidated but weakly cemented.
Miocene							
Mesozoic	Cretaceous	Eocene and Oligocene	Esplanado Volcanic Rocks	1,400	Unknown	Breccia, conglomerate and tuff	No wells tap this unit because of great depth.
			Galisteo Formation	4,000	Unknown	Sand, clay, sandstone and shale	No wells tap this unit because of great depth.
Paleozoic	Permian Pennsylvanian	(Undivided)	(Undivided)	5,100	Unconfined and Confined Aquifers	Sedimentary rocks	Moderately transmits water to wells on mesas and in adjoining areas.
				518,000	Unconfined and Confined Aquifers	Igneous and Metamorphic rocks	Transmits little water to wells in mountain areas.

Source: Bjorklund and Maxwell, 1961 and Uwe and Bachman, 1965

gpm - gallons per minute  
gpd/ft - gallons per day per foot

**USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT  
TEST BORING LOG NO. 5**



NOTE: SEE FIGURE 3.10 FOR TEST BORING LOCATION  
SOURCE: USAF PLANT NO. 83 DOCUMENTS

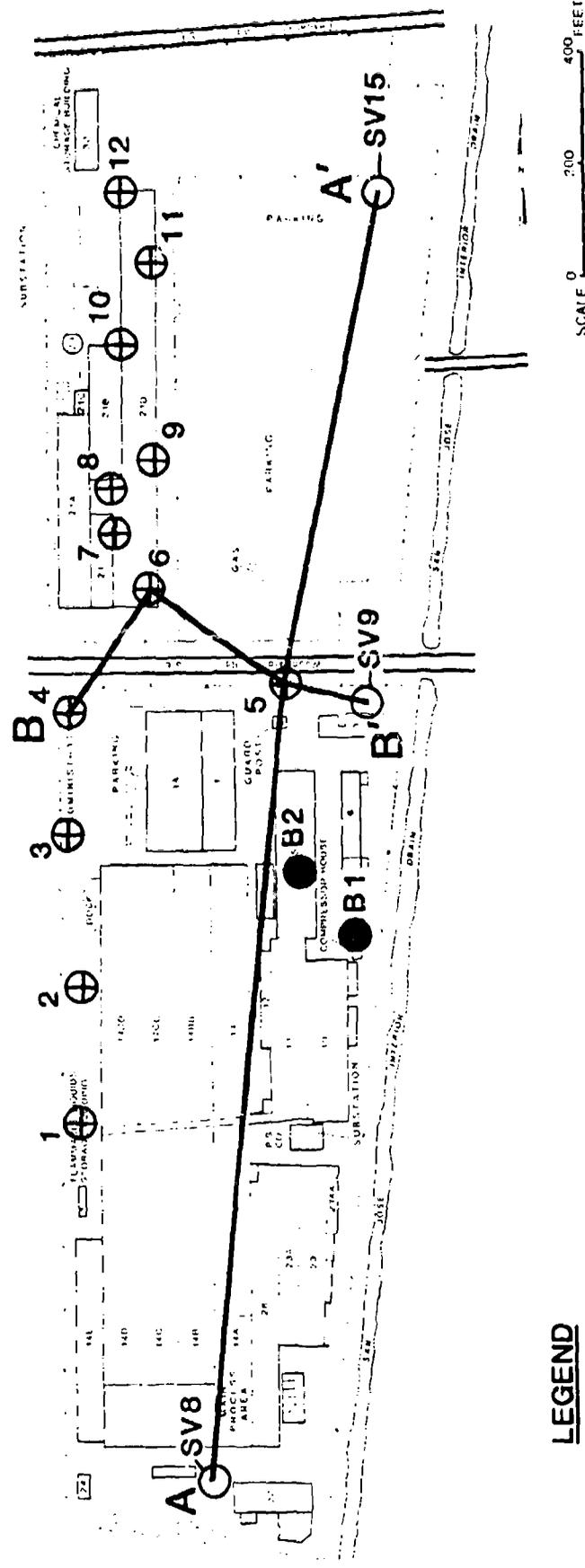
reducing the possible downward migration of ground water. Figure 3.10 shows the location of two hydrogeologic cross sections of the plant's subsurface. The cross sections are shown on Figures 3.11 and 3.12. Clay is most abundant in wells SV9 and SV15 underlying the middle and northern sections of the plant. Clay is thickest (5.5 feet) in well SV15 where it is present from 2.5 to 8.0 feet below ground.

The Pediment/Santa Fe Group (undivided) which outcrop east of the plant are composed of sand, gravel and cobbles with moderate amounts of clay. Caliche, a calcium carbonate cemented zone of soil, is also present in these units near the plant as are zones of cemented sandstone.

Hydrologically, USAF Plant No. 83 is located in an area of large ground-water use. Due to the large amount of ground-water pumpage by the city of Albuquerque the once southwesterly direction of regional ground-water flow has changed to a northeasterly and easterly direction of flow. Figure 3.13 shows the 1960 configuration of the regional water table. The effects of the San Jose Well Field are not apparent in this figure, but are very apparent in Figure 3.14, the 1978 configuration of the regional water table. In 1980 major water producing wells (SJ3, SJ6 and Miles No. 1) northeast and east of the plant were shut down due to contamination. Miles No. 1 was put back on line in 1981. Figure 3.15 shows the approximate regional water-table configuration in the Spring of 1981. Due to increased pumpage from other Albuquerque wells further east and northeast of the plant the direction of regional ground-water flow remained easterly in 1981. Water-level measurements made in July 1983 by the USGS are being analyzed and will become part of a report planned for publication in the near future (Kues, 1983).

Water-level measurements made in December 1982 by the NMEID indicate that locally there exists three major hydrologic features near the plant. These features are (1) low horizontal hydraulic gradients, (2) two distinct hydrologic units and (3) ground-water leakage from the shallow water-table aquifer to the regional water-table aquifer. The first feature of low horizontal hydraulic gradients can be inferred from the water-level elevations in Figure 3.16. Wells less than 25 feet deep within the shallow water-table aquifer display water-table conditions with water-level elevations between 4919 and 4923 NGVD. The horizontal

**USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT  
LOCATION OF TEST BORINGS, WELLS,  
AND HYDROGEOLOGIC CROSS SECTIONS**



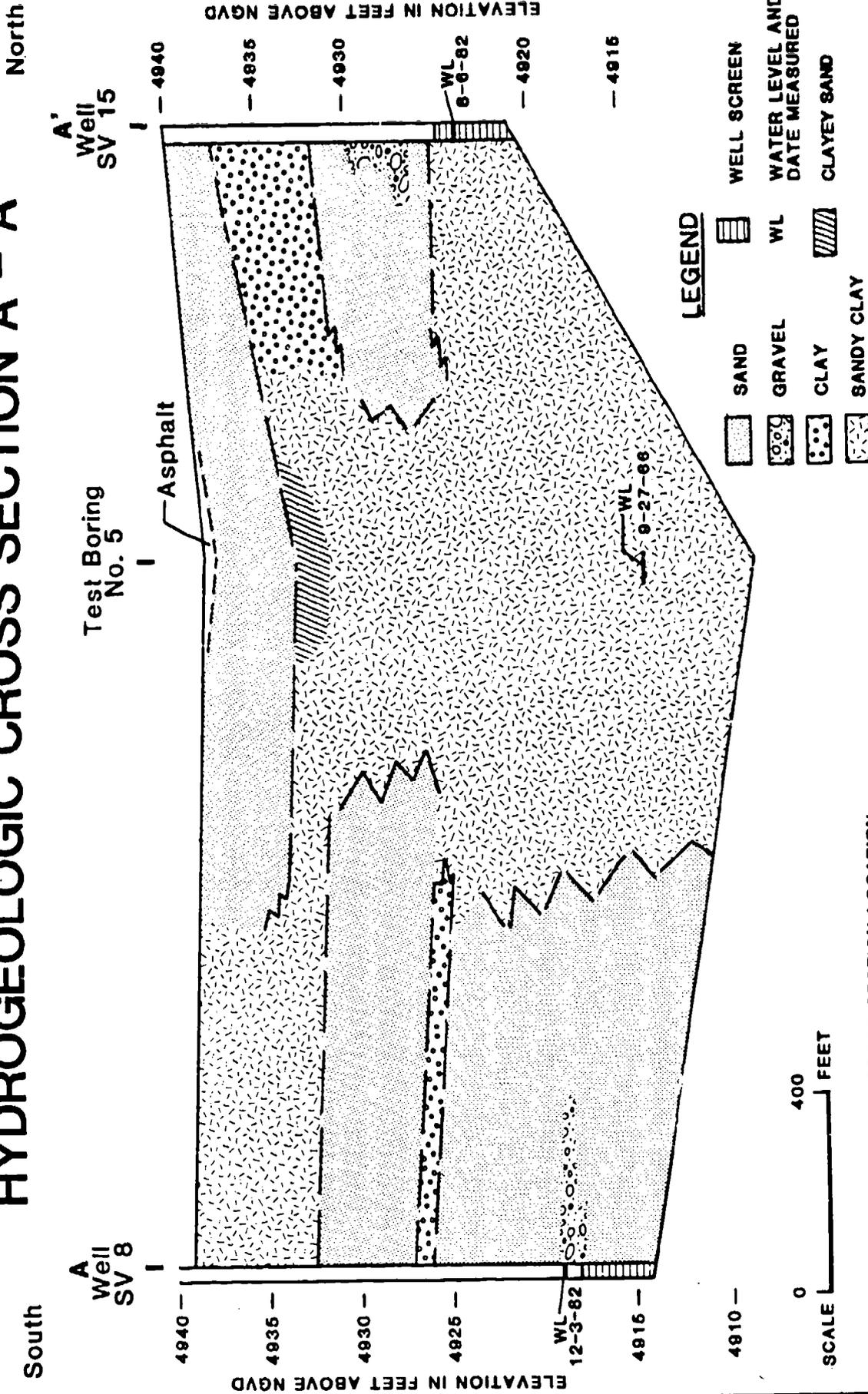
**LEGEND**

- ⊕ TEST BORING (CONSTRUCTION FOUNDATION)
- MONITOR WELL
- WATER SUPPLY WELL (UNUSED)
- A-A' LOCATION OF HYDROGEOLOGIC CROSS-SECTION

NOTE: SEE FIGURES 3.11 AND 3.12 FOR HYDROGEOLOGIC CROSS-SECTIONS  
SOURCE: USAF PLANT NO. 83 DOCUMENTS AND McQUILLAN, et al., 1982

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT

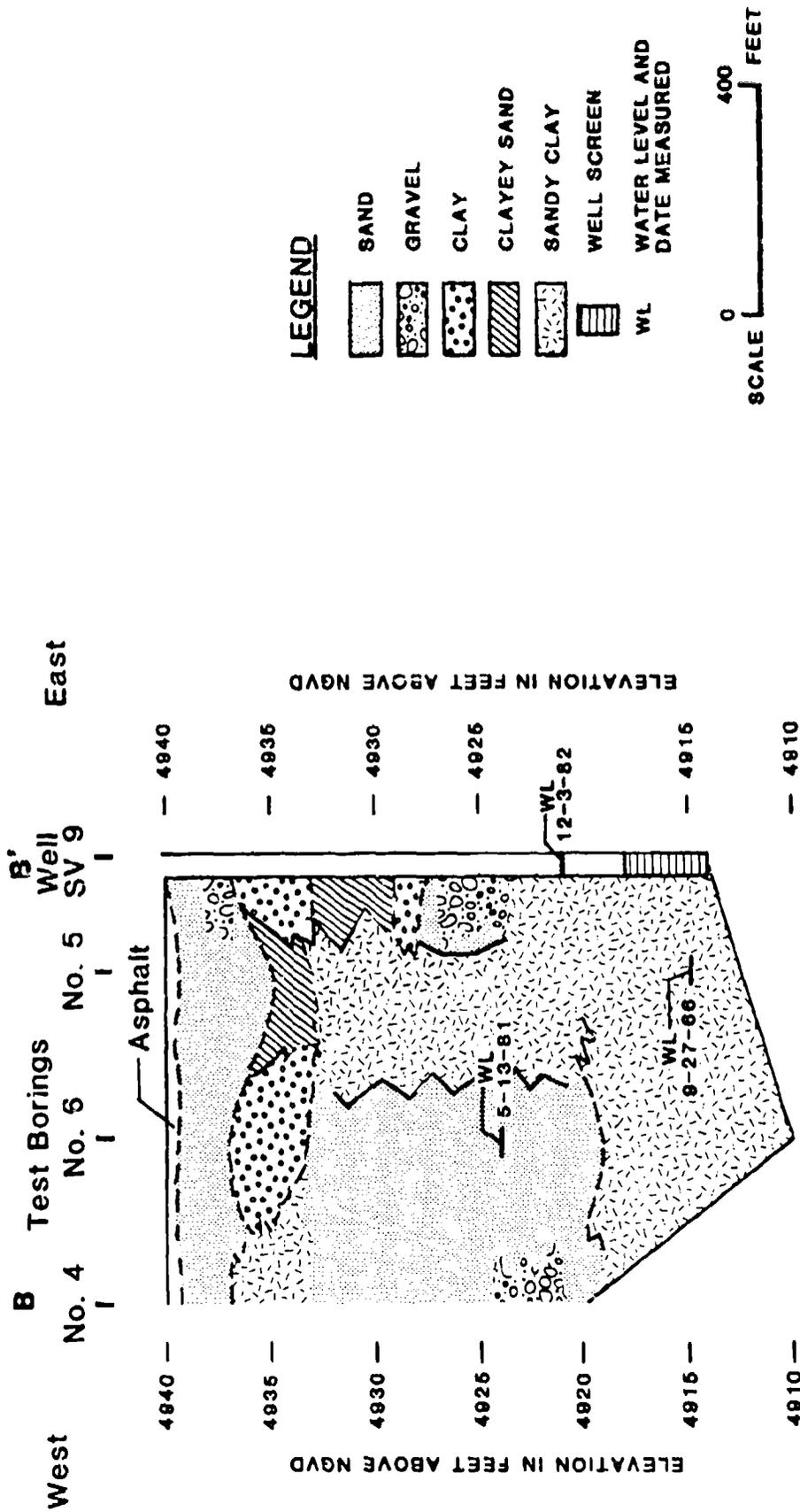
HYDROGEOLOGIC CROSS SECTION A - A'



NOTE: SEE FIGURE 3.10 FOR CROSS SECTION LOCATION  
SOURCE: USAF PLANT NO. 83 DOCUMENTS AND McQUILLAN, et al., 1982

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT

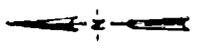
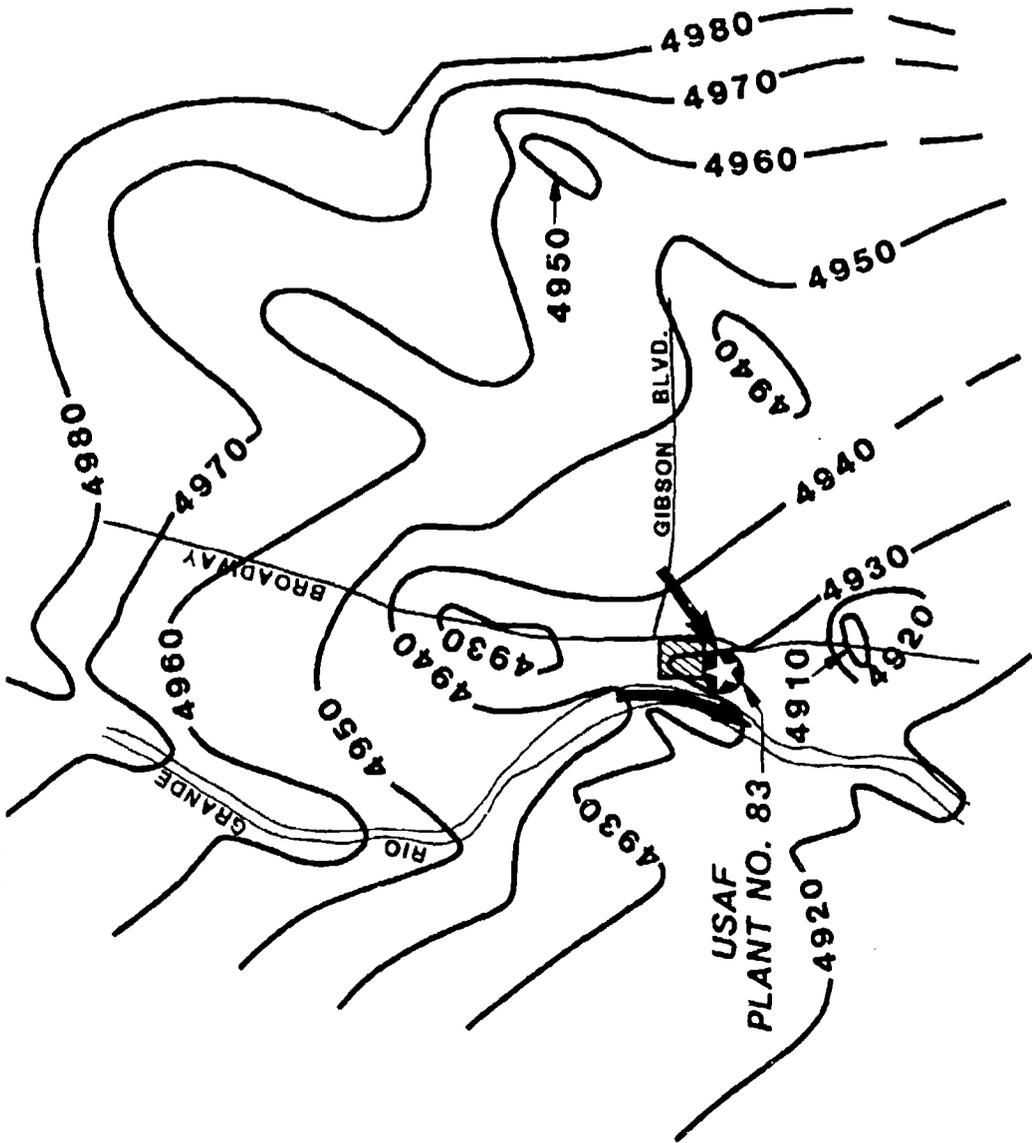
HYDROGEOLOGIC CROSS SECTION B - B'



NOTE: SEE FIGURE 3.10 FOR CROSS SECTION LOCATION  
SOURCE: USAF PLANT NO. 83 DOCUMENTS AND McQUILLAN, et al., 1982

USAF PLANT NO. 83  
 GENERAL ELECTRIC ALBUQUERQUE PLANT

# REGIONAL WATER-TABLE CONTOUR MAP, 1960



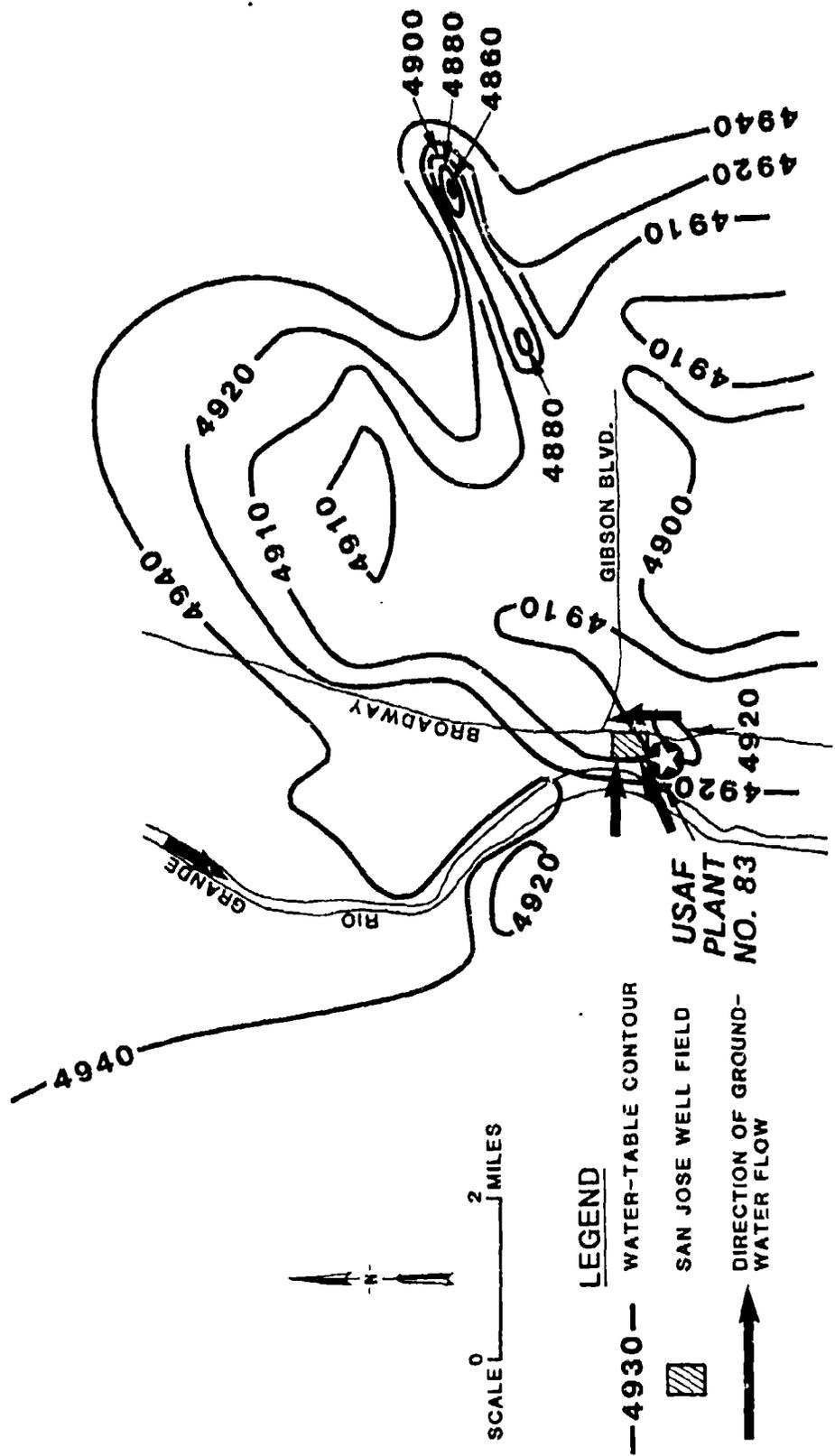
SCALE 0 2 MILES

**LEGEND**

- 4910- WATER-TABLE CONTOUR
- SAN JOSE WELL FIELD
- DIRECTION OF GROUND-WATER FLOW

SOURCE: COE, 1979

USAF PLANT NO. 83  
 GENERAL ELECTRIC ALBUQUERQUE PLANT  
**REGIONAL WATER-TABLE CONTOUR MAP, 1978**

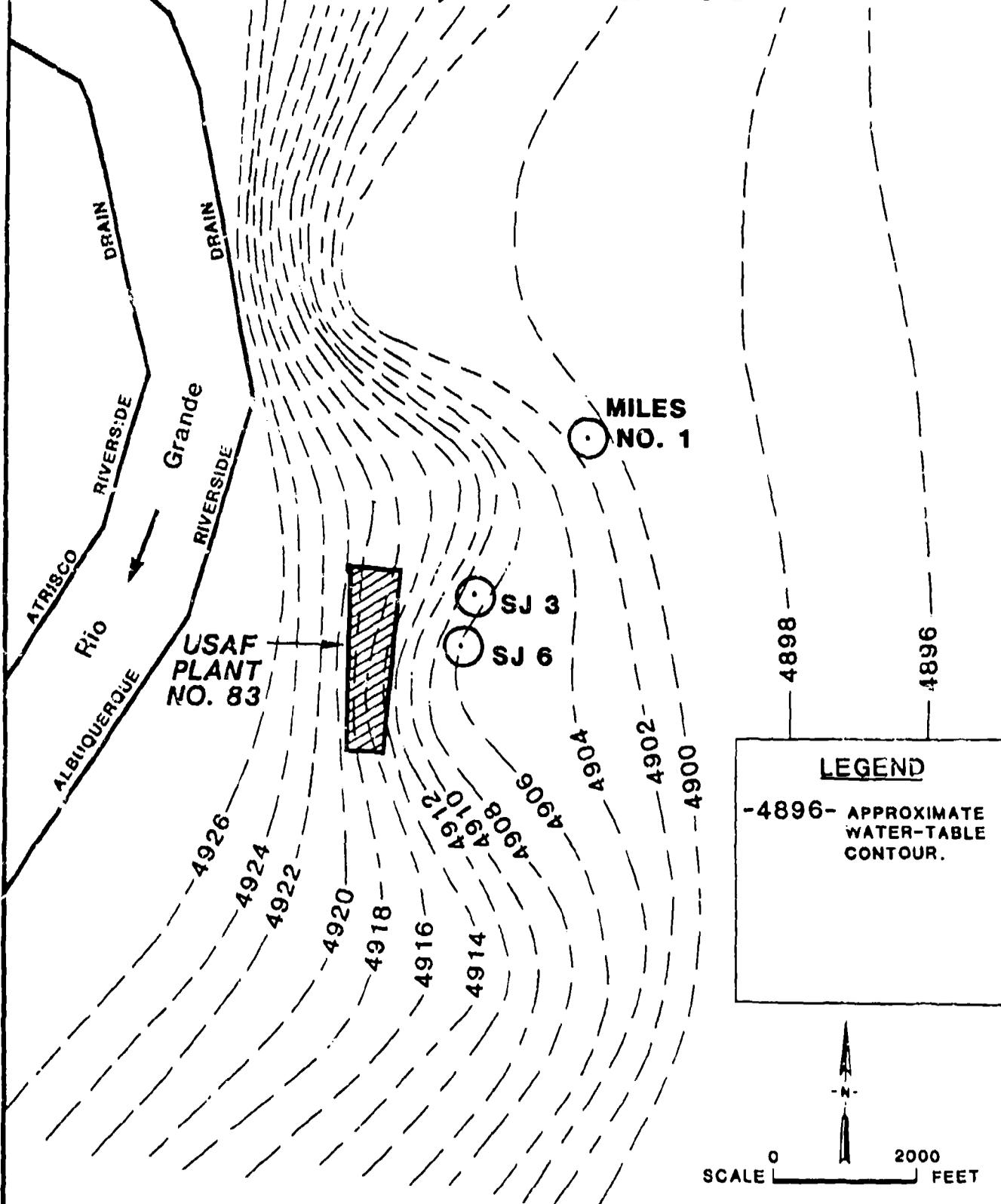


**LEGEND**

- 4930 — WATER-TABLE CONTOUR
-  SAN JOSE WELL FIELD
-  DIRECTION OF GROUND-WATER FLOW

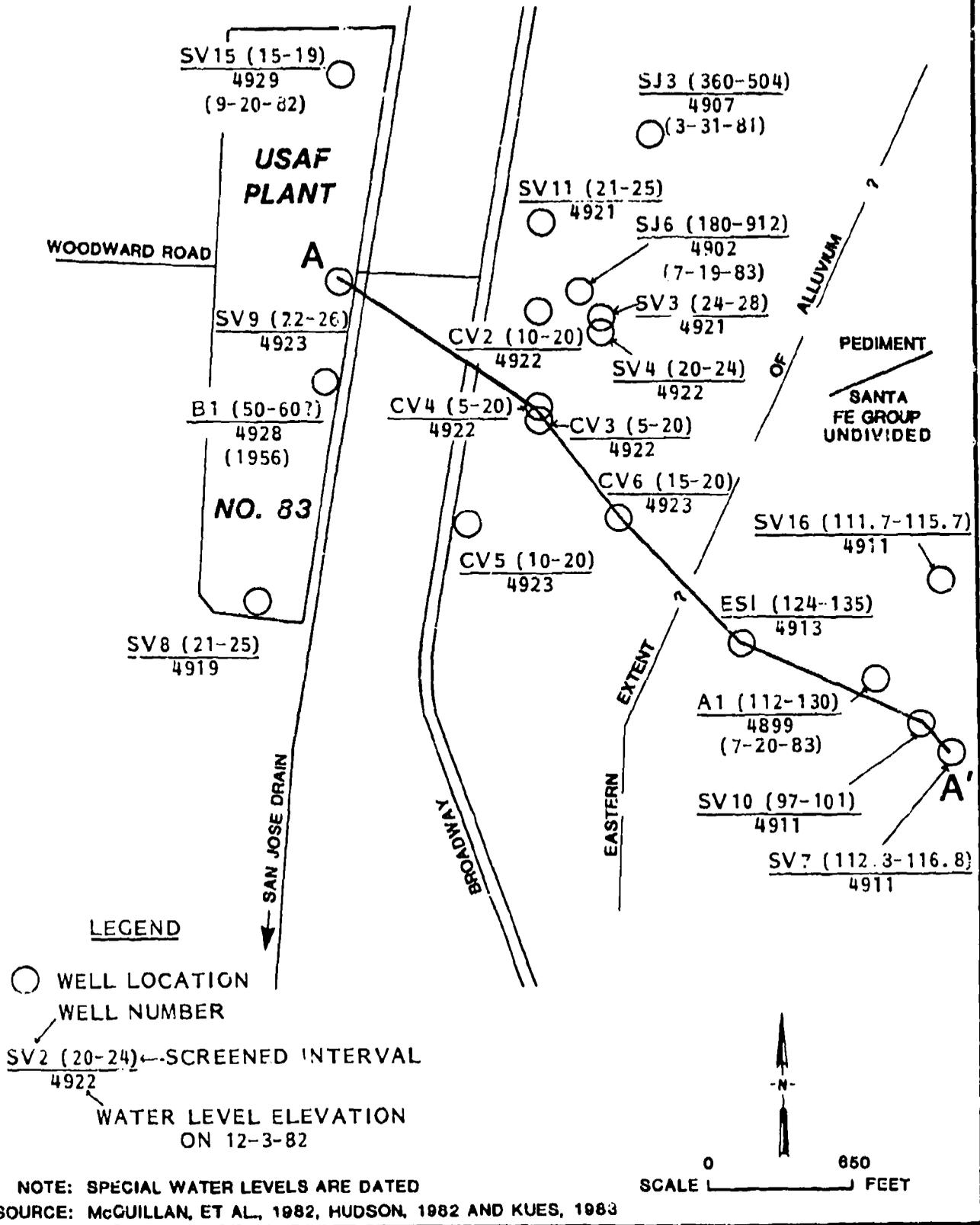
SOURCE: COE, 1978

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT  
**REGIONAL WATER-TABLE CONTOUR  
MAP, SPRING 1981**



SOURCE: HUDSON, 1982

# USAF PLANT NO. 83 GENERAL ELECTRIC ALBUQUERQUE PLANT WELL CONSTRUCTION AND WATER- LEVEL DATA FOR SELECTED WELLS



hydraulic gradient is approximately 0.002 (2 feet per 1000 feet) near the plant. These wells are on plant property and within the Alluvium. The importance of this feature is the lack of a significant hydraulic head to cause ground water in the shallow water-table aquifer to move appreciably west to east from the plant to wells SJ3 and SJ6 in the San Jose Well Field. This condition may change if SJ3 and SJ6 resume pumping.

The second feature of two distinct hydrologic units can be seen from the difference in water-level elevations east and west of the geological extent of the Alluvium. Water levels in general are approximately ten feet lower in elevation on the east than on the west of the geological boundary. This feature displayed locally by the December 1982 water levels has been mapped regionally by Bjorklund and Maxwell, 1961. Note also that the 1983 water-level elevation of well SJ6, which taps the regional water-table aquifer and has been shut down for approximately three years, is well below those of the shallower wells which are also under water-table conditions. The SJ6 water level has been affected by a continual regional water-table decline in the Albuquerque area (Corps of Engineers, 1974). The wells east of the geological boundary have water levels similar to those of wells SJ3 and SJ6 indicating good hydraulic connection between the city wells and the wells east of the geologic boundary. The feature of two distinct hydrologic units is important in that a relatively isolated shallow water-table aquifer now exists under the plant and just east of the plant where SJ3 and SJ6 are located. The shallow water-table levels have not been affected by the regional water-table decline. Prior to 1978 the two aquifers had similar water levels indicating a one-flow system. The clays mentioned earlier as being present under the plant apparently contained ground water in this shallow aquifer as the ground-water level in the regional aquifer declined. Therefore, the clays may limit the hydraulic connection between the shallow water-table aquifer and the regional water-table withdrawal zones of SJ3 and SJ6 in the deeper Santa Fe Group (undivided). This hydraulic connection may increase if SJ3 and SJ6 resume pumping.

The third feature of ground-water leakage from the shallow water-table aquifer to the regional water-table aquifer is illustrated

in Figure 3.17. The cross-section location shown in Figure 3.17 is located on Figure 3.16 from well SV9 on the plant property to well SV7 southeast of the plant. Leakage of ground water may occur vertically down from the shallow water-table aquifer in the shallow Alluvium to deeper alluvial deposits and the Santa Fe Group (undivided). Although the water level measurement dates differ for the two aquifers, historical water level data indicates that the vertical migration potential has existed at the plant since 1978. These facts are important in that ground water directly underlying the plant may migrate vertically to the deeper alluvial deposits and Santa Fe Group (undivided), although the low permeability of the underlying clays would tend to limit vertical ground-water leakage. Data presently available does not allow the complete evaluation of the leakage potential.

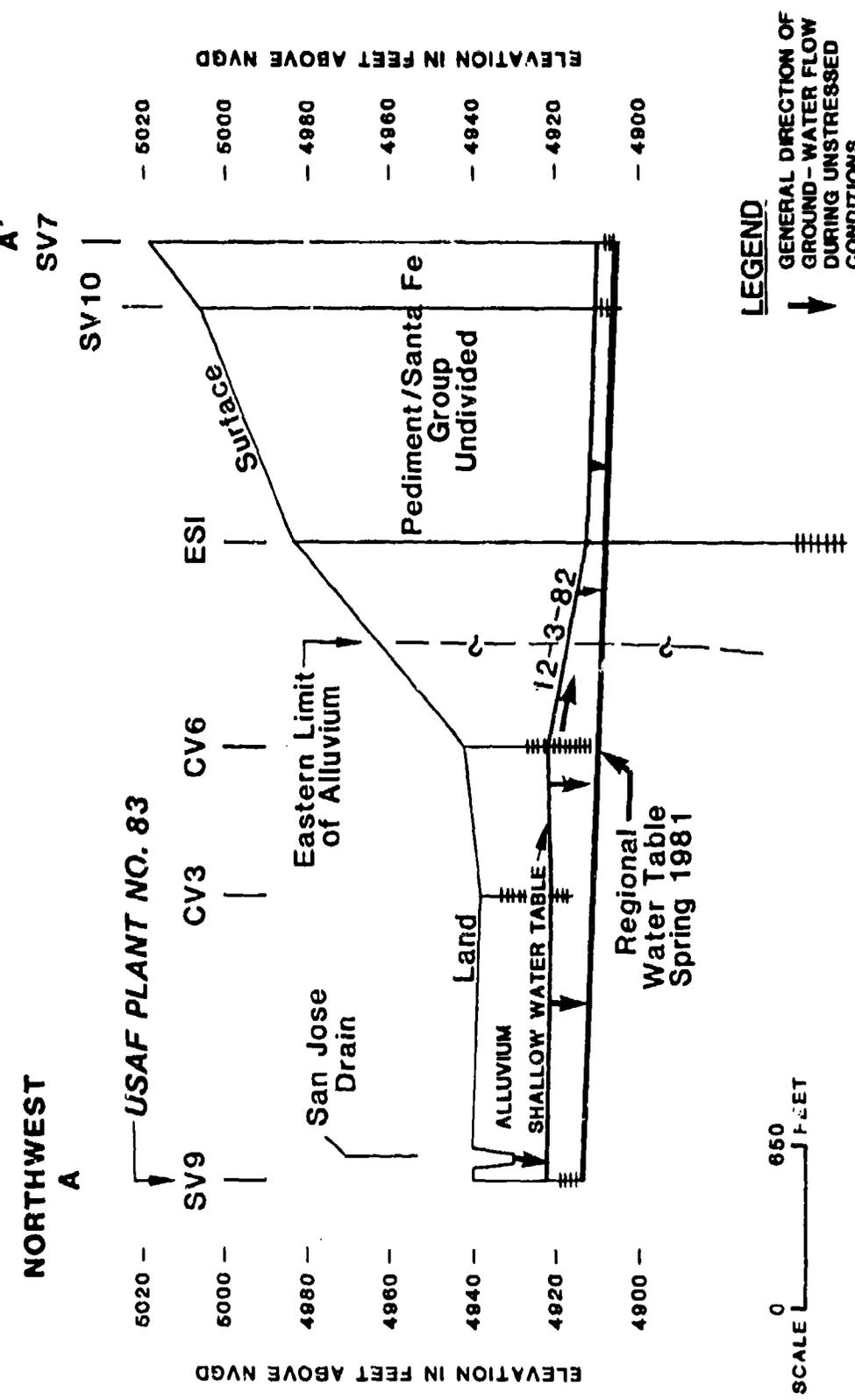
Two other important concerns in terms of leakage and recharge are the facts that the San Jose Drain recharges the shallow water-table aquifer and that the Rio Grande being controlled by levees and canals is approximately eight feet above the shallow water-table (Bjorklund and Maxwell, 1961). The Rio Grande also recharges the shallow water-table aquifer.

#### Ground-Water Quality

Ground-water quality in the vicinity of the plant has been investigated by McQuillan, et. al. 1982 and numerous potentially responsible parties named as possible contributors to the ground-water contamination in the South Valley of Albuquerque. Investigations in the general Rio Grande Valley of Albuquerque have documented ground-water contamination by nitrate from septic tanks, agricultural facilities, dumpsites and nitrate-contaminated surface water (McQuillan, 1982). Contamination by petroleum products from service station gasoline tanks and bulk fuel facilities has also been documented by McQuillan.

Plant No. 83 is located in the South Valley where wells SJ3 and SJ6 continue to be shut down due to organic contamination. Other wells which have been shut down due to past contamination problems are A1, C1 and ESI. Figure 3.18 illustrates the ground-water contamination problem in the vicinity of the plant. Seven wells in the area have ground water in which organic contaminants have exceeded the NMWQCC Human Health

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT  
**VICINITY HYDROLOGIC CROSS SECTION**



NOTE: SEE FIGURE 3.16 FOR CROSS SECTION LOCATION  
SOURCE: McQUILLAN, et al., 1982 AND HUDSON, 1982

SCALE 0 650 FEET

Standards. More varied organic contaminants in significantly higher concentrations have been detected in deeper monitoring wells in the area east of the vacated San Jose Lateral than in the vicinity of the plant. Table 3.5 summarizes significant ground-water quality analyses in the area. Appendix C-1 summarizes additional ground-water quality data for the area. The only organic contaminant which can be compared to a standard was found in shallow well SV15 underlying the plant. A concentration of 0.009 mg/l 1,1-Dichloroethene was sampled on September 8, 1982. This concentration is 0.004 mg/l over the MNWQCC Human Health Standard of 0.005 mg/l. Other organic contaminants in trace amounts detected at the plant monitoring wells were the following:

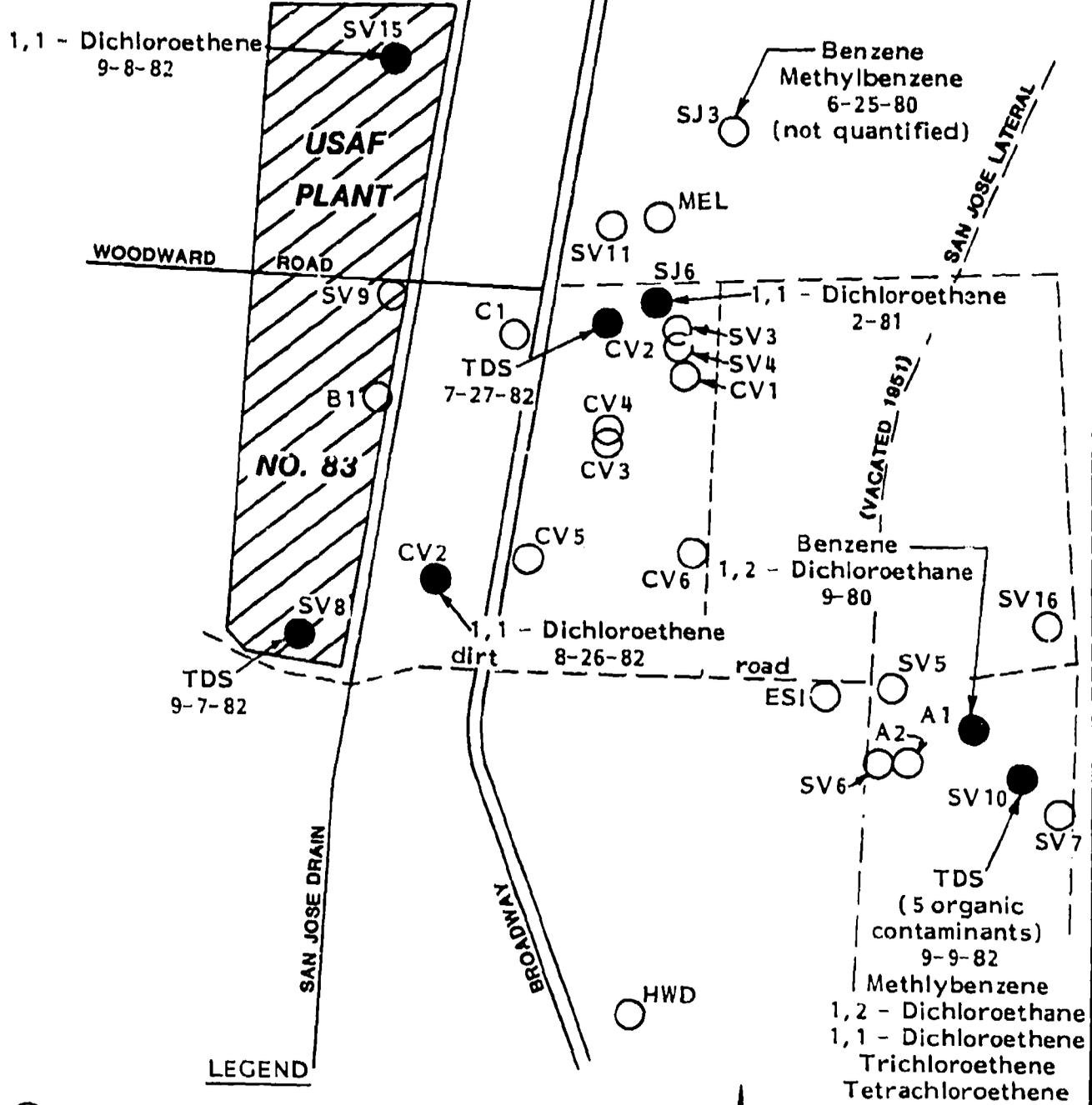
<u>Well</u>	<u>Contaminant</u>
SV8	1,1,2,2-Tetrachloroethane
SV9	1,2-Dichloroethane
	1,1,1-Trichloroethane
	Tetrachloroethene
SV15	1,1-Dichloroethane
	1,1,1-Trichloroethane
	Trichloroethene

Metal contaminants were also detected in the shallow plant monitoring wells. Metals which exceeded the MNWQCC Human Health Standards were arsenic, barium, total chromium and lead. Of these contaminants, 1,1,1-Trichloroethane, chromium, and lead are the only materials which have been utilized in significant quantities at the plant. Wells tapping the regional water-table aquifer underlying the plant have not been installed. The sources of the contaminants within the shallow water-table aquifer have not been identified.

#### Ground-Water Use

Ground water in the Albuquerque area is the only source of public water supply at the present time. Due to the importance of ground water the Rio Grande Basin has been officially designated as a "declared underground water basin" (New Mexico State Engineer, 1974). The basin ground water is regulated as a sole source of potable water. There are eighteen water supply well fields operated by the City of Albuquerque. The San Jose Well Field is near the plant as shown in Figure 3.19. Only

# USAF PLANT NO. 83 GENERAL ELECTRIC ALBUQUERQUE PLANT GROUND-WATER QUALITY SAMPLING LOCATIONS



**LEGEND**

- SAMPLING WELL LOCATION
- WELL LOCATION WHERE WATER QUALITY STANDARDS HAVE BEEN EXCEEDED BY PARAMETER AND DATE.

NOTE: SEE TABLE 3.5 AND APPENDIX C-1 FOR ANALYSES  
SOURCE: McQUILLAN, et al., 1982

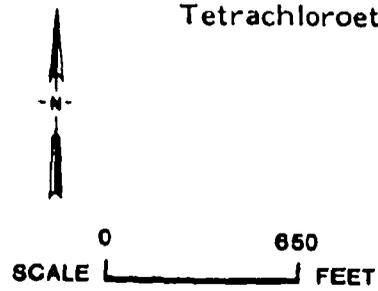


TABLE 3.5

SELECTED GROUND-WATER QUALITY DATA  
FOR USAF PLANT NO. 83 AND VICINITY

(Parameter analyses are presented in milligrams per liter)

Well Identification	Date (mm-dy-yr)	Chloride 1 (250)	Total Dissolved Solids (1000)	Benzene (0.01)	Methyl- benzene (0.01)	Tetra- chloro- methane (0.01)	1,2- Dichloro- ethane (0.02)	1,1- Dichloro- ethene (0.005)	Trichloro- ethene (0.1)	Tetra- chloro- ethene (0.02)	Acetone (MS)	Methyl Ethyl Ketone (MS)
A1, American Well	7-23-80	NA	NA	ND	ND	ND	0.097	ND	ND	<0.001	NA	NA
B1, Plant No. 83, Well No. 2	2-25-82	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
C2, Texaco Well	8-26-82	41.3	576	ND	ND	ND	0.0006	0.011	0.019	0.001	NA	NA
CV2, Chevron Monitor Well	7-27-82	54.7	2219	NA	NA	NA	NA	NA	NA	NA	NA	NA
HW, New Mexico Avy. Dept. Well	9-15-82	126.49	862	ND	ND	ND	ND	ND	ND	ND	ND	ND
MEL, Melchor Well	4-01-82	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
SJ3, Albuquer- que City Well	6-25-80	36	329	DNQ	DNQ	ND	ND	ND	ND	ND	ND	ND
2 SJ6, Albuquer- que City Well	6-25-80	33	300	DNQ	DNQ	ND	ND	DNQ	DNQ	DNQ	ND	ND
SV5, NMEID Monitor Well	9-17-82	NA	NA	ND	ND	ND	ND	ND	0.0057	0.003	NA	NA
SV7, NMEID Monitor Well	8-25-82	9.2	171	ND	ND	ND	0.006	0.005	0.002	0.001	NA	NA
2 SV8, NMEID Plant No. 83	9-07-82	98.8	1517	ND	ND	ND	ND	ND	ND	ND	NA	NA
2 SV9, NMEID Plant No. 83	9-08-82	39.5	507	ND	ND	ND	0.0015	ND	ND	0.0016	NA	NA
2 SV10, NMEID Monitor Well	9-09-82	2462	7066	ND	0.6	ND	1.7	9.0	6.0	20.0	150.0	6.0
2 SV15, NMEID Plant No. f	9-08-82	37.3	874	ND	ND	ND	ND	0.009	0.0006	ND	NA	NA

NOTES: 1 New Mexico Water Quality Control Commission Human Health Standards  
2 See Appendix C-1 for additional water quality data.  
See Figure 3.18 and 3.20 for well locations.  
See Table 3.6 for well construction data.

MS = No Standard  
ND = Not detected  
NA = Not analyzed  
DNQ = Detected but not quantified  
NMEID = New Mexico Environmental Improvement Division

Source: USGS, 1981; McQuillan, et al., 1982, and Wilson Laboratories, 1982

TABLE 3.5  
(Continued)  
SELECTED GROUND-WATER QUALITY DATA  
FOR USAF PLANT NO. 83 AND VICINITY  
(Parameter analyses are presented in milligrams per liter)

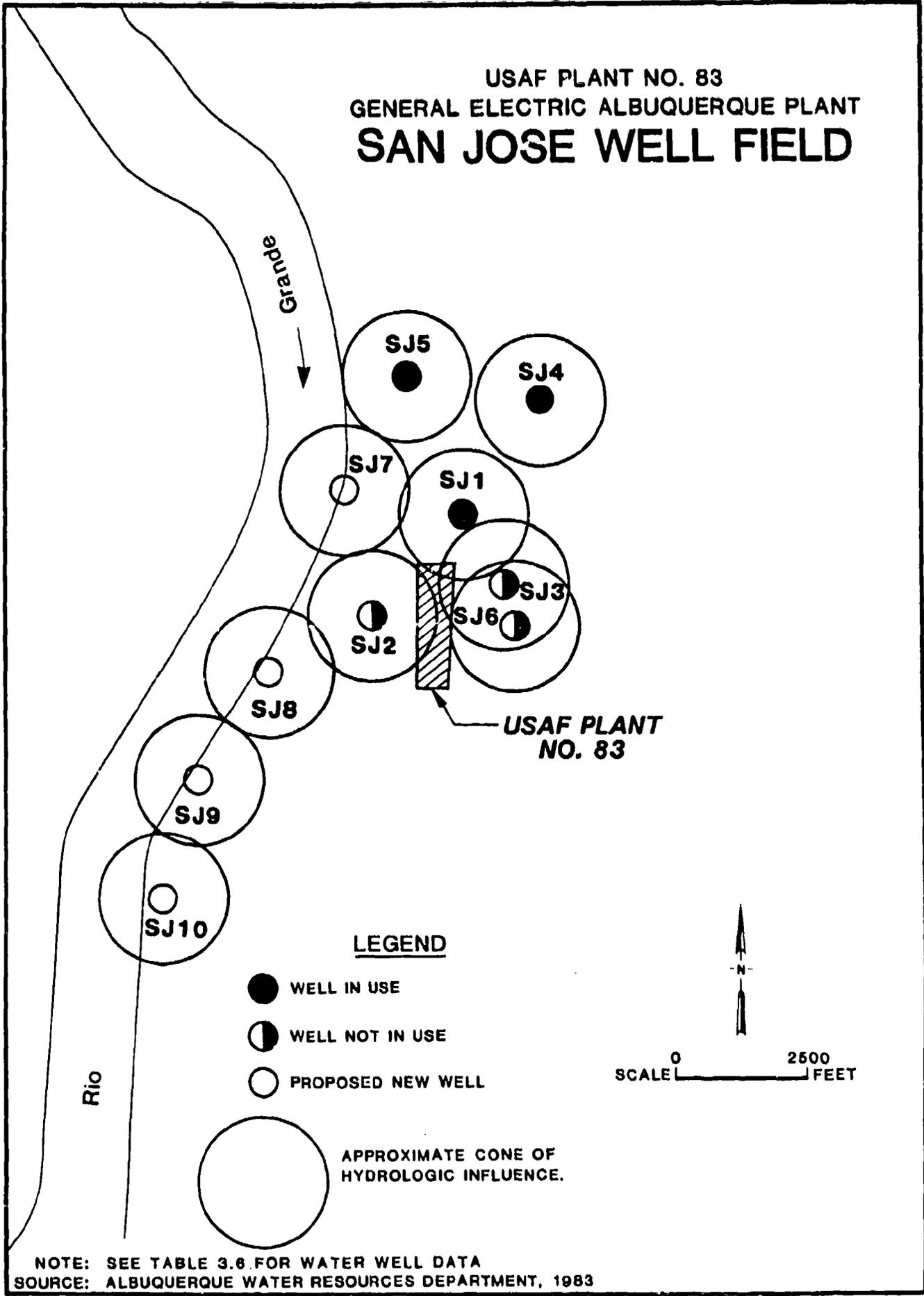
Well Identi- fication	Date of Sample Collection (mm-dy-yr)	Parameter							
		Arsenic (0.1)	Barium (1.0)	Cadmium (0.01)	Chromium (0.05)	Lead (0.05)	Mercury (0.002)	Selenium (0.05)	Silver (0.05)
R1, Plant No. 83, Well No. 2	2-25-82	0.0014	0.069	0.00016	0.0013	ND	ND	ND	ND
SV8, WMEID Plant No. 83	9-7-82	0.093	3.7	0.0035	0.09	0.17	0.0002	0.0086	ND
SV9, WMEID, Plant No. 83	9-8-82	0.14	14.3	0.0076	0.21	0.7	0.004	0.0033	0.0010
SV15, WMEID Plant No. 83	9-8-82	0.13	3.8	0.0036	0.12	0.18	0.00064	0.0027	0.0007
2636, Albuquer- que City Well	6-25-80	0.021	0.1	<0.001	0.010	0	0	0	0

NOTES: 1. New Mexico Water Quality Control Commission Human Health Standards  
2. See Appendix C-1 for additional water quality data.  
See Figures 3.18 and 3.20 for well locations.  
See Table 3.6 for well construction data.

MS = No Standard  
ND = Not Detected  
NA = Not Analyzed  
DNP = Detected but not quantified  
WMEID = New Mexico  
Environmental Improvement Division

Source: USGS, 1981; McQuillen, et al., 1982, and Wilson Laboratories, 1982

USAF PLANT NO. 83  
 GENERAL ELECTRIC ALBUQUERQUE PLANT  
**SAN JOSE WELL FIELD**



NOTE: SEE TABLE 3.6 FOR WATER WELL DATA  
 SOURCE: ALBUQUERQUE WATER RESOURCES DEPARTMENT, 1983

three of the possible six existing wells are presently pumping water. Wells SJ1, SJ4 and SJ5 are presently in use. Wells SJ3 and SJ6 are shut down due to contamination. Well SJ2 is not fully operational at the present time for mechanical reasons (Pirooz, 1983).

During 1982 Plant No. 83 used approximately 0.8 million gallons of ground water per day (Rhoades, 1983). All water used at the plant comes from the City of Albuquerque. A majority of the water used is for non-contact cooling purposes and is discharged to the San Jose Drain.

Other ground-water uses in the Albuquerque area include irrigation, industrial and domestic uses. Table 3.6 summarizes the ground-water uses and well construction data for wells in the immediate vicinity of the plant. Figure 3.20 shows the location of the wells in the immediate vicinity of the plant.

#### BIOTIC ENVIRONMENT

Within the Albuquerque area there are eight species of animals which have been listed as endangered or threatened by Federal or New Mexico agencies (Hubbard, et al., 1979). They are as follows:

Black-footed ferret (weasel)	Federal endangered
Mississippi kite (bird)	State endangered
Bald eagle	Federal and State endangered
Peregrine falcon	Federal and State endangered
Red-headed woodpecker	State endangered
McCown's longspur (bird)	State endangered
Bluntnose shiner (fish)	State endangered
Silvery minnow	State endangered

There are no Federally- or State-listed endangered or threatened species on USAF Plant No. 83.

#### SUMMARY OF ENVIRONMENTAL SETTING

The environmental setting data for USAF Plant No. 83 indicate the following facts are important when evaluating past hazardous waste disposal practices.

TABLE 3.6  
WATER WELL DATA FOR USAF PLANT NO. 83 AND VICINITY

Well Identification	Owner and/or Location	Depth (Feet)		Diameter (Inches)	Hydrogeologic Unit(s) Tapped By Well	Water Level (feet)		Yield (gpm)	Use		
		Casing	Screen			Below Land Surface	Date (mm-dy-yr)			Approximate Elevation Below MGV	
A1	Amerigas Company	112	20	132	10	Q7a	102.04	7/20/83	4899	NR	I/A
A2	Amerigas Company	510	12	522	5	Q7a	118	1980	4773	NR	I
* B1	USAF Plant No. 83 Well No. 2, Bldg. 16	NR	NR	62	8	Qa1	12	1956	4927	428	I/A
* B2	USAF Plant No. 83 Well No. 1, Bldg. 5	NR	NR	65	8	Qa1	111	1953	4926	NR	I/A
C1	Conoco Oil Company	82	12	94	NR	Qa1	NR	NR	NR	NR	I/A
C2	Texaco Oil Company	NR	NR	66	10	Qa1	NR	NR	NR	NR	I/A
CV1	Chevron Oil Company	10	20	30	2	Qa1	20.54	12-3-82	4921	NR	M
CV2	Chevron Oil Company	10	20	30	2	Qa1	17.71	12-3-82	4921	NR	M
CV3	Chevron Oil Company	5	20	25	2	Qa1	17.45	12-3-82	4922	NR	M
CV4	Chevron Oil Company	5	20	25	2	Qa1	17.63	12-3-82	4922	NR	M
CV5	Chevron Oil Company	10	20	30	2	Qa1	15.44	12-3-82	4922	NR	M
CV6	Chevron Oil Company	15	20	35	2	Qa1	20.68	12-3-82	4923	NR	M

gpm = gallons per minute  
mm-dy-yr = month-day-year

A = Abandoned  
D = Domestic  
I = Industrial  
M = Monitor  
U = unused

P = Public Supply  
Qa1 = Alluvium  
Q7a = Santa Fe Group, undivided  
NR = Not Recorded

MFEID = New Mexico Environmental Improvement Division  
MGVD = National Geodetic Vertical Datum of 1929

See Figures 3.19 and 3.20 for well location.  
See Table 3.5 and Appendix C-1 for water quality data.

\*Wells on USAF Plant No. 83 property

Source: Bynon, 1983; McQuillan, et al., 1982 and Hudson, 1982.

TABLE 3.6  
(Continued)  
WATER WELL DATA FOR USAF PLANT NO. 83 AND VICINITY

Well Identification	Owner and/or Location	Depth (Feet)		Diameter (inches)	Hydrogeologic Unit(s) Tapped By Well	Water Level (feet)		Yield (gpm)	Use	
		Casing	Screen Total			Below Land Surface	Date (m-dy-yr)			Approximate Elevation Below NGVD
ESI	Environmental Services, Inc.	NR	NR	6	NR	71.64	12-3-82	4913	NR	I/A
RWD	New Mexico State Highway Dept.	NR	NR	6	Qe1	NR	NR	NR	15	I
MEL	H. Melchor	NR	NR	2	Qe1	12	1957	4929	NR	D
SJ1	Albuquerque, San Jose Well Field	NR	NR	NR	Q7s	35.3	4-3-81	4915	NR	P
SJ2	San Jose Well Field	NR	NR	NR	NR	NR	NR	NR	NR	P/U
SJ3	San Jose Well Field	360	144	NR	Q7s	47.2	3-31-81	4907	1,000	P/U
SJ4	San Jose Well Field	268	732	NR	Q7s	92.4	4-2-81	4900	NR	P
SJ5	San Jose Well Field	192	840	NR	Q7s	43.7	4-1-81	4902	NR	P
SJ6	San Jose Well Field	180	732	NR	Q7s	38.58	7-19-83	4902	NR	P/U
SJ7 thru 10	San Jose Well Field	(Proposed New Wells)								
SV3	NREID	24	4	28	Qe1	18.49	12-3-82	4920	NR	M

gpm = gallons per minute  
 m-dy-yr = month-day-year  
 \*Wells on USAF Plant No. 83 property  
 A = Abandoned  
 D = Domestic  
 I = Industrial  
 M = Monitor  
 U = Unused  
 P = Public Supply  
 Qe1 = Alluvium  
 Q7s = Santa Fe Group, Undivided  
 NR = Not Recorded  
 NREID = New Mexico Environmental Improvement Division  
 NGVD = National Geodetic Vertical Datum of 1929  
 See Figures 3.19 and 3.20 for well location.  
 See Table 3.5 and Appendix C-1 for water quality data.

Source: Bynon, 1983, McQuillan, et al., 1982 and Hudson, 1982.

TABLE 3.6  
(Continued)  
WATER WELL DATA FOR USAF PLANT NO. 83 AND VICINITY

Well Identification	Owner and/or Location	Depth (Feet)		Diameter (inches)	Hydrogeologic Unit(s) Tapped By Well	Water Level (feet)		Yield (gpm)	Use
		Casing	Screen			Below Land Surface	Approximate Elevation Below NGVD		
SV4	NMEID	20	4	2	Qe1	18.15	4921	NR	M
SV5	NMEID	92	4	2	Qe1	88.9	4912	NR	M
SV6	NMEID	92.5	4	2	Qe1	91.69	4909	NR	M
SV7	NMEID	112.8	4	2	QTe	108.88	4911	NR	M
• SV8	NMEID	21	4	2	Qe1	21.14	4919	NR	M
• SV9	NMEID	22	4	2	Qe1	18.57	4922	NR	M
SV10	NMEID	97	4	2	QTe	95.21	4911	NR	M
SV11	NMEID	21	4	2	Qe1	22.19	4921	NR	M
• SV15	NMEID	15	4	2	Qe1	15.84	4929	NR	M
SV16	NMEID	111.7	4	2	QTe	106.32	4911	NR	M

gpm = gallons per minute  
 m-dy-yr = month-day-year

A = Abandoned  
 D = Domestic  
 I = Industrial  
 M = Monitor  
 U = Unused

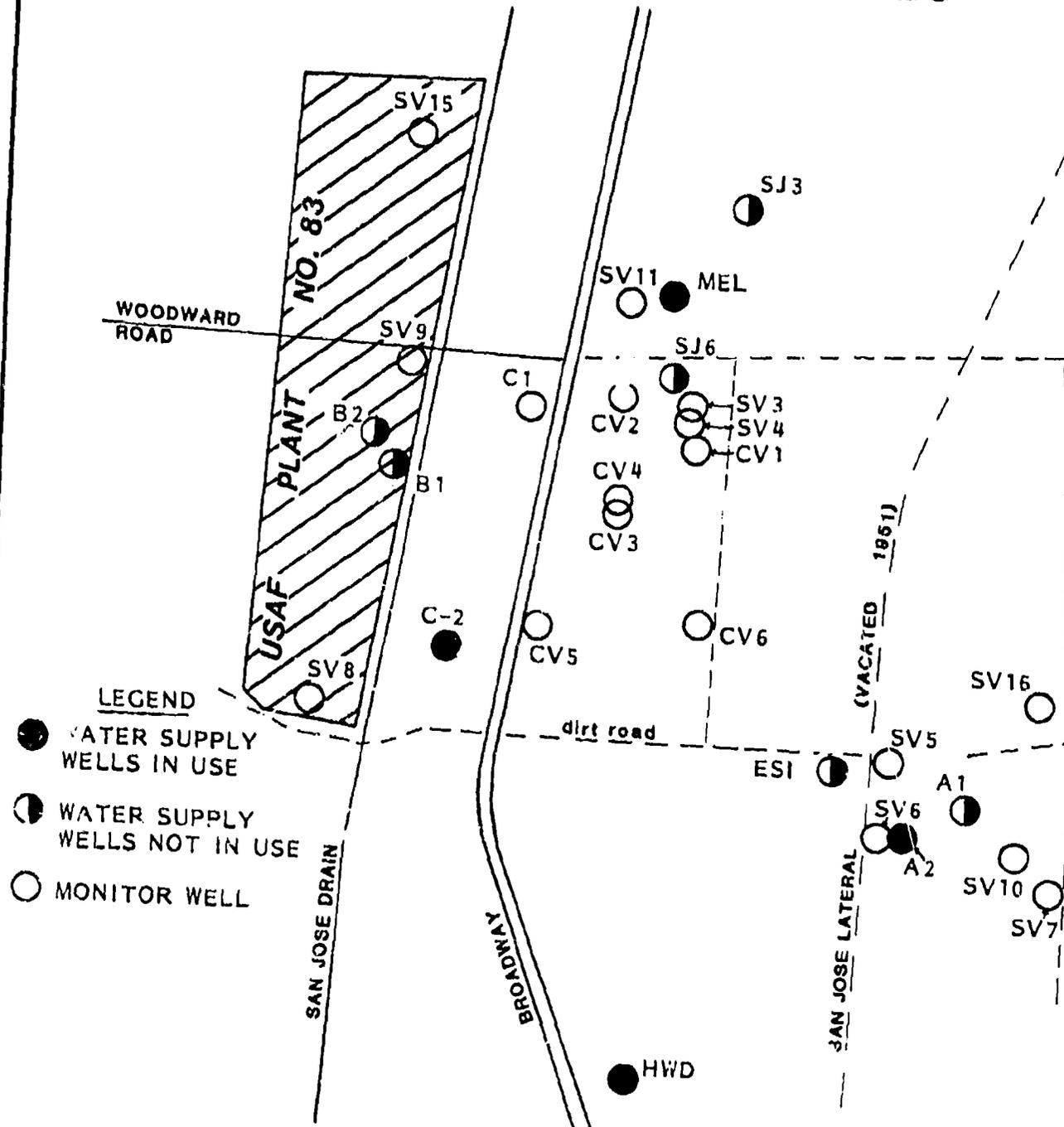
P = Public Supply  
 Qe1 = Alluvium  
 QTe = Santa Fe Group, Undivided  
 NR = Not Recorded  
 NMEID = New Mexico Environmental Improvement Division  
 NGVD = National Geodetic Vertical Datum of 1929

See Figures 3.19 and 3.20 for well location.  
 See Table 3.5 and Appendix C-1 for water quality data.

\*Wells on USAF Plant No. 83 property

Source: Rynon, 1983; McQuillan, et al., 1982 and Rudson, 1982.

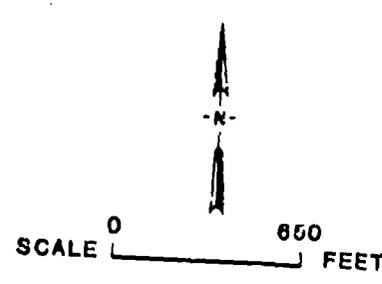
# USAF PLANT NO. 83 GENERAL ELECTRIC ALBUQUERQUE PLANT LOCATION OF WATER WELLS



- LEGEND**
- WATER SUPPLY WELLS IN USE
  - ◐ WATER SUPPLY WELLS NOT IN USE
  - MONITOR WELL

NOTES: SEE TABLE 3.6 FOR WATER WELL DATA  
 WELLS SJ3, SJ6, ESI AND A1 ARE TEMPORARILY NOT IN USE DUE TO CONTAMINATION.  
 WELLS B1 AND B2 WERE ABANDONED AND CAPPED WHEN PLANT NO. 83 BEGAN USING CITY WATER.

SOURCE: McQUILLAN, et al., 1982 AND USAF PLANT NO. 83 DOCUMENTS



1. The normal annual precipitation is 7.77 inches; the net precipitation is -54.23 inches and the 1-year, 24-hour rainfall event is estimated to be 1.25 inches. These data indicate that there is little or no potential for precipitation to infiltrate the surface soils on the plant property. Also, there is a slight potential for runoff and erosion.
2. There is limited area on the plant property where natural soils are exposed. Most of the plant property is covered by asphalt or concrete. The natural soils on the property are typically clayey or sandy loam with low permeability values. These data indicate that recharge by precipitation infiltrating the soils will be slow.
3. Surface water in the vicinity of the plant may recharge the shallow water-table aquifer or may flow downstream in the San Jose Drain to the Rio Grande.
4. Clay is a dominant lithologic unit under the plant which may limit the vertical migration of ground water.
5. Alluvial deposits of sand, gravel, cobbles and clay underly the plant. Water levels are approximately 15 to 20 feet below ground within the shallow alluvial deposits.
6. Water levels within the deeper alluvial deposits and the Santa Fe Group (undivided) are approximately 35-50 feet deep. These data indicate that a shallow water-table aquifer exists under the plant and a potential exists for horizontal and vertical migration of ground water from the shallow water-table aquifer to the regional water-table aquifer.
7. Ground-water contamination has been detected in shallow monitoring wells on the plant property.
8. The direction of ground-water flow within the shallow water-table aquifer cannot be determined based on available data.

9. The regional ground-water flow direction is east and northeast from the plant to major water producing wells for the City of Albuquerque.
10. The operation of wells SJ3 and SJ6 may impact the ground-water conditions underlying the plant in both the shallow and regional water-table aquifers.
11. The plant is located in a "declared underground water basin" which is the sole source aquifer for Albuquerque's water supply.
12. There are no Federally- or State-listed endangered or threatened species which inhabit the plant property.

## CHAPTER 4

### FINDINGS

This section summarizes the hazardous waste generated by activity; describes waste treatment and disposal methods; identifies the storage sites located at the plant; and evaluates the potential for environmental contamination from those sites. A review was conducted of current and past waste generation and management methods in order to identify those activities that resulted in the generation of hazardous waste. This activity involved a review of files and records, interviews with current and former plant employees, and an inspection of the plant site.

The following discussion emphasizes those wastes which have been generated at Air Force Plant No. 83 which are either hazardous or potentially hazardous. In this discussion a hazardous substance is defined either as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or a potentially hazardous waste, which is suspected of being hazardous although insufficient data are available to fully characterize the waste material. The source of most of the hazardous waste at the plant can be directly associated with the industrial operations and the methods of treatment, storage and disposal of these wastes. No landfills or other disposal sites were found to exist on the plant site. This study included a review of the potential sources of contamination such as chemical spills which occurred at the plant and other supplemental industrial activities such as fuels management, pest management, and heat and power production.

#### PAST INDUSTRIAL OPERATIONS

The materials manufactured and the levels of production during the 1951 to 1967 period, when American Car and Foundry (ACF) operated the plant for the Atomic Energy Commission (AEC) differed significantly from those manufactured since 1967, when General Electric began operating the

plant for the Air Force. The review of these activities was therefore divided into two sub-sections pertaining to the operations which occurred during these two distinct periods in the plant's history.

Two additional periods of industrial operations are also discussed below. These are the Eidal Manufacturing period (1948 to 1951) and the Dow Chemical period (1967).

#### Eidal Manufacturing Period - 1948 to 1951

Eidal Manufacturing conducted the first industrial operations on the plant site. Eidal manufactured trailers and other types of heavy equipment. Eidal constructed the first buildings on the site in 1948 (Buildings No. 5 and No. 11). The industrial processes conducted on the site consisted primarily of welding and thus would not have generated any hazardous wastes. In 1951, the property was transferred to the Atomic Energy Commission. Eidal still has a manufacturing operation located on a site adjacent to on the west side of the plant.

#### American Car and Foundry (ACF) Period - 1951-1967

From 1951 to 1967 the plant was owned by the Atomic Energy Commission and operated by American Car and Foundry as the AEC contractor. The plant was operated primarily to support activities at the Los Alamos Installation. The manufacturing operations included forming, welding, plating, and machining metal parts and structures and molding and machining plastics. The plant was divided into seven functional groups: Materials and Process Development, Parts Preparation, Assembly, Plate Shop, Small Machine Weld, Lead Plate Line and Miscellaneous Processing. Table 4.1 identifies the areas of the plant which were occupied by each of these groups, the types and quantities of wastes generated at the various locations and the method of disposal of these wastes throughout the period of operation.

#### Dow Chemical Period - 1967 (10 months)

Just prior to the Air Force's purchase and GE's subsequent occupation of Plant 83, the Dow Chemical Company joined with ACF in the operation of a portion of the facility for about 6 months. This was done for the purpose of training Dow on how to duplicate ACF's methods and skills so that the same products could be thereafter manufactured by Dow at the AEC's Rocky Flats Plant. Dow was not permitted during this time to institute any changes in the methods, materials, processes or practices being used.

TABLE 4.1  
**INDUSTRIAL OPERATIONS (Shops)**  
 Waste Management

SHOP NAME	LOCATION (BLDG. NO.)	WASTE MATERIAL	WASTE QUANTITY	METHOD(S) OF TREATMENT, STORAGE & DISPOSAL	
				1950-1960	1970-1980
ACF PERIOD 1953 - 1967					
MATERIALS AND PROCESS DEVELOPMENT (AREA #12)	5	GOLD SEL-REX	50 GALS./ONE TIME	SOLD TO U.S. MINT	1966
		SILVER CYANIDE, POTASSIUM CYANIDE	30 GALS./ONE TIME	SOLD TO U.S. MINT	1960
		FREON	110 GALS./2 MOS.	REMOVED WITH RECYCLED SCRAP CHIPS	1954
		COOLANT	<20 GALS./MO.	NEUTRALIZED TO STORM SEWER	1956
		SMUT CO (CHROMATE NITRIC ACID SOLUTION)	165 GALS./YR.	NEUTRALIZED TO STORM SEWER	1956
		TURCO-AVIATION (TRISODIUM PHOSPHATES)	125 LBS./YR.	NEUTRALIZED TO STORM SEWER	1967
		TURCO SMUT CO	300 LBS. & H <sub>2</sub> O/6 MOS.	NEUTRALIZED TO STORM SEWER	1967
		TURCO AVIATION	150 LBS./6 MOS. (SOLIDS)	TO KIRTLAND LANDFILL	1956
		TRI-CHLOROETHYLENE	300 LBS. & H <sub>2</sub> O/MO.	DILUTED TO SANITARY SEWER	1956
		PENETRANT	55 GALS./2 WKS.	COMMERCIAL SALE	1956
PARTS PREPARATION (AREA 509)	5	FIXER	150 GALS./YR.	TO KIRTLAND LANDFILL	1956
			55 GALS./MO.	SANITARY SEWER	1956

DUST CONTROL - OILS SPREAD ON LOCAL ROADS FOR DUST CONTROL

TABLE 4.1 (cont'd)  
**INDUSTRIAL OPERATIONS (Shops)**  
 Waste Management

SHOP NAME	LOCATION (BLDG. NO.)	WASTE MATERIAL	WASTE QUANTITY	METHOD(S) OF TREATMENT, STORAGE & DISPOSAL
PARTS PREPARATION (AREA 504) (CONT'D)	5	EMULSIFIER	100 GALS./YR.	1954 — TO KIRTLAND LANDFILL
	5	DEVELOPER	100 LBS./YR.	1955 — SANITARY SEWER 1957 — NEUTRALIZED TO SANITARY SEWER
ASSEMBLY (AREA 505)	14a	DOW 17 ANODIZE SANDIA SPEC 400184 (ANODIZING MAGNESIUM)	4000 GALS./ONE TIME	NEUTRALIZED TO SANITARY SEWER TO KIRTLAND LANDFILL
		PHOSPHORIC ACID, CHROMIC ACID, SULFURIC ACID	2000 LBS./ONE TIME (SOLIDS) 110 GALS./6 MOS.	1957 — NEUTRALIZED TO SANITARY SEWER
		TURCO AVIATION	1250 LBS. & H <sub>2</sub> O/6 MOS.	1956 — DILUTED TO SANITARY SEWER 1957 — NEUTRALIZED TO SANITARY SEWER
		TURCO ARR (ALKALINE RUST REMOVER) (88-95% NaOH)	3 TANKS 1250 LBS. & H <sub>2</sub> O/6 MOS. 1000 LBS. & H <sub>2</sub> O/6 MOS. 25 LBS. & H <sub>2</sub> O/MO.	1956 — NEUTRALIZED TO SANITARY SEWER
		IRON PHOSPHATE	100 GALS. & H <sub>2</sub> O/YR.	NEUTRALIZED TO SANITARY SEWER SOLIDS TO KIRTLAND LANDFILL
		CHROMIC ACID RINSE	250 LBS. & H <sub>2</sub> O/2 YRS.	NEUTRALIZED TO SANITARY SEWER NEUTRALIZED TO SANITARY SEWER
		TURCO #409 (AMMONIUM BIFLUORIDE)	2000 GALS./6 MOS.	NEUTRALIZED TO SANITARY SEWER
		CHROMIC ACID	3000 LBS. & H <sub>2</sub> O/2 YRS. 1000 LBS./2 YRS.	NEUTRALIZED TO SANITARY SEWER SOLIDS TO KIRTLAND LANDFILL

DUST CONTROL: OILS SPREAD ON LOCAL ROADS FOR DUST CONTROL

# INDUSTRIAL OPERATIONS (Shops)

## Waste Management

TABLE 4.1 (cont'd)

SHOP NAME	LOCATION (BLDG. NO.)	WASTE MATERIAL	WASTE QUANTITY	METHOD(S) OF TREATMENT, STORAGE & DISPOSAL			
				1950	1960	1970	1980
ASSEMBLY (AREA 505) (CONT'D)		ALODINE 1200, ALUMIGOLD TRUCO, MIL-L-5541	2000 GALS./2 YRS.	NEUTRALIZED TO STORM SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER
		PAINT SLUDGE	300 LBS./2 YRS. (SOLIDS)		1956 1955	1967 TO KIRTLAND LANDFILL	TO KIRTLAND LANDFILL
		WATER WASH SPRAY, BOOTH OVERFLOW	50 LBS./WK.				TO KIRTLAND LANDFILL
		LUBE OIL	50 GALS./DAY				SANITARY SEWER
		TOLUENE	150-200 GALS./MO.			1964	SANITARY SEWER
		MEK	SMALL RESIDUAL QUANTITIES AND WIPE RAGS				DUST CONTROL OR SANDIA BURN PIT FOR FIRE TRAINING
		DYE SOLUTIONS	SMALL RESIDUAL QUANTITIES AND WIPE RAGS			1956	KIRTLAND LANDFILL
	7	OLIVE DRAB	2 LBS./MO.				KIRTLAND LANDFILL
		YELLOW	2 LBS./MO.				SANITARY SEWER
		NICKEL ACETATE	200 GALS. & H <sub>2</sub> O/MO.				SANITARY SEWER
		CADMIUM PLATING SOLUTION (CONTAINS CADMIUM AND CYANIDE)	600 GALS. (b)				NEUTRALIZED TO SANITARY SEWER TO HYPOCHLORITE
			300 LBS. (SOLIDS) (b)				TO KIRTLAND LANDFILL

(b) IN 15 YEARS PUMPED ONE TIME AFTER PLATE SHOP FIRE IN 1962.  
DUST CONTROL - OILS SPREAD ON LOCAL ROADS FOR DUST CONTROL

TABLE 4.1 (cont'd)  
**INDUSTRIAL OPERATIONS (Shops)**  
 Waste Management

SHOP NAME	LOCATION (BLDG. NO.)	WASTE MATERIAL	WASTE QUANTITY	METHOD(S) OF TREATMENT, STORAGE & DISPOSAL							
				1950	1970	1980	1990				
PLATE SHOP (AREA 5(4) (CONT'D))	7	NICKEL CHLORIDE	10 GALS. & 40 GALS. H <sub>2</sub> O/ 3 WKS.	1959	1967	1970	1980				
				NEUTRALIZED TO SANITARY SEWER	TO KIRTLAND LANDFILL	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER				
				5 LBS./3 WKS. (SOLIDS)	300 LBS. & H <sub>2</sub> O/3 MOS.	150 LBS./3 MOS. (SOLIDS)	300 LBS. & H <sub>2</sub> O/1 MO.	30 GALS. & H <sub>2</sub> O/YR.	500 LBS./YR. (SOLIDS)	180 LBS. & H <sub>2</sub> O/6 MOS.	250 LBS./6 MOS. (SOLIDS)
				TURCO AVIATION	IRON PHOSPHATE (TURCO BRAND)	CHROMIC ACID	TURCO 3854 (NaOH SOLUTION)	MURATIC ACID	IRIDITE #1 (CHROMATE SOLUTION)	SULFURIC ACID	PERCHLORETHYLENE
				600 GALS./MO.	600 GALS./MO.	600 GALS./6 MOS.	600 GALS./3 MOS.	110 GALS./2 WKS.	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER
				NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER
				TO KIRTLAND LANDFILL	TO KIRTLAND LANDFILL	TO KIRTLAND LANDFILL	TO KIRTLAND LANDFILL	TO KIRTLAND LANDFILL	TO KIRTLAND LANDFILL	TO KIRTLAND LANDFILL	TO KIRTLAND LANDFILL
				DILUTED TO SANITARY SEWER	DILUTED TO SANITARY SEWER	DILUTED TO SANITARY SEWER	DILUTED TO SANITARY SEWER	DILUTED TO SANITARY SEWER	DILUTED TO SANITARY SEWER	DILUTED TO SANITARY SEWER	DILUTED TO SANITARY SEWER
				NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER
				NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER
				NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER
				NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER	NEUTRALIZED TO SANITARY SEWER

TABLE 4.1 (cont'd)  
**INDUSTRIAL OPERATIONS (Shops)**  
 Waste Management

SHOP NAME	LOCATION (BLDG. NO.)	WASTE MATERIAL	WASTE QUANTITY	METHOD(S) OF TREATMENT, STORAGE & DISPOSAL			
				1950	1960	1970	1980
SMALL MACHINE WELD (AREA 515)	19c	TURCO ARR	125 LBS. & H <sub>2</sub> O./MO.				1963 NEUTRALIZED TO SANITARY SEWER
		NITRIC ACID	150 GALS. & H <sub>2</sub> O./MO.				NEUTRALIZED TO SANITARY SEWER
		NITRADO HNO <sub>3</sub>	300 GALS./MO.				NEUTRALIZED TO SANITARY SEWER
		1,1,1, TRICHLOROETHANE	110 GALS./2 WKS.				COMMERCIAL SALE
		PENETRANT	100 GALS./YR.				1959 TO KIRTLAND LANDFILL
		EMULSIFIER	25 GALS./YR.				TO KIRTLAND LANDFILL
		FIXER	70 GALS./WK.				SANITARY SEWER
		DEVELOPER	50 GALS./WK.				SANITARY SEWER
							1964 RECYCLED
							1967
LEAD PLATE LINE	21a	LEAD FLUOROBORATE, CYANIDE COPPER PLATE, ALUMINUM-D	NO DISCHARGE ALL WASTES GIVEN TO A PLATING COMPANY WHEN PROJECT FINISHED.				
MISCELLANEOUS PROCESSING (AREA 506)	18a	TURCO AVIATION	2000 GALS./2 MOS.				1956 DILUTED TO SANITARY SEWER
		TURCO SOLUTION (CONTAINS TCE)	WIPE CLOTHS				TO KIRTLAND LANDFILL
		COOLANT	55 GALS./2 MOS.				DUST CONTROL 1967

DUST CONTROL - OILS SPREAD ON LOCAL ROADS FOR DUST CONTROL

### General Electric (GE) Period - 1967 to Present

In 1967, the Air Force acquired ownership of the plant and contracted with General Electric to manufacture aircraft engine parts, sub-assemblies and spare parts for the military. GE also manufactures commercial jet engine sub-assemblies. The types of operations conducted at the plant included machinery, fiber laminate composition, investment casting and shrouds and seals manufacturing. General Electric organized the plant into seven operational groups. They included Composites Component Operations (plastics), Composites Program, Metals Manufacturing, Investment Casting, Production and Inventory Control, Turbine Shrouds and Seals and Miscellaneous Shops (e.g. plant maintenance). Table 4.2 identifies the areas of the plant which have been occupied by each of these groups, the types and quantities of wastes generated at the various locations and the method of disposal of these wastes throughout the period of operation.

### SUMMARY OF WASTE MANAGEMENT PRACTICES

Despite the difference in the products manufactured during the two major periods of the plant's history, the major industrial processes were quite similar. Therefore, even though the specific wastes and the quantities generated varied, the major categories of waste were the same throughout the life of the plant.

During the early 1950's until 1954 the liquid industrial wastes were typically discharged to the San Jose Drainage Ditch and the solids were disposed of within the Kirtland AFB landfill. It should be noted that the operations at the plant were not extensive and because of this fact, only small quantities of waste were generated during this period. In 1954, the AEC began to expand the plant facilities as the operations became more extensive. As new buildings were constructed, process and sanitary drains were linked to a tributary sewer line connected to the city sewage treatment plant. Most non-combustible wastes were discharged to the Albuquerque sewer system. The acid and caustic solutions were typically neutralized prior to their discharge. Oils were disposed of in one of two manners. Either they were transported to the nearby Sandia Base burn pit and burned during fire protection training exercises or they were sprayed over adjacent dirt roads for

# INDUSTRIAL OPERATIONS (Shops)

## Waste Management

TABLE 4.2

SHOP NAME	LOCATION (BLDG. NO.)		WASTE MATERIAL	WASTE QUANTITY	METHOD(S) OF TREATMENT, STORAGE & DISPOSAL			
	PRESENT	PAST			1950	1960	1970	1980
<b>GE PERIOD 1967 - PRESENT</b>								
COMPOSITES COMPONENT OPERATIONS (PLASTICS)	14d		1, 1, 1, TRICHLOROETHANE	50 GALS. /2 WKS.				1967 CONTRACT SALE RECYCLE
	14c		ALKALINE CLEANERS	80 GALS. /6 MOS.				SANITARY SEWER OR CONTRACT DISPOSAL
	14c		CHROME ETCH	80 GALS. /2 YRS.				NEUT. TO CONTRACT DISPOSAL
	14c		ADIPRENE	3 GALS. /MO.				1975 CONTRACT DISPOSAL
	14c		MS 123 (FREON BASE)	100 GALS. /YR.				LANDFILL
	14c		CAYTUR 21 (METHYLENE DEANALINE)	<5 GALS. /YR.				CONTRACT RECYCLE 1967 CONTRACT DISPOSAL
	14c		PASAGEL	<5 GALS. /YR.				SANITARY SEWER
	14c		PAINT -BR127 (CONTAINS MEK & ORGANIC CHROMATE)	10 GALS. /WK. (80 GALS. /WK. PRIOR TO MID 1970'S)				SANITARY SEWER
	14c		GRAPHITE PMR-15	5 GALS. /MO.				COUNTY LANDFILL 1975
	14c		1, 1, 1-TRICHLOROETHANE	.5 GALS. /YR.				COMMERCIAL SALE
METALS MANUFACTURING	14cc	6, 7	WASTE CUTTING OIL					SANITARY SEWER
	14bd		SIMCOOL (1968 - 1976)	200 GALS. /WK.				
	14, 10 14a, 14b 14c		TRIMSOL (1976 - PRESENT)	3, 400 GALS. /3 WK. (90% H <sub>2</sub> O)				CONTRACT DISPOSAL 1975 DUST CONTROL CONTRACT DISPOSAL

SAN. SEWER - SANITARY SEWER  
 NEUT. - NEUTRALIZED  
 DUST CONTROL - OILS SPREAD ON GROUND AND ROADS FOR DUST CONTROL

TABLE 4.2 (cont'd)  
**INDUSTRIAL OPERATIONS (Shops)**  
 Waste Management

SHOP NAME	LOCATION (BLDG. NO.)		WASTE MATERIAL	WASTE QUANTITY	METHOD(S) OF TREATMENT, STORAGE & DISPOSAL		
	PRESENT	PAST			1950	1960	1970
METALS MANUFACTURING (CONT'D)	14a	6, 7	ALKALINE CLEANERS	3,000 GALS./YR.	NEUT. TO SAN. SEWER	1975 SOLUTIONS	CONTRACT DISPOSAL FOR CHROME CONTAMINATED
	14a	6, 7	CHROME ETCH	4,000 GALS./YR.	NEUT. TO SAN. SEWER	1975	CONTRACT DISPOSAL
	14a	6, 7	CHROME SEAL	7,500 GALS./2 YRS.	NEUT. TO SAN. SEWER	1975	CONTRACT DISPOSAL
	14a	6, 7	SULFURIC ACID	1,200 GALS./4 YRS.	NEUT. TO SAN. SEWER	1975	CONTRACT DISPOSAL
	14a	6, 7	NICKEL PLATING SOLUTION	80 GALS./YR.	NEUT. TO SAN. SEWER	1975	CONTRACT DISPOSAL
	14a	6, 7	NITRIC ACID NITRADD	100 GALS./YR.	NEUT. TO SAN. SEWER	1975	CONTRACT DISPOSAL
	14c, 14b, 14, 10, 14a, 14b, 14c	6, 7	1, 1, 1-TRICHLOROETHANE	800 GALS./2 YRS.	NEUT. TO SAN. SEWER	1975	CONTRACT DISPOSAL
	14b, 14c, 14bb, 14, 10, 14a	6, 7	TURCO SOLVE 66 (CONTAINS TCE)	150 GALS./MO.	CONTRACT RECYCLE	1975	CONTRACT RECYCLE
	14c, 14bb, 14, 10, 14a	6, 7	MISCELLANEOUS LUBRICATING OIL	100 GALS./MO.	CONTRACT RECYCLE	1975	CONTRACT RECYCLE
	14b, 14c	6, 7	MISCELLANEOUS LUBRICATING OIL	200 GALS./WK.	DUST CONTROL		CONTRACT DISPOSAL
	14a		PAINTS AND PAINT SLUDGE (CONTAINS TOLUENE & MEK)	15 GALS./WK.	COURTY LANDFILL		CONTRACT DISPOSAL

SAN. SEWER - SANITARY SEWER  
 NEUT. - NEUTRALIZED  
 DUST CONTROL - OILS SPREAD ON GROUND AND ROADS FOR DUST CONTROL

TABLE 4.2 (cont'd)  
**INDUSTRIAL OPERATIONS (Shops)**

Waste Management

SHOP NAME	LOCATION (BLDG. NO.)		WASTE MATERIAL	WASTE QUANTITY	METHOD(S) OF TREATMENT, STORAGE & DISPOSAL		
	PRESENT	PAST			1950	1960	1970
METALS MANUFACTURING (CONT'D)	14a		EDM OIL	100 GALS./YR.			DUST CONTROL 1975 CONTRACT DISPOSAL COUNTY LANDFILL
	22		CONTAMINATED OIL FILTERS	6/MO.			GREASE TRAP TO STORM SEWER
	14a	7	CONDENSATE WITH OIL CONTAMINANTS	75 GALS./DAY			COUNTY LANDFILL
	14a	7	GREASE AND OIL	20 LBS./6 MOS.			CONTRACT DISPOSAL
	14a	7	NICKEL ACETATE SEAL SOLUTION (CONTAINS NICKEL AND COBALT)	800 GALS./2 YRS. (PRIOR TO 1981 160 GALS.)			CONTRACT DISPOSAL
	14a	7	ORGANIC BLACK DYE	2,000 GALS./3 YRS. (PRIOR TO 1980 540 GALS.)			CONTRACT DISPOSAL
	14a	7	ALUMINUM DEOXIDIZER (CONTAINS CHROMIUM)	800 GALS./5 YRS. (PRIOR TO 1978 540 GALS.)			CONTRACT DISPOSAL
	14a	7	CHROMATE CONVERSION	800 GALS./2 YRS. (PRIOR TO 1981 540 GALS.)			CONTRACT DISPOSAL
	12		FERRIC CHLORIDE	75 GALS./WK.			COUNTY LANDFILL
	21b 21a 21		WAX  (NOTE: YATES WAX WAS USED BE- TWEEN 1974 & 1975 CONTAIN- ING 40% PCB FILLER)	800 - 900 LBS./WK.  11,000 LBS./ONCE			6,000 LBS TO COUNTY LANDFILL 5,000 LBS TO CONTRACT DISPOSAL
5	21a	CAUSTIC (POTASH)	500 GALS./WK.			1975 SANITARY SEWER DISPOSAL	
21d			900 GALS./2 MOS.			CONTRACT DISPOSAL	
14a			3,600 GALS./YR.			CONTRACT DISPOSAL	

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DUST CONTROL - OILS SPREAD ON GROUND AND ROADS FOR DUST CONTROL

TABLE 4.2 (cont'd)  
**INDUSTRIAL OPERATIONS (Shops)**

Waste Management

4 of 5

SHOP NAME	LOCATION (Bldg. No.)		WASTE MATERIAL	WASTE QUANTITY	METHODS OF TREATMENT, STORAGE & DISPOSAL			
	PRE-1970	1970-1979			1980	1970	1970	1980
INVESTMENT CASTING (CONT'D)	21c	21a	1, 1, 1 TRICHLOROETHANE	150 GALS./MO.	CONTRACT RECYCLE	71 COMMERCIAL SALE		
	21b		1, 1, 1, TRICHLOROETHANE	50 GALS./MO.	CONTRACT RECYCLE	COMMERCIAL SALE		
	21a		FREON 22	150 GALS./WK.	DUST CONTROL	71 RECYCLED	CONTRACT DISPOSAL	72
	21b		METHANOL METALS DUST	75 GALS./WK. 200 LBS./MO.			COMMERCIAL TO SALE	
PRODUCTION AND INVENTORY CONTROL	1843		OUT OF DATE PAINTS	100 GALS./YR.	CONTRACT DISPOSAL AND COUNTY LANDFILL	75		
TURNING SHROUDS AND SEALS	21d	11	SODIUM NITRATE WITH CHROMATE	500 GALS./WK.	SEWER SANITARY	1979 1979 DISPOSAL		
			EDM OIL CONTAMINATED OIL FILTERS	200 GALS./YR. 25/WK.	RECYCLED CONTRACT DISPOSAL OF CONTAMINATED OILS	1979	COUNTY LANDFILL	
MISCELLANEOUS SHOPS			BLOWDOWN (OIL & WATER)	2 GALS./DAY			1979 DRAINS TO GROUND SURFACE (ADJACENT MATERIAL TO LANDFILL)	
AIR COMPRESSOR			PENETRANT	500 GALS./YR.			DUST CONTROL	CONTRACT DISPOSAL
QUALITY CONTROL	11	21	EMULSIFIER	100 GALS./YR.			DUST CONTROL	CONTRACT DISPOSAL

DUST CONTROL - OILS SPREAD ON GROUND AND ROADS FOR DUST CONTROL

TABLE 4.2 (cont'd)  
**INDUSTRIAL OPERATIONS (Shops)**  
 Waste Management

SHOP NAME	LOCATION (BLDG. NO.)		WASTE MATERIAL	WASTE QUANTITY	METHOD(S) OF TREATMENT, STORAGE & DISPOSAL			
	PRESENT	PAST			1950	1960	1970	1980
QUALITY CONTROL (CONT'D) NON-DESTRUCTIVE TESTING (INDT) (CONT'D)			1, 1, 1-TRICHLOROETHANE FIXER SOLUTION DEVELOPER FLUORESCENT PHOSPHOR	100 GALS./YR. 80 GALS./WK. (PRIOR TO MID 1970's) 150 GALS./WK. 60 GALS./WK. 20 LBS./YR.  SMALL QUANTITIES				<p>COMMERCIAL SALE AND CONTRACT DISPOSAL CONTRACT DISPOSAL DISPOSAL 1971 CONTRACT DISPOSAL SAN. SEWER CONTRACT DISPOSAL NO SILVER RECOVERY FOR SILVER RECOVERY SANITARY SEWER SANITARY SEWER SANITARY SEWER CONTRACT DISPOSAL</p>
CHEMICAL TESTING LABORATORIES		14	MISCELLANEOUS CHEMICAL WASTES					

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dust control. Solvents were handled in one of several manners. The majority of the solvents were collected in drums and stored until enough had been accumulated to warrant a contract for its sale or disposal. Some solvents were also known to have been combined with the waste oils and either burned in the fire training pit or sprayed with the oil for dust control. Solid wastes (both hazardous and non-hazardous) were taken to the Kirtland AFB landfill and county landfill (also located on Kirtland AFB property). Some general refuse was incinerated on-site between 1955 and 1962.

In 1967, when the ownership of the plant was transferred to the Air Force, many of the disposal methods were modified. Acids and caustics continued to be neutralized and discharged to the sewers. Oils were stored in tanks on the south end of the plant. The tanks were periodically pumped into a truck which hauled the waste to the nearby Police Honor Farm where the oily waste was sprayed over the roads for dust control. Solvents were handled in manners similar to those of the ACF period. The majority of the solvents were stored in drums until a large enough quantity was accumulated to warrant a disposal or a contract for recycling the waste. Some solvents were combined with the waste oils and sprayed on the roads for dust control. The solid hazardous and non-hazardous wastes continued to be disposed of in the Kirtland and county landfills. Beginning around 1975 the plant began to arrange for contractors to pick up and dispose of the oils as well as the hazardous wastes generated at the facility.

#### HAZARDOUS WASTE STORAGE AREAS

Seven major hazardous waste storage areas have existed at Plant No. 83 (Figure 4.1). Only three of these sites are still in use. The seven sites are discussed below.

##### Hazardous Waste Storage No. 1

The area designated Hazardous Waste Storage No. 1 has been used as a chemical waste storage area since approximately 1954. The site was used primarily as a storage point for waste oils, coolants and some solvents used in the process areas. The area houses several tanks situated on a concrete slab. These include two 1300-gallon fiberglass open topped tanks (referred to as "swimming pool tanks"), and a

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT

# HAZARDOUS WASTE STORAGE AREAS

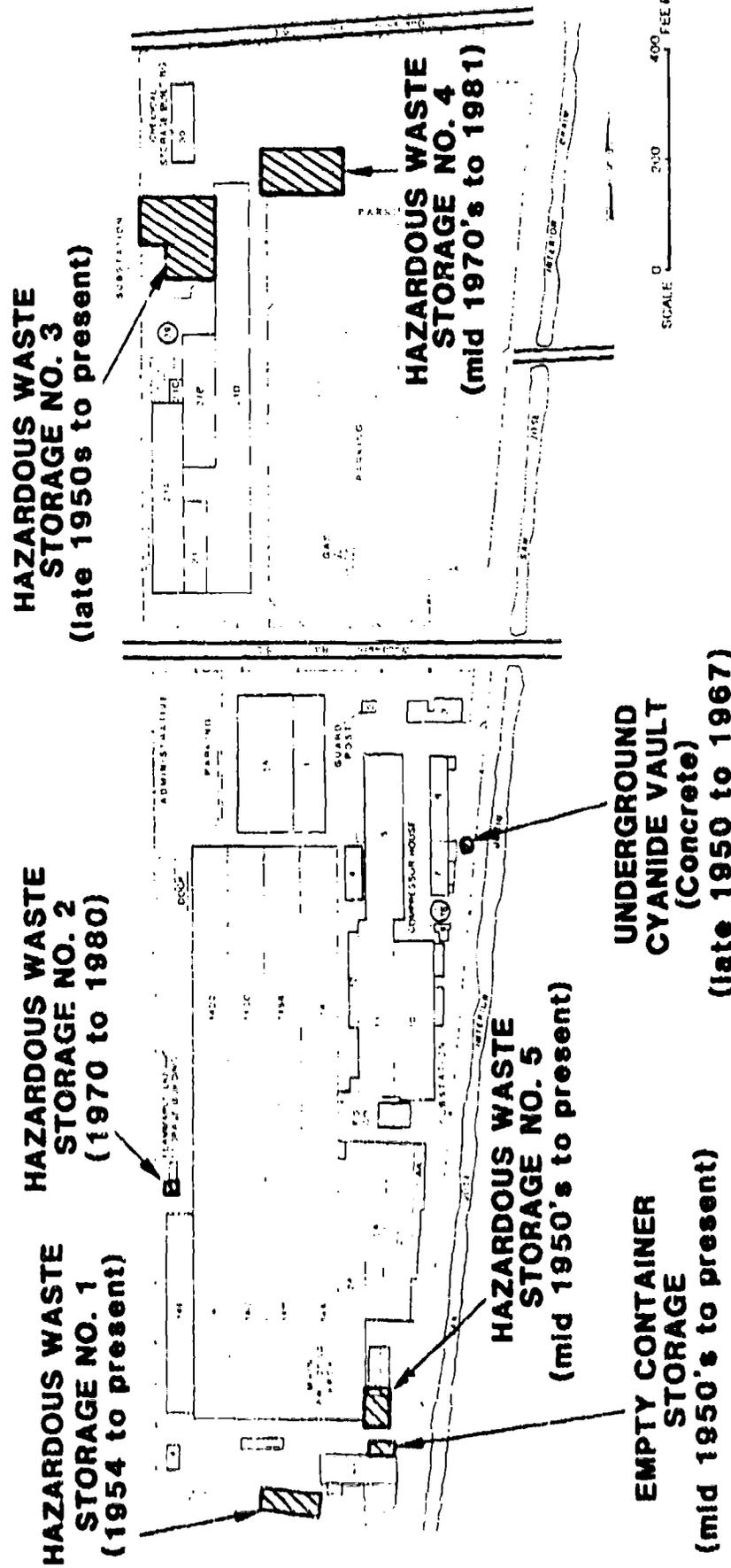


FIGURE 4.1

3400-gallon rectangular steel box (referred to as the "green tank"). Waste oils and coolants have been the principal products stored in the area. The coolant, known as Trimsol, is a water based lubricant used in cutting and grinding machines. A recent analysis of the waste Trimsol detected 37 mg/l of carbon tetrachloride and 2 mg/l of 1,1-dichloroethylene (refer to listing of data in Appendix C-3). Other contaminants previously reported to have been detected in the waste Trimsol include methylene chloride and 1,1,1 trichloroethane.

Until August 1983, waste coolant had been stored in the two 1300-gallon "swimming pool" tanks. In that month, the marginal condition of the tanks required relocation of waste Trimsol storage to the "Green Tank". When the two "swimming pool" tanks were deactivated, the waste coolant (Trimsol) was pumped out of the tank with a vacuum tanker truck and removed for off-site disposal at an approved disposal location. Sludge which had accumulated at the bottom of the tank was shoveled into barrels. The barrels were removed as hazardous waste by contract. The tanks were steam cleaned, allowed to dry, and then covered with polyethylene to prevent accumulation of rainwater in them. The concrete containment basin surrounding the Trimsol tanks was also steam cleaned and the wastewater generated was pumped into a small pump truck and placed into the green waste oil storage tank to await removal as a hazardous waste.

Spillage in the area in and around Hazardous Waste Storage No. 1 was evident from the oily coloration on the concrete and asphalt pads in the vicinity. However, no large scale spills were known to have occurred at this site. Some of the oily coloration in the storage area may be attributed to particular design features at the storage facility. An asphalt lot directly north of the site has been used as a storage area for bins containing the metal turnings generated during various machining processes. These metal turnings are typically coated with Trimsol. The coolant has a tendency to drip to the asphalt pad beneath the bins. Runoff from this area is currently directed to a concrete containment pit surrounding the "swimming pool" tanks and periodically pumped into the green waste oil storage tank. During the recent site visit, the concrete containment pit was observed to contain several inches of rain-fall runoff with a layer of suspected tramp oil floating on the surface.

### Hazardous Waste Storage No. 2

Hazardous Waste Storage No. 2 is located at the south end of Building 27 which is designated the flammable liquids storage building. Since approximately 1970, this section of the building was used to store spent solvents such as MEK and 1,1,1-trichloroethane. No spills were observed or known to have occurred in the area. The building is still used for storage of some flammable materials; however, waste chemicals have not been stored at this site since the early 1980's.

### Hazardous Waste Storage No. 3

Hazardous Waste Storage No. 3 has been an active storage area for waste chemicals since the late 1950's. The area is located just south of Building 30 and west of Building 21D. Presently, the yard is separated into seven segregated areas: flammable waste, caustic waste, oxidize waste, acid waste, 1,1,1 trichloroethane storage, Freon TF storage, other waste storage and empty container storage. Bags of cement are placed around the perimeter of each section to provide containment in the event of spills. The storage area is outside and has a hard-packed dirt base recently covered with approximately six inches of sand. The surface of the ground beneath the sand cover was reported to have been noticeably discolored. The discoloration may have been the result of occasional leakage from the containers in storage or possibly from a previous program of spraying exposed earth areas with waste oil to reduce fugitive dust.

Waste chemicals which have been stored within this area have included (Source: GE Closure Plan, August 1983):

- o 45% Potassium hydroxide solution
- o 22% Potassium hydroxide solution
- o BR-127 adhesive primer
- o Alumitech No. 2
- o 1,1,1-Trichloroethane
- o Ferric chloride solution
- o Inorganic alkaline cleaner solution
- o Chrome seal
- o Alkaline cleaner solution
- o Anocut electrolyte solution

- o Freon TF (Trichlorotrifluoroethane)
- o Waste Paints
- o Nitric nitrad nickel etch waste
- o Phosphoric acid etch waste
- o Sulfuric acid etch waste

Two sets of soil analyses were performed in this area, the first in March 1982 and the second in June 1982 (see Appendix C-2 for sampling locations and soil test results). Both were tested for lead and total hydrocarbons. The first samples were taken near an underground leaded gasoline tank that was removed in 1981 to accommodate plant modification. Five core samples were taken. One core, Sample #1, was not analyzed. The remaining four extended roughly linearly from the tank east into areas which are now Building 21D, a roadway between Building 21D and the North Parking Lot (see Figure C.1 in Appendix C). All of the lead values were below 15 micrograms per gram (ug/g), and all of the hydrocarbons were non-detectable except one which was 191 ug/g in Sample Location #5. The exact cause of the hydrocarbon levels found in Sample #5 is unknown.

The lead levels were above 5 ug/g at sample locations nos. 2, 4 and 5 (NMEID may consider 5 ppm the decontamination criteria), however, the lead in the soil at the sites close to the gas tank is not thought to be due to the underground storage tank. The tank was pressure tested after it was removed from the ground and was certified to be non-leaking. The lead levels may have resulted from the storage of lead turnings reported to have been stored in the area designated Hazardous Waste Storage Area No. 3 during the ACF period prior to 1967 (Source: GE Closure Plan, August 1983).

In the second set of soil samples, two were taken at the eastern boundary of the Hazardous Waste Storage No. 3 adjacent to Building 21D. In addition, three samples were taken to the east of substation (see Figure C.2 in Appendix C). Of the five samples in the area (the sixth was a control outside the plant boundaries), lead values ranged from 25-168 ug/g. Hydrocarbon values ranged from 279-691 ug/l. Again, the exact cause of the hydrocarbon levels found is unknown (Source: GE Closure Plan, August 1983).

#### Hazardous Waste Storage No. 4

Hazardous Waste Storage No. 4 is an area located just east of Building 30 (Chemical Storage Building, located on the north end of the site) in an area which is now an asphalt parking lot. The asphalt cover was not in place at the time the site was used as a waste chemical storage area. Between the mid 1970's and 1981, drums of waste freon and waste 1,1,1 trichloroethane were accumulated in this location. As many as 120 drums of waste were estimated to have been stored on the lot. These chemicals were removed for disposal by a contractor in 1981. It was reported that some small leaks may have occurred while the drums were in storage.

#### Waste Storage Area No. 5 and Empty Container Storage

Waste Storage Area No. 5 and the Empty Container Storage area have been used since the mid 1950's. The two areas are adjacent to one another between Building Nos. 28 and 22 on the south end of the plant site. The waste storage area was used as a collection point for the plant's general refuse and the empty container storage area was used to temporarily store empty drums until they were reused to contain waste chemicals. Some chemical wastes were stored periodically in both areas; consequently, there is a likelihood that minor leakage of chemical waste and oils may have occurred on the asphalt-covered area. Since the area has been covered with asphalt throughout the period it has been used as a storage area, the potential for soil or ground-water contamination occurring as a result of any spills is greatly reduced. However, some minor surface water contamination in the San Jose Drainage Ditch may have occurred as a result of the surface water runoff from the area. These sites are still serving as storage areas for the designated materials.

#### Underground Cyanide Vault

An underground concrete vault was installed during the late 1950's on the southeast corner of Building No. 6. The purpose of this vault was to collect any spillage which may have resulted from the plating vats which were located in Building No. 6. Cyanide solutions were the primary contaminant which the vault was intended to trap. The concrete vault was described as having dimensions of 3'X3'X4'. The vault is capped with a steel cover having the word "Cyanide" welded on the

surface. There were no outlets associated with the vault. The interviews conducted during the site investigation revealed conflicting stories as to whether or not any cyanide wastes entered the vault. An attempt to locate the vault revealed that the area had been covered with asphalt and therefore, an inspection of the vault could not be accomplished during the on-site investigation.

#### SPILLS

Chemical spills which had the potential for contaminating the environment were only known to have occurred in three areas other than the hazardous waste storage areas previously discussed. The three isolated spill areas are depicted in Figure 4.2. Two of the spills occurred in the chemical storage area adjacent to Building 30. One spill involved the rupturing of a 55-gallon drum of 1,1,1 trichloroethane. The spill occurred late in 1982 and was immediately cleaned up. The second spill involved the loss of between 200 and 250 gallons of a caustic cleaner. This spill occurred in 1981 and was also promptly cleaned up. Other small leaks from storage containers were known to have periodically occurred in and around the material storage area. The third isolated spill occurred in 1981 on the east side of Building No. 5. The spill included approximately 55 gallons of potassium hydroxide which overflowed from a concrete vat. The chemical flowed over a concrete drive and some portion of the chemical entered a storm drain. It was estimated that approximately 10 gallons of the caustic material was discharged to the San Jose ditch. The chemical was immediately neutralized in the ditch with phosphoric acid to meet the New Mexico water quality standards. No long term contamination is expected to have resulted from any of these isolated spills due to the small quantities included and the clean up efforts immediately instituted.

The plant has several PCB transformers and capacitors located throughout the complex. Several small leaks have occurred over the years. All of the leaks have been contained and cleaned up. There are no indications of PCB's having been emitted to the environment from the plant.



### DISCHARGE AREAS

Three discharge areas have been identified at the plant site. The earliest of these waste discharge areas was the San Jose Drain. During the early ACF period (1952-1955), prior to the plant's connection to the city sewer system, many of the industrial wastes were allowed to discharge directly into the San Jose Drain through direct outfalls from the process areas. Since the activity level at the plant was very low prior to the expansion which began in the mid 1950's, only small quantities of industrial wastes were directly discharged to the San Jose Drain. Typical of the types of wastes which were known to have been released into the ditch included plating solutions, etching solutions, acids, caustic cleaners and various solvents. Many of the acid and caustic solutions were neutralized prior to their discharge. After the connection to the city sewer system was completed, most discharging of chemical waste directly to the drain ceased. In recent years, many of the old outfall lines have been plugged to prevent any accidental discharges into the drain. Surface runoff from the plant site is however, still discharged to the drain via storm drain outfalls.

During the years preceding the city sewer connection, sanitary wastes were treated in septic tanks and leached to the ground in a drain field located on the site which now supports Buildings 14a, 14b and 14c (Figure 4.2). No contamination is expected to have occurred as a result of these septic tanks. Since approximately 1955, all sanitary wastes have been discharged to the City of Albuquerque sewage treatment plant.

Between 1979 and 1980, waste oil consisting of spent Trimsol and miscellaneous lubricating oils were sprayed over the North Parking Lot and possibly parts of Hazardous Waste Storage No. 3. The intent of the oil discharge was to control fugitive dust on the plant site. It was reported that approximately six applications of oil occurred during the one-year period. An analysis of a soil sample collected from the parking lot only detected trace concentrations of various metals and no organic contaminants (see Appendix C-3 for complete listing of data). An organic scan was also conducted on a sample of waste Trimsol which was the primary constituent of the oil sprayed on the parking lot. The results of this analysis revealed only two organic contaminants: carbon

tetrachloride (37 mg/l) and 1,1 dichloroethylene (2 mg/l) (see Appendix C-3 for complete listing of data).

A third discharge area still in use at the plant is located adjacent to the compressor house (Building No. 9, Figure 4.2). The discharge area consists of a minor amount (less than 1 gallon/week) of oil discharged with the compressor blowdown. The blowdown is presently discharged onto an absorbent material where the oil and water is trapped. The absorbent material is periodically disposed of with the general refuse.

#### SUPPLEMENTAL INDUSTRIAL ACTIVITIES

##### Fuels Management

An underground gasoline storage tank (leaded gasoline) was located on the north side of Building 21D. The tank was installed during the early 1960's and deactivated and removed from the ground in 1981. The tank was pressure tested after it was removed from the ground and was certified to be non-leaking. In 1971 a 3,500-gallon above ground gasoline storage tank was installed adjacent to Building 24. No leaks or spills are reported to have occurred around the new tank.

##### Pest Management

Pest management around the plant site has been performed under a contract by outside vendors. The vendor is responsible for cleaning equipment and discarding empty containers off plant property. No pesticide spills are known to have occurred on the plant site.

##### Heat and Power Production

The plant is heated by natural gas, therefore, no fuel storage tanks are required and no waste products are generated in heating the plant. The plant's electric power is purchased from the regional power company.

#### EVALUATION OF PAST DISPOSAL ACTIVITIES AND FACILITIES

The review of past operation and maintenance functions and past waste management practices at Air Force Plant No. 83 has resulted in the identification of 13 sites which were initially considered as areas of concern with regard to the potential for contamination, as well as the potential for the migration of contaminants. These sites were evaluated

using the Decision Tree Methodology referred to in Figure 1.1. Those sites which were considered as not having a potential for contamination were deleted from further consideration. Those sites which were considered as having a potential for the occurrence of contamination and migration of contaminants were further evaluated using the Hazard Assessment Rating Methodology (HARM). Table 4.3 identifies the decision tree logic used for each of the areas of initial concern.

Based on the decision tree logic, 8 of the 13 sites originally reviewed were not considered to warrant evaluation using the Hazard Assessment Rating Methodology. The rationale for omitting these eight sites from HARM evaluation is discussed below:

Hazardous Waste Storage Area No. 2 -	No spills known to have occurred at the site.
Hazardous Waste Storage Area No. 5 -	Only minor spills suspected, area is underlain by asphalt.
Empty Container Storage -	Only minor spills suspected, area is underlain by asphalt.
Septic Tank Drain Field -	Drain field only received sanitary wastes.
Air Compressor Blowdown -	Oil discharge (<1 gallon/wk) contained and properly disposed.
1,1,1 Trichloroethane Spill -	Small spill (approx. 55-gallon), contained and immediately cleaned up.
Caustic Clearer Spill -	Small spill, (200-250 gallons) contained and cleaned up.
Caustic Spill -	Small spill (approx. 55-gallons), neutralized.

The remaining five sites identified in Table 4.3 were evaluated using the Hazard Assessment Rating Methodology. The HARM process takes into account characteristics of potential receptors, waste characteristics, pathways for migration, and specific characteristics of the site related to waste management practices. The details of the rating procedures are presented in Appendix E. Results of the assessment for the sites are summarized in Table 4.4. The HARM system is designed to

TABLE 4.3  
SUMMARY OF DECISION TREE LOGIC FOR AREAS OF INITIAL  
ENVIRONMENTAL CONCERN AT AIR FORCE PLANT NO. 83

Site Description	Potential for Contamination	Potential for Contaminant Migration	HARM Rating
Hazardous Waste Storage No. 1	Yes	Yes	Yes
Hazardous Waste Storage No. 2	No	No	No
Hazardous Waste Storage No. 3	Yes	Yes	Yes
Hazardous Waste Storage No. 4	Yes	Yes	Yes
Hazardous Waste Storage No. 5	Yes	Yes	No
Empty Container Storage	Yes	No	No
Underground Cyanide Vault	Yes	Yes	Yes
Septic Tank Drain Field	No	No	No
Air Compressor Blowdown	Yes	No	No
1,1,1 Trichloroethane Spill	Yes	No	No
Caustic Cleaner Spill	Yes	No	No
Caustic Spill	Yes	No	No
North Parking Lot (Oiled Area)	Yes	Yes	Yes

indicate the relative need for follow-on action. The information presented in Table 4.4 is intended for assigning priorities for further evaluation of the Air Force Plant No. 83 waste storage areas (Chapter 5, Conclusions, and Chapter 6, Recommendations). The rating forms for the individual waste storage sites at Air Force Plant No. 83 are presented in Appendix F. Photographs of some of the key disposal sites are included in Appendix D.

TABLE 4.4

## SUMMARY OF HARM SCORES FOR POTENTIAL CONTAMINATION SOURCES

Rank	Site Name	Receptor Subscore	Waste Character- ization Subscore	Pathways Subscore	Waste Management Factor	Overall Total Score
1	North Parking Lot	80	80	41	.95	64
2	Hazardous Waste Storage No. 1	80	60	46	1.0	62
3	Hazardous Waste Storage No. 3	80	60	41	1.0	60
4	Hazardous Waste Storage No. 4	80	50	41	.95	54
5	Underground Cyanide Vault	80	40	41	0.10	51

CHAPTER 5  
CONCLUSIONS

The goal of the IRP Phase I study is to identify sites where there is potential for environmental contamination resulting from past waste disposal practices and to assess the probability of contaminant migration from these sites. The conclusions given below are based on field inspections, review of records and files, review of the environmental setting, and interviews with plant personnel, past employees, and state government employees. Table 5.1 contains a list of the potential contamination sources identified at Air Force Plant No. 83 and a summary of the HARM scores for those sites. Additional sites originally considered as potential contamination sources did not have sufficient data to warrant further consideration and were not evaluated using the HARM system. Information pertaining to those sites listed on Table 5.1 is summarized below and the follow-on recommendations are presented in Chapter 6.

NORTH PARKING LOT

There is sufficient evidence that the North Parking Lot site has potential for creating environmental contamination and a follow-on investigation is warranted. The North Parking Lot was an exposed dirt lot prior to 1981. Between 1979 and 1980 waste oils were applied to the surface of the lot to reduce fugitive dusts. The waste oil consisted primarily of Trimsol and other lubricants used at the plant. Analysis of the waste oil detected several solvent contaminants. Soil samples collected from the area detected only trace concentrations of heavy metals and no organic contaminants. Surface-water runoff from the site would flow east toward the San Jose Drain. Natural surface soils consist of loam and clay loam with relatively low permeability. Ground water is usually present at sixteen feet below ground. Clay is present between approximately two and eight feet deep, thus low permeability zones would be expected between the site and the water table. The site received a HARM score of 64.

TABLE 5.1

SITES EVALUATED USING THE HAZARD ASSESSMENT  
RATING METHODOLOGY  
AIR FORCE PLANT NO. 83

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Rank	Site	Operating Period	Final HARM Score
1	North Parking Lot	1979-1980	64
1	Hazardous Waste Storage No. 1	1954-Present	62
2	Hazardous Waste Storage No. 3	Late 1950's to Present	60
4	Hazardous Waste Storage No. 4	Mid 1970's-1981	54
5	Underground Cyanide Vault	Mid 1950's to Late 1970's	51

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#### HAZARDOUS WASTE STORAGE NO. 1

There is sufficient evidence that the Hazardous Waste Storage No. 1 site has potential for creating environmental contamination and a follow-on investigation is warranted. Hazardous Waste Storage No. 1 has been used as a chemical waste storage area since approximately 1954. The principal waste materials stored at the site were waste oils, coolants (Trimsol) and some solvents. The area is located on the south end of the plant and houses several different types of storage tanks. All of the tanks are situated on a concrete slab. Two of the larger tanks used for storing waste Trimsol have recently been deactivated and cleaned. The occurrence of spillage in the area was evident from the discoloration of the concrete and asphalt in the vicinity of the waste storage area, as well as the Trimsol contamination observed on the surface of the storm water contained in the concrete pit surrounding the Trimsol tanks. Surface-water runoff at this site would flow south and east to the San Jose Drain. Natural surface soils consist of loam and clay loam with relatively low permeability. Ground water is usually present at twenty feet below ground. Subsurface sediments consist of sand with minor amounts of clay, thus the subsurface permeability would be expected to be higher than the surface soil zone permeability. The site received a HARM score of 62.

#### HAZARDOUS WASTE STORAGE NO. 3

There is sufficient evidence that the Hazardous Waste Storage No. 3 site has potential for creating environmental contamination and a follow-on investigation is warranted. Hazardous Waste Storage No. 3 has been an active chemical waste storage area since the late 1950's. The site is located on the north side of the plant just south of Building 30. Essentially all of the chemical wastes generated at the plant have been stored for one period or another at this site. Until early 1983, the chemicals were stored in drums or other smaller containers directly on a hard-packed dirt base. In 1981, the site was covered with approximately six inches of sand. During the study, it was indicated that the dirt base had been discolored. The discoloration may have been a result of past leaks and spills in the area or from suspected applications of waste oil to reduce fugitive dust. Soil samples were collected in and

around the site. The samples were tested for hydrocarbons and lead. Hydrocarbon concentrations ranged from non-detectable to 191 ug/g. Lead concentrations ranged from 5 to 168 ug/g. Surface-water runoff from this site would flow east toward the San Jose Drain. Natural surface soils consist of clay loam with relatively low permeability. Ground water is usually present at sixteen feet below ground. Clay is present between approximately two and seven feet deep, thus low permeability zones would be expected between the site and the water table. The site received a HARM score of 60.

#### HAZARDOUS WASTE STORAGE NO. 4

There is sufficient evidence that the Hazardous Waste Storage No. 4 site has potential for creating environmental contamination and a follow-on investigation is warranted. Hazardous Waste Storage No. 4 is situated on the north end of the plant site in an area which now serves as the North Parking Lot. Between the mid 1970's and 1981, drums of waste freon and waste 1,1,1 trichloroethane were accumulated in this location. It was estimated that as many as 120 drums were stored on the bare earth lot. The drums were removed for contract disposal in 1981. It was reported that some small leaks may have occurred while the drums were in storage. However, since both solvents are highly volatile, it is unlikely that minor leakage would have caused any long term contamination. The majority of this past storage area is now paved. Surface-water runoff from this site would flow east toward the San Jose Drain. Natural surface soils consist of loam and clay loam with relatively low permeability. Ground water is usually present at sixteen feet below ground. Clay is present between approximately two and eight feet deep, thus low permeability zones would be expected between the site and the water table. The site received a HARM score of 54.

#### UNDERGROUND CYANIDE VAULT

There is sufficient evidence that the Underground Cyanide Vault has potential for creating environmental contamination and a follow-on investigation is warranted. The Underground Cyanide Vault, located on the southeast corner of Building No. 6, was installed in the late 1950's to collect spillage from plating vats located in Building No. 6. The

primary purpose of the vault was to prevent the release of cyanide solutions utilized in the plating operations. The concrete vault was described as having walls with dimensions of 3'x3'x4' and a steel cover. The vault was reported to have no outlets. The interviews conducted during the site investigation revealed conflicting stories as to whether or not any cyanide wastes entered the vault. The cover of the vault is located beneath a paved area and therefore, could not be inspected during the site visit. The natural surface soils consist of clay loam with relatively low permeability. Ground water is usually present at eighteen feet below ground. Clay exists between approximately three and seven feet deep, thus low permeability zones would be expected between the vault and the water table. The site received a HARM score of 51.

#### GROUND-WATER CONTAMINATION IN THE SAN JOSE AREA OF THE SOUTH VALLEY OF ALBUQUERQUE

USAF Plant No. 23 is located in the general area of an EPA designated ground-water contamination problem in the San Jose Area of the South Valley of Albuquerque. City wells SJ3 and SJ6 are not being used due to organic contamination. The plant has been named by EPA as one of the many potentially responsible parties based on an Order of Consent issued under the authority of Section 106 of CERCLA. Several potentially responsible parties are conducting or have completed conducting an investigation of the ground-water conditions underlying their respective property. Organic compounds used at the plant and at other industrial sites in the area have been found in the plant monitoring wells and in wells SJ3 and SJ6. Seven organic contaminants have been detected in the monitoring wells on the plant. The concentration of one organic contaminant, 1,1-dichlorethane, was found to be above the NMWQCC Human Health Standard.

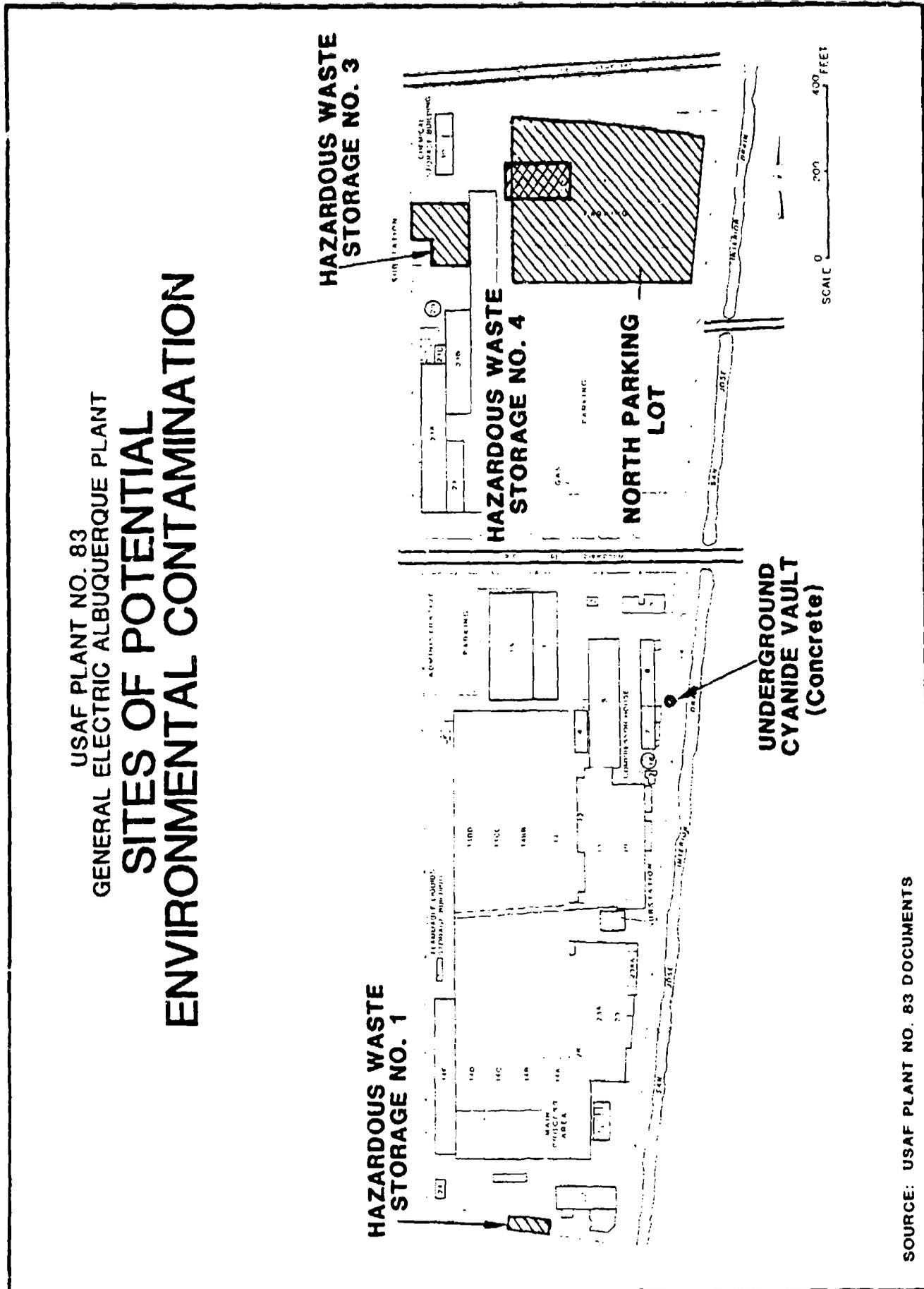
Hydrogeologically, the plant is located in an area which is underlain by clay layers which are not present in areas southeast of the city wells SJ3 and SJ6. These clay layers act as low permeability zones which would tend to slow the vertical migration of ground water from the shallow water-table aquifer to the deeper regional water-table aquifer from which wells SJ3 and SJ6 withdrew water while pumping. Data presently available does not allow the complete evaluation of the ground-water conditions underlying the plant.

CHAPTER 6  
RECOMMENDATIONS

PHASE II MONITORING

Five sites were identified at Air Force Plant No. 83 as having the potential for environmental contamination (Figure 6.1). These sites have been evaluated using the HARM system which assesses their relative potential for contamination. As a result of the information collected during the study, it was determined that additional data and/or information concerning each of the sites would be required in order to clearly ascertain whether or not the site was contributing to any form of environmental contamination. Therefore, the following recommendations have been developed for each of the sites. The recommended actions are generally one-time sampling programs to determine if contamination does exist at the site. If contamination is identified, the sampling program may need to be expanded to define the extent of contamination. Ground-water monitoring wells should be installed and sampled in both the shallow water-table aquifer and the regional water-table aquifer. The wells should be constructed of 2-inch diameter stainless steel screen and casing. Stainless steel is recommended due to the potential problem of PVC screen and casing contributing organics to the well water and due to the relatively low values of organic contaminants found to date in the plant monitoring wells. Stainless steel would improve the accuracy of the well sample analyses. During the well installations readings with an organic vapor analyser or similar equipment should be made. Wells placed into the shallow water-table aquifer should be approximately 25 feet deep. The wells placed into the regional water-table aquifer should be approximately 150 feet deep. The complete EPA designated list of priority pollutants except asbestos should be analyzed in each sample. The recommended monitoring program for Phase II is summarized in Table 6.1.

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT  
**SITES OF POTENTIAL  
ENVIRONMENTAL CONTAMINATION**



SOURCE: USAF PLANT NO. 83 DOCUMENTS

TABLE 6.1  
RECOMMENDED MONITORING PROGRAM FOR PHASE II  
USAF PLANT NO. 83

Ranking Number	Site Name	Rating Score	Recommended Monitoring	Sample Analytes	Comments
1	North Parking Lot	64	Conduct shallow soil coring and sampling; coordinate placement of wells for this site with Hazardous Waste Storage No. 4; sample existing well SV15.	Complete priority pollutants except asbestos.	Continue monitoring if sampling indicates contamination. Additional wells may be necessary to assess extent of contamination.
2	Hazardous Waste Storage No. 1	62	Conduct shallow soil coring and sampling; install and sample 1 upgradient and 1 downgradient well in the shallow water-table aquifer and 1 upgradient and 1 downgradient well in the regional water-table aquifer and sample existing well SV8.	Complete priority pollutants except asbestos.	Continue monitoring if sampling indicates contamination. Additional wells may be necessary to assess extent of contamination.
3	Hazardous Waste Storage No. 3	60	Conduct shallow soil coring and sampling; install and sample 1 upgradient and 2 downgradient wells in the shallow water-table aquifer and 1 upgradient and 2 downgradient wells in the regional water-table aquifer.	Complete priority pollutants except asbestos.	Continue monitoring if sampling indicates contamination. Additional wells may be necessary to assess extent of contamination.
4	Hazardous Waste Storage No. 4	54	Conduct shallow soil coring and sampling; coordinate placement of wells for this site with North Parking Lot; sample existing well SV15.	Complete priority pollutants except asbestos.	Continue monitoring if sampling indicates contamination. Additional wells may be necessary to assess extent of contamination.
5	Underground Cyanide Vault	51	Inspect vault for leakage; if leakage has occurred install and sample 1 downgradient well in the shallow water-table aquifer; inspect existing wells B1 and/or B2 by downhole geophysical techniques and sample as upgradient wells; if contamination is found in shallow water-table aquifer, install and sample 1 downgradient well in regional water-table aquifer; sample existing well SV9.	pH, Total Dissolved Solids, Cyanide, KP Toxicity Metals.	Continue monitoring if sample indicates contamination. Additional wells may be necessary to assess extent of contamination.

- 1) North Parking Lot - At least ten soil core samples should be collected from the parking lot. The samples should be analyzed for the parameters on the complete EPA designated priority pollutant list except asbestos. Soil pH should also be tested. The core samples should be approximately 3 feet in depth.

One upgradient and two downgradient wells should be installed in the shallow water-table aquifer. One upgradient and two downgradient wells should be installed in the regional water-table aquifer. The wells will also serve as monitoring wells for Hazardous Waste Storage No. 4. Samples from the wells and existing well SV15 should be analyzed for the parameters on the complete EPA designated priority pollutant list except asbestos.

- 2) Hazardous Waste Storage No. 1 - At least ten soil core samples should be collected in the areas adjacent to the storage area to determine whether any soil or asphalt contamination may have resulted from runoff from the site. The samples should be collected south of the "green tank" and "swimming pool" tanks along the facility fence line. Samples of soil and asphalt should also be collected on the east and west sides of the storage area. Samples should be collected in the areas which have any visual evidence of oil contamination. One control core sample should be collected from an area close to the test area but away from hazardous waste or industrial activities. The core samples should be a minimum of 1 foot in depth and at least four samples including the control should be 3 feet in depth. The samples should be analyzed for the parameters on the complete EPA designated priority pollutant list except asbestos. Soil pH should also be tested.

One upgradient and one downgradient well should be installed in the shallow water-table aquifer. One upgradient and one downgradient well should be installed in the regional water-table aquifer. Samples from the wells and existing well SV8 should be analyzed for the parameters on the complete EPA designated priority pollutant list except asbestos.

- 3) Hazardous Waste Storage No. 3 - At least ten core samples should be collected in the areas within and adjacent to the storage area to determine whether any soil, sand or asphalt contamination exists at the site, as well as whether any contamination may have migrated from the site. The samples should be analyzed for the parameters on the complete EPA designated priority pollutant list except asbestos. Soil pH should also be tested. The core samples should be a minimum of 1 foot in depth and at least four samples should be 3 feet in depth.

One upgradient and two downgradient wells should be installed in the shallow water-table aquifer. One upgradient and one downgradient well should be installed in the regional water-table aquifer. Samples from the wells should be analyzed for the parameters on the complete EPA designated priority pollutant list except asbestos.

- 4) Hazardous Waste Storage No. 4 - Hazardous Waste Storage No. 4 is located within the North Parking Lot and therefore, the sampling program for this site will be combined with the sampling program for the North Parking Lot. At least two of the ten soil core samples for the North Parking Lot should be taken within the Hazardous Waste Storage No. 4. These two core samples should be 5 feet deep.

The ground-water monitoring wells for this site will be the same wells as for the North Parking Lot. Samples from the wells and existing wells SV15 should be analyzed for the parameters on the complete EPA designated priority pollutant list except asbestos.

- 5) Underground Cyanide Vault - During the site investigation the precise location of the underground vault could not be determined because the area had been paved. Further investigations should be conducted to locate the vault. A metal detector may be useful to identify the location of the vault's steel cover. When the vault

is located, the cover should be removed to determine whether any materials are still contained within the concrete chamber. If any materials are found, they should be removed and analyzed for cyanide and the EP Toxicity metals. The interior of the chamber should also be inspected to determine whether any leakage was evident.

If leakage has occurred, one downgradient monitoring well should be installed into the shallow water-table aquifer. Wells B1 or B2 could be used as upgradient wells. These wells would need to be geophysically logged to determine the exact screen settings prior to use. If cyanide contamination is confirmed in the shallow water-table aquifer, one downgradient well should be installed in the regional water-table aquifer. The upgradient well for either of the other two sites (Hazardous Waste Storage No. 1 or Hazardous Waste Storage No. 3) could be used as the upgradient well for this site in the regional water-table aquifer. Samples from the well and existing wells should be analyzed for pH, total dissolved solids, cyanide and EP toxicity metals.

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APPENDIX A  
BIOGRAPHICAL DATA

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Mark I. Spiegel	A-3
H. Dan Harman, P.G.	A-6

Biographical Data

R. E. Mayfield, P.E.

Civil/Environmental Engineer

Education

B.S. Civil Engineering, New Mexico State University, 1976.  
M.S.C.E., Sanitary Engineering, New Mexico State University, 1978.

Professional Affiliations, Honors and Awards

Registered Professional Engineer (Georgia, #13254)  
Georgia Water Control Association  
Water Pollution Control Federation  
Chi Epsilon  
Tau Beta Pi

Experience Record

1972 - 1973 National Soils Service, Inc., Houston, TX  
1978 - Date Engineering-Science, Inc., Atlanta, GA

Pertinent Experience

Mr. Mayfield has over four years project experience while working for Engineering-Science in liquid and solid waste management and spill control planning for both governmental and industrial clients. His experience includes planning, conducting and managing both investigative and design type projects. Specific management and engineering experience is highlighted below.

- o Project engineer for identifying potential chemical spill situations and developing effective spill prevention, control and countermeasures (SPCC) plans for three industrial clients.
- o Project Manager for an investigation of an abandoned hazardous waste landfill site. The project was sponsored by an industrial firm which had utilized the site during its active life. Project objectives included definition of site geology, hydrogeology and hydrology. The project resulted in collection of sufficient information for development of a remedial action plan and detailed design of closure procedures. Recommendations were made on the necessary steps to secure the site.
- o Project Engineer on an Air Force Phase I IRP project conducted at a base located in the southwestern U. S. Responsibilities included investigation of closed on-base landfill disposal sites.
- o Project Engineer on a hazardous waste management study for a major plastics manufacturing company. Responsibilities included identification and investigation of a number of operating commercial hazardous waste landfills and incinerators.

R. E. Mayfield, P.E. (Continued)

Recommendations were developed concerning the client's best disposal alternatives based on economic, technical, and regulatory considerations.

- o Project Engineer involved in a detailed technical critique of a proposed hazardous waste disposal landfill design. Site soils and hydrologic conditions were examined as well as the proposed civil design. Facility design and site conditions were compared to RCRA 3004 Guidelines as well as regulations issued by several state agencies.

#### Publications and Presentations

"LFDESIGN; A Computer Model to Design and Cost Disposal Facilities for Fossil Energy Wastes," Summary Review of Fossil Energy Waste Sampling and Characterization Program, Laramie Energy Technology Center, Laramie, Wyoming, August 1982.

"Development of Preliminary Hazardous and Non-Hazardous Wastes Landfill Designs using Computer Methods", D.O.E. RCRA Utility Advisory Task Force Meeting, Atlanta Georgia, February 1982.

"Study of Solid Waste Management Alternatives for the City of Murray, Kentucky," prepared for Office of Solid Waste Management, U.S. EPA, Region IV, Atlanta, Georgia, October 1979.

"Technical Assistance to the City of Birmingham, Alabama," prepared for Office of Solid Waste Management, U.S. EPA, Region IV, Atlanta, Georgia, October 1980.

"Technical Assistance to the City of Aiken, South Carolina," prepared for Office of Solid Waste Management, U.S. EPA, Region IV, Atlanta, Georgia, December 1980.

"Textile Industry/EPA Technical Study of July 1974 BATEA Effluent Standards," prepared for Industrial Processes Division, Industrial Environmental Research Lab, U.S. EPA, January 1980 (Coauthors, E. J. Schroeder and T. N. Sargent).

"Expansion and Improvement of the STPDESIGN Computer Program System," M.S. Thesis, New Mexico State University, Las Cruces, New Mexico, 1978.

"State of the Art of Computer Programming in Sewage Treatment Plant Design," A.S.C.E. Conference on Computing in Civil Engineering, Atlanta, Georgia, June 1978 (Coauthors, W. A. Barkely, R. D. Hill, and T. M. Shoemaker).

#10

## Biographical Data

MARK I. SPIEGEL

Environmental Scientist

Personal Information

Date of Birth: 11 April 1954

Education

B.S. in Environmental Health Science (Magna cum laude), 1976,  
University of Georgia, Athens, Georgia  
Limnology and Environmental Biology, University of Florida,  
Gainesville, Florida  
MBA 1983, Marketing, Georgia State University

Professional Affiliations

American Water Resources Association  
Technical Association of the Pulp and Paper Industry

Experience Record

1974-1976 U.S. Environmental Protection Agency, Surveillance and Analysis Division. Cooperative Student. On assignment to Air Surveillance Branch, participated in ambient air study in Natchez, Mississippi, and operated unleaded fuel sampling program for Southeast National Air Surveillance Network. For Engineering Branch, participated in NPDES compliance monitoring of industrial facilities throughout the southeast; operation and maintenance studies of municipal waste treatment facilities; and post-impoundment study of West Point Reservoir, West Point, Georgia. Participated in industrial bioassay studies for the Ecological Branch.

1977-Date Engineering-Science. Environmental Scientist. Responsible for the conduct of water and wastewater sampling programs and analyses, quality control, laboratory process evaluations, and evaluation of other environmental assessment data. Conducted leachate extraction studies of sludges produced at a large organic chemicals plant to define nature of sludges according to the Resource Recovery and Conservation Act Guidelines. Involved in laboratory quality assurance program for the analysis of water samples used in a stream modeling project. Conducted a water quality modeling study for Amerada Hess Corporation to determine the assimilative capacity of

Mark I. Spiegel (Continued)

a stream receiving effluent from a southern Mississippi refinery.

Participated in bench-scale industrial treatability studies conducted for the American Textile Manufacturers Institute and Eli Lilly Pharmaceuticals in Mayaguez, Puerto Rico, and in carbon adsorption studies for an American Cyanamid chemical plant and Union Carbide Agricultural Products Division.

Involved in various aspects of several industrial environmental impact assessments including preliminary planning for a comprehensive study for St. Regis Paper Company on a major pulp and paper mill expansion project. Assisted in preparation of third-party EIS for EPA and Mobil Chemical Company concerning a proposed 16,000-acre phosphate mining and beneficiation facility. Developed an EIA prior to construction of a pulp and paper complex by the Weyerhaeuser Company in Columbus, Mississippi, which included preparation of a separate document for the Interstate Commerce Commission concerning the construction of a railroad spur to serve the complex. Also involved in formulating the water quality, water resource and socio-economic aspects of an environmental impact assessment for International Paper Company. Participated in large scale site evaluation to determine the suitability and environmental permitting requirements of a site for an east coast brewery for the Adolph Coors Company. Participated in a study to evaluate various options for developing a large parcel of land in the coastal section of North Carolina. The study involved evaluating both the market potential and environmental constraints of various options for development such as timber harvesting, peat mining, corporate farming and aquaculture.

Project Manager. Conducted comprehensive process evaluation of an 80 mgd wastewater treatment system for Weyerhaeuser Company. Responsible for a study to determine the leaching characteristics of sludges for a paint manufacturing facility for RCRA compliance. Also managed study for development of a solid waste management plan for a ceramic pottery manufacturer in northern Alabama which included evaluating surface and ground-water contamination potential from existing disposal site and assisting manufacturer in developing a disposal program acceptable to state agencies.

Mark I. Spiegel (Continued)

Participated as project team member for Phase I Installation Restoration Program projects for the Department of Defense. Studies were conducted at twelve Air Force bases to identify past hazardous waste disposal practices that could result in migration of contaminants and to recommend priority sites requiring further investigation.

Developed an Environmental Audit Manual for a pharmaceutical company. The purpose of the audit manual was to aid the company in identifying areas where a particular facility may not comply with Federal and state environmental regulations.

10/83

Biographical Data

H. DAN HARMAN, JR.  
Hydrogeologist

Personal Information

Date of Birth: 7 December 1948

Education

B.S., Geology, 1970, University of Tennessee, Knoxville, TN

Professional Affiliations

Registered Professional Geologist (Georgia NO.569)  
National Water Well Association (Certified Water Well Driller  
No. 2664)  
Georgia Ground-Water Association

Experience Record

- 1975-1977 Northwest Florida Water Management District, Havana, Florida. Hydrogeologist. Responsible for borehole geophysical logger operation and log interpretation. Also reviewed permit applications for new water wells.
- 1977-1978 Dixie Well Boring Company, Inc., LaGrange, Georgia. Hydrogeologist/Well Driller. Responsible for borehole geophysical logger operation and log interpretation. Also conducted earth resistivity surveys in Georgia and Alabama Piedmont Provinces for locations of water-bearing fractures. Additional responsibilities included drilling with mud and air rotary drilling rigs as well as bucket auger rigs.
- 1978-1980 Law Engineering Testing Company, Inc., Marietta, Georgia. Hydrogeologist. Responsible for ground-water resource evaluations and hydrogeological field operations for government and industrial clients. A major responsibility was as the Mississippi Field Hydrologist during the installation of both fresh and saline water wells for a regional aquifer evaluation related to the possible storage of high level radioactive waste in the Gulf Coast Salt Domes.
- 1980-1982 Ecology and Environment, Inc., Decatur, Georgia. Hydrogeologist. Responsible for project management of hydrogeological and geophysical investigations at uncontrolled hazardous waste sites. Also prepared Emergency Action Plans and Remedial Approach Plans for U.S. Environmental Protection Agency. Additional

H. Dan Harman, Jr. (Continued)

responsibilities included use of the MITRE hazardous ranking system to rank sites on the National Superfund List.

1982-1983 NUS Corporation, Tucker, Georgia. Hydrogeologist. Responsible for project management of hydrogeological and geophysical investigations at uncontrolled hazardous waste sites.

1983-Date Engineering-Science, Inc., Atlanta, Georgia. Hydrogeologist. Responsible for hydrogeological evaluations during Phase I Installation Restoration Program projects for the Department of Defense.

Publications and Presentations

"Geophysical Well Logging: An Aid in Georgia Ground-Water Projects," 1977, coauthor: D. Watson, The Georgia Operator, Georgia Water and Pollution Control Association.

"Use of Surface Geophysical Methods Prior to Monitor Well Drilling," 1981. Presented to Fifth Southeastern Ground-Water Conference, Americus, Georgia.

"Cost-Effective Preliminary Leachate Monitoring at an Uncontrolled Hazardous Waste Site," 1982, coauthor: S. Hitchcock. Presented to Third National Conference on Management of Uncontrolled Hazardous Waste Sites, Washington, D.C.

"Application of Geophysical Techniques as a Site Screening Procedure at Hazardous Waste Sites," 1983, coauthor: S. Hitchcock. Proceedings of the Third National Symposium and Exposition on Aquifer Restoration and Ground-Water Monitoring, Columbus, Ohio.

APPENDIX B

LIST OF INTERVIEWEES

APPENDIX B

LIST OF INTERVIEWEES

<u>Most Recent Position</u>	<u>Years of Service</u>
1. Environmental Protection Engineer	<1
2. Manager of Employee and Community Relations	7
3. Supervisor of Safety and Security	5
4. Truck Driver	27
5. Waste Collector	<1
6. Maintenance Manager (retired)	25
7. Manager, Manintenance and Plant Engineering	29
8. Truck Driver	26
9. Truck Driver	27
10. Manager, Material Services	25
11. Manager, Non-Destructive Testing	23
12. ACF Plant Superintendent	14
13. ACF Plant Engineer	14
14. Manager, Quality Control Laboratory	22
15. Purchasing Agent	27
16. Chemical Engineer Quality Control	26
17. Supervisor Lift Truck Operations	28
18. Buyer, Chemical Products	15
19. Process Engineer, Plating	15
20. Manager of Safety Branch	12
21. Manager of Manufacturing	25

## OUTSIDE AGENCY CONTACTS

<u>Agency</u>	<u>Contact</u>
City of Albuquerque, Water Resources Dept., Albuquerque, NM; Assistant Systems Planning Engineer; (505) 766-7354	Brian Pirooz
City of Albuquerque, Water Systems Division, Albuquerque, NM; Division Head; (505) 766-7100	Sam Cummings
City of Albuquerque, Wastewater Treatment Plant, Albuquerque, NM; Maintenance Superintendent; (505) 766-7955	George Holley
New Mexico Department of Game and Fish, Santa Fe, NM; (505) 827-7882	Publication Clerk
New Mexico Health and Environment Dept, Environmental Improvement Div., Water Pollution Control Bureau, Santa Fe, NM; Geologist; (505) 984-0020	Dennis McQuillan
New Mexico Health and Environment Dept, Water Quality Control Commission, Santa Fe, NM; (505) 827-5271	Publication Clerk
New Mexico State Engineers Office Albuquerque, NM; Engineer; (505) 841-6323	Jack Reed
New Mexico State Engineer Office, Water Use and Reports Section, Santa Fe, NM; Section Head; (505) 827-6110	Robert L. Borton
Middle Rio Grande Conservancy District, Albuquerque, NM; District Engineer; (505) 243-6796	Mr. Shah
U.S. Army Corps of Engineers, Albuquerque, NM; Technical Services Representative (505) 766-2616	Thomas Ryan
U.S. Department of Agriculture, Soil Conservation Service, Albuquerque, NM; (505) 766-3277	Publications Clerk
U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Climatic Data Center, Asheville, NC; (704) 259-0682	Publication Clerk

U.S. Department of Defense, Defense Logistics  
Agency, DLAS Residency - Albuquerque, NM  
Administrative Contracting Office  
(505) 844-3418

George Wilkinson

U.S. Department of Energy, ALO  
(Legal) - Albuquerque, NM;  
(505) 846-2123

Jim Randall

U.S. Environmental Protection Agency,  
Superfund Division, Enforcement Section,  
Dallas, Texas; Environmental Engineer  
(214) 767-9703

Larry Wright

U.S. Geological Survey, Water Resources  
Division, Albuquerque, NM; Hydrologist  
(505) 766-6506

Georgianna E. Kues

U.S. Geological Survey, Water Resources  
Division, Albuquerque, NM; Water Quality  
Specialist (505) 766-1173

Kim Ong

APPENDIX C

AIR FORCE PLANT NO. 83

SUPPLEMENTAL INFORMATION AND DATA

- C-1 - Ground-Water Quality Data
- C-2 - Analytical Results for Soil Samples Taken in the Vicinity of Hazardous Waste Storage Area No. 3
- C-3 - Analytical Results for the Soil Sample Taken in the North Parking Lot

APPENDIX C-1

GROUND-WATER QUALITY DATA



APPENDIX C-1 (Continued)  
 ADDITIONAL GROUND-WATER QUALITY DATA FOR USAF PLANT NO. 83 AND VICINITY

(Parameter analyses are presented in milligram per liter)

Well Identification	Parameter	New Mexico Standard		Date of Sample Collection (mg-dy-yr)		Well Identification	Date of Sample Collection (split sample)	Well Identification	Sample Collect. 3-7-82	Well Identification	Date of Sample Collection (split sample)	Well Identification	Sample Collect. 3-7-82	Well Identification	Date of Sample Collection (split sample)
		6-25-80	9-9-82	9-9-82	9-9-82										
Benzene	0.01	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.190	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethyl-	0.016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methane	0.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dichloro-	37	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloro-	35.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloro-	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethane	1.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloro-	41.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloro-	82.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,1-Trichloro-	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,2-Trichloro-	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,2,2-Tetra-chloro-	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethene	0.005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloro-	9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloro-	1.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloro-	3.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloro-	9.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloropropane	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acetone	4.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methyl Ethyl Ketone	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	150	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
113 Freon	4.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

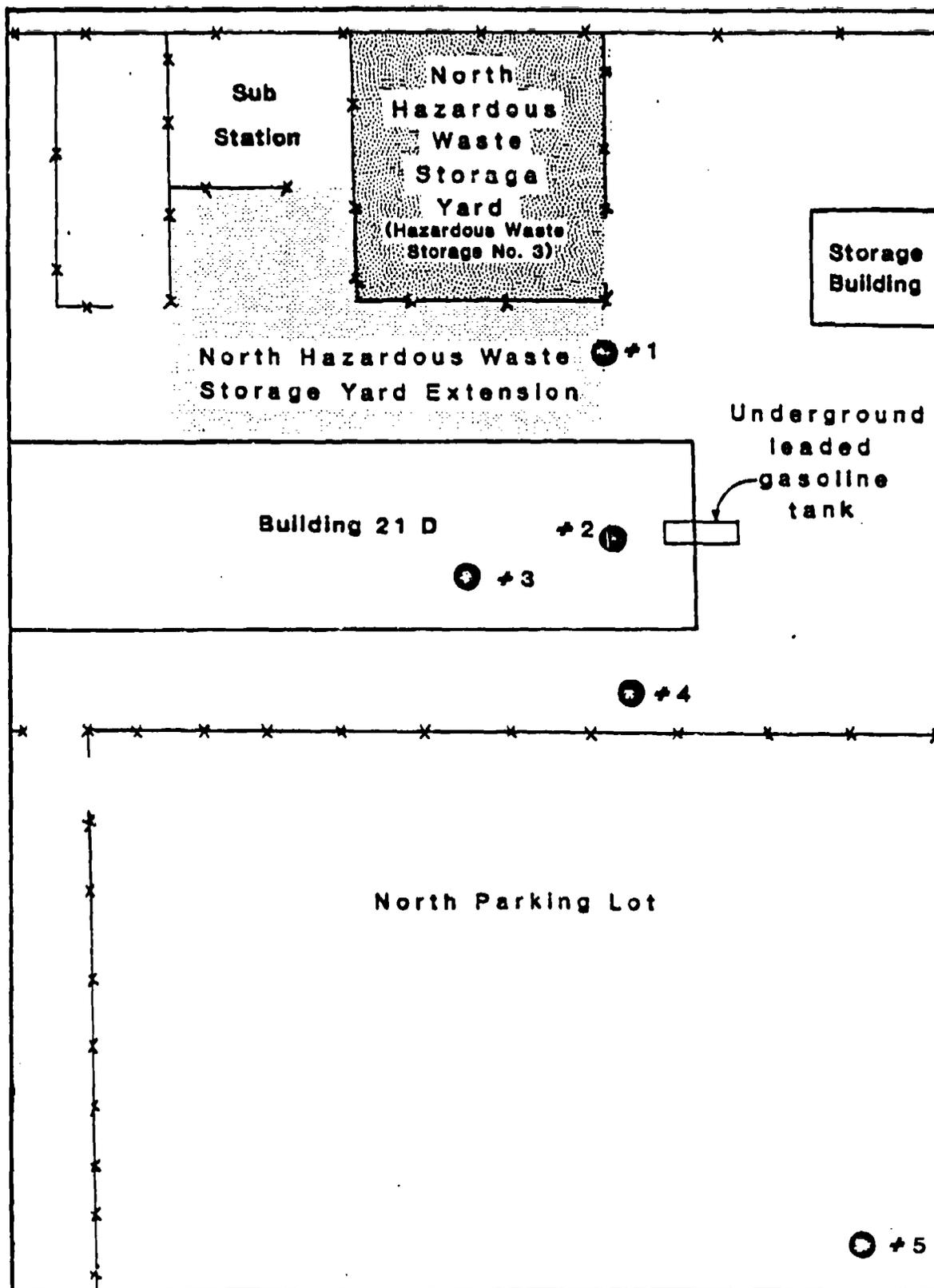
ND = Not Analyzed  
 NS = Not Detected  
 NS = No Standard

DMQ = Detected but not quantified  
 mg-dy-yr = month-day-year

APPENDIX C-2

RESULTS FOR SOIL SAMPLES TAKEN IN THE VICINITY  
OF HAZARDOUS WASTE STORAGE AREA NO. 3

Source: Closure Plan and Financial Requirements  
for Interim Status Hazardous Waste Storage Facilities,  
General Electric Co. Aircraft Engine Business Group  
Albuquerque, NM Air Force Plant No. 83, August 1983



Scale 1" = 50'

Figure C-1 Soil Samples Taken Near the Underground Leaded Gasoline Tank in March, 1982

WILSON LABORATORIES

328 NORTH NINTH STREET - P.O. BOX 1858 - SALINA, KANSAS 67401 - (913)825-7186

LABORATORY REPORT

PAGE 1

CLIENT: GENERAL ELECTRIC  
 ATTN: JIM BAECHEL  
 316 WOODWARD ROAD  
 ALBUQUERQUE, NM 87102

DATE RPTD.: 06/10/82  
 DATE RCVD.: 05/21/82  
 PURCHASE AUTH: A4806434  
 FILE NO.: 81-9570

CONCENTRATION UNITS ANALYST BOOK/PAGE

LAB NUMBER: 8205-0314 SAMPLE DESCRIPTION: N. STORAGE YARD #1  
 ORDER NUMBER: .2398 SPECIAL INSTRUCTIONS: ANALYZED AS RECEIVED  
 DATE SAMPLED: 04/27/82 TIME SAMPLED: 10:00 A.M.

HYDROCARBONS, TOTAL 392. UG/G, DRY WT. WAR 119 / 41  
 --CONCLUSION--LAB NUMBER: 8205-0314

LAB NUMBER: 8205-0314D SAMPLE DESCRIPTION: N. STORAGE YARD #1  
 ORDER NUMBER: .2398 SPECIAL INSTRUCTIONS: ACID DIGESTION  
 DATE SAMPLED: 04/27/82 TIME SAMPLED: 10:00 A.M.

LEAD 143. UG/G, DRY WT. DEM 180 / 54  
 --CONCLUSION--LAB NUMBER: 8205-0314D

LAB NUMBER: 8205-0315 SAMPLE DESCRIPTION: N. STORAGE YARD #2  
 ORDER NUMBER: .2398 SPECIAL INSTRUCTIONS: ANALYZED AS RECEIVED  
 DATE SAMPLED: 04/27/82 TIME SAMPLED: 10:15 A.M.

HYDROCARBONS, TOTAL 496. UG/G, DRY WT. WAR 119 / 41  
 --CONCLUSION--LAB NUMBER: 8205-0315

LAB NUMBER: 8205-0315D SAMPLE DESCRIPTION: N. STORAGE YARD #2  
 ORDER NUMBER: .2398 SPECIAL INSTRUCTIONS: ACID DIGESTION  
 DATE SAMPLED: 04/27/82 TIME SAMPLED: 10:15 A.M.

LEAD 40. UG/G, DRY WT. DEM 180 / 55  
 --CONCLUSION--LAB NUMBER: 8205-0315D

LAB NUMBER: 8205-0316 SAMPLE DESCRIPTION: N. STORAGE YARD #3  
 ORDER NUMBER: .2398 SPECIAL INSTRUCTIONS: ANALYZED AS RECEIVED  
 DATE SAMPLED: 04/27/82 TIME SAMPLED: 10:30 A.M.

## LABORATORY REPORT

PAGE 2

CLIENT: GENERAL ELECTRIC

DATE RPTD.: 06/10/82

ANALYSIS	CONCENTRATION	UNITS	ANALYST	BOOK/PAGE
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HYDROCARBONS, TOTAL	621.	UG/G, DRY WT.	WAR	119 / 41
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--CONCLUSION--LAB NUMBER: 8205-0316

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LAB NUMBER: 8205-0316  
 ORDER NUMBER: .2398  
 DATE SAMPLED: 04/27/82

SAMPLE DESCRIPTION: N. STORAGE YARD #3  
 SPECIAL INSTRUCTIONS: ACID DIGESTION  
 TIME SAMPLED: 10:30 A.M.

LEAD	47.	UG/G, DRY WT.	DEM	180 / 56
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--CONCLUSION--LAB NUMBER: 8205-0316

---

LAB NUMBER: 8205-0317  
 ORDER NUMBER: .2398  
 DATE SAMPLED: 04/27/82

SAMPLE DESCRIPTION: N. STORAGE YARD #4  
 SPECIAL INSTRUCTIONS: ANALYZED AS RECEIVED  
 TIME SAMPLED: 10:45 A.M.

HYDROCARBONS, TOTAL	596.	UG/G, DRY WT.	WAR	119 / 41
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--CONCLUSION--LAB NUMBER: 8205-0317

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LAB NUMBER: 8205-0317D  
 ORDER NUMBER: .2398  
 DATE SAMPLED: 04/27/82

SAMPLE DESCRIPTION: N. STORAGE YARD #4  
 SPECIAL INSTRUCTIONS: ACID DIGESTION  
 TIME SAMPLED: 10:45 A.M.

LEAD	25.	UG/G, DRY WT.	DEM	180 / 57
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--CONCLUSION--LAB NUMBER: 8205-0317D

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LAB NUMBER: 8205-0318  
 ORDER NUMBER: .2398  
 DATE SAMPLED: 04/27/82

SAMPLE DESCRIPTION: N. STORAGE YARD #5  
 SPECIAL INSTRUCTIONS: ANALYZED AS RECEIVED  
 TIME SAMPLED: 11:00 A.M.

HYDROCARBONS, TOTAL	279.	UG/G, DRY WT.	WAR	119 / 41
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--CONCLUSION--LAB NUMBER: 8205-0318

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LAB NUMBER: 8205-0318D  
 ORDER NUMBER: .2398  
 DATE SAMPLED: 04/27/82

SAMPLE DESCRIPTION: N. STORAGE YARD #5  
 SPECIAL INSTRUCTIONS: ACID DIGESTION  
 TIME SAMPLED: 11:00 A.M.

LEAD	168.	UG/G, DRY WT.	DEM	180 / 58
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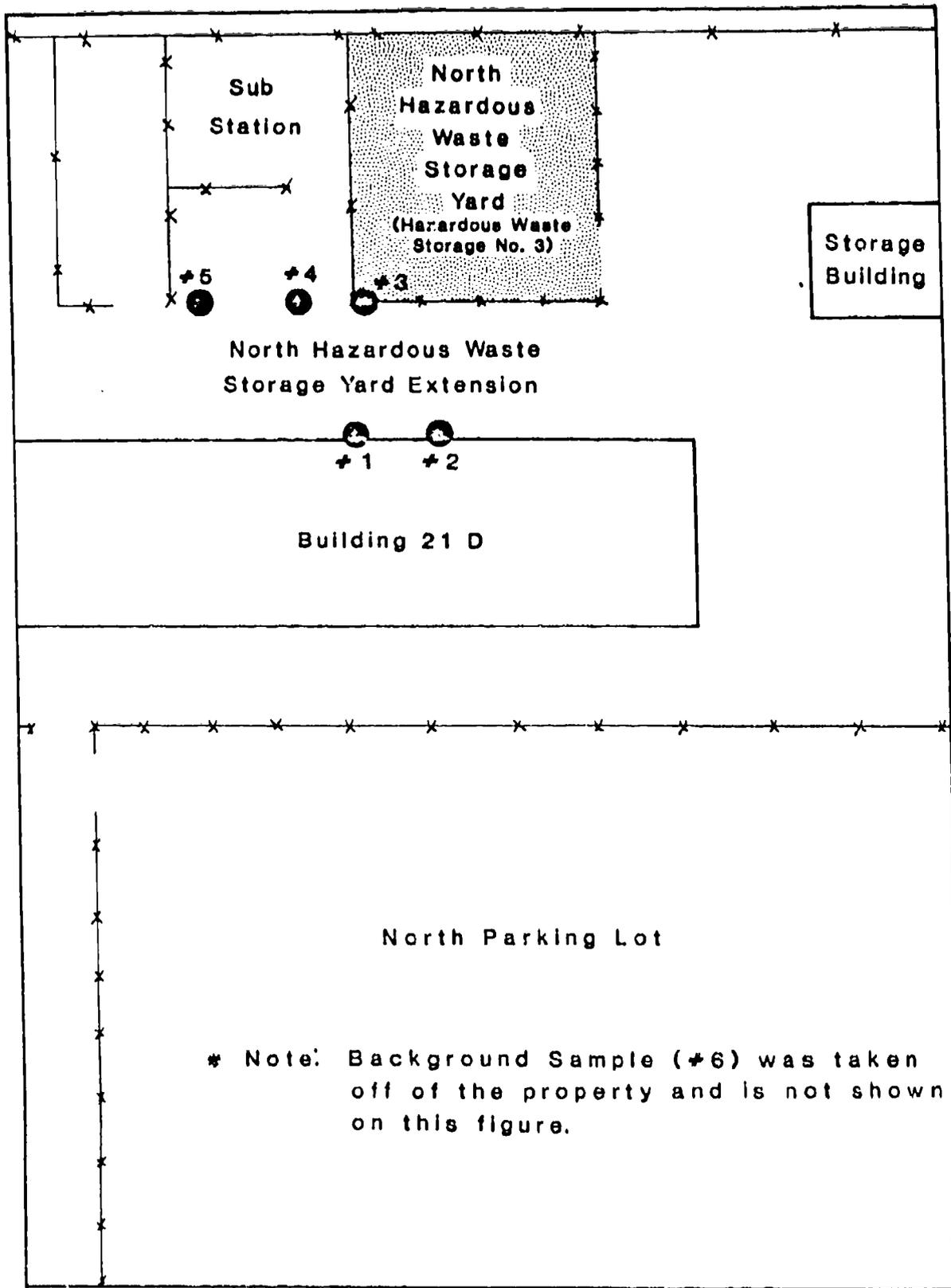


Figure C-2 Soil Samples Taken in the North Hazardous Waste Storage Yard Extension in June, 1982

WILSON LABORATORIES

528 NORTH NINTH STREET - P.O. BOX 1858 - SALINA, KANSAS 67401 - (913)825-7115

LABORATORY REPORT

PAGE 1

CLIENT: GENERAL ELECTRIC  
 ATTN: JIM BACCHTEL  
 336 WOODWARD ROAD  
 ALBUQUERQUE, NM 87102

DATE RPTD: 103/27/82  
 DATE RCVD: 103/11/82  
 PURCHASE AUTH: ZARA12597  
 FILE NO.: 81-9270

ANALYSIS	CONCENTRATION	UNITS	ANALYST	BOOK/PAGE
LAB NUMBER: 8203-0142 ORDER NUMBER: 2044 DATE SAMPLED: 03/10/82	SAMPLE DESCRIPTION: LOC. 02 35 FT X 48 IN SPECIAL INSTRUCTIONS: ANALYZED AS RECEIVED			

HYDROCARBONS, TOTAL 1111.0 UG/G, DRY WT. DEN 119 / 34  
 --CONCLUSION-- LAB NUMBER: 8203-0142

LAB NUMBER: 8203-0142D ORDER NUMBER: 2044	SAMPLE DESCRIPTION: LOC. 02 35 FT X 48 IN SPECIAL INSTRUCTIONS: ACID DIGESTION			
			DATE PREP.: 03/18/82	

LEAD 13.2 UG/G, WET WT. BLD 178 / 31  
 --CONCLUSION-- LAB NUMBER: 8203-0142D

LAB NUMBER: 8203-0143 ORDER NUMBER: 2044 DATE SAMPLED: 03/10/82	SAMPLE DESCRIPTION: LOC. 03 80 FT X 48 IN SPECIAL INSTRUCTIONS: ANALYZED AS RECEIVED			
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HYDROCARBONS, TOTAL 4011.0 UG/G, DRY WT. DEN 119 / 34  
 --CONCLUSION-- LAB NUMBER: 8203-0143

LAB NUMBER: 8203-0143D ORDER NUMBER: 2044	SAMPLE DESCRIPTION: LOC. 03 80 FT X 48 IN SPECIAL INSTRUCTIONS: ACID DIGESTION			
			DATE PREP.: 03/18/82	

LEAD 4.9 UG/G, WET WT. BTF 178 / 30  
 --CONCLUSION-- LAB NUMBER: 8203-0143D

LAB NUMBER: 8203-0144 ORDER NUMBER: 2044 DATE SAMPLED: 03/10/82	SAMPLE DESCRIPTION: LOC. 04 60 FT X 48 IN SPECIAL INSTRUCTIONS: ANALYZED AS RECEIVED			
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WILSON LABORATORIES

LABORATORY REPORT  
 CLIENT: GENERAL ELECTRIC

PAGE 2  
 DATE RPTD. 103/29/82

ANALYSIS	CONCENTRATION	UNITS	ANALYST	BOOK/PAGE
HYDROCARBONS, TOTAL	ND(1.0)	UG/G, DRY WT.	DEM	119 / 34
--CONCLUSION--LAB NUMBER: 8203-0144				

LAB NUMBER: 8203-0144B	SAMPLE DESCRIPTION: LOC 04 60 FT X 48 IN
ORDER NUMBER: 2044	SPECIAL INSTRUCTIONS: FILTER .45U; ANALYZE FILTRATE
DATE SAMPLED: 03/10/82	DATE PREP.: 03/16/82

<u>LEAD</u>	6.6	UG/G, WET WT.	PLD	178 / 34
--CONCLUSION--LAB NUMBER: 8203-0144B				

LAB NUMBER: 8203-0145	SAMPLE DESCRIPTION: LOC 05 230 FT X 12 IN
ORDER NUMBER: 2044	SPECIAL INSTRUCTIONS: ANALYZED AS RECEIVED
DATE SAMPLED: 03/10/82	

HYDROCARBONS, TOTAL	191.	UG/G, DRY WT.	DEM	119 / 34
--CONCLUSION--LAB NUMBER: 8203-0145				

LAB NUMBER: 8203-0145D	SAMPLE DESCRIPTION: LOC 05 230 FT X 12 IN
ORDER NUMBER: 2044	SPECIAL INSTRUCTIONS: ACID DISTILLION
	DATE PREP.: 03/18/82

<u>LEAD</u>	13.6	UG/G, WET WT.	PLD	178 / 32
--CONCLUSION--LAB NUMBER: 8203-0145D				

ND( ), WHERE NOTED, INDICATES NONE DETECTED WITH THE DETECTION LIMIT IN PARENTHESES

ANALYSES WERE PERFORMED ON SAMPLES AS RECEIVED BY WILSON LABS UTILIZING APPROVED PROCEDURES PUBLISHED IN THE FEDERAL REGISTER, VOL. 44, NO. 233, DEC. 3, 1979 (67500-69575) AND AS AMENDED IN THE FED. REG., VOL. 44, NO. 244, DEC. 18, 1979.

WILSON LABORATORIES

*Janis Butler*  
 JANIS BUTLER, P.E.  
 LABORATORY DIRECTOR

APPENDIX C-3

ANALYTICAL RESULTS FOR THE SOIL SAMPLE TAKEN IN

THE NORTH PARKING LOT

Source: Closure Plan and Financial Requirements  
for Interim Status Hazardous Waste Storage Facilities,  
General Electric Co. Aircraft Engine Business Group  
Albuquerque, NM Air Force Plant No. 83, August 1983



W I L S O N L A B O R A T O R I E S

LABORATORY REPORT  
 CLIENT: GENERAL ELECTRIC

PAGE 2  
 DATE RPTD.: 03/11/83

=====

ANALYSIS	CONCENTRATION	UNITS	ANALYST	BOOK/PAGE
LAB NUMBER: 8302-0130E	SAMPLE DESCRIPTION: SOIL SAMPLE			
ORDER NUMBER: 3767	SPECIAL INSTRUCTIONS: EF TOXICITY			
DATE SAMPLED: 01/06/83	TIME SAMPLED: 1140		DATE PREP.: 02/22/83	
ARSENIC	0.11	MG/L	BTF	222 / 13
BARIUM	0.65	MG/L	DEM	225 / 16
CADMIUM	0.01	MG/L	BTF	192 / 66
CHROMIUM, TOTAL	ND(0.05)	MG/L	BTF	192 / 67
LEAD	0.1	MG/L	BTF	192 / 67
MERCURY	ND(0.01)	MG/L	HJB	224 / 7
SELENIUM	ND(0.001)	MG/L	BTF	222 / 14
SILVER	ND(0.01)	MG/L	BTF	192 / 67

--CONCLUSION--LAB NUMBER: 8302-0130E

LAB NUMBER: 8302-0131      SAMPLE DESCRIPTION: WASTE TRIMSOL  
 ORDER NUMBER: 3767      SPECIAL INSTRUCTIONS: ANALYZE AS RECEIVED  
 DATE SAMPLED: 02/09/83

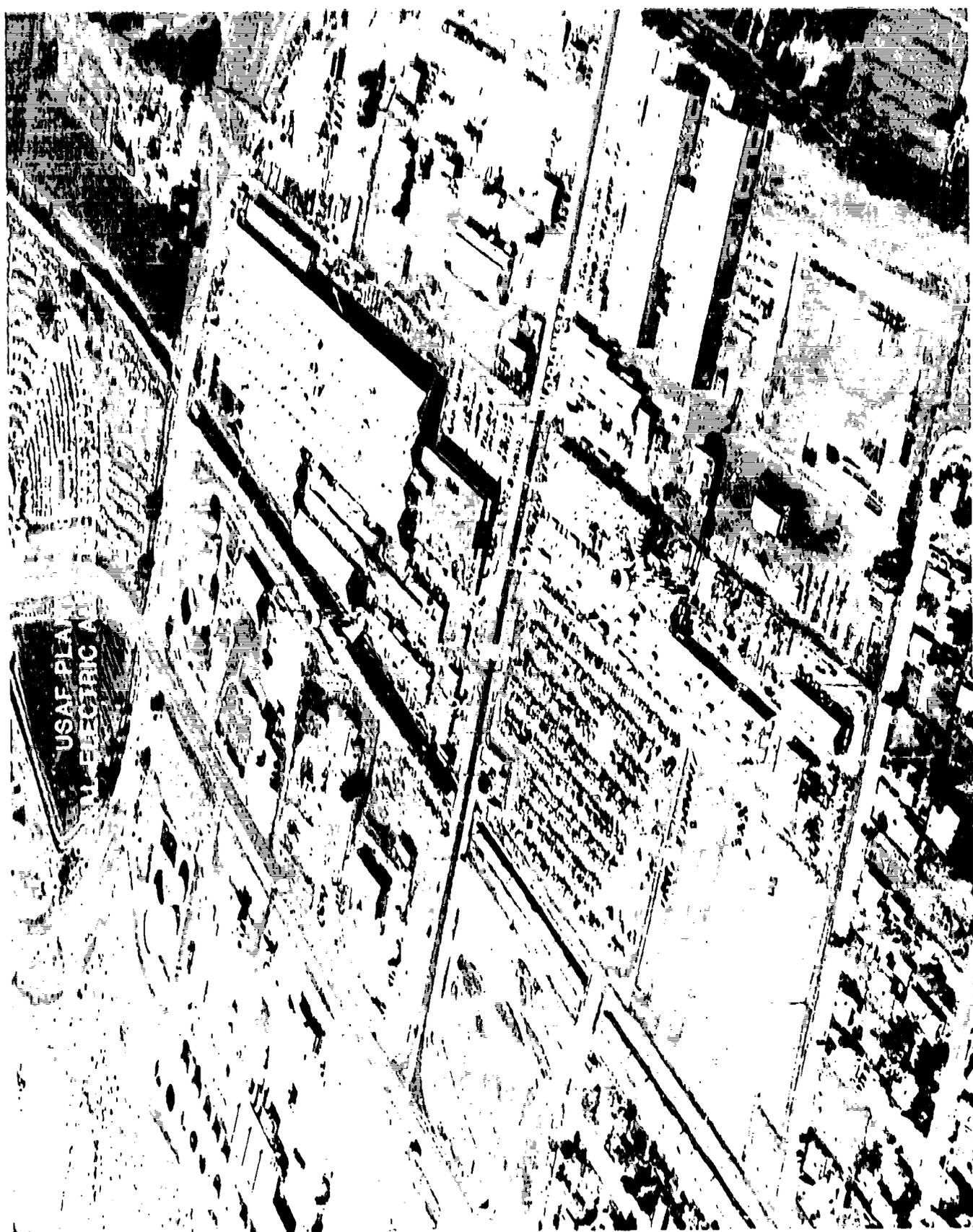
\*\*\*GC/MS VOLATILE COMPOUNDS\*\*\*

1V. ACROLEIN	ND(10)	MG/L	CK	212 / 53
2V. ACRYLONITRILE	ND(10)	MG/L	CK	212 / 53
3V. BENZENE	ND(1)	MG/L	CK	212 / 53
4V. BIS(CHLOROMETHYL)ETHER	ND(1)	MG/L	CK	212 / 53
5V. BROMOFORM	ND(1)	MG/L	CK	212 / 53
6V. CARBON TETRACHLORIDE	37.	MG/L	CK	212 / 53
7V. CHLOROBENZENE	ND(1)	MG/L	CK	212 / 53
8V. CHLORODIBROMOMETHANE	ND(1)	MG/L	CK	212 / 53
9V. CHLOROETHANE	ND(1)	MG/L	CK	212 / 53
10V. 2-CHLOROETHYL VINYL ETHER	ND(1)	MG/L	CK	212 / 53
11V. CHLOROFORM	ND(1)	MG/L	CK	212 / 53
12V. DICHLOROBROMOMETHANE	ND(1)	MG/L	CK	212 / 53
13V. DICHLORODIFLUOROMETHANE	ND(1)	MG/L	CK	212 / 53
14V. 1,1-DICHLOROETHANE	ND(1)	MG/L	CK	212 / 53
15V. 1,2-DICHLOROETHANE	ND(1)	MG/L	CK	212 / 53
16V. 1,1-DICHLOROETHYLENE	2.	MG/L	CK	212 / 53
17V. 1,2-DICHLOROPROPANE	ND(1)	MG/L	CK	212 / 53
18V. 1,3-DICHLOROPROPYLENE	ND(1)	MG/L	CK	212 / 53
19V. ETHYLBENZENE	ND(1)	MG/L	CK	212 / 53
20V. METHYL BROMIDE	ND(1)	MG/L	CK	212 / 53
21V. METHYL CHLORIDE	ND(1)	MG/L	CK	212 / 53
22V. METHYLENE CHLORIDE	ND(1)	MG/L	CK	212 / 53
23V. 1,1,2,2-TETRACHLOROETHANE	ND(1)	MG/L	CK	212 / 53
24V. TETRACHLOROETHYLENE	ND(1)	MG/L	CK	212 / 53
25V. TOLUENE	ND(1)	MG/L	CK	212 / 53

APPENDIX D

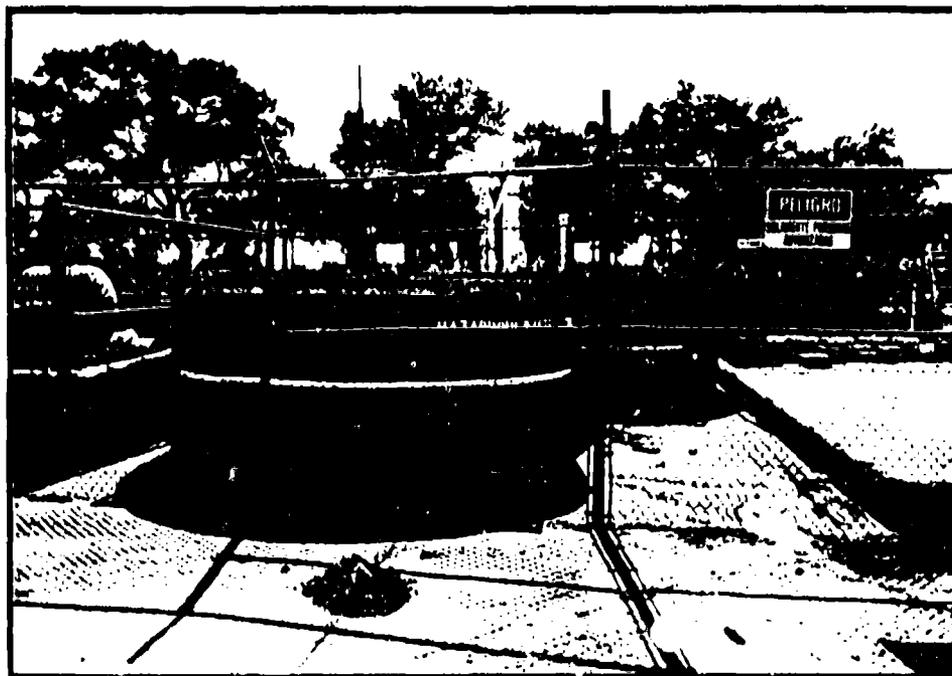
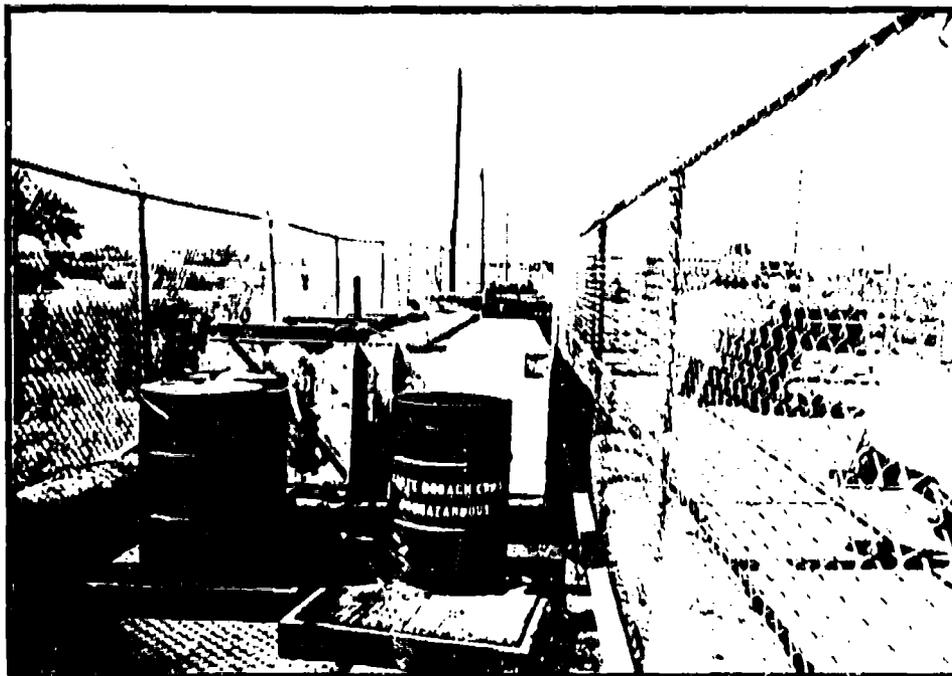
PHOTOGRAPHS





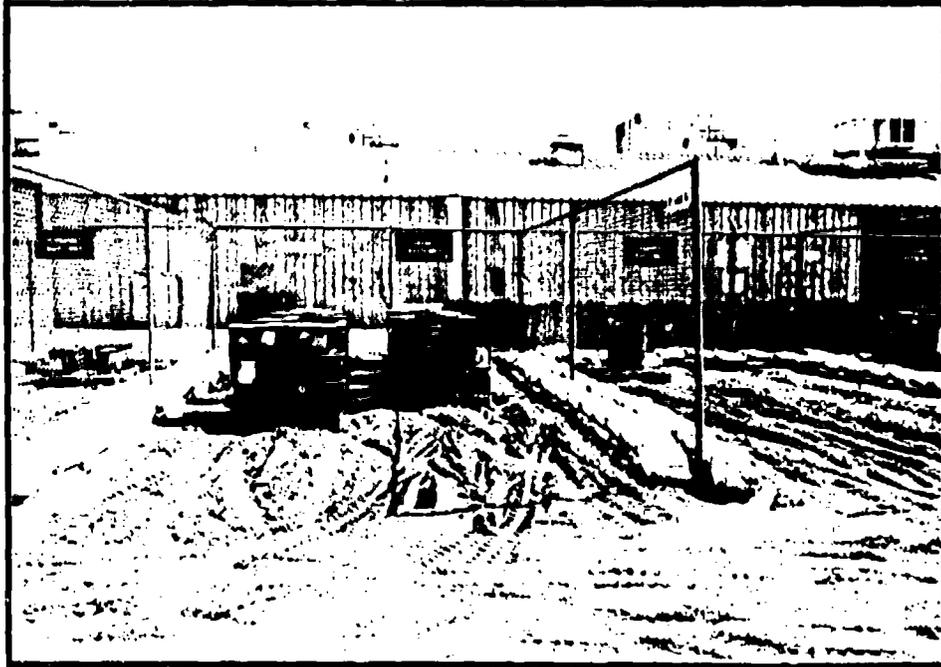
USAF PLANT  
ELECTRIC

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT



Hazardous Waste Storage Area No. 1

USAF PLANT NO. 83  
GENERAL ELECTRIC ALBUQUERQUE PLANT



Hazardous Waste Storage Area No. 3

APPENDIX E

USAF INSTALLATION RESTORATION PROGRAM

HAZARD ASSESSMENT RATING METHODOLOGY

## APPENDIX E

### USAF INSTALLATION RESTORATION PROGRAM HAZARD ASSESSMENT RATING METHODOLOGY

#### BACKGROUND

The Department of Defense (DOD) has established a comprehensive program to identify, evaluate, and control problems associated with past disposal practices at DOD facilities. One of the actions required under this program is to:

"develop and maintain a priority listing of contaminated installations and facilities for remedial action based on potential hazard to public health, welfare, and environmental impacts." (Reference: DEQPPM 81-5, aa December 1981).

Accordingly, the United States Air Force (USAF) has sought to establish a system to set priorities for taking further actions at sites based upon information gathered during the Records Search phase of its Installation Restoration Program (IRP).

The first site rating model was developed in June 1981 at a meeting with representatives from USAF Occupational and Environmental Health Laboratory (OEHL), Air Force Engineering and Services Center (AFESC), Engineering-Science (ES) and CH2M Hill. The basis for this model was a system developed for EPA by JRB Associates of McLean, Virginia. The JRB model was modified to meet Air Force needs.

After using this model for 6 months at over 20 Air Force installations, certain inadequacies became apparent. Therefore, on January 26 and 27, 1982, representatives of USAF OEHL, AFESC, various major commands, Engineering-Science, and CH2M Hill met to address the inadequacies. The result of the meeting was a new site rating model designed to present a better picture of the hazards posed by sites at Air Force installations. The new rating model described in this presentation is referred to as the Hazard Assessment Rating Methodology.

## PURPOSE

The purpose of the site rating model is to provide a relative ranking of sites of suspected contamination from hazardous substances. This model will assist the Air Force in setting priorities for follow-on site investigations and confirmation work under Phase II of the IRP.

This rating system is used only after it has been determined that (1) potential for contamination exists (hazardous waste present in sufficient quantity), and (2) potential for migration exists. A site can be deleted from consideration for rating on either basis.

## DESCRIPTION OF MODEL

Like the other hazardous waste site ranking models, the U.S. Air Force's site rating model uses a scoring system to rank sites for priority attention. However, in developing this model, the designers incorporated some special features to meet specific DOD program needs.

The model uses data readily obtained during the Records Search portion (Phase I) of the IRP. Scoring judgments and computations are easily made. In assessing the hazards at a given site, the model develops a score based on the most likely routes of contamination and the worst hazards at the site. Sites are given low scores only if there are clearly no hazards at the site. This approach meshes well with the policy for evaluating and setting restrictions on excess DOD properties.

As with the previous model, this model considers four aspects of the hazard posed by a specific site: the possible receptors of the contamination, the waste and its characteristics, potential pathways for waste contaminant migration, and any efforts to contain the contaminants. Each of these categories contains a number of rating factors that are used in the overall hazard rating.

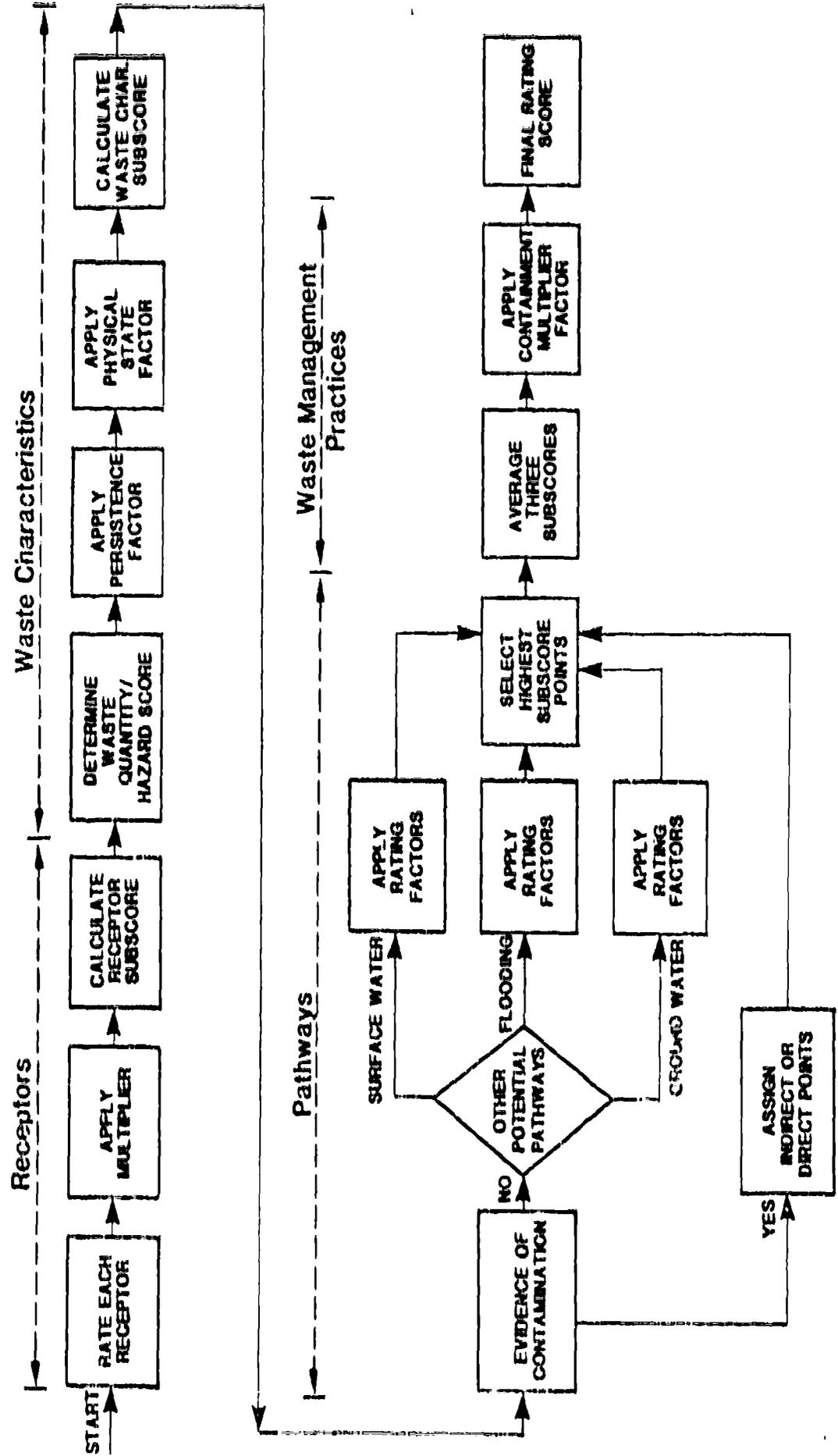
The receptors category rating is calculated by scoring each factor, multiplying by a factor weighting constant and adding the weighted scores to obtain a total category score.

The pathways category rating is based on evidence of contaminant migration or an evaluation of the highest potential (worst case) for contaminant migration along one of three pathways. If evidence of contaminant migration exists, the category is given a subscore of 80 to 100 points. For indirect evidence, 80 points are assigned and for direct evidence, 100 points are assigned. If no evidence is found, the highest score among three possible routes is used. These routes are surface water migration, flooding, and ground-water migration. Evaluation of each route involves factors associated with the particular migration route. The three pathways are evaluated and the highest score among all four of the potential scores is used.

The waste characteristics category is scored in three steps. First, a point rating is assigned based on an assessment of the waste quantity and the hazard (worst case) associated with the site. The level of confidence in the information is also factored into the assessment. Next, the score is multiplied by a waste persistence factor, which acts to reduce the score if the waste is not very persistent. Finally, the score is further modified by the physical state of the waste. Liquid wastes receive the maximum score, while scores for sludges and solids are reduced.

The scores for each of the three categories are then added together and normalized to a maximum possible score of 100. Then the waste management practice category is scored. Sites at which there is no containment are not reduced in score. Scores for sites with limited containment can be reduced by 5 percent. If a site is contained and well managed, its score can be reduced by 90 percent. The final site score is calculated by applying the waste management practices category factor to the sum of the scores for the other three categories.

# HAZARD ASSESSMENT RATING METHODOLOGY FLOW CHART



# HAZARD ASSESSMENT RATING METHODOLOGY FORM

NAME OF SITE \_\_\_\_\_  
 LOCATION \_\_\_\_\_  
 DATE OF OPERATION OR OCCURRENCE \_\_\_\_\_  
 OWNER/OPERATOR \_\_\_\_\_  
 COMMENTS/DESCRIPTION \_\_\_\_\_  
 SITE RATED BY \_\_\_\_\_

## I. RECEPTORS

Rating factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site		4		
B. Distance to nearest well		10		
C. Land use/zoning within 1 mile radius		3		
D. Distance to reservation boundary		6		
E. Critical environments within 1 mile radius of site		10		
F. Water quality of nearest surface water body		6		
G. Ground water use of uppermost aquifer		9		
H. Population served by surface water supply within 3 miles downstream of site		6		
I. Population served by ground-water supply within 3 miles of site		6		

Subtotals \_\_\_\_\_

Receptors subcore (100 X factor score subtotal/maximum score subtotal) \_\_\_\_\_

## II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large) \_\_\_\_\_
2. Confidence level (C = confirmed, S = suspected) \_\_\_\_\_
3. Hazard rating (H = high, M = medium, L = low) \_\_\_\_\_

Factor Subcore A (from 20 to 100 based on factor score matrix) \_\_\_\_\_

B. Apply persistence factor  
 Factor Subcore A X Persistence Factor = Subcore B

\_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

C. Apply physical state multiplier  
 Subcore B X Physical State Multiplier = Waste Characteristics Subcore

\_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
---------------	---------------------	------------	--------------	------------------------

A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.

Subscore \_\_\_\_\_

B. Rate the migration potential for 3 potential pathways: surface water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface water migration

Distance to nearest surface water			8	
Net precipitation			6	
Surface erosion			8	
Surface permeability			6	
Rainfall intensity			8	
Subtotals			_____	_____
Subscore (100 X factor score subtotal/maximum score subtotal)			_____	_____

2. Flooding

Subscore (100 x factor score/3) \_\_\_\_\_

3. Ground-water migration

Depth to ground water			8	
Net precipitation			6	
Soil permeability			9	
Subsurface flows			8	
Direct access to ground water			8	
Subtotals			_____	_____
Subscore (100 x factor score subtotal/maximum score subtotal)			_____	_____

C. Highest pathway subscore.

Enter the highest subscore value from A, B-1, B-2 or B-3 above.

Pathways Subscore \_\_\_\_\_

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	_____
Waste Characteristics	_____
Pathways	_____
Total _____ divided by 3 =	_____
	Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score X Waste Management Practices Factor = Final Score

E-6 \_\_\_\_\_ X \_\_\_\_\_ =

TABLE 1  
HAZARD ASSESSMENT RATING METHODOLOGY GUIDELINES

I. RECEPTORS CATEGORY	Rating Scale Levels				Multiplier
	0	1	2	3	
A. Population within 1,000 feet (includes on-base facilities)	0	1 - 25	26 - 100	Greater than 100	4
B. Distance to nearest water well	Greater than 3 miles	1 to 3 miles	3,001 feet to 1 mile	0 to 3,000 feet	10
C. Land Use/Zoning (within 1 mile radius)	Completely remote (zoning not applicable)	Agricultural	Commercial or Industrial	Residential	3
D. Distance to installation boundary	Greater than 2 miles	1 to 2 miles	1,001 feet to 1 mile	0 to 1,000 feet	6
E. Critical environments (within 1 mile radius)	Not a critical environment	Natural areas	Pristine natural areas; minor wetlands; preserved areas; presence of economically important natural resources susceptible to contamination.	Major habitat of an endangered or threatened species; presence of recharge area; major wetlands.	10
F. Water quality/use designation of nearest surface water body	Agricultural or Industrial use.	Recreation, propagation and management of fish and wildlife.	Shellfish propagation and harvesting.	Potable water supplies	6
G. Ground-Water use of uppermost aquifer	Not used, other sources readily available.	Commercial, industrial, or irrigation, very limited other water sources.	Drinking water, municipal water available.	Drinking water, no municipal water available; commercial, industrial, or irrigation, no other water source available.	9
H. Population served by surface water supplies within 3 miles downstream of site	0	1 - 50	51 - 1,000	Greater than 1,000	6
I. Population served by aquifer supplies within 3 miles of site	0	1 - 50	51 - 1,000	Greater than 1,000	6

TABLE 1 (Continued)  
HAZARD ASSESSMENT RATING METHODOLOGY GUIDELINES

II. WASTE CHARACTERISTICS

A-1 Hazardous Waste Quantity

- S = Small quantity (<5 tons or 20 drums of liquid)
- M = Moderate quantity (5 to 20 tons or 21 to 85 drums of liquid)
- L = Large quantity (>20 tons or 85 drums of liquid)

A-2 Confidence Level of Information

- C = Confirmed confidence level (minimum criteria below)
  - o Verbal reports from interviewer (at least 2) or written information from the records.
  - o Knowledge of types and quantities of wastes generated by shops and other areas on base.
  - o Based on the above, a determination of the types and quantities of waste disposed of at the site.
- S = Suspected confidence level
  - o No verbal reports or conflicting verbal reports and no written information from the records.
  - o Logic based on a knowledge of the types and quantities of hazardous wastes generated at the base, and a history of past waste disposal practices indicate that these wastes were disposed of at a site.

A-3 Hazard Rating

Hazard Category	Rating Scale Levels		
	0	1	2
Toxicity	Sax's Level 0	Sax's Level 1	Sax's Level 2
Ignitability	Flash point greater than 200°F	Flash point at 140°F to 200°F	Flash point at 80°F to 140°F
Radioactivity	At or below background levels	1 to 3 times background levels	3 to 5 times background levels

Use the highest individual rating based on toxicity, ignitability and radioactivity and determine the hazard rating.

Hazard Rating	Points
High (H)	3
Medium (M)	2
Low (L)	1

TABLE I (Continued)

HAZARD ASSESSMENT RATING METHODOLOGY GUIDELINES

II. WASTE CHARACTERISTICS (Continued)

Waste Characteristics Matrix

Point Rating	Hazardous Waste Quantity	Confidence Level of Information	Hazard Rating
100	L	C	H
80	L	C	M
	M	C	H
70	L	S	H
60	S	C	H
	M	C	M
50	L	S	M
	L	C	L
	M	S	H
	S	C	M
40	S	S	H
	M	S	M
	M	C	L
	L	S	L
30	S	C	L
	M	S	L
	S	S	M
20	S	S	L

Notes:  
 For a site with more than one hazardous waste, the waste quantities may be added using the following rules:  
 Confidence Level

- o Confirmed confidence levels (C) can be added
  - o Suspected confidence levels (S) can be added
  - o Confirmed confidence levels cannot be added with suspected confidence levels
- Waste Hazard Rating
- o Wastes with the same hazard rating can be added
  - o Wastes with different hazard ratings can only be added in a downgrade mode, e.g., MCM + SCH = LCM if the total quantity is greater than 20 tons.

Example: Several wastes may be present at a site, each having an MCM designation (60 points). By adding the quantities of each waste, the designation may change to LCM (80 points). In this case, the correct point rating for the waste is 80.

B. Persistence Multiplier for Point Rating

Multiply Point Rating From Part A by the Following

Persistence Criteria

Metals, polycyclic compounds, and halogenated hydrocarbons	1.0
Substituted and other ring compounds	0.9
Straight chain hydrocarbons	0.8
Easily biodegradable compounds	0.4

C. Physical State Multiplier

Multiply Point Total From Parts A and B by the Following

Physical State	Multiply Point Total From Parts A and B by the Following
Liquid	1.0
Silage	0.75
Solid	0.50

TABLE 1 (Continued)  
HAZARD ASSESSMENT RATING METHODOLOGY GUIDELINES

III. PATHWAYS CATEGORY

A. Evidence of Contamination

Direct evidence is obtained from laboratory analyses of hazardous contaminants present above natural background levels in surface water, ground water, or air. Evidence should confirm that the source of contamination is the site being evaluated.

Indirect evidence might be from visual observation (i.e., leachate), vegetation stress, sludge deposits, presence of taste and odors in drinking water, or reported discharges that cannot be directly confirmed as resulting from the site, but the site is greatly suspected of being a source of contamination.

B-1 POTENTIAL FOR SURFACE WATER CONTAMINATION

Rating Factor	Rating Scale Levels			Multiplier	
	0	1	2		3
Distance to nearest surface water (includes drainage ditches and storm sewers)	Greater than 1 mile	2,001 feet to 1 mile	501 feet to 2,000 feet	0 to 500 feet	8
Net precipitation	Less than -10 in.	-10 to + 5 in.	+5 to +20 in.	Greater than +20 in.	6
Surface erosion	None	Slight	Moderate	Severe	8
Surface permeability	0% to 15% clay (>10 <sup>-2</sup> cm/sec)	15% to 30% clay (10 <sup>-2</sup> to 10 <sup>-1</sup> cm/sec)	30% to 50% clay (10 <sup>-1</sup> to 10 <sup>-2</sup> cm/sec)	Greater than 50% clay (<10 <sup>-2</sup> cm/sec)	6
Rainfall intensity based on 1 year 24-hr rainfall	<1.0 inch	1.0-2.0 inches	2.1-3.0 inches	>3.0 inches	8

B-2 POTENTIAL FOR FLOODING

Floodplain	Beyond 100-year floodplain	In 25-year flood-plain	In 10-year flood-plain	Floods annually	1
B-3 POTENTIAL FOR GROUND-WATER CONTAMINATION					
Depth to ground water	Greater than 500 ft	50 to 500 feet	11 to 50 feet	0 to 10 feet	8
Net precipitation	Less than -10 in.	-10 to +5 in.	+5 to +20 in.	Greater than +20 in.	6
Soil permeability	Greater than 50% clay (>10 <sup>-2</sup> cm/sec)	30% to 50% clay (10 <sup>-2</sup> to 10 <sup>-1</sup> cm/sec)	15% to 30% clay (10 <sup>-2</sup> to 10 <sup>-1</sup> cm/sec)	0% to 15% clay (<10 <sup>-2</sup> cm/sec)	8
Subsurface flows	Bottom of site greater than 5 feet above high ground-water level	Bottom of site occasionally submerged	Bottom of site frequently submerged	Bottom of site located below mean ground-water level	8
Direct access to ground water (through faults, fractures, faulty well casings, subsidence fissures, etc.)	No evidence of risk	Low risk	Moderate risk	High risk	8

TABLE 1 (Continued)  
HAZARD ASSESSMENT RATING METHODOLOGY GUIDELINES

IV. WASTE MANAGEMENT PRACTICES CATEGORY

A. This category adjusts the total risk as determined from the receptors, pathways, and waste characteristics categories for waste management practices and engineering controls designed to reduce this risk. The total risk is determined by first averaging the receptors, pathways, and waste characteristics subscores.

B. WASTE MANAGEMENT PRACTICES FACTOR

The following multipliers are then applied to the total risk points (from A):

Waste Management Practice	Multiplier
No containment	1.0
Limited containment	0.95
Fully contained and in full compliance	0.10

Guidelines for fully contained:

Landfills:

- Clay cap or other impermeable cover
- Liners in good condition
- Leachate collection system
- Sound dikes and adequate freeboard
- Liners in good condition
- Adequate monitoring wells
- Adequate monitoring wells

Spills:

- Quick spill cleanup action taken
- Contaminated soil removed
- Oil/water separator for pretreatment of runoff
- Soil and/or water samples confirm total cleanup of the spill
- Concrete surface and berms
- Effluent from oil/water separator to treatment plant

Fire Protection Training Areas:

General Note: If data are not available or known to be complete the factor ratings under items I-A through I, III-B-1 or III-B-3, then leave blank for calculation of factor score and maximum possible score.

APPENDIX F

HAZARDOUS ASSESSMENT SITE RATING FORMS

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HAZARD ASSESSMENT RATING METHODOLOGY FORMS

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## HAZARD ASSESSMENT RATING METHODOLOGY FORM

Name of Site: North Parking Lot  
 Location: North end of plant  
 Date of Operation or Occurrence: 1979 - 1980  
 Owner/Operator: USAF  
 Comments/Description: Contaminated oils sprayed on bare earth lot for dust control

Site Rated by: Mark Spiegel, Dan Harman

## I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	3	4	12	12
B. Distance to nearest well	3	10	30	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	3	6	18	18
E. Critical environments within 1 mile radius of site	3	10	30	30
F. Water quality of nearest surface water body	0	6	0	18
G. Ground water use of uppermost aquifer	3	9	27	27
H. Population served by surface water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
Subtotals			144	180
Receptors subscore (100 x factor score subtotal/maximum score subtotal)				<u>80</u>

## II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (1=small, 2=medium, 3=large)	3
2. Confidence level (1=confirmed, 2=suspected)	1
3. Hazard rating (1=low, 2=medium, 3=high)	2

Factor Subscore A (from 20 to 100 based on factor score matrix) 80

B. Apply persistence factor

Factor Subscore A x Persistence Factor = Subscore B

$$80 \quad \times \quad 1.00 \quad = \quad 80$$

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$80 \quad \times \quad 1.00 \quad = \quad \underline{\underline{80}}$$

## III. PATHWAYS

A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.

Subscore 0

B. Rate the migration potential for 3 potential pathways: surface water migration, flooding, and ground-water migration. Select the highest rating and proceed to C.

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
<b>1. Surface Water Migration</b>				
Distance to nearest surface water	3	8	24	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	2	6	12	18
Rainfall intensity	1	8	8	24
Subtotals			44	108
Subscore (100 x factor score subtotal/maximum score subtotal)				41
<b>2. Flooding</b>				
	0	1	0	3
Subscore (100 x factor score/3)				0
<b>3. Ground-water migration</b>				
Depth to ground water	2	8	16	24
Net precipitation	0	6	0	18
Soil permeability	1	8	8	24
Subsurface flows	0	8	0	24
Direct access to ground water	0	8	0	24
Subtotals			24	114
Subscore (100 x factor score subtotal/maximum score subtotal)				21

C. Highest pathway subscore.

Enter the highest subscore value from A, B-1, B-2 or B-3 above.

Pathways Subscore 41

## IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	80
Waste Characteristics	80
Pathways	41
Total	201

201 divided by 3 =

67 Gross total score

B. Apply factor for waste containment from waste management practices.

Gross total score x waste management practices factor = final score

67 x 0.95 =

64  
FINAL SCORE

## HAZARD ASSESSMENT RATING METHODOLOGY FORM

Name of Site: Hazardous Waste Storage No. 1  
 Location: South boundary of plant  
 Date of Operation or Occurrence: 1954 - Present  
 Owner/Operator: USAF  
 Comments/Description: Used to store waste chemicals and oils

Site Rated by: Mark Spiegel, Dan Harman

## I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	3	4	12	12
B. Distance to nearest well	3	10	30	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	3	6	18	18
E. Critical environments within 1 mile radius of site	3	10	30	30
F. Water quality of nearest surface water body	0	6	0	18
G. Ground water use of uppermost aquifer	3	9	27	27
H. Population served by surface water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
Subtotals			144	180
Receptors subscore (100 x factor score subtotal/maximum score subtotal)				80

## II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (1=small, 2=medium, 3=large) 1
2. Confidence level (1=confirmed, 2=suspected) 1
3. Hazard rating (1=low, 2=medium, 3=high) 3

Factor Subscore A (from 20 to 100 based on factor score matrix) 60

B. Apply persistence factor

Factor Subscore A x Persistence Factor = Subscore B

$$60 \times 1.00 = 60$$

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristic Subscore

$$60 \times 1.00 = 60$$

## III. PATHWAYS

A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 60 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.

Subscore 0

B. Rate the migration potential for 3 potential pathways: surface water migration, flooding, and ground-water migration. Select the highest rating and proceed to C.

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
<b>1. Surface Water Migration</b>				
Distance to nearest surface water	3	8	24	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	3	6	18	18
Rainfall intensity	1	8	8	24
Subtotals			50	108
Subscore (100 x factor score subtotal/maximum score subtotal)				46
<b>2. Flooding</b>				
	0	1	0	3
Subscore (100 x factor score/3)				0
<b>3. Ground-water migration</b>				
Depth to ground water	2	8	16	24
Net precipitation	0	6	0	18
Soil permeability	0	8	0	24
Subsurface flows	0	8	0	24
Direct access to ground water	0	8	0	24
Subtotals			16	114
Subscore (100 x factor score subtotal/maximum score subtotal)				14

C. Highest pathway subscore.

Enter the highest subscore value from A, B-1, B-2 or B-3 above.

Pathways Subscore 46

## IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	60
Waste Characteristics	60
Pathways	46
Total	166 divided by 3 =

62 Gross total score

B. Apply factor for waste containment from waste management practices.  
Gross total score x waste management practices factor = final score

62 x 1.00 =

62  
FINAL SCORE

## HAZARD ASSESSMENT RATING METHODOLOGY FORM

Name of Site: Hazardous Waste Storage No. 3  
 Location: North end of plant between Buildings 21 and 30  
 Date of Operation or Occurrence: Late 1950's to Present  
 Owner/Operator: USAF  
 Comments/Description: Used to store chemical wastes

Site Rated by: Mark Spiegel, Dan Harman

## I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	3	4	12	12
B. Distance to nearest well	3	10	30	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	3	6	18	18
E. Critical environments within 1 mile radius of site	3	10	30	30
F. Water quality of nearest surface water body	0	6	0	18
G. Ground water use of uppermost aquifer	3	9	27	27
H. Population served by surface water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
Subtotals			144	168
Receptors subscore (100 x factor score subtotal/maximum score subtotal)				86

## II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (1=small, 2=medium, 3=large) 1  
 2. Confidence level (1=confirmed, 2=suspected) 1  
 3. Hazard rating (1=low, 2=medium, 3=high) 3

Factor Subscore A (from 20 to 100 based on factor score matrix) 60

B. Apply persistence factor

Factor Subscore A x Persistence Factor = Subscore B

60 x 1.00 = 60

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

60 x 1.00 = 60

III. PATHWAYS

A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.

Subscore 0

B. Rate the migration potential for 3 potential pathways: surface water migration, flooding, and ground-water migration. Select the highest rating and proceed to C.

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
<b>1. Surface Water Migration</b>				
Distance to nearest surface water	3	8	24	24
Net precipitation	0	6	0	18
Surface erosion	1	8	8	24
Surface permeability	2	6	12	18
Rainfall intensity	1	8	8	24
Subtotals			52	108
Subscore (100 x factor score subtotal/maximum score subtotal)				48
<b>2. Flooding</b>				
	0	1	0	3
Subscore (100 x factor score/3)				0
<b>3. Ground-water migration</b>				
Depth to ground water	2	8	16	24
Net precipitation	0	6	0	18
Soil permeability	1	8	8	24
Subsurface flows	0	8	0	24
Direct access to ground water	0	8	0	24
Subtotals			24	114
Subscore (100 x factor score subtotal/maximum score subtotal)				21

C. Highest pathway subscore.

Enter the highest subscore value from A, B-1, B-2 or B-3 above.

Pathways Subscore 41

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	80
Waste Characteristics	60
Pathways	41
Total	181 divided by 3 =

60 Gross total score

B. Apply factor for waste containment from waste management practices.

Gross total score x waste management practices factor = final score

60 x 1.00 =

60  
FINAL SCORE

## HAZARD ASSESSMENT RATING METHODOLOGY FORM

Name of Site: Hazardous Waste Storage No. 4  
 Location: Parking lot east of Building No. 38, North end of plant  
 Date of Operation or Occurrence: 1970's to 1981  
 Owner/Operator: USAF  
 Comments/Description: Used for storage of waste 1,1,1 trichloroethane and Freon

Site Rated by: Mark Spigel, Dan Harman

## I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	3	4	12	12
B. Distance to nearest well	3	10	30	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	3	6	18	18
E. Critical environments within 1 mile radius of site	3	10	30	30
F. Water quality of nearest surface water body	0	6	0	18
G. Ground water use of uppermost aquifer	3	9	27	27
H. Population served by surface water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
Subtotals			144	180
Receptors subscore (100 x factor score subtotal/maximum score subtotal)				<u>80</u>

## II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

- |  |   |
|--|---|
| 1. Waste quantity (1=small, 2=medium, 3=large) | 1 |
| 2. Confidence level (1=confirmed, 2=suspected) | 1 |
| 3. Hazard rating (1=low, 2=medium, 3=high)     | 3 |

Factor Subscore A (from 20 to 100 based on factor score matrix)      50

B. Apply persistence factor

Factor Subscore A x Persistence Factor = Subscore B

$$50 \quad \times \quad 1.00 \quad = \quad 50$$

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$50 \quad \times \quad 1.00 \quad = \quad \underline{\underline{50}}$$

## III. PATHWAYS

A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.

Subscore 0

B. Rate the migration potential for 3 potential pathways: surface water migration, flooding, and ground-water migration. Select the highest rating and proceed to C.

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
<b>1. Surface Water Migration</b>				
Distance to nearest surface water	3	8	24	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	2	6	12	18
Rainfall intensity	1	8	8	24
Subtotals			44	108
Subscore (100 x factor score subtotal/maximum score subtotal)				41
<b>2. Flooding</b>				
	0	1	0	3
Subscore (100 x factor score/3)				0
<b>3. Ground-water migration</b>				
Depth to ground water	2	8	16	24
Net precipitation	0	6	0	18
Soil permeability	1	8	8	24
Subsurface flows	0	8	0	24
Direct access to ground water	0	8	0	24
Subtotals			24	114
Subscore (100 x factor score subtotal/maximum score subtotal)				21

C. Highest pathway subscore.

Enter the highest subscore value from A, B-1, B-2 or B-3 above.

Pathways Subscore 41

## IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors 80  
 Waste Characteristics 50  
 Pathways 41

Total 171 divided by 3 =

57 Gross total score

B. Apply factor for waste containment from waste management practices.

Gross total score x waste management practices factor = final score

57 x 0.95 =

54  
 FINAL SCORE

## HAZARD ASSESSMENT RATING METHODOLOGY FORM

Name of Site: Underground Cyanide Vault  
 Location: East of Building No. 7  
 Date of Operation or Occurrence: Mid 1950's to late 1970's  
 Owner/Operator: USAF  
 Comments/Description: used to collect spilled plating waste

Site Rated by: Mark Spiegel, Dan Harman

## I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	3	4	12	12
B. Distance to nearest well	3	10	30	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	3	6	18	18
E. Critical environments within 1 mile radius of site	3	10	30	30
F. Water quality of nearest surface water body	0	6	0	18
G. Ground water use of uppermost aquifer	0	9	27	27
H. Population served by surface water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
Subtotals			144	180
Receptors subscore (100 x factor score subtotal/maximum score subtotal)				<u>80</u>

## II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

- |  |   |
|--|---|
| 1. Waste quantity (1=small, 2=medium, 3=large) | 1 |
| 2. Confidence level (1=confirmed, 2=suspected) | 1 |
| 3. Hazard rating (1=low, 2=medium, 3=high)     | 3 |

Factor Subscore A (from 20 to 100 based on factor score matrix) 40

B. Apply persistence factor

Factor Subscore A x Persistence Factor = Subscore B

$$40 \times 1.00 = 40$$

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$40 \times 1.00 = 40$$

SCALE: 0-100

## III. PATHWAYS

A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.

Subscore 0

B. Rate the migration potential for 3 potential pathways: surface water migration, flooding, and ground-water migration. Select the highest rating and proceed to C.

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
<b>1. Surface Water Migration</b>				
Distance to nearest surface water	3	8	24	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	2	6	12	18
Rainfall intensity	1	8	8	24
Subtotals			44	108
Subscore (100 x factor score subtotal/maximum score subtotal)				41
<b>2. Flooding</b>				
	0	1	0	3
Subscore (100 x factor score/3)				0
<b>3. Ground-water migration</b>				
Depth to ground water	2	8	16	24
Net precipitation	0	6	0	18
Soil permeability	1	8	8	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
Subtotals			32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28
<b>C. Highest pathway subscore.</b>				
Enter the highest subscore value from A, B-1, B-2 or B-3 above.				
Pathways Subscore				<u>41</u>

## IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	80
Waste Characteristics	40
Pathways	41
Total	161

divided by 3 =

54 Gross total score

b. Apply factor for waste containment from waste management practices.  
Gross total score x waste management practices factor = final score

54 x 0.95 =

51  
FINAL SCORE

APPENDIX G

REFERENCES

APPENDIX G  
REFERENCES

Albuquerque Water Resources Department, 1983. San Jose Well Field Masterplan. Albuquerque, New Mexico.

Bjorklund, L. J. and Maxwell, B. W., 1961. Availability of Ground Water in the Albuquerque Area, Bernalillo and Sandoval Counties, New Mexico. New Mexico State Engineer Technical Report 21, Santa Fe, New Mexico.

Bynon, J. 1983. General Electric Company, USAF Plant No. 83, Albuquerque, New Mexico. (505/765-9323) October 10, 1983.

Dane, C. H. and Bachman, G. O., 1965. Geologic Map of New Mexico. U.S. Geological Survey, Reston, Virginia.

Engineering-Science, 1981. Installation Restoration Program, Phase I - Records Search, Hazardous Materials Disposal Sites, Kirtland Air Force Base, New Mexico.

General Electric Company, 1983. Closure Plan and Financial Requirements for Interim Status Hazardous Waste Storage Facilities, August 26, 1983. General Electric Company, Aircraft Engine Business Group, Albuquerque, New Mexico.

Hacker, L. W., 1977. Soil Survey of Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico. U.S. Department of Agriculture, Soil Conservation Service, Albuquerque, New Mexico.

Holley, G., 1983. Albuquerque Waste Water Treatment Plant, Albuquerque, New Mexico (505/766-7955) October 17, 1983.

Hubbard, J. P. et al., 1979. Handbook of Species Endangered in New Mexico. New Mexico Department of Game and Fish, Santa Fe, New Mexico.

Hudson, J. D., 1982. Water-Table Map of the San Jose Well Field and Vicinity. Albuquerque, New Mexico, Spring 1981. U.S. Geological Survey Open-File Report 82-375.

Kues, G. E., 1983. Water-Level Data for San Jose Well Field and Vicinity, Albuquerque, New Mexico (Preliminary Data). U.S. Geological Survey, Water Resources Division, Albuquerque, New Mexico.

McQuillan, D. M., 1982. Pollution of the Rio Grande Valley-Fill Aquifer, in New Mexico Geological Society Guidebook, 33rd Field Conference, Albuquerque County II. New Mexico Health and Equipment Department, Environmental Improvement Division.

McQuillan, D. M., Oppenheimer, S. J. and Meyerhein, R. F., 1982. Organic Ground-Water Pollutants in the South Valley of Albuquerque, New Mexico (Final Draft). New Mexico Health and Environment Department, Environmental Improvement Division, Water Pollution Control Board; Surveillance and Standards Section, Santa Fe, New Mexico.

National Oceanic and Atmospheric Administration, 1979. Climatic Atlas of the United States. U.S. Department of Commerce, National Climatic Center, Asheville, North Carolina.

National Oceanic and Atmospheric Administration, 1963. Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, National Climatic Center, Asheville, North Carolina.

National Oceanic and Atmospheric Administration, 1983. Local Climatological Data, 1982 Annual Summary with Comparative Data, Albuquerque, New Mexico. National Climatic Center, Asheville, North Carolina.

New Mexico State Engineer, 1974. County Profile: Bernalillo County Water Resources Assessment for Planning Purposes, Santa Fe, New Mexico.

New Mexico Water Quality Control Commission, 1982. Water Quality Control Commission Regulations As Amended Through September 20, 1982. Santa Fe, New Mexico.

Pirooz, F., 1983. Albuquerque Water Resources Department, Albuquerque, New Mexico (505/766-7354) October 11, 1983.

Reeder, H. O. Bjorklund, L. J. and Dinwiddie, G. A., 1967. Quantitative Analysis of Water Resources in the Albuquerque Area, New Mexico. New Mexico State Engineer Technical Report 33, Santa Fe, New Mexico.

Rhoades, J., 1983. General Electric Company, USAF Plant No. 83, Albuquerque, New Mexico (505/765-9323) October 10, 1983.

Shah, 1983. Surface-Water Control Works of the District, Middle Rio Grande Conservancy District, Albuquerque, New Mexico.

U.S. Army Corps of Engineers, 1979. Albuquerque Greater Urban Area Water Supply Study, Appendix III of Albuquerque Greater Urban Area, Urban Studies Program. The Hydrologic Engineering Center, U.S. Army Corps of Engineers, Albuquerque District, New Mexico.

U.S. Geological Survey, 1981. Water Resources Data for New Mexico. U.S. Geological Survey Water-Data Report NM-80-1. U.S. Geological Survey, Water Resources Division, Albuquerque, New Mexico.

Wells, S. G., Lambert, W. and Callender, J. F., 1981. Editors Environmental Geology and Hydrology of New Mexico, New Mexico Geological Society Special Publication No. 10.

Wilson Laboratories, 1982. Water Sample Analyses for General Electric Company, USAF Plant No. 83 Wells. Salina, Kansas.

Wright, L., 1983. U.S. Environmental Protection Agency, Superfund Division, Enforcement Section, Dallas, Texas (214/767-9703) October 17, 1983.

APPENDIX H  
GLOSSARY OF TERMINOLOGY AND ABBREVIATIONS

## APPENDIX H

### GLOSSARY OF TERMINOLOGY AND ABBREVIATIONS

ACF: American Car and Foundry, Incorporated

AF: Air Force.

AFESC: Air Force Engineering and Services Center.

Ag: Chemical symbol for silver.

Al: Chemical symbol for aluminum.

ALLUVIUM: Materials eroded, transported and deposited by streams.

ALLUVIAL FAN: A fan-shaped deposit formed by a stream either where it issues from a narrow mountain valley into a plain or broad valley, or where a tributary stream joins a main stream.

ALODINE 1200: Alumigold Tinco Mil L-5541.

ARTESIAN: Ground water contained under hydrostatic pressure.

ASD/PMD: Aeronautical Systems Division, Directorate of Manufacturing.

AQUIFER: A geologic formation, group of formations, or part of a formation that is capable of yielding water to a well or spring.

AROMATIC: Description of organic chemical compounds in which the carbon atoms are arranged into a ring with special electron stability associated. Aromatic compounds are often more reactive than non-aromatics.

Ba: Chemical symbol for barium.

BIOACCUMULATE: Tendency of elements or compounds to accumulate or build up in the tissues of living organisms when they are exposed to these elements in their environments, e.g., heavy metals.

BIODEGRADABLE: The characteristic of a substance to be broken down from complex to simple compounds by microorganisms.

CaCO<sub>3</sub>: Chemical symbol for calcium carbonate.

CAYTUR 21: Methylethylene Dianiline.

Cd: Chemical symbol for cadmium.

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act.

CIRCA: About; used to indicate an approximate date.

**CLOSURE:** The completion of a set of rigidly defined functions for a hazardous waste facility no longer in operation.

**CN:** Chemical symbol for cyanide.

**COD:** Chemical Oxygen Demand, a measure of the amount of oxygen required to oxidize organic and oxidizable inorganic compounds in water.

**COE:** Corps of Engineers.

**CONFINED AQUIFER:** An aquifer bounded above and below by impermeable strata or by geologic units of distinctly lower permeability than that of the aquifer itself.

**CONFINING UNIT:** An aquitard or other poorly permeable layer which restricts the movement of ground water.

**CONTAMINATION:** The degradation of natural water quality to the extent that its usefulness is impaired; there is no implication of any specific limits since the degree of permissible contamination depends upon the intended end use or uses of the water.

**COOLANT:** Lubricant used during machining and cutting processes (e.g., Simcool, Trimaol).

**Cr:** Chemical symbol for chromium.

**Cu:** Chemical symbol for copper.

**DCAS:** Defense Contract Administration Services

**DIP:** The angle at which a stratum is inclined from the horizontal.

**DISPOSAL FACILITY:** A facility or part of a facility at which hazardous waste is intentionally placed into or on land or water, and at which waste will remain after closure.

**DISPOSAL OF HAZARDOUS WASTE:** The discharge, deposit, injection, dumping, spilling, or placing of any hazardous waste into or on land or water so that such waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground water.

**DOD:** Department of Defense.

**DOE:** U. S. Department of Energy.

**DOW 17 ANODIZER:** Sandia Spec 400104, Anodizing Magnesium.

**DOWNGRADIENT:** In the direction of decreasing hydraulic static head; the direction in which ground water flows.

**EDM OIL:** Electrical discharge machining oil.

**EFFLUENT:** A liquid waste discharge from a manufacturing or treatment process, in its natural state, or partially or completely treated, that discharges into the environment.

**EP:** Extraction Procedure, the EPA's standard laboratory procedure for leachate generation.

**EPA:** U.S. Environmental Protection Agency.

**EPHEMERAL AQUIFER:** A water-bearing zone typically located near the surface which normally contains water seasonally.

**EROSION:** The wearing away of land surface by wind, water, or chemical processes.

**ES:** Engineering-Science, Inc.

**EXTRACTION PROCEDURE TOXICITY METALS:** Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver

**FACILITY:** Any land and appurtenances thereon and thereto used for the treatment, storage and/or disposal of hazardous wastes.

**FAULT:** A fracture in rock along which the adjacent rock surfaces are differentially displaced.

**Fe:** Chemical symbol for iron.

**FLOOD PLAIN:** The lowland and relatively flat areas adjoining inland and coastal areas of the mainland and off-shore islands, including, at a minimum, areas subject to a one percent or greater chance of flooding in any given year.

**FLOW PATH:** The direction or movement of ground water as governed principally by the hydraulic gradient.

**GC/MS:** Gas chromatograph/mass spectrophotometer, a laboratory procedure for identifying unknown compounds.

**GE:** General Electric Company

**GROUND WATER:** Water beneath the land surface in the saturated zone that is under atmospheric or artesian pressure.

**GROUND WATER RESERVOIR:** The earth materials and the intervening open spaces that contain ground water.

**HALOGEN:** The class of chemical elements including fluorine, chlorine, bromine, and iodine.

**HARDFIELD:** Disposal after receiving construction debris, wood, miscellaneous spoil material.

**HAKME:** Hawaii Amendment Rating Methodology.

**HAZARDOUS SUBSTANCE:** Under CERCLA, the definition of hazardous substance includes:

1. All substances regulated under Paragraphs 311 and 307 of the Clean Water Act (except oil);
2. All substances regulated under Paragraph 3001 of the Solid Waste Disposal Act;
3. All substances regulated under Paragraph 112 of the Clean Air Act;
4. All substances which the Administrator of EPA has acted against under Paragraph 7 of the Toxic Substance Control Act;
5. Additional substances designated under Paragraph 102 of the Superfund bill.

**HAZARDOUS WASTE:** As defined in RCRA, a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

**HAZARDOUS WASTE GENERATION:** The act or process of producing a hazardous waste.

**HEAVY METALS:** Metallic elements, including the transition series, which include many elements required for plant and animal nutrition in trace concentrations but which become toxic at higher concentrations.

**Hg:** Chemical symbol for mercury.

**HWMP:** Hazardous Waste Management Facility.

**HYDROCARBONS:** Organic chemical compounds composed of hydrogen and carbon atoms chemically bonded. Hydrocarbons may be straight chain, cyclic, branched chain, aromatic, or polycyclic, depending upon arrangement of carbon atoms. Halogenated hydrocarbons are hydrocarbons in which one or more hydrogen atoms has been replaced by a halogen atom.

**INCOMPATIBLE WASTE:** A waste unsuitable for commingling with another waste or material because the commingling might result in generation of extreme heat or pressure, explosion or violent reaction, fire, formation of substances which are shock sensitive, friction sensitive, or otherwise have the potential for reacting violently, formation of toxic dusts, mists, fumes, and gases, volatilization of ignitable or toxic chemicals due to heat generation in such a manner that the likelihood of contamination of ground water or escape of the substance into the environment is increased, any other reaction which might result in not meeting the air, human health, and environmental standards.

INFILTRATION: The movement of water through the soil surface into the ground.

IRIDITE #1: Chromate solution.

IRP: Installation Restoration Program.

LEACHATE: A solution resulting from the separation or dissolving of soluble or particulate constituents from solid waste or other man-placed medium by percolation of water.

LEACHING: The process by which soluble materials in the soil, such as nutrients, pesticide chemicals or contaminants, are washed into a lower layer of soil or are dissolved and carried away by water.

LINER: A continuous layer of natural or man-made materials beneath or on the sides of a surface impoundment, landfill, or landfill cell which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents or leachate.

LITHOLOGY: The description of the physical character of a rock.

LYSIMETER: A vacuum operated sampling device used for extracting pore water samples at various depths within the unsaturated zone.

MGD: Million Gallons per Day.

Mn: Chemical symbol for manganese.

MONITORING WELL: A well used to measure ground-water levels and to obtain samples.

MS 123: Freon solution.

MSL: Mean Sea Level.

NDI: Non-destructive Inspection.

NET PRECIPITATION: The amount of annual precipitation minus annual evaporation.

NGVD: National Geodetic Vertical Datum of 1929.

Ni: Chemical symbol for nickel.

NMEID: New Mexico Environmental Improvement Division

NMHED: New Mexico Health and Environment Department

NMWQCC: New Mexico Water Quality Control Commission

NOAA: National Oceanic and Atmospheric Administration.

NPDES: National Pollutant Discharge Elimination System.

OEHL: Occupational and Environmental Health Laboratory.

ORGANIC: Being, containing or relating to carbon compounds, especially in which hydrogen is attached to carbon.

O&G: Symbols for oil and grease.

Pb: Chemical symbol for lead.

PCB: Polychlorinated Biphenyl; liquids used as a dielectrics in electrical equipment.

PERCOLATION: Movement of moisture by gravity or hydrostatic pressure through interstices of unsaturated rock or soil.

PERMEABILITY: The capacity of a porous rock, soil or sediment for transmitting a fluid without damage to the structure of the medium.

PERSISTENCE: As applied to chemicals, those which are very stable and remain in the environment in their original form for an extended period of time.

pH: Negative logarithm of hydrogen ion concentration.

POLLUTANT: Any introduced gas, liquid or solid that makes a resource unfit for a specific purpose.

POLYCYCLIC COMPOUND: All compounds in which carbon atoms are arranged into two or more rings, usually aromatic in nature.

POTENTIALLY ACTIVE FAULT: A fault along which movement has occurred within the last 25-million years.

POTENTIOMETRIC SURFACE: The surface to which water in an aquifer would rise through tightly cased wells open only to the aquifer.

PPB: Parts per billion by weight.

PPM: Parts per million by weight.

PRECIPITATION: Rainfall.

QUATERNARY MATERIALS: The second period of the Cenozoic geologic era, following the Tertiary, and including the last 2-3 million years.

RCRA: Resource Conservation and Recovery Act.

RECEPTORS: The potential impact group or resource for a waste contamination source.

RECHARGE AREA: A surface area in which surface water or precipitation percolates through the unsaturated zone and eventually reaches the zone of saturation. Recharge areas may be natural or manmade.

RECHARGE: The addition of water to the ground-water system by natural or artificial processes.

SANITARY LANDFILL: A land disposal site using an engineered method of disposing solid wastes on land in a way that minimizes environmental hazards.

SATURATED ZONE: That part of the earth's crust in which all voids are filled with water.

SAX'S TOXICITY: A rating method for evaluating the toxicity of chemical materials.

SCS: U.S. Department of Agriculture Soil Conservation Service.

SEISMICITY: Pertaining to earthquakes or earth vibrations.

SIMCOOL: Water base coolant.

SLUDGE: Any garbage, refuse, or sludge from a waste treatment plant, water supply treatment, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, or agricultural operations and from community activities, but does not include solid or dissolved materials in domestic sewage; solid or dissolved materials in irrigation return flows; industrial discharges which are point source subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 USC 880); or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954 (68 USC 923).

SMUT-GO: Chromate nitric acid solution.

SOLID WASTE: Any garbage, refuse, or sludge from a waste treatment plant, water supply treatment, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, or agricultural operations and from community activities, but does not include solid or dissolved materials in domestic sewage; solid or dissolved materials in irrigation return flows; industrial discharges which are point source subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 USC 880); or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954 (68 USC 923).

SPILL: Any unplanned release or discharge of a hazardous waste onto or into the air, land, or water.

STORAGE OF HAZARDOUS WASTE: Containment, either on a temporary basis or for a longer period, in such a manner as not to constitute disposal of such hazardous waste.

TCE: Trichloroethylene.

TDS: Total Dissolved Solid, a water quality parameter.

TOC: Total Organic Carbon.

TOXICITY: The ability of a material to produce injury or disease upon exposure, ingestion, inhalation, or assimilation by a living organism.

TRANSMISSIVITY: The rate at which water is transmitted through a unit width of aquifer under a unit hydraulic gradient.

TREATMENT OF HAZARDOUS WASTE: Any method, technique, or process including neutralization designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize the waste or so as to render the waste nonhazardous.

TRIMSOL: Water base coolant.

TSD: Treatment, storage or disposal.

TUCO 4409: Amonium bifluoride.

TURCO ARR: Alkaline rust remover, 88-95% NaOH

TURCO AVIATION: Trisodium phosphate.

UPGRADIENT: In the direction of increasing hydraulic static head; the direction opposite to the prevailing flow of ground-water.

USAF: United States Air Force.

USDA: United States Department of Agriculture

USFWS: United States Fish and Wildlife Service.

USGS: United States Geological Survey.

WATER TABLE: Surface of a body of unconfined ground water at which the pressure is equal to that of the atmosphere.

Zn: Chemical symbol for ~~zinc~~.

# APPENDIX

## B

### CONTENTS:

1. Sunport Commerce Center Design Overlay



**DRAFT**

**SUNPORT COMMERCE CENTER**  
Design Overlay  
January 31, 2014



*The Sunport Commerce Center Design Overlay was prepared by:*





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## 01 INTRODUCTION

### **Purpose**

The purpose of the Sunport Commerce Center Design Overlay (Design Overlay) is to positively influence development patterns in an effort to shape and enhance the character and identity of the area. The Design Overlay applies to all parcels that lie between 2nd Street to the west, Woodward Road and Sunport Boulevard to the north, Interstate 25 to the east, and Rio Bravo Boulevard to the south (See Exhibit A on the following page). Zoning will continue to be regulated by the Bernalillo County zoning ordinance. This is an addendum to the Bernalillo County/International Sunport Station Area Sector Development Plan, whose boundary is shown in Exhibit A on the following page.

The Design Overlay works in tandem with the existing zoning designations which specify allowable land uses and basic design parameters. The Design Overlay provides more detailed requirements for site, building, parking, and landscape standards which will also be used by Bernalillo County for plan reviews. The set of straightforward design standards have been developed to assist owners, builders, architects, and designers in the preparation of building plans for development. The intent is to provide direction and establish a baseline of design that will result in a more attractive and cohesive built environment. Done correctly, the Design Overlay will reduce the scale and frequency of detrimental uses that impact the overall community, encourage new economic activity, and elevate the overall image and identity of the area. Its strategic location, adjacent to the railroad, Interstate 25, as well as the Sunport cargo facilities, makes the area well situated to capitalize on manufacturing, warehousing, and distribution.

### **Design Overlay Goals**

The design standards of the Design Overlay are meant to inform development in a way that enhances the image and character of the area along with the following goals:

1. Physically reinforce the identity and character of the South Valley, the nearby Rio Grande bosque, and Valle Del Oro National Wildlife Refuge.
2. Strengthen existing communities through revitalization by increasing economic activity and generating new jobs for area residents.
3. Establish Sunport Commerce Center as a primary gateway to the South Valley.
4. Foster the Commerce Center's design to reflect the setting between the agricultural lands of the Rio Grande valley and the international commerce of the urbanized region.
5. Strengthen connectivity within the Design Overlay zone area and to adjacent areas.
6. Promote sustainable development through the recruitment of clean industry as well as the use of best practices in the design of landscape and the built environment.

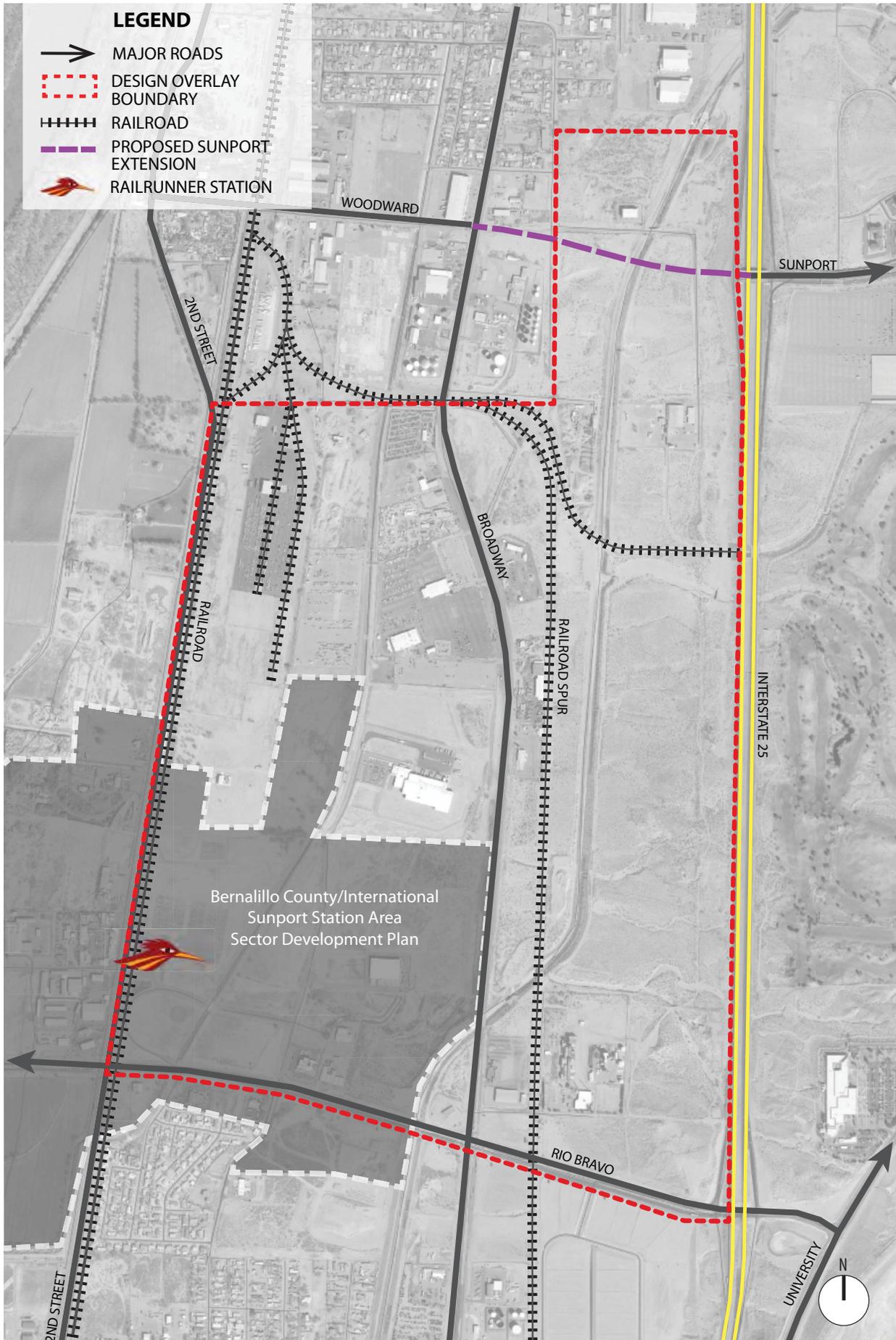


Exhibit A: Sunport Commerce Center Design Overlay boundary and context boundary and general context.



## 02 PROCESS

### Submittals

Applicants will follow standard County requirements and procedures for site plan approvals. In addition, applicants will be required to provide the following information:

1. Color samples of base, trim, and accent colors.
2. Specifications for proposed exterior lighting.
3. Short narrative explaining how proposed development meets design overlay standards.

A checklist at the end of this document summarizes the elements that need to be addressed.

### Implementation

Thresholds for application: Any addition to a building or structure that is 1,000 square feet or greater and all new development shall trigger compliance with the Sunport Commerce Center Design Overlay. Any project that requires a zone change or a Special Use Permit is also subject to these requirements. Additions greater than 20 percent of existing square footage will need to comply with landscape and signage requirements.

Utilizing the existing land use framework, the standards and guidelines address the following four design elements:

- circulation and access,
- area standards,
- architectural character, and
- site development.





## 03 STANDARDS + GUIDELINES

### CIRCULATION + ACCESS

#### Streets

Access and circulation should create an interconnected street network to provide a safe environment for all types of users. Currently, the Sunport Commerce Center area is predominantly undeveloped and roadways are built to only serve motorists. As the area develops, safer mobility infrastructure will become increasingly necessary, particularly within the Sunport RailRunner Station area. A complete streets concept design approach is intended to facilitate this process. Complete streets are designed and maintained to allow for safe usage by all users, including pedestrians, bicyclists, transit, and motorists.

The area is made up of three roadway types including principle arterials, minor arterials, and collectors. Broadway is categorized as a principle arterial. Principle arterials are roadways that are meant to carry high traffic volumes and accommodate trips leaving and entering urban areas. It should be noted that while Broadway is a principle arterial, it serves a significantly lower number of daily trips than its categorization suggests. There is significant opportunity for a complete street approach and possible lane reductions along this segment of the arterial. On the other hand, minor arterials interconnect and support higher service roads and sometimes carry local transit service. 2nd Street is categorized as a minor arterial. Additionally, collectors gather traffic from local roadways and funnel that traffic to the arterial roadway network. Prince Street and the planned roadways within the Sunport Commerce Center will likely be classified as collectors.

The following standards apply to all roadways within the Sunport Commerce Center:

#### Standards

1. Automobile entrances to commercial development shall be designed to ensure safety for motorists, pedestrians, and bicyclists
2. Service access and circulation to commercial developments shall be designed to allow use by both emergency and service vehicles.
3. Provide separate loading and delivery facilities from customer and pedestrian areas.
4. Curb radius standards per County Code.

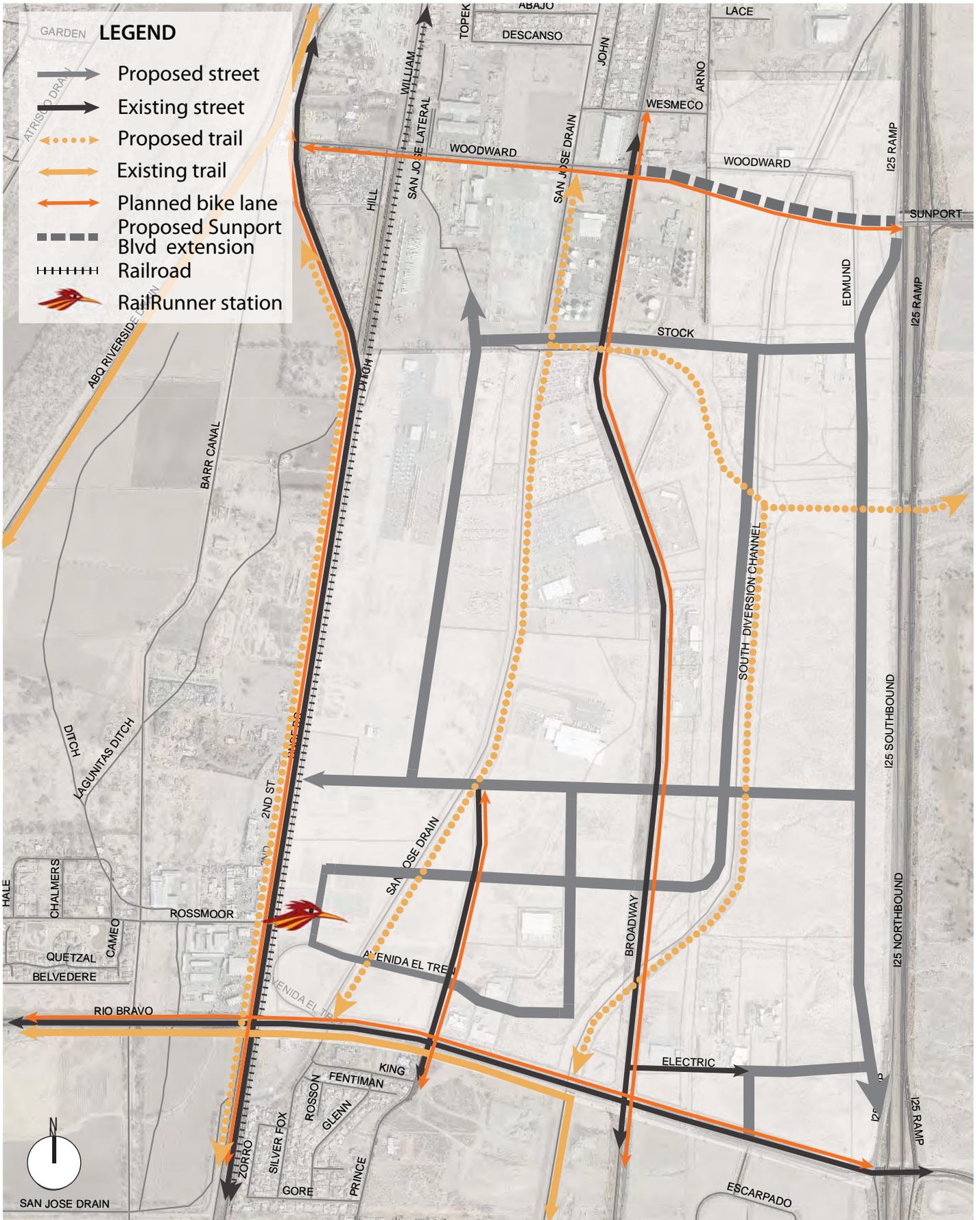


Exhibit B: Access and circulation framework.



**Street Trees**

Urban tree canopies contribute many positive aspects for the built environment such as reducing the urban heat island effect, providing relief from summer heat for pedestrians, and providing a positive visual aesthetic to urban development. This enhanced image will ultimately contribute to the value of the Sunport Commerce Center and surrounding communities.

**Standards**

1. Street trees are required along existing and proposed streets.
2. New trees shall have an approximate regular spacing of 30 feet or less on center. Modifications can be made in extraordinary circumstances where utilities or other infrastructure make it difficult to meet this requirement.

Trees should be planted in either a landscape strip a minimum of four feet wide parallel to and adjacent to the street or in minimum size 4' x 4' ground level planter with grates that are flush with the sidewalk.

**Sidewalks + Crosswalks**

Connectivity and access characterize walkable environments. Crosswalks contribute to an area’s walkability by providing attractive and safe routes for pedestrians to cross streets. This basic infrastructure also promotes health for nearby residents and employees by providing safe places to recreate and encouraging commuting by means other than the automobile.

**Standards**

1. Sidewalks shall be a minimum of 4’ in width and include a landscape strip that is a minimum of 4’ in width.
2. Crosswalks shall be marked by striping and/or textured/colored pavement for high visibility. Examples of allowable materials include:
  - Colored or Portland Grey concrete
  - Pavers/brick
  - Thermo-plastic striping
3. Crosswalks shall be required where sidewalks are interrupted by driveway curb cuts. Crosswalks are also required on-site in parking lots larger than 50 spaces to define a primary path to building entrances.
4. Raised medians shall be used for pedestrian refuges in crosswalks with cut-throughs for wheelchairs where turn-lanes exist.



Examples of street trees and landscape strip.  
Photo by Travis Lewis.



Examples of crosswalk elements.

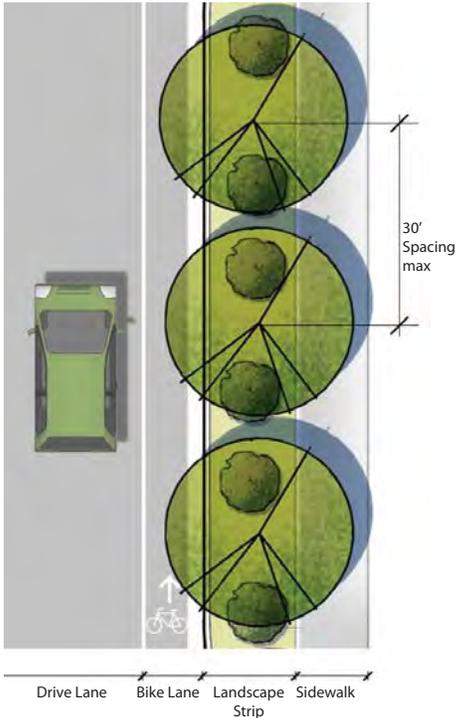
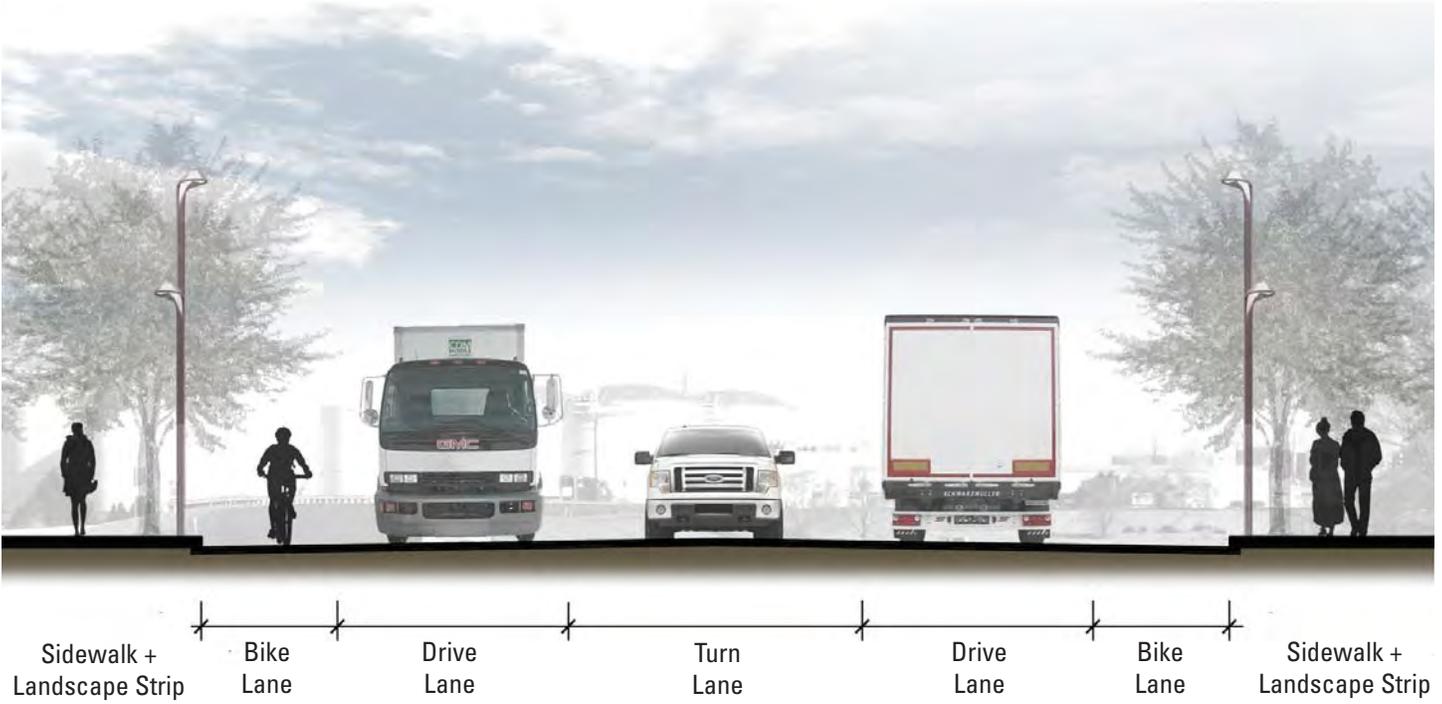
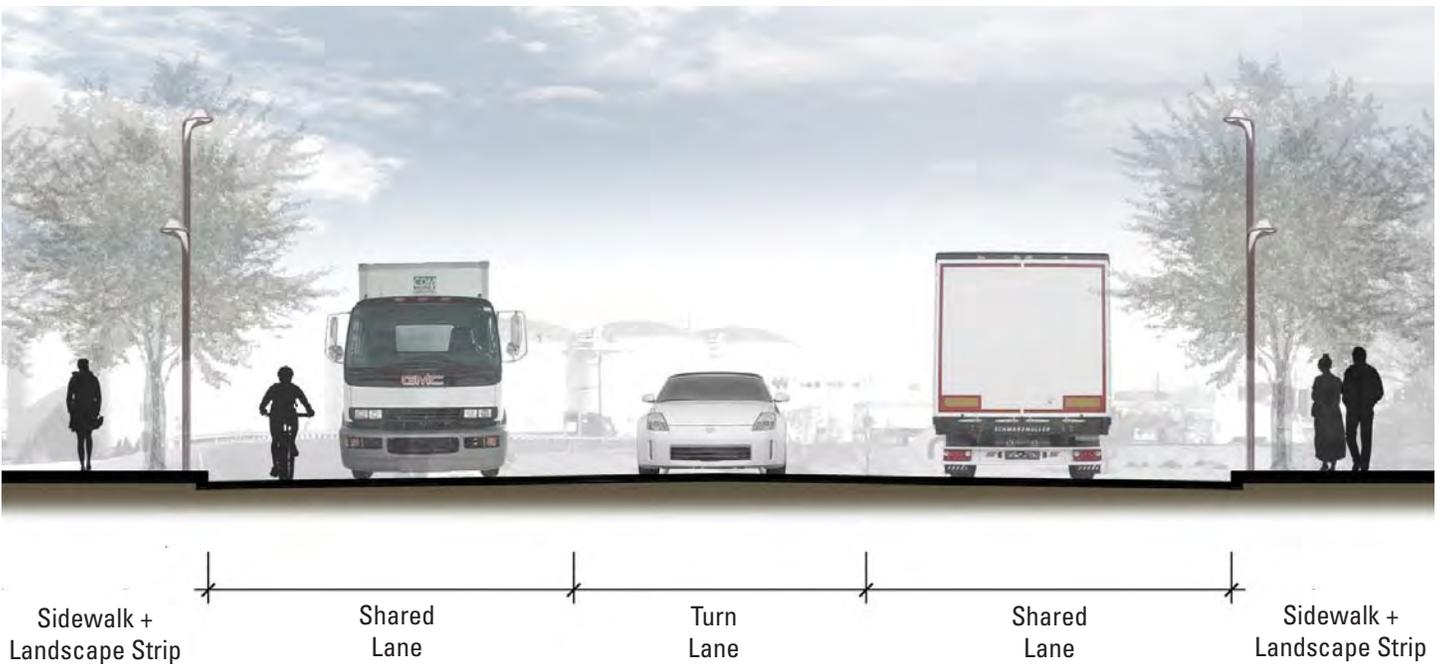


Exhibit C: Street tree spacing.



*Exhibit D: Typical arterial street section.*



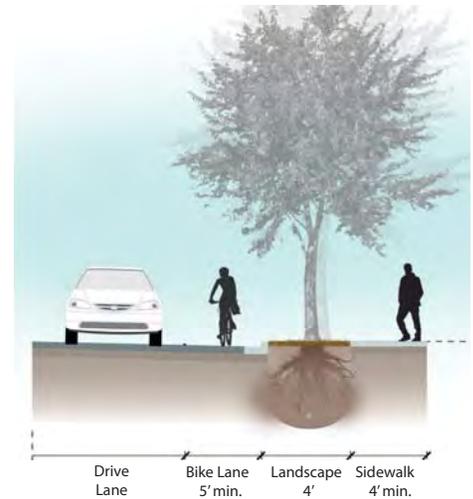
*Exhibit E: Typical collector street section.*



5. Pedestrian countdown signals that are audible and visual shall be installed and signal buttons shall be located at the appropriate height next to curb ramp landings. Signals shall be timed for children, seniors, and the disabled.
6. Bus stops shall consist of a sign and bench at the very minimum. In areas of higher use, a shelter is appropriate.
7. Pedestrian lighting shall be installed along sidewalks and all crosswalks shall be well lit.
8. Pedestrian and accessible facilities are to be constructed according to AASHTO, "Guide for Planning, Design, and Operation of Pedestrian Facilities."
9. All ramps shall be designed to ADA standards and be in line with crosswalks. Two ramps at each corner are recommended.
10. All public art and site furnishings shall be coordinated with existing bus stops to accentuate the wayfinding and pedestrian experience.



*Bus Shelter.*



*Street accommodating bike lane.*

## Bicycle Facilities

Despite the high volume of traffic on adjacent streets, bicycles can be an important element of daily life and contribute to the character and function of the area. To properly promote and support safe biking, practices such as those outlined below shall be followed:

### Standards

1. Major and minor arterial streets within the Sunport Commerce Center Design Overlay shall be designed to accommodate bike lanes (see Exhibit D and E on previous page). Bike lanes need to meet minimum County standards (5' wide) and be properly defined with a high contrast stripe. Ideally, the lane is painted a solid color to distinguish the extents of the bike lane.
2. Bike lanes shall be marked with proper signage, both within the lane on the ground and with posted street signs.
3. Bike lanes shall be properly coordinated and marked at right turn lanes.
4. Short-term bike parking shall be visible, secure, well lit, unimpeded by stationary objects, and easily accessible.



*Example of bicycle racks.*



5. Bicycle facilities shall be constructed according to AASHTO, "Guide for the Development of Bicycle Facilities 4th Edition."
6. One bike space shall be provided for every 20 car spaces. Bike racks will be located within 40' of the primary building entrance.
7. 10% of the required bike spaces shall be in the form of covered, secure bike storage. This can be indoors or outdoors.

### Open Space + Parks

Provision of open space is vital to the development of healthy communities. As the area develops, there exists an opportunity to create useful, accessible, and inviting open spaces. There is also an opportunity for the open space to physically connect to and reflect the presence of the nearby Rio Grande bosque and International Sunport. Exhibit B shows proposed trails along the San Jose Drain and South Diversion Channel.

### Standards

1. Public parks, plazas, and recreational spaces shall be open and accessible to the public from public streets, walkways, and trails.
2. Integration of art into the design and development of open space and parks is encouraged.
3. Consider integrating elements of the bosque as well as the Sunport in the design of open space and parks.
4. Properties adjacent to drainage arroyos shall have a minimum 20' buffer adjacent to arroyos and allow for passage along drainage arroyos.



*Art related to the river.  
Source: American City and County*



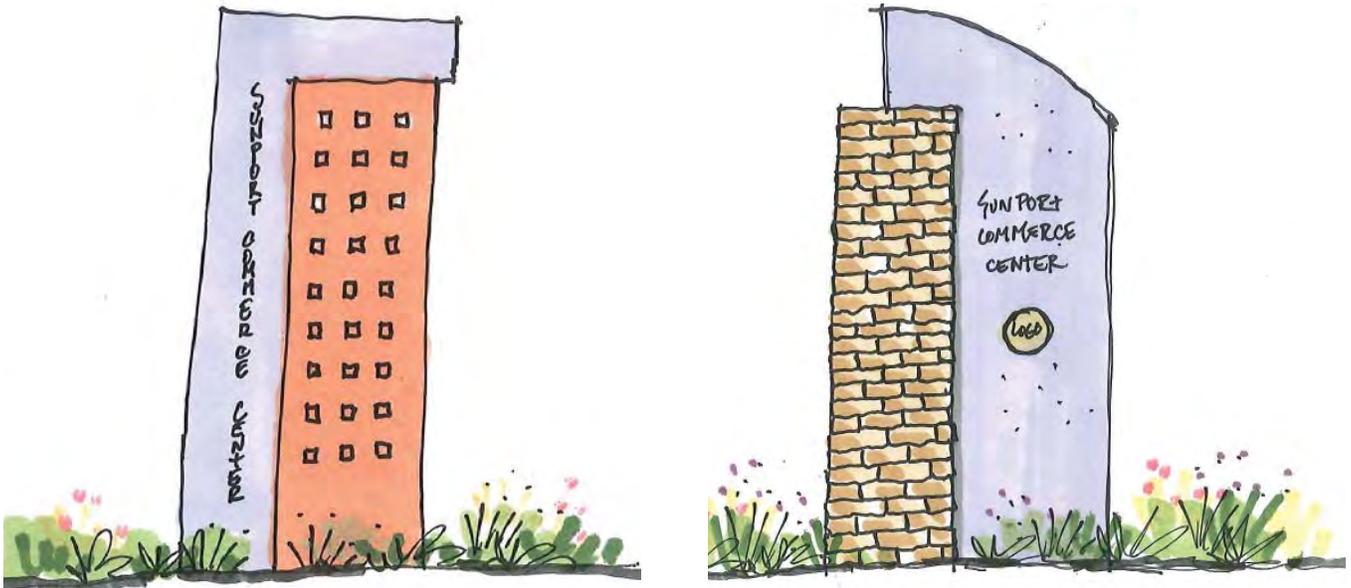
*Example of active public space.*



## Gateways + Signage

The Sunport Commerce Center endeavors to become a primary gateway to the South Valley while simultaneously developing its own brand. Gateway signage helps to celebrate the unique qualities of places. They provide a sense of entry and exit as well as emphasize the importance of the place they are celebrating. Signage shall reflect key characteristics of the area through materiality and design in addition to the following guidelines:

1. Place gateway signage at key locations that will highlight the significance of the Sunport Commerce Center. See following page for potential locations.
2. Exact location, design, and placement of gateway signage shall be determined by the County.



*Potential gateway concepts for Sunport Commerce Center.*

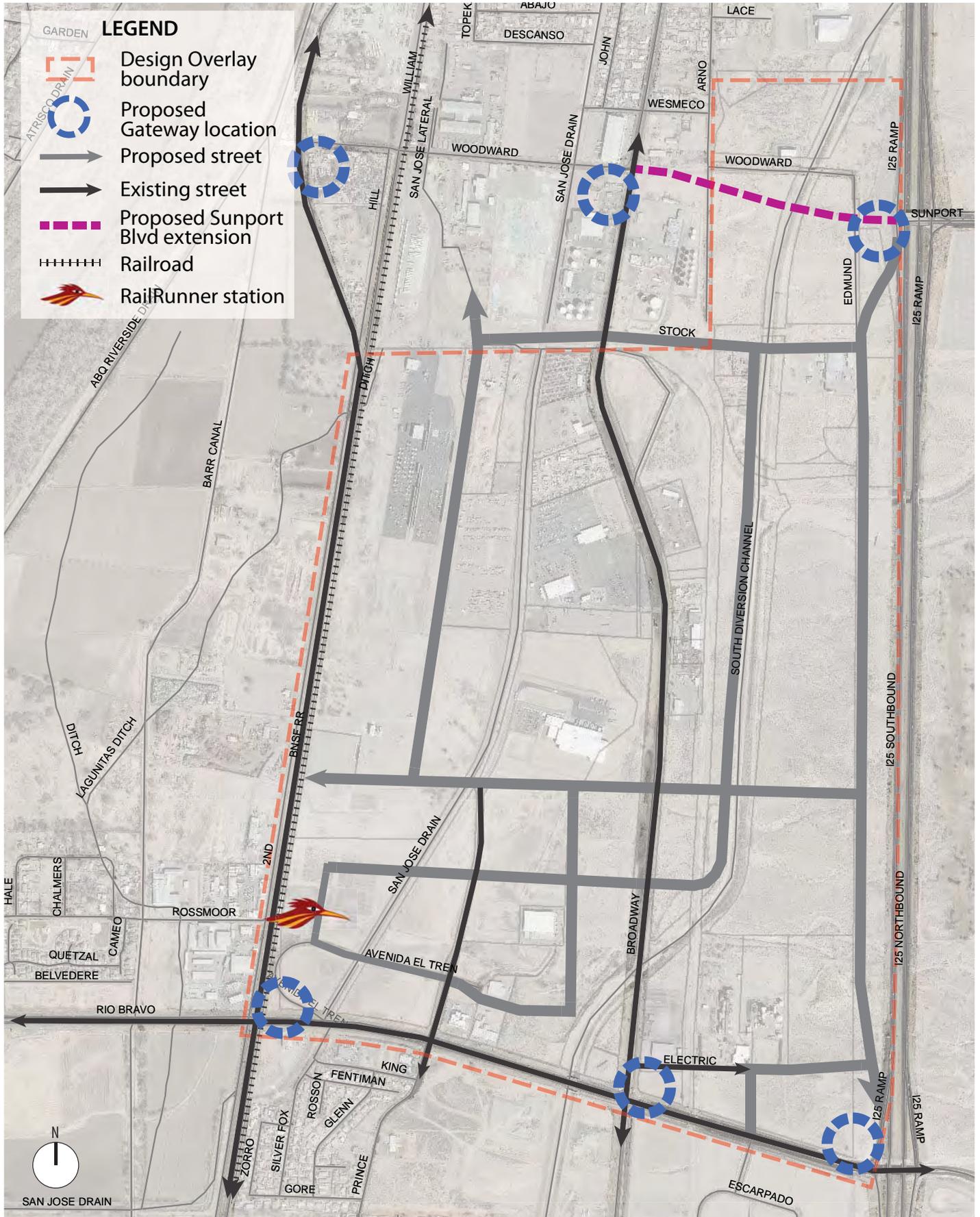


Exhibit F: Potential gateway signage locations.



## AREA STANDARDS

### Building Orientation

Buildings within the Sunport Commerce Center shall be oriented toward the street. The site circulation shall address and enhance the pedestrian realm. Building facades shall be designed to enliven the frontages of buildings and contribute positively to the overall character of the street and the district.

1. Primary entrances shall be prominent and placed along the primary street or near a street-adjacent corner. The primary street is the right-of-way that is taken to access the site.
2. Mirrored glazing and blank facades are not permitted on the ground-level of street-facing facades and are discouraged in general.
3. Loading docks, overhead doors, and service entries are strongly discouraged along street-facing facades and should only be used when other options are not available.

### Height Standards

1. The maximum building height shall be 60 feet, measured to the tallest part of the building from grade. Special architectural features such as clock towers, bell towers, and cupolas may extend up to 8 feet above the maximum building height, provided they are no more than 30 feet in width and make up no more than one third of the building's entry façade.

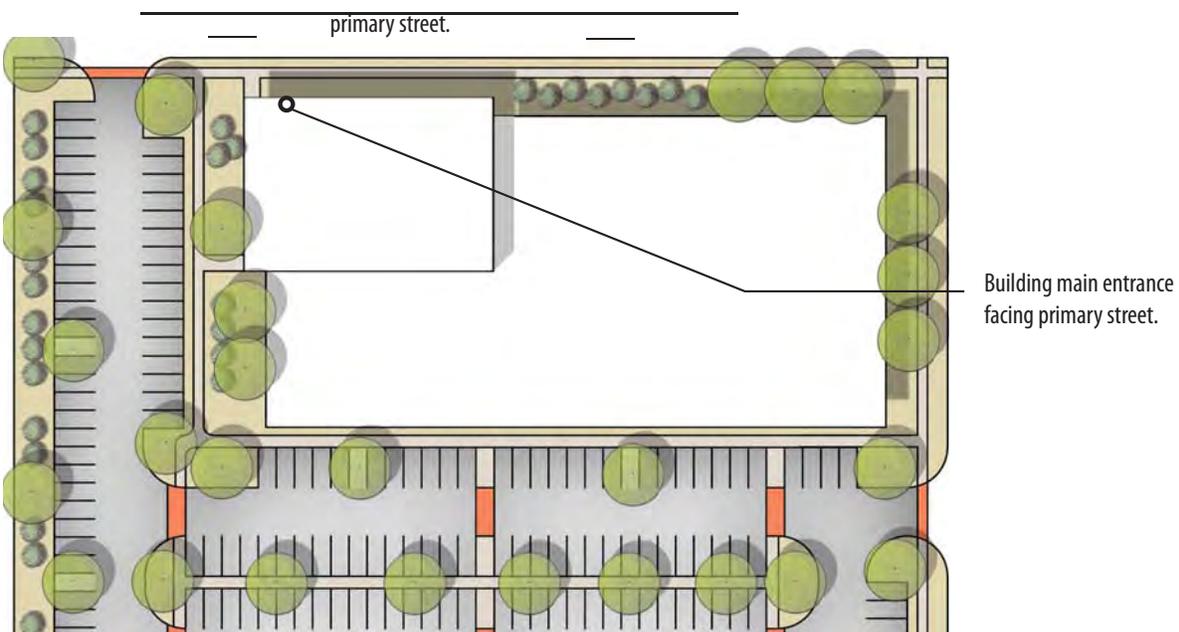


Exhibit G: Building location close to primary street.



## Setback Standards

Reduced setbacks result in a more active and interesting pedestrian realm. Buildings should be sited near the public right-of-way to contribute to the public realm. Topography in this area makes it difficult to enforce area-wide, however. Thus, flexibility is provided for such instances.

1. Buildings shall be located as close to a primary street as possible. Setbacks standards are as follows:
  - Front: 100' maximum
  - Side: 10' minimum
  - Rear: 10' minimum



## ARCHITECTURAL CHARACTER

### Standards

1. Primary building entrances shall be clearly expressed. Building entrances on corner lots shall address both streets.
2. All street-facing building walls shall be articulated with consistent style and materials. Exterior building walls shall contain windows, punched openings, change in height or plane, awnings or vertical posts every 80 feet or less.
3. Rooftop mechanical equipment shall be screened from view when standing on the adjoining sidewalk.
4. All industrial activities/materials and processing/assembling shall be conducted within an enclosed structure or covered area.
5. Materials stored in yards cannot be higher than 10 feet and must be screened by a 10-foot high wall or fence (see Walls + Fences, p.21).
6. Service areas such as loading docks, trash compactors, and storage yards shall be screened and/or located away from pedestrian areas to ensure they are out of sight of the public right-of-way and public open spaces.
7. Walls and/or fences are required for screening non-residential uses that abut residential properties (see Walls + Fences, p.21).
8. Limited use of accent colors on doors, covered entries and to highlight specific building masses is encouraged. Color palettes shall be approved by the County.
9. Refuse collection areas shall be screened with a maximum 8-foot high solid wall or fence, and must be effectively designed to contain all refuse generated on-site and deposited between collections. Deposited refuse should not be



*Examples of clearly expressed entrances, street facing building walls, and color variations.*

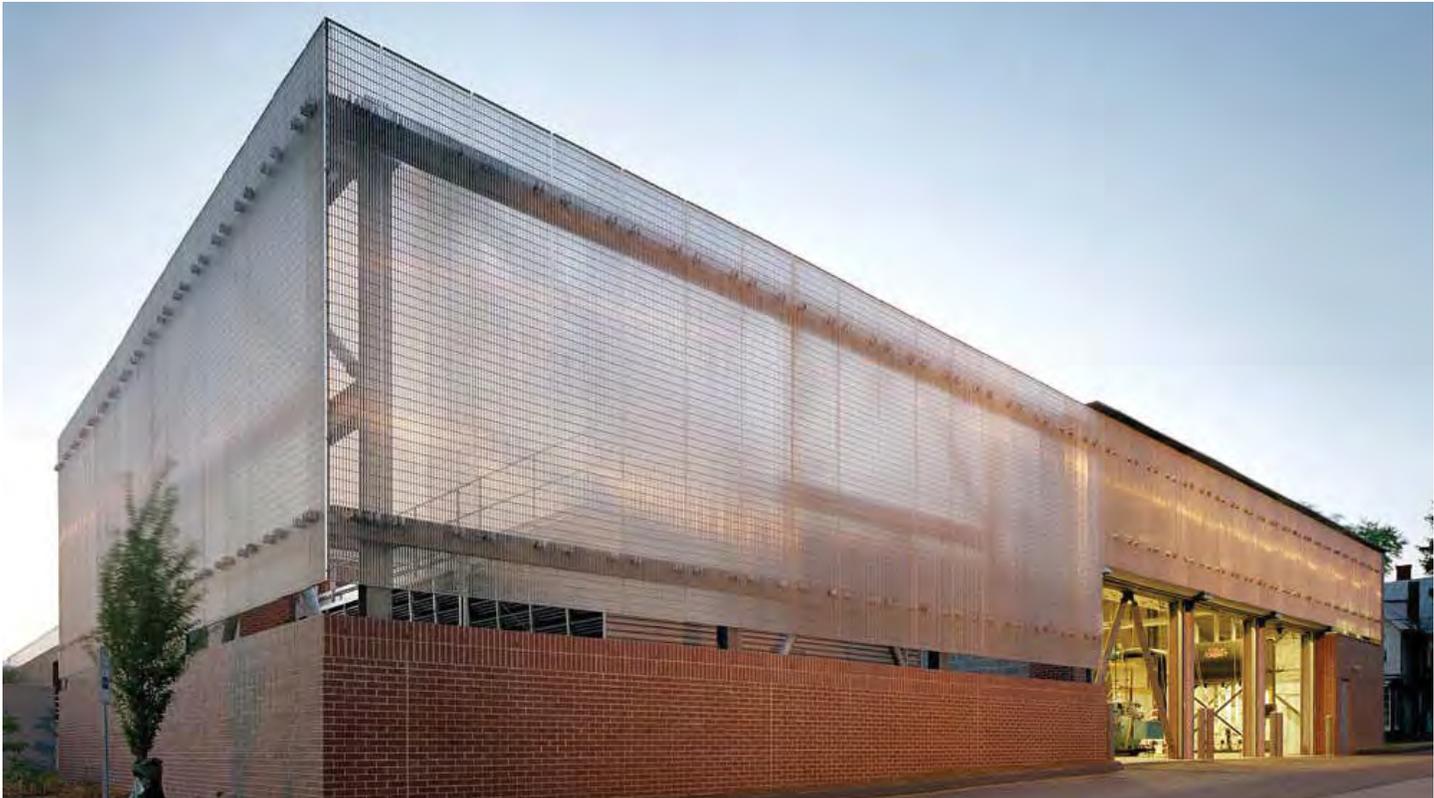


Example of prohibited Twin-T construction.

visible from outside the refuse enclosure. No refuse collection areas shall be located between street and building fronts.

**Material Quality & Detail Standards**

1. All buildings shall use materials that are durable, easily maintained, and of a quality that will retain their appearance over time.
2. Highly reflective mirror glass is prohibited at the ground level of street-facing facades.
3. The following materials shall be prohibited:
  - Twin-T construction.
  - Natural wood or wood paneling shall not be used as a primary exterior wall cladding system.
  - Natural concrete masonry unit (CMU) is not permitted as a primary exterior finish.
  - Pre-manufactured metal buildings shall be prohibited where visible from the public right-of-way.



Example of architectural character and screening.  
Source: Spillman Farmer Architects



*U.S. Foods facility, located within the Sunport Commerce Center.*



*Example of building orientation along a primary street.*



*Pedestrian paths through parking lot, with integrated native vegetation and pervious surfaces. Photo by Travis Lewis*



*Example of rainwater harvesting along the parking perimeter.*

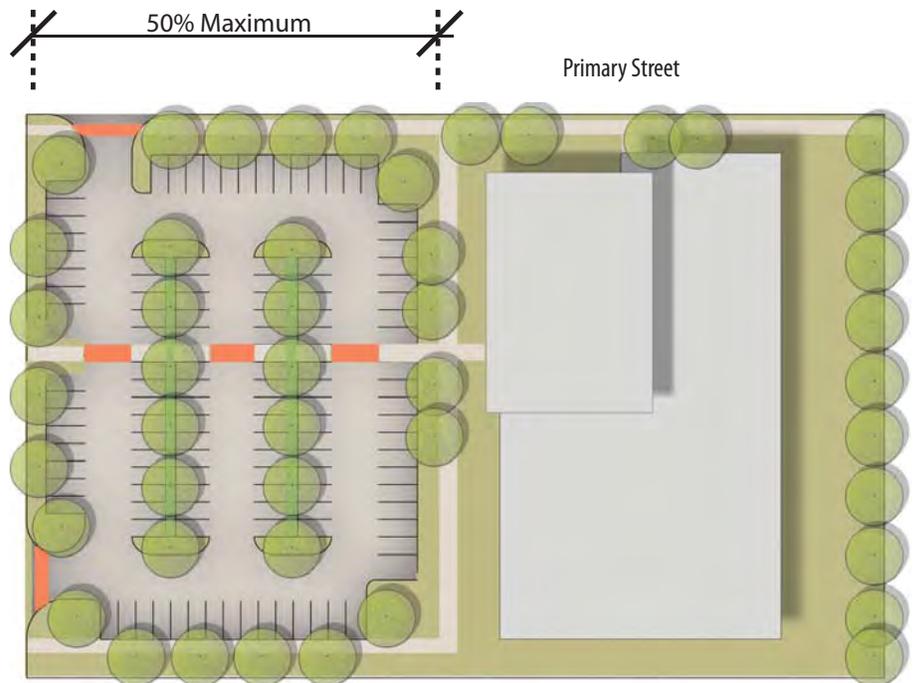
## SITE DEVELOPMENT

### Off-Street Parking

The design of off-street parking within the business park is a key consideration in creating an aesthetically pleasing area. Adequate and convenient off-street parking must be provided in a manner that does not make parking areas the predominant feature of an individual site. Required off-street parking ratios and requirements, including handicapped parking, shall be per the Bernalillo County Zoning Code and as listed below:

#### Standards

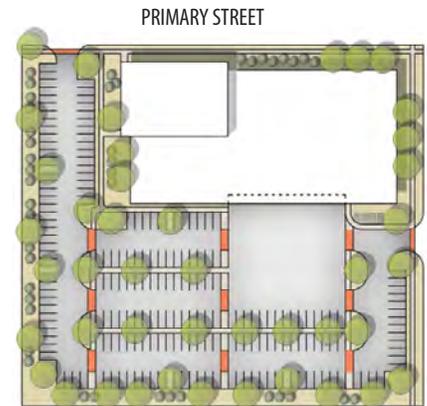
1. Parking minimum requirements shall be 1 space per 300 sf for office uses, 1 space per 250 sf for retail uses, and 1 space per 1,000 sf for manufacturing, warehouse, and light industrial uses, or per applicable zoning.
2. Bicycle parking shall be provided at one space per 20 parking stalls.
3. Development within 1,000 feet of a bus stop shall be eligible for a 20% reduction in overall off-street parking requirements.



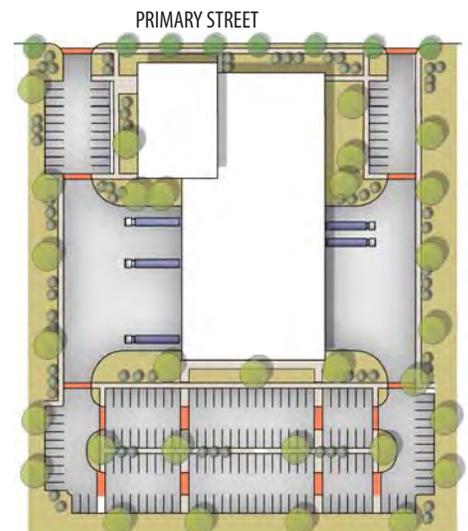
*Exhibit H: Diagram illustrating maximum parking frontage for retail/ office uses, pedestrian pathways through the parking lot, and water harvesting areas located along the parking perimeter and parking medians*



4. Shared parking is encouraged and may be applied when adjacent land uses have different/complementary parking demand patterns – allowing these spaces to be effectively and efficiently used throughout the day. Applicants for development should examine the feasibility of using shared parking.
5. Parking lots shall be subdivided by pedestrian paths and/or landscape areas so that no parking cell shall have greater than 100 spaces. Pedestrian paths with a minimum clear width of 6 feet shall be provided within parking lots to create direct connections between parking areas and buildings. Shade trees will be planted a minimum of 30 feet on center along parking lot pedestrian paths (see exhibits I and J to the right).
6. Surface runoff in off-street parking lots shall be directed to landscaped water harvesting areas. Drainage shall be directed to planting areas to maximize percolation and reduce the need for irrigation. Pervious paving/ surfaces are highly encouraged.
7. All parking should be located at the rear and/or sides of a building.
8. For retail/office uses, parking areas shall not constitute more than 50% of the street frontage.
9. Loading areas shall be separated from automobile parking and screened from view from the primary street right-of-way and adjacent properties.
10. Pedestrian walkways/ADA access shall be provided between bus stops, public sidewalks, and building entrances.
11. Pedestrian walkways shall be provided between parking aisles to building entrances. Walkways are to be clearly demarcated from the ADA parking spaces to building entrances.
12. Drive-thru aisles and drive-up windows shall be placed at the rear or sides of buildings where possible and not along the primary street.



*Exhibit I: Diagram illustrating loading area to the rear of a facility.*



*Exhibit J: Diagram illustrating cross-dock loading.*



*Example of landscaping.*



*Example of native vegetation.*

## Landscape

Landscape design standards are intended to create enduring landscapes that add value, create an overall district identity, as well as complement and protect the local natural environment. Landscape designs shall comply with applicable standards of the Bernalillo County Zoning Code. The landscape design shall be water conserving in the broadest sense by shading buildings and parking areas and reducing energy use, utilizing drip irrigation to eliminate overspray and reduce evaporation, using drought tolerant and native species that flourish in local conditions, and restricting the use of spray irrigation unless it is for turf or native seed areas. The following are additional requirements.

### Standards

1. Native/Xeric Plants: a minimum of 50% of the plant materials visible from the street shall be regionally native, low water-use plants. Extensive use of low water use plants is recommended to reduce water, fertilizer, and pesticide use.
2. Turf: High water use turf shall be limited to a maximum of 10% of the total landscape area. There is no limit to turf use when using non-potable water. When used in the landscape design, all varieties of turf areas should be designed to be efficiently irrigated.
3. Irrigation: A fully automated irrigation system is required to support landscaping within sight of the street. The use of spray irrigation shall be limited to turf or seeded areas. The majority of emitter devices shall be drip. Use of evapotranspiration-based controllers is encouraged.
4. Erosion Control: All landscape areas shall be stabilized with mulches or plant material to keep soils from washing or blowing away.
5. Vegetative Cover: Landscape area visible from the street shall achieve a minimum of 75% vegetative coverage within five years. Planting is required in front of walls that are setback from the property line where visible from the street.
6. Water Harvesting: Wherever possible, the landscape design shall incorporate active and passive water harvesting techniques to reduce potable water use for irrigation. Water harvesting areas must meet vegetative coverage requirements and is required in off-street parking areas with more than 20 parking stalls.
7. New development shall be required to surpass the number of required trees per current code by 10%.



8. Landscaping, low walls under three feet in height, and patios shall be used to define the transition from the public right-of-way onto private property.
9. Street-fronting side yards (yards on corner lots) should be similar in design and quality to typical front setback landscaping.
10. Flood irrigation is prohibited unless it is for agricultural uses.



*Example of native/xeric plants and water harvesting. Photo by Travis Lewis.*



*Example of screen wall.*



*Example of tubular steel fencing.*

## Walls + Fences

Delineation of property is done for many reasons and often by various styles of walls and fences. Walls and fences should be designed in an aesthetically pleasing manner, using natural and regional materials that contribute to the overall identity of the Sunport Commerce Center.

### Standards

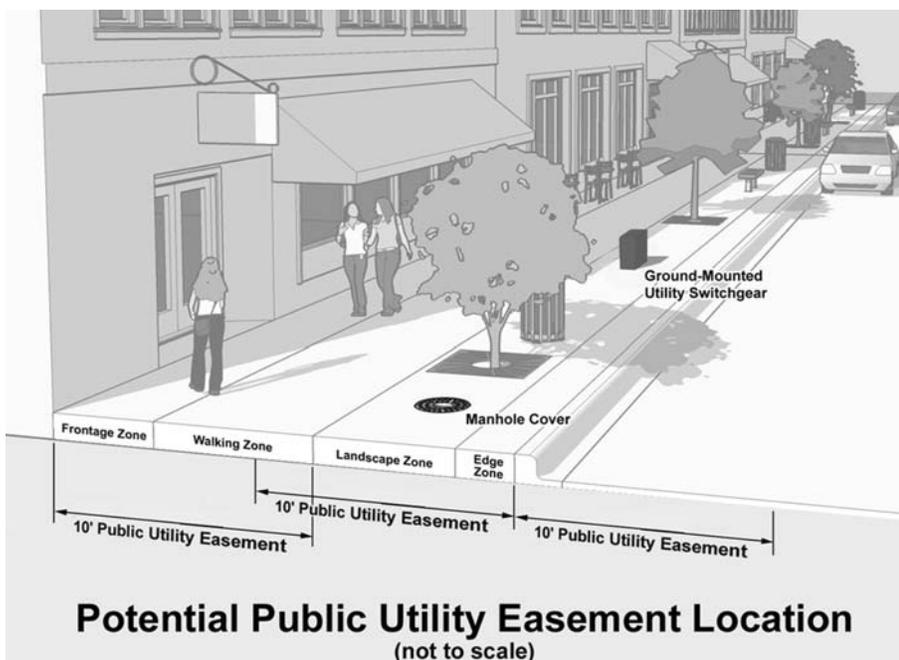
1. Use of fluted or plain gray CMU as the exposed wall surface is prohibited.
2. Chain-link, razor wire, and concertina wire are prohibited.
3. All walls visible from the primary street right-of-way shall have a finished appearance (stuccoed, painted, or cladded).
4. Walls and fences used for screening purposes are not to exceed 10 feet in height. Ten feet is the tallest that a solid wall can be, with up to two 2 feet of additional height consisting of a see-through material such as trellises, arbors, and semi open structures. Focus on walls abutting primary street. (note: walls over 6 feet in height may require to be engineered)
5. Walls and fences buffering residential uses from non-residential uses should take on the character of the residential use.
6. For fencing, allowable materials include the following:
  - Metal – tubular steel, wrought iron, metal panel, and wire mesh.



## Utilities

### Standards

1. Where required, above grade utility structures shall be grouped and located on the site in a manner that minimizes their visual impact from the street. Utility cabinets and structures shall be located on the sides or rear walls of structures. Free-standing meters are not permitted.
2. Solar technology (such as panels and solar hot water technology) is permitted and encouraged for use on rooftops and on grade.
3. Mechanical and other equipment on the ground and/or on rooftops shall be screened to obscure or minimize visibility from view when standing on the adjoining sidewalk. Any screening of ground-mounted transformers must be designed to allow for access to the equipment. All screening and vegetation surrounding ground-mounted transformers and utility pads shall allow 10 feet of clearance in front of the equipment door and 5 feet of clearance on the remaining three sides for safe operation, maintenance, and repair purposes.
4. Visible electrical equipment and conduits shall be installed in an orderly fashion and shall complement or blend in with the facility.
5. Any new utilities must be installed underground.
6. Consult with utility providers prior to finalizing site plans.



Source: PNM



*Example of outdoor lighting. Photo by Patrick Coulie*

### Lighting

Lighting design standards are intended to minimize light trespass and protect views of the night sky. All site and landscape lighting shall be fully shielded to minimize light trespass. Temporary lighting for social or seasonal events is permitted.

#### Standards

1. Heights shall be a maximum of 25 feet.
2. All lighting fixtures shall be night sky/dark sky compliant.
3. Lighting shall be located so that it does not shine beyond the property boundary.
4. Lamps shall be incandescent, metal halide or light-emitting diodes (LED).
5. Lighting levels shall not exceed the standards set forth by the Illuminating Engineering Society of North America (IESNA).

### Signage

Signage should complement the building by being compatible with the building architecture and be appropriately scaled. Signage in the Sunport Commerce Center shall be as per the Bernalillo County Zoning Code, C-1 Zone.



*Example of signage.*



<b>Submittal Requirements Checklist</b>			
	<i>On-Site Standards. These standards are compiled from the document. Applicants shall review the checklist for compliance. County reviewers shall verify compliance with the standards.</i>	<b>Applicant</b>	<b>County</b>
	<b>Written project summary:</b>		
1	Provide a short narrative description of the proposed project, its primary features and its compatibility with the local context.		
	<b>Colors</b>		
2	Provide samples of colors to be used in the project. Provide samples of base, trim, and accent colors. Acceptable forms of samples include: Paint swatches/stucco color chart/actual sample painted surfaces 1 sq. ft. or less.		
	<b>Lighting</b>		
3	Identification of all light fixture locations including whether they are ground-mounted or structure mounted. Locations shall be shown on the site plan as well as the landscape plan.		
4	Provide a copy of the manufacturer's catalog sheet.		
5	For sites over one acre, a photometric plan shall be required. Provide the calculated illuminance levels on a maximum of 10' grid		
	<b>DESIGN STANDARDS</b>		
	<b>Open Space + Parks</b>		
1	Public space is open and accessible from public streets, walkways, and trails		
2	Drainage arroyo adjacent properties shall contain a minimum 20' buffer to allow for passage along arroyo		
	<b>Building Orientation</b>		
3	Primary entrance is prominent and placed along primary street or near a street-adjacent corner		
4	There is no mirrored glazing or blank facades on ground level		
	<b>Height Standards</b>		
5	Maximum building height is 60' or less		
	<b>Setback Standards</b>		
6	Setbacks are within allowable limits		
	<b>Architectural Character</b>		
7	Primary building entrance is clearly expressed		
8	Street-facing building walls are articulated		
9	Exterior building walls contain windows, punched openings, change in height or plane, awnings or vertical posts every 80 feet or less		
10	Rooftop mechanical equipment is screened from view		
11	Industrial activities/materials and processing/assembling is conducted within an enclosed structure or covered area		
12	Service areas are screened or located away from pedestrian areas		
13	Walls and/or fences are used to screen non-residential uses from residential properties		
14	Refuse collection areas are screened with a maximum 8' high solid wall or fence		
	<b>Material Quality &amp; Detail</b>		
15	Building(s) use durable, maintainable materials		



Submittal Requirements Checklist			
16	Highly-reflective mirror glass is NOT used on the ground level of a street-facing façade		
	<b>Off-Street Parking</b>		
17	Parking is provided at 1 space per 300 sf of office uses, 1 space per 250 sf for retail uses, and 1 space per 1,000 sf for manufacturing, warehouse, and light industrial uses, or per applicable zoning.		
18	Bicycle parking is provided at 1 space per 20 vehicle parking stalls		
19	Parking lots are subdivided by pedestrian paths and/or landscape areas so that parking cell does not contain greater than 100 spaces		
20	Pedestrian paths through parking lots are a minimum 6' in width		
21	Shade trees in parking lots are planted at no greater than 30' on center along pedestrian paths		
22	Surface runoff from parking lot is directed to landscaped water harvesting areas		
23	Parking is located at the side or rear of a building		
24	If retail/office use, parking area does not constitute more than 50% of street frontage		
25	Loading areas are separated from parking		
26	Loading areas are screened from primary street right-of-way and adjacent properties		
27	Pedestrian walkways/ADA access is provided between bus stops, public sidewalks, and building entrances		
28	Pedestrian walkways are provided between parking aisles and building entrance(s)		
29	Drive-thru aisles and drive-up windows are placed at the rear or sides of buildings Landscaping		
	<b>Landscaping</b>		
30	A minimum of 50% of plants visible from the street are native, low water use plants		
31	High water use turf constitutes less than 10% of total landscaped area		
32	A fully automated irrigation system is installed to support street-visible landscaping		
33	Landscape areas are stabilized with mulches or plant material to keep soils from washing or blowing away		
34	Planting is located in front of walls that are setback from the property line where visible from the street		
35	Water harvesting is incorporated where possible and in off-street parking areas greater than 20 parking stalls		
36	Landscaping, low walls below three feet in height, and/or patios are used to define transition from public right of way to private property		
37	Street-facing side yards are similar in design and quality to front setback landscaping		
	<b>Walls + Fences</b>		
38	Walls visible from primary street right-of-way has a finished appearance		
39	Wall and fences used for screening do not exceed 10 feet in height		
40	Walls and fences buffering residential uses take on the character of the residential use		
41	Fencing utilizes an allowable material		
	<b>Utilities</b>		



Submittal Requirements Checklist			
42	Above grade utility structures are grouped and located in a manner that minimizes their visual impact from the street		
43	Mechanical and other equipment on the ground and/or rooftop is screened to obscure from view when standing on the adjoining sidewalk		
44	Visible electrical equipment and conduit is installed in an orderly fashion		
45	New utilities are installed underground		
	<b>Lighting</b>		
46	Fixture heights are a maximum of 25 feet		
47	Fixtures are night sky/dark sky compliant		
48	Lighting is located so that it does not shine beyond the property boundary		
49	Lamps are incandescent, metal halide, or light-emitting diodes (LED)		
50	Lighting levels do not exceed IESNA standards		



<b>Submittal Requirements Checklist</b>			
	<i>Off-Site Standards. These standards are compiled from the document. Applicants shall review the checklist for compliance. County reviewers shall verify compliance with the standards.</i>	<b>Applicant</b>	<b>County</b>
	<b>Street Trees</b>		
1	Street trees spaced maximum 30'		
	<b>Sidewalks + Crosswalks</b>		
2	Sidewalks minimum 4' width		
3	Landscape strips minimum 4' width		
4	Pedestrian crosswalks striped/textured/for high visibility		
5	Pedestrian refuges in medians (may be County responsibility)		
6	Pedestrian signals are audible as well as visual and timed for children, seniors, and the disabled		
7	Pedestrian countdown signal buttons are installed at the appropriate heights next to curb ramp landings.		
8	Bus stops contains a minimum of a sign and a bench		
9	Pedestrian lighting is installed along sidewalks		
10	Crosswalks are well lit		
11	Ramps are designed to ADA standards		
	<b>Bicycle Facilities</b>		
12	Bike lanes are marked with proper signage		
13	Bike lanes are properly coordinated and marked at right-turn lanes		
14	Short-term bike parking is visible, secure, well lit, and easily accessible		
15	Bike spaces are provided one space per every 20 auto spaces		
16	10% of required bike spaces are covered, secure spaces		
	<b>Open Space + Parks</b>		
17	Public space is open and accessible from public streets, walkways, and trails		
18	Drainage arroyo adjacent properties shall contain a minimum 20' buffer to allow for passage along arroyo		

# APPENDIX A: SUNPORT COMMERCE CENTER Existing Conditions Assessment





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- 01 Summary
- 02 Relevant Policy
- 03 Area Context
- 04 Study Boundary
- 05 Relevant Zoning
- 06 Affecting Parcels
- 07 Site Analysis





## 01 SUMMARY

The Sunport Commerce Center area, comprised of approximately 900 acres, has the potential to become a high quality employment district. With its proximity to rail, Interstate, and the Albuquerque International Sunport, this district is well suited for businesses that require good access to transportation. New developments such as the opening of the U.S. Foods Distribution Center and the Rio Grande Credit Union indicate renewed interest in the area for a variety of types of businesses. With the extension of Sunport Boulevard to Second Street, the area could attract additional interest for airport-related cargo and other businesses. The Rio Bravo Railrunner Station provides good public transit access for employees. The Rio Bravo Station Area Plan also has the potential to create a multi-use development adjacent to the station, with residential and retail components.

This Existing Conditions Assessment provides an overview of the area in its current state. This effort was completed in an effort to assess common issues that detrimentally impact the area as well as those opportunities and strengths that can be leveraged to enhance the image and character of the area.

The assessment includes review of:

- relevant policy such as comprehensive plans and sector plans
- existing zoning
- anticipated transportation projects that affect the area
- stakeholders and property owners
- known constraints to development
- competitive and strategic advantages



## 02 RELEVANT POLICY

### **Albuquerque/Bernalillo County Comprehensive Plan (A/BC Comprehensive Plan)**

As a Rank I Plan, the A/BC Comprehensive Plan provides broad policy direction for development in Bernalillo County and the City of Albuquerque. Although the current document dates from 1988, there have been several periodic revisions to the plan in the past twenty years.

A primary policy directive is the Centers and Corridors Plan that emphasizes growth along established transportation corridors and within designated activity centers. The intent of this policy is to create higher concentrations of growth at strategic locations throughout the city and connect them with transportation corridors that enable multimodal mobility. Land uses along the corridors are intended to have higher density than the surrounding areas and a mix of land uses, enabling citizens to reduce their need to drive.

The A/BC Comprehensive Plan identifies the Mountain View plan area as Developing Urban. However, the intersection of Rio Bravo and I-25 is identified as a proposed Major Activity Center, with a proposed Community Activity Center located at 2nd and Rio Bravo.

Major Activity Centers are activity nodes that provide “the most highly concentrated locations of commercial, service and employment uses in conjunction with area-wide needs.” (A/BC Comprehensive Plan) They typically cover large acreages of land and are accessible by all modes of travel.

Community Activity Centers, on the other hand, provide “the primary focus for the entire community sub-area with higher concentration and greater variety of commercial and entertainment uses in conjunction with community-wide services, civic land uses, employment, and the most intense land uses within the community sub-area. These areas typically range from 15-60 acres and are mostly accessible by automobile.” (A/BC Comprehensive Plan)

### **Southwest Area Plan (SWAP)**

This plan covers 115 square miles of the South Valley and the Southwest Mesa. The purpose of the SWAP is to “create a living document that will continue to encourage community involvement, including participation of the public and private sectors, and non-profit organizations, in order to implement the various policies and action strategies.” The plan is broken into three sections, the built environment, community involvement and services, and economic development. The approach emphasizes physical planning and its intersection with other planning elements such as land

# SUNPORT COMMERCE CENTER

## Existing Conditions Assessment



use, transportation, economic development, and natural resources. It establishes zoning and residential density levels, recommends social provisions for services and open space, and promotes economic development that are compatible with the unique and historic community.

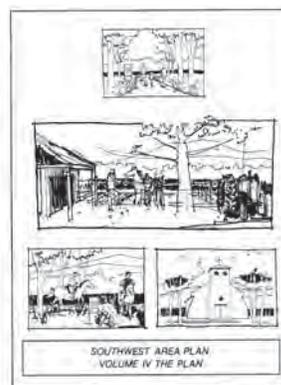
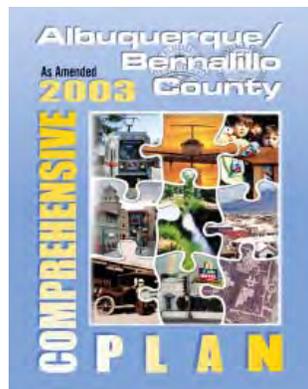
The plan calls for a light industrial corridor in the study area. It is consistent with current zoning in that it calls for M-1 and M-2 uses (described below) within the corridor.

### Mountain View Sector Development Plan- Rank III (not adopted)

A recommendation under the Southwest Area Plan was to develop this sector plan, which covers approximately 8,400 acres within portions of the City of Albuquerque and unincorporated Bernalillo County. This plan addresses issues raised in the SWAP by establishing zoning regulations and policies.

The plan breaks up the planning area into 6 sub areas. This Design Overlay falls within the North Mountain View and West Frontage sub areas. Broadway Boulevard delineates the two areas within our study boundary, while 2nd Street and Rio Bravo Boulevard make up the western and southern boundaries, respectively.

The plan's proposed vision involves the West Frontage sub area containing heavy industry and airport support service employment opportunities. North Mountain View would contain similar uses but have light to clean industries. Broadway Boulevard would become a commercial truck corridor and 2nd Street would become a safe and attractive corridor that is conducive to pedestrian and bicycle use. The plan calls for the station area to become an activity center with mixed uses that are accessible by all modes of mobility, and residential densities ranging from 12 and 20 dwelling units per acre.



# SUNPORT COMMERCE CENTER

## Existing Conditions Assessment

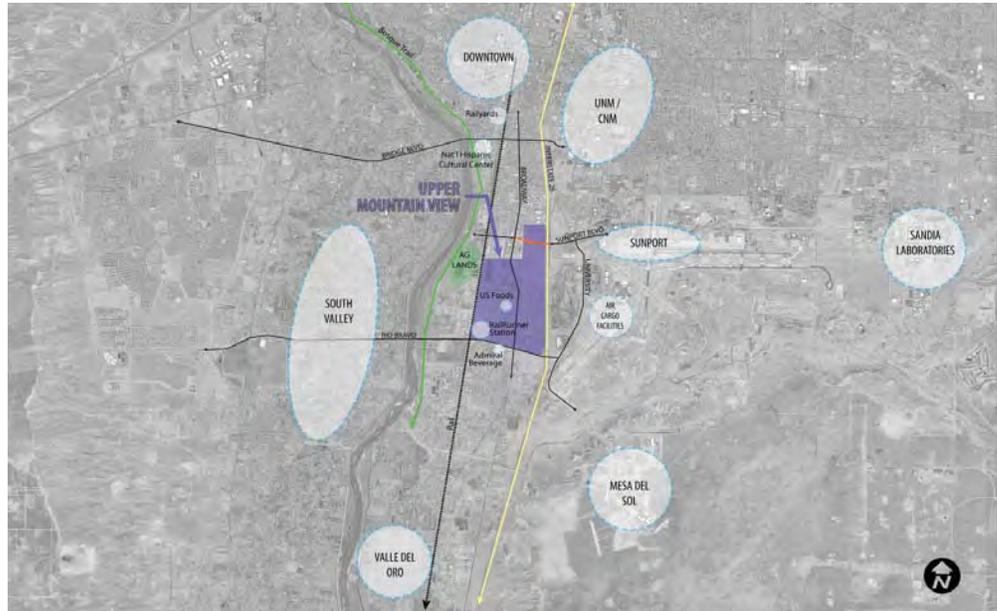


### **Bernalillo County/International Sunport Station Area Sector Development Plan**

The purpose of the plan is to guide quality development within the activity center surrounding the Bernalillo County/International Sunport Rail Runner Station near 2nd Street and Rio Bravo Boulevard. Located in an area that is semi-rural and industrial in nature, the plan's goal is to provide a mixture of uses that are more suitable for areas surrounding the station. The plan promotes a mix of residential, retail, office and light industrial uses and employment opportunities, along with recreational options. Transit-Oriented Development (TOD) defines the development objectives of this plan, with ample open space opportunities as well as a useful street network that encourages pedestrian and bicycle usage. Allowable densities reach up to 60 dwelling units per acre and FAR maximums are 2.0 in designated areas.



## 03 AREA CONTEXT



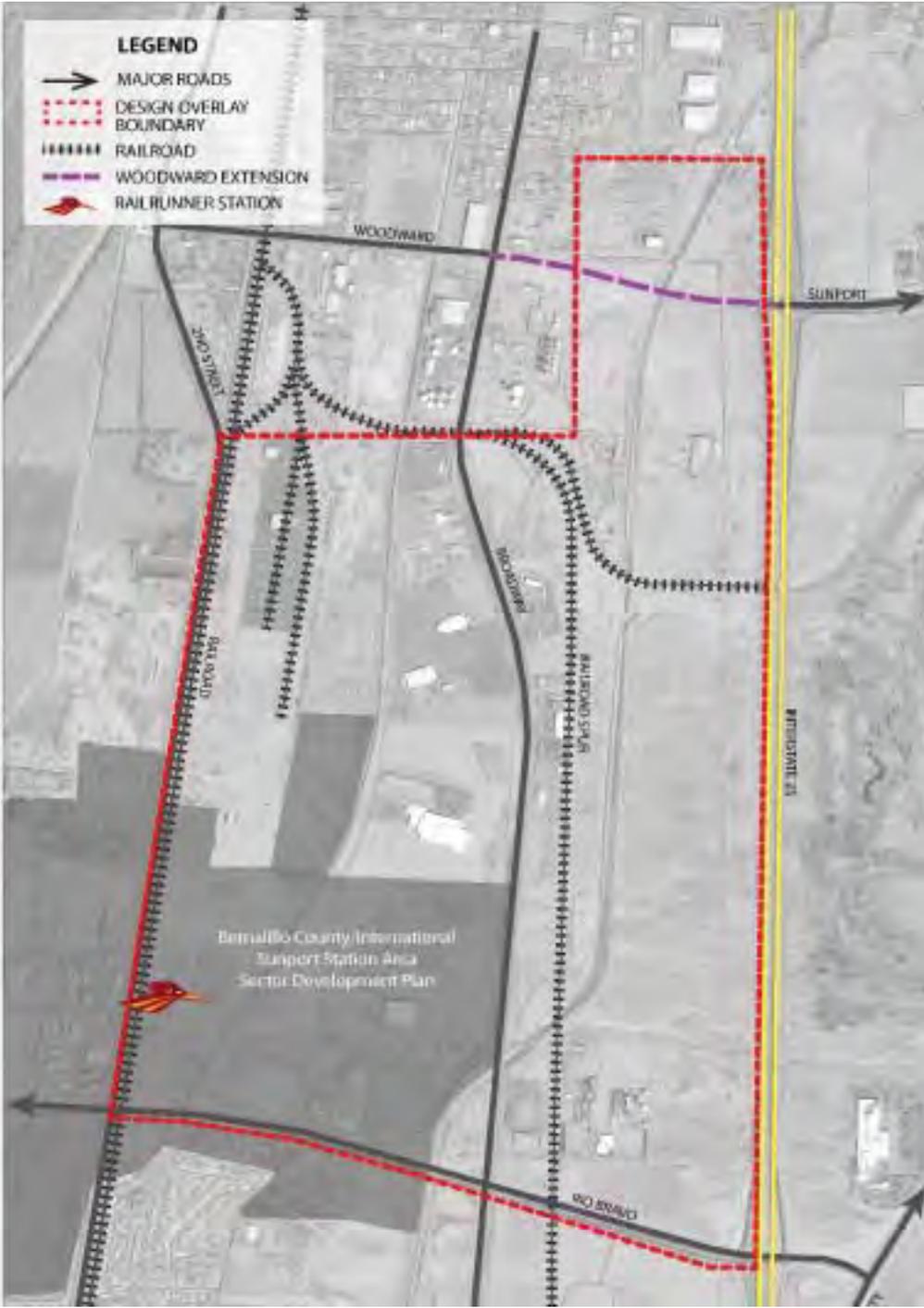
The Sunport Commerce Center area of Bernalillo County is seeing renewed interest by the development community. The land represents the largest contiguous tract of undeveloped land centrally located in the Albuquerque metropolitan area. Close proximity to downtown, research institutions such as UNM, CNM, and Sandia Laboratories, as well as the fertile, agricultural South Valley, make this location ideal for processing, warehousing, and manufacturing of products, which could range from local produce to high tech hardware. The adjacent railroad and Interstate, along with the proximate Sunport cargo facilities mean products can be imported and exported in any given timeframe and with ease. The near term extension of Sunport Boulevard will create additional direct access to Interstate 25, generating additional potential for economic growth.

# SUNPORT COMMERCE CENTER

Existing Conditions Assessment



## 04 STUDY BOUNDARY





## 05 RELEVANT ZONING

Below is a brief overview of the zoning regulations that apply within the Sunport Commerce Center study area.

### **M-1 Light Industrial Zone**

The purpose of this zone is primarily for light manufacturing, light fabricating, warehousing, and wholesale distribution with off-street loading and off-street parking for employees, and with access to arterial highways or railroads. Uses permitted within the M-1 zone include bottling plants, cold storage plants, foundries, laboratories, warehousing, and food processing, among others.

### **M-2 Heavy Manufacturing Zone**

The purpose of this zone is to provide for industrial operations of all types except that certain potentially hazardous or nuisance-type industries as specified in Subsection B.2. below are permitted only after public hearing and review to ensure protection of the public interest and surrounding property and persons. Permitted uses include those under M-1, along with Iron and steel foundries, manufacturing, milling, railroad repair, and salvage yards.

### **\*SD/MV-TOD Sector Development Mountain View Transit-Oriented Development Zone**

This zone allows a mixture of uses controlled by the Bernalillo County/International Sunport Station Area Sector Development Plan. Its purpose is to provide higher density residential and mixed-use development with retail and employment in a pedestrian-oriented area and with ready access to commuter rail and other transit amenities. Allowable building heights are a maximum of 60 feet, while residential densities are allowed to reach 60 du/ac, or a building FAR of 2.0.

\*This area is adjacent to but not a part of the study area.

# SUNPORT COMMERCE CENTER

## Existing Conditions Assessment



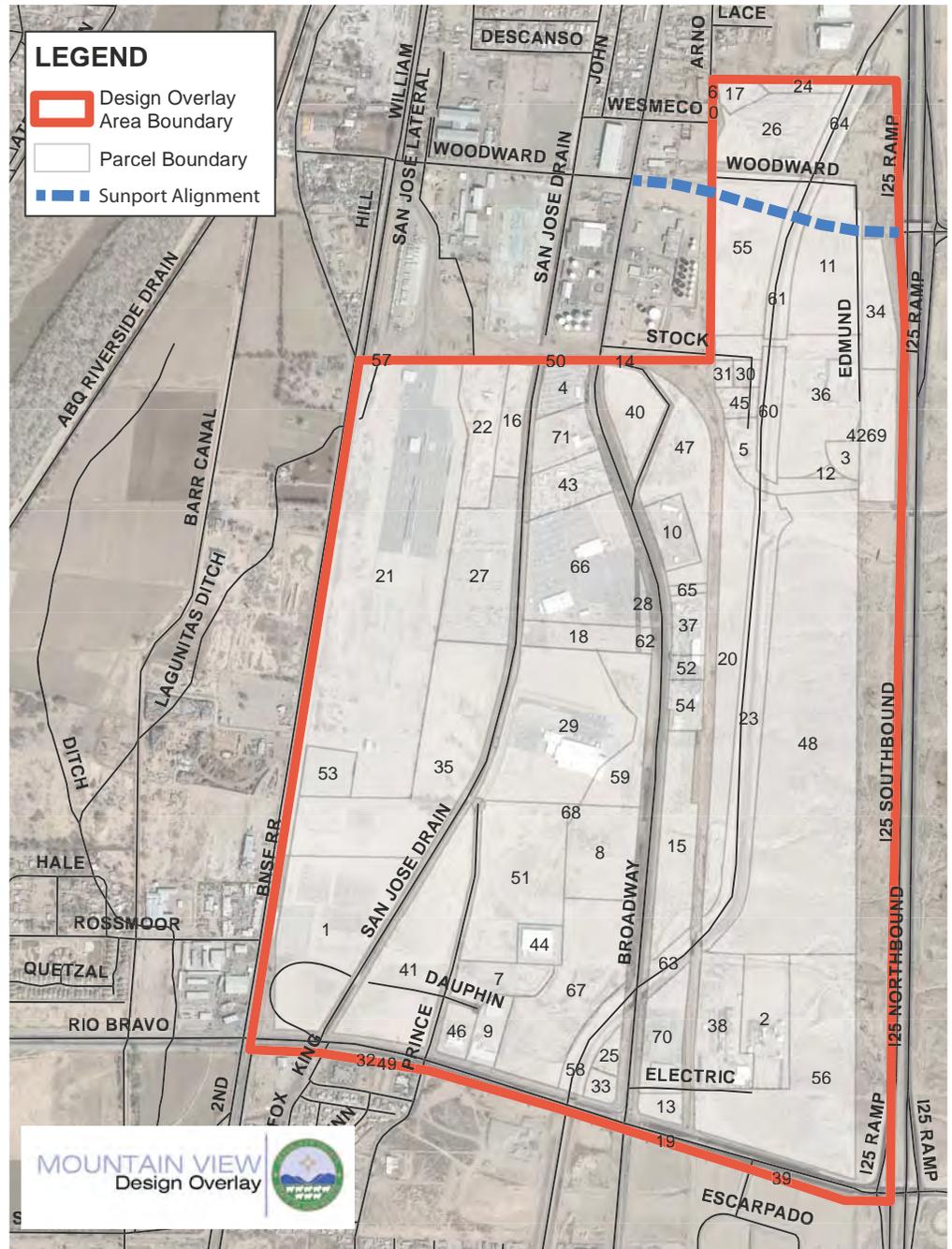
# SUNPORT COMMERCE CENTER

## Existing Conditions Assessment



### 06 AFFECTED PARCELS

71 property parcels lie within the Design Overlay area boundaries. The numbers in the illustration below reference the assessor data listed in the following pages.



# SUNPORT COMMERCE CENTER

## Existing Conditions Assessment



FID	UPC	Legal Description	Area (acres)	Owner
0	101405537822310205	* 012 C SO BROADWAY AC U1 VAC AVE E LOT12	.498	RIOS PABLO & PATRICIA CASILLAS
1	101405406504330112	TRACT 1A1 MAP 49 & TR 2A1 MAP 50 & TR 2B1B MAP 50 CONT 30.8045 AC M/L	30.94	SCHWARTZMAN INC
2	101405344848010539CA	TR 2 PLAT OF TRACTS 1 & 2 OF LANDS OF PERSON STATION BEING A REPLAT OF TRACT 1-B OF MRGCD MAP NO 45 CONT 10.0000 AC	11.38	PUBLIC SERVICE CO OF NM
3	101405450941810511	TR A 3 & TR IN NE1/4 NE1/4 SEC 5 T9N R3E CONT 1.87ACTR A-3 IN NE1/4 NE1/4 IN SEC 5 CONT 2.132 AC (92,870 SQ FT)	2.00	SCHWARTZMAN INC
4	101405425650330255	THE N POR OF TR 22C1 MRGCD MAP # 45 (AKA PARCEL A LANDS OF FRANCIS W GREEN) CONT 5.00 AC M/L	4.08	CARRETE ALFONSO & SYLVIA
5	10140544194521064	LOT 4 PLAT OF LOTS 1 THRU 4 BACA ACRES BEING A REPLAT OF A PORTION OF TR 24-A1-A2 MRGCD MAP NO 45 CONT 2.224 AC M/L	5.76	W STOCK LTD TRUST
6	101405537125310228	LOT C BLK C REPL OF LTS 9 10 & 11 IN BROADWAY ACRES UNIT 1 CONT 45,786 SQ FT M/L	1.29	DFA LLC
7	101405321048020221	W'LY PORT OF TR C-2-A CORRECTED PLAT OF TRACTS C-1-A-1, C-1-B-1, C-2-A & C-3-A SCHWARTZMAN INDUSTRIAL CENTER (BEING REPLAT OF TRACTS C-1-A, C-1-B, C-3 SCHWARTZMAN INDUSTRIAL	6.20	SCHWARTZMAN INC
8	101405429008440110	TR C-1-B-1 EXCL NW'LY PORT CORRECTED PLAT OF TRACTS C-1-A-1, C-1-B-1, C-2-A & C-3-A SCHWARTZMAN INDUSTRIAL CENTER (BEING A REPLAT OF TRACTS C-1-A, C-1-B, C-2, C-3 SCHWARTZMAN	12.20	SCHWARTZMAN INC
9	10140531894592023	MRGCD MAP 50 TRACT 2A3A1 CONT 3.81 AC	3.93	ALEXANDER GLEN ETUX
10	101405436838710210	MRGCD MAP 45 TRACT 24 A2 CONT 5.0 AC	5.12	STATE HIGHWAY DEPT
11	101405548507740629	TR IN E/2 SE/4 T10N R3E SEC 32 CONT 20.402 AC M/L OR 888,711 SQ FT M/L	18.23	SCHWARTZMAN INC
12	101405449440310510	NE1/4 NE1/4 SEC 5 TRN R3E	0.53	S E C CORPORATION NORTON BLDG FLOOR 16
13	10140533543961044	N'LY PORT TR 1A3 MRGCD MAP 50 (AKA N'LY PORT TR 9 LANDS OF DURAND) CONT 2.5146 AC	2.28	HERRERA LOUIS & ELIZABETH
14	101405431052910315	MRGCD MAP 45 TRACT 22C2B1B CONT .2000 AC	0.12	SCHWARTZMAN INC
15	101405436512340310	POR OF TR 1A MRGCD MAP 50 & POR OF TR 24A1A1 MRGCD MAP 45 CONT 13.711 AC +-	14.12	SCHWARTZMAN INC
16	101405420946720115	MAP 45 TR 22A1 CONT 5.6710 AC M/L OR 247,029 SQ FT M/L	5.28	SCHWARTZMAN INC
17	101405540725440238	POR OF SMALL HOLDING CLAIM # 1261 SEC 32 T10N R3E	3.17	WILD WEST BROADCASTING CORP
18	101405427527930239	PARCEL C1 CLIFFORD METROPOLITAN CENTER UNIT 1 CONT 5.6524 ACM/L	5.69	DEALERS AUTO AUCTIONS OF ALBUQUERQUE, INC.

# SUNPORT COMMERCE CENTER

## Existing Conditions Assessment



FID	UPC	Legal Description	Area (acres)	Owner
19	10140533463581025	PORT TR 1A3 MRGCD MAP 50 CONT 1.4971 AC	1.96	HERRERA LOUIS & ELIZABETH
20	101405441224210720	POR OF TR 24A1A1 MRGCD MAP 45 & POR OF TR 1-A MRGCD MAP 50 (AKA AMAFCA PARCELS S-8-1-X, S-8-1-Y & S-8-1-W) CONT 22.011 AC +-	20.47	AMAFCA
21	101405409431820109CA	POR NW & POR NW SW T9N R3E SEC 5 CONT 100.4000 AC	96.23	BURLINGTON NORTHERN & SANTA FE RAILWAY COMPANY THE
22	101405418447620114	MAP 45 TR 22 B	10.27	BAKER COMMODITIES INC
23	10140544262394061	PARCEL 4 PLAT OF A M A F C A SOUTH DIVERSION CHANNELDRAINAG E RIGHT OF WAY PHASE 1 RIGHT OF WAYPARCELS 1 THRU 10 CONT 22.3918 AC	23.59	AMAFCA
24	101405546125840220	TR IN N 1/2 N 1/2 S32 10N 3E CONT 3.750 AC	4.31	SCHWARTZMAN INC
25	10140533074541074	*1 HARMS INDUSTRIAL PARK COMPRISING TRS 2A3B & 2A3C MRGCD MAP 50 TOGETHER WIT	1.60	RODGERS CLARENCE ETUX
26	101405544720740217	TR IN N1/2 NE 1/4 SE 1/4 LESS FOR TO AMAFCA SEC 32 T10N R3ECONT 18.290 A	13.39	SCHWARTZMAN INC
27	101405418533920110	PARCEL B1 CLIFFORD METROPOLITAN CENTER UNIT 1 CONT 18.7585 AC M/L	18.71	DEALERS AUTO AUCTION OF ALBUQUERQUE, INC
28	10140543373071085	PARCEL A-2-A CLIFFORD METROPOLITAN CENTER UNIT 1 CONT 0.9772 AC M/L OR 42,567 SQ FT M/L	0.90	SCHWARTZMAN INC
29	101405426019630238	WEST PORTION OF TRACT A CORRECTED PLAT OF TRACTS A, B, & C SCHWARTZMAN INDUSTRIAL CENTER CONT 34.2844 AC	32.37	UNITED STATES POSTAL SERVICE WESTERN FACILITIES SERVICE OFFICE
30	10140544215161062	LOT 2 PLAT OF LOTS 1 THRU 4 BACA ACRES BEING A REPLAT OF A PORTION OF TR 24-A1-A2 MRGCD MAP NO 45 CONT 1.000 AC M/L	1.45	W STOCK LTD TRUST
31	10140544055161061	LOT 1 PLAT OF LOTS 1 THRU 4 BACA ACRES BEING A REPLAT OF A PORTION OF TR 24-A1-A2 MRGCD MAP NO 45 CONT 1.000 AC M/L	0.96	W STOCK LTD TRUST
32	101405306740320314	TRACT 3 UNIT 1 SCHWARTZMAN INDUSTRIAL PARK TRS 1, 2, 3, 4 & 5 REPL OF 1A3 MRGCD MAP 50 CONT 3.186 AC M/L	3.11	ENACON CORPORATION C/O PROPERTY VALUATION SERVICES
33	10140532934201078	LT 2 HARMS INDUSTRIAL PARK COMPRISING TRS 2A3B & 2A3C MRGCDMAP 50 TOGETHE	1.74	PELIGRO LLC
34	10150550140483015	TRACT OF LD WITHIN THE W/2 W1/2 OF SW1/4 SW/4 SEC 33 T10NR3E EXC THOSE PORTIONS OUT TO R/W FOR I-25 CONT 3.52 AC	7.40	SCHWARTZMAN INC
35	101405416814530115CA	PARC B2 CLIFFORD METROPOLITAN CENTER UNIT 1 & TR 2B1A MAP 50 CONT 37.0000 AC M/L	36.50	ATCHISON TOPEKA & SANTA FE RAILWAY CO
36	10140544884651059	MAP 45 TR 24 A1A3 EXC POR OUT TO AMAFCA CONT 21.49 AC	21.33	VAN WATERS & ROGERS INC% TAX DEPT
37	10140543772861024	THE NLY 520 FT M/L OF THE SLY 1900 FT M/L OF TR 24 MRGCD MAP#45 LYING E OF & ADJ TO BRAODWAY BLVD SE CONT 3.00 AC M/L	4.01	RITWAY PROPERTIES CO LLC

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FID	UPC	Legal Description	Area (acres)	Owner
38	101405340547010538CA	TR 1 PLAT OF TRACTS 1 & 2 OF LANDS OF PERSON STATION BEING A REPLAT OF TRACT 1-B OF MRGCD MAP NO 45 CONT 11.9369 AC	12.39	PUBLIC SERVICE CO OF NM
39	101405344726540313	MAP 50 PORT OF TR 1A & TR IN N/2 SE/4 SEC 8 T9N R3E CONT 51.7600 AC M/L OR 2,254,666 SQ FT M/L	51.32	RIO 25 LLC
40	101405432848610310	TR 22C2B1C MRGCD MAP 45 CONT 7.618 AC	8.05	SCHWARTZMAN INC
41	10140541370073031	TRACT B CORRECTED PLAT OF TRACTS A, B & C SCHWARTZMAN INDUSTRIAL CENTER CONT 26.1733 AC	26.29	SCHWARTZMAN INC
42	101405452143610513	TR A 1 IN NE NE SEC 5 T9N R3E CONT 0.213 AC	0.16	S E C CORPORATION
43	101405426042930250	TRACT 22-C-2 REPLAT OF THE NORTHERLY PORTION OF TRACT 22-C MRGCD MAP 45 CO	6.74	BOYER KENT D & CHARLOTTE F
44	101405423000130241	TR C-1-A-1-B PLAT OF TRACTS C-1-A-1-A & C-1-A-1-B SCHWARTZMAN INDUSTRIAL CENTER CONT 3.3443 AC	3.36	3800 PRINCE STREET LLC
45	10140544154891063	LOT 3 PLAT OF LOTS 1 THRU 4 BACA ACRES BEING A REPLAT OF A PORTION OF TR 24-A1-A2 MRGCD MAP NO 45 CONT 2.000 AC M/L	2.26	W STOCK LTD TRUST
46	10140531704582081	TR C-3-A CORRECTED PLAT OF TRACTS C-1-A-1, C-1-B-1, C-2-A & C-3-A SCHWARTZMAN INDUSTRIAL CENTER BEING A REPLAT OF TRACTS C-1-A, C-1-B, C-2, C-3 SCHWARTZMAN INDUSTRIAL	3.10	RIO GRANDE CREDIT UNION
47	101405436943710220	MAP 45 TR 22C2B2A & PORT OF TR A4A1A1 & PORT OF OLD ROAD CONT 11.6790 AC M/L OR 508,737 SQ FT M/L	14.15	SCHWARTZMAN INC
48	101405447220040547	PORTION OF TRACT 1A MAP 50 & PORTION OF TRACT 24A1A1 MAP 45 CONT 85.7580 AC M/L	84.88	RANDEL RON L TRUSTEE
49	10140531144012035	TRACT 2 UNIT 1 SCHWARTZMAN INDUSTRIAL PARK TRS 1, 2, 3, 4 & 5 REPL OF 1A3 MRGCD MAP 50 CONT 2.00 AC M/L	2.00	TK REALTY LLC
50	101405425953030260	MRGCD MAP 45 TRACT 22C2B1A CONT 0.19 AC	0.20	SCHWARTZMAN INC
51	101405421104630240	TR C-1-A-1-A PLAT OF TRACTS C-1-A-1-A & C-1-A-1-B SCHWARTZMAN INDUSTRIAL CENTER CONT 24.3874 AC	24.47	SVRB INVESTMENTS LLC
52	10140543762501025	THE NLY 224 FT M/L OF THE SLY 1370 FT M/L OF TR 24 MRGCD MAP#45 LYING E OF & ADJ TO BRAODWAY BLVD SE CONT 1.3445 AC M/L	1.58	RITWAY PROPERTY COMPANY LLC
53	101405404515130103CA	T9N R3E SEC 5 CONT 4.5000 AC	4.59	AT & SF RAILROAD
54	101405437721840335	THE SLY PORTION OF TRACT 24A1B MRGCD MAP 45 CONT 2.8718 AC	3.40	HITE ALFRED C & SHELBY J
55	10140554140984055	TR IN E/2 SE/4 SE/4 LESS PORT TO AMAFCA T10N R3E SEC 32 CONT 21.3060 AC M/L OR 928,089 SQ FT M/L	20.54	SCHWARTZMAN INC

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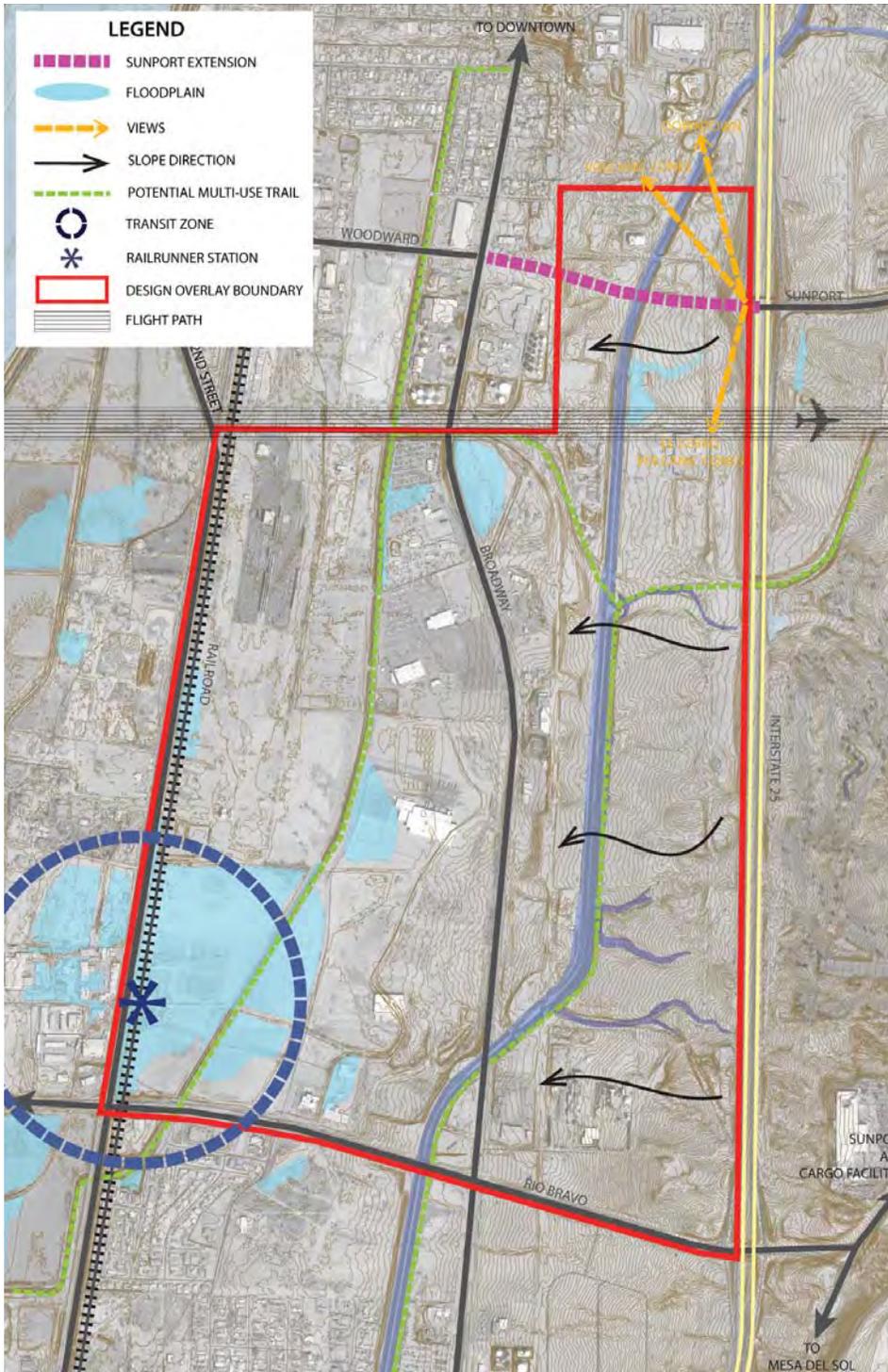
FID	UPC	Legal Description	Area	Owner
56	101405349543510501CA	A TR OF LAND BEING SITUATE WITHIN TR 4 SCHWARTZMAN INDUSTRIAL PARK WITHIN SECS 5 & 8 T9N R3E & PORTS OF TR1-A MRGCD MAP 50 & TR 24A-1 MAP 45 (AKA SCHWARTZMAN)	37.10	PUBLIC SERVICE CO OF NM
57	101405511626130322CA	TR OF LAND WITHIN THE W1/2 SEC 32 T10N R3E EXC A NW'LY 5.0769 AC PARCEL OUT TO TRS 1 & 2 LANDS OF B.N. & S.F RAILWAY CO CONT 46.2788 AC	34.83	UNION CARBIDE CORP LINDE DIV % DOW CHEM CO TAX DEPT APB BLDG
58	10140532804561081	PARCEL 2 PLAT OF A M A F C A SOUTH DIVERSION CHANNELDRAINAGE RIGHT OF WAY PHASE 1 RIGHT OF WAY PARCELS 1 THRU 10 CONT 5.5084 AC	5.53	AMAFCA
59	10140543271904011	EAST PORTION OF TRACT A CORRECTED PLAT OF TRACTS A, B&C SCHWARTZMAN INDUSTRIAL CENTER CONT 8.5470 AC	10.07	UNITED STATES POSTAL SERVICE WESTERN FACILI- TIES SERVICE OFFICE
60	10140544384751091	PARCEL 5 PLAT OF A M A F C A SOUTH DIVERSION CHANNEL DRAINAGE RIGHT OF WAY PHASE 1 RIGHT OF WAY PARCELS 1 THRU 10 CONT 5.8618 AC	5.64	AMAFCA
61	10140554500944071	PARCEL 6 PLAT OF A M A F C A SOUTH DIVERSION CHANNELDRAINAGE RIGHT OF WAY PHASE 1 RIGHT OF WAY PARCELS 1 THRU 10 CONT 7.4980 AC	7.03	AMAFCA
62	101405433627510810	PARCEL C2 CLIFFORD METROPOLITAN CENTER UNIT 1 CONT 25,652 SQ FT M/L	0.59	DEALERS AUTO AUCTION OF ALBUQUERQUE, INC.
63	10140533585221091	PARCEL 3 PLAT OF A M A F C A SOUTH DIVERSION CHANNELDRAINAGE RIGHT OF WAY PHASE 1 RIGHT OF WAY PARCELS 1 THRU 10 CONT 2.5861 AC	2.71	AMAFCA
64	10140555132464081	PARCEL 7 PLAT OF A M A F C A SOUTH DIVERSION CHANNELDRAINAGE RIGHT OF WAY PHASE 1 RIGHT OF WAY PARCELS 1 THRU 10 CONT 9.1267 AC	8.02	AMAFCA
65	10140543713181023	NLY PORTION OF TRACT 24B MRGCD MAP 45 CONT 0.5268 AC	0.67	RITWAY PROPERTIES CO LLC
66	101405427526530245	PARCEL A1 CLIFFORD METROPOLITAN CENTER CONT 24.023 AC M/L	23.96	DEALERS AUTO AUCTION OF ALBUQ INC
67	101405325051520220	TR C-2-A EXCL W'LY PORT CORRECTED PLAT OF TRACTS C-1-A-1, C-1-B-1, C-2-A & C-3-A SCHWARTZMAN INDUSTRIAL CENTER (BEING A REPLAT OF TRACTS C-1-A, C-1-B, C-2, C-3 SCHWARTZMAN)	24.88	SCHWARTZMAN INC
68	101405427011540111	NW'LY PORT OF TR C-1-B-1 CORRECTED PLAT OF TRACTS C-1-A-1, C-1-B-1, C-2-A & C-3-A SCHWARTZMAN INDUSTRIAL CENTER (BEING A REPLAT OF TRACTS C-1-A, C-1-B, C-2, C-3 SCHWARTZMAN)	0.27	SCHWARTZMAN INC
69	10150540355002012	POR OF LAND IN SEC 4 T9N R3E CONT 2.36 AC	9.14	U S A DEPT OF ARMY HDQRS 377 CEG/CERR
70	10140533574551064	MAP 50 POR TR 1A SOUTH OF AMAFCA SOUTH DIVERSION CHANNELL CONT 8.630 AC	8.82	GASKIN JOHN E ETUX
71	101405426146530265	THE S POR OF TR 22C-1 (AKA PARCEL B LANDS OF FRANCIS W GREEN) MRGCD MAP #45 CONT 5.0 AC M/L	5.85	BARROW MARK E & TONI T

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### 07 SITE ANALYSIS





## CONSTRAINTS

- Topography (slope)
- Floodplain
- Limited access to Rio Bravo
- Railroad easement limits 2nd St access
- Transmission lines
- BNSF contamination
- Adjacent oil refineries
- Airport flight path (noise & height regulations)

## OPPORTUNITIES

- I-25 access/frontage
- Rio Bravo access
- 2nd St access
- Broadway access
- Railrunner station
- Transit-oriented development
- Views (valley, mountains, volcanoes, downtown)
- Abundant vacant land
- Airport proximity
- Mesa del Sol proximity
- Air cargo facilities proximity
- Arroyos (open space)
- Bosque proximity
- Proximate agriculture

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The area is constrained by topography, stormwater channels, and lack of a developed road network. The existing BNSF rail line that parallels Second Street effectively limits access to parcels on the east side of the street. Similarly, Interstate 25 effectively limits access to parcels that front on the west side of the freeway. The network of drainage channels and transmission lines that are currently a constraint, have the potential to become an asset to the area if they are developed as a network of pedestrian and bike circulation.

The area lacks a coherent identity as a “district”. Other employment areas in the metropolitan area have a consistent set of standards for components such as lighting, landscaping, signage, and architecture. Upper Mountain View in its current state is more a collection of disparate businesses than a cohesive district. Existing County zoning, mostly M-2 (Heavy Manufacturing), along with some M-1 (Light Manufacturing) uses allows for a wide range of uses. In some cases the zoning allows for uses that may have a deleterious impact on the overall development potential of the area. The proposed design standards are intended to balance the wide range of allowable uses under the current zoning with some overall standards that provide a coherent identity for the area.

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