

1. 2:00 P.M. Agenda

Documents:

[2021-01-20 Council Agenda2.Pdf](#)

2. Meeting Materials

[2021-12-Financial-Report-Council](#)

[2021-01-City-Manager-Report](#)

Documents:

[2021-01-20 La De Da Lane.pdf](#)

[2021-01-20 Hazard Code Update.pdf](#)

[2021-01-20 Lighting Ordinance.pdf](#)

[2021-01-20 RES 2021-161 Hazard Resolution.pdf](#)

[2021-01-20 Library2Go.pdf](#)

[January 20 Council Meeting Document.pdf](#)

[Urban Renewal Agency Annual Report 2019-2020_1.Pdf](#)

[2019-20_SDC_Annual_Report.pdf](#)

[2021-156 RES Budget Officer Appointment_1.Pdf](#)

[2021-158 RES Urban Renewal Agency Budget Officer Appointment_1.Pdf](#)



CITY OF YACHATS
REGULAR CITY COUNCIL MEETING & Urban Renewal Agency Meeting
Yachats OR
Wednesday, January 20, 2021 at 2:00 pm
To Be Held Via Zoom
Join Zoom Meeting

Join Zoom Meeting

<https://us02web.zoom.us/j/82767416429?pwd=cUF6b1I5UVAyU2tyMG14anhnakZ4QT09>

Meeting ID: 827 6741 6429

Passcode: 728274

One tap mobile

+13462487799,,82767416429#,,, *728274# US (Houston)

+16699006833,,82767416429#,,, *728274# US (San Jose)

Dial by your location

+1 346 248 7799 US (Houston)

+1 669 900 6833 US (San Jose)

+1 253 215 8782 US (Tacoma)

+1 312 626 6799 US (Chicago)

+1 929 205 6099 US (New York)

+1 301 715 8592 US (Washington D.C) Meeting ID: 827 6741 6429

Passcode: 728274

Find your local number: <https://us02web.zoom.us/j/ky4u0gJgS>

REGULAR COUNCIL MEETING

I. Announcements, Correspondence, and Proclamations

II. Public Comment:

Topics not listed on the agenda 5 Minute limitation per person

III. New Business

a. La De Da Lane Proposal Guest: Westtech Engineering

b. Public Hearing: Natural Hazard Mitigation Code Update

c. Public Hearing: Lighting Ordinance

d. Resolution Accepting Lincoln County Natural Hazard Mitigation Plan Update with Yachats Addendum

The Yachats City Council meetings are open to the public and interested citizens are invited to attend. These are open meetings under Oregon law, but a work session is not a community forum; audience participation is at the discretion of the Council. Meetings are audio-recorded. Public meeting minutes are available for review at City Hall. The meeting place is accessible to persons with disabilities. For accommodations, please call (541) 547-3565, or Oregon Relay 1-800-735-2900 (TDD) two days in advance. City of Yachats does not discriminate on the basis of race, color, religion, creed, gender, national origin, age, disability, marital or veteran status, sexual orientation, or any other legally protected status.

In accordance with ORS 192.630, City of Yachats will make a good faith effort to provide accommodations for any person desiring to attend a public meeting, if the request is made at least 48 hours in advance of the meeting time. The meeting room is physically accessible to persons with mobility devices; a sign language or foreign language interpreter may be available, with advance notice.

Call City Hall at 541-547-3565 or Oregon Relay 1-800-735-2900 (TDD) two days in advance.

Posted 1/15/2021



- e. Code Enforcement Update and Discussion Guest: Matt Frank, TCB
- f. Library Commission request for Library 2Go approval
- g. Selection of topics/questions for March 1 joint meeting with county commissioners
- h. Discussion of interview questions for Council applicants
- i. Presentation of FY20 Urban Renewal Agency Financial Statement
- j. Annual SDC Filing
- k. Update on Oceanview Drive progress
- l. Update on 501 Building progress
- IV. Old Business
 - a. Appointment of FY22 Budget Officer
- V. Reports
 - a. Financial
 - b. Council
 - c. City Manager
- VI. Other Business
 - a. Mayor
 - b. Council
 - c. Staff

Urban Renewal Agency

- I. Appointment of FY22 Budget Officer

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January 11, 2021

Rick McClung
City of Yachats
PO Box 345
Yachats, OR 97498

RE: La De Da Lane Improvements – Design, Bidding and Construction
J.O. 3096.2021.0

Dear Rick:

This letter is intended to formalize our prior discussions between the City and Westech related to the proposed improvements for La De Da Lane between 5th Street and 6th Street.

Per our discussions, this improvement project is anticipated to include new paving, curb, and sidewalk. A pervious pavement alternate will be incorporated into the design for the area south of the skate park.

The remainder of this letter proposal is divided into the following sections.

- Project Description
- Proposed Work Plan
- Proposed Project Schedule
- Fee Schedule

Short discussions on these items follow.

PROJECT DESCRIPTION

The Driftwood Lane Project will include the following major elements.

- The goal of the roadway improvements is to create a new street with parking and sidewalk to serve this portion of the City which includes the skate park and community sports fields. The street will consist of adequate width to provide for two 12-foot wide travel lanes plus a row of full size (9'x18') parking stalls facing west on the west side of the street. A six foot sidewalk will be provided on the east side of the street adjacent to the skate park. There will not be a curb on the west side. If standard asphalt is installed the stormwater will flow onto the fields to the west. If pervious concrete is installed, the stormwater will infiltrate through the concrete into the rock and soils below.
- The location for the proposed street is across an existing tax lot so a right-of-way dedication will be needed for the new street. The right-of-way dedication will be carried out separately from the work performed under this proposal.

- **Street Lighting & Franchise Utilities.** No street lighting is planned for this project, and it does not appear that there will be any substantive impacts on franchise utilities. As discussed, there is an electric vehicle charging station in the 5th Street right-of-way. The current parking for the charging station will be relocated to the nearest new street parking stalls. Coordination of this work with the charging station owner is included in our scope, but this does not include any design related to modifications to the charging station facilities. Based on the charging station lease we believe the City may incur some financial responsibility for charging station modifications. We don't anticipate that those costs will be significant.

Per our prior discussions, the work is to be constructed as a single publicly bid project.

PROPOSED WORK PLAN

Our proposed approach to design the La De Da Lane Improvement Project is straightforward and structured to minimize the overall time required to complete the design. Major tasks required for completion of the project include those as listed below. This proposal includes design services only. We anticipate that our office will provide services during the construction phase of the project. However, the detailed scope of the construction services will be identified in a future proposal when the schedule for construction is better known.

Design Phase

1. The Prepare preliminary layout for the street improvements has been completed during the recent conceptual design phase. The curb locations and layout and lane configurations have been established and will be followed as the design phase progresses.
2. Prepare preliminary drawings and contract specifications for the project. The work will consist of a single drawing package including all street improvements. The construction document package will include both construction drawings and full contract specifications for a public project. Design drawings will be prepared at 1"=10' scale.
3. Prepare a preliminary construction cost estimate for the project.
4. Complete the construction drawings and contract specifications. A preliminary drawing list for the drawings to show the anticipated scope of the work is as shown below.
 - Sheet 1 – Cover Sheet
 - Sheet 2 – Notes
 - Sheet 3 – Erosion Control Plan
 - Sheet 4 – Erosion Control Notes & Details
 - Sheet 5 – La De Da Lane Survey & Demolition Plan
 - Sheet 6 – La De Da Lane Site Plan
 - Sheet 7 – La De Da Lane Grading Plan
 - Sheet 8 – Driftwood Lane Sections
 - Sheet 9 – Details

5. City review of Construction Drawings & Contract Documents. Provide the City with two (2) sets of the draft final drawings and contract documents for City staff review and comment.
6. Franchise utility review. Submit a copy of the preliminary final design to each of the franchise utility companies who may be affected by the design (to allow them to verify whether there are any known or anticipated conflicts).
7. Incorporate City & Utility comments. Review the preliminary design drawings & contract documents with City staff as requested. Upon receipt of City and other agency review comments, changes as appropriate will be incorporated into the documents and final construction cost estimates prepared. The project will then be ready for stamping.
8. Final design to City. Provide the City with two (2) full size sets and two (2) half size sets of construction drawings and a set of final contract documents. The project will then be ready for bidding.

Bidding Phase

Westech's services during bidding and construction are expected to very similar to the scope of services we provide to our other City Engineering clients for publicly bid projects. These services are listed below. If these services are more or less than desired by the City we can work with the City to cater our services to meet the City's needs.

9. Set up and manage bidding through an online bidding system. Compile all bidding documents and upload them to the 3rd party online bidding system. Upload addenda to the online system as needed. Prospective bidders and other interested parties are responsible for downloading the documents for use in preparation of bids. Printed copies of bidding documents are not provided.
10. Advertise. Advertise the project in the Daily Journal of Commerce and the local paper of record. City to pay advertising costs.
11. Bidding questions & addenda. Respond to questions during the bidding period from prospective bidders, suppliers and subcontractors. Prepare and issue addenda (if any) as required.
12. Bid opening. Conduct the bid opening for the publicly bid project, tabulate the bids and make a recommendation of award to the City Council. Due to the current social distancing requirements Westech has been using online bidding services for the complete bidding process. The bidders will enter bid information online. After the bidding period closes Westech will review the bids and provide a recommendation of award to the City.

Construction Administration Services

Based on our discussions, we have not included full time inspection in this scope of work. Therefore, it is anticipated that the City's forces will provide the day to day construction inspection and interfacing with the contractor. Listed below are services that will be provided as desired by the City. Please note that the scope of services provided by Westech can be modified as desired by the City to best meet the City's needs.

13. Contract Documents for execution. Upon authorization by the City, prepare construction contracts for execution by the City and the contractor.
14. Preconstruction conference. Organize and conduct the preconstruction conference. We assume that the preconstruction conference will be held at City Hall. Issue the Notice to Proceed to the Contractor.
15. Contract & drawing questions. Answer Contractor questions, and interpret the contract documents on behalf of the City and to best represent the City's interests.
16. Coordinate/Correspond with City & Contractor. Coordinate and correspond with the Contractor, the City's Public Works Department and City Hall as appropriate during construction.
17. Meetings & construction observation. Meet with City staff periodically as necessary during construction. Provide periodic construction observation to monitor the contractor's progress. We anticipate that most of the routine inspection work will be done by the City's public works staff, with visits by the engineer as appropriate based on the portion of construction under way (typically weekly or twice weekly, depending on the stage of construction).
18. Review of construction submittals. Review construction submittals to ensure that proposed equipment & materials comply with the Contract Documents and City standards.
19. Materials testing review. Coordinate with the contractor to ensure that the required materials testing as required under the contract documents (i.e., compaction, etc) is completed and acceptable.
20. Changes to the work. Review reports of changed conditions from the Contractor or change requests from the City, and prepare change order documents as appropriate.
21. Monthly payment requests. Prepare and submit to the City monthly payment requests and a cover letter/report outlining the contractor's progress during the preceding month.
22. Substantial and final completion walkthroughs. Conduct walkthrough inspections with City representatives as well as the contractor. Prepare a punch list of items to be completed and verify that they have been completed. Verify that the required project closeout paperwork is completed by the Contractor.
23. Record drawings. Prepare record drawings of the improvements (based on marked up field record built drawings provided by the contractor) and submit them to the City. Incorporate final records drawings into the City's existing as-built database.

PROPOSED PROJECT SCHEDULE

Draft construction drawings will be provided in time to allow for Council discussion of the proposed design at their January 20, 2021 meeting. Any necessary revisions will be made and final bid documents will be prepared in time for the February 17, 2021 Council meeting for final approval and authorization for bidding. We anticipate bids to be advertised in late February or early March, bid opening to occur in late March or early April, and construction to start no earlier than May due to typical weather conditions.

FEE SCHEDULE

We propose to provide design engineering services (Tasks 1-8) for a lump sum fee of **\$4,000**.

For services during the bidding and construction phases (Tasks 9-23), we propose to provide these services at our regular hourly rates (see attached), with services provided as requested by the City or as required due to the project scope. This approach has been proposed to minimize the overall engineering fees and to allow the City to utilize staff efforts to minimize the project budget to the extent feasible.

If the City proceeds with this work, and assuming a typical level of involvement, we suggest that the City budget about \$4,000 for bidding services (assuming public advertisement and bidding), and that the City budget about \$10,000 for construction administration services.

The scope of work required (and cost) during bidding will depend on the number of prospective bidders (i.e., number of questions that must be responded to). The scope of work required during construction will be dependent on the contractor selected, and on the City's level of involvement for the routine inspection work, etc. These suggested budget amounts listed assume that full time construction observation services are not required.

All design will be in accordance with the Yachats PWDS and industry standards. Not included in our scope are the following services.

- Agency review fees
- Easement and/or ROW negotiations, Legal Descriptions, Exhibit Maps or Documents
- Addition topographic survey beyond project limits
- Material Testing or Construction Staking
- Sewer or Storm TV Inspection
- Landscape or irrigation design
- Cultural, Wetlands, or T&E Species Investigations
- Geotechnical Studies
- Vacuum excavation or potholing for design verification
- Full time inspection
- As-Built Surveys
- Warranty Inspections
- Electrical Design for Street Lighting
- Traffic Engineering

Any of the above services can be provided on a time and material basis as needed and requested, or we can assist the City with these additional tasks only to the extent requested or required by the City.

If the City decides to proceed with the work scope summarized herein, we assume that the City will authorize us to proceed with these services under our existing city engineering contract (we will provide separate invoices for this work to allow the City to accurately track costs).

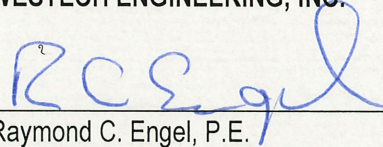
Upon your authorization to proceed, we are prepared to start immediately on the project coordination and design. This proposal is valid for 6 months from today's date.

January 11, 2021
Rick McClung
City of Yachats
Page 6

We appreciate the opportunity to present this engineering services proposal to the City. We look forward to working with the City on this important project. If you have any questions or require any additional information, please do not hesitate to contact us at (503) 585-2474.

Sincerely,

WESTECH ENGINEERING, INC.

A handwritten signature in blue ink, appearing to read "R C Engel", is written over a horizontal line.

Raymond C. Engel, P.E.
Project Manager

rce
enc.

DRAWINGS FOR:

LA DA DA LANE

STREET IMPROVEMENTS

FOR:

The City of Yachats, Oregon

P.O. Box 345

Yachats, Oregon 97498

(541) 547-3565

DISCLAIMER: UTILITIES DEPICTED ARE BASED ON EVIDENCE FOUND IN THE FIELD, MUNICIPALITY AND/OR OTHER GOVERNMENT ENTITY AS-BUILT PLANS, CONTRACTOR PLANS AND OTHER DOCUMENTS OF RECORD. BARKER SURVEYING ASSUMES NO RESPONSIBILITY FOR UTILITIES THAT ARE NO LONGER IN USE, INSTALLED AFTER THE DATE OF ACTUAL SURVEY, NOT IDENTIFIED OR NOT LOCATED. THIS INCLUDES UTILITIES UPON PUBLIC OR PRIVATE PROPERTY.

SPECIFIC UTILITY POSITIONS INDICATED ON THE GROUND SURFACE PROVIDED BY LOCATION SERVICES MAY VARY DUE TO UNDERGROUND DETECTION CAPABILITIES.

ABBREVIATIONS

A.C. or ASPH.	ASPHALTIC CONCRETE	IRR.	IRRIGATION
A.D.	AREA DRAIN	INV.	INVERT
ASSY.	ASSEMBLY	J.B.	JUNCTION BOX
BLDG. or BLD.	BUILDING	L.P.	LIGHT POLE
BW	BOTTOM OF WALL	M	METER, MAIN
CATV	CABLE TELEVISION	M.B.	MAILBOX
C.B.	CATCH BASIN	M.H.	MANHOLE
C.D.	CLEAN-OUT	O.H.	OVER-HEAD
CONC.	CONCRETE	P/L or R	PROPERTY LINE
C.L. or C	CENTERLINE	P.P.	POWER POLE
D.I.	DUCTILE IRON	P.V.C.	POLYVINYL CHLORIDE
E.G.	EDGE OF GRAVEL	PWR or P	POWER
E.O.P. or E.P.	EDGE OF PAVEMENT	R. or RAD.	RADIUS
ELEV.	ELEVATION	R.O.W. or R/W	RIGHT-OF-WAY
EX. or EXIST.	EXISTING	SAN. SEWER or S.S.	SANITARY SEWER
F.D.C.	FIRE DEPT. CONNECTOR	ST.D. or S.D.	STORM DRAIN
FT.	FEET	SVC.	SERVICE
F.F.	FINISH FLOOR	S/W	SIDEWALK
F.G.	FINISH GRADE	T.C.	TOP OF CURB
F.H.	FIRE HYDRANT	TEL. or T	TELEPHONE
F.I.	FIELD INLET	TRANS.	TRANSFORMER
F.M.	FORCE MAIN	TRAF. SIG. or T.S.	TRAFFIC SIGNAL
GRAV.	GRAVEL	TW	TOP OF WALL
G.M.	GAS METER	TYP.	TYPICAL
G.P.	GATE POST	U.G. or U/G	UNDER GROUND
GS	GROUND SHOT	UTIL.	UTILITY
G.V.	GAS VALVE	W/	WITH
H.	HANDICAP	WAT. or W	WATER
HYD.	HYDRANT	W.M.	WETLANDS MARKER
I.R.	IRON ROD	W.M.	WATER METER
I.P.	IRON PIPE	Y.P.C.	YELLOW PLASTIC CAP

SYMBOLS

AD	AREA DRAIN	TEL	TELEPHONE PEDESTAL
① or ②	CATCH BASIN	TEL PED	TELEPHONE PEDESTAL
CO	SEWER CLEANOUT	CATV PED	CATV PEDESTAL
⚡	FIRE HYDRANT	MAIL BOX	MAIL BOX
GV	GAS VALVE	IRRIGATION VALVE	IRRIGATION VALVE
WV	WATER VALVE	STREET LIGHTS	STREET LIGHTS
WM	WATER METER	UTILITY/POWER POLES	UTILITY/POWER POLES
DS	DOWN SPOUT	TEST PIT	TEST PIT
①	MANHOLE TELEPHONE	MONUMENT FOUND	MONUMENT FOUND
②	MANHOLE STORM DRAIN		
③	MANHOLE SAN. SEWER		
○	TREES - *TREENAME* DIAMETER (INCHES)/DRIP RADIUS (FEET)		
	NOTE: DIAMETER MEASURED AT BREAST HEIGHT		

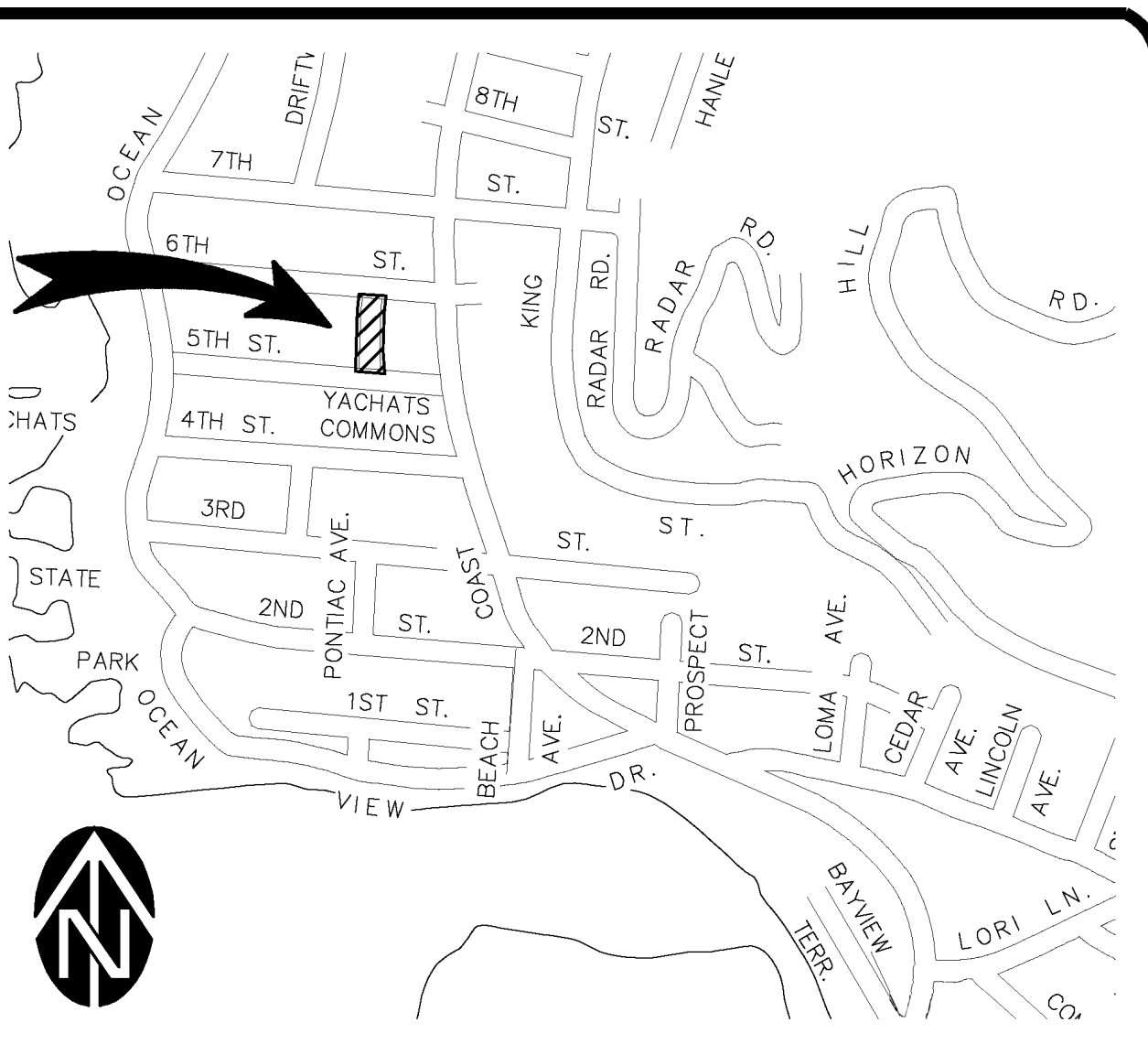
LINE TYPES

CATV LINE	CATV	CATV	CATV	CATV	CATV	CATV	CATV
COMMUNICATION LINE	CDM	CDM	CDM	CDM	CDM	CDM	CDM
EASEMENT LINE							
FENCE LINE							
FIBER OPTIC	FDC	FDC	FDC	FDC	FDC	FDC	FDC
GAS LINE	GAS	GAS	GAS	GAS	GAS	GAS	GAS
OVERHEAD LINE	DH LINES	DH LINES	DH LINES	DH LINES	DH LINES	DH LINES	DH LINES
PHONE LINE	PH	PH	PH	PH	PH	PH	PH
POWER LINE	ELEC	ELEC	ELEC	ELEC	ELEC	ELEC	ELEC
SANITARY SEWER	SS	SS	SS	SS	SS	SS	SS
STORM DRAIN	SD	SD	SD	SD	SD	SD	SD
WATER LINE	W	W	W	W	W	W	W

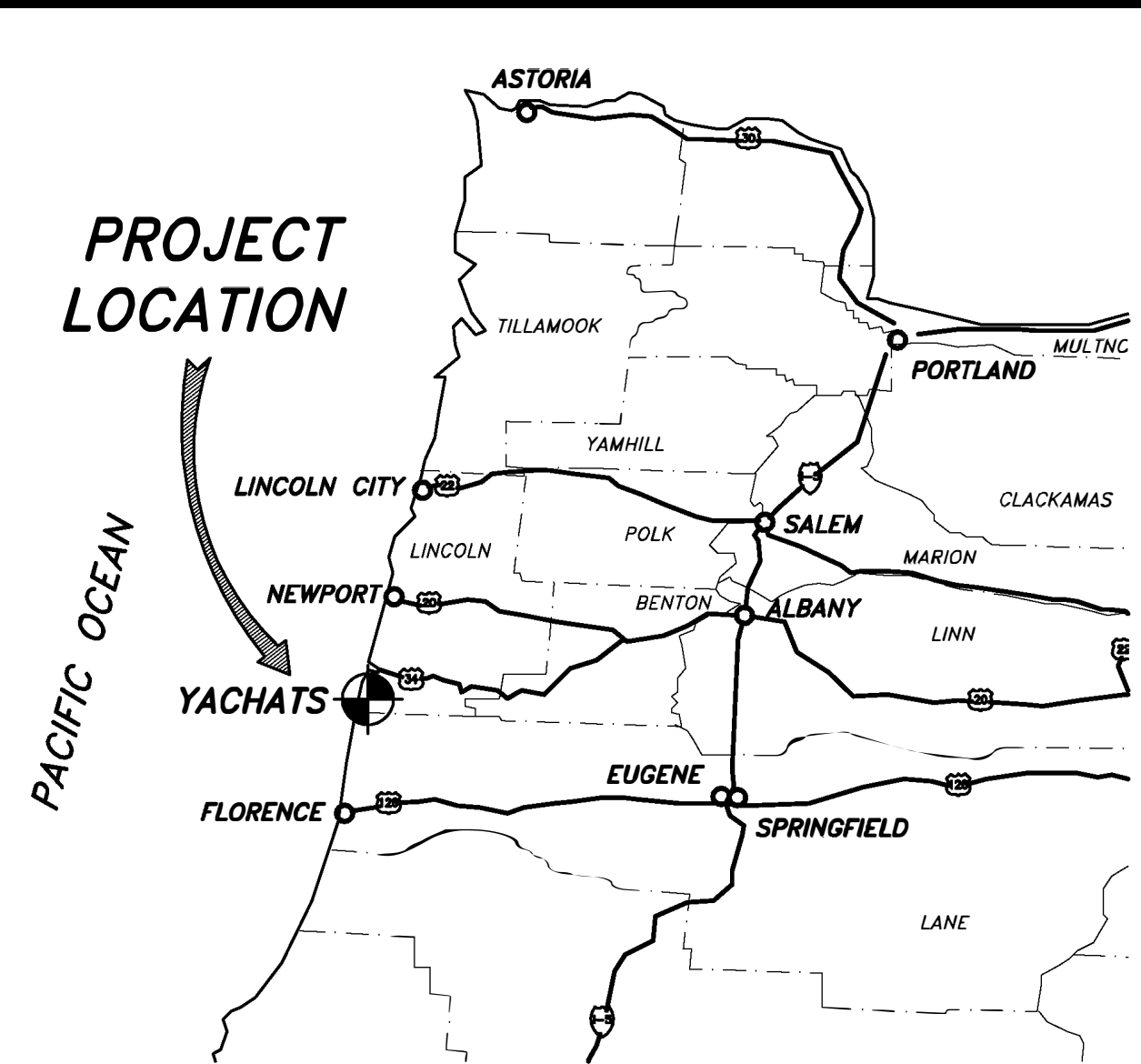


Know what's below.
Call before you dig.

PROJECT
LOCATION



LOCATION MAP

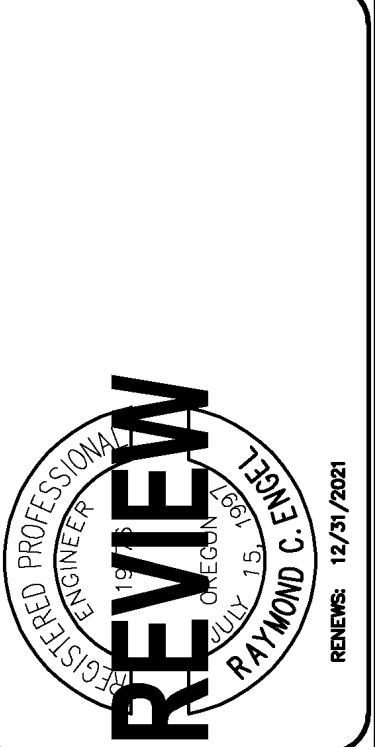


VICINITY MAP

SHEET INDEX

SHT NO	DESCRIPTION
1	COVER SHEET, VICINITY MAPS & DRAWING INDEX
2	NOTES
3	EROSION CONTROL PLAN
4	EROSION CONTROL NOTES & DETAILS
5	LA DE DA LANE SURVEY & DEMOLITION PLAN
6	LA DE DA LANE SITE PLAN
7	LA DE DA LANE GRADING PLAN
8	LA DE DA LANE SECTIONS
9	DETAILS

VERIFY SCALE	DATE: JAN 2021
BAR IS ONE INCH ON ORIGINAL DRAWING	
IF NOT ONE INCH ON ORIGINAL DRAWING, SCALES ACCURATELY	
DSN.	RCE
DRN.	RCE
CKD.	RCE
NO.	1
DATE	JAN 2021
DESCRIPTION	REVISIONS
BY	



WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS

3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

City of Yachats, Oregon

La De Da Lane Street Improvements

Cover Sheet

Vicinity Maps & Drawing Index

DRAWING
1

JOB NUMBER
3096.2030.0

1. Unless otherwise specified or noted on the drawings, all grading, rock, paving, utility and related work shall conform to Oregon Standard Specifications for Construction – OSSC (ODOT/APWA), 2021 edition, or local jurisdiction standards, whichever is more stringent.

3. Contractor to notify City and all utility companies a minimum of 48 business hours (2 business days) prior to start of construction, and comply with all other notification requirements of agencies with jurisdiction over the work.

5. Contractor shall provide all bonds and insurance required by public and/or private agencies having jurisdiction.

7. Unless otherwise approved by the Public Works Director, construction of all public facilities shall be done between 7:00 a.m. and 6:00 p.m., Monday through Friday.

9. Any inspection by the City or other agencies shall not, in any way, relieve the Contractor from any obligation to perform the work in strict compliance with the contract documents, applicable codes, and agency requirements.

11. Upon completion of construction of all new facilities, Contractor shall submit a clean set of field record drawings containing all as-built information to the Engineer. All information shown on the Contractor's field record drawings shall be subject to verification. If significant errors or deviations are noted, an as-built survey prepared and stamped by a registered professional Land Surveyor shall be completed at the Contractor's expense.

13. The contractor shall retain and pay for the services of a registered Civil Engineer and/or Land Surveyor licensed in the State of Oregon to establish construction control and perform initial construction surveys to establish the lines and grades of improvements as indicated on the drawings. Staking for buildings, structures, curbs, gravity drainage pipes/structures and other critical improvements shall be completed by a registered professional surveyor. The contractor shall be responsible for the better use of GPS equipment for final construction staking of these critical improvements is prohibited. The registered professional surveyor shall provide the design engineer with copies of all grade sheets for construction staking performed for the project.

15. Fire, Police, Transit, School Bus Notification. Contractor shall provide a minimum of 48 hours (2 work days) notice to police, fire department and Post Office prior to any work that will impact vehicular traffic, and ensure that alternate emergency access is available. Provide a minimum 1 week (5 work days) notice to any transit district or school district of any traffic impacts on streets which are on bus routes (Contractor to verify routes), and verify that arrangements are made for alternate routes.

TRAFFIC CONTROL

17. Contractor shall erect and maintain barricades, warning signs, traffic cones (and all other traffic control devices required) per City, County and ODOT requirements in accordance with the current MUTCD (including Oregon amendments). Access to driveways shall be maintained at all times. All traffic control measures shall be in place prior to the start of construction activity. Prior to any work in the existing public right-of-way, Contractor shall submit final traffic control plan to the City, County and ODOT for review and issuance of a Lane Closure or Work in Right-of-Way Permit.

19. Unless otherwise specified, the "Required Testing and Frequency" table outlines the minimum testing schedule for the project. This testing schedule is not complete, and does not relieve the Contractor of the responsibility of obtaining all necessary inspections or observations for all work performed, regardless of who is responsible for payment. Cost for retesting shall be borne by the Contractor.

21. The Contractor shall retain a surveyor to research, locate and mark all existing property and street monuments within or adjacent to the work areas prior to construction. Any survey monuments that will be disturbed during construction of the project shall be referenced (prior to construction) and replaced (following construction) by a Registered Land Surveyor at the Contractor's expense. The monuments shall be replaced within a maximum of 90 days, and the County Surveyor shall be notified in writing and/or a survey document recorded as required by ORS 209.140, ORS 209.150 and/or ORS 209.155 as applicable.

23. All facilities shall be maintained in-place by the Contractor unless otherwise shown or directed. Contractor shall take all precautions necessary to support, maintain, or otherwise protect existing utilities and other facilities at all times during construction. Contractor to leave existing facilities in an equal or better-than-original condition and to the satisfaction of the City and Owner's Representative.

25. Contractor shall remove all existing signs, mailboxes, fences, landscaping, etc., as required to avoid damage during construction and replace them to existing or better condition.

GRADING, PAVING & DRAINAGE:
27. Clear and grub within work limits all surface vegetation, trees, stumps, brush, roots, etc. Do not damage or remove trees except as shown or noted on the drawings, or as approved by the Owner's Representative. Protect all roots two inches in diameter or larger on trees which are not to be removed.

29. Immediately following stripping and grading operations, compact subgrade to 95% of the maximum dry density per AASHTO T-180 test method (Modified Proctor). Subgrade must be inspected and approved by the Owner's authorized representative before placing embankments, engineered fills or fine grading for base rock.

31. Granular baserock for standard PCC concrete and asphalt shall conform to the requirements of OSSC (ODOT/APWA) 02630.10 (Dense Graded Base Aggregate).

33. AC pavement shall conform to OSSC (ODOT/APWA) 00744 (hot mixed Asphalt Concrete Pavement –ACP) for standard duty mix. Unless otherwise specified or shown on the drawings, base lifts shall be 3/4" dense graded mix, while wearing courses shall be 1/2" dense graded mix. Unless otherwise specified or shown on the drawings, AC pavement for parking lots and streets shall be Level 2 mix (superpave 65 gyrations) per OSSC (ODOT/APWA) 00744.13.

35. Pavement surface shall be a smooth, well-sealed, tight mat without depressions or bird baths. Bony or open graded pavement surfaces shall be repaired to the satisfaction of the Owner's Representative, prior to final acceptance of the work.

37. Contractor shall protect new pavement against traffic as required, until it has cooled sufficiently to avoid tracking.

39. Finish pavement grades at transition to existing pavement shall match existing pavement grades or be feathered past joints with existing pavement as required to provide a smooth, free draining surface.

41. All street signs, traffic control signs, curb & pavement painting or striping, and/or reflectors shall be installed (in conformance with City and MUTCD standards) prior to requesting final inspection by the City.

43. Contractor shall seed and mulch all exposed slopes and disturbed areas which are not scheduled to be landscaped, including trench restoration areas. Mulch shall be either hydromulch or finely chopped fescue or rygrass mulch conforming with OSSC (ODOT/APWA) Section 01030.15 Per the OSSC, CEREAL GRAIN STRAW (wheat or similar) IS NOT AN ACCEPTABLE SUBSTITUTE without specific written approval.

45. Construction of all curbs & sidewalks shall conform to the applicable requirements of OSSC (ODOT/APWA) Section 00759, Miscellaneous Portland Cement Concrete Structures, including placement, curing, finishing and the repairing of minor defects. Major defects (as determined by the Owner's Representative) will require removal and replacement of the defective portions as directed.

47. Unless otherwise approved in writing by the Owner's Representative and the agency with jurisdiction, monolithic curb & sidewalk shall not be placed in the public right-of-way (ie. curb & sidewalk concrete shall be placed separately).

49. Standard sidewalks shall be a minimum of 4-inches thick. All pedestrian ramps and standard residential driveways shall be a minimum of 6-inches thick. Commercial use driveways and alley approaches shall be minimum 8-inches thick. All curbs, sidewalks and driveways shall be constructed using 3300-psi concrete, and shall be cured with Type 1 or Type 1D clear curing compound. All sidewalks shall be ADA compliant.

50. Finish sidewalk grades at transition to existing sidewalks shall match existing sidewalk grades as required to form a continuous, smooth, free draining surface. The Contractor shall notify the Owner's Representative in writing of any grade discrepancies or problems prior to sidewalk placement.

51. Curb & sidewalk concrete shall be placed only during periods when it will not be damaged by rain (protect unhardened concrete from precipitation). Concrete shall not be placed on frozen baseroack. Do not begin concrete placement until temperature in the shade is a minimum of 35°F and rising, and stop placement if air temperature falls below 35°F. Protect concrete from freezing for a minimum of 5 days after placement per OSSC (ODOT/APWA) 0000440.40.d & 00756.40 or the project specifications, whichever is more stringent.

52. Contraction joints shall be installed directly over any pipes that cross under the sidewalk, to control cracking. In general, cracks in new curbs or sidewalks (at locations other than contraction joints) are not acceptable, and cracked panels shall be removed & replaced unless otherwise approved by the City and the design engineer.

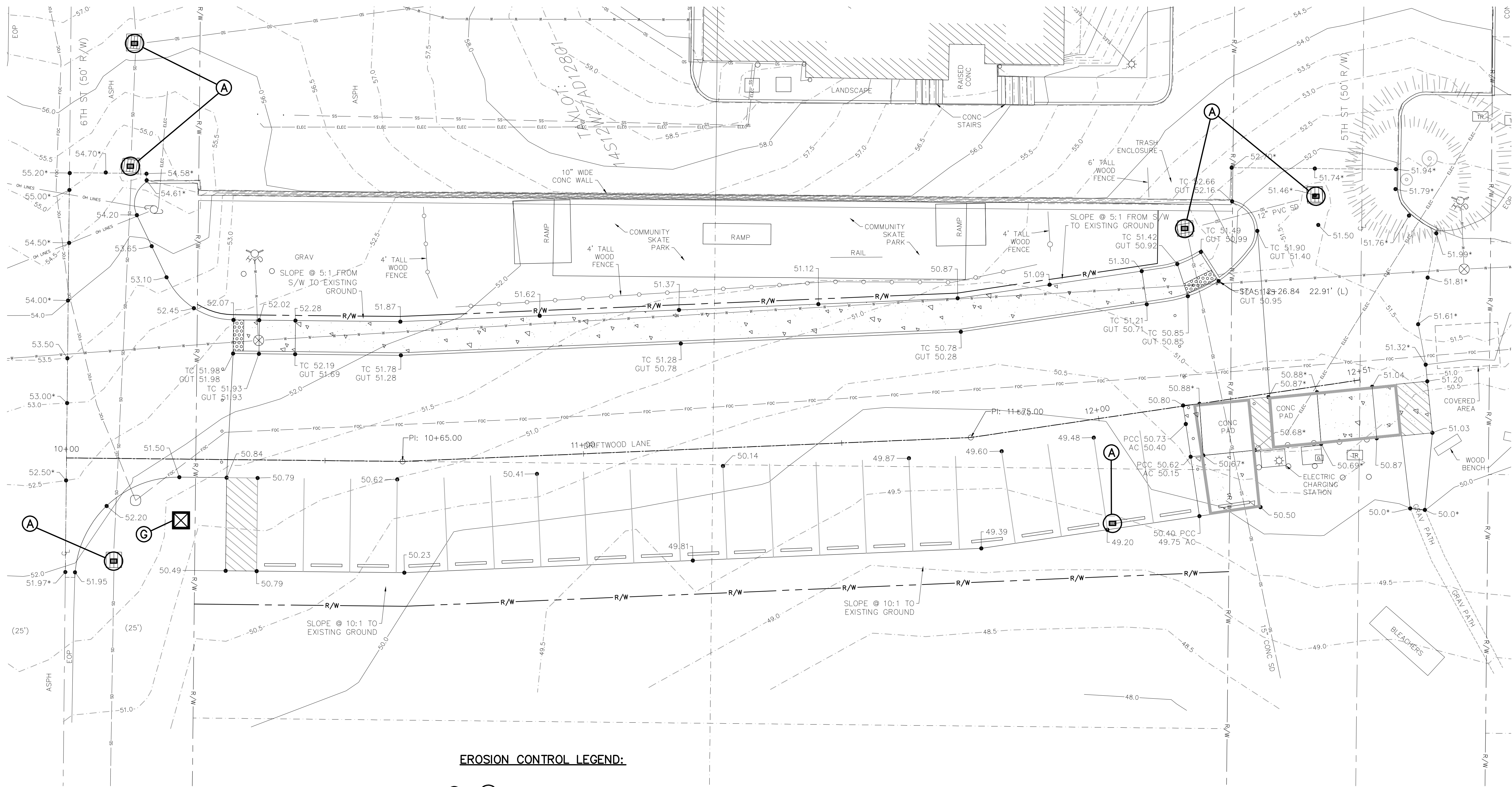
53. Where trench excavation requires removal of PCC curbs and/or sidewalks, the curbs and/or sidewalks shall be sawcut and removed at a tooled joint unless otherwise authorized in writing by the City. The sawcut lines shown on the drawings are schematic and not intended to show the exact alignment of such cuts.

54. Unless otherwise shown on the drawings, areas along curbs and sidewalks shall be backfilled with approved topsoil (typical 6" thick), as well as being seeded and mulched (or hydroseeded).

FRANCHISE & PRIVATE UTILITIES:
55. Contractor shall notify and coordinate with franchise utilities for removal or relocation of power poles, vaults, pedestals, manholes, etc. to avoid conflict with City utility structures, fire hydrants, meters, sewer or storm laterals, etc.

56. All franchise utility structures (vaults, pedestals, light poles, etc.) shall be set a minimum of 1 foot from any property corner or survey monument.

REQUIRED TESTING AND FREQUENCY TABLE		Party Responsible for payment	
		Contractor	Others (see note 1)
Streets, Fire Lanes, Common Driveways, Parking Lots, Pads, Fills, etc.			
Subgrade	1 Test/4000 S.F./Lift (4 min), locations acceptable to approving agency (typically alternate sides of road or access aisles)	✓	See note 2 & note 3
Engineered Fills	1 Test/4000 S.F./Lift (4 min), locations acceptable to approving agency	✓	See note 2 & note 4
Baseroack	1 Test/4000 S.F./Lift (4 min), locations acceptable to approving agency (typically alternate sides of road or access aisles)	✓	See note 2 & note 3
Asphalt	1 Test/6000 S.F./Lift (4 min), locations acceptable to AA (typ. alternate as above)	✓	See note 2
Concrete, Block, etc.			
Slump, Air & Cylinders for structural & reinforced concrete, equipment slabs, curbs, sidewalks & PCC pavements. Unless otherwise specified, one set of cylinders per 100 cubic yards (or portion thereof) of each class of concrete placed per day. Slump & air tests required on same load as cylinders.		✓	See note 2
Note 1: "Others" refers to Owner's authorized Representative or Approving Agency as applicable. Contractor responsible for scheduling testing. All testing must be completed prior to performing subsequent work. Note 2: Testing must be performed by an approved independent testing laboratory. Note 3: In addition to in-place density testing, the subgrade and base rock shall be proof-rolled with a loaded 10 yard dump truck provided by the Contractor. Baseroack proofroll shall take place immediately prior to (within 24 hours of) paving, and shall be witnessed by the Owner's authorized Representative or approving agency. Location and pattern of testing and proofroll to be as approved or directed by said Owner's authorized Representative or approving agency. Note 4: The approved independent laboratory retained by the Contractor shall provide a certification (stamped by an engineer licensed in the State of Oregon) that the subgrade was prepared and all engineered fills were placed in accordance with the provisions of the construction drawings and the contract documents. Note 5: Regardless of who is responsible for payment, the Contractor is responsible for scheduling and coordinating any and all required inspections and Special Inspections as required by applicable building codes or jurisdictions having authority. Note 6: Refer to the project specifications for testing requirements for pervious concrete.			

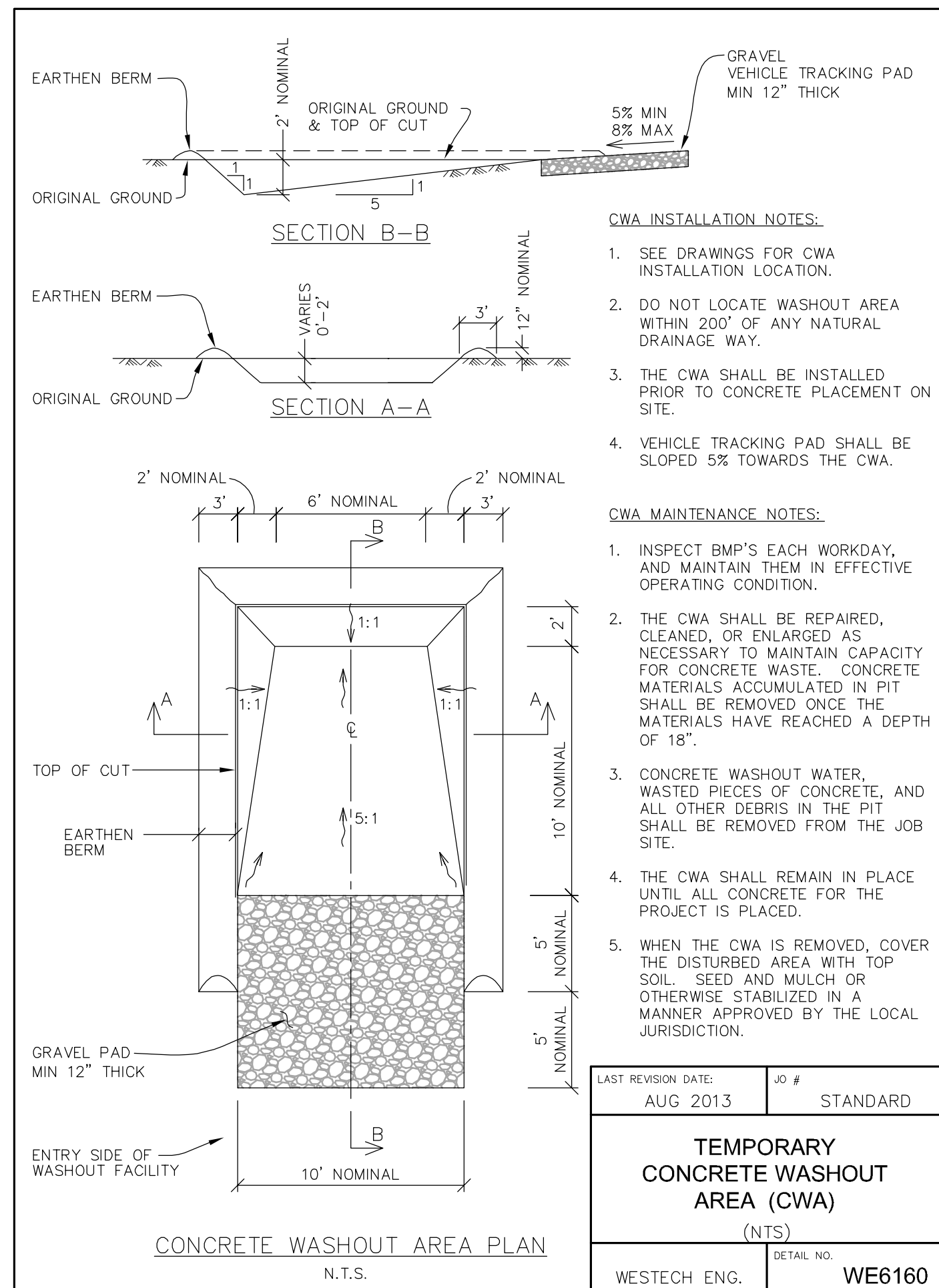
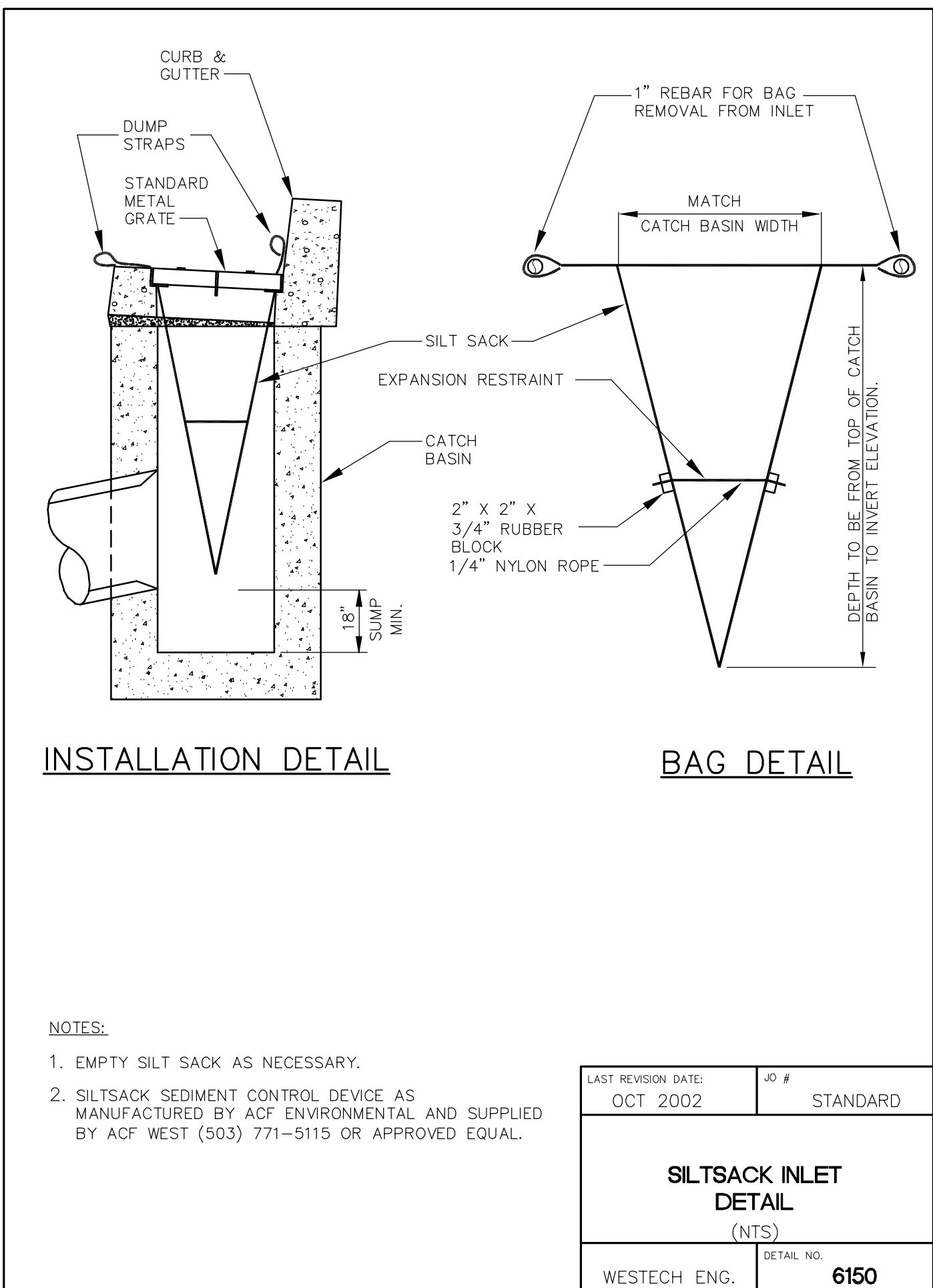


		CATCH BASIN/INLET PROTECTION
		CONCRETE TRUCK WASH-OUT AREA

DRAWING
3
JOB NUMBER
3096.2030.0

1. Clearing and grading erosion control measures shall be in place prior to site disturbance. All other necessary erosion control measures shall be implemented prior to starting work on the portion/phase of the project to which the measures are related. Erosion control measures shall be maintained in such a manner as to ensure that sediment and sediment-laden water does not enter the drainage system, roadways, or violate applicable water quality standards.
2. The erosion control construction, maintenance, replacement and upgrading of the erosion control facilities is the responsibility of the Contractor until all construction is completed and approved, and permanent erosion control (i.e. vegetation/landscaping) is established on all disturbed areas.
3. All recommended erosion control procedures are dependent on construction methods, staging, site conditions, weather and scheduling. During the construction period, erosion control facilities shall be upgraded as necessary due to unexpected storm events and to ensure that sediment and sediment laden water does not leave the site.
4. The Contractor is responsible for control of sediment transport within project limits. If an installed erosion control system does not adequately contain sediment on site, then the erosion control measures shall be adjusted or supplemented by the Contractor as necessary to ensure that sediment laden water does not leave the site. Additional measures shall be provided as required to ensure that all paved areas are kept clean for the duration of the project. Additional interim measures will include, at a minimum, installation of sediment barriers or silt fences in accordance with the details shown on the drawings. These measures shall be installed along all exposed embankments and cut slopes to prevent sediment transport.
5. All existing and newly constructed storm inlets and drains shall be protected until pavement surfaces are completed and/or vegetation is established.
6. Erosion control facilities and sediment fences on active sites shall be inspected by the Contractor at least daily during any period with measurable precipitation. Any required repairs or maintenance shall be completed immediately. The erosion control facilities on inactive sites shall be inspected and maintained by the Contractor a minimum of once a month or within 24 hours following the start of a storm event.
7. At no time shall sediment accumulation within a trapped catch basin exceed 50% of the sediment capacity. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system. The Contractor shall remove all accumulated sediment from all impacted catch basins and storm pipes prior to acceptance by the Owner.
8. The Contractor is solely responsible for protection of all adjacent property and downstream facilities from erosion and siltation during project construction. Any damage resulting from such erosion and siltation shall be corrected at the sole expense of the Contractor.

20. Temporary grass cover measures must be fully established by Oct 15th, or other cover measures (i.e. erosion control blankets with anchors, 3-inches minimum of straw mulch, 6 mil HDPE plastic sheet, etc.) shall be in place over all disturbed soil areas until April 30th. To establish an adequate grass stand for controlling erosion by Oct 15th, it is recommended that seeding and mulching occur by September 1st. Straw mulch, if used, shall not leave any bare ground visible through the straw.
21. Minimum wet weather slope protection. For slopes steeper than 3H:1V but less than 2H:1V, use Tensar/North American Green Type S150 erosion control blanket. For slopes 2H:1V or steeper, use Tensar/North American Green Type SC150 erosion control blanket. Use a minimum of 2-inches straw mulch or Tensar/North American Green Type S150 for slopes flatter than 3H:1V. Slope protection shall be placed on all disturbed areas immediately after completion of each section of construction activity, until the erosion control seeding has been established. As an option during temporary or seasonal work stoppages, a 6-mil HDPE plastic sheet may be placed on exposed slopes. The plastic sheet shall be provided with an anchor trench at the top and bottom of the slope, and shall be sandbagged on the slopes as required to prevent damage or displacement by wind.
22. Permanent erosion control vegetation on all embankments and disturbed areas shall be re-established as soon as construction is completed.
23. Soil preparation. Topsoil should be prepared according to landscape plans, if available, or recommendations of grass seed supplier. It is recommended that slopes be textured before seeding by rack walking (i.e. driving a crawling tractor up and down the slopes to leave a pattern of cleat imprints parallel to slope contours) or other method to provide stable areas for seeds to rest.
24. When used, hydromulch shall be applied with grass seed at a rate of 2000 lbs. per acre between April 30 and June 10, or between September 1 and October 1. On slopes steeper than 10 percent, hydroseed and mulch shall be applied with a bonding agent (tackifier). Application rate and methodology to be in accordance with seed supplier recommendations.
25. When used in lieu of hydromulch, dry, loose, weed free straw used as mulch shall be applied at a rate of 4000 lbs. per acre (double the hydromulch application requirement). Anchor straw by working in by hand or with equipment (rollers, cleat tractors, etc.). Mulch shall be spread uniformly immediately following seeding.
26. When conditions are not favorable to germination and establishment of the grass seed, the Contractor shall irrigate the seeded and mulched areas as required to establish the grass cover.
27. Seeding. Recommended erosion control grass seed mix as follows. Dwarf grass mix (low height, low maintenance) consisting of dwarf perennial ryegrass (80% by weight), creeping red fescue (20% by weight). Application rate shall be 100 lbs. per acre minimum.
28. Grass seed shall be fertilized at a rate of 10 lbs. per 1000 S.F with 16-16-16 slow release type fertilizer. Development areas within 50 feet of water bodies and wetlands must use a non-phosphorous fertilizer.



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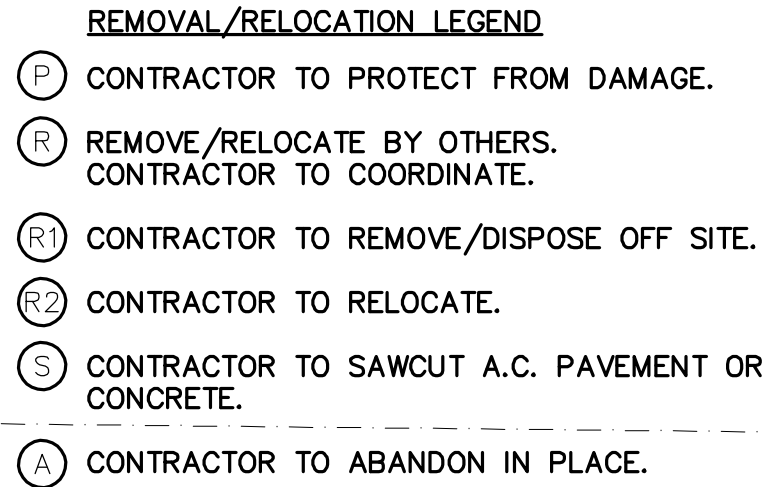


WE
WESTECH ENGINEERING, INC.
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3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
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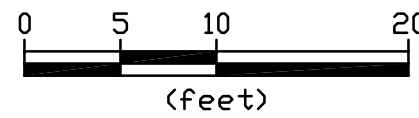
City of Yachats, Oregon
La De Da Lane Street Improvements
Erosion Control
Notes & Details

DRAWING
4

JOB NUMBER
3096.2030.0



NOTES:
THIS DEMOLITION PLAN IS PROVIDED AS A GUIDE TO ASSIST THE CONTRACTOR IN IDENTIFYING THE SCOPE OF WORK REQUIRED TO REMOVE EXISTING INFRASTRUCTURE AND MATERIALS PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING EXISTING CONDITIONS AND INFORMATION TO DETERMINE THE FULL SCOPE OF DEMOLITION WORK REQUIRED TO CONSTRUCT THE PROJECT CONSISTENT WITH THE PLANS AND SPECIFICATIONS.



REVIEW

STATE OF NEW YORK
 PROFESSIONAL ENGINEER
 NO. 15623
 EXPIRATION DATE 12/31/2021
 RAYMOND C. ENGEL

City of Yachats, Oregon

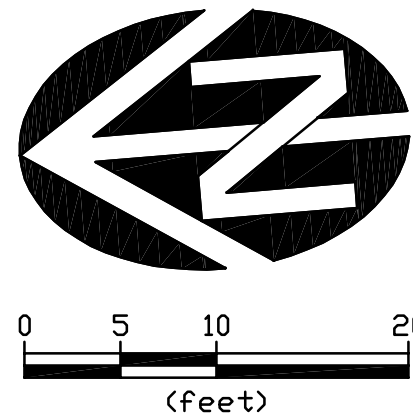
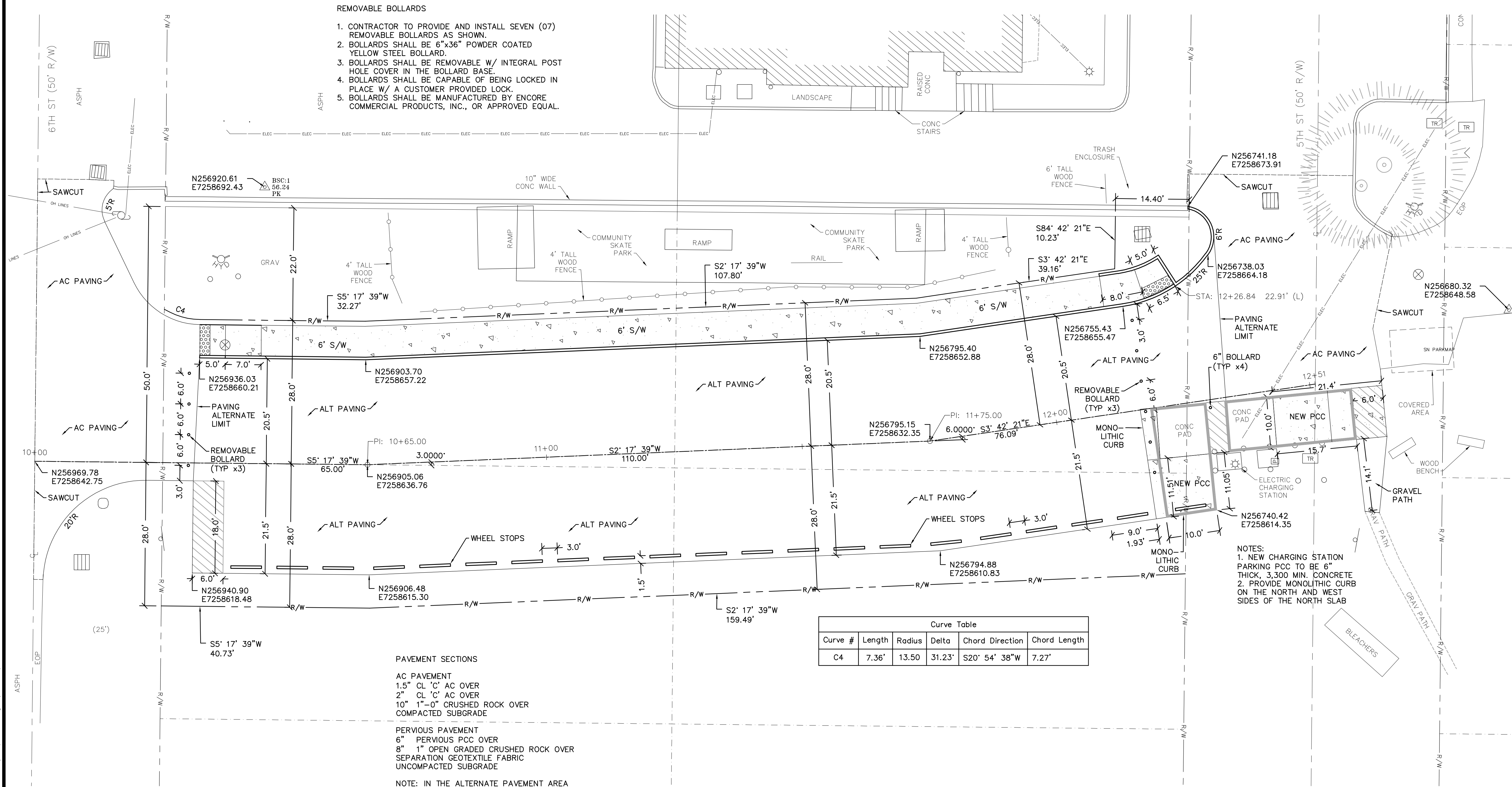
La De Da Lane Street Improvements

Driftwood Lane

Survey & Demolition Plan

DRAWING
5
JOB NUMBER
3096.2030.0

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NO. 1
DATE: JAN 2021

PROFESSIONAL
ENGINEER
STATE OF OREGON
15,000
P. W. M. D. C. E.
12/31/2021

REVIEW

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS

WE

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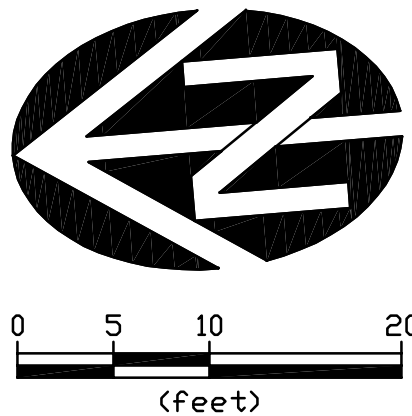
City of Yachats, Oregon

La De Da Lane Street Improvements

La De Da Lane
Site Plan

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3096.2030.0

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WESTTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS

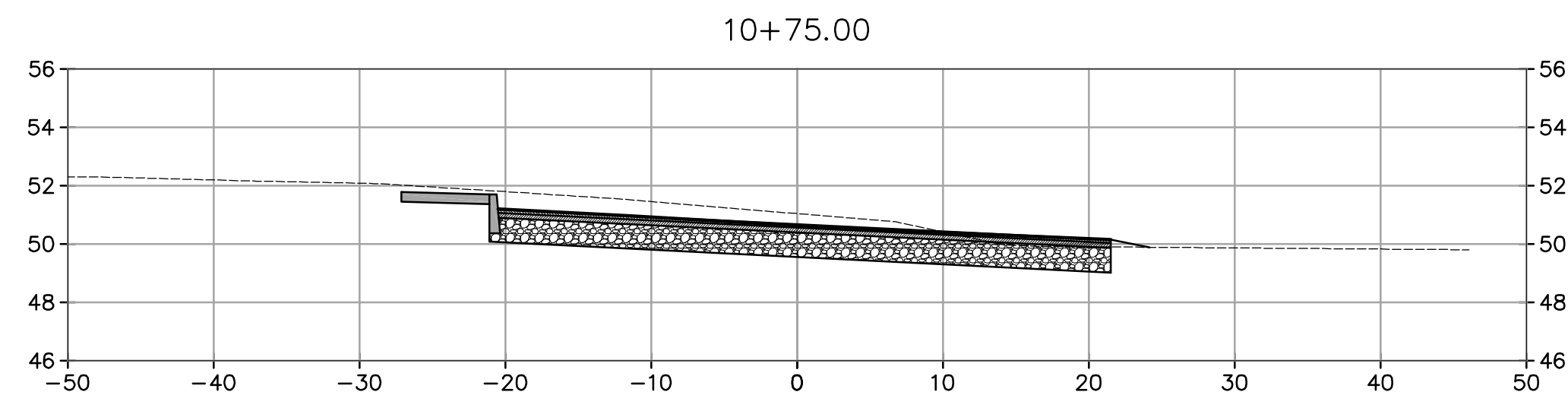
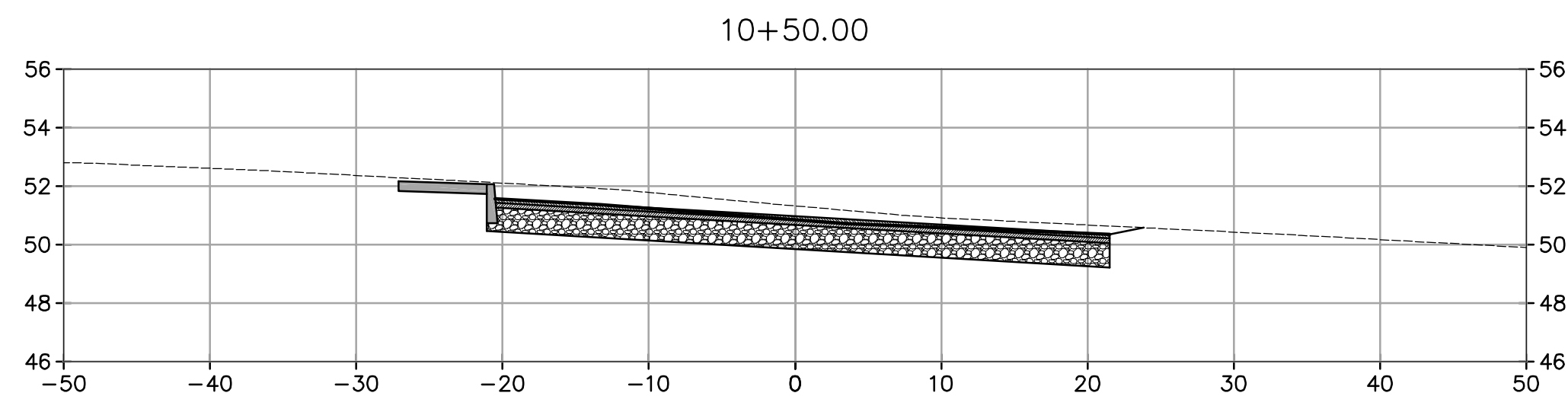
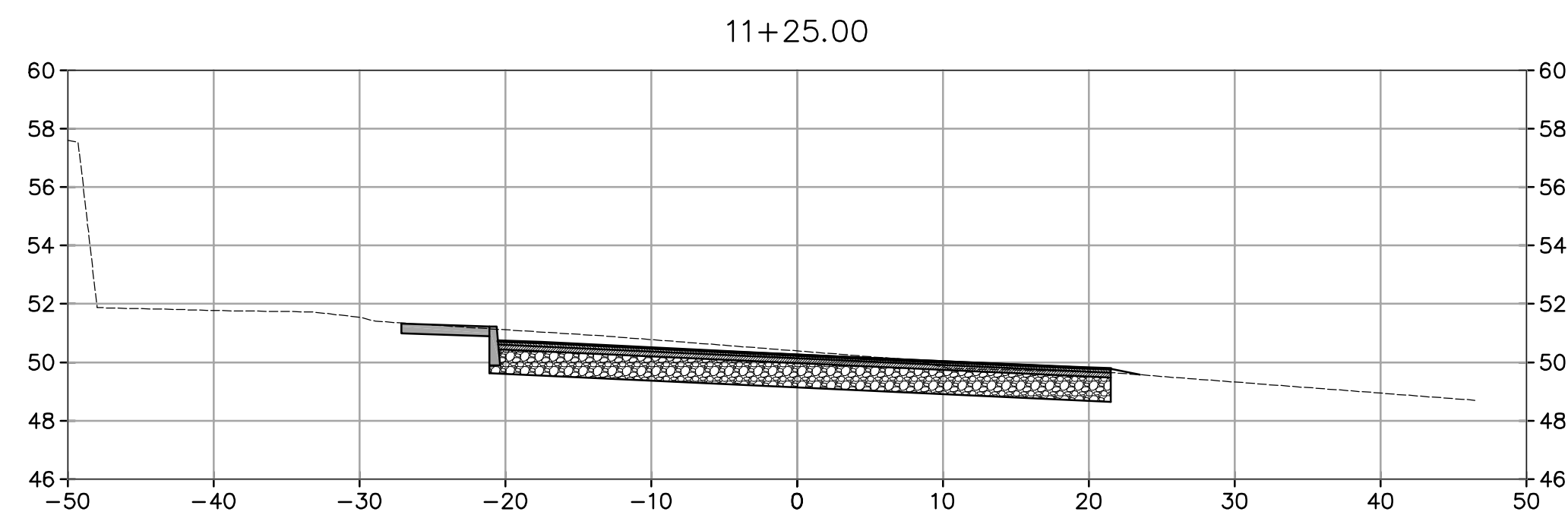
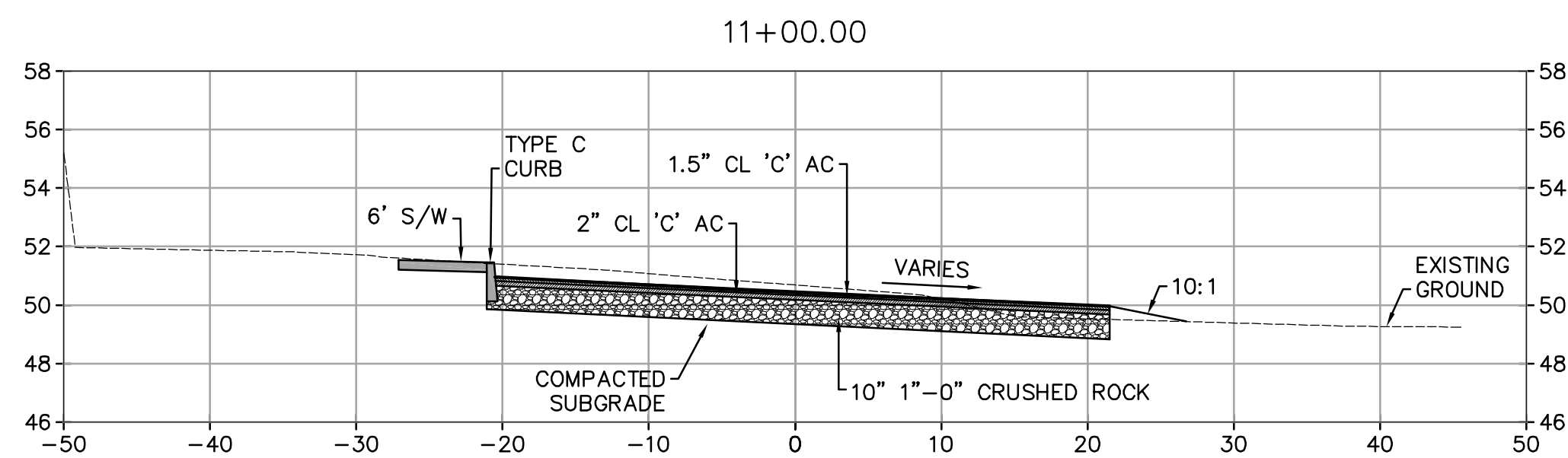
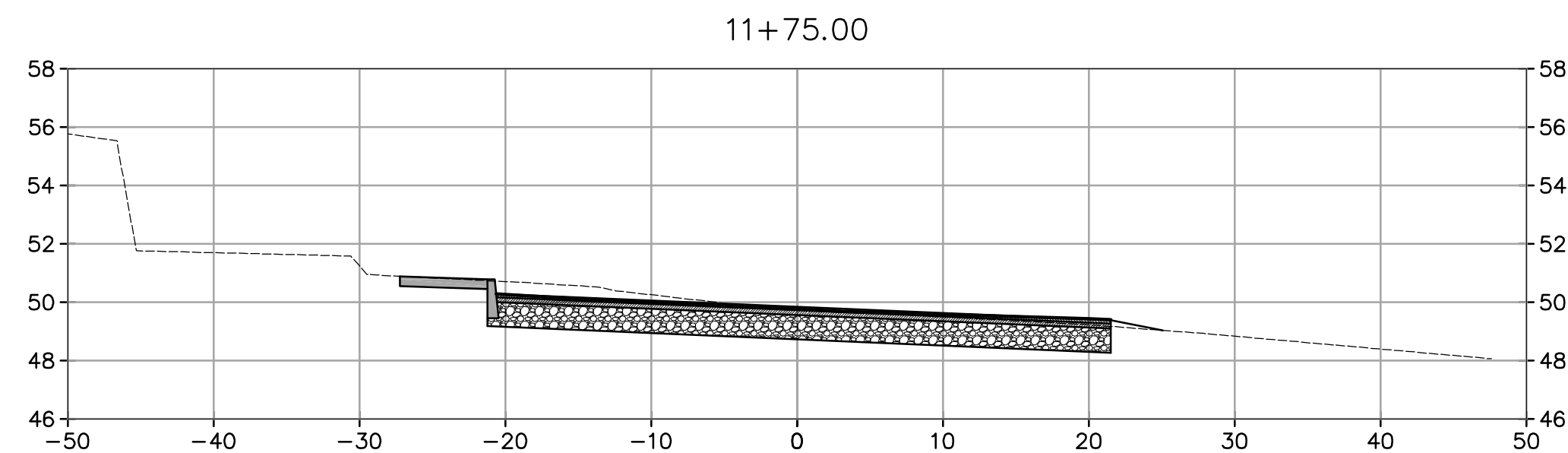
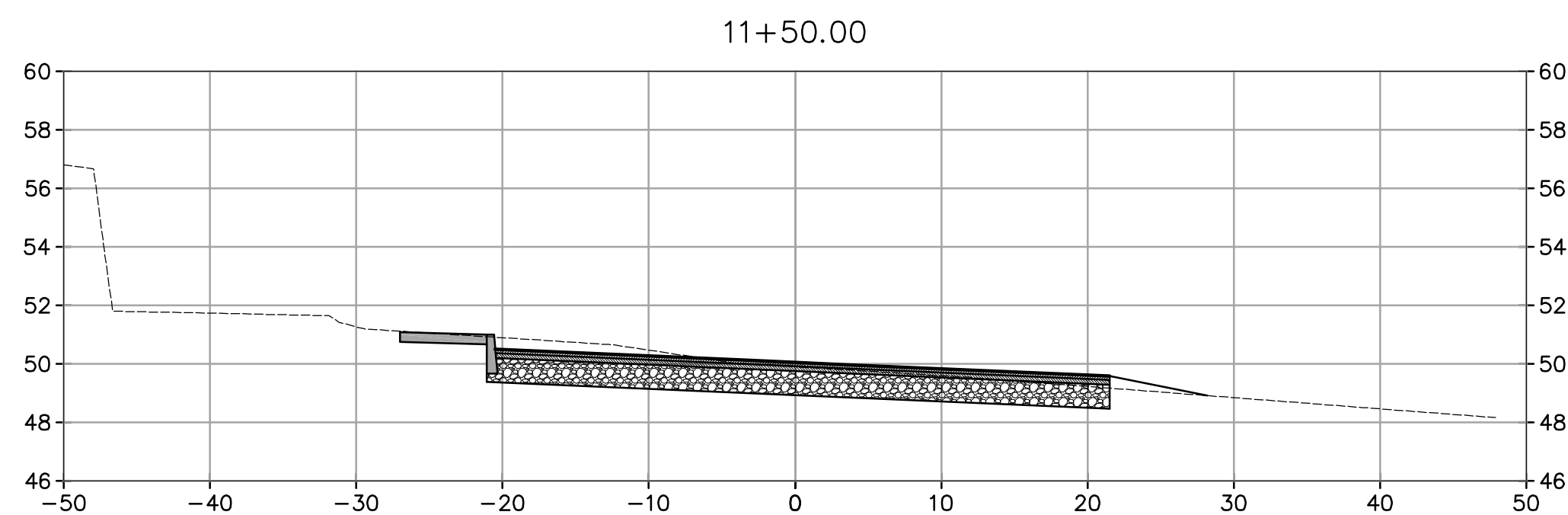
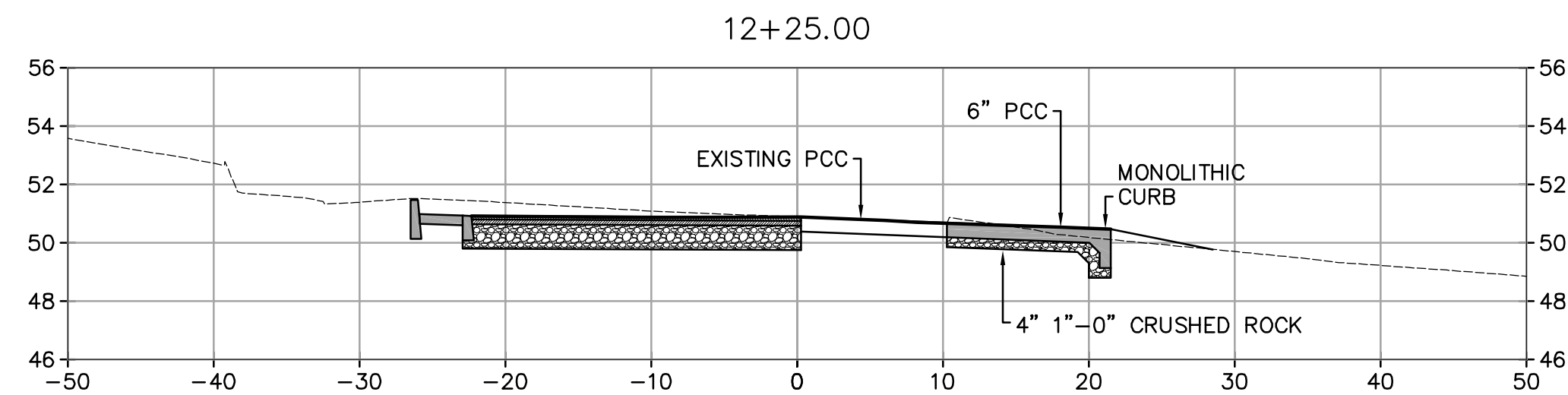
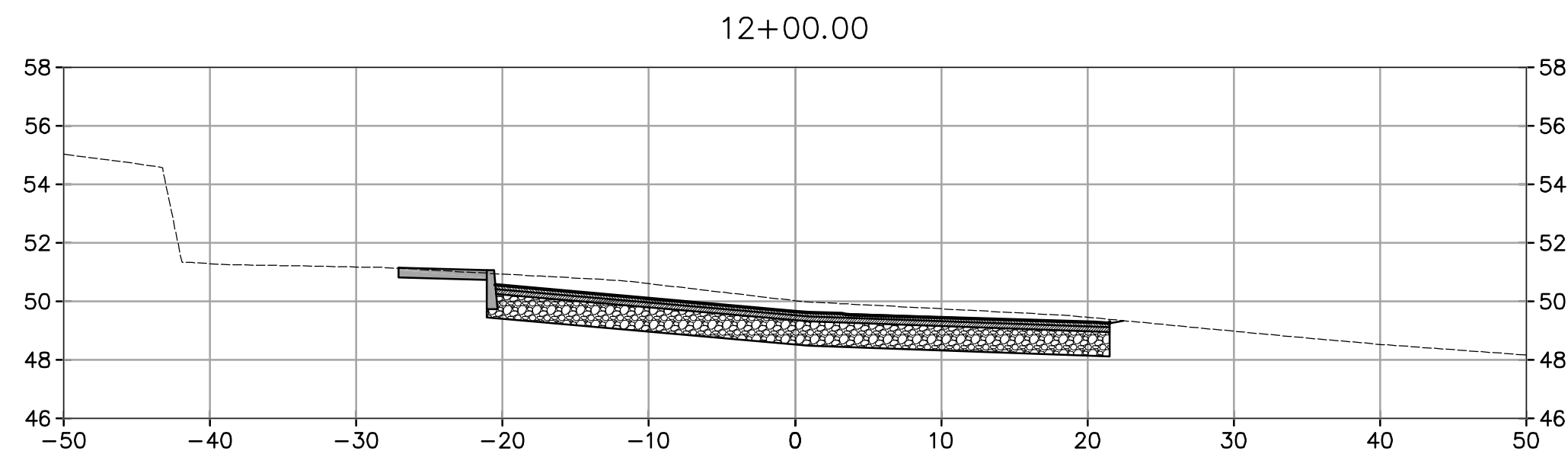
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City of Yachats, Oregon

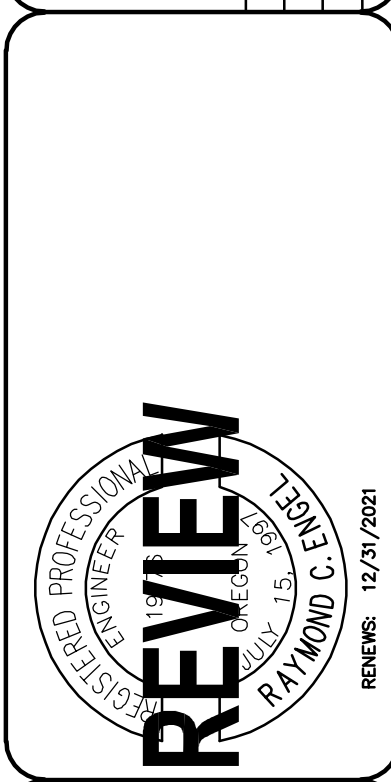
La De Da Lane Street Improvements

Driftwood Lane
Grading Plan

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7
JOB NUMBER
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WESTTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS

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City of Yachats, Oregon

La De Da Lane Street Improvements

La De Da Lane
Cross Sections

DRAWING
8

JOB NUMBER
3096.2030.0

SECTION 03303
STANDARD PERVIOUS CONCRETE PAVEMENT

PART 1 GENERAL

1.1 SCOPE:

- a. This section includes work related to the installation of pervious concrete pavement including sub-grade preparation, the installation the pervious concrete aggregate base, and the installation of pervious concrete pavement.

1.2 RELATED SECTIONS:

- a. Section 02201, Excavation, Fills and Subgrade Preparation

1.3 REFERENCES

- a. Annual Book of ASTM Standards, American Society for Testing and Materials (ASTM) Standards, Material References:
- b. ASTM C 29 "Test for Unit Weight and Voids in Aggregate."
- c. ASTM C 33 "Specification for Concrete Aggregates".
- d. ASTM C 94 "Specification for Ready-Mixed Concrete".
- e. ASTM C 150 "Specifications for Portland Cement" (Types I or II only).
- f. ASTM C172 "Specification for Sampling Freshly Mixed Concrete
- g. ASTM C 494 "Specification for Chemical Admixtures for Concrete."
- h. ASTM C 595 "Specifications for Blended Hydraulic Cements" (Types IP or IS only).
- i. ASTM C1688 "Standard Test for Density and Voids Content of Freshly Mixed Pervious Concrete".
- j. ASTM C1701 "Standard Test Method for Infiltration Rate of In Place Pervious Concrete".
- k. ASTM C 1692 Clean Potable Water
- l. OTHER REFERENCES:
 - 1) When working within the Public Right-of-way, comply with governing Public Agency Specifications, if more restrictive than specified herein.
 - 2) NRMCA Pervious In Practice Design Guidelines dated 2016 or newer.
 - 3) NRMCA Pervious Qualified Contractors Manual 2016 or newer.
 - 4) Evolution Paving Resources 'Pervious Concrete Owner's Manual and Maintenance Guide' 2020 or newer.
 - 5) NRMCA Pervious Maintenance Guide Manual dated 2016 or newer.
 - 6) ACI 306R "Cold Weather Concreting" [With specific exceptions pertaining to pervious concrete].

1.4 SUBMITTALS

- a. Submit under provisions of Section 01300 - Contractor Construction Submittals.
- b. Submit the following for review and approval by the design professional in time after bid opening in accordance with Section 01015 - Bidder's Qualifications.
 - 1) Certificates of Qualifications for Pervious Contractors (Consultants, Installers, Product Suppliers) per ACI 522-20 or newer.

- c. Submit the following for review and approval by the design professional in time for approval, and corrections if necessary, before installation begins.
- 1) Mix design as specified in Section 2.
 - 2) Sample Test Panel for proposed mix. Sample Test Panel placed on-site will be the basis for meeting project criteria, and shall be in conformance with Section 5 Inspections, Testing, and Acceptance.
 - 3) One (1) permeability test result from the mock-up of the proposed mix: In inches per hour as determined by ASTM C 1701 or an approved equal permeability test. Also, provide conversion to permeability in inches and mm per day if requested.
 - 4) Jointing plan, if not specified or different from the plans. Spacing shall be 10 on center or less for pavements with vehicle traffic.
 - 5) An owner's manual for cleaning, repair, and maintenance for installed pervious pavement. Evolution Pervious or NRMCA Pervious Maintenance Guide Manuals dated 2020 or newer.
 - 6) One-Year Limited Warranty for installed pervious pavement.

1.5 QUALITY ASSURANCE

- a. Perform work in this section in accordance with qualifications for consultants, concrete suppliers, installation contractor and testing companies shown in 1.6 below unless otherwise authorized by the design professional of record.
- b. ACI 522. 1-20 Specifications for Construction of Pervious Concrete was published in early November 2020. Some practices in this specification includes important details not included in ACI 522-20 but are important and commonly recommended by leading pervious concrete professionals.
- c. Follow recommendations of ACI 306R [Except sections within 306R related to Heated Water, Slump, Compressive strength, Walls, Maturity meters, Cement content, and Accelerators do not apply to pervious concrete] when concreting during cold weather.

1.6 QUALIFICATIONS: CONSULTANTS, INSTALLERS, PRODUCT SUPPLIERS

- a. Qualifications for Approved Pervious Consultants:
Must hold a certification from NRMCA, CPG, or NPCPA "Pervious Craftsman Certificate" and show references for pervious job supervision and be approved by design professional of record.
- b. Qualifications for Pervious Contractors.
The Pervious contractor must have one of the following qualified personnel options on site for all preconstruction meetings, mock up installations and during all pervious placements.
 - 1) One currently Certified NRMCA "Pervious Craftsman".
 - 2) Or three currently Certified NRMCA Pervious "Installers".
 - 3) If the pervious installer does not employ qualified certified personnel, at their expense, they may hire a qualified NRMCA Pervious Craftsman to be present during all placements & required pre-construction meetings and mock up pours.

- c. Pervious Concrete Supplier
 - 1) The pervious concrete supplier must have at least one Certified Technician on site for all preconstruction meetings, and at the beginning of each day's pour to inspect and confirm the pervious mix is the specified mix approved for the project.
 - a) The supplier may also hire at their expense an NRMCA Certified Craftsman to help design the pervious mix and or supervise the initial mock up and pervious installations.
 - b) The supplier and contractor may use the same Certified Craftsman.

1.7 PROJECT CONDITIONS

- a. Protection of Existing Improvements.
 - 1) Protect adjacent work from splashing of paving materials. Remove all stains from exposed surfaces of paving, structures, and grounds. Remove all waste and spillage.
 - 2) Do not damage or disturb existing improvements or vegetation. Provide suitable protection where required before starting work and maintain protection throughout the course of the work.
 - 3) Restore damaged improvements, including existing paving on or adjacent to the site that has been damaged because of construction work, to their original condition or repair as directed to the satisfaction of the design professional of record.
 - 4) Contractor shall document the site with photos or video prior to starting any work. Copies of the photos and/or video shall be provided to the engineer and owner prior to starting work.
- b. Safety and Traffic Control:
 - 1) Notify and cooperate with local authorities and other organizations having jurisdiction when construction work will interfere with existing roads and traffic.
 - 2) Provide temporary barriers, signs, warning lights, flagmen, and other protections as required to assure the safety of persons and vehicles around the construction area and to organize the smooth flow of traffic.
- c. Weather Limitations:
 - 1) The standard installation temperature range for pervious concrete is between 40°F and 80°F. Lower or warmer temperatures are allowable if the contractor provides written details what will be done to prevent damage caused by installing in warmer or colder conditions and the design professional of record signs off on these alternate mix or placement adjustments.
 - 2) Do not place pervious concrete pavement when the wind, heat or humidity does not allow enough time to place, properly joint, compact, edge, finish and cure before the surface dries and is no longer workable without damaging the surface.

PART 2: PART 2 PRODUCTS

2.1 CONCRETE MIX DESIGN

- a. Contractor shall furnish to the design professional of record a mix design for approval prior to the sample pour being placed. The mix design shall include:
 - 1) Mix identification name or number.
 - 2) Cementitious materials by amount and type.
 - 3) Water cement ratio.
 - 4) Aggregate void content as determined by ASTM C29.
 - 5) Admixtures used.
 - 6) Unit weight of the mix as determined in accordance with ASTM C1688.
 - 7) Target finished voids (by percent) of the pervious mix as determined by ASTM C1688.
 - 8) Integral color, if used, shall include brand, color and dosage rate.

2.2 MATERIALS

- a. Pervious Concrete:
 - 1) Cement: Portland cements used locally to produce standard concrete are acceptable with engineer's approval.
 - 2) Slag at 30% maximum, or Fly Ash Type C, or F at 20% maximum replacement for Portland Cement is allowed.
 - 3) Aggregate:
 - a) Aggregate must have a specific gravity of 2.55 or higher.
 - b) All aggregate approved for use in pervious concrete must be washed rock, free of coatings or other contaminants, unless otherwise approved by the design professional of record.
 - c) If crushed aggregate is specified, it must be washed rock with at least one fractured face on 70% of the aggregates, unless otherwise approved by the design professional of record.
 - d) Unless otherwise approved, aggregate shall be 1/4-10 gradation crushed aggregate.
 - e) If an alternate aggregate gradation is proposed, the following shall apply: Aggregate containing a void content of 40% as determined by ASTM C29 is preferred. But alternate void content is allowable if the supplier can demonstrate the mix design proposed allows at least a .34 water cement ratio, 15% to 25% mix voids, and still meet permeability requirements, the design professional of record may approve the aggregate.

- 4) Admixtures.
- a) Internal curing is required. Use HydroMax® Internal Curing Admixture, or approved equal, or saturated lightweight sand. “Internal” Curing is defined as water held in suspension within the mix via Super Absorbent Polymers or structurally rated saturated lightweight aggregates.
 - b) Use of Hydration stabilizing admixtures like BASF MasterSet/Delvo® or approved equal is recommended to extend the workable time of the mix. 522-20 allows suppliers to extend the delivery and discharge time for pervious mixes to any length of time the stabilizer manufacturer’s dosage and performance charts allow. Supplier to provide chart upon request.
 - c) Retarders are not an approved equal and are not recommended for use in pervious concrete.
 - d) All admixtures or saturated lightweight sand shall be used per manufacturer’s recommendations.
- 5) Water: Clean potable water shall be used per ASTM C 1602.
- 6) Proportions
- a) Total cementitious material shall not be less than 500 lbs. per CY unless otherwise approved by the manufacturer and the engineer.
 - b) Slag cement (30%) or Fly ash (20%) may be used to replace Portland cement unless otherwise authorized and approved by the design professional of record. Note, slag cement significantly slows curing time, when temperatures are lower than 55F. This should be considered before opening to vehicular traffic.
 - c) The volume of aggregate, cement, water, and admixture per cubic yard calculated as a function of the unit weight as determined by ASTM C1688 Standard Test for Density and Voids Content of Freshly Mixed Pervious Concrete and must be adjusted to result in a yield of 27 cubic feet per cubic yard
 - d) The unit weight per CY of the concrete shall be +/- 5 lbs of the design unit weight
 - e) The water/cement ratio shall be such that the cement paste displays a wet metallic sheen when floated with a magnesium hand float without causing the paste to flow from the aggregate or seal the surface. After accounting for free water on the aggregates, the water cement ratio required should be at least .34 and may be as high as .41.
 - f) Voids in the pervious mix must be adjusted if necessary to remain between 15% and 25% as tested by ASTM C1688. Ideal void content: 20% +/- 5%.

b. Pervious Concrete Aggregate Base:

- 1) Base material is used under pervious concrete for water storage, therefore it shall be composed of uniform sized aggregate.
- 2) Unless otherwise approved, Pervious Concrete Aggregate Base shall be 1-1/2" – 3/4" crushed rock or 3/4" – 1/2" crushed chip seal aggregate.
- 3) Alternate gradation may be allowed provided it has at least 40% voids, or approval by the design professional for less than 40% voids.
- 4) Use of local aggregates that provide 40% voids are allowable.

2.3 TRANSPORTATION METHODS:

a. Standard Ready-Mix Concrete Trucks

- 1) All mix trucks shall flush and rinse the barrel with water prior to loading regardless if the last load hauled was pervious.
- 2) Hot water [defined as temperatures more than the water temperature coming out of a well or municipal source] is not to be used in the mix or in the side tanks on the mixers, unless the supplier and installer can demonstrate the mix does not set up too fast to properly place, strike off, finish and cure before the wet metallic sheen on the rocks is lost.
- 3) Trucks that have difficulty discharging dry mixes shall not be used to deliver pervious concrete.
- 4) After loading:
 - a) Each load shall be visually inspected for conformity to specifications.
 - b) Water adjustments at the plant are preferred to on site adjustments, however;
 - c) Water may be added at the job site to obtain the specified mix consistency. Water adjustments at the job site shall be approved by the certified pervious concrete installer.
 - d) Loads that cannot be adjusted on-site to meet allowed unit weight range specified shall be rejected.
 - e) Concrete shall be deposited as close to its final position as practicable such that fresh concrete enters the mass of previously placed concrete.
 - f) Minimize the practice of discharging onto sub-grade and pulling or shoveling to final placement.

- b. Volumetric (Truck Mounted Mobile Mixers), may be used for delivery and mixing pervious concrete provided.
 - 1) The truck must be calibrated to the mix design specified at the beginning of the job.
 - 2) The certified pervious installer must approve water adjustments during placement to maintain the mix water within specified tolerances.

PART 3: PART 3 INSTALLATION OF BASE AGGREGATE AND PERVIOUS CONCRETE

3.1 INSTALLATION

- a. Notification Requirements:
 - 1) The design professional of record shall be notified forty-eight (48) business hours in advance of sub-grade preparation, recharge bed installation, and all pervious concrete pours (including ample time for travel to reach the site) to inspect or send a representative to inspect sub-grade preparation, recharge bed installation, and all pervious concrete pours.
 - 2) A pre-paving conference shall be scheduled held prior to installation of the sample panel. Two weeks' notice preferred but shorter notice allowed if approved by the design professional of record. The following individuals are required to attend:
 - a) Concrete Supplier:
 - b) Certified pervious concrete contractor. If not certified, the contractor's hired Craftsman must be there either physically or via live video link.
 - c) Site work contractor.
 - d) Project Manager.
 - e) Design Professional of Record or authorized representative of design professional of record.
- b. Pervious Base Aggregate: Specification, Installation and Review of Installed Base
 - 1) Crushed rock is required if delivery trucks will be driving on the base. Mix trucks are allowed to drive on the base rock as long as soft spots in the base are not observed. If soft spots are observed, remove the soft spot so trucks have access. Truck ruts must be leveled prior to placement of the pervious mixture.

- 2) Before placement of the pervious concrete begins, the pervious concrete contractor shall inspect the in-place aggregate base for compliance to the plans and specifications with written approval of the design professional of record, as follows:
- a) A nonwoven filter fabric, Marifi[™] 140 or approved equivalent, if required, must be properly secured as recommended by fabric manufacturer.
 - b) When the pervious concrete abuts a building face or interfaces with asphalt concrete pavement, an impervious barrier shall be installed to prevent water from seeping from the re-charge bed into adjacent base materials or structures. Approved barriers may include;
 - (1) An impermeable pond liner properly installed to prevent flow from the aggregate base.
 - (2) Flush curbs placed onto impermeable soil or used in conjunction with a waterproof liner.
 - (3) Any barrier chosen by the design professional of record to isolate the adjacent structure.
 - c) The base must be compacted to an acceptable level as approved by the design professional of record.
 - d) Test the base aggregate for permeability after compaction.
 - e) Base rock temperature and moisture control.
Two to twelve hours prior to placing concrete, and immediately prior to the pour, the re-charge bed shall be soaked with water to minimize effect of dry or hot aggregate from drawing moisture out of the plastic concrete. The design professional of record may waive this requirement in wet conditions.
 - f) All other elements of the design (i.e. conduits, drainage pipe(s), utilities, irrigation sleeves, etc.) Contractor to review all plans to determine placement of all elements prior to placing concrete.
 - g) All joints are to be clearly marked on the forms or base rock prior to placement. Radius joints between forms shall be painted on the base rock before placement begins.
 - (1) Contractor must follow the “jointing plan” as per the plans unless approved in writing by the design professional of record.
 - (2) Joints should not exceed ten (10) feet in either direction on pavements with vehicle traffic.
 - (3) Panel dimensions shall not exceed 125% of square.

c. Pervious Concrete Placing Equipment:

- 1) Powered spinning, “Roller” Screeds are recommended for placing pervious.
- 2) Placement using vibrating truss screeds is no longer recommended.
- 3) A hand operated straight edge may be used to place the pervious concrete if roller screeding is not practical due to access or other practical obstacles.
- 4) A slipform paver may be used to place the pervious concrete approved by the design professional of record.

d. CI. Approved Hand Tools:

- 1) A “Riser Strip” (shim) may be required during screeding. This may be required if the elevation after “cross rolling,” is below the specified finished elevation.
- 2) An approved pervious concrete “Cross” roller such Lura™ or Bunyan® brand or approved equal capable of applying a minimum weight of 30 Lbs./LF.
- 3) “Static” rollers are no longer recommended. Use of pervious cross rollers defined as roughly 30” wide, weighing 70-80 pounds, with tapered ends may be used instead of Static Rollers provided the cured pavement surface does not ravel.
- 4) Use of asphalt rollers or plate compactors are not allowed, unless they can be demonstrated not to seal the surface, they prevent raveling and do not result in uneven surfaces. Use of such tools must be approved in writing by the design professional of record.
- 5) A weighted steel “Fresno” or Magnesium float or other tools may be used to remove cross roller marks and improve the appearance of the pavement surface provided it does not seal the surface or reduce permeability below acceptable rates of infiltration.
- 6) Hand floats and other tools typical to concrete finishing may be used but only if they do not seal the surface, reduce permeability below acceptable infiltration rates or result in a slippery surface texture.
- 7) Powered floats, fitted with a pan, may be used if the contractor can demonstrate the ability to use the tool without sealing the surface and the surface remains raveling free for one year. Power troweling must be completed within 10 minutes of placement unless the mix is treated with set extending admixtures and weather conditions and base watering has been properly completed.
- 8) Walking edgers, deep jointers, and hand edgers with specified radius. If no radius is specified, the installer may use radius edgers with a minimum ½” radius or greater with approval from engineer.
- 9) Concrete saws shall be used whenever possible.

- 10) “Pizza” Style deep groovers are NO LONGER RECOMMENDED! They may be used if necessary but only if the joint radius leaves no torn or ragged edges. If the deep groover leaves ragged or torn edges, touch up the radius using a steel groover or hand tools to dress the edge.
- 11) Groovers designed for tooling radius contraction joints may be required to touch up both sides of wet cut deep contraction joints.

e. Placing, Compaction, Jointing and Finishing Process

- 1) Pervious materials shall be placed as on the ground as close as possible to its final location. Avoid piling and dragging into place when possible.
- 2) Immediately after placement, before screeding, workmen shall compact the edges within four (4) inches of the edge by stepping on fresh pervious. Avoid contaminating the surface with dirty boots. If dirt is transferred to the compacted edge, remove the contaminated mix from the grade.
- 3) If necessary, strike off the surface slightly high using a “riser strip” to compensate for compaction to final grade.
- 4) If a riser is used, compact to final grade using an approved pervious cross roller or power pan float immediately after striking off surface.
- 5) Saw cutting contraction joints are now preferred, but if wet cuts are used, they must be installed immediately after compaction. Time is of essence. Jointing without delay aids in the ease of installation and the durability of the tooled edge.
 - a. If a “pizza cutter” deep groover is used, the deep groove shall be cut in one direction only.
 - b. If ragged edges or surface tears are created while using the pizza cutter, immediately touch up these edges with steel radiused, “butterfly, torpedo or other steel groover designed to leave the tooled pervious edge tightly compacted and free of ragged or torn appearances. Avoid the use of wood or aluminum tools unless you can demonstrate the ability to do so without tearing the edge.
- 6) All edges and cold joints must be edged unless otherwise specified. A tooled radius edge is also required next to curbs.
- 7) If the surface or edges are “torn” or not otherwise uniform, immediately add fresh material to correct the appearance. Do not add material after the “sheen” has left the surface. Working with partially set paste (matte appearance as opposed to wet metallic) or un-compacted surface material can weaken the bond and increase the chance of raveling.
- 8) Spraying a mist of hydration stabilizers like BASF Confilm™ or approved equal can help finish torn surfaces if the fresh paste is not diluted.

- 9) After cross rolling the surface, a weighted Fresno or other finishing tool as needed may be used to remove cross roller marks (if any) and to touch up the surface. Demonstration of all final finishing tools should be included in the mock up placement for owner approval.
- 10) Avoid over-finishing of the surface to protect surface permeability. If material needs to be added or removed, make changes immediately and re-screed, compact changes and refinish as needed.
- 11) Cold joints should be avoided if possible.
 - a) If a delay occurs that lasts long enough the concrete is no longer workable (metallic sheen lost), install a header and create a transverse construction joint, compact the edge the new joint.
 - b) If the mix is cut back to a scheduled joint, excess concrete must be removed to allow at least three (3) inches of fresh mix on the surface. Use a straight edge and edging tool to make a tooled radius edge at the new joint.
 - c) During short delays cover the pavement, including the face of the new edge, with plastic until fresh concrete arrives.
 - d) Use of a surface stabilizing agent like "BASF Confilm™ or approved equal, is encouraged during delays. Stabilizers may be reapplied as long as the paste is not diluted or damaged.
- 12) Sawed joints: (Recommended).
 - a) Sawing is the preferred jointing method to reduce joint raveling. Saw cutting should begin as soon as the pavement has hardened sufficiently to prevent raveling and uncontrolled cracking.
 - b) A delay in saw cutting fresh pervious may be allowed up to three days if the pavement is placed or wet cut in sections 20 feet by 40 feet on center or smaller and as long as cracks do not develop before or after cutting.
 - c) If curing plastic is used for surface curing, and it is removed for cutting before the seven days curing time is complete, only remove plastic in the immediate area of the cut. Do not remove entire runs at the same time. Immediately after cutting, soak the surface of the pavement and re-cover with plastic to complete the curing time.
 - d) Dust created by dry cut pavements must be removed simultaneously (within a few feet) behind cutting. Failure to remove within a few minutes, can clog or stain the surface.
 - e) Slurry created by wet cutting must be immediately and thoroughly flushed or vacuumed from the surface before the water in the slurry drains out.

f. Curing Materials and Procedures

- 1) Surface curing pervious pavements is always required, even if internal curing methods are used! In past specifications, 20 minutes was allowed between placement and curing. That has been updated.
 - a) Curing now must be applied within 10-feet or less after placement, unless the mix is treated with set extending admixtures, weather conditions are calm winds, under 50 degrees F, and humidity is higher than 60%.
 - b) In dry or windy conditions, curing may need to be applied even sooner than 10-minutes.
 - c) If 6 mil plastic sheeting is used, cover and securely anchoring the edges within 10-minutes or 15 feet of placing the fresh pervious is recommended in all conditions because this has proven to dramatically reduce raveling. Do not allow the plastic to “billow” in the wind. Extra time is allowed if internal curing, hydration stabilization is used, and wind less than 3 mph and humidity is high enough the pavement does not ravel after curing.
 - d) Placing should be suspended if the wet metallic sheen cannot be maintained long enough to complete finishing operations.
- 2) Curing options for **internally cured** mixes. **Internally cured** pervious mixes may use other curing options if those options successfully protect the surface from raveling.
 - a) Covering the surface and all unprotected edges with polyethylene plastic sheeting is approved.
 - b) Spraying curing compounds on the surface of internally cured pervious concrete may be used as an alternative to plastic under the following stipulations:
 - (1) The surface is cured within the time limit in F.1.a,
 - (2) The pervious contractor must be able to demonstrate that the curing compound used and the timing used to apply the cure is adequate to prevent surface raveling within the first year after opening to traffic.
 - (3) The pervious contractor agrees to remove and replace surface raveling.
- 3) If plastic sheeting is use, black or white (opaque) sheeting is preferred over clear. If possible, maintain the same plastic color throughout the project.

- 4) The sheeting shall overlap all exposed edges and shall be secured; without using dirt or stones smaller than the aggregate in the mix, to securely anchor the plastic for all weather conditions.
- 5) Sheeting with unrepaired holes or rips will not be allowed.
- 6) A fog or light mist may be sprayed using CONFILM™ or approved equivalent (surface hydration- stabilizing agent). Apply with a pressure sprayer above the surface as needed during high temperature, high wind, and low humidity. Do not allow so heavy the paste is diluted.
- 7) Protection from Salts and Deicers.
 - a) Use of salt or other deicing chemicals on pervious concrete is not recommended. This especially true during the first one year after installation is prohibited. But since this prohibition is routinely ignored, at this time, the following practices have helped minimize damage:
 - (1) For additional protection from chemical damage, insure mix is adequately hydrated. If the water cement ratio is below .35, the cement is not fully hydrated and therefor will be more prone to chemical damage.
 - (2) Application of “SoyCure™, penetrating concrete sealer or approved equal has proven more effective than without sealers. Reapplication annually may help provide protection.
 - b) In cold zones where salt and deicing chemicals are heavily used, pavement damage can be severe. Instead of chemicals the use of snow blowers to remove snow or applying ¼”-10 crushed asphalt aggregates for traction control are recommended as an alternative to salt or deicers. Do NOT Use of Mag-Chloride based deicers at any time! They will damage the pavement and void the warranty!
 - c) No warranty is offered from salt or deicer damage.

g. CURE TIME:

- 1) Curing times shown are based on temperatures remaining at or above 55°F for the duration of the listed curing time. At temperatures below 55°F, curing time must be extended before opening to traffic. The amount of added time to be determined by the design professional of record. In very cold regions the curing time extension can be very long if temperature remains low.
- 2) HydroMax® treated mixes may shorten the time sheet plastic is required, but the shortened surface curing time does not shorten the cure time required before opening to traffic.
- 3) Passenger car traffic can be allowed after seven days.
- 4) Truck traffic (HS-20) loaded or un-loaded shall be not be allowed for at least ten days.

PART 4: PART 4 PROTECTION, REPAIRS, MAINTENANCE/CLEANING

4.1 PAVEMENT PROTECTION: DURING CONSTRUCTION/BEFORE ACCEPTANCE

- a. The general contractor must inform all trades; especially landscapers, not to dump fine materials such as dirt or bark on the pervious concrete.
 - 1) The general contractor must protect the pavement from other trades who use the pavement for staging, storage or other reasons.
 - 2) Protect the pavement surface from abrasion, discoloration, or sediments by covering with a geotechnical fabric. This fabric must be properly anchored and maintained in place starting when the curing plastic is removed and remaining until completion of any construction or landscaping activity that may expose the pavement to hazards.
 - 3) It is the general contractor's responsibility to remove and pay for replacement costs of surface damage for causes out of the control of the installer.
- b. At the completion of the job, loose construction "crumbs" left on the surface of the pavement shall be flushed off the surface of the pavement just prior to substantial completion by the general contractor unless otherwise specified within the contract.
 - 1) A water truck to flush the loose material, using a high volume, low pressure water flow, is the preferred way to clean the pavement.
 - 2) Remove loose material on the pavement surface before painting lines or other symbols on the pavement.
- c. The general contractor shall be responsible to clean, repair and touch-up, or replace when directed, pavement which has been soiled, discolored, or damaged by other trades prior to substantial completion.

4.2 REPAIRS

- a. Remove and replace pavement sections that fail to meet standards established and approved by the owner. Unless otherwise authorized by design professional of record, remove the entire section at no expense to the owner at the nearest joint.
- b. Patching small areas may be allowed if the installer uses the exact mix design with the same ingredients and cement supplier. Minor color differences are to be expected and are not a basis for rejecting patching.
- c. If the pavement has been clogged with construction debris or other sediment, clean the pavement as shown in section 4.3 and retest. If the pavement is slow draining because of improper mix design or installation techniques, remove and replace the section of pavement that is not compliant with the specifications to the nearest joint

- 4.3 MAINTENANCE /CLEANING AFTER CONSTRUCTION AND ACCEPTANCE OF WORK.
The owner is responsible for all Maintenance after construction and project work acceptance. The contractor must supply the owner with a copy of, "Evolution Pervious Paving Resources 'Pervious Concrete Owner's Manual and Maintenance Guide 2020 or newer" or the NRMCA Pervious Maintenance Manual dated 2016 or newer.

PART 5: PART 5 INSPECTIONS, TESTING, ACCEPTANCE:

5.1 MOCK UP AND INSPECTIONS

- a. The design professional of record shall approve a site cast sample of the specified pavement before paving begins. The following criteria for the sample shall be used:
 - 1) At a location approved by the contracting agency contractor shall construct a sample on site using the same design requirements required for the substantial portion of the project.
 - a) The sample test panel should be a minimum of 225 square feet and should be installed using the same tools and qualified personnel required for project installation.
 - b) The fresh concrete used in the test panel shall be tested for voids and unit weight as per ASTM C1688 and permeability ASTM C1701 or approved equal.
 - c) Repeat the mockup as needed until the mock up meets specifications and is approved by the owner.
 - d) The surface appearance of the sample must be approved for texture, finish and should have minimal surface tearing or raveling. The finished product must match the approved sample.
 - 2) Accepted sample panels, in like new condition, may be used in the contract work.
 - 3) Thickness. No measured sample may be less than 3/8" of specified thickness.

5.2 TESTING:

- a. If testing is specified, it shall be completed by an accredited laboratory who has experience using ASTM C 1688 and ASTM C 1701 or as approved by the design professional. All tests must be completed in accordance with the referenced standards as outlined in 1.3. If this level of experience is not available, the contractor shall hire an NRMCA Pervious Craftsman with experience using ASTM C 1688 or C 1701 to supervise the testing lab in testing.

b. Fresh Pervious Concrete:

- 1) A unit weight test using ASTM C 1688 shall be taken from the first load of the project to verify the mix design used is accurate. At the discretion of the design professional of record additional tests for each day's placement of pervious concrete in accordance with ASTM C 1688 to verify unit weight may be conducted.
- 2) If the unit weight is out of specifications, the installer and supplier shall be notified immediately after discovery. The installer must help the supplier correct the deficiency before work can continue and the testing confirms the correction has been made and conforms to design standards.
- 3) Aggregate confirmation: A representative sample of the fresh mix shall be taken from the first load of the project.
 - a) This sample shall be immediately flushed of cement slurry to visually confirm the aggregate reasonably meets size or fracture requirements.
 - b) If the aggregate is not the material specified, the pour shall be suspended until the correct mix can be confirmed.
- 4) Since no ASTM or ACI approved compressive test has been adopted, compressive strength testing shall not be used for acceptance or rejection of the pervious pavement. If the pavement meets permeability requirements and does not ravel it shall be accepted.

c. Hardened Pervious Concrete

- 1) Permeability shall be tested using ASTM C 1701 or an approved equal.
 - a) Must be tested on clean, level pervious pavement upon removal of the curing plastic and accepted before opening the pavement to traffic.
 - b) Permeability shall be tested at least 250 inches per hour within 14 days after curing plastic is removed.
 - c) If less than six (6) inches of open graded base rock is used under the pavement the permeability rate will not be valid and the permeability rate shall not be used for criteria for acceptance or rejection of the pavement.
 - d) An approved equal to ASTM 1701 permeability testing. Use of Evolution Pervious abbreviated permeability test is approved for initial permeability testing. If permeability using the abbreviated method are acceptable to the professional of record, ASTM 1701 is not required. The design professional of record is authorized to determine permeability on slopes.

2) Core Testing

- a) No cores may be taken in the first seven days after placement.
- b) Core testing is not recommended in pavements not exposed to heavy traffic. The design professional of record may specify the need for core samples of the hardened concrete.
- c) If cores are required, the cores shall be measured for thickness only. Untrimmed, hardened core samples may be used to determine placement thickness. The average of all cores shall not be less than the specified thickness with any individual core being more than ½ inch less than the specified thickness. ASTM C140 shall not be compared to ASTM C1688 Fresh pervious voids testing results. The results of these two test methods by design will not match. Refill core tests with standard concrete.

5.3 ACCEPTANCE.

Completed work that meets the standards approved in the sample panel shall be approved.

END OF SECTION

January 7, 2021

To: Shannon Beaucaire, City Manager

From: Justin Peterson, Contract City Planner

Re: Draft Amendments to Yachats Zoning & Land Use Code Sections

At the October 20, 2020 Planning Commission meeting, the Commission passed a motion to forward the attached recommended amendment to Yachats Municipal Code to City Council. The Planning Commission received a few questions at the October 20, 2020 meeting. A request was made to update the landslide map legend. The updated map has an amended legend. A question was asked about the development permit. Staff reviewed geologic hazard permit process in the City of Newport and expects to follow a similar process. At the November 18, 2020 meeting City Council remanded the amendments back to Planning Commission. The Planning Commission discussed the remand at the December 1, 2020 meeting. Planning Commission voted to recommend approval and forward the Ordinance to City Council at the December 21, 2020 meeting.

After discussion at the December 1, 2020 and December 21, 2020 Planning Commission meeting, the geo-hazard chapter was updated to include YMC 9.52.050(H)(12) relating to the removal of sedimentation and YMC 9.52.050(I) relating to storm water retention facilities to address the public comment received. In addition, staff updated the formatting under “Lands contiguous with the ocean...” in Goal C to bullets instead of numbered. Last, most of the text updates suggested by Mayor Vaaler were made. The three suggested text updates not made include:

- The question about the Policy 8 addition of “The inclusion of additional commercial forest lands within the UGB shall occur only upon finding that the land is needed for urban development.”
- Goal D comment. Goal D is not included in the proposed updates.
- Policy 12, Suggestion: “reduce the risk” on line 4 to “hopefully mitigate the cost” or to “reduce the financial risk”.

Issue/Question: Is the Yachats Comprehensive Plan and Municipal Code aligned with the Goals of the State to incorporate highest / best strategies for Hazard Mitigation?

Explanation: The City of Yachats received a Coastal Resilience Grant from the Oregon Coastal Management Program for March through July 2020. The goal of the grant was to utilize best available data and resources to review and update portions of the Yachats City Comprehensive Plan and Municipal Code. The City of Yachats held several work sessions including a City

Council and Planning Commission joint work session on June 4th, a Planning Commission work session on July 7th, and a Planning Commission work session on July 21st.

The resulting review effected new language / process for the protection of Yachats's natural resources.

Goal A: Protection of Natural Resources (General)

Goal B: Protection of Estuarine Resources

Goal C: Protection of Shoreland Resources

Goal E: Protection from Natural Hazards and Disasters,

Goal L: Beaches, and

Municipal Code Sections:

9.04.030 (Definitions)

9.52.050 (Hazard Areas)

9.52.100 (Older Stabilized dune construction)

9.52.130 (Development on Beaches).

Council Action:

1. The City Council may approve,
2. Approve with modifications,
3. Deny or
4. Remand back to the Planning Commission for reconsideration the proposed amendment

Example Motion:

To approve the proposed amendment to the Yachats Municipal Code based on the testimony received, the findings within the staff report, and the evidence and arguments before the City Council at the public hearings. The City Council determines that the request by the City of Yachats to amend Sections §9.04.030, §9.52.050, §9.52.100, §9.52.130, of the Yachats Municipal Code and Comprehensive Plan Goals A, B, C, E and L, of the Yachats Comprehensive Plan. The City Council hereby adopts the staff memo as findings and the other evidence in the record as findings supporting its decision and approves the Ordinance.

Attachments:

1. Draft Ordinance
2. Relevant Maps
3. Public Comment
4. Mayor Vaaler Comments

**CITY OF YACHATS
ORDINANCE NO. 367**

AN ORDINANCE AMENDING THE YACHATS MUNICIPAL CODE CHAPTERS 9.04 – DEFINITIONS, 9.52.050 GEOLOGIC HAZARD OVERLAY ZONE, 9.52.100 OLDER STABILIZED DUNE CONTRUCTION, 9.52.130 DEVELOPMENT ON BEACHES, AND YACHATS COMPREHENSIVE PLAN GOAL A PROTECTOIN OF NATURAL RESOURCES, GOAL B PROTECTION OF ESTUARINE RESOURCES, GOAL C PROTECTION OF SHORELAND RESOURCES, GOAL E PROTECTION OF NATURAL HAZARDS AND DISASTERS, AND GOAL L BEACHES.

WHEREAS, the City of Yachats received a Coastal Resilience Grant from The Oregon Coastal Management Program for March through July 2020;

WHEREAS, pursuant to ORS 197.610, the City provided DLCD with Form 1 notice of these proposed YMC Title 9, Chapter 9.54, text changes on September 13, 2020;

WHEREAS, notice of the proposed amendments were provided in accordance with procedures established in the Yachats Municipal code and Oregon Revised Statues;

WHEREAS, the Planning Commission held a work session on July 7, 2020 and July 21, 2020, to provide an open forum for discussion of the amendments;

WHEREAS, the Planning Commission and City Council held a work session on June 4, 2020, to provide an open forum for discussion of the amendments;

WHEREAS, the Planning Commission held a public hearing on October 20, 2020 for the proposed amendments;

WHEREAS, the Planning Commission followed the text amendment procedures under YMC 9.84.020 and has provided a report to the City Council along with its recommendation to consider the proposed text changes;

WHEREAS, the City Council held a public hearing on these proposed text changes on November 18, 2020 and remanded the Ordinance to the Planning Commission for further review;

WHEREAS, the Planning Commission held a public hearing on December 1, 2020 for the proposed amendments;

WHEREAS, the Planning Commission held a public hearing on December 21, 2020 for the proposed amendments;

WHEREAS, the City Council held a public hearing on January 20, 2021 for the proposed amendments;

NOW THEREFORE, the City of Yachats ordains as follows:

Section 1. Yachats Municipal Code Chapter 9.04, Definitions, 9.52.050 Geologic Hazard Overlay Zone, 9.52.100 Older Stabilized Dunes, and 9.52.130 Development on Beaches and Dunes.

CHAPTER 9.04.030 – Definitions

“Beach” means gently sloping areas of loose material (e.g., sand, gravel, and cobbles) that extend landward from the low-water line to a point where there is a definite change in the material type or land form, or to the line of vegetation.

“Estuary” means the body of water from the ocean to the head of tidewater that is partially enclosed by land and within which salt water is usually diluted by fresh water from the land, including all associated estuarine waters, tidelands, tidal marshes and submerged lands.

“Geologic Hazard” means a geologic condition that is a potential danger to life and property which includes but is not limited to earthquakes, landslides, erosion, liquefaction, fault displacement, and subsidence.

“Geoprofessional” refers to a Registered Geologist, Certified Engineering Geologist, Professional Engineer, and Geotechnical Engineer.

Registered Geologists (RG) provide geologic maps and documents and are licensed by the Oregon State Board of Geologist Examiners (OSBGE).

Certified Engineering Geologists (CEG) provide engineering geologic reports and are licensed by the Oregon State Board of Geologist Examiners (OSBGE).

A Geotechnical Engineer (GE) is a Professional Engineer (PE) with the specific training, expertise, and experience to qualify as a Geotechnical Engineer (GE). GEs provide geotechnical engineering reports and are licensed by the Oregon Board of Examiners for Engineering and Land Surveying (OSBEELS).

“Mean Higher High Water” is the average of the higher of the two high water heights of each tidal day observed over the National Tidal Datum Epoch.

“Older stabilized dune” means a dune that is stable from wind erosion, and that may include diverse forest cover. They include older foredunes.

“Shoreline” means the boundary line between a body of water and the land, measured on tidal waters at mean higher high water, and on non-tidal waterways at the ordinary high-water mark.

“Top of Bank” means that vertical point along a stream bank where an abrupt change in slope is evident. For streams in wider valleys it is the point where the stream is generally able to overflow the banks and enter the floodplain. For steep and narrow valleys, it will generally be the same as the top of slope.

CHAPTER 9.52.050 – Geologic Hazard Overlay Zone

- A. **PURPOSE:** The purpose of this overlay zone is to manage development in areas subject to geologic hazards in a manner that reduces long term risks to life, property, and the community, consistent with Statewide Planning Goal 7 and 18.
- B. **AREAS INCLUDED:** The following areas are considered potentially geologically hazardous and are therefore subject to the requirements of this section:
1. All lands partially or completely within “very high” and “high” landslide susceptibility areas as mapped in DOGAMI Open File Report O-16-02, “Landslide Susceptibility Map of Oregon.”
 2. All lands partially or completely within any coastal erosion hazard zone (very high, high, moderate, or low) as mapped in DOGAMI Open File Report O-07-03, “Evaluation of Coastal Erosion Hazard Zones Along Dune and Bluff Backed Shorelines in Lincoln County, OR: Seal Rock to Cape Perpetua.”
 3. All lands partially or completely within a rapidly moving landslide as mapped in DOGAMI IMS-22, “GIS Overview Map of Potential Rapidly Moving Landslide Hazards in Western Oregon,” 2002.
 4. Lots or parcels where the average existing slopes are equal to or greater than twelve (12) percent or where the average existing slopes are equal to or greater than thirty (30) percent within 100 feet of the property.
 - a. **Definition of Slope:** A property has a twelve (12) percent slope or greater if:
 - i. The average slope from the highest to lowest point of the property has a slope of twelve (12) percent or greater; or
 - ii. The average slope of the building footprint or area to be disturbed measured from the highest to lowest point within the footprint or area to be disturbed is twelve (12) percent or greater.
- C. **ALLOWED USES:** Within the Geologic Hazards Overlay Zone, all uses allowed pursuant to the provisions of the underlying zone may be allowed, subject to the additional requirements and limitations of this section.
- D. **GEOLOGIC HAZARD PERMIT REQUIRED:**
1. Except for activities identified in subsection (D)(2) as exempt, any new development, new construction or substantial improvement, as defined in Section 9.54.020, in an area subject to the provisions of this section shall require a Geologic Hazard Permit. The Geologic Hazard Permit may be applied for prior to or in conjunction with a building permit, grading permit, or any other permit or land use approval required by the City of Yachats.

2. The following activities are exempt from the requirement for a Geologic Hazard Permit:
 - a. Maintenance, repair, or alterations to existing structures that do not alter the building footprint or foundation and do not constitute substantial improvement;
 - b. An excavation which is less than two feet in depth or which involves less than twenty-five cubic yards of volume;
 - c. Fill that is less than two feet in depth or that involves less than twenty-five cubic yards of volume;
 - d. Exploratory excavations under the direction of a certified engineering geologist or registered geotechnical engineer;
 - e. Gravesites dug in cemeteries;
 - f. Construction of structures for which a building permit is not required;
 - g. Removal of trees smaller than 8 inches dbh (diameter breast height);
 - h. Removal of trees larger than 8 inches dbh (diameter breast height) provided the canopy area of the trees that are removed in any one year period is less than twenty-five percent of the lot or parcel area;
 - i. Yard area vegetation maintenance and other vegetation removal on slopes less than 25% slopes;
 - j. Forest operations subject to regulation under ORS 527 (the Oregon Forest Practices Act);
 - k. Maintenance and reconstruction of public and private roads, streets, parking lots, driveways, and utility lines, provided the work does not extend outside the previously disturbed area;
 - l. Maintenance and repair of utility lines, and the installation of individual utility service connections;
 - m. Emergency response activities intended to reduce or eliminate an immediate danger to life or property, or flood or fire hazard;
3. Application, review, decisions, and appeals on Geologic Hazard Permits shall be in accordance with the requirements for a staff level decision. Unless otherwise provided by Yachats Municipal Code or other provision of law, any Geologic Hazard Permit so issued shall be valid for a time period as specified in the approval decision and shall in no case be valid for more than 5 years.
4. In addition to a completed application as prescribed in subsection (E), an application for a Geologic Hazard Permit shall include the following:

- a. A site plan to scale that accurately illustrates areas of disturbance, ground topography (contours), roads and driveways, an outline of wooded or naturally vegetated areas, watercourses, erosion control measures, and trees with a diameter of at least 8 inches dbh (diameter breast height) proposed for removal;
 - b. An estimate of depths and the extent of all proposed excavation and fill work;
 - c. Identification of the geologic hazard zone for the parcel or lot upon which development is to occur. In cases where properties are mapped with more than one hazard zone, a Certified Engineering Geologist (CEG) shall identify the hazard zone(s) within which development is proposed; and
 - d. A engineering Geologic Report prepared by a qualified geoprofessional (as defined in Section 9.04.030) that meets the content requirements of subsection (E); and
- 5. A decision to approve a Geologic Hazard Permit shall be based upon findings of compliance with the following standards:
 - a. The proposed development is not subject to the prohibition of development on beaches and certain dune forms as set forth in Section 9.52.130;
 - b. The proposed development complies with the applicable requirements and standards of subsections (6) and (7) of this section;
 - c. The Geologic Report conforms to the standards for such reports set forth in subsection (E) of this section; and
 - d. The development plans for the application conform, or can be made to conform, with all recommendations and specifications contained in the geologic report.
- 6. In the event the city determines that additional review of a Geologic Hazard Permit application by an appropriately licensed and/or certified professional is necessary to determine compliance with the provisions of this section, the City may retain the services of such a professional for this purpose. All costs incurred by the City for this additional review shall be paid by the applicant in addition to the application fee for a Geologic Hazard Permit established pursuant to Section 9.88.050.
- 7. In approving a Geologic Hazard Permit, the City Planner may impose any conditions that are necessary to ensure compliance with the provisions of this section or with any other applicable provisions of the Yachats Municipal Ordinance.

E. GEOLOGIC REPORT (Engineering Geologic Report and Geotechnical Engineering Report) STANDARDS:

1. Geologic Reports required by this section shall be prepared consistent with standard geologic practices employing generally accepted scientific and engineering principles, and shall, at a minimum, contain the items outlined in the most recent edition of Oregon State Board of Geologist Examiners "Guidelines for Preparing Engineering Geologic Reports in Oregon". For oceanfront property, reports shall also address the "Geological Report Guidelines for New Development on Oceanfront Properties," prepared by the Oregon Coastal Management Program of the Department of Land Conservation and Development, in use as of the effective date of this section. Reports shall reference the published guidelines upon which they are based. All engineering geologic reports and geotechnical engineering reports are valid for purposes of meeting the requirements of this section for a period of five (5) years from the date of preparation. Such reports are valid only for the development plan addressed in the report. The City of Yachats assumes no responsibility for the quality or accuracy of such reports.
2. For the purposes of Section 9.52.050, a Geologic Report refers to both engineering geologic reports and geotechnical engineering reports.
3. Geologic reports required by this section shall include a statement certifying that all of the applicable content requirements of this subsection have been addressed.

F. ADDITIONAL LIMITATIONS IN GEOLOGIC HAZARD AREAS:

1. New construction shall be limited to the recommendations, if any, contained in the Geologic Report; and
2. Safest site requirement: All new construction or substantial improvements shall be located within the area most suitable for development based on the least exposure to risk from coastal hazards as determined by a qualified geoprofessional as part of a Geologic Report prepared in accordance with subsection (E). Notwithstanding the provisions of the underlying zone, as necessary to comply with this requirement.
3. Hazard Disclosure Statement: All applications for new development or substantial improvements subject to Geologic Hazard Permit shall provide a Hazard Disclosure Statement signed by the property owner that acknowledges:
 - i. The property is subject to potential natural hazards and that development thereon is subject to risk of damage from such hazards;

- ii. The property owner has commissioned an engineering geologic report for the subject property, a copy of which is on file with City of Yachats Planning Department, and that the property owner has reviewed the engineering geologic report and has thus been informed and is aware of the type and extent of hazards present and the risks associated with development on the subject property;
- iii. The property owner accepts and assumes all risks of damage from natural hazards associated with the development of the subject property.

G. MINIMUM OCEANFRONT SETBACKS: In areas subject to the provisions of this section, the building footprint of all new construction or substantial improvement subject to a Geologic Hazard Permit shall be set back from the ocean shore a minimum twenty-five (25) feet from the top of the bank or greater if recommended by an Oregon certified engineering geologist.

H. EROSION CONTROL MEASURES: A certified engineering geologist, geotechnical engineer, or qualified civil engineer shall address the following standards.

1. Stripping of vegetation, grading, or other soil disturbance shall be done in a manner which will minimize soil erosion, stabilize the soil as quickly as practicable, and expose the smallest practical area at any one time during construction;
2. Development plans shall minimize cut or fill operations so as to prevent off-site impacts
3. Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development;
4. Permanent plantings and any required structural erosion control and drainage measures shall be installed within 3 months as soon as practical;
5. Provisions shall be made to effectively accommodate increased runoff caused by altered soil and surface conditions during and after development. The rate of surface water runoff shall be structurally retarded where necessary;
6. Provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surface of fills by installation of temporary or permanent drainage across or above such areas, or by other suitable stabilization measures such as mulching, seeding, planting, or armoring with rolled erosion control products, stone, or other similar methods;

7. All drainage provisions shall be designed to adequately carry existing and potential surface runoff from the twenty year frequency storm to suitable drainageways such as storm drains, natural watercourses, or drainage swales. In no case shall runoff be directed in such a way that it significantly decreases the stability of known landslides or areas identified as unstable slopes prone to earth movement, either by erosion or increase of groundwater pressure;
 8. Where drainage swales are used to divert surface waters, they shall be vegetated or protected as necessary to prevent offsite erosion and sediment transport;
 9. Erosion and sediment control devices shall be required where necessary to prevent polluting discharges from occurring. Control devices and measures which may be required include, but are not limited to:
 - i. Energy absorbing devices to reduce runoff water velocity;
 - ii. Sedimentation controls such as sediment or debris basins. Any trapped materials shall be removed to an approved disposal site on an approved schedule;
 - iii. Dispersal of water runoff from developed areas over large undisturbed areas;
 10. Disposed spoil material or stockpiled topsoil shall be prevented from eroding into streams or drainageways by applying mulch or other protective covering; or by location at a sufficient distance from streams or drainageways; or by other sediment reduction measures; and
 11. Such non-erosion pollution associated with construction such as pesticides, fertilizers, petrochemicals, solid wastes, construction chemicals, or wastewaters shall be prevented from leaving the construction site through proper handling, disposal, site monitoring and clean-up activities
 12. Removal of Sedimentation: Whenever sedimentation is caused by stripping vegetation, grading, or other development, it shall be the responsibility of the person, corporation, or other entity causing such sedimentation to remove it from all adjoining surfaces and drainage systems and to return the affected areas to their original or equal condition prior to final approval of the project.
- I. STORM WATER RETENTION FACILITIES REQUIRED:
For structures, driveways, parking areas, or other impervious surfaces in areas of 12% slope or greater, the release rate and sedimentation of storm water shall be controlled by the use of retention facilities when specified by the City. The

retention facilities shall be designed for storms having a 25-year recurrence frequency. Storm waters shall be directed into a drainage with adequate capacity so as not to flood adjacent or downstream property.

- J. **CERTIFICATION OF COMPLIANCE:** Permitted development shall comply with the recommendations in any required geologic or engineering report. No development requiring a Geologic Report shall receive final approval (e.g. certificate of occupancy, final inspection, etc.) until the city receives a written statement by a qualified geoprofessional indicating that all performance, mitigation, and monitoring measures contained in the report have been satisfied. If mitigation measures involve engineering solutions prepared by a licensed professional engineer, then the city must also receive an additional written statement of compliance by the licensed professional engineer.
- K. **RESTORATION AND REPLACEMENT OF EXISTING STRUCTURES:**
1. A building or structure that is nonconforming under Chapter 9.76 of the Yachats Municipal Code that is destroyed by fire, other casualty or natural disaster shall be subject to the casualty loss provisions contained in Section 9.76.050. Application of the provisions of this section to a property shall not have the effect of rendering it nonconforming.
 2. A building or structure that conforms to the Municipal Code that is destroyed by fire, other casualty or natural disaster may be replaced with a building or structure of up to the same size provided a Geologic Report is prepared by a qualified geoprofessional. A Geologic Report prepared pursuant to this subsection shall adhere to the Geologic Report Standards outlined in subsection 9.52.050 (E). All recommendations contained in the report shall be followed, however the report need not establish that the site is suitable for development as required in subsection 9.52.050 (F)(2). An application filed under this subsection shall be processed and authorized as a ministerial action by the City Planner.

Section 3. Yachats Municipal Code Chapter 9.52.100, Older Stabilized Dune Construction Standards

CHAPTER 9.52.100 – Older Stabilized Dune Construction Standards

It is the intent of the older stabilized dune construction standards to regulate actions in older stabilized dunes in order to minimize damage to the dune forms and to adjacent property.

This section applies to all areas identified as “Older stabilized dunes” in the 1975 USDA Soil Conservation Service and OCCDC report “Beaches and Dunes of the Oregon Coast,” specifically the Sand Dunes Map for Lincoln County, Oregon.

The following standards shall apply to development in older stabilized dunes:

- A. Before a building permit is issued for construction involving the removal of vegetation in areas of older stabilized dunes, the City shall require an erosion prevention plan. The plan shall provide for temporary and permanent sand stabilization and maintenance of new and existing vegetation. The plan shall return the area to its original level of stability or further increase the area's stability.
- B. Removal of vegetation in older stabilized dunes shall be kept to the minimum required for building placement or other valid purposes. Removal of vegetation shall not occur more than thirty (30) days prior to grading, or construction. Permanent revegetation shall be started on the site as soon as practical.
- C. Sand removal shall be limited to that necessary for construction of permitted structures on the site or for eliminating hazards identified in the erosion prevention plan. Adequate consideration shall be given to removing sand from the least sensitive locations. Disturbed areas shall be properly revegetated unless building is done thereon.
- D. Developments shall result in the least topographic modification of the site that is practical.

CHAPTER 9.52.130 – Development on Beaches and Dunes

Construction of residential, commercial, or industrial buildings is prohibited on beaches, active foredunes, other foredunes that are conditionally stable and subject to ocean undercutting or wave overtopping, and interdune areas (deflation plains) that are subject to ocean flooding. Other development in these areas shall be permitted only if a certified engineering geologist determines that the development is adequately protected from any geologic hazards, wind erosion, undercutting, ocean flooding and storm waves and is designed to minimize adverse environmental effects. Such a determination shall consider:

- A. The type of use proposed and the adverse effects it might have on the site and adjacent areas;
- B. Temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;
- C. Methods for protecting the surrounding area from any adverse effects of the development; and
- D. Hazards to life, public and private property, and the natural environment that may be caused by the proposed use.

Section 2. Yachats Comprehensive Plan, Goal A Protection of Natural Resources (General), Goal B Protection of Estuarine Resources, Goal C Protection of Shoreland Resources, Goal E Protection of Natural Hazards and Disasters, and Goal L Beaches.

Yachats Community Characteristics

The City of Yachats is located on the Central Oregon Coast, in Lincoln County, Oregon, approximately 26 miles south of the City of Newport and 155 miles from the metropolitan area of the City of Portland. Yachats is located at the mouth of the Yachats River overlooking the Pacific Ocean. The climate is moderate. The City consists of varying topography, ranging from ridgetops, steep hillsides, basalt cliffs, uplifted marine terrace deposits, river frontage and relatively level areas along US Highway 101. Development in Yachats spreads mostly north to south along US-Highway 101 and slightly east along Yachats River Road. Dense commercial areas in Yachats exist along US-Highway 101 and are centrally located downtown. Residential development surrounds the downtown commercial core.

The City of Yachats is rich with natural beauty and abundant natural resources. The coastal community offers recreational amenities, activities and attractions in and around the community, such as the Yachats Commons Park and wetlands, Smelt Sands State Recreation Site, Yachats State Recreation Area, the Yachats Ocean Road State Natural Site, and the US Forest Service Cape Perpetua Scenic Area

Goal A – Protection of Natural Resources

The City of Yachats is nestled among the rocky ocean shores and the forested hillsides on both sides of the Yachats River. Protecting the natural beauty of Yachats is very important. Protection of the historic elements, preserving open space, improving parks and trails, and conservation of natural habitats is valued in the community. In conjunction with county, state and federal agencies as well as area residents and landowners, there is a desire to protect and enhance the City's rich natural, scenic and historic resources. Forests, beaches, water, wetlands, air quality, fish and wildlife habitats, historical and archaeological sites, and open space and scenic views all contribute to the high quality of the City's environment. These resources are Yachats' main assets in that they make it a beautiful place for people to live in and visit.

Goal

1. Protect and enhance the natural, scenic and historic resources of the City of Yachats.

Policies

1. The quality of air, water, and land resources shall be maintained or enhanced where possible.
2. Protect significant marine habitats, as identified on the City's adopted Natural Resources Map and Inventory Data, from proposed land uses that will, or might, modify their indigenous characteristics.
3. Preserve existing publically owned open space. Identify new areas appropriate for designation as public open space.
4. Encourage orderly development of land through zoning, land use codes and the timing and placement of public improvements in order to conserve natural resources.

5. Assist the State and County in protecting the County Road 804 right-of-way and the prescriptive easements accepted by the Oregon Supreme Court as established by the Lincoln County Surveyor (County Survey 11,905 dated 12/18/1987) from alterations that would prevent the establishment and maintenance of this segment of the Oregon Coast Hiking Trail within the public right-of-way.
6. Concur with all pertinent and legally authorized agencies, both federal and state, in a mutual effort to retain the character of those natural qualities identified in the adopted Natural Resources Map and Inventory Data.
7. Consider the quality of the resources areas as shown on the adopted Natural Resources Map and Inventory Data in adopting land use designations or in undertaking land use actions or decisions. This Map shall include wetlands, riparian areas, estuaries, and shorelands.
8. Direct growth so as not to encroach upon public or commercial forestlands. The inclusion of additional commercial forest lands within the UGB shall occur only upon finding that the land is needed for urban development.
9. Protect significant archaeological and historic resources through survey identification, map development, recordation and adoption of preservation codes, consistent with the standards of the State Historic Preservation Office (SHPO), affected tribes and federal laws. Specific sites for protection include, but are not limited to, the Little Log Church, Yachats Middens, Native American villages and other identified recorded or unrecorded archaeological or historic sites.
10. Do not support offshore oil and gas development and associated facilities due to potential conflicts with existing ocean fisheries, impacts on aesthetic and recreational values, and degradation of the marine environment. This includes leasing, exploration, and oil and gas extraction within the state territorial sea and federal waters.
11. Protect established trees, which contribute to the aesthetic and environmental quality of the City.
12. Protect significant trees and groves of trees through a tree protection ordinance or through voluntary mechanisms to ensure their health and retention.
13. Protect view sheds and corridors unique to the City. They contribute to the community identity and aesthetic values of City residents and visitors.
14. Protect streams, creeks, and wetlands.
15. Provide educational material regarding the responsible use of chemicals including but not limited to household chemicals, automotive chemicals, herbicides, and pesticides.

Proposed actions:

The City shall:

- a) Incorporate soil capacity analysis into the land use code for protection of prime forest soils.
- b) Conduct archaeological and historic resource inventories consistent with Goal 5 and the State Historic Preservation Office (SHPO); rank and prioritize significant properties for protective measures. Priority sites shall be identified on the City's Natural Resources Map or a separate archaeological and historic resources map

consistent with state law.

- c) Explore and prioritize actions to preserve trees and establish a tree protection ordinance.
- d) Identify and rank significant view sheds and corridors.
- e) Update the City-wide natural resources inventory and assessment.
- f) Research view protection strategies. Those strategies may include, but not be limited to, overlay zones, tree trimming standards, and voluntary deed restrictions. Ensure that view-shed protections do not conflict with other natural resource protections.
- g) Explore actions that would improve air quality, such as City-wide composting, replacing inefficient wood-burning stoves, and reducing vehicle emissions by providing alternative transportation options.
- h) Periodically update the ordinance to protect inland stream and associated riparian areas.

Goal B – Protection of Estuarine Resources

In Yachats, the estuarine areas include all estuarine waters, intertidal areas, tidal wetlands and submerged and submersible lands up to the line of non-aquatic vegetation or the mean higher high-water line. These resource areas are important for fish and wildlife habitats, for preservation and protection, for estuarine productivity, and for research or educational needs.

In harmony with adjacent property owners and relevant government agencies, the City desires to protect its estuarine areas from development, dredging and fill. Therefore, these estuarine areas within the City need to be classified as a natural management unit, managed to conserve the natural habitats and wildlife therein.

Goals

1. To recognize, protect, maintain and restore the unique environmental, economic and social values of the designated estuarine areas.

Policies

1. Cooperate with appropriate government agencies in the development of biological, aesthetic, recreational, and economic values and benefits of the Yachats River Estuary.
2. In recognition of the unique qualities of the Yachats River estuary, work with Lincoln County and relevant special districts, the Department of State Lands, U.S. Army Corps of Engineers, and other state and federal agencies to comprehensively manage the Yachats River estuary within the Yachats urban growth boundary.
3. The Yachats River is classified as a conservation estuary. All estuarine areas within the Yachats urban growth boundary shall be classified as a natural management unit, and shall be managed to preserve the natural habitats and wildlife therein.
4. Protect the natural habitat areas and aesthetic values in all City decisions

regarding land and/or water use actions that affect the estuary. The inventory information and the Natural Resources Map are sources of information regarding the aesthetic and natural values of the Yachats River estuary and the benefit derived therefrom to the City.

5. Protect estuarine areas through zoning and land use codes.
6. Permitted uses in the natural estuary management unit are undeveloped low-intensity, water-dependent recreational uses; protection of wildlife and their habitat and nutrients, fish, wildlife and aesthetic resources; research and educational observation; navigation aids; vegetative shoreline stabilization; and passive restoration measures.
7. Unless specifically exempted by the Director of the Department of State Lands under ORS 196.830 dredging or fill (including dredged material disposal) in intertidal or tidal marsh areas shall be mitigated by creation, restoration or enhancement of estuarine areas. The adequacy of a proposed mitigation project shall be determined by the Department of State Lands.
8. Require a clear presentation of the impacts of the proposed alteration where a use could potentially alter the estuarine ecosystem.
9. The estuarine and coastal shoreland habitat resources designated as significant on the Natural Resources Map shall be protected by implementing ordinances in the City's Municipal Code.

Proposed Actions

The City shall:

- a) Develop the City's Natural Resources Map. Designate the Yachats River on the City's Natural Resource Map for purposes of resource management.

Goal C – Protection of Shoreland Resources

Coastal Shorelands are a unique and sensitive component of the coastal environment. These shorelands are an invaluable resource for the protection and maintenance of water quality for fish and wildlife habitats, recreation and a variety of water-dependent uses.

Statewide Goal 17 calls for the conservation and protection of coastal shoreland resources and benefits. The Coastal Shorelands Planning Area is defined as all lands west of the Oregon Coast Highway (Highway 101) as described in ORS 366.235, including the western section of Gender Creek. Any other streams and creeks that intersect the shoreland, shall be in accordance with Yachats Comprehensive Plan Goal A, Protection of Natural Resources, Policy 13. The purpose of the Coastal Shorelands designation is to establish areas for inventory, study and planning for development and use to meet Statewide Planning Goal 17.

Lands contiguous with the ocean and estuaries shall be identified as coastal shorelands and shall include:

- Areas subject to ocean flooding and lands within 100 feet of the ocean shore or within 50 feet of an estuary;

- Adjacent areas of geologic instability where the geologic instability is related to or will impact a coastal water body;
- Natural or man-made riparian resources, especially vegetation necessary to stabilize the shoreline and to maintain water quality and temperature necessary for the maintenance of fish habitat and spawning areas;
- Areas of significant shoreland and wetland biological habitats whose habitat quality is primarily derived from or related to the association with coastal water areas;
- Areas necessary for water-dependent and water-related uses, including areas of recreational importance which utilize coastal water or riparian resources, areas appropriate for navigation and port facilities, dredge material disposal and mitigation sites, and areas having characteristics suitable for aquaculture;
- Areas of exceptional aesthetic or scenic quality, where the quality is primarily derived from or related to the association with coastal water areas; and
- Coastal headlands.

Statewide Planning Goal 17 outlines planning and management requirements for the lands bordering estuaries (as well as lands bordering the ocean shore). In general, the requirements of Goal 17 apply in combination with other planning goals to direct the appropriate use of shoreland areas. Provisions in Goal 17 specifically focus on the protection and management of resources unique to shoreland areas; examples of such resources include areas of significant shoreland habitat, lands especially suited for water dependent uses, lands providing public access to coastal waters, and potential restoration or mitigation sites. Implementing ordinances shall be consistent with Goal 17.

All inventories, policies and planning efforts outlined in this section of the Comprehensive Plan should be coordinated with the City's goals for Open Spaces, Scenic and Historic Areas and Natural Resource (Statewide Planning Goal 5, Comprehensive Plan Goal A), Air, Water and Land Resources Quality (Statewide Planning Goal 6, Comprehensive Plan Goal A), Areas Subject to Natural Disasters and Hazards (Statewide Planning Goal 7, Comprehensive Plan Goal E), Recreational Needs (Statewide Planning Goal 8, Comprehensive Plan Goal F), Economy of the State (Statewide Planning Goal 9, Comprehensive Plan Goal H) Estuaries (Statewide Planning Goal 16, Comprehensive Plan Goal B), and Beaches and Dunes (Statewide Planning Goal 18, Comprehensive Plan Goal L).

Inventory of Streams and Waterways:

Yachats River and Tributaries shall have a 50 foot setback buffer.

The "safe harbor" method shall be applied to establish setbacks from the Yachats River and its tributaries. The river and tributaries are fish-bearing streams with an average annual stream flow that is less than one thousand (1,000) cubic feet per second. Per the "safe harbor" methodology, a fifty (50) foot setback shall be established from the top of a

bank for fish-bearing streams with an average annual stream flow that is less than one thousand (1,000) cubic feet.

Gender Creek shall have a 25 foot setback buffer.

Gender Creek is an open channel that extends from the hillside located east of the Oregon Coast Highway to the ocean. The only exception to this open channel is the culvert which crosses under the highway. Although not considered a fish-bearing stream, Gender Creek does provide many important ecosystem services. Protection will help to maintain the beneficial effects of the stream as a natural habitat and corridor for wildlife, as well as for the protection and maintenance of water quality. Additionally, Gender Creek is valued by nearby residents and property owners for its open space and aesthetic aspects. Properties adjacent to Gender Creek have a history of flooding. The creek is essential to surface water management in the southernmost section of Yachats because the stream conveys stormwater and helps control flooding. Maintaining a buffer area adjacent to the stream will help maintain this carrying capacity. Development restrictions adjacent to the stream, including building setbacks and application of development standards, will also help preserve and restore the natural features of this coastal waterway.

Unnamed Stream at North End of City does not need a 25 foot setback.

Unnamed Stream at the north end of Yachats runs through the Overleaf Village Planned Development (PD) west of Highway 101. Development of the Overleaf Village PD included restoration of the stream and maintenance standards that continue to protect and enhance the stream corridor. East of Highway 101, the stream runs through the northern portion of the Fisterra Planned Development. The Fisterra Planned Development designated the stream and its associated corridor as open space to be maintained in its natural condition. The unnamed stream shall be preserved and maintained as approved in the Overleaf Village and Fisterra Planned Developments.

Agency Creek shall maintain a 10 foot on-center drainage easement.

Agency Creek consists of a combination of open channels, culverted sections, and underground sections. Development has occurred along the edges of the creek as well as over Agency Creek. Imposing greater setbacks on the limited number of undeveloped properties along the creek could cause significant hardship to development and be out of character with existing development. Agency Creek does not have a history of flooding as seen in other parts of Yachats. Agency Creek is a drainage way subject to the Drainage Way Protection Standards. A ten (10) foot on-center drainage easement shall be maintained along with other standards identified in the Yachats Municipal Code, Shoreland Setbacks section.

Goals

1. Recognize, protect, maintain and restore Coastal Shorelands. Coastal Shorelands are a unique and sensitive component of the coastal environment. These

shorelands are invaluable for the protection and maintenance of water quality for fish and wildlife habitats, recreation and a variety of water-dependent uses.

2. The City recognizes the environmental, social, and economic values of Coastal Shorelands.
3. Water-dependent and water-related uses are preferred uses in the Coastal Shorelands.

Policies

1. Cooperate with appropriate government officials in the protection of biological, aesthetic, recreational, and economic values and benefits of shorelands under public control.
2. Reduce or mitigate adverse effects upon water quality and fish and wildlife habitat resulting from the use of shorelands.
3. To recognize, protect, and maintain the value of the Yachats River and its tributaries, Gender Creek, and Agency Creek, a vegetative buffer shall be provided from the edge of the bank. The buffer will contribute to maintenance and enhancement of water quality, fish and wildlife habitat, recreation and aesthetics, and provide open space. The vegetative buffer will also help protect property from flooding and help manage stormwater drainage.
4. To recognize, protect, and maintain the value of the ocean, a buffer shall be provided from the top of the bank. Existing stabilizing native vegetation shall not be removed within the buffer in order to help stabilize the bluff and mitigate erosion. The buffer will also help protect adjacent property from flooding and erosion.
5. Provide implementing ordinances in the Zoning & Land Use Code to protect, maintain, and stabilize the shoreline. Stabilization and erosion control methods shall be included in the Zoning & Land Use Code.
6. Develop and implement programs for maintaining and improving public access to the estuary and ocean and pursuing adequate signage of existing access points.
7. Support future public access sites to be accessible in conformance with the Americans with Disabilities Act (ADA).
8. Land-use management practices and non-structural solutions to problems of erosion and flooding shall be preferred to structural solutions. Where shown to be necessary, water and erosion control structures, such as jetties, bulkheads, seawalls, and similar protective structures; and fill, whether located in the waterways or on shorelands above ordinary high water mark, shall be designed to minimize adverse impacts on water currents, erosion, and accretion patterns.
9. Coordinate with the Oregon Department of Parks and Recreation and the Department of State Lands in any review of shoreline stabilization structures.
10. Existing public ownerships, rights-of-way and similar public easements in estuary and ocean shorelands which provide access to or along the estuary or ocean shall be retained or replaced if sold, exchanged or transferred. Rights-of-way may be vacated to permit redevelopment of existing developed Shoreland areas, provided public access across the affected site is retained.

11. All development shall be consistent with the priorities and policies of the Comprehensive Plan and implementing ordinances.

Proposed Actions

The City shall:

- a) Develop a comprehensive map of water bodies, streams, and creeks within the City.
- b) Maintain and update Goal 17 inventories with best available science.
- c) Strengthen codes to protect Coastal Shorelands.
- d) Periodically update the Coastal Shoreland Boundary map based on bluff changes.
- e) Include public access points along the shoreline in the City's Natural Resources Map.
- f) Note the condition of access points and if they are compliant with the Americans with Disabilities Act (ADA). Identify the ADA non-compliant access points as future improvement projects, where feasible.

Goal E – Natural Hazards

Yachats lies in a challenged area for natural geological hazards due to much of the city's topography and climate. The City is vulnerable to natural hazards and the impacts of climate change, such as rising sea levels and increased extreme weather events. These hazards are related to various environmental processes and the natural characteristics of the region, which under certain situations can cause significant impacts to property and potentially life. Yachats considers natural hazards to include river and ocean flooding, landslides, liquefaction potential due to earthquakes, tsunamis, river bank erosion, coastal erosion, drought, windstorms, winter storms, and wildfires. An approach to land use planning that incorporates sound scientific information, including geotechnical planning, engineering, and design is important. Additionally, to better manage potential results of these hazards, the City has worked closely with Lincoln County in the development of the Lincoln County Natural Hazards Mitigation Plan.

Goals

1. Reduce risk to people and property from natural hazards.
2. Integrate natural hazards information from the Lincoln County Natural Hazards Mitigation Plan (NHMP) into the City of Yachats plans, policies, programs, and implementation provisions.
3. Promote risk reduction to people and property from natural hazards through education and outreach, thus increasing community preparedness and resilience.

General Policies

1. Minimize development in natural hazard areas: While natural hazard areas may be developed consistent with the Comprehensive Plan and city land use regulation, whenever possible, natural hazard areas shall be retained as open space, recreation use, and other low density uses.

2. Mitigation actions in the Lincoln County Natural Hazards Mitigation Plan shall be followed.
3. Recommendations in the Emergency Operations Plan shall be followed.
4. Encourage participation in Community Emergency Response Team (CERT) Programs.
5. Inform residents and business owners about preparedness measures.
6. Develop citywide stormwater management infrastructure.
7. Development adjacent to the Yachats River shall be planned to minimize any aggravation of the turbidity and seasonal low-flow situation.
8. Access and utilize federal and other grant dollars to implement measures to reduce risk to people and property, and protect against natural hazards.
9. Adopt and update maps, plans, inventories, policies, and implementing measures that reduce risk to people and property from natural hazards.
10. Identify and address emergency access and evacuation routes and areas when making development decisions. Recognize that evacuation routes can be different depending on the natural hazard.
11. Apply for hazard mitigation funding, as able, to advance mitigation projects.

Specific Hazards addressed include:

Flood Hazards
Tsunami Hazards
Geologic Hazards
Wildfire Hazards
Drought Hazards
Landslide Hazards

Policies related to Specific Hazards:

Flood Hazard:

12. Lands in Yachats subject to risk from flooding are identified as Special Flood Hazard Areas on the Flood Insurance Rate Maps (FIRMs) issued by FEMA, which have been adopted by the City. Yachats participates in the National Flood Insurance Program (NFIP) to reduce the risk of damage from flooding and to ensure the availability of flood insurance to property owners and residents.
13. Adopt new or revised FIRM maps as necessary for continued participation in the National Flood Insurance Program.
14. Adopt, revise and maintain regulations for development in identified Special Flood Hazard Areas, as necessary, for continued participation in the NFIP.
15. Identify historically vulnerable and impacted areas for buyout programs.

Tsunami Hazard:

16. Support tsunami preparedness and related resilience efforts, including outreach to residents.
17. Protect life and property to the fullest extent feasible from the impact of a local source Cascadia Subduction Zone tsunami.
18. Use the Oregon Department of Geology and Mineral Industries (DOGAMI) Tsunami Inundation Maps (TIM) applicable to the City of Yachats to develop tsunami hazard resilience measures.
19. Adopt a Tsunami Hazard Overlay Zone for identified tsunami hazard areas to implement land use measures addressing tsunami risk.
20. Identify and address emergency access and evacuation routes and areas when making development decisions.

Geologic Hazards (liquefaction, earthquake, landslide, erosion):

21. Reduce risk to people, property and the natural environment by adopting land use regulations that address geologic hazards.
22. For the purpose of identifying and mitigating geologic hazards, geologic site reports shall be prepared by appropriately qualified professionals that evaluate the risk to the site as well as the risk the proposed development may pose to other properties. Such reports shall be prepared by a State of Oregon certified geoprofessional such as a Registered Geologist (RG), Certified Engineering Geologist (CEG), or Geotechnical Engineer (GE).
23. Recognize that steep slopes are not the only factor that should be used to identify landslide hazard areas. Other factors that must be considered along with slope steepness include: the type of development, the size and scale of the development, the weight and extent of the construction, the location of the vulnerable population, the location of the critical facilities, erosion (natural and human caused), vegetation and grading. The physical footprint of development shall be no greater than the slope can safely accommodate.
24. Require applications for subdivisions, Planned Unit Developments, and building permits to include plans for stormwater management.

Wildfire Hazard:

25. Adopt land use regulations that provide safeguards to reduce risk to people and property from wildfire hazards.
26. Communicate concerns regarding forest activities to the Oregon Department of Forestry.
27. Support the Yachats Rural Fire Protection District in its fire protection efforts.
28. Support the Lincoln County Community Wildfire Protection Plan (CWPP). Implement recommendations and mitigation actions supported by the citizens of Yachats.
29. Prepare for, respond to, and suppress wildland and structural fires.

Drought Hazards:

30. Support drought preparedness and related resilience efforts, including outreach to residents. Engage state, regional and local organizations in a collaborative effort to prepare and distribute water conservation information.
31. Support the City of Yachats Water Conservation Plan. Implement recommendations and mitigation actions.

Proposed Actions

The City shall:

- a) Amend the City codes as necessary to reflect best practices related to mitigation of natural hazards.
- b) Prepare and distribute hazard preparedness information to all residents, property owners and business owners in the City, and make the information available at tourist accommodations (vacation rentals) and points of interest.
- c) Participate in emergency preparedness training drills, on a regular basis, with other agencies and jurisdictions.
- d) Explore the opportunity to obtain funds for a feasibility study for additional water storage in the City and develop Strategies for water infrastructure improvements.
- e) Prepare and distribute water conservation information through public outreach campaigns, as needed, to raise awareness about drought hazards and mitigation actions residents can take to reduce the impacts of drought in the city.

Goal L – Beaches

Beaches and dunes are the physical environments at the very edge of the sea. These beaches are highly dynamic places; shaped by wind, waves, and currents. They serve as buffers between the energy of the ocean and the land. Beaches and dunes also provide the public with recreational opportunities and draw scores of visitors to Oregon each year.

Goals

1. To conserve, protect, where appropriate develop, and restore the resources and benefits of coastal beach and dune areas.
2. To reduce the hazard to human life and property from natural or human-induced actions associated with these areas.
3. Enhance existing access points to beaches and protect beaches from erosion and other degradation.

Policies

1. Prohibit residential development or commercial and industrial buildings on beaches, active foredunes, on other foredunes which are conditionally stable and that are subject to ocean undercutting or wave overtopping, and on interdune areas (deflation plains) that are subject to ocean flooding.
2. Adopt land use regulations that provide safeguards to reduce risk to people and property from coastal hazards.
3. Improve public access to the beach and river shores by acquiring land and

easements.

4. Accept donations and dedications of land and easements for public access, open space, and habitat protection as appropriate.
5. Identify appropriate sites for emergency and public access to the beach.
6. Investigate a diverse range of beach access types (pedestrian, official vehicular, view) and a range of amenities (parks, walkways/boardwalks, street ends) while maintaining a balance between resource protection and human use.

Section 3. Severability. Any provision of this Ordinance which proves to be invalid, void, or illegal shall in no way affect, impair or invalidate any other provision of this Ordinance, and the remaining provisions of this Ordinance shall remain in full force and effect.

Section 4. Effective Date. This ordinance shall take effect on the 30th day after its adoption.

Passed and adopted by the Yachats City Council this _____ day of _____, 20____

	YES	NO	NOT PRESENT
Leslie Vaaler, Mayor	☐	☐	☐
Greg Scott	☐	☐	☐
Mary Ellen O'Shaughnessey	☐	☐	☐
Ann Stott	☐	☐	☐
Vacant	☐	☐	☐

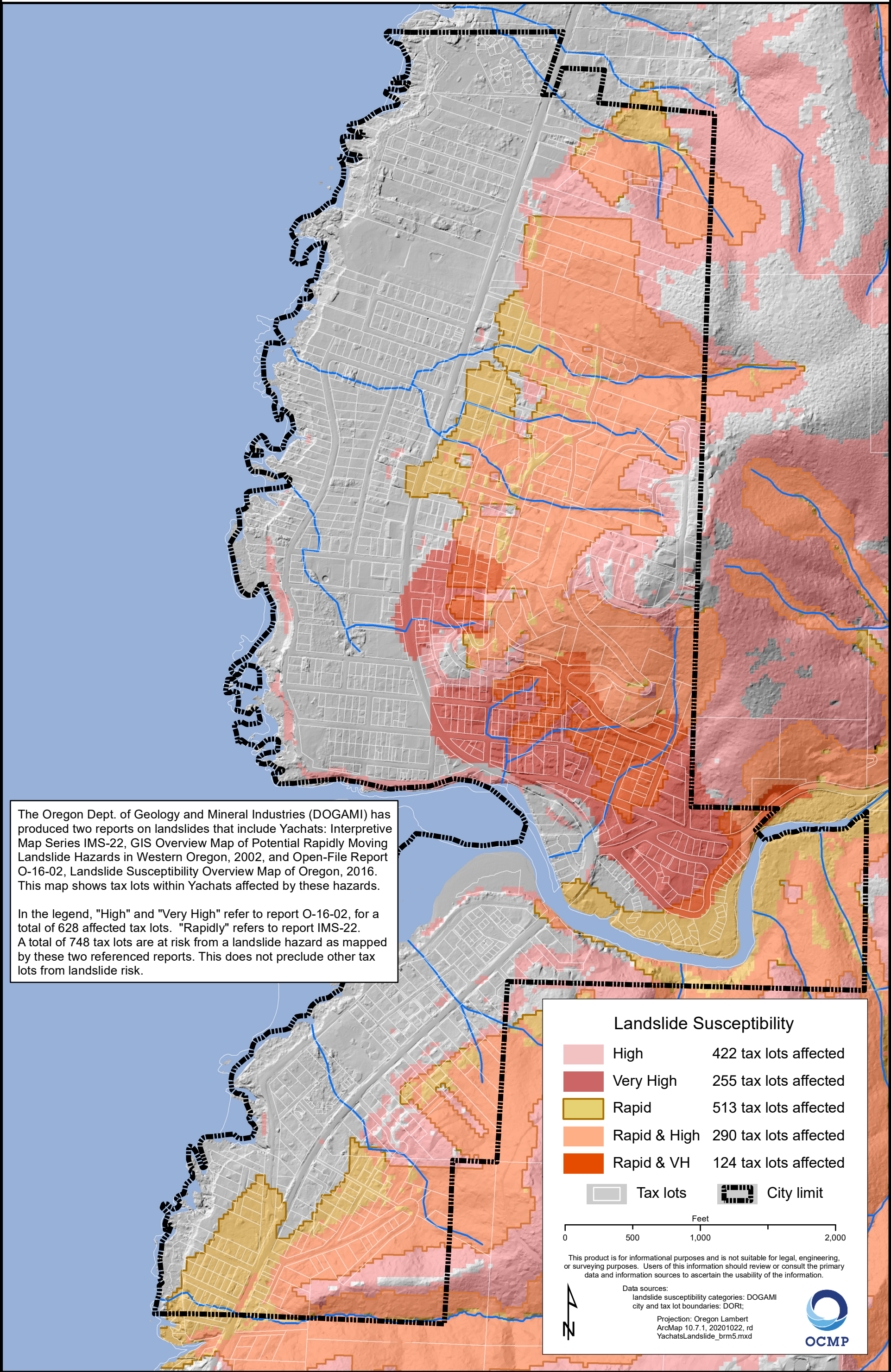
Leslie Vaaler, Mayor

Attest by:

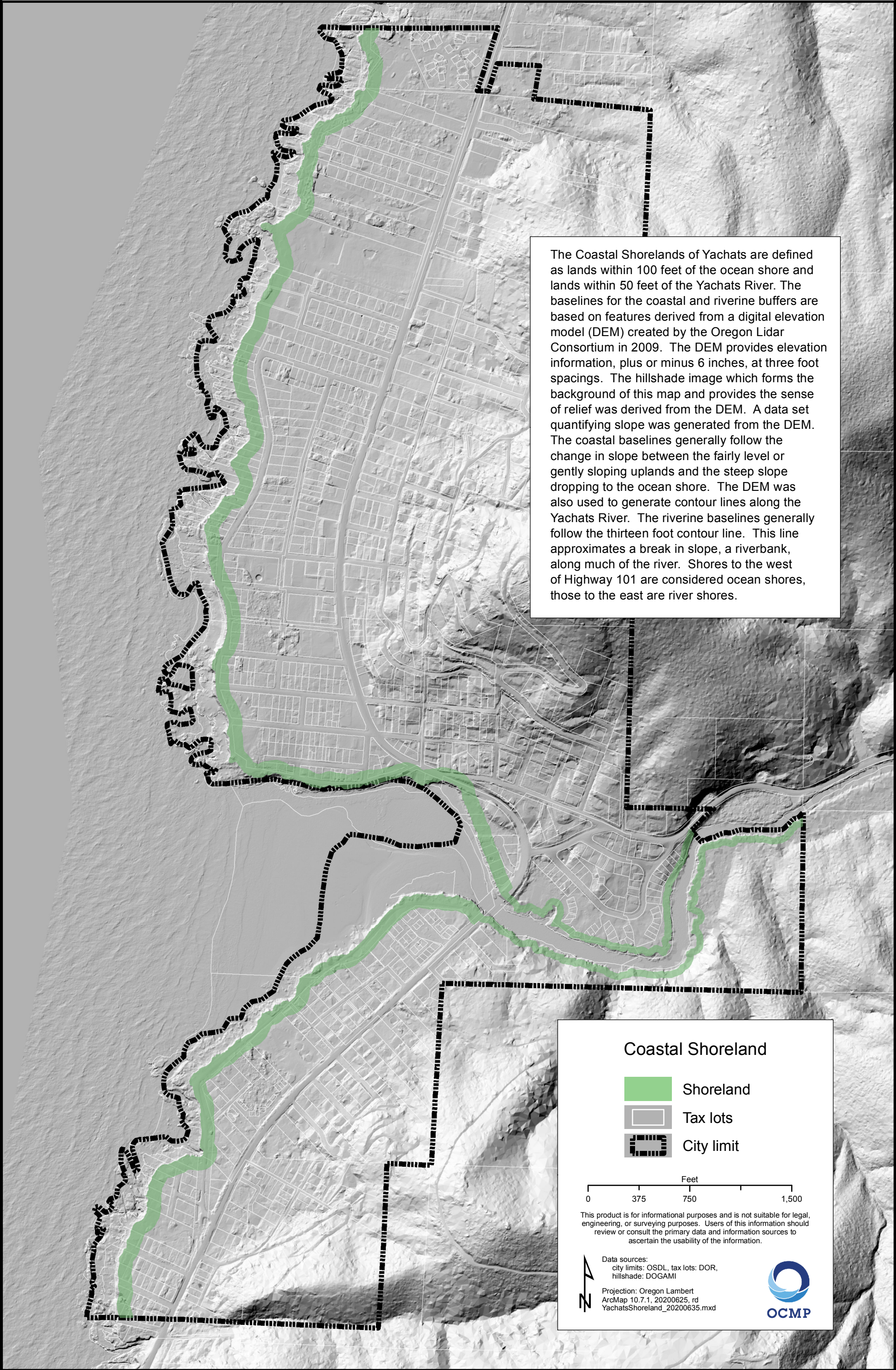
Shannon Beaucaire, City Manager

Yachats Landslide Susceptibility

Tax lots exposed to rapidly moving landslides and susceptible to “high” and “very high” categories of landslide



City of Yachats Goal 17 Shoreland Area



The Coastal Shorelands of Yachats are defined as lands within 100 feet of the ocean shore and lands within 50 feet of the Yachats River. The baselines for the coastal and riverine buffers are based on features derived from a digital elevation model (DEM) created by the Oregon Lidar Consortium in 2009. The DEM provides elevation information, plus or minus 6 inches, at three foot spacings. The hillshade image which forms the background of this map and provides the sense of relief was derived from the DEM. A data set quantifying slope was generated from the DEM. The coastal baselines generally follow the change in slope between the fairly level or gently sloping uplands and the steep slope dropping to the ocean shore. The DEM was also used to generate contour lines along the Yachats River. The riverine baselines generally follow the thirteen foot contour line. This line approximates a break in slope, a riverbank, along much of the river. Shores to the west of Highway 101 are considered ocean shores, those to the east are river shores.

Coastal Shoreland

Shoreland

Tax lots

City limit

03757501,500

Feet

This product is for informational purposes and is not suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

N

Data sources:
city limits: OSDL, tax lots: DOR,
hillshade: DOGAMI

Projection: Oregon Lambert
ArcMap 10.7.1, 20200625, rd
YachatsShoreland_20200635.mxd



OCMP

FW: Concern with Revision to Chapter 9.52.050

Shannon Beaucaire <citymanager@YachatsMail.org>

Tue 11/17/2020 4:55 PM

To: Yachats City Planner <Planner@YachatsMail.org>

Keep Lincoln County Open

Shannon Beaucaire

City Manager

City of Yachats

Citymanager@yachatsmail.org

YachatsOregon.org

PO Box 345

Yachats, OR 97498

Phone: 541.547.3565

Fax: 541.547.3063

From: Craig Berdie <cberdie@gmail.com>

Sent: Tuesday, November 17, 2020 4:53 PM

To: Shannon Beaucaire <citymanager@YachatsMail.org>; Mayor <Mayor@YachatsMail.org>

Subject: Concern with Revision to Chapter 9.52.050

I am writing to express a concern with a limitation of proposed CHAPTER 9.52.050 – Geologic Hazard Overlay Zone. It is possible that I misunderstand the scope of the change, but feel that I must raise this issue.

Section H, Erosion Control Measures does not address "downhill" concerns.

I believe that a section should be added that addresses mitigation costs to downstream neighbors and the city carrying capacity as part of erosion control.

While the Chapter comprehensively addresses control of on-site effects, it does not clarify limits or controls with water that must run off the site. There are no water detention requirements nor mitigation requirements for increased flow downstream from the property.

As an example, the home developed uphill from our house required the removal of a large tree that was absorbing the water from a natural spring, has a large roof footprint, a large concrete parking area and driveway. I estimate 70% of the lot is now impervious. While it complies with the suggested requirements in the Chapter, all that water goes somewhere at high rate. This causes downstream erosion (not on-site erosion) with costs for downhill residents and the city.

Apologies for this last minute comment after all the hard work done by the Planning Commission.

Craig Berdie

319 E. Third Street

Yachats, Or 97498

Vaaler Comments for Hazard Mitigation Sent 11/22/2020

GOAL A:

Policy 4; replace "in or affecting" by "that affect"

Policy 8, Question the addition of

"The inclusion of additional commercial forest lands within the UGB shall occur only upon finding that the land is needed for urban development."

Proposed action (f) "view shed" should be "view-shed"

Proposed action (g) replace "replacing wood burning stoves with electric ones" with "replacing inefficient wood-burning stoves" (COUNCIL CONCURRED)

Policy 12, insert "through" following the word "ordinance"

GOAL B:

Policy 9 replace "with" by "by"

GOAL D: This is just labeled "Goals" ; correct to read "Goal D"

GOAL E: Policy 1, line 1, insert comma following "possible" on the third line

Policy 11 Insert commas before and after "as able"

Policy 12 Suggestion: "reduce the risk" on line 4 to "hopefully mitigate the cost" or to "reduce the financial risk"

Policy 14 insert commas before and after "as necessary"

Add line space between policies 21 and 22

Proposed actions relating to drought hazards:

(c) add commas before and after "on a regular basis"

(e) delete "annual" prior to "public outreach campaigns", as needed but at least annually??? (Council discussed, and I believe we agreed on something along these lines)

GOAL L Beaches :

Policy 4 Add "as appropriate" at end so it reads

"Accept donations and dedications of land and easements for public access, open space, and habitat protection as appropriate"

(COUNCIL CONCURRED)

I also include a couple of comments I brought up in the council meeting.

In the discussion of the geological hazards permit, reference is made to the fee for a Geological Hazard permit in section 9.88.050. There currently is no such fee. There is an allowance for actual costs beyond the fees listed. This section, with fee amounts, was last modified by Ord 252 in 4/2005. It may be wise to take a look at it soon.

Note that there is some question whether the items listed as policies are actually policies or goals.

Note that no time frame is given for accomplishing most of these, but staff and volunteer time constraints suggest that we will not get to them all any time soon.

I wonder whether the list should be pared down or prioritized. Too long a list of goals takes away from them being meaningful.

I hope this is helpful. I do believe that the hazard mitigation ordinance was sent back mainly for consideration of Craig Berdie's query.

January 15, 2020

To: Shannon Beaucaire, City Manager

From: Justin Peterson, Contract City Planner

Re: Draft Amendments Lighting

Upon further review the Lighting Ordinance and consultation with the City Attorney Staff believes there are areas where the record can be improved to support the proposed language and policy choices. The goal is to strengthen the record so Planning Commission and City Council can make a decision based on the facts in the record.

Here some questions that City Council and Planning Commission may consider:

- How much do marine lights cost? The amount of time you give a business or property owner to replace equipment should have some relationship to the expense of the equipment. The more expensive the equipment the more time the City would want to allow for compliance.
- Planning Commission was interested in a separate compliance timeline for residential vs commercial uses. What is the difference between a residential marine light vs. a commercial marine light? If they are the same fixture then there is not much reason to treat them differently.
- As to the curfew, is there evidence in the record as to why light after 11PM is harmful, as compared to light before 11PM? During the winter, that would allow the lights to be on for at least five hours; during the summer, only a couple hours. The record should have information about why 11PM is important for this type of lighting and the harm it causes.

Other comments included:

- A need to clarify the meaning of “bright” in the Marine lighting definition.
- A need to better define temporary.
- A question about official copyright permission for the images.
- Instead of stating “after the passage of this ordinance” defining a specific date.
- A need for an administrative process to review rather than the standard variance process. It is unclear how a lighting regulation could meet the variance requirements.
- YMC 9.42.070(2)(c) is not a regulation. As such, it does not belong in the Code.
- YMC 9.42.050(E) should be removed since it is not a regulation.

Last comments from the City Attorney included minor text edits, formatting edits, and updating terms formatting to match existing formatting in YMC 9.04. The attached Ordinance has track changes identifying suggested text edits.

Public Hearing History: At the October 20, 2020 Planning Commission meeting the decision was made to continue the hearing to October 28, 2020. At the October 28, 2020 continued Planning Commission meeting, the Commission passed a motion to forward the attached recommended amendment to Yachats Municipal Code to City Council. The Planning Commission identified several changes that are noted in the memo dated November 10, 2020 to the lighting ordinance. The City Council remanded the draft Ordinance back to the Planning Commission at the November 18, 2020 meeting. Planning Commission discussed the Ordinance at the December 1, 2020 Planning Commission meeting. Planning Commission voted to recommend approval and forward the Ordinance to City Council at the December 21, 2020 meeting.

Issue/Question: Does the Municipal Code address lighting within the City of Yachats in a manner which supports the goals of the Comprehensive Plan?

Explanation: The Municipal Code currently addresses lighting minimally and without specificity; restricting exterior lighting directed to adjacent property (broadly defined by use).

See Section 5.08.165 Exterior lighting.

A. Exterior lighting shall not be directed from the property of the owner onto private residential or commercial property, streets, parklands, or other public properties.

The City of Yachats Comprehensive Plan GOAL D Conservation of Energy and **GOAL G** Control of Urban Growth and Form to sustain the small - town, ocean - side character of the Yachats Community supports the addition of a comprehensive lighting strategy which requires energy efficient lighting standards and addresses the adverse effects of bright, outdoor lighting, light trespass and glare.

The Planning Commission member amendments since the November 18, 2020 meeting are highlighted in the draft Ordinance. In addition, Planning Commission recommends that the images from earlier versions of the Ordinance be added back into the draft Ordinance.

Staff received additional written comments from Michael Lebofsky on December 29, 2020 and Bill Kowalik on December 30, 2020 which are included with the other Public comments.

Council Action:

1. The City Council may approve,
2. Approve with modifications,
3. Deny or
4. Remand back to the Planning Commission for reconsideration the proposed amendment

Example Motion:

To approve the proposed amendment to the Yachats Municipal Code based on the testimony received, the findings within the staff report, and the evidence and arguments before the City Council at the public hearings. The City Council determines that the request by the City of Yachats to add Section §9.42.050 and amend Section §9.04.030, of the Yachats Municipal Code. The City Council hereby adopts the staff memo as findings and the other evidence in the record as findings supporting its decision and approves the Ordinance.

Attachments:

1. Draft Ordinance with Track Changes
2. Draft Ordinance before Track Changes.
3. Public Comments
4. Planning Commission Members Comments and Research
5. Staff memos from earlier public meetings (October 20, 2020 and November 10, 2020 memo)

**CITY OF YACHATS
ORDINANCE NO. 368**

**AN ORDINANCE AMENDING THE YACHATS MUNICIPAL CODE CHAPTERS
9.04 – DEFINITIONS AND 9.42 LIGHTING.**

WHEREAS, pursuant to ORS 197.610, the City provided DLCD with Form 1 notice of these proposed YMC Title 9, Chapter 9.54, text changes on September 13, 2020;

WHEREAS, notice of the proposed amendments were provided in accordance with procedures established in the Yachats Municipal Code and Oregon Revised Statutes;

WHEREAS, the Planning Commission held a ~~work session~~ multiple work sessions in 2020, to provide an open forum for discussion of the amendments;

WHEREAS, the Planning Commission and City Council held a work session, to provide an open forum for discussion of the amendments;

WHEREAS, the Planning Commission held a public hearing on October 20, 2020 for the proposed amendments;

WHEREAS, the Planning Commission public hearing was continued to October 28, 2020 for the proposed amendments;

WHEREAS, the Planning Commission followed the text amendment procedures under YMC 9.84.020 and has provided a report to the City Council along with its recommendation to consider the proposed text changes;

WHEREAS, the City Council held a public hearing on these proposed text changes on November 18, 2020 and remanded the Ordinance back to the Planning Commission;

WHEREAS, the Planning Commission held a public hearing on December 21, 2020 for the proposed amendments;

WHEREAS, the City Council held a public hearing on January 20, 2021 for the proposed amendments;

NOW THEREFORE, the City of Yachats ordains as follows:

Section 1. ~~Yachats Municipal Code Chapter 9.04 and Definitions~~The following definitions are to be added to YMC 9.04.030, in alphabetical order.

CHAPTER 9.04.030 – Definitions

- A. “Cutoff Angle (of a luminaire)” ~~means:~~ The angle, measured from the lowest point between a vertical line from the center of the lamp extended to the ground and the first line of sight at which the bare source is not visible.
- B. “Exterior Lighting” ~~means:~~ Lighting relating to the outside of a building or structure.
- C. “Fixture” (also called a luminaire or light fixture) ~~means:~~ a complete lighting unit including the light source (bulb), mounting, and shielding.
- D. “Floodlight” ~~means~~ a light that produces up to one thousand eight hundred (1,800) lumens and is designed to “flood” a well-defined area with light.
- E. “Foot-candle” ~~means~~ a measure of luminance or a measure of how bright a light appears to the eye. One foot-candle is equal to one lumen per square foot. As an example, a 60-watt incandescent light (800 lumens) produces an illuminance of one-tenth (0.1) foot candle at a distance of about twenty-five (25) feet.
- F. “Glare” ~~means a:~~ Light that causes a visual impairment sensation due to excessive brightness from the light source and can interfere with one's ability to see. See Figures 2 and 3 in 9.42.020.
- G. “Hardscape” ~~means:~~ permanent hard landscape improvements to the site including parking lots, drives, entrances, curbs, ramps, stairs, steps, medians, walkways and non-vegetated landscaping that is ten (10) feet or less in width. Materials may include concrete, asphalt, stone, gravel, etc.
- H. “High Intensity Lighting” ~~means~~ Lamps which produce visible light directly by the electrical heating or excitation of a gas. Examples of such lighting include, but are not limited to, metal halide, high-pressure sodium, low-pressure sodium and mercury vapor.
- I. “Individual Lamp Limit” ~~means:~~ Limit on output of any individual light source as enumerated in Section 9.42.040.C
- J. “Individual Lot Limit” ~~means:~~ the maximum for the sum of all exterior individual light sources on a given property as enumerated in 9.42.050.A and 9.42.050.C.
- K. “Light Trespass/Trespass Lighting” ~~means~~ any light emitted from an outdoor luminaire that either shines directly beyond the property on which the luminaire is installed or indirectly shines beyond the property on which the luminaire is installed at a brightness that exceeds one-tenth (0.1) foot candle at twenty five (25) feet from the light source or at the property line, whichever is more restrictive. See Figure 4 in 9.42.020.
- L. “Lighting Source Height” ~~means~~ the distance from finished grade to the top most portion of any light emitting source (e.g., lamp, surface or lens).

- M. “Luminaire”: See definition for “fixture”.
- N. “Marine Lighting”: means bBright light fixtures directed at the ocean and coastal tide pools, and illuminating the marine area.
- O. “Outdoor Lighting Fixture”: means aA luminaire outside of an enclosed building or structure, or any luminaire directed such that it primarily illuminates outdoor areas.
- P. “Security Lighting” means: mMinimal lighting for personal and building security and safety after hours.
- Q. “Shielding”: means aAn opaque covering for an Outdoor Lighting Fixture such that no light rays are emitted above the horizontal plane running through the lowest point of the fixture. Shielding can be extended downward to prevent “Light Trespass” as defined above. See examples in Section 9.42.080.D.
- R. “Uplighting”: means lLighting that is directed in such a manner as to shine light rays above the horizontal plane.
- S. “Temporary Seasonal Lighting” means: eExterior lighting that is specifically directed at a holiday season such as Christmas, Halloween, and others. This will consist of small, low wattage bulbs of less than 10 lumens each.

Section 2. ~~Yachats Municipal Code Chapter 9.42 Lighting~~ A new Chapter 9.42 is added to the YMC to provide as follows:

9.42.010 Purpose

The purpose of this Ordinance is to provide regulations for outdoor lighting that will accomplish the following goals:

- A. Permit the use of outdoor lighting that promotes health, safety, security, and productivity.
- B. Protect shoreline natural resources and wildlife.
- C. Enhance the view of the dark sky.
- D. Minimize the adverse effects of bright, outdoor lighting including “light trespass” and “glare”.

9.42.020 Definitions

Types of light are defined in part by their intended use and impact. Full definitions are in 9.04.030. Figure 1 provides basic distinctions between types of light.

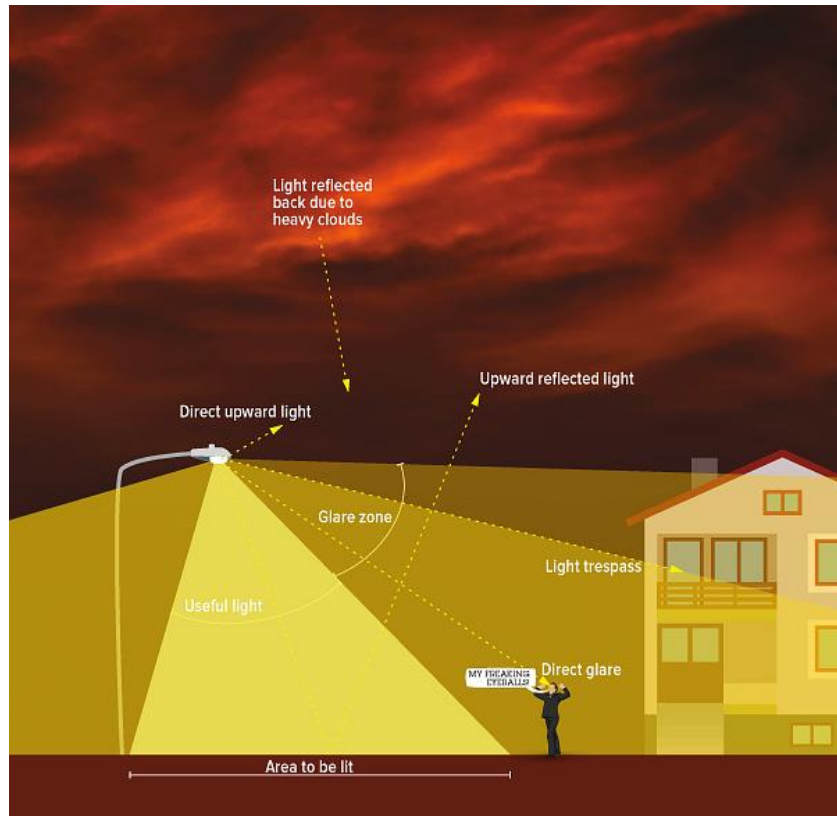


Figure 1. Types of Light

Image by Anezka Gocova, in “The Night Issue”, Alternatives Journal 39:5 (2013)



Figure 2: Example of glare from a light pole

Photo: James Lowenthal, Smith College



Figure 3. Example of glare from car headlights



Figure 4. Light Trespass

9.42.030 General Lighting Requirements

- A. Conformance with all applicable codes. All outdoor lighting shall be installed in conformance with the provisions of this ~~ordinance~~Chapter, applicable ~~e~~Electrical and ~~e~~Energy codes, and applicable sections of the ~~City, County and State~~ building codes.
- B. Applicability. Except as described below, all outdoor lighting installed after the date of this ~~ordinance~~Chapter shall comply with the requirements specified in section 9.42. This includes, but is not limited to, new lighting, replacement lighting, or any other lighting whether attached to structures, poles, the earth, or any other location, including lighting installed by any third party.
- C. Exemptions. The following are not regulated by this ~~Ordinance~~Chapter:

1. Lighting within the public right-of-way or easement for the principle purpose of illuminating streets ~~or roads~~.
2. Lighting for public monuments and statuary.
3. Lighting solely for signs (Covered in Chapter 9.44).
4. Repairs to existing luminaires not exceeding twenty-five percent (25%) of the total replacement value of the luminaire.
5. Temporary lighting for theatrical, musical, and other performance areas and construction sites.
6. Underwater lighting in swimming pools.
7. Temporary, seasonal lighting provided that individual lights are less than ten (10) lumens.
8. Lighting that is only used under emergency conditions.
9. Lighting identified and approved in a specific use permit.
10. Lighting required by County, State, or Federal government.

9.42.040 General Standards

- A. Outdoor lighting fixtures and accent lighting must be shielded and aimed downward, and ~~it~~ must be installed at the minimum height necessary so that the cutoff angle does not allow direct lighting of an adjacent property at a level exceeding one-tenth (0.1) foot-candles at twenty-five (25) feet from the light source. See examples in Section 9.42.080.
- B. All trespass lighting/light trespass that exceeds one-tenth (0.1) foot-candles at twenty-five (25) feet from the light source or at the property line is prohibited.
- C. Motion activated security lights must not be triggered by motion on adjacent properties or streets. These lights must be shielded so that they do not shine onto adjacent properties in excess of one-tenth (0.1) foot-candles at the property line.
- D. **All new** Marine lighting is prohibited.
- E. Mercury vapor lamps, metal halide lamps, and low-pressure sodium lamps are prohibited.
- F. Uplighting of building and landscaping is prohibited.
- G. Lighting on buildings shall not be placed above the eaves.

9.42.050 Standards Based on Use

- A. **Single-Family or 2-Two-Family** Residential Uses

1. Individual light sources on residential properties are limited to an output of eight hundred (800) lumens each. An eight hundred (800) lumen output is approximately equivalent to:
 - a. One (1) standard incandescent sixty (60) watt bulb
 - b. One (1) compact fluorescent fifteen (15) watt bulb
 - c. One (1) LED eight (8) watt bulb
2. Individual Lot Limit. The sum of the output of all outdoor lighting sources shall not exceed:
 - a. Five thousand six hundred (5,600) lumens on lots greater than zero-point-three (0.3) acres
 - b. Three thousand two hundred (3,200) lumens on lots less than or equal to zero-point-three (0.3) acres
3. Residential light sources shall be less than a color temperature of three thousand (3,000) Kelvin.
4. Lights on free standing poles higher than four (4) feet are prohibited.

B. Three or more Residential Unit Multi-Family Uses

1. Individual lamps on multi-family properties are limited to an output of one thousand two hundred (1,200) lumens each, except for parking areas which may be two thousand (2,000) lumens each.
2. Individual Lot Limit. The sum of the output of all light sources shall not exceed two and one-half (2.5) lumens per square foot of hardscape.
3. A Requirement of a to-scale ~~a~~Area of ~~i~~llumination ~~p~~lan. A to-scale Area of Illumination Plan shall include:
 - a. To-scale plans that accurately indicate the location, type, intensity, and height of luminaires including both building-mounted and ground-mounted fixtures;
 - b. A description of the luminaires, including lamps, poles or other supports and shielding devices, which may be provided as catalogue illustrations from the manufacturer;
 - c. Photometric data, such as that furnished by the manufacturer superimposed over a copy of the site plan, showing the angle of light emission and the foot-candles on the ground; and
 - d. Additional information as may be required by the city in order to determine compliance with this chapter.
4. Poles for luminaires shall be limited to:
 - a. Sixteen (16) feet in height for parking areas.

b. Ten (10) feet in height for walkways and pedestrian facilities.

C. Commercial Uses

1. Commercial ~~lots, when developed for commercial~~ uses, shall not exceed limits on trespass lighting as specified in 9.42.040.B.

2. Except for security lighting for pathways and building doors, outdoor lighting fixtures for commercial properties must be turned off when the business is not open. When businesses are closed, residential lighting requirements apply.

3. Individual Lot Limit. The sum of the output of all light sources shall not exceed two and one-half (2.5) lumens per square foot of hardscape.

4. Requirements of a to-scale Area of Illumination Plan

a. New developments for commercial uses shall provide an Area of Illumination Plan drawn to scale as part of the Site Plan.

b. An ~~a~~Area of ~~i~~llumination ~~p~~Plan drawn to scale shall be required with a change of commercial use or transfer of property for existing commercial uses.

c. An ~~a~~Area of ~~i~~llumination ~~p~~Plan drawn to scale shall include:

i. The location, type, intensity, and height of luminaires including both building- and ground-mounted fixtures;

ii. A description of the luminaires, including lamps, poles or other supports and shielding devices, which may be provided as catalogue illustrations from the manufacturer;

iii. ~~iii.~~ Photometric data, such as that furnished by the manufacturer, superimposed over a copy of the site plan, showing the angle of light emission and the foot-candles on the ground; and

iv. ~~iv.~~ Additional information as may be required by the city in order to determine compliance with this chapter.

5. High intensity lights shall be limited to two thousand four hundred (2,400) lumens per luminaire. Due to their high energy efficiency, long life, and spectral characteristics, narrow-spectrum amber LED's are the preferred illumination source.

6. Poles for luminaires shall be limited to:

a. Sixteen (16) feet in height for parking lots.

b. Ten (10) feet in height for walkways and pedestrian facilities.

D. Pedestrian Ways and Parks

1. Illumination: Light shall be directed in such a manner that any changes in elevation of the walkway (e.g., steps or curbs) shall be illuminated such that said features are clearly discernible (without shadow).
2. Fixture Type: Pedestrian walkway light fixtures can be a combination of freestanding pole, bollard, in-place step or building-mounted fixtures. For building mounted fixtures, the Planning Director shall ensure that the proposed fixture type will be in scale with the building elevation on which it is to be installed. The Planning Director may refer this latter determination to the Planning Commission.
3. Fixture Heights: Light fixtures shall not exceed the following height provisions:
 - a. Freestanding pole - Not greater than fourteen (14) feet as measured from finished grade to the bottom of the light fixture.
 - b. Building-mounted - Shall be located below the roof's eave or up to a height of fourteen (14) feet, whichever is less.
 - c. Bollard - Said fixture type shall not exceed a height of forty-two (42) inches as measured from finished grade to the top of the fixture.

~~E. Public Right of Ways 1. Shielding for street lights other than those on Highway 101 may be requested from the public utility provider.~~

9.42.060 Variances

To provide for reasonable interpretation of this Chapter, and in certain instances where this Chapter may produce a hardship, a property owner may apply for a variance pursuant to Chapter 9.80 of this Code

9.42.070 Time to Become Compliant

- A. The General Standards described in 9.42.030 and 9.42.040 require compliance within one year after the passage of this Ordinance. Notwithstanding the City's non-conforming use provisions in YMC Chapter 9.76.
 1. When violations of 9.42.040 are ~~cited~~ issued a notice by the enforcement officer and if the violation can be corrected by replacing an existing bulb with a lower intensity bulb, this corrective action is required to be implemented within fourteen (14) days after the citation notice is issued. Other corrective actions are required to be implemented within sixty (60) days after the ~~citation~~ notice is issued.
 2. Marine lighting existing prior to the enactment of this ordinance must be:
 - a. Turned off between 11:00 PM and sunrise each night, and
 - b. Removed, replaced, or disconnected within three years of the enactment of this ordinance.
 - c. ~~It is recommended that the City Council and the Planning Commission enter into negotiations with interested representatives~~

of the local lodging businesses to evaluate replacement and relocation alternatives to better comply with sections 9.42.040 and 9.42.050 above. These negotiations must be completed prior to the three year limitation identified above, otherwise item b. above is invoked.

B. Compliance based on extent of modification:

1. New uses and buildings. For all proposed new land uses, developments, buildings, and structures that require a permit, all outdoor lighting installations shall meet the requirements of this Code.
2. Additions and modifications. All building additions or modifications exceeding twenty-five (25) percent in terms of additional dwelling units or, gross floor area, ~~or parking spaces~~, and that require a permit, either with a single addition or cumulative additions, shall ~~invoke~~ comply with the requirements of this ~~Code~~ Chapter. This requirement shall hold for the entire property, including both previously installed and any new outdoor lighting.
3. If replacement or repair is required to an outdoor lighting fixture due to weather damage, accident, vandalism, or other unforeseen event, the outdoor lighting fixture may be replaced as it was previously built. Compliance to ~~section~~ Chapter 9.42 requirements is not required. However, if the design is changed in any way then compliance is required.

C. Resumption of use following abandonment. If a property or use with non-conforming lighting is abandoned, all outdoor lighting shall be reviewed and brought into compliance with this ~~Code~~ Chapter before the use is resumed.

9.42.080 Examples

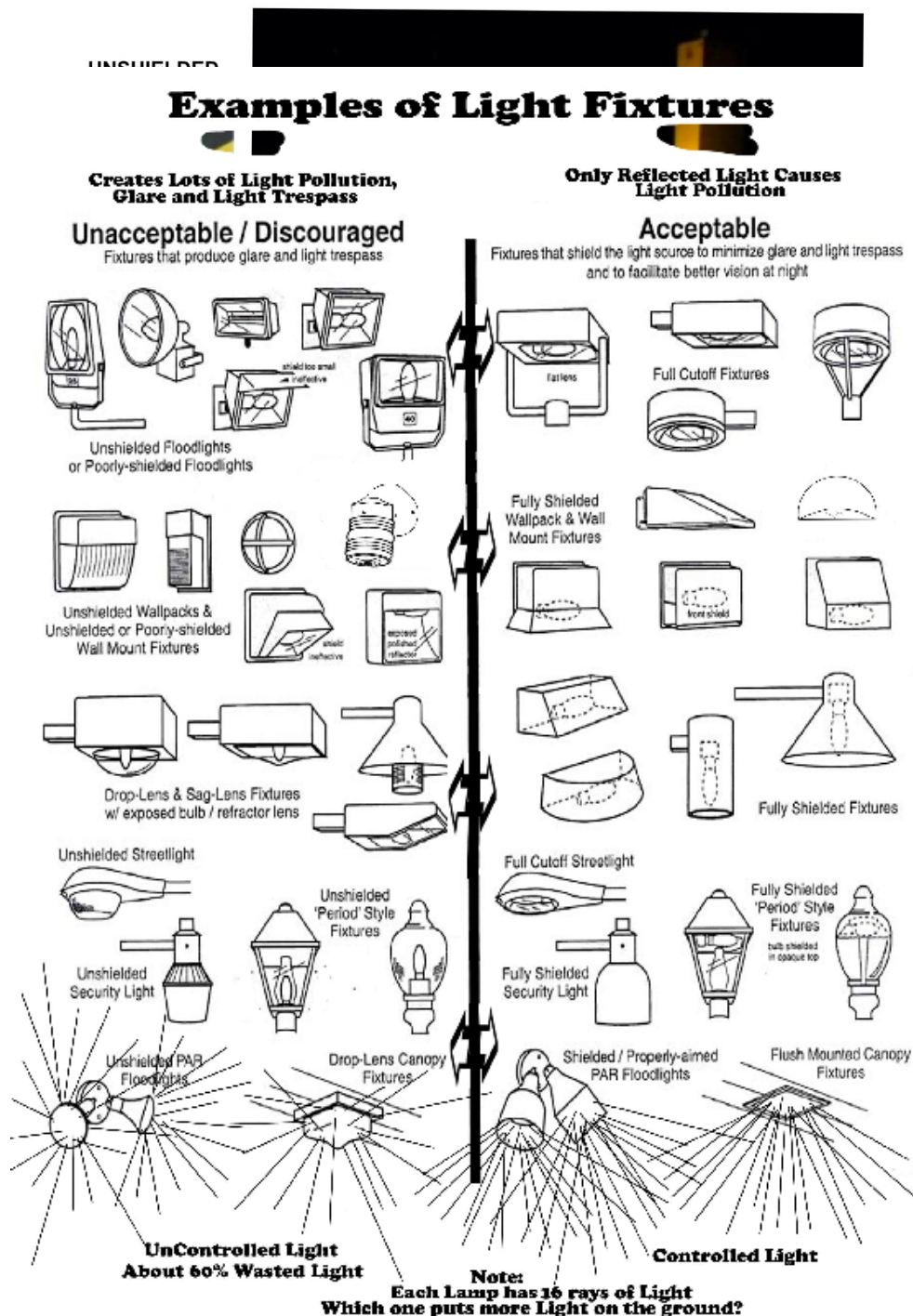
- A. Example showing that bright lights are not always better for security. Glare from bright wall light masks person standing at gate.



- B. Example of before and after with addition of shielding on a street light. Shielded light better illuminates roadway and sidewalks. (Images from International Dark-Sky Association Intro to Lighting public materials.)



- C. Example of shielding reducing glare on property and providing for better illumination of area.



- D. Examples of properly shield light fixtures. (Images from International Dark-Sky Association Intro to Lighting Public materials.)

Section 3. Severability. Any provision of this Ordinance which proves to be invalid, void, or illegal shall in no way affect, impair or invalidate any other provision of this Ordinance, and the remaining provisions of this Ordinance shall remain in full force and effect.

Section 4. Effective Date. This ordinance shall take effect on the 30th day after its adoption.

Passed and adopted by the Yachats City Council this _____ day of _____, 20____

	YES	NO	NOT PRESENT
Leslie Vaaler, Mayor	☐	☐	☐
Greg Scott	☐	☐	☐
Mary Ellen O'Shaughnessey	☐	☐	☐
Ann Stott	☐	☐	☐
Vacant	☐	☐	☐

Leslie Vaaler, Mayor

Attest by:

Shannon Beaucaire, City Manager

**CITY OF YACHATS
ORDINANCE NO. 368**

**AN ORDINANCE AMENDING THE YACHATS MUNICIPAL CODE CHAPTERS
9.04 – DEFINITIONS AND 9.42 LIGHTING.**

WHEREAS, pursuant to ORS 197.610, the City provided DLCD with Form 1 notice of these proposed YMC Title 9, Chapter 9.54, text changes on September 13, 2020;

WHEREAS, notice of the proposed amendments were provided in accordance with procedures established in the Yachats Municipal code and Oregon Revised Statutes;

WHEREAS, the Planning Commission held a work session multiple work sessions in 2020, to provide an open forum for discussion of the amendments;

WHEREAS, the Planning Commission and City Council held a work session, to provide an open forum for discussion of the amendments;

WHEREAS, the Planning Commission held a public hearing on October 20, 2020 for the proposed amendments;

WHEREAS, the Planning Commission public hearing was continued to October 28, 2020 for the proposed amendments;

WHEREAS, the Planning Commission followed the text amendment procedures under YMC 9.84.020 and has provided a report to the City Council along with its recommendation to consider the proposed text changes;

WHEREAS, the City Council held a public hearing on these proposed text changes on November 18, 2020 and remanded the Ordinance back to the Planning Commission;

WHEREAS, the Planning Commission held a public hearing on December 21, 2020 for the proposed amendments;

WHEREAS, the City Council held a public hearing on January 20, 2021 for the proposed amendments;

NOW THEREFORE, the City of Yachats ordains as follows:

Section 1. Yachats Municipal Code Chapter 9.04 and Definitions

CHAPTER 9.04.030 – Definitions

- A. Cutoff Angle (of a luminaire): The angle, measured from the lowest point between a vertical line from the center of the lamp extended to the ground and the first line of sight at which the bare source is not visible.

- B. Exterior Lighting: Lighting relating to the outside of a building or structure.
- C. Fixture (also called a luminaire or light fixture): A complete lighting unit including the light source (bulb), mounting, and shielding.
- D. Floodlight: A light that produces up to one thousand eight hundred (1,800) lumens and is designed to “flood” a well-defined area with light.
- E. Foot-candle: A measure of luminance or a measure of how bright a light appears to the eye. One foot-candle is equal to one lumen per square foot. As an example, a 60-watt incandescent light (800 lumens) produces an illuminance of one-tenth (0.1) foot candle at a distance of about twenty-five (25) feet.
- F. Glare: Light that causes a visual impairment sensation due to excessive brightness from the light source and can interfere with one's ability to see. See Figures 2 and 3 in 9.42.020.
- G. Hardscape: Permanent hard landscape improvements to the site including parking lots, drives, entrances, curbs, ramps, stairs, steps, medians, walkways and non-vegetated landscaping that is ten (10) feet or less in width. Materials may include concrete, asphalt, stone, gravel, etc.
- H. High Intensity Lighting: Lamps which produce visible light directly by the electrical heating or excitation of a gas. Examples of such lighting include, but are not limited to, metal halide, high-pressure sodium, low-pressure sodium and mercury vapor.
- I. Individual Lamp Limit: Limit on output of any individual light source as enumerated in Section 9.42.040.C
- J. Individual Lot Limit: The maximum for the sum of all exterior individual light sources on a given property as enumerated in 9.42.050.A and 9.42.050.C.
- K. Light Trespass/Trespass Lighting: Any light emitted from an outdoor luminaire that either shines directly beyond the property on which the luminaire is installed or indirectly shines beyond the property on which the luminaire is installed at a brightness that exceeds one-tenth (0.1) foot candle at twenty five (25) feet from the light source or at the property line, whichever is more restrictive. See Figure 4 in 9.42.020.
- L. Lighting Source Height: The distance from finished grade to the top most portion of any light emitting source (e.g., lamp, surface or lens).
- M. Luminaire: See definition for “fixture”.
- N. Marine Lighting: Bright light fixtures directed at the ocean and coastal tide pools, and illuminating the marine area.

- O. Outdoor Lighting Fixture: A luminaire outside of an enclosed building or structure, or any luminaire directed such that it primarily illuminates outdoor areas.
- P. Security Lighting: Minimal lighting for personal and building security and safety after hours.
- Q. Shielding: An opaque covering for an Outdoor Lighting Fixture such that no light rays are emitted above the horizontal plane running through the lowest point of the fixture. Shielding can be extended downward to prevent “Light Trespass” as defined above. See examples in Section 9.42.080.D.
- R. Uplighting: Lighting that is directed in such a manner as to shine light rays above the horizontal plane.
- S. Temporary Seasonal Lighting: Exterior lighting that is specifically directed at a holiday season such as Christmas, Halloween, and others. This will consist of small, low wattage bulbs of less than 10 lumens each.

Section 2. Yachats Municipal Code Chapter 9.42 Lighting

9.42.010 Purpose

The purpose of this Ordinance is to provide regulations for outdoor lighting that will accomplish the following goals:

- A. Permit the use of outdoor lighting that promotes health, safety, security, and productivity.
- B. Protect shoreline natural resources and wildlife.
- C. Enhance the view of the dark sky.
- D. Minimize the adverse effects of bright, outdoor lighting including “light trespass” and “glare”.

9.42.020 Definitions

Types of light are defined in part by their intended use and impact. Full definitions are in 9.04.030. Figure 1 provides basic distinctions between types of light.

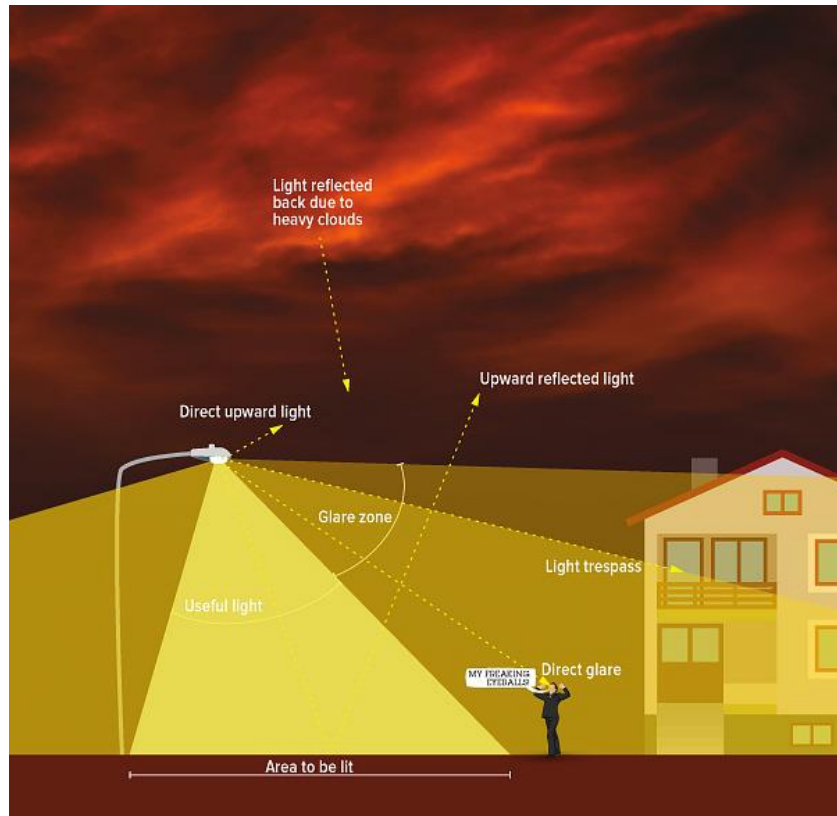


Figure 1. Types of Light

Image by Anezka Gocova, in “The Night Issue”, Alternatives Journal 39:5 (2013)



Figure 2: Example of glare from a light pole

Photo: James Lowenthal, Smith College



Figure 3. Example of glare from car headlights



Figure 4. Light Trespass

9.42.030 General Lighting Requirements

- A. Conformance with all applicable codes. All outdoor lighting shall be installed in conformance with the provisions of this ordinance, applicable Electrical and Energy codes, and applicable sections of the City, County and State building codes.
- B. Applicability. Except as described below, all outdoor lighting installed after the date of this ordinance shall comply with the requirements specified in section 9.42. This includes, but is not limited to, new lighting, replacement lighting, or any other lighting whether attached to structures, poles, the earth, or any other location, including lighting installed by any third party.
- C. Exemptions. The following are not regulated by this Ordinance:

1. Lighting within the public right-of-way or easement for the principle purpose of illuminating streets or roads.
2. Lighting for public monuments and statuary.
3. Lighting solely for signs (Covered in Chapter 9.44).
4. Repairs to existing luminaires not exceeding twenty-five percent (25%) of the total replacement value of the luminaire.
5. Temporary lighting for theatrical, musical, and other performance areas and construction sites.
6. Underwater lighting in swimming pools.
7. Temporary, seasonal lighting provided that individual lights are less than ten (10) lumens.
8. Lighting that is only used under emergency conditions.
9. Lighting identified and approved in a specific use permit.
10. Lighting required by County, State, or Federal government.

9.42.040 General Standards

- A. Outdoor lighting fixtures and accent lighting must be shielded and aimed downward, and it must be installed at the minimum height necessary so that the cutoff angle does not allow direct lighting of an adjacent property at a level exceeding one-tenth (0.1) foot-candles at twenty-five (25) feet from the light source. See examples in Section 9.42.080.
- B. All trespass lighting/light trespass that exceeds one-tenth (0.1) foot-candles at twenty-five (25) feet from the light source or at the property line is prohibited.
- C. Motion activated security lights must not be triggered by motion on adjacent properties or streets. These lights must be shielded so that they do not shine onto adjacent properties in excess of one-tenth (0.1) foot-candles at the property line.
- D. **All new** Marine lighting is prohibited.
- E. Mercury vapor lamps, metal halide lamps, and low-pressure sodium lamps are prohibited.
- F. Uplighting of building and landscaping is prohibited.
- G. Lighting on buildings shall not be placed above the eaves.

9.42.050 Standards Based on Use

- A. **Single Family or 2 Family** Residential Uses

1. Individual light sources on residential properties are limited to an output of eight hundred (800) lumens each. An eight hundred (800) lumen output is approximately equivalent to:
 - a. One (1) standard incandescent sixty (60) watt bulb
 - b. One (1) compact fluorescent fifteen (15) watt bulb
 - c. One (1) LED eight (8) watt bulb
 2. Individual Lot Limit. The sum of the output of all outdoor lighting sources shall not exceed:
 - a. Five thousand six hundred (5,600) lumens on lots greater than zero-point-three (0.3) acres
 - b. Three thousand two hundred (3,200) lumens on lots less than or equal to zero-point-three (0.3) acres
 3. Residential light sources shall be less than a color temperature of three thousand (3,000) Kelvin.
 4. Lights on free standing poles higher than four (4) feet are prohibited.
- B. **Three or more Residential Unit Uses**
1. Individual lamps on multi-family properties are limited to an output of one thousand two hundred (1,200) lumens each, except for parking areas which may be two thousand (2,000) lumens each.
 2. Individual Lot Limit. The sum of the output of all light sources shall not exceed two and one-half (2.5) lumens per square foot of hardscape.
 3. A Requirement of a to-scale Area of Illumination Plan. A to-scale Area of Illumination Plan shall include:
 - a. To-scale plans that accurately indicate the location, type, intensity, and height of luminaires including both building-mounted and ground-mounted fixtures;
 - b. A description of the luminaires, including lamps, poles or other supports and shielding devices, which may be provided as catalogue illustrations from the manufacturer;
 - c. Photometric data, such as that furnished by the manufacturer superimposed over a copy of the site plan, showing the angle of light emission and the foot-candles on the ground; and
 - d. Additional information as may be required by the city in order to determine compliance with this chapter.
 4. Poles for luminaires shall be limited to:
 - a. Sixteen (16) feet in height for parking areas.

- b. Ten (10) feet in height for walkways and pedestrian facilities.

C. Commercial Uses

1. Commercial lots, when developed for commercial uses, shall not exceed limits on trespass lighting as specified in 9.42.040.B.
2. Except for security lighting for pathways and building doors, outdoor lighting fixtures for commercial properties must be turned off when the business is not open. When businesses are closed, residential lighting requirements apply.
3. Individual Lot Limit. The sum of the output of all light sources shall not exceed two and one-half (2.5) lumens per square foot of hardscape.
4. Requirements of a to-scale Area of Illumination Plan
 - a. New developments for commercial uses shall provide an Area of Illumination Plan drawn to scale as part of the Site Plan.
 - b. An Area of Illumination Plan drawn to scale shall be required with a change of commercial use or transfer of property for existing commercial uses.
 - c. An Area of Illumination Plan drawn to scale shall include:
 - i. The location, type, intensity, and height of luminaires including both building- and ground-mounted fixtures;
 - ii. A description of the luminaires, including lamps, poles or other supports and shielding devices, which may be provided as catalogue illustrations from the manufacturer;
 - iii. iii. Photometric data, such as that furnished by the manufacturer, superimposed over a copy of the site plan, showing the angle of light emission and the foot-candles on the ground; and
 - iv. iv. Additional information as may be required by the city in order to determine compliance with this chapter.
5. High intensity lights shall be limited to two thousand four hundred (2,400) lumens per luminaire. Due to their high energy efficiency, long life, and spectral characteristics, narrow-spectrum amber LED's are the preferred illumination source.
6. Poles for luminaires shall be limited to:
 - a. Sixteen (16) feet in height for parking lots.
 - b. Ten (10) feet in height for walkways and pedestrian facilities.

D. Pedestrian Ways and Parks

1. Illumination: Light shall be directed in such a manner that any changes in elevation of the walkway (e.g., steps or curbs) shall be illuminated such that said features are clearly discernible (without shadow).

2. Fixture Type: Pedestrian walkway light fixtures can be a combination of freestanding pole, bollard, in-place step or building-mounted fixtures. For building mounted fixtures, the Planning Director shall ensure that the proposed fixture type will be in scale with the building elevation on which it is to be installed. The Planning Director may refer this latter determination to the Planning Commission.
3. Fixture Heights: Light fixtures shall not exceed the following height provisions:
 - a. Freestanding pole - Not greater than fourteen (14) feet as measured from finished grade to the bottom of the light fixture.
 - b. Building-mounted - Shall be located below the roof's eave or up to a height of fourteen (14) feet, whichever is less.
 - c. Bollard - Said fixture type shall not exceed a height of forty-two (42) inches as measured from finished grade to the top of the fixture.
- E. Public Right-of-Ways 1. Shielding for street lights other than those on Highway 101 may be requested from the public utility provider.

9.42.060 Variances

To provide for reasonable interpretation of this Chapter, and in certain instances where this Chapter may produce a hardship, a property owner may apply for a variance pursuant to Chapter 9.80 of this Code

9.42.070 Time to Become Compliant

- A. The General Standards described in 9.42.030 and 9.42.040 require compliance within one year after the passage of this Ordinance.
 1. When violations of 9.42.040 are cited by the enforcement officer and if the violation can be corrected by replacing an existing bulb with a lower intensity bulb, this corrective action is required to be implemented within fourteen (14) days after the citation is issued. Other corrective actions are required to be implemented within sixty (60) days after the citation is issued.
 2. Marine lighting existing prior to the enactment of this ordinance must be:
 - a. Turned off between 11:00 PM and sunrise each night, and
 - b. Removed, replaced, or disconnected within three years of the enactment of this ordinance.
 - c. It is recommended that the City Council and the Planning Commission enter into negotiations with interested representatives of the local lodging businesses to evaluate replacement and relocation alternatives to better comply with sections 9.42.040 and 9.42.050 above. These negotiations must be completed prior to the

three year limitation identified above, otherwise item b. above is invoked.

B. Compliance based on extent of modification:

1. New uses and buildings. For all proposed new land uses, developments, buildings, and structures that require a permit, all outdoor lighting installations shall meet the requirements of this Code.
2. Additions and modifications. All building additions or modifications exceeding twenty-five (25) percent in terms of additional dwelling units, gross floor area, or parking spaces, and that require a permit, either with a single addition or cumulative additions, shall invoke the requirements of this Code. This requirement shall hold for the entire property, including both previously installed and any new outdoor lighting.
3. If replacement or repair is required to an outdoor lighting fixture due to weather damage, accident, vandalism, or other unforeseen event, the outdoor lighting fixture may be replaced as it was previously built. Compliance to section 9.42 requirements is not required. However, if the design is changed in any way then compliance is required.

C. Resumption of use following abandonment. If a property or use with non-conforming lighting is abandoned, all outdoor lighting shall be reviewed and brought into compliance with this Code before the use is resumed.

9.42.080 Examples

- A. Example showing that bright lights are not always better for security. Glare from bright wall light masks person standing at gate.

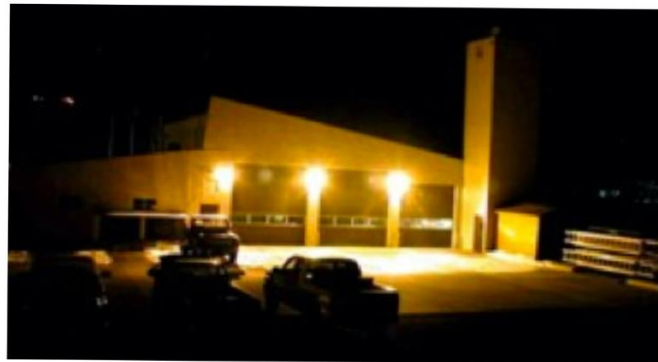


- B. Example of before and after with addition of shielding on a street light. Shielded light better illuminates roadway and sidewalks. (Images from International Dark-Sky Association Intro to Lighting public materials.)

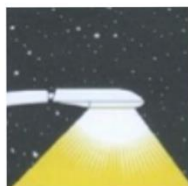


- C. Example of shielding reducing glare on property and providing for better illumination of area.

UNSHIELDED

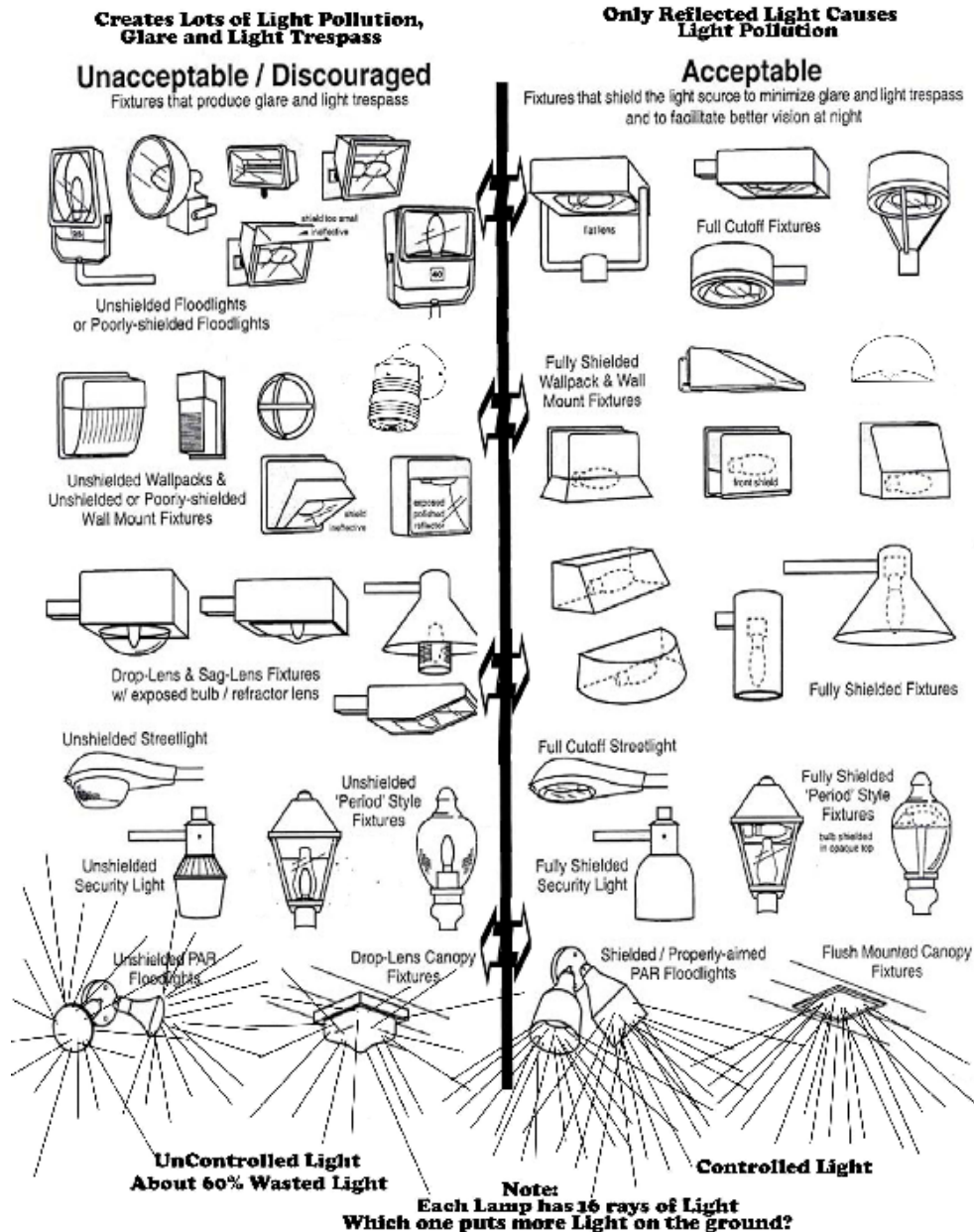


SHIELDED



- D. Examples of properly shield light fixtures. (Images from International Dark-Sky Association Intro to Lighting Public materials.)

Examples of Light Fixtures



Section 3. Severability. Any provision of this Ordinance which proves to be invalid, void, or illegal shall in no way affect, impair or invalidate any other provision of this Ordinance, and the remaining provisions of this Ordinance shall remain in full force and effect.

Section 4. Effective Date. This ordinance shall take effect on the 30th day after its adoption.

Passed and adopted by the Yachats City Council this _____ day of _____, 20____

	YES	NO	NOT PRESENT
Leslie Vaaler, Mayor	☐	☐	☐
Greg Scott	☐	☐	☐
Mary Ellen O'Shaughnessey	☐	☐	☐
Ann Stott	☐	☐	☐
Vacant	☐	☐	☐

Leslie Vaaler, Mayor

Attest by:

Shannon Beaucaire, City Manager

RE: For Holly G. Hamilton

lynb953@gmail.com <lynb953@gmail.com>

Tue 10/6/2020 5:49 PM

To: Yachats City Planner <Planner@YachatsMail.org>

But I don't know what those amendments contain. How can I find more info before the Zoom meeting?

M. Brown

Sent from [Mail](#) for Windows 10

From: [Yachats City Planner](#)

Sent: Tuesday, October 6, 2020 6:45 PM

To: lynb953@gmail.com

Subject: Re: For Holly G. Hamilton

Good afternoon, you are correct, the hearing is about both amendments.

We thought it a best use of city funds to combine the two amendments for notice and public hearings.

Please let me know if I can provide you with additional information on the amendments - you can also find information on the city's Web Site:

<https://yachatsoregon.org/>

Regards, Holly

Keep Lincoln County Open

Holly G Hamilton, *MJRP*

Assoc. AICP

Contract Planner *for*

Oregon Cascades West Council of Governments

EMAIL:

Planner@Waldport.org

Planner@Yachatsmail.org

hhamilton@OCWCOG.org

OFFICE PHONE:

Voicemail Msg: 541-812-2002

Waldport: 541-563-3561 x 15

Yachats: 541-547-3565

HOURS FOR WALK-IN:

9:00 AM to 4:00 PM (Currently by appt.)

Mon/Thurs – Waldport

Tues/Weds – Yachats

Fri - Remote

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[Yachats, OR | Official Website](#)

Find events & meetings UPCOMING EVENTS Choose a tab to see Community Events, Classes in the Commons, City meeting schedules, or Public Works Department scheduled activities

yachatsoregon.org

From: lynb953@gmail.com <lynb953@gmail.com>

Sent: Tuesday, October 6, 2020 12:46 PM

To: Yachats City Planner <Planner@YachatsMail.org>

Subject: For Holly G. Hamilton

Ms. Hamilton

I own property within the city limits of Yachats, and am confused about a mailing I received recently from your department titled: NOTICE OF THE CITY OF YACHATS PROPOSED PUBLIC LAND USE HEARING. Is the hearing about Hazard Mitigation and Lighting Ordinance, the two titles in bold type? Or is it another matter? Can you please clear up my confusion on this?

Thank you.

Marilyn M. Brown



Virus-free. www.avg.com

Outdoor lighting

Jean Erdahl <jean.erdahl@gmail.com>

Fri 10/9/2020 10:34 AM

To: Yachats City Planner <Planner@YachatsMail.org>

Hello. I am writing in support of the outdoor lighting ordinance to protect the environment and the beauty and our appreciation of the natural night sky. My husband and I moved to Yachats a year ago from a major downtown city after vacationing here often for 20 years. The only time we were able to see the stars at night due to the invasive lighting of the downtown was on our trips to Yachats or the occasional drive out to the countryside. We would be in awe of the features of the night sky that some people seem to take for granted such as the big dipper, the milky way and shooting stars. We are in favor of a lighting ordinance that would help eliminate invasive lighting and protect our natural environment. Ever hopeful, JeanE Erdahl

Lighting ordinance proposal

northnolan1@gmail.com <northnolan1@gmail.com>

Fri 10/9/2020 6:11 AM

To: Yachats City Planner <Planner@YachatsMail.org>

Dear Yachats City Planners,

I would like to express my wholehearted support for the new focus on lighting at residential and commercial properties in the city. My house is at the corner of Marine Drive and Ocean View, and we have been impacted negatively by neighbors lighting to the west on Marine Drive that is unshielded and overwhelmingly in trespass on our home and views. The overhead street light, which was recently changed to a new type of high intensity bulb and fixture, is far in excess of what is needed at that corner, and should be shielded to downlight at lower intensity for the benefit of all. Lastly, the south facing spotlights at the Adobe have been a constant plague on our views of the shore and the night sky. These two lamps may well be directly affecting marine life in the near shore, including the now extinct but once robust smelt spawn, as well as whale and fish activity in the area. Please, please address this serious quality of life issue and move toward the Dark Sky goal that enables all of us to live and sleep in peace with the natural surroundings we love here in Yachats.

Respectfully,

Michael and Kay Nolan
1219 Ocean View Drive
Yachats

Sent from my iPad

Dark sky Yachats

kent naffziger <knbuddah@gmail.com>

Sat 10/10/2020 12:55 PM

To: Yachats City Planner <Planner@YachatsMail.org>

We want to pass along our whole hearted endorsement of the lightning ordinance being considered for Yachats. As near full timers we are so thankful for the ability to observe the Milky Way in the middle of town, but only when our neighbors exterior lights are not in play. We agree that this wonderful sky can be a potential draw for visitors much as the northern lights are in other parts of the world. Our hope is that the ordinance also takes the newly minted led streetlights into account as well. The led are not healthy and are overly bright. We are so thankful that motion "security " lights and other overly bright outside lights will be directed to shine straight down as no resident nor visitors should need to sleep inside a tent atop their bed, inside their home. Thank you for taking these steps and may dark skies reign! Kent Naffziger

Sent from my iPhone

Date: October 13, 2020

To: Yachats Planning Commission

From: Kerry Kemp 
420 W. 1st St. (the "Property")
Yachats, OR 97498

RE: Proposed Lighting Ordinance – Comments submitted for Public Hearing 10/20/2020

Thank you for providing the opportunity to submit comments on the draft lighting ordinance ("Ordinance"). I appreciate the City's due diligence, and improper or excessive use of lighting is sometimes an issue. However, it may be government overreaching its police powers on use of property, and although I am not a lawyer it could open the city up to lawsuits if injuries or crimes occur as a result of a lack of adequate lighting. This Ordinance also creates an undue burden on the city, adding costs for administration and enforcement, as well as fostering neighborhood squabbles over compliance.

Even so, if the City decides to go forward with the Ordinance, please consider my input below.

Multi-Family and Residential Uses (definitions):

These definitions should be defined or reference specific definitions elsewhere in the Zoning Code.

Flagpoles

There is an existing 17-foot flagpole installed at the Property, which is currently unlit. There appears to be no provision for allowing lighting of the US flag in this Ordinance. Rather, it seems to disallow it.

Number/Type and Brightness of Lights

The approximately 5,000 square foot Property is Residential Use, which, according to the draft ordinance (Section 9.42.050), may have no more than 800 lumens per fixture, and 3,200 max lumens. This equates to four fixtures. There are currently six lights, which means to comply each one could provide up to 533 lumens, on average, or two fixtures would need to be removed. The question is which two? There are four doors to the house, each of which has a light for security, and they also illuminate patios and walkways for safety. The detached garage also has two lights, one illuminating the deck and the other the door. In addition, the fixtures themselves may not fit the new standards for fixture type. I am concerned that, even though none of the lights shine directly on any neighboring occupied properties—mostly it's right-of-way or state park—the Property will be forced into compliance. This, even though there is a much greater "light trespass" from the frequent vehicles that enter or exit the park. Vehicle lights are a much greater problem than lighting on the Property, which is not often used.

We have spent years improving the Property, including the lighting. All this Ordinance does is create a means to complain, to force spending more effort and money, without much public need or benefit.

Variances

The Ordinance seems to be "one size fits all" with the only flexibility via applying for a variance based on "hardship" (whatever that means), which will cost fees and may or may not even be approved. The Property has been developed since the 1950's, with the garage dating from the 1980's. There should be some mechanism for grandfathering or for allowing non-conforming uses.

Thank you for your consideration.

Lighting by Dublin motel

Susan Macdonell <susanmacdonell1@gmail.com>

Wed 10/14/2020 3:47 AM

To: Yachats City Planner <Planner@YachatsMail.org>

My house is 820 Driftwood Lane. I have to have blackout curtains just to block the all night lighting from the Dublin motel. The Dublin Motel has 4 very bright lights on the west side of the building on each night. They light up the whole neighborhood. At least 10 houses are impacted by this light pollution. Yachats has some beautiful starry skies and we should reduce outdoor lighting so as to enjoy it. I would ask the Dublin to shade their lights.

Lighting Ordinance - comments - questions

Larry Ellington <ellington.larry@gmail.com>

Sun 10/18/2020 8:56 PM

To: Yachats City Planner <Planner@YachatsMail.org>

Cc: 'Caroline van Wagtendonk' <caroline.vanwagtendonk@gmail.com>

Holly G Hamilton, Contract Planner:

We strongly support the proposed lighting ordinance and appreciate the extensive effort of the Planning Commission. We offer the following suggestion and questions.

1. We suggest the lighting ordinance include a reference in section **9.42.040 General Standards** to the existing prohibition on exterior lighting directed onto the marine zone (public property) at **Section 5.08.165** of the Yachats Municipal code.

Section 5.08.165 Exterior lighting.

A. Exterior lighting shall not be directed from the property of the owner onto private residential or commercial property, streets, parklands, or other public properties.

2. Please clarify: **9.42.070 Time to Become Compliant**

- **A. The General Standards described in 9.42.030 and 9.42.040 require compliance within one year after the passage of this Ordinance.**

- My neighbor's porch light is very bright. Can they defer compliance until the cost to replace/repair their fixture exceeds 25% of total replacement value? Or is bulb replacement considered "replacement lighting"?
- When must an existing metal halide lamp be removed? Within one year, or when the cost to replace/repair the fixture exceeds 25% of total replacement value?

Thank you,

Larry Ellington
Caroline van Wagtendonk
841 Ocean View Dr.
ellington.larry@gmail.com

John Purcell
116 Spring Hill Road
P.O.Box 161
Yachats, OR. 97498

October 20, 2020

To: Planning Commission, City of Yachats

Re: Public Comments, Proposed City of Yachats Lighting Ordinance

Dear Planning Commission,

First and foremost, thank you for addressing the lighting ordinance. Your time has been well spent and the draft, well crafted.

As a brief introduction, I was involved in electrical engineering, lighting design, and commercial electrical construction for twenty one years of my career. During that time I was able to gain an understanding of the often complicated and complex world of lighting. With that in mind, I would like to offer my limited experience to try and answer any questions that the Commission might have regarding exterior lighting.

With specific regard to the Draft, I'd like to offer the following comments:

9.04.030 Definitions

Item D: Even though we're all somewhat used to the term, the use of "watts" or "wattage" can be misleading especially with the advent of LED. To help I suggest that the last sentence of this section be reworded as follows:

"As an example, an 800 lumen lamp (equivalent to an old style 60 watt incandescent lamp) produces an illuminance of one-tenth (0.1) foot candle ('lumen') at a distance of about twenty-five (25) feet."

Item I: I suggest that you add the word "exterior" to better define the section.

9.42.50 Standards Based on Use

A. Residential Uses

Item 1: I recommend that you strike "b" & "c" - improvements to both fluorescent and LED lights continue to be able to provide more lumens per watt. The way its written, a homeowner could install more efficient 8 watt LED lamps claiming

conformance while in fact, the new LED lighting may be shedding more than 800 lumens.

B. Multi-family Uses

1. The Draft allows lamps up to two thousand four hundred lumens each. That's three times the allowable limit for a single family residence. That's a lot of light and I don't see a benefit.

3. Add or clarify that the owner/developer "shall provide" a to-scale Area of Illumination Plan.

4. Subsections "a" and "b" are both in conflict ("Twenty (16), and Fourteen (10)")

C. Commercial Uses

General Comment). As I understand it, Yachats allows residential home(s) to be built on commercially zoned properties and when that happens, at least one "commercial benefit" gets extended to the "residential" restrictions: the residence is allowed to exceed the percentage of property coverage (currently 40%) imposed on residential lots and instead use the coverages allowed for a commercial development. The way the Draft is written (Section 4.b and others), a single family dwelling built on a commercial lot could be allowed to use higher lumen fixtures and incorporate more lumens per property.

5. The Draft "encourages" the use of LPS (Low Pressure Sodium) lamps due to their reputation for benefiting dark sky's. While this was true years ago, the advent of LED lamps has made LPS lamps somewhat obsolete. More to the point, Emergency Service Providers disliked LPS because of the lamp's extremely limited color rendition - at an accident scene under LPS lamps, EMS, Police and Fire Crews could not differentiate between blood, water or gasoline. I recommend that the Draft cut the second and third sentences while retaining the first and the fourth.

6. Subsections "a" and "b" are both in conflict ("Twenty (16), and Fourteen (10)")

Thank you for taking the time to review my comments. Again: good job.

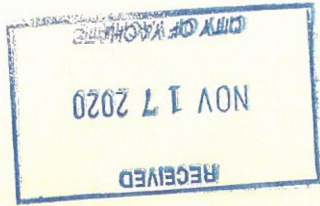
John Purcell

The ADOBE RESORT

P.O. Box 219
Yachats, Oregon 97498
Telephone (541) 547-3141 • 1-800-522-3623

COPY

November 16, 2020



John Moore, Mayor
Yachats City Council Members
City of Yachats
P.O. Box 345
Yachats, Oregon 97498

RE: Proposed Amendments to the City Lighting Code – Title 9.42

Dear Mayor Moore and Yachats City Council Members,

I am writing in an effort to inform the city of our concerns with safety at our property, specifically regarding the proposed removal of marine lighting. The Adobe Resort currently has lights that illuminate the rocky coastline directly in front of The Adobe. The Adobe has been allowed to illuminate this area for the last forty plus years and is an added attraction for our guests to be able to watch the waves from our Restaurant/Lounge, their room and our webcam. Removal of this lighting would hurt our business.

I listened to the commission's discussion during its work session of October 27, 2020. In that discussion, a member of the commission asserted that "most people" in Yachats do not want "marine lighting", but did not cite any surveys, petition or other indicators of public sentiment. I would appreciate more information about the **sources and scope** of those opinions.

I also was struck by the lack of any distinction during the commission's discussion between "marine lighting" (also referred to by one member as "lighting up the ocean") and "surf lighting". "Surf lighting," like that provided at the Adobe Resort, is much less intrusive on marine life and does not affect breeding areas or the life cycles of local species. I respectfully request that the council and commission give this distinction more study and discussion before adopting a blanket ban of our lighting practices under the heading of "marine lighting" **using a code template that was developed for other, different circumstances.**

Our lights provide more than just a view at night. The Adobe Resort welcomes around fifty thousand hotel guests a year. The first priority is to keep our guests safe and to avoid circumstances, which could turn into life and death situations for people on our property. These dangers can range from slips and falls to predators confronting guests. Other hotels have dealt with such dangers and applying steps to prevent these things from happening is our main priority. At the Adobe Resort we care about our guests and staff and take these issues seriously.

CC COPY

The Adobe Resort logo features the word "The" in a small, elegant script, followed by "ADOBE" in a large, stylized, serif font with a decorative flourish under the "E". Below "ADOBE" is the word "RESORT" in a smaller, clean, sans-serif font.

2 of 3

P.O. Box 219
Yachats, Oregon 97498
Telephone (541) 547-3141 • 1-800-522-3623

Without adequate lighting outside our business, more problems will arise. For example, the ocean's cliff is jagged and dangerous to those walking. If people are not able to see the cliff, it is possible they could be seriously hurt by slipping and falling. The rocks on the ocean's edge are uneven and unsafe, especially when you cannot see them clearly. Taking away our lights would be taking away a precaution we have set in place to protect our guests. **Contrary to the statements of one planning commission member, "ambient lighting" would be insufficient to provide this protection.**

The check-in time for the Adobe is at 4pm and with the sun setting so early in the winter time, our natural light is gone quicker than usual. Nature is something we cannot change, but we can help compensate for the loss of natural light. The Adobe does not have a defined trail in front of our property, but we have allowed guests and people from town to walk across our bluff. People enjoy watching the waves, the gorgeous sunsets, and make use of our benches. Lights help show the coastline and guide people back to where they need to go. An increased worry for our guests and others making use of our property occurs if we do not have lights in place to help guide them. As you know, coastal winds are very strong. The lights we currently have in place are stable and perform the job required, unlike other types of lighting.

The safety of our guests in their rooms presents another problem. The resort has 26 ground floor guest rooms that open toward the ocean. These rooms would lose all security lighting if this proposal is implemented. Along with our lights we have a webcam, cameras and security that roam the area throughout the night. The truth is, lights and added security are never a 100% guarantee of safety and being crime free. Yet, we do those precautions to try and protect ourselves. Our goal as a business is to protect our guests the best we can.

I also noted the planning commission's discussion of the increased safety concerns for multi-family housing parking areas. That illustrates the need for the commission to also consider the safety concerns for our parking lot. In addition, our parking lot is not in a residential neighborhood.

While working in my six years so far as general manager at The Adobe, I can confirm that we have had crime occur. Such as stolen goods and belongings out of cars or ground floor rooms. These are realities as a business that we are faced with and have to prevent on a daily basis the best way possible. With less lighting in these areas, those problems would only increase.

If this amendment is passed and our lighting is removed, the bluff area will have to become an area reserved only for hotel guests. Guests would be required to sign a waiver when checking-in, stating that they recognize climbing on the rocks and being out in the dark is not recommended for their safety. I will also be recommending a fence and gate with guest key access only. In order to protect our guests, non-guests would no longer have access to our property. Many currently walk across our property to access the 804 Trail. Sadly, this new amendment would force us to take these actions. Access to the 804 Trail from Smelt Sands via Highway 101 will remain.



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P.O. Box 219
Yachats, Oregon 97498
Telephone (541) 547-3141 • 1-800-522-3623

For the past forty+ years The Adobe Resort has been able to illuminate its coastline and parking lot to provide the extra safety and security to our guests and staff. I highly recommend that the city think about the points I have made and ask for support in our goal to keep our lighting status quo. Thank you for reading and listening to our concerns about this new city lighting code.

Sincerely,

Anthony Muirhead
Adobe Resort
General Manager

Received 11/28/2020

Dear Planning Commission,

Thank you for your hard work on the new lighting ordinance. The proposed ordinance establishes standards for the respectful use of external lights in our community.

It is ironic that those who have been violating our health and safety ordinance (Yachats Municipal Code 5.08.165) for the past 15 years claim to be doing so for safety. And the Yachats City Council, whose obligation it is to enforce that code, is now facilitating “a compromise.” Color me skeptical.

I don’t know if the council has been presented with the results of the Planning Commission’s public survey, but the people who responded, overwhelmingly oppose the “marine lights.” The commission knows this because it specifically asked them that question.

Perhaps another survey might be in order, but the City Council and the hospitality industry should understand that the sampling done by the Planning Commission is unambiguous – the sampled community opposes these lights by a pretty wide margin.

Compromise isn’t actually a land use policy, and the community isn’t obligated to do so. Land use Goal C, Policy #2 obligates the city to mitigate adverse effects upon water quality and fish and wildlife habitat resulting from the use of shore lands.

There is clear evidence that these lights attract insects, which dramatically skews their natural distribution. Species of bats that tolerate light will gorge themselves on the clouds of congregated insects, while those that are “light-shy” will go hungry. How does compromise mitigate this adverse effect?

The giant orange domes of glare that reach high into the night sky above the 804 Trail are the single biggest source of light pollution in Yachats. These giant, high-intensity, focused beam lights are obviously for the aesthetic enjoyment of shoreline views from inside the buildings, and are not intended for exterior security or safety purposes. Sitting in the restaurant, or in your room, enjoying the illuminated surf is the entire point. The Yelp reviews, that even bother to mention the lights at all, enjoyed them from inside the building.

However, upon stepping outside of the building, these bright lights ruin one’s night vision and actually make walking the 804 Trail dangerous. For the same reason that shining a bright light directly into your eyes doesn’t help you see better in the dark, these high intensity lights create a very high contrast condition of blinding glare, surrounded by inky darkness. Additionally, illuminating the rocky bluff at night, serves as an implicit invitation to explore the bluffs at night. Clearly a bad idea.

The assumption that visitors would prefer an artificially illuminated, Disneyesque experience, rather than the unspoiled darkness, and unobstructed view of the deep sky is highly questionable, and even a little old fashioned, in my opinion. In today’s highly light-polluted world, dark skies are marketable, and some of the best viewing occurs during the winter months when thermal eddies are minimal.

Just imagine, the Milky Way Galaxy illuminating our dark southern sky. Imagine the bluff, busy with people setting up tripods for telescopes, deep-sky binoculars and cameras. Imagine renown

astro-photographers (not to mention our really fine local photographers) coming to Yachats to photograph the Andromeda Galaxy, or the Great Orion Nebula, both of which, are visible through binoculars on a moonless night.

Imagine kids being able to see, for the first time, the moons of Jupiter, and the rings of Saturn. Imagine the benefit of dark skies, coupled with our unimpeded views of the western horizon, when the next comet makes its trip to our sunset. Yes, it rains a lot, but we get stretches of clear winter skies in January and February that are absolutely perfect for deep sky enthusiasts.

Perhaps rather than using threats and coercion to force a compromise, the hospitality industry, and the City Council, should consider respecting the opinion of the community and our land-use policies. Let's turn the lights off, and find ways to capture the economic benefits that a dark sky has to offer.

Douglas Conner
Yachats

Proposed Yachats Lighting Ordinance

ellington.larry@gmail.com <ellington.larry@gmail.com>

Sun 12/13/2020 1:36 PM

To: Yachats City Planner <Planner@YachatsMail.org>; lancebloch1@gmail.com <lancebloch1@gmail.com>;
Planning Commission Chair - Helen Anderson <Happydogs27@gmail.com>

December 13, 2020

To: Planning Commission

From: Larry Ellington & Caroline van Wagtendonk
841 Ocean View Dr.

RE: Proposed Lighting Ordinance

We remain hopefully optimistic that marine lighting will be prohibited by the new lighting ordinance.

On Ocean View Dr, between Marine Drive and 7th St. we count seven marine lights (plus wiring for one on a house under construction) – three are located on the shoreline bank, and four are mounted on houses above the eaves.

Curfew

Recent discussions about delaying the removal of existing marine lights for an extended period of time (i.e. over a year) reinforces the need for a marine light curfew during the interim period. The current draft includes curfew language, but given our experience with lights along Ocean View Dr., we find that lights are sometimes turned off at night and then turned back on in the wee hours of the morning. While the current language may address this, it would be better to make it clear for code enforcement. (We found this proposed language in state and county regulations in Hawaii.)

A suggested change, if existing marine lighting is proposed to continue for a period of time after ordinance adoption:

“ 2. Marine lighting existing previous to the enactment of this ordinance must be:

a. Turned off *between 10:00 PM and sunrise*, and

b. Removed within one year of the enactment of this ordinance.”

Adobe and Overleaf

We reviewed the Adobe's and the Overleaf's website and Facebook comments and see no marketing focus related to their marine lighting (aka security lighting). They neither mention the lights nor have pictures of the lights on their websites.

We found regulation language (again in Hawaii) that related to condo-hotels on the shoreline that addressed specific security/safety concerns of this type of use. For this shoreline use, shielded security lighting can be installed along the shoreline, provided the light extends no more than 30 feet beyond the shoreline/bank. This type of lighting might meet the needs of a specific commercial use and advance the community's interest in light control.

Thanks for your time,

Larry and Caroline

Re: New home purchase on Ocean View Drive (existing lights pointed at surf in back yard)

Michael Lebofsky <michaellebofsky@yahoo.com>

Tue 12/29/2020 9:20 AM

To: Yachats City Planner <Planner@YachatsMail.org>

Cc: Lisa Lebofsky <lisamlebofsky@gmail.com>

Public comment on **marine lighting**:

I believe a reasonable personal property approach would include a curfew (perhaps 11pm) and a duration limit (perhaps 3 hours).

I believe a reasonable business property approach would include a curfew (perhaps 11pm).

Mike Lebofsky

Property Owner on Ocean View Drive

On Monday, December 28, 2020, 02:14:35 PM MST, Yachats City Planner <planner@yachatsmail.org> wrote:

Michael,

I am available tomorrow. Feel free to call 541-924-8420.

The proposed updates will be discussed at the City Council Meeting on January 20th, 2021.

Thank you,
Justin Peterson

Contract Planner *for*
Oregon Cascades West Council of Governments

EMAIL:

Planner@Yachatsmail.org

OFFICE PHONE:

Yachats: 541-547-3565

PUBLIC RECORDS LAW DISCLOSURE: This email communication is subject to the State of Oregon Records Retention Schedule and may be made available to the Public. OCWCOG is an equal opportunity employer and provider.

From: Michael Lebofsky <michaellebofsky@yahoo.com>

Sent: Friday, December 25, 2020 8:23 AM

To: Yachats City Planner <Planner@YachatsMail.org>



TO PRESERVE THE MAGNIFICENT DARK SKIES OF
OREGON AND DIMINISH LIGHT POLLUTION FOR THE
HEALTH, SAFETY AND WELL-BEING OF ALL LIFE

December 30, 2020

W. John Moore, Mayor of Yachats

Dear Mayor Moore:

We applaud the recent efforts by the City of Yachats to address and minimize intrusive and overly-bright exterior lighting at night. In support of your efforts, we wish to bring to your attention a large and growing body of research on the deleterious impacts of light pollution on both diurnal and nocturnal birds, fish, amphibians, mammals and plants, as well as on human health. A number of peer-reviewed research papers (abbreviated list in Appendix below) demonstrate the adverse impacts of artificial light at night on marine and intertidal ecosystems as well as the ocean seafloor.

The Oregon Chapter of the International Dark-Sky Association was formed two years ago. We are excited to be part of an international community working to protect one of our planet's most valuable and most threatened natural resources—our night skies. Our goal is to encourage the use of thoughtful, well-designed lighting that simultaneously prioritizes safety and vibrance on the ground, while minimizing energy-wasting light pollution across Oregon.

As we transition into 2021, we are increasing our outreach and communication efforts. We are expanding our [network of dark sky quality measurements](#), supporting the nomination of [International Dark Sky Places throughout our state](#), building enthusiasm about Oregon's astro-tourism industry, and working with more public, private and government organizations on dark sky preservation initiatives.

Please feel free to reach out to us anytime. We are happy to be a resource and we look forward to working with you to preserve and protect Oregon's superb night skies while diminishing light pollution for the health, safety and well-being of all life.

Thank you,

Board of Directors of IDA Oregon

Bill Kowalik, PhD
Chairperson
bill.kowalik@darksky.org

Michael McKeag
Chapter Director
michael.mckeag@darksky.org

Cathie Flanigan
Treasurer
cathie.flanigan@darksky.org

Mary Coolidge
Board Member
mary.coolidge@darksky.org

www.darkskyoregon.org
<https://www.instagram.com/darkskyoregon/>
[Facebook: International Dark Sky Association - Oregon Chapter](#)

Cc:

Yachats City Council, City Manager, City Planner, Planning Commission
YachatsNews.com
IDA Oregon Board of Directors

Appendix – Selected research papers and news reports on the impact of artificial light at night on marine ecosystems

Artificial light pollution at night (ALAN) disrupts the distribution and circadian rhythm of a sandy beach isopod (2019)

<https://www.sciencedirect.com/science/article/abs/pii/S0269749118352503?via%3Dihub>

Coastal urban lighting has ecological consequences for multiple trophic levels under the sea (2017)

<https://www.sciencedirect.com/science/article/abs/pii/S0048969716322045?via%3Dihub>

The nature, extent, and ecological implications of marine light pollution (2014)

<https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1890/130281>

Mapping the consequences of artificial light at night for intertidal ecosystems (2019)

<https://www.sciencedirect.com/science/article/pii/S0048969719332693>

Coastal Cities leave up to 75% of seafloor exposed to harmful light pollution (2020)

<https://www.nature.com/articles/s41598-020-69461-6>

<https://phys.org/news/2020-07-coastal-cities-seafloor-exposed-pollution.html>

<https://www.scientificamerican.com/article/light-pollution-from-coastal-cities-reaches-seafloor/>

Coastal light pollution disturbs marine animals, new study shows. (Source: Night-time lighting alters the composition of marine epifaunal communities (2015))

<https://royalsocietypublishing.org/doi/10.1098/rsbl.2015.0080>

<https://www.sciencedaily.com/releases/2015/04/150429090144.htm>

University of Washington: Marine Protected Areas Aren't Safe From Light Pollution (2015) (Source:

Davies, T.W. et al. 2015. Stemming the tide of light pollution encroaching into Marine Protected Areas.

<https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/conl.12191>.)

<http://www.conservationmagazine.org/2015/06/marine-protected-areas-arent-safe-from-light-pollution/>

Forbes: Light Pollution Causes Risky Behavior In Fish (2018)

<https://www.forbes.com/sites/fionamcmillan/2018/09/23/light-pollution-causes-risky-behavior-in-fish/#37428f5f1270>

Light Pollution Identified As Potential Issue For Threatened Puget Sound Chinook Salmon (2018)

http://www.knknx.org/post/light-pollution-identified-potential-issue-threatened-puget-sound-chinook-salmon?utm_source=Sightline%20Institute&utm_medium=web-email&utm_campaign=Sightline%20News%20Selections

Artificial Lighting at Night in Estuaries—Implications from Individuals to Ecosystems (2018)

<https://link.springer.com/article/10.1007/s12237-018-0479-3>

Yachats Night Lighting & Marine Ecosystems

wsk412@sbcglobal.net <wsk412@sbcglobal.net>

Wed 12/30/2020 2:36 PM

To: Mayor <Mayor@YachatsMail.org>

Cc: Max Glenn <Max@YachatsMail.org>; Jim Tooke <Jim@YachatsMail.org>; Leslie Vaaler <Leslie@YachatsMail.org>; Mary Ellen O'Shaughnessey <MaryEllen@YachatsMail.org>; Shannon Beaucaire <citymanager@YachatsMail.org>; Yachats City Planner <Planner@YachatsMail.org>; happydogs27@gmail.com <happydogs27@gmail.com>; lancebloch1@gmail.com <lancebloch1@gmail.com>; jac.danos@gmail.com <jac.danos@gmail.com>; lorendickinson@gmail.com <lorendickinson@gmail.com>; corchard@peak.org <corchard@peak.org>; office@yachatsyardscapes.com <office@yachatsyardscapes.com>; YachatsNews@gmail.com <YachatsNews@gmail.com>; 'IDA Oregon' <idaoregon@darksky.org>

 1 attachments (169 KB)

note_to_Yachats_night_lighting_marine_environment.pdf;

W. John Moore, Mayor of Yachats,

The Oregon Chapter of the International Dark-Sky Association applauds the recent efforts by the City of Yachats to address and minimize intrusive and overly-bright exterior lighting at night.

In support of your efforts, we have prepared the attached letter which gives some background on our organization and lists a number of peer-reviewed research papers on the adverse impacts of artificial light at night on marine ecosystems.

We are happy to be a resource. Please feel free to reach out to us at any time.

Thank you,

Board of Directors of IDA Oregon

Bill Kowalik, PhD

Chairperson

Oregon Chapter of International Dark-Sky Association

bill.kowalik@darksky.org

www.darkskyoregon.org

<https://www.instagram.com/darkskyoregon/>

[Facebook: International Dark Sky Association - Oregon Chapter](#)

Scientific information regarding the affects of artificial light at night on coastal biological ecosystems:

<https://www.sciencedirect.com/science/article/abs/pii/S0269749118335656>

Abstract

*The increase of global light emissions in recent years has highlighted the need for urgent evaluation of their impacts on the behaviour, ecology and physiology of organisms. Numerous species exhibit daily cycles or strong scototaxic behaviours that could potentially be influenced if natural lighting conditions or cycles are disrupted. Artificial Light Pollution at Night (ALAN) stands for situations where artificial light alters natural light-dark cycles, as well as light intensities and wavelengths. ALAN is increasingly recognized as a potential threat to biodiversity, mainly because a growing number of studies are demonstrating its influence on animal behaviour, migration, reproduction and biological interactions. Most of these studies have focused on terrestrial organisms and ecosystems with studies on the effects of ALAN on marine ecosystems being more occasional. However, with the increasing human use and development of the coastal zone, organisms that inhabit shallow coastal or intertidal systems could be at increasing risk from ALAN. In this study we measured the levels of artificial light intensity in the field and used these levels to conduct experimental trials to determine the impact of ALAN on an intertidal fish. Specifically, we measured ALAN effects on physiological performance (oxygen consumption) and behaviour (activity patterns) of "Baunco" the rockfish *Girella laevis*, one of the most abundant and ecologically important intertidal fish in the Southeastern Pacific littoral. Our results indicated that individuals exposed to ALAN exhibited increased oxygen consumption and activity when compared with control animals. Moreover, those fish exposed to ALAN stopped displaying the natural (circatidal and circadian) activity cycles that were observed in control fish throughout the experiment. These changes in physiological function and behaviour could have serious implications for the long-term sustainability of fish populations and indirect impacts on intertidal communities in areas affected by ALAN.*

<https://www.annualreviews.org/doi/10.1146/annurev-ecolsys-110316-022745#:~:text=Artificial%20nighttime%20lighting%20can%20influence,wavelength%20light%3B%20West%20et%20al.>

Annual Review of Ecology, Evolution, and Systematics

Vol. 48:49-68 (Volume publication date November 2017)

<https://doi.org/10.1146/annurev-ecolsys-110316-022745>

Abstract

The use of artificial lighting to illuminate the night has provided substantial benefits to humankind. It has also disrupted natural daily, seasonal, and lunar light cycles as experienced by a diversity of organisms, and hence it has also altered cues for the timings of many biological activities. Here we review the evidence for impacts of artificial nighttime lighting on these timings. Although the examples are scattered, concerning a wide variety of species and environments, the breadth of such impacts is compelling. Indeed, it seems reasonable to conclude that the vast majority of impacts of artificial nighttime lighting stem from effects on biological timings. This adds support to arguments that artificial nighttime lighting has a quite pervasive and marked impact on ecological systems, that the rapid expansion in the global extent of both direct illuminance and skyglow is thus of significant concern, and that a widespread implementation of mitigation measures is required.



Mapping the consequences of artificial light at night for intertidal ecosystems

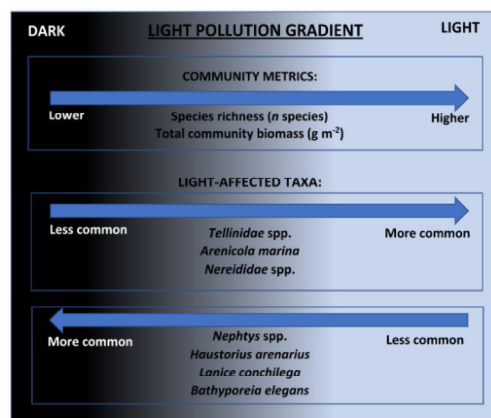
Matthew J. Garratt, Stuart R. Jenkins, Thomas W. Davies *

School of Ocean Sciences, Bangor University, Menai Bridge LL59 5AB, UK

HIGHLIGHTS

- Our coasts are increasingly polluted by artificial light at night (ALAN).
- We studied the potential effects of ALAN in an intertidal sandy shore ecosystem.
- Macrofaunal community structure significantly changed across a gradient in ALAN.
- 47% of non-rare taxa displayed significant relationships to illuminance.
- Relationships with key environmental drivers were accounted for.

GRAPHICAL ABSTRACT



ARTICLE INFO

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High pressure sodium
Intertidal ecosystems
Sandy shore
Macroinvertebrates
Community structure

ABSTRACT

Widespread coastal urbanization has resulted in artificial light pollution encroaching into intertidal habitats, which are highly valued by society for ecosystem services including coastal protection, climate regulation and recreation. While the impacts of artificial light at night in terrestrial and riparian ecosystems are increasingly well documented, those on organisms that reside in coastal intertidal habitats are less well explored. The distribution of artificial light at night from seaside promenade lighting was mapped across a sandy shore, and its consequences for macroinvertebrate community structure quantified accounting for other collinear environmental variables known to shape biodiversity in intertidal ecosystems (shore height, wave exposure and organic matter content). Macroinvertebrate community composition significantly changed along artificial light gradients. Greater numbers of species and total community biomass were observed with increasing illumination, a relationship that was more pronounced (increased effects size) with increasing organic matter availability. Individual taxa exhibited different relationships with artificial light illuminance; the abundances of 27% of non-rare taxa [including amphipods (Amphipoda), catworms (*Nephtys* spp.), and sand mason worms (*Lanice conchilega*)] decreased with increasing illumination, while 20% [including tellins (*Tellinidae* spp.), lugworms (*Arenicola marina*) and ragworms (*Nereididae* spp.)] increased. Possible causes of these relationships are discussed, including direct effects of artificial light on macroinvertebrate behaviour and indirect effects via trophic interactions. With increasing light pollution in coastal zones around the world, larger scale changes in intertidal ecosystems could be occurring.

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1. Introduction

Today around a quarter of the Earth's surface is polluted by artificial light at night (Falchi et al., 2016), originating from industry, residential areas and transportation networks (Bennie et al., 2014; Gaston et al., 2015). A wide range of ecological impacts of this pollution have been identified, including effects on physiology (Navara and Nelson, 2007; Dominoni et al., 2013), navigation (Tuxbury and Salmon, 2005; Rodríguez et al., 2012), reproductive behaviour (Jokiel et al., 1985; van Geffen et al., 2015), predation success (Santos et al., 2010; Underwood et al., 2017), community structure (Davies et al., 2012; Bolton et al., 2017) and ecosystem services (Lyytimäki, 2013).

With widespread coastal urbanization, the impact of artificial light at night on marine ecosystems has become a topic of increasing concern (Becker et al., 2013; Davies et al., 2014; Davies et al., 2016; Bolton et al., 2017). 75% of the world's megacities (populations >10 million) are now located in coastal regions (Luijendijk et al., 2018), and >22% of shorelines worldwide are light-polluted (Davies et al., 2014). The effects of artificial light on shallow marine species, including fish (Becker et al., 2013), amphipods (Navarro-Barranco and Hughes, 2015) and sessile invertebrates (Davies et al., 2015), have been documented in recent years. The consequences of lighting intertidal habitats – which provide valuable ecosystem services globally (Costanza et al., 1997; Barbier et al., 2011) and are likely most exposed among marine ecosystems to light pollution – have more recently become a focus for research (Luarte et al., 2016; Duarte et al., 2019).

Daily, monthly and seasonal natural light cycles play an important role in intertidal ecosystems, synchronising mass spawning and hatching events, partitioning feeding and swimming activity, and regulating migrations (Jansson and Källander, 1968; Forward, 1986; Robles et al., 1989; Naylor, 2001). Species interactions across trophic levels are also guided by light availability, determining the timing and success of predatory activity and the ability of prey to avoid predation (Viherluoto and Viitasalo, 2001; Santos et al., 2010; Underwood et al., 2017). Perhaps most importantly, intertidal invertebrate larvae are guided by light during settlement site selection, which determines subsequent survival and reproductive success (Thorson, 1964; Davies et al., 2014). These key ecological processes that shape intertidal ecosystems are likely affected by light pollution from streets, promenades, piers, jetties, harbours and marinas (Davies et al., 2014). Recent data has demonstrated strong evidence of artificial light impacts including reduced activity and growth rates on individual species that reside in sandy shores (Luarte et al., 2016; Duarte et al., 2019), which are the most widespread of intertidal ecosystems (Brown and McLachlan, 2002), with potential larger scale implications for macroinvertebrate assemblages. The consequences of artificially lighting beaches for the structure and composition of intertidal macroinvertebrate communities, however, remain unquantified.

We mapped the exposure of intertidal organisms in a sandy shore ecosystem to artificial light from High Pressure Sodium promenade lighting, and demonstrate for the first time its consequences for intertidal macroinvertebrate community composition and structure.

2. Methods

2.1. Summary

Ground level night-time artificial illuminance (Lux) was measured across Llandudno West Shore beach in North-West Wales, UK (53.320°N, 3.846°W) and the data used to produce a 6 m resolution light map. Macroinvertebrate communities, sediment grain size (a good proxy of wave exposure [Burt et al., 2010]), and organic matter content were sampled at low, mid and high shore elevations across a gradient in illumination parallel to the shoreline. The relationships between response variables (macroinvertebrate community composition, species richness, species dominance, the total number of individuals, total community biomass, and the presence of individual taxa) and

artificial light exposure were quantified accounting for potentially collinear gradients in shore height, median grain size and organic matter concentration.

2.2. Study site

This study was conducted at Llandudno West Shore Beach, a west-facing, macrotidal, sandy beach on the North Wales coast. The northern half of the shore is illuminated by adjacent High Pressure Sodium promenade lighting such that gradients of decreasing illumination are established from high to low shore, and north to south (Fig. 1). The site contains two fish-tail groynes, the larger of which (Gogarth Breakwater) brackets the northern limit of the shore.

2.3. Light mapping

Ground level illuminance was mapped at night at 6 m resolution across 4 transects parallel to the shore (at approximately 0, 40, 100 and 200 m from the sea wall) using a Skye® LUX sensor logging every 5 s. Measures were GPS linked so that a prediction surface map of illuminance could be interpolated from the data using an exponential kriging model in ArcGIS. The light data was collected between 12:30 and 2:30 am on the 11th of June 2018 during a new moon to avoid moonlight interference.

2.4. Shore sampling

One macroinvertebrate and two sediment samples were extracted from 54 sampling stations across the measured illumination gradient along horizontal transects (approximately 900 m in length) at three shore heights representative of the full gradient of zonation (Fig. 1). Each transect occupied a 50 cm elevation zone, relative to Ordnance Datum Newlyn: high shore (1 to 1.5 m), middle shore (−0.25 to 0.25 m) and low shore (−1.5 to −1 m); and contained 18 sampling stations positioned randomly within 40 m intervals along the transect. Sampling was undertaken either side of the smaller groyne to control for effects of potentially collinear variables known to influence community composition (grain size and organic matter content) (Bull et al., 1998; French and Livesey, 2000; Walker et al., 2008; Fanini et al., 2009). 89% of the samples (16 stations on each transect) were collected over 3 consecutive days (20th–22nd June 2018), with the final 11% collected 10 days later on a day with comparable weather conditions, using the same equipment and consistent methods. All sampling was undertaken at low/retreating tide.

At each station a macroinvertebrate sample (0.1 m² to 0.2 m depth) was dug and wet sieved through a 1 mm mesh, and two small sediment cores (0.008 m² to 0.2 m depth) were extracted for grain size and organic matter content analysis. Macroinvertebrate samples were preserved in 70% Industrial Methylated Spirit with rose bengal pending lab analysis, and all specimens were identified to the lowest practicable taxonomic resolution, counted and weighed. One sediment sample from each station, after washing and drying, was shaken for 15 min through a stack of brass sieves with decreasing mesh sizes (4 mm, 2 mm, 1 mm, 500 µm, 250 µm, 125 µm, 63 µm). The remaining sediment in each sieve was weighed, and median grain size was calculated using GRADISTAT v 8.0 (Blott and Pye, 2001). The remaining sediment samples were dried and then heated in a muffle furnace at 450 °C for 4 h to burn off any organic matter, with the resulting differences in the weights of the samples used to calculate organic matter concentrations (Cambardella et al., 2001).

2.5. Statistical analysis

Data analysis was performed using R statistical software. The relationship between macroinvertebrate community composition and artificial light exposure (ground-level illuminance) was examined using a

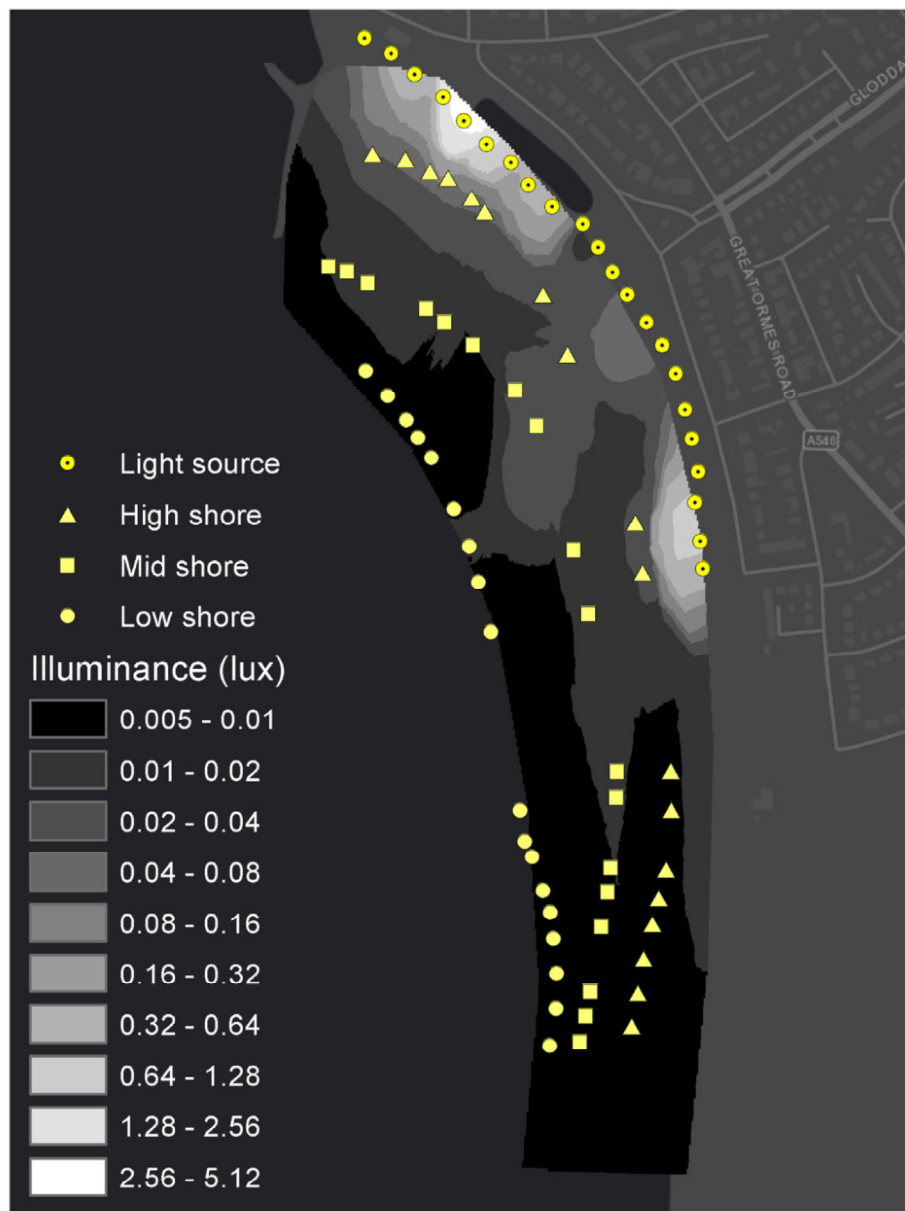


Fig. 1. The distribution of artificial light at night from High Pressure Sodium promenade lighting across Llandudno West Shore Beach, North Wales.

permutational multivariate analysis of variance (adonis, CRAN: [vegan](#)), performed on Bray-Curtis dissimilarity matrices calculated from log-transformed species abundance and biomass, accounting for shore height, particle size and organic matter. All first order effects and second order interactions with light were included in the model.

The relationships between macroinvertebrate community metrics (total number of individuals [$n\ m^{-2}$], total biomass [$g\ m^{-2}$], species richness [species count] and species dominance [$1 - \text{Pielou's evenness}$]) and environmental variables (artificial illuminance, shore height, particle size, organic matter) were quantified using multiple regression models fitted using either spatially autocorrelated mixed effects models (corrHLfit, CRAN: [spaMM](#)) or generalised linear models with appropriate error distributions where spatial autocorrelation was not identified in the response variable of interest (determined using Mantel tests).

Model selection (model.sel, CRAN: [MuMIn](#)) was used to compare the small-sample-size corrected values of Akaike's Information Criterion (AIC) of a series of candidate regression models, including the global model ($\sim \text{illuminance} * \text{shore height} + \text{illuminance} * \text{particle size} + \text{illuminance} * \text{organic matter}$), all possible nested models of the

global model, and a null ($\sim \text{intercept only}$) model (Table 2). The most parsimonious models were tested for significance by comparing to a null model using a likelihood ratio test. Where the most parsimonious models were significantly different from the null, and included the illuminance predictor variable, the significance of this variable was further tested using a likelihood ratio test comparing the model with a nested model in which the illuminance variable was omitted. If the model included a second order effect of illuminance, the significance of the effect was determined by testing the model against itself but with the interaction removed.

The relationships between the abundances of individual macroinvertebrate species and environmental variables were also examined using multiple regression model selection, as previously described, identifying the most parsimonious model for each species and testing the significance of illuminance when present as a predictor variable. The abundances of rarer species were summed by genus or family (Table 3) to reduce zero inflation. Analyses were performed on numerical abundance data for taxa present in >50% of samples, and presence-absence data for taxa present in <50% of samples, with appropriate error

distributions fitted in each case. Any taxa that were present in <10% of the samples were deemed too rare to be reliably incorporated in the analysis.

3. Results

The light data displayed an exponentially decreasing gradient in illuminance from high to low shore adjacent to the lamp-posts (Fig. 1), ranging from 5 lx on the promenade, equivalent to a typical residential side street (Gaston et al., 2013), to 0.006 lx, with the lowest values found in the far south and on the low shore directly next to Gogarath Breakwater. Median grain size on the intertidal shore ranged from 142 to 169 μm (fine sand), with the organic matter concentration of the sediment between 0.3 and 0.9%. Gradients in grain size and organic matter were not collinear with illuminance (variance inflation factor [VIF] values <3).

The beach contained an abundance of intertidal macroinvertebrates (median: 180 $n\text{ m}^{-2}$), with a total of 1984 individuals collected, representing 45 species and 26 families. The macroinvertebrate assemblages on the shore predominately consisted of crustaceans (70%), polychaetes (26%) and bivalves (3%) [percentages by abundance]. There was no significant difference in the structure of the community sampled between different survey days, with regard to abundance ($F_{(3,50)} = 1.29$, $p = 0.29$), biomass ($F_{(3,50)} = 0.84$, $p = 0.48$), species richness ($F_{(3,50)} = 1.84$, $p = 0.15$) or species dominance ($F_{(3,48)} = 0.94$, $p = 0.43$).

Macroinvertebrate community composition across the shore was significantly related to the degree of exposure to artificial light at night, accounting for other environmental variables (shore height, particle size and organic matter), and regardless of whether abundance or biomass was used (n individuals m^{-2} : $F_{(44,53)} = 2.26$, $p < 0.05$; g m^{-2} : $F_{(44,53)} = 2.52$, $p < 0.01$; Table 1).

Artificial illuminance (lux) was included in the most parsimonious models describing the species richness and total community biomass of macroinvertebrates (Table 2). The relationship between light and these responses was modulated by organic matter content (Species richness: $\chi^2 = 46.90$, $p < 0.01$; Biomass: $\chi^2 = 8.42$, $p < 0.01$). The selected model (Lux * Organic) described significantly more of the variability in these responses compared to a null (~intercept only) model (Species richness: $\chi^2 = 81.56$, $p < 0.01$; Biomass: $\chi^2 = 2.72$, $p < 0.001$). Species richness and biomass (Fig. 2) increased with increasing illuminance; relationships that became more positive with increasing organic matter availability (Fig. 3). The cumulative abundance and species dominance of the macroinvertebrate community were not strongly related to artificial light exposure, with the illuminance model (~Lux) describing no more variation in the responses than the null model (Abundance: $\chi^2 = 0.56$, $p = 0.11$; Dominance: $\chi^2 = 0.01$, $p = 0.67$).

Out of the 15 common taxa of macroinvertebrates found on the shore, the abundances of 7 taxa (47%) displayed significant

Table 1

The relationship between macroinvertebrate community composition and artificial light exposure from High Pressure Sodium promenade lighting in a sandy shore ecosystem. Permutational multivariate analysis of variance was performed on Bray-Curtis dissimilarity matrices calculated from log-transformed species abundance and biomass data. The tested model included first order effects of all physical variables, and interactions with illuminance. Results that are significant at the 95% confidence level or greater are underlined.

Predictor	Community composition response			
	Abundance		Biomass	
	$F_{(44,53)}$	p	$F_{(44,53)}$	p
Illuminance (lux)	2.26	<0.05	2.52	<0.01
Shore height	5.97	<0.001	3.71	<0.001
D50 (μm)	1.90	0.089	1.98	<0.05
Organic matter (%)	3.10	<0.01	2.33	<0.01
Lux:Shore height	1.50	0.120	1.35	0.117
Lux:D50	0.74	0.589	1.39	0.139
Lux:Organic	1.23	0.321	1.62	0.076

Table 2

Selection of the most parsimonious models describing how macroinvertebrate abundance ($n\text{ m}^{-2}$), biomass (g m^{-2}), species richness (species count) and species dominance ($1 - J'$) vary with exposure to High Pressure Sodium promenade lighting, and other physical variables in a sandy shore ecosystem. AICc values of the most parsimonious models are underlined and bold.

Model	AICc			
	Abundance ^a	Biomass ^a	Richness ^b	Dominance ^c
Lux * Shore height + Lux * D50 + Lux * Organic	67.8	58.5	269.4	−24.4
Lux * Shore height + Lux * Organic	63.0	55.8	266.5	−20.4
Lux * D50 + Lux * Organic	74.6	50.2	259.9	−21.9
Lux * Shore height + Lux * D50	63.4	60.3	267.8	−25.3
Lux * Shore height	59.6	61.3	267.4	−16.8
Lux * D50	78.4	53.2	262.0	−17.2
Lux * Organic	70.8	49.5	256.8	−17.7
Lux	76.5	54.4	260.2	−9.8
Shore height + D50 + Organic	58.0	60.4	264.2	−26.7
Shore height + D50	59.3	59.2	261.7	−23.3
Shore height + Organic	55.5	62.5	265.5	−26.1
Shore height	56.9	62.3	263.1	−21.3
D50 + Organic	72.6	62.9	266.4	−24.1
D50	75.5	61.3	264.3	−19.6
Organic	72.1	62.3	265.0	−19.0
Null	76.8	61.6	262.9	−11.6

^a Gaussian GLM performed on $\log_{10}(x + 1)$ transformed data.

^b Gaussian GLM performed on raw data.

^c Poisson GLM performed on raw data.

relationships with artificial light exposure accounting for other environmental variables (Table 3). Four of these taxa decreased in either abundance or probability of occurrence with increasing illuminance, including amphipods (*Bathyporeia elegans* and *Haustorius arenarius*), catworms (*Nephtys* spp.) and sand mason worms (*Lanice conchilega*), while the remaining 3 taxa increased in probability of occurrence with increasing illuminance: *Tellinidae* spp., *Arenicola marina* and *Nereididae* spp. (Fig. 4).

4. Discussion

Macroinvertebrate community composition is known to be affected by artificial light at night in a variety of ecosystems, including terrestrial ground-dwelling communities (Davies et al., 2012; Davies et al., 2017; Manfrin et al., 2017), sessile marine epifaunal communities (Davies et al., 2015; Bolton et al., 2017) and riparian ecosystems (Meyer and Sullivan, 2013). To our knowledge the results presented here represent the first evidence of artificial light altering macroinvertebrate community structure and composition in a sandy shore ecosystem. Macroinvertebrate assemblages in sandy shore habitats - which make up around 75% of the world's ice-free coastlines (Brown and McLachlan, 2002) - are critical to ecosystem functioning and connectivity. They contribute to sediment aeration, facilitating organic matter mineralisation and nutrient cycling, form planktonic linkages between distant habitats, and provide important resources for top consumers such as birds and fish (Brauns, 2008; Schlacher et al., 2008).

Our study found changes in the community composition, species richness and cumulative biomass of macroinvertebrates that were related to the level of exposure to artificial light pollution from adjacent High Pressure Sodium promenade lighting with illuminances equivalent to residential side streets (Gaston et al., 2013). While our study was limited to one shore line, the relationships between macroinvertebrate community descriptors and artificial illumination were quantified accounting for key structural drivers in intertidal ecosystems (shore elevation, and wave exposure), which are also strongly linked with groyne proximity, hence we are confident that the results presented constitute evidence of artificial light impacts in the focal study system.

The effects of anthropogenic structures such as groynes on sandy shore ecosystems are well established (French and Livesey, 2000;

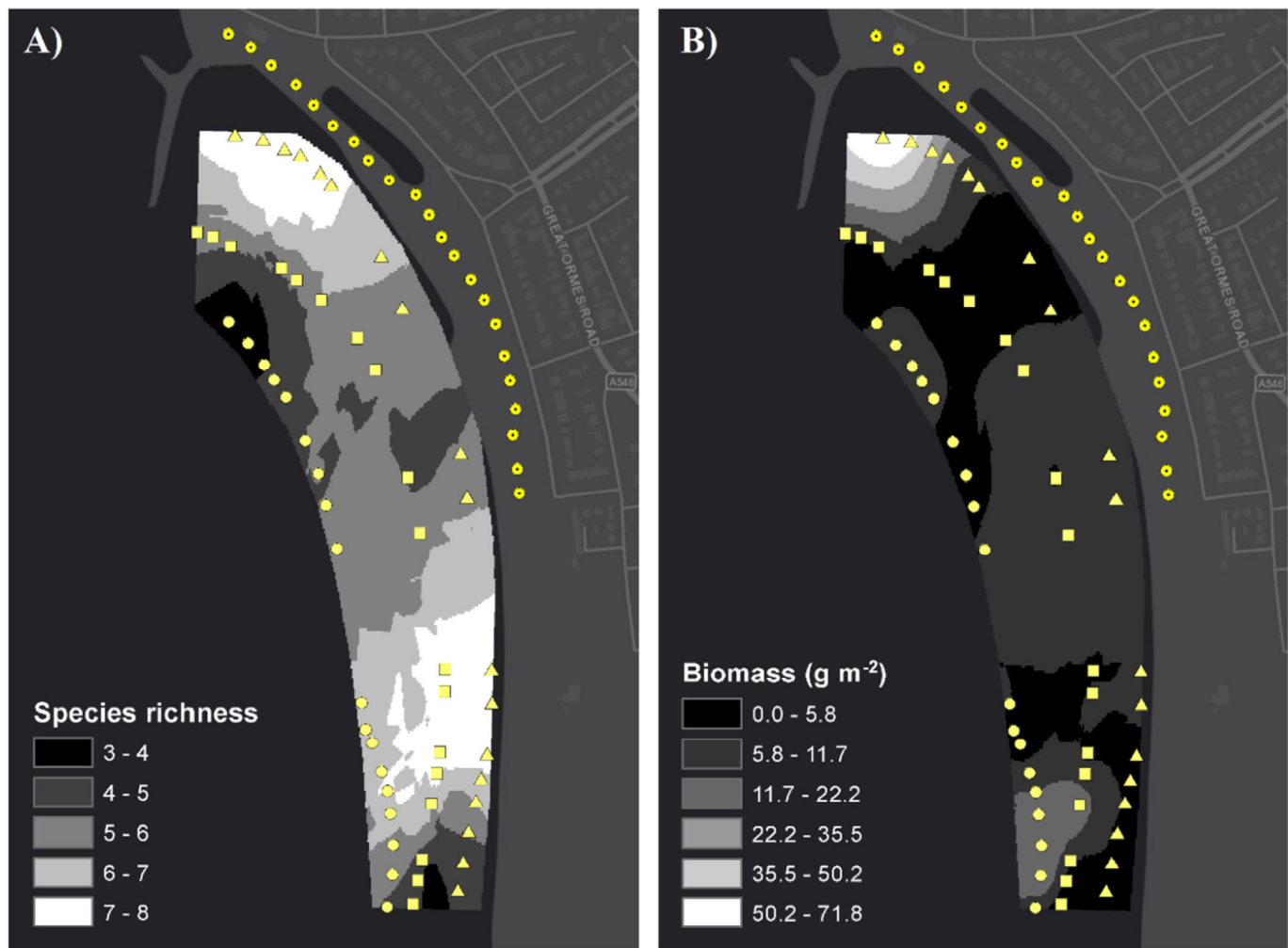


Fig. 2. Macroinvertebrate community structure metrics that were significantly related to artificial light exposure from High Pressure Sodium promenade lighting: A) species richness (species count); B) cumulative biomass (g m⁻²).

Martin et al., 2005; Walker et al., 2008; Fanini et al., 2009). Reduced wave exposure on the intertidal shore due to sheltering by anthropogenic structures often leads to changes in the sediment characteristics of the beach with regard to particle sizes and organic content, which in turn drive changes in macroinvertebrate assemblages (Martin et al., 2005; Rodil et al., 2007; Walker et al., 2008). These effects were given careful consideration during study design, and controlled for by sampling either side of the groyne structures, and in the analysis by including median grain size and organic matter content as candidate variables during the model selection procedure. We are therefore confident that the results reported here are not artefacts of groyne effects.

47% of non-rare taxa were individually found to either increase or decrease in abundance (or the probability of occurrence) with increasing illumination, accounting for shore height and sediment characteristics, including common intertidal species such as polychaetes (*Nephtys* spp., *Janice conchilega*, *Arenicola marina*, *Nereididae* spp.), amphipods (*Bathyporeia elegans*, *Haustorius arenarius*) and bivalves (*Tellinidae* spp.). Although the mechanisms responsible for these relationships are uncertain, there are a range of possible explanations based on the known influences of light in intertidal systems, which encompass direct effects of artificial light on macroinvertebrate life cycles, and indirect effects due to trophic interactions.

Multiple aspects of marine macroinvertebrate reproductive biology are guided by natural light cues, including synchronised broadcast spawning, larval phototaxis, and recruitment (Thorson, 1964; Bentley et al., 2001; Naylor, 2001). The adult stages of mobile marine

macroinvertebrates can also be highly photosensitive with taxa displaying both positive and negative phototaxis (Tranter et al., 1981; Del Portillo and Dimock Jr, 1982; Adams, 2001). Marine amphipods, for example, are known to be strongly attracted to artificial lights (Meekan et al., 2001; Hughes and Ah Yong, 2016), with assemblages of subtidal amphipods aggregating in halogen light traps with intensities equivalent to average levels of coastal light pollution (Navarro-Barranco and Hughes, 2015). As is the case for many taxa displaying this aggregation response (for example Lepidoptera, Araneae and Coleoptera), the mechanism of disruption remains unclear. Orientation using the lunar and solar compass is, however, common in some intertidal amphipod species (Ugolini et al., 2005; Ugolini et al., 2012), and artificial light disruption of this compass is plausible.

As with many other groups (Rydell, 1992; Becker et al., 2013), aggregation in illuminated areas will increase the vulnerability of intertidal macroinvertebrates to predation. Increases in the abundance of predators as a result of artificial light has been previously reported in a variety of ecosystems and species, from coastal fish (Becker et al., 2013) to bats (Rydell and Racey, 1995) and ground-dwelling insects and arachnids (Davies et al., 2012), and can lead to significant changes in the composition of prey communities within illuminated areas (Bolton et al., 2017). In the same manner that bats target moths and other flying insects around streetlights (Rydell, 1992; Acharya and Fenton, 1999; Minnaar et al., 2015), wading birds are attracted to the nocturnal foraging opportunity posed by light-polluted intertidal shores (Santos et al., 2010). Taking advantage of artificial illumination, these birds alter

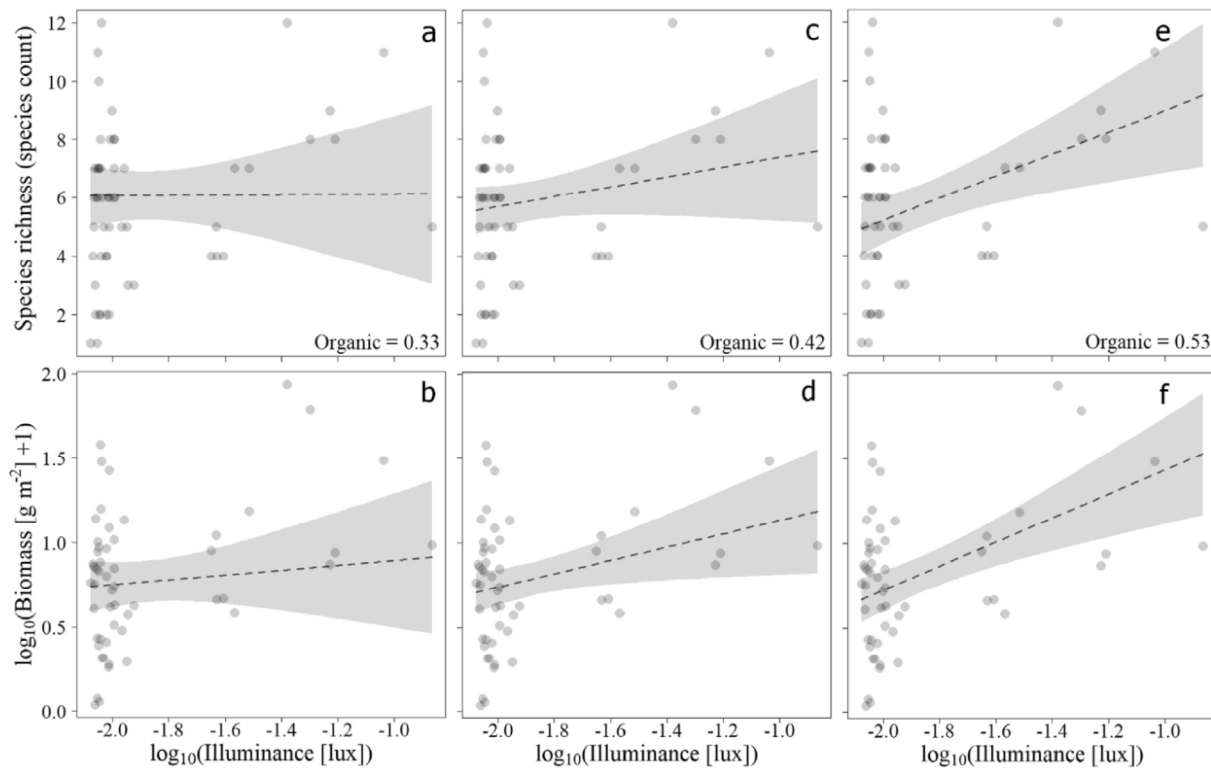


Fig. 3. The effects of artificial light at night from High Pressure Sodium lighting on macroinvertebrate species richness and biomass at high (a–b), medium (c–d), and low (e–f) organic matter content in a sandy shore ecosystem. Relationships (dashed lines) are presented from the most parsimonious generalised linear models (Table 2) which included artificial light exposure and were significantly different from a null (intercept only) model. A significant interaction between artificial light exposure and organic matter content was present in both cases, presented here using the lower quartile, median and upper quartile values of organic matter concentration (%). Grey regions indicate the 95% confidence intervals of these relationships.

their feeding strategy from tactile to sight-based foraging (Dwyer et al., 2013), displaying increased intake rates of macroinvertebrate prey compared to non-illuminated regions (Santos et al., 2010).

The negative effect of artificial light exposure on the prevalence of amphipods (*Bathyporeia elegans* and *Haustorius arenarius*) in the current study, which constitute the prey of wading birds (Goss-Custard and Jones, 1976; Evans et al., 1980), could be due to light-attracted aggregations being targeted by foragers. Similarly, two polychaete taxa

also displayed negative relationships to artificial illuminance: catworms (*Nephtys* spp.) and sand mason worms (*Lanice conchilega*), which are two of the most common prey groups in the diet of intertidal foraging birds (Goss-Custard and Jones, 1976; Yates et al., 1993; Petersen and Klaus-Michael, 1999).

Intertidal macroinvertebrates are known to be threatened by a variety of anthropogenic pressures, such as coastal development, pollution discharge and climate change (Brown and McLachlan, 2002; Schlacher

Table 3

Examining the relationships between the abundances of common macroinvertebrate taxa and exposure to High Pressure Sodium promenade lighting in a sandy shore ecosystem. Commonality is defined as the percentage of samples individual taxa were found in. The percentage contribution of each taxon to the total abundance and biomass of the macroinvertebrate community is also displayed, along with the formula of the most parsimonious model describing those predictor variables which shaped either the abundance or presence of each taxon. Taxa affected by artificial light underlined.

Taxon	Proportion of samples (%)	Proportion of abundance (%)	Proportion of biomass (%)	Model formula
<i>Nephtys</i> spp. ^a	70.4	8.7	9.9	Lux * Organic + D50
<i>Bathyporeia pilosa</i> ^a	66.7	49.9	4.0	Shore height
<i>Spionidae</i> spp. ^b	50.0	4.8	3.6	Shore height
<i>Orbiniidae</i> spp. ^b	37.0	2.4	7.5	Null
<i>Crangon crangon</i> ^b	35.2	2.6	1.5	Organic
<i>Tellinidae</i> spp. ^b	35.2	2.3	14.3	Lux * Organic + D50
<i>Lanice conchilega</i> ^b	33.3	6.4	4.8	Lux + Organic
<i>Bathyporeia elegans</i> ^b	25.9	3.8	0.2	Lux + Shore height
<i>Haustorius arenarius</i> ^b	24.1	2.7	2.8	Lux * Organic
<i>Phyllodoctidae</i> spp. ^b	22.2	0.8	0.04	Shore height
<i>Eurydice pulchra</i> ^c	18.5	10.5	1.2	Shore height
<i>Cerastoderma edule</i> ^b	14.8	0.7	34.1	Null
<i>Arenicola marina</i> ^b	13.0	0.5	11.9	Lux
<i>Nereididae</i> spp. ^b	13.0	1.2	1.7	Lux
<i>Semellidae</i> spp. ^b	11.1	0.4	0.01	Null
Sum	NA	97.6	97.6	NA

^a Poisson GLM performed on raw abundance ($n\ m^{-2}$) data.

^b Binomial GLM performed on presence/absence data.

^c Spatially autocorrelated binomial model (corrHilfit) performed on presence/absence data.

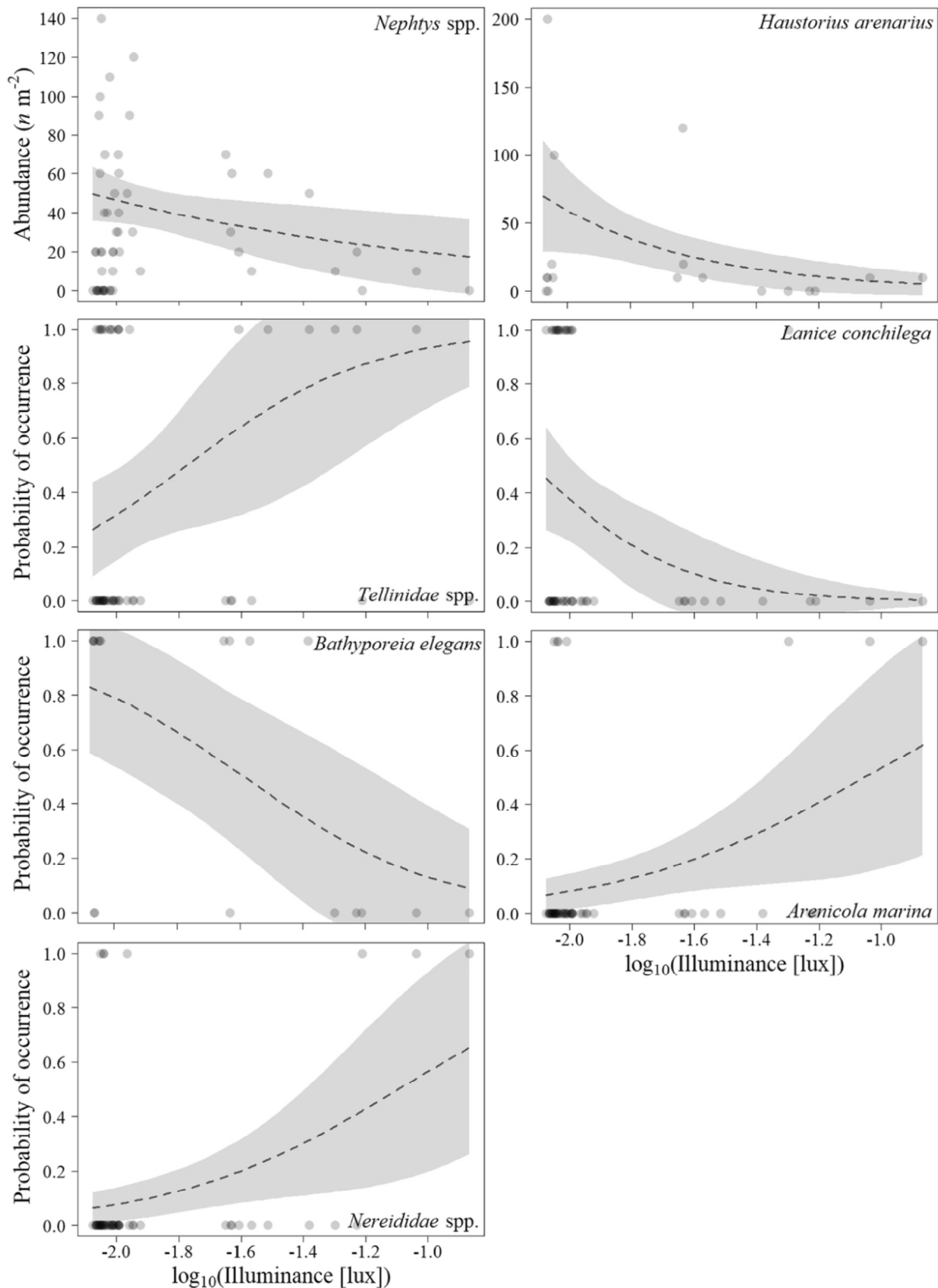


Fig. 4. Intertidal macroinvertebrate taxa with abundances or occurrences significantly related to artificial light at night from High Pressure Sodium promenade lighting in a sandy shore ecosystem. The relationship between artificial light exposure and each abundance measure (dashed lines) were identified as the most parsimonious generalised linear models that were significantly different from a null (intercept only) model. Grey regions indicate the 95% confidence intervals of these relationships. *Nephtys* spp. and *Haustorius arenarius* were analysed using Poisson GLMs performed on abundance data, while binomial GLMs performed on presence/absence data were used for the remaining taxa.

et al., 2007; Defeo et al., 2009). However the impact of artificial light pollution remained unconsidered until recent years (Luarte et al., 2016; Duarte et al., 2019). This study demonstrates that artificial light pollution can alter intertidal macroinfaunal communities in sandy beach

ecosystems. With 75% of the world's megacities located near coastlines (Luijendijk et al., 2018), the potential for widespread artificial light at night in coastal regions (Davies et al., 2014) to alter the biogeographical distributions of intertidal organisms is clear. It may prove possible to

reduce these impacts by limiting the period, intensity and dispersal of lighting, as well as altering the types of lights used and their spectral composition (Gaston et al., 2012; Rajkhowa, 2012).

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CRediT author statement

Matthew J. Garratt: Methodology, Formal Analysis, Investigation, Writing-Original Draft, Visualisation. **Stuart R. Jenkins:** Writing-Review & Editing, Supervision, Project Administration, Funding Acquisition. **Thomas W. Davies:** Conceptualization, Methodology, Formal Analysis, Writing-Review & Editing, Visualisation, Supervision, Project Administration, Funding Acquisition.

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Environment • Planet Earth

Why Dark Sky Tourism Is Catching On

By [Michael d'Estries](#) Updated December 16, 2019



An individual silhouetted against a backdrop of stars in Queensland, Australia. (Photo: [Dualiti Photos \[CC by 2.0\]/Flickr](#))



In the fight to protect natural wonders around the world from pollution, development and other man-made byproducts of our modern world, it's an overlooked fact that we're on the verge of losing one of our most enchanting. Even more ironic, it's not something that requires travel or tickets to experience. The



There are, however, efforts underway to protect what vestiges of the unspoiled night remain.

Organizations like the [International Dark-Sky Association \(IDA\)](#), which works with land owners and municipalities to protect vast areas under pristine dark skies for future generations, has to date designated 15 dark sky reserves around the world. The IDA has also designated over 65 smaller, but still impressive, [dark sky parks throughout the United States](#). As interest in astrotourism has increased, communities have also embraced their fortunate settings under starlight to offer stargazing tours, events around spectacles like solar eclipses and even rocket launch viewing parties.

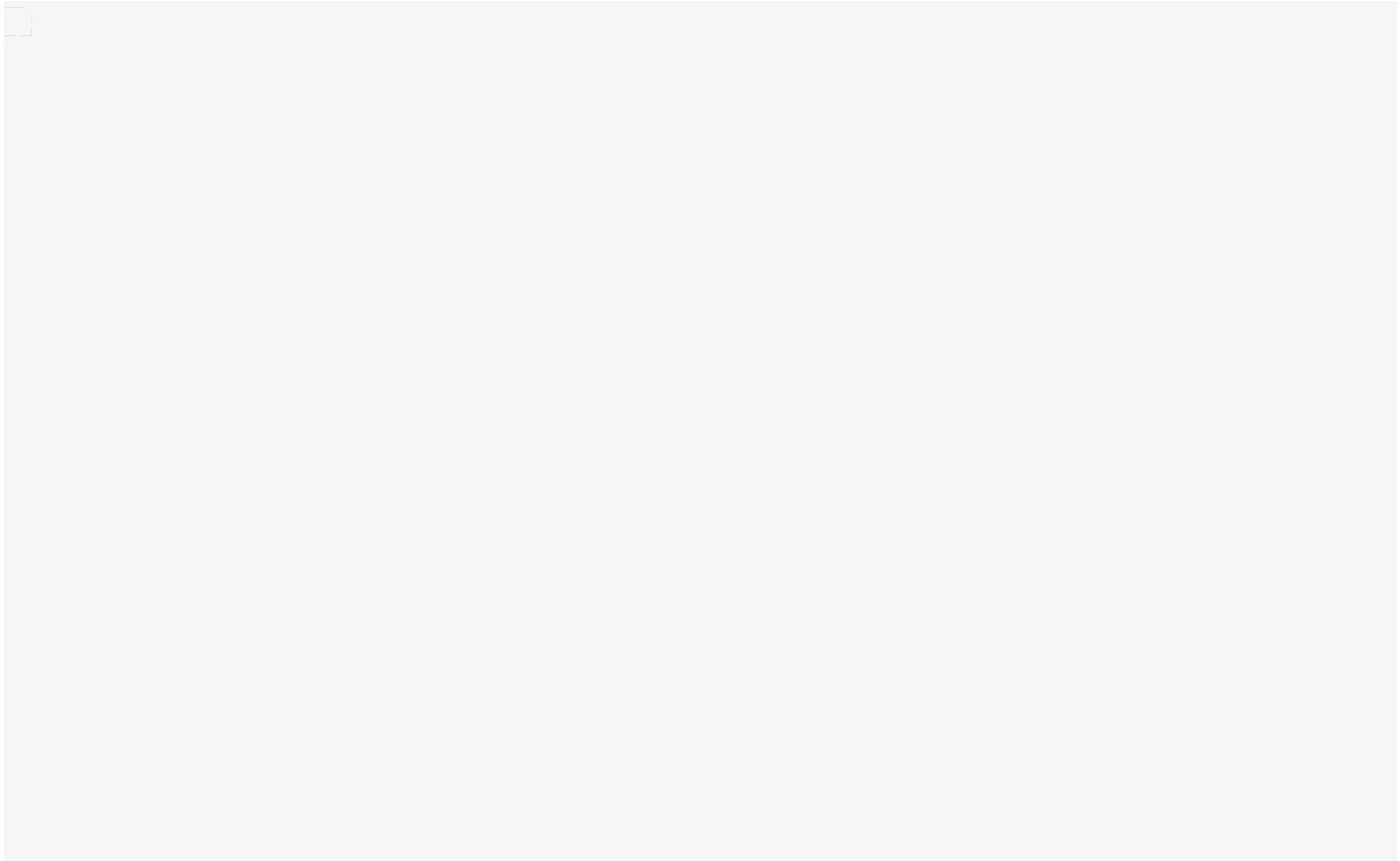
And now, thanks to travel writer and astrotourism guide Valerie Stimac, we have a single catalog of the opportunities available to look up in wonder at the heavens above. Her new book "[Dark Skies: A Practical Guide to Astrotourism](#)," not only features 35 of the darkest stargazing places around the world, but also highlights annual spectacles like meteor showers, the best place to catch the northern (or southern) lights, rocket launch sightseeing and even details on the major eclipses of the next decade and where to watch them.



The new Lonely Planet book 'Dark Skies,' by Valerie Stimac, offers an in-depth guide to the world of astrotourism.
(Photo: Valerie Stimac/Lonely Planet)



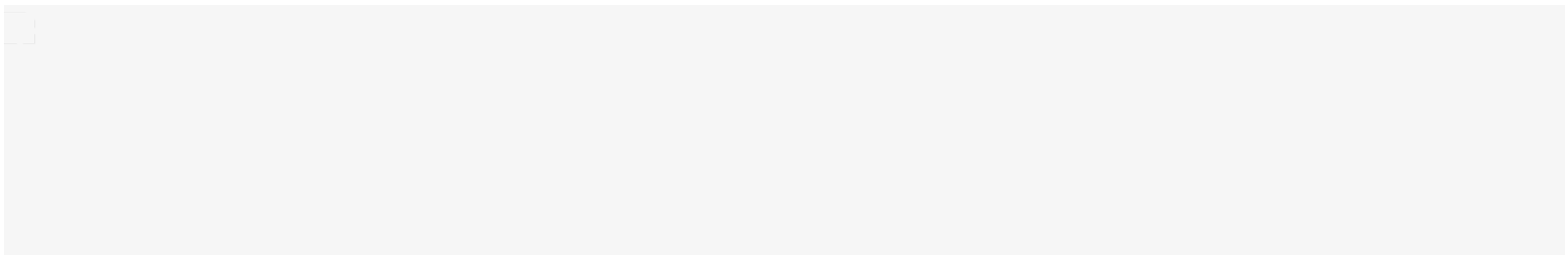
able to tackle the list of topics quickly to decide where we wanted to include and how to organize the book. After that, it was a lot of researching, writing, and working with sources around the globe!"



Valerie Stimac under a starry night sky. (Photo: Valerie Stimac)

Stimac, who chronicles her travels around the globe (and offers tips for those looking to do the same) through her site [Valerie & Valise](#), said she's deeply encouraged by interest across a lot of the different types of astrotourism.

"Obviously seeing rockets and the northern lights have always been popular; eclipse-chasing has grown more since the 2017 total solar eclipse too," she added. "Traveling for dark sky experiences is probably among the newest 'type' of astrotourism, and the International Dark-Sky Association has done a great job of generating excitement and interest in these locations – and showing how astrotourism is often a great complimentary activity for travel to spots that are also great natural destinations during the day."





Arches National Park, one of over 65 dark sky parks in the U.S. as designated by the International Dark-Sky Association, is a popular attraction for stargazers. (Photo: By Jun Su/Shutterstock)

While Stimac praised organizations like the IDA for doing a fantastic job of helping to protect pristine regions from encroaching light pollution, one of the biggest challenges faced is that astrotourism is still a young industry. "Not everyone is interested and/or willing to travel for these experiences," she shared.

Worse still, some areas lack both the financial and organizational resources to attract potential stargazers.

"Personally, I think the most endangered dark sky locations are those where there's no tourism infrastructure in place," she said. "For example, Wadi Rum in Jordan is a spectacular stargazing spot, but there's no CVB/DMO (Convention and Visitors Bureau/Destination Marketing Organization) there to help petition for dark sky designation status, so it's unlikely that development there will be done in a way that reduces light pollution.... and that will hurt the destination in the long run."

Joshua Tree National Park, California





The Milky Way rising over the rugged and rocky terrain of Joshua Tree National Park. (Photo: By Saptashaw Chakraborty/Shutterstock)

Designated a Dark Sky Park by the IDA in 2017, [Joshua Tree National Park](#) is a popular attraction for stargazers living on the west coast. Despite encroaching light pollution on its western borders from Coachella Valley cities, its relative isolation from major cities in the east (with Phoenix being the closest metropolitan area some 300 miles away), provides it with some of the darkest skies in California.

"While Joshua Tree National Park has an unfortunate amount of light pollution in the larger region, it's dark enough and such an otherworldly landscape that it's still an [unforgettable place to go stargazing](#)," Stimac said of the 790,000-acre park. "There's also a really low development footprint within the park so it's very quiet and isolated – totally like another planet or moon!"

Elqui Valley, Chile





A long exposure shot of the beautiful night sky above the Elqui Valley in Chile. (Photo: By Pung/Shutterstock)

A popular wine region centered on the Elqui River in northern Chile, the [Elqui Valley](#) also offers ideal conditions (high-altitude, low-population, limited cloud cover) for uncorking a bottle and toasting the heavens above. Spanning some 90,000 acres, the region has the distinction of being named the first-ever Dark Sky Sanctuary by the International Astronomical Union in 2015. It's also home to nearly a dozen observatories, boutique stargazing hotels and a large variety of tours that cover both cosmic and daytime spectacles.

"This was the first place I saw the southern night sky, and was amazed by how different the Milky Way and constellations look," said Stimac. "It was also a treat to see the Magellanic Clouds for the first time."

Wadi Rum, Jordan



The Milky Way in Wadi Rum, Jordan. (Photo: By Zaid Abu Taha/Shutterstock)



been nicknamed "Mars on Earth."

"I'm partial to [Jordan](#) because I'm [leading a tour group here in March!](#)," said Stimac. "Wadi Rum is an incredible landscape too (used for a lot of sci-fi movies like 'Prometheus,' 'Rogue One' and 'The Martian') and it's one of the dark places where you can just sit and look up at the wonder of the night sky with very little interruption."

Environment

The World's 11 Certified Dark Sky Reserves, Where the Stars Run Riot

Space

19 Dark Sky Parks Where the Heavens Steal the Show

Outdoors

3 New Dark Sky Parks Reveal Wonders of the Night Sky

Space

The First Dark Sky Reserve in the U.S. Is a Stargazer's Paradise



Pollution

Why Dark Skies Matter

Pollution

5 Ways You Can Reduce Light Pollution

Space

**Stunning Photo Project Explores Our
Complex Relationship With the Night Sky**

Space

**33 Out-Of-This-World Images of the Milky
Way, Aurora Borealis and More**

Conservation

**These 2 Towns Have Dimmed Their Lights
to Show Off the Glorious Night Sky**

Environmental Policy

**Welcome to Niue, the First Country
Recognized as a Dark Sky Place**



Outdoors

International Dark Sky Park Opens in Michigan; Only 9 Others in the World

Pollution

England's 'Cosmic Census' Reveals Scale of Light Pollution

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10 Unforgettable Desert Adventures

Pollution

Does an Empty Baseball Field Really Need Outdoor Lighting All Night?

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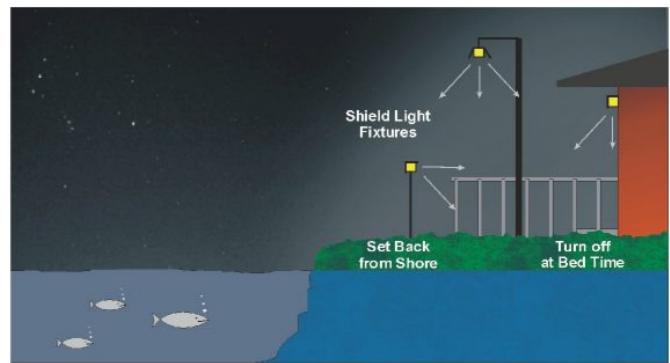
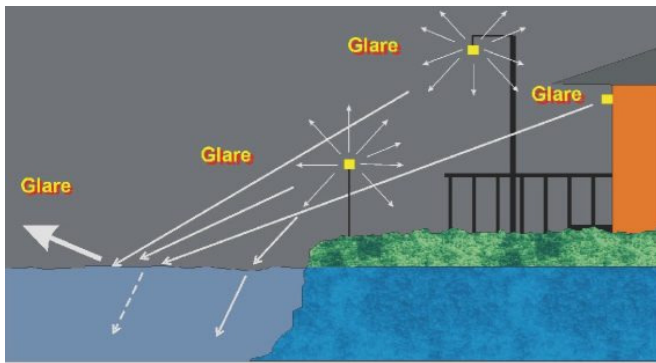
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The Bad and the Good
Shoreline Lighting



White Stone on Pathway
and Shielded Bollard

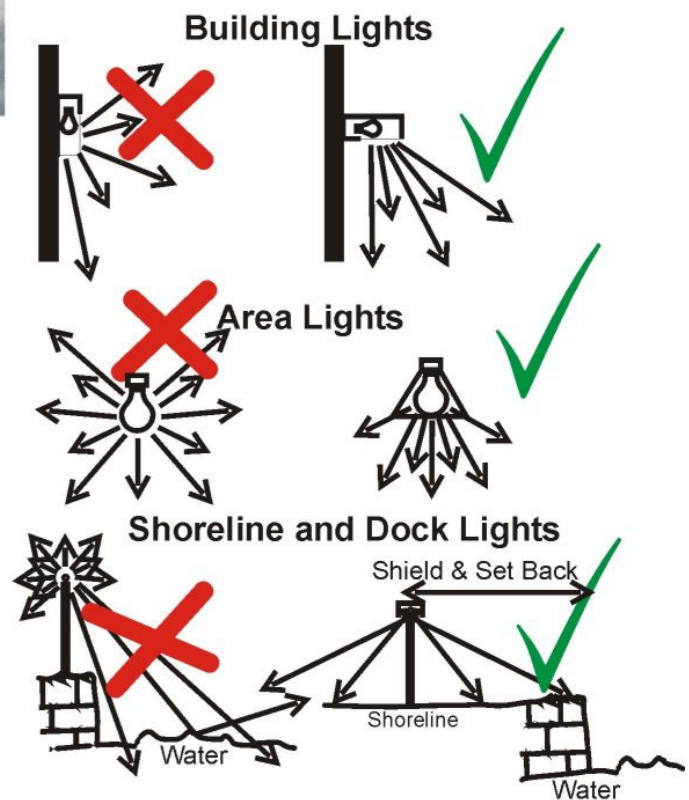
Use “Warm Light”
- not white light

Use Timers

- on at sunset
- off 2-hours later

Use Motion Sensors

- lights on only
when needed



12-01-2020

JGD

Planning Commission Special Work Session: Lighting Ordinance

Purpose of the ordinance:

Why do we develop and put into effect ordinances such as the current lighting ordinance under discussion? In my humble opinion, it is in order to set in place rules and parameters around which a community develops in the hopes of maintaining the values and desires of the residents of the City. The municipal code was put in place as a mechanism to help our citizens to be able to easily understand what is allowed and what is not allowed within the built environment. I think that we all agree that our ordinances are not enacted to punish existing homeowners or businesses. The proposed lighting ordinance is being enacted in large part to protect rather than punish residents and so that new and remodelled construction projects now have parameters by which to design outdoor lighting.

Yachats doesn't differ from any developed small American town. Walking and driving around Yachats with John, who has 30 years in electrical lighting design and construction experience and who has offered to assist this commission, at least 85% of existing exterior light fixtures will not meet the requirements of our proposed ordinance. Should we pass the Ordinance, that does not mean that the code enforcement officer will be canvassing the community giving out notices of non-conformity. What the Ordinance will provide is a mechanism that the residents can cite to lodge a complaint about any light fixtures that are a nuisance. If a neighbor, whether it is a resident or a business, has a light shining into someone's home this ordinance will give teeth to helping alleviate the situation. Enacting the ordinance doesn't mean that suddenly every homeowner and business needs to change out every outdoor light fixture. Practically speaking, if the lighting isn't bothering anyone it will not need to be changed.

section 9.42.040 D. Marine Lighting prohibited or curfew or alternative lights?

By definition, "marine lighting" means exactly that - marine lighting. Whether the lights shine far out onto the ocean or in close on the rocky shore the stated purpose of marine lighting is to light the natural environment. Any light fixture that is directed off of the coastline is marine lighting, does nothing with regards to safety and should not be allowed. Attached are a few examples of the scientific data regarding artificial light at night and the marine environment, including near shore shallow waters.

The ***Yachats Vision Statement*** begins with "***Our village is a place where natural resources are valued and protected, ...***". Decades of research has shown how harmful artificial light is for the natural environment on land and is now beginning to find evidence of the harm done along the shorelines as well. If Yachats truly believes in the Vision Statement, then marine lighting needs to be disallowed.

In response to the use of flood lights that are used as both marine , pathway lighting and for safety :

If clear paths for safe walking are the issue then the best lighting, as well as the least intrusive, are low pathway lights that illuminate the pathway rather than everything else around it. At night human beings' eyes have evolved to adjust to the lower level of light from moonlight. Human visual abilities degrade starting at about the age of 40 so bright white light causes glare and difficulty seeing. Bright lights cause shadows that can create hazards rather than alleviating them. Brightly lighting an area also gives a false sense of security which leads people to walk where they might not otherwise go, such as too close to an edge, thinking they can see much better than they actually can. Lighting the pathway itself, and only the pathway, will help keep people from wandering off into more dangerous areas.

If safety is related to crime prevention, then once again too much light and glare creates places where people might feel much safer than they actually are. Shadows where criminals can hide become an issue. Bright lights also spotlight a possible target giving a criminal someone to interfere with and then

run off into the shadows. Cameras do nothing unless they are constantly monitored. Again, a false feeling of safety.

So much of the planet suffers from light pollution that most children have never seen the Milky Way. This has led to a tourism boom in night sky viewing. Rather than continuing to cater to a single element of the tourism industry it would benefit our community to reach out to this new tourist and turn off the marine lights, which are damaging, and encourage people to visit Yachats for the chance to enjoy the night sky.

section 9.42.050 B 1 Should we further justify, or change the higher lumen limits for Multi-family housing?

A separation of types of residential light, for the purpose of this ordinance, could be that single family residential and duplex developments (R-1, R-2 & R-3) meet the same requirements and multifamily (R-4) developments have a slightly higher lumen allowance because they will most likely share common walkways and areas.

section 9.42.060 Mary Ellen was concerned about liability issues. Perhaps we should expand on the variance section to say that if compliance producers a (such as cost), or a concern about liability for inadequate lighting, a property owner may apply...

This ordinance does not limit lighting to such an extent that liability issues would arise. Safety has been discussed throughout the development of this ordinance. In actuality there are times when too much light can be a liability as well. The safety of guests is the responsibility of the business. If a business believes that their customers require lighting to navigate their property, we certainly allow that; we simply have parameters around what those lights should be in order to avoid trespass, glare, and sky glow. Navigating pathways, parking lots and marine lighting are different kinds of illumination challenges with different kinds of needs, safety parameters and liabilities.

section 9.42.070 A 1 The requirement for compliance within 48 hours/30 days was suggested to be lengthened to 14 days/60 days because of the time required to order items on line.

That's fine. A *slight* extension seems reasonable.

Costs associated with compliance:

If the council believes that due to the pandemic our businesses need more time to comply with the ordinance, we would recommend extending the deadline and have the complaint mechanism be the way to reach compliance of existing lighting upon enacting the ordinance. If a resident or business receives a complaint regarding trespass lighting, glare or excessive sky glow and it is deemed an actionable complaint, then the lighting will need to be brought into compliance within the 60-day(?) period.

To Planning Commission for discussion – JGD Response to the Adobe letter:

Community input:

At the recent public meeting on the Lighting Ordinance there seemed to be many more people who wanted marine lighting regulated or disallowed. There have been letters as well. There has also been an overwhelmingly positive response to creating a lighting ordinance in general due to the interest in eliminating excess sky glow and allowing night sky viewing in general. One newly elected council member specified during the campaign wanting Yachats to adopt a dark sky ordinance which would definitely disallow the marine lighting currently in use.

Examples Ecological effects:

From: *APRIL 28, 2015*

Coastal light pollution disturbs marine animals, new study shows

by [University of Exeter](#)

Dr Stuart Jenkins of the School of Ocean Sciences at Bangor University said: "This is an important first step in developing understanding of the way artificial light may be affecting marine coastal assemblages. Our research showed that levels of artificial light, commonly found in urbanized and developed coastal areas, can have important effects on the development of communities inhabiting hard surfaces in shallow water."

Dr Thomas Davies from the University of Exeter highlighted how historically overlooked the impacts of light pollution on coastal ecosystems has been, saying: "There has been a surge of research into the impacts of artificial lighting on land animals and plants over the last six years, but the influence on coastal animals of lights from harbors, marinas, piers and promenades has received very little attention. Understanding how to manage ecosystems to improve biodiversity gains is as important in the built marine environment as it is in our city parks, gardens, streets, rivers and canals. This study highlights that night-time lighting in coastal cities can impact biodiversity on rocky shores popular with beachgoers that enjoy the diversity of life they offer year round."

Safety along the 804 and pathways:

Just as was discussed with the Fireside and Overleaf, pathway lights would do a better job lighting the path for people walking without creating sky glow for the rest of the community. There is no need for flood lights. There are options available and there will be a year's time to switch them out.

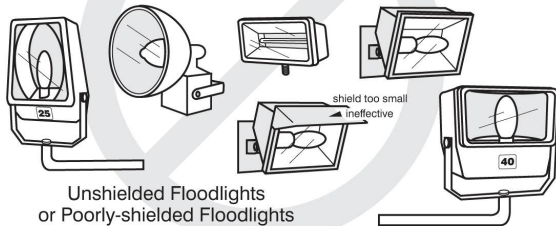
If it is decided that these properties are allowed to continue the lighting we should give specific types of lights to be used rather than simply allowing the continued use of existing flood lights. Here is a link for one example: <http://www.csbg.ca/>



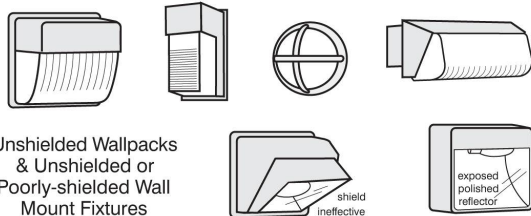
Examples of Acceptable / Unacceptable Lighting Fixtures

Unacceptable / Discouraged

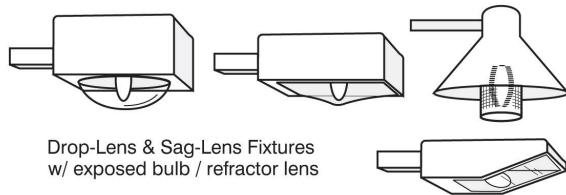
Fixtures that produce glare and light trespass



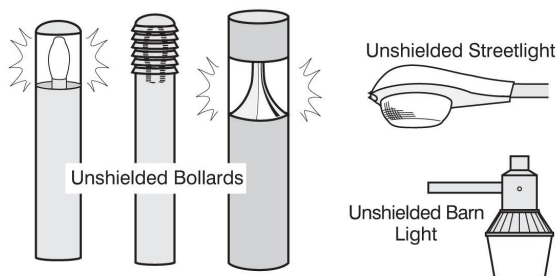
Unshielded Floodlights or Poorly-shielded Floodlights



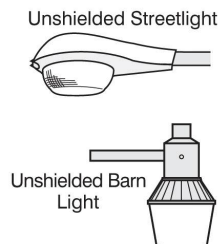
Unshielded Wallpacks & Unshielded or Poorly-shielded Wall Mount Fixtures



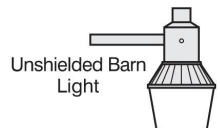
Drop-Lens & Sag-Lens Fixtures w/ exposed bulb / refractor lens



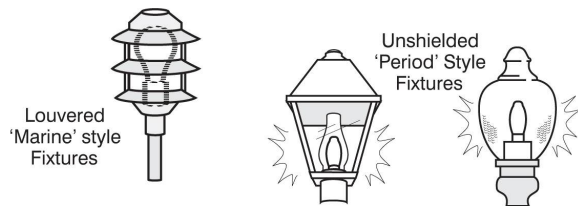
Unshielded Bollards



Unshielded Streetlight

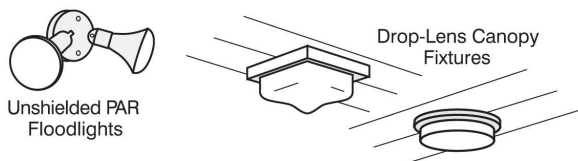


Unshielded Barn Light



Louvered 'Marine' style Fixtures

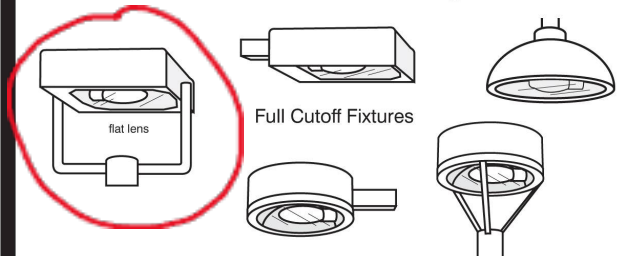
Unshielded 'Period' Style Fixtures



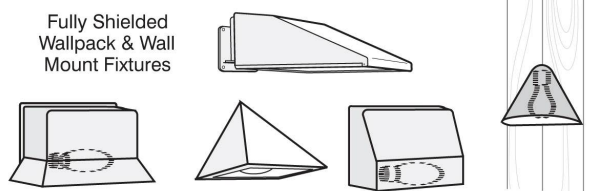
Drop-Lens Canopy Fixtures

Acceptable

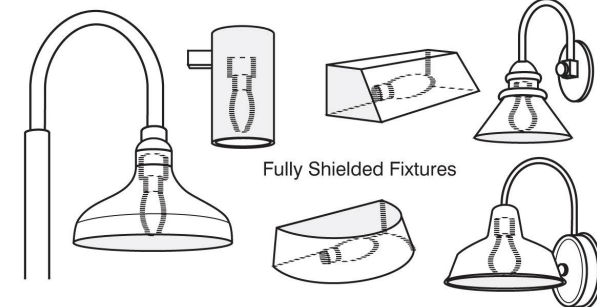
Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night



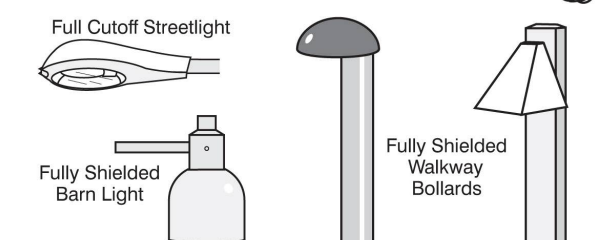
Full Cutoff Fixtures



Fully Shielded Wallpack & Wall Mount Fixtures



Fully Shielded Fixtures



Full Cutoff Streetlight

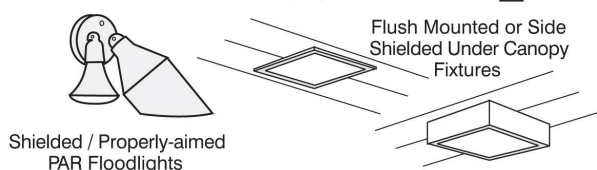
Fully Shielded Barn Light

Fully Shielded Walkway Bollards



Fully Shielded Decorative Fixtures

Fully Shielded 'Period' Style Fixtures



Shielded / Properly-aimed PAR Floodlights

Flush Mounted or Side Shielded Under Canopy Fixtures

This from the Canadian Scotobiology (the study of darkness on biology) group:

On a Budget?

You do not have to spend a lot of money to reduce your impact on the night. Here are a few tips, and why they work.

Cover pathways with white crushed stone (limestone or dolomite)

We see the ground with the light it reflects. If you use asphalt, less than 10% of the light is reflected. If it's a dirt path, then the soil will reflect about 20% of the light - about the same as grass. But crushed stone reflects about 80%. So, you can use much less light for the same visibility. In addition to using less light, a stone surface is easily repaired, and rainwater will drain through rather than forming puddles.

White paint on woodwork.

There are a few critical features that we NEED to see: steps and handrails - so make them obvious. White paint reflects almost all the incident light. So paint the edges of the step and sides of the railing. They will be much more prominent with only a small flashlight. You can also paint the edges of stone steps. You will be able to notice them under starlight.

Retro-reflective materials

This is similar to the idea of white paint. We can mount retro reflective materials in isolated places: posts, trees, rocks, etc. to mark their location. They will appear to “glow” when illuminated by a small flashlight and will stand out against the darker background.

Use “Bug Lights”

Bug Lights get their name because they don't attract flying insects as much as white light. You can get these in the form of incandescent, CFL or LED bulbs. They don't emit much blue light, which makes the light look amber. However the CFL and LED bulbs may be “too bright”, so although the illuminated path won't attract bugs, the brightness of the lamp will. To reduce this, the lamps should be shielded so the glare won't attract the insects. You may still be able to get some low wattage incandescent bulbs (<25W).

Filter the white light

White light is the mix of all colours, but the blue component is the “ecological disruptor”. To make a white lamp acceptable, block the blue light with a filter. I show how well one filter works here. This Roscolux #15 Deep Straw filter can be purchased from [BH Photovideo](#). I am sure there are others, but this is the one I found first.

Phosphorescent materials

These materials store up the light energy during the day and re-emit it at night. If the material is thick enough (5 mm) it may glow for the entire night. It has a slight greenish colour. This material is also used as escape lighting along the floor of aircraft, but it is quite thin and doesn't glow for very long. I have seen these at the Mont-Mégantic Observatory and AstroLab facility (Quebec). They are formed into small “pucks” about 4cm in diameter, and help delineate the roadway. They work very well but may be hard to find commercially.

Leave it dark

As strange as it may seem, it may be safer to leave an area dark. Light attracts attention and raises curiosity. If there is a place where you don't want people to go at night - keep it dark. Most animals know that anonymity is the best security.

Mark a spot?

What is it you would like to do? Marking a spot or location doesn't need a flood light. A VERY small low-power lamp will work. This will be enough for you to get your bearings. Consider the “morning”, or “evening” star. It appears as a brilliant “spark” in the sky. It's actually the planet Venus, but my point is that it is VERY easy to see. Its “luminance” is 1 cd/m², which doesn't mean much for most people. But a single LED powered by only a few milliwatts will produce this light. You DON'T need a 10W commercial light fixture.

Illuminate an area

If you want to illuminate an area like a patio then you will need more light. A good way to select the right fixture is by using the power it consumes. A typical LED light fixture produces (very roughly) 100-lumens of light per watt. A CFL bulb produces about 80-lumens per watt. You need only 1-watt to illuminate a 10m² patio (~10-feet x 10-feet) to 10-lux with an LED. To put this into perspective, you can read at 2-3 lux. You DON'T need a 10W commercial light fixture unless you want your patio to be brighter than your living room, which will also attract all the bugs in the neighborhood.

Simply shield

If you do not want to buy an expensive lamp with a good shield, you can make your own for your current light. If you have a low power (<15W) LED or CFL bulb, you can even use cardboard. If you have an incandescent bulb then you should use metal, because most of the power goes into producing heat, which can char or burn a cardboard shield. [Here](#) and [here](#) are links to a couple of examples. I paint the cardboard and metal shields with white outdoor metal paint. It will protect the material for many years. These are also nice craft projects for your children and grandchildren, and will get them thinking about the environment and how to protect it.

LOREN

1. To possibly contact the hotels and see if a lighting curfew would be acceptable if the City were to give them some relief for time-to-comply, as you were suggesting. This could help start the negotiation process. If they say "no", then a completely different approach to the ordinance would be required.

2. A legal question: can the ordinance discriminate between residential properties and commercial (hotels) for conditions and times-to-comply as far as marine lighting is concerned? I believe there is such a distinction between the two that, if possible, each should have a regulation that better fits its conditions.

3. I am very concerned about the Adobe's threat to close off 804 access. This would be a catastrophe for the continuity of the Pacific Coast Trail, and the safety & convenience of those trying to walk the length of the 804. Walkers would have to detour all the way up to Hwy 101, and walk along that very dangerous situation to Aqua Vista Lp. If it could be found through further discussion with the Adobe as to how certain that threat is, it might be helpful.

LANCE

Code conflicts/concerns for Marine Lighting

1. Trespass Lighting 9.42.040B
2. Marine Lighting (damage to wildlife) 9.42.040 D
3. Lights above the eaves 9.42.040G
4. Nuisance lighting 5.08.165A

Because of conflicts with all of these ordinances Marine Lighting cannot be ignored in a lighting ordinance.

Discussed Solutions

1. Ban on new Marine Lighting.
2. Removal of installed Marine Lighting
 - a. in 1 year?
 - b. in 3 years?
 - c. in 5 years?
 - d. When repair/replacement is needed
3. Curfew
 - a. summer 11pm?
 - b. winter 9pm or 10 pm?
 - c. 10pm year around?
4. Modification to lights
 - a. replace with "non-blue lighting" to offer a softer yellow light
 - b. reduce lighting intensity (how much?)
 - c. change direction of lighting to not shine on marine life or neighbors property
5. Negotiations between City officials and Lodging representatives.
6. Combinations of any/all of the above.

HELEN

Marine Lighting definition adjusted to specify illumination of area beyond property line. This distinction circumvents any concerns around whether lighting is primarily security lighting or marine lighting.



1400 Queen Ave SE • Suite 201 • Albany, OR 97322
(541) 967-8720 • FAX (541) 967-6123

MEMORANDUM

DATE: October 20, 2020

TO: Planning Commission, City of Yachats

FROM: Holly Hamilton, Contract Planner
OCWCOG

RE: Hazard Mitigation and Lighting Ordinance
Proposed Comprehensive Plan Goals and Policies
Proposed Development Code Amendments

1. **Issue/Question:** Does the **Municipal Code** address lighting within the City of Yachats in a manner which supports the goals of the Comprehensive Plan?

Explanation: The Municipal Code currently addresses lighting minimally and without specificity; restricting exterior lighting directed to adjacent property (broadly defined by use).

See **Section 5.08.165 Exterior lighting**.

A. Exterior **lighting** shall not be directed from the property of the owner onto private residential or commercial property, streets, parklands, or other public properties.

The City of Yachats **Comprehensive Plan GOAL D** *Conservation of Energy* and **GOAL G** *Control of Urban Growth and Form to sustain the small-town, ocean-side character of the Yachats Community* support the addition of a comprehensive lighting strategy which requires energy efficient lighting standards and addresses the adverse effects of bright, outdoor lighting, light trespass and glare.

The Planning Commission initiated textual changes to YMC Title 9.0, Lighting Standards and Requirements, 9.42 as follows:

Code:

PART I

9.04.030 Definitions (Municipal Code)

PART II

9.42.010 Purpose
9.42.020 Definitions
9.42.030 General Lighting Requirements
9.42.040 General Standards
9.42.050 Standards Based on Use
9.42.060 Variances
9.42.070 Time to Become Compliant
9.42.080 Examples

The development of a comprehensive lighting ordinance pre-dates my arrival to the Planning Desk for the City of Yachats. Municipal lighting code research began in 2017 and has been reviewed through planning commission meetings and work sessions conducted during the last two years.

Comments from the community over the last two weeks have been largely positive, and those that contain questions for the Commissioners follow this report.

2. **Issue/Question:** Is the Yachats Comprehensive Plan and Municipal Code aligned with the Goals of the State to incorporate highest / best strategies for Hazard Mitigation?

Explanation:

The City of Yachats received a Coastal Resilience Grant from the Oregon Coastal Management Program for March through July 2020. The goal of the grant was to utilize best available data and resources to review and update portions of the **Yachats City Comprehensive Plan and Municipal Code**.

The resulting review effected new language / process for the protection of Yachats' natural resources.

Goal A:	Protection of Natural Resources (General)
Goal B:	Protection of Estuarine Resources
Goal C:	Protection of Shoreland Resources
Goal E:	Protection from Natural Hazards and Disasters, and
Goal L:	Beaches

and related **Municipal Codes:**

Sections	9.04.030	(Definitions)
	9.52.050	(Hazard Areas)
	9.52.100	(Older Stabilized dune construction)
	9.52.130	(Development on Beaches).

The City of Yachats held several work sessions including a City Council and Planning Commission joint work session on June 4th, a Planning Commission work session on July 7th, and a Planning Commission work session on July 21st.

Comments Summary:

Mr. Ellington and Ms. Van Wagtendonk

- Recommended - Reference to 5.08.165
- Requested clarification on compliance (fixture vs. bulb)

Ms. Erdhal

- Supporting the Ordinance generally

Mr. Brown

- Requested additional information, and I provided a link to the city's website

Ms. Macdonell

- Resides adjacent to the Dublin Motel – which has 4 very bright lights on their west elevation affecting approximately 10 homes. She is requesting that the motel address this issue.

Mr. Kent Naffziger

- Expressed general support for shielding
- Concern regarding brightness of LED lights

Mr. and Mrs. Nolans

- North Yachats
- Noted brightness of new streetlights
- Supports shielding of light fixtures
- Expressed concern with regard to the Adobe Motel Lighting and how it may affect marine life

Mr. Kemp

- Expressed concern about maximum allowable lumens per residence (for large residences)
- Clarification regarding applicability of variance applications vs. grandfathered in fixtures

November 10, 2020

To: Shannon Beaucaire, City Manager

From: Justin Peterson, Contract City Planner

Re: Draft Amendments Lighting

At the October 20, 2020 Planning Commission meeting the decision was made to continue the hearing to October 28, 2020. At the October 28, 2020 continued Planning Commission meeting, the Commission passed a motion to forward the attached recommended amendment to Yachats Municipal Code to City Council. The Planning Commission identified several changes that are noted in this memo to the lighting ordinance.

Issue/Question: Does the Municipal Code address lighting within the City of Yachats in a manner which supports the goals of the Comprehensive Plan?

Explanation: The Municipal Code currently addresses lighting minimally and without specificity; restricting exterior lighting directed to adjacent property (broadly defined by use).

See Section 5.08.165 Exterior lighting.

A. Exterior lighting shall not be directed from the property of the owner onto private residential or commercial property, streets, parklands, or other public properties.

The City of Yachats Comprehensive Plan GOAL D Conservation of Energy and **GOAL G** Control of Urban Growth and Form to sustain the small - town, ocean - side character of the Yachats Community supportst the addition of a comprehensive lighting strategy which requires energy efficient lighting standards and addresses the adverse effects of bright, outdoor lighting, light trespass and glare.

The Planning Commission initiated textual changes to YMC Title 9, Lighting Standards and Requirements, 9.42 as follows:

At the October 20, 2020 Planning Commission meeting several comments were provided by members of the public. The October 20, 2020 public hearing was continued to October 28, 2020.

The Planning Commission member amendments are listed below:

1. 9.04.030 Definitions

Foot-candle: A measure of luminance or a measure of how bright a light appears to the eye. One foot-candle is equal to one lumen per square foot. As an example, a ~~typical~~ 60-watt incandescent

light (800 lumens) produces an illuminance of one-tenth (0.1) foot candle at a distance of about twenty-five (25) feet.

2. 9.04.030

Individual Lot Limit: The maximum for the sum of all exterior individual light sources on a given property as enumerated in 9.42.050.A and 9.42.050.C.

3. 9.04.030 Definitions

Exterior Lighting: Lighting relating to the outside of a building or structure.

4. 9.42.040.E

Mercury vapor lamps, metal halide lamps, and low-pressure sodium lamps are prohibited.

5. 9.42.050.B.4 and 9.42.050.C.6 – change to read

Poles for luminaires shall be limited to:

- a. Sixteen (16) feet in height for parking lots.
- b. Ten (10) feet in height for walkways and pedestrian facilities.

6. 9.42.050.C.1 Distinguish residences in Commercial Zone

Commercial lots, when developed for commercial uses, shall not exceed limits on trespass lighting as specified in 9.42.040.B.

7. 9.42.050.C.5

High intensity lights shall be limited to two thousand four hundred (2,400) lumens per luminaire. Due to their high energy efficiency, long life, and spectral characteristics, narrow spectrum amber LED's are the preferred illumination source.

8. 9.42.070.A

A. The General Standards described in 9.42.030 and 9.42.040 require compliance within one year after the passage of this Ordinance.

1. When violations of 9.42.040 are cited by the enforcement officer and if the violation can be corrected by replacing an existing bulb with a lower intensity bulb, this corrective action is required to be implemented within forty-eight (48) hours after the citation. Other corrective actions are required to be implemented within thirty (30) days after the citation.

2. Marine lighting existing previous to the enactment of this ordinance must be:

a. Turned off no later than 10:00 pm each night and

b. Removed within one year of the enactment of this ordinance.

9. 9.42.050.B.1

Individual lamps on multi-family properties are limited an output of one thousand two hundred (1,200) lumens each, except for parking areas which may be two thousand (2,000) lumens each.

Council Action:

1. The City Council may approve,
2. Deny or
3. Remand back to the Planning Commission for reconsideration the proposed amendment

Example Motion:

To approve the proposed amendment to the Yachats Municipal Code based on the testimony received, the findings within the staff report, and the evidence and arguments before the City Council at the public hearing on November 17, 2020. The City Council determines that the request by the City of Yachats to add Section §9.42.050 and amend Section §9.04.030, of the Yachats Municipal Code. The City Council hereby adopts the staff memo as findings and the other evidence in the record as findings supporting its decision and approves the Ordinance.

Attachments:

1. Proposed changes from the October 28, 2020 PC Public Hearing
2. Proposed Ordinance prior to the Public Hearing
3. Draft Ordinance
4. Public Comments

RESOLUTION NO. 2021-161

A RESOLUTION ADOPTING THE CITY OF YACHATS'S REPRESENTATION IN THE UPDATES TO THE LINCOLN COUNTY MULTI-JURISDICTIONAL NATURAL HAZARDS MITIGATION PLAN

WHEREAS, the City of Yachats recognizes the threat that natural hazards pose to people, property and infrastructure within our community; and

WHEREAS, undertaking hazard mitigation actions will reduce the potential for harm to people, property and infrastructure from future hazard occurrences; and

WHEREAS, an adopted Natural Hazards Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

WHEREAS, the City of Yachats has fully participated in the FEMA prescribed mitigation planning process to prepare the *Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan*, which has established a comprehensive, coordinated planning process to eliminate or minimize these vulnerabilities; and

WHEREAS, the City of Yachats has identified natural hazard risks and prioritized a number of proposed actions and programs needed to mitigate the vulnerabilities of the City of Yachats to the impacts of future disasters within the *Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan*; and

WHEREAS, these proposed projects and programs have been incorporated into the *Lincoln County, Multi-Jurisdictional Natural Hazard Mitigation Plan* that has been prepared and promulgated for consideration and implementation by the cities and special districts of Lincoln County; and

WHEREAS, the Oregon Office of Emergency Management and Federal Emergency Management Agency, Region X officials have reviewed the *City of Yachats addendum* to the *Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan* and pre-approved it (dated, December 9, 2020) contingent upon this official adoption of the participating governments and entities;

WHEREAS, the NHMP is comprised of comprised of three volumes: Volume I: Basic Plan, Volume II: Jurisdictional Addenda, and Volume III: Appendices, collectively referred to herein as the NHMP; and

WHEREAS, the NHMP is in an on-going cycle of development and revision to improve its effectiveness; and

WHEREAS, City of Yachats adopts the NHMP and directs the City Manager to develop, approve, and implement the mitigation strategies and any administrative changes to the NHMP.

NOW, THEREFORE, BE IT RESOLVED:

Section 1. The City of Yachats adopts *the Lincoln County Multi-Jurisdictional Natural Hazards Mitigation Plan* as an official plan; and

Section 2. The City of Yachats will submit this Adoption Resolution to the Oregon Office of Emergency Management and Federal Emergency Management Agency, Region X officials to enable final approval of the *Lincoln County Multi-Jurisdictional Natural Hazards Mitigation Plan*.

PASSED by the City Council on this
_____ day of _____, 2021.

APPROVED by the Mayor on this
_____ day of _____, 2021.

ATTEST:

APPROVED:

City Manager

Mayor

Adopted this _____ day of _____, 2021

City of Yachats Addendum to the Lincoln County Multi-Jurisdictional Hazard Mitigation Plan



Photo Credits: Sam Beebe, Ecotrust

December 2020

Volume II: Yachats Addendum



Prepared for:
City of Yachats

Prepared by:
University of Oregon
Institute for Policy Research and Engagement
Oregon Partnership for Disaster Resilience

This Natural Hazard Mitigation Plan was prepared by:



UNIVERSITY OF
OREGON

School of Planning, Public
Policy and Management

Institute for Policy
Research and Engagement

Planning grant funding provided by:



FEMA

Federal Emergency Management Agency (FEMA)

Pre-Disaster Mitigation Program

Grant: PDMC-PL-10-OR-2017-002

Disaster Award Number: OR-2018-001

Additional Support Provided by:



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Purpose

This is an update of the City of Yachats addendum to the Lincoln County Multi-Jurisdictional Natural Hazards Mitigation Plan (NHMP). The City of Yachats's original addendum to Lincoln County's NHMP was completed and approved by FEMA in 2009. This addendum supplements information contained in Volume I (Basic Plan) which serves as the NHMP foundation, and Volume III (Appendices) which provide additional information. This addendum meets the following requirements:

- Multi-jurisdictional **Plan Adoption** §201.6(c)(5),
- Multi-jurisdictional **Participation** §201.6(a)(3),
- Multi-jurisdictional **Mitigation Strategy** §201.6(c)(3)(iv), and
- Multi-Jurisdictional **Risk Assessment** §201.6(c)(2)(iii).

Updates to Yachats's addendum are further discussed throughout the NHMP, and within Volume III, Appendix B, which provides an overview of alterations to the document that took place during the update process.

Yachats adopted their addendum to the Lincoln County Multi-jurisdictional NHMP on [Date, 2020]. FEMA Region X approved the Lincoln County NHMP on [Date, 2020] and the City's addendum on [Date, 2020]. With approval of this NHMP the City is now eligible to apply for the Robert T. Stafford Disaster Relief and Emergency Assistance Act's hazard mitigation project grants through [Date, 2025].

Mitigation Plan Mission

The NHMP mission states the purpose and defines the primary functions of the NHMP. It is intended to be adaptable to any future changes made to the NHMP and need not change unless the community's environment or priorities change.

The City concurs with the mission statement developed during the Lincoln County planning process (Volume I, Section 3):

To promote public policy and mitigation activities which will enhance the safety to life and property from natural hazards.

The 2020 NHMP update Steering Committee reviewed the 2015 plan mission statement and agreed it accurately describes the overall purpose and intent of this plan. This is the exact wording that was present in the 2009 and 2015 plan. The Steering Committee believes the concise nature of the mission statement allows for a comprehensive approach to mitigation planning.

Mitigation Plan Goals

Mitigation plan goals are more specific statements of direction that Lincoln County citizens, and public, and private partners can take while working to reduce the City's risk from natural hazards. These statements of direction form a bridge between the broad mission statement, and serve as checkpoints, as agencies, and organizations begin implementing mitigation action items.

The City concurs with the goals developed during the Lincoln County planning process (Volume I, Section 3). All NHMP goals are important and are listed below in no order of

priority. Establishing community priorities within action items neither negates nor eliminates any goals, but it establishes which action items to consider implementing first, should funding become available.

Goal 1: Protect life and reduce injuries resulting from natural hazards.

Goal 2: Minimize public and private property damages and the disruption of essential infrastructure and services from natural hazards.

Goal 3: Implement strategies to mitigate the effects of natural hazards and increase the quality of life and resilience of economies in Lincoln County.

Goal 4: Minimize the impact of natural hazards while protecting, restoring, and sustaining environmental processes.

Goal 5: Enhance and maintain local capability to implement a comprehensive hazard loss reduction strategy.

Goal 6: Document and evaluate progress in achieving hazard mitigation strategies and action items.

Goal 7: Motivate the public, private sector, and government agencies to mitigate the effects of natural hazards through information and education.

Goal 8: Apply development standards that mitigate or eliminate the potential impacts of natural hazards.

Goal 9: Mitigate damage to historic and cultural resources from natural hazards.

Goal 10: Increase communication, collaboration, and coordination among agencies at all levels of government and the private sector to mitigate natural hazards.

Goal 11: Integrate local NHMPs with comprehensive plans and implementing measures.

(Note: although numbered the goals are not prioritized.)

Process and Participation

This section of the NHMP addendum addresses 44 CFR 201.6(a)(3), *Participation*.

In addition to establishing a comprehensive community-level mitigation strategy, the Disaster Mitigation Act of 2000 (DMA2K), and the regulations contained in 44 CFR 201, require that jurisdictions maintain an approved NHMP to receive federal funds for mitigation projects. Local adoption, and federal approval of this NHMP ensures that the city will remain eligible for pre-, and post-disaster mitigation project grants.

The Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Institute for Policy Research and Engagement (IPRE) collaborated with the Department of Land Conservation and Development, Oregon Office of Emergency Management (OEM), Lincoln County, and Yachats to update their NHMP. This project is funded through the Federal Emergency Management Agency's (FEMA) Fiscal-Year 2017 (FY17) Pre-Disaster Mitigation (PDM) Competitive Grant Program OR-2018-001 (PDMC-PL-10-OR-2017-02). Members of the Yachats NHMP Steering committee also participated in the County NHMP update process (Volume III, Appendix B).

The Lincoln County NHMP, and Yachats addendum, are the result of a collaborative effort between citizens, public agencies, non-profit organizations, the private sector, and regional organizations. The Yachats NHMP Steering Committee guided the process of developing the NHMP.

Convener and Committee

The Yachats Contract Planner serves as the NHMP addendum convener. The convener of the NHMP will take the lead in implementing, maintaining, and updating the addendum to the Lincoln County NHMP in collaboration with the designated conveners of the Lincoln County NHMP (Lincoln County Planning Director and Emergency Manager).

Representatives from the City of Yachats steering committee met formally, and informally, to discuss updates to their addendum (Volume III, Appendix B). The steering committee reviewed and revised the city's addendum, with focus on the plan's risk assessment and mitigation strategy (action items).

The current version of the addendum reflects changes decided upon at the designated meetings and through subsequent work and communication with OPDR. The changes are highlighted with more detail throughout this document and within Volume III, Appendix B. Other documented changes include revisions to the city's Risk Assessment and Hazard Identification sections, Action Items, and Community Profile.

The Yachats Steering Committee was comprised of the following representatives:

- Convener, Justin Peterson, OCWCOG Contract Planner
- Rick McClung, Public Works
- Jacqueline Danos, Planning Commission
- Katherine Guenther, Yachats Rural Fire Protection District
- David Buckwald, Public Works
- Dave Mattison, Contract Planner

Public Participation

Public participation was achieved by posting the NHMP publicly and providing community members the opportunity to make comments and suggestions during the review process. Community members were also provided an opportunity for comment via a survey administered by IPRE (Volume III, Appendix F). During the public review period (Attachment B) there were no comments provided.

Implementation and Maintenance

The City Council will be responsible for adopting the Yachats addendum to the Lincoln County NHMP. This addendum designates a steering committee and a convener to oversee the development and implementation of action items. Because the city addendum is part of the county's multi-jurisdictional NHMP, the city will look for opportunities to partner with the county. The city's steering committee will convene after re-adoption of the City of Yachats addendum on an annual schedule; the county is meeting on a quarterly basis and will provide opportunities for participating jurisdictions (cities and special districts) to report on NHMP implementation and maintenance during their meetings. The city's Contract Planner will serve as the convener and will be responsible for assembling the steering committee. The steering committee will be responsible for identifying new risk assessment

data, reviewing status of mitigation actions, identifying new actions, and seeking funding to implement the city's mitigation strategy (actions). The steering committee will be responsible for:

- Reviewing existing action items to determine suitability of funding;
- Reviewing existing, and new risk assessment data to identify issues that may not have been identified at NHMP creation;
- Educating, and training new steering committee members on the NHMP, and mitigation actions in general;
- Assisting in the development of funding proposals for priority action items;
- Discussing methods for continued public involvement; and
- Documenting successes, and lessons learned during the year.

The convener will also remain active in the County's implementation, and maintenance process (Volume I, Section 4).

The City will utilize the same action item prioritization process as the County (Volume I, Section 4).

Implementation through Existing Programs

This NHMP is strategic and non-regulatory in nature, meaning that it does not necessarily set forth any new policy. It does, however, provide: (1) a foundation for coordination and collaboration among agencies and the public in the city; (2) identification and prioritization of future mitigation activities; and (3) aid in meeting federal planning requirements and qualifying for assistance programs. The mitigation plan works in conjunction with other city plans and programs including the Comprehensive Land Use Plan, Capital Improvements Plan, and Building Codes, as well as the [Lincoln County NHMP](#), and the [State of Oregon NHMP](#).

The mitigation actions described herein (and priority actions in Attachment A) are intended to be implemented through existing plans and programs within the city. Plans and policies already in existence have support from residents, businesses and policy makers. Where possible, Yachats will implement the NHMP's recommended actions through existing plans and policies. Many land-use, comprehensive and strategic plans get updated regularly, allowing them to adapt to changing conditions and needs. Implementing the NHMP's action items through such plans and policies increases their likelihood of being supported and implemented. Implementation opportunities are further defined in action items when applicable.

Future development without proper planning may result in worsening problems associated with natural hazards. Yachats's acknowledged comprehensive plan is the City of Yachats Comprehensive Plan. The City implements the plan through the Community Development Code.

Existing Plans and Policies

Communities often have existing plans and policies that guide and influence land use, land development, and population growth. Such existing plans and policies can include comprehensive plans, zoning ordinances, and technical reports or studies. Plans and policies already in existence have support from residents, businesses and policy makers.

Many land-use, comprehensive, and strategic plans get updated regularly, and can adapt easily to changing conditions and needs.

Yachats's Addendum includes a range of recommended action items that, when implemented, will reduce the city's vulnerability to natural hazards. Many of these recommendations are consistent with the goals and objectives of the city's existing plans and policies. Linking existing plans and policies to the addendum helps identify what resources already exist that can be used to implement the action items identified in Yachats's Addendum. Implementing the city's mitigation actions through existing plans and policies increases their likelihood of being supported and getting updated and maximizes the city's resources.

The following are Yachats's existing plans and policies that relate to natural hazards:

- **Comprehensive Plan, 2008, amended 2018:** A document stating the general, long-range policies that will govern a local community's future development.

Relation to Natural Hazard Mitigation: Contains city-specific information regarding natural hazards within the city's jurisdictional boundaries.

- **Municipal Code:** Establishes land use zones to regulate the location of building structure and the use of land within the city of Yachats.

Relation to Natural Hazard Mitigation: Contains city-specific hazard related requirements for the placement and construction of the buildings. Issues such as floodplain development, fire resistant materials, etc. Title 9.54, Flood Damage Prevention Regulations, includes regulations for areas subject to flood damage.

- **Yachats Village Circulation Plan, 1997, amended 2013:** Guides the management of existing transportation facilities and the design and implementation of future facilities.

Relation to Natural Hazard Mitigation: Mitigation principles and strategies can be incorporated into Transportation Systems Plans to protect key transportation infrastructure from natural hazards.

- **Emergency Operations Plan, 2014:** All hazards plan describing how Yachats will respond to incidents.

Relation to Natural Hazard Mitigation: The plan includes a hazard vulnerability assessment, evaluation of hazards in the community, and demonstrates how the community will respond to a natural hazard event such as flood, tsunami, wildfire, etc. Much of the hazard assessment cites the Yachats addendum to the Lincoln County NHMP.

- **Lincoln County Community Wildfire Protection Plan, 2018:** Assists Yachats clarify and refine priorities for protection of life, property, and critical infrastructure in the wildland-urban interface on public and private lands.

Relation to Natural Hazard Mitigation: Enhances the NHMP risk assessment, identification of hazard zones, and includes mitigation actions to reduce risk to wildfire.

Government Structure

The City Council is the policy making body for Yachats. As the elected legislative body in Yachats, the City Council has overall responsibility for the scope, direction and financing of city services. Council members serve four-year terms. Additional departments within the city include the following:

City Manager: The city manager is appointed by the City Council and serves as the city administrative officer of the city government. The city manager provides the leadership and direction for the operation and management of all city departments, and serves as the city's budget officer.

City Recorder: The city recorder assures the timely presentation of formal communications from the public, other agencies and city staff to the City Council. The recorder prepares city council meeting agendas in coordination with the mayor; maintains official city records which reflect the actions of the governing body; maintains a depository of contracts, agreements and official council actions and ensures the timely availability of these records to the council, public other agencies and staff.

City Planner: The city planner provides service and information to the general public regarding phases of planning and community development. The city planner implements ordinance and plan requirements through a site and land use review process. Specifically, the city planner reviews potential development opportunities to ensure compliance with zoning, setback, parking, landscaping, access and other city requirements.

In addition to oversight of the development process, the city planner advises the City Council and Planning Commission on land use and special project matters.

Public Works Department: The Yachats Public Works Department provides responsive community services related to planning, design, construction, operation, maintenance and management of public infrastructure, including streets, sewer, water treatment, waste water treatment, storm drainage, public buildings and other facilities. Services provided by the department contribute to the public health, safety, economic diversity, environmental quality and citizen convenience.

Finance Department: The Finance Department serves the community by managing utility billing, business licenses, collecting taxes and fees, dealing with city expenditures, preparing the city's budget and managing investments. The goal of the Finance Department staff is to provide services with an emphasis on timelines, accuracy and courteous customer service.

Public Library: The Yachats Public Library collects, preserves, and administers organized collections of books and related materials.

Continued Public Participation

An open public involvement process is essential to the development of an effective NHMP. To develop a comprehensive approach to reducing the effects of natural disasters, the planning process shall include opportunities for the public, neighboring communities, local, and regional agencies, as well as, private, and non-profit entities to comment on the NHMP during review. Keeping the public informed of efforts to reduce its risk to future natural hazard events is important for successful NHMP implementation, and maintenance. As such,

the City is committed to involving the public in the NHMP review and update process (Volume I, Section 4). The City posted the plan update for public comment before FEMA approval, and after approval will maintain their addendum to the NHMP on the City's website: <https://www.yachatsoregon.org/>

In addition, natural hazards information dissemination is conducted throughout the year when opportunities present themselves via the city offices and website.

NHMP Maintenance

The Lincoln County Multijurisdictional Natural Hazard Mitigation Plan and city addendum will be updated every five years in accordance with the update schedule outlined in the Disaster Mitigation Act of 2000. During the county plan update process, the city will also review and update its addendum. The convener will be responsible for convening the steering committee to address the questions outlined below.

- Are there new partners that should be brought to the table?
- Are there new local, regional, state, or federal policies influencing natural hazards that should be addressed?
- Has the community successfully implemented any mitigation activities since the plan was last updated?
- Have new issues or problems related to hazards been identified in the community?
- Are the actions still appropriate given current resources?
- Have there been any changes in development patterns that could influence the effects of hazards?
- Have there been any significant changes in the community's demographics that could influence the effects of hazards?
- Are there new studies or data available that would enhance the risk assessment?
- Has the community been affected by any disasters? Did the plan accurately address the impacts of this event?

These questions will help the steering committee determine what components of the mitigation plan need updating. The steering committee will be responsible for updating any deficiencies found in the plan.

Mitigation Strategy

This section of the NHMP addendum addresses 44 CFR 201.6(c)(3(iv), *Mitigation Strategy*.

The City's action items were first developed through a two-stage process during the 2009 NHMP development and revised in 2015. In stage one, OPDR facilitated a work session with the steering committee to discuss the city's risk and to identify potential issues. In the second stage, OPDR, working with the local steering committee, developed potential actions based on the hazards and the issues identified by the steering committee. During the 2019-2020 update process OPDR re-evaluated the Action Items with the county and local steering committees and updated actions, noting what accomplishments had been made and if the actions were still relevant; any new action items were identified at this time. For additional information see the discussion near the end of this document.

The City's actions are listed in Table YA-1. For more detailed information on each action, see the action forms within Attachment A of this addendum.

In addition, there are 23 County Action Items that include the city as an “Affected Jurisdiction” (Table YA-13). For more detailed information on the county actions that involve city participation, see Volume I, Section 3 and the action item forms within Volume III, Appendix A.

Priority Action Items

Table YA-1 presents a list of mitigation actions. The steering committee decided to modify the prioritization of action items in this update to reflect current conditions (risk assessment), needs, and capacity. High priority actions are shown in bold text with grey highlight. The City will focus their attention, and resource availability, upon these achievable, high leverage, activities over the next five-years. Although this methodology provides a guide for the steering committee in terms of implementation, the steering committee has the option to implement any of the action items at any time. This option to consider all action items for implementation allows the committee to consider mitigation strategies as new opportunities arise, such as capitalizing on funding sources that could pertain to an action item that is not currently listed as the highest priority. Refer to Attachment A for detailed information for each high priority action. Full text of the plan goals referenced in Table YA-1 is located on page YA-2.

Table YA-I City of Yachats Action Items

Natural Hazard Action ID	Action Item	Coordinating Organization (Lead)	Cost	Timing
Yachats #1	Identify over-water transportation alternatives in the event of bridge collapse in an earthquake and/or tsunami.	Public Works	L	Long
Yachats #2	Continue to maintain and keep stocked two mobile storage containers with emergency supplies and equipment.	Administration	L to M	Ongoing
Yachats #3	Update and implement actions identified in the Yachats Storm Drainage Master Plan	Administration	L to H	Ongoing
Yachats #4	Encourage purchase of flood insurance, even for those outside of NFIP mapped hazard areas.	Administration	L	Ongoing
Yachats #5	Provide supplemental water supply tanks in key locations to ensure availability of water throughout the city.	Administration	H	Short
Yachats #6	Obtain LiDAR collection for DOGAMI and adopt and adopt Landslide code updates.	Administration	L	Short
Yachats #7	Encourage the County to evaluate and implement erosion control mitigation projects for NE Ocean View Drive/ 804 Trail.	Public Works	M to H	Long
Yachats #8	Work with the owners of repetitive flood loss buildings in the city to identify cost effective mitigation strategies including consideration of relocation, elevation, or buy-out.	Floodplain Manager	H	Long
Yachats #9	Relocate or mitigate City Hall, Water Treatment, and Wastewater Treatment plants out of tsunami inundation zone	Public Works	H	Long
Yachats #10	Implement land use strategies and options to increase community resilience by creating an adoption ready tsunami code.	Planning	L	Short
Yachats #11	Research drought resiliency code amendments (Gray water systems, green infrastructure, etc.). Consider drafting a drought resiliency ordinance.	Planning	L	Long
Yachats #12	Develop a non-potable water source for fire suppression (purple pipe).	Public Works	M	Long
Yachats #13	Develop a Climate Resilience Plan	Public Works	M	Medium

Source: City of Yachats NHMP Steering Committee, 2020.

Cost: L (less than \$50,000), M (\$50,000-\$100,000), H (more than \$100,000)

Timing: Ongoing (continuous), Short (1-4 years), Medium (4-10 years), Long (10 or more years)

Risk Assessment

This section of the NHMP addendum addresses 44 CFR 201.6(b)(2) - Risk Assessment. In addition, this chapter can serve as the factual basis for addressing Oregon Statewide Planning Goal 7 – Areas Subject to Natural Hazards. Assessing natural hazard risk has three phases:

- **Phase 1:** Identify hazards that can impact the jurisdiction. This includes an evaluation of potential hazard impacts – type, location, extent, etc.
- **Phase 2:** Identify important community assets and system vulnerabilities. Example vulnerabilities include people, businesses, homes, roads, historic places and drinking water sources.
- **Phase 3:** Evaluate the extent to which the identified hazards overlap with, or have an impact on, the important assets identified by the community.

The local level rationale for the identified mitigation strategies (action items) is presented herein, and within Volume I, Section 2, and Volume III, Appendix C. The risk assessment process is graphically depicted in Figure YA-1. Ultimately, the goal of hazard mitigation is to reduce the area of risk, where hazards overlap vulnerable systems.

Figure YA-1 Understanding Risk



Hazard Analysis

The Yachats NHMP steering committee reviewed and revised the plan's Hazard Analysis and Risk Assessment section. Changes from their previous HVA and the County's HVA were made where appropriate to reflect distinctions in probability, vulnerability, and risk from natural hazards unique to the City of Yachats, which are discussed throughout this addendum.

Table YA-2 shows the hazard analysis matrix for Yachats listing each hazard in rank order from high to low. The table shows that hazard scores are influenced by each of the four categories combined. For local governments, conducting the hazard analysis is a useful step in planning for hazard mitigation, response, and recovery. The method provides the jurisdiction with sense of hazard priorities but does not predict the occurrence of a hazard. See Volume I, Section 2: Risk Assessment of the Lincoln County NHMP for a description of the methodology.

One catastrophic hazard (Cascadia Subduction Zone earthquake) and four chronic hazards (drought, windstorm, landslide, and winter storm) rank as the top hazard threats to the City (Top Tier). Local tsunami, riverine floods, wildfire, and coastal floods comprise the next highest ranked hazards (Middle Tier). Coastal erosion, crustal earthquake, tornado, distant tsunami, and volcanic event comprise the lowest ranked hazards in the City (Bottom Tier).

Table YA-2 Hazard Analysis Matrix – City of Yachats

Hazard	History	Vulnerability	Maximum Threat	Probability	Total Threat Score	Hazard Rank	Hazard Tiers
Drought	20	50	100	70	240	#1	Top Tier
Windstorm	20	50	100	70	240	#1	
Landslide	20	40	100	70	230	#3	
Winter Storm (Snow/Ice)	18	40	100	70	228	#4	
Earthquake (Cascadia)	10	50	100	49	209	#5	
Tsunami (Local)	2	50	100	49	201	#6	Middle Tier
Flood (Riverine)	20	35	50	70	175	#7	
Wildfire	10	35	70	56	171	#8	
Flood (Coastal)	20	25	50	70	165	#9	
Coastal Erosion	20	15	50	49	134	#10	Bottom Tier
Earthquake (Crustal)	10	20	40	42	112	#11	
Tornado	8	10	30	56	104	#12	
Tsunami (Distant)	10	15	30	35	90	#13	
Volcanic Events	2	5	40	7	54	#14	

Source: City of Yachats NHMP Steering Committee (2020)

Table YA-3 categorizes the probability and vulnerability scores from the hazard analysis for the city and compares the results to the assessment completed by the Lincoln County NHMP Steering Committee (areas of differences are noted with **bold** text within the city ratings).

Table YA-3 Probability and Vulnerability Comparison

Hazard	Yachats		County	
	Probability	Vulnerability	Probability	Vulnerability
Coastal Erosion	Moderate	Low	High	Low
Drought	High	High	High	Moderate
Earthquake (Cascadia)	Moderate	High	Moderate	High
Earthquake (Crustal)	Low	Moderate	Low	Moderate
Flood (Coastal)	High	Moderate	High	Moderate
Flood (Riverine)	High	Moderate	High	Moderate
Landslide	High	High	High	High
Tornado	High	Low	High	Low
Tsunami (Distant)	Moderate	Low	Moderate	Low
Tsunami (Local)	Moderate	High	Moderate	High
Volcanic Event	Low	Low	Low	Low
Wildfire	High	Moderate	High	Moderate
Windstorm	High	High	High	High
Winter Storm (Snow/Ice)	High	High	High	Moderate

Source: City of Yachats NHMP Steering Committee and Lincoln County NHMP Steering Committee (2020)

Community Characteristics

Table YA-4, Appendix C (Volume III), and the following section provide information on City specific demographics and assets. Many of these community characteristics can affect how natural hazards impact communities, and how communities choose to plan for natural hazard mitigation. Considering the city specific assets during the planning process can assist in identifying appropriate measures for natural hazard mitigation. Between 2012 and 2019 the City grew by 55 people (8%).¹ According to the State's official coordinated population forecast, between 2019 and 2040 the City's population is forecast to grow by 40% to 1,061.² City population varies according to the season, with up to a 400% increase in population occurring during the summer months (July/ August peak); the population increases roughly from 750 to 2,500. Median household income decreased by 5% between 2012 and 2017.³ The City has an educated population with 92% of residents 25 years, and older holding a high school degree, 45% have a bachelor's degree or higher. As of 2019 the Lincoln County School District has a 76% graduation rate (Yachats students travel 8 miles north to attend schools in Waldport).

The city of Yachats sits at the mouth of the Yachats River overlooking the Pacific Ocean. Development in Yachats spreads mostly north to south along US-Highway 101 and slightly east along Yachats River Road (see Figure YA-2). Dense commercial areas in Yachats exist along US-Highway 101 and are centrally located in the downtown area and around the Yachats River. Residential development surrounds the downtown commercial core. The city's Comprehensive Plan identifies land use needs within the city and its urban growth boundary. There are three oceanfront state parks located within the city.

¹ Portland State University, Population Research Center, "Annual Population Estimates", 2019.

² Portland State University, Population Research Center, "Oregon Population Forecast Program Cycle 1 (2014-2017)". 2017.

³ Social Explorer, Table T57, U.S. Census Bureau, 2013-2017 and 2008-2012 American Community Survey Estimates.

The city's Comprehensive Plan identifies land use needs within the city and its urban growth boundary Figure YA-2 shows the city of Yachats's zoning map. New development has complied with the standards of the [Oregon Building Code](#), and the city's development code including their floodplain ordinance.

Economy

Yachats's commercial areas developed along primary routes and residential development followed nearby (see Figure YA-2).

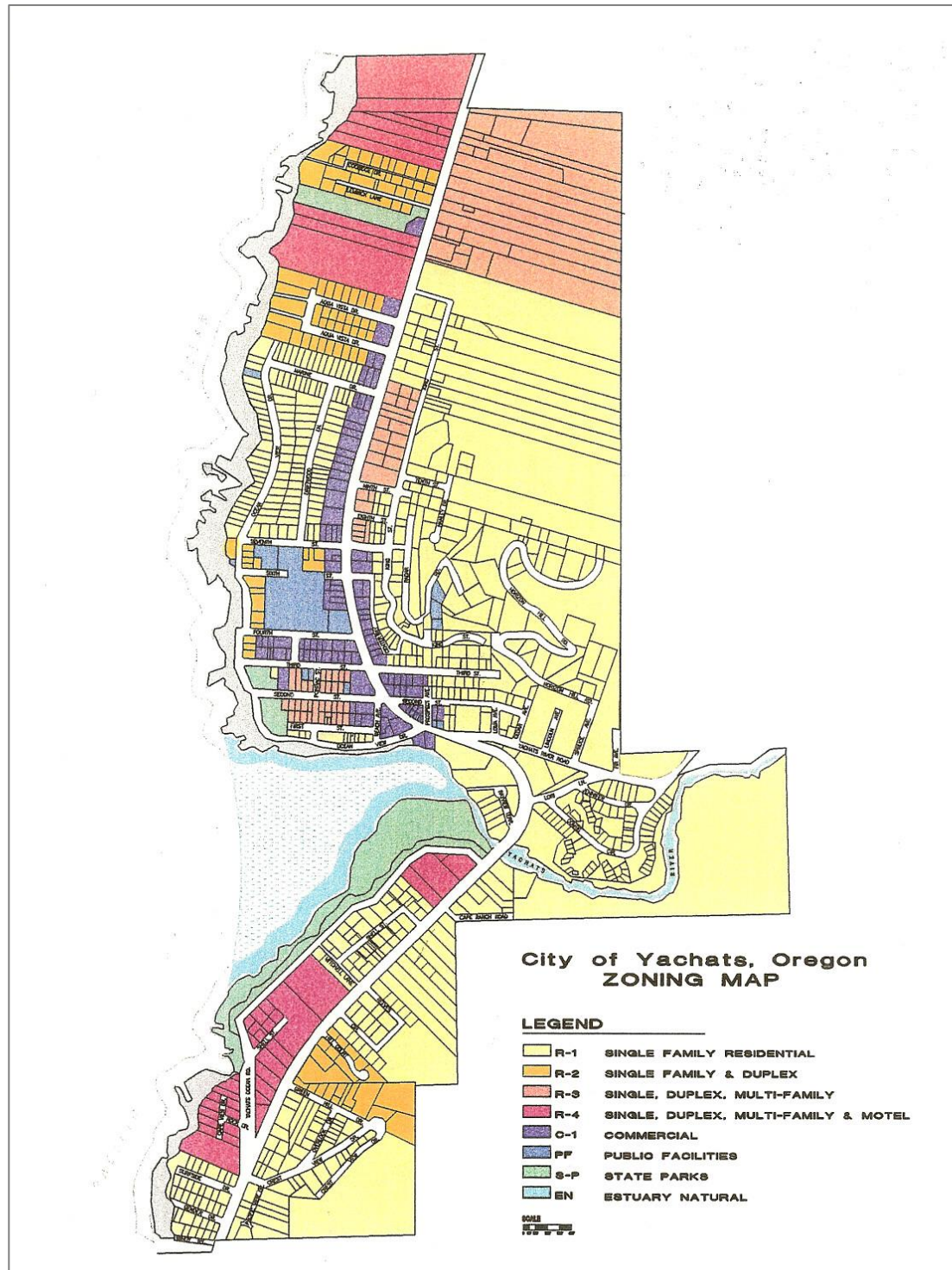
Most workers residing in the city (86%, 446 people) travel outside of the city for work primarily to Newport and Yachats.⁴ A significant population of people travel to the city for work, (83% of the workforce, 355 people) primarily from Newport and Yachats.

About 40% of the resident population 16 and over is in the labor force (237 people) and are employed in a variety of occupations including professional (22%), building and grounds cleaning (20%), office and administrative support (15%), sales (13%), and food preparation and serving (13%) occupations.⁵

⁴ U.S. Census Bureau. LEHD Origin-Destination Employment Statistics (2002-2017). Longitudinal-Employer Household Dynamics Program, accessed on April 25, 2020 at <https://onthemap.ces.census.gov>.

⁵ Social Explorer, Tables A17008 & A17002, U.S. Census Bureau, 2013-2017 American Community Survey Estimates.

Figure YA-2 Zoning Map



Source: City of Yachats

Table YA-4 Community Characteristics

Population Characteristics		
2012 Population	705	
2019 Population	760	
2040 Forecasted Population	1,061	
Race (non-hispanic or latino) and Ethnicity (Hispanic)		
White	77%	
Black/ African American	3%	
American Indian and Alaska Native	0%	
Asian	0%	
Native Hawaiian and Other Pacific Islander	1%	
Some Other Race	0%	
Two or More Races	6%	
Hispanic or Latino (of any race)	14%	
Limited or No English Spoken	32	5%
Vulnerable Age Groups		
Less than 15 Years	69	10%
65 Years and Over	315	48%
Age Dependency Ratio		0.37
Disability Status		
Total Population	162	24%
Children (Under 18)	0	0%
Working Age (18 to 64)	61	23%
Seniors (65 and older)	101	32%
Income Characteristics		
Households by Income Category		
Less than \$15,000	45	13%
\$15,000-\$29,999	82	24%
\$30,000-\$44,999	54	16%
\$45,000-\$59,999	69	20%
\$60,000-\$74,999	3	1%
\$75,000-\$99,999	34	10%
\$100,000-\$199,999	44	13%
\$200,000 or more	13	4%
Median Household Income	\$43,125	
Poverty Rates		
Total Population	91	14%
Children (Under 18)	28	36%
Working Age (18 to 64)	54	20%
Seniors (65 and older)	9	3%
Housing Cost Burden (Cost > 30% of household income)		
Owners with Mortgage	47	25%
Renters	90	59%

Source: U.S. Census Bureau, 2013-2017 American Community Survey; Portland State University, Population Research Center, "Annual Population Estimates", 2019. Portland State University, Population Research Center, "Oregon Population Forecast Program Cycle 1 (2014-2017)". 2017.

Housing Characteristics		
Housing Units		
Single-Family	763	88%
Multi-Family	83	10%
Mobile Homes	23	3%
Year Structure Built		
Pre-1970	313	36%
1970-1989	225	26%
1990-2009	318	37%
2010 or later	13	12%
Housing Tenure and Vacancy		
Owner-occupied	191	22%
Renter-occupied	153	18%
Seasonal	443	51%
Vacant	82	9%

The city of Yachats is rich with beauty and abundant natural resources. The coastal community offers recreational amenities, activities and attractions including, but not limited to fishing, beachcombing, clam digging, hiking/ trail running, mountain biking (including the Gravel Epic ride), camping, whale watching, crabbing, windsurfing, scenic flights, golfing, kite-flying and more. In and around the community are the Cape Perpetua Federal Recreational Area and Museum, Smelt Sands State Park, Yachats State Park, the Commons Community Center, and the Yachats Ocean Wayside State Park.

The climate in Yachats is moderate. Average monthly temperatures range from lows of 36-40° F (November through April) to highs of 74-76° F (July through September) degrees. The driest months are July and August (average about 0.85-1.15 inches of precipitation per month) the wettest months are November through March (average 11-14 inches of precipitation per month). Yachats has an average annual precipitation of approximately 92 inches (73%, 67 inches fall November through March).

Asset Identification

The following assets identified by the City of Yachats were first gathered from the Asset Identification meetings held with community members in 2007. These assets were confirmed and updated by the City steering committee during the 2019-2020 update process.

Cultural and Historic Resources

Historic and cultural resources such as historic structures and landmarks can help to define a community and may also be sources of tourism dollars. Because of their role in defining and supporting the community, protecting these resources from the impact of disasters is important.

The city of Yachats's website offers noteworthy time periods in the community's history.⁶ Before white settlers came to the Yachats area, the coast was inhabited by Native Americans, known as the Alsi and Yahuts tribes. In 1787, Captain Cook, one of the first white people sailing along the Oregon Coast, named Cape Perpetua, an 800-foot cape overlooking the ocean. In 1855, the Coast Range Reservation and Alsea Sub-Agency established a community to be the home to different tribes of Native Americans. In 1871, it noted that the first white child was born in Yachats. In 1875, the Coast Range Reservation and Alsea Sub-Agency was closed when the area was opened to settlement. In 1892, the Oceanview, Benton County Post Office was established in what later became known as the town of Yachats. Vacationers began visiting the Yachats area in the early 1900's. In 1914, the US Forest Service built a narrow road around Cape Perpetua. In 1917, the community was renamed from "Oceanview" to the present name of Yachats. In 1918, soldiers of the Signal Corps were organized at camps in the area to log for spruce used to build airplanes for war efforts. In 1926, the Little Log Church was built to serve the community. The church later became the property of the Lincoln County Historical Society, who eventually turned the church over to the city of Yachats. It is now maintained as the Little Log Church and Museum. In the 1930's, the Roosevelt Memorial Highway, now known as US Highway 101, was completed, opening the coastal area to a greater influx of people. In the 1930's and 40's, the Great Depression and World War II affected the area. Today, Yachats is a lively community home to permanent and seasonal residents, with a vigorous tourist population.

Historic and cultural resources such as historic structures and landmarks can help to define a community and may also be sources of tourism dollars. Because of their role in defining and supporting the community, protecting these resources from the impact of disasters is important. The National Register of Historic Places and the State Historic Preservation Office lists historic sites and properties within the city:⁷

- US Spruce Production Railroad XII, Spur 5, Linear District],1925
- Ten Mile Creek Bridge, Hwy 101, 1931
- North Fork Of The Yachats Bridge, North Fork Yachats River, c.1938
- Cape Perpetua Shelter and Parapet, Waldport Ranger District, 1933
- (35-LNC-73) Trail 804 Midden #3, Address Restricted

⁶ City of Yachats History. [www. http://www.ci.yachats.or.us/Yachats%20History.htm](http://www.ci.yachats.or.us/Yachats%20History.htm)

⁷ Oregon Historic Sites Database, <http://heritagedata.prd.state.or.us/historic/>, accessed July 17, 2020.

- (35-LNC-72) North 804 Midden, Address Restricted
- (35-LNC-66) Yachats Trail 804 Midden, Address Restricted
- (35-LNC-65) Smelt Sands Midden, Address Restricted
- (35-LNC-63) Archeological Site, Address Restricted
- (35-LNC-57) Cape Creek Site, Address Restricted
- (35-LNC-56) Good Fortune Cove Site, Address Restricted
- (35-LNC-55) Good Fortune Point Site, Address Restricted
- (35-LNC-54) Archeological Site, Address Restricted
- (35-LNC-48) Archeological Site, Address Restricted

The following list includes six other sites listed on the State Historic Preservation Office website:

- [House], 10740 Yachats River Rd
- Upper Yachats School, E Hwy 101, c.1920
- Roosevelt Coast Highway, Hwy 101, c.1919
- Little Log Church by the Sea, 328 W 3rd St, 1927
- Alsea Sub-Agency Indian Reservation Headquarters, Hwy 101, 1875
- [House], 2550 N Hwy 101, c.1930

The city of Yachats holds many community events throughout the year, including, but not limited to, the Yachats Guitar Festival, the Yachats Music Festival, Yachats Big Band, the Yachats Farmers Market, various arts and craft shows, the Yachats la de da Parade, Festivities and Fireworks Show, the Yachats Village Mushroom Festival, the Annual Smelt Fry, the Yachats Celtic Music Festival, and the Yachats Youth and Families Activities Program, as well as a wide range of restaurants, galleries and shops.⁸

Critical Facilities & Infrastructure

Critical facilities are those that support government and first responders' ability to act in an emergency. They are a top priority in any comprehensive hazard mitigation plan. Individual communities should inventory their critical facilities to include locally designated shelters and other essential assets, such as fire stations, and water and wastewater treatment facilities.

Yachats has the following critical facilities (**bold** indicates facility was included in the Risk Report):

- **Yachats Rural Fire Protection District:** 2056 Hwy 101 N
- The Commons Building: 441 Hwy 101 N
- Public Library: 560 W 7th Street
- Water treatment plant: 500 W 7th Street
- Wastewater treatment plant: 500 W 7th Street
- City Hal (501 Hwy 101 N)

In addition, the Sea Aire Assisted Living Facility (1882 Hwy 101 N) is considered a community asset serving the elderly population of the community.

⁸ City of Yachats Events. <http://www.ci.yachats.or.us/calendar/commons/events.htm>

In addition, the Sea Aire Assisted Living Facility (1882 Hwy 101 N) is considered a community asset serving the elderly population of the community.

Transportation

Mobility plays an important role in Yachats, and the daily experience of its residents, and businesses. Motor vehicles represent the dominant mode of travel through, and within the City. Yachats is also served by Lincoln County Transit Routes 497 with service running six days a week with stops in Yachats and by the Florence-Yachats Connector.

Roads/Seismic lifelines

Seismic lifeline routes help maintain transportation facilities for public safety and resilience in the case of natural disasters. Following a major earthquake, it is important for response and recovery agencies to know which roadways are most prepared for a major seismic event. The Oregon Department of Transportation has identified lifeline routes to provide a secure lifeline network of streets, highways, and bridges to facilitate emergency services response after a disaster.⁹

System connectivity and key geographical features were used to identify a three-tiered seismic lifeline system. Routes identified as Tier 1 are considered the most significant and necessary to ensure a functioning statewide transportation network. The Tier 2 system provides additional connectivity to the Tier 1 system, it allows for direct access to more locations and increased traffic volume capacity. The Tier 3 lifeline routes provide additional connectivity to the systems provided by Tiers 1 and 2.

Highway 101 (Tier I) is the major north-south transportation route through the City (see Figure YA-3). Highway 18 (Tier I, north of Lincoln City), Highway 20 (Tier III, Newport), and Highway 126 (Tier II, Florence) are the major east-west transportation routes connecting the coast to the Willamette Valley. Highway 34 (Waldport) is not a seismic program highway, however, it does connect to the Willamette Valley through Alsea.

⁹ Oregon Department of Transportation. Oregon Seismic Lifeline Evaluation, Vulnerability Synthesis, and Identification, *Oregon Seismic Lifeline Routes*, May 15 2012.

Figure YA-3 Yachats Functional Classification of Roads



Source: Oregon Department of Transportation

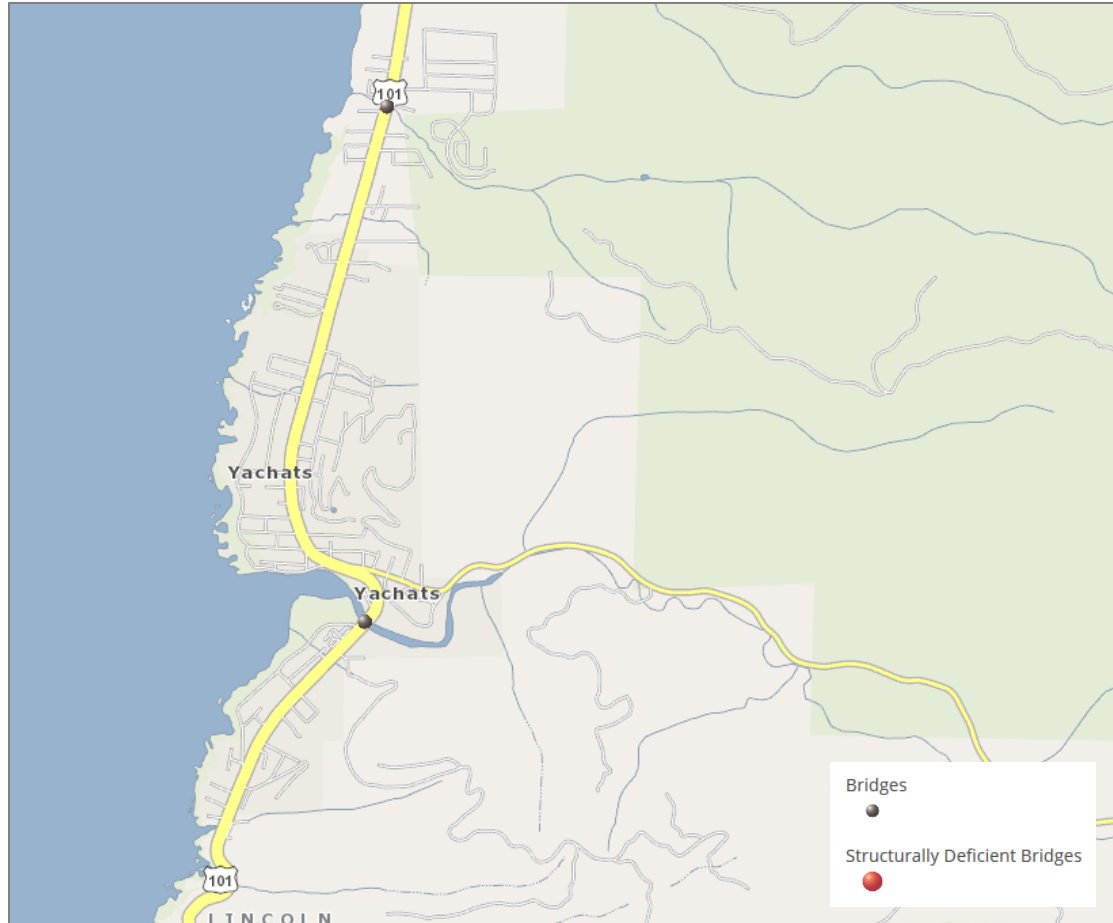
Bridges

Because of earthquake risk, the seismic vulnerability of the city's bridges is an important issue. Non-functional bridges can disrupt emergency operations, sever lifelines, and disrupt local and freight traffic. These disruptions may exacerbate local economic losses if industries

are unable to transport goods. Bridges and culverts within the city that are critical or essential include (see Figure YA-4):

- Yachats River, US 101 (1977), (Bridge ID 01173D)
- (culvert) Starr Creek, US 101 (1930), (Bridge ID 01451)

Figure YA-4 Oregon Bridges and Structurally Deficient Bridges



Source: Oregon Department of Transportation, ODOT TransGIS, accessed August 7, 2020

More information on Seismic Design of bridges is on the ODOT website:

<https://www.oregon.gov/odot/Bridge/Pages/Seismic.aspx>

Railroads

There are no railroads in Yachats.

Airports

There are no public airports in Yachts. Wakonda Beach State Airport is located north just south of Waldport and the Newport Municipal Airport is in the South Beach area of Newport. The city has no commercial service airports. The nearest commercial airports are in Eugene and Portland.

Utility Lifelines

Utility lifelines are the resources that the public relies on daily such as, electricity, fuel and communication lines. If these lines fail or are disrupted, the essential functions of the

community can become severely impaired. Utility lifelines are closely related to physical infrastructures, like dams and power plants, as they transmit the power generated from these facilities.

Generally, the network of electricity transmission lines running throughout the city is operated by Central Lincoln PUD (see their addendum for more information). The Williams Gas Pipeline provides natural gas that is delivered to customers in the city by Northwest Natural Gas. These lines may be vulnerable as infrequent natural hazards, like earthquakes, could disrupt service to natural gas consumers across the region.

The city water, wastewater, and stormwater (culvert) systems include the following:

Water Infrastructure

- Water Treatment Plant: 963 Yachats River Road
- Storage tanks:
 - Primary tank, 1.0 MG, east side of Radar Road (ca. 1992)
 - Round tank, 0.2 MG, Radar Road (ca. 1945)
 - Upper tank, 0.01 MG, Horizon Hill Road (ca. 1964)
 - Pressure tank, 1,000-gallon, Horizon Hill Road
 - Blackstone Middle Tank 0.1 MG Gimlet Drive (ca. 2008)
 - Blackstone Upper tank 0.125 MG Horizon Hill Road (ca. 2008)
 - South Tank 0.25 MG Crestline (ca. 2017)
- Pump stations:
 - Radar Road, pumps between the primary tank and round tank
 - Upper Tank pump station used for pressure tank
 - Blackstone Lower pump station
 - Blackstone Middle pump station
 - Blackstone Upper pump station

Wastewater Infrastructure

- Wastewater Treatment Plant: 500 W 7th Street

Stormwater Infrastructure (e.g. Culverts)

- Numerous Critical or Essential culverts (some listed under bridges above)

Community Organizations and Programs

Social systems can be defined as community organizations and programs that provide social and community-based services, such as health care or housing assistance, to the public. In planning for natural hazard mitigation, it is important to know what social systems exist within the community because of their existing connections to the public. Often, actions identified by the plan involve communicating with the public or specific subgroups within the population (e.g. elderly, children, low income). The county and cities can use existing social systems as resources for implementing such communication-related activities because these service providers already work directly with the public on several issues, one of which could be natural hazard preparedness and mitigation. The countywide community organizations that are active within the city and county and may be potential partners for implementing mitigation actions can be found in Appendix C: Community Profile.

Lincoln County School District

The Lincoln County School District has two schools in Yachats including Crestview Heights Elementary and Yachats Middle and High School. For more information on School District assets see their addendum in Volume II.

Existing Mitigation Activities

Existing mitigation activities include current mitigation programs and activities that are being implemented by the community to reduce the community's overall risk to natural hazards. Documenting these efforts can assist participating jurisdictions better understand risk and can assist in documenting successes. The following efforts have occurred or are ongoing within Yachats:

- The city of Yachats has an emergency planning steering committee that meets monthly.
- A Community Emergency Response Team (CERT) is active in Yachats. The CERT Program educates people about disaster preparedness and trains citizens to assist with the community's immediate needs in the aftermath of a disaster (when emergency services are not immediately available). CERT can assist in saving lives and protecting property.
- The city of Yachats coordinates emergency planning activities with the Yachats Rural Fire Protection District.
- The city of Yachats enforces a setback requirement for all developments located along the coast. The purpose of the setback is to reduce property damages related to coastal erosion, windstorms, and flooding. The setback requirement also serves to satisfy a portion of the city's natural hazard goal, as defined in the Yachats Comprehensive Plan: "Through regulation of the location and type of development, the city shall work to protect life and property from natural disasters and hazards, such as landslides, fire, tsunamis and flooding."
- The city's Comprehensive Plan and Zoning and Land Use Code address natural hazards. Specific hazardous areas have been identified by RNKR Associates in their work *Environmental Hazards, Coastal Lincoln County, Oregon, 1979*. The city has defined 'hazardous areas' and will allow development in these areas if adequate protective measures can be employed to prevent or minimize damage in accordance with city development code standards.
- State legislation: SB 379, implemented as Oregon Revised Statutes (ORS) 455.446 and 455.447, limits construction of new essential facilities and special occupancy structures in tsunami flooding zones.

Hazard Profiles

The following sections briefly describe relevant information for each profiled hazard. More information on Lincoln County hazards can be found in Volume I, Section 2 *Risk Assessment* and in the [Risk Assessment for Region 1, Oregon Coast, Oregon SNHMP \(2020\)](#).

In addition, the Oregon Department of Geology and Mineral Industries (DOGAMI) conducted a multi-hazard risk assessment (Risk Report) for Lincoln County, including the City of Yachats. The study was funded through the FEMA Risk MAP program and was completed in 2020. The Risk Report provides a quantitative risk assessment that informs communities of their risk related to the following natural hazards: coastal erosion, Cascadia Subduction Zone earthquake and tsunami, flood, landslide, and wildfire (summarized herein). The City hereby incorporates the Risk Report into this NHMP addendum by reference ([DOGAMI, O-20-11](#)).

Coastal Erosion

The steering committee determined that the city's probability for coastal erosion is **moderate**, meaning one incident is likely within the next 35 to 75 years and that their vulnerability to coastal erosion is **low**, meaning it is expected that less than 1% of the City's population or property could be affected by a major coastal erosion event. *The probability and vulnerability ratings have decreased since the previous NHMP.*

Volume I, Section 2 describes the characteristics of coastal erosion hazards, as well as the history, location, extent, and probability of a potential event. Coastal erosion is a natural process that continually affects coastal areas; in Yachats and elsewhere along the Pacific, coastal erosion becomes a hazard when lives and properties are at risk of death, injury, or damage. Coastal erosion is typically a gradual process, which can be greatly accelerated in the event of a storm or climate factors that increase the potential for coastal erosion.

Future Climate Projection:

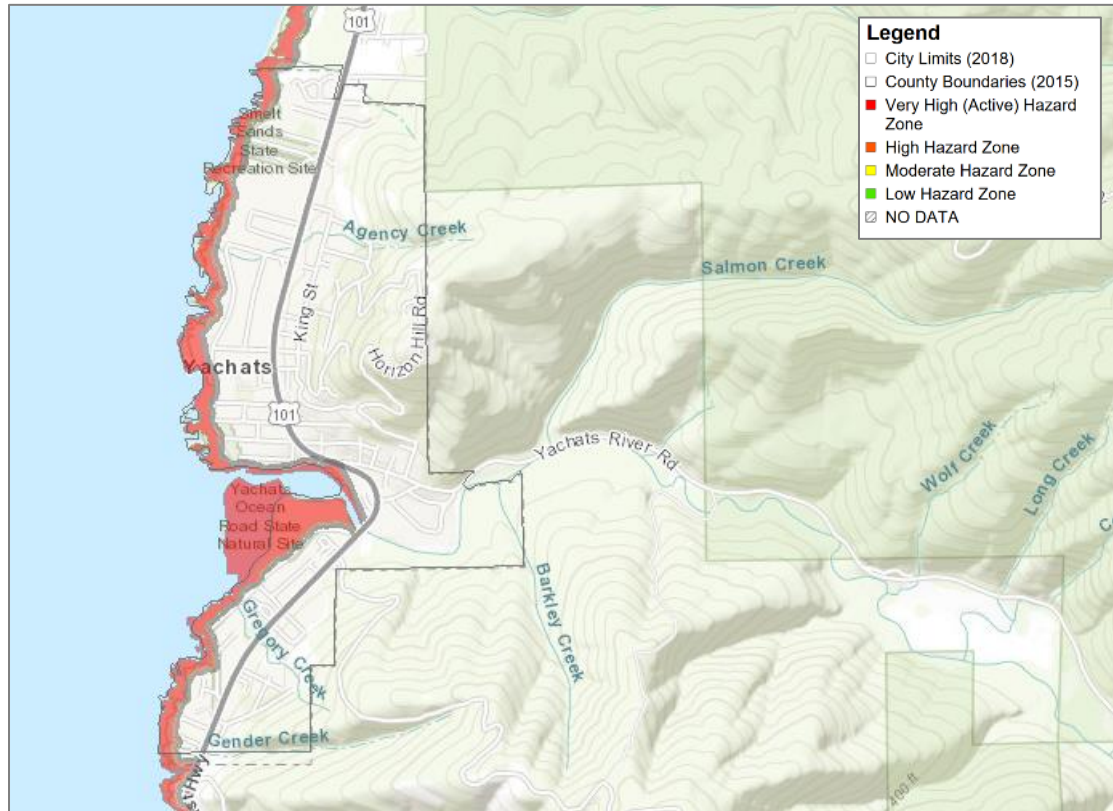
According to OCCRI report "*Future Climate Projections: Lincoln County*" (Appendix G) the risk of coastal erosion is expected to increase due to sea level rise and changing wave dynamics.

Vulnerability Assessment

The county identified areas along Highway 101 that have sustained erosion induced damages. The city can be characterized as consisting of low rock beaches, basalt cliffs and benches overlain by sedimentary uplifted marine terrace deposits along US Highway 101. Additionally, the city has steep hillsides east of Highway 101 and southeast of the Yachats River. The most susceptible area for coastal erosion is along the oceanfront where concentrations of homes, businesses, roads and infrastructure are located. The steering committee identified the area along Ocean View Drive from 6th Street down to the Yachats Recreation Area as experiencing on-going erosion; this road includes major water and sewer lines. The city of Yachats has engaged in projects to mitigate coastal erosion by installing hardened shoreline stabilization in the form of rip-rip, relocating pump stations away from vulnerable locations, and stabilizing banks. The city previously installed rip-rap to protect utilities and streets along the bluffline. Records of other specific events are not available at this time; however, events may have occurred in tandem with previous storms.

Potential community-related impacts, including shoreline reduction, economic (tourism-related) impacts, and property/infrastructural damage, are adequately described within the Volume I, Section 2 of the NHMP. See Figure YA-5 for locations of the city’s coastal erosion hazard along coastal bluffs on the city’s western edge.

Figure YA-5 Coastal Erosion Hazard



Source: [Oregon Explorer: Map Viewer](#) – To explore and view map detail click hyperlink to left.

The city of Yachats uses the RNKR Environmental Hazards Inventory of Coastal Lincoln County, Oregon as a mapping and reporting tool for coastal erosion. Although not included within this addendum, the coastal erosion hazards map can be obtained through the Planning and Community Development Department at City Hall.

Natural Hazard Risk Report for Lincoln County

The **Risk Report** ([DOGAMI, O-20-11](#)) provides hazard analysis summary tables that identify populations and property within Lincoln County that are vulnerable to coastal erosion. The Risk Report provides a distinct profile for Yachats.

The Risk Report provides an analysis of dune-backed beaches and bluff-backed shorelines to identify the general level of susceptibility due to storm-induced erosion, sea level rise, and subsidence due to CSZ earthquake event. The Risk Report performed an analysis of buildings, including critical facilities, to determine exposure for each community. According to the Risk Report the following resident population and property (public and private) within Yachats may be impacted by profiled coastal erosion scenario (Table YA-5).

Very few people are may be displaced by coastal erosion. These people are expected to have mobility or access issues and/or may have their residences impacted by coastal

erosion. Properties that are most vulnerable to the coastal erosion hazard are those that are developed in an area of steep dunes or cliffs. Only a few buildings (residential, commercial, industrial) are exposed to the high coastal erosion hazard zone. The value of exposed buildings is \$325,000 (a fraction of total building value). It is important to note that impact from coastal erosion may vary depending on areas that are impacted during an event.

Table YA-5 Potentially Displaced Residents and Exposed Buildings, Coastal Erosion

Community Overview: Yachats						
Population		Buildings		Critical Facilities	Total Building Value (\$)	
690		1,050		1	160,911,000	
Exposure Analysis: Coastal Erosion High Hazard Scenario						
Potentially Displaced Residents		Exposed Buildings			Exposed Building Value	
Number	Percent	Number	Percent	Critical Facilities	Value (\$)	Percent
2	0.3%	4	0.4%	0	325,000	0.2%

Source: IPRE. Data adapted from DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-20. Note: City population based on the 2010 Census population.

Critical Facility Vulnerability¹⁰

There are no critical facilities exposed to the profiled coastal erosion scenario.

Drought

The steering committee determined that the city's probability for drought is **high**, meaning at least one incident is likely within the next 35 years and that their vulnerability to drought is **high**, meaning more than 10% of the city's population or property could be affected by a major drought event. *These ratings have not changed since the previous NHMP.*

Volume I, Section 2 of Lincoln County's NHMP adequately describes the causes and characteristics of drought hazards, as well as the history, location, extent, and probability of a potential event. Due to a cool, wet climate, past and present weather conditions have generally spared coastal communities from the effects of a drought.

The city is working to protect their water rights on the Yachats River, including the Reedy and Salmon creeks to secure future access and supply (there is some concern in the community that logging within the Salmon Creek Watershed compromises their water availability). Likewise, Yachats has an intergovernmental agreement with the South Lincoln County Water District and the city of Waldport for delivery services in the event of a water-shortage. In addition, Yachats's population expands during the summer tourist season, peaking in July/ August with a tourist population upwards to 400% the normal population of the community (approximately 750); during these period water meter usage expands from about 150 to about 800; the tourism population, in addition to natural population growth,

¹⁰ DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-21.

will further strain the existing system. To mitigate water availability the city installed a 250,000 gallon storage tank in 2017 and plans additional water storage projects.

Due to lack of a predictable water supply, the Yachats Steering Committee believes that the impacts of a potential event are much greater for the city than for the county. Although the city has IGA's to ensure deliverable water in the event of a water shortage, the South Lincoln County Water District and the city of Waldport have similar contamination concerns as Yachats. Funding was recently secured and emergency treatment machines capable of treating 9,000 gallons per day for drinking water were installed. In addition, the city Public Works Department has an ongoing water main inspection program to prevent the loss of water due to leaks. The city also has long range plans to construct a series of reservoirs with water storage capacity of up to 500,000 gallons (one 250,000 gallon tank completed in 2017). The city has a Water Management and Conservation Plan and program in place (Section 7 of their Water System Master Plan). In addition to reduced water supplies, a drought will increase the chances of wildfire and significantly reduce tourism activities. If hotels and rental houses, for example, are unable to accommodate guests, the city's economy would greatly suffer.

The city currently receives water from four (4) surface water sources: Yachats River, Cape Creek, Reedy Creek, and Salmon Creek.¹¹ Water from the city reservoirs is treated at the water treatment facility that can treat up to 0.50 million gallons per day (mgd) or 350 gallons per minute. Following treatment water flows via water transmission mains to four water storage reservoirs (combined 1.21 million gallons capacity) in the northern half of the city at elevations ranging from 210 to 545 feet. Most of the system utilizes 6- or larger diameter pipes. There are two pump stations that boost pressure to higher elevations. The City has enough capacity to meet current and anticipated future demand.

Future Climate Projection:

According to OCCRI report "*Future Climate Projections: Lincoln County*" (Appendix G) the probability of future drought conditions (low summer soil moisture, low spring snowpack, low summer runoff, low summer precipitation, and high summer evaporation) is expected to be more frequent by the 2050s.

Vulnerability Assessment

Due to insufficient data and resources, Yachats is currently unable to perform a quantitative risk assessment, or exposure analysis, for this hazard. State-wide droughts have historically occurred in Oregon, and as it is a region-wide phenomenon, all residents are equally at risk. Structural damage from drought is not expected; rather the risks apply to humans and resources. Industries important to the City of Yachats's local economy such as fishing have historically been affected, and any future droughts would have tangible economic and potentially human impacts.

In addition to reduced water supplies, a drought will increase the chances of wildfire and significantly reduce tourism activities. If hotels, for example, are unable to accommodate guests, the city's economy would greatly suffer.

¹¹ [Yachats Water Master Plan](#), 2001.

Earthquake

The steering committee determined that the city's probability for a Cascadia Subduction Zone (CSZ) Earthquake event is **moderate**, meaning one incident may occur within the next 35 to 75 years and that their vulnerability to a CSZ event is **high**, meaning that more than 10% of the City's population or property could be affected by a major CSZ earthquake event. The steering committee determined that the city's probability for a crustal earthquake event is **low**, meaning one incident may occur within the next 100 years and that their vulnerability to a Crustal Earthquake event is **moderate**, meaning that between 1% and 10% of the city's population or property could be affected by a major crustal earthquake event. *The city's probability to crustal earthquake was decreased since the previous NHMP, all other ratings have remained the same.*

Volume I, Section 2 of Lincoln County's NHMP adequately describes the causes and characteristics of earthquake hazards, as well as the history, location, extent, and probability of a potential event. Earthquake-induced damages are difficult to predict, and depend on the size, type, and location of the earthquake, as well as site-specific building and soil characteristics. Presently, it is not possible to accurately forecast the location or size of earthquakes, but it is possible to predict the behavior of soil at any site. In many major earthquakes, damages have primarily been caused by the behavior of the soil.

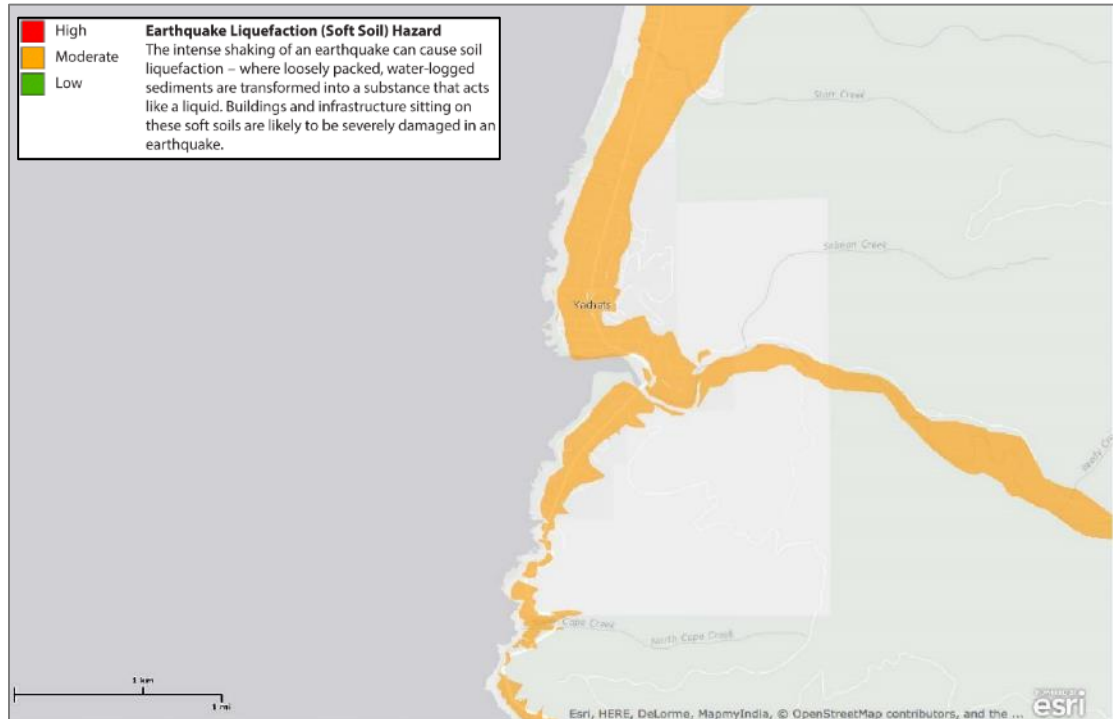
The Pacific Northwest experienced a subduction zone earthquake estimated at magnitude 9 on January 26, 1700. The earthquake generated a tsunami that caused damage as far away as Japan. Cascadia subduction zone earthquakes and associated tsunamis have occurred on average every 500 years over the last 3,500 years in the Pacific Northwest. The time between events has been as short as 100 to 200 years and as long as 1,000 years. The geologic record indicates that over the last 10,000 years approximately 42 tsunamis have been generated off the Oregon Coast in connection to ruptures of the CSZ (19 of the events were full-margin ruptures and arrived approximately 15-20 minutes after the earthquake).¹²

The Oregon Department of Geology and Mineral Industries (DOGAMI), in partnership with other state and federal agencies, has undertaken a rigorous program in Oregon to identify seismic hazards, including active fault identification, bedrock shaking, tsunami inundation zones, ground motion amplification, liquefaction, and earthquake induced landslides.

The figures below show earthquake hazards that affect the city, including the soft soil/liquefaction hazard (Figure YA-6), expected ground shaking for crustal events (Figure YA-7), and for the Cascadia Subduction Zone event (Figure YA-8). The extent of the damage to structures and injury and death to people will depend upon the type of earthquake, proximity to the epicenter and the magnitude and duration of the event. The soft soils figure below shows that in general the soils in Yachats have low to moderate liquefaction potential; the areas of the population along the coastline are more susceptible to liquefaction than areas further in land and away from rivers.

¹² DLCD. *Oregon State Natural Hazard Mitigation Plan*. 2020 (Draft).

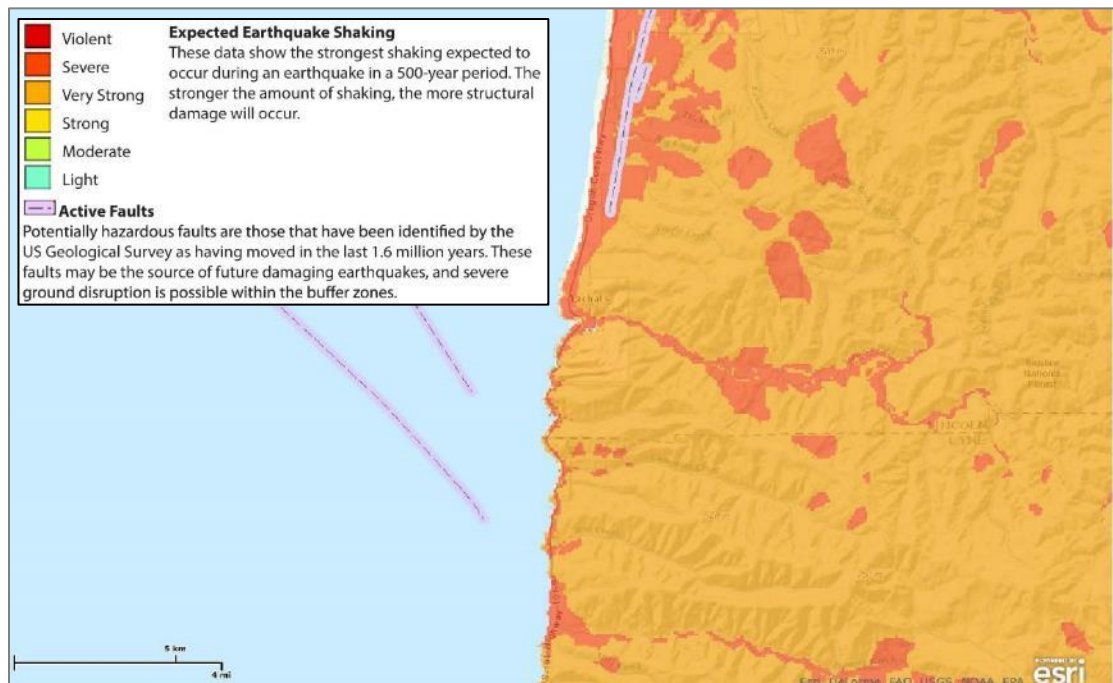
Figure YA-6 Earthquake Liquefaction (Soft Soil) Hazard



Source: [Oregon HazVu: Statewide Geohazards Viewer](#) – To explore and view map detail click hyperlink to left.

Shaking from the combined earthquake scenario is expected to be very strong to violent for much of Yachats as shown in Figure YA-7. The figure also shows active onshore and offshore faults.

Figure YA-7 Combined Earthquake Events Expected Shaking and Active Faults



Source: [Oregon HazVu: Statewide Geohazards Viewer](#) – To explore and view map detail click hyperlink to left.

Figure YA-8 shows expected shaking with a Cascadia Earthquake. The figure shows that the entire city will receive severe to violent shaking.

Figure YA-8 Cascadia Earthquake Expected Shaking



Source: [Oregon HazVu: Statewide Geohazards Viewer](#) – To explore and view map detail click hyperlink to left.

Vulnerability Assessment

The city's concentrated population and resources, as well as the soil characteristics and relative earthquake hazards described above are cause for significant effort toward mitigating the earthquake hazard. The city's infrastructure is highly vulnerable to a severe earthquake event. Sewer lines, water lines, power lines, water and sewer treatment systems, and City Hall were identified by the steering committee as vulnerable assets. The city would also expect damage to roads following a CSZ event, as well as deaths and severe injuries region wide. Education and outreach regarding the CSZ is an on-going endeavor in Yachats.

2007 Rapid Visual Survey

Building codes were implemented in Oregon in the 1970s, however, stricter standards did not take effect until 1991 and early 2000s. As noted in the community characteristics section (Table YA-4), approximately 62% of residential buildings were built prior to 1990, which increases the City's vulnerability to the earthquake hazard (according to the Risk Report 47% of all buildings are pre-code and 19% are low code)¹³. Information on specific public buildings' (schools and public safety) estimated seismic resistance, was determined by DOGAMI in 2007. The only facility evaluated by DOGAMI was the former Yachats RFPD building at 217 W 2nd Street.

¹³ DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table D-2.

Mitigation Activities

Earthquake mitigation activities listed here include current mitigation programs and activities that are being implemented by Yachats agencies or organizations.

A primary mitigation objective of the city is to construct or upgrade critical and essential facilities and infrastructure to withstand future earthquake events. Although seismic retrofit grant awards per the [Seismic Rehabilitation Grant Program](#)¹⁴ have not been used by the city, the School District has retrofitted at risk schools in Waldport, that serve Yachats students, through local resources (see the Lincoln County School District addendum for more information). Additionally, the fire district relocated to a site at higher ground north of downtown Yachats (2056 Hwy 101 N).

Natural Hazard Risk Report for Lincoln County

The **Risk Report** ([DOGAMI, O-20-11](#)) provides hazard analysis summary tables that identify populations and property within Lincoln County that are vulnerable to earthquake. The Risk Report provides a distinct profile for Yachats.

According to the Risk Report the following resident population and property (public and private) within the study area may be impacted by the profiled magnitude 9.0 Cascadia Subduction Zone (CSZ) event. *Note: Due to the simultaneous nature of a CSZ earthquake and tsunami, loss estimates have been separated in the following tables to avoid double counting. Building losses within the tsunami zone are considered total. See the tsunami section for additional information.*

The Risk Report performed an analysis of buildings, including critical facilities, to determine exposure for each community. According to the Risk Report the following resident population and property (public and private) within Yachats may be impacted by the profiled earthquake scenarios (Table YA-6). *Note: Due to the simultaneous nature of a CSZ earthquake and tsunami, loss estimates have been separated in the following tables to avoid double counting. Building losses within the tsunami zone are considered total. See the tsunami section for additional information.*¹⁵

Approximately 19% of the City's population (131 people) may be displaced by a magnitude 9.0 CSZ earthquake and tsunami event. Of those, approximately less than 1% will be impacted by the accompanying tsunami. *Note: The data does not include potentially impacted visitor populations that may be lodging or at a public venue during a CSZ earthquake and tsunami event.* Earthquakes will impact every building in the City, to some degree, by a CSZ magnitude 9.0 earthquake and tsunami. Building damage (loss) estimates are reported for buildings expected to be damaged by the earthquake outside of the tsunami inundation zone (medium-sized). Additional exposure information is provided for buildings within the tsunami inundation zone to obtain the combined total damage (loss) estimate. Buildings reported as "damaged" in the area *outside* the tsunami zone include yellow tagged (extensive, limited habitability) and red tagged (complete, uninhabitable) buildings, while 100% of buildings exposed *inside* the tsunami inundation area are

¹⁴ The Seismic Rehabilitation Grant Program (SRGP) is a state of Oregon competitive grant program that provides funding for the seismic rehabilitation of critical public buildings, particularly public schools and emergency services facilities.

¹⁵ DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-20.

considered “damaged” (complete, uninhabitable). The City has 321 buildings that are expected to be damaged by the CSZ earthquake and tsunami event. The combined (earthquake and tsunami) value of building damage losses are \$41.6 million.

The Risk Report estimated losses show that the age of the building stock is the primary metric of earthquake vulnerability. Communities with older building stock are expected to have higher losses. However, if buildings were retrofitted to at least “moderate code” standards the impact of the event would be reduced. The Risk Report concludes that loss estimates for the City drop from 22% to 16% (\$10.5 million decrease in loss) when all buildings are upgraded to at least moderate code level.¹⁶ *Note: earthquake vulnerability retrofit benefits are minimized in areas of liquefaction and landslide where additional geotechnical mitigation would be needed.*

Table YA-6 Potentially Displaced Residents and Exposed Buildings, Earthquake

Community Overview: Yachats						
Population		Buildings		Critical Facilities	Total Building Value (\$)	
690		1,050		1	160,911,000	
Exposure Analysis: Earthquake CSZ M9.0 (Deterministic) Scenario						
Potentially Displaced Residents		Damaged Buildings			Exposed Building Value	
Number	Percent	Number	Percent	Critical Facilities	Loss Estimate (\$)	Loss Ratio
125	18.1%	289	27.5%	1	35,498,000	22.1%
Exposure Analysis (within Tsunami Zone - Medium)						
6	0.9%	32	3.0%	0	6,089,000	3.8%
Total Exposure						
131	19.0%	321	30.6%	1	41,587,000	25.8%

Source: IPRE. Data adapted from DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-20. Note: City population based on the 2010 Census population.

Critical Facility Vulnerability¹⁷

- Yachats Fire Station and South Lincoln Ambulance Service (Fire District)

Note 1: It is expected that bridges in the area may be impassable by vehicles for over 24 months. As such bringing resources into Yachats by sea and air will be necessary.

Note 2: The city also expects city hall and their water treatment and wastewater treatment plants and systems to be impacted by earthquake.

Tsunami

The steering committee determined that the city’s probability for a distant tsunami event is **moderate** meaning one incident may occur within the next 35 to 75 years and that their

¹⁶ DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table B-2.

¹⁷ Ibid, Table A-21.

vulnerability to a distant tsunami event is **low**, meaning that less than 1% of the city's population or property could be affected by a major distant tsunami event. The steering committee determined that the city's probability for a local tsunami event is **moderate**, meaning one incident may occur within the next 35 to 75 years and that their vulnerability to a local tsunami event is **high**, meaning that more than 10% of the City's population or property could be affected by a major local tsunami event. *The city's probability to distant tsunami decreased since the previous NHMP, all other ratings have remained the same.*

Volume I, Section 2 of Lincoln County's NHMP adequately describes the causes and characteristics of tsunami hazards, as well as the history, location, extent, and probability of a potential event. The Pacific Northwest experienced a subduction zone earthquake estimated at magnitude 9 on January 26, 1700. The earthquake generated a tsunami that caused damage as far away as Japan. Cascadia subduction zone earthquakes and associated tsunamis have occurred on average every 500 years over the last 3,500 years in the Pacific Northwest. The time between events has been as short as 100 to 200 years and as long as 1,000 years. The geologic record indicates that over the last 10,000 years approximately 42 tsunamis have been generated off the Oregon Coast in connection to ruptures of the CSZ (19 of the events were full-margin ruptures and arrived approximately 15-20 minutes after the earthquake).¹⁸ Distant tsunamis happen more regularly than CSZ related local tsunamis.

It is difficult to predict when the next tsunami will occur. According to the Oregon NHMP the coast has experienced 25 distant tsunamis in the last 145 years with only three causing measurable damage. Thus, the average recurrence interval for tsunamis on the Oregon coast from distant sources would be about six (6) years. However, the time interval between events has been as little as one year and as much as 73 years. Since only a few tsunamis caused measurable damage, a recurrence interval for distant tsunamis does not have much meaning for the City.

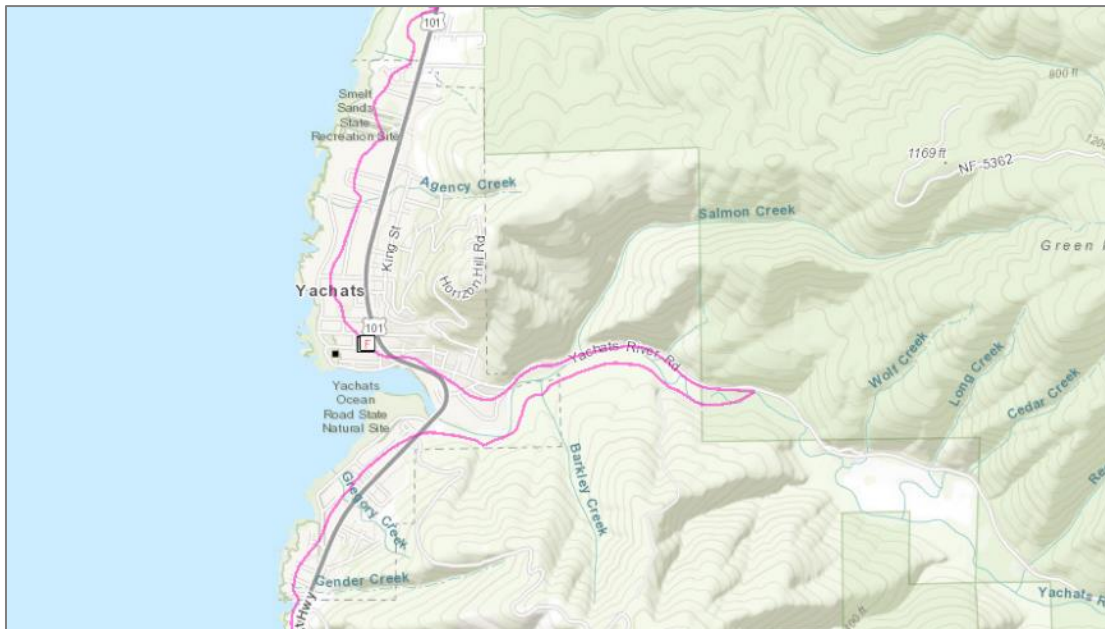
A 9.0 magnitude earthquake originating from Japan caused approximately \$7.1 million worth of damages along the Oregon Coast. Particularly, there was extensive damage to the Port of Brookings (Curry County; \$6.7 million), as well as the Port of Yachats (Lincoln County; \$182,000), and Charleston Harbor (Coos County; \$200,000); Salmon Harbor on Winchester Bay (Douglas County) and the South Beach Marina in Newport (Lincoln County) were also affected. On March 15, 2011 Governor Kitzhaber declared a State of Emergency was declared by Executive Order in Curry County. Approximately 40% of all docks at the Port of Brookings were destroyed or rendered unusable (including a dock leased by the U.S. Coast Guard) compromising commercial fishing and U.S. Coast Guard operations. Along the Oregon Coast local official activated the Emergency Alert System and sirens, implemented "reverse 9-1-1" and conducted door-to-door notices in order to evacuate people from the tsunami inundation zone. Local governments activate their Emergency Operations Centers and the state activated its Emergency Coordination Center. For more information view Volume II, Hazard Annex.

In 1995, the Department of Geology and Mineral Industries (DOGAMI) conducted an analysis resulting in extensive mapping along the Oregon Coast. The maps depict the expected inundation for tsunamis produced by a magnitude 8.8 to 8.9 undersea earthquake. The tsunami maps were produced to help implement Senate Bill 379 (SB 379); digitized in

¹⁸ Oregon Natural Hazard Mitigation Plan. Department of Land Conservation and Development. 2015

2014 ([O-14-09](#)). SB 379, implemented as Oregon Revised Statutes (ORS) 455.446 and 455.447, and Oregon Administrative Rules (OAR) 632-005, limit construction of new essential facilities and special occupancy structures in tsunami flooding zones. Figure YA-9 shows the regulatory tsunami inundation line showing that much of the residential development west of Highway 101 is impacted by tsunami inundation. Note: HB 3309 (2019) effective January 1, 2020 repealed the ban on building “new essential facilities, hazardous facilities, major structures, and special occupancy structures” inside the tsunami inundation zone (SB 379 line):¹⁹

Figure YA-9 Regulatory (SB 379) Tsunami Inundation Line



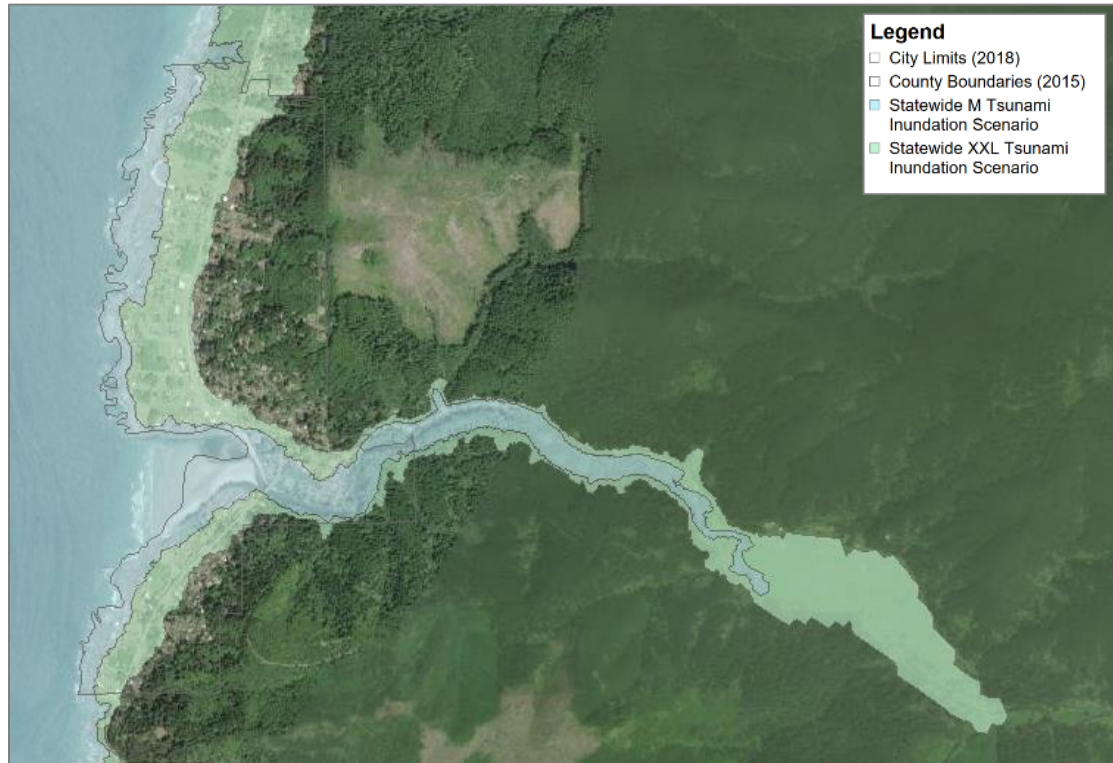
Source: [Oregon HazVu: Statewide Geohazards Viewer](#) – To explore and view map detail click hyperlink to left.

Tsunami inundation maps were created by the Department of Geology and Mineral Industries (DOGAMI) to be used for emergency response planning for coastal communities. Maps were created for local and distant source tsunami events. The local source tsunami inundation maps display the output of computer modeling showing five tsunami event scenarios shown as “T-shirt” sizes S, M, L, XL, and XXL. Figure YA-10 shows the M and XXL tsunami inundation scenarios. The distant source tsunami inundation maps show the potential impacts of tsunamis generated by earthquakes along the “Ring of Fire” (the Circum-Pacific belt, the zone of earthquake activity surrounding the Pacific Ocean). The distant tsunami inundation maps model the 1964 Prince William Sound event (Alaska M9.2) and a hypothetical Alaska Maximum event scenario; only the Alaska Maximum Wet/ Dry Zone is shown on the map. Both the local and distant source tsunami inundation maps show simulated wave heights and inundation extents for the various scenarios.

¹⁹ Oregon Legislature. HB 3309 (2019).

<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB3309>

Figure YA-10 Tsunami Inundation Map (M and XXL Scenarios)



Source: [Oregon Explorer: Map Viewer](#) – To explore and view map detail click hyperlink to left.

For more information on the regulatory and non-regulatory maps visit the Oregon Tsunami Clearinghouse resource library:

Regulatory (SB 379) - <http://www.oregongeology.org/tsuclearinghouse/pubs-regmaps.htm>
(Note: HB 3309, effective January 1, 2020, repealed ban on building essential facilities within the tsunami inundation zone, SB 379 line.)

Non-Regulatory Tsunami-Inundation Maps:

<http://www.oregongeology.org/tsuclearinghouse/pubs-inumaps.htm>

Evacuation maps (brochures) are available for the populated areas of Lincoln County. The Department of Geology and Mineral Industries (DOGAMI) developed the evacuation zones in consultation with local officials; local officials developed the routes that were reviewed by the Oregon Department of Emergency Management (OEM). The maps show the worst-case scenario for a local source and distant source tsunami event and are not intended for land-use planning or engineering purposes.

For more information on the evacuation brochures visit the Oregon Tsunami Clearinghouse resource library:

<http://www.oregongeology.org/tsuclearinghouse/pubs-evacbro.htm>

A free application is also available that displays the evacuation routes in coastal areas of Oregon: http://www.nanoos.org/mobile/tsunami_evac_app.php

Vulnerability Assessment

In 2013, DOGAMI produced new Tsunami Inundation Maps (TIMs) for the entire Oregon coast. The TIMs identify both local and distant Tsunami Inundation Zones (TIZs) by event size. The maps also tabulate the affected buildings located within the local and distant source tsunami inundation zones. The Risk Report section below provides detailed information on the impact to the City from a CSZ earthquake and medium tsunami.

When the tourist population swells, many are spending time at accommodations, facilities, or along the beach/bluff-line in these vulnerable locations. An existing assisted living facility (Sea Aire Assisted Living Facility, 1882 Hwy 101 N) is located on the eastern fringe of the tsunami inundation zone. Additionally, the city water and wastewater treatment plants and city hall are among the buildings within the local source tsunami inundations zone. Severe damage could occur to low-lying areas of the city, including roads, bridges, communication systems, and infrastructure within Yachats, among other assets described in the county's plan. The city of Yachats recognizes the importance of continuing education and outreach, especially to the transient populations (i.e., tourists), and plans to implement greater outreach in the future. The city utilizes a reverse 911 service as the tsunami warning system; rental houses are notified if a land line is present.

As shown in Table YA-4 there are about 23 manufactured housing units (mobile homes) in Yachats. Manufactured homes built prior to 2003 are subject to slipping off their foundations potentially compromising the occupants' ability to exit. The compromised egress may hinder timely evacuation.

Population vulnerability is characterized in terms of exposure, demographic sensitivity, and short-term resilience of at-risk individuals. Nate Wood, et al. (USGS) performed a cluster analysis of the data for coastal communities in the Pacific Northwest to identify the most vulnerable communities in the region.²⁰ Wood, et al. conducted a comprehensive analysis to derive overall community clusters based on (1) the number of people and businesses in the tsunami hazard zone, (2) the demographic characteristics of residents in the zone, and (3) the number of people and businesses that may have insufficient time to evacuate based on slow and fast walking speeds. According to the study Lincoln County (including Yachats) has relatively low numbers of "residents, employees, or customer-heavy businesses" inside the tsunami hazard zones and will likely have enough time to reach high ground before a tsunami wave arrives.

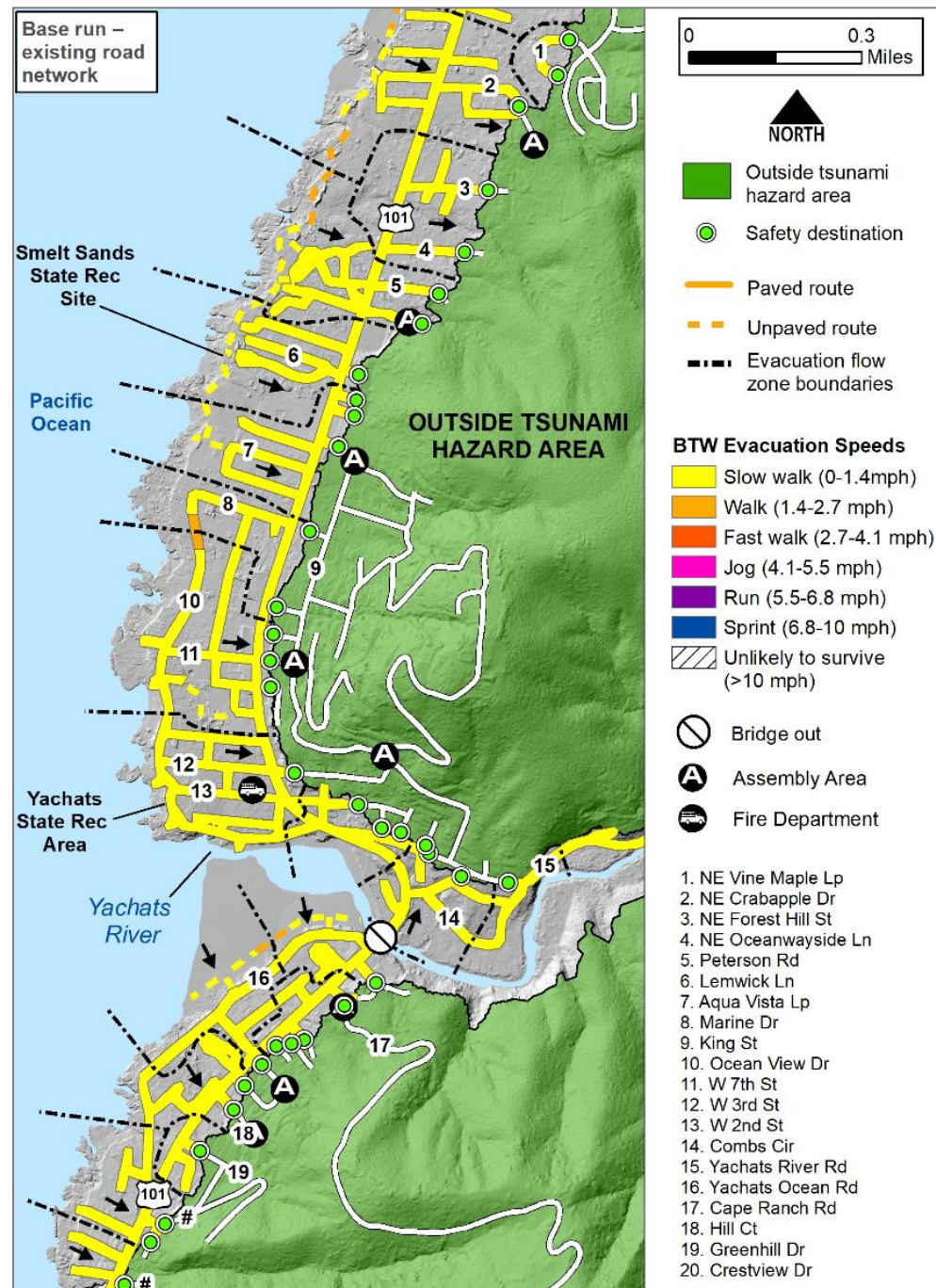
In 2019, DOGAMI published a tsunami evacuation analysis using the XXL inundation zone which covers the largest CSZ event likely to occur based on the historical record.²¹ Safety is reached when evacuees have reached "high ground", or 20 feet beyond the limit of tsunami inundation. An analysis was conducted for Yachats. According to the model the first waves arrive along the open coast 26 minutes after the start of earthquake shaking with most of Yachats inundated about 4 minutes later. North Yachats from Camp One to Starr Creek Dr is expected to be completely inundated under the XXL tsunami inundation scenario. High ground is generally accessible at a slow walking speed of 2 feet per second (fps) or 1.4 mph. Evacuees closer to the ocean (Ocean View Dr and Yachats Ocean Rd) will need to move

²⁰ Nathan J. Wood, Jeanne Jones, Seth Spielman, and Mathew C. Schmittlein. "Community clusters of tsunami vulnerability in the US Pacific Northwest", PNAS 2015 112 (17) 5354-5359.

²¹ DOGAMI, Open-File Report O-19-06.

faster in order to beat the wave and make it to high ground (see Figure YA-11). It is expected that the Yachats River Bridge will fail, and that north and south parts of Yachats will be disconnected during a tsunami. Prompt evacuation, knowledge of the route, signage, and alternative route designation due landslide activity is necessary to improve evacuation speeds. For details see *Tsunami evacuation analysis of Lincoln City and unincorporated Lincoln County: Building community resilience on the Oregon coast* (DOGAMI, 2019, [O-19-06](#)).

Figure YA-11 Beat the Wave modeling in Yachats (CSZ earthquake XXL inundation zone)



Source: DOGAMI, Open-File Report O-19-06.

Natural Hazard Risk Report for Lincoln County

The **Risk Report** ([DOGAMI, O-20-11](#)) provides hazard analysis summary tables that identify populations and property within Lincoln County that are vulnerable to tsunami. The Risk Report provides a distinct profile for Yachats.

The Risk Report performed an analysis of buildings, including critical facilities, to determine exposure for each community. According to the Risk Report the following resident population and property (public and private) within Yachats may be impacted by the profiled tsunami scenario (Table YA-7).

About 12% the city's population (85 people) may be displaced by a magnitude 9.0 CSZ tsunami event (note there are additional people that will be displaced by the earthquake). This is fewer people than those exposed within the Senate Bill 379 line (215 people). *Note: The data does not include potentially impacted visitor populations that may be lodging or at a public venue during a CSZ earthquake and tsunami event.* Building damage (loss) estimates are reported for buildings expected to be damaged by the tsunami inundation zone (medium-sized and SB 379). All 169 buildings exposed *inside* the tsunami inundation area are considered "damaged" (complete, uninhabitable); the number of buildings damaged is higher under the SB 379 scenario (408 buildings).

Table YA-7 Potentially Displaced Residents and Exposed Buildings, Tsunami

Community Overview: Yachats						
Population		Buildings		Critical Facilities	Total Building Value (\$)	
690		1,050		1	160,911,000	
Exposure Analysis: Tsunami CSZ M9.0 (Deterministic) Scenario						
Potentially Displaced		Exposed Buildings			Exposed Building	
Number	Percent	Number	Percent	Critical Facilities	Value (\$)	Percent
85	12.3%	169	16.1%	0	37,266,000	23.2%
Exposure Analysis: Tsunami SB 379 Regulatory Line						
215	31.2%	408	38.9%	0	67,112,000	41.7%

Source: IPRE. Data adapted from DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-20. Note: City population based on the 2010 Census population.

Critical Facility Vulnerability²²

There are no critical facilities exposed to the profiled tsunami inundation scenario.

Note 1: Although critical facilities are not exposed to the profiled tsunami scenarios it is expected that bridges in the area may be impassable by vehicles for over 24 months. As such bringing resources into Yachats by sea and air will be necessary.

²² DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-21.

Note 2: The city expects city hall and their water treatment and wastewater treatment plants and systems to be impacted by the M (water treatment plant) and XXL tsunami inundation scenarios (city hall and wastewater treatment plant).

For more information, see the following DOGAMI reports:

- Tsunami evacuation analysis of Yachats and unincorporated Lincoln County: Building community resilience on the Oregon coast (2019, [O-19-06](#))

Flood

The steering committee determined that the city's probability for riverine or coastal flood is **high**, meaning at least one incident is likely within the next 35-year period and that their vulnerability to coastal or riverine flood is **moderate**, meaning that between 1% and 10% of the City's population or property could be affected by a major coastal or riverine flood event. *These ratings have not changed since the previous NHMP.*

Volume I, Section 2 of Lincoln County's NHMP adequately describes the causes and characteristics of coastal and riverine flood hazards, as well as the history, location, extent, and probability of a potential event.

The Yachats River and the Pacific Ocean are the primary sources of flooding—typically due to coastal flood and rain. The extent of flooding varies depending on height of tides, rainfall, and/or precipitation levels throughout the year.

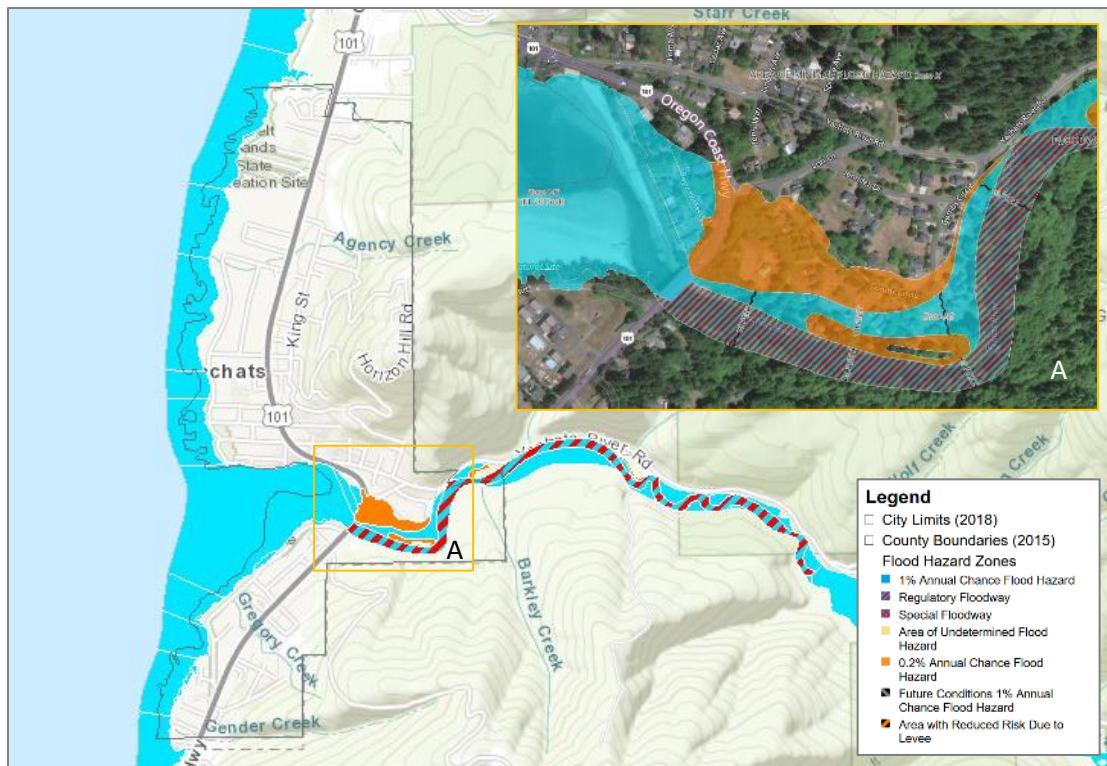
FEMA has mapped most of the flood-prone streams in Oregon for 100- and 500-year flood events. A 100-year flood (a flood with a one percent probability of occurring within any given year) is used as the standard for floodplain management in the United States and is referred to as a base flood; also known as the Special Flood Hazard Area (SFHA). The SFHA is the area where the National Flood Insurance Program's (NFIP's) floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies. Flood Insurance Rate Maps (FIRMs) prepared by FEMA provide the most readily available source of information for 100-year floods (Figure YA-12). These maps are used to support the NFIP. FIRMs delineate 100- and 500-year (a flood with a 0.2-percent probability of occurring within any given year) floodplain boundaries for identified flood hazards. These maps represent a snapshot in time, and do not account for later changes which occurred in the floodplains. According to Oregon Explorer about 17% of the City is within the 100-year floodplain, and an additional 4% is within the 500-year floodplain (see Figure YA-12).

Future Climate Projection:

According to OCCRI report "*Future Climate Projections: Lincoln County*" (Appendix G) the intensity of extreme precipitation is expected to increase as the atmosphere warms. The magnitude of the wettest days and the wettest consecutive five days is expected to increase by about 13% (range 4% to 28%) by the 2050s under the higher emissions scenario relative to historical baselines. The probability of winter flood risk will increase within coastal rain-dominated watersheds (such as the Siletz River) due to projected greater winter precipitation and warmer winter temperatures that will cause precipitation to fall more as rain than snow. There will also be an increase in atmospheric river events. Additionally, coastal flooding is expected to increase due to sea level rise (SLR) and changing wave dynamics. Sea level is projected to rise by 1.7 to 5.7 feet by 2100. Tidal wetlands and

estuaries throughout the county are also expected to experience changes to their composition and area, thereby impacting their ability to naturally mitigate flood events.

Figure YA-I2 Flood Hazard Zones (100- and 500-year floodplains)



Source: [Oregon Explorer: Map Viewer](#) – To explore and view map detail click hyperlink to left.

Vulnerability Assessment

A floodplain vulnerability assessment combines the floodplain boundary, generated through hazard identification, with an inventory of the property within the floodplain. Understanding the population and property exposed to natural hazards will assist in reducing risk and preventing loss from future events.

The city of Yachats’s Steering Committee notes that a couple of homes along Gender Creek located south of the Yachats River have flooded in recent history, most likely from debris that clogs storm drains (possibly from recent logging activity). The city is currently taking steps to address infrastructural vulnerabilities associated with seasonal flooding and flooding associated with storm drain systems. The city’s water intake system was upgraded in such a way that improved maintenance capabilities and will reduce potential flood impacts. The city is reviewing its Storm Water Master Plan to identify a list of projects intended to mitigate localized flooding that’s associated with clogged or overloaded drains. Except for some pump stations, there are no critical city facilities located in flood hazard areas. Houses along Bayview Terrace near the bridge (see Figure YA-12, Area A), and west of Yachats Ocean Rd, may be more vulnerable to flooding due to low elevation. The Yachats Stormwater Master Plan includes additional information on flood impacts to the community and includes additional mitigation actions.

Natural Hazard Risk Report for Lincoln County

The **Risk Report** ([DOGAMI, O-20-11](#)) provides hazard analysis summary tables that identify populations and property within Lincoln County that are vulnerable to flood. The Risk Report provides a distinct profile for Yachats.

The Risk Report provides a flood analysis for four flood scenarios (10-, 50-, 100-, and 500-year). The 100-year flood scenario is used for reporting since it is commonly used as a reference level for flooding and is the standard FEMA uses for regulatory purposes. In addition to the riverine flood scenarios coastal flooding information is available for the 100-year flood scenario for the city. The Risk Report only analyzed buildings within a flood zone, or within 500 feet of a flood zone. First-floor building height and presence of basements was also considered. Buildings with a first-floor height above the flood level were not included in the flood loss estimate, however, their assumed building occupants (residents) were counted as potentially displaced. According to the Risk Report the following resident population and property (public and private) within Yachats may be impacted by the profiled flood scenario (Table YA-8).

Table YA-8 Potentially Displaced Residents and Exposed Buildings, Flood

Community Overview: Yachats						
Population		Buildings		Critical Facilities	Total Building Value (\$)	
690		1,050		1	160,911,000	
Exposure Analysis: Flood (1% Annual Chance)						
Potentially Displaced Residents		Damaged Buildings			Exposed Building Value	
Number	Percent	Number	Percent	Critical Facilities	Loss Estimate (\$)	Loss Ratio
13	1.9%	7	0.7%	0	81,000	0.1%

Source: IPRE. Data adapted from DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-20. Note: City population based on the 2010 Census population.

Less than two percent (2%) of the City's population (13 people) may be displaced by flooding. These people are expected to have mobility or access issues due to surrounding water. Similarly, less than one percent (1%) of the City's buildings (7 buildings) are exposed to the flood hazard and may be damaged. The loss estimate for exposed buildings is \$81,000. No critical facilities are vulnerable to the flood hazard.

Critical Facility Vulnerability²³

There are no critical facilities exposed to the profiled flood scenario.

National Flood Insurance Program (NFIP)

FEMA's Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) are effective as of October 10, 2019. Table YA-9 shows that as of August 2019, the City has 130 National Flood Insurance Program (NFIP) policies in force, representing more than \$41.5 million in coverage. Of those, 31 are for properties that were constructed before the initial FIRMs. The

²³ DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-21.

last Community Assistance Visit (CAV) for the City was March 7, 2001. The table shows that most flood insurance policies are for residential structures, primarily single-family homes. Flood insurance covers only the improved land, or the actual building structure. There have been five (5) paid flood insurance claims for a combined total of just under \$22,000.

The City complies with the NFIP through enforcement of their flood damage prevention ordinance and their floodplain management program.

The NFIP's Community Rating System (CRS) recognizes jurisdictions for participating in floodplain management practices that exceed NFIP minimum requirements. The City does not participate in the CRS and, therefore, does not receive discounted flood insurance premiums for residents in a special flood hazard zone. The Community Repetitive Loss record for Yachats identifies one (1) Repetitive Loss Property²⁴ and no Severe Repetitive Loss Properties²⁵. The repetitive loss property is single-family residential.

²⁴ A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978. A RL property may or may not be currently insured by the NFIP.

²⁵ A Severe Repetitive Loss (SRL) property is a single family property (consisting of 1 to 4 residences) that is covered under flood insurance by the NFIP, and has incurred flood-related damage for which 4 or more separate claims payments have been paid under flood insurance coverage, with the amount of each claim payment exceeding \$5,000, and with cumulative amount of such claims payments exceeding \$20,000; or for which at least 2 separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

Table YA-9 Flood Insurance Detail

	Lincoln County	Yachats
Effective FIRM and FIS	10/18/2019	10/18/2019
Initial FIRM Date	-	3/1/1979
Total Policies	2,325	130
Pre-FIRM Policies	1,067	31
Policies by Building Type		
Single Family	1,685	125
2 to 4 Family	57	1
Other Residential	462	0
Non-Residential	121	4
Minus Rated A Zone	98	2
Minus Rated V Zone	3	0
Insurance in Force	\$585,856,500	\$41,498,700
Total Paid Claims	343	5
Pre-FIRM Claims Paid	265	3
Substantial Damage Claims	53	0
Total Paid Amount	\$5,479,221	\$21,833
Repetitive Loss Structures	64	1
Severe Repetitive Loss Properties	12	0
CRS Class Rating	NP	NP
Last Community Assistance Visit	-	3/7/2001

Source: Department of Land Conservation and Development, August 2019. Repetitive Flood Loss information provided by FEMA correspondence on September 10, 2020. NP = Not Participating.

Landslide

The steering committee determined that the city's probability for landslide is **high**, meaning at least one incident is likely within the next 35-year period, and that their vulnerability to landslide is **high**, meaning that more than 10% of the City's population or property could be affected by a major landslide event. *These ratings have not changed since the previous NHMP.*

Volume I, Section 2 of Lincoln County's NHMP adequately describes the causes and characteristics of landslide hazards, as well as the history, location, extent, and probability of a potential event.

The severity or extent of landslides is typically a function of geology and the landslide triggering mechanism. Rainfall initiated landslides tend to be smaller and earthquake induced landslides may be very large. Even small slides can cause property damage, result in injuries or take lives. Landslide susceptibility exposure for Yachats is shown in Figure YA-13. Approximately 42% of the City has very high or high, and 25% moderate, landslide susceptibility exposure.²⁶ *Note that even if a City has a high percentage of area in a high or*

²⁶ DOGAMI. [Open-File Report, O-16-02](#), *Landslide Susceptibility Overview Map of Oregon* (2016)

very high landslide exposure susceptibility zone, this does not mean there is a high risk, because risk is the intersection of hazard and assets.

Future Climate Projection:

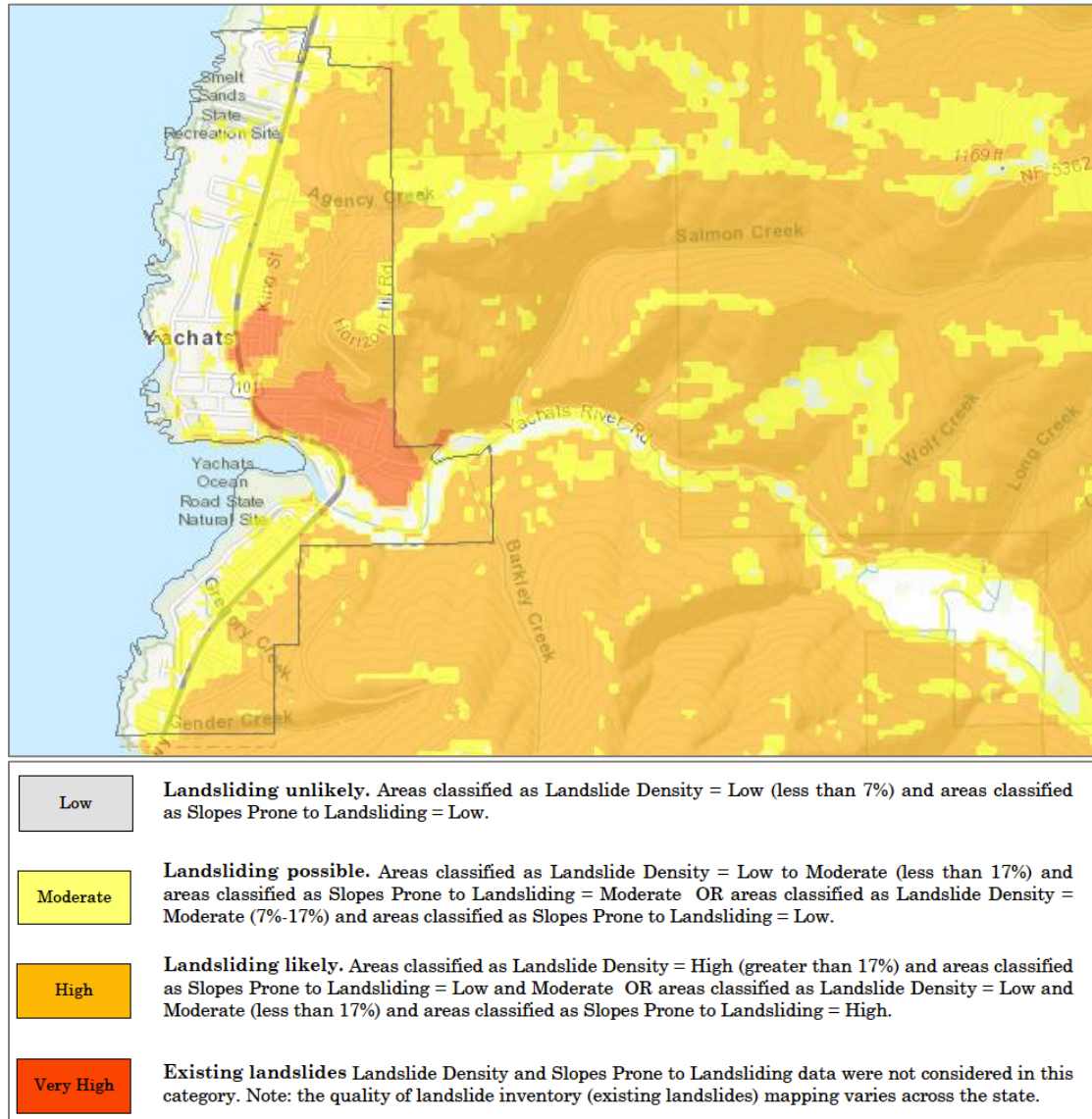
According to OCCRI report “*Future Climate Projections: Lincoln County*” (Appendix G) the intensity of extreme precipitation is expected to increase as the atmosphere warms. The magnitude of the wettest days and the wettest consecutive five days is expected to increase by about 13% (range 4% to 28%) by the 2050s under the higher emissions scenario relative to historical baselines. Landslide risk is not expected to change significantly.

Vulnerability Assessment

Development pressure on steep slopes is an issue that Yachats is facing. Figure YA-13 shows that the areas most susceptible to landslide activity are on steep hillsides east of Highway 101 and southeast of the Yachats River.

Site-specific geotechnical reports are required for development on steep hillsides, and city approval is also required for road construction and utility installation serving development on steep hillsides. Potential landslide-related impacts are adequately described within the county’s plan, and include infrastructure damages, economic impacts (due to isolation and/or arterial road closures), property damages, and obstruction to evacuation routes. Rain-induced landslides and debris flows can potentially occur during any winter in Lincoln County, and thoroughfares beyond city limits are susceptible to obstruction as well. As such, Yachats is vulnerable to isolation for an extended period.

Figure YA-13 Landslide Susceptibility Exposure



Source: [Oregon Explorer: Map Viewer](#) – To explore and view map detail click hyperlink to left.

Natural Hazard Risk Report for Lincoln County

The **Risk Report** ([DOGAMI, O-20-11](#)) provides hazard analysis summary tables that identify populations and property within Lincoln County that are vulnerable to landslide. The Risk Report provides a distinct profile for Yachats.

The Risk Report provides an analysis of landslide susceptibility to identify the general level of susceptibility to landslide hazards, primarily shallow and deep landslides. The Risk Report performed an analysis of buildings, including critical facilities, to determine exposure for the City. According to the Risk Report the following resident population and property (public and private) within the city may be impacted by the profiled landslide scenario (Table YA-10).

Approximately 33% of the City's population (225 people) may be displaced by landslides. These people are expected to have mobility or access issues and/or may have their

residences impacted by a landslide. It is important to note that impact from landslides may vary depending on the specific area that experiences landslides during an event. Properties that are most vulnerable to the landslide hazard are those that are developed in an area of, or at the base of, moderate to steep slopes. Approximately 31% of all buildings (322 buildings) within the City are exposed to the High or Very High landslide susceptibility zones (see Figure YA-13). The value of exposed buildings is just over \$49 million (about 31% of total building value).

Table YA-10 Potentially Displaced Residents and Exposed Buildings, Landslide

Community Overview: Yachats						
Population		Buildings		Critical Facilities	Total Building Value (\$)	
690		1,050		1	160,911,000	
Exposure Analysis: Landslide High & Very High Susceptibility						
Potentially Displaced		Exposed Buildings			Exposed Building	
Number	Percent	Number	Percent	Critical Facilities	Value (\$)	Percent
225	32.6%	322	30.7%	0	49,175,000	30.6%

Source: IPRE. Data adapted from DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-20. Note: City population based on the 2010 Census population.

Critical Facility Vulnerability²⁷

There are no critical facilities exposed to the profiled landslide scenario.

Severe Weather

Severe wind events may occur throughout Oregon during all seasons. Often originating in the Pacific Ocean, westerly winds pummel the coast, slowing as they cross the Coastal mountain range and head into the inland valleys.²⁸ Similarly, severe winter storms consisting of rain, freezing rain, ice, snow, cold temperatures, and wind originate from troughs of low pressure offshore in the Gulf of Alaska or in the central Pacific Ocean that ride along the jet stream during fall, winter, and early spring months.²⁹ In summer, the most common wind directions are from the west or northwest; in winter, they are from the south and east. Local topography, however, plays a major role in affecting wind direction.

Future Climate Projections

Oregon and the Pacific Northwest experience a variety of extreme weather incidents ranging from severe winter storms and floods to drought and dust storms, often resulting in morbidity and mortality among people living in the impacted regions. According to the

²⁷ DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-21.

²⁸ US Department of Agriculture. <http://www.fsa.usda.gov/or/Notice/Flp104.pdf>.

²⁹ Interagency Hazard Mitigation Team. 2000. State Hazard Mitigation Plan. Salem, OR: Oregon Office of Emergency Management.

Oregon Climate Change Research Institute, climate change is expected to increase the frequency and intensity of some weather incidents.³⁰

Climate change poses risks for increased injuries, illnesses and deaths from both direct and indirect effects. Incidents of extreme weather (such as floods, droughts, severe storms, heat waves and fires) can directly affect human health as well as cause serious environmental and economic impacts. Indirect impacts can occur when climate change alters or disrupts natural systems.

According to OCCRI report “*Future Climate Projections: Lincoln County*” (Appendix G) windstorm events are not expected to increase, however, air temperatures on the coldest day of the year will increase by about 5°F by the 2050s under the higher emissions scenario relative to historical baselines.

Windstorm

The steering committee determined that the city’s probability for windstorm is **high** (the probability of tornado is also high), meaning at least one severe incident is likely within the next 35-year period, and that their vulnerability to windstorm is **high**, meaning that more than 10% of the City’s population or property could be affected by a major windstorm event. The Steering Committee rated the County as having a “**low**” **vulnerability to a tornado hazard**, meaning that less than 1% of the City’s population or property could be affected by a major tornado event. *The windstorm ratings have not changed since the previous NHMP. The tornado ratings are new with this version of the NHMP.*

Volume I, Section 2 of Lincoln County’s NHMP adequately describes the causes and characteristics of windstorm hazards, as well as the history, location, extent, and probability of a potential event. Because coastal windstorms typically occur during winter months, ice, freezing rain, flooding, and very rarely, snow sometimes accompany them. More than likely, however, the coast’s winter will just be windy, cold, and wet.

Vulnerability Assessment

Due to insufficient data and resources, Yachats is currently unable to perform a quantitative risk assessment, or exposure analysis, for this hazard. In Yachats, power outages are the greatest concern during windstorms. Building codes require new developments to place power lines below ground. Without power, communication is lost, and fuel and food stores shut down. Of concern are downed trees and damage to buildings. The city, in conjunction with some private utility companies, works to remove hazardous trees where possible. The county’s plan adequately identifies the remaining impacts and damages that can occur with windstorm events.

Winter Storm (Snow/ Ice)

The steering committee determined that the city’s probability for winter storm is **high**, meaning at least one severe incident is likely within the next 35-year period, and that their vulnerability to winter storm is **high**, meaning that more than 10% of the city’s population or

³⁰ Oregon Climate Change Research Institute <http://occri.net/wp-content/uploads/2011/04/chapter9ocar.pdf> Page 412.

property could be affected by a major winter storm event. *These ratings have not changed since the previous NHMP.*

Volume I, Section 2 of Lincoln County's NHMP adequately describes the causes and characteristics of winter storm hazards, as well as the history, location, extent, and probability of a potential event. Severe winter storms can consist of rain, freezing rain, ice, snow, cold temperatures, and wind. They originate from troughs of low pressure offshore that ride along the jet stream during fall, winter, and early spring months. Severe winter storms affecting the city typically originate in the Gulf of Alaska or in the central Pacific Ocean. These storms are most common from October through March. More than likely, however, the coast's winter will just be windy, cold, and wet.

Vulnerability Assessment

Due to insufficient data and resources, Yachats is currently unable to perform a quantitative risk assessment, or exposure analysis, for this hazard. Major winter storms can and have occurred in the Yachats area, and while they typically do not cause significant damage; they are frequent and have the potential to impact economic activity. Road closures on Highway 101, or the passes to the Willamette Valley (Hwy 126, 34, 20, and 18), due to winter weather are an uncommon occurrence, but can interrupt commuter and large truck traffic.

Volcanic Event

The steering committee determined that the city's probability for volcanic event is **low**, meaning one incident is likely within the next 75 to 100-year period, and that their vulnerability to volcanic event is **low**, meaning that less than 1% of the city's population or property would be affected by a major volcanic event (ash/lahar). *These ratings have not changed since the previous NHMP.*

Volume I, Section 2 of Lincoln County's NHMP adequately describes the causes and characteristics of volcanic event hazards, as well as the history, location, extent, and probability of a potential event. Generally, an event that affects the county is likely to affect Yachats as well.

Vulnerability Assessment

Due to insufficient data and resources, Yachats is currently unable to perform a quantitative risk assessment, or exposure analysis, for this hazard. Yachats is very unlikely to experience anything more than volcanic ash during a volcanic event. When Mt. Saint Helens erupted in 1980, the city received small amounts of ashfall, but not enough to cause significant health and/or economic damages.

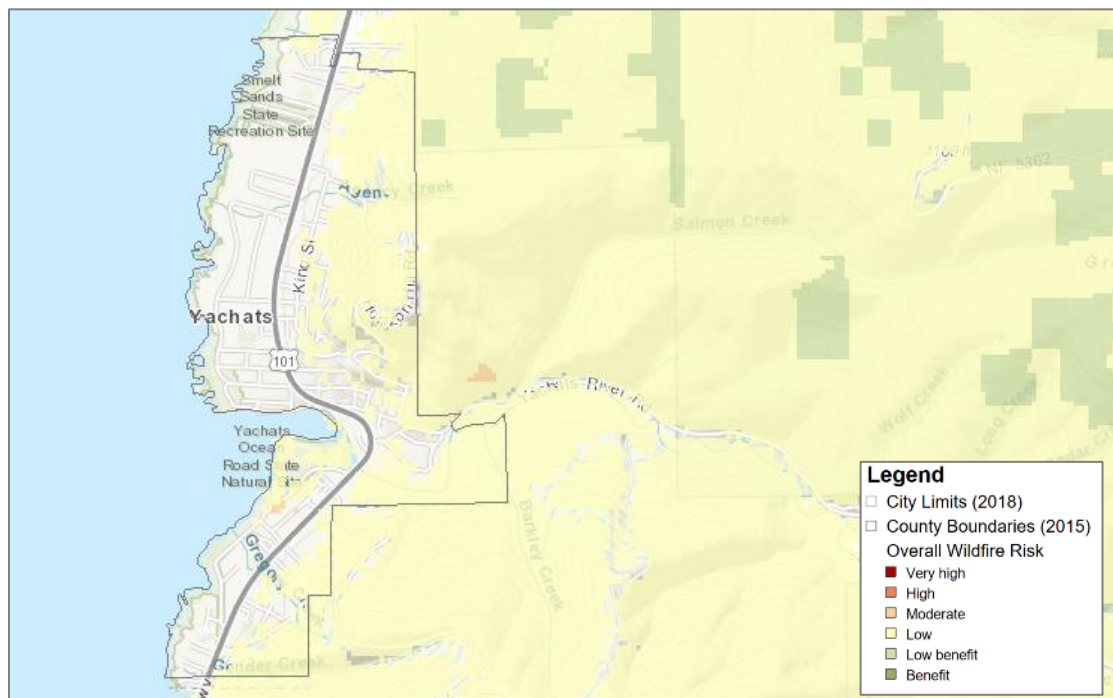
Wildfire

The steering committee determined that the city's probability for wildfire is **high**, meaning at least one incident is likely within the next 35-year period, and that their vulnerability to wildfire is **moderate**, meaning that between 1% and 10% of the City's population or property could be affected by a major wildfire event. *The vulnerability rating has decreased since the previous NHMP.*

The [Lincoln County Community Wildfire Protection Plan \(CWPP\)](#) was completed in 2010 and revised in 2018. CWPP is hereby incorporated into this NHMP addendum by reference, and it will serve to supplement the wildfire section in this addendum.

Volume I, Section 2 of Lincoln County's NHMP adequately describes the causes and characteristics of wildfire hazards, as well as the history, location, extent, and probability of a potential event. The location and extent of a wildfire vary depending on fuel, topography, and weather conditions. Wildfires in 1849 and 1936 were particularly devastating in Lincoln County, but since then, there have been few large events. As shown in Figure YA-14 the City has mostly low, with some moderate, overall wildfire risk. Resource lands that are actively managed for forest uses surround the city of Yachats. Weather conditions are primarily at cause for the hazard level, the steering committee noted that the current drought conditions have heightened fire conditions in the area and likely have increased the probability of a wildfire occurrence. Due to the prevailing wind patterns (i.e., from the north or south), the city's steering committee felt that the east end of the city might be the most vulnerable. Power, natural gas, and phone lines run through the forest to the east of the city and would be affected in the event of a wildfire. Likewise, active commercial logging occurs just outside the city, and slash burns are a potential wildfire concern.

Figure YA-14 Overall Wildfire Risk



Source: [Oregon Explorer: Map Viewer](#) – To explore and view map detail click hyperlink to left.

Future Climate Projection:

According to OCCRI report “*Future Climate Projections: Lincoln County*” (Appendix G) wildfire risk is expected to increase as the frequency of higher fire danger days per year increases by 37% by the 2050s under the higher emissions scenario compared with the historical baseline.

Vulnerability Assessment

Overall, the city, and its watershed, has low to moderate overall wildfire risk, however, the forested areas have the potential for large wildfires and a wildfire within the watershed could impact the city's water supply and quality. Commercial forestry and harvesting activities increase the potential for wildfires. In addition, development on the ridgeline along the eastern boundary of the city has increased over the last few years, making this urban/rural interface more vulnerable to wildfires.

Property can be damaged or destroyed with one fire as structures, vegetation, and other flammables easily merge to become unpredictable, and hard to manage. Other factors that affect ability to effectively respond to a wildfire include access to the location, and to water, response time from the fire station, availability of personnel, and equipment, and weather (e.g., heat, low humidity, high winds, and drought).

Exposed infrastructure including wastewater main lines, major water lines, natural gas pipeline and fiber optic lines are buried, decreasing their vulnerability to damage from wildfire hazards. However, wildfire conditions could potentially limit or delay access for the purposes of operation or repair.

Natural Hazard Risk Report for Lincoln County

The **Risk Report** ([DOGAMI, O-20-11](#)) provides hazard analysis summary tables that identify populations and property within Lincoln County that are vulnerable to landslide. The Risk Report provides a distinct profile for Yachats.

The Risk Report provides an analysis of the West Wide Wildfire Risk Assessment's Fire Risk Index (FRI) High Hazard category to identify the general level of susceptibility to the wildfire hazard. The Risk Report performed an analysis of buildings, including critical facilities, to determine exposure for the City. According to the Risk Report there are no resident population and property (public and private) within the City that may be impacted by the profiled wildfire scenario (Table YA-11).

Table YA-11 Potentially Displaced Residents and Exposed Buildings, Wildfire

Community Overview: Yachats						
Population		Buildings		Critical Facilities	Total Building Value (\$)	
690		1,050		1	160,911,000	
Exposure Analysis: Wildfire High-Hazard						
Potentially Displaced		Exposed Buildings			Exposed Building	
Number	Percent	Number	Percent	Critical Facilities	Value (\$)	Percent
0	0.0%	0	0.0%	0	0	0.0%

Source: IPRE. Data adapted from DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-20. Note: City population based on the 2010 Census population.

Critical Facility Vulnerability³¹

There are no critical facilities exposed to the profiled wildfire scenario.

³¹ DOGAMI, Open-File Report O-20-11, Lincoln County Natural Hazard Risk Report (2020), Table A-21.

ATTACHMENT A: ACTION ITEM FORMS

Table YA-1 and Table YA-12 provide a summary list of actions for the city. Each high priority action item has a corresponding action item worksheet describing the activity, identifying the rationale for the project, identifying potential ideas for implementation, and assigning coordinating and partner organizations. The action item worksheets can assist the community in pre-packaging potential projects for grant funding. The worksheet components are described below.

Table YA-12 Action Item Timelines, Status, High Priority and Related Hazards

Action Item	Priority	Timeline	Status	Related Hazard									
				Coastal Erosion	Drought	Earthquake	Flood	Landslide	Tsunami	Volcano	Wildfire	Windstorm	Winter Storm
Yachats #1		Long	Ongoing			X			X				
Yachats #2	X	Ongoing	Ongoing			X	X		X				
Yachats #3	X	Ongoing	Ongoing				X		X				
Yachats #4		Ongoing	Ongoing				X						
Yachats #5	X	Short	Ongoing		X	X			X				
Yachats #6	X	Short	Ongoing	X			X	X			X		
Yachats #7		Long	Ongoing	X									
Yachats #8		Long	Ongoing				X						
Yachats #9	X	Long	Ongoing						X				
Yachats #10	X	Short	New		X								
Yachats #11	X	Long	New		X						X		
Yachats #12	X	Long	New		X						X		
Yachats #13		Medium	New		X						X		

ALIGNMENT WITH EXISTING PLANS/POLICIES

The City NHMP includes a range of action items that, when implemented, will reduce loss from hazard events in the City. Existing programs and other resources that might be used to implement these action items are identified. The City addresses statewide planning goals and legislative requirements through its comprehensive land use plan, capital improvements plan, mandated standards and building codes. To the extent possible, the City will work to incorporate the recommended mitigation action items into existing programs and procedures. Each action item identifies related existing plans and policies.

STATUS/RATIONALE FOR PROPOSED ACTION ITEM

Action items should be fact-based and tied directly to issues or needs identified throughout the planning process. Action items can be developed at any time during the planning process and can come from several sources, including participants in the planning process, noted deficiencies in local capability, or issues identified through the risk assessment. The rationale for proposed action items is based on the information documented in this addendum and within Volume I, Section 2. The worksheet provides information on the activities that have occurred since the previous plan for each action item.

IDEAS FOR IMPLEMENTATION

The ideas for implementation offer a transition from theory to practice and serve as a starting point for this plan. This component of the action item is dynamic, since some ideas may prove to not be feasible, and new ideas may be added during the plan maintenance process. Ideas for implementation include such things as collaboration with relevant organizations, grant programs, tax incentives, human resources, education and outreach, research, and physical manipulation of buildings and infrastructure.

COORDINATING (LEAD) ORGANIZATION:

The coordinating organization is the public agency with the regulatory responsibility to address natural hazards, or that is willing and able to organize resources, find appropriate funding, or oversee activity implementation, monitoring and evaluation.

INTERNAL AND EXTERNAL PARTNERS:

The internal and external partner organizations listed in the Action Item Worksheets are potential partners recommended by the project steering committee but not necessarily contacted during the development of the plan. The coordinating organization should contact the identified partner organizations to see if they are capable of and interested in participation. This initial contact is also to gain a commitment of time and/or resources toward completion of the action items.

Internal partner organizations are departments within the City or other participating jurisdiction that may be able to assist in the implementation of action items by providing relevant resources to the coordinating organization.

External partner organizations can assist the coordinating organization in implementing the action items in various functions and may include local, regional, state, or federal agencies, as well as local and regional public and private sector organizations.

PLAN GOALS ADDRESSED:

The plan goals addressed by each action item are identified as a means for monitoring and evaluating how well the mitigation plan is achieving its goals, following implementation.

TIMELINE:

All broad scale action items have been determined to be ongoing, as opposed to short (1 to 4 years), medium (4-10 years), or long (10 or more years). This is because the action items are broad ideas, and although actions may be implemented to address the broad ideas, the efforts should be ongoing.

POTENTIAL FUNDING SOURCE

Where possible potential funding sources have been identified. Example funding sources may include: Federal Hazard Mitigation Assistance programs, state funding sources such as the Oregon Seismic Rehabilitation Grant Program, or local funding sources such as capital improvement or general funds. An action item may include several potential funding sources.

ESTIMATED COST

A rough estimate of the cost for implementing each action item is included. Costs are shown in general categories showing low, medium, or high cost. The estimated cost for each category is outlined below:

Low - Less than \$50,000

Medium - \$50,000 – \$100,000

High - More than \$100,000

STATUS

The 2020 status of each action item is indicated: new actions were developed in 2020, ongoing actions are those carried over from the previous plan, and deferred actions are those that are carried over from the previous plan but had limited or no activity..

County level actions that the city is listed as a partner are shown in Table YA-13. These actions are led by the County, however, the City will incorporate elements of the action that are applicable to their jurisdiction.

Table YA-13 County Specified Actions that the City is Partner

Action Item (2015 NHMP)	City Partner	Action Item
MH #1	Yes	Consider Local Energy Assurance Planning for critical areas countywide
MH #2	Yes	Improve technology capacity of communities, agencies and responders needed to adequately map hazard areas, broadcast warnings, inform, and educate residents and visitors of natural hazard dangers
MH #3	Yes	Develop, enhance, and implement strategies for debris management and/or removal after natural hazard events.
MH #4	Yes	Work with coastal communities, citizen groups, property owners, recreation areas, emergency responders, schools and businesses in promoting natural hazard mitigation opportunities.
MH #5	Yes	Encourage purchase of hazard insurance for business and homeowners by forming partnerships with the insurance and real estate industries.
MH #6	Yes	Integrate the NHMP into County and City comprehensive plans.
MH #7	Yes	Prepare long-term catastrophic recovery plan
MH #8		Review recommended mitigation strategies identified in DOGAMI reports (including O-19-06, O-20-03, O-20-11) and make recommendations to BOC for consideration as long-term mitigation strategies.
CE #1	Yes	Improve knowledge of effects of climate change and understanding of vulnerability and risk to life and property in hazard prone areas.
CE #2	Yes	Evaluate revising existing county coastal hazard area regulations based on the DOGAMI risk zone mapping.
EQ #1	Yes	Integrate new earthquake hazard mapping data for Lincoln County and improve technical analysis of earthquake hazards.
EQ #2	Yes	Identify, inventory, and retrofit critical facilities for seismic and tsunami rehabilitation (consider both structural and non-structural retrofit options).
EQ #3	Yes	Stay apprised of new earthquake and landslide data and perform mitigation of infrastructure where possible to increase resilience of critical transportation links to the valley and along the coast during earthquake events.
TS #1	Yes	Relocate county controlled critical/essential facilities and key resources, and encourage the relocation of other critical facilities and key resources that house vulnerable populations (e.g.,

Action Item (2015 NHMP)	City Partner	Action Item
		hospitals, nursing homes, etc.) that are within the tsunami inundation zone and likely to be impacted by tsunami.
TS #2	Yes	Implement land use strategies and options to increase community resilience
FL #1	Yes	Explore steps needed to qualify Lincoln County for participation in the NFIP Community Rating System (CRS)
FL #2	Yes	Update the Lower Siletz Flood Mitigation Action Plan; develop flood mitigation action plan(s) for the lower Alsea and Salmon River, and Drift Creek and other areas.
FL #3		Work with affected property owners to elevate or relocate non-conforming, pre-FIRM structures in flood hazard areas
FL #4	Yes	Continue compliance with the National Flood Insurance Program (NFIP).
LS #1	Yes	Encourage construction, site location and design that can be applied to steep slopes to reduce the potential threat of landslides.
LS #2	Yes	Protect existing development in landslide-prone areas.
LS #3	Yes	Collaborate with the Oregon Department of Geology and Mineral Industries to work on landslide risk reduction.
SW #1	Yes	Develop and implement programs to keep trees from threatening lives, property, and public infrastructure during severe weather events (windstorms, tornados, and winter storms).
SW #2	Yes	Continue and enhance severe weather (windstorm, tornado, winter storm) resistant construction methods where possible to reduce damage to utilities and critical facilities from windstorms and winter storms (snow/ice). In part, this may be accomplished by encouraging electric utility providers to convert existing overhead lines to underground lines.
WF #1	Yes	Implement actions identified within the Lincoln County Community Wildfire Protection Plan (CWPP) and continue to participate with ongoing maintenance and updates.

Mitigation Action: Yachats #1 (What do we want to do?)		Alignment with Plan Goals:	High Priority Action Item?	
Identify over-water transportation alternatives in the event of bridge collapse in an earthquake and/or tsunami.		☒ 1 ☒ 2 ☒ 3 ☐ 4	☐ Yes	
		☒ 5 ☐ 6 ☐ 7 ☐ 8		
		☐ 9 ☐ 10 ☐ 11		
Alignment with Existing Plans/Policies:				
Rationale for Proposal (Why is this important?):				
In the event of a Cascadia Subduction Zone (CSZ) earthquake and/or tsunami, it is possible the U.S. Highway 101 bridge in Yachats would fail. Essential transportation services would need to be restored. Community is most concerned about retaining access to Waldport which will provide evacuation shelters. Tsunami destruction can come from both the tsunami wave and from the rapid retreat of the water from the coastline. Tsunami waves tend to be fast moving, rising surges of water. The average recurrence interval for a CSZ event is between 500 and 600 years. There have been seven CSZ events in the last 3500 years with time between individual events varying from 150 to 1000 years. The last CSZ event occurred approximately 315 years ago. Restoration of key infrastructure is essential after a natural disaster "to support the industry and the jobs it provided." To sustain the economy, communities should "provide for temporary infrastructure while long-term rebuilding efforts are underway." Source: Governor's Commission Report on Recovery, Rebuilding, and Renewal. After Katrina: Building Back Better than Ever. December 31, 2005. p. 112.				
Ideas for Implementation (How will it get done?):		Action Status Report		
Build boat launches in strategic locations to serve as bridge replacements after an earthquake and tsunami. Obtain emergency equipment in preparation for an earthquake and/or tsunami event. Purchase flatcars to use as temporary bridges.		<u>2020 Update:</u> The City is identifying forest service roads as an alternative and developing maps of the forest service roads. This is an ongoing process.		
Champion/ Responsible Organization:	Public Works			
Internal Partners:		External Partners:		
Planning		Lincoln County Emergency Services, ODOT, NOAA, CERT		
Potential Funding Sources:		Estimated cost:	Timeline:	
Local Funding Resources		Low	☐ Ongoing ☐ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☒ Long-Term (10+ years)	

Form Submitted by:	Yachats Steering Committee, revised 2020
Action Item Status:	Ongoing

Mitigation Action: Yachats #2 (What do we want to do?)		Alignment with Plan Goals:		High Priority Action Item?		
Continue to maintain and keep stocked two mobile storage containers with emergency supplies and equipment.		☐ 1	☒ 2	☒ 3	☐ 4	☒ Yes
		☒ 5	☐ 6	☐ 7	☐ 8	
		☐ 9	☒ 10	☐ 11		
Alignment with Existing Plans/Policies:						
Rationale for Proposal (Why is this important?):						
The city of Yachats is vulnerable to a Cascadia Subduction Zone earthquake/tsunami event. Other natural hazards such as flood, landslide and windstorm can leave populations without basic resources during emergencies. The city chooses to be proactive in being prepared to provide basic services when disrupted by natural hazard events.						
Ideas for Implementation (How will it get done?):		Action Status Report				
Two portable storage containers will be stocked with emergency supplies and equipment and be strategically placed in key locations. Seek funding to maintain and keep each unit stocked. Continue community education and outreach regarding the purpose and function of the Emergency Planning Steering Committee. Seek funding for additional containers.		<u>2020 Update:</u> The mobile storage containers now have heat. <u>2015 Update:</u> The City maintains and stocks two mobile storage containers with emergency supplies and equipment. Electricity was recently supplied to the containers.				
Champion/ Responsible Organization:	Administration					
Internal Partners:		External Partners:				
Public Works, Emergency Planning Steering Committee		Yachats Rural Fire Protection District				
Potential Funding Sources:		Estimated cost:	Timeline:			
Local Funding Resources, NOAA Coastal Resilience Grant		Low to Medium	☒ Ongoing ☐ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☐ Long-Term (10+ years)			
Form Submitted by:	Yachats Steering Committee, revised 2020					

Action Item Status:	Ongoing
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Mitigation Action: Yachats #3 (What do we want to do?)		Alignment with Plan Goals:	High Priority Action Item?
Update and implement actions identified in the Yachats Storm Drainage Master Plan		☒ 1 ☒ 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☒ 10 ☒ 11	☒ Yes
Alignment with Existing Plans/Policies:			
Storm Drainage Master Plan Addendum (2008)			
Rationale for Proposal (Why is this important?):			
Yachats is recently updated its Stormwater Master Plan. Mitigation actions are identified within that plan as well. See Section 7 of the Storm Drainage Master Plan Addendum (2008) and Figure A-5, Recommended Improvement Map. The Disaster Mitigation Act of 2000 requires communities to describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information (201.6(b)). Implementing actions identified within the Yachats Stormwater Management Plan will assist the City in meeting this requirement. Stormwater management is a key element in maintaining and enhancing a community's livability. There is a direct link between stormwater and a community's surface and ground waters. As a community develops, the impervious surfaces that are created increase the amount of runoff during rainfall events, disrupting the natural hydrologic cycle. Without control, these conditions erode stream channels and prevent groundwater recharge. Parking lots, roadways, and rooftops increase the pollution levels and temperature of stormwater runoff that is transported to streams, rivers, and groundwater resources. Protecting these waters is vital for a great number of uses, including fish and wildlife habitat, recreation, and drinking water.			
Ideas for Implementation (How will it get done?):		Action Status Report	
Implement and maintain the Stormwater Plan. Review the Plan's mitigation actions at one of the County's future semi-annual natural hazard mitigation meetings. Identify and assist with actions that reduce the City's vulnerability to flood-related hazards.		<u>2020 Update:</u> Storm water master plan implementation is in progress. Quiet Water Tide Gate improvements are complete. Public Works and Streets Commission is interested in a new Storm Drainage Master Plan with new implementation items.	
Champion/ Responsible Organization:	Administration		
Internal Partners:		External Partners:	
Public Works, Planning		DOGAMI	
Potential Funding Sources:		Estimated cost:	Timeline:
Local Funding Resources		Low to High	☒ Ongoing ☐ Short Term (1-4 years)

		☐ Medium Term (4-10 years) ☐ Long-Term (10+ years)
Form Submitted by:	Yachats Steering Committee, revised 2020	
Action Item Status:	Ongoing	

Mitigation Action: Yachats #4 (What do we want to do?)		Alignment with Plan Goals:	High Priority Action Item?	
Encourage purchase of flood insurance, even for those outside of NFIP mapped hazard areas.		☐ 1 ☒ 2 ☒ 3 ☐ 4	☐ Yes	
		☐ 5 ☐ 6 ☒ 7 ☐ 8		
		☐ 9 ☒ 10 ☐ 11		
Alignment with Existing Plans/Policies:				
FIS, FIRMs, Lincoln County Risk Report, Comprehensive Plan, Development Code				
Rationale for Proposal (Why is this important?):				
Increasing knowledge about the extent of flood risk in order to educate residents about elevating homes and structures can help mitigate the city's vulnerability to future floods. There are streams affected by seasonal flooding. The Disaster Mitigation Act of 2000 requires that communities continue to involve the public beyond the original planning process [201.6(c)(4)(ii)]. Developing public education programs for hazard risk mitigation would be a way to keep the public informed of, and involved in, the city's actions to mitigate hazards.				
Ideas for Implementation (How will it get done?):		Action Status Report		
Continue to participate in the National Flood Insurance Program. Consider participating in the NFIPs CRS Program. Make contacts with insurance industry representatives to keep current about their requirements, rates, and plans. Provide educational information to property owners. Coordinate activity with Lincoln County.		<u>2020 Update:</u> The city provides educational material as outreach to members of the community. The city is currently participating in the NFIP. The Lincoln County Risk Report is being updated to include additional Hazus loss estimation which could be used to target areas for future outreach.		
Champion/ Responsible Organization:	Administration			
Internal Partners:		External Partners:		
Planning, Lincoln County		Insurance companies		
Potential Funding Sources:		Estimated cost:	Timeline:	
Local Funding Resources		Low	☒ Ongoing ☐ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☐ Long-Term (10+ years)	

Form Submitted by:	Yachats Steering Committee, revised 2020
Action Item Status:	Ongoing

Mitigation Action: Yachats #5 (What do we want to do?)		Alignment with Plan Goals:	High Priority Action Item?
Provide supplemental water supply tanks in key locations to ensure availability of water throughout the city.		☐ 1 ☒ 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☒ 7 ☐ 8 ☐ 9 ☒ 10 ☐ 11	☒ Yes
Alignment with Existing Plans/Policies:			
Water System Master Plan			
Rationale for Proposal (Why is this important?):			
In their hazard analysis, the city of Yachats rated itself as having a high drought risk and vulnerability. It is important water remains available during and after a drought event. Disaster Mitigation Act of 2000 requires communities to create actions that will reduce the impact of natural hazards on the community [201.6(c)(3)(ii)]. Providing supplemental water supply tanks in key locations will enhance the City's resilience in a drought event.			
Ideas for Implementation (How will it get done?):		Action Status Report	
Obtain funding to construct additional water reservoirs for emergency drought-related storage. Research ways to reduce drought risk within the city. This may potentially result in non-structural projects.		<u>2020 Update</u> The city has storage containers for supplemental water and has portable water treatment plants. Two Blackstone storage tanks are in development and are complete; water filtration systems are available in the containers. The South tank is complete. YRFPD has portable water filtration. The city is working on an inventory of available supplies.	
Champion/ Responsible Organization:	Administration		
Internal Partners:		External Partners:	
Public Works		USDA, USGA, Western States Water Council	
Potential Funding Sources:		Estimated cost:	Timeline:
Local Funding Resources		High	☐ Ongoing ☒ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☐ Long-Term (10+ years)
Form Submitted by:	Yachats Steering Committee, revised 2020		
Action Item Status:	Ongoing		

Mitigation Action: Yachats #6 (What do we want to do?)	Alignment with Plan Goals:	High Priority Action Item?
Obtain LiDAR collection for DOGAMI and adopt and adopt Landslide code updates.	☒ 1 ☒ 2 ☒ 3 ☒ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☒ 10 ☐ 11	☒ Yes
Alignment with Existing Plans/Policies:		
Lincoln County Risk Report		
Rationale for Proposal (Why is this important?):		
LIDAR (light detection and ranging) is a mapping tool that can provide very precise, accurate, and high-resolution images of the surface of the earth, vegetation, and the built environment. It can be used to study landforms and identify areas, especially landslide areas that may be susceptible to future occurrences. The Oregon Department of Geology and Mineral Industries (DOGAMI) has been working with communities to develop large-scale LIDAR maps of entire regions. In 2006- 2007, various local, state, and federal agencies formed the Portland Consortium to gather 2200 square miles of LIDAR data in the Portland Metropolitan region. DOGAMI has formed the Oregon LIDAR Consortium (OLC) to gather data in other Oregon regions, including Lincoln County. Entering into an agreement with the OLC, or obtaining LIDAR collection data from DOGAMI will assist in mapping areas of Western Lane County and landforms around Yachats. Additional, LIDAR analysis has been conducted as part of the Lincoln County Risk Report and Open-file Report (O-16-02). With LIDAR, you can quickly, cheaply, and accurately: find landslides, old cuts and grades; measure and estimate fills and cuts; find stream channels and measure gradients; measure the size and height of buildings and bridges; locate and measure every tree in the forest; characterize land cover; model floods, fire behavior; locate power lines and power poles; find archeological sites; map wetlands and impervious surfaces; define watersheds and view-sheds; model insulation and shaking; map road center and sidelines; find law enforcement targets; map landforms and soils; assess property remotely; inventory carbon; monitor quarries, find abandoned mines; enhance any project that requires a detailed and accurate 2-D or 3-D map. The east side of the city of Yachats has relatively steep topography. Despite the city's topographical characteristics and vulnerabilities to landslides, Yachats does not have accurate information regarding the location and extent of potential landslides. With improved data via participation in the OLC, (or purchase of the OLC's data), Yachats would have a much greater understanding of its landslide risks. The Disaster Mitigation Act of 2000 requires that communities identify actions and projects that reduce the impact of a natural hazard on the community, particularly to new and existing buildings and infrastructure [201.6(c)(3)(ii)]. Obtaining LIDAR collection data from DOGAMI will help in understanding areas and landforms susceptible to landslide events to protect new and existing buildings, and infrastructure.		
Ideas for Implementation (How will it get done?):	Action Status Report	
DOGAMI's LIDAR website provides information about the OLC and LIDAR and is a starting point for entering into an agreement with DOGAMI.	<u>2020 Update:</u> The City of Yachats received a grant in March of 2019 to complete a hazard code audit with DLCD. The	

http://www.oregongeology.com/sub/projects/olc/default.htm Contact DOGAMI about obtaining the data. DOGAMI staff is additionally available to talk to groups of potential users to show them the data and explain its uses. The LIDAR will be available without license restrictions in standard USGS quadrangles, with a nominal charge for each quadrangle. DOGAMI is happy to work with small communities to develop map products that they can use if they do not have GIS. Incorporate relevant aspects of the DLCD Landslide Land Use Guide (" Preparing for Landslide Hazards, A land Use Guide for Oregon Communities ")		result of the project was adoption ready codes including an updated geo-hazard code. DOGAMI published Open-File Report, O-16-02, Landslide Susceptibility Overview Map of Oregon which maps existing landslide data for Lincoln Co and Yachats. <u>2015 Update</u> The city has not yet acquired LIDAR from DOGAMI. LIDAR is available for areas of the county and data and analysis from the Lincoln County Risk Report is available to incorporate in local planning efforts.	
Champion/ Responsible Organization:	Administration		
Internal Partners:		External Partners:	
Public Works, Planning, City Recorder		DOGAMI	
Potential Funding Sources:		Estimated cost:	Timeline:
Local Funding Resources		Low	☐ Ongoing ☒ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☐ Long-Term (10+ years)
Form Submitted by:	Yachats Steering Committee, revised 2020		
Action Item Status:	Ongoing		

Mitigation Action: Yachats #7 (What do we want to do?)		Alignment with Plan Goals:	High Priority Action Item?
Encourage the County to evaluate and implement erosion control mitigation projects for NE Ocean View Drive/ 804 Trail.		☒ 1 ☒ 2 ☐ 3 ☒ 4 ☐ 5 ☐ 6 ☒ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11	☐ Yes
Alignment with Existing Plans/Policies:			
804 Trail Plan			
Rationale for Proposal (Why is this important?):			
Area is susceptible to coastal erosion (south side at the inlet, from 6th Street to south of 2nd Street). Lincoln County has jurisdiction over Ocean View Drive and the southern portion is within Yachats State Park. The Yachats 804 Trail/ NE Ocean View Drive is under Lincoln County jurisdiction and is part of former County Road 804, the gravel route between Yachats and Waldport's Alsea Bay before U.S. Highway 101 was built in the 1930s. Area is within the distant tsunami inundation zone This area is the only by-pass of Highway 101 for the northern half of the city Area is undergoing coastal erosion that will affect the street, public utilities (water, sewer), and public pedestrian access.			
Ideas for Implementation (How will it get done?):		Action Status Report	
Plant and construct erosion control measures (riprap, etc.), handrails, and improve storm drainage. Monitor ground movement in high susceptible areas, especially during or after large storms. Maintain erosion control structures that are already in place. Identify critical facilities and infrastructure near high coastal erosion areas. Consider land value losses due to coastal erosion in future risk assessments.		<u>2020 Update:</u> Ocean View Drive tilts inland and water drains to the ocean through culverts. County is in the process of transferring ownership to the city. This action item will remain and the city will be responsible for erosion control after the transfer.	
Champion/ Responsible Organization:	Public Works		
Internal Partners:		External Partners:	
Planning		Lincoln County, DOGAMI, Oregon Parks & Recreation	
Potential Funding Sources:		Estimated cost:	Timeline:

Local Funding Resources		Medium to High	☐ Ongoing ☐ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☒ Long-Term (10+ years)
Form Submitted by:	2015 Yachats Steering Committee, revised 2020		
Action Item Status:	Ongoing		

Mitigation Action: Yachats #8 (What do we want to do?)		Alignment with Plan Goals:		High Priority Action Item?		
Work with the owners of repetitive flood loss buildings in the city to identify cost effective mitigation strategies including consideration of relocation, elevation, or buy-out.		☒ 1	☒ 2	☒ 3	☒ 4	☐ Yes
		☐ 5	☐ 6	☒ 7	☐ 8	
		☐ 9	☒ 10	☐ 11		
Alignment with Existing Plans/Policies:						
Yachats Flood Ordinance, Comprehensive Plan, FEMA Flood Insurance Study, Flood Insurance Rate Maps, Stormwater Master Plan (2015), Lincoln County Risk Report, 2015						
Rationale for Proposal (Why is this important?):						
The City estimates a high probability that flooding will occur in the future. Repetitive flood loss properties are documented in this addendum and problem areas include Yachats Ocean Road and Gender Creek where flooding in 2009 affected two homes. Concentrations of pre-FIRM structures in areas subject to flooding are present in several areas along the County's major rivers. Experience with the floods of the late 1990s showed that properly elevated structures in the flood plain performed well during major flood events, most suffering minimal if any, damage. Especially in areas which may be subject to damage during relatively high frequency flood events, elevating structures in conformance with the County's flood hazard area codes (lowest floor at least one foot above the base flood level) is a cost-effective way to reduce risk.						
Ideas for Implementation (How will it get done?):				Action Status Report		
Coordinate with willing property owners, DLCD, FEMA, and OEM to identify suitable mitigation options. Assess individual properties for possible mitigation measures (elevation, acquisition, relocation) to reduce or prevent future flood losses. Implement mitigation measures (elevation, acquisition, relocation) for properties within the floodplain.				<u>2020 Update:</u> Education materials available at City Hall.		
Champion/ Responsible Organization:		Floodplain Manager				
Internal Partners:			External Partners:			
Planning, Public Works			Lincoln County Building, DLCD, OEM, DOGAMI, FEMA			
Potential Funding Sources:			Estimated cost:		Timeline:	
Local Funding Resources, FEMA PDM, HMGP, FMA			High		☐ Ongoing ☐ Short Term (1-4 years)	

		☐ Medium Term (4-10 years) ☒ Long-Term (10+ years)
Form Submitted by:	2015 Yachats Steering Committee, revised 2020	
Action Item Status:	Ongoing	

Mitigation Action: Yachats #9 (What do we want to do?)		Alignment with Plan Goals:	High Priority Action Item?
Relocate or mitigate City Hall, Water Treatment, and Wastewater Treatment plants out of tsunami inundation zone		☒ 1 ☒ 2 ☐ 3 ☐ 4 ☒ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11	☒ Yes
Alignment with Existing Plans/Policies:			
Rationale for Proposal (Why is this important?):			
City Hall, the water treatment plant, and the wastewater treatment plant are located within a tsunami inundation area. DOGAMI finalized the remapping of the distant and local tsunami zones providing public, private and citizens with a clearly defined map of hazard areas. However, there was little to be done for the relocation of public safety buildings out of the inundation areas. A significant tsunami event has the potential to cause disruption of power, contamination of water supplies, loss of essential communication systems, a large amount of debris, and traffic congestion. A tsunami has the potential to damage critical buildings and infrastructure in the tsunami inundation zone. Mitigating the effects that a tsunami has on city assets is a high priority. The Disaster Mitigation Act of 2000 requires communities to identify actions and projects that reduce the effects of hazards on both new and existing buildings and infrastructure [201.6(c)(3)(ii)]. Assessing and evaluating needed mitigation for critical assets in the tsunami inundation zone, can assist the City in determining what further actions are needed to help mitigate the city's risk to tsunami.			
Ideas for Implementation (How will it get done?):		Action Status Report	
Investigate relocation alternatives for critical facilities in the tsunami inundation zone. Investigate alternatives and purchase a cost effective police communications system that is resilient to natural hazards (earthquake, tsunami, etc.)		<u>2020 Update:</u> The YRFPD building is now located at 2056 Hwy 101. The Fire Department is in the process of zone change for the old fire station and plans to sell the building. City Hall will move to the former Umpqua Bank Building (located at 5 th St and Hwy 101 N) Outside the M tsunami inundation zone (inside the XXL tsunami inundation zone).	
Champion/ Responsible Organization:	Public Works		
Internal Partners:		External Partners:	
Administration, Planning		County, DLCD, Regional Solutions Team	
Potential Funding Sources:	Estimated cost:	Timeline:	
Local Funding Resources	High	☐ Ongoing ☐ Short Term (1-4 years) ☐ Medium Term (4-10 years)	

		☒ Long-Term (10+ years)
Form Submitted by:	2014 Risk MAP Resilience Workshop, revised 2020	
Action Item Status:	Ongoing	

Mitigation Action: Yachats #10 (What do we want to do?)	Alignment with Plan Goals:	High Priority Action Item?
Implement land use strategies and options to increase community resilience by creating an adoption ready tsunami code.	☒ 1 ☒ 2 ☒ 3 ☒ 4 ☒ 5 ☐ 6 ☒ 7 ☒ 8 ☐ 9 ☒ 10 ☐ 11	☒ Yes
Alignment with Existing Plans/Policies:		
Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities, Comprehensive Plans, Development Codes		
Rationale for Proposal (Why is this important?):		
The Land Use Guidance prepared by the Oregon Department of Land Conservation and Development (DLCD), was released on January 15, 2014 and updated in April 2015. This tsunami land use guidance was originally developed by DLCD in partnership with a diverse and capable advisory committee comprised of representatives of local government and state agencies assisted by the consulting firm of Cogan Owens Cogan. Advisory committee members from local governments included representatives from the cities of Cannon Beach, Coos Bay, Depoe Bay, Lincoln City, Manzanita, Seaside, Waldport, Yachats, and also included Coos County. The purpose of the guidance is to assist vulnerable communities as they incorporate tsunami resilience measures into their local land use programs. The land use guide is designed to be tailored by communities to address their individual tsunami risk and location, and provides comprehensive information focused on land use planning approaches to reduce tsunami hazard risk and implement important land use resilience measures. The guidance includes sample tsunami related comprehensive land use plan text and policies, information on needed map amendments, a tsunami hazard overlay (THO) zone model to implement resilience measures, tsunami land use strategy financing and incentive concepts, a newly revised and comprehensive chapter 6 on tsunami evacuation facilities improvement planning, information relating to pre-disaster community land use planning for a Cascadia event tsunami, and web links to other helpful information. The guide's model comprehensive plan, zoning code and other provisions are designed to be used with the new Department of Geology and Mineral Industries Tsunami Inundation Maps (TIMs). The guide is web based with links to other resources. DLCD was assisted by consultants Carole Connell and D.J. Heffernan in the development of the newly revised Chapter 6 as indicated above.		
Ideas for Implementation (How will it get done?):	Action Status Report	
Utilize the Tsunami Land Use Guidance and determine appropriate strategies/ options to increase community resilience Incorporate relevant aspects of the DLCD Landslide Land Use Guide ("Preparing for Landslide Hazards, A land Use Guide for Oregon Communities") Consider relocating or retrofitting structures with vulnerable populations (e.g. schools, hospitals,	<u>2020 Update</u> New in 2020	

and nursing homes) that are within high tsunami hazard zones.			
Champion/ Responsible Organization:	Planning		
Internal Partners:		External Partners:	
Administration, Public Works		FEMA, OEM, DLCD	
Potential Funding Sources:		Estimated cost:	Timeline:
Local Funding Resources, DLCD-TA Grant		Low	☐ Ongoing ☒ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☐ Long-Term (10+ years)
Form Submitted by:	2020 Yachats Steering Committee		
Action Item Status:	New		

Mitigation Action: Yachats #11 (What do we want to do?)		Alignment with Plan Goals:		High Priority Action Item?	
Research drought resiliency code amendments (Gray water systems, green infrastructure, etc.). Consider drafting a drought resiliency ordinance.		☐ 1	☒ 2	☒ 3	☒ 4
		☒ 5	☒ 6	☒ 7	☒ 8
		☐ 9	☐ 10	☐ 11	☒ Yes
Alignment with Existing Plans/Policies:					
Comprehensive Plan, Development Code, Water Master Plan/Water Management & Conservation Plan					
Rationale for Proposal (Why is this important?):					
The steering committee recognized that the city's probability of drought is high and that their vulnerability to drought is high. Development in the city has put more pressure on the existing water supply. Drought was identified as the top hazard in the City of Yachats. Developing drought resiliency code requirements could increase the number of drought resiliency projects in the city.					
Ideas for Implementation (How will it get done?):		Action Status Report			
Research drought resiliency code requirements and ordinances passed by other jurisdictions in the State.		<u>2020 Update:</u> New			
Champion/ Responsible Organization:	Planning				
Internal Partners:		External Partners:			
Public Works, Administration		DLCD			
Potential Funding Sources:		Estimated cost:	Timeline:		
Local funding resources		Low	☐ Ongoing ☐ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☒ Long-Term (10+ years)		
Form Submitted by:	2020 Steering Committee				
Action Item Status:	New				

Mitigation Action: Yachats #12 (What do we want to do?)		Alignment with Plan Goals:		High Priority Action Item?	
Develop a non-potable water source for fire suppression (purple pipe).		☒ 1	☒ 2	☐ 3	☐ 4
		☐ 5	☐ 6	☐ 7	☐ 8
		☐ 9	☒ 10	☐ 11	
☒ Yes					
Alignment with Existing Plans/Policies:					
Rationale for Proposal (Why is this important?):					
Water is a valuable resource and the City of Yachats is developing a water master plan, source water protection plan and a water management and conservation plan to address water issues. A purple pipe system provides an alternative to the existing water suppression methods that use potable water.					
Ideas for Implementation (How will it get done?):		Action Status Report			
Cooperate with the Yachats Rural Fire Protection District and Public Works to Investigate the implementation of a purple pipe system for fire suppression.		<u>2020 Update:</u> New			
Champion/ Responsible Organization:	Public Works				
Internal Partners: Planning		External Partners: DLCD and Regional Solutions Team			
Administration		Yachats RFPD			
Potential Funding Sources:		Estimated cost:	Timeline:		
Local funding sources and grants		Medium	☐ Ongoing ☐ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☒ Long-Term (10+ years)		
Form Submitted by:	2020 Steering Committee				
Action Item Status:	New				

Mitigation Action: Yachats #13 (What do we want to do?)		Alignment with Plan Goals:	High Priority Action Item?
Develop a Climate Resilience Plan		☒ 1 ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☒ 10 ☐ 11	☐ Yes
Alignment with Existing Plans/Policies:			
Rationale for Proposal (Why is this important?):			
A climate resilience plan would help the City of Yachats prepare for and respond to hazardous events. The City of Yachats as discussed above is susceptible to many hazards and a climate resilience plan will help the City be better prepared to bounce back from the listed hazard events. The City is part of the Geos Institute team that is convening and supporting a cohort of communities across Oregon that are interested in developing climate resilience plans.			
Ideas for Implementation (How will it get done?):		Action Status Report	
Apply for grant funding and complete the project.		<u>2020 Update:</u> New	
Champion/ Responsible Organization:	Public Works		
Internal Partners: Planning		External Partners: DLCD and Regional Solutions Team	
Administration, Planning		DLCD, OCCRI, OSU, UO	
Potential Funding Sources:		Estimated cost:	Timeline:
Local funding sources, DLCD Technical Assistance Grants, Geo-Institute Funding		Medium	☐ Ongoing ☐ Short Term (1-4 years) ☒ Medium Term (4-10 years) ☐ Long-Term (10+ years)
Form Submitted by:	2020 Steering Committee		
Action Item Status:	New		

ATTACHMENT B: PUBLIC INVOLVEMENT SUMMARY

Members of the steering committee provided edits and updates to the NHMP prior to the public review period as reflected in the final document.

To provide the public information regarding the draft NHMP addendum, and provide an opportunity for comment, an announcement (see text below) was announced on the city's website and an email contact was provided for public comment. The plan was also announced on the County's website and an opportunity to provide feedback was provided.

During the public review period there was one comment provided.

Community Input Needed

<https://www.co.lincoln.or.us/planning/page/community-input-needed-natural-hazards-mitigation-plan-renewal>

The first phase of the renewal process was to solicit feedback from community members to identify what is important to them regarding our local natural hazard risks and planning goals. This was completed in September of 2019. Since 2019 our Steering Committee made up of our local City, Tribal, Public Safety Agencies and our Addendum Partners have finalized our draft plan for our next renewal period. Our next step is to send our final draft to our community members for their feedback and input then to the State of Oregon, then to FEMA and lastly to our Lincoln County Board of Commissioners.

Community Member Input:

- Community members are invited to provide feedback by submitting comments or questions by Friday, October 2nd

Natural Hazards Mitigation Plan - September 2020 Renewal Plan:

- The September 2020 page is separated down into 3 sections (I, II, III)

Volume I – Basic Plan

Volume II – Jurisdictional Addenda

- Depoe Bay
- Lincoln City
- Newport
- Siletz
- Toledo
- Waldport
- Yachats
- Central Lincoln PUD
- Lincoln Co. School District
- Seal Rock Water District

Volume III - Appendices

- for current plan - September 2015

Public Comments and Responses

Listed below is the list of public comments shown in *italic text* followed by the County's response.

By way of introduction, my wife and I have owned the house at 622 Ocean View Drive for the past 20+ years. We read the draft Lincoln County Natural Hazard Mitigation Plan with interest, as we have been doing our part to be aware of and mitigate against the various natural hazards that face us in Yachats.

I wanted to highlight a mitigation recommendation on Page 3-8, for which Public Works is identified as the Coordinating Organization:

Continue and enhance severe weather (windstorm, tornado, winter storm) resistant construction methods where possible to reduce damage to utilities and critical facilities from windstorms and winter storms (snow/ice). In part, this may be accomplished by encouraging electric utility providers to convert existing overhead lines to underground lines.

We are very supportive of Yachats working with the utility companies to convert existing overhead lines to underground lines. Over the years, we have had numerous calls into Lincoln PUD and Charter to reattach electrical lines after windstorms and winter storms. The overhead transformer next to our house has exploded, and insulators and other debris have dangerously blown off the top of the poles during these storms.

Over the past few months, I have been in touch with Lincoln PUD, Charter Communications, and our neighbors on Ocean View Drive to explore the feasibility of converting the existing overhead lines on Ocean View Drive to underground lines. There is considerable interest among our neighbors in doing this. While I am primarily interested in having the lines underground between 7th Street and 6th Street, it seems there should be a strong community interest in going all the way from 7th Street to 4th Street. If this can be accomplished, Ocean View Drive would not have any overhead lines on Ocean View Drive from 7th Street to 1st Street. Since this is the portion of Yachats most exposed to the ocean and therefore most vulnerable to windstorms and winter storms, having these lines underground would be a tremendous benefit to the City of Yachats in mitigating against our #1 and #2 highest priority natural hazards: windstorms and winter storms. Burying the powerlines in this area will also significantly beautify the aptly named Ocean View Drive, home of much of the 804 Trail and Yachats' biggest "gem" and tourist attraction.

While I have learned a lot in my discussions with Faye Monroe at Lincoln PUD and Joshua Lightner at Charter Communications and am making progress towards making this happen, as well as determining an approximate cost, it would seem to make a lot more sense to consider this a community-wide project with Yachats Public Works taking the lead from this point forward. What do you think? Would it help to set up a time to talk via phone or Zoom to discuss further?

Yachats Response:

The Yachats addendum to the NHMP includes an action addressing this comment. The City will continue to coordinate with utility providers and work to accomplish this action item."

ATTACHMENT C: ACTION ITEM FORM TEMPLATE

Mitigation Action: Yachats # (What do we want to do?)	Alignment with Plan Goals:	High Priority Action Item?
	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11	☐ Yes
Alignment with Existing Plans/Policies:		
Rationale for Proposal (Why is this important?):		
Ideas for Implementation (How will it get done?):	Action Status Report	
Champion/ Responsible Organization:		
Internal Partners:	External Partners:	
Potential Funding Sources:	Estimated cost:	Timeline:
		☐ Ongoing ☐ Short Term (1-4 years) ☐ Medium Term (4-10 years) ☐ Long-Term (10+ years)
Form Submitted by:		
Action Item Status:		



DATE: January 8, 2021

TO: Yachats City Council

FROM: Yachats Library Commission

SUBJECT: Joining the Oregon Digital Library Consortium

The Yachats Library Commission would like to ask the Yachats City Council's approval to apply for a two-year membership to the **Oregon Digital Library Consortium** (ODLC). Joining ODLC would give the Yachats Library access to an online service known as **Library2Go** (L2G).

As the only library in Lincoln County not signed up with L2G, we are bypassing an opportunity to increase our library's offerings by nearly 90,000 items, including ebooks, audiobooks and videos.

L2G is a computer-based library lending service. Upon joining, our Library would provide its members with a code that they could use to go directly to the L2G website, peruse its extensive catalogue, and download requested items. As a result, the Yachats Library would not be obliged to purchase any of these items, but nevertheless, would provide its patrons with a nearly ten-fold increase in its offerings.

There is a cost, which the Friends of the Yachats Library have agreed to shoulder; they intend to apply for a Trust Management Grant, which the Friends feel represents a "good fit" between our request and the Trust Management's giving philosophy. The estimated annual cost of ODLC membership would be \$3,931.09. There would also be a possible, one-time setup fee for L2G of \$1,500—although, in the recent past L2G has chosen to forego that charge.

Thus, for a two-year membership, our total, maximum cost would be \$9,362.18. The most we could ask from the Trust Management Grant would be \$10,000. Again, there seems to be a good fit between our needs and what the Trust Management has to offer.

In summary, we feel that this is an invaluable service to our patrons, one that is long overdue. We are willing to find ways to finance it, courtesy of our Library Friends. And we ask your prompt approval on this time sensitive request; the application to ODLC is due on February 1.

Respectfully submitted,
David Rivinus—Library Commission Chair

INFORMATION FOR YACHATS PUBLIC LIBRARY: Procedure for Admitting New Members to the Oregon Digital Library Consortium (ODLC)

What is the Oregon Digital Library Consortium? ODLC is a group of public and tribal libraries that join together to purchase access to downloadable material (e-books and e-audiobooks). ODLC has an annually elected Executive Committee and a Governing Board with representatives selected by each participating library (small libraries and consortiums are each represented by a single member). Through fiscal year 2022/2023, the online platform contracted with to provide an online platform for downloadable material to ODLC is OverDrive. OverDrive is also the fiscal agent for ODLC. Not all eligible libraries are members of ODLC, but all of our members must be officially recognized as a public or tribal library by the Oregon State Library. All downloadable items purchased by ODLC are available to the patrons of any participating library.

According to the current by-laws, the Governing Board must approve all new member libraries at least 90 days prior to the new contract year. This means that new members must request membership by February 1st, in order to give the Board time to take a ratification vote at the Spring Governing Board Meeting. After the Governing Board ratifies membership, new members will need to sign a contract with OverDrive. OverDrive invoices members in early July each year, and OverDrive service for new members would begin July 1st. OverDrive reserves the right to approve new members to the consortium.¹

Costs

1. How platform and content fees are calculated for member libraries

This amount is based on the size of the library member's service population combined with projected content use. While this number is an estimate the first year, it will change based on actual usage after the initial year and as content use by each ODLC member is periodically reassessed. Estimates for prospective members is generally based on the contribution from a similarly-sized library.

2. OverDrive's one-time set up fee

This is determined by OverDrive. In the past that has been in the neighborhood of \$1,500, but it has been \$0 as of 2019. This could change if OverDrive ever decided to reinstate the fee.

3. SIP license

This is the preferred method to authenticate users. Some ILS (Integrated Library System - examples include SirsiDynix and Polaris systems) vendors will not charge extra for an additional license and some will. This can

cost anywhere from \$1,500 – \$5,000. If this is cost-prohibitive, there are other options such as EZproxy or OverDrive's Library Card Manager. Check with your ILS vendor for clarification on the SIP license. Learn more about authentication with OverDrive under *Authentication* here:

<https://company.overdrive.com/libraries/public-libraries/faqs/>

4. Annual hosting fee

ODLC's total hosting fee is determined by ODLC's contract with OverDrive, valid from July 1, 2019 to June 30, 2023. It is up to ODLC how to split the hosting fee costs.

5. Annual content contribution

The ODLC Governing Board determines each member's content contribution amount by December 1st before the next fiscal year. There is no guarantee neither as to what the content contribution will be each year, nor how much the content contribution may increase from year to year. The annual collection fee assessed to each library includes a proportional share of a per title cost of \$1.50 for OCLC MARC records. If desired, these records may be downloaded and added to the individual online catalogs of each member and associate member library.

6. Advantage program membership

ODLC member libraries may optionally join the Advantage program. There may be a cost associated with this, beyond the cost of Advantage titles. Check with OverDrive for details.

Conditions of membership

1. The member library must agree to abide by the separately attached by-laws. The way a prospective new member library agrees to abide by these by-laws will vary depending on the type of library: a special district should have their governing board pass a resolution, while a city or county library may have an agreement to this effect signed by a city/county manager.
2. The member library must sign an agreement with Overdrive.
3. Any prospective member must be prepared to provide proof that they are a public or tribal library as recognized by the Oregon State Library (OSL). A letter from OSL to this effect is acceptable.

From the OverDrive Digital Library Reserve Consortium Access Agreement: "OverDrive shall have sole discretion to approve any and all new libraries that seek to join Consortium."

Application for Membership in the Oregon Digital Library Consortium

Library Name:

Library Mailing Address:

Library Service Population (most recent number from OSL report):

ODLC Primary Contact Name:

ODLC Primary Contact Email Address:

ODLC Primary Contact Phone Number:

ILS used:

Do you share an ILS with other libraries?

If so, with which libraries do you share?

Technical Contact for OverDrive:

Technical Contact Email Address:

Technical Contact Phone Number:

Email address for patrons to send technical questions to:

By signing this application, you are agreeing to the terms as outlined in the procedures including intent to sign the by-laws and contracts as required. This initial application does not obligate you to any fees. Once the actual fees are known you will be sent a copy of the form which appears on the next page in which the actual estimate of fees for July 1, 2021 – June 30, 2022 will be filled in. You will be expected to sign this additional form which obligates you to pay the fees as presented at that time.

Name:

Title:

Signature:

Date:

In order to join the Oregon Digital Library Consortium, please complete the following steps by February 1 prior to the fiscal year your library/consortium plans to join ODLC:

- **Please email a brief letter of intent to the ODLC chair along with the following:**
 - **A signed copy of the ODLC bylaws**
 - **A completed ODLC application for membership**
- **The original signed documents should additionally be mailed to:**

Michael Grutchfield

Chair of Oregon Digital Library Consortium

Jackson County Library Services

412 East Main Street

Medford, OR 97501

ODLC Statement of Fees FY 2021-2022: Yachats Public Library

Based on service population of: 745

This estimate does not reflect any additional fees assessed by OverDrive or your ILS.

Hosting Fee:	97.90
Content Contribution:	3833.19
Total Cost:	\$3931.09

Bylaws of the Oregon Digital Library Consortium

Approved November 7, 2005

Revisions approved October 30, 2006; April 4, 2008; March 20, 2009; June 30, 2010; March 2011;
January 2013; November 2014; April 2015; April 2017; June 2020

Article 1. Organization

The name of this organization shall be the Oregon Digital Library Consortium (ODLC).

Article 2. Charge

- a. The Oregon Digital Library Consortium is charged with negotiating subscriptions to digital content including but not limited to downloadable audiobooks and videos. Negotiations can be either direct with commercial providers or through a third party business agent (hereafter referred to as business agent).
- b. The ODLC recommends subscription contracts to its member libraries and manages those subscriptions.

Article 3. Membership and Governance

Section 1. Membership

A member library in ODLC is a single library or a group of libraries involved in a cooperative relationship that contracts for a subscription. There are two (2) levels of membership.

a. Full membership

Full membership includes all members from libraries or libraries involved in a cooperative arrangement with a service population of 50,000 or greater, as determined by the Oregon State Library.

b. Associate membership

Associate membership includes all members from libraries or libraries involved in a cooperative arrangement with a service population 49,999 or less, as determined by the Oregon State Library.

Section 2. Governance

- a. The Governing Board shall consist of one representative from each full member library and one representative elected from all associate member libraries. Libraries involved

in a cooperative arrangement separate from the ODLC are entitled to one representative on the Governing Board. The associate member representative will be elected by a majority vote of all associate members in an election to take place before the annual meeting.

- b. The Governing Board shall elect a Chair, Vice-Chair/Chair-Elect and Secretary. Chair and Secretary shall serve one-year terms. The Vice-Chair/Chair-Elect shall serve a two-year term with the second year as Chair. Elections shall be held at the annual meeting.
- c. The Governing Board may appoint an Executive Committee.

Section 3. Appointment, Term of Office, and Duties of the Chair

- a. The duties of the Chair include facilitating meetings, helping set agendas, serving as a liaison between the Governing Board and the subscription vendors or the business agent, and conferring with and keeping committee member libraries informed.
- b. The Chair shall be the previous year's Vice-Chair/Chair-Elect.
- c. A vacancy in the Chair may be filled by an election of the Governing Board for the unexpired portion of the term for the vacant office. Until an election can be held the Vice-Chair/Chair-Elect shall serve as Interim Chair.

Section 4. Appointment, Term of Office, and Duties of the Vice-Chair/Chair-Elect

- a. The duties of the Vice-Chair/Chair-Elect include assisting the Chair as requested, acting in capacity for the Chair when the Chair is unavailable and preparing to serve as Chair the following year. The Vice-Chair/Chair-Elect shall also serve as Secretary if the position of Secretary is vacant or absent.
- b. The Vice-Chair/Chair-Elect shall be elected annually by the Governing Board at the annual meeting. The election may be held electronically. The new Vice-Chair/Chair-Elect shall serve a two-year term, effective July 1. The first year is as Vice-Chair/Chair-Elect and the second as Chair.
- c. A vacancy in the Vice-Chair/Chair-Elect may be filled by an election of the Governing Board for the unexpired portion of the term for the vacant office. Until an election can be held the position of Vice-Chair/Chair-Elect shall remain vacant.

Section 5. Appointment, Term of Office, and Duties of the Secretary

- a. The duties of the Secretary include taking and distributing minutes at any scheduled meetings, handling correspondence, maintaining membership lists for the Governing

Board, standing committees and ad hoc committees membership lists, and maintaining public records as required by law.

- b. The Secretary shall be elected annually by the Governing Board at the annual meeting. The election can be held electronically. The new Secretary shall serve a one-year term, effective July 1st.
- c. A vacancy in the Secretary position may be filled by an election of the Governing Board for the unexpired portion of the term for the vacant office. Until an election can be held the position of Vice-Chair/Chair-Elect shall serve as interim Secretary.
- d. The duties of the Vice-Chair/Chair-Elect include assisting the Chair as requested, acting in capacity for the Chair when the Chair is unavailable and preparing to serve as Chair the following year. The Vice-Chair/Chair-Elect shall also serve as Secretary if the position of Secretary is vacant or absent.
- e. The Vice-Chair/Chair-Elect shall be elected annually by the Governing Board at the annual meeting. The election may be held electronically. The new Vice-Chair/Chair-Elect shall serve a two-year term, effective July 1. The first year is as Vice-Chair/Chair-Elect and the second as Chair.
- f. A vacancy in the Vice-Chair/Chair-Elect may be filled by an election of the Governing Board for the unexpired portion of the term for the vacant office. Until an election can be held the position of Vice-Chair/Chair-Elect shall remain vacant.

Section 6. Appointment, Term of Office, and Duties of the Selection Committee Chair

- a. The duties of the Selection Committee Chair include overseeing and coordinating the work of selectors purchasing materials for the Oregon Digital Library Consortium. The Selection Committee Chair shall present an annual purchasing plan to the ODLG Governing Board at the annual spring meeting for review and discussion. The Selection Committee Chair is a non-voting member of the Executive Committee.
- b. The Selection Chair shall be elected bi-annually by the Governing Board at the annual spring meeting. The election can be held electronically. The new Selection Committee Chair shall serve a two-year term, effective July 1st.
- c. A vacancy in the Selection Chair position may be filled with an appointment by the Executive Committee to ensure no interruption in ordering. A new Selection Chair will then be elected at the next Governing Board Meeting for the unexpired term.

Section 7. Appointment, Term of Office, and Duties of the Executive Committee

- a. If deemed necessary, the Governing Board shall appoint an Executive Committee.
- b. The Executive Committee shall be composed of the Chair, Vice-Chair/Chair-Elect, Secretary, the Selection Committee Chair and two members at large elected from the member libraries of the Governing Board by a majority vote at the annual meeting. The election may be held electronically.
- c. The term of office shall be one year for the members at large. The other Executive Committee members shall follow the terms of office as defined for officers in the previous sections.
- d. The Executive Committee shall be authorized to carry out the work of the Governing Board as described herein, based on a majority vote of the Executive Committee members. The Executive Committee can appoint and dismiss Ad Hoc Committees, act on recommendations of ad hoc and standing committees, refigure cost allocations based on the established formula(s) and perform other duties as determined by the Governing Board. The Executive Committee cannot amend the by-laws, accept officer resignations, remove an Officer from office or vote to dissolve the consortium.

Section 8. Resignation and Removal

- a. An officer may resign at any time by delivering written notice to the Governing Board. A resignation shall be effective when received or at a subsequent effective date which is stated in the resignation and acceptable to the Governing Board.
- b. An officer may be removed from office, with or without cause, by a two-thirds majority vote of the members then serving on the Governing Board.

Section 9. Compensation

No member library of the Governing Board shall receive any compensation or reimbursement for his or her services to the Governing Board.

Section 10. Joining the Consortium

- a. ODLIC membership is open to public and tribal libraries in Oregon, as defined in the Oregon Administrative Rules 543-060-0010: “(1) ‘Public library’ has the meaning given to public library in ORS 357.400(3), and shall be established in accordance with ORS 357.410.... (4) ‘Tribal library’ means a library operated by any of the nine

federally-recognized tribes in Oregon.”

- b. Participation can only begin at the start of a new fiscal year, currently July 1.
- c. Prospective members must submit their application to join ODLC by February 1st of each year. This allows enough time for the Governing Board to vote, for forms to be signed, and for OverDrive to complete its work in time for the July 1st service start date.
- d. Member libraries wishing to participate in vendor add-on programs must have the approval of the Governing Board.

Section 11. Withdrawal from the Consortium

- a. Any member library can fully withdraw from the Consortium provided notice is given to the Governing Board at least 120 days prior to the new contract year. Upon withdrawing, member library loses all rights and privileges to access the content already subscribed to. Any fees paid to date are nonrefundable.
- b. A member library can request partial withdrawal for a period of one year; defined as paying the annual maintenance but not contributing to the product selection funds, annual subscriptions, etc.
 - 1. This request must be made at least 150 days prior to the new contract year.
 - 2. This request will be considered by the Governing Board, which has 20 days to accept or reject the request and to make adjustments in the subscription allocation for all member libraries or just for the requesting member library as deemed appropriate and necessary.
 - 3. Should the request be denied, the member library will have a choice to pay the subscription allocation in full or withdraw from the Consortium as per Article 3 Section 9a.
 - 4. If approved, the member library has rights to the content subscribed to up to the point of withdrawal. If it is not technically feasible to separate access, the member library retains rights to access all content for the one-year period.
 - 5. Should a member library withdraw or partially withdraw from the Consortium, all other member libraries must state their intent to remain or withdraw within 15 days of notice to the Governing Board in the case of full withdrawal or within 15 days of the Governing Board’s decision in the case of a partial withdrawal. In this circumstance, the 120-day rule for withdrawal is waived for the remaining member libraries. However, a final decision by all the remaining member libraries must be registered with the Governing Board no more than 90 days

prior to contract renewal in order to allow adequate time to prepare and give 60 days' notice for non-renewal of the contract(s) should that be deemed the appropriate course.

Article 4. Meetings and procedures

Section 1. Frequency

- a. The Governing Board shall meet a minimum of once each fiscal year, July 1- June 30. An annual meeting shall take place in conjunction with the annual spring gathering of the Oregon Library Association.
- b. Additional meetings can be scheduled by majority vote of either the Executive Committee or the Governing Board.

Section 2. Use of Electronic and Telephonic Means

- a. If a member library of the Oregon Digital Library Consortium is not able to meet at the specified geographic location, it is acceptable to participate in the meeting by any appropriate electronic medium, provided in ORS 192.6.
- b. Votes by the Governing Board or Executive Committee may be held electronically.

Section 3. Quorum and Manner of Acting

- a. The presence of more than fifty percent (50%) of current Governing Board members shall be required as a quorum for the conduct of any business.
- b. The presence of more than fifty percent (50%) of current Executive Committee members shall be required as a quorum for the conduct of any business.
- c. An act of more than fifty percent (50%) of the Governing Board members present at a meeting at which a quorum is present shall be the act of the Governing Board.
- d. An act of more than fifty percent (50%) of the Executive Committee members present at a meeting at which a quorum is present shall be the act of the Executive Committee.

Section 4. Minutes

The Secretary shall be responsible for recording and distributing minutes of all Governing Board and Executive Committee meetings.

Section 5. Standing committees

a. Selection

1. The Selection committee is charged with selecting and purchasing materials on behalf of the Consortium.
2. The Selection Committee Chair and Executive Committee make budget recommendations to the Governing Board in the form of an annual purchasing plan submitted at the annual spring meeting for review and discussion.
3. Selection procedures and policies shall be reviewed annually by the Executive Committee and Selection committee chair. Policy changes will be recommended to the Governing Board.
4. The Selection committee shall be composed of one chairperson, and can also include any interested individual(s) from any ODLC member library who wishes to participate. Committee membership will be reviewed annually.

b. Cataloging

5. The Cataloging committee is charged with the collection and distribution of MARC records (and any other relevant metadata) that accurately represent the collection of the ODLC. The committee collects MARC records and other metadata from vendors of ODLC and OCLC, and distributes the data to any ODLC member libraries that wish to use the records in their local catalog, or for any other purpose related to ODLC.
6. The Cataloging committee shall collect and distribute records and metadata in as timely a manner as possible, given the time constraints imposed by vendors and OCLC.
7. Depending upon the quality and content of the records received from vendors, the Cataloging committee may occasionally make adjustments to the data prior to distribution to ODLC member libraries.
8. The Cataloging committee provides "best practice" recommendations for the use of MARC records and any other metadata by ODLC member libraries. The use of either Cataloging committee data or best practices by ODLC member libraries is purely voluntary. ODLC member libraries are not required to load ODLC records into their local catalogs. Nor are ODLC member libraries required

to follow the related best practices.

9. The Cataloging committee shall be composed of one chairperson, and can also include any interested individual from any ODL member library who wishes to participate.

Section 6. Ad hoc committees

The Oregon Digital Library Consortium Governing Board and Executive Committee have the authority, by a majority vote of the respective body, to establish and abolish ad hoc committees as deemed necessary and appropriate.

Section 7. Amending bylaws

- a. The Oregon Digital Library Consortium Governing Board has the authority to review periodically the Oregon Digital Library Consortium bylaws and to make any changes deemed appropriate.
- b. Proposed by-laws changes must be distributed to the Governing Board at least 30 days prior to a scheduled vote on those changes.

Article 5. Procurement Process and Responsibilities

Member libraries of the Consortium agree to provide access to this subscription service as an alternative to the regular procurement process each individual member library normally follows.

Article 6. Cost Allocation

- a. Where possible the formula for financial participation shall be based on service area population as determined by the Oregon State Library. The Governing Board, when necessitated by vendor requirements, may approve other formulas.
- b. Member libraries joining after the initial contract period shall pay the annual maintenance and product selection or subscription fees as determined by a refiguring costs as calculated in Article 6 Section a. New member libraries shall pay start up fees as determined by the vendor(s).

Article 7. Dissolution of the Oregon Digital Library Consortium

- a. Oregon Digital Library Consortium may be dissolved upon a unanimous vote of the Governing Board and can be effective only with the next fiscal year that has not yet begun. Such a vote can only be taken prior to the 60-day cancellation date required by the vendor(s) in order to give all an opportunity to cancel the service at the same time. Should a vendor require more than

60-day notice for cancellation, this dissolution vote must be taken with enough prior notice to meet the vendor's cancellation deadline.

- b. Upon dissolution all assets of the Consortium shall be divided according to the formula used for cost allocation. Each member library of the Consortium shall be responsible for managing those assets in accordance with any provisions and requirements set by the vendor(s) and/or business agent.

Article 8. Fiscal agencies for the Oregon Digital Library Consortium (ODLC)

- a. Invoicing, receivables, and billing are handled by the platform vendor as fiscal agent for ODLC.
- b. The Oregon Library Association (OLA), specifically the Public Library Division (PLD), will act as the fiscal agent, for the purposes of grant documentation and receipt/distribution of Library Services and Technology Act (LSTA) grant funds managed by the State Library of Oregon.
- c. The ODLC Executive Committee will vote to determine the fiscal agency of any other funds received by ODLC.
- d. Any changes to the fiscal agency, as outlined in (a) and (b) above, must be approved by a majority vote of the Governing Board.

RATIFICATION OF BYLAWS

As a member library of ODLC I hereby ratify these Bylaws:

Signature

Title

Institution

Date

Selection of topics/questions for March 1 joint meeting with County Commissioners

The meeting is scheduled for Monday, March 1 from 5:30 - 6:30 PM. In addition to items initiated by Council, we can expect there to be items put on the agenda by the Commissioners. Council's previous joint meeting took place on July 15, 2020, and it may be helpful to review the materials for that meeting on the city website.

Discussion of interview questions for Council applicants

Prior to Council interviews on February, 24 2020, Council selected questions to ask to applicants at the February 6 work session. What questions do we wish applicants to anticipate this time? Any other features of the potential interview process that Council wishes to discuss?

(Council is scheduled to meet on January 22 to review all applications that have been received and to determine whether to schedule interviews or extend the application period.)

Yachats Urban Renewal District
Annual Report and Financial Statement
Fiscal Year July 1, 2019 – June 30, 2020

The City of Yachats has an urban renewal agency (Yachats Urban Renewal Agency) that receives property taxes to pay for projects and programs to improve the Urban Renewal District. Each year, urban renewal agencies provide a summary of their finances for public information. This report is in addition to the annual agency budgets, which are adopted after public hearings. The Annual Report & Financial Statement for the Yachats Urban Renewal Agency has been prepared for fiscal year 2020 based on audited financial information and is on file with the City of Yachats and the Yachats Urban Renewal Agency. Additional information is available to all interested persons by contacting Shannon Beaucaire, City Manager/Recording Secretary for the Yachats Urban Renewal Agency, at Yachats City Hall, 501 Highway 101 N, P.O. Box 345, Yachats, Oregon 97498; telephone (541) 547-3565; e-mail citymanager@yachatsmail.org.

Urban renewal funds come from a variety of sources but the most common source is through tax increment financing. Tax increment financing is the basic means of financing urban renewal projects in the State of Oregon. Tax increment financing becomes available when an urban renewal plan is adopted. The steps in the tax increment process are:

- When a plan is adopted, total assessed value in the renewal area becomes the “frozen base” of assessed value.
- The Assessor re-calculates the total assessed values in the area each year that the renewal plan is in operation.
- Tax increment revenue is produced when total assessed values exceed the frozen base value. The assessor calls this increase over the frozen base “excess value”.
- Under Ballot Measure 50, growth in values comes from new construction, and a maximum 3% growth on existing property
- The tax increment revenue must be spent on activities written into the renewal plan
- The tax increment revenue must be spent inside the urban renewal plan boundary

Though urban renewal is a separate item on property tax statements, local property owners pay the same amount of tax whether or not an urban renewal district is established in their area. Basic property tax rates are fixed and will not change. Ballot Measure 50, which was passed by Oregon voters in 1996, requires urban renewal to be specifically shown on tax statements, but taxes shown on the tax statement to other taxing districts and government bodies are reduced by the same amount.

Fiscal Year 2020 Receipts and Expenditures

During the 2019-2020 fiscal year, the Agency received \$374,059 in tax revenue, \$66,059 more than budgeted, from tax increment financing and \$897 in interest revenue. The Agency had a beginning fund balance of \$297,767. Expenditures totaled \$240,488 for payments to the City per an intergovernmental agreement. The payment to

the City was used for repayment of the wastewater treatment plant loan and administration and accounting services. \$432,235 was carried forward into fiscal year 2020-2021 as a beginning balance.

Impact on Fiscal Year 2020 Tax Collections for Overlapping Taxing Districts

The division of taxes process results in some property taxes, which would otherwise have been received by the overlapping taxing districts, being paid over to the Yachats Urban Renewal Agency. The taxing districts forego a share of the property tax income during the life of an urban renewal plan so that the urban renewal agencies can carry out the activities that increase property values in the long term. The impact on the overlapping taxing districts was \$374,059.

Fiscal Year 2021 Budget Receipts and Expenditures

Budget estimates for fiscal year 2021 show that the Urban Renewal Agency expects to receive \$364,000 from the division of taxes.

Anticipated 2021 fiscal year expenditures include a payment to the City of Yachats of \$95,000 for debt service for the wastewater treatment plant loan, \$100,000 for debt service for the South Tank, \$220,000 for capital projects, \$14,000 for administration and accounting services. \$2,800 is budgeted for audit services and legal notices. \$350,357 is anticipated to be carried forward into fiscal year 2022 as a beginning balance.

This statement is hereby filed with the City of Yachats on January 7, 2021. Notice of this filing shall be posted and published on February 14 and February 21, 2021. The statement shall be made available to all interested parties.

Shannon Beaucaire
City Manager/Recording Secretary for the Yachats Urban Renewal Agency

SYSTEM DEVELOPMENT CHARGES ANNUAL REPORT

DATE: January 15, 2021

As per ORS 223.311(1), an annual report shall be produced which lists the projects funded in whole or in part with System Development Charges revenues during the preceding year; the amount of money spent on each project; and the amount of System Development Charges revenue collected.

In City of Yachats, all System Development Charges revenues and expenses are segregated and accounted for in Fund 160-1605 of the Municipal Budget and Accounting Records. At the time the charges are collected they are posted to the following accounts:

- Water System Improvements
- Water System Reimbursements
- Sewer System Improvements
- Storm Drain Improvements

The amount for each of these charges is based on the existing capacity of city-owned infrastructures (reimbursements) and the costs to build future capacity to serve future users (improvements), based on a methodology adopted by City Council. System Development Charges may not be used for operations or maintenance of the systems.

Attached is a complete report of the activity in Fund 160-1605 for the 2019-2020 Fiscal Year.

\$413,285.00 was carried forward from the previous year; \$163,166.22 was received in charges for the year. Additionally, \$12,552.96 was received in interest and \$15,482.81 in Local Improvement District (LID) payments.

\$40,000 was transferred to the Sewer Debt Service Fund and \$45,000 transferred to Capital Reserves

SDC-Admin 160-1605

Monthly Financial Detail Report

JUNE 2020

Printed: 8/31/2020 10:47:47 AM

Period 12 - 12

Fiscal Year 2020

Fund	Dept	Account Number	Description	Budget for Year	Prior Mo Bal	Current Activity	Actual to Date	% of Budget	Notes
160	1605	300101	Beginning Fund Balance	\$ 355,332.00	\$ 413,285.00	\$ -	\$ 413,285.00	116.31%	Audited beginning balance
160	1605	301500	Interest Earned	\$ -	\$ 11,971.36	\$ 581.60	\$ 12,552.96	0.00%	LGIP Interest
160	1605	304341	SDC Water Improvements	\$ 15,000.00	\$ 34,464.29	\$ -	\$ 34,464.29	229.76%	
160	1605	304342	SDC Water Reimbursements	\$ 20,000.00	\$ 21,358.90	\$ -	\$ 21,358.90	106.79%	
160	1605	304343	SDC Wastewater Reimbursement	\$ 60,000.00	\$ 86,439.05	\$ -	\$ 86,439.05	144.07%	
160	1605	304344	SDC Storm Drain Improvement	\$ 19,000.00	\$ 19,607.56	\$ 1,296.42	\$ 20,903.98	110.02%	
160	1605	304435	LID Assessments-Principal	\$ 10,000.00	\$ 8,091.07	\$ 7,391.74	\$ 15,482.81	154.83%	
160	1605	314875	LID Assessments-Interest	\$ 25,294.00	\$ -	\$ -	\$ -	0.00%	
			REVENUE	\$ 504,626.00	\$ 595,217.23	\$ 9,269.76	\$ 604,486.99	119.79%	
160	1605	217126	Transfer out Cap Res	\$ 45,000.00	\$ 33,750.00	\$ 11,250.00	\$ 45,000.00	100.00%	
160	1605	217129	Transfer to Debt Services	\$ 40,000.00	\$ 30,000.00	\$ 10,000.00	\$ 40,000.00	100.00%	
			TRANSFERS	\$ 85,000.00	\$ 63,750.00	\$ 21,250.00	\$ 85,000.00	100.00%	
160	1605	208500	EFB Reserved For Future Years	\$ 419,626.00	\$ -	\$ -	\$ -	0.00%	
			ENDING FUND BALANCE	\$ 419,626.00	\$ -	\$ -	\$ -	0.00%	
			EXPENSE	\$ 504,626.00	\$ 63,750.00	\$ 21,250.00	\$ 85,000.00	16.84%	
			Revenue Total	\$ 504,626.00	\$ 595,217.23	\$ 9,269.76	\$ 604,486.99	119.79%	
			Expense Total	\$ 504,626.00	\$ 63,750.00	\$ 21,250.00	\$ 85,000.00	16.84%	
			NET GAIN/(LOSS)	\$ -	\$ 531,467.23	\$ (11,980.24)	\$ 519,486.99	0.00%	



**CITY OF YACHATS
RESOLUTION NO. 2021-156
A RESOLUTION APPOINTING THE CITY MANAGER AS THE BUDGET
OFFICER PER ORS 294.331**

The City of Yachats Resolves as follows:

WHEREAS, The City of Yachats follows the Oregon Local Budget Laws ORS 294 in preparing its budget. ORS 294.331 requires the governing body to designate the one person to act as the Budget Officer.

WHEREAS, The governing body is responsible for designating the person to act as Budget Officer. The Budget Officer shall act under the direction of the executive officer of the municipal corporations, or where no executive officer exists, under the direction of governing body.

WHEREAS, The Budget Officer shall prepare or supervise the preparation of the budget document. The Budget Officer shall prepare or supervise publishing all the notices required by Local Budget Law.

Now, therefore, be it resolved by the CITY OF YACHATS City Council designates the City Manager as the Budget Officer.

This Resolution was Adopted by the CITY OF YACHATS CITY COUNCIL this __ day of _____ 2021 and takes effect upon signing by the Mayor.

Leslie Vaaler, Mayor

Attest by:

Shannon Beaucaire, City Manager



**CITY OF YACHATS
RESOLUTION NO. 2021-158
A RESOLUTION APPOINTING THE CITY MANAGER/URBAN RENEWAL
AGENCY SECRETARY AS THE URBAN RENEWAL AGENCY BUDGET
OFFICER PER ORS 294 AND 457**

The City of Yachats Resolves as follows:

WHEREAS, The City of Yachats follows the Oregon Local Budget Laws ORS 294 in preparing its budget. ORS 294.331 requires the governing body to designate the one person to act as the Budget Officer. ORS 457 specifies the requirements for the Urban Renewal Agency.

WHEREAS, the governing body is responsible for designating the person to act as Budget Officer. The Budget Officer shall act under the direction of the executive officer of the municipal corporations, or where no executive officer exists, under the direction of governing body.

WHEREAS, The Budget Officer shall prepare or supervise the preparation of the Urban Renewal Agency budget document. The Budget Officer shall prepare or supervise publishing all the notices required by Local Budget Law.

Now, therefore, be it resolved by the CITY OF YACHATS Urban Renewal Agency Board designates the City Manager/Urban Renewal Agency Secretary as the Urban Renewal Agency Budget Officer.

This Resolution was Adopted by the CITY OF YACHATS Urban Renewal Agency Board this ____ day of _____ 2021 and takes effect upon signing by the Urban Renewal Agency Chair.

Leslie Vaaler, Urban Renewal Agency Chair

Attest by:



**CITY OF YACHATS
RESOLUTION NO. 2021-158
A RESOLUTION APPOINTING THE CITY MANAGER/URBAN RENEWAL
AGENCY SECRETARY AS THE URBAN RENEWAL AGENCY BUDGET
OFFICER PER ORS 294 AND 457**

Shannon Beaucaire, City Manager/Urban Renewal Agency Secretary