

Rockaway Beach Community Open House March 26, 2019

Tsunami Resilience Land Use Strategies



Agenda

1. About the Project
2. Tsunami Evacuation Facilities Improvement Plan (TEFIP) Recommendations
3. Tsunami Hazard Overlay Zone
4. Next Steps
5. Posters and Q&A

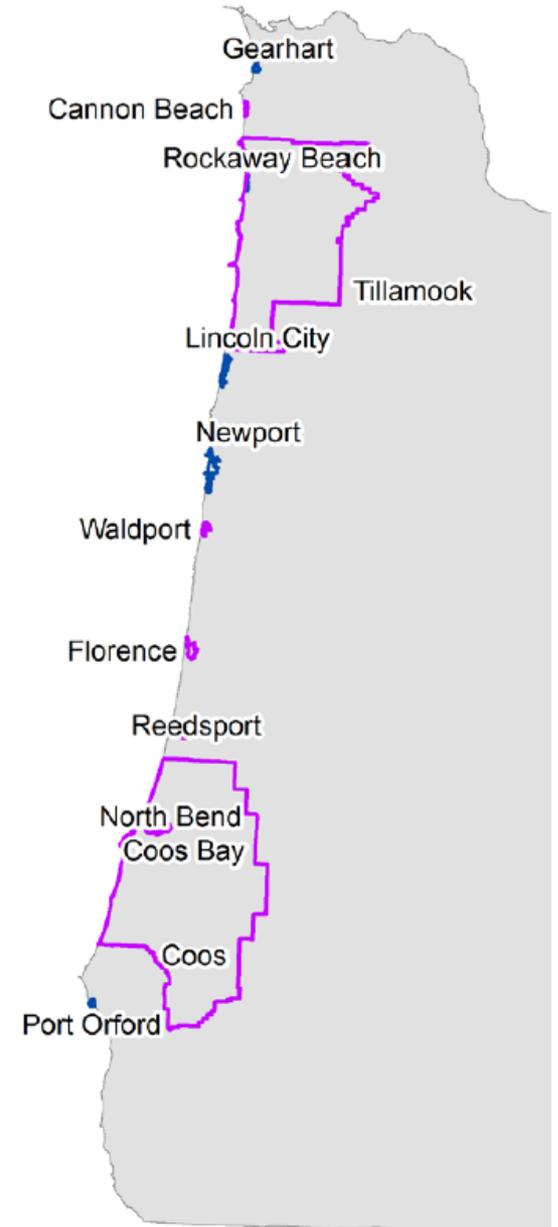
Tsunami Resilience Land Use Strategies

- Project Goal: Reduce vulnerability and increase resilience to a Cascadia event tsunami through land use planning
 - Focus – *Life safety first*
- Planning documents:
 1. Tsunami Hazard Overlay Zone
 2. Tsunami Evacuation Facilities Improvement Plan



Communities Involved

- Gearhart
- Cannon Beach
- **Rockaway Beach**
- Tillamook County
- Lincoln City
- Newport
- Waldport
- Florence
- Reedsport
- North Bend
- Coos Bay
- Coos County
- Port Orford
- Waldport
- Florence
- Reedsport
- North Bend
- Coos Bay
- Coos
- Port Orford



Project Timeline

Project Setup and Kickoff

Background Research & Existing Conditions

Draft Plan Documents

1. Tsunami Hazard Overlay Zone
2. TEFIP

WE ARE HERE

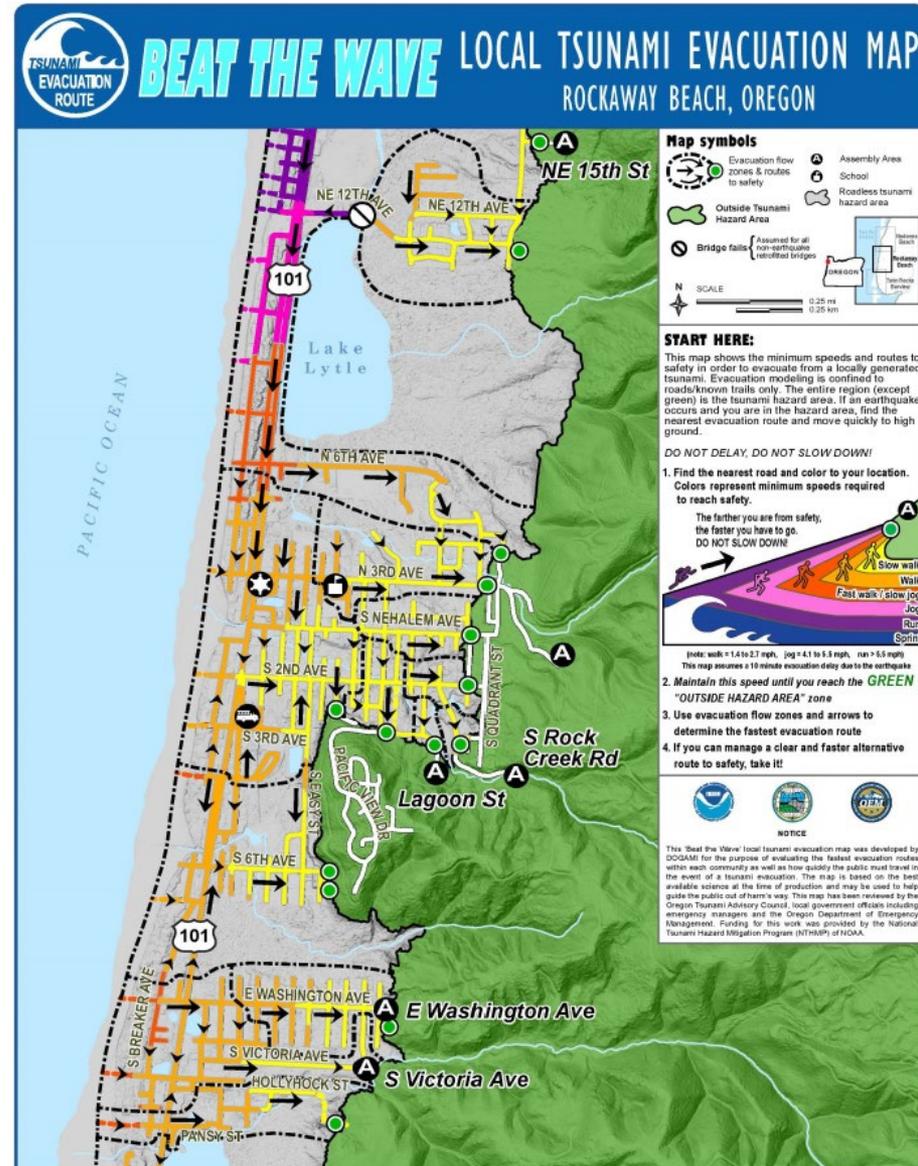
Public Open House
(Spring 2019)

Final Plan Documents
(April 2019)

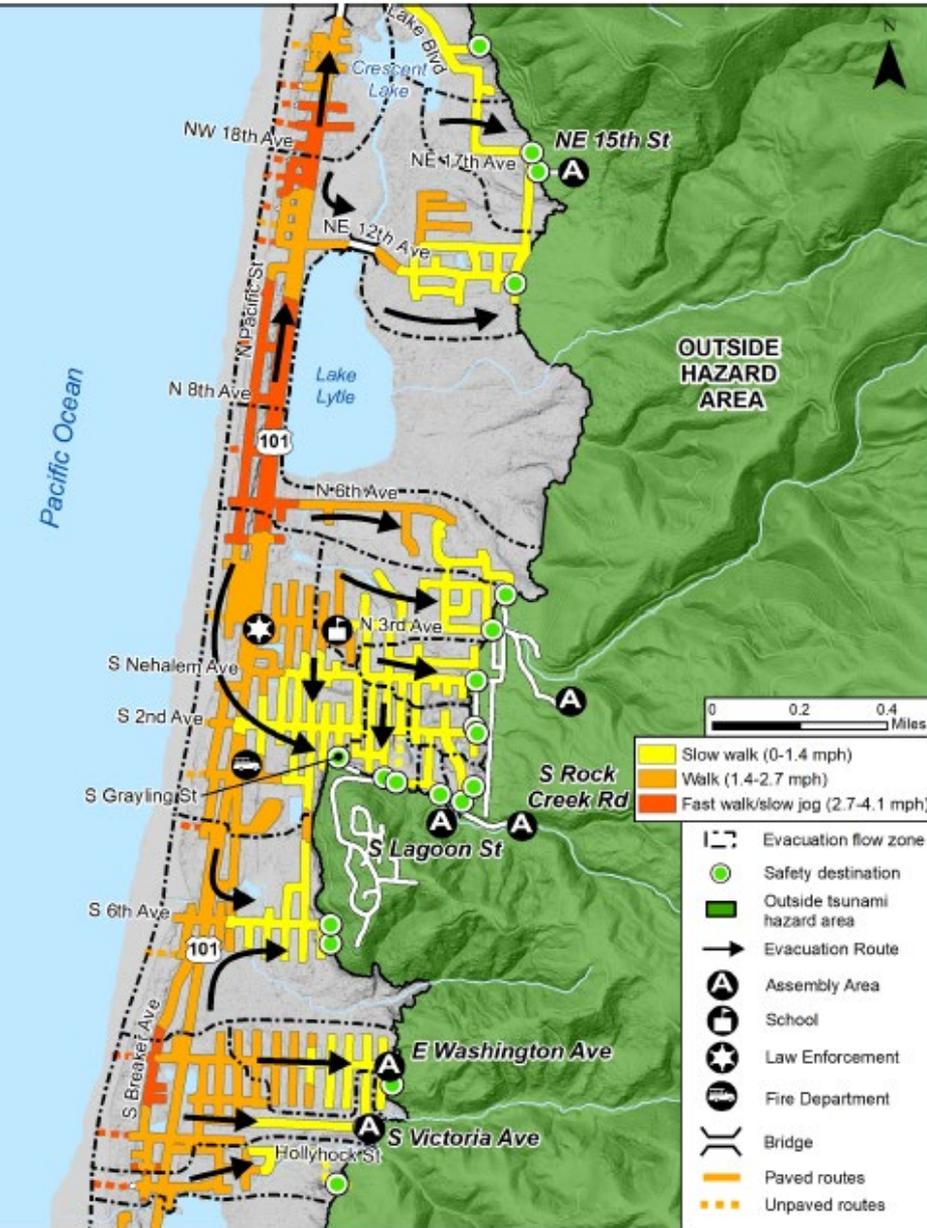
Adoption

DOGAMI Beat the Wave Report

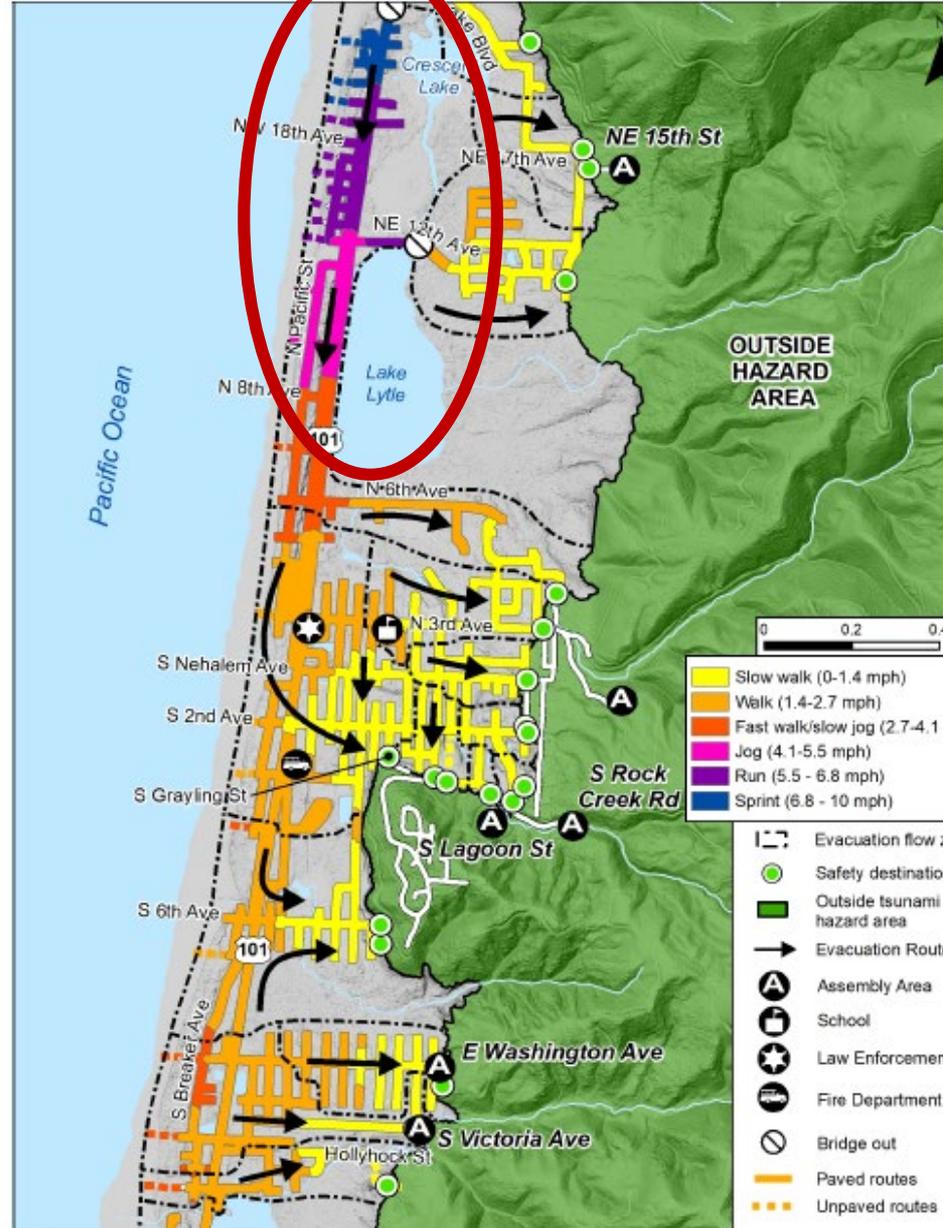
- Evaluation of evacuation difficulty in Rockaway Beach in the event of a XXL tsunami
- Produced maps showing minimum walking speeds needed to reach safety depending on you location
- These maps illustrate different scenarios
 - Failure of bridges vs. bridges intact, likely landslide areas etc.



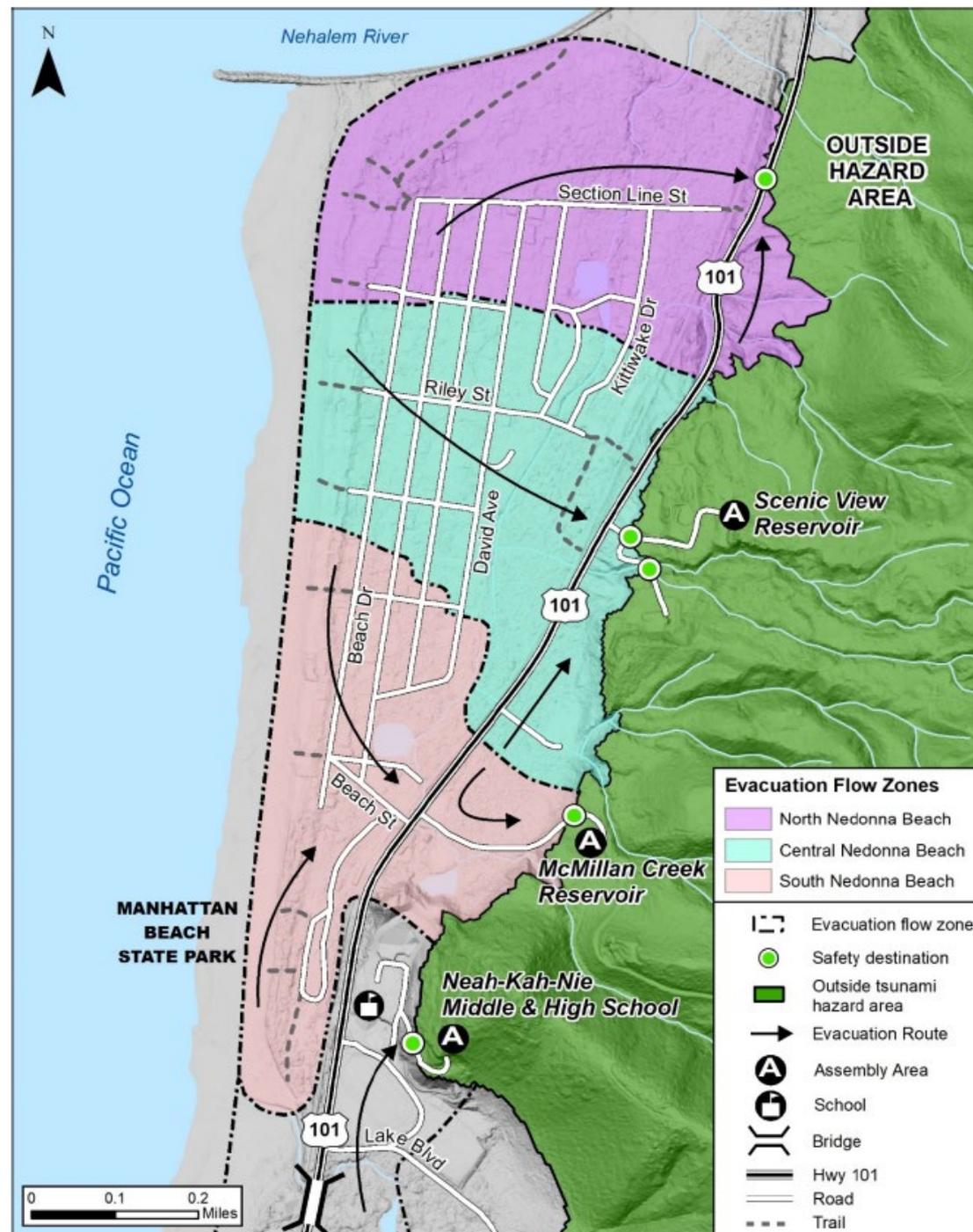
Bridges Intact



Bridge Failure



Results used to create evacuation routes and “evacuation flow zones” for all locations in hazard area



Tsunami Evacuation Facilities Improvement Plan (TEFIP)

What is a TEFIP?

A TEFIP is a comprehensive evaluation of tsunami evacuation facilities in a community



Assessment

Improvements

Plan Adoption

- Assesses evacuation routes (existing and needed)
- Identifies evacuation vulnerabilities
- Identifies improvements to the evacuation system

Types of Evacuation Facility Improvements

- Signage/Wayfinding
- Construction projects
 - Bridge improvements
 - Landslide mitigation
 - Vertical evacuation structures
- Education, Outreach and Training
 - Evacuation drills
 - Educational materials



Sign Types



Evacuation Route Arrows





TSUNAMI EVACUATION MAP

NEDONNA BEACH



IF YOU FEEL AN EARTHQUAKE:

- Drop, cover, and hold
- Move immediately inland to higher ground
- Do not wait for an official warning

SI USTED SIENTE EL TEMBLOR:

- Tírese al suelo, cúbrase, y espere
- Diríjase de inmediato a un lugar más alto que el nivel del mar
- No espere por un aviso oficial



ASSEMBLY AREA / ÁREA REUNIÓN

OUTSIDE HAZARD AREA: Evacuate to this area for all tsunami warnings or if you feel an earthquake.

LOCAL CASCADIA EARTHQUAKE AND TSUNAMI: Evacuation zone for a local tsunami from an earthquake at the Oregon coast.

DISTANT TSUNAMI: Evacuation zone for a distant tsunami from an earthquake far away from the Oregon coast.

ZONA DE PELIGRO EXTERIOR: Evacue a esta área para todas las advertencias del maremoto o si usted siente un temblor.

MAREMOTO LOCAL (terremoto de Cascadia): Zona de evacuación para un tsunami local de un temblor cerca de la costa de Oregon.

MAREMOTO DISTANTE: Zona de evacuación para un tsunami distante de un temblor lejos de la costa de Oregon.

MAP SYMBOLS / SÍMBOLOS DEL MAPA

- Evacuation route / Ruta de evacuación
- Assembly area / Área reunión

SCALE / ESCALA

1000 feet
100 meters

NOTICE

This tsunami evacuation zone map was developed by DOGAMI for the purpose of evaluating the most effective means to guide the public in the event of a tsunami evacuation. The map is based on preliminary data and should not be used for site-specific planning. This map adopts the recommendations from the Oregon Tsunami Advisory Council. The evacuation routes were developed by local emergency officials and reviewed by the Oregon Department of Emergency Management.

MAP REVISED 03-30-12

If you feel an earthquake, a tsunami may be coming...

WHAT TO DO:

- DROP, COVER, HOLD until the earthquake is over; protect yourself
- MOVE IMMEDIATELY INLAND to high ground and away from low-lying coastal areas
- FOLLOW EVACUATION ROUTE SIGNS
- DO NOT WAIT for an official warning
- GO ON FOOT if at all possible
- DO NOT PACK or delay
- DO NOT RETURN to the beach - large waves may continue to come onshore for several hours
- WAIT for an "all clear" from local emergency officials before returning to low-lying areas

Visit OregonTsunami.org to find more great resources!

Pacific Ocean



"You Are Here" Maps

Sign Types



LEAVING

ENTERING



Location Specific Recommendations

- Wayfinding & Signage
 - Where new or improved signs are needed
- Construction Projects
 - Where something needs to be built or physically improved



EVACUATION FACILITY IMPROVEMENTS

WAYFINDING

- ▲ NEW ASSEMBLY AREA SIGN
- NEW EVACUATION ARROW
- ◆ NEW HIGH GROUND SIGN
- ★ NEW YOU ARE HERE SIGN

CONSTRUCTION PROJECTS

- ✚ CONSTRUCTION PROJECTS

Citywide Recommendations

Policy/Administration

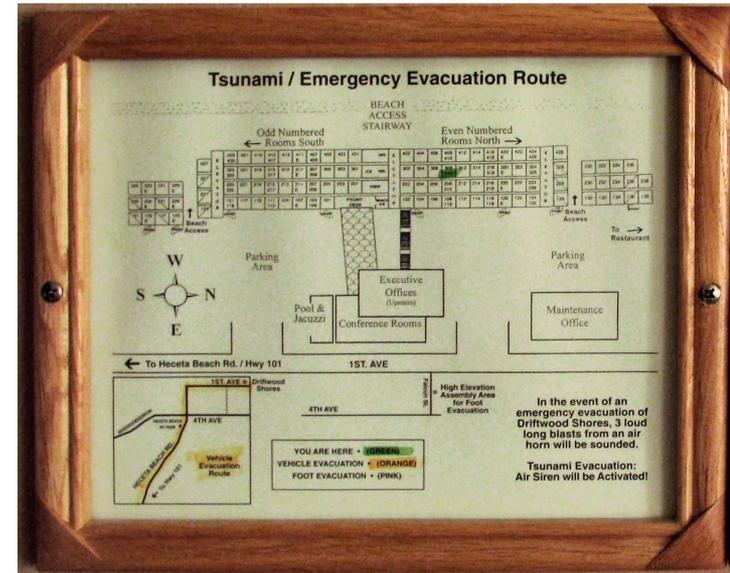
- Identify staff member to lead implementation
- Increase coordination between City departments/community organizations
- Integrate evacuation facilities improvements with other ongoing planning efforts

Evacuation Facilities and Preparedness

- Create trail connectivity between high ground and assembly areas
- Determine locations for shelters and supplies
- Establish shelters and supply caches

Education, Outreach, and Training

- Coordination with news and social media pages to distribute info
- Community-wide activities such as evacuation drills
- Provide appropriate resources, information, and educational opportunities to groups such as:
 - Schools and teachers
 - Business owners and the Chamber of Commerce
 - Hotel and vacation rental owners, property management companies
- Provide information and signage that is accessible to people with hearing or vision impairments, or who speak a language other than English

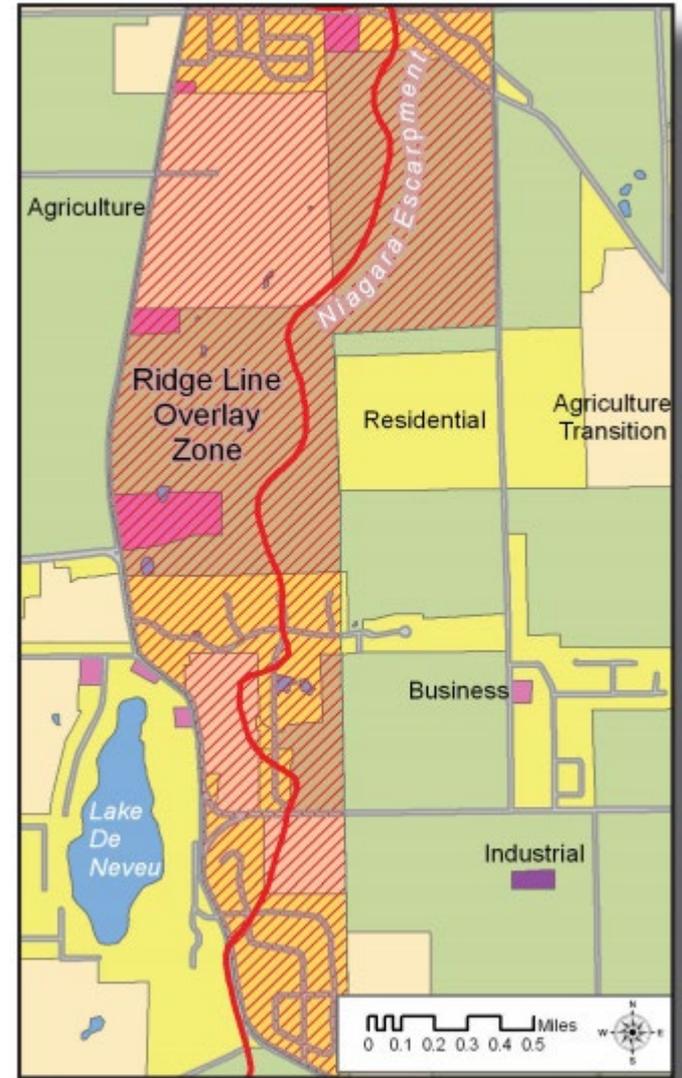


Tsunami Hazard Overlay Zone

Tsunami Hazard Overlay Zone

What is an overlay zone?

An overlay zone creates a special zoning district, placed over existing base zones, which identifies special provisions in addition to those in the underlying base zone.



Tsunami Hazard Overlay Zone

Important to note–

1. These requirements do not apply to single family homes on existing lots
2. These requirements will not make any existing structures non-conforming
3. This is not intended to regulate existing uses or development

Tsunami Hazard Overlay Zone

DOGAMI Tsunami Inundation Map (TIM)

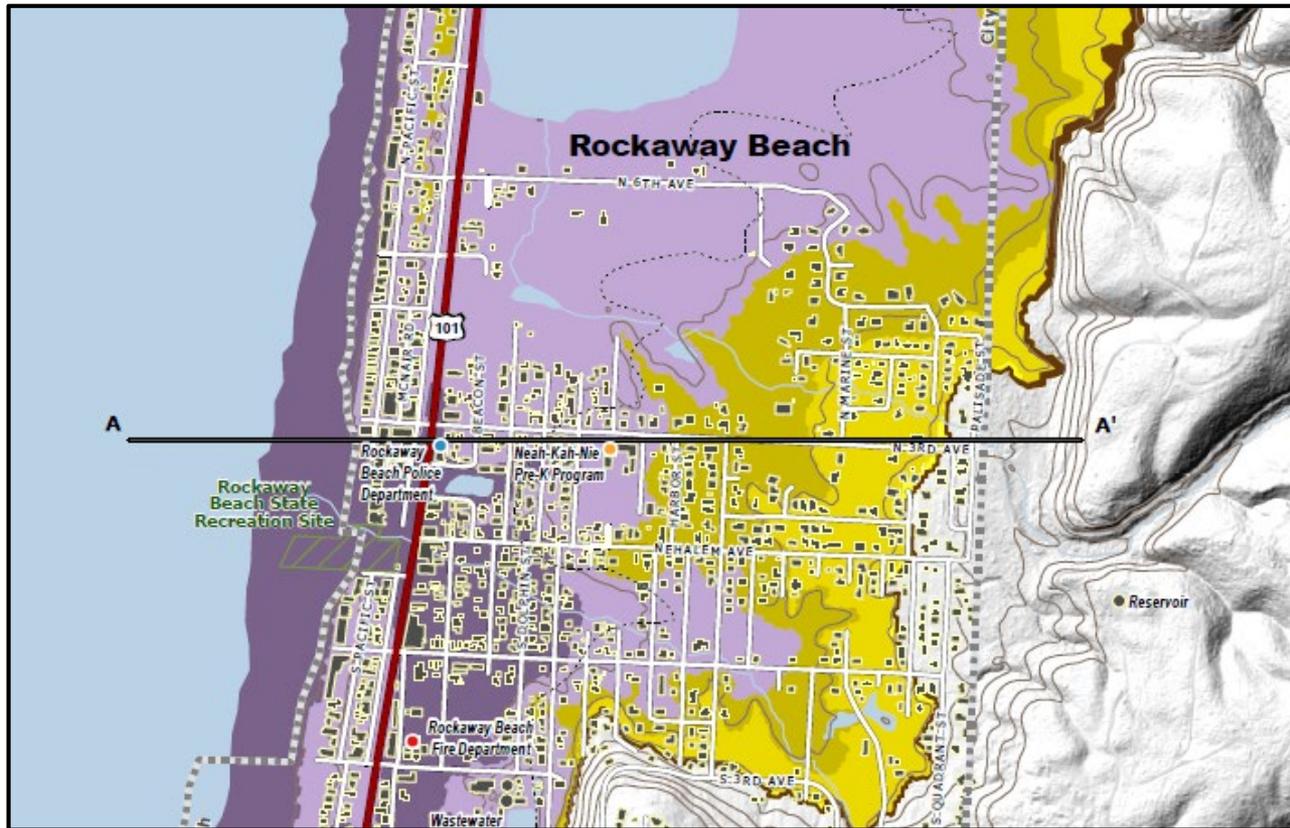
“T-shirt size” inundation scenarios

Legend					
Earthquake Size	Average Slip Range (ft)	Maximum Slip Range (ft)	Time to Accumulate Slip (yrs)	Earthquake Magnitude	
	XXL	59 to 72	118 to 144	1,200	~9.1
	XL	56 to 72	115 to 144	1,050 to 1,200	~9.1
	L	36 to 49	72 to 98	650 to 800	~9.0
	M	23 to 30	46 to 62	425 to 525	~8.9
	S	13 to 16	30 to 36	300	~8.7
	XXL Wet/Dry Zone				

Tsunami Hazard Overlay Zone

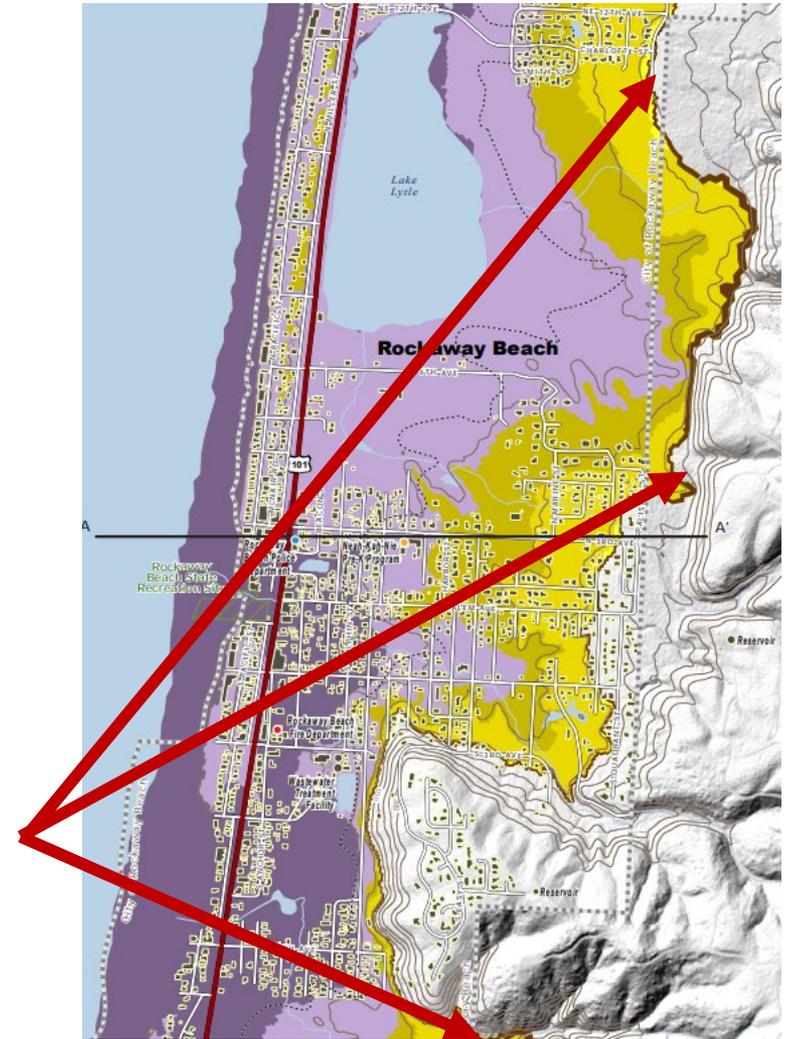
DOGAMI Tsunami Inundation Map (TIM)

“T-shirt size” inundation scenarios



Tsunami Hazard Overlay Zone

- Three main approaches to increase resilience:
 1. Use restrictions
 2. Required evacuation route improvements
 3. Incentives for design that reduces risk
- Covers everything within XXL inundation scenario



Tsunami Hazard Overlay Zone

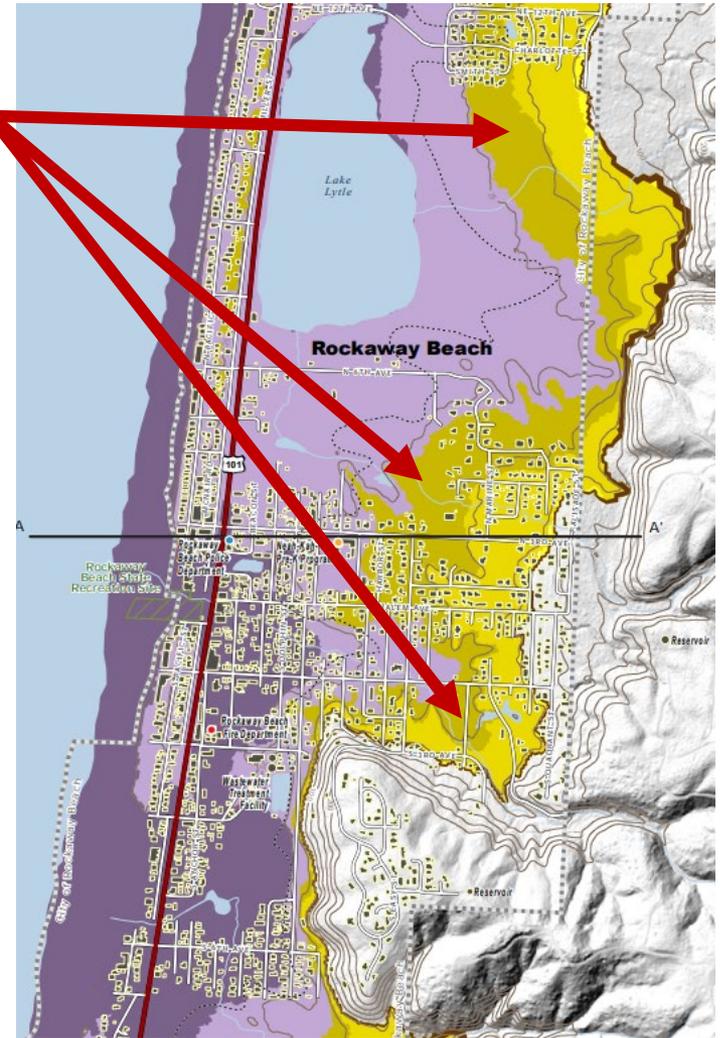
Use Restrictions

- Within certain inundation scenarios (“t-shirt sizes”), limits uses that:
 - Present a high potential for life safety risk
 - Provide an essential function during and after disaster
- This section will not make any established uses or structures nonconforming

Tsunami Hazard Overlay Zone

Uses restricted in **L Scenario**

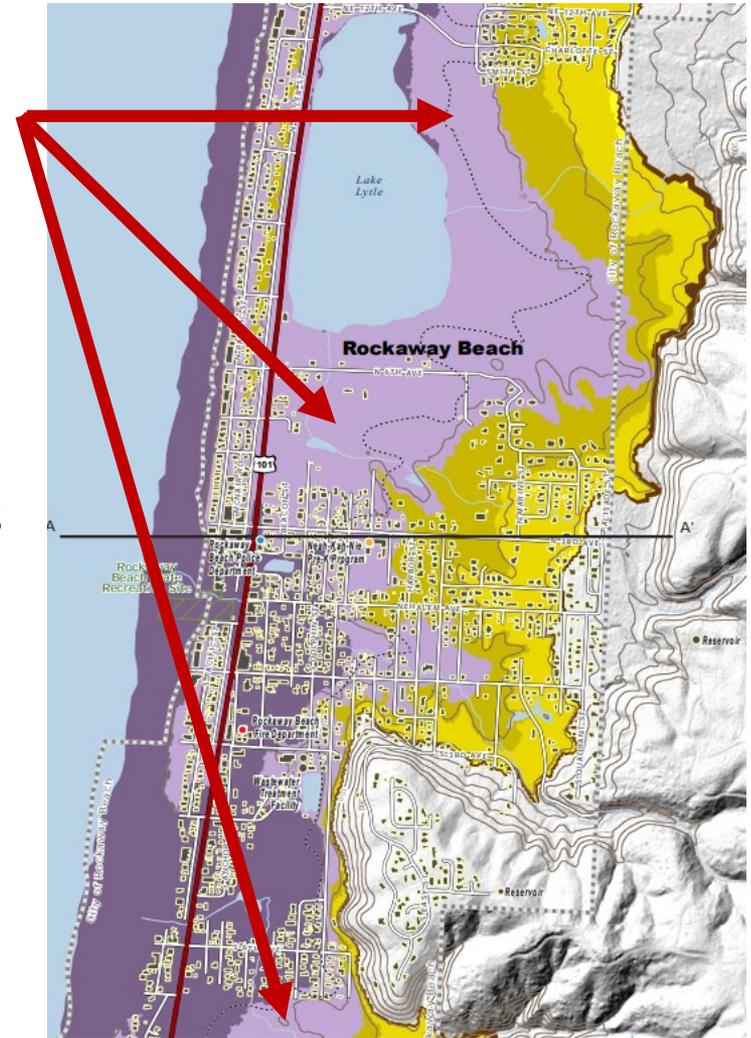
- Medical facilities with surgery and emergency treatment
- Fire and police stations
- Government communication centers and emergency response facilities
- School buildings with a capacity >250
- Buildings for colleges or adult education with a capacity >500
- Jails and detention facilities



Tsunami Hazard Overlay Zone

Uses restricted in **M Scenario**

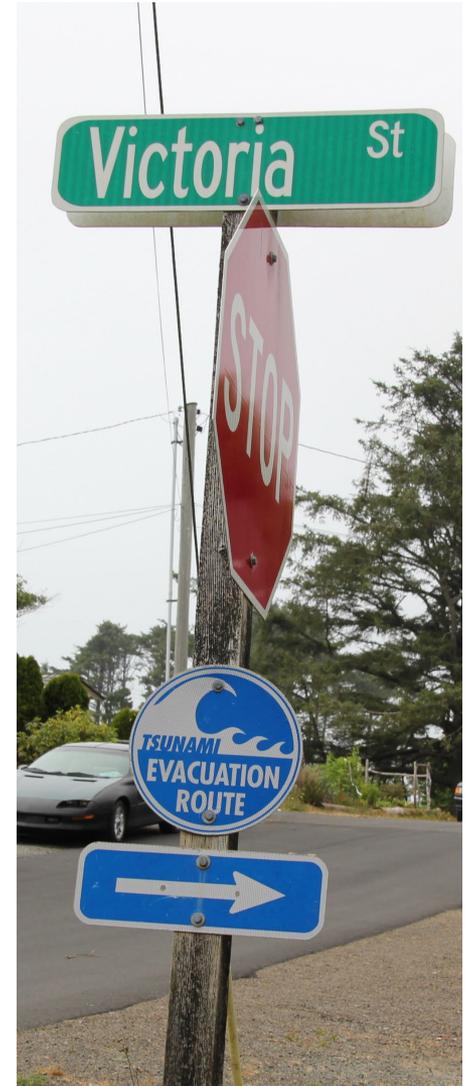
- Fire-suppression materials or equipment for the protection of essential facilities
- Emergency vehicle shelters and garages
- Emergency preparedness centers
- Standby power generating equipment for essential facilities
- Covered public assembly structures with a capacity >300
- Medical facilities with 50 or more resident, incapacitated patients



Tsunami Hazard Overlay Zone

Evacuation Route Improvement Requirements

- *Except for single family homes on existing lots, all new development, substantial improvements, or land divisions shall incorporate evacuation measures*
- Required improvements may be on-site, off-site, or along development frontage
 - Improvements identified in TEFIP
 - Requirements proportional to need created by development



Tsunami Hazard Overlay Zone

Flexible Development Option

- Encourage site planning and development that lowers tsunami risk at a greater level than required
 - Allows for flexibility in setbacks, lot size, and height
 - Minimum densities still apply



Next Steps

Finish drafting plan documents

Adoption of Tsunami Hazard Overlay and TEFIP

- **Planning Commission Meeting**
 - Tuesday April 23rd, 6 pm
- **City Council Meeting**
 - Wednesday June 12th, 6 pm

Next Steps

Get involved! Share your contact information to receive more information on emergency preparedness and volunteer opportunities

Have you taken our survey? Results will help us learn more about community preparedness and evacuation facility needs. Will be available through March 31.



www.corb.us



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ROCKAWAY BEACH TSUNAMI EVACUATION SURVEY

Please take our survey! The City of Rockaway Beach is working to develop a Tsunami Evacuation Facilities Improvement Plan and your input is important to us. The results of this survey will be used to inform tsunami evacuation planning efforts.

<https://www.surveygizmo.com/s3/4801263/Rockaway-Beach-Tsunami-Evacuation-Planning-Community-Survey>

Thank you!

