

Lisa Palmer, President
Tom Fayram, Vice President
Mike Arme, Director
Brian O'Neill, Director



POSTED 2-5-2021

LOS OLIVOS COMMUNITY SERVICES DISTRICT
Board of Directors Regular Board Meeting, February 10, 2021, 6:00 p.m.

The Meeting will be held electronically via RingCentral Meetings. The public will be able to hear and participate.

1. Join from PC, Mac, or Android: <https://meetings.ringcentral.com/j/1487632121>
2. Via telephone: +1(623)404-9000 **Meeting ID: 148 763 2121**
3. If you choose to access through your browser, visit <https://meetings.ringcentral.com/join>, enter **Meeting ID: 148 763 2121**, Join Meeting

REGULAR MEETING AGENDA

1. CALL TO ORDER

2. ROLL CALL

3. PLEDGE OF ALLEGIANCE

4. APPROVAL OF MEETING MINUTES

- a. Minutes of 1-13-2021 Regular Meeting

5. DIRECTOR COMMENTS

Directors will give reports on any meetings that they attended on behalf of the District and/or choose to comment on various District activities.

6. PUBLIC COMMENTS

Members of the public may address the Board on any items of interest within the subject matter and jurisdiction of the Board but not on the agenda today (Government Code - 54954.3).

Speakers are limited to 3 minutes. Due to the requirements of the Ralph M. Brown Act, the District cannot take action today on any matter not on the agenda, but a matter raised during Public Comments can be referred to District staff for discussion and possible action at a future meeting.

7. INTERIM GENERAL MANAGER REPORT

Interim General Manager Report on current assignments and general District business.

8. BUSINESS ITEMS: Consideration, Discussion and Action on the following:

A. Appointment of New Director

B. Resolution 2021-01, A Resolution of the Board of Directors of the Los Olivos Community Services District Recognizing the Significant Contributions of Director Julie Kennedy and her Service to the District

C. Consent Calendar:

Approve Payment of the following Invoices as reviewed and recommended for approval by the Finance Committee:

1. 1-15-2021 MNS Invoice 77103 (December Services) \$10,907.50
2. 1-6-2021 Aleshire & Wynder Invoice 60561 (January services) \$620.20
3. 2-4-2021 GSI Invoice 0876.001 - 1 (January Services) \$13,411.25 (Need to submit to County)

D. Residential OWTS Requirements & Guidelines

1. Process and timeline for Board review and public workshop and approval by SBCEHS & RWQCB

E. Committee Assignment Review Needs and Goals

1. Consider current Committees and determine if re-appointments or new appointments are desirable in light of new Director Appointment.

F. IGM And Legal Counsel Performance Reviews

1. Consider Setting Review date (Closed Session) for the March 10, 2021 Meeting
2. Recommend authorizing two Board Directors to create an evaluation criteria and process with input from District Counsel.

G. WWTP Siting Options

1. UPC Task Order No. 2 Update on Siting Feasibility Study (One Mile criteria) & Schedule
2. Status of ID1 request to consider sharing Well 5 Site.

H. Groundwater Monitoring Plan Update & Timeline -GSI

1. GSI Task Order No. 1 Update & Schedule.

I. Preliminary Environmental Study

1. UPC Task Order No. 2 Update & Schedule.

J. Load Study/Preliminary Design Update (Stantec)

1. Stantec Task Order No. 1 Update & Schedule.

K. Call for Agenda Items

8. Next Regular Meeting:

Wednesday, March 10, 2021, 6:00 p.m.

Via RingCentral Meeting Link to be posted in the agenda (at the Post Office Bulletin Board & CSD Website www.losolivoscscsd.com)

9. ADJOURNMENT

The Los Olivos Community Services District is committed to ensuring equal access to meetings. In compliance with the American Disabilities Act, if you need special assistance to participate in the meeting or need this agenda provided in a disability-related alternative format, please call 805.946.0431 or email to losolivoscscsd@gmail.com. Any public records, which are distributed less than 72 hours prior to this meeting to all, or a majority of all, of the District's Board members in connection with any agenda item (other than closed sessions) will be available for public inspection at the time of such distribution at a location to be determined in Los Olivos, California 93441.



LOS OLIVOS COMMUNITY SERVICES DISTRICT
Board of Directors Regular Board Meeting, January 13, 2021, 6:00 p.m.

The Meeting was held electronically via RingCentral Meetings. The public will be able to hear and participate.

1. Join from PC, Mac, or Android: <https://meetings.ringcentral.com/j/1480371091>
2. Via telephone: +1(623)404-9000 Meeting ID: 148 037 1091

REGULAR MEETING MINUTES

1. CALL TO ORDER 6:00 PM
2. ROLL CALL: Directors present: Palmer, Arme, and O'Neill. Absent: Director Fayram
3. PLEDGE OF ALLEGIANCE
4. APPROVAL OF MEETING MINUTES: Minutes of 12-9-2020 Regular Meeting Approved Motion: Director Arme, Second: Director O'Neill, Approved 3-0, 1 Absent.
5. DIRECTOR COMMENTS: Director Palmer reported on her meeting with the IGM and Supervisor Hartmann. Counsel Trindle clarified for Director Arme that all construction within the District is subject to prevailing wages.
6. PUBLIC COMMENTS: Kelly Gray asked about getting copies of MNS Invoices. Director Palmer directed her to the Board Packets posted online, which contain all consultant invoices approved for payment at the referenced meeting.
7. INTERIM GENERAL MANAGER REPORT: Presented per packet.
8. BUSINESS ITEMS
 - A. Consent Calendar:
 1. Approve Payment of the following Invoices as reviewed and recommended for approval by the Finance Committee:
 2. 12-18-2020 MNS Invoice 76901 (Nov. Services) \$6,903.75
 3. 1-6-2021 Aleshire & Wynder Invoice 60096 (December services) \$1292.00
 4. 12-14-2020 Stantec Invoice 1735684 (Services through 11-06-2020) \$6,649.00 (Need to submit to County)
 - Approved. Motion: Director Arme, Second: Director O'Neill, Approved 3-0, 1 Absent.
- B. District Board Member Appointment Update. It was announced that the County Board of Supervisors would amake appointment Feb. 9, pending County Counsel and County Manager Approval.
- C. Residential OWTS Requirements & Guidelines: Paul Jenzen was present for discussion and questions. Goal was set to submit draft in a timely fashion for a March 3, 2021 review by SBCEHS & RWQCB. Board Directors asked to provide comments by January 17th, so additional update could be provided by Feb 1, 2021 by Mr. Jenzen. Director Plamer Expressed a need to have a guidance document that motivated maintenance of the private OWTS's during phased project implimentation. The document should provide guidance and advocacy info. Public Comment: Kelly Gray requested info regarding potential funding for a local cluster system for approx. 8 houses. Board indicated it would address the topic with EHS. Brad Ross reiterated the need for a simplified „cook book“ approach for septic system maintenance in the interrim between Phase 1 and subsequent project phases.

- D. Comment Letter to Central Management Area (CMA) Groundwater Sustainability Agency (GSA) - Public Comment Thru 1/20/21. Board directed that IGM send a DRAFT Central Management Area Hydrogeologic Conceptual Model (HCM) comment letter. Letter goal: to go on record formally asking that the District be included in the monitoring network, specifically for the GSA to provide sampling wells in support of monitoring and resolving our Special Problem Area designation. Letter should ask GSA what they can do by way of cooperation with Groundwater monitoring.
- E. WWTP Siting Options: Siting Feasibility Study (One Mile criteria): UPC Selected. Motion to Authorize IGM & District Counsel to finalize and obtain contract Signatures. Motion: Director O'Neill, Second: Director Arme. Approved 3-0, 1 abs.
- F. Groundwater Monitoring Plan Update & Timeline -GSI: GSI Task Order No. 1 completion schedule presented. Director O'Neill requested to participate in the GSI progress meeting to be scheduled within 2 weeks.
- E. Funding and Grant Report and Milestones: Reported that Planning Grant Application Submitted on time. Projected Budget for monitoring, managing grant application. See attached Letter from MNS Grant Writer. Consider action to approve supplemental funding. Board deferred to future meeting when need is realized.
- G. Environmental Consultant Selection – UPC selected. Motion to Award of Contract. Authorize IGM & District Counsel to finalize and obtain contract Signatures. Motion: Director O'Neill, Second: Director Arme. Approved 3-0, 1 abs.
- H. Load Study/Preliminary Design Update (Stantec): Reported that Draft Report Due mid-month.
- I. Call for Agenda Items

8. Next Regular Meeting: Wednesday, February 10, 2021, 6:00 p.m. Via RingCentral Meeting Link to be posted in the agenda (at the Post Office Bulletin Board & CSD Website www.losolivoscsd.com)

9. ADJOURNMENT: 7:38 PM A. Motion: Director Arme, Second: Director O'Neill. Approved 3-0, 1 abs.

APPROVED

_____ Lisa Palmer, President

ATTEST

_____ Doug Pike, IGM/Secretary

Lisa Palmer, President
Tom Fayram, Vice President
Mike Arme, Director
Brian O'Neill, Director



2-10-2021 IGM Notes

Informational Items

1. Proposed 2021 Calendar.
2. Action Item List Update. See Attached.
3. Financial/Budget Overview (See attached Budget Report, Consultant Expense Summary)

LOS OLIVOS COMMUNITY SERVICES DISTRICT

Calendar 2021

(Rev. 2-10-2021)

- REGULAR MEETING
- FINANCE COMMITTEE MEETING
- HOLIDAY



January						
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Consultant Contract Cost Summary

STATUS DATE

2/2/2021

	Project	Consultant	SCHEDULE		Contract Value	FY 2019-20	FY 2020-21			FY 2020-21	TOTAL
			START	FINISH		TOTAL FY 2019-20	Oct-20	Nov-20	Dec-20	TOTAL FY 2020-21	CONTRACT TO-DATE
1	Residential OWTS Requirements & Guidelines	Paul Jenzen	1/31/2020	4/30/2021	\$19,200.00	\$1,960.00				\$0.00	\$1,960.00
	MNS Project Management				\$905.00		\$200.00	\$500.00	\$1,000.00	\$1,905.00	
	A&W Contract Review/Support				\$0.00				\$0.00	\$0.00	
2a	Grant Writing	Wallace Group	CLOSED	CLOSED	\$5,000.00	\$3,490.00				\$0.00	\$3,490.00
	MNS Project Management				\$350.00				\$200.00	\$550.00	
	A&W Contract Review/Support				\$0.00				\$0.00	\$0.00	
2b	Grant Writing Phase 1	MNS Grant Wri	10/1/2020	12/31/2020*	\$5,000.00	\$0.00	\$1,530.00	\$337.50	\$236.26	\$4,698.76	\$4,698.76
	MNS Project Management				\$0.00			\$1,000.00	\$1,000.00	\$1,000.00	
	A&W Contract Review/Support				\$0.00				\$0.00	\$0.00	
3	Preliminary Design Services	Stantec	8/20/2020	2/28/2021	\$20,000.00	\$0.00	\$1,760.00	\$6,640.00		\$8,400.00	\$8,400.00
	MNS Project Management				\$1,105.00	\$600.00	\$300.00	\$200.00	\$1,900.00	\$3,005.00	
	A&W Contract Review/Support				\$0.00				\$0.00	\$0.00	
4	Preliminary Hydrogeologic/ Geotechnical Services	GSI	12/8/2020	5/21/2021	\$85,000.00	\$0.00				\$0.00	\$0.00
	MNS Project Management				\$1,000.00	\$300.00	\$300.00	\$200.00	\$2,200.00	\$3,200.00	
	A&W Contract Review/Support				\$0.00				\$38.00	\$38.00	
5	Preliminary Environmental Services	TBD	1/13/2020	5/15/2021	\$45,000.00	\$0.00				\$0.00	\$0.00
	MNS Project Management				\$0.00		\$200.00	\$300.00	\$500.00	\$500.00	
	A&W Contract Review/Support				\$0.00				\$0.00	\$0.00	
6	Site ID	County of SB	7/30/2020	2/28/2021	\$5,000.00	\$0.00				\$0.00	\$0.00
	MNS Project Management/Engrg.				\$5,725.00	\$385.00	\$200.00	\$300.00	\$2,963.75	\$8,688.75	
	MNS Survey				\$2,240.00				\$2,235.00	\$2,235.00	
	A&W Contract Review/Support				\$0.00				\$0.00	\$0.00	
7	Site ID Study	UPC	2/5/2021	3/15/2021	\$4,800.00	\$0.00				\$0.00	\$0.00
	MNS Project Management				\$0.00				\$0.00	\$0.00	
	A&W Contract Review/Support				\$0.00				\$0.00	\$0.00	
8	Assessment Engineer's Report	Water Consulta	12/30/2019	TBD	\$15,280.00	\$9,860.00				\$0.00	\$9,860.00
	MNS Project Management				\$855.00				\$0.00	\$855.00	
	A&W Contract Review/Support				\$0.00				\$0.00	\$0.00	
TOTAL Contract Costs					\$186,440.00	\$14,535.00				\$25,135.51	\$39,670.51

Report : Financial Status (Real-Time)

Selection Criteria: Fund = 3490

Layout Options: Summarized By = Fund, LineltemAccount; Page Break At = Fund

Last Updated: 2/2/2021 12:22 PM

Accounting Period: OPEN

Fund 3490 -- Los Olivos CSD

Line Item Account	6/30/2021 Fiscal Year Adjusted Budget	1/5/2021 Year-To-Date Actual	6/30/2021 Fiscal Year Variance	6/30/2021 Fiscal Year Pct of Budget	
Revenues					
Taxes					
3066 -- Special Tax Assessment	188,887.00	113,803.07	113,803.07	60.25%	
Taxes	0.00	113,803.07	113,803.07	0.00%	
Use of Money and Property					
3380 -- Interest Income	0.00	537.51	537.51	--	
3381 -- Unrealized Gain/Loss Invstmnts	-476.00	-475.75	0.25	99.95%	
Use of Money and Property	-476.00	61.76	537.76	-12.97%	
Intergovernmental Revenue-Other					
4840 -- Other Governmental Agencies	180,000.00	1,760.00	1,760.00	--	SBCCEHS Reimb. For Special Studies
Intergovernmental Revenue-Other	0.00	1,760.00	1,760.00	--	
Revenues	180,000.00	115,320.51	11,593.51	0.64	
Expenditures					
Services and Supplies					
7090 -- Insurance	2,320.00	0.00	2,320.00	0.00%	
7324 -- Audit and Accounting Fees	4,000.00	2,000.00	2,000.00	50.00%	
7430 -- Memberships	1,200.00	1,050.00	150.00	87.50%	
7450 -- Office Expense	2,000.00	0.00	2,000.00	0.00%	
7460 -- Professional & Special Service (Project, Planning & Studies)	193,500.00	6,895.00	186,605.00	3.56%	
7508 -- Legal Fees	27,000.00	10,629.02	16,370.98	39.37%	\$3238.02 from FY 19-20
7510 -- Contractual Services (IGM Contract)	80,400.00	45,533.70	34,866.30	56.63%	\$13,333.75 from FY 19-20
7530 -- Publications & Legal Notices	1,000.00	0.00	1,000.00	0.00%	
7732 -- Training	1,500.00	0.00	1,500.00	0.00%	
Services and Supplies	309,920.00	66,107.72	246,812.28	21.33%	
Other Charges					
7894 -- Communication Services	930.00	0.00	0.00	0.00%	
Other Charges (County Election Fees)	8,000.00	0.00	0.00	0.00%	\$2,000 Charged to 7324
Expenditures	318,850.00	66,107.72	246,812.28	20.73%	

Cash Balance

Fund	Beginning Balance	Month-to-date cash receipts	Month-To-Date Treasury Credits (+)	Month-To-Date Treasury Debits (-)	Ending Balance
3490 -- Los Olivos CSD					
6/1/2019 - 6/30/2019 (FY 2018-19)	112,073.98	0.00	189,600.16	184,868.00	\$116,806.14
7/1/2019 - 7/31/2019 (FY 2019-20)	116,806.14	0.00	568.10	14,530.44	\$102,843.80
8/1/2019 - 8/31/2019 (FY 2019-20)	102,843.80	0.00	0.00	0.00	\$102,843.80
9/1/2019 - 9/30/2019 (FY 2019-20)	102,843.80	0.00	0.00	0.00	\$102,843.80
10/1/2019 - 10/31/2019 (FY 2019-20)	102,843.80	0.00	502.03	21,826.18	\$81,519.65
11/1/2019 - 11/30/2019 (FY 2019-20)	81,519.65	0.00	0.00	12,726.68	\$68,792.97
12/1/2019 - 12/31/2019 (FY 2019-20)	68,792.97	0.00	118,021.75	12,772.97	\$174,041.75
1/31/2019 - 1/30/2020 (FY 2019-20)	174,041.75	0.00	0.00	1,799.03	\$172,242.72
2/1/2020 - 2/29/2020 (FY 2019-2020)	172,671.12	0.00	257.75	11,695.00	\$161,233.87
3/1/2020 - 3/31/2020 (FY 2019-2020)	161,233.87	525.00	117,224.70	122,555.77	\$156,472.80
4/1/2020 - 4/30/2020 (FY 2019-2020)	156,427.80	0.00	72,396.85	6,402.60	\$222,422.05
5/1/2020 - 5/31/2020 (FY 2019-2020)	222,422.05	0.00	72,309.08	96,379.70	\$198,351.43
6/1/2020 - 6/30/2020 (FY 2019-2020)	198,351.43	0.00	7,231.00	11,696.49	\$193,885.94
7/1/2020 - 7/31/2020 (FY 2020-21)	193,885.94	0.00	608.94	6,190.00	\$188,304.88
8/1/2020 - 8/31/2020 (FY 2020-21)	188,304.88	0.00	0.00	3,883.02	\$184,421.86
9/1/2020 - 9/02/2020 (FY 2020-21)	184,421.86	0.00	0.00	25,696.25	\$158,453.86
10/1/2020 - 10/31/2020 (FY 2020-21)	158,453.86	0.00	339.47	8,476.50	\$150,316.83
11/1/2020 - 11/30/2020 (FY 2020-21)	150,316.83	0.00	0.00	0.00	\$148,574.58
12/1/2020 - 12/7/2020 (FY 2020-21)	148,574.58	0.00	115,577.07	19,862.00	\$244,289.65

From: [Brad Ross](#)
To: [Doug Pike](#)
Subject: Ross Los Olivos CSD Application
Date: Sunday, February 7, 2021 9:35:19 AM
Attachments: [Ross Resume Dec 2020.pdf](#)

Doug,

My resume is attached.

I am eager to serve on the board because I believe it is past time for Los Olivos to have a recognized solution to wastewater treatment issues and concerns. Los Olivos has been a "Special Problems Area" for far too long. I believe that my engineering, project management, and technical communication background will prove useful to the board.

Brad

BRADLEY A. ROSS, MSME

Los Olivos, CA 93441

rossbrada@gmail.com

805.350.9203

[linkedin.com/in/bradleyaross](https://www.linkedin.com/in/bradleyaross)

SENIOR MECHANICAL / SYSTEMS ENGINEER

Providing Support Toward Project Execution – On Time, Under Budget

Recognized professional with significant engineering knowledge in energy conversion and utilization. Provide technical clarity and direction, and facilitate meeting of cost and schedule targets as cohesive team. Create funding opportunities through technical innovation.

Contribute to small to large scale projects to meet customer requirements by applying engineering skills and experience to conceive and design components and systems meeting technical and budget targets, timelines and production standards with minimal rework. Expertise includes:

**Technical Leadership and Communication | Lean Manufacturing | Project Management
Team Building | Requirements Management | Root Cause Analysis | GD&T**

PROFESSIONAL EXPERIENCE

MANTECH CORPORATION, Vandenberg Air Force Base, CA **Current**

Same position, desk, and activities as below – just moved up to lead contract company.

ARCTIC SLOPE REGIONAL CORPORATION, Vandenberg Air Force Base, CA **2018-2019**

Systems and Mission Assurance Engineer

- 2018 Outstanding Contractor Engineering Award, Air Force Association Chapter 266
- Supports Air Force evaluation of SpaceX rocket launch data (on-console and post-launch), with a focus on cryogenic liquid, propellants, and helium ground systems;
- Provides surveillance of launch preparation activities at Space Launch Center 4 at VAFB

NORTHROP GRUMMAN ASTRO AEROSPACE, Carpinteria, CA **2016 – 2018**

Systems Engineer

Conducted tests of structures for space applications, including planning, test fixture development, generation of test procedures, instrumentation, and data evaluation. Managed requirements (Jama software) and developed requirement verification needed to ship space structures. Generated test plans for space structures. Provided technical leadership for deliverable documents and customer meetings.

RAYTHEON VISION SYSTEMS, Goleta, CA

Principal Systems Engineer and Assistant Project Manager **2009 – 2015**

Directed technical activities for infrared and visible sensor development and production programs. Communicated to build effective relations with suppliers and customers.

- Facilitated \$25M Exo-atmospheric Kill Vehicle (EKV) sensor project, maintaining expenses 10% under budget and ensuring over 15% extra sensors were delivered and compliant with all mission assurance requirements through providing technical leadership and management assistance.
- Developed approach using Rational Dynamic Object-Oriented Requirements System (DOORS) database, organizing requirements flow-down and verification, including specification and test plan generation by providing clear direction to team and customer.
- Developed and produced IR sensor for laser pointer for helicopter (ATIRCM) and for F-16 missile warning

Principal Mechanical Engineer **1998 – 2008**

Led engineering support of cryocooler factory, including lean process development, design innovation, evaluation of test results and failure investigation.

- Contributed to team winning Raytheon Vision Systems Six Sigma Project of the Year award for developing lean measurement process for infrared sensor assembly with cryocoolers, reducing cycle time and costs while simplifying logistics.
- Provided technical guidance for integration of cryocoolers into infrared sensor assemblies, resulting in 1st-pass success.
- Developed and implemented design upgrades for tactical cryocoolers, including 7052-196S, 7062-260S and 7070-260S, now factory standard products.
- Led critical failure investigations of infrared sensors, providing path forward and alleviating customer concerns.

RAYTHEON MISSILE SYSTEMS, Tucson, AZ**1997 – 1998****Senior Mechanical Engineer**

- Developed effective thermal interfaces between cryocooler and AIM-9X Sidewinder air-to-air missile, including novel cryogenic interface to detector, resulting US Patent No. 6,070,414 granted.

INFINIA (formerly Stirling Technology Company), Kennewick, WA**1990 – 1997****Senior Mechanical Engineer and Project Team Leader**

- Provided programmatic and technical direction and increased business \$3.5M as project team leader while driving developments of long-life Stirling energy conversion systems for terrestrial, radioisotope and space applications.

PACIFIC NORTHWEST NATIONAL LABORATORY, Richland, WA**1984 – 1989****Research Engineer**

- Analyzed thermal-hydraulic behavior of fuel for Fast Flux Test Facility (FFTF) nuclear reactor, enabling fuel handling.
- Evaluated dimensional stability of N-reactor graphite stack and developed method characterizing distortion as function of nuclear fluence, facilitating prediction of operating lifetime.
- Led thermal-hydraulic design and construction of test facility, validating Ice Condenser Decontamination Factor (ICEDF) computer code for specific commercial nuclear power plants. (300 Area construction project)
- Verified installation of state-of-the-art data loggers at both residential and commercial buildings, validating predicted energy consumption of domestic water heaters and refrigerators for US Department of Energy.

UNION CARBIDE CORPORATION, Charleston, West Virginia**1981 – 1984****Mechanical Engineer / Building Manager of High-Pressure Laboratories**

- Directed 5 technicians, responsible for the safe and effective use of 48 high pressure cells and 12 labs for chemical research and development programs, and for storage of high pressure and cryogenic gas supplies.

EDUCATION AND CERTIFICATION**Master of Science (MS)**, Mechanical Engineering, Brigham Young University, Provo, UT, December 1980**Bachelor of Science (BS)**, Mechanical Engineering, Brigham Young University, Provo, UT, April 1980

Washington State Professional Engineer 23219 (inactive), 39 technical publications

Holds active DOD Secret clearance

PATENTS

Title	US Patent No.	Date
Passive Balance System for Machines	5,895,033	Apr. 20, 1999
Flexure Bearing Support Assy With Particular Application to Stirling Machines	5,920,133	July 6, 1999
Cryogenic Cooler With Mechanically-Flexible Thermal Interface	6,070,414	June 6, 2000
Monitoring the Health of a Cryocooler	8,794,016	Aug 5, 2014



RESOLUTION 2021-01, A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LOS OLIVOS COMMUNITY SERVICES DISTRICT RECOGNIZING THE SIGNIFICANT CONTRIBUTIONS OF DIRECTOR JULIE KENNEDY AND HER SERVICE TO THE DISTRICT

WHEREAS, the Board of Directors of the Los Olivos Community Services District (the “District”) recognizes public participation and service as an invaluable contribution to the community; and

WHEREAS, Julie Kennedy has served for two years as a District Director for the District and has assisted the District in planning for a potential wastewater facility; and

WHEREAS, for one and one-half years Director Kennedy served as District Secretary; and

WHEREAS, Director Kennedy served on the District’s Finance Committee for two years, wherein she assisted the District in financial planning, grant pursuits and budgeting; and

WHEREAS, she served as an active volunteer in support of the District’s formation in 2018; and

WHEREAS, she has faithfully attended Los Olivos Community Services District board meetings, respectfully conducting the critical business of the District, and providing valuable input and voting on Board decisions; and

WHEREAS, her time, knowledge, and expertise to assist the District and the community has resulted in the general success of the District’s accomplishments to-date; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Los Olivos Community Services District hereby gives recognition and appreciation to Julie Kennedy for her time and efforts as a public servant, by demonstrating unwavering commitment to the District by serving and representing the concerns of the community and the mission of the District.

CERTIFICATION

I do hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Board of Directors held on February 10, 2021.

I HEREBY CERTIFY that the foregoing Resolution was passed and adopted by the Board of Directors of the Los Olivos Community Services District at a regular meeting held on the 10th day of February 2021, by the following vote:

AYES: _____ NOES: _____ ABSENT: _____ ABSTAIN: _____

ATTEST:

By: _____
LISA PALMER, Board President

DOUG PIKE, Interim General Manager

APPROVED AS TO FORM:

By: _____
G. ROSS TRINDLE, III, District Counsel

I, _____, Secretary of the Los Olivos Community Services District, Santa Barbara County, California, DO HEREBY CERTIFY that the foregoing is a true and accurate copy of the Resolution passed and adopted by the Board of Directors of the Los Olivos Community Services District on the date and by the vote indicated herein.



201 N. Calle Cesar Chavez, Suite 300
 Santa Barbara, CA 93103

ENGINEERING
 PLANNING
 SURVEYING
 CONSTRUCTION MANAGEMENT

January 15, 2021

Project No: LOCSD.180392.00

Invoice No: 77103

Los Olivos Community Services District
 P.O. Box 553
 Los Olivos, CA 93441

Principal Jeffrey Edwards
 Project Manager Douglas Pike
 Project LOCSD.180392.00 General Manager Services

This Invoice includes:

1. General District Management: \$8,171.25
2. WWTP Site ID: \$300.00
3. Design Contract: \$200.00
4. GSI Contract \$200.00
5. Grant Management (Doug Pike and Board Presentation by Greg Jaquez): \$1,000.00
6. Jenzen Contract: \$500.00
7. Grant Work by MNS Grant Group (Linda Palmquist) \$236.26
8. Environmental Contract: \$300.00

Professional Services for the Period: December 1, 2020 to December 31, 2020

Level 2 TASK01 District Management

Professional Personnel

	Hours	Rate	Amount	
Project Management				
Project Coordinator	29.25	105.00	3,071.25	
District Manager	25.50	200.00	5,100.00	
Totals	54.75		8,171.25	
Total Labor				8,171.25
				Level 2 Subtotal
				\$8,171.25

Level 2 TASK02 Engineering Tasks

Professional Personnel

	Hours	Rate	Amount
Project Management			
Senior Project Engineer	5.00	180.00	900.00

Project	LOCSD.180392.00	General Manager Services	Invoice	77103
District Manager		8.00	200.00	1,600.00
Fund Development/Grant Applications				
Project Coordinator		2.25	105.00	236.25
Totals		15.25		2,736.25
Total Labor				2,736.25
			Level 2 Subtotal	\$2,736.25
			Current Invoice Amount	\$10,907.50

Outstanding Invoices

Number	Date	Balance
76901	12/18/2020	6,903.75
Total		6,903.75

Billing Backup

Friday, January 15, 2021

MNS Engineers, Inc.

Invoice 77103 Dated 1/15/2021

3:07:49 PM

Project	LOCS.D.180392.00	General Manager Services
Level 2	TASK01	District Management

Professional Personnel

			Hours	Rate	Amount
Project Management					
Project Coordinator					
Zepeda, Mary	12/3/2020		2.00	105.00	210.00
Create Single Payment Claims for approved Aleshire & Wynder, CSDA and MNS Invoices; Update Budget Tracking Log					
Zepeda, Mary	12/7/2020		.50	105.00	52.50
Check LOCS.D Gmail Account for emails from Community Members; Foward FIN Vendor Distrubtion Report to DP re Vendor Distrubtion Payment to California State Board of Equalization					
Zepeda, Mary	12/9/2020		.75	105.00	78.75
Contact SBC Auditor Controller's Office re Vendor Distribution Payment to California State Board of Equalization; Forward Vendor Distribution Payment Findings to both DP and BOE Representatives					
Zepeda, Mary	12/14/2020		8.00	105.00	840.00
Check LOCS.D Gmail Account for emails from Community Members; Review and Update Wastewater Reclamation Project Letter; Update Mail Chimp Landing Page for Email Signup; Print Finalized Wastewater Reclamation Letter and Mailing Labels; Begin Production of Direct Mailer for the Wastewater Reclamation Project Update with target delivery 12/15/20; Update Direct Mailer Email List					
Zepeda, Mary	12/15/2020		8.00	105.00	840.00
Continue Production of Direct Mailer for the Wastewater Reclamation Project Update; Finalize Direct Mailer Email List; Draft Email Correspondence for Wastewater Reclamation Project Update and review with DP prior to Sending to LOCS.D Residents; Complete Production of Direct Mailers and Deliver to Los Olivos Post Office					
Zepeda, Mary	12/17/2020		1.50	105.00	157.50
Forward Pending Meeting Minutes List to DP; Update Data Analytic for LOCS.D Resident Update Letter					
Zepeda, Mary	12/18/2020		1.50	105.00	157.50
Create Single Payment Claims for approved Aleshire & Wynder and MNS Invoices and process payment for DP; Follow-up with SBC Auditor Control re Aleshire & Wynder Invoice 59839; Update Budget Tracking Log					
Zepeda, Mary	12/22/2020		2.25	105.00	236.25
Check LOCS.D Gmail Account for emails from Community Members; Update Email List for LOCS.D Resident Update Letter; Forward Data Analytic for LOCS.D Resident Update Letter to LP and DP; Create Single Payment Claims for approved Stantec Invoices and process payment for DP; Updated LOCS.D Website (January Meeting; Board Members)					

Project	LOCS.D.180392.00	General Manager Services			Invoice	77103
Zepeda, Mary		12/23/2020	2.75	105.00	288.75	
		Scan and File Resolution 20-08; Update Resolution Tracking Log; Scan and File Finance and Regular Meeting Minutes (electronic copy); Upload Meeting Minutes to LOCS.D Website; Forward Pending Meeting Minutes to DP; Follow-up with SBC Auditor Control re Invoice Processing				
Zepeda, Mary		12/28/2020	1.00	105.00	105.00	
		Check LOCS.D Gmail Account for emails from Community Members; Update Email List for LOCS.D Resident Update Letter per LP Request; Modify Single Payment Claim for Aleshire & Wynder and MNS Invoices and Resubmit for Invoice Processing				
Zepeda, Mary		12/29/2020	1.00	105.00	105.00	
		Modify Single Payment Claim for Stantec Invoice and Resubmit for Invoice Processing; Follow-up with SBC Auditor Control re Invoice Processing and Distribution				
		District Manager				
Pike, Douglas		12/1/2020	1.00	200.00	200.00	
		Finance Committee participation (1)				
		Supplemental Agenda Packet for Special Meeting (1)				
Pike, Douglas		12/2/2020	3.00	200.00	600.00	
		Attend and prep for Special Meeting				
Pike, Douglas		12/4/2020	1.50	200.00	300.00	
		Regular Meeting Agenda Prep and Post (1.5)				
Pike, Douglas		12/5/2020	2.00	200.00	400.00	
		Finance Committee agenda/packet and posting				
Pike, Douglas		12/7/2020	3.50	200.00	700.00	
		Regular Meeting Agenda Packet Preparation (3)				
		Financial Reports from FIN (.5)				
Pike, Douglas		12/8/2020	1.00	200.00	200.00	
		Supplement Packet assembly. Draft Letters				
Pike, Douglas		12/9/2020	3.00	200.00	600.00	
		District Board Meeting Prepa and participation (3)				
Pike, Douglas		12/14/2020	2.00	200.00	400.00	
		District Update Letter coordination and purchase supplies				
Pike, Douglas		12/15/2020	.50	200.00	100.00	
		Payment and follow-up regarding invoices (.5)				
Pike, Douglas		12/16/2020	3.00	200.00	600.00	
		Board Appointment coordination with COB and Supervisors Office, Julie and Brad, Oath of office to Tom .5				
Pike, Douglas		12/18/2020	1.00	200.00	200.00	
		ID 1 Letter, Signature/Send				
Pike, Douglas		12/21/2020	1.00	200.00	200.00	
		Board Appointment coordination with COB and Supervisors Office				
Pike, Douglas		12/22/2020	2.00	200.00	400.00	
		Board Appointment coordination with COB and Supervisors Office				
Pike, Douglas		12/23/2020	1.00	200.00	200.00	
		Board Appointment coordination with COB and Supervisors Office				
		Totals		54.75	8,171.25	
		Total Labor				8,171.25
					Level 2 Subtotal	\$8,171.25

Level 2 TASK02 Engineering Tasks

Professional Personnel

			Hours	Rate	Amount	
Project Management						
Senior Project Engineer						
Jaquez, Gregory	12/7/2020		1.50	180.00	270.00	
Board meeting PowerPoint presentation preparation.						
Jaquez, Gregory	12/8/2020		2.00	180.00	360.00	
Board meeting PowerPoint presentation preparation.						
Jaquez, Gregory	12/9/2020		1.50	180.00	270.00	
Presentation to LOCS.D Board.						
District Manager						
Pike, Douglas	12/2/2020		1.50	200.00	300.00	
Stantec Coordination (.5)						
Site selection 1-mi. Radius Exhibit (.5)						
Grant support- possible reclaimed water customers exhibit (.5)						
Pike, Douglas	12/8/2020		1.00	200.00	200.00	
GSI Proposal review and discuss with Tech Comm.						
Pike, Douglas	12/14/2020		.50	200.00	100.00	
January Workshop for Local OWTS System Requirements, Incl Detailed schedule						
Pike, Douglas	12/17/2020		1.00	200.00	200.00	
Los Olivos CSD Request for Qualifications for Environmental & Permitting Services respond to Rincon Questions -1						
Pike, Douglas	12/21/2020		.50	200.00	100.00	
Stantec Invoicing FIN issues						
Pike, Douglas	12/24/2020		1.00	200.00	200.00	
RFP for Siting Study to Water Consultancy and UPC. Both indicated they will propose.						
Pike, Douglas	12/31/2020		2.00	200.00	400.00	
Local Requirements Document draft Review						
Pike, Douglas	12/31/2020		.50	200.00	100.00	
Environmental SOQ to tech committee						
Fund Development/Grant Applications						
Project Coordinator						
Palmquist, Linda	12/9/2020		1.00	105.00	105.00	
Finish application						
Palmquist, Linda	12/24/2020		1.25	105.00	131.25	
Submit grant application						
Totals			15.25		2,736.25	
Total Labor						2,736.25
					Level 2 Subtotal	\$2,736.25
					Project Total	\$10,907.50
					Total this Report	\$10,907.50



**ALESHIRE &
WYNDER** LLP
ATTORNEYS AT LAW

Eileen Lee
eelee@awattorneys.com

18881 Von Karman Avenue,
Suite 1700
Irvine, CA 92612
P (949) 223.1170
F (949) 223.1180

ORANGE COUNTY | LOS ANGELES | RIVERSIDE | CENTRAL VALLEY

AWATTORNEYS.COM

February 4, 2021

VIA EMAIL ONLY: dpike@mnsengineers.com

Mr. Doug Pike, Interim General Manager
Los Olivos Community Services District
P.O. Box 345
Los Olivos, CA 93441

Re: **February 2021 Billing Statement (for services through 1/31/21);
Aleshire & Wynder, LLP**

Dear Doug:

Enclosed please find a billing statement for the month of February, which includes services rendered and costs incurred by Aleshire & Wynder, LLP, through January 31, 2021.

Should you have any questions or require additional information concerning the foregoing, please let me know.

Sincerely,

ALESHIRE & WYNDER, LLP

Eileen Lee for
G. Ross Trindle, III

Enclosure

LOS OLIVOS COMMUNITY SERVICES DISTRICT (01245)
MONTHLY BILLING SUMMARY

Billing Period: January 1 thru January 31, 2021

	Total Hours	Hourly Rate	Total Fees	Total Costs	Total Fees & Costs	Writeoff Value	Comments
0001 General (\$200 Blended: Atty / Paralegal / Law Clerk)	3.10	200	620.00	0.20	620.20	0.00	(Advisory/Transactional Svcs)
TOTALS:	3.10		620.00	0.20	620.20	0.00	



**ALESHIRE &
WYNDER** LLP
ATTORNEYS AT LAW

Orange County
18881 Von Karman Ave., Suite 1700
Irvine, CA 92612
P 949.223.1170 • F 949.223.1180
awattorneys.com

Federal Tax ID: 55-0814676

Los Olivos Community Services District
Attn: Mr. Doug Pike, Interim General Manager
2540 Alamo Pintado Avenue
Los Olivos, CA 93441

February 4, 2021
Bill No. 60561

For Legal Services Rendered Through 01/31/21

CLIENT: 01245 - Los Olivos Community Services District
MATTER: 0001 - General

PROFESSIONAL SERVICES

Date	Attorney	Description	Hours	Amount
01/13/21	GRT	(REGULAR MEETING) COMPLETE PREPARATION FOR AND ATTEND REGULAR MEETING	2.10	420.00
01/20/21	GRT	(BOARD VACANCY) REVIEW OF UPDATE FROM IGM RE APPOINTMENT TO FILL BOARD VACANCY OF OFFICE FORMERLY OCCUPIED BY DIRECTOR KENNEDY	0.10	20.00
01/28/21	GRT	(DIRECTOR APPOINTMENT) PHONE CONFERENCE WITH IGM RE STATUS UPDATE FROM COUNTY ON APPOINTMENT TO FILL VACANT OFFICE; PHONE CALL TO COUNTY COUNSEL'S OFFICE RE SAME	0.30	60.00
01/31/21	GRT	(DIRECTOR APPOINTMENT) DRAFT FOLLOW UP EMAIL CORRESPONDENCE TO DEPUTY COUNTY COUNSEL RE COUNTY APPOINTMENT TO FILL VACANT OFFICE	0.60	120.00
Total Professional Services			3.10	\$620.00

PROFESSIONAL SERVICES SUMMARY

Code	Name	Hours	Rate	Amount
GRT	George "Ross" Trindle	3.10	200.00	620.00
Total Professional Services		3.10		\$620.00

Client: 01245 - Los Olivos Community Services District
Matter: 0001 - General

February 4, 2021
Page 2

DISBURSEMENTS

Date	Description	Amount
	PHOTOCOPY CHARGES thru 01/31/21 (1 pgs at 20 cents each)	0.20
	Total Disbursements	<u>\$0.20</u>
	CURRENT BILL TOTAL AMOUNT DUE	<u><u>\$620.20</u></u>
	Balance Forward:	1,292.00
	Payments & Adjustments:	-0.00
	Total Due:	<u><u>\$1,912.20</u></u>

Please return this page with remittance

to
Aleshire & Wynder, LLP

Bill Number: 60561
Bill Date: February 4, 2021
Client Code: 01245
Client Name: Los Olivos Community Services District
Matter Code: 0001
Matter Name: General

Total Professional Services	620.00
Total Disbursements	0.20
CURRENT BILL TOTAL AMOUNT DUE	<u>\$620.20</u>
Balance Forward:	1,292.00
Payments & Adjustments:	-0.00
Total Due:	<u><u>\$1,912.20</u></u>

Amount enclosed: _____

Thank You



55 SW Yamhill Street, Suite 300
 Portland, OR 97204
 P: 503.239.8799
 accounting@gsiws.com
 www.gsiws.com

Doug Pike
 Los Olivos Community Services District
 PO Box 345
 Los Olivos, CA 93441

February 4, 2021
 Invoice No: 0876.001 - 1

Project 0876.001 Groundwater Quality Management Services

Professional Services from January 1, 2021 to January 31, 2021

Task .001 Hydrogeological Conceptual Model

Labor

	Hours	Rate	Amount	
Principal Consultant				
Thompson, Timothy	14.50	265.00	3,842.50	
Managing Hydrogeologist				
Franz, Brian	1.50	160.00	240.00	
Project Geologist				
Lapostol, Andres	31.00	135.00	4,185.00	
Totals	47.00		8,267.50	
Total Labor				8,267.50
				Total this Task
				\$8,267.50

Task .002 Groundwater Monitoring Plan

Labor

	Hours	Rate	Amount	
Principal Consultant				
Thompson, Timothy	7.00	265.00	1,855.00	
Totals	7.00		1,855.00	
Total Labor				1,855.00
				Total this Task
				\$1,855.00

Task .003 Install Monitoring Well

Labor

	Hours	Rate	Amount	
Managing Hydrogeologist				
Franz, Brian	7.75	160.00	1,240.00	
Totals	7.75		1,240.00	
Total Labor				1,240.00
				Total this Task
				\$1,240.00

Task .005 Project Management

Labor

	Hours	Rate	Amount	
Principal Consultant				
Thompson, Timothy	5.75	265.00	1,523.75	

Project	0876.001	Los Olivos: GW Quality Mgmt Services		Invoice	1
Managing Hydrogeologist					
Franz, Brian		3.00	160.00	480.00	
Administrative Assistant					
Mackey, Emily		.50	90.00	45.00	
Totals		9.25		2,048.75	
Total Labor					2,048.75
				Total this Task	\$2,048.75

Project Summary	Current Period	Prior Periods	Invoiced to Date
Total Billings	13,411.25	0.00	13,411.25
Authorized Budget			85,000.00
Budget Remaining			71,588.75
		Total this Invoice	<u><u>\$13,411.25</u></u>



**Los Olivos Septic to Sewer Task
Order No. 1**

Los Olivos Wastewater Loading Study
Draft

February 2, 2021

Prepared for:

Los Olivos Community Service District

Prepared by:

Jonathan T. Zukowski, PE
Autumn L. Glaeser, PE
Andrew Devries, EIT



LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

Revision	Description	Author		Quality Check		Independent Review	



LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

This document entitled Los Olivos Septic to Sewer Task Order No. 1 was prepared by Stantec Consulting Ltd. (“Stantec”) for the account of Los Olivos Community Service District (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by _____
(signature)

Enter Name

Reviewed by _____
(signature)

Approved by _____
(signature)

Enter Name



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LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

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APPENDIX A..... 1



Abbreviations

A	Agricultural
ADF	Average Daily Flow
ADMMF	Average Daily Maximum Monthly Flow
BOD ₅	Biochemical Oxygen Demand
CSD	Community Service District
EIR	Environmental Impact Report
EIR 2009	Santa Ynez Valley Community Plan Environmental Impact Report
EPA	Environmental Protection Agency
gpd	gallons per day
LOWWMP	Los Olivos Wastewater Management Plan
MDF	Maximum Daily Flow
No.	Number
NO ₂ -	Nitrite
NO ₃ -	Nitrate
OWTS	Onsite Wastewater Treatment System
PER AECOM 2013	Los Olivos Wastewater System Preliminary Engineering Report
PDWF	Peak Dry Weather Flow
PHF	Peak Hour Flow
PWWF	Peak Wet Weather Flow
Res.	Residential
RGR	Regional Growth Rate



LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

RR	Residential Rural
RWQCB	Regional Water Quality Control Board
sf	Square feet
STN 2015	Los Olivos Special Problems Area Sewer Calculation
SYCSD	Santa Ynez Community Service District
SYRWCD ID-1	Santa Ynez River Water Conservation District
TKN	Total Kieldahl Nitrogen
TN	Total Nitrogen
TSS	Total Suspended Solids
Update AECOM 2016	Update to Los Olivos Wastewater System Preliminary Engineering Report



LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

Background

1.0 BACKGROUND

The unincorporated township of Los Olivos is located in the Santa Ynez Valley in Santa Barbara County, California. Per 2010 census data, Los Olivos has an estimated population of 1,132 residents. The Regional Growth Rate forecast 2050 for Santa Barbara County January 2019¹ (RGR) projected a growth rate of 7.5% percent from 2017 to 2050 for the unincorporated areas of the Santa Ynez Valley. In 2050 the population of Los Olivos is estimated to be 1,217. Though Los Olivos is projected to have minimal growth, the township experiences heavy tourism in the downtown commercial area on weekends and holidays throughout the year. Per County of Santa Barbara Los Olivos Wastewater Management Plan 2010 (WMP 2010), the daily tourist population is estimated to be two to three times the population of the township during summer weekends and holidays. The community has a total of 418 parcels with approximately 350 septic systems per the WMP 2010. The area is predominantly rural residential with a mix of viticulture and agriculture surrounding the downtown commercial area. Presently, the entire community utilizes septic systems for wastewater treatment and disposal.

Los Olivos is in the Santa Ynez Uplands Groundwater Basin and over the years, groundwater contamination has become an issue. Groundwater monitoring has shown significant impact with the use of septic systems in the Los Olivos area. Per the EIR 2009, the community has been designated a Special Problems Area due to the groundwater issues. To mitigate further groundwater contamination, in 2018, voters brought about the formation of Los Olivos Community Service District (District) to provide a funding mechanism for developing, building, and operating wastewater facilities. Per Adopted Resolution 2019-04, the Los Olivos Wastewater Reclamation Program Project (LOWRPP) was implemented to define a strategy to provide economically viable wastewater treatment and reclamation solutions to the residents and property owners within the District that meets public health needs and the regulatory requirements of the Regional Water Quality Board (RWQCB). The LOWRPP is comprised of four components:

1. Development of Residential Onsite Wastewater Treatment System (OWTS) Requirements
2. Financial Outreach and Assistance for Program Development, Construction and Operation
3. Implementation of a Local Groundwater Monitoring Program; and
4. Phased Collection and Treatment

Component No. 4 includes multiple phases to convert the Special Problems Area from septic systems to centralized wastewater conveyance, treatment, and disposal facilities.

¹ Santa Barbara Association of Governments Regional Growth Rate Forecast 2050, January 2019



LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

Background

- Phase I includes the buildout of the downtown commercial area which consists of the existing commercial district properties and select residential properties dispersed throughout the commercial area.
- Phase II includes Phase I flows and select small lot residential properties in the surrounding area.
- Phase III includes the rest of the community within the Service Area.

This study will focus primarily on Phase I of Component No. 4 of the LOWRPP. Estimated wastewater flows and loading for the subsequent phases of the Component No. 4 are not included in this study.

1.1 SERVICE AREA

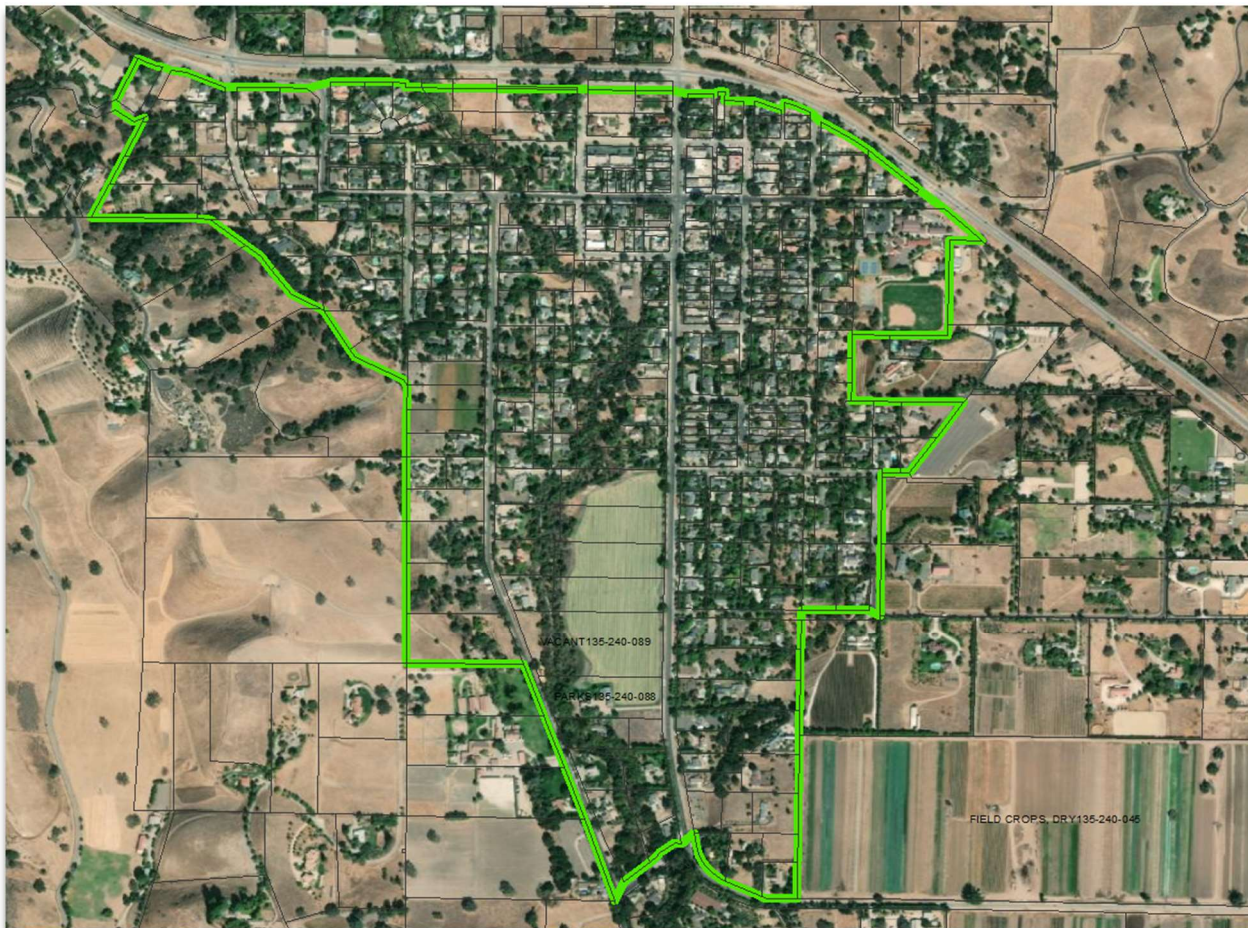
Regarding Component No. 4 of the LOWRPP, the Service Area of the District within the designated Special Problems Area, includes 391 parcels of the 418 parcels. This is concurrent with the Santa Ynez Community Plan. See Figure 1 for map of the service area and Table 1 for Santa Ynez Community Plan Land Use Designations



LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

Background

Figure 1 – District Service Area



LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

Background

Figure 2 - LOWRPP Component No. 4 Phases

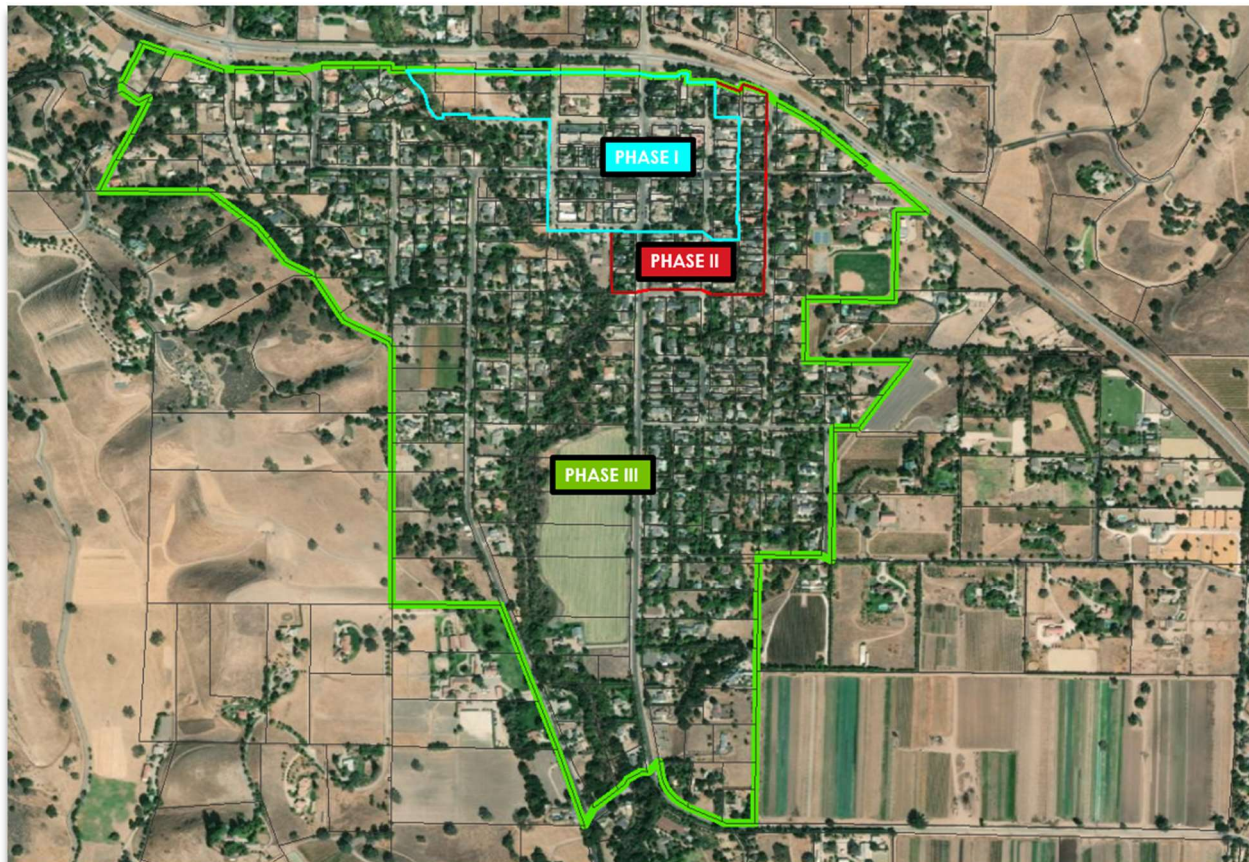


Table 1 - Land Use Designation

LOWRPP Component No. 4 – Phase No.	No. of Parcels
Phase I – Commercial Zone	
General Commercial	77
Phase II – Small Lot Residential	
Residential - 4.6 units/Acre	50
Phase III – Overall Service Area	
Res. 1 Residential - 1.0 Units/Acre	75
Residential – 1.8 Units/Acre	35
Residential - 3.3 Units/Acre	127
Residential - 4.6 Units/Acre	21
RR – 5 Rural Residential – 1 Unit/5 Acre	5
A-1-5 Agriculture 1 Unit/5 Acre	1
Total	391



LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

Historical Wastewater Studies

2.0 HISTORICAL WASTEWATER STUDIES

Over the last decade, there have been multiple studies involving estimating wastewater flows generated from the Special Problems Area of Los Olivos. The following is a list of studies reviewed and summarized below:

- Santa Ynez Valley Community Plan Environmental Impact Report 2009 (EIR 2009)
- Los Olivos Wastewater Management Plan (LOWWMP)
- Los Olivos Wastewater System Preliminary Engineering Report AECOM 2013 (PER AECOM 2013)
- Update to Los Olivos Wastewater System Preliminary Engineering Report AECOM 2016 (Update AECOM 2016)
- Los Olivos Special Problems Area Sewer Calculations Stantec 2015 (STN 2015)

The phases referenced within the historical wastewater studies do not reflect the same District service area and Phases for Component No. 4 of the LOWRPP. See Table 2 for a phase comparison between Component No. 4 of the LOWRPP and historical reports. The following section provides a brief understanding of the calculations used to determine planning level wastewater flows for each historical wastewater study.

Table 2 – Historical Wastewater Studies Phase Comparison

Wastewater Report	Phase I	Phase II	Phase III
EIR 2009	N/A	N/A	N/A
LOWWMP 2010	N/A	N/A	N/A
PER AECOM 2013	Existing Commercial Zone & Select Residential	Buildout Commercial Zone & Select Residential	Buildout Overall Service Area
UPDATE AECOM 2016	N/A	N/A	Buildout Overall Service Area
STN 2015	Existing Commercial Zone & Select Residential	Buildout Commercial Zone & Select Residential	N/A
LOWRPP Component No. 4	Buildout Commercial Zone & Select Residential	Buildout Commercial Zone, Select Residential & Small Lot Residential	Buildout Overall Service Area



2.1.1 Santa Ynez Valley Community Plan Environmental Impact Report 2009 (EIR 2009)

The EIR 2009 presents a plan for physical development of the community plan area in Santa Ynez Valley. The Township of Los Olivos is located within the community plan area. The EIR estimates the cumulative wastewater impacts to the Santa Ynez Community Service District (SYCSD) that the community of Los Olivos would generate from existing conditions to 20-year buildout. SYCSD has published wastewater generation factors of 215 gallons per day (gpd) per unit for residential and 1,050 gpd per commercial connection. The EIR combined the theoretical buildout commercial areas of the Townships of Santa Ynez, Los Olivos, and Ballard and divided by the quantity of commercial lots to determine an average development size of 18,790 square feet (sf) per parcel. The SYCSD generation factor of 1,050 gpd/parcel was divided by the average development area to generate a buildout commercial wastewater duty factor of 0.056 gpd/sf. The residential duty factor of 215 gpd/parcel and commercial duty factor of 0.056 gpd/sf were used to calculate projected flows for existing and 20-year buildout scenarios. The existing developed area for the downtown commercial zone was estimated to be 228,990 sf. The 20-year buildout assumed an additional 120,539 sf would be developed totaling 349,529 sf.

2.1.2 County of Santa Barbara Los Olivos Wastewater Management Plan 2010 (LOWWMP 2010)

The LOWWMP prepared by Santa Barbara County Environmental Health Services for use as a tool to address an existing groundwater quality problem in the Los Olivos Special Problems Area. The LOWWMP 2010 references 2006 Uniform Plumbing Code App. K to estimate wastewater flows. This method involves assumed septic tank sizes multiplied by the number of designated parcels to calculate wastewater generated maximum daily (peak) flows for residential and commercial properties within Special Problems Area. Average daily wastewater flows were estimated from comparable water use with a 50 percent reduction and proportioned for residential and commercial connections in the same manner as the maximum daily flows. The LOWWMP does not address future buildout scenarios.

2.1.3 Los Olivos Wastewater System Preliminary Engineering Report AECOM 2013 (PER AECOM 2013)

The PER AECOM 2013 provides technical recommendations to develop a communal wastewater treatment system for the community of Los Olivos. Wastewater generation estimates in the PER AECOM 2013 reference the duty factors provided in the EIR 2009 report. The residential factor of 215 gpd per connection was used to develop a residential Average Daily Flow (ADF). The commercial duty factor of 0.056 gpd/sf calculated in the EIR 2009 was applied to all phases documented in the PER AECOM 2013. The theoretical buildout area provided in the EIR 2009 of 1,018,071 square feet was carried forward into the PER AECOM 2013 for determining the commercial buildout values. Both residential and commercial flows were added together to determine an estimated total ADF. To develop a flow rate for the design of a



LOS OLIVOS SEPTIC TO SEWER TASK ORDER NO. 1

Historical Wastewater Studies

wastewater treatment facility the report uses a factor of 1.1² applied to the total ADF flow to estimate the Average Day Maximum Month Flow (ADMMF). Furthermore, to design the collection system the report specifies Maximum Daily Flow (MDF) and Peak Hour Flow (PHF) factors as 3.2³ and 4.5⁴, respectively, applied to the ADF.

2.1.4 Update to Los Olivos Wastewater System Preliminary Engineering Report AECOM 2016 (Update AECOM 2016)

At the request of the Los Olivos Steering Committee, the County of Santa Barbara requested AECOM to update the PER 2013 and obtain construction, operation, and maintenance (O&M) costs for a wastewater collection, treatment, and disposal system for Los Olivos. To generate wastewater flows in ADF, MDF, and PHF for Residential and Commercial properties in the overall service area from present to a 20-year build-out, the updated report uses an average value derived from the values in the PER AECOM 2013, STN 2015, and a report developed for the community of Los Alamos. Based on this approach, the residential wastewater generation values were estimated to be 221 gpd and 0.053 gpd/sf for commercial properties. The buildout for the commercial zone uses the 20-year buildout area of 349,529.⁵ square feet applied the developed commercial duty factor of 0.053 gpd/sf to estimate average daily flows (ADF) from the commercial zone. ADMMF, MDF, and PHF factors remained the same as the PER AECOM 2013.

2.1.5 Los Olivos Special Problems Area Sewer Calculations Stantec 2015 (STN 2015)

In 2015, Stantec developed wastewater generation calculations to size conveyance and treatment facilities in the downtown commercial area of Los Olivos. The report uses existing water-use data from 2007 to 2014 received from Santa Ynez River Water Conservation District (SYRWCD ID-1). To convert actual water uses to wastewater flows, the report estimated irrigation use based on multiple factors for each property and subtracted these values from the total water use for each property. Based on this approach, the average residential use with a 30 percent irrigation factor was estimated to be 269 gpd per residential property and commercial factors varied based on type and size of parcel. Buildout for the downtown commercial zone was estimated using factors applied based on the potential for building additions and/or extra units are for each residential or commercial lot. The factors ranged from 1.0 to 3.0 based on property buildout potential. The ADMMF, MDF, and PHF factors are consistent with the EIR 2009 and PER AECOM 2013.

² Factor established in the PER AECOM 2013 based on observations at the City of Morro Bay/Cayucos Sanitary District Wastewater Treatment Plant. *City of Morro Bay/Cayucos Sanitary District WWTP Draft Facility Master Plan (Carollo, September 2007)*

³ Factor established in the PER AECOM 2013 based on *San Simeon CSD Water System Master Plan and Wastewater Collection System Evaluation (Boyle, November 2007)*

⁴ Factor established in the PER AECOM 2013 based tourism and minimums in *Metcalf & Eddy – McGraw-Hill (March 2002)*.

⁵ Santa Ynez Valley Community Plan EIR



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Historical Wastewater Studies

The historical wastewater studies summarized previously have different approaches and results. Tables 3 through 6 are provided as a reference and comparison of wastewater duty factors, residential and commercial connections and developed commercial area, average daily flow, and peak flow factors.

Table 3 – Historical Reports Wastewater Duty Factors Summary

Wastewater Duty Factors			
	Residential (gpd per connection)	Commercial (gpd per connection)	Commercial (gpd/sf)
EIR 2009	215 ⁶	N/A	0.056
LOWWMP 2010	408 ⁷	588 ⁸	N/A
AECOMM 2013	215	N/A	0.056
Update AECOM 2016	221	N/A	0.053
STN 2015	269	N/A	N/A

Table 4 - Historical Reports Residential and Commercial Connections and Developed Commercial Areas Summary

	Existing			Buildout		
	Residential Connections	Commercial Connections	Commercial Area (sf)	Residential Connections	Commercial Connections	Commercial Area (sf)
	Existing Service Area			Buildout Service Area		
EIR 2009	404	N/A	228,990	512	N/A	349,529
LOWWMP 2010	366	52	N/A	N/A	N/A	N/A
	Existing Commercial Zone			Buildout Service Area		
AECOMM 2013	25	N/A	228,990	400	N/A	1,018,071
Update AECOM 2016	N/A	N/A	N/A	400	N/A	349,529
	Existing Commercial Zone			Buildout Commercial Zone		
STN 2015⁹	11	43	N/A	11	47	N/A

Table 5 - Historical Report Average Daily Flow Comparison Summary

Historical Report	Existing	Buildout
	Service Area	Service Area
	ADF (gpd)	ADF (gpd)
EIR 2009 (a)	98,800	128,800
LOWWMP 2010 (a)	180,000	N/A
Historical Report	Existing	Buildout

⁶ Santa Ynez Community Service District Wastewater Duty Factor

⁷ LOWWMP – Average Daily flow of 180,000 gpd / 366 Residential Connections

⁸ LOWWMP – Average Daily flow of 180,000 gpd / 52 Commercial Connections

⁹ Values are for the Commercial Zone Only



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Sub-Task 1: Validation of Previous Wastewater flows

	<i>Phase I – Commercial Zone & Select Residential</i>	<i>Phase II – Commercial Zone & Select Residential</i>	<i>Phase III – Service Area</i>
	ADF (gpd)	ADF (gpd)	ADF (gpd)
<i>AECOMM 2013 (b)</i>	19,000	63,000	143,000
<i>Update AECOM 2016 (b)</i>	N/A	N/A	106,900
<i>STN 2015 (b)</i>	27,812	45,717	N/A

(a) Overall service area for the District

(b) Phase I & II (Commercial Zone Only); Phase III (Overall Service Area)

Table 6 - Historical Report Peak Flow Factor Summary

Peak Flow Factors			
	ADMMF	MDF	PHF
EIR 2009	N/A	N/A	N/A
LOWWMP 2010	N/A	1.79 ¹⁰	N/A
AECOMM 2013	1.1	3.2	4.5
Update AECOM 2016	1.1	3.2	4.5
STN 2015	1.1	3.2	4.5

3.0 SUB-TASK 1: VALIDATION OF PREVIOUS WASTEWATER FLOWS

For purposes of this study, existing flows, wastewater duty factors for residential and commercial connections, and buildout factors will be reviewed between historical reports and current available data. The EIR 2009 and LOWWMP 2010 do not have phases and only estimate flows for existing conditions and buildout conditions for the District Service Area. The PER AECOM 2013, UPDATE AECOM 2016, and STN 2015 have comparable project phases, see Table 2 previously.

3.1 ESTIMATED WASTEWATER FLOWS

The Special Problems Area of Los Olivos has been under water restriction requirements and development restrictions for over a decade and current water use and wastewater generation patterns are anticipated to change when restrictions are lifted. Future development will be required to meet current water efficiency requirements per current building standards. Water use in the surrounding area of Santa Ynez has shown a declining trend due to recent water saving measures implemented at a State and local level. Based the Recycled Water Facilities Plan (2017) for Santa Ynez Community Service District, water use declined 25% from 2013 to 2015 due to conservation. Conservation and future water efficiency standards will be considered in the buildout phases of this project.

¹⁰ Maximum Daily Flow of 323,00 (gpd) / Average Daily Flow 180,000 (gpd)



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Sub-Task 1: Validation of Previous Wastewater flows

Recent parcel data obtained from the County of Santa Barbara showed that there are 77 lots within the Commercial Zone of Los Olivos (Phase I). Each lot contains a designated Land Use value. Based on 2019 water use data obtained from SYRWCD ID-1, there are 60 lots in the Commercial Zone of Los Olivos with past water data. These 60 lots have been coordinated with the parcel data in which 13 of the lots are residential use and 47 are commercial use. Regarding the 17 lots without water use data, there are 10 vacant lots, one County designated park, and six parcels that either share a common building or are being used as a parking area. It assumed that these lots do not have a water connection to SYRWCD ID-1.

The estimated wastewater flows are broken into residential and commercial flows to account for the variability between these different types of customers.

3.1.1 Residential Duty Factors

Residential wastewater duty factors documented in the previous reports range from 215 gpd to 408 gpd per connection. The most conservative value is from the LOWWMP. As stated in the EIR 2009, the published 215 gpd per residential connection is a “conservative value” as it is 30 percent above the 168 gpd monitored from Santa Ynez Community Service District (SYCSD) at the time of the report. The STN 2015 report used historical water use data received from the local water purveyor from 2007 to 2014. The water use data includes irrigation and/or outdoor water use values. The STN 2015 report assumed a 30 percent reduction in water use to account for irrigation and/or outdoor water used. The 30 percent was taken from the EPA Design Manual 1977 and EPA’s Water Sense website¹¹ and is consistent with the EIR 2009 language that “20% to 40% of water use does not return to the wastewater conveyance system”. It should be noted that the values on the EPA’s website are an average for all geographical regions of the United States. The website states that more arid regions such as the south west, may have exterior uses as high as 60 percent. The community of Los Olivos is in the south-western portion of the United States and could likely have higher outdoor water usage. A commonly referred to report in Southern California, the 2011 California Single Family Water Use Efficiency Study¹², found that 53 percent of water use was for landscape or exterior water.

This factor was applied to the available residential water data from SYRWCD ID-1 in the STN 2015 report and resulted in an average residential duty factor of 180 gpd. SYRWCD ID-1 provided water use data for the peak months of 2019. Using this 2019 water use data and applying a 53 percent exterior water use factor for residential lots the duty factor calculated is 196 gpd.

¹¹ <https://www.epa.gov/sites/production/files/2017-01/documents/ws-outdoor-water-efficient-landscaping.pdf>

¹² <https://www.irwd.com/images/pdf/save-water/CaSingleFamilyWaterUseEfficiencyStudyJune2011.pdf>



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Sub-Task 1: Validation of Previous Wastewater flows

For planning purposes, using the SYCSD residential duty factor of 215 gpd is a reasonable estimate and would account for the potential bounce back of conservation and building moratorium requirements lifted. See Appendix A for Phase I wastewater flow estimations.

3.1.2 Commercial Duty Factors

The methodology used in estimating existing commercial wastewater flows will be consistent with the methodology used in the STN 2015 report. The commercial use category duty factors from the STN 2015 report as well as a calculated duty factor for parcels with unknown Land Use designations will be used to generate flows in this study. See Table 7 below.

The average irrigation and/or exterior use of approximately 12.9 percent calculated from the STN 2015 report was used and applied to the 2019 SYRWCD ID-1 water use data for comparison. As a result, the average commercial duty factor from the 2019 data was 465 gpd per commercial connection. Comparatively, the average commercial connection in the STN 2015 report using 8 years (2007 to 2014) of data was calculated to be 556. A weighted average of 546 gpd per connection was used for commercial parcels with no land use designation for preliminary planning purposes. Additional water use data may be required prior to final design to verify commercial duty flow factors.

Table 7 - Commercial Land Use Duty Factors

Commercial Land Use	No. of Connections	Total Average Annual Daily Flow (gpd)	Calculated Average Daily Flow per Property (gpd)
Hotel	1*	2,850*	2,850
Office	1*	192*	192
Restaurant	2*	1,786*	893
Retail	37*	12,226*	330
Mattie's Tavern	1*	6,300*	6,300
STN 2015 Total	42*	23,354*	556
2019 ID#1 Total	47	21,876	467
Weighted Average**	-	-	546

*Values from the STN 2015 report

**Weighted average based on 2007 – 2014 (8 years) and 2019 (1 year) ID#1 water use data.

Based on recent parcel data, there are various commercial uses beyond what is shown in Table 8, including service station, clubs/lodge halls, store and office combination, storage, parking lots, and miscellaneous commercial. Each of these uses were given a duty factor and then applied to each respective parcel as shown in Appendix A.



4.0 ESTIMATING PROJECTED PHASE 1 WASTEWATER FLOWS

4.1 RESIDENTIAL COMPONENT

The method used for estimating build-out flows for the residential component involved multiplying the duty factors by the number of lots in the Service Area. The number of lots in each previous report is shown in Table 4 and differ among reports. The STN 2015 report does not estimate flows for the Service Area and assumes the residential lots in the Commercial Zone will remain the same.

4.2 COMMERCIAL COMPONENT

Methodologies for estimating Build-out flows in the Commercial Zone of Los Olivos vary between reports. The EIR 2009, PER AECOM 2013, and UPDATE AECOM 2016 use estimated build-out area values as shown in Table 4. This method assumes development of vacant lots and existing structures. The STN 2015 report uses a build-out factor applied to each property based on buildout potential with the development of vacant lots. It should be noted that only the EIR 2009, PER AECOM 2013, the STN 2015 reports estimate flows both for existing conditions as well as build-out conditions and will be compared in this study. To compare build-out in the Commercial Zone between reports, we can calculate build-out factors by comparing existing flows to build-out flows. See Table 8 for a build-out factor comparison.

Table 8 - Historical Reports Calculated Build-out Factors

	Existing Commercial Flows (gpd)	Build-out Commercial Flows (gpd)	Calculated Average Build-out Factor
EIR 2009*	12,800	19,200	1.50
PER AECOM 2013	12,800	57,000	4.45
STN 2015	23,354	42,761	1.83

*Note: EIR tables 4.9-21 & 4.9-22 are not consistent. The build-out areas and flows between tables appear to have an error. The Build-out factor was calculated from the ratio of build-out commercial flows divided by estimated existing commercial flows. Build-out commercial flows were calculated from total projected flow minus projected residential flows (30,000 gpd – 23,200 = 6,400 gpd).

The build-out factor from the PER AECOM 2013 estimates build-out flows from a *theoretical developed area (1,018,071 sf)* in which this value in the County adopted EIR 2009 is only used to generate a duty factor.

4.3 ESTIMATING FLOWS: LOWRPP COMPONENT NO. 4: PHASE I - COMMERCIAL ZONE BUILD-OUT

For commercial zone build-out, this study will use a 1.5 build-out factor. This factor was derived from the County adopted EIR 2009 for 20-year build-out, as shown in Table 8. This factor is applied to the existing



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Estimating Projected Phase 1 Wastewater Flows

flows given to each parcel to estimate future build-out flows. The residential connections within the Commercial Zone were assumed to remain the same as existing to account for future conservations and water efficiency standards. There is a total of 77 lots located in the commercial zone. Ten of these lots either shared a common building with another lot, were being used for parking, or for pedestrian egress/ingress. 5 of these lots (zero lots) were smaller than a tenth of an acre and were assumed to remain the same as existing over the 20-year build-out. These lots were not counted as having a connection to the proposed wastewater conveyance system. See Table 10 for a breakdown of estimated existing and buildout flows for Phase I.

For purposes of this study, vacant lots, aside from zero lots, were assumed to be used for commercial-non-residential purposes and were counted as a connection to the proposed wastewater conveyance system. These lots were assumed to be fully built-out in 20-years and were given the 1,050 gpd per connection duty factor as adopted in the EIR 2009 since there was no previous water use data for estimation purposes. It should be noted, that this duty factor was assumed too conservative to estimate existing flows when compared to water use data, but it is a good fit for projecting build-out flows as these vacant lots have the potential to be developed with buildings that may use a relatively large amount of water such as a restaurant. This value can also account for any additional public restroom facilities that may be brought about due to lifted restrictions. A Commercial Zone Build-out Average Daily Flow comparison is shown in Table 9 below.

Table 9 - Build-out Commercial Zone Flow Comparison

Commercial Zone Build-Out ADF (gpd)	
EIR 2009	N/A
LOWWMP 2010	30,000
PER AECOM 2013	63,000
UPDATE AECOM 2016	N/A
STN 2015	45,717
LOWRPP Component No. 4 - Phase I	43,753

Table 10 - Build-out Residential and Commercial Flows

Residential and Commercial Flows – Phase I: Commercial Zone Build-Out ADF (gpd)					
Type	No. of Connections	Existing Flow Per Unit (gpd/unit)	Estimated Existing Flow (gpd)	Build-out Flow Per Unit (gpd/unit)	Estimated Build-out Flow (gpd)
Residential					
<i>Single Family Residential</i>	13	215	2,795	215	2,795
<i>Mixed-Use Residential</i>	1	215	215	323	323
Sub-total	14	-	3,010	-	3,118
Commercial					



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Estimating Projected Phase 1 Wastewater Flows

Retail (store or office)	15	192	2,880	288	4,320
Retail (store single story)	19	330	6,270	495	9,405
General Commercial	3	546	1,638	819	2,457
Restaurant	2	893	1,786	1,340	2,680
Hotel	2	2850	5,700	2,850	5,700
*Mattie's Tavern	1	6300	6,300	6,300	6,300
Service Station	1	215	215	323	323
Vacant	9	0	0	1,050	9,450
Sub-total	42	-	24,789	-	40,635
Total	66	-	27,799	-	43,753

*Assumed build-out flows for Mattie's Tavern restaurant and bar will remain the same to account for conservation and water efficiency standards. Vacant lots adjacent to Mattie's Tavern that are pending development have been accounted for as vacant lots and have assumed a full commercial buildout potential.

See Appendix A for Phase I wastewater flow estimations.

4.4 PEAK FLOW FACTORS

Average Daily Flows (ADF) are converted to design flows using multiplying or peak flow factors. To design loading on wastewater treatment facilities, ADFs are typically converted to Average Daily Maximum Month Flows (ADMMF) and Maximum Daily Flows (MDF). Wastewater gravity conveyance systems are designed to handle Peak Hour Flows (PHF) during wet and dry weather. Peak Hour Wet Weather Flows (PHWWF) can be assumed to account for infiltration of ground water in the conveyance system, inflow of stormwater through storm water connections and openings in manholes etc. Although, it is anticipated dry weather and wet weather flows should remain constant in a new collection system.

To account for infiltration over the life of the conveyance system and to the affect that tourism in the downtown commercial zone will have, Peak Hour Dry and -Wet Weather flows will be calculated to size the conveyance facilities appropriately.

The peak flow factors in the historical reports are shown in Table 11. The multiplying flow factors are consistent through the historical reports and are reasonable to use for preliminary design purposes.

Table 11 - Historical Report Multiplying Flow Factors

Multiplying Flow Factors			
	ADMMF	MDF	PHF
EIR 2009	N/A	N/A	N/A
LOWWMP 2010	N/A	1.79 ¹³	N/A
AECOMM 2013	1.1	3.2	4.5

¹³ Maximum Daily Flow of 323,00 (gpd) / Average Daily Flow 180,000 (gpd)



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Estimating Projected Phase 1 Wastewater Flows

Update AECOM 2016	1.1	3.2	4.5
STN 2015	1.1	3.2	4.5
Mattie's Tavern (STN 2016) adopted by Santa Barbara County	1.33	N/A	N/A

In addition, Table 12 - Peak Dry and Wet Weather Flows documents the SYCSD and City of Solvang standards for peak dry and wet weather flows.

Table 12 - Peak Dry and Wet Weather Flows

Design Standard	Peak Dry Weather Flow (PDWF)	Peak Wet Weather Flow (PWWF)
SYCSD Design and Construction Standards	2	3
City of Solvang Sewer System Management Plan 2015	2.5	5

Though the community of Los Olivos is similar to Santa Ynez in that it has a small commercial zone with rural residential, viticulture, and agriculture in the surrounding area and like Solvang with the influx of tourism throughout the year it differs from these nearby towns in population. Based on 2010 Census data the population of Los Olivos is 1,132 persons while the populations for Santa Ynez and Solvang are 4,418 and 5,230, respectively. Per RGR¹⁴ projections for 2050, Santa Ynez is projected to have a growth of 7.5% by 2050 yielding a population of 4,750 and Solvang's population will increase to 6,300. Per *Recommended Standards for Sewage Works (Ten State's Standards)* the relationship for peak to average wastewater flow is based on the population served. Smaller populations are found to have a higher peak flow factor than larger populations. Because Los Olivos has a smaller population than nearby towns it is appropriate to compare a calculated wastewater peak factor to each town's standard peak factors.

The peaking factor for the District was calculated using the following equation from *Recommended Standards for Sewage Works (Ten State's Standards)* is used to calculate a PDWF.

$$PDWF = \frac{18 + \sqrt{P}}{4 + \sqrt{P}}$$

Based on the LOWWMP, tourism can increase the population by three times. To account for the influx in tourism and the population growth of Los Olivos, a factor of three was applied to the projected 2050 population and the following peaking factor was calculated.

¹⁴ Santa Barbara Association of Governments Regional Growth Rate Forecast 2050, January 2019



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Estimating Projected Phase 1 Wastewater Flows

$$P = 1,132 * 3 * \frac{1.075}{1000} = 3.65$$

$$\text{Proposed PDWF} = 3.37$$

Comparatively the calculated peak factors using the Ten State's Standard equation for projected 2050 populations of Santa Ynez and Solvang are 3.15 and 3.27, respectively. Based on this comparison, the recommended multiplying flow factors are shown in Table 13.

As stated previously, new conveyance facilities aren't expected to be affected by infiltration of groundwater or inflow of any stormwater, but to account for any buildup of solids and aging materials over the design life as well as any mistakes or tolerances during construction a Peak Wet-Weather Flow factor should be used. Based on textbook value in Metcalf & Eddie, 2002¹⁵, a peak flow factor of not less than 4 should be used for populations below 4,000 persons. Because Los Olivos has a 2050 projected lower population than 4,000, applying a Peak Wet-Weather Flow factor of 4 is reasonable for this project.

The new conveyance facilities should be designed for the minimum capacity of d/D for PDWF and PWWF. The minimum capacities shown in Table 13 are from the SYCSD and Solvang Designs Standards. These capacities were found to be reasonable and are recommended for preliminary design purposes in this project.

Table 13 - Recommended Wastewater Flow Factors

	Multiplying Factor	d/D for D ≤ 12-inch	d/D for D ≥ 15-inch
ADMMF	1.10	-	-
ADMMF (Mattie's Tavern)	1.33		
MDF	3.20	-	-
PDWF	3.37	0.50	0.75
PWWF	4.00	0.90	0.90

Table 14 shows factored build-out flows for Phase I to be used for preliminary design purposes.

Table 14 – Phase I: Factored Commercial Zone Build-out Flows

Phase I: Commercial Zone Build-out - Factored Wastewater Flows (gpd)					
	ADF	ADMMF	MDF	PDWF	PWWF
Residential	3,118	3,430	9,978	10,508	12,472
Commercial	34,335	37,769	109,872	115,709	137,340

¹⁵ Factor established in the PER AECOM 2013 based tourism and minimums in *Metcalf & Eddy – McGraw-Hill (March 2002)*.



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Sub-Task 2: Projected Wastewater Loading

Mattie's Tavern	6,300	8,379	20,160	21,231	25,200
Total	43,753	49,577	140,010	147,448	175,012

The factored wastewater flows in Table 14 are sufficient for preliminary design purposes, but additional water use data may be required prior to final design to verify average and projected flow calculations. It should be noted that these average and factored flows shown in this report are for Phase I – Commercial Zone only and a separate analysis for other phases of the LOWRPP Component No. 4 will be required.

5.0 SUB-TASK 2: PROJECTED WASTEWATER LOADING

In addition to the development of projected wastewater flows for the Los Olivos Special Problem Area, design of a collection and treatment system will also require the estimation of future wastewater composition and strength. While prior studies focused their analysis on the projection of flow magnitude and peaking factors, the PER AECOM 2013 and UPDATE AECOME 2016 reports also estimated the concentration and loading for three key wastewater constituents: Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), and Total Kjeldahl Nitrogen (TKN). Sub-Task 2 will briefly describe the key wastewater constituents, summarize and validate the data presented in prior reports, and provide updated projections for the key wastewater constituents, for the build-out commercial zone area. These projections, in addition to the flow projections, will serve as a basis for sizing the treatment and reclamation facilities for Phase I.

As discussed in Section 1.0, Phase I includes the buildout of the downtown commercial area, which consists of the existing commercial district properties and select residential properties dispersed throughout the commercial area. This study will focus primarily on Phase I of Component No. 4 of the LOWRPP. Estimated wastewater loading for the subsequent phases of the Component No. 4 are not included in this study.

5.1 SUMMARY OF WASTEWATER CONSTITUENTS

5.1.1 Biochemical Oxygen Demand (BOD₅)

Biochemical oxygen demand is the amount of oxygen required to stabilize a decomposable organic matter under aerobic conditions. Typically, this is expressed as BOD₅, or the biochemical oxygen demand of a wastewater sample over a five-day testing period. This value is used as a measure of the decomposable organic matter in a given wastewater, which, if discharged untreated into the environment, can contribute to depletion of dissolved oxygen and development of septic conditions in natural water bodies. Because of this, BOD₅ is a key design parameter in the sizing of wastewater treatment systems and is one of the most commonly regulated constituents of treated wastewater effluent.



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5.1.2 Total Suspended Solids (TSS)

The total suspended solids (TSS) is another key wastewater constituent, and is a measure of the suspended material, both volatile and inert, in the wastewater. In untreated wastewater discharged to the environment, suspended solids can lead to the development of turbidity, sludge deposits, and anaerobic conditions in a natural aquatic environment. Given the wide variety of materials that are included in the category of suspended solids, other material-specific effects in the aquatic environment are possible. Consequently, the TSS of treated wastewater effluent is commonly regulated, and is a key design parameter in sizing wastewater treatment systems.

5.1.3 Total Kjeldahl Nitrogen (TKN)

The Total Kjeldahl Nitrogen (TKN) of a wastewater is a measure of the sum of ammonia (NH_3) and organic nitrogen present in the wastewater. Because of the septic nature of most domestic wastewater, the nitrogen present in the wastewater is almost exclusively in the form of TKN. Under aerobic conditions, ammonia can be biologically oxidized to nitrite (NO_2^-) and nitrate (NO_3^-). Nitrogen is an essential nutrient for growth. When untreated wastewater is discharged to natural aquatic environments, the nitrogen in the wastewater can encourage the growth of undesirable aquatic life in a process known as eutrophication. When this life dies and decays, the resultant oxygen demand can deplete the oxygen levels of the aquatic environment. When untreated wastewater is discharged on land, the nitrogen can contaminate the groundwater, as is the case in Los Olivos.

For wastewater treatment plants discharging to aquatic environments (or aquifers) whose quality will be negatively impacted by excess nitrogen, the Total Nitrogen (TN) in the treated effluent is typically regulated. Because almost all nitrogen in untreated wastewater exists in the form of TKN, this parameter is typically used for the design and sizing of a wastewater treatment facility to meet the required TN limit.

5.2 SUMMARY OF PREVIOUS STUDIES

The PER AECOM 2013 report provided technical recommendations to develop a communal wastewater treatment system for Los Olivos, as specified by the Los Olivos Wastewater Management Plan (LOWWMP). Included in these technical recommendations were estimate concentrations for BOD_5 , TSS, and TKN, as well as loadings based on the projected Average Day Maximum Month flows (AADMF) for each of the phases of implementation of the collection system (Note: the phases of implementation used in the AECOM calculations do not reflect the current projected project phasing as noted in Section 1).

Because no sampling data is available for the Los Olivos Special Problem Area wastewater due to the lack of an existing collection system, the PER AECOM 2013 report referenced textbook values (Metcalf & Eddy, 2002) for average concentrations of BOD_5 , TSS, and TKN, for moderate-strength domestic wastewater. Concentrations and loadings were determined for both residential and commercial sources of wastewater in Los Olivos. In the case of commercial sources, a weighted average was applied to the textbook values for retail and non-retail commercial sources, based on the ratio of retail to non-retail



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commercial area in the Los Olivos Special Problem Area. Based on these textbook values, an overall concentration and total loading was developed. Table 15 summarizes the projected influent loadings for BOD₅, TSS, and TKN from the PER AECOM 2013 report.

Table 15 - Projected Influent Wastewater Strength, PER AECOM 2013 Report

Constituent	Phase	Flow (gpd)	Concentration (mg/L)	Loading (ppd)	Flow (gpd)	Concentration (mg/L)	Loading (ppd)	Concentration (mg/L)	Loading (ppd)
			Residential			Commercial		Total	
BOD ₅	I	5,900	190	9	14,100	810	95	630	105
	II	5,900		9	62,700		424	755	435
	III	94,600		150	62,700		424	435	575
			Residential			Commercial		Total	
TSS	I	5,900	210	10	14,100	510	60	420	70
	II	5,900		10	62,700		267	480	275
	III	94,600		166	62,700		267	330	435
			Residential			Commercial		Total	
TKN	I	5,900	40	2	14,100	100	12	90	15
	II	5,900		2	62,700		52	95	55
	III	94,600		32	62,700		52	65	85

In 2016, AECOM submitted an update to the PER AECOM 2013 report at the request of the Los Olivos Steering Committee, fine tuning some of the recommendations and evaluations. The update did not change the projected wastewater concentrations and loadings for the Los Olivos Special Problem Area.

5.3 WASTEWATER DATA COMPARISONS

Because the Los Olivos Special Problem Area does not have an existing wastewater collection system and no sampling data exists for the existing septic systems, the updated projections for wastewater concentrations and loadings in this report must rely on textbook values, such as those developed in the PER AECOM 2013 report, and data from similar municipalities in California. These will provide projections sufficient for planning-level sizing and cost estimation for the future wastewater treatment facility. For the detailed design phase of this project, a comprehensive wastewater sampling program may be necessary.

While textbook values are a valuable reference for preliminary estimates of wastewater strength, these values are generated based on statistical analysis of a large set of wastewater sampling data, encompassing both domestic and international service areas. Consequently, it is desirable to augment the evaluation with data from service areas located in the same geographic region and having similar characteristics to Los Olivos. Local phenomena that are particularly relevant to the estimation of wastewater loads are the fact that Los Olivos experiences significant population (and therefore wastewater production) variation due to tourism, a vital local industry. Additionally, because the wastewater collection and conveyance system in this area will be entirely new, it will implement water conservation technology and restrict groundwater infiltration, which will result in higher strength wastewater due to the lack of dilution.



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The City of Palm Springs is located in Riverside County, CA, and has a population of approximately 48,000 people. Like Los Olivos, the Palm Springs experience substantial tourism, and has relatively widespread implementation of water conservation measures. Stantec conducted an analysis of the influent wastewater characteristics for the City of Palm Springs Wastewater Treatment Plant (WWTP) based on plant operations data for 2017-2018. This data is shown in Table 16.

Table 16 - City of Palm Springs WWTP Influent Wastewater Characteristics, 2017-2018

Parameter	Units	BOD	TSS	TKN
Average	mg/L	225	308	42
Maximum	mg/L	480	740	52
Minimum	mg/L	94	60	34
90th Percentile	mg/L	310	437	48

As can be seen from Table 14, the wastewater strength for the City of Palm Springs is, on average, of lower strength than the proposed concentrations in the PER AECOM 2013 report. This is reasonable, given the higher population and larger proportion of residential sources for the Palm Springs influent, compared to what may be expected for the Los Olivos Special Problem Area, which is focused on the commercial downtown area of Los Olivos, and does not incorporate the entire residential area. Based on the data from Palm Springs WWTP, the projected wastewater strength for Los Olivos from textbook values is reasonably conservative.

The township of Santa Ynez is located in Santa Barbara County, south of Los Olivos, and is served by Santa Ynez Community Services District (SYCSD). SYCSD provides wastewater collection services for the township, conveying this wastewater to the City of Solvang WWTP for treatment. In their 2017 Recycled Water Facilities Plan, the SYCSD included BOD₅ and TSS data for the influent characteristics of the Solvang WWTP for January through December 2014. This report also included data from a series of special sampling events at a manhole in the SYCSD collection system, intended to characterize the wastewater generated specifically by the SYCSD service area. This data is summarized in Table 17.

Table 17 - SYCSD and Solvang WWTP Wastewater Characterization

Parameter	Units	Average	Peak	Average	Peak
		SYCSD Manhole #33		Solvang WWTP	
BOD₅	mg/L	320	429	263	400
TSS	mg/L	176	288	155	290



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Because of its proximity to Los Olivos, the data from the SYCSD is a valuable indicator for what BOD₅ and TSS concentrations may be expected in the Los Olivos Special Problem Area. As is the case with the data from the Palm Springs WWTP, it is likely that the Los Olivos projections from the PER AECOM 2013 report are higher due to the larger percentage of commercial wastewater sources.

One of the primary differences between the Phase I service area and a typical wastewater collection system is the significantly higher percentage of commercial properties. Because commercial sources tend to produce much stronger wastewater than residential sources, a collection system with a significant percentage of commercial sources will typically see wastewater strengths much higher than the typical municipal system, such as those operated by the cities of Solvang and Palm Springs. Because of this, a more reasonable comparison to the textbook values used in the PER AECOM 2013 report would be data from a collection system with a similarly high percentage of commercial sources. The City of Anaheim, in 2013, built a 100,000 gpd tertiary wastewater treatment plant to provide water for multiple reuse applications. This water recycling facility (WRF) served the downtown Anaheim area, an area with a large percentage of commercial usage. Table 18 shows the wastewater influent data collected during the initial pilot testing for the City of Anaheim WRF.

Table 18 - City of Anaheim WRF Demo Plant Influent Wastewater Characteristics

Parameter	Units	BOD	TSS	TKN
Max Day	mg/L	487	507	76
Max Week	mg/L	470	491	75
Max Month	mg/L	410	435	70
Minimum	mg/L	180	169	39
Maximum	mg/L	490	510	76
Average	mg/L	292	319	60

As can be seen from Table 18, a higher percentage of commercial sources in a collection system leads to greater wastewater strength, with the downtown Anaheim wastewater strength being similar in magnitude to the estimated concentrations from the PER AECOM 2013 report.

5.4 PHASE I WASTEWATER LOADING PROJECTIONS

Based on the comparison of the textbook values calculated in the PER AECOM 2013 report with the survey of influent data for other selected wastewater treatment facilities in California, we conclude that the textbook values for wastewater strength are the most conservative design parameters. Based on these values, balancing higher strength commercial sources with lower strength residential sources, reasonably



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conservative design parameters may be produced for high-level budgeting and design of Phase I of the future wastewater collection and treatment systems for Los Olivos.

Using the textbook values from the PER AECOM 2013 report, and the updated average day maximum month flows (ADMMF) for the projected build-out of Phase I presented in Table 14, the updated projected wastewater loadings and concentrations were calculated. These are presented in Table 19.

Table 19 - Phase I Commercial Zone Buildout, Projected Wastewater Strength

Constituent	Phase	Flow (gpd)	Concentration (mg/L)	Loading (ppd)	Flow (gpd)	Concentration (mg/L)	Loading (ppd)	Concentration (mg/L)	Loading (ppd)
		Residential			Commercial			Total	
BOD₅	I	3,430	190	6	46,148	810	312	769	318
		Residential			Commercial			Total	
TSS	I	3,430	210	7	46,148	510	197	493	204
		Residential			Commercial			Total	
TKN	I	3,430	40	2	46,148	100	39	99	41

As can be seen from Table 19, the primarily commercial usage of the Phase I zone exercises a significant influence on the projected concentration of the various wastewater constituents. As the collection system is expanded beyond the Phase I zone, to include more residential sources, the flow from these residential sources will increase the loading and flow but reduce the overall concentration at the treatment facility. The loadings presented in Table 19 will allow for high-level design and cost-estimates for the future wastewater treatment facility, although these evaluations should also incorporate considerations for future expansions of the system beyond Phase I.

While the projected wastewater strength provided in Table 17 may be sufficient for high-level estimates of the future wastewater treatment requirements, significant variability may be present in the actual wastewater produced by the collection system. For more detailed design and cost-estimates, it is recommended that the Los Olivos CSD undertake a comprehensive sampling effort of representative commercial and residential sources to produce real-world data. This sampling effort should distinguish between residential and commercial sources of wastewater and be conducted across a time period sufficient to capture seasonal variations in wastewater strength. Due to the heavy influence of tourism on the Phase I commercial district, the variation in wastewater strength between weekdays and weekends and between high and low tourism seasons is expected to be substantial. A comprehensive sampling effort would provide data invaluable to the accurate design of the future wastewater treatment facilities. It would help ensure that the facilities can successfully treat both baseline and seasonal variation of wastewater loads and would likely reduce long-term costs by reducing the risks of under- or over-sizing.



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References

6.0 REFERENCES

City of Morro Bay/Cayucos Sanitary District WWTP Draft Facility Master Plan (Carollo, September 2007)

County of Santa Barbara Los Olivos Wastewater Management Plan 2010

<https://www.epa.gov/sites/production/files/2017-01/documents/ws-outdoor-water-efficient-landscaping.pdf>

<https://www.irwd.com/images/pdf/save-water/CaSingleFamilyWaterUseEfficiencyStudyJune2011.pdf>

Los Olivos Wastewater System Preliminary Engineering Report; AECOM 2013

Los Olivos Special Problems Area Sewer Calculations; Stantec 2015

Metcalf & Eddy – McGraw-Hill (March 2002).

San Simeon CSD Water System Master Plan and Wastewater Collection System Evaluation (Boyle, November 2007)

Santa Barbara Association of Governments Regional Growth Rate Forecast 2050, January 2019

Santa Ynez Valley Community Plan Environmental Impact Report 2009

Santa Ynez Community Service District Recycled Water Facilities Plan FINAL May 2017

Update to Los Olivos Wastewater System Preliminary Engineering Report; AECOM 2016

Water Resources of Santa Barbara County; Santa Barbara County Water Agency July 2000

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Appendix A

Appendix A



PHASE 1 - Commercial Zone

LandUse	Data	
	Sum of Ex. WW Flows	Sum of Buildout WW Flow (gpd)
AUTO SALES, REPAIR, STORAGE, CAR WASH, ETC	330	495
CLUBS, LODGE HALLS	192	288
COMMERCIAL (MISC)	1638	10857
COMMERCIAL AND OFFICE CONDOS,PUDS	0	0
HOTELS	5700	5700
MIXED USE-COMMERCIAL/RESIDENTIAL	215	323
OFFICE BUILDINGS, MULTI-STORY	768	1152
OPEN STORAGE, BULK PLANT	0	0
PARKING LOTS	0	0
PARKS	0	0
RESIDENTIAL INCOME, 2-4 UNITS	645	645
RESTAURANTS,BARS	8086	8979
RETAIL STORES, SINGLE STORY	5940	8910
SERVICE STATIONS	215	323
SINGLE FAMILY RESIDENCE	2150	2150
STORE AND OFFICE COMBINATION	1920	2880
VACANT	0	1050
(blank)		
Grand Total	27799	43751

*Lots coded with various colors share a common building across property lines. These lots were evaluated for development potential. Lots found to have no building potential/are smaller than 0.1 of an acre were categorized as 'zero lots' and were assumed not connected to the conveyance system for existing or build-out estimations.

APN	Owner	Situs1	Acreage	LandUse	Phase	Zone	Ex. WW Flows	Buildout WW Flow (gpd)	Vacant
135-064-021	RAILWAY JONATA, LLC		0.35	COMMERCIAL (MISC)	1	Commercial	0	0	Y
135-064-024	RAILWAY JONATA, LLC		0.62	COMMERCIAL (MISC)	1	Commercial	0	1050	Y
135-064-026	RAILWAY JONATA, LLC		0.41	COMMERCIAL (MISC)	1	Commercial	0	0	Y
135-064-028	RAILWAY JONATA, LLC		0.79	COMMERCIAL (MISC)	1	Commercial	0	1050	Y
135-073-007	RAILWAY JONATA, LLC	2329 JONATA ST	1.798	COMMERCIAL AND OFFICE CONDOS,PUDS	1	Commercial	0	0	
135-073-009	RAILWAY JONATA, LLC	2350 RAILWAY	1.48	RESTAURANTS,BARS	1	Commercial	6,300	6300	
135-074-011	RANCHEROS VISITADORES	2355 JONATA ST	0.86	COMMERCIAL (MISC)	1	Commercial	546	819	
135-074-012	STAGE STOP PLAZA LLC (CA)	2971 GRAND AVE	0.37	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-074-013	STAGE STOP PLAZA LLC (CA)	2963 GRAND AVE UNIT A	0.32	STORE AND OFFICE COMBINATION	1	Commercial	192	288	
135-074-017	STAGE STOP PLAZA		0.367	COMMERCIAL (MISC)	1	Commercial	0	1050	Y
135-074-019	STAGE STOP PLAZA		0.86	COMMERCIAL (MISC)	1	Commercial	0	1050	Y
135-074-021	STAGE STOP PLAZA		0.32	COMMERCIAL (MISC)	1	Commercial	0	1050	Y
135-075-002	LONG CREEK HOLDINGS, LLC	2982 GRAND AVE	0.16	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-075-005	PALMER, FRANK	2445 JONATA ST	0.54	SINGLE FAMILY RESIDENCE	1	Commercial	215	215	
135-075-006	TED CHAMBERLIN RANCH, LLC	2435 JONATA ST	0.1	SINGLE FAMILY RESIDENCE	1	Commercial	215	215	
135-075-007	GANDOLFO FAM TR 4/22/99	2956 GRAND AVE	0.15	COMMERCIAL (MISC)	1	Commercial	0	1050	Y
135-075-008	COUNTRY GARDENS, LLC	2974 GRAND AVE	0.289	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-075-009	2990 GRAND AVENUE, LLC	2990 GRAND AVE	0.28	OFFICE BUILDINGS, MULTI-STORY	1	Commercial	192	288	
135-075-010	LOVE DONALD R/JOYCE A TRUSTEES (for) L	2432 RAILWAY AVE	0.16	OPEN STORAGE, BULK PLANT	1	Commercial	0	0	
135-091-002	CARHARTT FAMILY TRUST	2939 GRAND AVE	0.08	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-091-003	2935 GRAND AVENUE LLC	2935 GRAND AVE	0.24	STORE AND OFFICE COMBINATION	1	Commercial	192	288	
135-091-004	GRAND COURT, LLC	2933 GRAND AVE	0.12	STORE AND OFFICE COMBINATION	1	Commercial	192	288	
135-091-005	GRAND COURT, LLC	2923 GRAND AVE	0.22	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-091-006	GRAND COURT, LLC	2905 GRAND AVE	0.08	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-091-007	GRAND COURT, LLC	2901 GRAND AVE	0.08	OFFICE BUILDINGS, MULTI-STORY	1	Commercial	0	0	
135-091-008	GRAND COURT, LLC	2901 GRAND AVE	0.09	OFFICE BUILDINGS, MULTI-STORY	1	Commercial	192	288	
135-091-009	FREITAS FAMILY TRUST 07/12/2002	2375 ALAMO PINTADO AVE	0.16	RESTAURANTS,BARS	1	Commercial	893	1340	
135-091-014	SAARLOOS PROPERTIES, LLC	2363 ALAMO PINTADO AVE	0.16	STORE AND OFFICE COMBINATION	1	Commercial	192	288	
135-091-015	SAARLOOS PROPERTIES, LLC	2363 ALAMO PINTADO AVE	0.08	STORE AND OFFICE COMBINATION	1	Commercial	192	288	
135-091-016	BARTLETT, MARGARET J TRUSTEE (for) BAR	2948 NOJOQUI AVE	0.79	STORE AND OFFICE COMBINATION	1	Commercial	192	288	
135-091-017	GENERAL TELEPHONE COMPANY OF CALIF	2372 JONATA ST	0.14	COMMERCIAL (MISC)	1	Commercial	546	819	
135-091-018	DRAMMER, LAURA L FAMILY TRUST 2/19/13	2900 NOJOQUI AVE	0.26	STORE AND OFFICE COMBINATION	1	Commercial	192	288	
135-091-019	SAARLOOS PROPERTIES, LLC	2363 ALAMO PINTADO AVE	0.09	PARKING LOTS	1	Commercial	0	0	
135-091-020	GRAND COURT, LLC		0.064	COMMERCIAL (MISC)	1	Commercial	546	819	
135-091-021	CERNY, JAY E & CORINE D REVOCABLE TRL	2371 ALAMO PINTADO AVE	0.08	SINGLE FAMILY RESIDENCE	1	Commercial	0	0	
135-091-022	CERNY, JAY E & CORINE D REVOCABLE TRL	2369 ALAMO PINTADO AVE	0.08	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-091-023	CERNY, JAY E & CORINE D REVOCABLE TRL	2367 ALAMO PINTADO AVE	0.08	STORE AND OFFICE COMBINATION	1	Commercial	0	0	
135-092-001	GANDOLFO FAM TR 4/22/99	2948 GRAND AVE	0.24	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-092-002	HARNESS, JOHN TERENCE	2446 JONATA ST	0.16	AUTO SALES, REPAIR, STORAGE, CAR WAS	1	Commercial	330	495	
135-092-006	BENSON FAMILY SURVIVOR'S TRUST 12/23/	2900 GRAND AVE	0.13	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-092-011	ROESER FAMILY SURVIVOR'S TRUST 11/2/9	2922 GRAND AVE	0.4	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-092-013	VAUGHAN HOUSING PARTNERSHIP II, LP	2445 ALAMO PINTADO AVE	0.39	OFFICE BUILDINGS, MULTI-STORY	1	Commercial	192	288	
135-092-014	LOS OLIVOS COURTYARD, LLC		0.39	STORE AND OFFICE COMBINATION	1	Commercial	192	288	
135-092-015	M POWER PROPERTIES, LLC	2906 GRAND AVE	0.2	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-093-003	RAND, GERTRUDE S TRUST 2/28/69	2358 ALAMO PINTADO AVE	0.16	SINGLE FAMILY RESIDENCE	1	Commercial	215	215	
135-093-004	SIDEWAYS OUT WEST, LLC	2366 ALAMO PINTADO AVE	0.321	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-093-005	SIDEWAYS OUT WEST, LLC		0.08	COMMERCIAL (MISC)	1	Commercial	0	0	
135-093-006	LOS OLIVOS OLIVOS COMMUNITY ORGANIZ	2374 ALAMO PINTADO AVE	0.16	CLUBS, LODGE HALLS	1	Commercial	192	288	
135-093-007	POLO PARK FOUNDATION, INC		0.16	PARKS	1	Commercial	0	0	
135-093-008	CASANOVA, HELEN	2885 GRAND AVE	0.16	SINGLE FAMILY RESIDENCE	1	Commercial	215	215	
135-093-010	JENKINS, JOSIAH F 2009 TRUST 12/22/09	2883 GRAND AVE	0.13	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-093-015	MARMORSTEIN, SAM/SHAWNDA REVOCABL	2879 GRAND AVE	0.14	RESTAURANTS,BARS	1	Commercial	893	1340	
135-093-017	EPPINK, ERIK J REVOCABLE TRUST 3/18/09	2353 HOLLISTER ST	0.34	RETAIL STORES, SINGLE STORY	1	Commercial	330	495	
135-093-019	CLEVELAND-WOESTE FAMILY TRUST 2/13/1	2356 ALAMO PINTADO AVE	0.25	SINGLE FAMILY RESIDENCE	1	Commercial	215	215	
135-093-020	WALKER ARTHUR/BILLIE C TRUSTEES (for) V	2365 HOLLISTER ST	0.17	SINGLE FAMILY RESIDENCE	1	Commercial	215	215	

135-093-021	GARLEY, CATHERINE R		0.16 VACANT	1 Commercial	0	1050 Y
135-093-022	ELLISON EDWARD C/WANDA L	2381 HOLLISTER ST	0.16 SINGLE FAMILY RESIDENCE	1 Commercial	215	215
135-093-023	GARLEY MICHAEL N/CATHERINE S	2375 HOLLISTER ST	0.17 SINGLE FAMILY RESIDENCE	1 Commercial	215	215
135-093-024	GRAND HOTEL THE	2861 GRAND AVE	0.32 HOTELS	1 Commercial	2,850	2850
135-094-001	BR LOS OLIVOS PROPERTY, LLC	2890 GRAND AVE	0.33 RETAIL STORES, SINGLE STORY	1 Commercial	330	495
135-094-002	TERRY, NANCY J	2434 ALAMO PINTADO AVE	0.16 RETAIL STORES, SINGLE STORY	1 Commercial	330	495
135-094-003	PALM COTTAGE LLC	2446 ALAMO PINTADO AVE	0.16 MIXED USE-COMMERCIAL/RESIDENTIAL	1 Commercial	215	323
135-094-004	CARROLL WALLACE E/MARIA LUISA TRUSTE	2881 SAN MARCOS AVE	0.16 RESIDENTIAL INCOME, 2-4 UNITS	1 Commercial	215	215
135-094-005	BAILEY LTD, LLC.	2865 SAN MARCOS AVE	0.32 SINGLE FAMILY RESIDENCE	1 Commercial	215	215
135-094-006	GRAND HOTEL THE	2435 HOLLISTER ST	0.15 HOTELS	1 Commercial	0	0
135-094-010	GRAND HOTEL THE	2860 GRAND AVE	0.48 HOTELS	1 Commercial	2,850	2850
135-094-012	BAILEY LTD	2880 GRAND AVE	0.16 RETAIL STORES, SINGLE STORY	1 Commercial	330	495
135-102-003	LOS OLIVOS INVESTMENTS, LLC	2902 SAN MARCOS AVE UN	0.25 STORE AND OFFICE COMBINATION	1 Commercial	192	288
135-102-009	MANZANILLA BUILDING LLC	2928 SAN MARCOS AVE UN	0.24 STORE AND OFFICE COMBINATION	1 Commercial	192	288
135-102-010	BARNSTORM, LLC		0.16 COMMERCIAL (MISC)	1 Commercial	0	1050 Y
135-102-011	JRJ ASSOCIATES, LLC	2948 SAN MARCOS AVE UN	0.33 OFFICE BUILDINGS, MULTI-STORY	1 Commercial	192	288
135-133-021	BAILEY LTD LLC		0.2 SERVICE STATIONS	1 Commercial	215	323
135-133-026	RICHOLSON FAMILY TRUST 11/25/2014	2896 SAN MARCOS AVE	0.16 RETAIL STORES, SINGLE STORY	1 Commercial	330	495
135-133-027	BAILEY LTD	2874 SAN MARCOS AVE	0.39 SINGLE FAMILY RESIDENCE	1 Commercial	215	215
135-133-034	COURSON FAMILY TRUST 06/02/1999	2472 ALAMO PINTADO AVE	0.16 RESIDENTIAL INCOME, 2-4 UNITS	1 Commercial	215	215
135-133-035	COURSON FAMILY TRUST 06/02/19999	2460 ALAMO PINTADO AVE	0.17 RESIDENTIAL INCOME, 2-4 UNITS	1 Commercial	215	215
135-133-047	BAILEY LTD LLC		0.28 COMMERCIAL (MISC)	1 Commercial	0	1050