



**BIG BEAR AREA
REGIONAL WASTEWATER AGENCY**
P.O. Box 517, 122 Palomino Drive, Big Bear City, CA 92314-0517
(909) 584-4018 • FAX (909) 585-4340
Email: info@bbarwa.org • Internet: www.bbarwa.org

June 18, 2002

Michael Harden
Environmental Analyst
RBF CONSULTING
14725 Alton Parkway
Irvine, CA 92618-2027

Subject: Moon Camp Environmental Impact Report

Dear Mr. Harden:

This is in response to your letter dated June 6, 2002 and the attached Sewer Service Questionnaire for the Moon Camp Residential Subdivision – Tentative Tract Map No. 16136 Environmental Impact Report. The following is a response to your questions:

1. The proposed project would connect to the County Service Area 53B (CSA 53B) sewer system as addressed in the CSA 53B Sewer Feasibility Study report prepared on September 27, 2002. Sewage from the CSA 53B system would be transported via the Big Bear Area Regional Wastewater Agency (BBARWA) North Shore Interceptor/Force Main system to the regional wastewater treatment plant.

At this time, we anticipate that there will be sufficient capacity for the proposed project. Our Consulting Engineer will verify the capacity by developing a computer model for capacity analysis of the North Shore Interceptor System starting July 1, 2002. The dry weather capacity of the wastewater treatment plant is 4.8 million gallons per day. The annual average influent flow to the treatment plant for 2001 was 2.1 million gallons per day.

2. Refer to the CSA 53B Sewer Feasibility Study report. Since the exact development housing floor plan was not available to the CSA 53B engineer performing the feasibility study, 92 equivalent dwelling units were assumed for the project. A unit wastewater flow coefficient of 215 gpd/EDU (average basis) was typically estimated for the CSA 53B area, with the total average daily flow at 19,780 gallons per day.
3. Implementation of the proposed project would present a significant increase in the service demand based on the estimated flow of 19,780 gallons per day, which represents an

~ JOINT POWERS AGENCY ~

Big Bear City Community Services District • City of Big Bear Lake • San Bernardino County Service Area 53B

increase of approximately 25% of the current average daily dry weather flow of 80,000 gallons per day.

4. If CSA 53B should approve the project, BBARWA is capable of providing service through its interceptor sewer and regional treatment plant, provided that all required connection fees are paid in full.
5. I addressed other significant project impacts and requirements for the proposed Conditional Use Permit in my letter to Tracy Creason of the San Bernardino County Land Use Services Department/Planning Division, dated February 28, 2002 (enclosed). This included the relocation of the 10" force main and the installation of new air release vaults with odor control units to control potential nuisance odors. The project developer must submit plans for the above mitigation measures to BBARWA for approval. The project developer will be required to pay all costs related to the mitigation measures.

One other thought, is the potable water supply adequate for this project?

6. The project developer will be required to pay all applicable CSA 53B and BBARWA connection fees as determined by the San Bernardino County Special Districts. Standby fees may be required for unimproved parcels within 200 feet of the available sewer system. The project developer must pay all costs related to the mitigation measures in response No. 5 above.

If you have any questions or require additional information, please contact me at (909) 584-4032, ext. 1#.

Sincerely,
BIG BEAR AREA REGIONAL
WASTEWATER AGENCY


Jerry Rang
Plant Superintendent

Attachments

CC: Tom Sutton, CSA 53B
Dottie Saville, Dept. of Water & Power
Wilson So, So & Associates

BOARD OF TRUSTEES

Dr. Larry Poland
Phil Hamilton
Mrs. Kathleen Campbell-Kite
Gary Thielfoldt
Dr. Ken Turney
Mr. Ronald Peavy
Superintendent

Bear Valley Unified School District

Educating for Success

BEAR VALLEY SCHOOLS

Big Bear Elementary
Big Bear High School
Big Bear Middle School
Glen Martin Elementary
North Shore Elementary
Chautauqua High School
Baldwin Lane Elementary

❖ P.O. Box 1529 ❖ 42271 Moonridge Road ❖ Big Bear Lake, CA 92315 ❖ (909) 866-4631 ❖ Fax (909) 866-2040 ❖

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JUN 20 2002

RBF CONSULTING

SCHOOL FACILITIES QUESTIONNAIRE MOON CAMP RESIDENTIAL SUBDIVISION – TENTATIVE TRACT MAP NO. 16136 ENVIRONMENTAL IMPACT REPORT RESPONSES

1. Please list the name and address of all elementary, junior high and high schools that are available to serve the project site.

North Shore Elementary School
765 North Stanfield
P.O. Box 1887
Big Bear Lake, California 9215

Big Bear Middle School
41275 Big Bear Boulevard
P.O. Box 1607
Big Bear Lake, California 92315

Big Bear High School
351 North Maple Lane
P.O. Box 1708
Big Bear Lake, California 92315

2. What is the current enrollment of each school in the vicinity of the project, and what is the maximum capacity of each school?

	<u>Current Enrollment</u>	<u>Maximum Capacity</u>
North Shore Elementary School	614	588
Big Bear Middle School	575	408
Big Bear High School	921	697

3. What is the distance of each school to the project site?

North Shore Elementary School	3.0 miles
Big Bear Middle School	4.5 miles
Big Bear High School	8.0 miles

**ENVIRONMENTAL IMPACT REPORT
RESPONSES**

June 18, 2002

Page 2

4. What are the average student generation rates per dwelling unit for the proposed project at each school level? Will new facilities be required?

The average student generation rate per dwelling unit as calculated in the most recent "Developer Fee Justification and Impact Analysis," October 2000, is .20 students per unit.

The three schools identified do not have adequate school housing capacity, and replacement facilities are required.

5. Do you anticipate that project implementation would result in the need for physical additions to your school district (*i.e.*, construction of new school facilities)?

Currently the District does need new school facilities to meet the demand of inadequately housed students.

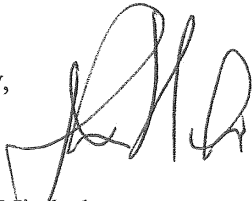
6. Is there any other relevant information regarding significant project impacts?

There is no other relevant information regarding project impacts.

7. Are there any assessment fees or other required or recommended mitigation measures for the project? If so, please explain.

Consistent with the Government Code, the District does collect Developer Fees for all residential and commercial projects within the school district. These fees would be calculated and applied at the time of the construction permit approval.

Sincerely,



Dr. John Niederkorn
Director of Business

JN/sc

G:\Reports\School Facilities Questionnaire Response 6-18-02



GARY PENROD, SHERIFF

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JUN 24 2002



June 28, 2002

RBF CONSULTING

Big Bear Station
P.O. Box 2803
Big Bear Lake, CA. 92315
(909) 866-0100

Michael Harden, Environmental Analyst
R.B.F. Consulting
P.O. Box 57057
Irvine, CA. 92619-7057

SUBJECT: Moon Camp Environmental Impact Report

Dear Mr. Harden:

In response to your request on the Environmental Impact Report, we have reviewed the tentative track map for the proposed 95 lot track #16136 (Moon Camp Residential subdivision).

The Big Bear Sheriff's Station is located at 477 Summit Blvd., Big Bear Lake, CA. 92315, six miles east of the proposed project site. The station is functionally organized into two distinct groups to serve the citizens of the Big Bear Valley. The station serves as host to the City of Big Bear Lake's contract law enforcement services, personnel, as well as staff to serve the unincorporated area. Additionally, a Type I jail facility is housed within the County building. We have nine patrol deputies, twenty-four coverage assigned to unincorporated area, one detective, and support personnel.

The Big Bear Station unincorporated population is estimated at 15,800. These numbers were taken from the population estimates from the State of California demographics cities and counties as of January 1, 2001. The average response time for emergency type calls, the average response time for emergency type calls is 6.97 minutes within the jurisdiction. Total average response time in the unincorporated areas 28.59 minutes. The response types and times may vary plus or minus depending on the number of calls for service received. We handled 9,028 calls for service in the unincorporated area of Big Bear Valley from January 1, 2000 to January 1, 2001. This information was collected from the Sheriff's Crime Analysis Unit.

The anticipated impact the Department may incur as the result of this type of development are the following: Increase response to burglar alarm calls, general criminal investigations, missing or lost persons, emergency medical calls, thefts from boats, and vandalism. Also, concerns for proper road signage, street lights, residence addresses posted, snow conditions, snow removal from residential roadways, coordination with the California Highway Patrol, and CALTRANS for road closures and/or traffic accidents, private roadways within the development or will the roadways be turned over to the county for responsibility and maintenance?

RBF

Michael Harden
June 18, 2002
Page 2

Speed limits posted per the California Vehicle Code, within the residential area, and accessibility through the gated entry.

The San Bernardino County Development Code will also address issue or concerns that will affect this type of proposed project.

Should you have any questions that we may help you with, please call me at the Big Bear Sheriff's Station, (909) 866-0100.

Sincerely,

A handwritten signature in cursive script that reads "Bobby R. Phillips". The signature is written in dark ink and is positioned above the typed name.

Bobby R. Phillips, Captain
Big Bear Station Commander

DAD:BRP:mj

DEPARTMENT OF WATER AND POWER



June 28, 2002

Scott Magorien
RBF Consulting
14725 Alton Parkway
Irvine, CA 92618-2027

RE: MOON CAMP ENVIRONMENTAL IMPACT REPORT

Dear Mr. Scott Magorien:

This is in regards to water service for the proposed Moon Camp Subdivision, Tentative Tract # 16136. This particular project is located at the west boundary of the North Shore subunit, which is just east of the Grout Creek subunit that feeds the town known as Fawnskin. I will be sending Michael Harden, from your company, answers to the questions outlined in his June 6 letter.

In regards to Question # 6, that you requested information on, I offer the following:

6) In March of 2002, our consulting engineer completed a feasibility Study. The feasibility Study estimates that, upon build out, this tract would create a demand of an average of 41,400 gallons per day, and a maximum day demand of 103,500 gallons per day. The DWP's most recent Master Plan was completed in 1997, prior to this proposed development.

There are two existing wells located on this proposed site, one on the south side of the highway, and one on the north side. Combined, these wells produce approximately 150 gallons per minute. DWP can serve this project provided the two wells be fully equipped to pump 150 gallons per minute, and are turned over to the DWP to incorporate into our water system.

Big Bear Valley is currently entering its fourth year of drought; therefore, our hydrogeologist has recommended that a controlled pump test, with a duration of 24 hours be completed, in addition to a full Title 22 water quality analysis. These tests would need to be coordinated through our consultant, Dennis Williams of Geo Science.

I apologize for the delay in getting this information to you. If you have any additional questions, please contact me at (909) 866-5050.

Sincerely,

Dottie Saville
General Manager

G/CorresAdmin/MooncampERIRBF6-02

Bear Valley Electric Service

P.O. Box 1547 42020 Garstin Rd. Big Bear Lake, California 92315
A Division of Southern California Water Company

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JUL - 5 2002
RBF CONSULTING

Telephone (909) 866- 4678
Fax (909) 866-5056

July 2, 2002

RBF Consulting
Attn: Michael Harden
P.O. Box 57057
Irving CA 92619-7057

Subject: BVES response to Moon Camp EIR Request

What is the present service area and/or location of your facilities? Are any of these facilities within the proposed project boundaries as shown on the attached site vicinity map?

BVES service area covers all of the proposed project. A power line currently traverses the area in an east west direction. Some is located along the existing highway, and some away from the highway.

What is the present capacity an/or nature of your facilities? Please provide any available information necessary to evaluate existing conditions in the project area and potential impacts.

The existing line is 4160/2400 volts, and has #2 copper as its conductor. The distribution line is fed by a substation located just west of Stanfield Cutoff, which in turn is fed by a 34Kv transmission line whose source is the Goldhill switching center located near the Big Bear Dump. The transmission line has a section of #2 copper that limits its capacity. Winter loads have reached the maximum allowed on the line. Substantial load additions may cause a need for facilities to be upgraded.

What is the projected electrical demand for the project based upon the information provided.

This is unknown with the information sent. Other tracts with larger lots and houses, the diversified loading estimates have been 4 – 5 Kw per lot. If this tract is similar, there would be a substantial loading increase upon build out.

Can your facilities in the service area supply the required additional electricity currently or upon project completion?

Since the source transmission line has reached its peak, any large load addition may be difficult to serve. There would be several alternatives to look at to relieve load on the transmission. One alternative would be to shift load to another transmission line, but the other line is also operating near capacity. Another alternative would to investigate a distributed generation option.

Do you anticipate any project related impacts to your facilities? Specifically, will the proposed project impact service or require new or modified facilities? If so, please list/summarize additions or modifications?

The total length of the distribution line running through the project area will probably need to be relocated. The current overhead line, would need to be reconstructed as an underground line along the new highway right of way. From Stanfield the existing distribution feeder proceeds westerly for 2.6 miles underground, then traverses overhead. Undergrounding through this tract would leave a short section of overhead line. This overhead section would have to be investigated to determine if it would also need to be placed underground.

Do you anticipate any short term construction or related impacts, such as a possible disruption of service?

There should be very minimal impacts and disruption of service.

Is there any other relevant information regarding potential significant impacts of the project?

Tap lines to serve individual lots would be made under our tariff rule 15 and 16, Any relocation and other related cost would be paid for by the developer. The extent of relocation and other costs is unknown at this time.

Do you require or recommend any mitigation measures for any project impacts?

BVES operates under tariff rules as set by the CPUC, and mitigation would also fall under those tariff rules. Any mitigation would occur by having to maintain the existing level of service to our existing customers, while adding new load to the system. As mentioned above, a distributed generation option could be required. If this is determined, placement of a generator would need to be placed on a parcel within the development or on a parcel provided by the developers.

Please call at 909-866-4678, if you have any questions.



Mark Abraham
Engineering Supervisor

C: Roger Kropke



July 14, 2002

Mike Harden
RBF Consulting
PO Box 57057
14725 Alton Parkway
Irvine, CA 92618-2027

Subject: **Natural Gas Service, Fawnskin**
Your Project # JN 10-101901.001, Moon Camp Project

Dear Sir:

The following information is submitted per your request 7/10/2002.

1. What is the present service area and /or locations of your facilities? Are any of these facilities within the proposed project boundaries as shown on the attached Site Vicinity Map?

Natural Gas "Main" pipelines are installed in the right-of-way of Northshore Drive aka State Hwy 38.

2. What is the present capacity and/or nature of your facilities?

Capacity is sufficient to provide natural gas for typical residential customers.

3. Please provide estimated gas consumption factor on the basis of the information provided?

I don't understand this question.

4. Do you anticipate any project related impacts to your facilities in the service area? List or summarize.

No.

5. Do you anticipate any short-term construction related impacts to the service area, such as the possible disruption of service?

No.

6. Do you require or recommend any mitigation measure for any project impacts noted above?

No.

7. Is there any other relevant information regarding potential impacts of the project?

No.

Please refer to the enclosed maps. Locations of the gas lines are for general reference only. Exact locations can only be determined by field locating.

A "Request to Serve" should be submitted to the SWG Sale Office at (760) 951-4018.

If you have any further questions please contact me at (760) 951-4016.

Best Regards,

Timothy E. Cook
Engineering Manager
Southern California Division
Tim.Cook@SWGas.com

TEC/cj



SOUTHWEST GAS CORPORATION

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JUL 22 2002
RBF CONSULTING

July 17, 2002

Mike Harden
RBF Consulting
PO Box 57057
14725 Alton Parkway
Irvine, CA 92618-2027

Dear Sir:

**Subject: Natural Gas Service, Fawnskin /
Project # JN 10-101901.001, Moon Camp Project**

The following information is submitted per your request 7/10/2002.

1. What is the present service area and /or locations of your facilities? Are any of these facilities within the proposed project boundaries as shown on the attached Site Vicinity Map?

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3. Please provide estimated gas consumption factor on the basis of the information provided?

I don't understand this question.

4. Do you anticipate any project related impacts to your facilities in the service area? List or summarize.

No.



5. Do you anticipate any short-term construction related impacts to the service area, such as the possible disruption of service?

No.

6. Do you require or recommend any mitigation measure for any project impacts noted above?

No.

7. Is there any other relevant information regarding potential impacts of the project?

No.

Please refer to the enclosed maps. Locations of the gas lines are for general reference only. Exact locations can only be determined by field locating.

A "Request to Serve" should be submitted to the SWG Sale Office at (760) 951-4018.

If you have any further questions please contact me at (760) 951-4016.

Best Regards,

Timothy E. Cook
Engineering Manager
Southern California Division
tim.cook@swgas.com

TEC/jdt



So & Associates Engineers Inc.

16209 KAMANA RD., SUITE 100 • P.O. BOX 1712 • APPLE VALLEY, CA 92307 • PHONE (760) 242-2365 FAX (760) 242-3083

July 26, 2001

101.0110-114

Special Districts Department
Water & Sanitation Division
12402 Industrial Blvd., Bldg. D, Suite 6
Victorville, CA 92392

Attention: Mr. Thomas Sutton
Division Chief

Reference: County Service Area 53, Improvement Zone B (CSA 53-B) Sewer Feasibility
Study for APN # 0304-091-12,13 and 0304-082-04 (Mr. Michael Rafferty)

Dear Mr. Sutton:

In accordance with CSA 53-B (District) authorization, SAE staff have completed the subject feasibility study for APN 0304-091-12, 13 and 0304-082-04 for connection to CSA 53-B sewer system. We are pleased to submit the final feasibility study report for District's review and acceptance. All initial review comments have been incorporated.

A. Wastewater Flow From the Proposed Development

The proposed project is a housing development located in the Northeast 1/4 of Section 13, Township 2 North and Range 1 West. The proposed project will consist of 92 single family housing lots as shown in Figure 1 and the tentative Tract map. The sewer capacity requirement for the proposed project will be determined based on equivalent dwelling units (EDUs). For this study, each subdivided lot will be considered as one EDU and average wastewater flow per EDU in the CSA 53 Fawnskin area is typically estimated at 215 gpd (gallons per day). In this case, the proposed project will be assigned a maximum occupancy of 92 EDUs with an average flow at $215 \text{ gpd/EDU} \times 92 = 19,780 \text{ gpd}$. For preliminary design purpose, a peaking factor of four will be used. The estimated peak wastewater flow immediately downstream of the proposed development will be 79,120 gpd (54.9 gallons per minute).

B. Existing Sewer System Capacity Review and Buy-In Cost

The existing sewer system located to the east of Project site should be capable of handling the wastewater flow from the proposed development based on estimated flows as discussed above. At present, no internal collection sewer system design has been presented. The Project developer

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1



So & Associates Engineers Inc.

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(through its civil engineer) will be required to submit the proposed internal collection system to CSA 53B for review and approval.

County Service Area 53-B Local Sewer Connection Fee: CSA 53B has established a 2001-2002 local sewer connection fee at \$1,088.59 per equivalent dwelling unit (EDU). These fees and charges were developed through a "rate study" performed by the consulting firm of Black & Veatch for all of the County Service Areas. The study included recommendations on capital funds required to construct infrastructures to ensure adequate capacity in the District's water and sewer systems. The local sewer connection fee is estimated at: 92 EDUs x \$1,088.59/EDU = \$100,150.28. Depending on project phasing, this fee is subject to further inflationary adjustments.

C. Estimate Cost of System Improvements

On-Site Facilities: The proposed development will be entirely responsible for all costs of internal collection sewer facilities including manholes and connection to the CSA 53-B system at location(s) approved by CSA 53B. All on-site gravity sewers must be minimum 8-inches diameter. All on-site facilities must meet CSA 53-B standards and specifications, and construction plans must be submitted for plan check and approval by District's engineer.

Off-Site Facilities: A grading plan and sewer layout plan of the proposed development were not available for this study. Referring to Figure 1, the proposed development may be able to convey part of the wastewater flow via gravity sewer to the existing Pump Station "B"; and some of the subdivided lots may require additional on-site sewage lift station(s). CSA 53-B staff and engineer will continue to monitor and upgrade the collection sewer system to ensure adequate capacity and reliable service to its customers.

D. Regional Connection Fee

Regional connection fee imposed by BBARWA (Big Bear Area Regional Wastewater Authority) for sewage treatment and disposal are presently assessed at \$2,298 per equivalent dwelling unit (EDU) and an additional \$100 fee for the Fawnskin area (CSA 53-B). The above connection fees are subject to adjustment each year. The exact regional connection fees for the proposed project will be reviewed at the time when application is made to connect to the CSA 53B sewer system, based on the most current project construction plans. The estimated regional connection fee is as follows:

$$92 \text{ EDUs at } \$ 2,298/\text{EDU} = \$ 211,416$$



So & Associates Engineers Inc.

16209 KAMANA ROAD, SUITE 100 • APPLE VALLEY, CA 92307
(760) 242-2385 • FAX (760) 242-3083

E. Plan Check/Inspection Fee

The on-site and off-site sewer line and connection details must be submitted through the Special Districts Department for plan check and approval per the District rules and regulations (current plan check fee schedule). Prior to start of construction, the developer or the contractor must also deposit with the Special Districts Department the required inspection fee, again per District rules and regulations. All of the above fees are based on the proposed pipeline design footage.

F. Monthly User Fee

The monthly user fee will be determined by the CSA 53B staff at the time the sewer connection application is made (based on District's rules, regulations and the estimated number of EDUs). The current monthly user fee is \$ 21.26/EDU.

G. Summary

Based on limited information provided by the developer's engineer, the following briefly summarizes the various sewerage costs and connection fees:

- On-site collector sewer and lift station(s) = Developer to pay for the costs
- Off-site sewer extensions = Developer to pay for the costs
- Local Sewer Connection fees = \$ 100,150.28
- Regional Connection Fee = \$ 211,416

We trust that the information provided in this report will be helpful to the developer and the Special Districts Department. Information provided in this letter report is valid for a period of one year from date of the final report.

Very truly yours,

Wilson F. So, P.E.
District Engineer

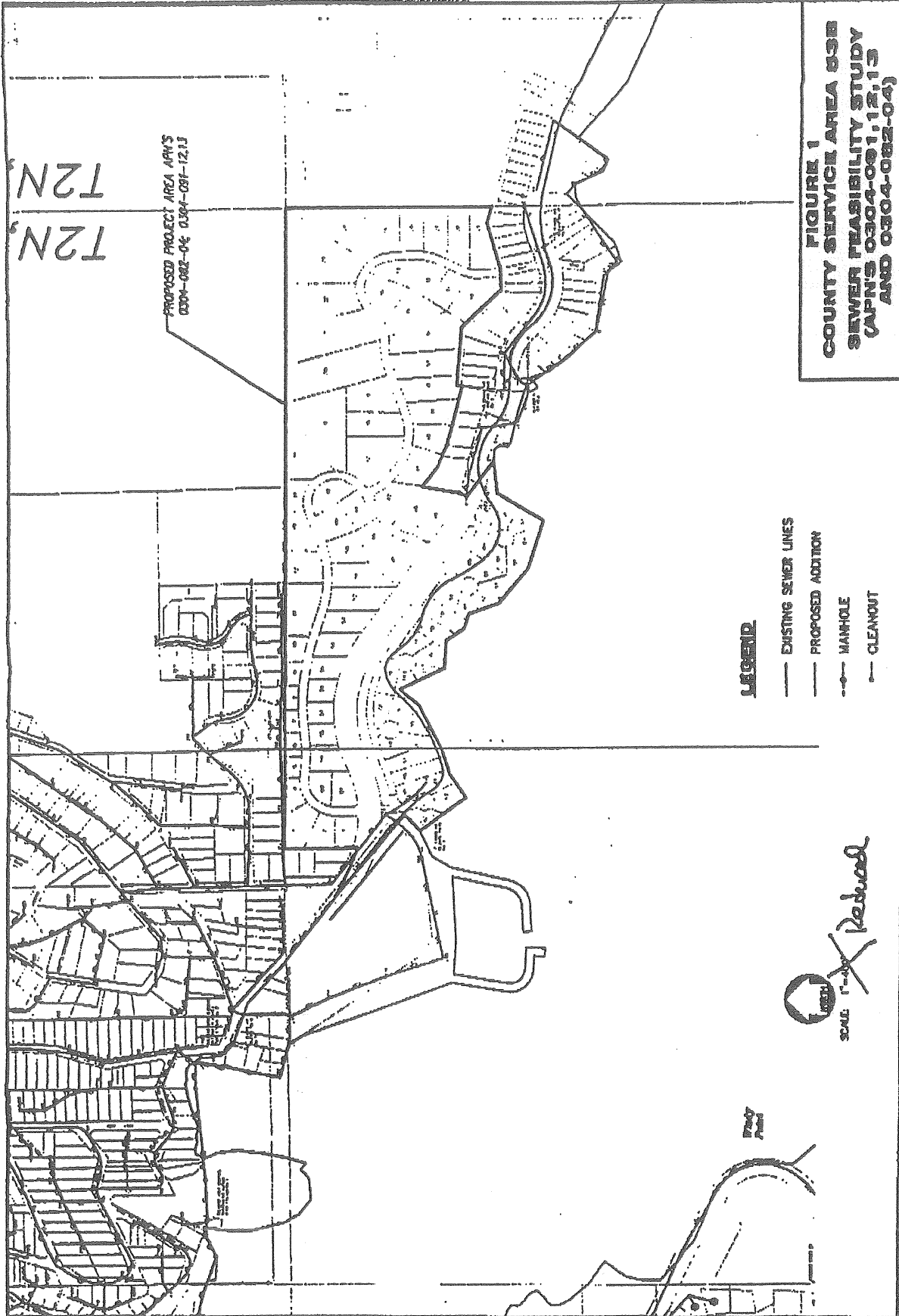


FIGURE 1
COUNTY SERVICE AREA 838
SEWER FEASIBILITY STUDY
(APN'S 0304-081, 12, 13
AND 0304-082-04)

DEPARTMENT OF WATER AND POWER



August 8, 2002

Michael Harden
RBF Consulting
14725 Alton Parkway
Irvine, CA 92618-2027

RECEIVED
AUG 12 2002
RBF CONSULTING

RE: MOON CAMP ENVIRONMENTAL IMPACT REPORT

Dear Mr. Harden:

In response to your questions regarding water service for the proposed Moon Camp development I offer the following information:

- 1) Fawnskin is located in the Grout Creek sub-basin, which has an annual projected safe yield of 200 acre-feet. Moon Camp is located at the western boundary of the North Shore sub-basin. The North Shore sub-basin has an estimated safe yield of 260 acre-feet per year. The annual use for the Fawnskin area is 136 acre-feet, the daily flow is .5cfs, and the peak demand is .2 MGD.
- 2) The projected demand for the project is 72 GPM (41,400 GPD)
- 3) There are two existing wells on the project site. The closest DWP water mainline is located at North Shore Drive and Canyon Road. The closest Reservoir is Cline Miller, which is located north of the project site. (See attached maps for locations.)
- 4) Grout Creek sub-basin extracts an average of 126 acre-feet per year (41.2 million gallons). There are currently no customers in the western portion of the North Shore sub-basin, so nothing is extracted there at this time. Existing water quality is good.
- 5) See attached feasibility study from our engineers, So & Associates, which outlines the new facilities required.
- 6) See attached letter to your consultant, Scott Magorien, regarding answers to question # 6.

Mooncamp EIR

Page 2

- 7) We are still checking on whether or not the proposed project is subject to Senate Bill 610 and/or 221.
- 8) Pending outcome of well testing, as addressed in the June 28, 2002 letter regarding water demands and existing wells.
- 9) Must following DWP regulations regarding limitation on landscaping and watering hours, and must use Xeriscape. Private wells should not be allowed due to limited groundwater supplies available. Current connection fees are \$4,086 per residential connection (payable at the current rates when connecting to the Water System). Also, see attached letters addressing # 5 & 6 above.

I apologize for the delay in getting this information to you. If you have any additional questions please call me at (909) 866-5050 or email me at dwp@bigbear.net. Thank you!

Very truly yours,



Dottie Saville
General Manager

Enclosures

G/CorrespAdmin/MooncampEIR2nd

DEPARTMENT OF WATER AND POWER



RECEIVED
FEB 10 2003
RBF CONSULTING

January 6, 2003

Mike Harden
Environmental Analyst
RBF Consulting
P.O. Box 57057
Irvine, CA 92619-7057

RE: MOON CAMP ENVIRONMENTAL IMPACT REPORT

Dear Mr. Harden,

The following comments are in response to the questions raised in your letter dated December 11, 2002, in the order they were raised.

1. The proposed Moon Camp development is located immediately adjacent to the City of Big Bear Lake, Department of Water and Power (DWP) service area. The next closest water purveyor's (Big Bear City Community Services District) water delivery facilities is more than four miles from the site. The DWP is the only public water agency capable of supplying this project. I do not believe LAFCO would have to take any formal action to allow the DWP to serve this project.
2. The DWP Board of Commissioners is considering placing limitations on the number of new water connections within the Big Bear Lake, Moonridge, Erwin Lake, Sugarloaf, and Lake Williams service areas and has plans for addressing the issue during one or more special meetings in March and April. To date, connection limitation discussions have not focused on the Fawnskin service area.
3. This project development includes provision for two fully functional wells being added to the DWP system. Based upon our current understanding, we anticipate these wells will provide an adequate supply of water to meet the project water demands. Should the Board of Commissioners enact drought-related emergency water conservation measures, those measures would apply to the entire DWP service area, including this project.

Mike Harden
RBF Consulting
January 6, 2003
Page 2

4. This question has been addressed in Item #2 above.
5. The well testing and performance requirements detailed in our letter dated June 28, 2002, regarding the two existing wells FP-2 and FP-3, are unchanged. Should the results of the testing prove the wells are inadequate in either production capacity or quality, the developer will be required to conduct additional exploratory and construction activities to secure a supply acceptable to the DWP.
6. The DWP does not currently have a Water Master Plan that includes the Fawnskin water system.
7. See Item #6 above.
8. The conditions of approval of the Moon Camp project required by DWP are as follows, and were initially itemized in a March 13, 2002 letter from our Engineer, So & Associates Engineers, Inc.
 - a. Submit water plans (on-site) for review by DWP to ensure water mains do not conflict with the BBARWA 10-inch sewer main (which will be relocated at developer's cost).
 - b. Drill and/or equip two supply wells to DWP standards and dedicate these facilities and water rights to DWP.
 - c. Within the proposed tract, no individual private irrigation wells will be permitted.
 - d. Advance funds towards constructing new reservoir and pipeline improvements at Clinemiller (with an estimated project cost of \$481,100) and dedicate these facilities to the DWP. If other parcels of land can benefit by the off-site improvements based upon review by DWP's engineer, a "reimbursement agreement" will be considered by DWP.
 - e. Pay other component (except source, storage, and transmission) of the connection fee to DWP at the time of application for water service for specific subdivided parcels.
 - f. Pay plan check, inspection, and water meter installation charges as discussed in this Feasibility Study Report.

Mike Harden
RBF Consulting
January 6, 2003
Page 3

- g. DWP encourages low water usage landscape designs (turf limitation) to achieve water conservation. This may in turn lower the water supply demand. The developer is required to submit landscaping plans for review by the DWP that satisfy mandatory regulations pertaining to landscaping and irrigation as detailed in City of Big Bear Lake Ordinance No. 2002-323 (copy attached).

Please contact me if you have questions/comments.

Very truly yours,



DOTTIE SAVILLE
General Manager

DS:RLB

Enclosure

c: Scott Heule

From: <john_niederkorn@bigbear.k12.ca.us>
To: <mharden@rbf.com>
Date: 11/26/02 7:54AM
Subject: Mooncamp


Regarding Mooncamp's proposed development and impact on Bear Valley Unified

Bear Valley Unified is prepared to serve the projected students that might move into the proposed Mooncamp development. Our Developer Fee Justification Study, which is conducted every two years, projects that approximately 20 students would be generated by this development. Based upon current demographics, a .21 student per housing unit is the calculated student loading factor for our school district.

Bear Valley Unified is currently in year 4 of a modest enrollment decline. We would hope that we would be experiencing a modest enrollment growth instead. The development of Mooncamp would support a modest enrollment growth.

The District currently collects Developer's Fees for new construction. The current residential rate is \$.82 per square foot. This rate is unique among California School Districts because it is significantly less than the State Maximum Allowable. This lesser developer fee rate is again determined by the developer fee justification study and is indicative of the modest demand placed on school district facilities due to the projected student enrollment growth projection.

John Niederkorn
Director of Business





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September 7, 2004

137.0020-27
(Ref. 137.0020-18)

City of Big Bear Lake
Department of Water & Power
PO BOX 1929
Big Bear Lake, CA 92315-1929

Attention: Mr. Scott Heule
Assistant General Manager

Reference: **Water Feasibility Study Update for Tentative Tract 16136 (Moon Camp)**
(APN# 0304-091-12,13 and 0304-082-04)

Dear Mr. Heule:

In response to City of Big Bear Lake Department of Water and Power (DWP) request and authorization, our staff has completed a system review and hydraulic analysis to update the water feasibility study for Tentative Tract 16136. We are pleased to submit this Final Report for your review and approval.

A. PROJECT DESCRIPTION

The proposed project is a housing development located in the Northeast 1/4 of Section 13, Township 2 North and Range 1 West. The proposed project will consist of 92 single family housing lots as shown in Figure 1-B. Each residential lot will be considered as one equivalent dwelling unit (EDU). The average day demand (ADD) and maximum day demand (MDD), based on the number of EDUs is estimated to assess the impact to the existing water system.

Water Demand: Using information from the water production and water sales (from the 2004 3-year CIP study), the average day water demand is approximately 250 gallons per day per equivalent dwelling unit (gpd/EDU) throughout the DWP service area. The max-day demand as considered takes into consideration that water usage occurs over an 8 to 10 hour period each day.

$$\begin{aligned}\text{Average day demand (ADD)} &= 92 \text{ EDU} \times 250 \text{ gpd/EDU} \\ &= 25.77 \text{ AF/year}\end{aligned}$$

$$\begin{aligned}\text{Maximum day demand (MDD)} &= 2.5 \times \text{ADD}/1,440 \text{ minutes per day} \\ &= 57,500 \text{ gpd (about 40 gpm)}\end{aligned}$$



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Fire Flow Requirements: The existing water distribution system was originally designed for about 750 gpm fire flow for two hours. The current requirement per the County Fire Department for the Fawnskin area is between 1,000 gpm and 1,500 gpm depending on the building square footage. The fire flow may be further increased in the future. As such, the water distribution system was analyzed to handle the maximum day demand of the proposed development plus fire flow of 1,500 gpm.

Water Supply and Storage Requirements: The State Health Department requires storage to account for one peak day usage. The DWP typically experiences one peak day during a summer holiday when tourists and part-time residents become full-time users. The average day water demand at 250 gpd/EDU or above and corresponding max-day demand is representative of that day and is the basis for calculating the water supply and storage required for the proposed project as presented in prior discussions and shown below:

Domestic water supply requirement (Max. Day)	= 40.0	gallons per minute
Operational Storage = (0.3 x MDD)	= 17,250	gallons
Emergency Storage = (1.0 x MDD)	= 57,500	gallons
Subtotal (without fire storage)	= 74,750	gallons
Fire Storage (1,500 gpm x 2 hour)	= 180,000	gallons
Total Storage Requirement	= 255,000	gallons

Based on proposed project development requirements (at MMD), one to two new well(s) may be required to provide a minimum of 40.0 gallons per minute. Developer will be required to deposit funds with DWP for new well construction unless a proven source of supply is provided by the developer at locations satisfactory to DWP and not exceeding sub-basin safe-yields. It is our understanding that the developer is proposing to drill/equip two wells to DWP standards and dedicate these production wells to the DWP. The developer shall record a quit-claim deed to the City of Big Bear Lake, Department of Water & Power for "all rights to percolating or other groundwater underlying the subdivision." Further, within the proposed tract, no individual private irrigation wells will be permitted.

B. WATER DISTRIBUTION SYSTEM REVIEW

The proposed tract is located near the southeast side of the Fawnskin area, which receives water from Cline Miller Reservoir. Figure 1-A attached shows the existing distribution piping system near the proposed development and the recommended pipeline extension layout. Referencing the hydraulic grade line of 6,957 feet elevation at Cline Miller Reservoir and the approximate ground elevation at project site (varying from 6,780 to 6,800 feet), the minimum static pressure at the project area should be around 68 psi.



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Under maximum day demands plus residential fire flow of 1,500 gpm, the minimum residual pressure of 20 psi can be met, based on the existing computer hydraulic model. However, the existing Cline-Miller reservoir is an old 100,000 gallon concrete reservoir which will not be sufficient to serve the proposed project. The existing site has limited room for a new tank without demolishing the old tank and/or securing additional property. Therefore, it is recommended that the old concrete reservoir be replaced with a new 300,000 to 400,000 gallon storage reservoir. The developer will be required to advance funds towards construction of the new reservoir and the 12-inch transmission pipeline from the reservoir site to the proposed development (see attached map).

C. ESTIMATED COST OF SYSTEM IMPROVEMENT

On-Site Facilities: The owner or developer of Tentative Tract 16136 will be entirely responsible for all costs of internal facilities. On site distribution pipeline must be 8-inches diameter minimum. All site facilities (plumbing, piping, etc) must also meet the requirements of CBBL-DWP, and San Bernardino County Building & Safety Department.

Off-site Facilities: The property owner or developer is responsible for advancing funds towards the construction of a new reservoir (255,000 gallons minimum) at Cline-Miller and the associated 12-inch transmission pipeline. The estimated probable project costs are as follows:

• Construction of a 255,000 gallon (min.) replacement reservoir	= \$135,000 *
• Construction of about 2,780 lineal feet of 12-inch pipeline	= <u>\$250,000</u>
	Subtotal = \$385,000
• Allowance for project contingency, engineering, and administration	= \$115,000
• Estimated total probable project cost	= \$500,000

* Adjusted for recent increases in steel construction; DWP may participate to make it a 400,000 gallon tank.

Water Supply Source: As discussed earlier, the project developer will be required to drill/equip up two new wells to meet the project's max-day demand.

Connection Fee: The proposed project is required to pay the DWP connection fee (at \$ 4,942 / EDU for FY 2004-05 plus a \$1,000/EDU supplemental water fee) in order to mitigate the project's impact on the existing water system. Based on the estimated 92 EDUs referenced in this report, the total project connection fee is estimated as follows:

$$92 \text{ EDUs} \times \$ (4,942 + 1,000) / \text{EDU} = \$546,664$$

Because the project developer is proposing to drill/equip two wells to DWP standards, and will be



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required to advance funds towards constructing a new reservoir and off-site pipeline, credit for components of the normal connection fee (source, storage, transmission) discussed above should be discussed with DWP. Any other component of the above connection fees will be paid when the developer or new lot owner applies for residential connections and water service to the DWP system. Additional fees such as plan check, inspection, and monthly user fees are determined by the DWP at the time of application for service.

D. SUMMARY

The proposed project (Tentative Tract 16136) can be served by the Department's water system in the Fawnskin area provided that the project developer meets with the following requirements:

- Submit water plans (on-site) for review/approval by DWP to make sure that water mains do not conflict with the BBARWA 10-inch sewer force main (which will be relocated at the developer's cost).
- Drill and equip up to two new supply wells to DWP standards and dedicate those facilities and water rights to DWP. Within the proposed tract, no individual private irrigation wells will be permitted. The developer shall record a quitclaim deed to the City of Big Bear Lake, Department of Water and Power for "All rights to percolating or other groundwater underlying the subdivision."
- Advance funds towards constructing new reservoir and transmission pipeline at Cline-Miller (with an estimated project cost at \$500,000) and dedicate these facilities to the Department of Water & Power. If other parcels of land can be benefited by the off-site improvements based on review by DWP's engineer, a "reimbursement agreement" will be considered by DWP. Because of prolonged drought experienced in the Big Bear area and the concern for basin wide groundwater safe-yield, the developer may elect to reduce the extent of initial development. The following table presents a summary of project costs and connection fees for initial 92 lots plus two other scenarios:

	92 lots	71 lots	50 lots
Average day water demand (gpd)	23,000	17,750	12,500
Estimated annual usage in acre-ft/year	(25.77)	(19.88)	(14.00)
Estimated off-site improvement cost	< \$500,000	< \$500,000	< \$500,000
Estimated DWP connection fee(s)	\$546,664	\$421,882	\$297,100

- Pay other component (except source, storage, and transmission) of the connection fee to DWP at the time of application for water service for specific subdivided parcels.
- Pay plan check, inspection, and water meter installation charges as discussed in this feasibility study report.



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- DWP requires low water usage landscape designs (turf limitations and xeriscape) to achieve water use efficiency. This may in turn lower the water supply demand. The developer is required to submit landscaping plans for review with DWP.

Information provided in this letter report is valid until September 15, 2005. The above water connection fee(s) and estimated improvement costs will be subject to further inflationary adjustment depending on commencement and completion of the entire project. We trust that this information will prove useful to the Department of Water and Power and the project developer.

Very Truly Yours,

Wilson F. So., P.E.

