

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (REV. 12/2013)

ECONOMIC IMPACT STATEMENT

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DESCRIPTIVE TITLE FROM NOTICE REGISTER OR FORM 400 DRILLS AND EXERCISES			NOTICE FILE NUMBER Z

A. ESTIMATED PRIVATE SECTOR COST IMPACTS *Include calculations and assumptions in the rulemaking record.*

1. Check the appropriate box(es) below to indicate whether this regulation:

- a. Impacts business and/or employees
- b. Impacts small businesses
- c. Impacts jobs or occupations
- d. Impacts California competitiveness
- e. Imposes reporting requirements
- f. Imposes prescriptive instead of performance
- g. Impacts individuals
- h. None of the above (Explain below):

See attachment for details regarding economic costs.

If any box in Items 1 a through g is checked, complete this Economic Impact Statement.

If box in Item 1.h. is checked, complete the Fiscal Impact Statement as appropriate.

CDFW/OSPR

2. The _____ estimates that the economic impact of this regulation (which includes the fiscal impact) is:
(Agency/Department)

- Below \$10 million
- Between \$10 and \$25 million
- Between \$25 and \$50 million
- Over \$50 million *[If the economic impact is over \$50 million, agencies are required to submit a Standardized Regulatory Impact Assessment as specified in Government Code Section 11346.3(c)]*

3. Enter the total number of businesses impacted: 40 - 50

Describe the types of businesses (Include nonprofits): Oil producers, oil pipelines, railroads transporting oil, inland refineries.

Enter the number or percentage of total businesses impacted that are small businesses: 0

4. Enter the number of businesses that will be created: none eliminated: none

Explain: _____

5. Indicate the geographic extent of impacts: Statewide
 Local or regional (List areas): _____

6. Enter the number of jobs created: Less than 20 and eliminated: None

Describe the types of jobs or occupations impacted: May be a slight increase in jobs for providers of services for oil spill planning, spill management, exercise planning, and spill cleanup.

7. Will the regulation affect the ability of California businesses to compete with other states by making it more costly to produce goods or services here? YES NO

If YES, explain briefly: _____

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STD. 389 (REV. 12/2013)

ECONOMIC IMPACT STATEMENT (CONTINUED)

B. ESTIMATED COSTS *Include calculations and assumptions in the rulemaking record.*

1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime? \$ 573,214/yr

a. Initial costs for a small business: \$ none Annual ongoing costs: \$ none Years: n/a

b. Initial costs for a typical business: \$ 13,000 Annual ongoing costs: \$ 13,000 Years: annual

c. Initial costs for an individual: \$ none Annual ongoing costs: \$ none Years: n/a

d. Describe other economic costs that may occur: None; if all costs across industry are passed on to the consumer, the cost to operate a vehicle for a year will increase 6 cents, which would not be detectable in the marketplace.

2. If multiple industries are impacted, enter the share of total costs for each industry: n/a

3. If the regulation imposes reporting requirements, enter the annual costs a typical business may incur to comply with these requirements. *Include the dollar costs to do programming, record keeping, reporting, and other paperwork, whether or not the paperwork must be submitted.* \$ n/a

4. Will this regulation directly impact housing costs? YES NO
If YES, enter the annual dollar cost per housing unit: \$ _____

Number of units: _____

5. Are there comparable Federal regulations? YES NO

Explain the need for State regulation given the existence or absence of Federal regulations: See attachment.

Enter any additional costs to businesses and/or individuals that may be due to State - Federal differences: \$ none

C. ESTIMATED BENEFITS *Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment: See attachment.

2. Are the benefits the result of: specific statutory requirements, or goals developed by the agency based on broad statutory authority?

Explain: Statute requires best achievable protection of waters and natural resources. [Gov. C. §8670.28] These regulations implement this mandate.

3. What are the total statewide benefits from this regulation over its lifetime? \$ See attachment.

4. Briefly describe any expansion of businesses currently doing business within the State of California that would result from this regulation: Response
planning consultants, spill management teams, and oil spill response companies may expand in order to assist the operators who must comply with these regulations.

D. ALTERNATIVES TO THE REGULATION *Include calculations and assumptions in the rulemaking record. Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. List alternatives considered and describe them below. If no alternatives were considered, explain why not: The requirement to engage in oil spill drills and exercises is required by statute [Gov. C. §8670.29(b)(9)]. Therefore, there are no reasonable alternatives.

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ECONOMIC IMPACT STATEMENT (CONTINUED)

2. Summarize the total statewide costs and benefits from this regulation and each alternative considered:

Regulation: Benefit: \$ See attachment Cost: \$ 573,214/yr

Alternative 1: Benefit: \$ _____ Cost: \$ _____

Alternative 2: Benefit: \$ _____ Cost: \$ _____

3. Briefly discuss any quantification issues that are relevant to a comparison of estimated costs and benefits for this regulation or alternatives: Estimated benefits are \$7.7 million/yr for all four related regulations. See attachment.

4. Rulemaking law requires agencies to consider performance standards as an alternative, if a regulation mandates the use of specific technologies or equipment, or prescribes specific actions or procedures. Were performance standards considered to lower compliance costs? YES NO

Explain: These regulations represent performance standards. The facts and circumstances of each spill are different. Facilities have some flexibility in how they meet the drills and exercise requirements.

E. MAJOR REGULATIONS *Include calculations and assumptions in the rulemaking record.*

California Environmental Protection Agency (Cal/EPA) boards, offices and departments are required to submit the following (per Health and Safety Code section 57005). Otherwise, skip to E4.

1. Will the estimated costs of this regulation to California business enterprises exceed \$10 million? YES NO

*If YES, complete E2. and E3
If NO, skip to E4*

2. Briefly describe each alternative, or combination of alternatives, for which a cost-effectiveness analysis was performed:

Alternative 1: _____

Alternative 2: _____

(Attach additional pages for other alternatives)

3. For the regulation, and each alternative just described, enter the estimated total cost and overall cost-effectiveness ratio:

Regulation: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 1: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 2: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

4. Will the regulation subject to OAL review have an estimated economic impact to business enterprises and individuals located in or doing business in California exceeding \$50 million in any 12-month period between the date the major regulation is estimated to be filed with the Secretary of State through 12 months after the major regulation is estimated to be fully implemented?

YES NO

If YES, agencies are required to submit a Standardized Regulatory Impact Assessment (SRIA) as specified in Government Code Section 11346.3(c) and to include the SRIA in the Initial Statement of Reasons.

5. Briefly describe the following:

The increase or decrease of investment in the State: _____

The incentive for innovation in products, materials or processes: _____

The benefits of the regulations, including, but not limited to, benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency: _____

ECONOMIC AND FISCAL IMPACT STATEMENT

(REGULATIONS AND ORDERS)

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FISCAL IMPACT STATEMENT

A. FISCAL EFFECT ON LOCAL GOVERNMENT *Indicate appropriate boxes 1 through 6 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

1. Additional expenditures in the current State Fiscal Year which are reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ _____

a. Funding provided in _____

Budget Act of _____ or Chapter _____, Statutes of _____

b. Funding will be requested in the Governor's Budget Act of _____

Fiscal Year: _____

2. Additional expenditures in the current State Fiscal Year which are NOT reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ 15,000 (see attachment)

Check reason(s) this regulation is not reimbursable and provide the appropriate information:

a. Implements the Federal mandate contained in _____

b. Implements the court mandate set forth by the _____ Court.

Case of: _____ vs. _____

c. Implements a mandate of the people of this State expressed in their approval of Proposition No. _____

Date of Election: _____

d. Issued only in response to a specific request from affected local entity(s).

Local entity(s) affected: _____

e. Will be fully financed from the fees, revenue, etc. from: _____

Authorized by Section: _____ of the _____ Code;

f. Provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each;

g. Creates, eliminates, or changes the penalty for a new crime or infraction contained in _____

3. Annual Savings. (approximate)

\$ 3,750 (see attachment)

4. No additional costs or savings. This regulation makes only technical, non-substantive or clarifying changes to current law regulations.

5. No fiscal impact exists. This regulation does not affect any local entity or program.

6. Other. Explain See attachment.

ECONOMIC AND FISCAL IMPACT STATEMENT

(REGULATIONS AND ORDERS)

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FISCAL IMPACT STATEMENT (CONTINUED)

B. FISCAL EFFECT ON STATE GOVERNMENT *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

1. Additional expenditures in the current State Fiscal Year. (Approximate)

§ 7,500 (see attachment)

It is anticipated that State agencies will:

a. Absorb these additional costs within their existing budgets and resources.

b. Increase the currently authorized budget level for the _____ Fiscal Year

2. Savings in the current State Fiscal Year. (Approximate)

§ -0- for OSPR; \$3,750 for other state agencies (see attachment)

3. No fiscal impact exists. This regulation does not affect any State agency or program.

4. Other. Explain See attachment.

C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

1. Additional expenditures in the current State Fiscal Year. (Approximate)

\$ _____

2. Savings in the current State Fiscal Year. (Approximate)

\$ _____

3. No fiscal impact exists. This regulation does not affect any federally funded State agency or program.

4. Other. Explain _____

FISCAL OFFICER SIGNATURE

DATE



12/13/17

The signature attests that the agency has completed the STD. 399 according to the instructions in SAM sections 6601-6616, and understands the impacts of the proposed rulemaking. State boards, offices, or departments not under an Agency Secretary must have the form signed by the highest ranking official in the organization.

AGENCY SECRETARY

DATE



12/13/17

Finance approval and signature is required when SAM sections 6601-6616 require completion of Fiscal Impact Statement in the STD. 399.

DEPARTMENT OF FINANCE PROGRAM BUDGET MANAGER

DATE



Attachment to Economic and Fiscal Impact Statement (STD 399)

Title 14. California Code of Regulations
Re: Drills and Exercises
to
Adopt Section 820.02

Economic Impact Statement

Page 1

A. Estimated Private Sector Cost Impacts

These regulations will not have a significant statewide adverse economic impact. Based on OSPR's experience implementing the emergency regulations in 2015, about 45 companies are subject to these inland requirements. They will incur some costs of compliance, described in detail below. Because oil demand is highly inelastic, nearly all of these costs are expected to be passed on to consumers. Because there are millions of oil consumers in California, these costs will be spread so thinly across all of them that they will hardly be noticed. For example, the gasoline costs to operate a vehicle for a year is expected to increase six cents as a result of these regulations.

These are not considered "major regulations" because the economic impact assessment concludes that the impacts, summing both costs and benefits, will be considerably less than \$50 million dollars annually.

Costs

With respect to drills and exercises, inland facility plan holders must accomplish certain tabletop exercise objectives. Some larger plan holders have operations both along the coast and in interior portions of the state. Thus, as a statewide program, these exercise objectives can be accomplished anywhere in the state that is appropriate, not just along the coast.

At a tabletop exercise, the participants will role-play a simulated oil spill and work through resolving hypothetical spill response issues. OSPR has established three tiers of exercise objectives for plan holders based on their reasonable worst case spill volume. The use of tiers will likely reduce exercise costs for existing operators commensurate with their potential environmental risk.

Tier I plan holders are the largest operators; they have the most objectives to accomplish because their potential spill impacts are more extensive. Tier II plan holders are mid-sized operators, with a middle range of objectives. Tier III plan holders are the smallest operators, with the fewest objectives. For the list of objectives, see subsections 820.02(f), (g), and (h).

As of February 2017, under the emergency regulations, OSPR received plans from 42 facilities: 16 in Tier I, 3 in Tier II, and 23 in Tier III. The tabletop exercise cost estimates below are based on marine tabletop exercises as provided to staff by industry.

It is expected that inland tabletop exercise costs will generally be lower than marine tabletop exercise costs for the following reasons:

- Facility rental may be cheaper. For example, a conference room rental in Long Beach is generally more expensive than a similar room in Bakersfield.
- Logistics costs may be cheaper. Exercises can be held at a plan holder's inland facility instead of renting a conference room or other location (assuming the facility has enough space). Inland-based employees that would have to travel to the coast for a marine exercise could now accomplish certain objectives at exercises held at inland facility buildings, reducing travel and setup costs (lodging, equipment rental, etc.).
- OSPR staff experience is that there are fewer participants (e.g., federal, local representatives) at inland exercises, thus reducing costs.

Tier I Plan Holders

Tier I operators are defined by a reasonable worst case spill volume of 1,000 barrels or more. Tier I plan holders have three years to accomplish the required exercise objectives, thus the costs are spread out over three years. It is the plan holder's choice to have one large exercise to accomplish most or all of the objectives, or have several smaller exercises spread over three years to accomplish all the objectives.

The estimated cost for a Tier I tabletop exercise designed to accomplish all objectives ranges from \$15,000 to \$75,000, depending on logistics, use of consultants, and training. Spread over three years, the cost ranges from \$5,000 to \$25,000 per year. For all 16 Tier I plan holders, the total cost would be between \$80,000 and \$400,000 per year (Table 1).

OSPR recognizes there are examples of more expensive drills where costs exceed the estimates here. For example, for a marine PREP drill (which occurs every three years), costs can reach \$500,000 to \$1,000,000, especially if the host company chooses to accomplish additional objectives beyond those required by OSPR. An event of this size includes costs for airfare, multiple days of lodging, conference rooms, food or catering, multiple days of training, multiple exercise days, several contractors, and involves 200 to 300 people. OSPR does not anticipate any inland tabletop exercises approaching this scale or cost. The new regulatory requirements can be accomplished with fewer people, in fewer days, and thus cost much less.

Tier II Plan Holders

Tier II plan holders are mid-sized operators. They have a reasonable worst case spill volume from 500 to 999 barrels. Like Tier I, Tier II plan holders have three years to accomplish the required tabletop exercise objectives, thus the costs are spread out over three years. The estimated costs per year depend on the methods used to conduct the exercise and whether or not the facility chooses to hold one exercise or spread them over three years.

To accomplish all Tier II tabletop exercise objectives, the average cost for a Tier II plan holder is estimated at \$8,000 to \$20,000, depending on their use of consultants. Spread over three years, the cost ranges from \$2,667 to \$6,667 per year. For all 16 Tier I plan holders, the total cost would be between \$8,000 and \$20,000 per year (Table 1).

Tier III Plan Holders

Tier III plan holders are the smaller operators. They have a reasonable worst case spill volume from 1 to 499 barrels. Correspondingly, they have the fewest exercise objectives to complete. The exercise objectives for Tier III plan holders test the core elements of response to a spill, and all Tier III objectives must be accomplished each year. Tier III plan holders could accomplish all of the objectives in a single exercise or spread them throughout the year.

The high end estimated annual cost per plan holder, assuming they hired a consultant to develop and plan the exercise, as well as train staff in advance, is approximately \$5,000. If an exercise is facilitated by in-house employees at the plan holder's office, the cost could be as low as "donuts and coffee" and some photocopying costs (\$100 estimate).

If all 23 Tier III plan holders hired consultants and incurred the maximum estimated expenses, the total cost would be approximately \$115,000 (Table 1).

The total estimated annual cost, across all three Tiers, ranges from \$90,300 to \$535,000. For the purposes of this analysis, we adjust all industry totals assuming there will be 45 plan holders (not 42 as there were when we conducted this inquiry). Normalizing to 45 plan holders, the maximum estimated annual cost is \$573,214.

Table 1: Estimated Annual Cost of Drills and Exercises

	Plan Holders	Cost/Plan Holder		Total for All Plan Holders	
		Low	High	Low	High
Tier I	16	\$5,000	\$75,000	\$80,000	\$400,000
Tier II	3	\$2,667	\$6,667	\$8,000	\$20,000
Tier III	23	\$100	\$5,000	\$2,300	\$115,000
				\$90,300	\$535,000
Maximum estimated annual cost (45 plan holders):					\$573,214

Equipment Deployment Drills

Plan holders with terrestrial-only risks (e.g., next to a wash dry most of the year) are not required to drill the deployment of equipment. Plan holders that pose a risk to waterways must demonstrate on-water cleanup capability, which involves drills deploying equipment. These drills may be done by the plan holder or a cleanup contractor, also known as an oil spill response organization (OSRO). Rated OSROs perform their own drills, and plan holders that have contracted with them may rely on those results.

Currently no inland plan holders have indicated they are relying on their own equipment; they have all contracted with a Rated OSRO to provide on-water oil containment and recovery services. Thus, they have no equipment deployment drill costs. The costs for plan holder to retain the services of an OSRO are covered under the economic analysis for the contingency plan regulations.

If an inland plan holder wanted to rely on their own equipment for on-water response, they would have equipment drill costs. Such a plan holder would have to periodically demonstrate its capabilities. By comparison approximately 40-50 marine plan holders rely on some amount of their own equipment.

In the future, if an inland plan holder decided to use their own equipment for on-water cleanup, inland on-water deployment costs are expected to be less than ocean deployment costs. Differences include smaller skiffs to pull boom in a river versus larger ocean-going vessels, less gas consumption for smaller inland vessels, and fewer personnel relative to an ocean spill.

Cumulative Impact

At this time, OSPR is also promulgating regulations for inland facilities regarding: 1) oil spill contingency planning, 2) demonstration of financial responsibility to pay for cleanup and damages, and ratings of oil spill response organizations. The economic impact assessment for each of those requirements is addressed in the Initial Statement of Reasons (ISOR) for each of those rulemakings. Collectively, looking at the costs to comply with all aspects of these four rulemakings (drills and exercises, contingency planning, financial responsibility, and rating of oil spill response organizations) across all the affected operators (about 45 facilities), the total cost for industry-wide compliance is expected be about \$4 million (Figure 1) in the first year, and \$2 million annually in future years. For reasons described in this and other ISORs, this is a high estimate.

Figure 1: Total Cost of All New Oil Spill Preparedness Regulations



Summary of Costs

The estimated costs of all the regulations are described in detail in each of the respective ISOR's, but are presented here for summary purposes:

- Contingency plans: \$2.7 million in the first year; \$617,000/yr annually
- Drills and exercises: \$573,000 annually
- Financial responsibility: \$855,000 annually
- Oil spill response organizations: zero (captured under contingency plan analysis)

Total expected cost of the four packages combined: \$4 million in the first year; \$2 million/year thereafter.

Based on this analysis, the proposed regulations collectively will not have a significant adverse economic impact on businesses in California or their ability to compete with out-of-state businesses. The impacted companies are involved in oil production, oil transport, oil refining, and oil distribution within the state. California receives about two-thirds of its oil from out of state (mostly via tankers coming from Alaska or overseas) and a third of its oil from domestic production within California. Most of the domestic production is from inland locations. Nearly all of the oil consumed in California is refined in the state. All of it is then distributed for sale throughout the state.

In general, businesses from outside of California do not compete with California refineries or transporters (although facilities within California may be owned by a larger corporation based outside of California). Inland producers do compete on the global market with all oil producers worldwide. However, because they are located locally, they have a strong economic advantage over out-of-state competitors due to minimal transport costs. All domestic California oil production is consumed within California.

The increased costs associated with preparing and maintaining contingency plans incurred by these companies is unlikely to affect their ability to compete with businesses from outside the state. While OSPR does not have data at the individual company level, we can examine the impact across the industry as a whole. Annual California inland production is approximately 170 million barrels. (California Department of Conservation Monthly Oil and Gas Production and Injection Report (October 2016)) Assuming a market value of \$50/barrel, the value of this annual production is \$8.5 billion. The estimated total cost of complying with these regulations, across all facilities and companies, is \$855,110 annually. Assuming these costs are all incurred in one year (which is unlikely), this is 0.010% of the total revenues of oil production. If applied to the cost of production, these costs would add \$0.0050 (half of a penny) to the price of a barrel of oil, and this would only be in the first year. Given the normal variability in the price of oil, and the transport price advantage that producers in California have over their overseas competitors (several dollars per barrel), the cost of demonstrating financial responsibility is unlikely to affect their ability to compete with other producers from out of state.

Note that, due to the promulgation of the emergency regulations, the first two years of compliance with these regulations have already occurred. OSPR is not aware that compliance with this caused any effects on the ability of companies to compete with businesses from out of state.

Because the demand for gasoline and other oil products is highly inelastic in the short run, it is likely that nearly all of this cost would be passed on to consumers. Thus, the \$4 million born by 45 companies in the first year, and \$2 million annually after that, would be passed down to California's millions of households and business. Here we examine the likely increased cost of driving a car for a year.

The total high end estimated cost for all of the new regulations in the first year is \$4,090,297 across all affected companies. This is 0.048% (less than five-hundredths of one percent) of the total revenues of oil production. If applied to the cost of oil production, these costs would add \$0.0241 (a little more than two cents) to the price of a barrel of oil, and this would be only in the first year (which has already occurred under the emergency regulations) (Table 3). In future years, the cost would be less than half of that.

Again, the benefit to the State by having facilities with spill contingency plans should result in less damage to the environment and reduced response costs overall.

Table 3: Total Estimated Cost of Proposed Regulations Across all Facilities in Year 1 (based on high-end estimates)			
Regulation	Cost	% of value of Inland oil production in California	Potential addition to price of a barrel of oil
Contingency Plans (mostly upfront costs)	\$2,661,973	0.031%	\$0.0157
Drills and Exercises (annual costs)	\$573,214	0.007%	\$0.0034
Financial Responsibility (annual costs)	\$855,110	0.010%	\$0.0050
TOTAL	\$4,090,297	0.048%	\$0.0241

To apply this total (an increase of \$0.0241/barrel) to the annual cost of driving a car, we assume a vehicle is driven 12,000 miles/year, gets 17.5 miles per gallon, and thus requires 686 gallons of gasoline/year. A price increase of \$0.0241/barrel translates to \$0.00057/gallon (1 barrel = 42 gallons). Applied to the 686 gallons needed to drive for a year, this would add \$0.39 (or 39 cents) to the annual gas budget for the vehicle. Six of the 39 cents are due to the drills and exercises regulations.

Given the normal variation in gas prices at the pump, it is unlikely that this change would be noticed by consumers, nor impact their economic decisions.

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B. Estimated Costs

5. Explain the need for State regulation given the existence or absence of Federal regulations.

The proposed regulations are similar to but do not conflict with federal regulations. The National Preparedness for Response Exercise Program (NPREP) was developed in 1990 to establish an exercise program for spill response preparedness. States are not preempted from building upon NPREP, which OSPR has done since the mid-1990's.

However, OSPR's requirements generally are more thorough than the federal requirements. OSPR works closely with federal counterparts, such as the U.S. Coast Guard, the U.S. Environmental Protection Agency (EPA), and the U.S. Bureau of Safety and Environmental Enforcement. OSPR, the U.S. Coast Guard, and U.S. EPA conduct tabletop exercises and equipment deployment drills with plan holders on average several times a month.

C. Estimated Benefits

1. *Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment.*

These regulations will provide benefits to the health and welfare of California residents by ensuring a minimum level of skills and competence to cleanup oil spilled into inland waterways. Tabletop exercises are designed to test and reinforce the ability to properly organize a common management structure to respond to oil spills. Equipment deployment drills test and reinforce the ability to deploy oil spill containment and recovery equipment. Exercises and drills include specific safety objectives, thus enhancing worker safety. Further, these regulations will benefit the state's environment and communities that will benefit from an efficient and competent response to an oil spill.

These regulations regarding drills and exercises are part of a larger package of regulations that build upon OSPR's marine oil spill preparedness and response program to cover inland facilities that pose a threat to inland surface waters. Together, they are part of a four-pronged approach to improve preparedness and response capabilities across the inland oil production and transport industry. The following four components are new regulations for inland facilities with regard to:

1. Drills and exercises
2. Contingency plans
3. Financial responsibility
4. Rating of oil spill response organizations

While it is difficult to examine the economic benefits of any one component, we examined the overall benefit of the suite of the new regulations by focusing on the ultimate measure of program success: the number and volume of oil spills over time.

Cumulative Impact

To examine the benefits of these regulations, we considered three factors:

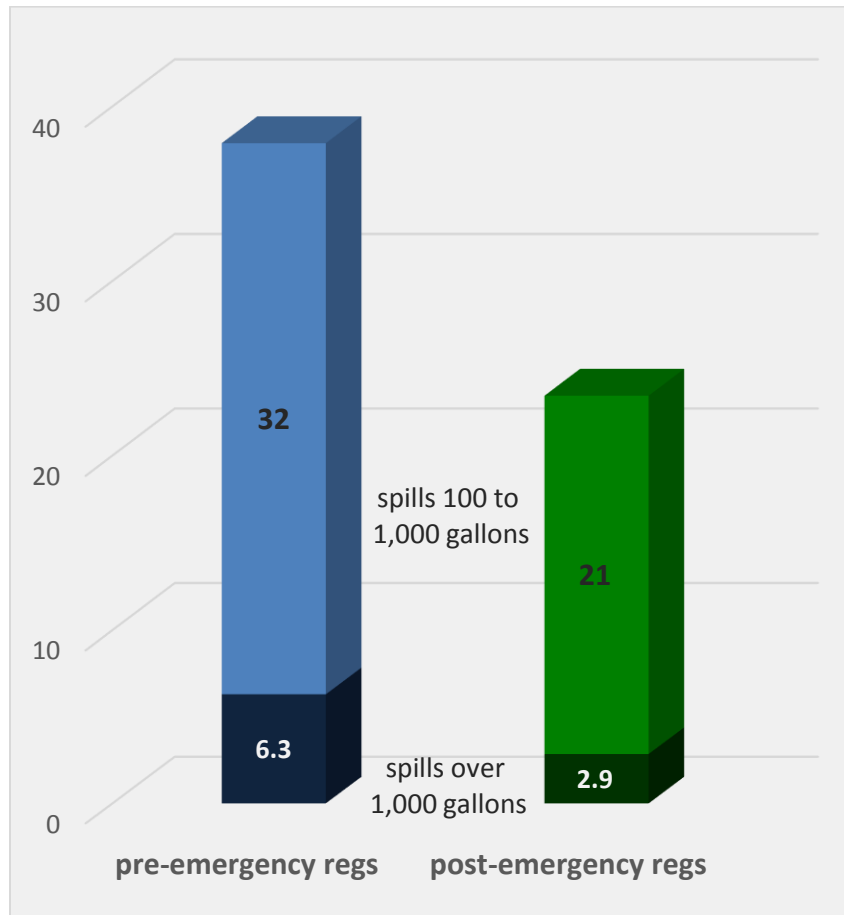
1. The reduction in small and medium-sized spills since the implementation of the emergency regulations.
2. The reduction in the risk of large spills.
3. The added risk of an oil spill due to an increase in the transport of crude by rail.

Reduction in Small and Medium-sized Spills

OSPR has a database of spills, based on reports from the Office of Emergency Services. Smaller spills happen on a regular basis, allowing us to compare spill data since the initiation of the emergency regulations in September 2015. Here, we examined data regarding inland oil spills to water, comparing 21 recent months (September 2015 thru April 2017) under the emergency regulations to the previous 38 months (July 2012 thru August 2015) before the expansion to a statewide program. We include all spills of 10 gallons or more. There are hundreds of spills under 10 gallons but, for most of these, the response costs were negligible.

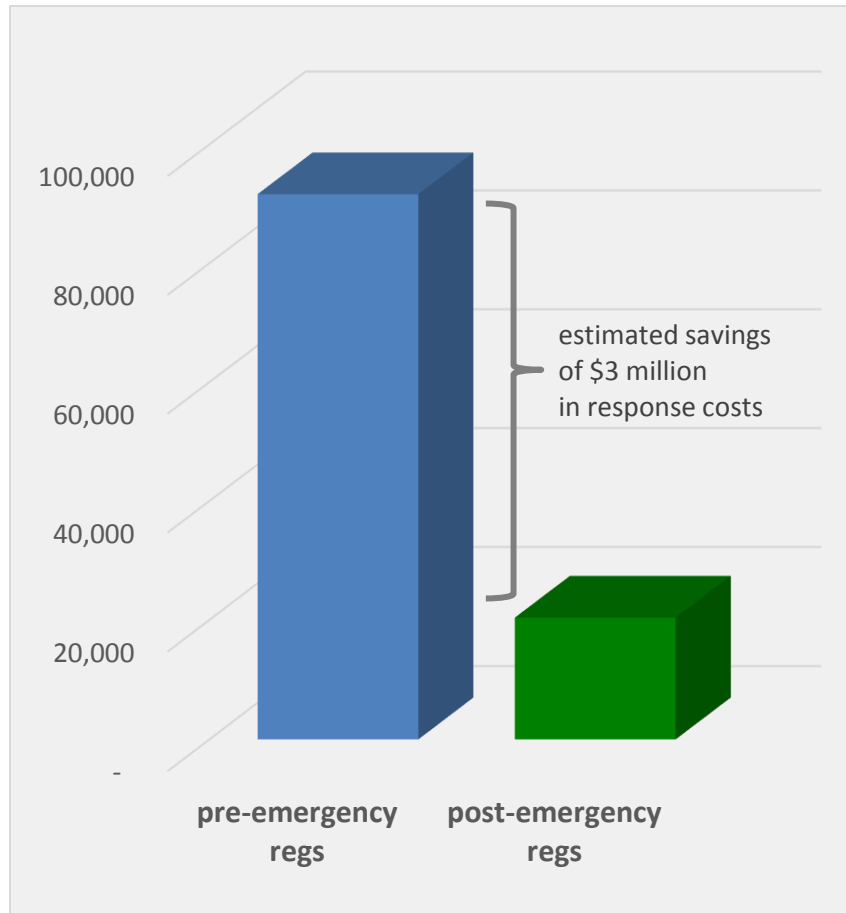
Normalizing to a 12-month period to use comparable annual figures, the total number of inland oil spills to water (of 10 gallons or more) has stayed about the same (123/year before the emergency regulations went into effect and 135/year after). However, the spills are now smaller than previously. The number of spills from 100 to 999 gallons fell a third (from 32 to 21/year), while the number of spills of 1,000 gallons or more dropped in half (from 6.3 to 2.9/year) and (Figure 2).

Figure 2: Number of Inland Oil Spills to Water



More significantly, the volume of oil spilled declined dramatically, from about 90,000 gallons/year before the establishment of the emergency regulations, to 20,000 gallons/year after (Figure 3). Based on an average response cost of \$1,779/barrel, or about \$42/gallon), this represents an annual savings of just over \$3 million/year. This response cost, provided to OSPR by a group of inland oil facilities who conducted their own internal survey, is intended to include cleanup costs as well as third party claims and natural resource damages.

Figure 3: Gallons Spilled/Year (Inland Oil Spills to Water)



An important caveat to this analysis is that significant oil spills are rare events, and large oil spills are even rarer, thus requiring long time frames to ensure enough data to paint a realistic picture. Furthermore, one large spill within the time period under examination can strongly bias results. In this instance, there were no exceptionally costly spills during the months under examination. Removing the largest spills from the 2012-2017 data would not meaningfully change the results presented above.

Risk of a Large Spill

Large spills are rare, occurring once every few years. Yet, because of their potential harm, preparing for them is one of the primary goals of OSPR. It is possible that the

new planning regulations and increased attention, in the long run, will prevent a large spill, not yet detected in the data above. To assess the potential benefit of this, we can examine the likely cost of such a spill, its annual probability, and the degree to which the new regulations will lower that probability. The result will be an expected benefit, measured in terms of reduced annual expected costs. The following equation describes this analysis:

$$\text{Benefits/yr} = \text{cost} * \text{probability of a large inland spill/yr} * \text{reduction in probability}$$

In recent decades, there have been two large inland oil spills to water in California, the 1991 ExxonMobil spill and the 1994 ARCO spill, both pipeline breaks affecting the Santa Clara River. The response costs (including third party claims and natural resource damages) for these events were \$25 million and \$51 million respectively. These spills rank among the most expensive inland spills in United States history. For the sake of this analysis, we assume the cost of a large inland spill would be \$100 million and the probability has been once every 13 years (based on these two spills occurring in the past 26 years). This is an annual probability of 0.077.

The remaining question is how much the new regulations will reduce this probability. To answer that, we looked to OSPR's history with regard to its marine program. Before the beginning of OSPR's marine program in 1991, there were four large marine oil spills between 1986 and 1990 (four in five years). Since then, there have been 11 large spills (or 11 in 26 years). Thus, the annual probability of a large marine spill declined from 0.80 to 0.42. This reduction, by 47%, is similar to the reduction recently documented with regard to smaller inland spills. For the purposes of this exercise, we assume that these regulations will reduce the risk of a large inland spill by 47%. The expected annual benefit, with regard to reducing the probability of a large inland spill, are:

$$\text{Benefits/yr} = \text{cost} * \text{probability of a large inland spill/yr} * \text{reduction in probability}$$

$$\$3,624,260 = \$100,000,000 * 0.077 * 0.47$$

In summary, the new inland regulations should cut the probability of a large inland oil spill roughly in half. This will lower the risk of such an incident from once every 13 years to once every 26 years. The benefit of preventing such an event is \$100 million. The annual expected benefit, taking into the account the reduced probability, is over \$3.6 million.

Risk of a Crude by Rail Spill

Because the new inland regulations apply to railroads transporting oil, an additional benefit will be a reduction in the risk of spills by rail. This is not captured in the data analyzed above, as crude-by-rail has played a small part in the supply of California's oil historically. However, if market conditions change in the future, crude-by-rail could grow significantly. This section discusses that potential growth and the additional spill risk it

brings, and thus the additional potential benefits of the proposed regulations in minimizing that risk.

Historically, crude-by-rail in California has been limited to a twice-a-week, 300-mile run from the San Ardo oil field to the Los Angeles area. There have been no significant spills associated with this. This train transports about 5 million barrels per year.

In recent years, crude-by-rail has been used to import oil into California from Canada, North Dakota, Wyoming, New Mexico, and several other production areas. This peaked in 2013 at just over 6 million barrels per year. There were plans to build crude-by-rail terminals to receive over 150 million barrels per year, but most of these were not built due to a combination of local opposition and market conditions. The only new rail terminals have been in the Bakersfield area. When the price of oil fell dramatically from around \$100/bbl to \$50/bbl in the second half of 2014, transporting crude-by-rail to California became less attractive. Since then, crude-by-rail imports into the state have stayed below 2 million barrels per year.

For this analysis, we assume that 50 million barrels of crude could be transported each year by rail into California in the future, assuming that economic conditions change. This figure represents the likely rail terminal capacity in the Bakersfield area in the future and would represent approximately 9% of California's oil supply.

Based on an analysis of crude-by-rail nationwide in 2013, approximately 131 barrels (or 5,502 gallons) were spilled per million barrels transported. Thus, for the 50 million barrels potentially transported to California, about 275,000 gallons would be spilled. Since about 20% of the route lies within the state, about 55,000 of those gallons would be spilled in California. Assuming the same rate of reduction in spills as applied above for large spills (47%), about 26,000 of those gallons would not be spilled as a result of OSPR's program. Using the \$42/gallons cost estimate described above, this would imply a benefit of almost \$1.1 million per year.

Summary of Benefits

The combined benefits of the regulations regarding drills and exercise, contingency plans, financial responsibility, and oil spill response organizations are considered jointly and summarized here:

- Expected annual benefit by reducing small and medium-sized spills: \$3 million
- Expected annual benefit by reducing large spills: \$3.6 million
- Expected annual benefit by reducing crude-by-rail spills: \$1.1 million

Total expected benefit for all regulations: \$7.7 million/year.

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D. Alternatives to the Regulation

- 2. Summarize the total statewide costs and benefits from this regulation and each alternative considered:*

Estimated benefits are \$7.7 million/year. This is for all four related regulations.

Estimated costs for this regulation is \$573,214/year.

- 3. Briefly discuss any quantification issues that are relevant to a comparison of estimated costs and benefits for this regulation or alternatives:*

The costs of drills and exercises are described in detail above and are estimated at \$573,214/year annually across the affected industry. These costs will likely be spread very thinly across millions of consumers, resulting in a very small increase in gasoline expenditures (e.g. six cents per vehicle per year).

The benefits are described above with respect to the all four regulations associated with oil spill preparedness. Across all four regulations, benefits, in terms of the cost of oil spills avoided or minimized, are estimated at \$7.7 million/year.

Fiscal Impact Statement

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A.2. Fiscal Effect on Local Government

In order to prepare for an oil spill, local governments may elect to participate in drills that previously did not exist. This is voluntary. Based on recent experience since the implementation of the emergency regulations, a few staff from various local governments often participate in oil spill drills, which typically last most of a day. These include staff from county fire, water, and public health agencies. We estimate that this totals about 50 person-days per year. Assuming, statewide, that 50 person-days per year are invested in these drills, and assuming staff costs of \$300/day, the total cost of their participation would be \$15,000, spread across many local agencies statewide.

These costs will likely be offset for three reasons. First, the costs described above are somewhat offset because the drills will achieve some of the coordination and planning that are normal parts of their job responsibilities. The other two reasons are described under A.3. (benefits) below.

A.3. Annual savings

The estimated \$7.7 million/year benefit from a reduction in oil spills refers to the economic benefit of reduced response costs, reduced environmental damages, and reduced third party injuries. None of that refers to fiscal savings by state or local governments.

In theory, all government response costs are reimbursed by the responsible party, resulting in no net costs. In practice, however, cost recovery is not 100%. Sometimes oil spills are caused by unknown sources, or sometimes the responsible party is not financially viable. In these cases, government agencies may end up incurring some of the response costs. OSPR estimates that their rate of cost recovery is approximately 90%. The remaining 10% goes unreimbursed and is borne by OSPR. Local governments would likely experience the same difficulties with cost recovery. To that extent, a reduction in spills will mean a reduction in unreimbursed response costs. OSPR's annual unreimbursed costs are about \$75,000/year. However, OSPR does not have data on local government response costs, whether reimbursed or not. It undoubtedly varies from year to year depending on spill activity. In general, local agency response costs are a small fraction of OSPR's. Assuming it was 10% of OSPR's, local agency unreimbursed costs would be \$7,500/year. If these declined by half (in keeping with Figures 2 and 3), local agencies would save \$3,750/year.

Local governments may realize savings in another way. In the aftermath of a spill, local governments are also allowed to make a legal claim for lost revenues. For example, if an oil spill results in the closure of a city park, and the city received revenues from users reserving the park or paying for parking spaces at the park, the city could make a claim for that lost revenue. In practice, such claims are rare and the local governments suffer the lost revenue. To the extent that spills are reduced, such losses will be reduced, which is a benefit to the local governments. OSPR does not have data on such claims and is not able to estimate the magnitude.

A.6. Other

The costs and benefits described above are expected annually. In summary, the annual costs to local government are approximately \$15,000/year. The annual benefits, which offset some of these costs, are at least \$3,750/year.

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B.1. Fiscal Effect on State Government

This regulation will be implemented using existing resources. Specifically, this regulation will be implemented by the California Department of Fish and Wildlife's Office of Spill Prevention and Response (OSPR). To do this, OSPR has added several new staff positions, which were funded through a fee on oil movement in California, authorized by

SB 861 and implemented through a separate regulation, which became permanent on August 22, 2017. No additional funds are needed.

In order to prepare for an oil spill, other state agencies (outside of OSPR) may elect to participate in drills that previously did not exist. This is voluntary. Based on recent experience since the implementation of the emergency regulations, a few staff from various other agencies often participate in oil spill drills, which typically last most of a day. These include staff from CalEPA and CalFIRE. We estimate that this totals about 25 person-days per year. Assuming, statewide, that 25 person-days per year are invested in these drills, and assuming staff costs of \$300/day, the total cost of their participation would be \$7,500, spread across many local agencies statewide. These costs will be partially offset because the drills would achieve some of the coordination and planning that are normal parts of their job responsibilities.

B.2. Savings in the current State Fiscal Year

The estimated \$7.7 million/year benefit from a reduction in oil spills refers to the economic benefit of reduced response costs, reduced environmental damages, and reduced third party injuries. None of that refers to fiscal savings by state or local governments.

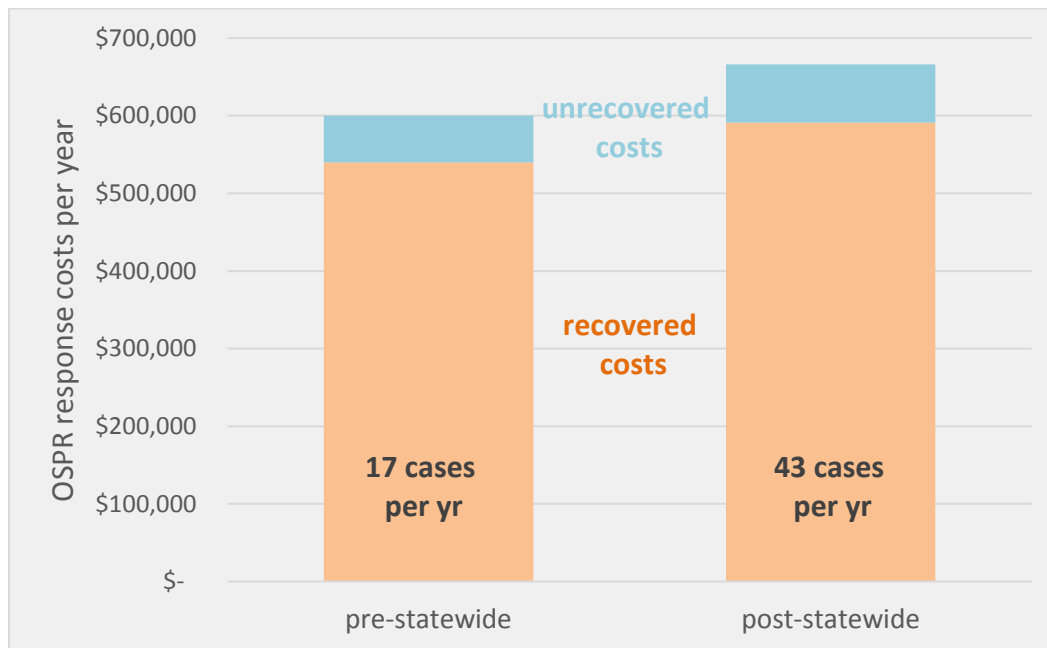
OSPR and other state government agencies may realize a fiscal benefit from a reduction in future oil spills (as illustrated in Figures 2 and 3 above). However, in OSPR's case, this will likely be offset by OSPR's increased responses to smaller inland spills which it had not previously responded to.

In theory, all government response costs are reimbursed by the responsible party, resulting in no net costs. In practice, however, cost recovery is not 100%. Sometimes oil spills are caused by unknown sources, or sometimes the responsible party is not financially viable. In these cases, government agencies may end up incurring some of the response costs. OSPR estimates that their rate of cost recovery is approximately 90%. The remaining 10% goes unreimbursed and is borne by OSPR. OSPR estimates that this amounts to about \$75,000/year (which is ideally offset by interest earned on the response trust fund). To the extent that inland spills, especially large ones, are reduced (see Figures 2 and 3), OSPR may see unreimbursed costs reduced.

However, under the emergency regulations OSPR is now responding to more spills. This is expected to continue. While these additional spills are smaller, and the response costs are much smaller than those for a large spill, this will add to unreimbursed response costs. That is to say, even though the total number of spills—especially large spills—is reduced, OSPR is responding to more of them than it had previously. Based on a review of OSPR cost recovery since the implementation of the emergency regulations, OSPR's unreimbursed cost recovery has remained at \$75,000/year. While the number of spills has declined significantly (Figures 2 and 3), OSPR is now responding to more small spills than previously. Before the emergency regulations, OSPR responded to and incurred response costs to 17 spills per year. After the

implementation of the emergency regulations, that figure jumped to 43 spills per year. However, because most of the additional spills were small inland spills, total response costs to OSPR, and total unreimbursed response costs, did not change significantly (Figure 4).

Figure 4: OSPR Cost Recovery Before and After Emergency Regulations



Other state government agencies respond much less often than OSPR. Nevertheless, they would likely experience the same difficulties with cost recovery. To that extent, a reduction in larger spills, which they would be more likely to respond to, will mean a reduction in unreimbursed response costs.

OSPR's annual unreimbursed costs are about \$75,000/year. However, OSPR does not have data on other state agencies's response costs, whether reimbursed or not. It undoubtedly varies from year to year depending on spill activity. In general, other state agencies's response costs are a small fraction of OSPR's. Assuming they were 10% of OSPR's, other state agencies's unreimbursed costs would be \$7,500/year. If these declined by half (in keeping with Figures 2 and 3), other state agencies would save \$3,750/year.

OSPR is not aware of other state agencies making claims for lost revenue as described for local agencies under A.3., but such a situation is possible. A reduction in spills would make such losses in revenue less likely.

B.4. Other

The costs and benefits described above are expected annually. In summary, OSPR is expecting a decrease in unreimbursed response costs due to fewer spills, especially large spills, but these will largely be offset by an increase in the small spills that OSPR responds to. Based on an analysis of OSPR cost recovery before and after the implementation of the emergency regulations (Figure 4), OSPR expects to break even.

Other state agencies may experience a savings via a decrease in unreimbursed response costs of about \$3,750/year.

END