THE CHICAGO REGIONAL GREEN TRANSIT PLAN

May 2012

rta cta Metra pace

About Us

The Chicago region's transit system is comprised of the Regional Transportation Authority (RTA) and three operating agencies—Chicago Transit Authority (CTA), Metra and Pace.

The RTA system covers six counties – Cook, DuPage, Kane, Lake, McHenry and Will - in Northeastern Illinois, with a population of over 8 million people.

As the third largest public transit system in the nation, the agencies provide more than two million rides each weekday and operate more than 5,000 vehicles over 7,200 route miles.

- RTA provides funding, planning and fiscal oversight for regional bus and rail operations.
- CTA provides bus and heavy rail service in the City of Chicago and neighboring suburbs.
- Metra provides commuter rail service throughout the region.
- Pace provides bus service in the suburbs and between the suburbs and the City of Chicago, as well as paratransit and vanpool service in the entire region.

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Introduction

The Chicago region is faced with the challenge of maintaining and strengthening its position as a global economic center. To meet this challenge, the region needs to remain environmentally, economically and socially sustainable. As a key component of sustainability, a well-utilized, reliable and safe transit system can reduce greenhouse gas emissions, spur economic development and improve mobility for residents, employees and visitors.

Public transit plays an integral role in making Chicago one of the most sustainable regions in the country. The Regional Transportation Authority (RTA), Chicago Transit Authority (CTA), Metra and Pace comprise the third largest transit system in the country, operating over 5,000 vehicles over 7,200 route miles. More than two million transit rides are taken each weekday on a system whose assets are valued at more than $36 billion.

Public transit in the Chicago region saves more than 750 million gallons of gasoline each year

ENVIRONMENTAL VALUE

Transit in the Chicago region saves more than 750 million gallons of gasoline each year, keeping more than 6.7 million metric tons of greenhouse gases from being released into the atmosphere. By removing over one million cars from the road every weekday, transit reduces gasoline and diesel consumption and reduces the amount of toxic pollutants being emitted into the air.

ECONOMIC VALUE

Transit can save households in the Chicago region up to $11,500 annually.[1] The RTA system attracts businesses and jobs to the region, as more corporations take into account access to quality transit when considering where to locate new offices and recruit new talent. Additionally, land near rail stations and major bus stops enjoy significant land-value premiums and generally outperform competitive residential markets.

[1] *http://www.publictransportation.org/tools/transitsavings/Pages/default.aspx*

SOCIAL VALUE

The RTA system is one of the few 24-hour transit systems in the United States, allowing residents and visitors to travel to jobs, schools, doctor appointments, shopping and recreational activities at all hours of the day. High quality public transit is linked to improved physical health, as transit riders generally take part in higher levels of physical activity than non-riders and obesity rates tend to be lower in regions with high transit market share. Transit is also linked to improved mental health, as transit commuters have been found to have lower stress levels than commuters who drive to work.

In summer 2011, the RTA launched the Regional Priorities Initiative to advance a collective vision for the region's transit system that aims to enhance the customer experience, increase transit ridership and improve the efficiency of the transit system. Building on this effort the Chicago Regional Green Transit Plan quantifies the environmental benefits of public transit in the region and provides a roadmap for how transit can help improve the sustainability of the Chicago region. The Chicago Regional Green Transit Plan identifies a series of strategies to achieve the transit agencies' goals of increasing the greenhouse gas emissions benefits of transit, using natural resources more efficiently, reducing environmental impacts of construction and maintenance, and promoting the growth of transit-oriented communities.

The implementation of this plan will require the cooperation and collaboration of many stakeholders. Enhancing transit will not only help make the Chicago region more environmentally sustainable, it will also help the region strengthen its position as a global economic center.

Did You Know...?

- In 2011, over 648 million rides were taken on transit in the Chicago region. That's more than twice the population of the United States.
- Households in the Chicago region can save up to $11,500 each year by riding transit.
- Transit produces less than 1% of regional greenhouse gas emissions.
- Between 2005 and 2008, carbon emissions per transit ride decreased 5%.

Climate Change and the Chicago Region

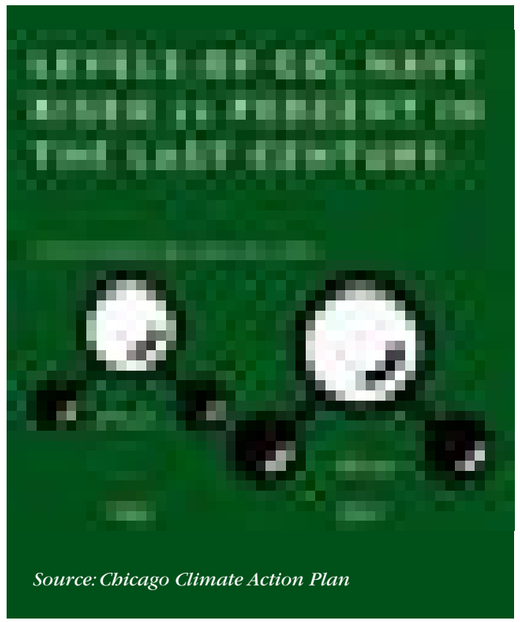
Greenhouse gas emissions - measured in metric tons of carbon dioxide equivalents (MTCO2e) – are both natural and man-made. Due largely to burning fossil fuels, increasing deforestation and development, atmospheric carbon dioxide levels have increased 25% in the past century. This dramatic growth has contributed to rising global temperatures, rising ocean levels and more frequent instances of severe weather around the world.

Since 1980 annual average temperature in the Chicago region has increased 2.6° F

Locally, the Chicago region has begun to experience the impacts of a changing climate, which are projected to intensify over the next few decades. Since 1980, annual average temperature in the Chicago region has increased 2.6°F and heat waves have occurred more frequently. The number of annual heavy rainfall events has doubled since the 1970's.

Without significant reductions in global carbon emissions, scientists project that by the end of this century Chicago's climate could be dramatically altered. Summers will be characterized by prolonged heat waves and little rain. Winter and spring could see significant increases in precipitation, resulting in flooding along the region's river system. The frequency of severe storms will likely increase, which can have impacts of transit operations across the region.[1]

Without aggressive action, climate change could have significant physical and financial impacts in the Chicago region. Higher temperatures and more frequent heat waves could lead to higher rates of illness and death, especially for children, seniors and people with pre-existing health conditions. Increased electricity use and precipitation could stress the region's power and water infrastructure



Source: Chicago Climate Action Plan

[1] *"Climate Change and Chicago: Projections and Potential Impacts". November 2007. http://www.chicagoclimateaction.org/filebin/pdf/report/Chicago_Climate_Impacts_Report.pdf*

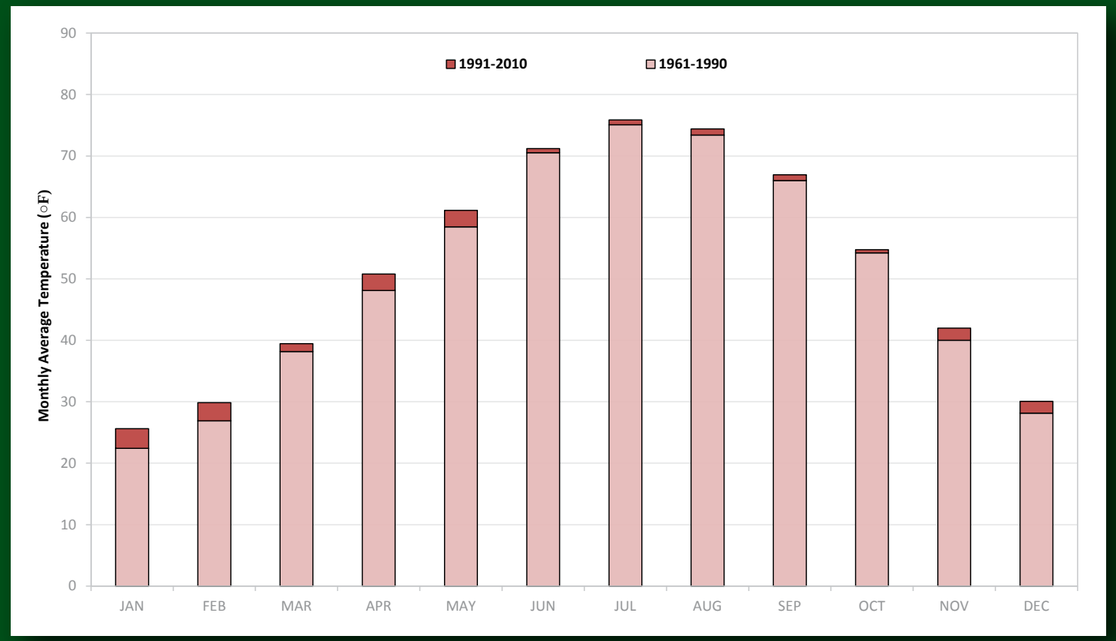
systems, potentially resulting in blackouts and higher electricity and water costs. A changing climate could also raise the cost of living and doing business in the region, as homes, office buildings, roadways, bridges and transit systems become more expensive to operate and maintain.

Governments throughout Illinois recognize the potential danger that climate change presents and have begun taking steps to deal with the potential negative impacts. In recent years, a series of greenhouse gas emission reduction targets have been established at the state, regional and local levels. The Report of the Illinois Climate Change Advisory Group proposes a statewide reduction of greenhouse gas emissions to 1990 levels by 2020, and a further reduction to 60% below 1990 levels by 2050. The Chicago Climate Action Plan and Go To 2040 Plan, the region's comprehensive plan, recommend citywide and regional greenhouse gas emissions reductions of 25% below 1990 levels by 2020 and 80% below 1990 levels by 2050.

Growing public transit ridership and expanding transit service are highlighted as essential strategies for achieving greenhouse gas emissions reduction targets and improving the region's sustainability in each of these reports. The following pages quantify the current environmental benefits of transit in the Chicago region and show how these benefits can grow.

Monthly Average Temperature

Chicago Midway Weather Station



Source: Illinois State Climatologist

Transit – A Green Transportation Choice

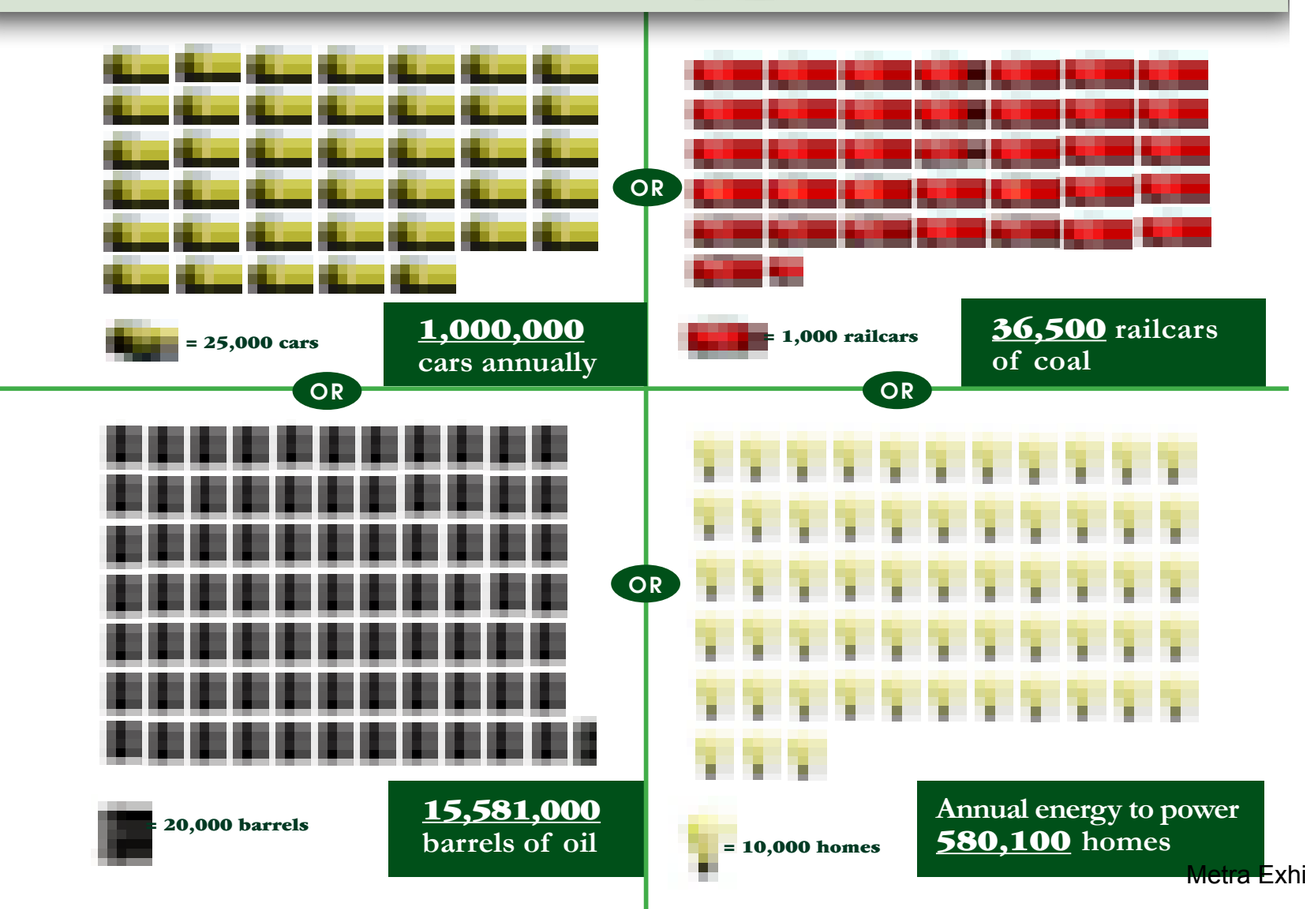
Each year, a total of approximately 130 million metric tons of carbon are produced in the Chicago region. Transportation emissions, which come from the consumption of fossil fuels and electricity needed to power cars, trucks, buses and trains, account for 30% of all regional emissions. The region's public transit system, which produces 1.2 million metric tons of carbon annually, accounts for only 3% of transportation emissions – or less than 1% of overall regional emissions.

Beyond producing only a fraction of the region's greenhouse gas emissions, a well-utilized public transit system can actually help lower total regional greenhouse gas emissions. In addition to being more emissions-efficient than a car or SUV, public transit reduces congestion and supports compact development. In 2008, the Chicago region's public transit system saved nearly 6.7 million metric tons of carbon from being emitted into the atmosphere. That is equal to 5.5 times the amount of carbon produced by transit. Without transit, the region's drivers would consume 750 million more gallons of gasoline and drive 32 million more miles each year, requiring over 30 additional highway lanes.

Since public transit in Chicago saves more carbon than it produces, a primary goal of RTA, CTA, Metra and Pace is to increase the ratio of emissions saved versus emissions produced, rather than reduce transit's carbon footprint, since a small increase in transit's carbon footprint typically results in a significantly greater decrease in the region's carbon footprint. This is true because additional transit service generally leads to fewer cars on the road, reduced congestion and more compact land development.

Transit saves 6.7 million metric tons of carbon each year

What does that equal?



The Chicago Regional Green Transit Plan focuses on the following three primary strategies that can increase the greenhouse gas emissions reduction benefits of transit in the region:

GROW RIDERSHIP AND MARKET SHARE

In 2010, over 633 million transit rides were taken in the Chicago region. Each weekday, 62% of all work trips to the Chicago central business district are made on CTA, Metra and Pace. Expanding the use of innovative technologies to enhance the customer experience, upgrading transit system with state-of-the-art vehicles and facilities and strategically enhancing and expanding transit service across the region will attract new transit customers and entice existing customers to ride the system more frequently.

PROMOTE TRANSIT-ORIENTED DEVELOPMENT

Transit-oriented developments (TOD), characterized as high-quality, compact, mixed-use, pedestrian-oriented development around transit stations, increase transit ridership and make communities more livable. TODs help reduce greenhouse gas emissions by promoting bicycle, walking and transit trips, as well as shortening trips for those who choose to drive. Further coordination, education and outreach between the transit agencies and the public and private sectors can help further grow TOD in the Chicago region.

IMPROVE OPERATIONAL EFFICIENCY

Between 2005 and 2008, the carbon efficiency of transit service improved 5%. This improvement was a result of increased fuel efficiency and energy conservation measures. Increasing vehicle fuel economy, investing in technologies that conserve electricity and utilizing renewable energy can allow the transit agencies to emit fewer carbon emissions per vehicle and passenger mile.

Growing Ridership and Market Share

Between 2005 and 2008, transit ridership increased 8% in the Chicago region. In order to further grow ridership and capture a larger share of the travel market, the transit system must continue to operate in a safe, reliable and cost-effective manner. The implementation of new technologies, upgrades to transit infrastructure and strategic service enhancements will attract new customers to the region's transit system and encourage existing customers to ride more frequently.

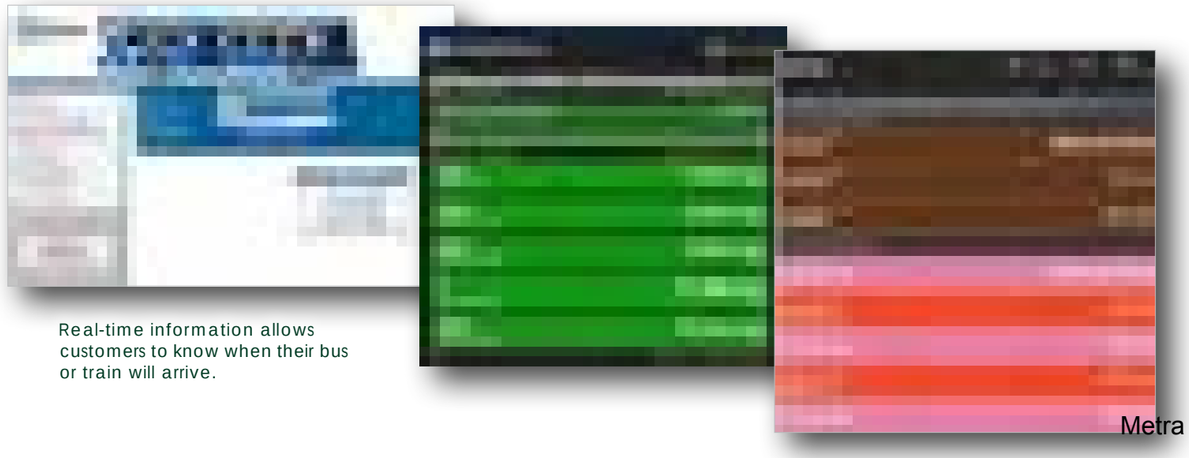
IMPLEMENT TECHNOLOGY

The implementation of innovative technologies for transit can attract new riders to the system by enhancing the customer experience. RTA, through enhancements to its multi-modal trip planning website, goroo.com, provides customers with a user-friendly one-stop shop for regional travel information, including trip plans, schedules, travel alerts and real-time transit arrival information. Building off the success of CTA BusTracker, CTA TrainTracker and Pace's WebWatch, Metra will launch a web-based, real-time train arrival system in 2012. In addition, a new regional fare payment system is expected to be implemented by 2015, allowing customers to pay their fares using credit and debit cards on CTA, Metra and Pace.

UPGRADE INFRASTRUCTURE

Upgrading the region's existing transit infrastructure with state-of-the-art vehicles and facilities can help grow market share by making transit a more attractive option for commuters. CTA is purchasing 706 new rail cars that will provide a smoother, more comfortable ride due to a new power system and regenerative braking. In conjunction with a project to replace 22 bridges on the Union Pacific North Line, Metra is rehabilitating the existing Ravenswood Station in order to provide modern station amenities at one of its highest ridership stations. Pace is upgrading bus stops across the region, making them more inviting and accessible by adding concrete pads, installing shelters, pedestrian walkways and other passenger amenities.

Building new rail stations and bus facilities makes transit more accessible and can attract new riders. In 2011, Metra opened the 35th St./"Lou" Jones Station on the Rock Island District Line and CTA began construction of new stations at Morgan (Green/Pink Lines) and Skokie-Oakton (Yellow Line). Planning and engineering work for new infill Metra stations (Romeoville, Auburn Park and Peterson/Ridge) and new Pace park-n-ride facilities is underway.



Real-time information allows customers to know when their bus or train will arrive.

The new CTA Morgan Station and Metra's planned rehab of the Ravenwood Station will help grow transit ridership.

ENHANCE SERVICE

The implementation of strategic service enhancements can help grow ridership and market share by making transit a more viable option for customers. In November 2011, Pace initiated the region's first bus-on-shoulder operations on I-55, between the southwest suburbs, the Illinois Medical District and Downtown Chicago. Allowing buses to bypass highway congestion in regular traffic lanes by riding on designated shoulders provides riders with travel time savings and greater reliability. The implementation of Bus Rapid Transit on Jeffrey Boulevard, the Northwest Tollway (I-90) and in other corridors will provide premium transit service in corridors that are currently served by standard bus service.

Longer term extension and expansion projects will bring enhanced transit service to underserved parts of the region. CTA's proposed Red, Orange and Yellow Line extension projects would expand CTA's rail system to parts of the region that lack rapid transit service. Metra's proposed Union Pacific West and Northwest capacity expansion projects would allow more express trains and additional reverse commute trains to operate, making the city-to-suburb commute easier for customers along those lines. The development of Pace's Arterial Rapid Transit along Milwaukee and Dempster Avenues would enhance bus service along heavily traveled suburban corridors by increasing bus speed and reducing travel times.

Initiatives: Grow Ridership and Market Share

- Expand availability and dissemination of real-time information
- Modernize fare payment systems
- Bring system to a State of Good Repair
- Build infill rail stations
- Develop new regional park & ride facilities
- Expand Bus-on-Shoulder Program
- Implement Bus Rapid Transit and Arterial Rapid Transit projects
- Implement transit capacity improvement and extension projects
- Expand operating coverage area based on market demand

Promote Transit-Oriented Development

The Chicago region's comprehensive plan, GoTo 2040, emphasizes the need to develop communities that are compact, mixed-use and walkable, in accordance with the six livability principles established by the federal Partnership for Sustainable Communities in 2009. Livable communities around transit – also known as Transit-Oriented Development (TOD) – help reduce greenhouse gas emissions by making bicycling, walking and riding transit more viable, as well as shorten trips for those who choose to drive. By producing educational materials, providing technical assistance to local governments and engaging the development community, the transit agencies can help grow TOD implementation across the region, further reducing carbon emissions.

PRODUCE EDUCATIONAL MATERIALS

The RTA-led Regional Transit-Oriented Development Working Group, with representatives from the transit agencies, CMAP, IDOT, non-profits and municipal staff has developed a series of educational materials on different aspects of TOD. Recent publications include reports on the economic and social benefits of TOD, zoning around transit stations and strategies for improving access and parking in TODs. Future educational materials, including an update to Pace's Development Guidelines that will support the planned Arterial Rapid Transit (ART) program, will enhance the educational opportunities for communities throughout the region to develop in a transit-supportive manner.

PROVIDE TECHNICAL ASSISTANCE

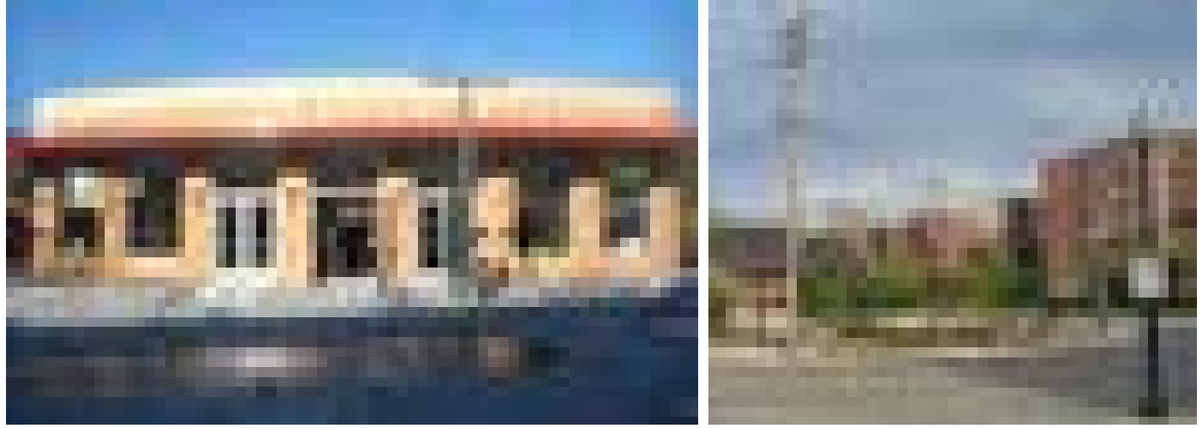
RTA and CMAP currently administer programs that provide resources to communities interested in better integrating economic development, land use and transportation. RTA's Community Planning Program has provided funding and technical assistance to almost 100 municipalities for developing plans to transform areas around rail stations and bus stops into vibrant, walkable, mixed-use districts featuring higher-density residential buildings and enhanced commercial development. Through RTA's TOD Implementation Technical Assistance Program, communities with existing TOD plans can receive assistance to update their zoning ordinances and codes, as well as streamline their TOD entitlement processes.

CMAP, through its Local Technical Assistance Program, works with communities to address local issues at the intersection of transportation, land use, and housing, including the natural environment, economic growth, and community development. Moving forward, the transit agencies and CMAP should focus their technical assistance efforts on working with municipalities to implement strategies to make their communities more livable. The continuation of the strong partnership between the transit agencies and CMAP will help leverage the resources needed to promote TOD and livability to all communities in the region.

Livability Principles

- Provide more transportation choices
- Promote equitable, affordable housing
- Enhance economic competitiveness
- Support existing communities
- Coordinate and leverage federal policies and investment
- Value communities and neighborhoods

www.sustainablecommunities.gov



Transit-oriented development improves the livability of communities throughout the Chicago region.

ENGAGE THE PRIVATE SECTOR

In recent years the transit agencies have partnered with the private sector to address State of Good Repair issues, promote transit-oriented development and grow transit ridership. RTA currently engages the private sector as part of its TOD planning and implementation efforts. Each TOD plan funded by RTA includes a review meeting with developers and real estate professionals to vet the plan. RTA also coordinates developer recruitment activities as part of its TOD implementation efforts. Working with Apple, Inc., the CTA's North/Clybourn Station was renovated and a new plaza was built next to the station, improving the customer experience and making the area more pedestrian-friendly. The Lake Cook Transportation Management Association, a public-private partnership, works with local business, Pace and Metra to fund bus service between suburban Metra stations and office buildings, allowing hundreds of workers to commute by transit to their jobs along Lake-Cook Road.

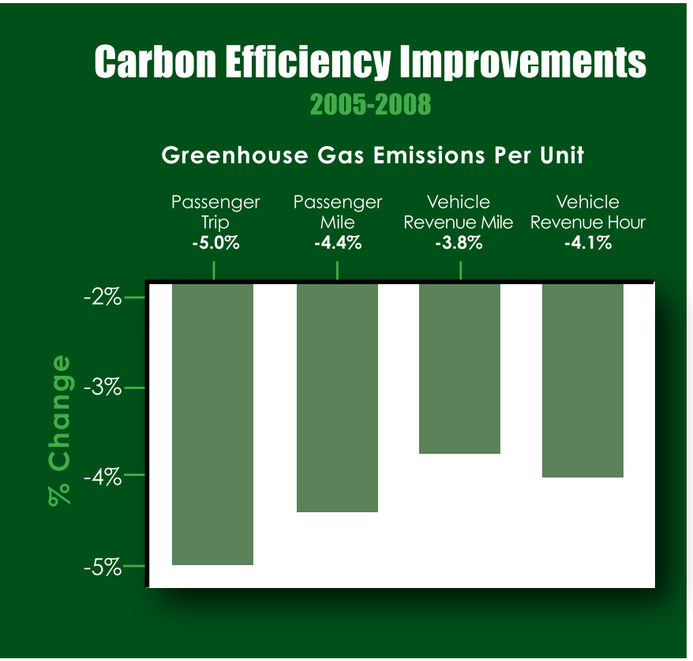
Pursuing new public-private partnerships can help the transit agencies leverage additional funding sources to help implement TOD and support livable communities across the region. Enhancing relationships with the private sector, including the development and lending communities, would provide the transit agencies with the opportunity to further educate the private sector on the benefits of TOD, as well as help the transit agencies learn about the barriers to TOD implementation.

Initiatives: Promote Transit-Oriented Development

- Expand TOD education outreach to development and lending community
- Develop new TOD education materials
- Update Pace's Development Guidelines
- Work with municipalities to update zoning ordinances and codes
- Work with municipalities to streamline TOD entitlement processes
- Work with CMAP on implementing the Local Technical Assistance Program
- Enhance coordination with other agencies to leverage resources

Improving Operational Efficiencies

Between 2005 and 2008, the transit agencies showed marked improvement in their carbon efficiency. While transit service grew 6% and transit ridership increased 8% during the four year period, carbon emissions produced by transit rose only 2%. The region realized up to 5% gains in carbon efficiency due to increased transit ridership and more efficient transit vehicles. Further increases in vehicle fuel economy, investments in technologies that conserve electricity and natural gas, as well as the expansion of renewable energy utilization will allow the transit agencies to operate more efficiently and reduce normalized carbon emissions in the future.



INCREASE FUEL ECONOMY

The use of innovative engine technologies can allow buses, trains and support vehicles to burn less fuel and produce fewer carbon emissions while providing the same level of service. CTA currently operates a fleet of 228 hybrid electric buses and uses compressed natural gas (CNG) vehicles for many support functions. Recently, Pace introduced two new hybrid fixed-route buses and ten hybrid paratransit vehicles into service.

The transit agencies plan to further increase the fuel-efficiency of their fleets by expanding vehicle idle reduction technologies and training efforts, as well as piloting additional innovative technologies such as electric buses and GenSet locomotives.[1] Metra was recently awarded a series of grants to increase the fuel efficiency of its locomotives by repowering and retrofitting engines with fuel-efficient components.

CONSERVE ELECTRICITY AND NATURAL GAS

The implementation of energy-efficient technologies can help reduce emissions from electricity used to power the region's rail systems. CTA's new 5000-series rail cars are equipped with energy-efficient AC-power motors and utilize regenerative braking, reducing the amount of electricity needed to operate each train. Metra plans to expand the implementation of high-efficiency LED train signals, where feasible, to reduce electricity use. Additional conservation can be achieved through Metra's planned purchase of new Metra Electric District vehicles equipped with regenerative braking and conducting studies on how to optimize the electricity needed to operate the L and the Metra Electric District.

Transit facilities also offer opportunities to conserve electricity and natural gas. Pace's new headquarters was constructed using many green building best practices including the installation of energy efficient lighting and HVAC systems. The transit agencies can also retrofit their facilities with energy-efficient lighting, elevators, escalators and building control systems as opportunities arise, and expand the use of power-saving features on computers and others electronics where feasible. The transit agencies plan to jointly purchase energy management software to track energy consumption and identify future conservation opportunities.

[1] *GenSet locomotives replace a single large diesel engine generator with two or three smaller units. Coupled with engine control technology, GenSet locomotives allow for starting and stopping of one or more of the engines as their power is needed.*

Solar-powered Pace bus shelters and hybrid buses helped improve the carbon efficiency of the transit agencies by nearly 5% between 2005 and 2008.

UTILIZE RENEWABLE ENERGY

The use of renewable energy at facilities can reduce carbon emissions produced by the transit agencies. CTA recently completed a 12.7 kilowatt solar panel installation at the 95th/Dan Ryan station to supplement the station lighting, reducing reliance on electricity generated from fossil fuels. Pace has begun a program to install hundreds of solar-powered bus shelters across the region over the next few years. Opportunities to power vehicles and facilities using renewable energy will continue to be evaluated by the transit agencies in the future as technologies are developed. Additionally, the ability to generate renewable energy and participate in the renewable energy credit marketplace could improve the environmental sustainability of the transit agencies, as well as potentially provide them new sources of revenue.

Initiatives: Improve Operational Efficiency

- Pilot CTA electric buses
- Study and pilot more fuel and emissions-efficient locomotives and buses
- Expand implementation of LED train signals, where feasible
- Conduct study on optimizing electricity consumption of heavy rail and existing electric commuter rail
- Install energy building management systems and energy management software
- Install energy-efficient lighting and control systems, and retrofit lighting fixtures, where applicable
- Improve energy efficiency of elevators and escalators during modernization projects
- Implement power-saving features on computers and other electronics, where applicable
- Study benefits and costs of potential opportunities for the generation and use of renewable energy or the purchase of renewable energy credits

Greening the Transit System

Transit's role in improving the environmental sustainability of the Chicago region goes beyond reducing greenhouse gas emissions. Transit's consumption of natural resources can have an impact on air and water pollution, public health and quality of life for the region's residents. Reducing diesel emissions, conserving water consumption and using materials responsibly can help the transit agencies continue to be good stewards of the Chicago region's natural environment.

REDUCE DIESEL EMISSIONS

Limiting diesel emissions can help lower the risk of respiratory ailments for the region's residents. The transit agencies currently use ultra-low sulfur diesel fuel to power their buses and trains and have plans to install diesel particulate filters on over 400 more buses Metra has installed high-efficiency air filters on its entire diesel fleet to stop soot and other air pollutants from entering the train.

With the help of a federal grant, RTA, CTA and Pace will work to optimize the region's traffic signal systems and expand transit signal priority[1] in dozens of CTA and Pace corridors. Metra will reduce locomotive idling by equipping twenty-four locomotives with automatic engine start/stop controls using a federal emissions reduction grant, and plans to implement this technology on its entire fleet in the future. Future pilots of diesel exhaust after-treatment technologies for buses and locomotives could help further reduce diesel emissions from transit and improve regional air quality.

[1] *Transit signal priority is a technology that gives buses a little extra green time or a little less red time at traffic signals.*

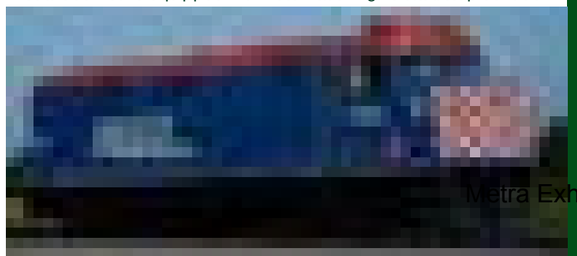
CONSERVE WATER

Stormwater management is an effective strategy to reduce transit's impact on the region's water resources. Improvements made to the roof at CTA's North Park Garage funnel stormwater directly into the Chicago River and reduce pollutants entering the river. Future implementation of stormwater management techniques, such as permeable pavement and rainwater harvesting at applicable new and existing transit facilities could further reduce runoff and preserve the quality of the region's waterways.

More efficient use of potable water could also limit the impact that transit has on the region's water resources. CTA, Metra and Pace currently use water reclamation systems that recycle up to 85% of the water used for washing buses and trains at many of their yards and garages. Improving the efficiency of vehicle wash systems and retrofitting water fixtures during facility upgrade projects could help reduce potable water consumption. The installation of additional water meters and building management systems would allow the transit agencies to better manage their water consumption.

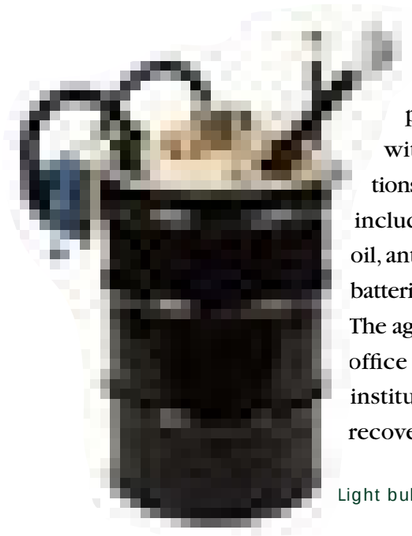
A green roof atop CTA's headquarters building conserves energy and reduces stormwater runoff.

Metra locomotive equipped with Automatic Engine Start/Stop controls.



RECYCLE

Transit system operations and maintenance consume considerable amounts of material resources. The transit agencies follow sustainability best practices in many aspects of their operations, including recycling waste products, utilizing recycled materials and conserving materials through efficiencies.



CTA, Metra and Pace recycle many of the waste products associated with transit operations and maintenance, including tires, engine oil, antifreeze, lead-acid batteries and railroad ties. The agencies also recycle office waste and have instituted scrap metal recovery programs.

USE GREEN MATERIALS

In recent years, the transit agencies have taken advantage of the growing market of green products, including those made from recycled materials. Most transit maps, schedules, fare cards, tickets and promotional materials in the region are printed on recycled content paper. CTA has replaced thousands of wooden rail ties with ones made from recycled plastic. Revising design and construction guidelines to incorporate additional sustainability best practices, as well as the development of a regional framework for further incorporating sustainability into procurement specifications and processes, could encourage the transit agencies and potential vendors to consider the environmental impacts of products and services. The transit agencies could then evaluate the life-cycle costs of green products as they come to market, and pilot those that have positive social, economic and financial benefits.

Light bulb crusher used to process old bulbs into recyclable glass fragments.

Initiatives: Green the Transit System

- Install diesel particulate filters on CTA and Pace buses
- Optimize regional traffic signal system
- Expand Transit Signal Priority
- Install AESS on all Metra locomotives
- Continue compliance with anti-idling laws and policies for revenue and non-revenue fleet
- Pilot exhaust after-treatment technologies on diesel locomotives
- Install water building management systems and improve metering of water usage
- Implement stormwater management initiatives at applicable new and existing sites
- Improve efficiency of vehicle wash systems
- Retrofit water fixtures at applicable facilities when upgrades are made
- Revise design and construction guidelines for transit facilities.
- Develop a framework for incorporating sustainability into the procurement specifications for agency departments
- Perform cost and life-cycle analysis to determine whether to expand use of environmentally-friendly materials
- Pilot new rail and road materials with right of way partners where appropriate
- Expand use of green cleaning products where appropriate
- Increase use of digital processing and filing

Adapting to a Changing Climate

The current elevated level of carbon emissions in the Earth's atmosphere means that significant changes to our climate are inevitable. While aggressive action to reduce global and regional carbon emissions may lower the severity of climate change impacts, recent weather events and incidents are consistent with scientific projections that the impacts of climate change are already affecting the planet.[1] The increased frequency and severity of these events and incidents have impacted transit agencies across the country and within the Chicago region.

If left unaddressed, the impacts of a changing climate could impact the ability of CTA, Metra and Pace to continue to provide safe and reliable transit. To better understand the potential impacts of climate change on their systems, CTA, Metra and Pace are joining other transit operators in taking proactive measures to adapt to climate change, to ensure the future viability of their transit operations and assets. Agencies including New York Metropolitan Transportation Authority and Port Authority of New York and New Jersey have conducted assessments of the anticipated impacts of climate change and identified potentially vulnerable assets.

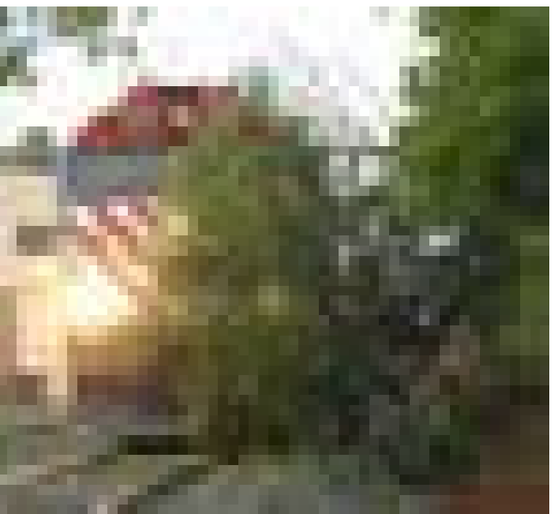
The climate change effects that will most likely impact CTA, Metra and Pace include hotter temperatures, increased precipitation and more frequent severe storms.

Extended periods of high temperatures can cause railroad tracks and roadway pavement to buckle and overhead catenary wires to lose tension and stretch. Severe flooding resulting from increased precipitation could impact bus and rail service as roadways and rail rights-of-way could become impassable for buses and trains. Storms with strong winds could cause trees, power lines and other debris to fall on, or near, rail lines, leading to service delays. Heavy snowfalls could cause roadways and rail yards to become impassable, as well as rail switches to freeze, limiting the ability to operate bus and rail service.

The effects of climate change are also likely to impact transit customers and employees, as they are subject to weather conditions at many of the region's bus stops, rail stations and maintenance facilities. Extreme heat and heavy precipitation could impact the quality of the customer experience and affect people's health and safety. Hot temperatures can make waiting for and traveling on buses and trains uncomfortable, and could affect outdoor construction and maintenance workers. Heavy precipitation could impact the ability for customers to access bus stops and rail stations, and flooding at stations and maintenance facilities could cause damage to transit vehicles and equipment. Climate change could potentially increase transit operating and maintenance costs, raise safety concerns and lower agency employee productivity.

To prepare for the projected impacts of climate change on the Chicago region's transit system, the transit agencies should continue to develop and implement plans to lower the risk of service disruptions due to climate change. CTA recently received a federal grant that will allow the agency to develop an approach to identify and define implementation plans for climate change adaptation strategies for its assets and operations. The integration of climate change adaptation with asset management is a strategy that can help the transit agencies sustain long-term transit ridership growth and remain environmentally, financially and socially sustainable.

[1] *Federal Transit Administration; "Flooded Bus Barns and Buckled Rails: Public Transportation and Climate Change Adaptation", August 2011.*



Transit - An Essential Green Investment Strategy

As an essential part of making the Chicago region more sustainable, the region's transit system reduces regional greenhouse gas emissions, grows the region's economy and provides mobility options for the region's residents, employees and visitors. The Chicago Regional Green Transit Plan reaffirms the commitment of RTA, CTA, Metra and Pace to maximizing the environmental benefits of transit and improving the sustainablity of the Chicago region. The transit agencies will continue to promote transit as a green transportation choice, educate agency staff on environmental best practices, monitor the region's environmental progress and pursue recognition for transit's environmental achievements.

However, transit's potential as a regional greenhouse gas emissions reduction strategy cannot be achieved by the transit agencies alone. RTA, CTA, Metra and Pace will need support from stakeholders across the region and throughout the state, including elected officials, advocacy groups, the private sector and the general public. Growing transit's contribution to achieving the state and regional greenhouse gas emission reduction targets is only feasible if communities continue to develop in a transit supportive manner, funding for transit increases and customers continue to ride our buses, trains and vans.

DEVELOP TRANSIT-ORIENTED COMMUNITIES

There is a growing trend in the region for locating housing near transit. The demand for transit-oriented housing is expected to rise significantly in the next decade, especially as the types of households continue to change. Improving existing communities around transit and building new transit-oriented developments throughout the Chicago region will lead to higher transit ridership and market share.

While RTA, CTA, Metra, Pace and CMAP are great sources for technical assistance, the implementation and construction of transit-oriented communities occurs at the local level. Municipal officials, developers and the private sector must continue to make land use decisions that follow the principles of livability and invest in ways that continue to support public transit. By doing so, transit ridership and market share will continue to grow, increasing the likelihood of achieving significant greenhouse gas emissions reductions.

INCREASE FUNDING

Despite transit's important role in reducing greenhouse gas emissions, funding for the Chicago region's transit system is inadequate. CTA, Metra and Pace currently have a combined backlog of over $10 billion in capital projects, which is anticipated to grow to $14 billion by 2019. Further disinvestment in the region's transit system will lead to lower ridership and market share as transit infrastructure continues to deteriorate and maintenance costs escalate, negatively impacting the quality and quantity of transit service provided.

While the transit agencies have been successful in recent years obtaining federal and state grants to fund green initiatives, additional funding is needed to implement the strategies included in this plan. Our elected officials should continue to support increased funding for public transportation and environmental initiatives at the federal and state levels that will allow the region's transit system to improve its emissions efficiency and become more environmentally sustainable.

RIDE TRANSIT

The RTA system provided more than 648 million rides in 2011, the system's highest ridership in 20 years. Growing ridership shows that more and more people in the Chicago region value the convenience, savings and environmental benefits that CTA, Metra and Pace provide. Upgrading the region's transit infrastructure, implementing new technologies and enhancing transit service will attract new customers to the RTA system and help ridership continue to grow.

As transit ridership continues to grow, fewer cars will travel on the region's roads and roadway congestion will be reduced. Choosing transit over driving helps reduce the region's carbon footprint. All residents, employees and visitors are encouraged to continue making the Chicago region more environmentally sustainable by riding transit whenever possible.

Summary of Initiatives

Grow Ridership and Market Share

- Expand availability and dissemination of real-time information
- Modernize fare payment systems
- Bring system to a State of Good Repair
- Build infill rail stations
- Develop new regional park & ride facilities
- Expand Bus-on-Shoulder Program
- Implement Bus Rapid Transit and Arterial Rapid Transit projects
- Implement transit capacity improvement and extension projects
- Expand operating coverage area based on market demand

Promote Transit-Oriented Development

- Expand TOD education outreach to development and lending community
- Develop new TOD education materials
- Update Pace's Development Guidelines
- Work with municipalities to update zoning ordinances and codes
- Work with municipalities to streamline TOD entitlement processes
- Work with CMAP on implementing the Local Technical Assistance Program
- Enhance coordination with other agencies to leverage resources

Improve Operational Efficiency

- Pilot CTA electric buses
- Study and pilot more fuel and emissions-efficient locomotives and buses
- Expand implementation of LED train signals, where feasible
- Conduct study on optimizing electricity consumption of heavy rail and existing electric commuter rail
- Install energy building management systems and energy management software
- Install energy-efficient lighting and control systems, and retrofit lighting fixtures, where applicable
- Improve energy efficiency of elevators and escalators during modernization projects
- Implement power-saving features on computers and other electronics, where applicable
- Study benefits and costs of potential opportunities for the generation and use of renewable energy or the purchase of renewable energy credits

Green the Transit System

- Install diesel particulate filters on CTA and Pace buses
- Optimize regional traffic signal system
- Expand Transit Signal Priority
- Install AESS on all Metra locomotives
- Continue compliance with anti-idling laws and policies for revenue and non-revenue fleet
- Pilot exhaust after-treatment technologies on diesel locomotives
- Install water building management systems and improve metering of water usage
- Implement stormwater management initiatives at applicable new and existing sites
- Improve efficiency of vehicle wash systems
- Retrofit water fixtures at applicable facilities when upgrades are made
- Revise design and construction guidelines for transit facilities.
- Develop a framework for incorporating sustainability into the procurement specifications for agency departments
- Perform cost and life-cycle analysis to determine whether to expand use of environmentally-friendly materials
- Pilot new rail and road materials with right of way partners where appropriate
- Expand use of green cleaning products where appropriate
- Increase use of digital processing and filing

Other

- Expand promotion and marketing of transit as an environmentally friendly mode of transportation
- Conduct regular energy and water audits
- Further pursue recognition for implementing best practices, where applicable
- Educate agency staff on sustainability best practices

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Pace
Sierra Club (Illinois Chapter)

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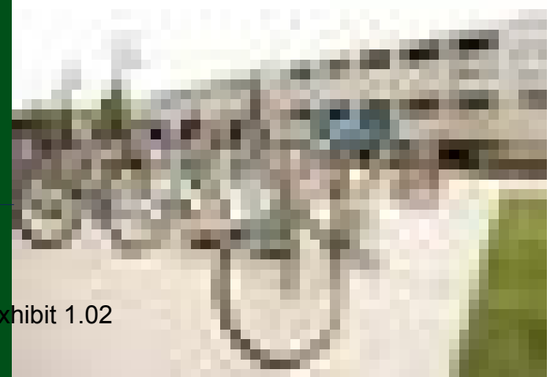


cta
Metra
pace