Investing in Mobility and Equity:

Strengthening California's Low Carbon Transit Operations Program

TransForm

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Acknowledgments

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Executive Summary

The Low Carbon Transit Operations Program (LCTOP) is a funding program within California's Greenhouse Gas Reduction Fund (GGRF). The GGRF invests revenues generated from climate polluters through the state's cap-and-trade auction program in projects and programs that reduce greenhouse gas (GHG) emissions while providing "co-benefits" to communities across the state. A particular goal of the GGRF is to direct investments specifically to benefit the most disadvantaged communities and households – those that are disproportionately impacted by pollution, climate change, and historical injustices.[1] The Legislature has set a floor for how much of the GGRF must be directed toward this purpose; in 2016, new legislation increased the minimum to 35%.[2]

Within the GGRF, the Legislature established the LCTOP in order to provide operating and capital assistance for transit agencies to reduce greenhouse gas emissions and improve mobility, with a priority on serving disadvantaged communities. The Department of Transportation (Caltrans) administers the LCTOP, reviewing applications and making grants pursuant to formula and the guidelines it adopts for the program.

Within the first two years of its implementation, the LCTOP is already contributing to the creation of a better public transit system statewide and, with improvements, can maximize its benefits for all Californians. The purpose of this report is to assess whether and how transit service and capital projects funded by the LCTOP could meet the goals of the program to reduce GHG emissions and enhance transit mobility, in particular for residents of disadvantaged communities and low-income populations.

Key Policy Recommendations

The LCTOP is already funding critically needed transit operations investments throughout the state. However, as with any new program, it deserves evaluation in its early stages to identify opportunities for refinement to best achieve its stated objectives.

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1. *AB 32 requires The California Air Resources Board (ARB) to design all regulations adopted under it "in a manner that is equitable" and that activities undertaken to comply with AB 32 regulations "do not disproportionately impact low-income communities." Cal. Health & Safety Code § 38562(b)(1), § 39712(b)(4). AB 1532 (Pérez 2012) directs climate investments using this fund to "[m]aximize economic, environmental, and public health benefits to the state" and toward "the most disadvantaged communities and households." Cal. Health & Safety Code § 39712(b)(1)&(b)(4).*
2. *SB 535 (de León 2012) required that 25% of GGRF investments benefit these disadvantaged communities. AB 1550 (Gomez 2016), signed by Governor Brown on September 14, 2016, now requires that a minimum of 25% of the GGRF be invested in projects that are located and benefit individuals living within disadvantaged communities, and additionally requires a minimum of 10% of the GGRF be invested in projects that benefit low-income households and communities.*

Our review of projects funded through the LCTOP revealed that a number could have been funded through other programs, freeing up more resources for service improvements that can only be funded through the LCTOP.

This report comes at a time of uncertainty for the LCTOP's funding source, the GGRF. The California Air Resources Board (ARB) currently has the authority to regulate statewide greenhouse gas emissions, but there is a legal challenge to that authority working its way through the courts, and the future of cap-and-trade in California is uncertain. This report underscores the importance of continuing to make climate protection investments that meet the needs of underserved Californians.

We urge Caltrans to act on the following recommendations to further strengthen transit service, reduce emissions by increasing ridership, and enhance access to economic opportunity and a healthy environment for all Californians.

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Recommendations

Staying True to the Purpose of the Program

Recommendation #1: Maintain the link between ridership increase and GHG emissions reductions.

Recommendation #2: Preserve the majority of LCTOP funds for transit operations.

Generating the Greatest Impact from Dollars Spent

Recommendation #3: Maximize LCTOP investments in service by leveraging other GGRF programs.

Recommendation #4: Ensure LCTOP resources are additive and do not supplant other funding resources.

Maximizing Direct and Meaningful Benefits for Vulnerable Populations

Recommendation #5: Ensure direct and meaningful benefits to the residents of disadvantaged communities.

Recommendation #6: Ensure direct and meaningful mobility benefits to low-income populations, whether or not they live in disadvantaged communities.

Introduction

In this report we examine the Low Carbon Transit Operations Program's (LCTOP) background; take a look at its first two rounds of funding; examine how effectively it is meeting its commitment to reduce greenhouse gas (GHG) emissions and enhance mobility; and highlight several model projects. We also identify ways to improve the program in the short and long term to ensure benefits for disadvantaged communities and low-income populations throughout the state.

Achieving our near- and long-term climate goals will require a major transformation of our transportation system. Transportation is responsible for 37% of California's greenhouse gas (GHG) emissions — more than any other sector.[3] As part of its long-term planning to combat climate change, the state created an investment plan to guide investments from the Greenhouse Gas Reduction Fund (GGRF), whose funds are required to be spent in ways that further reduce GHG emissions. The first Investment Plan, adopted in 2013, established three major investment areas: Sustainable Communities and Transportation, Natural Resources and Waste Diversion, and Clean Energy and Energy Efficiency.[4]

The Low Carbon Transit Operations Program is one of several programs in the Sustainable Communities and Transportation suite of programs, which also includes the Affordable Housing and Sustainable Communities (AHSC) Program, the Transit and Intercity Rail Capital Program (TIRCP), the Low Carbon Transportation Program (LCTP), and High Speed Rail (HSR). These programs were formally established through the 2014 budget process. Together, they receive 60% of available annual GGRF funds and collectively are intended to play a key role in catalyzing California's shift to a low-carbon, multimodal transportation system.

As established, the core purpose of the LCTOP is to fund transit projects throughout the state that reduce GHG emissions and increase transit ridership. Specifically, SB 862, the law through which the LCTOP was established, intends for the program "to fund operation investments to increase transit ridership and reduce emissions of greenhouse gases by reducing vehicle miles traveled throughout California."[5] Additionally, the program was established to "provide operating and capital assistance for transit agencies to reduce greenhouse gas emissions and improve mobility, with a priority on serving disadvantaged communities."[6] Caltrans distributes the funding to transit agencies throughout the state based on a formula. Each transit agency is required to create an annual project list and submit it to Caltrans for review. As the administering agency, Caltrans must verify that the projects conform to the LCTOP guidelines, which were created through a public stakeholder process.[7]

3. *Air Resources Board, California Greenhouse Gas Emissions for 2000 to 2013—Trends of Emissions and Other Indicators, (Sept. 2015), available at: https://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_trends_00-13%20_10sep2015.pdf*
4. *Air Resources Board, Cap-and Trade Auction Proceeds Investment Plan: Fiscal Years 2013-14 through 2015-16, (May 2013), available at: https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/final_investment_plan.pdf*
5. *Stats. 2014 ch.36*
6. *Pub. Res. Code § 75230(a). See also Id., §§ 75230(d)(2), (3) (The statute currently requires "[t]he recipient transit agency [to] demonstrate that each expenditure directly enhances or expands transit service to increase mode share" and "that each expenditure reduces greenhouse gas emissions.") SB 824 (Beall 2016), signed into law on September 22, 2016, amended the eligibility criteria to include GHG emissions-reducing projects that "directly enhance or expands transit service"; are "expenditures that increase mode share"; or are "related to the purchase of zero-emissions buses []." Stats. 2016, ch. 479.)*
7. *See Low Carbon Transit Operations Guidelines, available at: http://www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/Cap&Trade/lctop.guidelines.fy15-16_112415.pdf*

Photo by Noah Berger

However, the LCTOP receives just 5% of the GGRF on an annual basis, which cannot fill the massive need for transit operations funding in the years ahead.

This makes it especially important to spend resources available through the LCTOP on projects that are deeply focused on reducing GHG emissions, providing true mobility benefits, and meeting the needs of low-income and disadvantaged communities.[8]

Additionally, transit agencies serving disadvantaged communities must invest at least 50% of their yearly LCTOP allocation in projects that provide direct and meaningful benefits to the people residing in those communities.[9] The Funding Guidelines of the Air Resources Board, which govern the LCTOP and other GGRF investments, require investments to benefit disadvantaged communities by "meaningfully address[ing] an important community need."[10] In addition, the Guidelines require that "projects be designed to avoid substantial burdens, such as physical or economic displacement of low-income disadvantaged community residents and businesses, or increased exposure to toxics or other health risks."[11]

To date, a total of approximately $100 million in LCTOP funds has been available for agencies to invest: $25 million generated in FY 2014-15 and $75 million in FY 2015-16. As mentioned above, federal and state resources for transit operations funding are highly restricted, and those that are

8. *The California Environmental Protection Agency designated disadvantaged communities based on assessing the cumulative impacts of 19 measures of pollution burden (e.g. high ozone concentrations, toxic cleanup sites) and population characteristics (e.g. high concentrations of children and elderly, high poverty levels) on census tracts throughout the state. This assessment tool is known as the California Communities Environmental Health Screening Tool 2.0.*
9. *Pub. Res. Code §§ 75230(e): "For transit agencies whose service areas include disadvantaged communities … at least 50 percent" of the LCTOP funds received "shall be expended on projects or services that … benefit the disadvantaged communities, consistent with the guidance developed by the State Air Resources Board."*
10. *Air Resources Board, Cap-and-Trade Auction Proceeds Funding Guidelines for Agencies that Administer California Climate Investments (Dec. 2015), p. 2-6, available at http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/fundingguidelines.htm*
11. *Id. p. 2-12.*

available are volatile and subject to significant year-to-year cuts. For example, the State Transit Assistance program lost nearly a third of its funding in 2015-16, a cut of $72.6 million just for this year.[12] Many regions of the state are making unprecedented transit capital investments – much of it with revenue from regional and local sales taxes – that have the potential to transform regional transportation systems and meet the state's climate targets, as well as economic and equity goals. However, it will not be possible to maximize our capital investments and achieve these targets without the resources to provide frequent and reliable transit service.[13]

Although the LCTOP was not intended to fill gaps in transit operations, it is the only GGRF program that allows investments in transit operations.This makes it especially important to spend resources available through the LCTOP on projects that are deeply focused on reducing GHG emissions, providing true mobility benefits, and meeting the needs of low-income and disadvantaged communities.[14] And like any new program, we must evaluate the early results, both to ensure that the projects comply with the intent of its enacting statute and existing guidelines, as well as to identify opportunities to improve future iterations of the guidelines.[15] Our goal should be to continually refine the program so that it supports projects that are increasingly innovative and effective at meeting the needs of low-income and disadvantaged communities.

What follows is a review of the approved projects submitted through the program's first two years. They reveal a program that is broadly functioning as intended, with room for improvements.

12. *See Department of Transportation, 2016-17 California Transportation Financing Package, p. 7, available at: http://www.dot.ca.gov/budgets/docs/CATransFinPkg-2016-17.pdf (estimating $315,169,000 available for allocation under the State Transit Assistance program for FY 2016-17); compare to 2015-16 California Transportation Financing Package, p. 7, available at: http://www.dot.ca.gov/docs/CA_Transportation_Financing_Package_2015-16.pdf ($387,798,000 available under the STA for FY 2015-16)*
13. *See, e.g., Testimony of the Amalgamated Transit Union, (May 19, 2011), p. 5, available at: https://issuu.com/atucomm/docs/legis_senbankingtestimonymay19?mode=embed&layout=http%3A%2F%2Fskin.issuu.com%2Fv%2Flight%2Flayout.xml&showFlipBtn=true*
14. *The California Environmental Protection Agency designated disadvantaged communities based on assessing the cumulative impacts of 19 measures of pollution burden (e.g. high ozone concentrations, toxic cleanup sites) and population characteristics (e.g. high concentrations of children and elderly, high poverty levels) on census tracts throughout the state. This assessment tool is known as the California Communities Environmental Health Screening Tool 2.0.*
15. *Stats. 2014 ch.36*

The First Two Years:

An Analysis of LCTOP Implementation from 2014-2016

Our review of projects funded by the LCTOP in FY 2014-15 and FY 2015-16 shows that, for the most part, the program is functioning as intended. Overall, funded projects appear to be in general compliance with statutory requirement and core program goals: reducing GHG emissions, increasing ridership, improving mobility, and providing meaningful benefits to disadvantaged communities. However, some projects and overall program trends reveal opportunities for improvement that Caltrans can address to ensure the program reaches its full potential.

Our analysis relies on publicly available information about the projects, which was limited to the award documents for each project and the FY 2015-16 project applications (FY 2014-15 applications were not available). The applications themselves contained varying levels of information. Some project applications offered extensive descriptions and project information, while others contained very limited information.

As a result, the numbers included in this report should be viewed as approximations of overall trends and issues, rather than an exact representation. They also illuminate the real challenges that Caltrans faces in administering this program.

In general, Caltrans is doing a good job gathering information from transit agencies. However, it needs to require agencies to document the details of these projects and their impacts in a more consistent and comprehensive manner. That way Caltrans can better evaluate the success of the projects and the program as a whole to more thoroughly implement the ARB Guidelines. Finally, as of the release of this report, the GHG emissions reductions, transit ridership, and vehicle miles traveled data from each of the projects are still being compiled and verified. While agencies submitted estimates in their applications, it was clear that many were inaccurate. For that reason, we decided not to include them in this report.

Because the core focus of the program is to reduce GHG emissions through increased transit ridership and transit mobility, we first analyzed projects on the basis of whether or not the projects fulfill this requirement. To do so, we established seven different investment types: Pure Service; Fare Programs; Station and Connectivity Improvements; Technology; Transit Capital with Service Improvements; Transit Capital; and Education.

Investments in Operations vs Capital Projects

Since the core focus of the program is to reduce GHG emissions and increase ridership and mobility, projects that expand or improve service should receive the majority of investments. Of the seven listed categories, “Transit Capital” is the only one that does not effectively meet the program’s GHG emissions reductions and ridership/mobility increase goals.

On the other hand, the "Pure Service" category, which has accounted for the majority of investments over the LCTOP's first two years, best meets the central goals and criteria of the program. Projects assigned to this category include projects that expand routes (either geographically or hours of service), improve frequency, add a new line, or fund lines that were created by previous years' LCTOP funds.

However, the relative amount invested in Pure Service projects decreased significantly from the first year to the second year, a troubling trend given the purpose of the program. The absolute dollar amount invested in Pure Service projects increased from year one to year two, but available program funding tripled over that period. On a percentage basis, substantially less LCTOP funding was spent in Pure Service improvements in FY 2015-16 (about half) than it was in FY 2014-15 (nearly 70%).

This sharp decline in the proportion of the program invested in Pure Service is most directly a result of a dramatic increase in hybrid capital and service projects – represented in the charts below as the "Transit Capital with Service Improvements" category. The most common type of project in this category is the purchase of an electric bus and/or charging infrastructure combined with new or expanded service.[16]

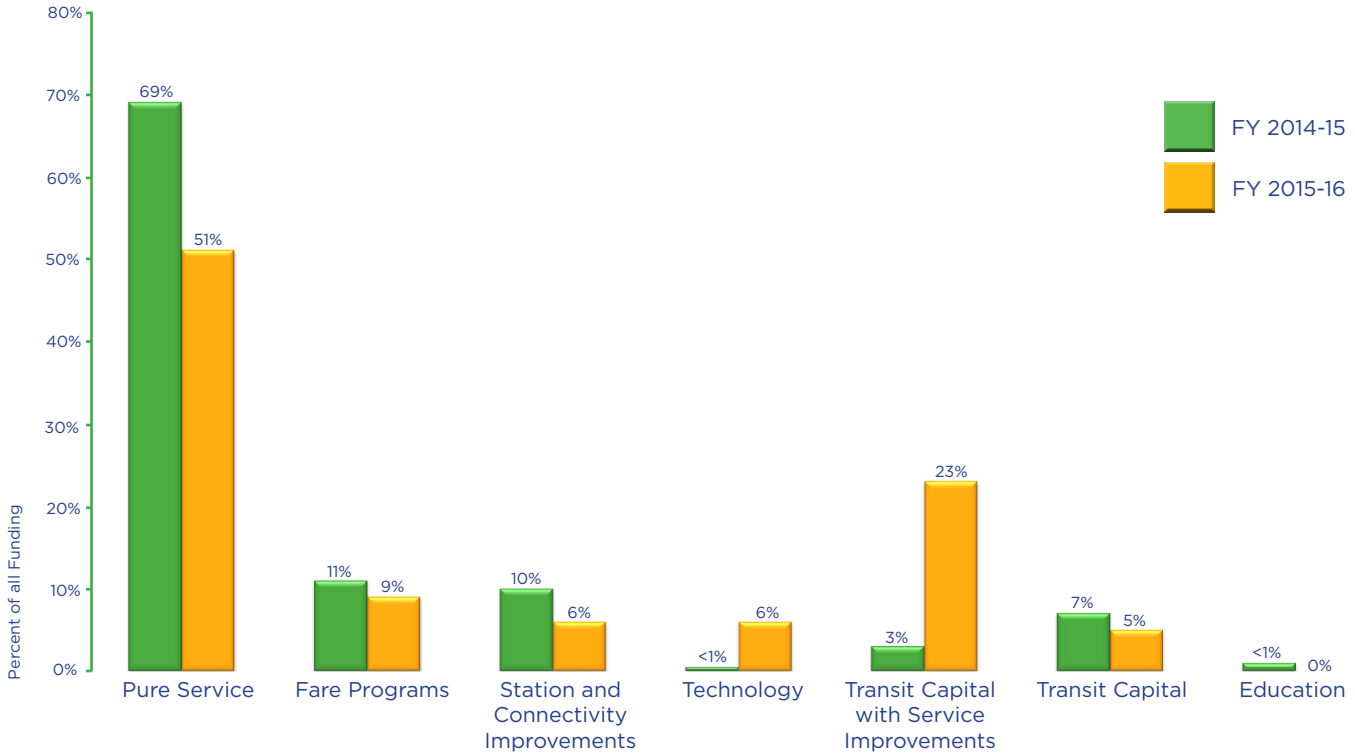
LCTOP Investment Types

Investment Type	Project Types	Does it meet the program's GHG and ridership goals?	$ (%) Funded by Project Type FY 14-15	$ (%) Funded by Project Type FY 15-16
Pure Service	New service, expanded or more frequent existing service, or maintenance of existing service	Very strong connection to goals	$14,661,427 (69%)	$36,833,643 (51%)
Fare Programs	Free or low-cost transit passes, reduced fares, and vouchers	With proper structure, these programs can be very effective at meeting program goals.	$2,414,149 (11%)	$6,246,768 (9%)
Station and Connectivity Improvements	Transit station and stop improvements, or improved access to active transportation such as bike racks on transit vehicles and at stations	These projects can facilitate transit access and increase ridership by removing physical barriers to transit, as well as improve safety and comfort.	$2,196,694 (10%)	$4,160,948 (6%)
Technology	Smart card standardization, fare integration, ticketing machines, and other projects that provide seamless fare connections between local and regional transit services	Fare integration projects make it easier for transit users to access and transfer between different transit systems, which could result in significant ridership increases.	$75,150 (<1%)	$4,177,818 (6%)
Transit Capital with Service Improvments	Projects include the purchase of vehicles such as electric buses or supportive infrastructure and are combined with new, expanded, and more frequent service.	Meet the program objectives of GHG-reduction and increased ridership. Transit agencies should seek to leverage other GGRF programs such as the LCTP for vehicle purchases.	$622,785 (3%)	$17,015,989 (23%)
Transit Capital	The purchase of buses, rail cars, and some other transit infrastructure (excluding creating new service, expanding service, or making service more frequent)	This project category is not consistent with the goals of the program. These investments are better suited to other programs such as the LCTP, TIRCP, and AHSC.	$1,469,495 (7%)	$3,460,090 (5%)
Education	Includes ads, marketing, and other similar projects to create transit awareness.	Neither the GHG nor ridership benefits are as clear or as strong as the majority of other eligible expenditures. .	$10,000 (<1%)	$0 (0%)

16. *As previously noted, SB 824 expressly allows for transit agencies to purchase zero-emissions buses with LCTOP funds. See Stats. 2016, ch. 479.*

Breakdown of LCTOP Funding

by Investment Type in FY 2014-15 and FY 2015-16



While these Transit Capital with Service Improvements projects may meet the most basic criteria for the LCTOP, other programs in the GGRF are better suited to fund transit capital investments, which would preserve the limited amount of funding available for operations within the LCTOP.

For instance, the Transit and Intercity Capital Rail Program (TIRCP), which allocates 10% of available GGRF moneys each fiscal year (double the budget for LCTOP), has provided millions of dollars to transit agencies to purchase cleaner buses.[17] The Low Carbon Transportation Program (LCTP) also designates specific funding for transit agencies to purchase electric buses.[18] In addition, housing-related transit capital projects are eligible for funding under the Affordable Housing and Sustainable Communities (AHSC) Program.[19]

Despite the number of other transit capital programs available in the GGRF, a close analysis of the applications themselves reveals that Caltrans does not require agencies to state other GGRF funding sources they are seeking or receiving funding from during the LCTOP application process. Very few transit agencies expressly state that they are seeking to leverage funding available under these other programs.[20] Transit agencies could use

17. *See CalSTA Transit and Intercity Rail Capital Program, First Round Selected Projects-Project Detail Summary (June 30, 2015), available at: http://www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/TIRCPAwardSummary06302015.pdf*
18. *See ARB's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project, available at: https://www.arb.ca.gov/msprog/aqip/hvip.htm*
19. *Stats. 2014 ch.36*
20. *The LCTOP program guidelines require Caltrans to describe leveraged funds in its annual report to the Air Resources Board, but these reports are not published on Caltrans' website. See Caltrans, Low Carbon Transit Operations Program Guidelines FY 2015-16, p. 16, available at: http://www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/Cap&Trade/lctop.guidelines.fy15-16_112415.pdf*

the LCTP or TIRCP for purchasing electric buses and other capital expenditures, and then pair these investments with LCTOP funds that would be freed up for its core purpose: improving transit service.

Leveraging the broader GGRF for capital improvements would maximize the potential of the entire GGRF to expand transit systems.

Other program categories — such as "Station and Connectivity Improvements," "Fare Programs," and "Technology" — also increase ridership and reduce emissions by removing barriers to accessing transit. But these categories do not have their own dedicated GGRF funding and have only limited eligibilities under the LCTOP and other programs. Collectively, the proportion of the LCTOP dedicated to these categories has remained relatively stable over the first two years of the program. Broadly speaking, each of these categories has been shown to be effective at reducing GHG emissions and increasing transit ridership.

Fare programs in particular could effectively meet these two goals of the program, if they are structured in the right ways. Around nine percent of the LCTOP was invested in fare programs, and in most cases these types of projects are implemented by smaller transit agencies and transit agencies in rural areas. However, not all fare programs are created equal. Free and discounted transit pass programs that have longer time horizons and target specific groups (such as students and residents of low-income housing) yield greater impacts in terms of ridership and reduced emissions.[21] The North County San Diego transit pass program, profiled below, is an example of an effective program offering discounted transit passes for students on an ongoing basis.[22] On the other hand, voucher programs or one-time free ride passes are less likely to have the same level of benefits.

Transit Capital projects do not appear to result in increased ridership based on the information contained in the project applications, and did not include new or expanded service.

While these projects reduce GHG emissions, they do not reduce them by providing improved transit service that results in increased ridership and mobility.[23] As with the Transit Capital with Service Improvements category of projects, transit agencies would more effectively maximize ridership increases if they were to leverage capital funding for vehicles through the LCTP, TIRCP, and AHSC, while utilizing the LCTOP to fund increased service.

It is harder to evaluate the direct and meaningful impacts on both GHG emissions reductions and transit ridership from the final category, Education. This category is also not featured prominently; only one project for $10,000 was funded in FY 2014-15, and only one project was proposed (but ultimately not funded) in FY 2015-16. Given the more concrete benefits of other investments, we believe education projects are of limited value in comparison to other options such as service projects.

21. *For more research on the benefits of student pass programs, see: http://www.movela.org/the_case_for_student_transit_passes*
22. *AB 2222 (Holden 2016), a bill that enjoyed broad support and nearly became law in 2016, would have created a statewide transit pass program to fund efforts like that of North County San Diego. Assem. Bill No. 2222 (2015-16 Reg. Sess.).*
23. *However, as previously noted, SB 824 will expressly allow for transit agencies to purchase zero-emissions buses without requiring this use of funds to directly increase ridership. See Stats. 2016, ch. 479.*

Model LCTOP Projects:

Three Case Studies

The following section offers brief profiles of three select LCTOP projects that largely meet the program's goals, and the benefits they are projected to create for their communities.

Expansion and Electrification of Foothill Transit Line 280 (Los Angeles County)

The expansion and electrification of Foothill Transit's Line 280 is exemplary of California's goal to address climate change while lifting up low-income households and disadvantaged communities. For many people in the San Gabriel Valley, bus service is a lifeline: more than 40% of the residents in the area don't have access to a car, and 35% of daily bus riders are low-income.[24] Foothill Transit was awarded $512,738 by the LCTOP to extend and electrify its Line 280 service, which will benefit both the community and the climate. First, it will boost transit ridership by increasing bus frequency from 20 to 15 minutes, connecting more low-income transit riders to school, jobs, healthcare, family, groceries, and more. Secondly, it will reduce GHG emissions by replacing existing buses with zero-emissions buses. Although the latter is now an express eligible use of the program funds under SB 824 (Beall 2016),[25] this project is a good example of a hybrid capital-service project where the capital portion could have also received funding from other GGRF programs, including the TIRCP and LCTP, so that more LCTOP funding could be focused on service itself.

Photo by George Lumbreras / CC BY-SA 2.0

24. *See FY 2015-16 Foothill Transit Low Carbon Transit Operations Program Project Description and Allocation Request Summary, available at: http://www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/Cap&Trade/LCTOP_Southern/15-16-D07-096_TARv.1.pdf*

25. *Stats. 2016, ch. 479.*

Photo by Richard Masoner / CC BY-SA 2.0

North County Transit District Reduced Fare Passes (San Diego County)

When students don't have to worry about the cost of getting to school every day, they can worry about more important things — such as succeeding in class. Thanks to North County Transit District's new discount student transit pass program, students in the San Marcos area will soon be able to ride the bus to school — and elsewhere — at a much more affordable price. North County Transit District was awarded $794,903 from the LCTOP in FY 2015-16 to launch this program, which will provide reduced-fare passes for San Diego's SPRINTER/BREEZE transit network to students attending Palomar College, Cal State University San Marcos, Mira Costa College, and all K-12 students in the San Marcos Unified School District (one of the largest school districts in San Diego). This program will reduce GHG emissions, as well as increase students' mobility and independence by making public transportation their cheapest option to get to school and work.

Monterey-Salinas Transit Electric Bus (Monterey County)

Salinas, California is known as the "Salad Bowl of the World," famous for its prolific food production. The people who bring our food to harvest rely heavily on public transportation to get around. In 2014, 34% of all the people who rode transit in Monterey and Salinas worked for farms or approximately 66,200 people. In 2015, the Monterey-Salinas Transit Agency used its FY 2014-15 funds to establish bus Line 42, which serves people living in several disadvantaged communities. The agency then used its FY 2015-16 funds to purchase a new electric bus for the route. Planning multi-year investments for these funds can ensure that projects have the greatest impact and serve the greatest need. In this case, having an upgraded, eco-friendly, and reliable way to stay connected to jobs and opportunity will greatly improve the quality of life and the quality of air people breathe. At the same time, the transit agency could have further maximized its investments in these disadvantaged communities by applying for LCTP or TIRCP funding to purchase the electric bus, which could have allowed it to use its LCTOP funds for further service enhancements.

LCTOP Funds Should Not Replace Other Transit Funding

As with all investments in the GGRF, projects funded by the LCTOP are intended to be additive in order to achieve new GHG emissions reductions. This means that the LCTOP should only invest in projects that have no other existing funding sources. To meet this objective, transit agencies must demonstrate they are not supplanting other federal, state, or local funding to other projects and using the LCTOP to fill these artificially created gaps. However, the LCTOP application does not ask transit agencies to demonstrate that proposed projects are additive. If Caltrans did seek to enforce this provision over the last two years, it did so through other means than the application itself and that information has not been made public. SB 824 addresses this potential issue of funding supplantation by requiring that "a recipient transit agency shall demonstrate that each expenditure of program moneys does not supplant another source of funds."[26]

An example of funding supplantation would be if an agency built a new rail line and used its yearly allocation of LCTOP funds to pay for the service of the line once it opens. If this use were consistent with the additive requirements of the LCTOP, we would have to assume that the agency knowingly built a new rail line without any other plans for operating it. A responsible agency would never do this, so it would be clear the agency diverted operating funds to other projects, and used the LCTOP as a backfill.

With the limited information available to us, we were not able to draw conclusions about how much of this type of funding supplantation has occurred in the first two rounds.

Adding assurances against funding supplantation to the application as a requirement in accordance with SB 824, and making the information easily accessible to the public would increase transparency and help ensure that GGRF and LCTOP funds are not being used to supplant other funding sources.

26. *See Stats. 2016, ch. 479.*

Meaningful Benefits for Vulnerable Populations

The core purpose of the LCTOP is to achieve GHG emissions reductions through improved transit service and improved mobility, with the priority of serving disadvantaged communities. The LCTOP specifically requires transit agencies that serve disadvantaged communities to invest at least 50% of their annual allocations to the benefit of those communities. AB 1550 (Gomez 2016) sets minimum investment requirements for projects that are both located within and benefit individuals living in disadvantaged communities, and additionally for projects that benefit low-income households and communities.[27] In addition, the ARB Guidelines require that the LCTOP, like other GGRF programs, provides benefits that "meaningfully address an important community need" of disadvantaged communities, including projects that "reduce transportation costs" and "improve access to public transportation."[28]

Mobility First: Prioritizing Direct Mobility Benefits

Caltrans should require that projects funded by the LCTOP directly enhance the mobility of the residents of a disadvantaged community in order to qualify as a benefit to the community.

While other positive impacts such as improved air quality are important, they are not the primary benefit that the LCTOP program was created to provide.[29] Air quality co-benefits for disadvantaged communities from transit projects serving residents of other communities should not take the place of service provided directly to residents of disadvantaged communities. Money spent on a project that does not provide mobility benefits to residents of a disadvantaged community should not be counted toward meeting the 50% requirement.

Some of the LCTOP funding has clearly not provided mobility benefits to low-income residents of disadvantaged communities. For instance, Caltrain's Peninsula Corridor Electrification Project received just under $1 million to electrify its commuter rail service between San Jose and San Francisco, and lists the primary benefit to disadvantaged communities as air quality benefits from the electrification of 75% of the fleet. While air quality improvements benefit the environment and residents in general, these improvements do not specifically increase the mobility of underserved residents or make it more affordable for them to ride public transit; in fact, Caltrain primarily serves higher-income populations that do not live in disadvantaged communities.[30]

27. *Stats. 2016, ch. 369.*
28. *See ARB Guidelines, at 2-6 and 2-14 (Table 2-2 on common disadvantaged community needs).*
29. *By contrast, the Low-Carbon Transportation Program is designed to reduce GHG emissions, criteria pollutants, and air toxics through the development of advanced technology and clean transportation. See http://www.arb.ca.gov/msprog/aqip/aqip.htm.*
30. *According to Caltrain's 2014 On-Board Transit Survey: Final Report, "[n]early three-quarters of riders (73%) report their annual household income is above $60,000," while only 7% have household income under $25,000.*

Photo by Michael Halberstadt

In addition to providing direct mobility benefits for disadvantaged community residents, Caltrans should ensure mobility benefits for low-income populations as stipulated by AB 1550.[31]

Need for Comprehensive and Transparent Data Collection and Reporting

In order to evaluate whether it is successfully meeting its statutory obligations, Caltrans should require transit agencies to publicly provide detailed data showing how the LCTOP funds are used to improve the mobility of, and otherwise benefit, disadvantaged community residents and low-income populations.

In the first two years of the LCTOP, 149 of 220 projects were classified by transit agencies as benefiting disadvantaged communities. However, both the application and award documents for LCTOP projects rarely provided sufficient information to assess these claims. In particular, information was lacking about the extent to which projects served disadvantaged communities and the types of benefits the projects provided. The details that were included were extremely vague, generic, and often repetitive. Most of the LCTOP application and award documents also did not detail the income levels of populations that projects would serve.

Without more detailed information and a clearer explanation of how projects enhance mobility, it's impossible to fully understand or evaluate the benefits of LCTOP projects for low-income and disadvantaged communities.

31. *Stats. 2016, ch. 369.*

More Benefits per Dollar: Maximizing Benefits to Disadvantaged and Low-income Populations

Projects that have relatively clear, direct mobility benefits to disadvantaged communities and meet the LCTOP's goal are those that increase transit service (new bus routes/stops, expanded routes, service frequency improvements), increase access to transit (reduced fares, transit vouchers, fare integration), and connect low-income populations and residents living in disadvantaged communities to areas of higher opportunity, such as job centers. These benefits are not just a function of where, but also how much. In general, but not always, transit services such as buses are more affordable and provide the greatest level of benefits to residents in disadvantaged communities as well as low-income populations. Other services, such as heavy or commuter rail, are on average more expensive and do not serve as many of the destinations that low-income riders need to reach. This is sometimes the case with light rail as well, though there are exceptions. For example, in Los Angeles, light rail service may provide significant mobility benefits to disadvantaged and low-income communities and also cost the same as bus service.

Consider a brief comparison of the top two recipients of LCTOP funding: LA County Metropolitan Transportation Authority (Metro) and San Francisco Metro Transit Authority (SFMTA). The largest formula share of program funding went to Metro. While the overwhelming majority of Metro's transit ridership is on its bus routes, Metro has used all its LCTOP funds for operating new lines within its light rail system.[32] Without additional information, we were unable to determine whether and how strongly these investments have benefited residents of disadvantaged communities.[33]

The second largest share went to SFMTA, which has used its LCTOP funds to decrease headways and increase service on several bus lines, including the 38-R and 44-O'Shaughnessy.[34] These investments have resulted in clear and direct mobility benefits to lower-income populations living in and outside of disadvantaged communities.[35]

Avoiding Substantial Harms to Low-income Populations

Separate from the requirement to provide mobility benefits is the requirement in ARB's Funding Guidelines to avoid substantial harms to low-income populations. The ARB Guidelines specifically require that "projects be designed to avoid substantial burdens, such as physical or economic displacement of low-income disadvantaged community residents and businesses or increased exposure to toxics or other health risks."[36] In accordance with the requirement to avoid substantial harms and AB 1550's affirmative mandate to make investments that benefit low-income populations, projects funded by the LCTOP should also be awarded based on the extent they avoid harming low-income populations living both in and outside of disadvantaged communities.[37]

32. *LA Metro was awarded $5,897,391 in FY 2014-15, and $16,825,598 in FY 2015-16.*
33. *See Stats. 2016, ch. 479.*
34. *SFMTA was awarded $2,592,022 in FY 2014-15, and $8,156,592 in FY 2015-16.*
35. *In FY 2015-16, SFMTA increased service on lines that have stops within or ½ mile from disadvantaged communities in San Francisco. See http://www.dot.ca.gov/hq/MassTrans/Docs-Pdfs/Cap&Trade/LCTOP_Bay%20Area/15-16-D04-052_TARv.1.pdf*
36. *Id. at 2-12.*
37. *See ARB Guidelines requiring projects to avoid substantial harm to low-income residents of disadvantaged communities. (ARB Guidelines, at 2-12.) AB 32 also requires that GHG emissions reductions measures should not "disproportionately impact low-income communities." (Health & Safety Code § 38562(b)(2).).*

Policy Recommendations for Improving the LCTOP

Broadly speaking, our analysis shows that the LCTOP is functioning well and that Caltrans is administering the program in a positive way. To build on this good beginning, we recommend that Caltrans adopt the following policy changes to strengthen the LCTOP and help the program reach its full potential.

Staying True to the Purpose of the Program

Recommendation #1: Maintain the link between ridership increase and GHG emissions reductions.

The essential purpose of the LCTOP is to invest in transit operations or operations-enhancing projects to achieve GHG emissions reductions, specifically by increasing transit ridership. Increased ridership directly results in additional community benefits beyond GHG emissions reductions, including less dependence on single-occupancy vehicles and their associated costs, less traffic congestion, improved air quality, and enhanced access to jobs, housing, and other key destinations. Maintaining this requirement will ensure that investments truly address the need for high-quality transit service throughout the state, especially in low-income and disadvantaged communities.

Recommendation #2: Preserve the majority of LCTOP funds for transit operations.

Federal and state transportation dollars are largely restricted to capital investments, leaving public transportation agencies with few options to fund the service improvements that most effectively increase ridership and reduce emissions. The LCTOP represents the only significant non-local source of new revenue to achieve this goal. As a result, it is important that the majority of these funds are dedicated to the operation of transit services.

Caltrans should consider revising the guidelines to keep the LCTOP focused on funding core transit service. This could be achieved by requiring that a certain amount of program funding is used to improve, expand, or maintain service. Based on the first two years of projects, where approximately 75% of funds have been dedicated to service enhancement projects, we recommend requiring 75% of funding be used for Pure Service projects in the years that follow. This provides transit agencies flexibility to fund other projects while reserving most of the program for service projects, which best meet the program's core goals.

Generating the Greatest Impact from Dollars Spent

Recommendation #3: Maximize LCTOP investments in service by leveraging other GGRF programs.

The LCTOP is one of several GGRF programs set up to fund sustainable communities and transit investments. This includes — but is not limited to — the Affordable Housing and Sustainable Communities Program (AHSC), the Transit and Intercity Rail Capital Program (TIRCP), and the Low Carbon Transportation Program (LCTP). The AHSC is intended to fund affordable, transit-oriented development; the TIRCP funds capital projects including subways, light rail, and Bus Rapid Transit; and the LCTP funds low and zero-emissions

projects such as electric vehicles. The positive impact of GGRF investments can be maximized when agencies focus their LCTOP funding on enhancing transit service that complements capital and program investments from other programs. Leveraging these funding sources will result in more integrated and effective projects. In the second year of the program (FY 2015-16), applicants requested a significant amount of LCTOP funding for purchasing electric buses. The LCTP and TIRCP are more geared towards this type of investment, and using these funds for capital projects instead would allow agencies to utilize LCTOP funds for more service-oriented projects.

Recommendation #4: Ensure LCTOP resources are additive and do not supplant other funding resources.

As with all programs in the GGRF, the LCTOP is meant to be additive to planned investments and generate additional emissions reductions and public benefits. Agencies must be required to demonstrate that they are not diverting other federal, state, and local funds already marked for transit operations projects to other purposes. It is not clear what steps Caltrans took in the first two years of the program to ensure that LCTOP funds did not supplant other funding sources. It should establish a framework for doing so in future years, in accordance with SB 824.

Maximizing Direct and Meaningful Benefits for Vulnerable Populations

Recommendation #5: Ensure direct and meaningful mobility benefits to the residents of disadvantaged communities.

Given that the core purpose of the program is to achieve GHG emissions reductions and increase ridership, LCTOP investments should only qualify as benefiting disadvantaged communities if they provide meaningful mobility benefits as a first priority. Other benefits, such as air quality, should be considered a secondary (albeit important) benefit.

Caltrans must invest at least 50% of all LCTOP funding to benefit disadvantaged communities, and a transit agency that serves disadvantaged communities must invest at least 50% of its share of LCTOP funds to benefit those communities. Residents of underserved communities across California have repeatedly identified a significant need for more reliable and affordable local transit service. Caltrans should require that the primary benefits to disadvantaged communities meaningfully address these communities' need for improved transit mobility, especially in light of AB 1550's requirement that at least 25% of all GGRF investments must be located within and "benefit individuals living in" disadvantaged communities.[38]

Furthermore, Caltrans should require transit agencies to provide and publish data that would allow the public to determine the extent to which projects that are listed as serving disadvantaged community residents actually do so, as well as the extent to which projects avoid harms to low-income residents of a disadvantaged community.[39]

Recommendation #6: Ensure direct and meaningful mobility benefits to low-income populations, whether or not they live in disadvantaged communities.

In addition to providing direct mobility benefits for disadvantaged community residents, projects funded by the LCTOP should also be awarded based on the extent to which they provide direct mobility benefits to low-income populations living both inside and outside of disadvantaged communities, as directed by AB 1550. Caltrans should also require transit agencies to provide and publish information that would allow the public to determine the extent to which projects benefit and avoid harmful impacts to low-income populations.[40]

38. *Stats. 2016, ch. 369.*
39. *See ARB Guidelines, at 1.A-12 (requiring reporting on "disadvantaged community benefits and ... strategies the agency will use to maximize benefits" to them); ARB Guidelines, at 2-12 (requiring programs and projects to avoid substantial harms to low-income disadvantaged community residents and businesses).*
40. *ARB Guidelines, at 2-12.*

Conclusion

Throughout California, people of all incomes need accessible, reliable, and affordable public transportation that promotes a healthy environment, access to economic opportunity, and a high quality of life. Equally important, California must invest in long-term operations funding for the existing and expanding public transportation system as part of a broader strategy to drastically reduce greenhouse gas emissions. SB 32 (Pavley 2016), a landmark law enacted in 2016, set an ambitious goal of reducing emissions to 40% below 1990 levels by 2030 in a way that benefits the state's most disadvantaged communities.

The LCTOP can be a highly effective mechanism to achieve both of those goals by making transit work better for more riders, in particular by funding expanded transit service and reducing fares, particularly for those who face financial barriers to mobility. Strengthening the implementation of this program to ensure transparency, focus funds on transit operations, and better benefit disadvantaged and low-income families will be critical to address climate change and advance social equity in California.

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