

SUSTAINABLE
LOCAL
HEALTHY



Promoting healthy oceans with sustainable shellfish aquaculture



Current Project Focus

*The Ventura Shellfish Enterprise seeks to create a permitting **blueprint** for offshore mussel farming operations in Ventura Harbor and other coastal California communities*





Key Issues

*Global Seafood
Demand*

*Best Management
Practices*

*Environmental
Effects*

*Mussel Farming
Technology*

*Fisheries
Science*

*Harbor
Infrastructure*

*Regulatory
Policy*

*Economic
Impacts*

*Quality
Assurance*



Recap

Workshop 1 | Introduction to Shellfish Aquaculture and the Ventura Shellfish Enterprise

Examined an important role for shellfish aquaculture in the future of food production and provided an overview of the VSE project

Workshop 2 | The Biology of Bivalve Shellfish and Mussel Growing Technology & Equipment

Introduced mussel development in a land-based hatchery setting and showcased a variety of shellfish growing technologies



Workshop Materials

www.venturashellfishenterprise.com

*Workshop videos and other materials are now available on the **Workshop Archive** page of the VSE website*

Home | About VSE | Shellfish Aquaculture | Get Involved | News & Events | Contact

Get Involved

The Ventura Shellfish Enterprise is committed to transparency in all facets of its decision-making activities, and to building a vibrant, well-informed community of participants through fair and objective dialog on a wide diversity of issues, challenges, and opportunities. In pursuit of this mission, the VSE will host a series of workshops that address key issues associated with its efforts to invigorate the working waterfront community with offshore shellfish aquaculture. Moderated by established grower-producers, resource managers, scientists, regulators, business operation specialists, and other industry experts, the workshops are free and open to the general public.

Workshop Registration

Space is limited, so we encourage you to register for a workshop to reserve a seat. After each workshop, registered attendees will also be invited to complete a brief survey where they can provide anonymous feedback and express their views on any aspect of the VSE project.

Visit the [Upcoming Workshops](#) page to browse topics and register for an upcoming workshop.

Get Involved

Upcoming Workshops

Workshop Archive

Stay informed and up-to-date on all the latest VSE news and events. [Click here](#) to join our mailing list. [privacy statement](#)



Workshop Materials

The screenshot shows the Ventura Shellfish Enterprise website's 'Workshop Archive' page. At the top is a navigation bar with links: Home | About VSE | Shellfish Aquaculture | Get Involved | News & Events | Contact. The main header features the Ventura Shellfish Enterprise logo on the left and the title 'Workshop Archive' in a large, white, serif font on the right. Below the header, the first workshop is highlighted: 'Workshop 1: Introduction to Shellfish Aquaculture and the Ventura Shellfish Enterprise'. To the right of this title is a faint background image of a laptop with a clapperboard on its screen. The workshop details are listed: Date: February 16, 2017; Speakers: Steve Gaines, Everard Ashworth; Venue: Channel Islands National Park, Auditorium of the Robert J. Lagomarsino Visitor Center, 1901 Spinnaker Dr., Ventura Harbor, CA 93001. A 'Brief Description' follows, stating that the workshop explored the role of aquaculture in food production and provided an overview of the Ventura Shellfish Enterprise project. On the right side of the page, there is a vertical sidebar with a home icon and a menu icon at the top, followed by three links: 'Get Involved', 'Upcoming Workshops', and 'Workshop Archive' (which is underlined). At the bottom of the page, there are four icons with corresponding labels: a video camera icon for 'Video Recording', a PowerPoint icon for 'Power Point Presentation', a document icon for 'Workshop Flyer', and a photo gallery icon for 'Photo Gallery'.

Home | About VSE | Shellfish Aquaculture | Get Involved | News & Events | Contact

Workshop Archive

Workshop 1: Introduction to Shellfish Aquaculture and the Ventura Shellfish Enterprise

Date: February 16, 2017
Speakers: Steve Gaines, Everard Ashworth
Venue: Channel Islands National Park
Auditorium of the Robert J. Lagomarsino Visitor Center
1901 Spinnaker Dr., Ventura Harbor, CA 93001

Brief Description
This first workshop of the VSE Public Outreach Program explored the important role for aquaculture in the future of food production and provided a general overview of the Ventura Shellfish Enterprise, a new collaborative project that aims to meet an ever-increasing demand for domestic seafood production with mussel aquaculture.

Video Recording Power Point Presentation
 Workshop Flyer Photo Gallery

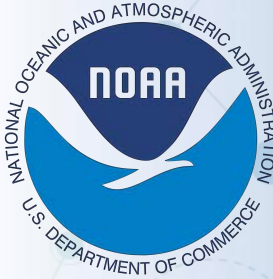
[Get Involved](#)
[Upcoming Workshops](#)
[Workshop Archive](#)

workshop videos courtesy of CAPS Media and Elaine Sanders (CMB Intern)

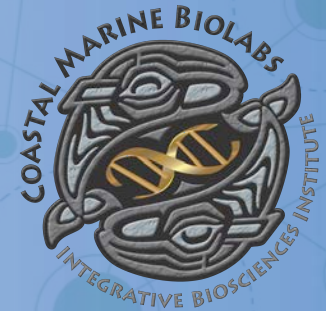
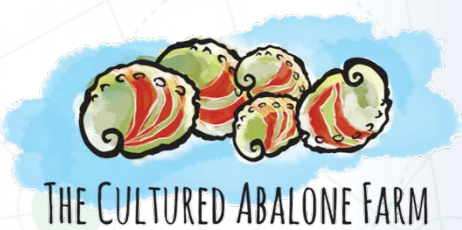


VSE Collaborative

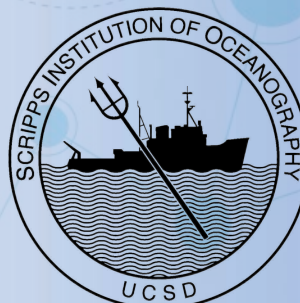
Policy Partners



Core Team



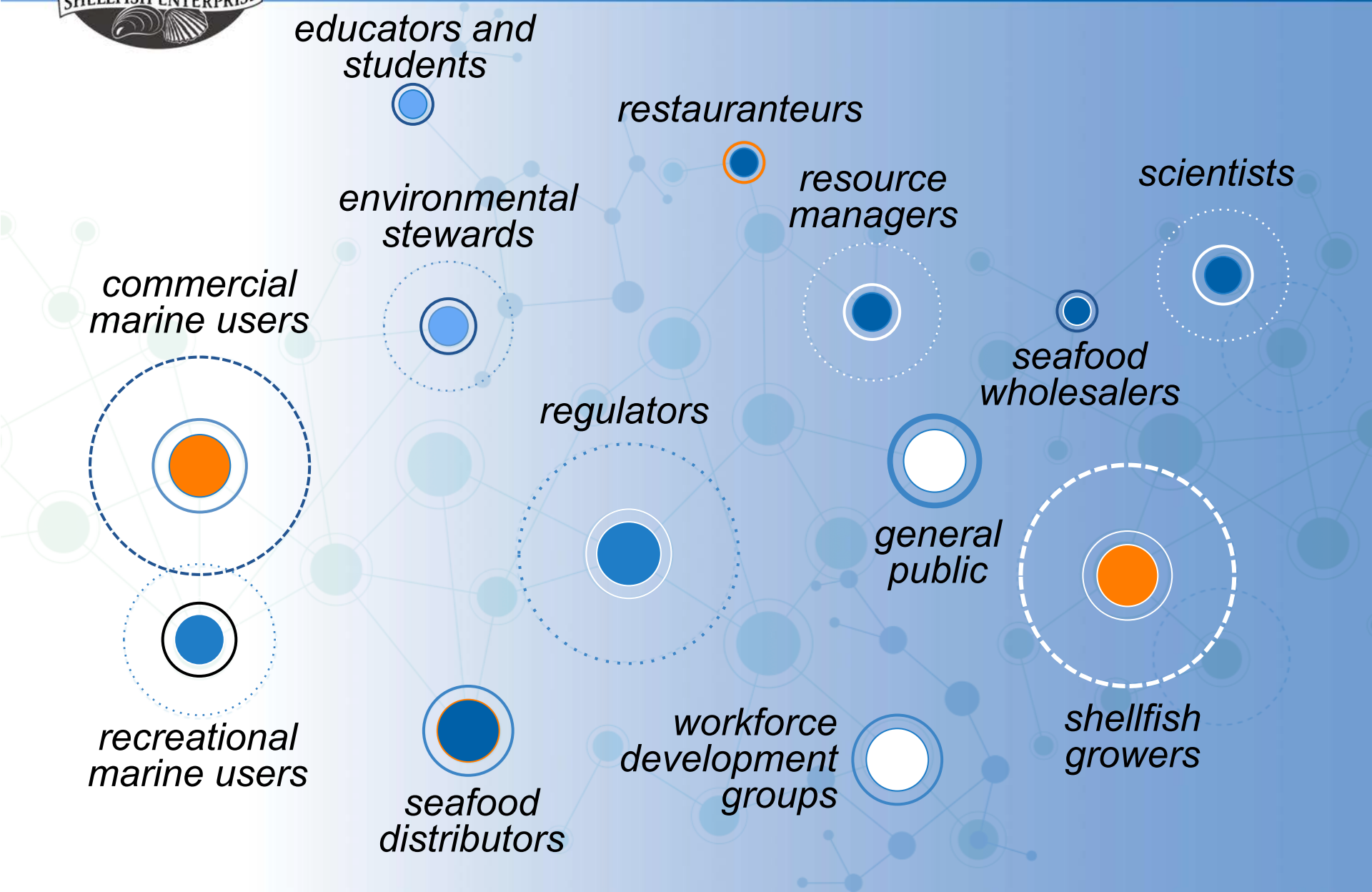
Academic & Research Partners



BREN SCHOOL OF
ENVIRONMENTAL SCIENCE
& MANAGEMENT
UNIVERSITY OF CALIFORNIA, SANTA BARBARA



VSE Collaborative





Project Sequence

2009



Early concept of a native California shellfish operation introduced to the Ventura Port District



Project Sequence

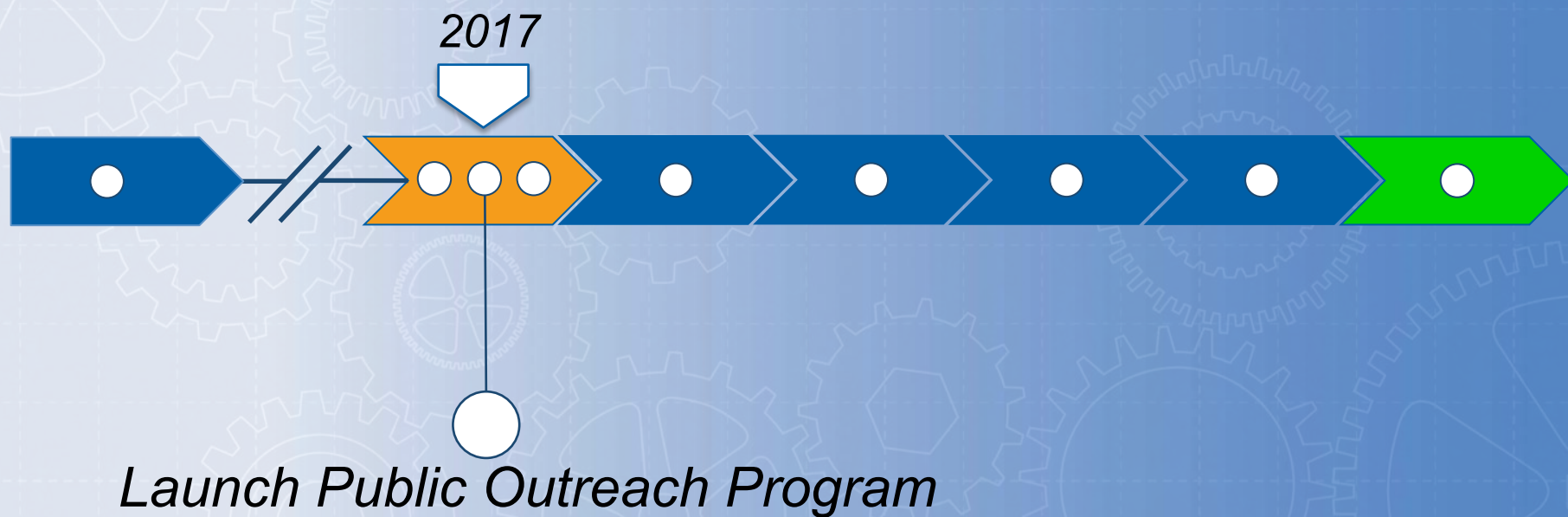
2015 to 2017



Create Strategic Permitting Plan

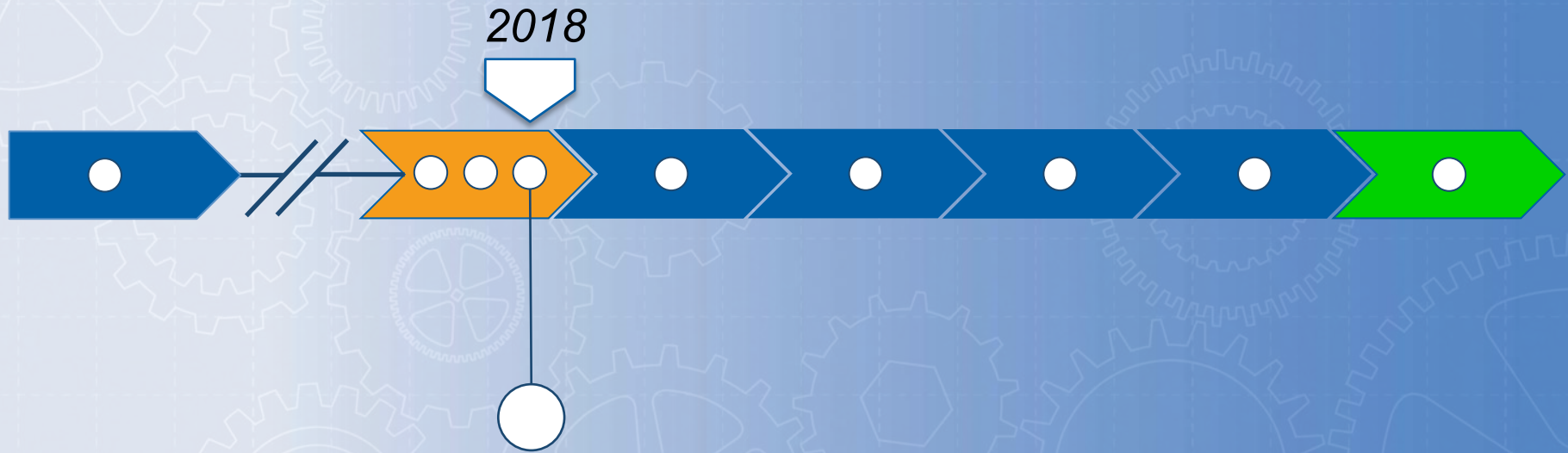


Project Sequence





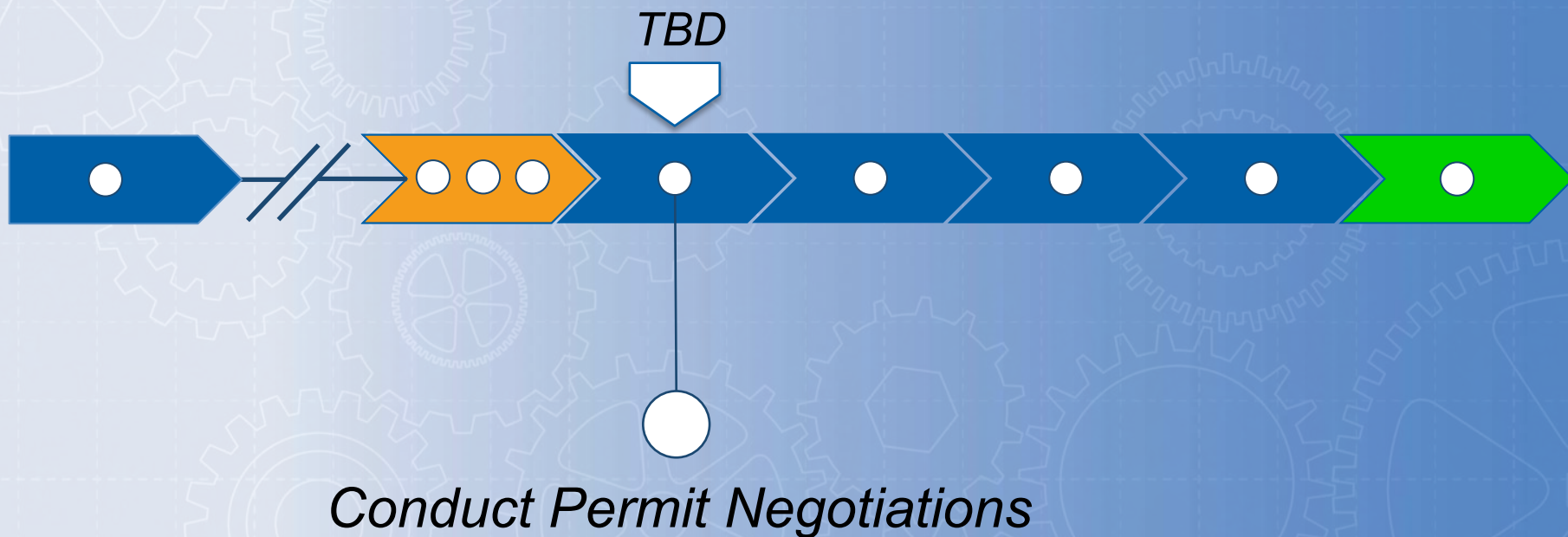
Project Sequence



- *Circulate Draft EIR/EIS*
- *Submit Primary Agency Permit Applications*

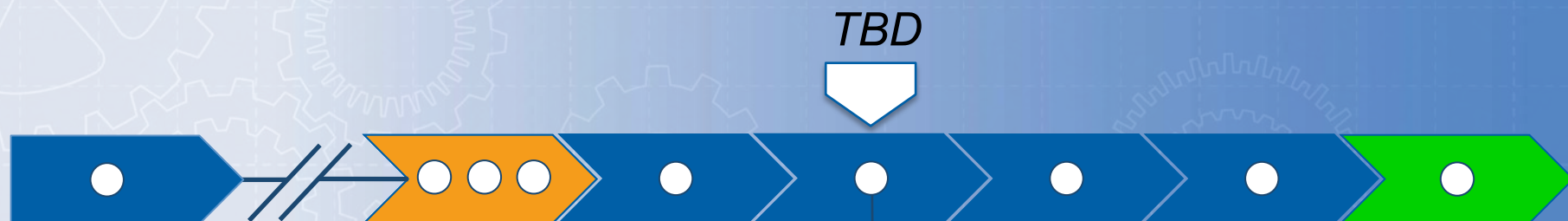


Project Sequence





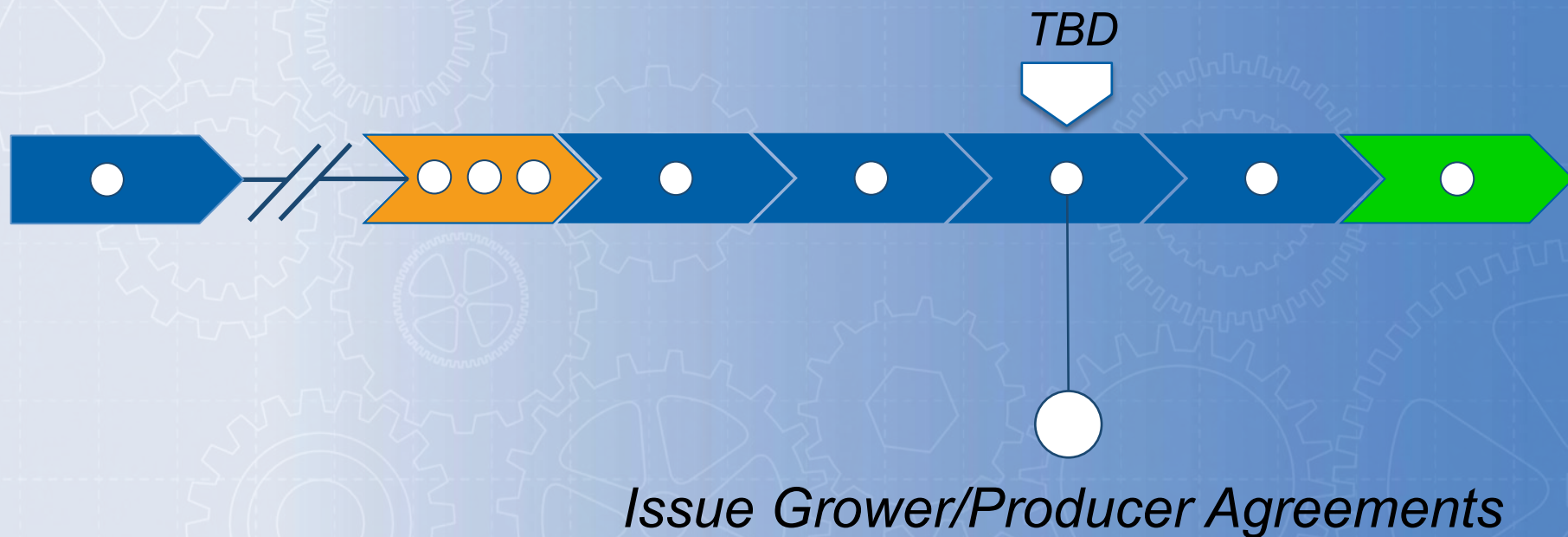
Project Sequence



- *Certify EIR*
- *Obtain Permits*

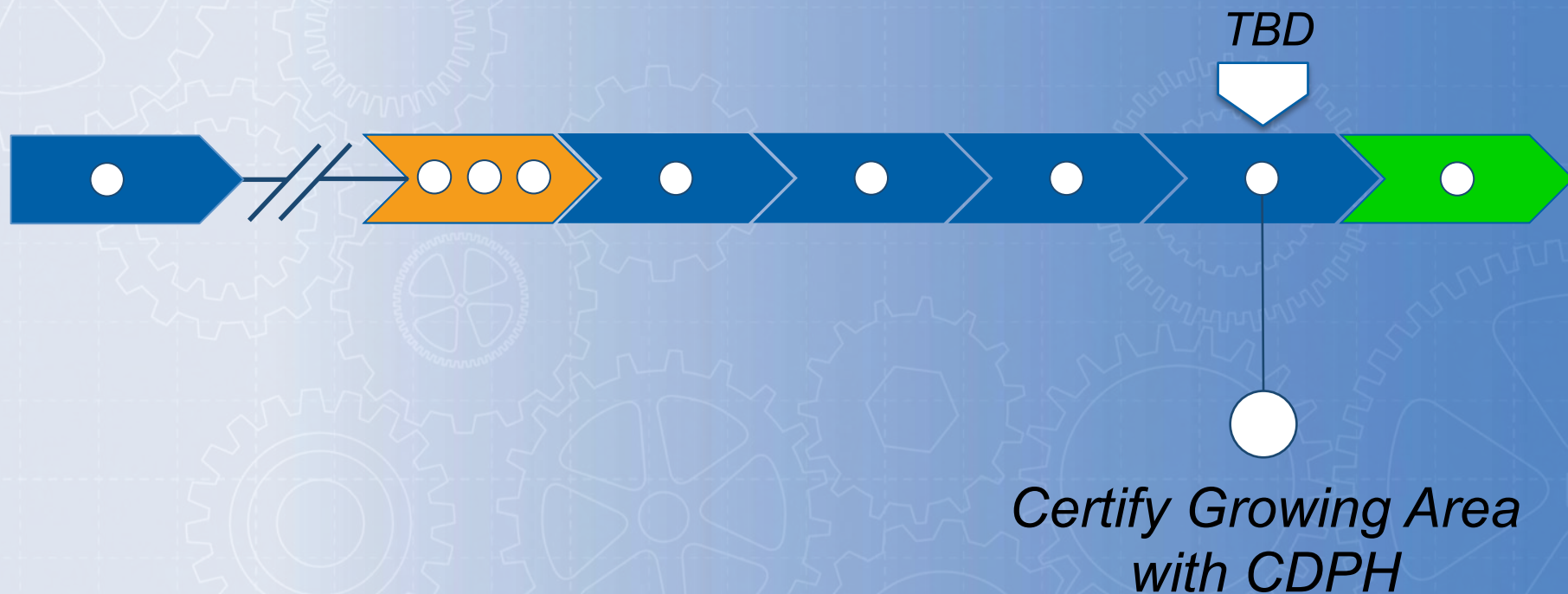


Project Sequence





Project Sequence





Project Sequence





Workshop 3

VSE Economic Impacts & Benefits

Ventura Harbor | Overview

Brian Pendleton

Business Operations Manager, VPD



Ventura Harbor | Shoaling & Dredging

Richard Parsons

Dredging Consultant, VPD

VSE | Economics and Pro Formas

Everard Ashworth

Chair, VPD Board of Port Commissioners



Ventura Harbor: An Overview

Brian Pendleton

Business Operations Manager, Ventura Port District



Ventura Port District Formation & History

- Organized - acquiring, constructing and operating a commercial and recreational boat harbor;
- District's legal boundaries generally co-terminus with City of Ventura boundary;
- Voters approved a general obligation bond issue of \$4 million in February 1962 for harbor construction, opened in 1963;
- Majority of Harbor development occurred in 1980's.





Ventura Port District

WHAT IS A SPECIAL DISTRICT?

An Independent, special-purpose governmental unit that exists separately from, and with substantial administrative and fiscal independence from, general purpose local governments such as county, municipal, and township governments and that are formed to perform a single function or a set of related functions.





Ventura Port District - Mission Statement

The Ventura Port District, home to the Channel Islands National Park, provides a safe and navigable harbor and a seaside destination that benefits residents, visitors, fisherman and boaters to enjoy Ventura Harbor's exceptional facilities, events and services.





Ventura Port District - Formation & History

- Ventura Port District is the sole landowner within this multiple use harbor, 274 acres:
 - 152 acres of land
 - 122 acres of water area
- One exception - 2.74 acre site owned by the Department of Interior, National Park Service.





Ventura Port District Operating Revenue

Approx. \$1M yearly from property taxes

Approx. \$8.8M generated from:

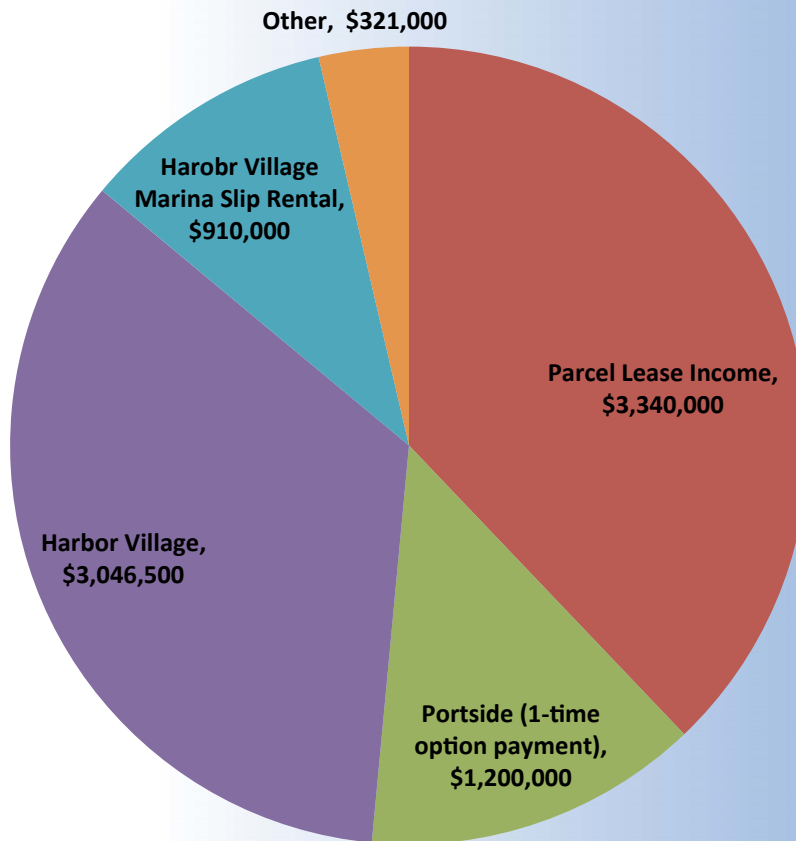
- Three private marinas (Ventura Isle Marina, Ventura West Marina I, & Ventura West Marina II)
- Marina Mobile Home Park
- Ventura Yacht Club
- Boatyards & Fuel Dock Facilities
- Hotels and Timeshare
- Ventura Harbor Village & Marina
- Other revenue sources:
 - (i.e., commercial fishing fees, dry storage, etc.)
- Portside – newest development





Ventura Harbor Budget Highlights FY 16-17

○ Operating Revenue = \$8,817,500



○ Property Tax Revenue = \$1,024,000



Ventura Port District – Ventura Harbor Economic Impacts

- California Economic Forecast 2012 Study:
 - 100 businesses located at Ventura Harbor
 - Diverse array of goods and services
 - Largest economic impact comes from commercial fishing industry
 - Harbor supported equivalent of 2,537 jobs, \$90M in worker income
 - 975 jobs Ventura County \$31M in labor income
 - 1,562 jobs CA and US \$59M in labor income
 - \$246M Economic Impact
 - \$86M remained in Ventura County
 - \$162M spread across in CA and US economies



Ventura Harbor Commercial Fishing Operations

- California Economic Forecast 2012 Study
 - Harbor's largest business segment
 - 378 of 975 equivalent full-time jobs
 - \$46M in economic activity





Ventura Port District – Harbor Commercial Fishing Characteristics

- Ventura Harbor Characteristics:
 - Commercial fishing in SW Harbor is Priority in LCP – (zoning and comprehensive plan)
 - Only small/medium harbor in CA w/ large scale commercial fishing infrastructure;
 - Deep-water capacity;
 - Close proximity to the trade centers in Los Angeles;
 - Ventura County top 10 county for fish off-loading in nation.





Commercial Fishing Infrastructure at Ventura Harbor

- Ventura Harbor Village Marina - VPD
 - 99 of 134 slips – used for commercial fishing
 - 75% +/- of slips
 - Seiners, light boats, draggers/gillnet, lobster, small fishing vessels
 - 55 slips 55' to 251'
 - 79 slips 30' to 48'
 - Commercial Fish Dock 115'x200' concrete pier – fish offloading
 - 2, 1-ton hoists for commercial fishermen





Commercial Fishing Infrastructure at Ventura Harbor

- Ventura Harbor Boatyard
 - 3-acre site
 - 150-ton vessel Travelift
 - 885 linear feet of slip space
 - 30'x90' U-shape concrete dock w/ 35-ton Travelift
 - Ventura Packers -fish off-loading





Commercial Fishing Infrastructure at Ventura Harbor

- Fisheries Bldg. @ 1449 Spinnaker Drive
 - 6,331 sf. 1st floor
 - 1,375 sf. 2nd floor
 - Total - 7,706 sf.
 - 3 rollup doors and loading dock
 - Tenants: Andria's Seafood, Del Mar Seafoods, and Deluca Fish Co.





Commercial Fishing Infrastructure at Ventura Harbor

- Del Mar Seafoods
 - Onsite ice plant – under construction
 - 2, 10-ton ice machines
 - 50-ton ice storage facility
 - Ice service for other commercial fishermen
 - Other ice plants in region used by commercial fishing operations





Commercial Fishing Infrastructure at Ventura Harbor

Ventura Harbor Marine Fuel

- Up to 170' vessel length capability
- 60,000 gallons
- High-speed pumps; &
- Marine supplies store.





Planned Ventura Harbor Infrastructure Upgrades

- VPD - Planned commercial fishing capital improvements
 - Fish Pier resurfacing
 - Fish Pier Crane #1 replacement
 - Village Marina Renovation – Docks D, G, & H est. \$4.4M
- Ventura Harbor Marina & Yacht Yard
 - Proposed expansion:
 - Slip space - 680 linear ft. to 3,637 linear ft.
 - 25 slips b/t 45'-90'
 - 2-story office & retail building





Ventura Harbor Commercial Fishing Operations

Top Ten Fish Varieties for 2015 (Offloading)

<u>Variety</u>	<u>Pounds</u>	<u>Value</u>
Squid, market	19,273,132	\$ 5,514,582
Lobster, CA Spiny	91,891	\$ 1,861,769
Prawn, ridgeback	659,245	\$ 1,599,297
Tuna, bigeye	133,606	\$ 546,862
Prawn, spot	30,532	\$ 360,767
Halibut, CA	44,352	\$ 234,470
Mackerel, Pacific	2,253,376	\$ 188,443
Sea cucumber, warty	25,696	\$ 127,573
Sea urchin, red	75,561	\$ 112,443
Sea cucumber, gaint red	23,101	\$ 91,799



Ventura Harbor Commercial Fishing Operations

Squid Offloading – 10 Year History

	Pounds	Value
2006	18,293,013	\$4,380,312
2007	12,191,630	\$2,991,174
2008	22,130,841	\$7,076,220
2009	67,572,254	\$17,668,806
2010	66,721,872	\$15,963,062
2011	64,797,550	\$15,535,185
2012	28,741,470	\$8,109,347
2013	63,910,861	\$20,136,619
2014	36,320,344	\$10,878,505
2015	19,273,132	\$5,514,582
TOTAL	399,952,967	\$108,253,812



Mussel Supply & Demand

Mussel Market Sources :

- \$1B+ global industry producing about 2.2M Tons
- International Imports to U.S. (NMFS Data):
 - \$120M +/- Value 2016, 79.1M Lbs.
 - \$114M +/- Value 2015, 71.2M Lbs.
- Major Import Countries: Canada, Chile, New Zealand



U.S. Mussel production, weightmeat, and value

State, NMFS, USDA, Other Data Sources: 2009 – 2014

Year	Pounds	Value
2009	733,000	\$ 6,730,000
2010	1,008,000	\$ 6,633,000
2011	880,000	\$ 7,254,000
2012	739,000	\$ 9,451,000
2013	699,000	\$ 9,804,000
2014	699,000	\$ 9,861,000

California Mussel production, number, weight, and value CDFW Data (cultured mussels), 2005 - 2015				
Year	Numbers	Pounds	Value	
2005	229,100	11,455	\$	34,365
2006	287,560	14,378	\$	43,134
2007	742,540	37,127	\$	111,381
2008	782,780	39,139	\$	117,417
2009	1,421,080	81,054	\$	213,162
2010	1,252,140	62,607	\$	187,821
2011	1,350,280	67,514	\$	202,542
2012	2,312,920	115,646	\$	346,938
2013	1,844,100	92,205	\$	276,615
2014	3,705,760	185,288	\$	555,864
2015	3,376,880	129,011	\$	506,532



VSE Project – Overview of Potential Economic Impacts

- Twenty 100-acre sites
- Timing to full production
 - Entitlements
 - Permitting, Leasing, Sub-leasing
 - Start-up, certification
 - Distribution development
 - Market & growing conditions
- 1,152,000 lbs. market size mussels / year / 100-acre site
 - 576 Tons
 - \$2.88M Value @ \$2.50 / lb.
- 23,040,000 lbs. market size mussels all 20 sites full production
 - 11,520 Tons
 - \$57.6M Value @ \$2.50 / lb.





VSE Project - Overview of Potential Economic Impacts

- Ventura Port District Revenues (Potential)
 - Potential Revenues
 - Many Variables (preliminary analysis)
 - Lease / License (subject to CDFW requirements)
 - @ 3% of gross revenues (illustrative)
 - \$86,400 per year for 100-acre site
 - Fish Offloading Fee
 - @ .03 per lb. (based on current rates)
 - \$34,560 per year for 100-acre site



VSE Project – Overview of Potential Economic Impacts

- Ventura Port District Revenues
 - Village Marina Slip fees – Current rates 11.06 to 13.98 per linear foot
 - Slip Fees - Current \$910,000
 - 75% +/- of slips used by commercial fishing vessels
 - @ 75% = \$682,500 +/- slip fees related to commercial fishing



VSE Project – Overview of Potential Economic Impacts

- Ventura Port District Expenses
 - Permit Fees
 - Lease Fees
 - State of California
 - Infrastructure, maintenance
 - Piers;
 - Hoists;
 - Docks;
 - Slips;
 - parking lots; and bldgs.



VSE Project – Overview of Potential Economic Impacts

- Ventura Harbor & regional business opportunities:
 - Commercial fishing companies;
 - Boatyards;
 - Marinas;
 - Chandleries;
 - Transportation services;
 - Ice facilities;
 - Hatcheries; and
 - Restaurants & retail businesses



- Next Steps
 - Register w/ VSE for Workshops, Project Updates
 - Workshop #6 – Becoming a VSE Shellfish Producer
 - Contact VPD
 - Oscar Peña, General Manager
 - Brian Pendleton, Business Operations Manager
 - VPD will provide formal application process
 - Future timing largely dictated by:
 - Entitlements
 - Permits
 - Leasing by CDFW



Ventura Harbor: Shoaling & Dredging

Richard Parsons
Dredging Consultant, Ventura Port District





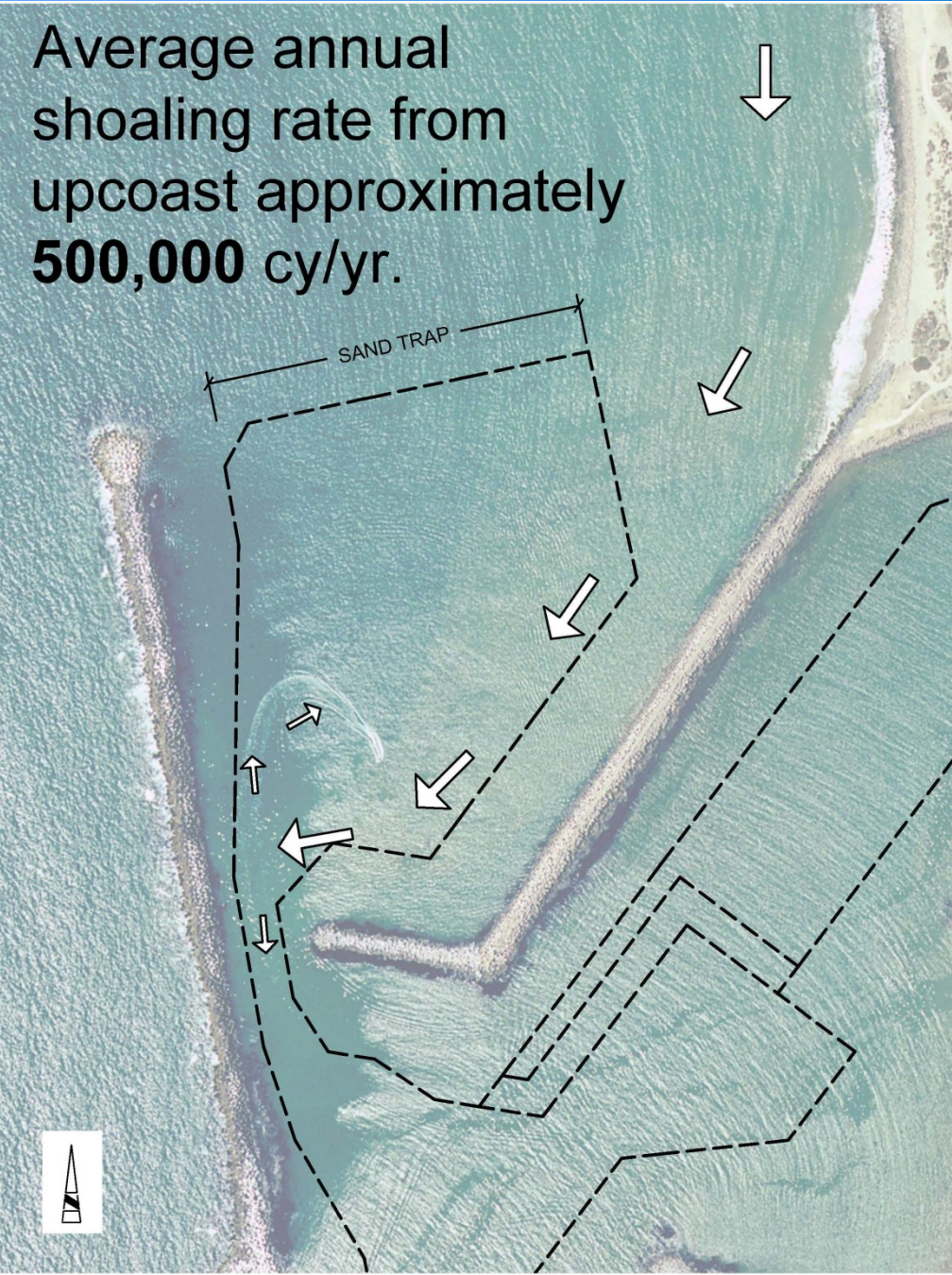
Sand Trap

Entrance Channel

Deposition Area

Ventura Harbor

Average annual shoaling rate from upcoast approximately **500,000 cy/yr.**



Scale: 1 inch = 250± feet

Estimated Shoaling Pattern Within Sand Trap Area

Ventura Harbor: Dredging Operations

500,000 cubic yards of sand flow annually into the Ventura Harbor sand trap. This is usually caused by the sand migrating south from the littoral cell extending south from Point Conception.





Ventura Harbor – Dredging Operations

WHAT IS DREDGING?

Dredging is the removal of sediments and debris from the entrance channel and sand trap.

If dredging was not accomplished annually, it would negatively impact the local fishing industry and local economy.





Ventura Harbor – Dredging Operations

- **REASON FOR FEDERAL FUNDING**
 - The Ventura Harbor Entrance area is a Congressionally authorized federal project subject to annual appropriations by Congress
- **ROLES OF US CONGRESS**
 - Approves annual appropriations
- **ROLES OF US ARMY CORPS OF ENGINEERS**
 - Oversees the dredging of the Harbor
 - Issues permits for the disposal of dredged material
 - Issues Work Contracts
- **SIGNIFICANCE OF COMMERCIAL FISHING**
 - Primary justification for Federal funding



Ventura Harbor – Dredging Operations Annual Dredging Amounts

<u>Year</u>	<u>Quantity of Sand (cu.yds.)</u>	<u>VPD</u>	<u>Corps of Engineers</u>	<u>Note</u>
2008	787,300	\$0	\$3,100,000	
2009	435,000	\$0	\$2,601,000	
2010	412,585	\$0	\$2,572,000	*458,000 cubic yards remain
2011	306,000	\$0	\$2,307,500	*500,000 cubic yards remain
2012	500,895	\$1,500,000	\$2,228,000	*360,000 cubic yards remain
2013	240,236	\$0	\$2,350,000	*500,000 cubic yards remain
2014	450,000	\$0	\$3,679,281	*550,000 cubic yards remain
2015	778,000	\$0	\$6,031,000	*252,000 cubic yards remain
2016	892,295	\$0	\$6,875,000	*280,000 cubic yards remain



Ventura Shellfish Enterprise – The Opportunities

Ev Ashworth

Chair, Ventura Port District



Objectives

- To increase the supply of safe, sustainably produced, and locally-grown shellfish
- To sustain Ventura Harbor as a major west coast fishing port and support the local economy & working waterfront
- To provide an entitlement and permitting template for aquaculture projects state-wide
- To provide economies of scale & technical support to small producers who would not otherwise be able to participate in shellfish aquaculture
- To enhance public knowledge and understanding of sustainable shellfish farming practices





Project Description

Twenty 100 acre growing sites

Sites to be located within the 3-mile limit of State Waters of California

Product to be landed in Ventura Harbor

Ventura Port District will obtain all permits and sublease to producers





VSE Timeline

- Strategic Permitting Plan – 1st QTR 2017
- Early Public Outreach – 1st – 2nd QTR 2017
- Prepare permit applications and CEQA/NEPA Analysis – 2-4th QTR 2017
- Submit draft applications and CEQA Analysis – 1st QTR 2018, after which we will:
 - Assure agency data/information needs are met
 - Assure all agency requirements are complied with
 - Certify EIR and secure permits





VSE Opportunities

- Commercial fishing
 - Twenty 100 acre parcels
 - Provide opportunities for local commercial fishermen to sublease
- Recreational fishing
 - New Zealand experience
- Working harbor
 - Boat yards
 - Chandleries/supply
 - Support services
- Distribution and wholesale of product
 - Leverage existing expertise
 - Provide opportunities for diversification for others





VSE Opportunities

- **Retail/restaurant**
 - Locally sourced, high quality product
 - Boat to table
 - Integration with other local specialties and products
- **Potential for branding of product**
 - Sustainably produced, low-carbon, high quality protein
 - Transparency of boat to table
- **Special events**
- **Provide for integration of aquaculture research**
 - UC Bren School, UC Scripps, Woods Hole Oceanographic Institute, and local institutions
 - Education and outreach





Ongoing Public Outreach

Public Workshops:

2/16 | Introduction to Shellfish Aquaculture and the Ventura Shellfish Enterprise

2/23 | Biology of Bivalve Shellfish, Mussel Growing Technology and Equipment

3/16 | VSE Economic Impacts and Benefits

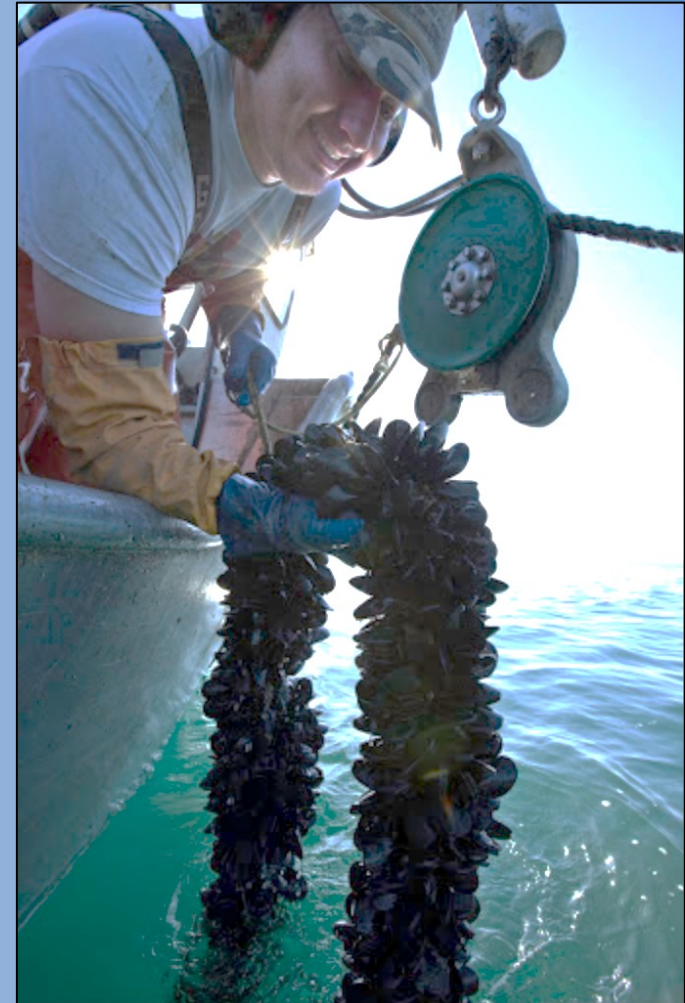
4/11 | Environmental Effects and Best Management Practices

5/11 | VSE Production Site Selection

6/1 | Becoming a VSE Shellfish Producer

6/15 | VSE Shellfish Quality and Safety Assurance

TBD | Shellfish: Local, Sustainable, Delicious and Nutritious VSE Project Update and Mussel Tasting





VSE Project Features

- **Low impact/high yield, sustainable mussel aquaculture**
- **Ventura Port District will obtain and provide umbrella permits for producers**
- **Project will achieve economies of scale – monitoring, product safety testing, product marketing**
- **Early and regular input sought from regulatory agencies and the public**
- **Ability for small individual growers to participate**
- **Economic benefits to Ventura Harbor and the community**

