Stormwater Credit Think Tank

Building Stormwater Credit Trading Capacity in California
A Roadmap of Future Actions

April, 2024

Introduction: The Need to Support Advancement of Stormwater Credits Trading in California

Stormwater managers in California face daunting challenges in meeting changing stormwater management requirements without adequate funding for project implementation and maintenance. Legal constraints have made it difficult for stormwater programs to secure stable local fee funding and grant and loan resources are insufficient to meet their program and project needs and do not provide long term operations and maintenance funding. Similarly, businesses have found it difficult to incorporate affordable stormwater management projects into the footprints of planned developments. Proponents of multiple benefit stormwater management have encountered constraints in their ability to site cost-effective projects that effectively improve water quality, through existing planning and funding mechanisms.

Municipal and industrial stormwater managers, developers, and green infrastructure advocates are increasingly considering alternative compliance approaches including stormwater credit trading to help augment funding for and expand implementation of multi-benefit stormwater projects to protect water quality, capture stormwater to augment supply, reduce flooding potential, and produce other community benefits. However, to accelerate inclusion of stormwater credit trading approaches in stormwater funding plans, we need to rapidly increase understanding of stormwater crediting approaches and assist stormwater managers and regulators in evaluating, implementing, and overseeing stormwater credit trading programs. This roadmap proposes specific steps needed to build the capacity of stormwater managers, regulatory agencies, and stakeholder groups to consider and develop effective, accountable stormwater credit trading programs tailored to meet local needs.

In early 2023, the *Stormwater Credit Think Tank* (Think Tank) was formed to have a forum for discussing stormwater credit trading, identify implementation opportunities, issues, and needs; begin educating interested parties about credit trading principles and practices; and develop a specific strategy to help build our collective capacity to advance these methods in California. Volunteers from municipal stormwater agencies, State Water Resources Control Board and Regional Water Quality Control Boards (State Board and Regional Boards, collectively Water Boards), consulting firms, and non-governmental organizations collaborated to host webinars and meetings about stormwater credit trading and develop three products to help build stormwater credit trading understanding and capacity:

1) *Stormwater Credit Trading Basic Principles and Conceptual Model White Paper*

2) *Stormwater Credit Trading Terminology Appendix*

3) *Roadmap of Future Actions to Build Stormwater Credit Trading Capacity in California* (this paper).

There is a high level of interest in stormwater credit trading in much of California and significant efforts are underway to develop these programs in some communities. However, development and implementation of stormwater credit trading programs are currently hampered by uncertainties about the core principles underpinning credit trading, the complexity of these approaches, variability in potential program approaches, limited communication among organizations interested in stormwater credit trading, local planning bandwidth constraints, and lack of clarity about how stormwater credit trading relates to permit requirements established by the Water Boards. Stormwater managers, except in isolated instances, lack the current capacity to efficiently address these challenges individually. To help improve understanding of stormwater credit trading, build local capacity to consider and design credit trading programs, and create clearer and more consistent understanding of regulatory expectations, the Think Tank proposes to seek funding resources and other assistance from the State Board and other interested organizations to support implementation of actions to address these needs:

- *Basic Outreach and Educational Materials* to inform local leaders and interested parties about stormwater credit trading potential and the experiences of early adopters;

- *Stormwater Credit Trading Program Design Guidance* to assist in efficient, equitable development of local programs;

- *Regulatory Guidance and Training* to support the development of clear and consistent regulatory/permit frameworks for stormwater credit trading programs that yield tangible benefits while ensuring compliance with water quality requirements;

- *Technical and Research Needs* including strategies to prioritize and address key knowledge gaps; and

- *Community of Practice* to provide an ongoing forum to coordinate these actions, exchange ideas and address challenges associated with stormwater credit trading.

Why Should We Advance Stormwater Credit Trading in California?

As discussed in the attached Basic Principles White Paper, stormwater credit trading programs provide a mechanism to increase funding available to implement needed stormwater control projects that can yield water quality, water supply, flood control, urban greening, and other benefits. Stormwater credit trading creates the opportunity for stormwater managers to satisfy stormwater management requirements under NPDES permits by purchasing stormwater credits created through construction of nearby projects sized to create extra pollution removal capacity. The credit trading concept is flexible; programs can be designed to enable participation by public and private stormwater managers at different geographical and jurisdictional scales.

Stormwater managers or others may be interested in addressing regulatory requirements through purchase of stormwater credits because it may be less expensive and simpler to implement than onsite compliance options. Stormwater project developers may be interested in selling credits to secure funding for projects that create greater stormwater management capacity at lower cost. Stormwater credit trading can be attractive to communities and regulators because it results in more effective stormwater management and yields co-benefits that larger scale and distributed green infrastructure projects can provide. Overall, well-designed stormwater credit trading programs can increase investment and accelerate project implementation to restore water quality through implementation of more-cost effective stormwater solutions.

Challenges in Implementing Stormwater Credit Trading

Stormwater-related issues and opportunities vary substantially across California, which necessitates tailoring credit trading program design to address local circumstances. One size will not fit all. As the White Paper discusses, stormwater credit trading programs need to incorporate carefully designed legal, financial, and technical elements that clearly delineate participant roles and responsibilities and provide a high level of transparency and accountability to ensure results are delivered as promised. Moreover, because stormwater credit programs at this time are just getting started and therefore appear complicated, it can be difficult to explain and demonstrate to communities, decisionmakers, and stakeholders how credit trading approaches can be beneficial in accelerating water quality improvements, increasing stormwater control investment, and addressing the needs of stormwater managers. Early program adopters in California and beyond have had to build their programs, secure regulatory authorization, and develop local support for these programs from scratch—a process that has taken many years in some cases. There is growing interest across California in accelerating program development by better assisting communities in considering and developing credit trading programs. The Think Tank is addressing these needs now, and proposing this Roadmap for the future, because no other organized group is pursuing these issues in the State.

Roadmap Goals

The Think Tank has completed the White Paper and associated terminology appendix to help inform development of the actions and tools proposed in this Roadmap. While the Think Tank has made progress in highlighting the issues and opportunities associated with credit trading implementation and begun to build a robust community of practice, development of more specific actions and materials to build statewide capacity to consider and implement credit trading programs will require more effort than the fully voluntary Think Tank effort can accomplish. The Think Tank developed the Roadmap through an intensive, collaborative effort including multiple remote meetings and an all-day meeting hosted by Southern California Coastal Water Research Project in September 2023. We identified several specific actions that would be most effective in building understanding of capacity to develop and approve robust local programs.[1] The actions are designed to address the interests of several audiences:

- MS4 regulated communities
- Developers and other parties with stormwater management responsibilities
- State and Regional Board regulatory programs
- Environmental and environmental justice groups
- Key local and regional decisionmakers with roles in stormwater program leadership
- Interested members of the public, including community groups and watershed organizations
- Consultants, attorneys, and researchers involved in discussion/development of credit trading approaches

[1] While the Think Tank also identified other potential actions to help build SCT capacity beyond those presented here, these were deemed lower priority for immediate action. Information about other potential actions is available upon request from the Think Tank.

Our goals in proposing these actions are to:

1) Build statewide capability to advance stormwater credit trading implementation by addressing these challenges;

2) Establish basic principles and a conceptual model for stormwater credit trading including consistent terminology to guide more efficient program development;

3) Ensure flexibility in program design is preserved, balanced by establishing shared understanding of minimum program elements that ensure credit trading programs are accountable, transparent, and effective in protecting water quality and achieving other program goals;

4) Provide guidance and educational/outreach materials to increase consistency in application of credit trading and encourage its adoption; and

5) Create and sustain an ongoing community of practice to address ongoing stormwater credit trading challenges and support research on emerging technical and science challenges.

Proposed Roadmap Actions

To address these goals, the following high priority, immediate actions are proposed:

Outreach and Educational Materials

We propose development of basic information and presentation materials to aid communications with local decision-makers, Water Boards, citizen groups, stormwater managers, trade organizations, and stakeholders about credit trading approaches, benefits, and examples. Key outputs would include Fact Sheet(s), potentially tailored to different audiences and addressing different issues and questions, user-friendly infographics and outreach materials, and a slide deck to assist presentations about stormwater credit trading to different audiences.

Estimated cost: $25,000-$35,000[2].

Stormwater Credit Trading Program Design Guidance

We propose development of guidance on program design elements, options, and strategies. Drawing upon the Think Tank's White Paper, the guidance would discuss key program elements and options for tailoring these elements to local needs and opportunities:

Stormwater Credit Program Viability Assessment

[2] The Think Tank considers the cost estimates for proposed actions to be relatively low in comparison to the costs of similar projects we have implemented in the past; however, funding at the proposed levels should enable completion of impactful initial materials, guidance, training, and other actions that will substantially increase the State's capacity to advance stormwater credit trading.

- Processes for the evaluation by interested jurisdiction(s) of whether a stormwater credit trading program is viable in their location;
- Outreach guidance to reach and engage potential stormwater credit users and generators.

Program Structure and Administration

- Administrative authority (necessary financial, legal, administrative capabilities);
- Roles and responsibilities of credit generators, credit users, and credit program administrators;
- Operational /administrative processes (e.g., how credits are generated, verified, banked, traded, etc.)
- Operational policies (e.g., purchase guarantees, credit supply assurance, project aggregation, and ratio/reserve requirements); and
- Inspection/oversight/reporting processes to ensure clear accountability mechanisms.

Financial and Legal Mechanisms
- Financial management needs and policies (e.g., program operations and IT needs)
- Credit pricing approaches and mechanisms; and
- Legal mechanisms (e.g., specific legal framework, provisions for liability transfer)

Design and Policy Considerations
- Geographical scope (e.g., allowable credit trading area;
- Temporal scope (e.g., policies on when credits are banked and credit term);
- O&M process (e.g., mechanisms to ensure reliable O&M throughout project lifespan); and
- Consideration of environmental justice and equity needs and design approaches to address the needs of and minimize impacts on disadvantaged communities.

Outreach and Public Involvement
- Outreach and education regarding credit program availability; and
- Public involvement processes and recommendations.

The guidance would provide not only the “building blocks” for program development and suggest stepwise approaches to developing a program while building support with the community, key decisionmakers and citizen groups, and the regulatory agency, but also the tools needed for communities to evaluate if a stormwater credit program makes sense for them. The guidance would draw upon specific program examples to illustrate the range of potentially viable approaches that can be taken to stormwater credits.

Estimated cost: $80,000-$100,000

<u>Stormwater Credit Trading Regulatory Guidance</u>

We propose development of regulatory guidance addressing approaches for authorizing stormwater credit trading in MS4, industrial, and commercial, industrial, and institutional permits and mechanisms for demonstrating compliance with permit provisions. The guidance would include:
- Review of existing authorization language in existing permits and discussion of permit elements that can incentivize or discourage credit trading approaches;
- Description of Water Board roles/responsibilities regarding credit trading program review, approval,

oversight, and tracking/reporting;
- Illustration of how permits can effectively authorize stormwater credit trading consistent with other permit requirements and ensure key program elements are clearly defined, while reserving local flexibility to tailor program details to local circumstances.

This basic guidance should ideally be developed in concert with a general statement of State Board support for stormwater credit trading approaches within the regions. It is unclear whether a statewide stormwater credit trading policy is needed at this time. We recommend an evaluation within 2-3 years of whether a statewide policy is needed and/or whether more detailed regulatory guidance is needed.

Estimated cost: $50,000-$75,000.

Stormwater Credit Trading Regulatory Training

We also propose development of a training module for regulatory agency staff on how NPDES stormwater permitting requirements can intersect with stormwater credit trading program authorization. This training would draw from the proposed Regulatory Guidance and Stormwater Credit Trading Program Design Guidance and provide a critical opportunity to bring together Water Board stormwater managers and executive level staff to learn about credit trading basics, design issues, and regulatory approaches. The key outputs would include a regulatory training module and an in-person and/or webcast delivery for regulatory agency staff, with potential participation by the regulated community and interested parties.

Estimated cost: $20,000-$30,000.

Research and Development Needs

As stormwater credit trading is an emerging approach to stormwater management, there are potentially important areas of practice for which additional research and development work would improve our capacity to effectively and efficiently pursue credit trading. For example, there is strong interest in further exploration of options for:
- Estimating the cost savings potential from stormwater credit trading;
- Setting the geographical boundaries for credit trading to ensure water quality is protected; and
- Predicting and validating the performance of stormwater control measures implemented through credit trading programs.

We propose ongoing Think Tank engagement with SCCWRP, SFEI, and other science-based organizations to prioritize these needs and frame a proposal to fund further research and development (R&D) investment to address them. Estimated cost: $20,000-$30,000 to support engagement by science organizations in assessment of R&D needs and priorities. Costs of specific R&D projects are at this time unknown.

Stormwater Credit Trading Community of Practice

We propose to continue using the Think Tank as a forum for learning about stormwater credit trading development and experience of early adopters, discussing credit trading policy and technical issues, and coordinating actions being developed per the Roadmap workplan. While this ongoing effort could operate under the auspices of STORMS, it would likely require some outside consulting support due to STORMS staffing constraints.

Estimated cost: $20,000-$30,000/year.

Costs, Responsible Parties, and Scheduling

In summary, the Think Tank has developed the following initial estimates of resources needed to develop different elements/actions under the Roadmap:

Outreach and Educational Materials:	$25,000-35,000
Stormwater Credit Trading Program Design Guidance:	$80,000-100,000
Stormwater Credit Trading Regulatory Guidance:	$50,000-75,000
Stormwater Credit Trading Regulatory Training:	$20,000-30,000
Research and Development Needs Assessment:	$20,000-30,000
TOTAL	$195,000-270,000
Stormwater Credit Trading Community of Practice:	$20,000-30,000/year

The Think Tank proposes to work with the State Board and other potential funders to explore potential mechanisms to fund and manage this work. If necessary, we can work with potential funders to further prioritize action implementation. We envision use of existing grant and/or contractual mechanisms where available to reduce management overhead and potential delays in funding and initiating the work. It may be possible to do this work in partnership with organizations with ongoing grant or contract relationships with the funder(s). While several of the organizations involved with the Think Tank are interested in potentially becoming involved in Roadmap action implementation, the Think Tank, through this document, makes no assumptions about who would perform the work. At the funders' request, potential candidate organizations who are interested in and qualified to perform this type of work can be identified. Obviously, it is critical for the work to be done by organizations with established expertise in stormwater credit trading programs and associated issues.

Recommended Schedule for Implementation

Ongoing Think Tank efforts:
- Complete and distribute the White Paper, associated Terminology Appendix, and Roadmap proposal;
- Organize monthly meetings to showcase specific credit trading programs in and beyond California;
- Discuss emerging issues and opportunities associated with program development in California; and
- Coordinate work on Roadmap action project development (if funded).

Within 6 months of funding:
- Complete basic outreach materials (fact sheets/infographics/slide deck);
- Convene Water Board NPDES managers to discuss/compare stormwater credit trading permitting approaches; and
- Brief State Board on Roadmap approach and funded projects (in conjunction with STORMS update).

Within 1 year of funding:
- Complete draft Stormwater Credit Trading Program Design Guidance;
- Complete draft Stormwater Credit Trading Regulatory Guidance;
- Convene discussion to identify priority research and development needs; and
- Brief State Board on progress to date.

Within 1.5 years of funding:
- Finalize Stormwater Credit Trading Program Design Guidance
- Finalize Stormwater Credit Trading Regulatory Guidance
- Develop training module and provide Water Board staff regulatory training;
- Conclude identification of priority research and development needs and report recommendations; and
- Brief State Board on progress to date (optional).

Within 2 years of funding:
- Evaluate whether formal policy and/or more detailed guidance are needed;
- Evaluate experiences to date in existing California (and potentially non-California) stormwater credit trading programs;
- Evaluate whether to continue the Think Tank process; and
- Brief State Board on progress and evaluation recommendations.

Conclusion

Stormwater credit trading offers an important opportunity to assist broader and more effective stormwater management solutions in California, and there is a strong need for statewide leadership and investment to enable communities to take advantage of this opportunity. This Roadmap shows that a significant investment of between $235,000 to $330,000 over two years is needed to unlock the potential of this approach. The Think Tank looks forward to discussing next steps on this proposal with the State Board and other potential funders.