

MEMORANDUM

To: CHAIR AND COMMISSIONERS
CALIFORNIA TRANSPORTATION COMMISSION

CTC Meeting: October 13-14, 2021

From: STEVEN KECK, Chief Financial Officer

Reference Number: 4.27, Information Item

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Subject: **CALTRANS STORMWATER PERMITS – COST ASSESSMENT UPDATE**

SUMMARY:

The California Department of Transportation (Caltrans) is providing a detailed analysis on the estimated increase in the cost of compliance with the two following permits currently under reissuance by the State Water Resource Control Board (SWRCB):

1. Formal Draft Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) permit, referred to as the 2021 Draft Caltrans NPDES Permit;
2. Formal Draft Construction General Permit, referred to as the 2021 Draft CGP

This refined cost assessment was requested by the California Transportation Commission Executive Director Mitch Weis at the August 2021 California Transportation Commission (Commission) meeting following a Caltrans presentation on the status of the 2021 Draft Caltrans NPDES Permit reissuance.

2021 Draft Caltrans Permit

The current Caltrans NPDES Permit (Order no 2012-0011-DWQ), also referred to as the 2012 Caltrans NPDES Permit, expired in September 2018 and was administratively extended until a new order is adopted and becomes effective. The SWRCB is considering adopting two orders, an NPDES Permit and an associated TSO (an Enforceable Order) to replace the existing NPDES Permit, which are collectively referred to as the 2021 Draft Caltrans NPDES Permit. This Draft 2021 Caltrans NPDES Permit was released by the SWRCB for public review on June 25, 2021, and written comments were submitted to the SWRCB on August 27, 2021.

Caltrans has been collaborating with the SWRCB and the nine Regional Water Quality Control Boards (RWQCBs) partners in good faith over the course of the last two years to determine progress toward the compliance objectives while developing an inter-agency understanding of regulatory expectations and implementation challenges and opportunities. This ongoing

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partnering approach facilitates inter- agency coordination as we work together toward a 2021 Draft Caltrans NPDES Permit that meets our mutual environmental stewardship goals. Caltrans continues to engage with regulatory partners to: maximize opportunities for developing cost-effective compliance strategies such as leveraging compliance opportunities from the Clean California Investment, and minimizing the risks for permit non-compliance by collaborating in the following areas:

- obtaining clarity on interpretation of draft permit provisions;
- determining feasibility of compliance with the draft permit provisions;
- and developing a framework for implementing technically feasible compliance actions that are aligned with Caltrans' business process and established funding framework.

This following cost assessment documents Caltrans assumptions based on interpretation of the 2021 Draft Caltrans NPDES Permit provisions. The cost assessment is contingent upon SWRCB and RWQCBs acceptance of Compliance Plans, due one year after permit adoption. Consequently, a range of costs are shown to reflect the variability in the types of acceptable compliance actions as Caltrans works collaboratively with the SWRCB/RWQCBs.

As shown in the attached Table -1, the 2012 Caltrans NPDES Permit baseline compliance needs, funded through State Highway Operations and Protection Program (SHOPP), are estimated at \$400 million/year. Subsequently, the SWRCB adopted new regulations, which will be formally incorporated into the 2021 Draft Caltrans NPDES Permit. Caltrans forecasts that the major changes in the 2021 Draft NPDES Permit will increase the baseline SHOPP needs from \$400 million/year to \$660 - \$780 million/year. Caltrans' SHOPP allocation for compliance with the 2012 Caltrans NPDES Permit is estimated to be in the range of \$300 - \$330 million/year, which will leave an estimated annual funding gap of \$360 - \$450 million/year.

The 2021 Draft Caltrans NPDES Permit requires Caltrans to implement stormwater treatment devices to address legacy pollutants to comply with Total Maximum Daily Loads (TMDLs) established for impaired water bodies. Caltrans must meet waste load allocations for TMDLs by 2034. In addition, Caltrans has a zero-trash discharge compliance mandate associated with 25,000 Acres of trash hot spots from Caltrans Right-of Way (ROW) by Year 2030.

The State Highway System (SHS) is not conducive to large scale treatment opportunities due to the linear and high-speed environment, which consequently results in major safety concerns associated with flooding and worker exposure from stormwater treatment devices needed to meet final compliance objectives. Caltrans continues to educate our SWRCB and RWQCBs partners regarding feasibility constraints of stormwater treatment devices implementation and thus the importance of permit flexibilities to encourage local partnerships projects needed achieve the compliance targets and overcome on-system design constraints. Large scale regional partnership projects also yield economies of scale that could help close the SHOPP funding gap, while optimizing watershed-based environmental benefits.

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2021 Draft CGP

The NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance (Order no 2009-0009-DWQ amended by 2010-0014-DWQ and 2012-0006-DWQ) became effective July 1, 2010 and is also now under consideration by State Water Board for renewal. The existing CGP (2009 CGP) expired on September 2, 2014 and was administratively extended until a new order is adopted and becomes effective. The 2021 Draft CGP was released by the State Water Resources Control Board (SWRCB) for public review period on May 28, 2021.

Written comments were submitted to the SWRCB on August 13, 2021. Caltrans in its comments expressed concerns with the feasibility of meeting the 2021 Draft CGP requirements. For projects subject meet numeric limits for certain TMDLs (dissolved pollutants such as metals), no data is available to confirm that temporary best management practices (BMPs), including Active Treatment Systems (ATS) will be effective in meeting Numeric Effluent Limitations (NELs) as required. Due to their linear nature Caltrans projects, physically constraints exist within the limited RW. Construction projects are dynamic and temporary in nature with land use and drainage patterns changing drastically over short time periods. This increases the infeasibility of implementing ATS due to increased sediment loading, an unmanageable number of discharge points, and/or frequent relocation needs. Complicated temporary drainage infrastructure may need to be designed and installed to move stormwater runoff around the site for collection and conveyance of runoff to ATS.

Caltrans expressed concerns where pre-construction sediment loss and deposition rates are unachievable through the required modeling, resulting in significant increase in erosion and sediment control BMPs, resulting in limited access to required materials of an already constrained supply chain prior to and during storm events. The aforementioned factors make compliance likely infeasible even with the robust installation and maintenance of the increased temporary BMPs as driven by the required modeling.

There is currently no grandfathering clause in the Draft 2021 CGP which means all proposed regulatory requirements go live on the permit Effective Date. This will have serious cost implications for active construction projects and any project currently under development that has completed the Project Approval & Environmental Document phase. Caltrans is collaboratively working with the SWRCB to consider including a grandfathering clause to minimize the project delivery impacts and align the compliance requirements with the existing funding framework.

Caltrans estimates the baseline cost to comply with the 2009 CGP at \$136 million. The annual incremental cost is estimated to be \$51 - \$80 million/year, representing up to a 40-60% increase over the baseline.

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BACKGROUND:

Caltrans, alongside our Partners at the State and Regional Water Boards, have been focused for more than 20 years in the area of stormwater quality management. Caltrans continues to strive to ensure that surface and ground water resources are protected and managed in a sustainable manner for future generations.

Stormwater runoff from Caltrans highway infrastructure can carry pollutants that contribute to water quality and beneficial use impacts of receiving waters - beneficial uses that belong to all Californians. For nearly two decades, Caltrans has responded to the call to action in managing stormwater runoff to reduce harmful pollutants, fertilizers, trash and other materials from draining into our rivers, lakes and ocean through a coordinated multi-disciplinary implementation effort.

Caltrans is the largest municipal storm water discharger in California, however, at the same time, the most physically constrained in terms of ability to fit stormwater treatment devices in the linear and high-speed freeway environment in which Caltrans typically only has a 2% land use contribution. Caltrans is proud of the robust municipal coordination program that facilitates large scale regional partnership projects that takes a coordinated watershed-based engineering approach to water quality restoration. Over nearly the past decade, Caltrans has funded over \$160 million in local partnership projects that have optimized environmental outcomes from the transportation investment to collaborate on treatment of over 1,800 acres of Caltrans RW and over 65,000 acres of local RW statewide.

Caltrans Stormwater Program is implemented through funding allocations derived from the State Highway Operation and Protection Program (SHOPP). Stormwater cost impacts to the net zero sum SHOPP could preclude the ability of Caltrans to manage the SHS' "fix-it-first" program that funds the repair and preservation, emergency repairs, and safety improvements on the SHS. SHOPP projects provide equity opportunities to address other vital State priorities, such as the implementation of Complete Streets elements, climate change considerations (reduction of transportation related greenhouse gas (GHG) emissions and measures to enhance the resilience of transportation assets to future climate stressors), and enhancements to wildlife connectivity and fish passage; in Caltrans pursuit to provide a safe and reliable transportation network that serves all people and respects the environment.

Caltrans is cautiously optimistic that ongoing collaboration with SWRCB and RWQCBs will result in flexibilities that allow implementation of practical/technically feasible compliance actions, such as the municipal coordination program, that facilitate fiscally responsible off-system regional partnership projects, and optimize the available transportation funding investment for the best environmental outcome.

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COST ASSESSMENT

Following is an explanation on the cost assessment for the 2021 Draft Caltrans Permit and the 2021 Draft CGP:

1. Annual increase in compliance cost: 2021 Draft Caltrans NPDES Permit

As shown in the attached Table -1, the 2012 Caltrans NPDES Permit baseline compliance needs to be funded through SHOPP are estimated at \$400 million/year. Since the adoption of the existing, the SWRCB adopted new regulations, which will be formally incorporated into the 2021 Draft Caltrans NPDES Permit. The post 2012 Caltrans Permit regulations increased the baseline SHOPP needs from \$400 million to \$590 - \$690 million/year.

Caltrans forecasts that the major changes in the 2021 Draft NPDES Permit will further increase the post 2012 Caltrans Permit baseline SHOPP needs from \$590 - \$690 million/year to \$660 - \$780 million/year.

It is assumed that 70% of the new/redevelopment treatment requirements are currently funded through the State Highway Operations and Protection Program (SHOPP), and the remaining are funded through the State Transportation Improvement Program (STIP) and local funding programs and will continue to be case moving forward.

Caltrans currently allocates \$300 - \$330 million/year through SHOPP for compliance with the 2012 Caltrans Permit and is expected to maintain this baseline allocation moving forward, which leaves an estimated funding gap of \$360 - \$450 million/year required for compliance with the 2021 Draft Caltrans Permit.

As Caltrans continues to collaborate with the SWRCB and RWQCBs to obtain acceptance on the Compliance Plans that will commit to specific compliance actions, it will strive to close the funding gap by exploring opportunities to implement cost-effective strategies that provide multiple benefits and are aligned with our established funding framework.

The following major permit changes in the 2021 Draft NPDES Permit contribute to the projected increase in compliance needs as shown in the attached Table-1:

- a) *Incorporation of Trash Control Mandates* - A \$270 million to \$480 million per year cost associated with regulatory trash mandates enacted in 2017. The unfunded trash costs were borne after the 2012 permit adoption. In 2019, the San Francisco RWQCB issued a Cease and Desist Enforcement Order for trash discharges in Caltrans District 4, increasing compliance cost needs by \$100 million a year. Collaborative discussions are ongoing with SWRCB and RWQCB to minimize compliance cost impacts to the SHOPP by leveraging compliance crediting opportunities from the litter abatement and beautification efforts associated with the paramount \$1 billion Clean CA investment.
- b) *Limitations to the Municipal Coordination Program for Total Maximum Daily Load (TMDL) compliance objectives* - TMDL is a regulatory enforcement tool used to address impacts to the most impaired waterbodies. A \$55-\$78 million per year increase over baseline is a result of constraints to regional partnership projects that facilitate

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economies of scale and an increased dependency of on-system treatment deployment at a much higher cost.

- a. TMDLs establish watershed-based pollutant discharge limits requiring treatment devices that result in Waste Load Reductions. Stormwater treatment devices are built on the State Highway System (on-system) or on local right of way (off-system) which require ongoing maintenance costs in perpetuity.
- c) *New Post-Construction Treatment Threshold* – A \$8-\$10 million per year increase over baseline for increased treatment requirements resulting from the reduction in the treatment threshold from 1 acre to 10,000 square feet (0.23 acre) for projects that create new pavement or reconstruct existing pavement.
- d) *Asphalt Concrete (AC) Grindings Restriction* - A new \$120 million per year compliance cost from the elimination of the sustainable practice of reusing AC grindings as shoulder backing. The cost increase is a result of disposal costs and cost of alternative material. Caltrans is optimistic that a mutually beneficial agreement has been reached with SWRCB that will result in revised permit language that will avoid the cost impact. This is a great example of interagency collaboration by demonstration of our mutual environmental stewardship commitment by ensuring Caltrans will properly manage stockpiles during construction and operations & maintenance activities.

Cost Impact Assessment Methodology

Caltrans annual stormwater cost assessment includes compliance cost increase associated with the Draft 2021 Caltrans NPDES Permit above and beyond the cost of implementing the 2012 Caltrans Permit and subsequent regulatory actions. The annual increase in cost to comply, is estimated to be between \$340 million - \$570 million per year, representing approximately a 50% - 100% increase. The estimated increase includes new regulatory mandates since the 2012 Caltrans Permit adoption as well as regulatory enforcement actions imposed against Caltrans. Final compliance requirements are contingent upon SWRCB and the RWQCBs' approval of the TMDL Compliance Plan due one year after permit adoption. Therefore, a range of costs are shown to reflect both risks and opportunities from permit flexibilities and collaborative partnerships.

Cost Increase assumptions resulting from major permit changes:

TMDL Implementation

The 2012 Caltrans Permit was amended in April 2014 to implement TMDLs, adopted by the nine RWQCBs and the United States Environmental Protection Agency, for those watersheds where Caltrans is named as a responsible party. This amendment requires Caltrans to comply with the TMDL requirements by year 2034.

One of the highlights of the 2012 Caltrans NPDES Permit is the ability to fund a robust municipal coordination grant program that optimizes transportation investments while maximizing water quality improvements. Under the purview of the existing permit, compliance units are issued to Caltrans based on a very simple monetary metric in which

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Caltrans receives 1 compliance unit for every \$88,000 of funding contribution. Caltrans has yearly compliance unit targets that if met will ensure progress toward final compliance.

The 2012 Caltrans NPDES Permit annual compliance needs to meet interim and final TMDL compliance targets is estimated at \$190 million per year. The assumptions used to establish this need assumes the following breakdown to meet the annual compliance unit targets:

- On-system Retrofits (60%)
- Off-system local partnerships (40%)

Under the draft 2021 NPDES permit, the State Board is shifting from compliance units to waste load allocations as the compliance metric. Consequently, the municipal coordination grant program will be restricted in a manner that limits the amount of Caltrans funding in proportion to its waste load reductions achieved.

The implications of this permit modification is an increased need for on-system retrofits that result in a much higher cost. The SHS is not conducive to large scale treatment opportunities due to its constrained RW due to the linear and high-speed environment posing major safety concerns.

The unit cost rate assumptions used to establish the 2021 Draft Caltrans NPDES Permit TMDL compliance needs assumes the following strategic mix of delivering projects to meet the various waste load allocations:

- On-system Retrofits (80%)
- Off-system local partnerships (20%)

The estimated increase in annual costs to implement TMDL requirements of the Draft 2021 Caltrans NPDES Permit ranges from \$55 million to \$78 million per year. The assumptions for the cost increase are as follows:

- Applying TMDL compliance units from existing on-system and off-system stormwater treatment devices within the watersheds subject to TMDLs to determine the remaining treatment needs to be addressed by year 2034.
- Caltrans TMDL Compliance Plan is due one year after permit adoption that will propose specific compliance actions to demonstrate a path to achieve waste load reductions from existing and future stormwater treatment devices implemented to meet both post-construction treatment requirements and dedicated on-system and off-system retrofit projects for TMDL compliance. . TMDL Compliance Plans require SWRCB and RWQCB approvals.
- The low estimate of \$55 million per year is based upon 50-50 split between on-system and off-system with unit costs of \$176,000 per acre for on-system and \$115,000 per acre for off-system retrofits.

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- The high estimate of \$78 million per year is based on 20-80 split between on-system and off-system projects respectively, with on-system projects with a higher unit cost of \$176,000 - \$350,000 to treat one acre of right of way.
- District 1 and 2 cost range assumptions use the unit rate of \$88,000 per acre, based on on-going consultations with North Coast RWQCB. The North Coast RWQCB encourages funding contribution to off-system projects and therefore, economies of scale are realized.
- Approximately 40% of Department right of way is pervious area, and 60% is impervious area.
- Cost for soil stabilization within sediment TMDLs is estimated to be \$133,000 per acre based on historical data in the Caltrans Construction Cost Data Book (except for projects within the North Coast RWQCB jurisdiction).
- About 25% of Caltrans RW area to be treated for bacteria using source control BMPs.
- On average Construction and Support Cost for on-system structural BMPs estimated to be ~\$230,000 per acre.
- Implementation required by 2034, 13 years to complete.

Statewide Trash Provision Implementation:

Implementation to meet compliance objectives (zero trash discharges by 2030) are achieved through trash capture devices built on the SHS (on-system) or on local right of way (off-system) to treat designated Significant Trash Generation Areas (STGAs), or trash hot spots. The compliance strategy also includes credit for Enhanced Maintenance Measures (EMM) where physical intervention through full trash capture structural devices are not feasible due to on-system technical constraints.

The cost estimates for trash implementation are based upon:

- Enhanced maintenance measures estimated range from \$44 million to \$151 million per year.
 - Low estimate assumes 10% of urban directional miles (537 miles) will be required to implement enhanced maintenance measures at \$5,000 per event with 2 events per month (litter pick up or sweeping) to meet compliance objectives. High estimate assumes 35% of urban directional miles (1,880 miles) will be required to implement enhanced maintenance practices to meet compliance objectives.
- Construction of structural trash capture devices are estimated to range from \$87 million - \$155 million annually based upon:
 - The range in cost is driven by assumptions to deploy trash capture devices for STGAs in the low estimate for urban areas only (28,000 discharge points) and the high end to include both urban and rural areas (50,000 discharge points).

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- 20% of Discharge point can be retrofit at \$138,000 /device.
- 10% BMPs installed each year.
- Construction of structural trash capture devices through regional partnership projects is estimated in the range of \$ 37 million per year – \$ 62 million per year.
- Trash assessment, mapping and maintenance of on-system trash capture devices is estimated in the range of \$4 million per year - \$6 million per year.

Programmatic Administrative Costs - Manuals, Templates, Training, and Guidance

With the reissuance of the Draft 2021 Caltrans NPDES Permit, all stormwater related guidance, manuals, and policies will need to be updated accordingly. In addition, training materials need to be developed to educate Department staff on the new permit conditions and requirements. It is estimated to cost \$6,000,000 over a period of 3.5 years for developing or updating manuals, templates, training, and guidance for various stormwater program including Design, Right-of-Way, Construction, Maintenance, and Encroachment Permit.

Feasibility of Compliance:

Physical Constraints

Safety of the traveling public and work force is Caltrans #1 priority. Caltrans linear infrastructure includes impervious travel ways and shoulders and pervious medians vegetated slopes. Other assets include safety features, such as guardrails, and noise attenuating sound walls among other features in the high-speed environment. To keep the travel-way clear of standing water and safe for vehicle traffic and for Caltrans maintenance forces, storm drains are designed to quickly convey runoff away from the right of way, resulting in a network of inlets, pipes, and outfalls that collect runoff and discharge it at frequent intervals.

This combination of features is unique to the Caltrans RW and presents several challenges with implementing treatment technologies that require collection and conveyance of runoff to retention and/or infiltration systems for pollutant removal (including trash capture). Safety considerations play a key role in feasibility evaluations for siting stormwater treatment systems on the SHS, to ensure safety of the traveling public and Caltrans workers who have to maintain these treatment systems.

2021 Draft Caltrans NPDES Permit requirements and SWRCB/RWQCBs review of Compliance Plans will need to be flexible to advance municipal coordination with local partners and stakeholders to fund off-system projects to overcome Caltrans' physical site constraints. Opportunities also exist to leverage enhanced maintenance practices, that will result in demonstrated pollutant load reductions that count towards compliance with the numeric targets for trash control and TMDL mandates.

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Without permit flexibilities to engage in regional partnership projects through the municipal coordination program and enhanced maintenance practices, Caltrans will not be able to construct enough stormwater treatment devices to meet numeric targets which could result in increased costs associated with enforcement actions.

Achieving Numeric Targets

In 2030 and 2034, if Caltrans is unable to meet numeric targets associated with zero trash discharges and TMDL waste load allocations, respectively, Caltrans will be subject to enforcement actions for non-compliance. Even if Caltrans deploys all viable BMPs to treat all contributing drainage areas with the limited available treatment technologies and implements enhanced maintenance practices, it is possible that final waste load allocations will not be met and Caltrans will be subject to renewed Regional Board TMDL requirements into future years beyond 2034.

Caltrans values our SWRCB, RWQCBs and municipal partners as we collaborate on the next evolution of the 2021 Draft Caltrans NPDES Permit and advance our mutual environmental stewardship goals through coordinated watershed-based solutions.

2. Annual Increase in Compliance Cost: 2021 Draft CGP

Caltrans baseline cost to comply with the 2009 CGP is estimated at \$136 million. The annual incremental cost is \$51 million - \$80 million per year, representing up to a 40-60% increase over the baseline.

Cost Impact Assessment Methodology

The Department has assessed potential impacts of the Draft 2021 CGP. The following discussion summarizes the reasons for the increase in costs resulting from the new requirements in the Draft 2021 CGP over the annual baseline cost for compliance with the 2009 CGP.

Project Level - Baseline Costs

The annual baseline costs for implementation of the 2009 CGP are estimated at \$136 million. The following information and assumptions led to this value:

- A model project was assumed based on an average Department project size of 12 acres of soil disturbance. Cost scenarios were prepared for this model project using a risk-based approach required in the 2009 CGP that quantifies the risk levels based on sediment discharge risk and a receiving water risk in the following order of increased risk:
 - Risk Level 1 (requiring standard erosion and sediment control measures)
 - Risk Level 2, (require monitoring for numeric action levels that trigger need for corrective measures)
 - Risk Level 3 (monitoring and reporting for large sites high sediment risk with significant receiving water impairments)

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- To scale costs to a programmatic level:
 - Best Management Practice (BMP) implementation costs, consisting of both material and labor, were averaged statewide.
 - Historical, statewide rainfall data was averaged to determine the estimated number of storm event inspections, sampling, and reporting required.
 - A percentage of project Risk Levels was developed based on 257 active Department projects.
 - 24% are Risk Level 1 (the lowest level of risk),
 - 67% are Risk Level 2
 - 9% are Risk Level 3
 - The average number of active projects across the past five years has been 280. The estimates presented here reflect the impact of 308 projects per year, a 10% increase on the recent trend. An increase in projects requiring CGP coverage is expected due to Senate Bill 1 funding and a proposed permit clause redefining routine maintenance. Some projects under the 2009 CGP definition of routine maintenance may be classified as construction projects in the 2021 permit.
- The analysis looked at active construction projects and projects which will begin construction in the next 5 years.
- Estimated impacts reflect the average increase in implementation costs for the current set of active projects and the five additional years of projects.

Significant Cost Increases

Specific new requirements in the Draft 2021 CGP that may contribute to significant cost increases include:

- The lack of a grandfathering clause will require existing projects to transition coverage under Draft 2021 CGP by its Effective Date. This will result in a significant impact to projects with programmed funding.
- Numeric discharge limitations apply to projects that discharge to specific impaired water bodies subject to Total Maximum Daily Load (TMDL) requirements, including emergency projects. These inclusions will require additional implementation of both traditional erosion and sediment control BMPs with the potential for advanced or active treatment BMPs, some of which may be infeasible.
- Increased stormwater professional oversight of BMP improvements and maintenance
- Permit coverage required for pavement rehabilitation projects

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An increase in implementation costs for the new requirements are expected at both program (one-time) and project levels (annual):

Project Level - Administrative Impact

There will be an upfront administrative cost to all active projects when the Draft 2021 CGP becomes effective due to updating Stormwater Pollution Prevention Plans (SWPPPs) to reflect Draft 2021 CGP requirements. This cost is currently estimated at \$1 million for 280 projects and includes contractually required mark-up fees for active construction projects.

Project Level – Annual Cost Increase

The annual incremental cost increase reflects the potential impacts of implementing the Draft 2021 CGP above and beyond the cost of implementing the 2009 CGP. The annual incremental cost is \$51 million - \$80 million per year, representing up to a 40-60% increase. These values were obtained under the following assumptions.

- The distribution of project Risk Levels identified in the Baseline section were applied to future projects.
- A change order mark-up was applied to active projects, as any change at this point would qualify mark-ups from the contractor.
- TMDL implementation requirements vary by watershed. Through mapping of active projects, it was determined that 70% of projects will be impacted by a TMDL. Three tiers of TMDL requirements were identified based on requirements included in the Draft 2021 CGP.
 - Tier 1: implement minimum BMPs identified in the CGP (26% of projects)
 - Tier 2: Tier 1 plus complete sediment yield modeling, implement additional BMPs (21%)
 - Tier 3: Tier 2 plus monitoring for effluent levels or limitations which likely results in the implementation of active or advanced treatment systems (23%)
- Due to a high reliance on site specific conditions for actual implementation of Tier 2 and Tier 3 TMDLs, a range of cost impacts was developed.

Feasibility of Compliance:

Physical site constraints

For sediment related pollutants, Passive Treatment may be used. Passive treatment would require a passive treatment plan, additional material costs, and on-site monitoring. For projects subject to non-visible TMDLs, predominantly the Los Angeles region, Active Treatment Systems (ATS) may be required to meet numeric limits for certain TMDLs (dissolved pollutants such as metals). Both ATS and Passive Treatment are expected to carry large cost increases, ranging from \$18-32 million/year.

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Caltrans projects due to their linear nature, have physically constrained workable limits, and are temporary in nature, with land use/drainage patterns changing drastically over short time periods. This increases the infeasibility of implementing ATS due to increased sediment loading, an unmanageable number of discharge points, and/or frequent relocation needs. Complicated temporary drainage infrastructure may need to be designed and installed to move runoff around the site for collection and conveyance of runoff to ATS.

Treatment systems capable of addressing dissolved pollutants are continuous/flow-based systems in lieu of batch/volume-based detention that typically require a large footprint to store and treat stormwater. Due to space constraints on construction projects, it may be infeasible to properly size the system. Further, the unpredictability of storm intensities will likely lead to oversizing the system, resulting in added costs.

Final Numeric Compliance Targets

Caltrans is concerned about the feasibility of implementing these standards, and the costs as well. Based upon Caltrans extensive experience in treating stormwater discharges from our construction sites, we have no data to confirm that best management practices, including ATS, will be effective in meeting Numeric Effluent Limitations (NELs) as required.

Erosion and sediment control BMPs and ATS are not effective at reducing concentrations of dissolved pollutants, such as metals. Treatment technologies with the ability to address dissolved pollutants report a removal efficiency of 85% to 95%, depending on the system and the constituent. However, it is unclear whether these efficiencies would meet the NELs included in the proposed CGP.

Achieving pre-construction sediment loss and deposition rates

For projects along the North Coast and in/around Los Angeles, erosion prediction modeling must be performed and BMPs implemented to ensure that sediment loss is less than pre-project conditions during ALL phases of the project. This is problematic for several reasons:

- Revised Universal Soil Loss Equation (RUSLE2), the model selected by the SWRCB, is not widely understood by industry. With no set standards nor any guidance documents to support the CGP requirements, the model is highly subjective, leading to uncertainties in how it will be enforced.
- It may be physically impossible to achieve pre-construction sediment loss during certain phases. For example vegetative cover is always removed during rough grading operations and there may not be an effective combination of BMPs which will meet the RUSLE2 requirements (outside of covering the entire area in plastic).
- In instances where pre-construction sediment loss and deposition rates are achievable through modeling, a significant increase in erosion and sediment control BMPs will be required, straining the availability of materials in the supply chain prior to and during storm events, and making it likely infeasible to ensure installation and maintenance of the increased BMPs.

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Grandfathering

There is currently no grandfathering clause in the Draft 2021 CGP which means all proposed requirements go live on the permit Effective Date. This will have serious cost implications for active construction projects and any project currently under development that has completed the Project Approval & Environmental Document phase. Caltrans is collaboratively working with the SWRCB to consider including a grandfathering clause to minimize the project delivery impacts and align the compliance requirements with the existing funding framework.

It is important to note that the addition of a grandfathering clause will only defer the overall increase in CGP compliance costs for a 2 to 5 year period, pending the exact grandfathering language. Program-wide CGP compliance costs will eventually go up for future projects by the estimated 60% as discussed in the “Project Level - Incremental Annual Cost Increase” section above.

3. Conclusion

Caltrans will continue to engage in collaborative efforts with SWRCB and the RWQCBs to obtain clarity on its interpretation of the 2021 Draft Caltrans Permit and 2021 Draft CGP provisions, and maximize our opportunities to develop cost-effective, sustainable compliance strategies that are integrated into the established project development process, maintenance practices and aligned with the established funding framework.

Attachment –

Table -1: 2021 Draft Caltrans NPDES Permit - Annual Compliance Cost Assessment

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Table 1: 2021 Draft Caltrans NPDES Permit - Annual Compliance Cost Assessment (Estimated \$ costs in millions)

Stormwater Regulatory Requirement	2012 Permit: Baseline Funding Needs	Post 2012 Permit: Regulatory Actions - Additional Funding Needs	2021 Permit: New Funding Needs	2021 Draft Permit Total Compounded needs:
Stormwater Treatment Device (Legacy Impacts to impaired areas)	\$ 190	-	\$ 55 - \$ 78	\$ 245 – \$ 268
2017 Trash Provisions (Statewide) (SHOPP -> trash capture device retrofits)	-	\$ 128 - \$ 224	-	\$ 128 – \$ 224
2019 District 4 Cease & Desist Order (SHOPP -> trash capture device retrofits)	-	\$ 58	-	\$ 101
Trash – Maintenance Operations (Increased frequency & inventory)	-	\$ 87 – \$ 194	-	\$ 44 – \$ 151
Stormwater Treatment Device (New Development & Redevelopment Impacts)	\$ 292	-	\$ 8 - \$ 10	\$ 300 – \$ 302
General Maintenance Operations	\$ 13	-	\$ 3	\$ 16
Program Administration (guidance doc), Mapping, Monitoring & Reporting	\$ 16	-	\$ 4	\$20
Total Needs (Capital & Maint.)	\$ 520	\$ 230 – \$ 330	\$ 120 – \$ 250	\$ 860 – \$ 1.09 billion
SHOPP Needs	\$ 400	\$ 190 – \$ 290	\$ 70 – \$ 90	\$ 660 – \$ 780
SHOPP Allocation				\$ 300 - \$ 330
SHOPP Funding Gap				\$ 360 - \$ 450

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