Year 2025 Traffic Conditions

Noise levels within the vicinity of the project area were modeled for with and without Proposed Alternative Project scenarios for 2025 traffic conditions to determine the location and extent of future vehicular generated noise conditions. Table 4.6-8 indicates the noise increase and/or decrease for the analyzed roadways within the County of San Bernardino and City of Big Bear Lake. According to Table 4.6-8, under the "2025 Without Proposed Alternative Project" scenario, noise levels at a distance of 100 feet from centerline would range from approximately 33 to 64 dBA. The highest noise levels would occur on Big Bear Boulevard, west of Stanfield Cutoff. The lowest noise levels would occur along Stanfield Cutoff (north of North Shore Drive).

As shown in Table 4.6-8, under the "2025 With Proposed Alternative Project" scenario, noise levels at a distance of 100 feet from centerline would range from approximately 33 to 64 dBA. Similar to the "2025 Without Proposed Alternative Project" scenario, the highest and lowest noise levels would occur along Big Bear Boulevard (west of Stanfield Cutoff) and Stanfield Cutoff (north of North Shore Drive), respectively.

Table 4.6-8 also compares noise levels under the "2025 Without Proposed Alternative Project" scenario with the "2025 With Proposed Alternative Project" scenario. Based on the information cited in Table 4.6-8, all roadway segments comparatively analyzed would experience a noise increase of less than 1 dBA at 100 feet from the roadway centerline. Thus, noise impacts along all the roadway segments would be less than significant based on the significance criteria in Section 4.6.6, Impacts and Mitigation Measures.

Table 4.6-8: Exterior Noise Exposure to Nearby Roadways, 2025

Roadway Segment	2025 Without Proposed Alternative Project					2025 With Proposed Alternative Project					Difference in dBA at 100 Feet from Roadway
	Average Daily Traffic	dBA at 100 Feet From Roadway Centerline[1]	Distance from Roadway Centerline (in feet) to: 70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour	Average Daily Traffic	dBA at 100 Feet From Roadway Centerline	Distance from Roadway Centerline (in feet) to: 70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour	
North Shore Drive:											
West of Stanfield Cutoff	5,890	58.10	17	37	79	6,557	58.57	18	40	85	0.47
East of Stanfield Cutoff	8,556	59.72	22	47	102	8,556	59.72	22	47	102	0.00
Stanfield Cutoff:											
North of N. Shore Dr.	155	33.16	0	1	2	155	33.16	0	1	2	0.00
N. Shore Dr. to Big Bear Blvd.	6,975	58.83	19	41	89	7,642	59.23	20	44	94	0.40
South of Big Bear Blvd.	2,790	50.09	5	11	23	2,790	50.09	5	11	23	0.00
Big Bear Boulevard:											
West of Stanfield Cutoff	25,420	63.80	45	98	211	25,687	63.85	46	98	212	0.05
East of Stanfield Cutoff	22,444	63.26	42	90	194	22,844	63.34	42	91	196	0.08

Note:
[1]=100 feet is the assumed distance to the midpoint of a receptor rear yard.
Noise level models computed for 2006 scenarios utilized existing 2002 roadway cross-section data.
Source: Traffic data obtained from the TIA (refer to Appendix 15.3, Traffic Data, from the 2005 Final EIR).

Watercraft Noise

The Proposed Alternative Project includes the installation of a removable, floating dock with 55 boat slips on the north shore of Big Bear Lake. The 2005 Final EIR determined that 103 boat slips (as originally proposed), if multiplied by the weekend use factor of 9 percent, would add approximately nine boats per day to the daily average number of boats using the lake. All persons undertaking boating activities would be responsible for complying with rules and regulations established by the Big Bear Municipal Water District. Boating operation requirements that include speed limits, mooring and launching restrictions, and muffler requirements would serve to reduce noise impacts generated by watercraft activities. As previously stated, the Proposed Alternative Project would add fewer than nine boats to the average daily use of the Lake. Not only is this considered a nominal increase in daily boating numbers, adherence to the Water District's rules and regulations, and the Harbor and Navigational Code 654, would reduce noise impacts from watercrafts to a less than significant level. It is noted that during peak holiday and summer periods, the daily use of watercraft would significantly increase. However, compliance with the Water District's rules and regulations would reduce impacts to less than significant levels.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

Operational Noise – Stationary Sources

Impact Analysis

Proposed Alternative Project operation would result in stationary noise source impacts on-site. These sources would include the typical residential noise sources and activities at the nearby marina and adjacent parking lot. The potential impacts from these sources were analyzed in terms of their proximity to the nearby off-site sensitive receptors.

Residential

Development of the residential lots adjacent to existing residences located to the north (along Flicker Road), west (along Canyon Road) and east (along SR-38) would result in new sources of stationary noise typical of any residential development. Residential noise sources include children playing, pet noise, amplified music, car repair, pool and spa equipment, woodworking and home repair. Noise typically associated with residential land uses does not exceed 60dBA and usually occurs during daytime hours from 7:00 a.m. to 10:00 p.m. In addition, all residents must comply with the noise standards set forth in the County Development Code, which states that exterior noise levels in residential property shall not exceed the basic noise standard of 55 dBA between the hours of

7:00 a.m. and 10:00 p.m. and shall not exceed 45 dBA between the hours of 10:00 p.m. and 7:00 a.m. (refer to Table 4.6-4). Thus, noise impacts from the residential uses are less than significant in this regard.

Marina Facilities

The Proposed Alternative Project includes the development of a marina on Big Bear Lake and an associated parking lot and boat launch. Proposed Alternative Project revisions include a floating, removable dock with 55 boat slips (down from 103 slips). Surface parking lots generate instantaneous noise from tire squeals, trash pick-up, delivery trucks, lot sweeping, door slamming, back-up alarms, and engine start-ups. Noise would primarily remain on-site and would be temporary (during peak events). Parking lot noise can also be considered a "stationary" noise source and may occur after 10 p.m. Typical noise levels generated by parking areas are an estimated 70 dBA at 50 feet during peak events (this is an "instantaneous" or peak noise level). Parking lot noise would also be partially masked by background noise from adjacent SR-38 and other roads and typical community noise sources. Based on the distance to the nearest existing residential areas from the proposed marina parking lot, noise levels would not exceed 55 dBA during the daytime or 45 dBA at nighttime. Therefore, typical parking lot noise generated at the Proposed Alternative Project site would be below both the daytime and nighttime noise standards at the nearest existing residential uses. Thus, noise impacts from the marina facilities are less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

4.7 - Public Services

This section presents a discussion of the existing and proposed public services available to serve the Proposed Alternative Project, which has been modified from the Original Proposed Project that was described in the 2005 Final Environmental Impact Report (EIR). Public services include police and fire protection, parks, schools, and libraries.

4.7.1 - Existing Conditions

Fire Services

The County of San Bernardino Fire Department provides fire protection and emergency service to the Fawnskin area. County Fire Station No. 49 is located at 39188 Rim of the World Drive, approximately 0.75 mile west of the site. Station 49 has two permanent personnel, one of whom is a paramedic, and approximately eight to ten volunteer fire fighters. Mutual aid agreements with the City of Big Bear Lake and Big Bear City Community Services District supplement service by providing first-response in the event that additional manpower and/or equipment is needed during a fire, emergency medical call, or in the event that the Big Bear Lake or Big Bear City stations could provide first alarm response with the closest available equipment.

The private Insurance Service Organization (ISO) research group rates fire danger on a scale of 1 to 10, depending on type of vegetation, structures, climate and availability of fire protection services. The Community of Fawnskin has an ISO rating of 9, with 1 representing the lowest threat and 10 the highest.

The project site is located within San Bernardino County Fire Safety Area 1 (FS1). Since the Proposed Alternative Project is located within a FS1 designated area, it is subject to compliance with various requirements relative to construction, building separations, project design, and erosion and sediment control. The requirements applicable to each fire safety area are found in the County's Development Code in Section 82.13.050 (General Development Standards), Section 82.13.060 (FS1, FS2, and FS3 Development Standards), and 82.13.070 (FS1 Additional Development Standards). The provisions for the FS1 District apply to all phases of the Proposed Alternative Project development.

Police Services

Police protection for the Community of Fawnskin is provided by the San Bernardino County Sheriff's Department. The Big Bear Sheriff's Station is located at 477 Summit Boulevard in the City of Big Bear Lake, approximately 6 miles east of the project area. The station also provides staffing for the contract law enforcement personnel for the City of Big Bear Lake (the County Sheriff is the City's Police Department under contract with the City) and houses a Type I jail. The department has nine patrol duties, 24-hour personnel coverage of unincorporated areas, one detective and support personnel. The Big Bear Sheriff's Station serves a population of approximately 16,000 in the

unincorporated San Bernardino County areas of Big Bear Valley. The average response time for emergency calls is plus or minus 6.97 minutes.

The mountain communities in the Valley have volunteer support of law enforcement through an active Search and Rescue team, Citizen's Patrol and Neighborhood Watch Programs.

School Services

Moon Camp is within the Bear Valley Unified School District (BVUSD). The BVUSD provides public education for grades Kindergarten through 12. School facilities serving the project site, along with their enrollment and capacity, are shown in Table 4.7-1. Although one of the schools is operating beyond capacity, enrollment is declining in the elementary and middle schools. Measure Q, a local bond for $25 million to improve school facilities, recently passed. Measure Q includes projects to renovate existing facilities and to provide new classrooms to replace portable classrooms at North Shore Elementary, Big Bear Middle School and Big Bear High School. Big Bear High School has recently completed an expansion project and is no longer functioning over capacity. From 2006 to 2007, enrollment decreased at the elementary and middle school levels, yet increased for the high schools.

Table 4.7-1: Bear Valley School District Facilities

School	Grade Level	Maximum Capacity	2006 Enrollment	2007 Enrollment	Currently Impacted?
North Shore Elementary 765 N. Stanfield Cutoff	K-6	588	568	535	No
Big Bear Middle 41275 Big Bear Blvd.	7-8	408	534	436	Yes
Big Bear High [1] 351 N. Maple Lane	9-12	ND	1,026	1,038	No
Chautauqua High [2] (Alternative) 525 Maple Lane	9-12	ND	104	114	No

ND = data not available
[1] Recently expanded
[2] All portable buildings with ability to expand
Source: BVSD, personal contact.

Libraries

Big Bear Lake Branch Library serves the community from a 9,543- square-foot building located at 41930 Garstin Drive. It is one of 28 branch libraries in the County system and serves approximately 6,000 visitors per month. According to the San Bernardino County Library Facility Master Plan, the library needs to expand to 15,443 square feet. However, at present, there are no plans to expand.

Parks

The project site is located in the Community of Fawnskin. The Fawnskin area supports visitors and residents with the provisions of lodging, restaurants, boat docks, fishing, hiking, backpacking, off-roading, bicycling paths, campgrounds and picnic areas. Although the project site is privately owned and not formally in operation as public parkland, the site currently supports multiple recreational activities inline with the lakeside communities.

There are multiple recreational opportunities in the immediate vicinity. Big Bear Lake is considered a premier recreational and vacation resort area of southern California. The lake's waters are utilized by recreational boaters, as well as smaller recreational craft (jet skis, sailboats, kayaks, etc.), and fishing. Most of the recreational activities are privately owned and operated. However, the Big Bear Municipal Water District (MWD) has authority to regulate recreational activity on the lake's surface.

According to the Big Bear Municipal Water District Management Plan, dated August 3, 2000 (Revision), MWD has constructed two public boat launch ramps and improvements at the Stanfield Marsh that includes a parking, viewing location and boardwalk for public access. Additional public access to the lake is provided on property along the north shore, which is owned by the Forest Service. Also, there are 11 commercial marinas providing access to the lake. The MWD also owns and operates a recreational vehicle (RV) park adjacent to their administrative offices.

Recreational Bike Trail

The U.S. Forest Service (USFS) constructed the Alpine Pedal Path Bike Trail along the north shore of the Lake extending from Stanfield Cutoff, through the MWD East Boat Ramp, to the Solar Observatory, which is immediately to the east of the project site. Currently, the trail does not extend through the properties east of the project site, nor through the project site itself.

4.7.2 - Thresholds of Significance

The following criteria for establishing the significance of potential impacts on public services were derived from Appendix G of the California Environmental Quality Act (CEQA) guidelines. The Proposed Alternative Project would result in potentially significant impacts to public services if the following criteria are met:

a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, other public facilities.

4.7.3 - Project Impact Analysis

Fire Services

Wildfire is the primary safety issue in mountainous areas. Fire conditions in the San Bernardino National Forest are more dangerous than ever, according to the USFS (2006). The recent Butler II fire (September 2007) required the evacuation of the Fawnskin community for a short period. Many decades of fire suppression policy, which led to growth of the understory and bark beetle infestation, is partially to blame for this fire hazard. Implementation of the San Bernardino National Forest Plan (2006) for mechanical thinning of under-story trees and provision of fire-flow would reduce fire danger in the project area.

The project site is located adjacent to the National Forest Service on the north and east. The USFS requires a 100-foot firebreak for residential lots that are adjacent to USFS land. The Proposed Alternative Project is designed to include this 100-foot fuel modification zone adjacent to USFS land.

The project site is in a high fire hazard area and included in the County's Fire Hazard Overlay District (FS1). The FS1 Area "includes areas within the mountains and valley foothills. It includes all the land generally within the San Bernardino National Forest boundary and is characterized by areas with moderate and steep terrain and moderate to heavy fuel loading contributing to high fire hazard conditions."

Since the Proposed Alternative Project is located within a FS1 designated area, it is subject to compliance with various requirements relative to construction, building separations, project design, and erosion and sediment control. The requirements applicable to each fire safety area are found in the County's Development Code in Section 82.13.050 (General Development Standards), Section 82.13.060 (FS1, FS2, and FS3 Development Standards), and 82.13.070 (FS1 Additional Development Standards). The provisions for the FS1 District include, but are not limited to, fuel modification zones, set backs, emergency access, water supply (for fire flows), and apply to all phases of project development. For a complete list of applicable codes, see Appendix F, San Bernardino County Development Code, Fire Safety Overlay District.

Exhibit 2-5, in Section 2, *Project Description*, shows the required 100-foot fuel modification zone required for any development project that abuts USFS land. Ten of the residential lots are affected by this requirement and must abide by the Fuel Modification Plan required to be prepared for the Proposed Alternative Project. In addition, because the proposed residential lots would be sold as custom lots and would be developed as they are sold, fuel modification on individual lots may be required if a lot being developed is adjacent to other lots that have not been sold or remain undeveloped. Under this condition, Development Code Section 82.13.060(6) (B) would apply. This provision states in part that "when a development project is phased, individual phases may be required to provide temporary fuel modification areas, where the development perimeter of a phase is contiguous to a subsequent phase of a project, which in its undeveloped state is a hazardous fire area…"

The fuel modification zone adjacent to the USFS boundary and areas within the site that would be required to maintain temporary fuel modification areas will be maintained by the prospective homeowners of these specific lots. Each homeowner will be required to pay property taxes and development impact fees based on then-current rates. The project's increase in demand for fire protection services would be offset through project-related fees and taxes.

Regular thinning of these buffer zones would lessen the fire hazard. A potential loss of habitat could result from the removal of trees required for fire control. However, the County of San Bernardino requires under Chapter 88.01, Plant Protection and Management, of the Development Code that development on all private and public lands within the unincorporated areas of San Bernardino County is subject to specific requirements. Removal of any native plant from unincorporated areas of San Bernardino requires the approval of a removal permit. The Proposed Alternative Project would comply with this Plant Protection and Management Ordinance and the design standards specific for high fire areas.

Related to this issue, a Water Supply Feasibility Study (Appendix G) was prepared for the Proposed Alternative Project that addresses both domestic water supply and water supply for fire flow. As part of the permitting process, the Applicant must provide adequate domestic water supply as well as meet the fire flow requirements established by the County Fire Marshall. Storage capacity for the development would be sized to meet the operational, emergency and fire flow storage requirements. Operational storage would be used to meet the hourly fluctuations in demand during maximum day conditions, and must be established as 30 percent of maximum day. Emergency storage would be used to meet demands during a power outage or other emergency situation when supply sources and boosting pumps may not be available. The requirements for emergency storage are equivalent to one day of maximum day demand. Fire-flow storage capacity would be equal to the fire-flow capacity of 1,750 gallons per minute (gpm) times its duration (2 hours). Fire-flow storage for 1,750 gpm (based on 120 minutes) is 210,000 gallons (see Section 4.9, Utilities, for this discussion). According to the Water Supply Feasibility Study, the Proposed Alternative Project would have sufficient water to meet these requirements. In addition, mitigation measures pertaining to fire protection are included to address the potential fuels- and fire-related impacts of the Proposed Alternative Project. Implementation of these mitigation measures will ensure that fire protection impacts of the Proposed Alternative Project are less than significant.

Emergency Evacuation

The project site is currently vacant; therefore, implementation of the Proposed Alternative Project would increase the demand for fire protection in the area and increase the probability of additional calls for service. The average household size in Big Bear Valley has been estimated to be 2.31 persons. Therefore, at full build-out of the 50 residential lots, the Fawnskin population has the potential to increase by approximately 116 persons, assuming that all residences are occupied full

time, that would require evacuation, in the event of an emergency (currently, Big Bear Valley experiences one third permanent occupancy and two thirds part time, vacation occupancy).

The project site is located adjacent to State Route 38 (SR-38), which serves as the evacuation route for the Fawnskin Community. At this location on SR-38, Fawnskin residents can evacuate the Community (at the direction of the County Sheriff) to the west by going directly west on SR-38 towards Big Bear Dam and then west on SR-18 to Running Springs and onward to San Bernardino and Interstate 210 (I-210). If the Fawnskin residents are directed to evacuate to the east, they travel on SR-38 to the east. As they pass through Big Bear City on SR-38, they can leave the Valley either to the northeast on State Highway 18 to Lucerne Valley, Victorville and I-15, or to the Southeast on SR-38 to Redlands and I-10. There are three two-lane State Highways providing access into and out of Big Bear Valley.

The County of San Bernardino has proactively worked to provide efficient emergency response and an emergency evacuation plan to protect residents and visitors to the Big Bear Valley. The efforts of the County include providing regulations for property owners to reduce the potential for wildfires, coordination with other jurisdictions in the Big Bear Valley to provide emergency response, and an emergency evacuation plan that includes notification of local media and a reverse 911 system.

The County has enacted several ordinances and regulations in order to proactively work to reduce emergency situations such as wildfires. These regulations include weed abatement requirements and property maintenance standards. Weed abatement requirements and property maintenance standards reduce the amount of fuel that is located adjacent to houses, reducing the risk to structures and humans from wildfire. In addition, fuel reduction of plants, trees, and shrubs along major roads (such as SR-38 and SR-18) has been an ongoing process in coordination with the USFS.

The San Bernardino County Operational Area Coordination Council (SBCOACC) consists of 24 cities and towns that meet on a quarterly basis to discuss emergency preparedness in San Bernardino County. The Council has access to resources from all members, including the County and City of Big Bear Lake. Member jurisdictions of the Council coordinate with one another to provide aid in the event of an emergency.

Other participants in interagency planning and cooperation include the USFS, Natural Resources Conservation Service (NRCS), CALFIRE, California Department of Transportation (Caltrans) California Highway Patrol (CHP), San Bernardino County Fire Department, San Bernardino County Roads, San Bernardino County Sheriff, Big Bear Lake Fire Department, Big Bear City Fire Department, and other local fire departments.

The County has adopted an Emergency Operations Plan for all types of disasters, including snowstorms, earthquakes, and fires. This Plan incorporates policies and procedures to care for full-time residents and visitors in a time of disaster. Depending upon the situation or disaster, citizens and

visitors would be instructed on the appropriate action to take. Instructions can be disseminated by a wide array of options. The San Bernardino County Telephone Emergency Notification System (TENS) provides for recorded messages to be sent to all standard telephones in the Big Bear Valley in a reverse 911 system. KBHR 93.3 FM radio and TV6, in addition to their normal emergency broadcasts, have agreed to participate in sending out messages. In addition, a siren system has been installed in the City of Big Bear Lake and can be utilized in the event of an emergency. Scan USA, which is a web-based emergency notification system, sends out locally generated messages by email, telephone, text messaging, and cell phone for individuals that sign up for the service.

With respect to an evacuation, the Emergency Operations Plan allows for conservative trigger points to be established when calling for voluntary and mandatory evacuations. The County has not released the Plan, as doing so could jeopardize security, and therefore the Plan cannot be attached as an Appendix to this Revised and Recirculated Draft EIR. However, the County has an approved evacuation plan, and it would be implemented in the event of an emergency.

The Big Bear Valley Mutual Aid Association provides public outreach to educate the public for preparedness in the event of an emergency. The County and City provide additional disaster education to residents of the Big Bear Valley through presentations at elementary and pre-schools for earthquake and fire preparedness, open houses at the fire station, press releases to the media, and active participation in community activities to provide awareness for residents. In addition, the County, City and Community Services District through Mountain Mutual Aid have conducted disaster drills, which included all local agencies, public service organizations and utilities.

In summary, the County has an approved Emergency Operations Plan, and strict development standards will be applied to the Proposed Alternative Project. The County and City Emergency Services Agencies have an Evacuation Plan for the Big Bear Valley that has been used successfully in the past and the addition of the 50-lot Proposed Alternative Project will not have a significant impact on the evacuation of Big Bear Valley. The Proposed Alternative Project is subject to compliance with various requirements relative to construction, building separations, project design, and erosion and sediment control, including regulations on fire flows. The Water Feasibility Study has determined that there is sufficient water available to meet the requirements for the FS1 Overlay District Overlay (Section 82.13.060 of the Development Code). In addition, the Proposed Alternative Project design includes adequate fuel modification zones that will reduce the risk of wildfire associated with the adjacent National Forest. Furthermore, the individual homeowners will be required to pay development impact fees, a portion of which are directed to fire protection services. Therefore, impacts to fire services and emergency evacuation will be less than significant, and no mitigation measures are recommended.

Police Services

As with any new residential development, implementation of the Proposed Alternative Project would increase police service calls to the vicinity beyond existing conditions. This would be a direct result

of the addition of 50 single-family residences and associated population. The average household size has been estimated to be 2.31 persons; therefore, at full build-out of the 50 residential lots, the Fawnskin population has the potential to increase by approximately 116 persons. This increase in population would incrementally increase the number of police service calls.

Anticipated police calls that may occur include increased burglar alarm calls, general criminal investigations, missing or lost persons, emergency medical calls, thefts of boats, and vandalism. Although there would be an incremental need for increased police service, it is not anticipated that Proposed Alternative Project implementation would require any new police facilities. Each homeowner will be required to pay property taxes and development impact fees based on then-current rates. The Proposed Alternative Project's increase in demand for police services would be offset through project related fees and taxes. Therefore, impacts to law enforcement services are expected to be less than significant, and no mitigation measures are proposed.

School Services

Development of the Proposed Alternative Project could generate an increased student population of approximately 11 students (based on 0.21 students per unit times 50 units) within the BVUSD. This is less than one student per grade. As noted in Table 4.7-1, the middle school is over capacity. All of the schools have augmented existing facilities with portable classrooms to accommodate over-crowding, and the local electorate recently passed Measure Q to build new classrooms and/or improve facilities at all of the BVUSD schools that could be affected by this Proposed Alternative Project. In addition, both the elementary and middle schools have experienced a decline in enrollment.

Currently, the BVUSD collects development impact fees from new development projects within the service district boundaries. The fees are determined by a Developer Justification Study commissioned by the District every 2 years. Each homeowner will be required to pay these development impact fees, regardless of whether or not they will have students in the BVUSD. Payment of these fees are considered full mitigation under the CEQA Guidelines. Therefore, the impacts to school services would be less than significant, and no mitigation is proposed.

Libraries

Big Bear Lake Branch Library serves the community from a 9,543-square-foot building located at 41930 Garstin Drive. It is one of 28 branch libraries in the County system and serves approximately 6,000 visitors per month. According to the San Bernardino County Library Facility Master Plan, the library needs to expand to 15,443 square feet. However, at present, there are no plans to expand.

The Proposed Alternative Project would add an additional 116 residents to the Fawnskin community, and these additional residents would place an incremental demand on public libraries primarily the Big Bear Lake Branch Library. The increase in population could necessitate a proportionate increase in staffing, resources, materials and library space. The demand for library services has decreased because of the internet (i.e., online publications). The current state average is 0.35 square feet of

library space per capita. However, the Division of Library Development Services of the State of California recommends up to 0.5 square feet of space per capita. The Big Bear Lake Branch Library is currently impacted and in need of expansion. According to the San Bernardino County Library Facility Master Plan, the library needs to expand to 15,443 square feet. However, at present, there are no plans to expand.

The individual homeowners will pay property taxes, of which a portion will go toward funding library services. The revenue from property taxes would offset the incremental cost of providing services to the project residents. Furthermore, modern technology (computers) has reduced the need for library services. The impacts to library services are expected to be less than significant and no mitigation is required.

Parks

The Proposed Alternative Project would add an additional 116 residents to the Fawnskin community, and these additional residents would place an incremental demand on public parks. With implementation of the Proposed Alternative Project, the existing unauthorized trails and dirt roads on site would be eliminated. However, these features are on private property and could be blocked from public use at any time. An area for Neighborhood Lake Access (Lot B) will be included in the development plan that will be accessible by foot and bicycle. In addition, the Applicant intends to dedicate a 66-foot-wide road easement for SR-38 that would accommodate an extension of the multipurpose trail that runs along the north shore of the lake. Furthermore, the mountain community has multiple recreational facilities, both public and private, and Big Bear Lake has multiple access points that will remain accessible to the general population.

Summary of Impacts

The Proposed Alternative Project will result in less than significant impacts on police services, schools, and libraries, because project-related fees and property taxes would offset the additional demand for police services, schools, and libraries. The project would have sufficient water to meet fire flow requirements and the County's Emergency Operations Plan would provide guidance in the event of an emergency evacuation. Furthermore, implementation of mitigation measures pertaining to fire protection would ensure that fuels- and fire-related impacts associated with the Proposed Alternative Project would be less than significant.

4.7.4 - Standard Conditions and Uniform Codes

Fire Services

The County requires that all land use proposals, including subdivisions, site plans, and use permits, be consistent with Uniform Fire Code and other site design requirements relative to fire safety such as water supply, fire hydrant number and location, etc. The project site is located within San Bernardino County Fire Safety Area 1 (FS1). Since the Proposed Alternative Project is located within a FS1 designated area, it is subject to compliance with various requirements relative to construction,

building separations, project design, and erosion and sediment control. The requirements applicable to each fire safety area are found in the County's Development Code in Section 82.13.050 (General Development Standards), Section 82.13.060 (FS1, FS2, and FS3 Development Standards), and 82.13.070 (FS1 Additional Development Standards). The provisions for the FS1 District include fuel modification zones, and apply to all phases of project development. The individual homeowners will be required to pay development impact fees, a portion of which are directed to fire protection services.

Police Services

The individual homeowners will be required to pay development impact fees, a portion of which are directed to law enforcement services. In addition, the Police Department reviews development plans to make sure they provide "defensible space" (e.g., areas visible at night to patrolling officers, unit numbers readily visible, etc.).

School Services

The individual homeowners will be required to pay development impact fees to the BVUSD. These fees are considered full mitigation under CEQA Guidelines. Service levels and needs for additional staff or school facilities are determined by the CJUSD as development is proposed.

Libraries

Other than payment of property taxes, there are no Standard Conditions and Uniform Codes that pertain to library services.

Parks

There are no Standard Conditions and Uniform Codes that pertain to park services.

4.7.5 - Project Design Features

Fire Services

The Proposed Alternative Project would have two public access points (Street A and Street B) on the north side of SR-38 that connect to the residences, and one emergency access point at the easterly terminus of Street A. In addition, there are two points of access to the marina parking lot south of SR-38. From these access points, residents would follow the San Bernardino County emergency evacuation procedures for the Big Bear Valley, as discussed in the Emergency Evacuation section (above). Therefore, the Proposed Alternative Project will allow emergency vehicles unrestricted access to project site. The Proposed Alternative Project also has a water feasibility study and the Applicant must install a network of water mains and fire hydrants to protect the site, prior to development of any individual home sites. Residences and related structures will be constructed out of fire resistant materials as required by the County's development code.

Police Services

The Proposed Alternative Project has a circulation master plan that provides emergency access, and that also incorporate principles of "defensible space."

School Services

There are no design features of the Proposed Alternative Project that specifically address school services or facilities other than the payment of development impact fees, which are required of all new development.

Libraries

There are no design features of the Proposed Alternative Project that specifically address library services or facilities, other than the payment of development impact fees, which are required of all new development

Parks

The Proposed Alternative Project includes an area for Neighborhood Lake Access (Lot B) that will be accessible by foot and bicycle, a dock with 55 boat slips, and will provide a 66-foot-wide road easement for SR-38 that allows for the future extension of the Alpine Pedal Path Bike Trail.

4.7.6 - Mitigation Measures

The following mitigation measures pertaining to fire protection would apply to the Proposed Alternative Project.

Fire Protection

PS-1 The fire flow requirement shall be 1750 gpm at 2 hours based on homes in the range of 3,600 to 4,800 square feet, and 2,000 gpm at 2 hours for homes greater than 4,800 square feet.

PS-2 All residences less than 5,000 square feet shall be subject to the standard fire sprinkler requirement (NFPA 13D). Homes above 5,000 square feet shall be subject to the NFPA13R sprinkler requirement.

PS-3 A Fuels Management Plan, with specifications, shall be prepared and subject to approval by the County of San Bernardino Fire Department and San Bernardino National Forest Service. The Fuels Management Plan shall implement the fire safety requirements of the FS1 Fire Safety Overlay District, including a 100-foot minimum setback requirement from the National Forest. The fuel modification zone shall be located entirely within the project boundaries. The minimum fuel modification zone requirements may be greater in steeper areas (up to 300 feet), as determined by the Fire Department.

PS-4 A Homeowner's Association shall be established to implement the Fuels Management Plan. The Fuels Management Plan shall specify any professional assistance, if necessary, to implement the action portion of the Plan. The Plan shall determine if a Registered Professional Forester is necessary for professional guidance to implement the Plan. The HOA is to be responsible for fuel modification in common areas.

Police Protection

No mitigation measures are recommended.

Schools

No mitigation measures are recommended.

Libraries

No mitigation measures are recommended.

4.7.7 - Level of Significance after Mitigation

With the implementation of appropriate Development Code, design features, Emergency Operations Plan, Mitigation Measures and payment of development impact fees, the Proposed Alternative Project-related impacts on public services would be less than significant.

4.8 - Transportation, Circulation, and Parking

This report summarizes the Moon Camp Traffic Analysis (April 2007) and the Revised Traffic Study for the Moon Camp Project (June 2007), both of which were prepared by Urban Crossroads (Appendix E), to assess the potential impacts of the Moon Camp Proposed Alternative Project on the roadway system in the study area. The proposed development is generally located along North Shore Drive in the County of San Bernardino. The Proposed Alternative Project would include 50 new single-family detached dwelling units and seven lettered lots on approximately 62.43 acres.

In conformance with the requirements of the San Bernardino County Congestion Management Program (CMP), the Proposed Alternative Project does not require a CMP traffic study. The CMP requires no analysis for projects generating less than 250 peak hour trips. The Proposed Alternative Project would generate approximately 51 trips during the AM peak hour and 51 trips during the PM peak hours; which is fewer than the required threshold for a CMP traffic study. However, per discussion with County staff, the traffic study should follow CMP guidelines and a long-range traffic analysis is required.

Proposed Alternative Project Overview

The proposed Moon Camp residential development is generally located north of North Shore Drive, south of Flicker Road and east of Canyon Road in San Bernardino County. The Proposed Alternative Project would include 50 new single-family detached dwelling units and seven lettered lots, of which one would be designated as Pebble Plain Habitat and Open Space/Conservation (4.91 acres), one would be designated as Open Space/Neighborhood Lake Access (0.82 acre with 891 lineal feet of lakefront access), one would be developed as the marina parking lot with a boat ramp for a 55-slip private boat marina, three are the existing well sites, and one is a potential reservoir site. There are two (2) primary full access points to the Proposed Alternative Project site located off North Shore Drive.

Study Area

The overall study area evaluated in the TIA is presented in Exhibit 4.8-1. Based on discussions with County transportation staff, the study area includes the following existing study intersections:

Stanfield Cutoff (NS) at:

- North Shore Drive (SR-38) (EW)
- Big Bear Boulevard (SR-18) (EW)

North Shore Drive (SR-38) (NS) at:

- Big Bear Boulevard (SR-18) (EW)

Traffic Study Methodology

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with the San Bernardino County CMP. The following analysis years are considered in this report:

- Existing Conditions – 2007.
- Interim Year – 2010.
- Long Range – 2030.

The overall methodologies used to develop future traffic volume forecasts, and the explicit traffic operations analysis methodologies are summarized herein and further discussed in the Traffic Impact Assessment (TIA).

Overall Analysis Methodology

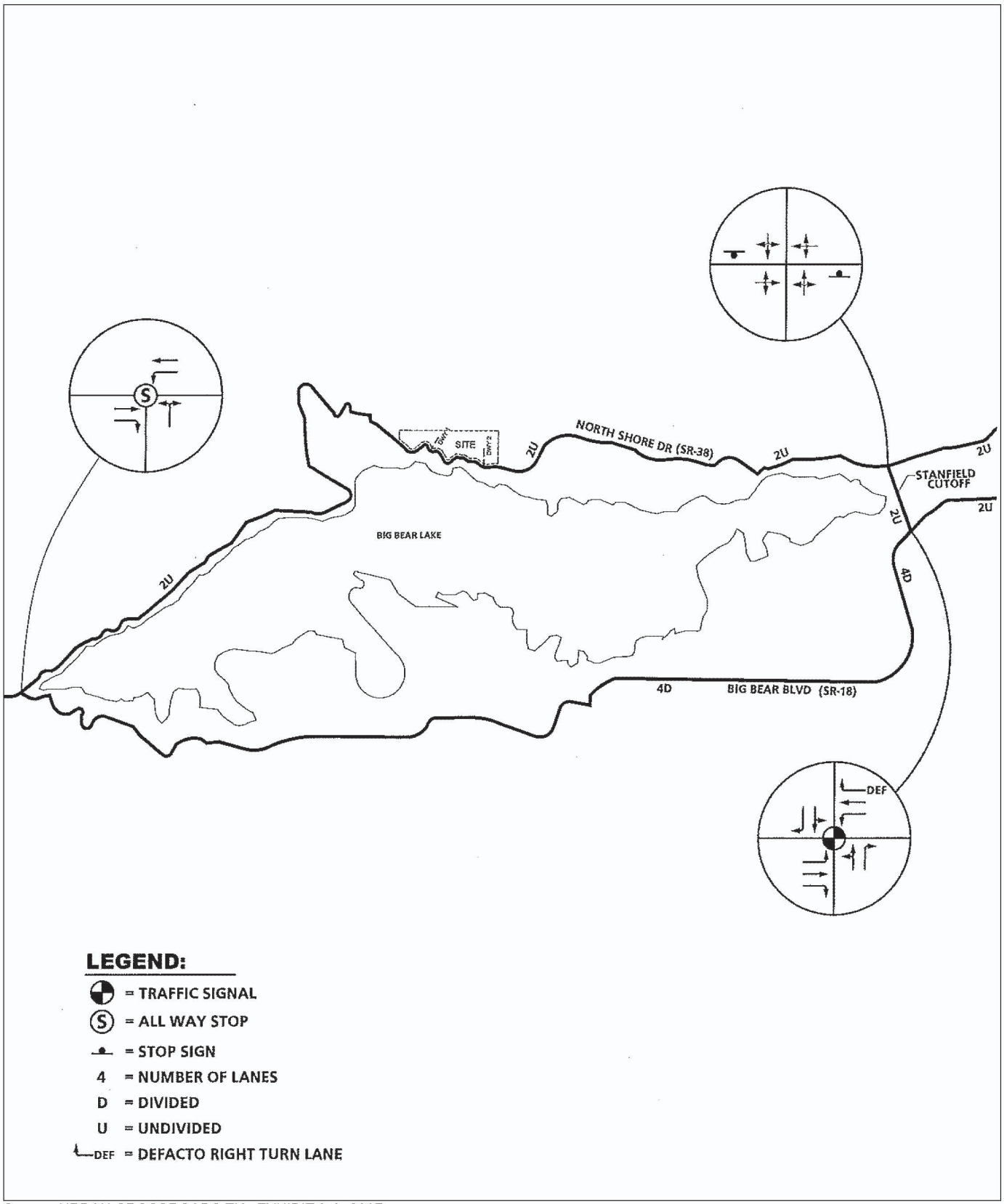
As stated previously, traffic conditions were evaluated for existing conditions, 2010 Interim Year Without Project conditions, 2010 Interim Year With Project conditions, and Long Range General Plan Buildout (2030) conditions.

Actual traffic count data was obtained from manual intersection counts (conducted in March 2007, refer to Appendix "A" of the TIA that is included in Appendix E of this Revised and Recirculated Draft EIR) to quantify existing traffic conditions. Per discussion with County staff, the peak season of the study area occurs during the summer months, thus a 16 percent growth is applied to manual intersection counts to represent existing peak hour intersection volumes.

Interim Year conditions have been estimated based on area-wide growth (other projects that are approved, pending, or under construction) and the addition of the Proposed Alternative Project related peak hour volumes. An area-wide growth of 2 percent per year is applied to adjusted existing volumes (with 16 percent growth).

The Interim Year 2010 without project traffic volumes are estimated based on the 2007 existing traffic volumes (with 16 percent adjustment) plus the 2007 to 2010 background growth volumes (2 percent) plus the known cumulative development volumes.

Project traffic volumes for all future conditions were estimated using the manual approach described in the CMP guidelines. The trip generation calculation is based on the most recent "Institute of Transportation Engineers Trip Generation Rates," 7th Edition. The project trip distribution was developed from a select zone run of the "San Bernardino Mountain Model*"* and was reviewed by the County of San Bernardino staff. The project only traffic forecasts have been generated by applying the trip generation, distribution and traffic assignment calculations, as shown in Tables 4.8-1 and 4.8-2.



Source: URBAN CROSSROADS TIA, EXHIBIT 3-A, 2007.

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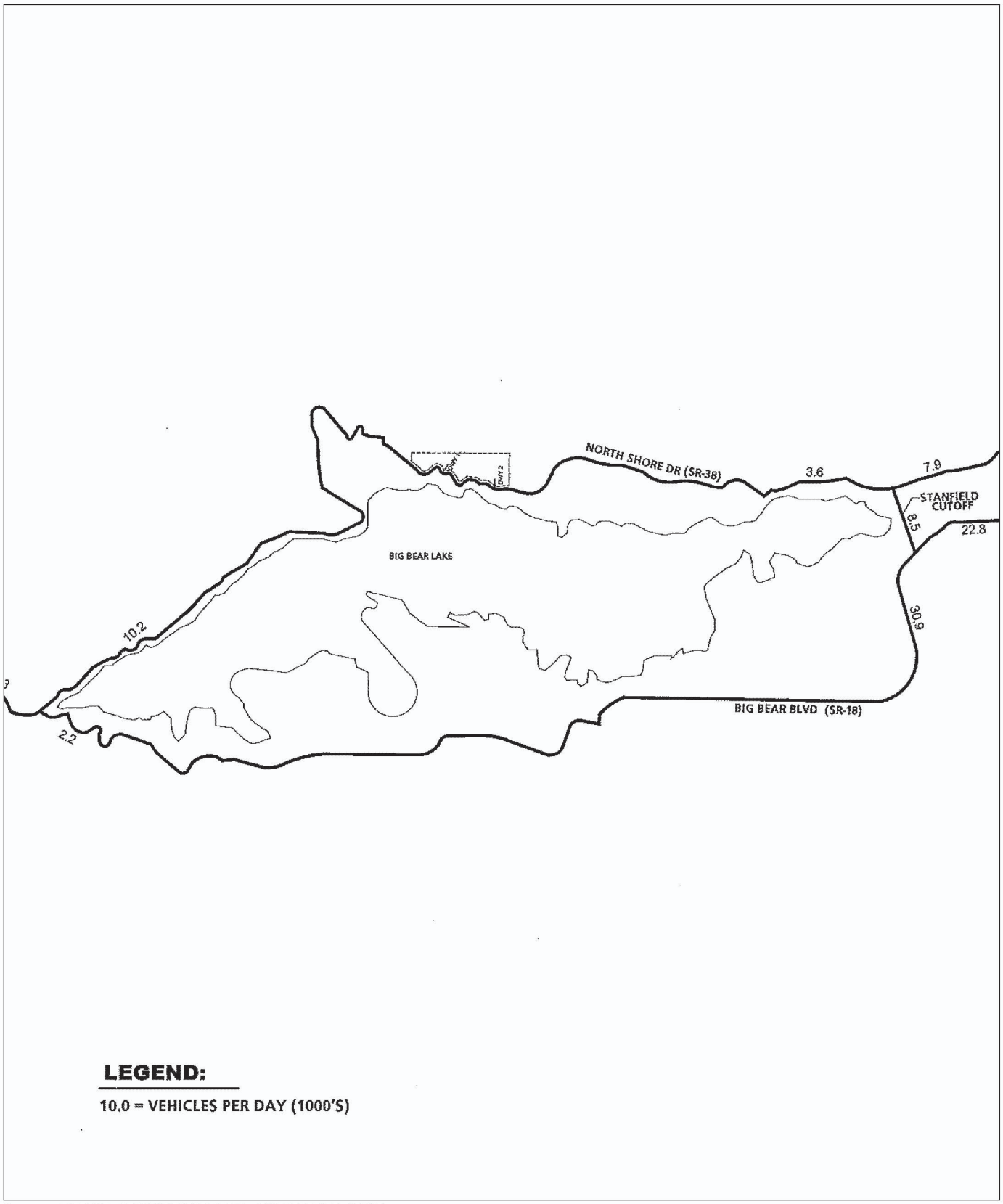
Exhibit 4.8-1
Existing Through Lanes and Intersection Controls



Source: URBAN CROSSROADS TIA, EXHIBIT 3-B, 2007.

NORTH

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Exhibit 4.8-2
Existing Friday Average Daily Traffic (ADT)

Table 4.8-1: Moon Camp Proposed Alternative Project Trip Generation Rates

Trip Rate/Land Use	AM Peak Hour			PM Peak Hour			Total Daily Trips
	In	Out	Total	In	Out	Total	
PROJECT – 50 DU							
Single Family Residential	0.64	0.37	1.01	0.64	0.37	1.01	9.57
CUMULATIVE PROJECTS							
Hotel	0.31	0.28	0.59	0.31	0.28	0.59	8.17
Townhomes / Condominiums	0.35	0.17	0.52	0.35	0.17	0.52	5.86
Fast Food with drive through	18.01	16.63	34.64	18.01	16.63	34.64	496.12
Shopping Center	6.57	7.12	13.70	6.57	7.12	13.70	152.03
Shopping Center	4.99	5.4	10.39	4.99	5.4	10.39	114.43
Automobile Care Center	1.69	1.69	3.38	1.69	1.69	3.38	20.00
Mini-warehouse	1.99	1.84	3.83	1.99	1.84	3.83	38.87
Office	0.17	0.83	1.00	0.17	0.83	1.00	11.01
Church	0.34	0.32	0.66	0.34	0.32	0.66	9.11
Source: Urban Crossroads (Moon Camp Traffic Analysis, County of San Bernardino, California, April 24, 2007).							

Long Range General Plan Buildout (2030) conditions have been estimated based on the San Bernardino Mountain Model and the addition of both the Proposed Alternative Project related peak hour volumes and the known cumulative development peak hour volumes per discussions with County staff.

Proposed Alternative Project traffic volumes for all future conditions were estimated using the manual approach. Trip generation has been estimated based on data collected by the Institute of Transportation Engineers (ITE). The Proposed Alternative Project trip distribution was derived from a select zone run of the San Bernardino Mountain Model.

Table 4.8-2: Summary of Moon Camp Proposed Alternative Project Trip Generation

Land Use	Quantity	Units	Friday Pm Peak Hour In - Out - Total			Sunday Mid-Day Peak Hour In - Out - Total			Daily
Single Family Residential	50	DU	32	19	51	32	19	51	479

Traffic Operations Analysis

The current technical guide to the evaluation of traffic operations is the "2000 Highway Capacity Manual" (HCM) (Transportation Research Board Special Report 209). The HCM defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted. The definitions of level of service for uninterrupted flow (flow unrestrained by the existence of traffic control devices) are:

- LOS "A" represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
- LOS "B" is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
- LOS "C" is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.
- LOS "D" represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
- LOS "E" represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
- LOS "F" is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations.

Uninterrupted flow is generally found only on limited access (freeway) facilities in urban areas. The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control.

The level of service is typically dependent on the quality of traffic flow at the intersections along a roadway. The HCM methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control. The LOS determined in this study are calculated using the HCM methodology.

For signalized intersections, average total delay per vehicle for the overall intersection is used to determine LOS. LOS at signalized study intersections have been evaluated using a HCM intersection analysis program.

The study area intersections which are stop sign controlled with stop-control on the minor street only have been analyzed using the two-way stop controlled unsignalized intersection analysis methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at these locations to calculate average intersection delay; the level of service has been calculated. The LOS criteria for this type of intersection analysis is based on total delay per vehicle for the worst minor street movement(s)

The six qualitative categories of Level of Service, LOS (A through F), which are standard for California, have been defined for the project area along with the corresponding delay range as measured in seconds, as shown in Table 4.8-3. The peak weekday hours selected for this analysis are 7 to 9 AM (morning or AM peak) and 4 to 6 PM (afternoon or PM peak).

Table 4.8-3: Level of Service Definitions

Level of Service (LOS)	Description	Average Total Delay Per Vehicle (seconds)	
		Signalized	Unsignalized
A	Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 – 10.00	0 - 10.00
B	Occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average total delay.	10.01 - 20.00	10.01 - 15.00
C	Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level, although many still pass through the intersection without stopping.	20.01 - 35.00	15.01 - 25.00
D	Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 - 55.00	25.01 - 35.00
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 - 80.00	35.01 - 50.00

Table 4.8 3 (cont.): Level of Service Definitions

Level of Service (LOS)	Description	Average Total Delay Per Vehicle (seconds)	
		Signalized	Unsignalized
F	Considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrive flow rates exceed the capacity of the intersection). It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up
Source: Highway Capacity Manual, 2000.			

Definition of Deficiency

County of San Bernardino guidelines indicate that peak hour intersection operations of LOS "C" or better are considered acceptable. Therefore, any intersection operating at LOS "D" or worse is considered deficient. Per CMP direction, state controlled facilities (state highways, freeway ramp intersection, etc.) are subject to local jurisdiction (California Department of Transportation) traffic operations requirements, with no greater than 45 seconds average stopped delay per vehicle allowed during peak hour operations (middle of LOS "D").

The identification of a CMP deficiency requires further analysis in satisfaction of CMP and County requirements, including:

- Evaluation of the mitigation measures required to restore traffic operations to an acceptable level of service with respect to CMP and local jurisdiction LOS standards.
- Calculation of the Proposed Alternative Project share of new traffic on the impacted CMP facility during peak hours of traffic.
- Estimation of the cost required to implement the improvements required to restore traffic operations to an acceptable level of service as described above.

Definition of a Significant Impact

The identification of significant impacts is a requirement of California Environmental Quality Act (CEQA) and is not directly addressed in the CMP document. The County of San Bernardino General Plan and Circulation Element have been adopted in accordance with CEQA requirements, and any roadway improvements within the County of San Bernardino which are consistent with these documents are not considered a significant impact, so long as the Proposed Alternative Project contributes its "fair share" funding for improvements.

A traffic impact is considered significant and immitigable if a project both:

i) Contributes measurable to traffic; and

ii) Substantially and adversely changes the LOS at any off-site location projected to experience deficient operations under foreseeable cumulative conditions, where feasible improvements consistent with the County of San Bernardino General Plan cannot be constructed.

4.8.1 - Existing Conditions

This section summarizes existing roadway and traffic conditions in the study area. All analysis locations which exist today have been analyzed. The number of through travel lanes for existing roadways and intersection controls are presented, along with existing traffic count data collected for this study. This data was used to analyze existing traffic operations in the study area. Existing plans for roadway improvements are also described in this section.

Existing Roadway System and Daily Traffic Volumes

The number of through travel lanes for existing roadways and existing intersection controls within the study area are presented in Exhibit 4.8-1.

Exhibits 4.8-2 and 4.8-3 depict the current average daily traffic (ADT) volumes in the study area on Friday and Sunday, respectively. Existing ADT volumes are estimated based upon the latest traffic data collected by Urban Crossroads, Inc. (refer to E of this Revised and Recirculated Draft EIR). Peak hour data has been used to estimate the average daily traffic volumes on each leg using the following formula:

- Peak Hour (Approach Volume + Exit Volume) x 12 = Leg Volume.
- Regional access to the site is provided by North Shore Drive (SR-38)

Existing Peak Hour Traffic Volumes

Actual traffic count data was obtained from manual intersection counts (March 2007, see Appendix E) to quantify existing traffic conditions. The Friday PM peak hour traffic volumes were determined by counting the two hour period between 4:00 PM- 6:00 PM in the evening. The Sunday mid-day peak hour traffic volumes were identified by counting the two hour period from 12:00 PM – 2:00 PM. Per discussions with County staff, since the peak season of the study area occurs during the summer months, a 16 percent growth is applied to the manual intersection counts to represent existing peak hour intersection volumes.

Existing intersection level of service calculations are based upon the adjusted manual Friday PM and Sunday mid-day peak hour turning movement counts, as shown in Exhibits 4.8-4 and 4.8-5.

Based on the traffic study data, the LOS and estimated delay times at the local area intersections for both the morning (AM) and afternoon (PM) peak hours are currently below the standards (refer to Appendix E).

Existing Traffic Operations

Existing peak hour traffic operations have been evaluated for both the Friday PM and Sunday mid-day peak hours of traffic throughout the study area. The results of this analysis are summarized in Table 4.8-4, along with geometrics and control devices at each analysis location. As indicated in Table 4.8-4, the following study area intersections are currently operating at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

The operations analysis worksheets for existing conditions are included in Appendix "B" of the TIA.

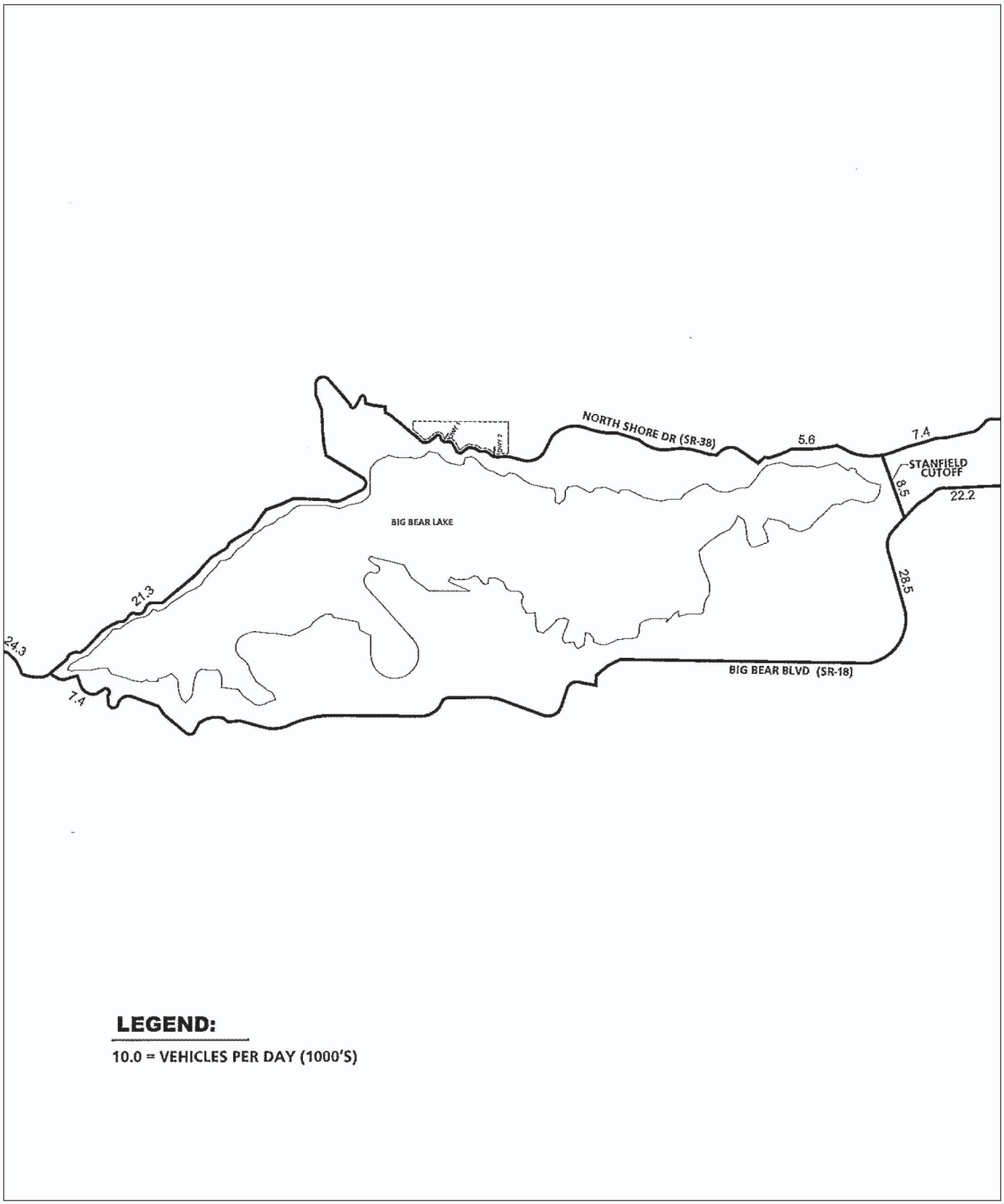
Traffic signal warrant analysis (included in Appendix "D" of the TIA) has been conducted for existing conditions and traffic signals are currently warranted at the following study area intersections:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)



Source: URBAN CROSSROADS TIA, EXHIBIT 3-C, 2007.

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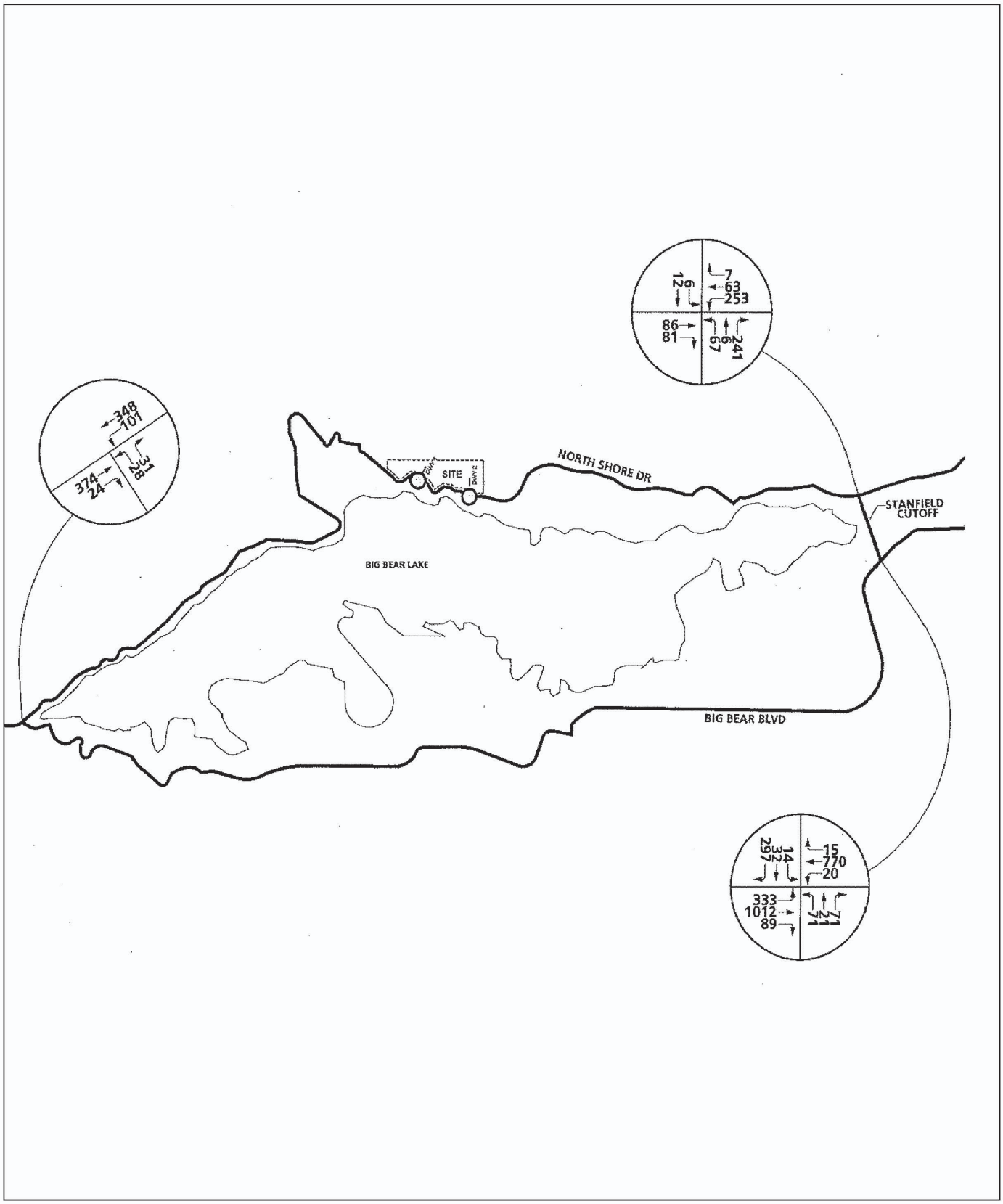
Exhibit 4.8-3
Existing Sunday Average Daily Traffic (ADT)



Source: URBAN CROSSROADS TIA, EXHIBIT 3-D, 2007.

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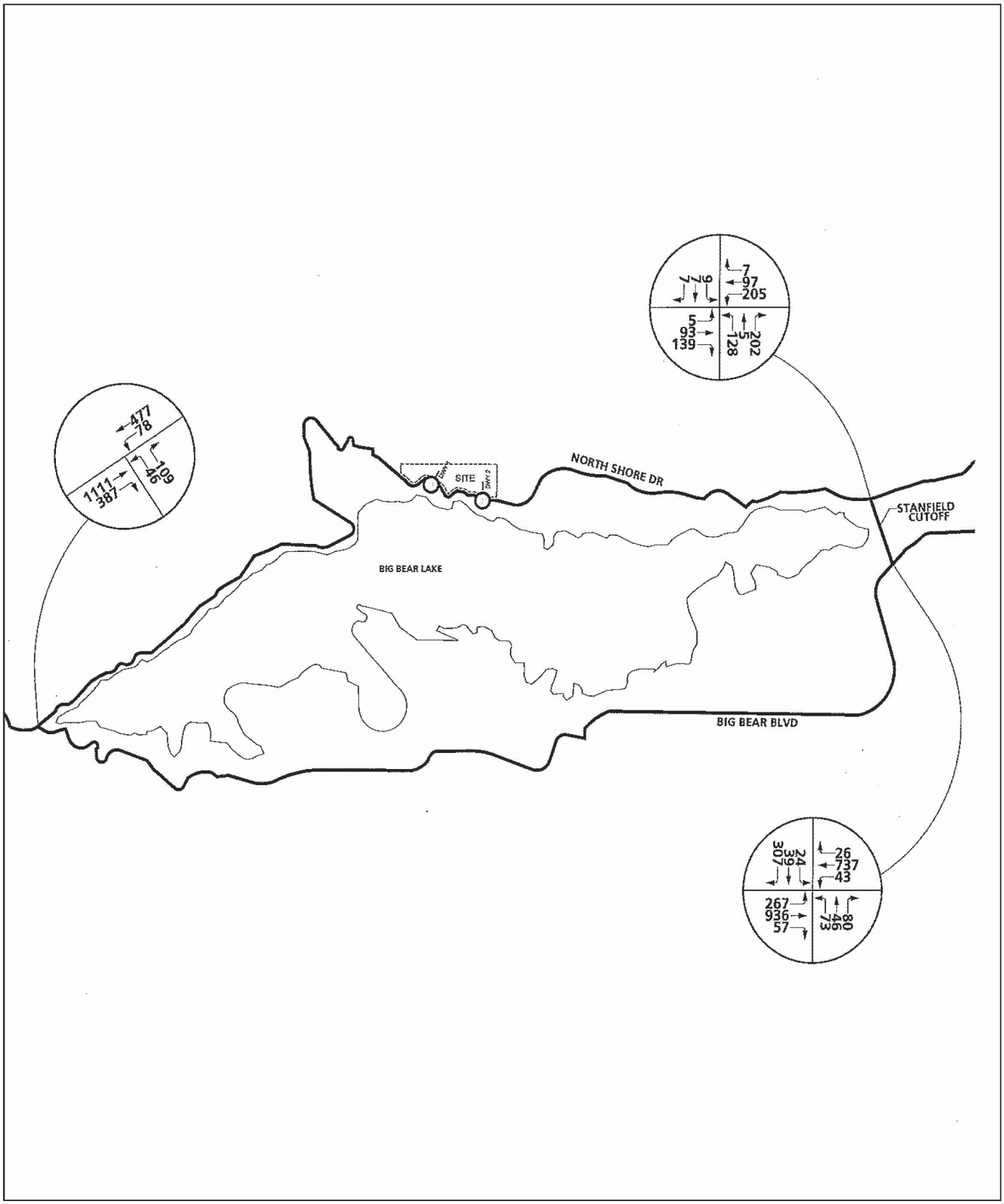
Exhibit 4.8-4
Existing Friday PM Peak Hour Intersection Volumes



Source: URBAN CROSSROADS TIA, EXHIBIT 3-E, 2007.

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Exhibit 4.8-5
Existing Sunday Mid-Day Peak Hour Intersection Volumes

Table 4.8-4: Local Intersection Conditions

Intersection	Traffic Control*	Seconds of Delay		Level of Service	
		Friday PM	Sunday MD	Friday PM Peak	Sunday MD Peak
North Shore Dr. (SR-38) at: Big Bear Blvd.(SR-18)(EW)	CSS	22.5	--	C	F
Stanfield Cutoff (NS) at: North Shore Dr. (SR-38)(EW)	CSS	25.5	34.5	D	D
Stanfield Cutoff (NS) at: Big Bear Blvd. (SR-18)(EW)	TS	--	81.1	F	F
TS = Traffic Signal; CSS = Cross Street Stop; MD = mid-day -- = Delay High, Intersection Unstable, Level of Service "F"					
Source: Urban Crossroads (Moon Camp Traffic Analysis, County of San Bernardino, California, 2007).					

Parking

There is currently no parking provided within the project site, as it is unimproved except for State Route 38 (SR-38).

Mass Transit and Railroad Service

There is currently no mass transit or rail service provided within the project site, as it is unimproved except for SR-38.

Scoping Meeting Comments

The following public comments regarding traffic were provided during the March 31, 2007, scoping meeting:

Discuss emergency access to the property. Emergency access to the property would be via Northshore Drive (SR-38) from the east or west. Interior circulation roads would provide access to all parts of the Proposed Alternative Project. Since there are no residences proposed along SR-38, emergency access through the property would be unencumbered.

Address emergency evacuation plan for the site and how it will integrate with the existing plan for the community. Emergency evacuation would occur via SR-38 and would be consistent with the existing plan for the community.

Will/Can the 80 foot easement along the existing Highway be used for a trail? Can it be used as a designated Class II bikeway? See recommended Proposed Alternative Project Design Features for Traffic in this Section.

Address project traffic on existing roads. Does the project trigger the need for turning lanes into existing streets? Particularly at Canyon Road and Highway 18. Residents do not want a traffic signal. Traffic impacts and recommended improvements both on and off site are discussed in this Section.

Will bikeway go through the existing neighborhood? The Proposed Alternative Project would provide the right-of-way that would allow a bikeway to follow Northshore Drive (SR-38).

The following criteria for establishing the significance of potential impacts on transportation and circulation were derived from Appendix G of the CEQA Guidelines. A significant impact would occur if the Proposed Alternative Project would:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

b) Exceeds, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.

c) Result in a change in traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment).

e) Result in inadequate emergency access.

f) Result in inadequate parking capacity.

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

4.8.2 - Project Impact Analysis

The following paragraphs describe the development of the future year traffic volume forecasts and present the resulting daily traffic volumes which were used for traffic operations analysis. Future traffic conditions without the Proposed Alternative Project are presented first, followed by the future with Proposed Alternative Project traffic volumes. Traffic signal warrant analysis for future conditions has also been presented in this section.

Based on discussions with County staff, the areawide growth was interpolated from adjusted existing volumes (with 16 percent growth) to General Plan Buildout (2030) volumes. The area-wide growth varies for each movement at each intersection (see Appendix "D" of the TIA). The interpolated area-wide growth rate was added to peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the Proposed Alternative Project and other development.

Long Range General Plan Buildout (2030) conditions were estimated based on a select zone run of the San Bernardino Mountain Model, in addition to traffic generated by the Proposed Alternative Project and the known cumulative development.

The County of San Bernardino was contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on information given by the County of San Bernardino and City of Big Bear staff, a total of 17 cumulative projects were identified that could affect the study intersections. The location of each of these other developments is shown in Exhibits 4.8-6 and 4.8-7A (Exhibit 4-A of the TIA).

As indicated in Table 4.8-3, other developments are projected to generate 15,111 trip-ends per day with 1,455 vehicles per hour during the AM peak hour and 1,455 vehicles per hour during the PM peak hour. Based on the identified trip distribution for the other development on arterial highways throughout the study area, other development ADT and Friday PM/Sunday mid-day peak hour intersection turning movement volumes (based on PM peak hour trip generation) are shown on Exhibits 4.8-7A and 4.8-7B (Exhibits 4-B and 4-C of the TIA), respectively.

Table 4.8-5: Friday PM Peak Hours/Sunday Mid-day Peak Hour
Other Development Trip Generation

Id #	Project Name	Land Use	Quantity	Units	Peak Hour						
					Friday PM			Sunday Mid-day			Daily
					In	Out	Total	In	Out	Total	
San Bernardino County											
1	TT 16771	SFR	242	DU	155	90	245	155	90	245	2.316
2	TT 16934	SFR	228	DU	146	84	230	146	84	230	2,182
3	TT 17217 &TT17022	SFR	53	DU	34	20	54	34	20	54	607
4	TT 16036	SFR	116	DU	74	43	117	74	43	117	1,110
5	TT 14916	SFR	51	DU	33	19	52	33	19	52	488
6	TT 16980	SFR	15	DU	10	6	16	10	6	16	144
7	TT 1776H	SFR	10	DU	6	4	10	6	4	10	98
8	TT 16749	SFR	86	DU	55	32	87	55	32	87	823
9	TT 17201	SFR	66	DU	42	24	66	42	24	66	632
	TOTAL (CO. OF SAN BERNARDINO)				**556**	**322**	**877**	**555**	**322**	**877**	**8,298**
CITY OF BIG BEAR											
10	Hilton Garden Inn	Hotel	91	Rooms	28	25	63	28	25	53	743

Table 4.8 5 (cont.): Friday PM Peak Hours/Sunday Midday Peak Hour
Other Development Trip Generation

Id #	Project Name	Land Use	Quantity	Units	Peak Hour						
					Friday PM			Sunday Mid-day			Daily
					In	Out	Total	In	Out	Total	
11	Mixed Use Development	Retail	22.5	TSF	112	122	234	112	122	234	2,575
		Less pass-by (15%)			-17	-16	-35	-17	-18	-35	-386
		Subtotal Commercial			95	104	199	95	104	199	2,189
		Office	6.3	TSF	1	5	6	1	5	6	69
		SFR	10	DU4	6	4	10	6	4	106	96
	Subtotal				102	113	215	102	113	215	2,354
12	Residential Lots	SFR	8	DU	5	3	8	5	3	8	77
13	Condominiums	MFDU	78	DU	27	13	40	27	13	40	457
14	41820 Big Bear Blvd.	Hotel	55	Rooms	17	15	32	17	15	32	449
		Retail	10	TSF	66	71	137	66	71	137	1,620
		Fast-food	2.5	TSF	45	42	87	45	42	87	1,240
		Less Pass-by (15%)			-17	-17	-34	-17	-17	-34	-414
		Subtotal Commercial			94	98	190	94	96	190	2,346
	Subtotal				111	111	222	111	111	222	2,795
15	World Harvest Faith Center	Church	20	TSF	7	6	13	7	6	13	182
16	Boat Parts Retail & Service	Auto Care Center	4,375	TSF	7	7	14	7	7	14	88
17	Storage Yard	Mini Warehouse	3	AC	6	6	12	6	6	12	117
	Total (City of Big Bear)				**294**	**284**	**576**	**294**	**284**	**578**	**6,813**
	TOTAL				**849**	**606**	**1,455**	**849**	**606**	**1,455**	**15,111**
SFR = Single Family Residence, DU = Dwelling Unit, TSF = Thousand Sq. Feet, AC = Acres											

Short-Term Impacts (Year 2010)

The ADT at key intersections for 2010 Without Project traffic conditions have been determined by adding the 2007 existing traffic volumes (with 16 percent adjustment) plus the two percent background growth volumes per year (6 percent for three years) plus the known cumulative development volumes. The 2010 Friday ADT and Sunday ADT volumes for without project traffic conditions are shown in Exhibits 4.8-8A and 4.8-8B (4-D and 4-E in the TIA).

2010 Without Project Conditions

For 2010 Without Project traffic conditions, no new traffic signals are projected to be warranted compared to Existing Conditions. Without improvements, the same intersections continue to operate at an unacceptable level of service. With traffic signals, the level of service would improve to acceptable levels.

Table 4.8-6: Intersection Analysis for 2010 Without Project Conditions

Intersection	Traffic Control	Delay in Seconds		Level of Service	
		Friday PM	Sunday MD	Friday PM	Sunday MD
Northshore Drive (SR-38) at Big Bear Blvd (SR-18)					
Without Improvements	CSS	—	—	F	F
With Improvements	TS	14.0	21.2	B	C
Standfield Cutoff at Northshore Drive:					
Without Improvements	CSS			F	F
With Improvements	TS	31.9	30.7	C	C
Stanfield Cutoff at Big Bear Blvd. (SR-18)					
Without Improvements	TS	—	—	F	F
With Improvements	TS	31.4	26.8	C	C
CSS = Cross Street Stop, TS = Traffic Signal, MD = mid-day -- = Delay High, Intersection Unstable, F LOS					

2010 With Project Conditions

The ADT for the 2010 With Project was determined by adding the Proposed Alternative Project-only traffic volumes to the 2010 Without Project traffic volumes. The 2010 Friday and Sunday ADT volumes with Proposed Alternative Project traffic are shown on Exhibit 4.8-8A and 4.8-8B (Exhibits: 4-F and 4-G of TIA), respectively.

For 2010 With Project traffic conditions, no new traffic signals are projected to be warranted as compared to 2010 Without Project conditions.

The intersection operations analysis for 2010 With Project traffic conditions are summarized in Table 4.8-7, based on the geometrics analysis at the study area intersections, without and with improvements. 2010 Without Project Friday PM and Sunday mid-day peak hour intersection turning movement volumes are shown on Exhibits 4.8-9A and 4.8-9B (Exhibits:5-A and 5-B of TIA) , respectively. As shown in Table 4.8-7, the following study area intersections are currently operating at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

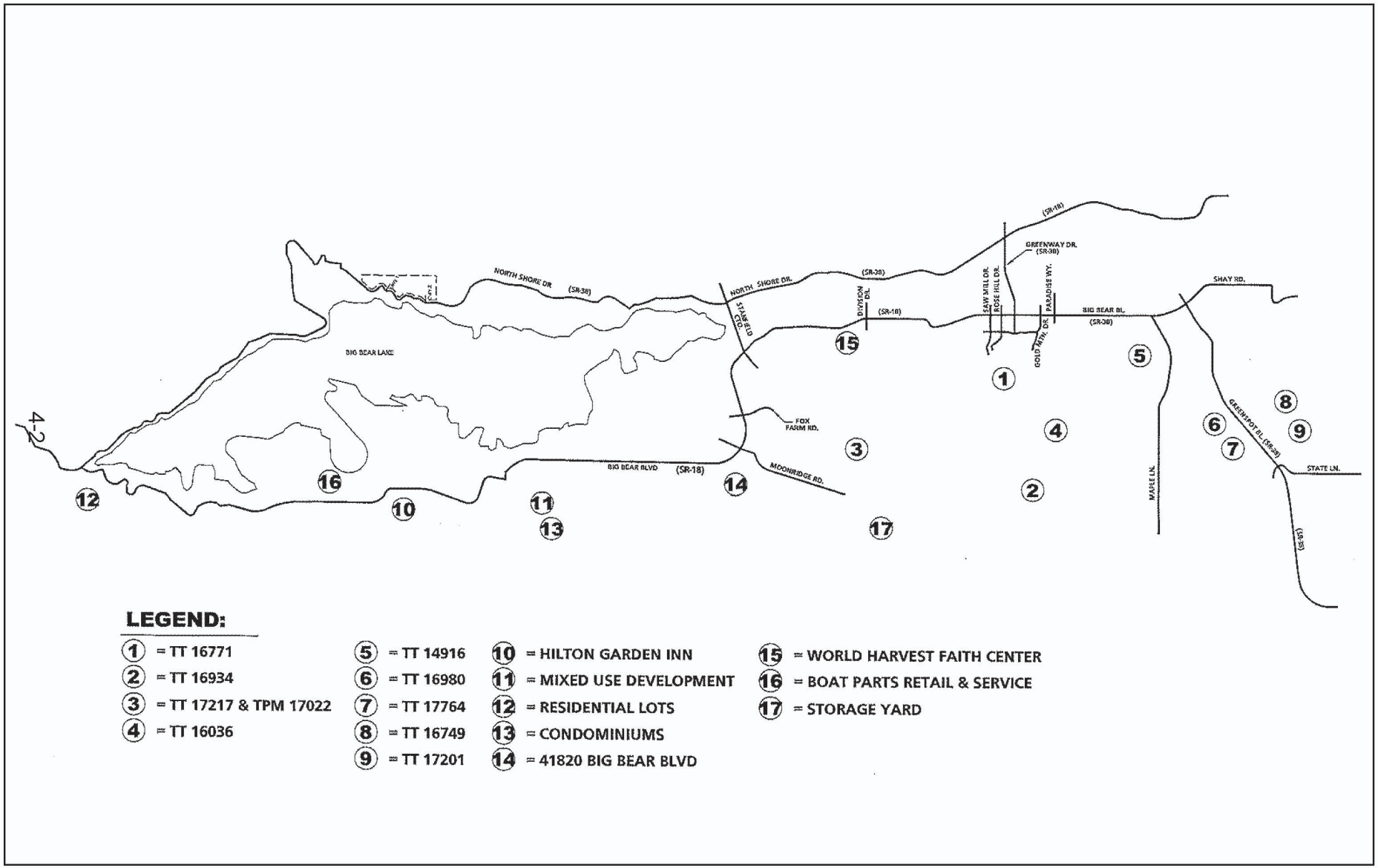
Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

As shown in Table 4.8-7, these intersections will continue to operate at unacceptable levels without improvements, but will improve to acceptable levels with the addition of traffic signals with no significant impact due to this Proposed Alternative Project. Driveway or street intersections within the Proposed Alternative Project are projected to operate at acceptable levels without traffic signals.

Table 4.8-7: Intersection Analysis for 2010 With Project Conditions

Intersection	Traffic Control	Delay in Seconds		Level of Service	
		Friday PM	Sunday MD	Friday Pm	Sunday MD
Northshore Drive (SR-38)(NS) at Big Bear Blvd. (SR 18) (EW)					
Without Improvements		—	—	F	F
With Improvements		14.0	22.1	B	C
Stanfield Cutoff (NS) at Northshore DR. (SR-38)(EW)					
Without improvements	CSS	—	—	F	F
With Improvements	TS	32.4	31.5	C	C
Stanfield Cufoff at Big Bear Blvd (SR 18) (EW)					
Without Improvments	CSS	—	—	F	F
With Improvements	TS	32.5	276	C	C
Driveway # 1 at Northshore Drive	CSS	11.1	12.0	B	B
Driveway # 2 at Northshore Drive	CSS	11.2	12.1	B	B
CSS = Cross Street Stop, TS = Traffic Signal, MD = mid-day -- = Delay High, Intersection Unstable, F LOS					



LEGEND:

1 = TT 16771	5 = TT 14916	10 = HILTON GARDEN INN	15 = WORLD HARVEST FAITH CENTER
2 = TT 16934	6 = TT 16980	11 = MIXED USE DEVELOPMENT	16 = BOAT PARTS RETAIL & SERVICE
3 = TT 17217 & TPM 17022	7 = TT 17764	12 = RESIDENTIAL LOTS	17 = STORAGE YARD
4 = TT 16036	8 = TT 16749	13 = CONDOMINIUMS	
	9 = TT 17201	14 = 41820 BIG BEAR BLVD	

Source: URBAN CROSSROADS TIA, EXHIBIT 4-A, 2007.

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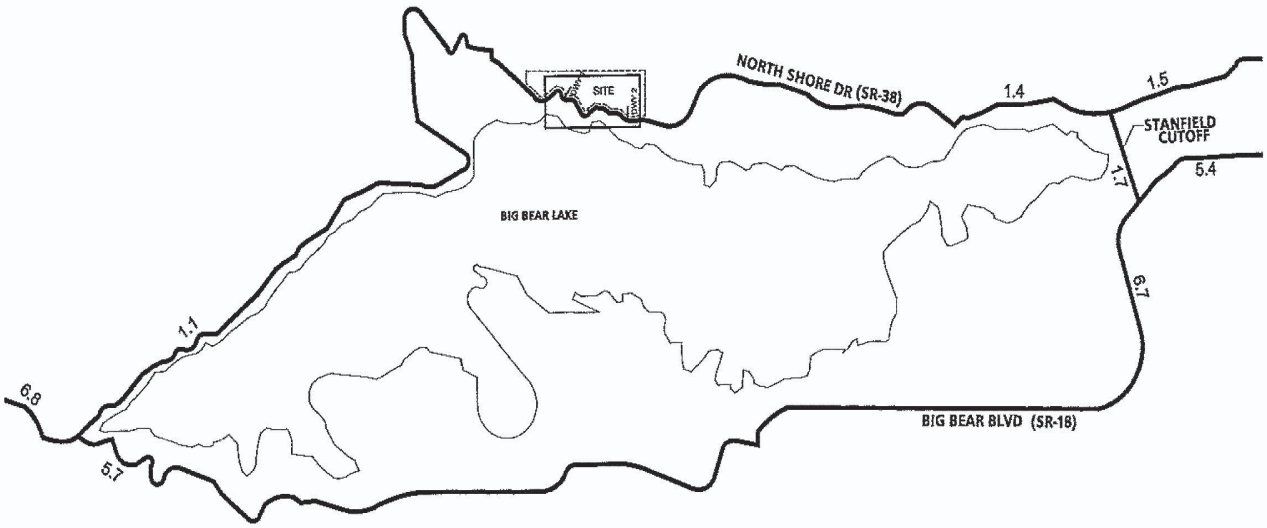
Exhibit 4.8-6
Other Development Location Map

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: URBAN CROSSROADS TIA, EXHIBIT 4-B, 2007.

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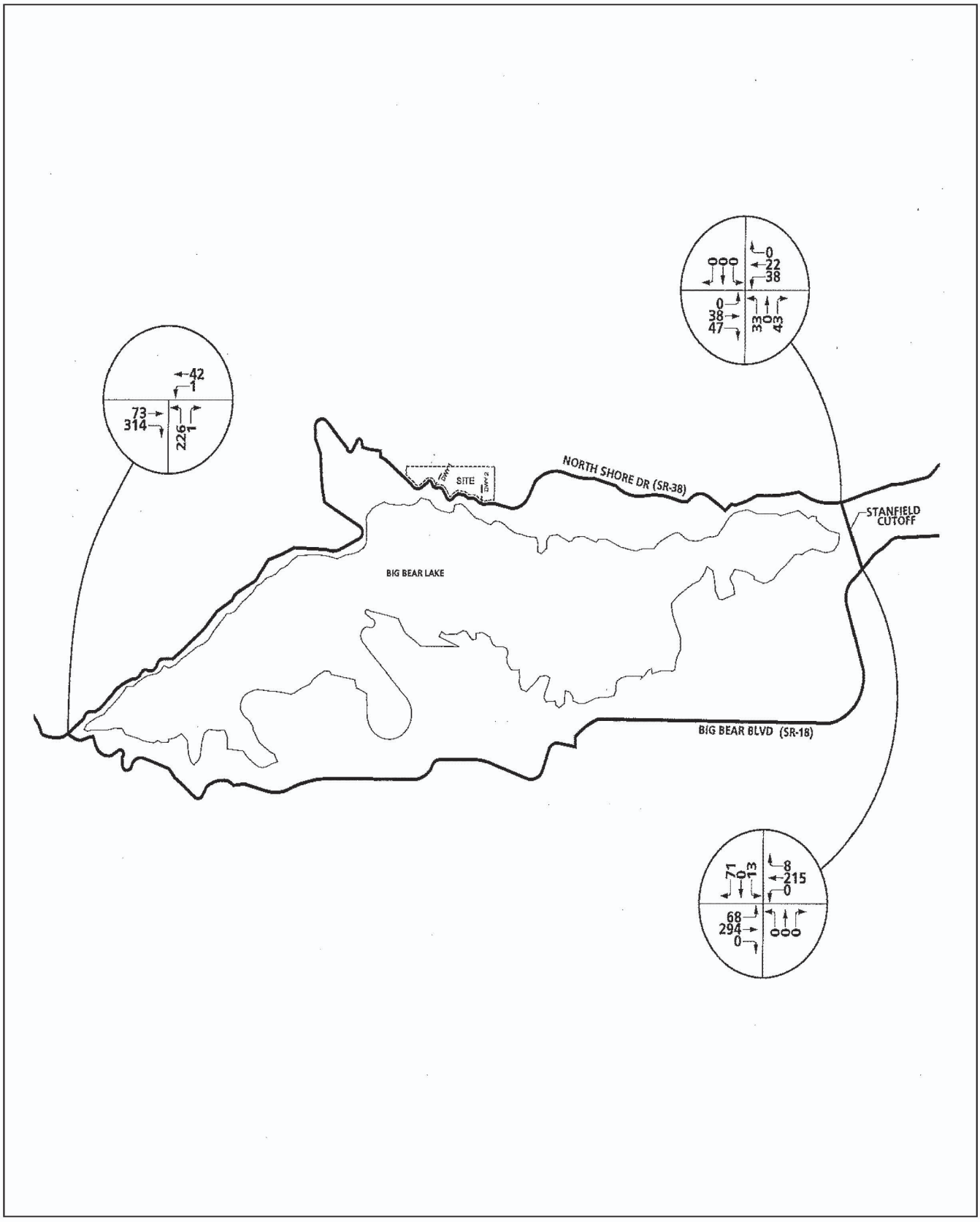
Exhibit 4.8-7A
Other Development Average Daily Traffic (ADT)



Source: URBAN CROSSROADS TIA, EXHIBIT 4-C, 2007.

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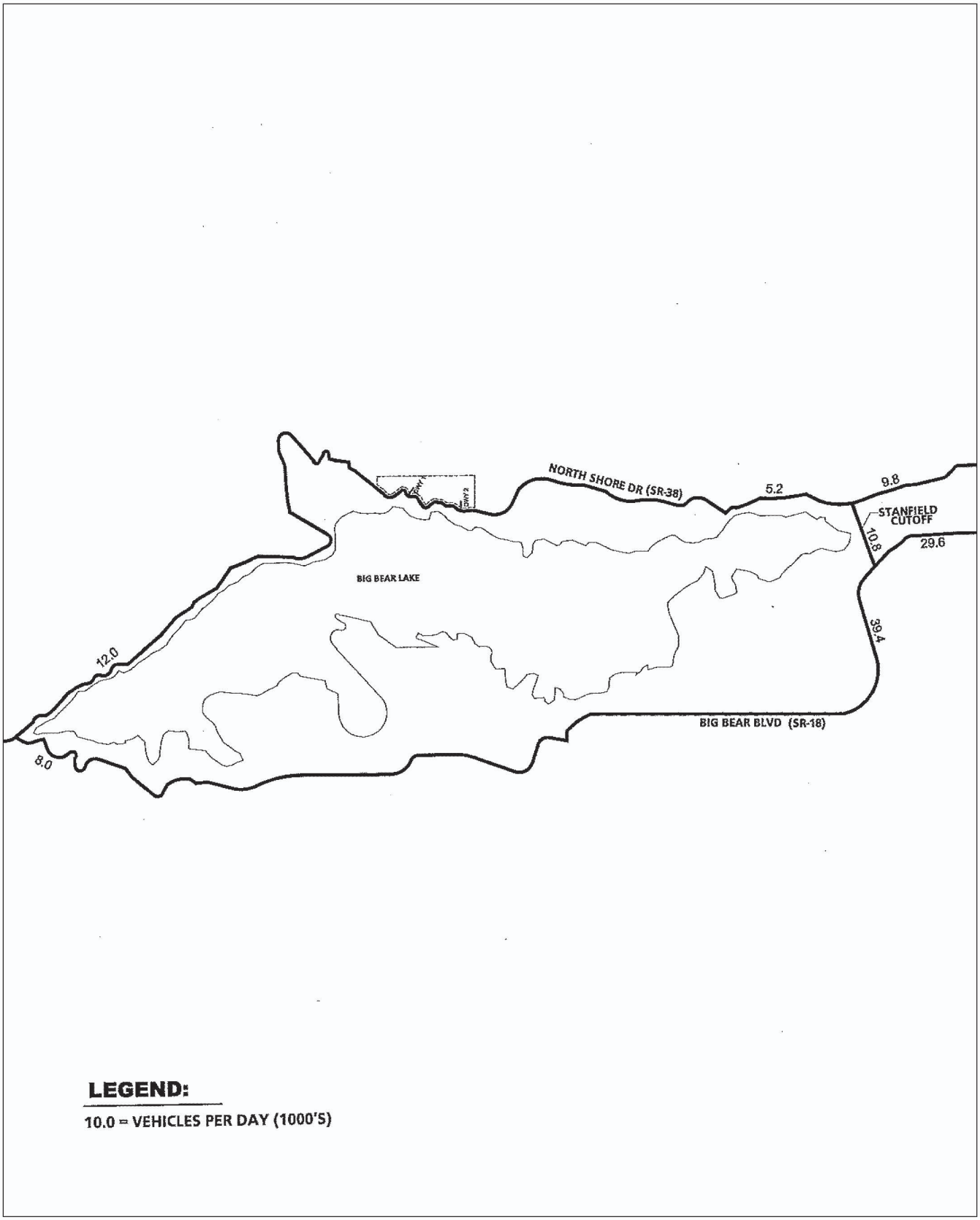
Exhibit 4.8-7B
Other Development Friday PM Peak Hour Sunday Mid-Day Peak Hour Intersection Volume



Source: URBAN CROSSROADS TIA, EXHIBIT 4-D, 2007.

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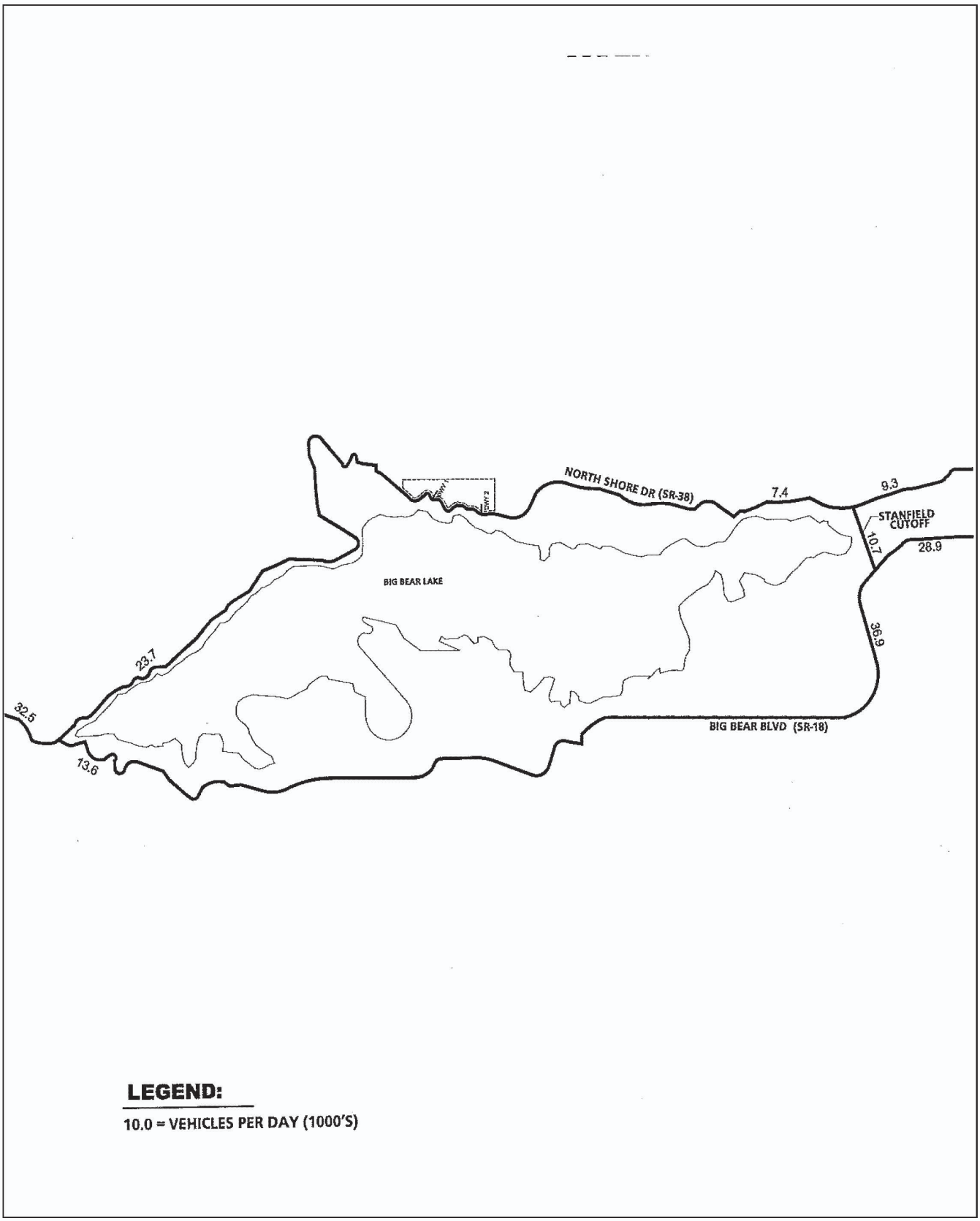
Exhibit 4.8-8A
2010 Without Project Friday Average Daily Traffic (ADT)



Source: URBAN CROSSROADS TIA, EXHIBIT 4-E, 2007.

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Exhibit 4.8-8B
2010 Without Project Sunday Average Daily Traffic (ADT)

Long-Term Impacts (2030)

Long Range conditions were based on a General Plan Buildout (2030) that was estimated by adding the Proposed Alternative Project peak traffic and the known cumulative development peak traffic volumes to the San Bernardino Mountain Model. The intersection operations analysis for General Plan Buildout With Project (2030) traffic conditions are summarized in Table 4.8-8, based on the geometrics analysis at the study area intersections, without and with improvements. General Plan Buildout With Project (2030) Friday PM and Sunday mid-day peak hour intersection turning movement volumes are shown on Exhibits 4.8-10 A and 4.8-10B (Exhibits 5-E and 5-F of the TIA), respectively. The General Plan Buildout post-processed volumes worksheets are provided in Appendix "G" to the TIA. As shown in Table 4.8-8, without improvements, the following study area intersections would operate at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

Driveway #1 (NS) at:

- North Shore Drive (SR-38) (EW)

Driveway #2 (NS) at:

- North Shore Drive (SR-38) (EW)

Table 4.8-8: Intersection Analysis for General Plan Buildout (2030) Conditions

Intersection	Traffic Control	Intersection Approach Lanes				Delay (Secs.)		Level of Service	
		North-bound	South-bound	East-bound	West-bound				
		L T R	L T R	L T R	L T R	Fri. PM	Sun. MD	Fri. PM	Sun. MD
Northshore Dr. (SR-38)(NS) at Big Bear Blvd									

Table 4.8 8 (cont.): Intersection Analysis for General Plan Buildout (2030) Conditions

Intersection	Traffic Control	Intersection Approach Lanes				Delay (Secs.)		Level of Service	
		North-bound	South-bound	East-bound	West-bound				
		L T R	L T R	L T R	L T R	Fri. PM	Sun. MD	Fri. PM	Sun. MD
Without improvements	CSS	0 1 0	0 0 0	0 1 1	1 1 0	—[1]	—[1]	F	F
With improvements	TS	1 0 1	0 0 0	0 2 1>	1 1 0	20.4	18.6	C	B
Stanfield Cutoff (NS) at Northshore Dr. (SR38) (EW)									
Without improvements	CSS	0 1 0	0 1 0	0 1 0	0 1 0	--[1]	--[1]	F	F
With improvements	TS	2 1 0	1 1 0	1 1 1>	1 1 0	34.2	26.0	C	C
Stanfield Cutoff (NS) at Big Bear Blvd (SR 16) (EW)									
Without improvements	TS	0 1 1	0 1 1	1 1 1	1 1 1	—[1]	—[1]	F	F
With improvements	TS	1 1 0	1 1 1>	1 2 0	1 2 1	31.7	21.5	C	C
Driveway #1 (NS) at Northshore Dr. (EW)									
Without improvments	CSS	0 0 0	0 1 0	0 1 0	0 1 0	49.6	24.2	E	C
With improvements	CSS	0 0 0	0 1 0	0 2 0	0 1 0	23.1	15.7	C	C
Driveway # 2 (NS) at Northshore Dr. (EW)									
Without improvements	CSS	0 0 0	0 1 0	0 1 0	0 1 0	41.9	18.8	E	C
With improvements	CSS	0 0 0	0 1 0	0 2 0	0 1 0	23.6	15.7	C	C

L = left, T= through, R = right, CSS = Cross Street Stop, TS = Traffic Signal, MD = mid-day
[1]-- = Delay high, intersection unstable, level of service F
1 = Improvement, > = Right turn overlap phase

Parking

Under the Proposed Alternative Project, each residence would have two parking spaces in the driveway, as required by San Bernardino County Development and building codes. Additionally, there would be a parking lot to service the marina and the open space conservation easement on the lakeshore. The parking lot would have 12 parking spaces for use by the public and the residents of Moon Camp. Only the residents would be allowed access to the marina and the boat launch. Each residence would be assigned a slip to store one boat.

Emergency Access

Emergency access would occur through the two driveways, and an additional fire gate would be provided on the east end of the Proposed Alternative Project.

Summary of Traffic Impacts

The traffic issues related to the Proposed Alternative Project have been evaluated in the context of CEQA and the San Bernardino County CMP. In conformance with the requirements of the San Bernardino County CMP, the Proposed Alternative Project does not require a CMP traffic study. (The CMP requires no analysis for projects that generate less than 250 peak hour trips.) The Proposed Alternative Project generates approximately 51 trips during the AM peak hours and 51 trips during the PM peak hours, which is less than the required threshold for a CMP traffic study. However, a long-range traffic analysis has been required by County staff.

Proposed Alternative Project traffic volumes for all future conditions were estimated using a manual approach. The trip generation calculation was based on the most recent *Institute of Transportation Engineers Trip Generation Rates*, 7th Edition. The Proposed Alternative Project trip distributions were derived from a select zone run of the San Bernardino Mountain Model. Long Range General Plan Buildout (2030) conditions were estimated based on the San Bernardino Mountain Model and the addition of both the Proposed Alternative Project related peak hour volumes and the known cumulative development peak hour volumes per discussions with County staff.

The traffic analysis indicates that under present conditions, affected intersections will operate at less than acceptable rates with or without the Proposed Alternative Project. Traffic improvements are needed for existing conditions and projected conditions whether or not this Proposed Alternative Project is implemented. According to the traffic study, all study intersections are expected to operate at a LOS C or better during peak hours for the scenario analyzed with improvements installed.

Level of Significance before Mitigation

Potentially significant.

4.8.3 - Standard Conditions and Uniform Codes

The traffic evaluation shall be consistent with CEQA and the San Bernardino County Congestion Management Plan. Additionally, the County of San Bernardino has required a long range traffic study to be generated for this Proposed Alternative Project.

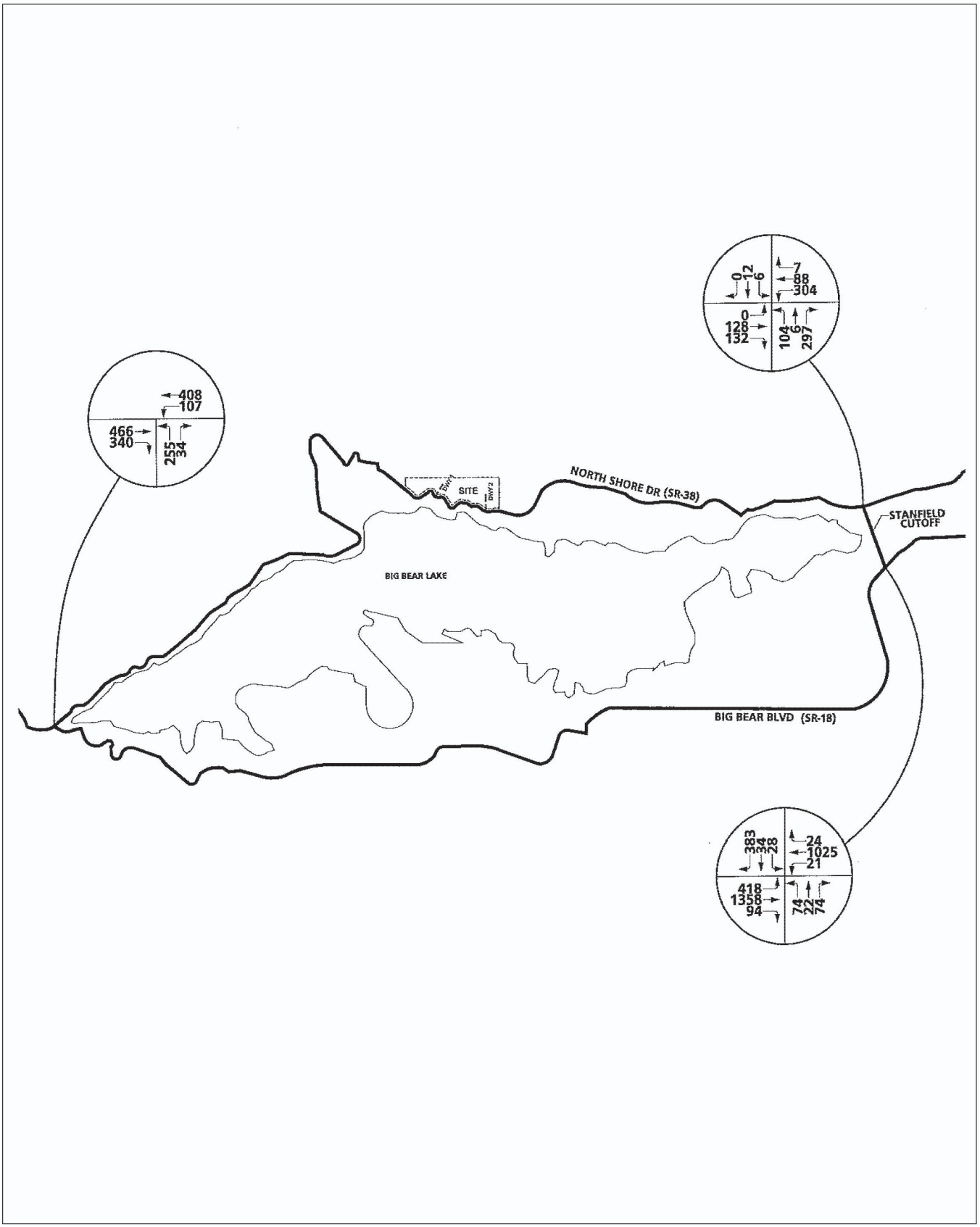
4.8.4 - Project Design Features

The TIA recommends the following Proposed Alternative Project design features:

On-Site Improvements

On-site improvements and improvements adjacent to the site will be required in conjunction with the proposed development to ensure adequate circulation within the Proposed Alternative Project. Exhibit 4.8-11 (Exhibit 6-A of TIA) illustrates the recommended improvement measures to address on-site circulation requirements of the proposed site, which include the following:

- Sight distance at the Proposed Alternative Project access roadway should be reviewed with respect to Caltrans / County of San Bernardino sight distance standards at the time of final grading landscape and street improvement plans.
- Traffic signing / striping should be implemented in conjunction with detailed construction plans for the Proposed Alternative Project site.
- Construct North Shore Drive at its ultimate half-section width as a Mountain Major highway from Canyon Drive to the Easterly Proposed Alternative Project boundary.
- Install a stop sign control at Driveway #1 and Driveway #2
- Construct an Eastbound Left Turn Lane at Driveway 1 / North Shore Drive and Driveway 2/ North Shore Drive for 2030 Buildout Conditions
- Construct a 2nd Eastbound Through Lane at Driveway 1 / North Shore Drive and Driveway 2/ North Shore Drive for 2030 Buildout Conditions.



Source: URBAN CROSSROADS TIA, EXHIBIT 5-A, 2007.

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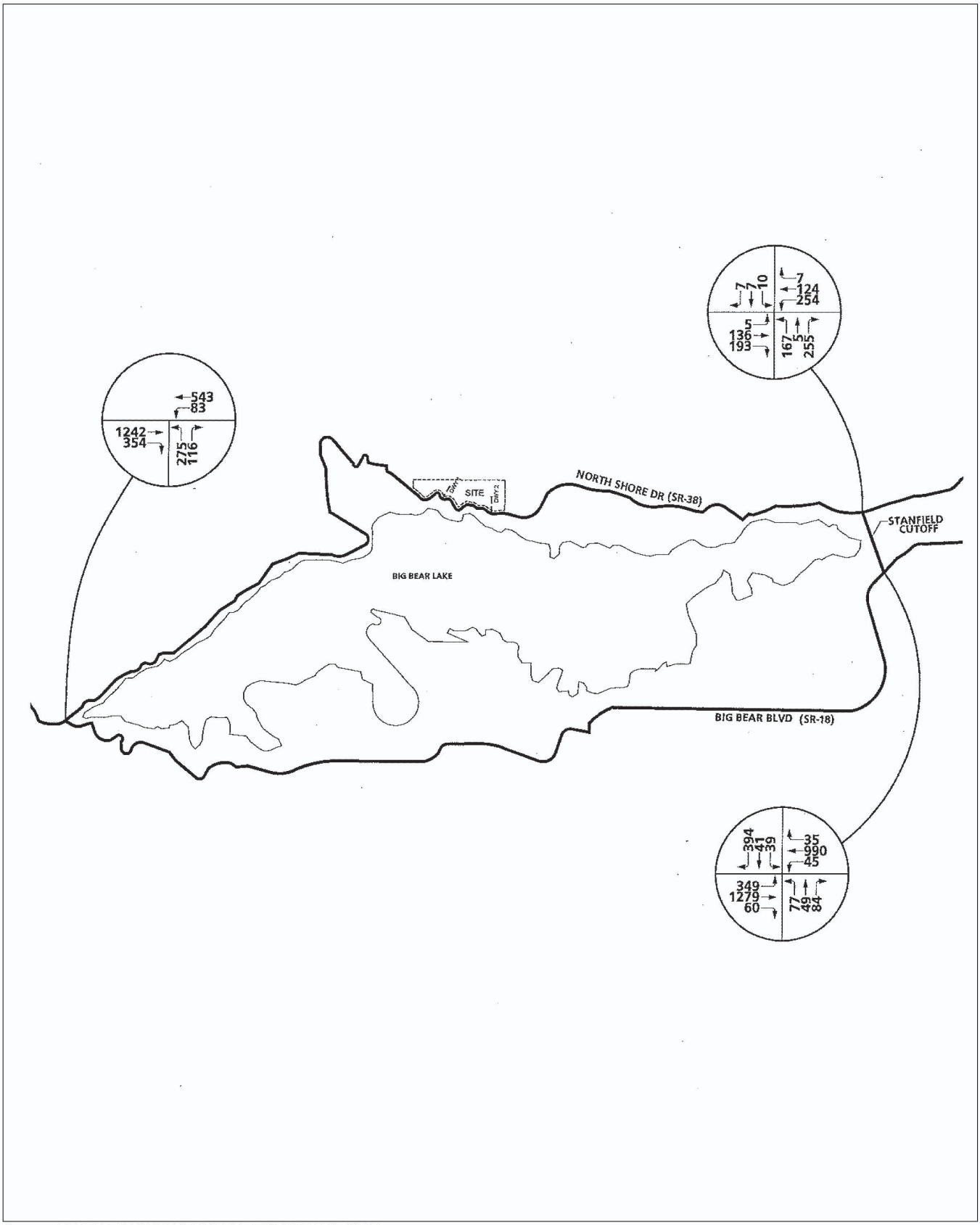
Exhibit 4.8-9A
2010 Without Project Friday PM Peak Hour Intersection Volumes



Source: URBAN CROSSROADS TIA, EXHIBIT 5-B, 2007.

NORTH

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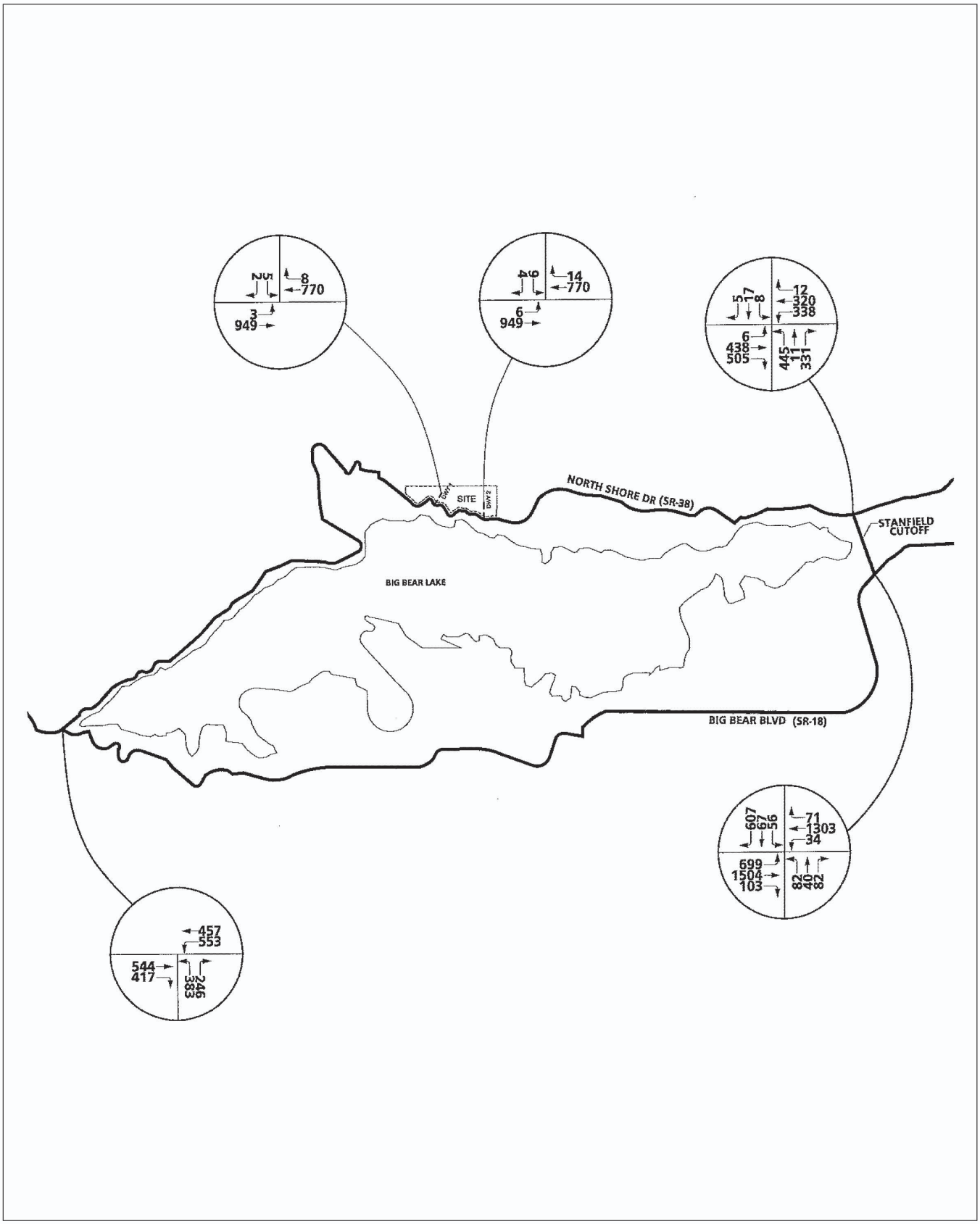
Exhibit 4.8-9B
2010 Without Project Sunday Mid-Day Peak Hour Intersection Volumes



Source: URBAN CROSSROADS TIA, EXHIBIT 5-E, 2007.

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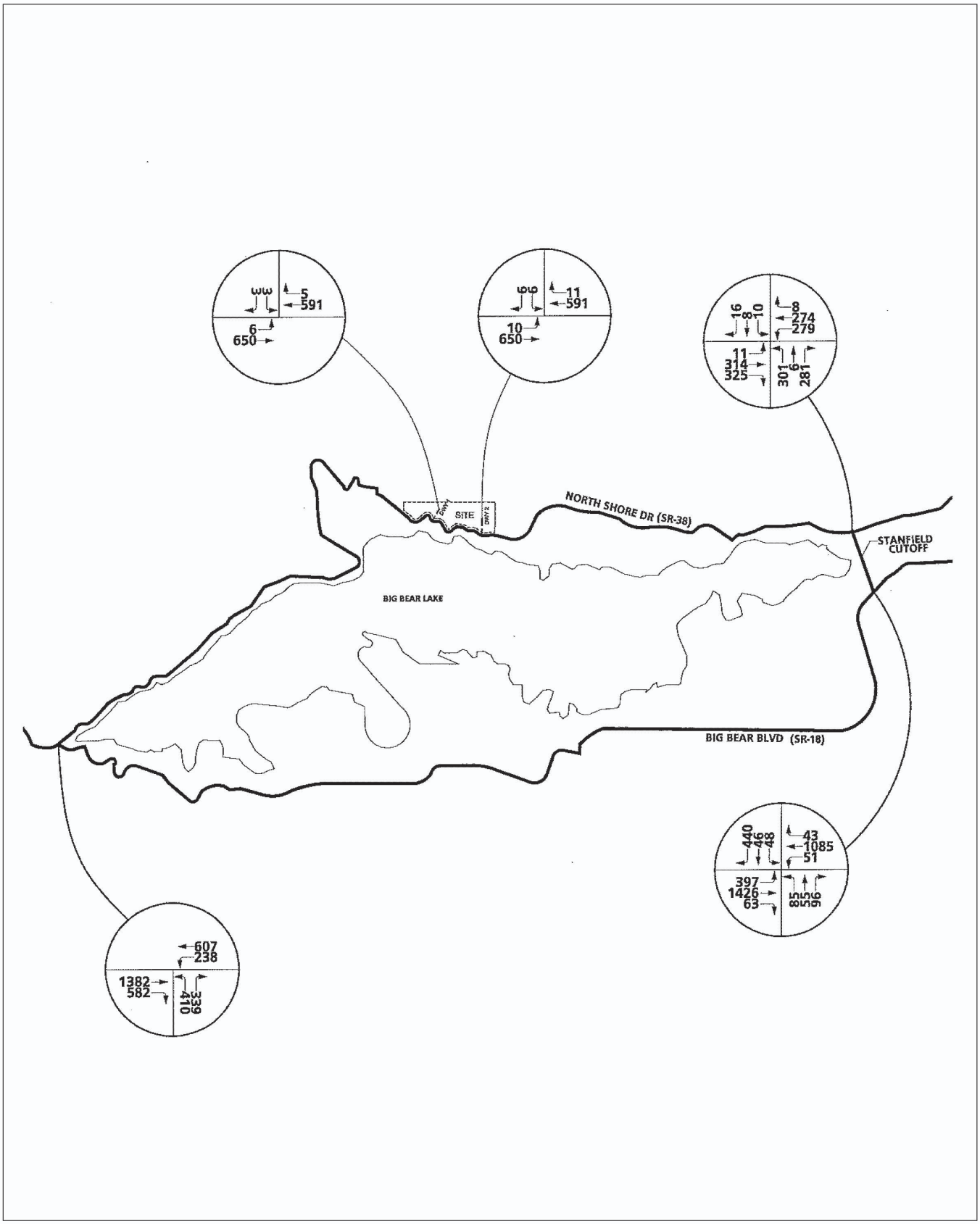
Exhibit 4.8-10A
General Plan Buildout With Project Friday PM Peak Hour Intersection Volumes



Source: URBAN CROSSROADS TIA, EXHIBIT 5-F, 2007.

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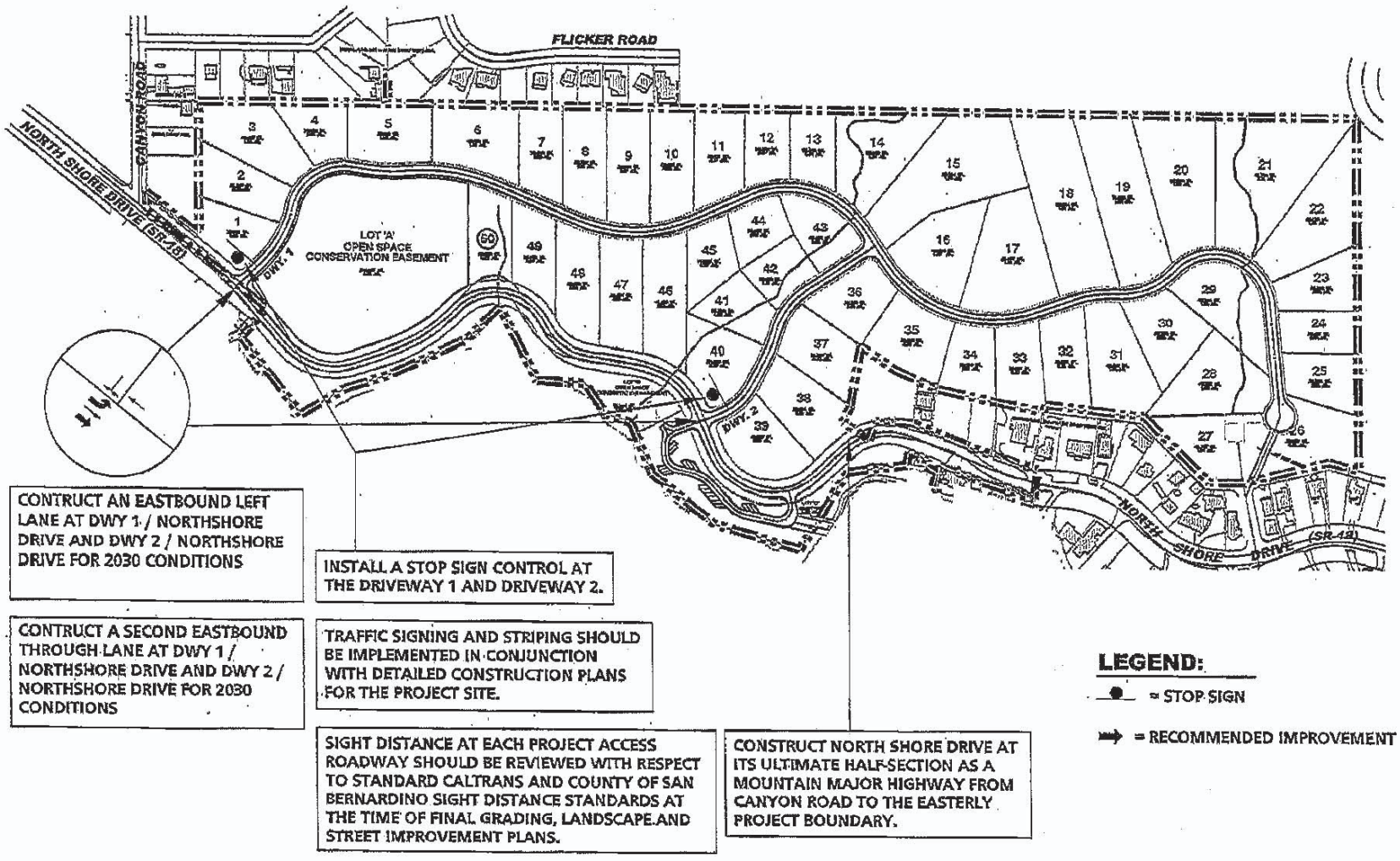
Exhibit 4.8-10B
General Plan Buildout With Project Sunday Mid-Day Peak Hour Intersection Volumes



Source: URBAN CROSSROADS.

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Michael Brandman Associates

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Exhibit 4.8-11
Circulation Recommendations

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

Off Site Improvements

The traffic analysis indicates that under present conditions, affected intersections will operate at less than acceptable rates with or without the Proposed Alternative Project. Traffic improvements are needed for existing conditions and projected conditions whether or not this Proposed Alternative Project is implemented. If needed improvements are installed, implementation of this Proposed Alternative Project will not significantly reduce the level of service off-site. Nevertheless, fair share costs have been calculated.

Table 4.8-9 lists traffic improvements and associated costs needed to improve future traffic conditions in the Big Bear area as related to this Proposed Alternative Project.

Table 4.8-9: Roadway Improvement Costs

Intersection	2030 Improvements	Costs
North Shore Dr. (SR-38) at Big Bear Blvd (SR 18) (EW)	Install Traffic Signal Construct NB Left Turn Lane Construct EB Through Lane Add Right Turn Overlap Phasing Subtotal	$400,000 $50,000 $289,720 $25,000 $764.720
Stanfield Cutoff (NS) at Northshore Drive (EW)	Install Traffic Signal Construct 2 NB Left Turn Lanes Construct SB Left Turn Lane Construct EB Left Turn Lane Construct EB Right Turn Lane Add Right Turn Overlap Phasing Construct WB Left Turn Lane Subtotal	$400,000 $100,000 $50,000 $50,000 $50,000 $25,000 $50,000 $725,000
Stanfield Cutoff (NS) at Big Bear Blvd. (EW)	Construct NB Left Turn Lane Construct SB Left Turn Lane Construct SB Right Turn Lane Add Right Turn Overlap Phasing Construct EB Through Lane Construct WB Through Lane Signal Modification Subtotal	$50,000 $50,000 $50,000 $25,000 $289,720 $289,720 $40,000 $794,440
Total Cost of Construction		**$2,284,160**
Source: Appendix G of the San Bernardino Congestion Management Program, 2003 Update.		

The Proposed Alternative Project fair share contribution towards the required improvements has been calculated. Table 4.8-10 includes the Proposed Alternative Project's cost contribution based on the Proposed Alternative Project's percent of new traffic. As indicated in Table 4.8-10, the highest Friday PM or Sunday mid-day fair share cost is approximately $48,921.

Table 4.8-10: Proposed Alternative Project Fair Share Costs

Segment	Cost ($)	Peak Hours	Existing Traffic	2030 With Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	(A) Friday PM Project Cost Share ($)	(B) Sunday MD Project Cost Share ($)	Highest Friday PM or Sunday MD Cost Share ($)
Northshore Dr. at Big Bear Blvd.	764,720	Fri. PM Sunday MD	906 2,208	2,600 3,558	16 26	1,694 1,350	0.94% 1.93%	7,223	14,728	14,728
Standfield Cutoff at Northshore Dr.	725,000	Fri. PM Sunday MD	822 904	2,436 1,833	36 26	1,614 929	2.23% 2.80%	16,171	20,291	20,291
Standfield Cutoff at Big Bear Blvd.	794,440	Fri. PM Sunday MD	2,745 2,635	4,648 3,835	29 21	1,903 1,200	1.52% 1.75%	12,107	13,903	13,903
Grand Total – Cost Share for Improvements								**35,500**	**48,921**	**48,921**

4.8.5 - Mitigation Measures

To assure that potential traffic impacts of the Proposed Alternative Project remain at less than significant levels, the following mitigation measures are proposed:

T-1 The following Project Design Features recommended in the Traffic Impact Analysis shall be incorporated into the Proposed Alternative Project design:

- Construction of North Shore Drive at its ultimate half-section width as a Mountain Major highway from Canyon Drive to the Easterly Proposed Alternative Project boundary.
- Installation of a stop sign control at Driveway #1 and Driveway #2
- Construction of an Eastbound Left Turn Lane at Driveway 1 / North Shore Drive and Driveway 2/ North Shore Drive for 2030 Buildout Conditions.
- Construction of a 2nd Eastbound Through Lane at Driveway 1 / North Shore Drive and Driveway 2/ North Shore Drive for 2030 Buildout Conditions.

T-2 The eastbound left turn lanes at both project access points will be constructed at opening year at 100 percent cost to the Applicant. The Applicant shall pay fair share costs of the construction of the eastbound through lanes at both project access points for the horizon year conditions. The developer shall pay the fair share cost of $48,921 toward the off-site traffic improvements recommended in Appendix G of the San Bernardino Congestion Management Program, 2003 Update.

4.8.6 - Level of Significance After Mitigation

Less than significant. With incorporation of recommended project design features and payment of fair share costs of impacted off-site roadway intersections, traffic and circulation impacts related to the Moon Camp Proposed Alternative Project will be reduced to less than significant.

4.9 - Utilities

This section presents a discussion of the existing and proposed utilities available to serve the Proposed Alternative Project (Moon Camp Project - 50 lots), which has been modified from the Original Proposed Project (92 lots) described in the 2005 Final Environmental Impact Report (EIR). This section includes an analysis of potential impacts to water supply, sewer and wastewater, natural gas, electricity, and stormwater.

In addition, the discussion of groundwater and water supply is based on the Recommendations for Groundwater Monitoring, prepared by Geoscience Support Services, Inc, September 2004 (Appendix G), the Final Feasibility Study to Serve the Proposed Moon Camp Residential Development (TTM No. 16136), March 2007, Prepared by ALDA Engineering, Inc. (Appendix G); the Moon Camp Well FP-Z Report, August 2008, prepared by California Collaborative Solutions, August 2008 (Appendix G); the "Water Supply Analysis," February 2009, prepared by California Collaborative Solutions (Appendix C); and the "Water Supply Report," May 2009, prepared by California Collaborative Solutions (containing the Thomas Harder Groundwater Consulting Analysis and Big Bear DWP correspondence letter, May 2009) (Appendix C).

4.9.1 - Existing Conditions

Water

The project site lies primarily within a tributary aquifer of the North Shore Subunit designated as Subarea A. A small area within the northwest portion of the project site lies within a separate, adjoining tributary aquifer of the Grout Creek Subunit designated as Subarea D. There are three groundwater wells within the project site, FP2, FP3 and FP4, which were constructed and are owned by the project's property owner and developer. Two of these Project Wells (FP2 and FP3) are located in Subarea A. As part of the North Shore Subunit, Subarea A is a separate groundwater basin and is not a part of the Grout Creek Subunit from which the existing Fawnskin system draws its water. Approximately 40 private, homeowner wells also withdraw water from Subarea A's groundwater aquifer. Project Well FP4 is located in the northwest corner of the project site and draws its water from Subarea D of the Grout Creek Groundwater Subunit. The general location of Project Well FP-4 is shown in Exhibit 4.4-1, Grout Creek Hydrologic Subunit.

Although water service is not presently provided to the project site, the site is immediately adjacent to the Fawnskin Water System, which is owned and operated by the Big Bear Lake Department of Water and Power. Water supply in the Fawnskin Water System is provided by two groundwater wells in the Lower Fawnskin pressure zone and by slant wells in the vicinity of the Racoon Reservoir, all of which draw water from the Grout Creek Subunit. Excess groundwater production from the Lower Fawnskin pressure zone is conveyed to the Upper Fawnskin pressure zone through a booster station located at the Cline Miller Reservoir.

The Department of Water and Power (DWP) provides water service to more than 16,000 customers from four separate water systems within the San Bernardino Mountains of southern California. All of the DWP's water comes from snow and rain that percolates back into the ground. Only 3 to 5 percent of the snow and rain reaches the water table and is recharged for future use. The DWP does not utilize water from Big Bear Lake and no additional water is imported into the Big Bear Valley. The DWP maintains 50 wells, 13 booster stations, 17 reservoirs, 16 chlorination stations, 20 sample stations, approximately 170 miles of water main pipeline, and a complex pressure-reducing network (www.bbldwp.com).

The majority of DWP customers are located in Big Bear Valley. The DWP provides water to its Big Bear Valley customers by pumping ground water from local aquifers. Currently, no outside water source is available to augment the local supply. The remaining system is in Rimforest, California, located near Lake Arrowhead and water used in this system is purchased from the Crestline-Lake Arrowhead Water Agency (CLAWA) (www.bbldwp.com).

Although DWP has completed a Water Feasibility Study (Alda, 2007) and provided a conditional will serve letter to the Applicant, the majority of the project site is outside of the DWP authorized service area as well as the City's Sphere of Influence. As a result, DWP cannot provide water service without first complying with the provisions of Government Code Section 56133, which requires that cities receive Local Agency Formation Commission (LAFCO) annexation approval to provide new or extended services outside their jurisdictional boundaries, but within their spheres of influence.

Wastewater

The project site is located within County Service Area 53B (CSA 53B) and the Big Bear Area Regional Wastewater Agency (BBARWA) sanitary sewer service area. The service area for BBARWA includes the entire Big Bear Valley (79,000 acres) and is served by three separate collection systems: City of Big Bear Lake, Big Bear City Community Services District, and the County of San Bernardino CSA 53B (representing approximately 4 percent of the BBARWA total flow). Each underlying Agency maintains and operates its own wastewater collection system and delivers wastewater to BBARWA's interceptor system for transport to BBARWA's Regional Wastewater Treatment Plant. The regional plant is a 93.5-acre site located adjacent to Baldwin Lake in unincorporated San Bernardino County. The regional plant processes approximately 2.8 billion gallons per year (gpy). In 2006, the Fawnskin area (CSA 53B) produced an average of 80,000 gallons of effluent per day, or approximately 29 million gpy.

Sewage from CSA 53B is transported via the BBARWA North Shore Interceptor/Force Main system to the Regional Wastewater Treatment Plant. Currently, BBARWA has a 10-inch sewer force main located within the shoulder along the south side of State Route 38 (SR-38) that traverses the project site. This force main conveys raw sewage from CSA 53B to the Regional Wastewater Treatment Plant.

Solid Waste

Solid waste collection within the project area would most likely be provided by Big Bear Disposal, Inc. Waste would be transported to the Big Bear Transfer Station, located on Holcomb Valley Road in Big Bear City, approximately 1.5 miles north of Highway 18. The transfer station is owned and operated by the County of San Bernardino Waste Management Division. From the transfer station, solid waste is transferred to the Barstow Landfill; a County of San Bernardino owned and operated facility. The landfill is currently permitted to receive 750 tons of waste per day. The landfill is currently at approximately 25 percent of the original capacity of 3.58 million cubic yards. Closure is scheduled for May 1, 2012. However, as part of the County's strategy for long-range solid waste disposal, the Barstow Landfill could be expanded onto adjacent county-owned property.

Natural Gas

The project site is located entirely within the Southwest Gas Corporation (SGC) utility service territory. A natural gas pipeline is currently installed on the project within the SR-38 right-of-way, very near Big Bear Lake. However, since the site is vacant, no service currently extends onto the site.

SGC is principally engaged in the business of purchasing, transporting and distributing natural gas to residential, commercial and industrial customers in the southwestern United States. SGC serves approximately 1.8 million customers in Arizona, Nevada and portions of California. The company added 71,000 customers in 2006, maintaining its status as one of the fastest-growing natural gas distribution companies in the nation (excluding mergers and acquisitions).

Electricity

Bear Valley Electric Service (BVE) is the local provider of electricity. BVE provides electric power to more than 20,000 customers in the communities surrounding Big Bear Lake, including the Fawnskin area.

BVE recently constructed a local power generating station to provide backup power and peak power to supplement the two power lines that feed the valley. An overhead power line traverses the project site in an east/west direction and is adjacent to and along SR-38.

4.9.2 - Thresholds of Significance

The following criteria for establishing the significance of potential impacts on public services resources were derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The proposed project would result in potentially significant impacts to public services if the project would:

a.) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB);

b.) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

c.) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

d.) Have insufficient water supplies available to serve the project from existing entitlements and resource, or are new or expanded entitlements needed;

e.) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

f.) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; and

g.) Not comply with federal, state, and local statutes and regulations related to solid waste.

4.9.3 - Project Impact Analysis

Projected Utility Use

Table 4.9-1 estimates the utilities consumed/generated by the Proposed Alternative Project.

Table 4.9-1: Projected Utility Use

Utility	Average Usage	Moon Camp Total/Day*	Moon Camp Total/Year*
Water			
Consumption Rate	250gallons/day/unit	12,500 gallons/day	14 acre-feet/year([1])
Sewer			
Generation Rate	215 gallons/day/unit	10,750 gallons/day	3.9 million/gallons/year([2])
Electricity			
Consumption Rate	16.66 kWh /unit/day	833 kWh/day	304 thousand kWh/year
Natural Gas			
Consumption Rate	219.12 cubic feet/unit/day	10,956 cubic feet/day	4 million cubic feet/year
Solid Waste			
Generation Rate	20 pounds/day/household	1,000 pounds/day	182.5 tons/year

Source - Water Feasibility Study([1]) (Alda, 2007); Sewer Feasibility Study([2])(So, 2007).
* Based on 116 residents (50 units at 2.31 persons/unit; persons/unit).
Note: Totals could be slightly off due to rounding.

4.9.4 - Water Service Alternatives

Although water service is not presently provided to the project site, the site is immediately adjacent to the jurisdiction of the DWP and annexation to the DWP's authorized service area is one of three

possible water service alternatives. DWP has conducted a Water Feasibility Study (Alda, 2007), and provided a conditional will serve letter to the Applicant. However, the majority of the project site is outside of the DWP authorized service area as well as the City's Sphere of Influence. DWP cannot provide water service without first complying with the provisions of Government Code Section 56133, which pertains to the LAFCO annexation process. In order for the DWP to provide water service to the project site and to own and operate the Proposed Alternative Project's water system, LAFCO would have to approve an expansion of the City of Big Bear Lake's Sphere of Influence (SOI) to include the entire existing DWP Water Service Area in Fawnskin as well as the entire project site. The developer would be required to construct the on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda, 2007). This is Water Service Alternative #1 (see below for details).

Water Service Alternative #2 (see below for details) would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. Instead, County Service Area 53C (CSA 53C) would own and operate the water facilities within the project site and contract with the DWP for a water interconnection to the existing Fawnskin water system. The developer would be required to construct the same on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda, 2007).

Water Service Alternative #3 (see below for details) would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. Alternative #3 would involve the developer constructing an independent water system completely within the project site. The developer would construct the same on-site water lines as in Water Alternatives #1 and #2, and, in addition the required water reservoir and water booster station would be constructed by the developer on the project site (rather than constructing the off-site water facilities identified in the DWP's Water Feasibility Study). CSA 53C would own and operate this independent water system.

Water Service Alternative #1

According to the Water Feasibility Study prepared by Alda Engineering Inc. (Appendix G), water service to the project site could be provided from the DWP's Upper Fawnskin pressure zone (*Water Feasibility Study*, Appendix G, Alternative B). However, significant transmission improvements in the Fawnskin system would be needed to provide fire flow to the project site. The closest DWP pipeline within the Upper Fawnskin system is a single six-inch-diameter pipeline located near the intersection of Flicker Road and Chinook Road, approximately 2,000 feet from the westerly boundary of the project site.

The Upper Fawnskin pressure zone has an operating hydraulic grade of 7,113 feet set by the high water level of the existing 0.25-million gallon Racoon Reservoir. Based on this hydraulic elevation, static pressures within the project site would range from a low of 71 psi at the highest point in Lot 18 to 157 psi near the lake. Therefore, individual pressure regulators would be required for all lots with

static pressures exceeding 80 psi. The future home owners would install and fund the individual pressure regulators as required for specific lots.

Projected water demand for the Proposed Alternative Project, Moon Camp 50-lot subdivision, is based on the DWP's Water Feasibility Study consumption rate of 250 gallons per day (gpd) per connection. Exhibit 2-6, Proposed Water Facilities, shows the proposed water system. Maximum day demand is estimated based on information provided in the recently completed DWP Water Master Plan and it is equivalent to 1.76 times the average day demand. Therefore, the average and maximum day demands for the Proposed Alternative Project's 50-lot subdivision are estimated as follows:

- Average Day Demand (ADD) = 12,500 gpd or 8.68 gallons per minute (gpm); and
- Maximum Day Demand (MDD) = 15.27 gpm.

Based on an estimated average day demand of 12,500 gallons, the annual water demand for the Proposed Alterative Project (50 lots) is estimated at 4.56 million gallons or 14 acre-feet per year. Required fire flow and water storage for the Proposed Alternative Project are identified in the Alda Water Feasibility Study (Appendix G) as 1,750 gpm with a 2-hour duration, and 238,600 gallons of storage.

Currently there are three groundwater wells on-site (constructed by the project's property owner and developer), Wells FP2, FP3 and FP4. Alternative #1 involves wells FP2, FP3, and FP4 being deeded to the DWP at the time the tract map is recorded.

The Water Feasibility Study provides two options (A and B) for expanding the existing Fawnskin Water System infrastructure. Option B has been chosen by DWP and the Applicant as the preferred Water Feasibility Study alternative for Water Service Alternative #1. In either case, the Applicant would install all common infrastructures, including fire hydrants, and would also install the water main lines within the project site. The water improvements will primarily occur within existing paved roads. Nearby residents are not required to tie into the proposed DWP water system. The impacts related to the installation of the off-site and on-site water improvements would be temporary and are considered less than significant. See Exhibit 2-6 for the proposed water facilities and improvements.

Water Service Alternative #2

This Alternative assumes the City does not wish to expand its Sphere of Influence, or that LAFCO does not approve an expansion of the City of Big Bear Lake's Sphere of Influence to include the entire existing DWP Water Service Area in Fawnskin as well as the entire project site (Water Service Alternative #1). The existing County Service Area 53C (CSA 53C) is authorized to own and operate water systems, and currently CSA 53C encompasses the entire project site. No LAFCO action would be required for CSA 53C to own and operate the Proposed Alternative Project's Water System.

Alternative #2 would include the developer constructing the on-site and off-site water facilities contained in the DWP's Water Feasibility Study (Alda, 2007); CSA 53C owning and operating the Proposed Alternative Project's Onsite Water System (the three water wells and the water main lines); DWP owning and operating the water facilities constructed by the developer within the DWP's Fawnskin Water System; and CSA 53C contracting with the DWP for a water interconnect between the DWP's existing Fawnskin Water System and the Proposed Alternative Project's Onsite Water System.

All of the water demand calculations for the Proposed Alternative Project, water system descriptions, and the Water Feasibility Study Option B described in Water Service Alternative #1, apply to Water Service Alternative #2.

The water improvements for Water Service Alternative #2 would primarily occur within existing paved roads. The impacts related to the installation of the off-site and on-site water improvements would be temporary and are considered less than significant. See Exhibit 2-6 for the proposed water facilities and improvements.

Water Service Alternative #3

Instead of constructing the off-site water facilities (within the Fawnskin Water System) identified in the DWP's Water Feasibility Study Option B (Alda, 2007, which is the basis for Water Service Alternatives #1 and #2, above), the Proposed Alternative Project's developer would construct an on-site reservoir (238,600 gallons) and an on-site booster station capable of providing the daily water supply flow and the required 1,750 gallons per minute fire flow. The reservoir and booster station would be sized based upon the same demand calculations contained in the Water Feasibility Study and Water Service Alternatives #1 and #2:

- Average Day Demand (ADD) = 8.68 gpm.
- Maximum Day Demand (MDD) = 15.27 gpm;
- Fire Flow = 1,750 gpm with a 2 hour duration;
- Operational Storage = 30% of MDD (15.27 gpm) = 6,600 gallons;
- Emergency Storage = 100% of MDD (15.27 gpm) = 22,000 gallons;
- Fire Flow Storage for 1,750 gpm (2 hour duration) = 210,000 gallons; and
- Total Storage Requirement per the Alda Water Feasibility Study = 238,600 gallons.

The developer would also construct the same on-site (within the project site) water facilities (water main lines, fire hydrants, etc) identified in the Alda Water Feasibility Study. Existing water wells FP2 and FP4 would be connected to the on-site water system and pump their water into the 238,600 gallon on-site reservoir. The on-site booster station would produce the Average and Maximum Daily Demand flows (8.68 gpm and 15.27 gpm) and the Fire Flow of 1,750 gpm for the 2-hour duration. The booster station would include an emergency electrical generator to allow the station to operate during a power outage.

The water improvements for Water Service Alternative #3 will primarily occur within the Proposed Alternative Project's paved roads and at the Proposed Alternative Project's reservoir site. The construction of the reservoir would include grading an approximately 75-foot-diameter pad for the reservoir. The impacts related to the installation of the on-site water improvements would be temporary and are considered less than significant.

4.9.5 - Proposed Alternative Project - Water Demand and Water Supply

The Water Feasibility Study calculates the Water Demand for the Proposed Alternative Project as:

- 250 gallons per day per connection x 50 lots = 12,500 gallons per day;
- 12,500 gallons per day x 365 days/year = 4,562,500 gallons per year; and
- 4,562,500 gallons per year is equal to 14 acre-feet per year.

The water supply for the Proposed Alternative Project's 14 acre-feet per year demand will come from two groundwater basins. Based on two separate reports prepared by Geoscience in 2000 and 2003 (included as appendices to the 2005 Final EIR), the annual groundwater recharge for Subarea A of the North Shore Subunit is between 14 and 44 acre-feet per year, with an estimated annual Maximum Perennial Yield of 29 acre-feet per year. In order to be as conservative as possible, the "minimum recharge" of 14 acre-feet per year will be utilized for Subarea A. There are also existing private, homeowner wells that withdraw their water supply from Subarea A. Table 4-2 of the DWP's 2006 Water Master Plan, prepared by CDM Engineering, shows the "Private Wells Production" within Subarea A as 5 acre-feet per year of groundwater production. Subtracting the 5 acre-feet of groundwater production from the minimum recharge for Subarea A of 14 acre-feet leaves 9 acre-feet available to supply the Proposed Alternative Project. Existing Project Well FP-2 is capable of pumping the 5.6 gallons per minute that will produce the 9 acre-feet per year of groundwater production from Subarea A and will also produce the Maximum Day Demand of 15.27 gpm (Geoscience Support Services Inc, 2008, Results of Rehabilitation and Aquifer Testing Moon Camp Well FP2).

The remaining 5 acre-feet per year of Proposed Alternative Project Demand will be supplied from the Grout Creek Groundwater Subunit, Subarea D. Project Well FP-4, which was drilled by the developer in the northwest corner of the project site, will supply the 5 acre-feet per year of groundwater production, which is 3.1 gallons per minute (Harich Enterprises, 2009, Well FP-4 Driller's Report). Thomas Harder Groundwater Consulting noted in its report that the only potential impact from FP-4 would be the draw-down influence onto neighboring private wells as indicated from pump test data. The data indicated that FP-4, at a sustained rate of 3.5 gpm, would result in a 2-foot draw-down in groundwater level for the nearest private well, which is located approximately 250 feet from Well FP-4. The available data on private wells suggests that the nearest private well has a saturated thickness that would be able to accommodate the additional 2-foot draw-down and that pumping from Well FP-4 would not significantly impact the private well's routine operations. Based on these data, mitigation (per the 2009 Water Supply Report) shall be incorporated into the Proposed

Project Alternative that will limit the Proposed Alternative Project's allocation of water supply from Well FP-4 to a maximum of 5 acre-feet per year.

Geoscience (2003) reports the groundwater annual recharge of Grout Creek Subarea D to be between 32 and 99 acre-feet per year, with an estimated annual Maximum Perennial Yield of 66 acre-feet per year. At present, the only groundwater production in this subarea is from 11 private wells and is calculated to be 3 acre-feet per year. The additional 5 acre-feet per year of annual groundwater production from Well FP-4, combined with the existing 3 acre-feet per year of annual groundwater production, results in 8 acre-feet per year of total annual groundwater production, well below the low end of the annual recharge for Subarea D, which is 32-acre-feet per year, and also well below the estimated Maximum Perennial Yield for Subarea D which is 66 acre-feet per year.

Project Well FP-2 was cleaned, rehabilitated and test pumped by Roadrunner Drilling, under the supervision of Geoscience, in July of 2008. Geoscience's August 2008 Report concluded that:

- Well FP-2 has successfully been rehabilitated and its specific capacity restored to near original levels;
- Well FP-2 can yield up to 35 gpm on a long term basis with less than 10 ft of drawdown;
- At the 35 gpm discharge rate, pumping interference with the nearest private well (910 feet to the east of FP2) is expected to be less than 0.3 ft (less than 3.6 inches);
- Groundwater quality data from Well FP-2 indicates the water from the well is suitable for municipal supply; and
- There is no evidence from the Microscopic Particulate Analysis that the ground water produced by Well FP-2 is under the direct influence of surface water in Big Bear Lake.

Thomas Harder, Groundwater Consulting (formerly with Geoscience), stated in his May 1, 2009, letter (Appendix C) that the potential impact of pumping Project Well FP-2 on the surface water of Big Bear Lake would be minimal. The top of perforations for Project Well FP-2 (the area of the well where water is withdrawn from the surrounding soil) occur (begin) approximately 60 feet below ground surface, at an elevation of approximately 6,686 feet above mean sea level (msl). The high surface water elevation in the lake is 6,743 feet msl and the average depth of the lake is 30 feet. Thus, the elevation of the bottom of Big Bear Lake is approximately 27 feet above the top of perforations for Project Well FP-2. The geologic log for Project Well FP-2 shows multiple silt and clay layers between the land surface and top of perforations. If the silt and clay layers extend beneath the lake, they would provide some hydraulic separation between the lake water and aquifer system. While it is possible that some vertical leakage could occur from the lake into the aquifer system of FP-2, the majority of groundwater produced by FP-2 would be from the aquifer underlying Subarea A.

The third existing, on-site well, FP-3, located to the east of the FP-2 well, would not be equipped nor pumped, but will be used as a monitoring well to record groundwater levels.

Groundwater Recharge

Impacts from Project Wells FP-2 and FP-4 will be less than significant as long as mitigation measures established in the Thomas Harder Groundwater Consulting Report are implemented to ensure that annual groundwater production limits for FP-2 are 9 acre-feet per year; and FP-4 are 5 acre-feet per year.

In summary, the Proposed Alternative Project demand is 14 acre-feet per year. Well FP-2 is capable of producing the 5.6 gallons per minute, which is 9 acre-feet per year from North Shore Subunit, Subarea A, and Well FP-4 will produce the 3.1 gallons per minute, which is 5 acre-feet per year from Grout Creek Subunit, Subarea D. Therefore, there is sufficient water available to serve the Proposed Alternative Project, and the impacts in regard to water supply for the Proposed Alternative Project are considered less than significant.

Wastewater

So and Associates Engineers Inc. prepared a wastewater feasibility study for the Proposed Alternative Project (So, April 2007; Appendix G). According to So and Associates, the project would generate approximately 10,750 gallons of effluent per day, with an estimated peak flow of 43,000 gallons per day. According to the study, the existing sewer system has the capacity to service the Proposed Alternative Project.

Before service can be extended to the site, both on and off-site improvements would be necessary. The improvements include an extension of 1,200 linear feet along North Shore Drive to connect to the existing 8-inch collector sewer southwest of the property. Other requirements include that 1) all gravity facilities must be minimum 8-inch diameter; 2) all on-site facilities must meet CSA 53B standards and specifications and construction plans must be submitted for plan check and approval by the District Engineer; and 3) the Applicant will be required to construct 4,400 lineal feet of on-site collector sewer mainlines as shown in Exhibit 2-7, Proposed Sewer Facilities.

The Proposed Alternative Project would convey part of the wastewater flow via gravity sewer to the existing Pump Station B, southeast of the property, as shown in Exhibit 2-7. However, depending upon where houses are built on each lot, some of the lots may require individual, on-site, household pump stations. This will depend on the individual lot design and will be decided at the time each lot is developed. The future homeowner will fund and install the lot-specific sewer improvements.

The Applicant would construct and pay for all common sewer infrastructure required for implementing the Proposed Alternative Project. The future homeowners will fund the lot-specific improvements. The future homeowners will pay for the associated connection fees to CSA 53B and BBARWA. The County's local fee for connecting to CSA-53B is $1,358.72 per dwelling unit. This

represents $67,936 in local connection fees for the 50 residential lots in the Proposed Alternative Project. Regional fees are also imposed by BBARWA for sewage treatment and disposal. These fees are assessed at $2,704.99 per dwelling unit, which represents $135,249.50 in regional connection fees for the 50 residential lots in the Proposed Alternative Project.

The sewer line design and connection details must be submitted to the County's Special Districts Department (SDD) for plan check and approval. The Applicant will pay the sewer line design and inspection fees that are related to the common infrastructure. Individual lot owners / home builders do not pay any of these fees. Individual home builders would pay an inspection fee to CSA 53B for the inspection of their house lateral connection to the common infrastructure.

The future residents would pay monthly user fees that offset the sewer system maintenance. Therefore, all project related costs would be paid for by the Applicant and/or the future residents, and the utility providers would not be financially impacted by the future residential development.

The existing sewer system has the capacity to service the 50 residential lots in the Proposed Alternative Project, and the cost of providing service will not impact BBARWA, the County or existing Fawnskin residents. The impacts in regard to sewer service are considered less than significant and no mitigation is required.

Solid Waste

According to the website of the California Integrated Solid Waste Management Board, local residents generate an average of 20.0 pounds of solid waste per household per day. Since the Proposed Alternative Project would have 50 single-family residences, the Proposed Alternative Project could generate as much as 1,000 pounds or one-half ton of solid waste per day.

Solid waste collection within the project area would be provided by Big Bear Disposal, Inc. Waste would be transported to the Big Bear Transfer Station, located on Holcomb Valley Road in Big Bear City, approximately 1.5 miles north of Highway 18. The transfer station is owned and operated by the County of San Bernardino Waste Management Division. From the transfer station, solid waste is transferred to the Barstow Landfill; a County of San Bernardino owned and operated facility. The landfill is currently permitted to receive 750 tons of waste per day. The landfill is currently at approximately 25 percent of the original capacity of 3.58 million cubic yards. Closure is scheduled for May 1, 2012. However, as part of the County's strategy for long-range solid waste disposal, the Barstow Landfill could be expanded onto adjacent county-owned property.

County landfills do not accept hazardous wastes. The County operates regular programs/operations to routinely collect hazardous wastes from residential sources (i.e., residential round-ups, once a month collection locations, etc.). Each new residence is expected to generate approximately 50 pounds of hazardous waste per year, according to data from the State Integrated Waste

Management Board website. All residents, including those within the project site, are expected to take advantage of these programs to a similar degree as existing County residents.

Since the cost is passed down to the residents via monthly service fees and because the landfill has adequate storage capacity, no significant impacts are anticipated with regard to solid waste collection or disposal.

Natural Gas

SGC has indicated that natural gas main pipelines are installed in the right-of-way of SR-38. According to the 2005 Final EIR, the Southwest Gas Corporation has concluded that there is sufficient capacity in their facilities to provide natural gas service to the project area without any significant impact on the environment. As such, extensions to existing facilities would be required in order to provide service to the Proposed Alternative Project. Service would be provided in accordance with SGC's policies and extension rules on file with the California Public Utilities Commission. Future natural gas service to the project area would require coordination with the company's engineering department for a comprehensive plan as to levels of service required.

Because the larger (92-lot) Original Proposed Project would not cause significant impacts, the Proposed Alternative Project, with 46 percent fewer residential units, would also not cause significant impacts. Therefore, implementation of the Proposed Alternative Project would result in a less than significant impact with respect to natural gas service.

There is a natural gas line underneath Big Bear Lake, located to the east of the proposed marina. There has been some public concern regarding this natural gas line and the potential for it to rupture during construction activities in the lake, associated with the construction of the boat launch ramp and placement of the floating docks. The gas line does not pose a threat to public safety, as it is buried, and, therefore, protected from boating activities during low lake levels. Furthermore, no dredging of the lake is proposed for the marina. The only proposed construction that would interfere with the lake is the proposed ramp. However, the ramp would not be located in the area of the natural gas line. Additionally, prior to any excavation, Underground Service Alert must be called and all utilities respond and mark the location of their underground lines. The impacts in this regard are therefore considered less than significant.

Electricity

The Proposed Alternative Project would result in an increased demand for electrical service. Based on a daily average of 16.66 kilowatts per unit, at project buildout the Proposed Alternative Project would utilize 833 kilowatts per day. BVE recently constructed a local power generating station to provide backup power and peak power to supplement the two power lines that feed the valley. According to BVE, service is available and of adequate supplies.

The Applicant will construct and fund all infrastructure related to the Proposed Alternative Project. In addition, the future residents of the site will pay monthly user fees that offset the cost of service and maintenance. Therefore, the impacts in this regard are considered less than significant and no mitigation is required.

4.9.6 - Standard Conditions and Uniform Codes

All utility improvements constructed as part of the Proposed Alternative Project will meet applicable uniform codes (i.e., plumbing, fire, and building), including potable water and sewer systems, electrical cables and wiring, natural gas lines, solid waste containers and enclosures, and telephone/cable lines. The County's development review and construction inspection processes would assure that these improvements are constructed according to appropriate standards.

Water conservation measures recommended by the California Department of Water Resources must be incorporated as appropriate, including but not limited to: (a) low flush toilets of no greater than 1.6 gallons per flush; (b) insulation of hot water lines to provide hot water faster with less waste; and (c) keeping water pressure at 55 pounds psi or less. Some portion of the landscaping, especially shrubs and trees, may be native species or species that are adapted to drought conditions.

The project must comply with energy conservation standards contained in Titles 20 and 24 of the California Code of Regulations, Section 2-5307(b), which is the California Energy Conservation (CEC) Standard for New Buildings. These regulations prohibit the installation of fixtures unless the manufacture has certified to the CEC compliance with the flow rate standards. Title 24, California Code of Regulations Sections 2-5452(i) and (j) addresses pipe installation requirements, which can reduce water use before hot water reaches equipment or fixtures. Title 20, California Code of Regulations Section 1604(f) and 1606(b) are Applicable Efficiency Standards that set the maximum flow rates of all plumbing fixtures and prohibit the sale of non-conforming fixtures.

The Applicant or individual property owners would also be responsible for paying applicable utility impact fees charged by various service providers. Payment of these fees helps the local agencies anticipate future demand and establish plans and construct new facilities to serve growth.

4.9.7 - Project Design Features

The Proposed Alternative Project includes master water and sewer plans that will provide comprehensive utility systems. All utility improvements will be constructed to the satisfaction of the County Public Works Department; and SWG, Bear Valley Electric and BBARWA, CSA 53B, CSA 53C and Big Bear Lake Department of Water and Power will maintain their respective utility lines within the public right-of-way, as appropriate. The Applicant will install all common infrastructures necessary to support the proposed residential development, including the required wastewater improvements, water mains, and fire hydrants.

4.9.8 - Mitigation Measures

Project design features and standard conditions and uniform code reduce many potential impacts to less than significant levels. However, the following mitigation measures are recommended in order to mitigate utility impacts associated with the Proposed Alternative Project to the maximum extent feasible.

Water

U-1a The Moon Camp Home Owners Association shall create a "conservation guidelines" booklet that outlines the following measures:

- All indoor water fixtures shall be low flow / low flush.
- Landscape shall not be irrigated between the hours of 9:00 a.m. and 6:00 p.m.
- Residences, buildings, and premises shall be limited to watering landscaping every other day.
- Water from landscape irrigation shall not be allowed to run off into streets or other paved areas.
- Water leaks are not permitted and must be repaired as soon as practicable.
- Sidewalks, paved driveways, and parkways shall not be washed off with hoses, except as required for sanitary purposes.
- Washing non-commercial vehicles (cars, boats RVs) is permitted; however, it shall only be permitted with an automatic shut-off nozzle on a hose, or with a bucket.
- Turf landscaping shall be limited to 500 square feet on a parcel or lot unless the water purveyor's regulations allow additional turf area.
- Turf irrigation shall include an automatic controller that incorporates evapo-transpiration and rain shutoff features.
- Sprinklers are only allowed on turf. All other landscape plantings must be irrigated with efficient, low water use devices, such as, drip systems or bubblers.
- All outdoor irrigation systems shall be shut off and winterized between November 1st and April 1st of each year.
- A model landscaping and irrigation guide shall be prepared for the tract and required by homeowner association rules. The guide shall identify the following conservation measures: Landscaping shall include a plant palate that emphasizes Xeriscape, native plants and cultivars that are suitable for the mountain climate. Plant materials shall be low water consuming and fire

resistant. Irrigation shall limit aerial spray methods and shall emphasize drip and bubbler type emitters. The landscaping guidelines shall be reviewed and approved by the Land Use Services Department. In addition, the project shall comply with the local water agency's Model Landscape and Irrigation Ordinance'.

- The Project shall comply with the local water agency's "Model Landscape and Irrigation" ordinance.

U-1b Pumping and extraction of groundwater shall be limited to 9 acre-feet per year for Well FP-2, 0 acre-feet per year for Well FP-3, and 5 acre-feet per year for Well FP-4. If the water purveyor desires to extract groundwater from Well FP-2 in excess of 9 acre-feet per year, the purveyor shall conduct an independent environmental analysis to identify and consider potential impacts at that time.

U-1c The grant deeds transferring ownership of Wells FP-2, FP-3 and FP-4 shall include the pumping and extraction limitations included in Mitigation Measure U-1b. The grant deeds shall also state that the water purveyor, on January 1st of each year, shall report the amount of the prior year's annual groundwater production from Wells FP-2, FP-3 and FP-4 to the County Land Use Services Department and the County Health Department.

Wastewater

U-2 Prior to issuance of building permits, the Applicant shall fund all on-site and off-site sewer improvements required to support development of the project site. Such improvements shall be to the satisfaction of the County Service Area (CSA)53B.

U-3 Prior to issuance of building permits, the Applicant shall provide evidence to the County of San Bernardino that the BBARWA has sufficient transmission and treatment plant capacity to accept sewage flows from the project site.

4.9.9 - Level of Significance after Mitigation

The utility impacts of the Proposed Alternative Project would be less than significant with mitigation.

SECTION 5: CUMULATIVE IMPACTS

5.1 - Introduction

California Environmental Quality Act (CEQA) Guidelines (Section 15130) require identification of related projects, both public and private, that together with a proposed project could have cumulative impacts on the environment. There are several development projects in the general vicinity of the Proposed Alternative Project that may produce a cumulative impact on the community. These projects may produce community-wide and area-wide cumulative impacts related to traffic, noise, and air quality, in addition to various site-specific impacts.

CEQA Guidelines Section 15604(i), which is the same as CEQA Statute Section 21083(b), includes a vague definition of "cumulatively considerable." Project contributions to cumulative impacts are "considerable" when viewed in connection with the effects of past, current, and "probable future projects." This information will be used as guidance in evaluating the cumulative impacts of planned growth and the Proposed Alternative Project's contributions to those impacts. For all environmental issues, the area of consideration of potential cumulative impacts will be specified so the contribution of the Proposed Alternative Project to cumulative impacts can be clearly identified.

5.2 - Cumulative Projects

CEQA Guidelines Section 15130 requires identification of related projects, both public and private, that together with a proposed project could have cumulative impacts on the environment. The County of San Bernardino and City of Big Bear Lake have identified 17 development projects, in addition to the Proposed Alternative Project, that are either pending or recently approved, or in process of being constructed within the Proposed Alternative Project area. These "cumulative" projects represent a total of 957 residential units, 146 hotel rooms, approximately 40,000 square feet of retail space, 6,300 square feet of office space, a 20,000 square-foot church, and 3 acres of mini-storage. Table 5-1, Cumulative Project List, summarizes the projects within the study area that could have a direct or connected indirect impact or influence on the project site or surrounding area.

If approved and constructed, these projects could introduce an additional 2,110 residents into the Big Bear Valley. This estimate is based on an average household size of 2.31 persons per household for standard single-family units based on data from the federal census.

Table 5-1: Cumulative Project List

Project Type	Description	Number of Units/Size	Population
County of San Bernardino			
TT 16771	SFR	242	559
TT 16934	SFR	228	527
TT 17217 &TT17022	SFR	53	122
TT 16036	SFR	116	268
TT 14916	SFR	51	118
TT 16980	SFR	15	35
TT 1776H	SFR	10	23
TT 16749	SFR	86	199
TT 17201	SFR	66	152
Total (County of San Bernardino)		**867 Residential Lots**	**2,003**
City of Big Bear Lake			
Hilton Garden Inn	Hotel	91 Rooms	- -
Mixed use Development	Retail	22,500 square feet	9
	Office	6,300 square feet	
	Residential	10 acres/4 lots	
Residential	SFR	8 lots	18
Residential	Condominiums	78 dwelling units	180
Mixed use Development	Hotel	55 rooms	- -
	Retail	10,000 square feet	- -
	Fast Food	2,500 square feet	- -
World Harvest Faith Center	Church	20,000 square feet	- -
Boat Parts Retail & Service	Boat/Auto Care Center	4,375 square feet	- -
Storage Yard	Mini Storage	3 acres	- -
Total (Big Bear)		**12 SFR/78 MFR, 65,675 square feet of mixed use, 3 acres of storage, 149 hotel rooms**	**207**
TOTAL		**879 SFR 78 MFR 65,675 square feet of mixed use 3 acres of storage 146 hotel rooms**	**2,210**

The potential cumulative impacts of these developments are evaluated herein. Each environmental issue analyzed previously in Sections 4.1 through 4.9 of this Revised and Recirculated Draft Environmental Impact Report (EIR) is also evaluated here in terms of cumulative impacts.

5.3 - Cumulative Impacts Analysis

Cumulative impacts related to Geology and Soils, Public Safety, and Cultural Resources were determined to have been adequately addressed in the 2005 Final EIR and are not re-analyzed in this Revised and Recirculated Draft EIR. Please refer to the 2005 Final EIR for a discussion of cumulative impacts to these areas.

5.3.1 - Aesthetics/ Light and Glare

Build-out of the Proposed Alternative Project, together with cumulative projects, may alter the nature and appearance of the area and contribute to the loss of undeveloped areas. As development occurs in the Fawnskin area as well as the broader Big Bear Valley, residents and visitors in the area would notice the visual effects of development projects. Construction of currently approved and pending projects in the vicinity would permanently alter the nature and appearance of the area through the loss of undeveloped properties. Security and street lighting would introduce some light and glare to the area; however with adherence to development code requirements, these impacts can be minimized. The significance of these visual/aesthetic changes is difficult to determine, since aesthetic value is subjectively determined and potential impacts are site-specific, and impacts are typically evaluated on a project-by-project basis.

The County of San Bernardino identifies the Proposed Alternative Project site within a Scenic Resources (SR) Overlay District and SR-38 as a County Scenic Highway. The State of California has also designated this portion of SR-38 as a "Scenic Highway" and the U.S. Forest Service (USFS) has designated SR-38 as a "scenic byway." The intent of the SR Overlay District is to "provide development standards that will protect, preserve, and enhance the aesthetic resources of the County." Thus, cumulative impacts in this area can be mitigated to less than significant levels by following the development standards of the SR Overlay District for building and structure placement, project design, access drives, landscaping, roads, undergrounding of utilities, grading and signs, in addition to the use of building materials that are consistent with the general character of the area, and proper lighting techniques to direct light on-site and away from adjacent properties. Although no mitigation measures were specifically recommended to reduce cumulative impacts, Mitigation Measures A-1a through A-4f are required to further reduce the Proposed Alternative Project's impacts to Aesthetics/Light and Glare.

Project-specific impacts to Aesthetics/Light and Glare will be reduced to less than significant levels by the incorporation of mitigation measures, along with standard conditions and Conditions, Covenants & Restrictions (CC&Rs). Similarly, the Proposed Project Alternative's contribution to

Aesthetics/Light and Glare is less than significant when considered in connection with cumulative projects and will not result in a significant cumulative impact.

5.3.2 - Air Quality

The requirement for the assessment of cumulative impacts to Air Quality has evolved recently and now includes discussions of greenhouse gas emissions and global warming. There are no published thresholds for measuring the significance of a project's cumulative contribution to global climate change. Global climate change is an international phenomenon; the regulatory background and scientific data are changing rapidly. However, it is reasonable to apply the same requirements used for criteria pollutants; that significance is when a project results in a cumulatively considerable net increase of greenhouse gases (GHG).

The following four-tiered approach was used to assess cumulative air quality impacts.

- Consistency with the South Coast Air Quality Management District (SCAQMD) project specific thresholds for construction and operation;
- Project consistency with existing air quality plans;
- Assessment of the cumulative health effects of the pollutants; and
- Cumulative impact of global climate change.

Cumulative Health Impacts

The South Coast Air Basin is in non-attainment for ozone, 10-micron or less particulate matter (PM_{10}), Fine particulate matter ($PM_{2.5}$), and Carbon monoxide (CO), which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect the health of sensitive individuals (i.e., elderly, children, and the sick). Therefore, when the concentration of those pollutants exceed the standard, it is likely that some of the sensitive individuals of the population experience health effects.

The localized significance analysis (Section 4.2, Air Quality) demonstrated that during construction activities, no localized significance threshold was expected to be exceeded; therefore, the emissions of particulate matter, primarily in the form of fugitive dust, would not result in a significant cumulative health impact.

Long-term operational emissions are not expected to exceed SCAQMD's significance thresholds. Reactive organic gases (ROG) and Nitrogen oxides (NO_X) are precursors to ozone; and because ozone is a secondary pollutant (it is not emitted directly but formed by chemical reactions in the air), it can be formed miles downwind of the project site. Proposed Alternative Project emissions of VOC and NO_X may still contribute to the background concentration of ozone but such contributions would not be considered cumulatively considerable.

The combination of ozone and PM_{10} can aggravate health effects. $PM_{2.5}$ is a component of PM_{10}. The ambient air quality standard for both PM_{10} and $PM_{2.5}$ are exceeded in the Basin. Operational

emissions of PM_{10} and $PM_{2.5}$ are not expected to exceed the regional significance threshold. Therefore, Proposed Alternative Project emissions may contribute to the background of those pollutants, but such contributions would not be considered cumulatively considerable.

Long-term health effects from residential woodburning are not expected to create a significant impact. Implementation of Mitigation Measures AQ-3 and AQ-4 (identified in Section 4.2, Air Quality) would create an environment where woodburning activities may contribute to the local wood smoke, but such contribution would not be considered cumulatively considerable. Thus, the Proposed Alternative Project's impact to Air Quality is less than significant when considered in connection with cumulative projects.

Greenhouse Gas (GHG) Emissions/Global Climate Change

As demonstrated in the Project Air Quality Analysis (refer to Appendix A) and the information presented in Section 4.2, the Proposed Alternative Project would not conflict with the attainment of the state's goals of reducing greenhouse gas emissions as dictated by AB 32. In addition, the Proposed Alternative Project will include design features that will further reduce the Proposed Alternative Project's contribution to global climate change. As such, the Proposed Alternative Project's potential to contribute considerably (either individually or cumulatively) to a global climate change impact through GHG emissions is less than significant.

5.3.3 - Biological Resources

Significant and unavoidable impacts from development of the Proposed Alternative Project related to Biological Resources have been identified for impacts to bald eagle. Mitigation Measure BR-4 requires that eagle perch locations be preserved in place upon completion of the Proposed Alternative Project, and that any development that may occur within the Proposed Alternative Project site and in the individual lots must avoid impacts to trees larger than 24 inches dbh and their root structures. Still, even with the implementation of Mitigation Measure BR-4 and the establishment of nearly 6 acres of Conservation/Open Space set aside, some trees will still need to be removed from the Proposed Alternative Project site to allow for the development of the 50 residential lots. This is considered a significant and unavoidable project-specific, as well as cumulative, impact.

Six special status plant species have been observed on the Proposed Alternative Project site: ash-gray Indian paintbrush; Parish's rock cress; Big Bear Valley woollypod; Bear valley phlox; purple monkeyflower; and silver-haired ivesia. Impacts to special status plants and plant communities will be reduced by implementation of Mitigation Measures BR-1a and BR-1b, which require creation of a 4.91-acre on-site conservation easement to preserve the 0.69-acre Pebble Plain and 4.91 acres of occupied ash-grey Indian paintbrush habitat, and creation of the 10-acre Dixie Lee Lane Pebble Plain Habitat conservation easement that will mitigate the remaining impacts to ash-grey Indian paintbrush at a 3:1 ratio. Implementation of these Mitigation Measures will reduce impacts to plant species to less than significant levels. When considered in connection with the development of the cumulative

projects, the impacts of the Proposed Alternative Project on special status plant species are less than significant.

A total of 0.69 acres of pebble plain habitat occurs within the Proposed Alternative Project site; however, all of this habitat would be permanently preserved in an Open Space/Conservation easement consisting of a 4.91-acre easement (Lot A) at the westerly end of the Proposed Alternative Project site. The 0.69-acre site is near the center of the easement area, which would be buffered from future development of adjacent residential lots. Approximately 1,511 acres of pebble plain are known to exit in the San Bernardino Mountains (Krantz, 2008), 60 percent (906 acres) of which occurs on public lands. Development of the site would not result in the removal of any of the pebble plain that occurs on the project site. Further, in addition to the 0.69 acre of pebble plain habitat that will be preserved by Proposed Alternative Project implementation, an additional 10 acres of pebble plain habitat will be preserved through the purchase of the off-site mitigation area. When considered in connection with the development of the cumulative projects, the impacts of the Proposed Alternative Project on pebble plain habitat are less than significant.

A total of 50.72 acres of Jeffrey pine forest, including 13.81 acres of open Jeffrey pine forest, would be impacted by Proposed Alternative Project implementation. Approximately 58,526 acres of Jeffrey pine forest occurs in the San Bernardino National Forest and 141,604 acres in the Cleveland, San Bernardino, Angeles and Los Padres National Forests, collectively. Approximately 4.2 acres of open Jeffrey pine forest will be permanently preserved by a conservation easement. Impacts on this vegetation type would be considered cumulatively less than significant since this vegetation type is common throughout the San Bernardino Mountains and other mountain ranges in the region.

A total of 4.0 acres of ruderal lake shoreline would be impacted by Proposed Alternative Project implementation. Man-made lakes are essentially distinct ecosystems, with an aquatic fauna and flora that bears little resemblance to what naturally occurs in the streams that formed them. Impacts on this vegetation type would be considered less than significant.

A total of 2.82 acres of disturbed vegetation in developed areas (SR-38) would be impacted by Proposed Alternative Project implementation. Impacts on this vegetation type would not be considered significant since this vegetation type is considered to have a low biological value.

In sum, when considered in conjunction with the other cumulative projects, the Proposed Alternative Project would add incrementally to the cumulative significant impact on the bald eagle. Accordingly, cumulative impacts to the bald eagle are considered significant. The Proposed Alternative Project would not result in a significant cumulative impact to any other biological resource.

5.3.4 - Hydrology and Water Quality

For purposes of the drainage and water quality analysis, cumulative impacts are considered for projects in the same watershed as the project site, which would also drain into Big Bear Lake. For

purposes of this discussion, it is assumed that the list of cumulative proposed projects would all drain into the lake. The County of San Bernardino follows State standards for water quality. During construction, projects will be required to obtain coverage under the State's General Permit for Construction Activities that is administered by the California Regional Water Quality Control Board (RWQCB). The Proposed Alternative Project will obtain coverage under the statewide National Pollutant Discharge Elimination System (NPDES) permit for construction activities and develop and implement a Stormwater Pollution Prevention Program (SWPPP) to control erosion and protect water quality during the construction phase of the Proposed Alternative Project, as well as operate under an approved WQMP. The SWPPP must also implement other applicable BMPs as needed to keep pollutants away from stormwater. The SWPPP must also identify additional applicable measures taken during the storm season and when storms are anticipated.

It is assumed that any of the cumulative proposed projects would be required to comply with the same standards for urban runoff as outlined in the Santa Ana Region's NPDES Permit and Water Discharge Requirements, as a condition of approval. Each project would be required to prepare and implement a SWPPP for construction and a Water Quality Management Plan (WQMP) for long-term conditions after construction. Therefore, with adherence to the requirements of each project's respective NPDES permit and SWPPP requirements, no cumulative impacts would occur as a result of the Proposed Alternative Project.

5.3.5 - Land Use and Planning

Development of the site under the Proposed Alternative Project would not result in any cumulative significant land use impacts. The Proposed Alternative Project involves a request for a General Plan Amendment from Rural Living – 40 (minimum 40-acre lot sizes) (RL-40) to Single Family Residential with 20,000-square-foot minimum lot sizes (RS-20M). Upon approval of the General Plan Amendment, the Proposed Alternative Project will be developed consistent with the goals and policies of the Bear Valley Community Plan and the San Bernardino National Forest Land Use Management Plan and does not conflict with any applicable Habitat Conservation Plan (HCP) or any Community Conservation Plan.

The current land use designation of the Proposed Alternative Project site, RL-40, is a remnant of the previous General Plan. It appears that subsequent development on adjacent and nearby private properties in the Fawnskin community has converted to a higher density on a tract by tract basis, and now the Proposed Alternative Project site is bordered on the west, northwest and southeast by development with a typical residential lot density of 7,200 square feet or greater. Thus, the Proposed Alternative Project will have a lower density than other residential uses in the immediate area.

It is assumed that as other projects are implemented in the area, each new project will undergo the same review process as the Proposed Alternative Project, in order to preclude potential land use compatibility issues and planning policy conflicts. It is further assumed that cumulative development will progress in accordance with the City of Big Bear Lake and County of San Bernardino General

Plan and Development Code, and that each individual project would be analyzed independent of other land uses, as well as within the context of existing and planned developments, to ensure that the goals, objectives and policies of the General Plans are consistently upheld. Thus, the Proposed Project Alternative's impacts on Land Use and Planning are less than significant when considered in connection with cumulative projects, and will not result in a significant cumulative impact.

5.3.6 - Noise

Implementation of the Proposed Alternative Project, when combined with development of cumulative projects, would contribute to ambient noise levels in the vicinity. This increase would be due to both vehicular traffic noises along local roadways; noise associated with boating activities on the lake; and stationary noise sources from residences and other proposed land uses. The Proposed Alternative Project is required to reduce noise impacts to comply with County noise standards and to adhere to Development Code and General Plan requirements. The analysis of the Proposed Alternative Project showed that development of the project site would not contribute to ambient noise in excess of County noise standards and, therefore, does not contribute to a significant cumulative noise impact. The evaluation of noise impacts is typically determined on a project-by-project basis in order to focus mitigation on a particular noise source. As such, future development proposals within the County would require separate discretionary approval and CEQA assessment, which would address potential noise impacts and identify appropriate attenuation measures where appropriate. Thus, the Proposed Project Alternative's contribution to Noise is less than significant when considered in connection with cumulative projects, and will not result in a significant cumulative impact.

5.3.7 - Public Services

The Proposed Alternative Project site is located in an area that is served by existing public services. Service providers have indicated that the Proposed Alternative Project's incremental impacts can be sufficiently mitigated through various fire protection measures, design features, an Emergency Operations plan, implementation of mitigation measures and the payment of development impact fees and property taxes by future homeowners. Therefore, the Proposed Alternative Project would not result in a significant impact to Public Services when considered in connection with cumulative projects and will not result in a significant cumulative impact.

5.3.8 - Traffic and Circulation

The Proposed Alternative Project would generate approximately 51 trips during AM peak hours, 51 trips during PM peak hours, and a total of 479 daily trips. The San Bernardino County Congestion Management Program (CMP) does not require analysis for projects that generate less than 250 peak hour trips; however, a long-range traffic analysis has been prepared for the Proposed Alternative Project.

A total of 17 cumulative projects were identified by the County of San Bernardino and City of Big Bear staff as affecting the study intersections. Other developments are projected to generate 15,111

trip-ends per day, with 1,455 vehicles per hour during the AM peak hour and 1,455 vehicles per hour during the PM peak hour.

For 2010 With Project traffic conditions, including traffic generated by cumulative projects, no new traffic signals are projected to be warranted as compared to 2010 Without Project conditions. The following study area intersections are currently operating at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

These intersections will continue to operate at unacceptable levels without improvements, but will improve to acceptable levels with the addition of traffic signals with no significant impact due to the Proposed Alternative Project.

For General Plan Buildout With Project Conditions, the following study area intersections would operate at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours without improvements:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

Driveway #1 (NS) at:

- North Shore Drive (SR-38) (EW)

Driveway #2 (NS) at:

- North Shore Drive (SR-38) (EW)

Traffic improvements are needed for existing conditions and projected conditions whether or not this Proposed Alternative Project is implemented. If needed improvements are installed, implementation of this Proposed Alternative Project will not significantly reduce the level of service off-site. Nevertheless, fair share costs for off-site improvements have been calculated in the amount of $48,921 and will be paid as required by Mitigation Measure T-2.

The installation of on-site improvements as required by Mitigation Measure T-1, and the payment of fair share costs of improvements to impacted off-site roadway intersections will reduce traffic and circulation impacts related to the Proposed Alternative Project to a less than significant level. According to the traffic study, all study intersections are expected to operate at a level of service C or better during peak hours for the scenario analyzed with improvements installed. Other cumulative projects would also presumably be subject to fair share costs for necessary intersection improvements; thus, when considered in connection with cumulative projects, the Proposed Alternative Project's cumulative impact on traffic and circulation is less than significant and will not result in a significant cumulative impact.

5.3.9 - Utilities

The Proposed Alternative Project site is located in an area that is served by utilities and has its own water wells on-site that, when developed, will be turned over to the Department of Water and Power (DWP) or County Service Area 53C to administer. Although water service is not presently provided to the project site, the site is immediately adjacent to the Fawnskin Water System, which is owned and operated by the Big Bear Lake Department of Water and Power (DWP). DWP has conducted a Water Feasibility Study (Alda, 2007) and has provided a conditional will-serve letter to the Applicant. Annexation to the DWP's authorized service area is one of three possible water service alternatives. Other alternatives include ownership and operation of the Proposed Alternative Project's water facilities by County Service Area 53C, or the construction of an on-site, 238,600 gallon reservoir and on-site booster station.

The Water Feasibility Study calculates the Water Demand for the Proposed Alternative Project (50-lot subdivision) as:

- 250 gallons per day per connection x 50 lots = 12,500 gallons per day;
- 12,500 gallons per day x 365 days/year = 4,562,500 gallons per year; and
- 4,562,500 gallons per year is equal to 14 acre-feet per year.

The Water Supply for the Proposed Alternative Project's 14 acre-feet per year demand will come from two groundwater basins. Based on two separate reports prepared by Geoscience in 2000 and 2003 (which are appended to the 2005 Final EIR) the annual groundwater recharge for Subarea A of the North Shore Subunit is between 14 and 44 acre-feet per year. In order to be as conservative as possible, the minimum recharge of 14 acre-feet per year will be utilized for Subarea A. There are also existing private wells that withdraw their water supply from Subarea A. Table 4-2 of DWP's 2006 Water Master Plan, prepared by CDM Engineering, shows the "Private Wells Production" within Subarea A as 5 acre-feet per year. Subtracting the 5 acre-feet from the minimum recharge for Subarea A of 14 acre-feet leaves 9 acre-feet available to supply the Proposed Alternative Project. Existing Project Well FP-2 is capable of pumping the 5.6 gallons per minute that will produce the 9-acre-feet per year from Subarea A and will also produce the Maximum Day Demand of 15.27 gpm

(Geoscience Support Services Inc, 2008, Results of Rehabilitation and Aquifer Testing Moon Camp Well FP2).

The remaining 5 acre-feet of Project Demand will be supplied from the Grout Creek Groundwater Subunit, Subarea D. Well FP-4, which was drilled by the developer in the northwest corner of the project site, will produce the 5 acre-feet per year, which is 3.1 gallons per minute (Harich Enterprises, 2009, Well FP4 Driller's Report). Geoscience (2003) reports the groundwater recharge of Grout Creek Subarea D to be between 32 and 99 acre-feet per year, with a midpoint of 66 acre-feet per year. At present, the only groundwater production in this subarea is from 11 private wells and is calculated to be 3 acre-feet per year. The additional 5 acre-feet per year of pumping from Well FP-4, combined with the existing 3 acre-feet per year of pumping, results in 8 acre-feet per year of total pumping, well below the low end of the recharge for Subarea D, which is 32 acre-feet per year.

The third existing, on-site well, FP-3, located to the east of the FP2 well, would not be equipped nor pumped, but will be used as a monitoring well to record groundwater levels.

In summary, the Proposed Alternative Project demand is 14 acre-feet per year. Well FP-2 is capable of producing 5.6 gallons per minute, which is 9 acre-feet per year from North Shore Subunit, Subarea A, and Well FP-4 will produce the 3.1 gallons per minute, which is 5 acre-feet per year from Grout Creek Subunit, Subarea D. Impacts to groundwater levels from pumping from FP-2 and FP-4 will be less than significant, with implementation of Mitigation Measure U1-b, which establishes annual groundwater production limits for FP-2 as 9 acre-feet per year, and FP-4 as 5 acre-feet per year, and implementation of Mitigation Measure U1-c, which stipulates that the grant deeds transferring ownership of Wells FP-2, FP-3 and FP-4 must include the pumping and extraction limitations included in Mitigation Measure U-1b. In addition, if the water purveyor desires to extract groundwater from Well FP-2 in excess of 9 acre-feet per year, the purveyor must conduct an independent environmental analysis and consider potential impacts at that time. Therefore, there is sufficient water available to serve the Proposed Alternative Project, and the impacts in regard to water supply for the project are considered less than significant with mitigation, when considered in connection with the development of other cumulative projects.

In addition to project design features and standard conditions and uniform code requirements that will be incorporated into the Project, Mitigation Measures U-1 through U-3 will be implemented to further mitigate utility impacts in the areas of solid waste, wastewater, natural gas, and electricity to the maximum extent feasible, which are less than significant with mitigation. Therefore, the Proposed Alternative Project would not add incrementally to a significant cumulative impact to utilities when considered in connection with the development of other cumulative projects and will not result in a significant cumulative impact.

5.3.10 - Summary

The evaluation of cumulative impacts has shown that all impacts associated with the Proposed Alternative Project can be reduced to less than significant levels except for Biological Resources, due to impacts to the bald eagle. When considered in conjunction with the other reasonably foreseeable cumulative projects, the Proposed Alternative Project would add incrementally to the cumulative significant impact to the bald eagle.

SECTION 6: OTHER CEQA ANALYSIS

This section includes a discussion of the following issues required by California Environmental Quality Act (CEQA) to be analyzed in a project Environmental Impact Report (EIR): Significant Environmental Effects Which Cannot be Avoided if the Proposed Project is Implemented; Significant Irreversible Environmental Changes Which Would be Caused by the Proposed Project Should it be Implemented; and Growth Inducing Impacts.

6.1 - Significant Environmental Effects Which Cannot Be Avoided If the Proposed Project Is Implemented

CEQA Guidelines Section 15126.2 (b) requires that an EIR identify any significant environmental impacts that cannot be avoided. The analysis of potential environmental effects that could occur with implementation of the Proposed Alternative Project were addressed in Section 4, Environmental Impact Analysis, of the Revised and Recirculated Draft EIR. The findings of that analysis were that the Proposed Alternative Project - Moon Camp Residential Subdivision, consisting of 50 residential lots on approximately 62.43 acres, including approximately 8.6 acres of open space and other non-residential uses such as flood control and well sites, would have a significant impact on Biological Resources. Specifically, significant and unavoidable impacts to the bald eagle population were identified. Mitigation Measure BR-4 would mitigate impacts by requiring replacement of perch trees at a ratio of 5:1 with the creation of artificial perch trees along the shoreline designated open space. In addition, any development that may occur within the project site and in the individual lots must avoid impacts to these trees and their root structures. All construction or landscaping improvements, including irrigation, will be prohibited on or around the exposed root structures or within the dripline of these trees. However, because the Proposed Alternative Project would result in a permanent change in existing conditions under which the bald eagle currently occupies the site and vicinity, impacts would remain significant and unavoidable.

No other impacts were identified that could not be mitigated to a less than significant level.

6.2 - Significant Irreversible Environmental Changes Which Would be Caused by the Proposed Project Should it be Implemented

CEQA Guidelines Section 15126.2(c) requires that an EIR include a discussion of Significant Irreversible Environmental Changes associated with the use of non-renewable resources during the initial and continued phases of a project. Approval of the Proposed Alternative Project would cause irreversible environmental changes, as follows:

- Commitment of land, which would be physically altered by the proposed development of the 50 residential lots and related infrastructure;

- Alteration of the project site through the removal of some trees and other vegetation to accommodate grading and construction;
- Commitment to residential and recreational uses which intensify land uses on the project site, thus causing incremental increases in vehicular activity in the surrounding circulation system, resulting in associated increases in air emissions and noise levels; and
- Utilization of various new raw materials, such as lumber, sand and gravel for construction. Some of these resources are already being depleted worldwide. The energy consumed in development and maintaining the site may be considered a permanent investment.

6.3 - Growth Inducing Impacts

CEQA Guidelines Section 15126.2(d) requires the evaluation of growth-inducing impacts of a proposed project. This discussion must address ways a project could encourage economic and population growth, or construction of additional housing in the surrounding area, either directly or indirectly. Also required is a discussion of project characteristics, which may encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively.

Growth inducement can take many forms. A project can remove barriers, provide access, or eliminate other constraints, which encourage growth that has already been approved and anticipated through the General Plan process. The "planned" growth would be reflected in land use plans that have been developed and approved with underlying assumptions that adequate supporting infrastructure will be built. This is perhaps best described as accommodating or facilitating growth, but for the purpose of this section, the term "inducing" is used.

Implementation of the Proposed Alternative Project would result in the development of up to 50 residential lots. Using the City of Big Bear Lake average household size multiplier of 2.31 persons per household, the Proposed Alternative Project has the potential to increase Fawnskin's population by approximately 115 persons at buildout, or approximately 100 less than under the Original Proposed Project (92 Lots). The potential population growth under the Proposed Alternative Project represents an approximate 28 percent increase over the Community's permanent population estimate of 409 persons (2000) and an approximately 8 percent increase over the Community's peak weekend/holiday period population of 1,428 persons. Implementation of the Proposed Alternative Project, like the Original Proposed Project, would be considered growth inducing inasmuch as it would result in the construction of additional housing, consequentially fostering population growth. However, based on the findings of the Environmental Impact Analysis (Section 4 of the Revised and Recirculated Draft EIR), the Proposed Alternative Project would not require the extension of new infrastructure, since infrastructure is available adjacent to the project site, and utility providers have indicated the ability to serve the site.

Overall, development under the Proposed Alternative Project would not require the substantial development of unplanned/unforeseen support uses and services. As a result, the Proposed Alternative Project would not result in significant growth-inducing impacts.