Letter from the Executive Team

As we look back at 2015, we are struck by the spirit of cooperation that has been demonstrated on the world stage. At the Sustainable Development Goals summit, the world committed to new and ambitious goals. At COP21, 200 nations made a groundbreaking set of commitments to address and mitigate climate change. And at the Brasilia Road Safety Conference, a declaration was signed where countries commit to doubling their efforts on the Decade of Action for Road Safety 2011-2020. As the world moves to implement these commitments, sustainability-focused collaborations like the FedEx-EMBARQ Mobility and Accessibility Program (MAP) become even more important.

Even before the adoption of these commitments, and in just five years, MAP has helped cities to avoid more than 40,000 tonnes (metric tons) of CO2 emissions, supported a 75 percent increase in fuel efficiency for bus fleets in seven Indian cities, trained more than 2,000 drivers on Safety First principles, reached 1.5 million people annually with messages and learnings, and directly benefitted more than 2.2 million people annually in Mexico, Brazil, India, and China. With a new global consensus building on more sustainable, safer cities, EMBARQ and FedEx are presented with an even greater opportunity to make an impact.

In 2015, MAP teams continued to foster better livelihoods in cities. In Mexico, the federal government adopted MAP’s Quality-of-Service Diagnostic Tool for evaluating finance for transport projects, potentially impacting more than 15 million people nationwide. In India, EMBARQ governance recommendations influenced the initiation of a new bus system in Gurgaon, which will begin operations with 500 buses and provide access to transit to the city’s 880,000 inhabitants by the end of 2016. Additionally, MAP’s global Fuels and Vehicles recommendations were incorporated into a proposed Road Transport and Safety Bill that will allow for the use of alternative fuels in India’s buses. Finally, in Brazil, MAP’s User Satisfaction Surveys helped to assess the growing satisfaction of transit users after shifts from conventional buses to BRT systems. The achievement of these outcomes would not have been possible without the support of FedEx.

The success of the FedEx-EMBARQ collaboration is due in large part to MAP’s innovative model for corporate social responsibility, based on shared values and highly skilled employee engagement. Through MAP, EMBARQ is able to leverage the wide range of expertise FedEx offers to help cities create mobility and access to the marketplace, jobs, schools, and communities in ways that minimize environmental impacts. The contributions of 92 FedEx experts cumulatively since 2011 have magnified the program’s impacts and outreach, contributing to mobility options that prioritize sustainability, safety, and high quality of service for customers.

From 2016–2018, EMBARQ plans to focus MAP’s projects on promoting high-quality sustainable urban mobility to help make every user’s experience outstanding, aligning well with the FedEx “Purple Promise.” Higher-quality service will attract more riders to public transport and further reduce congestion. EMBARQ has developed a strategy to foster high-quality urban mobility based on a Deming Cycle for quality improvements, inserting quality concerns into each stage of the cycle. The new proposed projects will help to guide cities, transit agencies, and transit operators through the processes of implementation, operation, measurement of performance, and improvement of high-quality transport systems.

We invite you to read more about the impact of the program in this report. We thank FedEx for its continued support, and we look forward to further collaboration to improve the lives of people in cities.
Executive Summary

Sustainable transportation solutions are key factors in ensuring that cities reduce congestion, avoid growth in greenhouse gas emissions, and provide access to all the opportunities that cities have to offer. In countries where EMBARQ is currently working, cities are growing in a disconnected and sprawling fashion. The population of cities in Mexico doubled between 1980 and 2010, but urban areas increased in size by 600 percent. Additionally, motorization rates are rising as cities expand and grow. The number of cars in Brazil increased by 119 percent between 2000 and 2010. In China, 154 million vehicles are now on the road, a jump of 17 million cars since 2014. Furthermore, the negative effects associated with an increase in car ownership include surges in air pollution and congestion. For instance, Delhi has the world’s highest concentration of dangerous particulate matter (PM 2.5), with 13 other Indian cities close behind. Additionally, in the Santa Fe zone of Mexico City, commuters spend an average of 26 days per year in traffic, more than they spend on vacation.

In response to these trends, the FedEx-EMBARQ Mobility and Accessibility Program (MAP) is working to enhance the sustainability, safety, and service quality of public transport by leveraging FedEx expertise to help government officials make informed decisions. The use of FedEx knowledge accelerates the rate at which EMBARQ can foster change in cities to avoid the negative consequences of motorization and improve quality of life for people in India, Mexico, Brazil, and China.

MAP Vision

Cities in key FedEx markets are served by excellent public transportation; are more productive, healthier, and connected; and have fewer cars on the road, safer streets, cleaner air, and faster commutes and deliveries.

MAP Objective

To accelerate dissemination of FedEx and EMBARQ expertise to enable government officials to make informed decisions that will improve the quality of life of people.

MAP Impact

EMBARQ projects in key FedEx markets help reduce congestion and CO₂ emissions and increase the accessibility, road safety, and efficiency of public transportation systems.
The FedEx-EMBARQ collaboration through MAP, formalized in 2012, has proven to be an innovative and powerful model for engagement. It builds on the values that EMBARQ and FedEx share, and leverages the skills of FedEx employees to positively influence the way in which people access the marketplace, jobs, schools, and their communities. In just five years, MAP has grown to include 40 cities across four countries, spreading the program’s ideas and messages to more than 1.5 million people annually and directly benefitting more than 2.2 million people per year.

In 2015, EMBARQ continued to develop knowledge and deepen relationships in MAP countries, fostering positive change and further securing its position as a key advisor to both local and national governments. In Mexico, the EMBARQ MAP team furthered its work to make driver safety a priority in the city’s bus rapid transit (BRT) system through institutional policies, and engaged with bus systems countrywide to increase quality of service. In India, the team provided technical assistance and built capacity to help Indian cities create more sustainable bus services. In Brazil, the team further developed the QualiÔnibus (Quali-bus) toolkit to help cities improve the quality of their bus systems, and helped cities to implement these improvements. Finally, in China, the team convened more than 200 government officials in a workshop with the goal of improving the quality of the “Beijing-Tianjin-Hebei Integrated Transport Plan,” which will shape transport for a new “super-city” of 130 million people.

Globally, the MAP Fellows successfully expanded the implementation of the User Satisfaction Survey to Mexico and defined a practical set of performance indicators for bus systems, which focus on quality. Additionally, the Fuels and Vehicles team further developed and disseminated its research and Fuels and Vehicles Selection tool, educating key audiences on the potential benefits of alternative fuels and vehicles, and expanded its direct engagement with cities and national governments.

This report outlines the most important accomplishments achieved by the global team and the MAP centers from October 2014 to November 2015. MAP highlights include:

**Global (Sustainable Urban Transport Fuels and Vehicles and FedEx Transport Fellowship)**
- Completed the Fellowship Team Project, conducted across all four countries. It included
- Developed a Fleet Selection Guide for transit systems in partnership with ANPACT, the Mexican association of bus manufacturers. The guide will be used to foster sustainability in future fleet renovation processes in Mexican cities.
- Influenced the content of a national draft Road Transport and Safety Bill in India that, if adopted, will allow for the introduction of alternative fuels for buses in the country, potentially impacting more than 270 million people who use buses in Indian cities.
Mexico
- PROTRAM, the Mexican federal government’s transit and infrastructure financing agency, adopted MAP’s Quality Management Diagnostic Tool as one of the components used to assess funding for proposed transit projects, fostering quality in funded projects and potentially impacting more than 15 million people.

India
- Influenced the institutional setup of a new bus system in Gurgaon. System will begin operations with 500 buses and provide access to transit to the city’s 880,000 inhabitants by the end of 2016.
- EMBARQ’s eco-driving training programs were delivered to more than 1,000 drivers, improving their fuel efficiency by an average of 75 percent.

Brazil
- Implemented the MAP User Satisfaction Surveys in Rio de Janeiro, Curitiba, Joinville, and Belo Horizonte, measuring the benefits that users experience from improvements to bus systems. These surveys help transit systems better identify where improvement is needed, according to feedback from end-users. For instance, significant increases in user satisfaction were seen in Rio de Janeiro and in Belo Horizonte after the introduction of BRT systems.

China
- Influenced government officials of the Beijing-Tianjin-Hebei (Jing-Jin-Ji) metropolitan area to incorporate the learnings from an integration workshop, which was co-organized by EMBARQ, into their regional transport plan. This plan will improve transit options for the Jing-Jin-Ji region, a new city of 130 million people. Alan Turley, FedEx Vice President of International Affairs, was a speaker at this workshop.

The success of the overall MAP strategy is shown by the improvement in the MAP Key Performance Indicators (KPIs) since 2010.

CUMULATIVE FIVE-YEAR KPIs

Environmental Benefit:
Carbon reduced (tonnes CO₂e avoided): 40,000

Community Mobilization:
Annual number of people directly benefitting from the project: 2,251,834
Annual number of people directly influenced as a result of the project: 4,141

Team Member Engagement:
Number of FedEx team-member participants: 92
Average satisfaction (1–10 with 10 outstanding) ratings from FedEx participants: 10

Brand Enhancement:
Annual number of people reached with message/learnings from the project: 1,570,248
FedEx–EMBARQ MAP Projects

Global

The EMBARQ global team, based in Washington D.C., coordinates efforts to accelerate, replicate, and expand the MAP strategy while ensuring coordination and following best practices.

Key Pillar: FedEx Transport Fellowship

The FedEx Transport Fellowship (FTF) provides EMBARQ staff with the unique opportunity to garner expertise and knowledge from FedEx and apply it to on-the-ground projects. The second cycle of the fellowship consists of two phases: a one-week training and a team project. The training occurred at the FedEx World headquarters in Memphis, Tennessee in March 2014. With participation from 19 FedEx experts, the sessions covered not only the technical aspects of sustainable transport, but also marketing strategies for disseminating MAP knowledge (reported in 2014 Annual Report).

In 2015, the Fellows continued to apply the knowledge they acquired through their earlier training at FedEx World headquarters. The User Satisfaction Survey methodology, first developed and applied in Brazil, was replicated in Mexico in order to implement a benchmarking process to identify best practices and improve quality management of bus transit systems. As a result of the team project, the User Satisfaction Survey was applied in Mexico City in May 2015. In total, 3,460 interviews were conducted in five transport modes across the city. The results indicated that 67 percent of Metrobús users had a favorable impression of the system.

In August 2015, the Fellows held a retreat in Rio de Janeiro, Brazil to discuss and learn from the results of the survey’s application in Mexico City. The retreat also began the second stage of the project: the identification of quality indicators that will allow for comparison between cities in order to share best practices and improve service quality. Representatives from Consórcio BRT, the bus operator for BRT in Rio de Janeiro, participated in the retreat, contributing an operator’s perspective with regard to the applicability of the indicators. The Fellows are currently conducting a final review of the 78 indicators that have been identified across categories including Access to Bus Services, Reliability, and Comfort. They Fellows are coordinating globally to ensure that the resulting set of indicators can be applied in all cities in which EMBARQ works.

Global Research: Sustainable Urban Transport Fuels and Vehicles

In 2015, EMBARQ’s Sustainable Urban Transport Fuels and Vehicles (SUTFV) project improved its Fuels and Vehicles selection tool, developed research products on alternative technologies, presented its research in numerous international forums, and continued its direct engagement with cities for on-the-ground impact. The team’s recommendations were included in a draft national Road Transport and Safety Bill in India, potentially increasing the adoption of alternative fuels at a national scale. The team also worked with ANPACT (the national association of Mexican bus manufacturers) to create a Fleet Selection Guide, which will influence fleet selection processes in Mexican cities.
SUTFV aims to take an unbiased approach to analyzing the impacts of different fuels and vehicle technologies for bus transit fleets. The project jointly addresses lifecycle costs and emissions of transit buses and is targeted to provide context-specific recommendations for cities. The project aids governments, transit agencies, and other stakeholders in making informed decisions about optimizing bus fleet performance and selection processes, reducing costs, and at the same time avoiding emissions of both CO₂ and particulate matter.

TOOLS, RESEARCH, AND DISSEMINATION
EMBARQ has completed an improved version of the Fuels and Vehicles selection tool, which contains a simplified interface and more default data to make it more user-friendly. The tool is ready to be piloted in 2016, and will be used to help cities choose sustainable and cost-effective bus fleets.

MAP staff also disseminated Fuels and Vehicles research in a variety of workshops and forums such as:

- “Towards Clean Fleets, Experiences and Results.” Session at EMBARQ’s Congress of Sustainable Transport, held in Mexico City in October 2014. Included a presentation from Thomas Griffin (Chief Engineer Global Vehicles, FedEx Express).

- “Fleet Selection Guide for Mass Transit Buses.” Workshop for 25 representatives of Mexican bus operators, organized in partnership with Mexico’s association of bus manufacturers (ANPACT) at EMBARQ’s Congress of Sustainable Transport, held in Mexico City in October 2014.

- **Brazilian National Congress of Transportation.** EMBARQ’s flagship event in Brazil, at which Fuels and Vehicles work was disseminated to more than 1,000 participants. Held in September 2015.

- **Designing a Modern City Bus Service.** Publication disseminated to over 15 transit agencies at the Talking Transit Workshop held in Gurgaon, India, in July 2015.

DIRECT ENGAGEMENT
The Vehicles and Fuels teams in-country have also engaged directly with city stakeholders, including:

- **Mexico:** Developed a Fleet Selection Guide for transit systems in partnership with ANPACT, the Mexican association of bus manufacturers. The section on environmental aspects for transit buses in the guide was based on MAP Fuels and Vehicles research and will influence fleet renovation processes in Mexican cities.

- **Brazil:** Provided technical assistance to Salvador in both the creation of the city’s climate action plan and its fleet renewal and procurement process (ongoing). Additionally, provided recommendations to Belo Horizonte on its mitigation plan for the transport sector.

- **India:** Influenced the content of a national draft Road Transport and Safety Bill, which, if adopted, will allow for the introduction of alternative fuels for buses in the country.

Additionally, the team was invited by Delhi’s Commissioner of Transport to provide input on a policy that would ban diesel vehicles more than 10 years of age in the city.

PUBLICATIONS:


- “Alternative Fuels for Bus Agencies.” (Title subject to change) Global report containing the analytical framework of our approach to Vehicles and Fuels of transit fleets. To be published in August 2016.

MAP Center: Mexico
The population of cities in Mexico is expected to increase by 38 percent between 2014 and 2050, an addition of nearly 40 million people. As Mexican cities grow, issues of congestion and air pollution become more acute. Congestion already costs Mexico City 2.6 percent of its GDP each year, and premature deaths from air pollution in Mexico rose from 17,000 in 2005 to 21,000 in 2010. With the support of FedEx, EMBARQ is working to improve the quality and safety of mobility in Mexican cities in order to reduce congestion, air pollution, and traffic fatalities.

EMBARQ is the government’s main advisor in evaluating projects for the Federal Mass Transit Support Program (PROTRAM), which approves financing for the implementation of infrastructure and transportation projects in Mexico.
PROTRAM receives and evaluates proposals from city and state governments, and provides a grant for 50 percent of the infrastructure costs of selected projects. More than 40 transit projects are currently registered in PROTRAM’s project pipeline, representing 30 cities of more than 500,000 inhabitants each. However, very few projects have yet been approved, due to issues with political continuity, low-quality submissions, and lack of data to underpin assumptions. EMBARQ’s role in PROTRAM is to assess whether proposed projects meet minimum technical standards, and if not, to help cities reach those standards. This role gives EMBARQ the opportunity to insert quality-of-service concerns into the approval process, by developing tools and guidelines for assessment.

EMBARQ is also providing technical assistance to Mexico City’s government on the implementation of the city’s Integrated Transport System. At the moment, 56 percent of daily trips within Mexico City are made on informal minibuses, compromising quality of service for the city’s commuters. Because all 28,000 of these buses have been identified as obsolete, the new system will include replacing these minibuses with a conventional bus network, which will improve service to users through reliable routes and schedules, standardized fares, and integrated transfer points. EMBARQ has the opportunity to insert quality standards into the planning and management of the integrated system, which will improve quality across all aspects of its operation.

Quality of Service
Through high-quality, reliable, and safe services, cities can attract more customers to public transit and retain them, thereby avoiding growth in unsustainable and more dangerous modes of transport, such as cars and motorcycles. In 2015, MAP continued its work on promoting quality of service for public transport systems to increase ridership and reduce congestion in Mexican cities.

QUALITY MANAGEMENT DIAGNOSTIC TOOL
PROTRAM has adopted MAP’s Quality Management Diagnostic Tool as one of the components used to assess proposed transit projects, potentially impacting more than 15 million people. The tool provides a comprehensive assessment of a transit project’s quality. It analyzes the project at each phase of its development and creates a report that determines areas for improvement. It also delivers a risk assessment aimed to direct attention to high-risk areas.

GUIDELINE FOR INSTITUTIONAL AND FINANCIAL STRUCTURE
EMBARQ developed a guideline, to be published in 2016, that will provide a clear step-by-step process for improving the institutional structures and financial schemes of transit systems. This guide will be used to help cities within PROTRAM’s pipeline to effectively structure their projects, but will also be employed to promote the inclusion of a financial follow-up assessment after implementation of the project. Additionally, the institutional guide will be used
to influence the mandate of Mexico City’s new Integrated Transport System, promoting quality as a key priority of this system.

**Safety First**

The Safety First project aims to foster safety management in transport systems through driver training and institutional recommendations for BRT agencies and private operators. The objective is to reduce the number of deaths and injuries caused by road crashes through the implementation of comprehensive road-safety management in public transport systems. In past years, the Safety First project adapted the Safety First program and manuals from FedEx Safety First program and safety manuals to a bus operation context and conducted defensive-driving training courses in three cities in Mexico, training more than 1,150 drivers.

EMBARQ is also finalizing its “Guidelines for Comprehensive Road Safety Management in Public Transport Systems,” which will be published in 2016, and will include best practices from Latin American cities. The report will be used to influence cities to incorporate road safety plans into transit projects proposed to PROTRAM.

**International Sustainable Transportation Conference**

In October 2014, EMBARQ hosted its 10th International Conference of Sustainable Mobility in Mexico City, with support from FedEx via sponsorship and participation. The conference was attended by 920 people from 15 different countries and 48 cities in Mexico. FedEx staff participated in two sessions, sharing their vision of safe and sustainable transport with attendees. Thomas Griffin, Chief Engineer of Worldwide Fleet Engineering at FedEx Express, presented his experience with fuels and vehicles technology at the session, “Towards a Clean Fleet: Experiences and Results,” in which he highlighted the importance of proper maintenance in reducing costs and improving fleet performance. Additionally, Shane O’Connor, Communications Advisor at FedEx Services, shared his knowledge on disseminating road-safety principles for safer streets at the “Road Safety Workshop for the Media” session.

The 11th International Conference on Sustainable Mobility in Mexico City was held in October 2015, with the theme “Towards a Sustainable World.” The conference attracted 1,100 attendees from 13 countries. As a courtesy, EMBARQ recognized FedEx as a Gold sponsor of the event, and organized sessions around relevant projects under MAP, such as road safety and quality of service on bus systems.

**MAP Center: India**

Indian cities are expanding at an enormous scale. Projections indicate that Indian cities will add 250 million inhabitants by 2030. At the same time, these cities are becoming increasingly motorized, which contributes to worsening congestion and air pollution. Thirteen of the 20 most polluted cities in the world are in India and, in Bangalore alone, congestion costs 5 percent of GDP each year. Furthermore, India is projected to have 400 million motorized vehicles on the road by 2050, which represents half the current number of vehicles worldwide. High-quality, well-coordinated public transport can play an important role in addressing these challenges.

In India, EMBARQ works to develop the technical capacity of bus agencies and operators to deliver high-quality transport options to city residents. MAP in India works through Bus Karo Plus (Bus Karo means “Do the Bus” in Hindi). Bus Karo Plus serves as a best practice and peer-learning network for public transport planners and city officials. The program has three focus areas: Talking Transit, Mentoring Transit, and Learning Transit.

**TALKING TRANSIT**

EMBARQ hosted two Talking Transit workshops in 2015, directly disseminating learnings to more than 140 people. The first workshop, “Co-Creating Modern Bus Services in Cities,” was hosted in Bhopal in November 2014, and
was attended by more than 80 people from 16 cities. The event, organised in partnership with Bhopal’s transit agency, focused on the planning, design, and operation of integrated transport services. The platform successfully convened the National Payment Corporation of India (NPCI), Private Banks, and Public Transport Operators on a common platform to discuss cashless payment integration across various modes of transportation.

The second, entitled “Designing a Modern City Bus Service,” was hosted in the city of Gurgaon in July 2015. More than 60 people from 15 cities attended the two-day workshop, in which transit agencies from around India shared their expertise on fuel efficiency, terminal design, scheduling, and routes. These learnings prompted the city of Gurgaon to begin a discussion with EMBARQ on transit within the city. As a result, the Municipal Corporation of Gurgaon announced that it would create an institutional framework to manage the implementation of a new Bus Service in the city, which is expected to have 500 buses and improve accessibility for the city’s population of 880,000. The service will be launched by the end of 2016.

MENTORING TRANSIT

The Mentoring Transit program focuses on providing direct technical assistance to cities in India. In 2015, these activities were:

- **Driver training**: EMBARQ India continued the dissemination of its comprehensive four-step framework for fuel efficiency, which includes driver training, vehicle maintenance, managerial controls, and performance incentives. (Video available at: http://embarqindiahub.org/videos/driver-training-fuel-efficiency-training-and-management). By December 2014, these programs had trained more people.

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“Financial viability of public transport is key to improving urban mobility and the sustainable growth of cities.”

–Prasanth Bachu

*Project Manager, Urban Transport, EMBARQ*
than 2,000 drivers in 14 cities, resulting in an average increase in fuel efficiency of 75 percent. In 2015, EMBARQ organized further fuel-efficiency driver training for 100 drivers in Karnataka, who replicated the learnings in eight workshops, training an additional 1,000+ drivers on fuel-efficient driving techniques.

**Route Rationalization:** EMBARQ has provided technical assistance to the Bangalore Metropolitan Transport Corporation (BMTC) for route rationalization on six of the high-demand corridors of the city’s integrated transport network, currently under implementation. Based on EMBARQ’s recommendations, Bangalore is considering the implementation of a software package to scale up these efforts citywide. Additionally, Chennai’s Metropolitan Transport Commission (MTC) has implemented EMBARQ’s recommendations for route rationalization on a major arterial corridor. The rationalization exercise made an immediate impact on service levels on the corridor and resulted in a 6 percent rise in ridership along the corridor, along with an 11.7 percent jump in revenue collection.

**Car-Free Days:** In Gurgaon, as an outcome of the Talking Transit workshop, EMBARQ had the opportunity to assist with the organization of the first ever Car-Free Tuesday event in the city. The initiative was implemented in four corridors that were identified as having the heaviest traffic in the city. The result was an overall reduction of 25–30 percent in vehicle traffic, which dropped by 9,551 cars and 5,700 two-wheel-er vehicles. EMBARQ facilitated discussion between Gurgaon’s Municipal Corporation and private transport operators to provide 400 shuttle buses for the event. Gurgaon is now holding Car-Free Days once a week, and these efforts won the team an award for most innovative project around promoting sustainable and safe transport in cities at Urban Mobility India, a conference organized by India’s Ministry of Urban Development.

**LEARNING TRANSIT**

The *Bus Karo 2.0 – Case Studies from India* was published in December, 2014. The publication seeks to document the implementation of significant advances in bus transport in India related to infrastructure, service, and design. It was disseminated through workshops and on EMBARQ India’s online Hub (http://embarqindiahub.org/).

**COMMITMENT TO MEASURING USER SATISFACTION IN JOINVILLE, BRAZIL**

Urban Mobility Plans are key to guide cities’ development toward sustainable transport systems. Joinville’s recently created Mobility Plan incorporates annual application of the User Satisfaction Survey until 2030 to evaluate public transport in the city. The city used the survey to create a baseline in 2014, and is also using the tool to understand current users’ opinions regarding different components of local public transport and to propose goals and projects for the Mobility Plan. More than 700 people were interviewed through a partnership with the Planning and Research Institute of Joinville, the Federal University of Santa Catarina, and EMBARQ.

On a scale of zero to ten, the city’s public transport was rated 5.2, with 40 percent of users being satisfied or very satisfied. The best results of the survey were related to the payment process and system integration—both recently implemented features. According to users, the system needs improvement in the areas of comfort at bus stops and level of bus fares.
USER SATISFACTION SURVEYS

The User Satisfaction Survey, which was developed in 2013 and piloted in Belo Horizonte in 2014, is growing in scale and impact. Four cities have implemented the survey, measuring the quality of their transit systems by establishing users’ levels of satisfaction and enabling targeted interventions to improve quality.

With EMBARQ assistance, Curitiba made improvements to its transit system throughout 2015, based on the results of a baseline established through the User Satisfaction Survey, which addressed the quality of bus stops and security in the system. A second round of the survey was carried out in November 2015 to measure the impact of the improvements on users’ perceptions. Survey results are expected to be available in 2016.
“I would like to reiterate that the survey applied last year has been an important tool for decision-making in URBS. It served to indicate weak points worthy of attention, as well as to validate perceptions that URBS had on the quality of public transport services.”

Roberto Gregorio Da Silva Jr.
URBS President (transit agency of Curitiba)

In Rio de Janeiro and Belo Horizonte, initial surveys were conducted in 2014 on conventional bus lines to set a baseline for user satisfaction. After the inauguration of the cities’ BRT, a second round of the survey was conducted on the same corridors to measure the benefits in perceived quality from the BRT implementation. In Rio, the results indicate an increase in users’ satisfaction from 1.7 to 5.8 (on a 1–10 scale) and a reduction in commute time of 31.8 minutes per day after the BRT’s introduction. The survey also showed that 3 percent of riders had previously driven cars, and 1 percent had used motorcycles. In Belo Horizonte, the survey indicated a jump in satisfaction from 3.4 to 5.6 on the same 10-point scale. Users highlighted the speed and comfort of the system as the most significant improvements.

Additionally, Joinville included the annual application of the survey in their 2030 Mobility Plan, indicating a long-term commitment to quality of service. The second application of the survey was conducted in October 2015, and results are scheduled for release in 2016.

Finally, by the end of December 2015, two new cities will apply the User Satisfaction Survey: Florianópolis and Anápolis.

PERFORMANCE INDICATORS

With the aim of helping Brazilian cities to better manage services delivered to users, EMBARQ has developed 78 quality-driven performance indicators, which can be used to measure the quality of transit systems. These indicators and the methodologies for their calculation are being further defined within the FedEx-EMBARQ Fellowship Team Project. Once the team finalizes these indicators, they will be piloted in several Brazilian cities to test their applicability to bus systems.

SAFETY FIRST FOR BRT SYSTEMS

QualiÔnibus also aims to increase the safety of bus services through an integrated program of road safety, which includes driver training and capacity building. In December 2014, the team launched Segurança em Primeiro Lugar (Safety First), a manual for bus operators to prioritize safety in their institutional polices, management, and personal and professional development programs. The launch reached more than 40 cities at the “Sustainable Mobility Seminar” held by EMBARQ in São Paulo. The manual has been downloaded more than 1,700 times since its launch.

The promotion of institutional policies for safety complements the driver-training manuals published and piloted in Brazil in 2014 as part of the Safety First project. Properly trained drivers avoid dangerous behavior and can anticipate unsafe situations caused by adverse conditions or the mistakes of others. In 2014, EMBARQ piloted these driver-training programs in Rio de Janeiro and Belo Horizonte.

As a next step, EMBARQ is developing an online web platform that will consolidate information and generate reports and analysis using data from cities.
China’s urban transition is the most dramatic the world has ever seen. In the past 30 years, the country has added 500 million people to its urban population, and the number of cars on the road has increased tenfold. This transition, while it has brought enormous economic opportunity, has also negatively impacted quality of life in cities. Only eight of the 74 largest cities in China met the government’s basic air quality standards in 2015, and congestion is slowing traffic to a crawl; average travel speed in Beijing is half that of London or Singapore. Through the introduction of well-integrated transport networks, air quality can be improved, congestion can be reduced, and China’s urban residents can live happier, healthier lives.

Chinese government officials indicated that EMBARQ’s knowledge on sustainability and quality of service in transport integration will be incorporated into the “Beijing-Tianjin-Hebei Integrated Transport Plan.” This plan will positively impact the residents of the Beijing-Tianjin-Hebei (Jing-Jin-Ji) region, a new “super-city” of 130 million inhabitants. EMBARQ imparted this knowledge to more than 200 officials and professionals from the national government and local municipalities by co-hosting the Beijing-Tianjin-Hebei Transport Integration Workshop on November 6, 2015 with China’s Ministry of Transport and the Beijing Municipal Commission of Transport. The workshop built consensus around issues ranging from integrated land use and transport planning, regional inter-modal transit hubs, intelligent transport systems, and transport emissions reductions. The event also included the participation of Alan Turley, FedEx Vice President of International Affairs, who shared the FedEx green fleet management experience with the audience.
Communications and Outreach

In 2015, EMBARQ disseminated MAP impacts and stories through a variety of channels, including videos and online engagement. These efforts raised the profile of the Mobility and Accessibility Program and showcased the benefits of a shared-value approach involving corporations and non-profit organizations, positioning FedEx at the cutting edge of Corporate Social Responsibility.

- The FedEx-EMBARQ MAP website (mobility.embarq.org) was visited by nearly 2,000 people following its launch in April 2015. The site reached nearly 300 FedEx employees, and was viewed by people in 56 countries.
- FedEx Vice President Mitch Jackson and EMBARQ Director Holger Dalkmann conducted a FedEx Twitter Chat on April 28, 2015, which covered innovation in environmental sustainability. The twitter chat inspired 700 tweets from 118 users, and achieved 9.76 million impressions.
- EMBARQ is producing a video showcasing how Corporate Social Responsibility, based on shared values, enabled MAP’s impact in cities. Release is expected in early 2016. The video features Holger Dalkmann, EMBARQ Director, and Mitch Jackson, FedEx Vice President of Environment and Sustainability.
- EMBARQ provided support to FedEx for the video: “EMBARQ and FedEx: Safety and Sustainability in Mexico City” (https://www.youtube.com/watch?v=3OZNxFKv7ns) which showcases the impacts of Safety First in Mexico City.
Measuring Impact and Effectiveness

Key Performance Indicators

Performance Indicators are an important part of the accountability mechanism of any grant and ensure that the project is on track to meet the goals specified at the beginning of the grant.

Measuring impact and performance is a vital tool to analyze the effectiveness of EMBARQ’s projects. EMBARQ’s Key Performance Indicators enable us to measure how our work has improved human wellbeing and encourage a streamlined and effective approach to project planning that has resulted in the successful growth of our organization and impact.

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<th>FEDEX PROJECT IMPACTS—EX-POST REPORTING</th>
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<td>B2. Community Mobilization: Annual number of people directly influenced as a result of the project (that is. taking action, changing behavior)</td>
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<tr>
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<tr>
<td>C1. Team Member Engagement: Number of FedEx team member participants</td>
</tr>
<tr>
<td>2010</td>
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<tr>
<td>C2. Team Member Engagement: Average satisfaction (1–10 with 10 outstanding) ratings from FedEx participants</td>
</tr>
<tr>
<td>2010</td>
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<tr>
<td>D1. Brand Enhancement: Annual number of people reached with message/learnings from the project (that is, indirect influence)</td>
</tr>
<tr>
<td>2010</td>
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## Financial Report

### Budget by Country/Program

<table>
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<tr>
<th>Category</th>
<th>Amount</th>
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<tr>
<td>Global Coordination and Performance Monitoring</td>
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<tr>
<td>Fuels and Vehicles</td>
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<tr>
<td>Fellowship</td>
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<tr>
<td>Marketing and Communications</td>
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</tr>
<tr>
<td>Brazil</td>
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<tr>
<td>Mexico</td>
<td>$167,000</td>
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<tr>
<td>India</td>
<td>$113,000</td>
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<td><strong>Total</strong></td>
<td><strong>$740,000</strong></td>
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## OCTOBER 2014–SEPTEMBER 2015*

<table>
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<tr>
<th>Expense Line Items</th>
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<td>Salaries</td>
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<tr>
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<td>Facility Costs (e.g., rent, utilities, office services)</td>
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<td>Conference Expenses</td>
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<td>Electronic Network, Support, and Equipment</td>
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<td>Research Materials and Services, Misc. Project Expenses</td>
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<td>Subgrants**</td>
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<tr>
<td>Other Direct Expenses</td>
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<tr>
<td>G &amp; A Expenses***</td>
<td>$45,599</td>
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<td>**Total ****</td>
<td><strong>$740,433</strong></td>
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</tbody>
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* Note: Financial report does not include smaller FedEx grants for specific activities, including a grant for $30,000 to support the Congreso de Transporte Sustentable in Mexico in October 2014.

**Subgrants to EMBARQ Mexico and EMBARQ Brasil.

***General and Administrative Expenses: organization-wide costs including senior management, accounting, grants management, human resources, web management, audit and legal services, and corporate insurance.

**** Underspending was approved by FedEx in a *no-cost extension of the grant on October 23, 2015. All funds will be spent down by December 31, 2015.
The Road Ahead

The rapid increase in motorization in emerging economies has contributed greatly to congestion and air pollution, and the negative impacts of these trends will only continue unless action is taken. The challenge of attracting and retaining users of public transport systems, through high-quality sustainable transportation, also represents an enormous opportunity to create a virtuous cycle of benefits. To take advantage of this opportunity, mitigate the impacts of increased motorization, and improve the lives of people in cities, EMBARQ will, over the next three years, focus MAP projects on High-Quality Sustainable Urban Mobility to help make every user’s experience outstanding, aligning well with the FedEx “Purple Promise.”

EMBARQ’s proposed projects will: assist cities to align their institutional arrangements with high-quality services, create a toolkit to help cities integrate quality into their projects from planning to implementation, build capacity of city officials, and further disseminate knowledge in MAP countries. The projects will be globally coordinated, interconnected, and strategically unified, allowing the teams to learn from one another and to build on each other’s progress. This coordination effort will amplify MAP’s impact on the ground.

MAP’s projects enable EMBARQ to take advantage of recent and upcoming developments in cities around the world. Mexico City is moving forward with a plan to integrate its transit system, which will include replacing informal microbuses with a more coordinated conventional bus network. This transformation will provide space for the MAP team to promote measures that enhance quality in the system. In Brazil, cities are beginning to implement their government-mandated Mobility Plans and are planning or building almost 250 km of BRT and bus priority corridors. The MAP team will leverage its connections with the national government, city leaders, and transit agencies to foster quality in the implementation of these plans and in the planning and construction of bus systems. In China, EMBARQ has the opportunity to highlight service quality as a key concern in the implementation of the “National Transit Metropolis Demonstration Program,” a ten-year initiative that provides over $97 million to 37 pilot cities to promote sustainable urban transport. And, in India, the team is well positioned to expand the impact of its Mentoring Transit project by taking advantage of the country’s new commitments to improve the quality of urban life, including the 100 Smart Cities initiative and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT). The team has the relationships and opportunity to channel some of this increased political will and capital investment into improved service quality for public transport.

The impact that can be achieved when EMBARQ’s on-the-ground engagement is paired with FedEx’s knowledge and expertise is clear from MAP’s history, and EMBARQ is confident that the current abundance of global opportunities will magnify this impact. Over the next three years, MAP projects have the potential to cumulatively benefit 10 million people, engage over 140 FedEx experts, directly influence nearly 8,000 people, and avoid a cumulative 70,000 tonnes of CO₂.
APPENDICES

Appendix 1: A Global Strategy for Cities and Transport

Strategy Summary for WRI Ross Center for Sustainable Cities

Objective: To spur action that will create accessible, healthy, equitable, and environmentally friendly cities

- Catalyze compact urban growth to achieve highly accessible, equitable, resource-efficient city development
- Implement game-changing solutions and policies in the urban development, transport, water, and energy sectors
- Develop performance tools and research. Targeted research to evaluate the economic benefits and costs of low-carbon transport and urban development and document lessons of sustainable urbanization and best-practice solutions. Tools to help cities diagnose problems, set measurable goals, prioritize solutions, improve accountability, and leverage finance
- Scale-up best practices to other cities

The biggest challenges and opportunities are in cities. The pace of urbanization today is unprecedented, creating huge challenges and vast opportunities for progress. By 2030, the world’s cities are expected to add another 1.5 billion people and possibly 1 billion more vehicles. The urban built area will expand beyond what has been developed in the entire human history.

Too often cities are associated with problems. Today, they account for 70 percent of global greenhouse gas emissions and for the great majority of the 1.2 million deaths each year from traffic accidents. Air pollution in many developing country cities far exceeds WHO air quality guidelines. The share of the population with access to clean water and sanitation is decreasing in many cities. These challenges are driving social tensions and have fueled protests in a number of countries.

Yet cities are also crucibles of innovation and powerful engines for progress. Cities account for 70 percent of the world’s GDP and, in recent years, have lifted hundreds of millions of people out of poverty. In several major cities around the world, mayors are showing that the best policies for growth, competitiveness, and job creation are those that also promote environmental improvement, livability, and social equity. Programs such as PlaNYC (in New York) and coalitions such as the C40 Cities Leadership Group are presenting a new vision for how to combine cleaner and more efficient cities and economic growth.

WRI has more than a decade of experience working with cities to address problems and leverage opportunities. Our early work in cities, through EMBARQ, focused on sustainable transport. Spurred by the growing urgent need in cities, and confident in our strong technical base and reputation on the ground, WRI established WRI Ross Center for Sustainable Cities to consolidate and coordinate urban work. EMBARQ remains the sustainable urban mobility workstream of the program, and is complemented by additional expertise in planning, energy, climate resilience, water-risk management, and low-carbon economics. Today, the team focused on cities and transport numbers more than 170 staff and experts; 80 percent of team members work on the ground in 55 cities in Brazil, China, India, Mexico, and Turkey. They work at four levels:

- providing integrated support to cities;
- providing targeted analytical and advisory services to cities;
- supporting national policy development; and
- developing tools, identifying best practices, and seeking to influence action through global knowledge and outreach.

WRI partners with leading financial, business, and city institutions, such as the World Bank and Regional Development Banks, the World Business Council for Sustainable Development (WBCSD), C40, Local Governments for Sustainability (ICLEI), and UN Habitat.

EMBARQ at the core

EMBARQ is a core focal point for WRI Ross Center for Sustainable Cities because transport is responsible for 24 percent of global energy-related CO₂ emissions. In addition, $1.6 trillion is spent annually around the world on transport infrastructure, but much of it is focused on unsustainable solutions. The scale of these challenges demands an effective scalable solution. The EMBARQ reputation is based on scaling up best practices. The key strategy is three-pronged: Avoid-Shift-Improve. The objectives are to avoid long trips or reduce motorized trips whenever possible, shift to more sustainable options, and improve fuel and vehicle technologies where needed.

ABOUT WRI ROSS CENTER FOR SUSTAINABLE CITIES

WRI Ross Center for Sustainable Cities, a program of the World Resources Institute, aims to influence 200 cities to be more accessible, healthy, equitable, and environmentally friendly.

Building on EMBARQ’s global and local reputation in urban planning and mobility, the program develops proven solutions and action-oriented tools to help cities increase building and energy efficiency, transport people in cities more sustainably and safely, manage water risk, practice effective governance, and ensure resilience to new challenges.

The program was established in 2014 thanks to a generous contribution from The Stephen M. Ross Foundation.
The EMBARQ approach is to: deliver “game changer” transport and road-safety projects in cities; replicate best practices via technical assistance, capacity building, and national policy guidance; and shift international transport and road-safety policy to leverage sizeable sustainable investments from national governments.

The EMBARQ global strategy is localized and implemented in five countries—Brazil, China, India, Mexico and Turkey. Each country team defines and implements projects according to the local context but with the intention of building programs that are replicable around the world. In addition to supporting real change on the ground, the programs serve as iconic case studies, which can be cited by WRI to influence policies and investments at national and international levels.

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**WRI ROSS CENTER FOR SUSTAINABLE CITIES: TARGET RESULTS BY 2019**

- **4+ large countries**—with priority on China, India, Brazil, and Mexico—are implementing new national policies that significantly advance urban sustainability.

- **4+ cities** in these countries are establishing sustainable practices in multiple sectors, via integrated planning, healthy governance, and innovative projects.

- **200+ cities** (one in six cities globally with a population of 250,000+) mostly in emerging economies are adopting innovative ideas and implementing at least one high-quality, sustainable solution.
## Appendix 2: Selected Outreach

### MEDIA OUTREACH—GLOBAL

<table>
<thead>
<tr>
<th>Article Title</th>
<th>Publication And Date</th>
<th>Link</th>
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### MEDIA OUTREACH—MEXICO

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<th>Publication and Date</th>
<th>Link</th>
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### MEDIA OUTREACH—INDIA

<table>
<thead>
<tr>
<th>Article Title</th>
<th>Publication and Date</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitefield gets BMTC Chakra service, more Big Trunk buses soon</td>
<td>Citizen Matters—Bangalore: January 13, 2015</td>
<td><a href="http://bangalore.citizenmatters.in/articles/whitefield-gets-bmtc-chakra-service-big-trunk-buses-bengaluru">http://bangalore.citizenmatters.in/articles/whitefield-gets-bmtc-chakra-service-big-trunk-buses-bengaluru</a></td>
</tr>
<tr>
<td>A first for Gurgaon: Better air quality, less traffic on car-free Tuesday</td>
<td>The Indian Express: September 23, 2015</td>
<td><a href="http://indianexpress.com/article/cities/delhi/a-first-for-gurgaon-better-air-quality-less-traffic-on-car-free-tuesday/">http://indianexpress.com/article/cities/delhi/a-first-for-gurgaon-better-air-quality-less-traffic-on-car-free-tuesday/</a></td>
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### MEDIA OUTREACH—BRAZIL

<table>
<thead>
<tr>
<th>Article Title</th>
<th>Publication and Date</th>
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<tr>
<td>City Hall Launches Buses and Conducts Research on the Quality of Public Transport</td>
<td>The City of Joinville, Brazil: October 8, 2014</td>
<td><a href="https://www.joinville.sc.gov.br/noticia/8520-Prefeitura+embarca+nos+%C3%B4nibus+e+realiza+pesquisa+sobre+qualidade+do+transporte+coletivo.html">https://www.joinville.sc.gov.br/noticia/8520-Prefeitura+embarca+nos+%C3%B4nibus+e+realiza+pesquisa+sobre+qualidade+do+transporte+coletivo.html</a></td>
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### MEDIA OUTREACH—CHINA

<table>
<thead>
<tr>
<th>Article Title</th>
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</table>
ENDNOTES


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ABOUT FEDEX

At FedEx, we believe a connected world is a better world. We’re also passionate about making connections that improve people’s lives and make the world a better place.

FedEx links over 90 percent of the global GDP and as our business grows, the link between emerging economies and the global marketplace strengthens. As urban growth continues to explode worldwide, the need for sustainable transit systems and solutions has never been more critical. That’s why we value our relationship with EMBARQ. Together, we can help address pollution, congestion and driver and pedestrian safety issues. In the process, we can help connect urban residents with greater opportunities.

Watch this video to see how FedEx is working with EMBARQ to improve transportation and its environmental impacts in Mexico City.

For more information about other environmental and citizenship efforts, download the 2014 FedEx Global Citizenship Report at http://csr.fedex.com/.

ABOUT WRI

WRI is a global research organization that works closely with leaders to turn big ideas into action to sustain a healthy environment—the foundation of economic opportunity and human well-being.

Our Challenge
Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth’s resources at rates that are not sustainable, endangering economies and people’s lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our Vision
We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our Approach
COUNT IT
We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

CHANGE IT
We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

SCALE IT
We don’t think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people’s lives and sustain a healthy environment.

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PHOTO CREDITS
Cover photo, pg. 8 EMBARQ Brasil; table of contents, pg. 19 (left) (right), pg. 26 Benoit Colin/EMBARQ; pg. 5, pg. 7, pg. 16, pg. 20 (right) Mariana Gil/EMBARQ; pg. 9, pg. 10, pg. 13, pg. 14, pg. 20 (left), EMBARQ; pg. 12, pg. 22 EMBARQ Mexico; pg. 18 Luisa Zottis/EMBARQ; pg. 25 GuoZhongHua/Shutterstock; pg. 28 Mariana Gil/EMBARQ Brasil; pg. 31 Noppasin/Shutterstock.
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