



September 1, 2015

Mary D. Nichols, Chair
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Re: Cap-and-Trade Auction Proceeds Second Investment Plan Draft Concept

Dear Ms. Nichols,

Thank you for the opportunity to comment on the Cap-and-Trade Auction Proceeds Second Investment Plan Draft Concept Proposal (Investment Plan). The Trust for Public Land conserves land and builds parks, gardens and other natural places, ensuring livable communities for generations to come. Our mission is to create a healthy and climate-smart California with access to nature for all.

We would like to provide comments on several areas of the Investment Plan, particularly spanning the Transportation and Sustainable Communities and Natural Resources and Waste Diversion concepts. Specifically, we propose a new program to fill a gap we perceive in current GGRF investments and we also recommend that ARB direct more support for several existing programs with great greenhouse gas reduction potential. Note that below references to current levels of investment are from 2014/15.

➤ **Building Sustainable Communities - the Case for Carbon-Smart Green Infrastructure**

The Strategic Growth Council's Affordable Housing and Sustainable Communities program supports housing or transit-oriented development to reduce greenhouse gases but does not lead to the development of complete carbon-smart communities. A multi-benefit green infrastructure approach to community development is missing in the current GGRF expenditure plan, and it is not incentivized under existing programs. These strategies are critical to the long-term sustainability of our state - they will help us meet our 2030 and 2050 climate goals, while tackling other critical statewide issues like the drought.

We propose the development of a new Carbon-Smart Green Infrastructure program as an essential strategy to greening our cities, and incentivizing innovative, carbon-smart development. We need to make our communities more climate resilient through a connect, cool, absorb, and protect approach to green alleys, school yards, parks, riverways and greenways - greenhouse gas reduction strategies that are well documented by research (see Attachment A for background and details of proposed program). Through innovative development and restoration, these projects reduce greenhouse gases in our communities by providing multiple benefits – enhancing the tree canopy, lowering VMTs, reducing energy usage from water conveyance and

treatment, and decreasing the urban heat island effect. The Investment Plan stresses a need for integrated projects that support energy and transportation solutions, smart growth, and urban forestry within communities (Investment Plan, III.E, p. 5) – a green infrastructure program would cut across GGRF investment areas while catalyzing much needed integration at a local level, incentivizing local jurisdictions to coordinate across agencies for investment decisions and planning. Investments can be targeted toward our disadvantaged communities, where they are needed most.

The 2012 Urban Greening for Sustainable Communities Program, overseen by SGC and administered by Natural Resources Agency is a great example of a multi-benefit approach to building sustainable, resilient, low-carbon communities. With the foundation and infrastructure for the program already established, the state is well on its way to adding this missing piece to the puzzle. Revamping the 2012 Urban Greening Program will create a crosscutting program to complement current investments in forestry, wetlands, and other natural resources. We recommend this program be funded through the GGRF, based on evidence showing the potential these strategies have to play in statewide carbon reduction. We recommend that ARB consider adapting the Urban Greening program to become a vital and complementary tool for meeting and exceeding GGRF goals.

Recommendation – Allocate 4% of auction proceeds to a crosscutting program for Carbon-Smart Green Infrastructure by revamping the 2012 Urban Greening for Sustainable Communities program through the Strategic Growth Council and California Natural Resources Agency.

Recommendations for Enhancing Existing Investments

- **Increase funding to CALFIRE for urban and rural forest conservation to 7% of auction proceeds**
 - The largest vehicle for greenhouse gas reduction through large-scale carbon storage is the protection and management of large tracts of intact forest. The world's forests are estimated to sequester up to 30% of annual global anthropogenic carbon emissions.¹
 - In California, approximately 113,000 acres of forest were converted to other uses between 1969 and 1998.²
 - Protection of forests with conservation easements, with management to maximize carbon storage, is essential to meeting our greenhouse gas reduction goals. The Trust for Public Land has been approached by several large forestland owners interested in such easements whose lands offer the potential for annual sequestration of nearly 1 million tons CO₂e.

¹ Pan et al. 2011. Science 333, 988–993.

² FRAP Technical Working Paper 1-01-02. California Department of Forestry and Fire Protection.

- There is currently a \$4.2 million allocation to CALFIRE’s Forest Legacy program. This amount is far less than necessary to meet landowner demand (estimated by both The Trust for Public Land and CALFIRE at close to \$100 million) and does not reflect the critical role forest conservation plays in achieving our long-term greenhouse gas reduction goals. It should be increased.
- In San Francisco, it is estimated that the city's trees sequester nearly 200,000 tons of carbon and filter 260 tons of atmospheric pollutants each year.³ The current \$15.7 million investment through CALFIRE in urban forestry projects should also be increased.

➤ **Increase funding for agricultural conservation easements and management incentives to 2% of auction proceeds**

- Agricultural conservation easements are an essential tool to store carbon, help cities combat sprawl and maintain working lands close to where people live. With careful management, rangelands and cropland sequester carbon in soils – through the growth of vegetation and accumulation of organic matter. Appropriate incentives can help landowners achieve these results.
- Agricultural lands provide a myriad of climate and public benefits – food security, jobs, long-term carbon storage in soils, and decrease of greenhouse gas production from long distance commutes and food transportation.
- In California, approximately 40,000 acres of working lands are lost to development and other uses each year⁴, particularly when close to urban areas with rapid population growth and increasing land value. Moreover, conversions of agricultural land to urban development in California results in a 57 times increase in greenhouse gas emissions per acre of land converted.⁵
- The Strategic Growth Council’s Sustainable Agricultural Lands Conservation Program is insufficiently funded at \$4.75 million annually, and should be increased.

➤ **Increase and broaden funding for wetland and watershed protection and restoration to 3% of auction proceeds**

- The ecological and economic benefits of wetlands are well understood. Notably, wetlands have the ability to sequester and store large amounts of carbon over long time periods.⁶

³ San Francisco Planning Department, San Francisco Urban Forest Plan. 2014. p.6.

⁴ American Farmland Trust. 2009.

⁵ American Farmland Trust. 2015.

⁶ Mitsch et al. 2013. Landscape Ecology 28, 583-597.

- California has lost 91% of wetlands since the 1780s (compared to 53% for the lower 48 states).⁷
- Protection of wetlands on private land, in combination with restoration, is essential to ensure durability of restoration efforts and to realize the greenhouse gas benefits of wetland conservation. The Department of Fish and Wildlife's Wetlands Restoration for Greenhouse Gas Reduction program funds restoration, but does not enable the permanent protection of wetlands. Funding for this program should be increased and expanded to include conservation easement or fee title acquisition of key watershed and wetland areas for durability.

➤ **Direct GGRF transportation funds toward innovative and alternative transportation projects**

- GGRF transportation programs should be directed toward finding solutions to our dependence on carbon-intensive fuels and modes of transportation (including zero-emissions vehicles and public transit) and should not be used to fund roadway repairs

➤ **Remove barriers to funding for disadvantaged communities**

Currently many GGRF programs are not set up to be user-friendly for communities with fewer resources, less capacity, or experience in applying for highly competitive public funds. The Investment Plan stresses that disadvantaged communities should be able to compete themselves for GGRF funds (III.B, p.4). To be accessible by communities hit first and worst by climate impacts, we recommend the following:

- Technical assistance should be provided early in the process in order to assist applicants in making their projects more competitive. This includes technical support for the required greenhouse gas calculations to ensure broad participation in the program. This will also assist ARB and agencies implementing GGRF programs to ensure consistency with greenhouse gas quantification as well as in gathering defensible, and comparable data across the state.
- Bonus points should be awarded for applications that demonstrate a multiple-benefits strategy.
- Prioritization of qualitative processes to support the success of applicants who need additional direction, information, and technical assistance.
- Incentives for grant applicants to directly engage members of disadvantaged communities in project selection, design, and prioritization.

⁷ Dahl, 1990. US Department of the Interior, USFWS.

- The timeline between the NOFA and the concept proposal deadline should be increased to 60 days to provide more lead time to applicants.
- Relevant applications should demonstrate project design and development strategies that mitigate displacement.
- Matching funds requirements should be waived for projects located within disadvantaged communities.
- Funding, through set-asides within GGRF programs, for planning, decision-making tools, and community engagement, with the intent that the planning would lead to projects resulting in greenhouse gas reduction. This will greatly assist communities to assess and prioritize needs, as well as develop innovative strategies for future GHG reduction and participation in GGRF programs.
- Set-asides in GGRF programs for rural disadvantaged communities. Although there is a great need for GGRF investments in our urban communities, there are many high-need rural areas of the state encompassed within CalEnviroScreen prioritized areas, that would not be triggered by grant program density requirements that are also worthy of investments.
- Nonprofits should be eligible applicants for these funds – in order to increase the variety of projects that are brought forward and to encourage a greater diversity of partnerships.

Sincerely,

A handwritten signature in cursive script, reading "Mary Creasman". The signature is written in black ink and includes a long, sweeping horizontal flourish at the end.

Mary Creasman
Director of Government Affairs

Attachment A: The Creation of a Carbon-Smart Green Infrastructure Program

Here we provide relevant research to support the development of a Carbon-Smart Green Infrastructure Program as well as recommendations for the revision of the 2012 Urban Greening for Sustainable Communities Program.

A carbon-smart green infrastructure approach increases mobility options in communities to ensure transportation mode shifts, capture and cleanse our water, reduces energy usage connected with urban heat island effect, and sequesters greenhouse gases through natural infrastructure. These strategies provide important co-benefits for our communities by cleaning the air, promoting active transportation, and reducing heat related illness and death, providing outdoor recreation opportunities, and increasing community connection. Applicants will be asked to carefully project the effectiveness and cost-benefits of their approach for carbon reduction and measure actual performance post-implementation. This will increase the impact of funding through this program by helping to advance knowledge within the field of carbon-smart green infrastructure while also helping to promote replication.

A Carbon-Smart Green Infrastructure Program seeks proposals that utilize a multiple-benefit approach to maximize carbon gains and other co-benefits from green infrastructure. To help guide applicants, this program has five base layers of carbon-related green infrastructure benefit for applicants to consider. The scientific framework is as follows:

Connect: In 2012, transportation emissions represented 37% of California’s total emissions, with more than 90% attributable to on-road vehicles.⁸ Personal passenger vehicles account for 78% of emissions from this sector.⁹ For many suburban and exurban communities, transportation is responsible for an even higher percentage of emissions.¹⁰ California communities have many opportunities to reduce on-road vehicle use by leveraging green infrastructure investment to help fill gaps in active transit networks. While California communities are leading in bicycle commuting, such as Davis at a nationally leading 24.5% of its population, many communities have room for active transit growth.¹¹ Los Angeles is second nationally for the raw number of daily cyclists on its streets, but this number represents only 1.5% of the city’s population.¹² Other major cities, including San Francisco, are over 3% bicycle commuting.¹³ One study found that achieving a 50% mode shift to active transit for

⁸ California Air Resources Board, *2000-2012 GHG Inventory*, 2014

⁹ Maizlish, et al. *Health benefits and transportation related reductions in San Francisco Bay Area*, 2013

¹⁰ Jones and Kammen, 2013

¹¹ League of American Bicyclists, *National Survey*, 2014

¹² Ibid.

¹³ Ibid.

short trips (less than 1.5 miles) and medium trips (1.5 to 5 miles) in Bay Area communities from the 2000 baseline would reduce carbon emissions by 14.5% while also producing a 14% reduction in cardiovascular disease and diabetes.¹⁴ Green infrastructure proposals under this program should demonstrate how the proposed activities will promote active transit by increasing user accessibility and decreasing safety concerns. Proposals should use a research-based methodology such as The Trust for Public Land/ICF International carbon benefits quantification model to calculate the specific carbon benefits and air quality that are projected from the green infrastructure being proposed. Other data should also be used to demonstrate the co-benefits of the project, such as spatial data showing the demographic, social, and health-related risk factors for adjacent populations (affordable housing developments, etc.) to the new active transit connections being created. These data should be used to show the impact of the project on transit equity, economic benefits of enhanced transit alternatives, and health benefits. The Connect strategy supports the State's goal of reducing petroleum use in cars.

Cool: Energy use for cooling buildings is a major segment of carbon emissions in communities during warm weather months. Energy use is elevated 5-10% during peak summer periods due to the urban heat island effect.¹⁵ Shade trees and other heat island reduction measures can reduce building emissions by 5-20%.¹⁶ An analysis by the University of California at Berkeley's Heat Island Group developed in response to the passage of AB 32 estimated that full implementation of a "cool communities" strategy using green infrastructure and closely related approaches could reduce California emissions by 4 million metric tons of carbon dioxide equivalent per year.¹⁷ This is equivalent to 5% of the 80 million tons in annual reductions required for the State of California to meet its 2020 target under AB 32. Additional carbon gains can be found in direct sequestration by urban trees and other vegetation used to reduce urban heat islands. Urban forests account for approximately 8% of forest-based sequestration in the U.S. annually. Green infrastructure proposals under this program should demonstrate how the proposed activities will advance heat island reduction, including how siting and design of the proposed green infrastructure will maximize cooling of buildings within the proposal area for reduced carbon emissions. Other carbon benefits through direct sequestration should also be quantified. Proposals should use a research-based tool such as the U.S. Forest Service I-Tree model to calculate the specific heat island benefits of proposed green infrastructure. Other data can be used to demonstrate the impact of the project, such as spatial data showing the

¹⁴ Maizlish, et al. *Health benefits and transportation related reductions in San Francisco Bay Area*, 2013

¹⁵ Akbari et al., 2008

¹⁶ Akbari and Konopacki, 2003

¹⁷ Berkeley Lab. Heat Island Group. <https://heatisland.lbl.gov/projects/projects-cool-communities>

magnitude of the urban heat island being addressed and information on demographic, social, and health-related risk factors for adjacent populations. The Cool strategy support the State's goal of reducing energy use in homes and businesses.

Absorb: Energy use for imported water supplies and wastewater treatment represent an important segment of California's carbon emissions. The State Water Project is the single largest energy user in the state, and 20% of electric use in the state is attributable to water.¹⁸ Deploying green infrastructure to manage stormwater on-site through an integrated water management approach increases potential for communities to use local water supplies through aquifer recharge. Green infrastructure that promotes infiltration also lessens the water load for treatment, and thereby reduces associated energy use and carbon emissions. Green infrastructure can also protect our groundwater aquifers from seawater intrusion, allowing coastal communities to rely on local sources of drinking water. The City of Los Angeles and Los Angeles County, among other actors in California, have assessed the potential water and energy savings of an integrated water management approach. One recent analysis concluded that the City of Los Angeles has potential to meet 30-45% of its water supply needs by implementing a full green infrastructure plan, such as the activities envisioned as part of the Los Angeles Department of Water and Power's Stormwater Master Plan.¹⁹ The City of Los Angeles has set a goal in its Sustainability Plan to reduce imported water purchases from the State Water Project and Metropolitan Water District of Southern California 50% by 2025. ICF International analysis found that the carbon footprint of the Metropolitan Water District imports to Los Angeles during one year (2007) was 548,000 metric tons of carbon dioxide equivalents. If LID techniques were applied in southern California and the San Francisco Bay area, between 40,400 MG and 72,700 MG per year in additional water supplies would become available by 2020. The creation of these local water supplies would result in electricity savings of up to 637 million kWh per year and annual carbon emissions reductions would amount to approximately 202,000 metric tons by offsetting the need for inter-basin transfers and desalinated seawater.²⁰ Statewide, for instance, water-related energy use in 2001 was estimated at 48 million MWh (or 48 thousand GWh) of electricity, plus 4.3 billion Therms of natural gas and 88 million gallons of diesel fuel. This energy use results in approximately 38.8 million metric tons of carbon dioxide emissions annually.²¹ The carbon emissions embedded in California's water as a result of these energy demands is equivalent to the carbon emissions of 7.1 million passenger vehicles, and would require approximately 9

¹⁸ Bloome and Lipkis, *A new vision for water management in the Los Angeles Region*, 2014

¹⁹ Ibid.

²⁰ Griffiths-Sattenspiel and Wilson, 2009. *The Carbon Footprint of Water*

²¹ Ibid.

million acres of pine forest to offset California's water-related carbon footprint.²² Green infrastructure proposals under this program should demonstrate how the proposed activities will advance energy savings through integrated water management, including specific description of the volume of water impacted by the proposal and how the water management achieved will impact existing water management activities and the energy impact of those activities. Proposals should utilize a research-based model such as the Local Government Commission's tool to demonstrate the aggregate energy impacts and related carbon savings from the integrated water management benefits that will be achieved through the proposal. The Absorb strategy supports the State's goals to capture and save water.

Protect: Consistent with California's Climate Action Plan, proposals should integrate explicit climate resilience considerations into green infrastructure design and development. Considerations include vulnerability of key populations to extreme heat events, repetitive loss flooding from increasingly intense rainfall patterns, mudslides, wildfires, seismic threats, and increased risk of coastal and riverine inundation. Additional credit will be given to applications that reflect consideration and pursuit of these adaptation co-benefits as part of carbon-oriented green infrastructure. Applicants will be asked to use diverse data sources to demonstrate the risk being addressed and the related resilience benefits of the green infrastructure proposal.

Disadvantaged Communities: Further, the consideration of California's most impacted communities should be integrated into the design considerations for each plan. Which populations will most greatly benefit from the economic benefits of energy savings and increased access to active transit? Which populations are most at risk from pollution, extreme heat, and natural disasters? Low-income populations are disproportionately impacted by energy costs as a percentage of household income, and will uniquely benefit from the potential for economic savings generated by reduced energy use. Further, these communities will uniquely benefit from reduced vulnerability to climate risks like extreme heat and household flooding given their reduced resources for dealing with these challenges, and the presence of elevating risk factors such as health conditions that exacerbate heat related illness. Applicants must detail the specific communities served, connect to affordable housing residents where appropriate, and show the direct and indirect climate benefits to these communities from the proposal.

²² Ibid

Carbon-Smart Green Infrastructure: Revising the 2012 Urban Greening Program

This funding is intended to engage the capabilities of experts from across California and the nation to advance greater carbon efficiency through green infrastructure in California communities, with a particular emphasis on supporting strategies that are implemented at larger scales, such as a neighborhood or watershed, and that can be replicated across that community or even the state. These replicable “super projects” represent green infrastructure typologies such as green alleys that combine multiple benefits and have potential application within a variety of different California communities and geographic contexts across the state, and are able to leverage a diversity of local, state, and federal funding through the multiple benefits approach. As such the program has a planning and development component to invest in carbon-smart innovation and incentivize research and decision-making tools to inform investments that provide the greatest multiple-benefit return.

The 2012 Urban Greening Project and Planning Grant Program defined urban greening as a community-based effort to plan, plant, care, and manage flora, structures and spaces, which lead to increased forest canopy, reduced stormwater runoff, improved air and water quality, energy conservation, open space and ultimately, more sustainable communities. The program was administered through the Natural Resources Agency in consultation with the Strategic Growth Council, to ensure optimal integration of sustainable community strategies including transportation, affordable housing and low-income transit-oriented development projects. Guidelines were developed through a cross-functional effort between Public Health, DWR, CALFIRE, DFW, Caltrans, the Strategic Growth Council, and regional boards, and the Strategic Growth Council was the final decision-maker on grant applications.

The 2012 Urban Greening Program description: *Because of the built-out nature of California's urban areas, the Urban Greening for Sustainable Communities Program provides funds to preserve, enhance, increase or establish community green areas such as urban forests, open spaces, wetlands and community spaces (e.g., community gardens). The goal is for these greening projects to incrementally create more viable and sustainable communities throughout the State.*

The 2012 Urban Greening Project and Planning Grant Program eligible projects:

- Use natural systems, or systems that mimic natural systems, or create, enhance, or expand community green spaces.

- Provide multiple benefits including, but not limited to
 - Decrease in air and water pollution
 - Reduction in the consumption of natural resources and energy
 - Increase in the reliability of local water supplies
 - Increased adaptability to climate change

- Be consistent with the State's planning policies specific to the following statewide priorities
 - Promote infill development and invest in existing communities
 - Protect, preserve and enhance environmental, agricultural and recreational resources
 - Encourage location and resource efficient new development

- Reduce; on as permanent a basis that is feasible, greenhouse gas emissions consistent with the California Global Warming Solutions Act of 2006.