SECOND **REVISED**
Attachment to Economic and Fiscal Impact Statement (Form STD 399)

Title 14. California Code of Regulations
Regarding Certification of Spill Management Teams
to
Adopt Sections 830.1, 830.2, 830.3, 830.4, 830.5,
830.6, 830.7, 830.8, 830.9, 830.10, 830.11

This document replaces the previous Attachment to STD Form 399 noticed on July 31, 2020.

Changes made after the first 15-day comment period are illustrated in single underline for additions, and ~~single strikethrough~~ for deletions, and start on page 10.

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A. Estimated Private Sector Cost Impacts

These regulations will not have a significant statewide adverse economic impact. These are not considered "major regulations" because the economic impact assessment concludes that the impacts, summing both costs and benefits, will be less than $50 million annually.

These regulations establish a certification process for Spill Management Teams (SMTs). SMTs may be external companies under contract, in-house staff, staff affiliated with plan holder companies, or any combination thereof. Certifications are voluntary in that external SMTs may offer their services regardless of whether they are certified. However, owners and operators that are required to have contingency plans must specify a certified SMT in their contingency plans. Hiring a certified external SMT and/or providing training for in-house staff are potential costs to a plan holder.

For the purposes of evaluating private sector cost impacts, we focus on new costs associated with training requirements, because the SMTs should already have experience participating in exercises for contingency plan holders under OSPR's current drills and exercise regulations (Title 14 California Code of Regulations sections 820.01 and 820.02). Note that most plan holders already have SMTs, whether internal or external (contracted), as part of their oil spill contingency plan and most of these SMTs already have some level of training and experience. This proposed regulation would require all SMTs listed in contingency plans to become certified, which is accomplished primarily through training and exercise participation, if they will be listed in the contingency plans of plan holders.

As of 2019, approximately 101 facility SMTs and 18 vessel SMTs operate in California. These SMTs were contacted by the Office of Spill Prevention and Response (OSPR) as part of a survey to ascertain their expected costs from these proposed regulatory requirements. In total, two external (contracted) spill management teams and three plan holders with internal SMTs responded to OSPR's inquiry. Based on discussions with industry representatives in 2018, the cost of maintaining an SMT contract for a contingency plan holder is approximately $5,000 per year.

External (contracted) firms that provide SMT services will initially bear the cost of meeting the certification requirements in order to be listed in the contingency plans of existing clients. Attaining certification is also an investment on their part because it will create business opportunities. Additionally, some out-of-state SMTs may hire additional staff in California to meet the increased demand from plan holders wanting to maintain compliance with the regulations. The results from the SMT survey conducted by OSPR approximate the annual cost of additional training to be in the range of $40,000 – $50,000. SMTs that choose to hire new personnel could face additional annual costs of approximately $150,000. These costs will then be passed on as increased retainer fees to their clients who are the plan holders, which OSPR approximates as a $2,000 per year increase.

Plan holders with internal SMTs are directly impacted by the costs associated with the requirements for personnel and for additional training. Based upon the survey results OSPR received from plan holders in the tier classification with the most intensive personnel and training requirements, we expect the additional annual costs to internal SMTs to be approximately $160,000 for hiring additional personnel to meet the staffing requirements and $250,000 to meet the training requirements of these regulations, for a total of $410,000 in additional annual costs. These projected costs represent an upper limit, since they reflect the most robust training and personnel requirements included in the proposed regulations, and personnel must only take the required incident command system courses once. We do not have analogous cost estimates from plan holders in lower tiers that require fewer trained personnel, but we presume that they will be less.

The impacted plan holders are involved in the production, transport, and distribution of crude oil and refined products, as well as commercial shipping in proximity of state waters. 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 facilities. Nearly all of the oil consumed in California is refined in the state and then distributed for sale throughout the state. Using the consolidated definition of small business, there are a total of 33 plan holders that qualify as small businesses (i.e., those that are independently owned, not dominant in their field, and have fewer than 100 employees) impacted by these regulations. Eight of these are oil producers, and 25 are involved in the marine terminal and mobile transfer unit (MTU) business.

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). 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 transportation costs. All domestic California oil production is consumed within California.

For context, the increased costs incurred by oil production companies associated with the 2018 statewide regulations that required inland facilities meeting applicability requirements to have contingency plans, conduct drills and exercises, and demonstrate financial responsibility (Title 14 California Code of Regulations sections 817.04; 820.02; 791 through 798, respectively) did little 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 oil production industry. Annual California crude

oil production was approximately 170 million barrels in 2018 (U.S. Energy Information Administration, Annual Crude Oil Production 2018). Assuming a market value of $66.77 per barrel based on the average 2018 value for a barrel of California Midway-Sunset (U.S. Energy Information Administration, California Midway-Sunset Price Data), the value of this annual production was approximately $11.35 billion. The estimated total cost of complying with the 2018 regulations, across all facilities and companies, was $4,090,297 for initial implementation and $2,045,417 per year thereafter.

Assuming the costs of initial implementation were all incurred in the first year, this was 0.036% of the total revenues of oil production in 2018. The ongoing annual cost of $2.045 million would represent about 0.018% of the total revenues of oil production in 2018. If applied to the cost of production, these costs would add $0.024 (about two cents) to the price of a barrel of oil in the first year and $0.012 (about a penny) to the price of a barrel of oil thereafter. 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 implementing the 2018 regulations was unlikely to affect their ability to compete with other producers from out of state.

Using a similar analysis for the implementation of these proposed SMT certification regulations, we anticipate that the cost of implementation will be passed along from external SMTs to the plan holders. Our analysis examines the contrast between the potential costs of these regulations to oil producing plan holders with their expected revenues based upon oil production and pricing data and estimates the impact of these costs as a percentage of the producers' revenues. The process of contrasting the projected costs with estimated revenues is repeated for those plan holders who do not produce oil, such as railroads, pipelines, MTUs, marine facilities, and vessel operators.

Tables 1 and 2 below present the 79 on-shore oil-producing companies whose California production exceeded 10,000 barrels in 2018, categorized by volume produced. Because OSPR's contingency planning requirements only apply to facilities that may impact state waters, only 23 of these companies hold contingency plans for oil production facilities in California. The remaining 56 companies either do not have facilities within proximity of state waters or have received an exemption from OSPR. In order to provide a conservative upper limit for the potential costs imposed by these regulations, our analysis includes all 79 companies whose 2018 production exceeded 10,000 barrels of oil, overestimating the number of impacted production companies by a factor of three. Although 18 of these production plan holders are in the lowest SMT tier and only four are in the highest tier, we performed the analysis using cost estimates for the highest tier classification, which includes 50% more personnel than the lowest tier, as well as more intensive training requirements. As a result of these means of overestimation, our analysis should be considered a robust ceiling for the potential impacts of the estimated cost increase.

Categorizing oil producers by volume produced allows for more accurate cost estimation for larger producers who have designated in-house SMTs, while the smaller firms are expected to retain external (contracted) SMTs as a cost saving measure to avoid the increased expenses for hiring additional SMT staff and providing the required training. Since a vast majority of oil producing plan holders produce over 9,000 barrels a year, the smallest category begins at 10,000 barrels a year, while the largest category is over 10 million barrels a year. Revenues are calculated using a price of $40 per barrel

based on the most recent forecast for the 2021 per barrel value of California Midway-Sunset in order to account for the economic downturn caused by the coronavirus pandemic (U.S. Energy Information Administration, Short-Term Energy Outlook). It is important to note that this estimate is lower than the forecasted price of oil for 2022, which the U.S. Energy Information Administration estimates will rise to approximately $50 per barrel in its Short-Term Energy Outlook.

The figures presented in Table 2 are based on the limited feedback OSPR received from industry in the 2019 survey described above. The figures reflect estimated cost increases that production plan holders may incur from training their own staff to meet SMT certification requirements (top production category), retaining an SMT for the first time (second and third categories), or increased SMT retainer fees (bottom three production categories). The cost of an SMT retainer includes compensation for the added training that external SMTs must undergo, as well as the costs to participate in required exercises. Costs are expected to be higher for the top production category as the companies either have in-house SMTs or a combination of in-house and external SMT personnel to meet the requirements of a Tier I certification, and thus are directly paying for labor costs for trained SMT staff. The smaller producers are most likely to have Tier III plans, which require fewer personnel and are more easily covered by a contracted SMT. As mentioned previously, we expect the annual costs to be up to $160,000 for plan holders hiring additional personnel to meet staffing requirements, and $250,000 to meet the training requirements, for a total of $410,000 in annual costs for maintaining an in-house SMT based upon the survey results OSPR received. As noted above, only 23 of the 79 companies included in Tables 1 and 2 are plan holders, so these costs are conservatively overestimated.

Table 1: Estimated Revenues Based on Production

Annual Production in Barrels	Number of Firms	Average Production	Total Average Revenue	Average Revenue
Greater than 10 million	2	27,090,210	$2,167,216,800	$1,083,608,400
Greater than 1 million	9	4,190,012	$1,508,404,320	$167,600,480
Greater than 500,000	10	651,537	$260,614,800	$26,061,480
Greater than 100,000	14	218,585	$122,407,600	$8,743,400
Greater than 50,000	5	69,464	$13,892,800	$2,778,560
Greater than 10,000	39	23,792	$37,115,520	$951,680
Total	79		**$4,109,651,840**	

Table 2: Estimated Cost Increase to Producers from Proposed SMT Regulations

Annual Production in Barrels	Number of Firms	SMT Cost/Retainer Increase	Total Cost Increase	Average Cost Increase as % of Average Revenue	Cost per Barrel
Greater than 10 million	2	$410,000	$820,000	0.038%	$0.02
Greater than 1 million	9	$7,000	$63,000	0.004%	$0.002
Greater than 500,000	10	$7,000	$70,000	0.027%	$0.01
Greater than 100,000	14	$2,000	$28,000	0.023%	$0.01
Greater than 50,000	5	$2,000	$10,000	0.072%	$0.03
Greater than 10,000	39	$2,000	$78,000	0.210%	$0.08
Total	79		**$1,069,000**	0.026%	

For the purpose of this analysis, based upon the 2019 survey results, we assume that external SMTs will pass on to their clients the increased staffing and training costs they incur to meet the proposed SMT certification requirements by increasing their retainer rates from $5,000 per year to $7,000 per year. Larger production plan holders that maintain their own SMTs may see increased costs associated with additional staffing to meet minimum personnel requirements, or for contracting with external SMTs to compensate for personnel shortfalls. Some production plan holder with an annual production above 500,000 barrels but less than 10 million barrels may elect to contract with an SMT for the first time to meet the requirements and would pay the full retainer cost of $7,000 rather than just the $2,000 increase. The average estimated cost increases for each production category are used to calculate an estimated $1.069 million in total costs for the industry.

While we have no information on the costs of production, we can estimate gross revenues by multiplying the annual production of crude oil by the price of crude oil. We then assumed that all of the costs of the regulations are borne by each company and not passed on to consumers. We compared those costs to the estimated annual revenues to provide a measure of the economic burden of complying with the regulations (Table 2).

For all but the smallest producers (those producing 10,000 barrels to 50,000 barrels of oil per year), the impact of the estimated cost increase of compliance with these regulations is less than 0.1% of their average revenues. The smallest producers would experience a cost increase of 0.21% of their average revenue. The additional cost for most producers, regardless of size, is probably less than that described here, as this analysis assumes only high-end cost estimates. Additionally, producers with in-house SMTs may decide to reduce their costs by hiring external SMTs instead, which eliminates the need to maintain a certified SMT and thus eliminates the associated labor costs.

We also compared these cost increases to the natural volatility in the market that oil producers experience. For all producers, the effect of a $1 per barrel change in the price of crude oil (e.g., from $40 per barrel to $39 per barrel) would have a greater impact than the total maximum estimate of the costs of regulatory compliance (Table 2). To calculate the impact on producers, we divided the cost increases in Table 2 by the average production in Table 1 to calculate the per barrel effect. For producers in the top five production categories the cost of regulatory compliance is equal to or smaller than the impact of a $0.03 drop in the price of a barrel of crude oil, while producers in the lowest category would potentially face an impact similar to an $0.08 drop in the price of a barrel of crude oil. This is well within the daily average variability in the price of crude oil and thus unlikely to affect business decisions.

Other plan holders, such as pipeline operators, railroads, MTUs, marine facilities, and vessels would incur similar cost increases associated with in-house SMT training and personnel requirements or from increased SMT retainer costs. As mentioned above, the cost for an SMT retainer includes compensation for the training that an SMT must undergo, as well as the cost for participating in required exercises. Larger companies which maintain in-house SMTs, such as class I railroads, marine facilities with Tier I plans, and large pipelines, are expected to have costs similar to the those for larger oil producers with in-house SMTs, as they must meet the same training and must hire the appropriate personnel to meet the staff requirements for their SMTs. Vessels typically contract with one or two SMTs to cover their fleets. No vessel plans currently retain more than two SMTs, but in order to capture a conservative upper estimate, we used the cost increase for maintaining three SMT retainers to generate the estimate in Table 3. It is expected that MTUs will behave as companies contracting with an SMT for the first time and would thus pay $7,000 annually to retain a new contracted SMT. Marine facilities that are not in the Tier I category are expected to pay the estimated retainer increase of $2,000 for their contracted SMT. Class III railroads are expected to pay the retainer fee increase of $2,000 as well. As with Table 2, the expected cost for maintaining in-house SMT staff or retaining a contracted SMT are based on the results of OSPR's 2019 survey of existing SMTs.

As most of the companies with contingency plans for pipelines, railroads, MTUs, marine facilities, and vessels are large and have revenues comparable to, if not higher than those of inland producers, it is reasonable to assume that the economic impacts of the increased costs to comply with these regulations would be similarly miniscule. An estimation of the cost increases and impact of those costs on revenues is presented in Table 3.

Table 3: Estimated Revenue, Cost Increases, and Impact to Rail, Pipeline, MTUs, Marine Facilities, and Vessel Operators

	Number of Firms	Average Revenue	Cost Increase	Cost as % of Revenue
Class I Rail	2	$22,615,000,000	$410,000	0.002%
Class III Rail	4	$6,437,316	$2,000	0.031%
Large Pipeline	6	$107,750,000,000	$410,000	0.0004%
Medium Pipeline	1	$116,620,000	$2,000	0.00171%
Small Pipeline	5	$8,880,892	$2,000	0.023%
Vessel Owner	918	$211,556,423	$6,000	0.00284%
Large MTU	7	$676,770,000	$7,000	0.00103%
Small MTU	26	$14,250,000	$7,000	0.04912%
Tier I Marine Facility	10	$84,550,000,000	$410,000	0.00048%
Non-Tier I Marine Facility	13	$1,750,000,000	$2,000	0.00011%
Totals		**$1,759,483,460,406**	**$13,165,000**	**0.00075%**

As seen in Table 3, the impact of the expected costs on average revenues is not expected to exceed 0.05% for any operator type. The total expected cost to all rail, pipeline, MTUs, marine facilities, and vessel operators is $13.165 million. Combined with the total expected cost of $1.069 million to oil producers (Table 2), the total expected costs across all impacted plan holders are estimated to be $14.234 million.

Assuming that production plan holders decide to pass the cost of complying with the proposed regulations on to the consumer, the likely outcome would be an increase in gasoline prices, which would primarily impact automobile drivers – but quite insignificantly. To apply this total to the annual cost of driving a car, we assume that the average vehicle is driven 12,000 miles per year, gets 17.5 miles per gallon, and thus requires 686 gallons of gasoline per year. The annual crude production in California was estimated at 170 million barrels in 2018 (U.S. Energy Information Administration, Annual Crude Oil Production 2018). Applying the total cost of compliance for oil producers to the estimated production of 170 million barrels yields a per barrel increase of $0.08 per barrel (8 cents a barrel). A price increase of $0.08 per barrel translates to $0.002 per gallon (1 barrel = 42 gallons). Applied to the 686 gallons needed to drive for a year, this would add $1.37 to the annual gas budget per vehicle.

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B. Estimated Costs

1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime?

See above for details (Tables 2 and 3). The total cost to oil producers to adjust their in-house SMT personnel or incur increased contracted SMT retainer fees is expected to be around $1.069 million annually (Table 2). The total cost to railroads, pipelines,

mobile transfer units (MTUs), marine facilities, and vessel operators is expected to be around $13.165 million (Table 3). Combined, the total expected costs are estimated to be $14.234 million.

In terms of the size of the businesses impacted, 33 plan holders qualify as small businesses (i.e., those that are independently owned, not dominant in their field, and have fewer than 100 employees) based in California. Eight of these plan holders are producers, five are marine facilities, and 20 are MTUs. Class III railroads and small pipeline operators are excluded due to their nature of having relative monopolies over the infrastructure they provide and often being owned by holding companies, which make them dominant in their fields and not independently owned. This leaves 1,037 "typical" businesses out of the 1,071 total estimated impacted businesses (Table 4).

The eight producers are expected to pay the $2,000 retainer fee increase, for a total expected cost of $16,000. Only one marine facility operator that qualifies as a small business is expected to have a Tier I plan and would be expected to switch to an external SMT for a cost of $7,000, while the four lower tiered marine facility operators that qualify as small businesses are expected to pay the $2,000 retainer increase, for a total expected cost of $15,000. The 20 MTUs that qualify as small businesses are expected to pay the full cost of $7,000 to retain a new external SMT, for a total expected cost of $140,000. Across all industries the total expected cost for small businesses is estimated to be $171,000, with the total expected cost of $14.234 million per year borne by all industry members

Applied to the annual production of 170 million barrels of crude, the total cost of $14.234 million represents a $0.08 per barrel increase, or $0.002 per gallon. Assuming this is passed on to consumers who drive an average of 12,000 miles per year, get an average of 17.5 miles per gallon, and require 686 gallons of gasoline per year, the impact to individuals will be an increase in fuel expenditures of $1.37 per vehicle per year.

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

Multiple industries are involved in the production and distribution of oil within California, including production facilities, railroads, vessels, pipeline operators, and MTUs. All of these industries must comply with California regulations for contingency planning. Our analysis assumes that external SMTs pass along the increased cost associated with complying with these proposed regulations by increasing the retainer fees charged to contingency plan holders, and that plan holders with in-house SMTs will incur increased personnel costs to meet the requirements of the proposed regulations. Table 4 presents the total estimated cost increases across all impacted industries and shows each industry's share of the cost increase.

Table 4: Estimated Cost Impacts Across All Industries

Industry	Number of Firms	Total Costs	Industry Share of Total Costs
Class I Rail	2	$820,000	5.76%
Class III Rail	4	$8,000	0.056%
Oil Production	79	$1,069,000	7.51%
Pipeline Operator	12	$2,472,000	17.37%
Vessel Owner	918	$5,508,000	38.70%
Large MTU	7	$49,000	0.34%
Small MTU	26	$182,000	1.28%
Tier I Marine Facilities	10	$4,100,000	28.80%
Non-Tier I Marine Facilities	13	$26,000	0.18%
Totals	**1071**	**$14,234,000**	

The total cost across all industries is expected to be $14.234 million. Despite making up approximately 86% of the firms impacted, vessel owners only bear 38.7% of the total cost to industry. The impact of these costs on an average firm's revenue can be seen in Tables 2 and 3 within the analysis in section A. Summarizing those results, oil producers would experience cost impacts of less than 0.026% of their average revenues, while operators of railroads, pipelines, MTUs, marine facilities, and vessels would experience cost impacts of less than 0.0009% of their average revenues.

5. Are there comparable Federal regulations? Explain the need for State regulation given the existence or absence of Federal regulations.

California's preparedness and response requirements are generally more comprehensive than those of the federal government. For example, OSPR has the following key requirements which are different from the federal government: sensitive site identification and protection, use of rated oil spill response organizations including minimum response times and minimum equipment requirements, and additional requirements for equipment deployment drills and tabletop exercises.

Currently, federal regulations only stipulate that vessels transporting oil, onshore and offshore oil facilities, and pipelines must have an SMT listed in their response plans (Title 33 Code of Federal Regulations parts 154-155, Title 30 Code of Federal Regulations part 254, Title 49 Code of Federal Regulations part 194), but do not offer a certification process to verify an SMT's capabilities. OSPR's proposed regulations establish a certification requirement for SMTs listed in contingency plans filed with the state. There should be no additional costs due to the state-federal difference since contingency plans accepted by OSPR also meet the federal government requirements.

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 manage a spill in California's waterways. Training and exercise requirements prepare and test the ability of SMTs to respond to and effectively manage an oil spill. These regulations will benefit the state's environment and communities by ensuring that oil spill responses are efficiently and competently managed.

We use the large, well-documented 2015 Refugio spill that occurred near the Santa Barbara coast to estimate the benefits using the cost of cleaning up the spill, the potential reduction in the volume spilled (represented as a range of a 1% to 10% reduction), and the annual probability of a large marine spill. For the sake of the analysis, we assume that a 1% reduction in the volume spilled corresponds to a 1% reduction in the costs of the spill.

Benefits per year = (cost of Refugio spill multiplied by the potential reduction in spill volume from using an SMT) multiplied by the probability of a large marine spill per year.

There have been two large marine spills above 1,000 barrels since OSPR began collecting spill data in 2008. Thus, the annual probability of a large marine spill occurring between 2008 and 2019, which is the range for the data used in this analysis, is 0.167. The costs for Refugio included $64.5 million in cleanup and response costs (California Oil Spill Response Cost Study, November 2019). It should be noted that these costs do not include figures for third party claims and the natural resource damage assessment settlement, and thus are a conservative representation of the actual costs associated with the Refugio spill. Using the formula above, we can estimate the annual benefit from a 1% reduction of oil spilled: *($64,500,000 multiplied by 0.01) multiplied by 0.167 per year = $107,715 per year.*

Similarly, we can estimate the benefit of a 10% reduction in the volume spilled: *($64,500,000 multiplied by 0.1) multiplied by 0.38 per year = $1,077,150 per year.* Taking the mean of both estimates gives us an average annual benefit of $592,432.50.

We take a similar approach with estimating the benefits from the reduction in the volume of oil spilled during a large inland spill (greater than 1,000 barrels) to water. For the sake of this analysis, we assume the probability based on the six largest (over 1,000 barrels) inland spills to water that were documented by OSPR from 2008 to 2019. This is an annual probability of 0.5. As with the marine spills, we assume that a 1% reduction in the volume spilled corresponds to a 1% reduction in the response costs for the spill. For this analysis, we multiplied response costs by potential spill volume reductions to derive estimated benefits, unlike the case study approach used above, which used cleanup costs for a specific spill for which total cleanup costs are known.

The mean spill size for a large spill over 1,000 barrels during this period was 2,017.94 barrels. OSPR's certificate of financial responsibility regulations establish inland facilities' financial responsibility for spill cleanup as a function of a facility's reasonable worst-case spill volume (RWCS), applying a per barrel amount contingent on the facility's proximity to state waters designated as either ephemeral, intermittent, or perennial in the National Hydrography Dataset (14 CCR Section 791.7). Facilities potentially impacting intermittent or ephemeral inland waters must demonstrate financial responsibility equating to their reasonable worst-case spill volume times $6,000; and facilities that may impact perennial waters must demonstrate financial responsibility

equating to their reasonable worst-case spill volume times $10,000. Based on these figures, an average response cost of $8,000 per barrel is used for our estimation since our analysis does not distinguish among impacts to perennial, intermittent, or ephemeral waters. To derive the average cost of a large inland oil spill we use the following equation:

Benefits per year = (average large spill volume multiplied by the potential reduction in spill volume from using an SMT multiplied by the per barrel response cost of an inland spill) multiplied by the probability of a large inland spill per year.

We can estimate a 1% reduction as: *(2,017.94 barrels times $8,000per barrel times 0.01) multiplied by 0.5 = $80,717.60 per year.* A 10% reduction can be estimated as: *(2,017.94 barrels multiplied by $8,000 per barrel multiplied by 0.1) multiplied by 0.5 = $807,176 per year.* Taking the mean gives us an average benefit of $443,946.80 per year.

Finally, we apply this approach to small (greater than one barrel and less than 1,000 barrels) inland and marine spills, which happen at a much greater frequency. We use the following generalized equation to derive the benefit from the potential reduction in the volume of oil spilled during one of these small spill events:

Benefits per year = (average small inland or marine spill volume multiplied by the potential reduction in spill volume from using an SMT multiplied by the per barrel response cost of an inland or marine spill) multiplied by the annual average number of small inland or marine spills to water.

We again utilize the cleanup cost of $12,500 per barrel for marine spills and $8,000 per barrel for inland spills based on OSPR's current per-barrel financial responsibility requirements. We used OSPR's spill data going back to 2008 to calculate the average number of marine and inland spills greater than 1 barrel and less than 1,000 barrels to derive the annual probability of a small spill occurring, as well the average volume spilled for small marine and inland spills. Between 2008 and 2019 there was an annual average of 88 inland spills to water in the range of 1 – 1,000 barrels, with an average spill volume of 512.82 barrels. During this same period there was an annual average of 32 marine spills to water, with an average spill volume of 244.72 barrels.

Using this information, we can estimate the benefit from a 1% reduction in small inland spill volumes as: *(512.82 barrels multiplied by 0.01 multiplied by $8,000 per barrel) multiplied by 88 = $3,610,252.80*. The benefit of a 10% reduction in volume can be estimated as: *(512.82 barrels multiplied by 0.1 multiplied by $8,000 per barrel) multiplied by 88 = $36,102,528.00.* Taking the mean yields an estimated benefit of $19,856,390.40.

For marine spills, the estimated benefit from a 1% reduction in small spill volumes is expressed as: *(244.72 barrels multiplied by 0.01 multiplied by $12,500 per barrel) multiplied by 32 = $978,880*. The benefit from a 10% reduction to the volume spilled during small marine spills can be estimated as: *(244.72 barrels multiplied by 0.1 multiplied by $12,500 per barrel) multiplied by 32 = $9,788,800.* Taking the mean yields an estimated benefit of $5,383,840.

OSPR is required by statute to establish regulations certifying that SMTs have the skills and training to effectively manage a response to an oil spill for the benefit of California residents and the environment. These regulations will ensure that all plan holders will have a certified SMT that meets minimum standards for training and qualifications, ability to arrive on-scene, and the number of personnel available. Prior to these regulations, it was both allowable and common for a plan holder to list only two or three personnel with no specific qualifications as their SMT. Although it is difficult to quantify the benefits of having a certified SMT listed in each contingency plan, we expect that these regulations will result in plan holders promptly activating their certified SMTs in the event of a spill, leading to timely and effective spill responses of lesser duration and with minimal impacts to natural resources, the health and welfare of the public, and businesses.

Our analysis assumes that a more efficiently managed oil spill response would lead to modest reductions in the per barrel response and cleanup costs, as these costs tend to grow larger as the duration of the spill response increases. We generalize this approach using the following formula, and adjust the reduction to the per barrel response and cleanup costs for each spill type by 0.1%, 0.5%, and 1% to generate a range of possible outcomes:

Benefits per year = (average spill volume multiplied by the spill's per barrel response cost multiplied by the potential reduction in per barrel response cost from using an SMT) multiplied by the annual probability of a spill event.

We begin by analyzing the benefit to a reduction in the per barrel response and cleanup costs for a large marine spill with a volume greater than 1,000 barrels. There have been two large marine spills above 1,000 barrels since OSPR began collecting spill data in 2008, with an average volume of 1,735.88 barrels. The responsible parties for both of these spills were OSPR plan holders who will be required to have a certified SMT under these regulations. Thus, the annual probability of a large marine spill occurring from 2008 through 2019, which is the range for the data used in this analysis, was 0.167. We utilize a maximum per barrel cleanup and response cost of $12,500 for marine spills, as established in OSPR's regulations, for obtaining a certificate of financial responsibility (14 CCR 791.7). Using the formula above, we can estimate the annual benefit from a 0.1% reduction in the response and cleanup costs: *(1,735.88 barrels multiplied by $12,500 per barrel multiplied by 0.001) multiplied by 0.167 per year = $3,623.65 per year.*

Similarly, we can estimate the annual benefit of a 0.5% and 1% reduction in the per barrel response and cleanup costs by plugging in 0.005 and 0.01 in place of 0.001 in the previous equation. Doing so yields corresponding annual benefits of $18,118.25 and $36,236.50, respectively.

We take a similar approach with estimating the benefits from the reduction in the response and cleanup costs for a large inland spill (greater than 1,000 barrels) to water. For the sake of this analysis, we assume the probability based on the six largest (over 1,000 barrels) inland spills to water that were documented by OSPR from 2008 to 2019. Only three of those spills had responsible parties with an OSPR contingency plan that would be affected by the proposed SMT regulations, giving us an annual probability of 0.25. As with the marine spills, we assume a range of .01%, 0.5%, and 1% reductions in the response and cleanup costs for the spill.

The mean spill size for a large inland spill over 1,000 barrels with a responsible party regulated by OSPR during this period was 2,353.33 barrels. OSPR's certificate of financial responsibility regulations establish inland facilities' financial responsibility for spill cleanup as a function of a facility's reasonable worst-case spill volume (RWCS), applying a per barrel amount contingent on the facility's proximity to state waters designated as either ephemeral, intermittent, or perennial in the National Hydrography Dataset (14 CCR 791.7). Inland facilities potentially impacting intermittent or ephemeral inland waters must demonstrate financial responsibility equating to their reasonable worst-case spill volume times $6,000; and facilities that may impact perennial waters must demonstrate financial responsibility equating to their reasonable worst-case spill volume times $10,000. Based on these figures, an average response cost of $8,000 per barrel is used for our estimation since our analysis does not distinguish among impacts to perennial, intermittent, or ephemeral waters.

Utilizing the same generalized annual benefit equation as before, we can estimate a 0.1% reduction in the per barrel response and cleanup costs for large inland spills to water as: *(2,353.33 barrels multiplied by $8,000 per barrel multiplied by 0.001) multiplied by 0.25 = $4,706.66 per year.* As with the large marine spills, we can plug in 0.005 and 0.01 in the place of 0.001 to get the annual benefits from 0.5% and 1% reductions in cleanup and response costs. Doing so yields annual benefits of $23,533.30 and $47,066.60, respectively.

Finally, we apply this approach to small (greater than one barrel and less than 1,000 barrels) inland and marine spills, which happen at a much greater frequency. We again utilize the cleanup cost of $12,500 per barrel for marine spills and an average response cost of $8,000 per barrel for inland spills based on OSPR's current per barrel financial responsibility requirements. We used OSPR's spill data going back to 2008 to calculate the average number of marine and inland spills greater than 1 barrel and less than 1,000 barrels to derive the annual probability of a small spill occurring, as well the average volume spilled for small marine and inland spills. Between 2008 and 2019 there was an annual average of 32 marine spills to water in the range of 1 – 1,000 barrels, with an average spill volume of 244.72 barrels. Of the marine spills for which a responsible party was identified, 33.66% of the responsible parties were OSPR plan holders and therefore would be affected by these regulations, giving us approximately 11 spills per year that would potentially be impacted. During this same period there was an annual average of 88 inland spills to water, with an average spill volume of 512.82 barrels. Of the inland spills to water for which a responsible party was identified, 34.63% of the responsible parties were OSPR plan holders and therefore would be affected by the proposed SMT regulations, giving us approximately 30 spills per year that would potentially be impacted.

Using this information, we can estimate the annual benefit from a 0.1% reduction in the per barrel response and cleanup costs for small marine spills as: *(244.72 barrels multiplied by $12,500 per barrel multiplied by 0.001) multiplied by 11 = $33,649*. Plugging in 0.005 and 0.01 in place of 0.001 yields annual benefits of $168,245 and $336,490 for 0.5% and1% reductions in the per barrel response and cleanup costs.

For small inland spills, the estimated annual benefit from a 0.1% reduction in the per barrel response costs is expressed as: *(512.82 barrels multiplied by $8,000 per barrel multiplied by 0.001) multiplied by 30 = $123,076.80*. As before, we can estimate the

annual benefits for 0.5% and 1% reductions in the per barrel response and cleanup costs by plugging in 0.005 and 0.01 in place of 0.001 in the equation. Doing so yields annual benefits of $615,384 and $1,230,768, respectively.

3. What are the total statewide benefits from this regulation over its lifetime?

The statewide benefits previously identified can be summarized in the following table:

~~***Table 5: Total Estimated Annual Statewide Benefits from Potential Spill Reduction***~~

~~**Spill Type**~~	~~**1% Spill Reduction**~~	~~**10% Spill Reduction**~~	~~**Mean Benefit**~~
~~Large Inland~~	~~$80,717.60~~	~~$807,176~~	~~$443,946.80~~
~~Small Inland~~	~~$3,610,252.80~~	~~$36,102,528~~	~~$19,856,390.40~~
~~Large Marine~~	~~$107,715~~	~~$1,077,150~~	~~$592,432.50~~
~~Small Marine~~	~~$978,880~~	~~$9,788,800~~	~~$5,383,840~~
~~**Total Benefit**~~	~~**$4,777,565.40**~~	~~**$47,775,654.00**~~	~~**$26,276,609.70**~~

~~A 1% reduction in the total annual volume spilled from all spill types listed in Table 5 from the use of certified SMTs would result in a total potential annual benefit of about $4.78 million. A 10% reduction in the annual volume spilled would result in a potential annual benefit of about $47.78 million. The mean total potential annual benefit from these regulations is about $26.28 million.~~

Table 5: Total Estimated Annual Statewide Benefits from Potential Spill Reduction in Response and Cleanup Costs

Spill Type	**0.1% Reduction**	**0.5% Reduction**	**1% Reduction**
Large Marine	$3,623.65	$18,118.25	$36,236.50
Large Inland	$4,706.66	$23,533.30	$47,066.60
Small Marine	$33,649	$168,245	$336,490
Small Inland	$123,076.80	$615,384	$1,230,768
Total Benefit	**$165,056.11**	**$825,280.55**	**$1,650,561.10**

A 0.1% reduction in the annual per barrel response and cleanup costs for all spill types listed in Table 5 from the use of certified SMTs would result in a total potential annual benefit of about $165,056.11. Likewise, a 0.5% reduction in the annual per barrel response and cleanup costs would yield a potential annual benefit of $825,280.55, and a 1% reduction in the annual per barrel response and cleanup costs would yield a potential annual benefit of about $1.651 million.

D. Alternatives to the Regulation (continued)

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

There will be a cost increase to SMTs to meet the certification requirements through additional training and staffing, but it is expected that external SMTs will pass these costs along to plan holders retaining SMTs as part of their plan. The estimated cost increase for plan holders with external SMTs is $2,000 for an existing retainer and $7,000 for a new contract. Applying these estimates to the plan holders listed in Tables 2 and 3 yields a total estimate of $6.034 million per year. The estimated cost increase for the 20 plan holders retaining an internal SMT is $8.2 million, for a combined cost increase of $14.234 million. These estimates assume that smaller plan holders will retain external SMTs and that larger plan holders with in-house SMTs will decide to train and hire additional SMT staff. The estimates do not reflect the possibility that larger plan holders could choose to lower their costs by eliminating their in-house SMT and retaining an external SMT. ~~The estimated benefit these regulations may provide by increasing plan holder preparedness and reducing spill volumes is estimated to be $4.78 million or $47.78 million for a 1% and 10% reduction in total annual volume spilled, respectively. The mean potential annual benefit from these two scenarios is about $26.28 million.~~ The estimated benefits that these regulations may provide by increasing plan holder preparedness and thus potentially reducing per barrel response and cleanup costs by a range of 0.1%, 0.5%, and 1% across all spill types is estimated to be $165,056.11, $825,280.55, and $1.651 million, respectively.

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A. Fiscal Effect on Local Government

3. Annual Savings (approximate)

In theory, all agency 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, sometimes the responsible party is not financially viable. In these cases, government agencies end up incurring some of the response costs. OSPR estimates that its 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, the potential reduction in spill volumes could mean a reduction in unreimbursed response costs for OSPR and local agencies.~~ The remaining 10% goes unreimbursed but generally can be reimbursed either from OSPR's Oil Spill Response Trust Fund (OSRTF) or from the federal National Pollution Fund Center (NPFC). ~~Local governments would likely experience the same difficulties with cost recovery. To that extent, t~~The potential reduction in spill volumes could mean a reduction in unreimbursed response costs for OSPR and local agencies. OSPR's annual unreimbursed costs are about $75,000 per 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~~ compared to OSPR's costs

associated with response. Assuming ~~it~~ unreimbursed local agency costs was 10% of OSPR's, local agency unreimbursed costs would be $7,500 per year. But as mentioned, the OSRTF or NPFC can usually pay the response costs not paid by the responsible party.

Spills that are responded to by SMTs that have satisfied the training and exercise requirements of these proposed regulations to become certified, would be managed more effectively, which in turn, would reduce the total cost of spill response incurred by state and local agencies. A reduction in total response costs would mean a reduction in the likelihood of unreimbursed spill costs. Assuming a small initial reduction in the range of 1% – 5%, this benefit could be realized as a decrease of up to $3,750 per year in unreimbursed costs to OSPR and a reduction of up to $375 per year for local government agencies. The unreimbursed costs of oil spill response could be further reduced over time as SMTs continuously renew their certification every three years which includes meeting the training and exercise requirements of the proposed regulations.

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 local governments. OSPR does not have data on such claims and is not able to estimate the magnitude.

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B. Fiscal Effect on State Government

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

OSPR's fiscal analysis of the legislation behind the SMT regulations, AB 1197, expected that the implementation of these regulations would require the creation of one permanent position of an Environmental Scientist or other appropriate classification at a total cost of $154,000 per year. Of this total staffing costs are $55,000 per year, staff benefits are $27,000 per year, and office expenses and equipment are $72,000 per year.

The staff person will facilitate the development of regulations, as well as expand the unannounced exercise program through increased quantity of exercises conducted yearly, which includes planning for, traveling to, and conducting exercises, in addition to database management and administrative support. This position was filled through an internal vacancy within OSPR, and the cost has been absorbed within OSPR's existing budget.

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

Other state government agencies respond to oil spills 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.

Based on a review of OSPR's cost recovery since 2015, OSPR's annual unreimbursed costs are about $75,000 per year. However, OSPR does not have data on the response costs for other state agencies, whether reimbursed or not. It undoubtedly varies from year to year depending on spill activity. In general, the response costs for other state agencies are a small fraction ~~of~~ compared to OSPR's costs of responding. Assuming they were 10% of OSPR's, other state agencies' unreimbursed costs would be $7,500 per year. If we assume a small initial reduction in the range of 1% – 5% as we do in the analysis on page 4, A.3, this benefit could be realized as a decrease of up to $3,750 per year in unreimbursed costs to OSPR and a reduction of up to $375 per year for other state agencies. However, generally unreimbursed costs can be paid either from OSPR's Oil Spill Response Trust Fund (OSRTF) or from the federal National Pollution Fund Center (NPFC).

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.

END