

Kern County High-Speed Rail Maintenance Facility Analysis



**Kern Transportation Foundation
High-Speed Rail Maintenance
Facility Committee
December 2003**

Kern Transportation Foundation Board Members

To address growing transportation issues, a group of concerned citizens formed the Kern Transportation Foundation in 1992. A nonprofit public benefit corporation, Kern Transportation Foundation is working with government to develop a plan and to find funding solutions for Kern County's future transportation needs. The Foundation's mission is to promote a modern, balanced transportation system that enhances our quality of life and supports the economic vitality of all communities. Within a public forum, the Kern Transportation Foundation is working to:

- ▶ Create public awareness of current and future transportation needs in Kern County;
- ▶ Find creative and innovative ways to provide for and fund our transportation needs;
- ▶ Build the kind of private and public partnership that is necessary to develop and fund a modern, balanced transportation system.

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Kern County High-Speed Rail Maintenance Facility Analysis

EXECUTIVE SUMMARY

The Kern Transportation Foundation's High-Speed Rail Maintenance Facility Committee was formed to evaluate high-speed rail maintenance facility sites within Kern County. In 2002, the Committee began evaluating potential high-speed rail maintenance facility locations for the Kern region. That process included the following elements:

- ❑ Background discussion of previous high-speed rail studies
- ❑ Routing options
- ❑ Maintenance facility requirements
- ❑ Evaluation criteria
- ❑ Site Ranking
- ❑ Evaluation criteria relative to Kern County
- ❑ Conclusions

In evaluating the potential maintenance facility sites, two major routes connecting Los Angeles to Bakersfield were explored: the I-5/Grapevine alignment and the Palmdale alignment. These two routes were used as a basis for eight potential maintenance facility sites. The site locations were developed through previous high-speed rail studies, community discussions and staff input from the California High-Speed Rail Authority (CHSRA). The locations include:

- ❑ Rosamond
- ❑ Mojave
- ❑ Tehachapi
- ❑ Arvin
- ❑ Comanche Road/State Route 58
- ❑ Southeast Bakersfield
- ❑ Shafter/Wasco
- ❑ Delano/McFarland

Site Location maps are included in Appendix A.

After identifying potential maintenance facility sites, the Committee devised a set of criteria to evaluate each site's viability. The criteria were similar to those used in the Kern Transportation Foundation's previous report in April 2001, the *Metropolitan Bakersfield High-Speed Rail Terminal Analysis and Evaluation*. The criteria comprised:

- Rail access (alignment)
- Infrastructure improvements
- Environmental issues
- Site purchase price
- Utility availability
- Freeway access
- Access to public transit
- Existing commercial support services
- Workforce availability
- Available housing
- Workforce training capability

Each site location was evaluated on a scale of one to five, with one representing the lowest score and five the highest.

Based on scores compiled during the evaluation and screening process, the Committee recommended that all sites be considered further. The scores were relatively similar and a successful facility could be constructed in any of the proposed locations. The focus of the analysis was revised from a location specific analysis to Kern County in general.

Kern County is the ideal spot for a high speed rail maintenance facility. It is the geographical center of the entire system spanning from San Diego to the San Francisco Bay Area/Sacramento Area. Kern County offers comparatively low-cost real estate, with many large parcels of undeveloped land available. Freeway access is good, with major north/south and east/west transportation corridors throughout the County. Kern County residents enjoy the benefits of short commute times and little roadway congestion in their cities. Metropolitan Bakersfield has an average commute time of 15 minutes, and is the fifth least congested area according to the 2002 Urban Mobility Study. Kern County ranks as #1 most affordable housing market in California. The cost of living index of 99.6% is well below the California average of 119.7%. The area has tremendous workforce availability. Average wages and salaries are 82.5 percent of the national average. Kern County has over ten different junior colleges and universities, both public and private, with state of the art technology and instructors. It has an excellent quality of life with many recreational opportunities, available homes and rentals, excellent climate, good health care, and safety from crime. Bakersfield and Kern County have been named one of the top fifty hottest cities to do business by Expansion Management Magazine, and ranked number 42 in Best Places for Business and Careers, 2003 by Forbes Magazine. This ranking places the Bakersfield area ahead of San Francisco, San Jose, Los Angeles-Long Beach, California and Phoenix, Arizona.

Kern County High-Speed Rail Maintenance Facility Analysis

Purpose and Needs Statement

The purpose of Kern Transportation Foundation's (KTF) High-Speed Rail Maintenance Facility Committee is to screen and evaluate high-speed rail maintenance facility alternatives for Kern County. Among its goals, the committee was to identify high-speed rail maintenance facility locations for further study that best meet the needs of the Kern region. Criteria for site selection and evaluation included:

- Rail access (alignment)
- Infrastructure improvements
- Environmental issues
- Site purchase price
- Utility availability
- Freeway access
- Access to public transit
- Existing commercial support services
- Workforce availability
- Available housing
- Workforce training capability

The Kern region's needs have been addressed through this set of evaluation criteria. This document outlines the process which the Kern Transportation Foundation's high-speed rail maintenance facility committee used in evaluating potential maintenance site locations for Kern County. The process examined the following elements:

- Background discussion of previous high-speed rail studies
- Routing options
- Maintenance facility requirements
- Evaluation criteria
- Site Ranking
- Evaluation criteria relative to Kern County
- Conclusions.

Background Information-Discussion of Previous High-Speed Rail Studies

1. High-Speed Rail Corridor Study-Los Angeles-Fresno-Bay

Area/Sacramento – Final Report to the State Legislature, June 1990 (AB-

971): This study, commissioned through AB 971 (Costa), addresses certain key findings about the need for a California High-Speed Rail program. The report indicates that the 20 million people living along the proposed high-speed rail corridor require a vastly improved passenger rail service to sustain increasing mobility, lessen impacts on the environment, and maintain economic growth.

The study group found that California has a significant interest in providing its citizens with rail service at least comparable to those of major trading partners, and that the State must take a leading role in improving rail performance. Furthermore, significant reductions in automobile emissions are dependent on a transit rail system that offers faster travel times than cars.

In addition, the State should look to European models for both validation and experience. High-speed trains in France have been easily able to recoup their construction costs, while those in Germany are capable of operating along the same tracks as freight trains, given proper construction and stringent operating practices. Finally, any fully integrated rail system should operate in the San Joaquin Valley along the already established Burlington Northern rail lines.

2. Metropolitan Bakersfield High-Speed Ground Transportation System Terminal Study, March 1994:

Commissioned from ICF Kaiser by the Kern Council of Governments, this report states that of the six potential locations considered for a high-speed rail terminal in Bakersfield – downtown, F Street, East Bakersfield, Fruitvale Avenue, Olive Drive and Westside Freeway – the downtown location is the strongest candidate. Selection criteria included: development potential both adjacent and near the site; vehicular and pedestrian links; support of general plan goals; drainage and utilities; seismicity; site availability and potential for expansion. The F Street Amtrak site was selected as second choice.

The consultant agreed with Kern COG's Technical Advisory Committee findings in favor of the downtown site. Both choices would produce better ridership than suburban sites, offer direct accessibility to primary Bakersfield destinations, had the potential to bring more activity to downtown, and already had support services available. The downtown location was singled out over the F Street site for its accessibility.

3. Los Angeles-Bakersfield High-Speed Ground Transportation Preliminary Engineering Feasibility Study, November 1994:

Prepared by Parsons Brinckerhoff Quade & Douglas, Inc. for Caltrans District 7, the report examines alternatives for a high-speed rail system that crosses the Tehachapi Mountains. It is divided into six major task areas: technology assessment; alignment alternatives; preliminary engineering; cost estimates (capital and operations);

preliminary environmental analysis and a feasibility study report. A number of alignment variations were evaluated in the vicinity of Interstate 5 between Bakersfield and Santa Clarita, as well as through the Antelope Valley.

While none of the alternatives in any of the task areas are endorsed, the study does conclude that developing a high-speed ground transportation system significantly increases the options for handling large volumes of people, is safer, environmentally friendly and has proven technology already available. The costs for such a system between Bakersfield and Los Angeles are significant, range anywhere from \$4 to \$8 billion. Accordingly, just as the State's highway system was developed over time, so must high-speed rail, which does not enjoy the priority status of highways, airports or urban transit systems.

4. California High-Speed Rail Corridor Evaluation: Southern California Alternatives, April 1999: This report, which evaluates high-speed rail corridor alternatives in Southern California, divides the alternatives into three categories: San Diego Area, Los Angeles Area and the Tehachapi Crossing. Each corridor is defined within its proper geographical area with key evaluation elements summarized in tabular form.

Evaluation criteria include: capital cost; travel time; operating cost; key constraints and issues (environmental, engineering, operational, right-of-way and institutional); ridership; and revenue.

5. California High-Speed Rail Authority Final Business Plan, June 2000: The California High-Speed Rail Authority's (CHSRA) business plan proceeds from the conclusion that a statewide high-speed rail system which is a smart investment for Californians to make; with its estimated \$25 billion cost is only a fraction of what will be spent on transportation as a whole. Furthermore, the plan states that high-speed rail can only be a success when coupled with other well-maintained transportation modes, and urges appropriate upkeep of highways, airports and other infrastructure.

The report says that the process should begin to move into its environmental review period. Specifically, it recommends that the Governor and Legislature initiate a formal environmental clearance process through a state EIR/federal Tier I EIS on the described network; increase funding and accelerate planning for inner city and commuter rail improvements to complement a high-speed rail system; lobby for increased federal funding in high-speed rail service and technology; and encourage state, regional and local agencies to include high-speed rail in the planning process.

6. California High-Speed Rail Program Environmental Document, January 2001: The Authority is preparing a program environmental document for the 700-mile high-speed train proposal. The draft EIR/EIS will provide CEQA/NEPA documentation and include project purpose and needs/objectives, project alternatives definition and alignment/station screening evaluation, system

alternatives, public and agency comment and consultation, and environmental benefit and impact analysis. Mitigation measures and preferred alternatives also will be addressed. Central Valley alignment issues to be discussed in the draft EIR/EIS are: prime agricultural land preservation, preservation of resources and sensitive environments, and accommodation of sustainable and responsible growth patterns.

Alignment and stations screening was completed in January 2002. Alignment refinements and environmental technical studies were completed in June 2002. Public involvement will take place throughout the entire planning process. The final program EIR/EIS is scheduled to be completed by December 2003 with construction beginning in 5-7 years. The California high-speed rail project is expected to be constructed by 2016.

7. Metropolitan Bakersfield High-Speed Rail Terminal Analysis and Evaluation, April 2001: The Kern Transportation Foundation's (KTF) report, *Metropolitan Bakersfield High-Speed Rail Terminal Analysis and Evaluation*, evaluates routing options and terminal locations in Metropolitan Bakersfield. This document identifies the process through which the Committee evaluated routing options and potential terminal locations. That process included the following: background discussion of previous high-speed rail studies; routing options; station requirements; site identification; evaluation criteria; focused project listing; public outreach; and conclusions. Seven potential terminal locations in Metropolitan Bakersfield were identified and evaluated with a set of criteria the Committee developed with input from California High-Speed Rail Authority staff. The criteria included factors such as infrastructure improvements, intermodal connection, metro-area accessibility, rail alignment, and train speed.

Based on the scores compiled during the evaluation and screening process, the Kern Transportation Board of Directors recommended three sites for further consideration: 7th Standard Road/West of State Route 99; Golden State Avenue/M Street; and Truxtun Avenue and S Street/Union Avenue.

8. Metropolitan Bakersfield High-Speed Rail Terminal Impact Analysis, July 2003: This study, prepared for Kern Council of Governments by Wilbur Smith Associates, evaluated three potential station sites in the areas of mobility, access and intermodal connectivity, cost, user convenience, impact on built environment, air quality, economic development and environmental impacts. The three sites evaluated included: Meadows Field Airport area; Golden State/M Street; and Truxtun Avenue/S Street. Each site was compared against the evaluation criteria developed and approved at a joint meeting of the Bakersfield City Council and Kern County Board of Supervisors on September 9, 2002 and revised, as requested at the Kern COG board meeting on November 21, 2002. A public workshop was held at the Bakersfield Convention Center on April 22, 2003 and attended by approximately 35 individuals.

Based on technical data, public comments, the project steering committee and agency comments, the Truxtun Avenue site is presented in the report as the preferred terminal site for the Kern region. The final report concludes "while all three station site vicinities appear capable of supporting high speed rail service, the Truxtun site is recommended as the most attractive site for the Bakersfield Region." On September 18, 2003, Kern Council of Governments Board of Directors adopted a Resolution endorsing the Truxtun Avenue site as the preferred high-speed rail terminal location within Metropolitan Bakersfield.

Routing Options

In evaluating the potential high-speed rail maintenance facility sites for the Kern region, two routes were explored. These routes include the I-5/Grapevine alignment and Palmdale alignment. Figure 1 illustrates the regional routes the Committee examined. This figure was created using data from the CHSRA. Each of these proposed routes connect with Bakersfield. For each alignment option, tunnels, grade concerns, travel times, and cost estimates were considered. Table 1 summarizes key information pertaining to each route option between Los Angeles and Bakersfield. This information was included in the *California High-Speed Rail Corridor Evaluation* (Parsons Brinckerhoff, April 1999). The CHSRA is expected to choose a final alignment after the final EIR/EIS is completed in December 2003. Several of the maintenance facility sites evaluated would be served by either of the proposed alignments.

| | I-5/Grapevine Alignment | Palmdale Alignment |
|--------------------------------|------------------------------------|--------------------------------------|
| Capital Cost | \$4.615 billion | \$4.852 billion |
| Express Travel Time | 45 minutes | 54 minutes |
| Route Length | 109.9 miles | 143.4 miles |
| Tunneling Required | 28 miles | 11 miles |
| Fault Impacts | San Andreas Garlock | San Andreas Garlock White Wolf |

Maintenance Facility Requirements

The basic criteria that the California High Speed Rail authority uses when evaluating sites for the environmental impacts for maintenance facilities are as follows:

Total Area: 98.4 acres (including trackage)

Length: 2,579 m (8,460 feet)

Width: 269 m (880 feet)

As indicated on the aerial photographs in Appendix A, which depict the proposed site locations, all sites exceed the basic criteria. There is tremendous land availability in Kern County.

Evaluation Criteria:

- Rail access (alignment): Proximity of large parcels of land adjacent to the existing rail alignments.
- Infrastructure improvements: Defined as the required improvements in the roadway system near the proposed maintenance facility.
- Environmental issues: Involve impacts to natural resources, endangered species, agricultural land, cultural resources, as well as noise impacts in urban areas.
- Site purchase price: The estimated cost of purchasing land and rights of way for the maintenance facility location.
- Utility availability: Whether utilities are available at the maintenance facility location and the adequacy of existing utilities.
- Freeway access: Proximity of the site to major north/south or east/west transportation corridors.
- Access to public transit: Proximity to existing public transit routes and services. Consideration was given to the likelihood of future routes servicing the area.
- Existing commercial support services: Proximity of commercial support services, (i.e. gas stations, eating establishments) to the proposed maintenance facility location.
- Workforce availability: The pool of qualified and available work force. It includes consideration to unemployment rates.
- Available housing: The availability of all levels of housing for the employees; from executive estates to apartments within commute distance (20 minutes) from the proposed site.
- Workforce training capability: Any colleges or universities or trade and technical schools within commute distance of the site (20 minutes) of the proposed site.

Site Ranking

| | Delano McFarland | Shafter Wasco | SE Bakersfield | Comanche Rd. @ SR 58 | Arvin | Tehachapi | Mojave | Rosamond |
|--|---------------------|------------------|-------------------|----------------------------|-------|-----------|--------|----------|
| Rail Access (Alignment) | 5 | 5 | 4 blue 5 red | 5 | 5 | 5 | 3 | 5 |
| Infrastructure Improvements | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 2 |
| Environmental Issues | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 |
| Site Purchase Price | 5 | 5 | 3 | 5 | 5 | 5 | 4 | 4 |
| Utility Availability | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Freeway Access | 5 | 5 | 4 | 5 | 3 | 5 | 2 | 5 |
| Access to Public Transit | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 |
| Existing Commercial Support Services | 3 | 1 | 4 | 2 | 1 | 2 | 5 | 4 |
| Workforce Availability | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 |
| Available Housing | 2 | 4 | 5 | 4 | 2 | 2 | 2 | 3 |
| Workforce Training Capability | 2 | 4 | 5 | 4 | 2 | 5 | 2 | 5 |
| | | | | | | | | |
| TOTAL | 44 | 46 | 47/48 | 46 | 38 | 45 | 38 | 44 |

Benefits to Locating in Kern County

After study and ranking of the proposed maintenance facility locations, it was determined that there was no discernable distinction between the various locations identified. A successful facility could be located at any of the proposed sites. The following is response to the ranking criteria for Kern County in general:

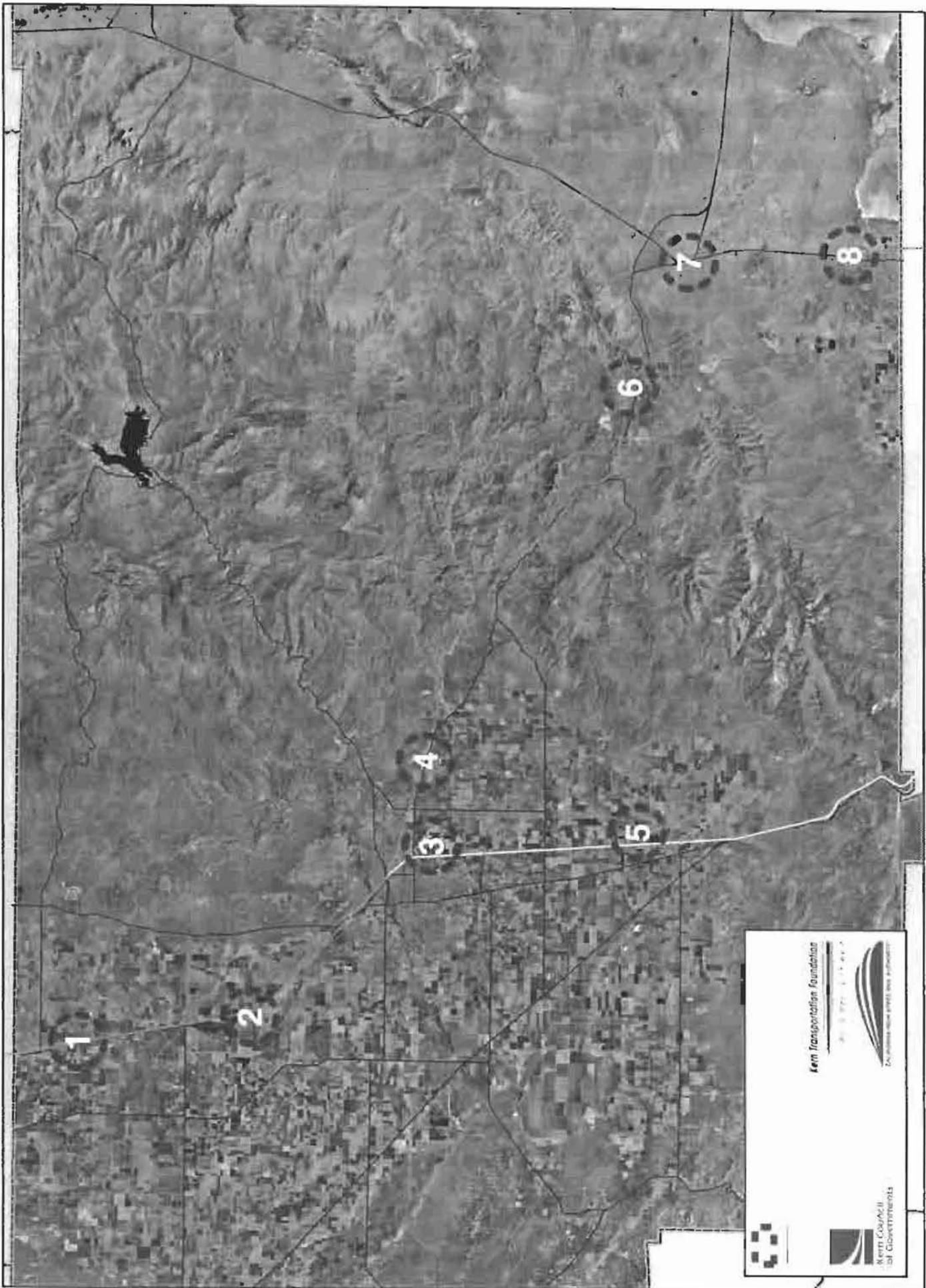
- **Rail Access (alignment):** Kern County is the geographical center of the entire California High Speed Rail system, spanning from San Diego to the San Francisco Bay/Sacramento Area. Both proposed rail alignments connecting Bakersfield to Los Angeles have numerous potential maintenance facility locations. There are numerous large parcels of relatively flat, undeveloped land adjacent to both proposed rail corridors.
- **Infrastructure Improvements:** Many of the arterial roadways adjacent to the proposed Kern County sites are either already constructed or the construction could be easily facilitated because of minimal obstructions in those areas. Metropolitan Bakersfield, Shafter and Rosamond have Traffic Impact Fee programs that may contribute to improving arterial roadways adjacent to the sites.
- **Environmental Issues:** All proposed sites can be mitigated environmentally. Two of the main environmental issues in Kern County are the protection of the San Joaquin Kit Fox and the Blunt Nosed Leopard Lizard. Metropolitan Bakersfield has a Habitat Conservation Plan (HCP). It includes the largest habitat conservation area in the state and assists in the mitigation of environmental impacts associated with construction.
- **Site Purchase Price:** The price for one acre of un-entitled land, without infrastructure, ranges in price from \$1,500.00 to \$2,500.00 per acre in Kern County. This acreage cost is below the land costs in other areas of California.
- **Utility Availability:** Since many of the proposed sites are adjacent to freeways and to the commercial support services associated with busy transportation corridors, much of the necessary utility infrastructure is in place.
- **Freeway Access:** Kern County is bisected by California's 2 major north/south transportation corridors, I-5 and SR 99. I-5 intersects with I-8 in San Diego, I-10 in Los Angeles and I-80 in Sacramento. SR 46 and SR 58 provide east/west mobility through the County. SR 58 provides a link to I-40 and I-15 in Barstow, which connects to eastern United States. SR 46 connects Kern County to California's coastline. There are other transportation corridors in Kern County; including SR 119, SR223, SR33 and SR178.

- **Access to Public Transit:** Kern County has a vast public transportation network. Kern Regional Transit (KRT) provides transit services connecting the smaller metropolitan areas to Bakersfield. KRT services 20 communities throughout the County, including the cities of Shafter/Wasco, Delano/McFarland, Bakersfield, Arvin/Lamont, Mojave, Tehachapi, and Rosamond. KRT boasts a fleet of 55 buses and 82,000 hours of annual operating time. Golden Empire Transit District serves the Metropolitan Bakersfield area. It has an annual operating budget of \$\$\$ and serves more than %%% passengers per year. All of the incorporated cities in Kern County offer public transportation services, either Dial-A-Ride or a fixed route service.
- **Existing Commercial Support Services:** Since many of the proposed sites are adjacent to freeways, they are also adjacent to the commercial support services associated with busy transportation corridors.
- **Workforce Availability:** According to a recent labor market study prepared by the Wadley Donovan Group, Kern County employers report generally satisfactory experience recruiting professional and managerial talent from outside the county. They cite the area's highly-rated quality of life and moderate cost of living as two factors driving their ability to recruit this talent pool. The county's unemployment rate is higher and average wage rates are lower than state or national averages. Relative to the rest of California, a large proportion of Kern County households have median incomes below \$35,000. According to the labor market study, this may indicate a high proportion of residents that would be interested in entering the workforce as second-income earners or moving into positions that offer greater earnings and career advancement potential.
- **Available Housing:** According to the California Association of Realtors, Kern County is the most affordable housing market in California and the seventh most affordable market in the western United States.
- **Workforce Training Capability:** Kern County has a number of educational and job training programs. There are nine high school academies in the County, each concentrating on a separate industry, focusing primarily on the areas showing the most growth. Kern County also boasts over ten different junior colleges and universities, both public and private, with state of the art technology and instructors from all over the United States. The school of Business and Public Administration at California State University Bakersfield, the largest public university in the area, was recently given the honor of being placed in the top twenty percent of the business programs in the world.

Conclusions

Kern County is not only the center of the entire high speed rail system, thus an ideal spot for the maintenance facility, but it offers many other amenities that attract businesses to the area. A low cost of living, an available workforce, strategic location and a business friendly environment are just a few of the reasons that companies such as ACS, Sears Logistics Services, Frito-Lay and State Farm Insurance have chosen to call Kern County home. Bakersfield and Kern County have been named one of the top fifty hottest cities to do business by Expansion Management Magazine, and ranked number 42 in Best Places for Business and Careers, 2003 by Forbes Magazine. This ranking places the Bakersfield area ahead of San Francisco, San Jose, Los Angeles-Long Beach, California and Phoenix, Arizona.

APPENDIX A



North Council
of Governments



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2013-2017
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Delano/McFarland



2



Kent Inspection Foundation
KENT COUNTY, WASHINGTON

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Shafter/Wasco



Southeast Bakersfield





Comanche/Hwy 58



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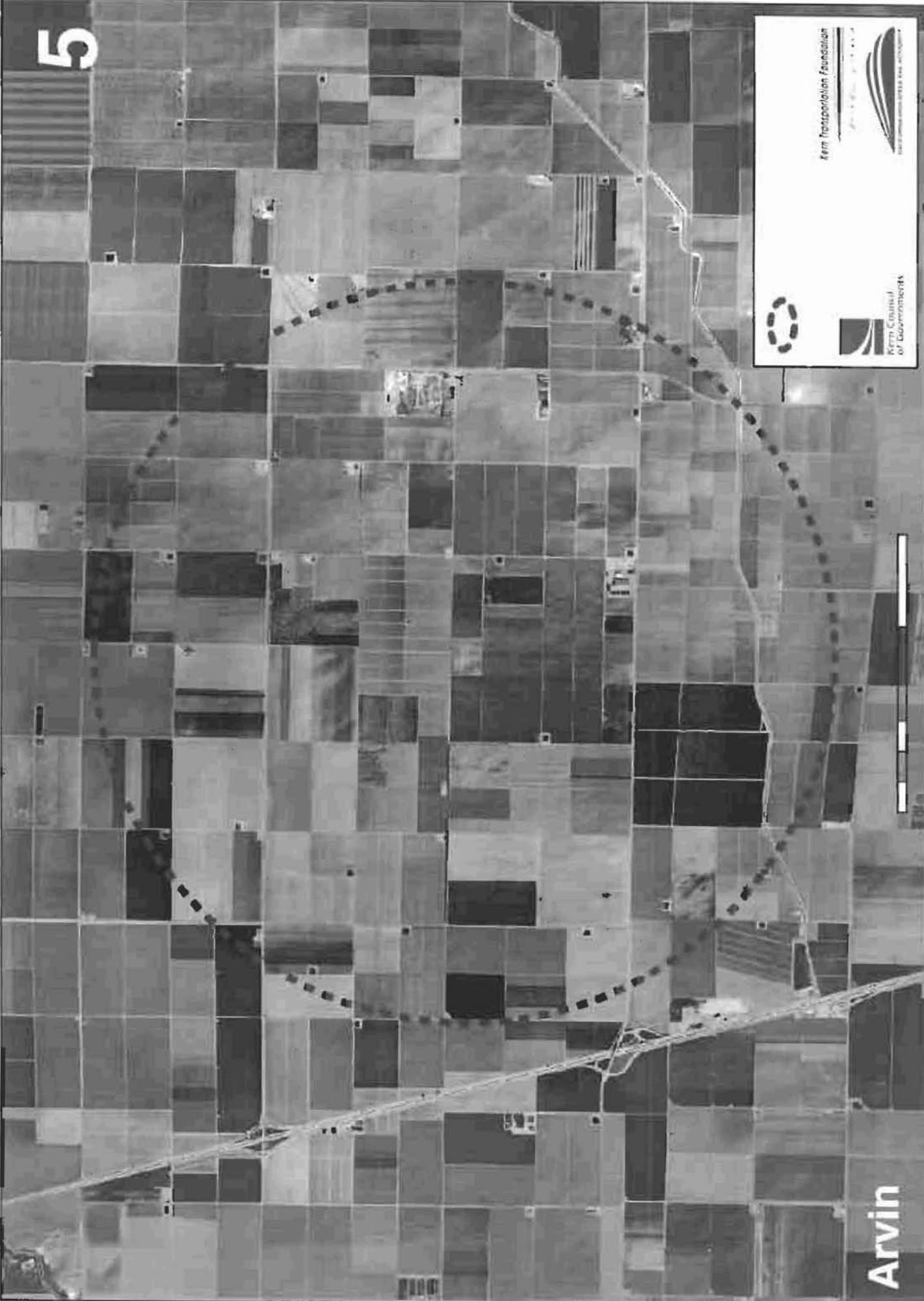
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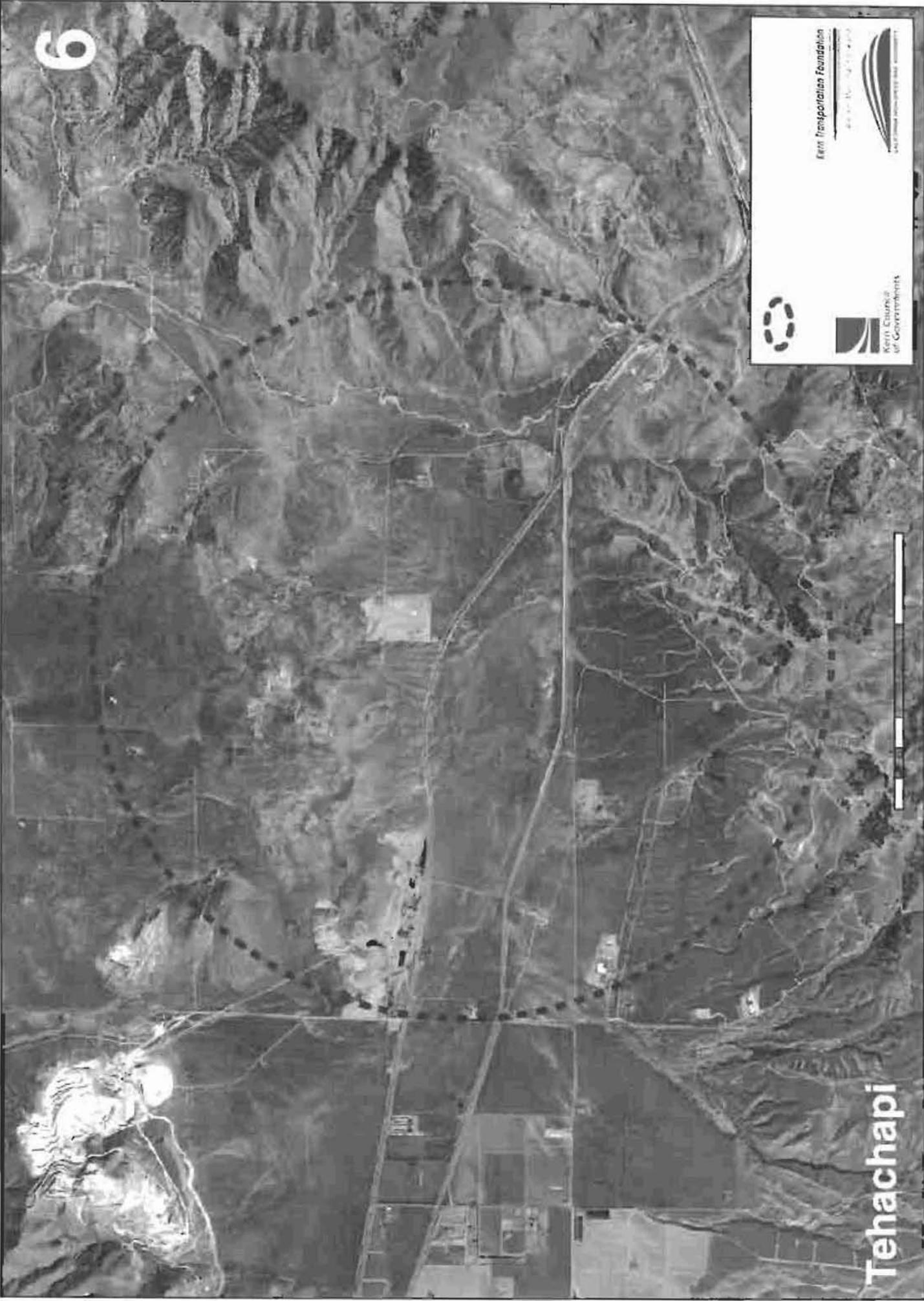
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Arvin





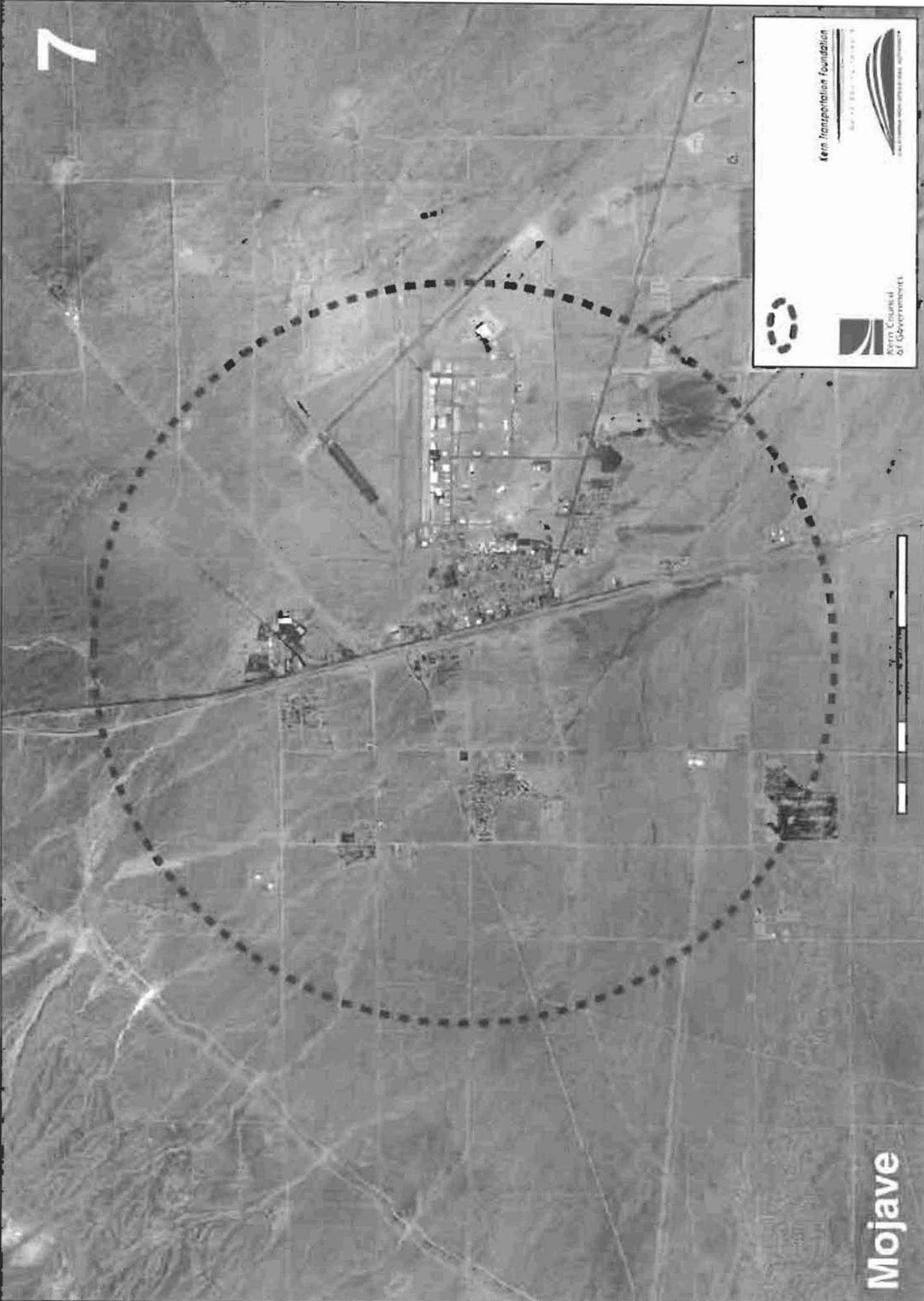
Tehachapi



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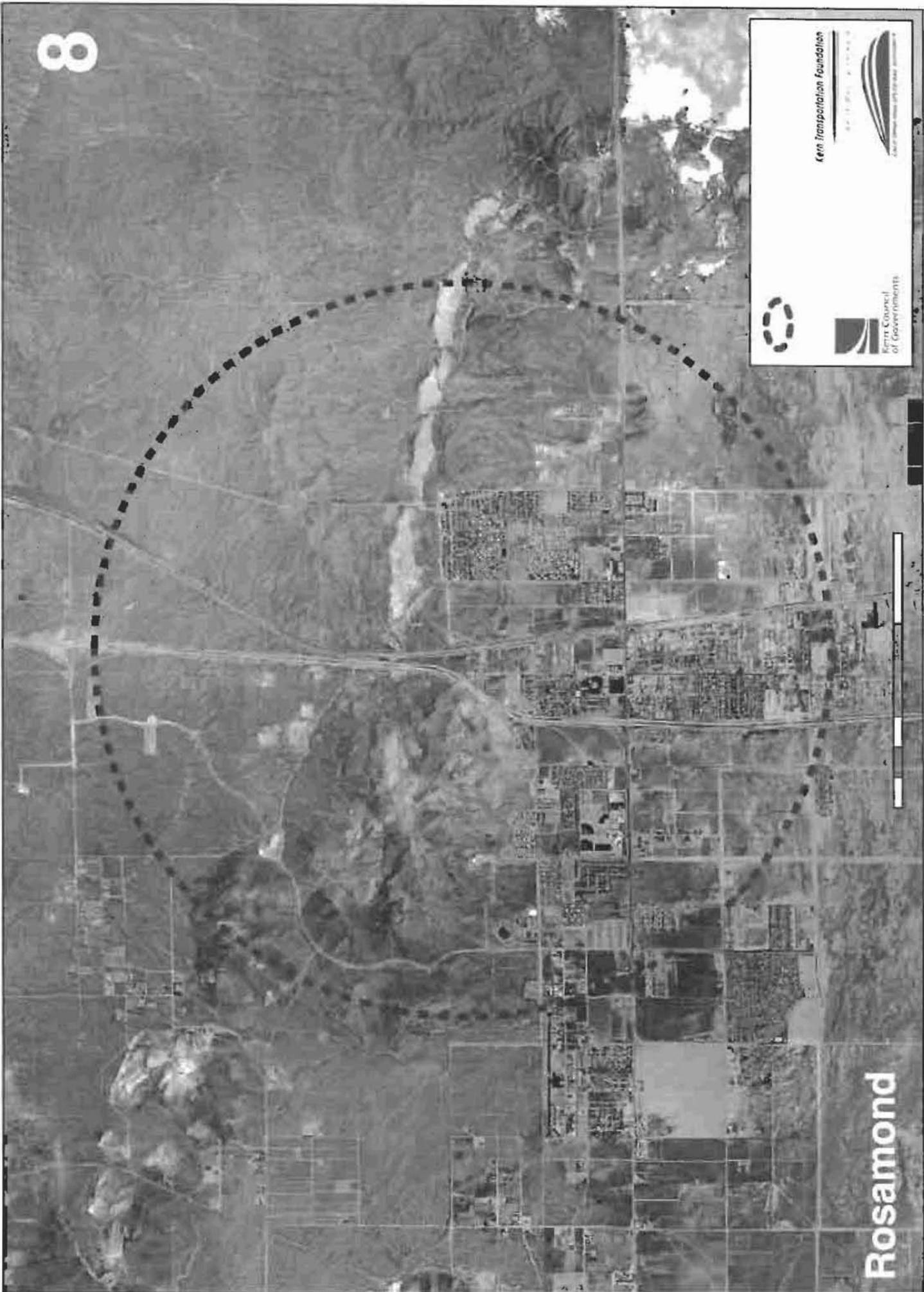
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Mojave



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Rosamond

