

CMAP FY 2016-2020 CMAQ PROJECT APPLICATION

OTHER PROJECTS

I. PROJECT IDENTIFICATION					
Project Sponsor Pace Suburban Bus			Contact Information – Name, Title, Agency, Address, Phone, e-mail (e-mail required) Lorraine Snorden, Department Manager, Planning Services 550 W. Algonquin Road Arlington Heights, Illinois 60005 Phone # 847-228-4249 Fax # 847-228-2330 E:Mail lorraine.snorden@pacebus.com		
Other Agencies Participating in Project					
<input type="checkbox"/> New Project <input checked="" type="checkbox"/> Existing CMAQ Project <input type="checkbox"/> Add CMAQ to Existing Project		TIP ID if project already has one 17-12-0002	Pace Rideshare Program: Kim Koy Kim.Koy@pacebus.com		
II. PROJECT LOCATION <ul style="list-style-type: none"> • Projects not readily identified by location must provide a title on the last line of this section • Attach a map sufficient to accurately locate this project in a GIS system 					
Name of Street or Facility to be Improved Northeastern Illinois residents and employee commutes (some traveling from portions of IN and WI to IL)			Marked Route #		
Project Limits: North/West Reference Point/Cross St/Intersection			Marked Route #	Municipality & County	
Project Limits: South/East Reference Point/Cross St/Intersection			Marked Route #	Municipality & County	
Other Project Location Information or Project Title Pace Rideshare Real-Time Pilot Project					
III. PROJECT FINANCING & CMAQ FUNDING REQUEST Please review the instructions.					
	Starting Federal Fiscal Year*	Total Phase Costs	(New) CMAQ Funds Requested	Other Federal Funds Including prior CMAQ awards	
				Fund Type	Amount
Engineering Phase 1		\$	\$		\$
Engineering Phase 2		\$	\$		\$
Right-Of-Way Acquisition		\$	\$		\$
Construction (Including Construction Engineering)		\$	\$		\$
Engineering (For Implementation Projects)		\$	\$		\$
Implementation	2017	\$447,000	\$447,000		\$
	2019	\$430,000	\$430,000		\$
Alternatives Analysis		\$	\$		\$
*Phase must be accomplished within 3 years		\$877,000	\$877,000		
Total Project Costs					
Source Of Local Matching Funds Rideshare project eligible at 100%		Indicate if sponsor intends to apply for Transportation Development Credits.			
If soft matching funds are intended to be used, please contact CMAP staff.					
Have Matching Funds Been Secured? (Provide Details):		Rideshare project eligible at 100%			

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IV. PROJECT EMISSIONS BENEFIT DATA

Annual Auto trips eliminated per day (round trips): **500 trips**

Length of auto trips eliminated (one-way miles to the nearest tenth): **The average commuter spends 12.6 miles and the average Traditional Pace Vanpool travels 36.7 miles. Commuting to and from Prairie Stone Business Park, the average miles per carpool = 30 miles and per Pace Vanpool = 45 miles**

Auto trips diverted to the new facility (round trips):

Line-haul length of trips diverted (one-way miles to the nearest tenth):

Affected days per year:

Project life (years): **5**

Current traffic volume (ADT – indicate year):

Length of project or number of units provided: **Funds are intended for FY2017-2020**

Utilization rate (percent):

Describe method used to estimate benefits. Provide basis for parameters used to estimate benefits (e.g., diversion rate, auto occupancy, trip length. See instructions)

Estimated benefits are based on a project launch from the Prairie Stone Business Park utilizing 125 carpools traveling with an average of 60 round trip miles per day and utilizing one open seat on 24 Traditional Pace vanpools traveling an average of 90 round trip miles.

Assumptions made for calculations are:

- Filling open seats in traditional rideshare vehicles is a minimum measure for calculating the impact of dynamic rideshare
- Two-person carpools make up 80% of carpools and the remaining 20% are larger groups with one open seat
- Traditional vanpools will operate as mini-vans (and not expand to a conversion van that seats more) with only one vacant seat to fill
- Average fuel economy per vehicle is 21.6 miles per gallon and 8,887grams of CO₂ are produced per gallon

Calculation assumptions are bases on values outlined in the following sources:

In Illinois, according to the [U.S. Census Bureau, 2010 American Community Survey](#), there are 4,273,034 individuals driving alone and 398,450 carpooling to work. Two-person carpools make up 79.3% of the rideshare groups leaving at least 2 seats per vehicle unfilled. This adds up to 796,900 vacancies which can potentially be utilized round trip. If in fact these seats can be filled, it would result in almost 1.6 million work trips.

To calculate the possible annual CO₂ emission reduced, one would need to know the number of miles commuted. Among 2-person carpools, the American Community Survey shows that travel times vary and most likely so do the length of commutes. See the below table.

Means of Transportation to Work by Travel Time to Work	
In 2-person carpool:	398,450
Less than 10 minutes	45,981
10 to 14 minutes	51,214
15 to 19 minutes	50,987
20 to 24 minutes	53,764
25 to 29 minutes	24,248
30 to 34 minutes	62,691
35 to 44 minutes	30,790
45 to 59 minutes	38,674
60 or more minutes	40,101

Source: U.S. Census Bureau, 2010 American Community Survey

IV. PROJECT EMISSIONS BENEFIT DATA

According to the [U.S. Department of Transportation Federal Highway Administration 2010 Status of the Nations' Highways, Bridges, and Transit: Conditions & Performance](#), the average automobile commuter spends 22.8 minutes traveling 12.6 miles. If an assumption is made that 1,593,800 work trips were 12.6 miles in length and the annual carbon dioxide emission calculation provided by [United States EPA](#) is applied. The annual CO₂ emissions saved could be 8,262,392,017 metric tons.

The annual CO₂ emission reduced by the Pace Rideshare Real-Time Pilot Project would be as follows:

Total shared miles = (carpool with 2 open seats * miles + carpool with one open seat* miles) + vanpool * miles
Total shared miles = (200 carpools * 60 miles + 25 carpools * 60 miles) + (24 vanpooler * 90 miles)
Total shared miles = 13,500 carpool miles + 2,160 vanpool miles = 15,660 miles

$$\text{Annual CO}_2 \text{ emission} = \frac{\text{CO}_2 \text{ per gallon}}{\text{MPG}} \times \text{miles} = \frac{8,887}{21.6} \times \frac{15,660}{\text{miles}} = \mathbf{6,443,075 \text{ metric tons}}$$

Auto trips eliminated per day (round trip): Dynamic ridesharing to and from Prairie Stone Business Park could potentially eliminate 500 trips (Please note this is a conservative value)

Since it is unclear how many open seats there would really be in any rideshare vehicle at a given point in time, calculations were made under the assumption that there would be at least one open seat in each existing vanpool and 2 seats in the current 2-person carpools and 1 seat in the larger carpools currently traveling to Prairie Stone Business Park.

Potential auto trips eliminated per day round trip calculation:

(one seat per vanpool + 2 seats in 2-person carpool + 1 seat in larger carpools) traveling round trip = 498 trips
There are 24 vanpools, 100 2-person carpools and 25 3-person carpools
(24+200+25 open seats) x 2 one-way commutes = 498 trips
(249) x 2 = 498 trips

V. PROGRAM MANAGEMENT INFORMATION

Is Right-Of-Way Acquisition required for this project? Yes No If so, has it been acquired? Yes No

Preliminary Design Status: N.A. Not Begun Agreement executed by Central Office Engineering Underway
 Submitted for review Responding to review comments
 Agreement sent to District I for signatures Design approval granted
Date approval is anticipated or was granted: _____

Estimated Completion (Construction) Year or Start of Operation: **start 2017**

VI. PROJECT DESCRIPTION Please describe the project. For outreach, promotion or marketing efforts give specific details of the campaign. Describe the coordination of this project with respect to other such campaigns

The Pace Rideshare Program will administer a real-time ridesharing pilot project to an employment cluster area containing about 1,000 multimodal travelers. The primary goal is to provide a new transportation option that will effectively use open seats in existing rideshare groups thus lowering air pollution and congestion levels in Chicagoland.

Real-time or dynamic ridesharing is a form of carpooling/vanpooling that provides service by the single, one way trip level rather than a grouping of trips made on a regular basis at a fixed time or set schedule. Dynamic rideshare is designed to accommodate commutes at random points at random times.

With real-time information provided through a mobile app, the Pace Rideshare Program will be able to better serve the daily commute market expanding rideshare services to (1) commuters seeking travel close to their departure time, (2) the casual commuters who travels one-way or less frequently, (3) the vary-scheduled traveler and (4) the public transportation rider with a vary-scheduled with changing stop locations, to name a few. All of these commuters are currently unable to participate in the traditional existing rideshare program since the routing and times of operation are fixed. Providing this dynamic rideshare option will notify commuters of delays, arrivals, alternatives, offer immediate response from other users and allow for maximizing open seats on existing Pace traditional commuter vanpools as well as untapped opportunities in carpools. The impact of the project would be measured in number of shared miles created instead of the number of solo vehicles actually removed from the road since participants maybe ridesharing for a segment of their total commute which could include public transportation or other modes.

The project will focus initially on bringing real-time ridesharing to an employment area such as the Prairie Stone Business Park (7,300 employees) and then in the second phase dynamic rideshare will be launched in a larger more dense employment area such as the Lake County TMA (which has 40,000 employees on Lake Cook Rd and 15,000 near Overlook Point Dr.) or the business area around Woodfield Mall (49,686 employees). The final selected location will be dependent on the employer interest level and funding. Existing participants of PaceRideShare.com with commutes to the pilot area and employees at major businesses located in the test location will be invited to use the mobile app. The approach will provide financial incentives to both riders and drivers to establish a critical mass of participation necessary for a self-sustaining, dynamic ridesharing system. Using smart phones, web and mobile applications, commuters would be able to share commuting costs through automated electronic payment based on the passenger miles traveled.

Goals

- Recruit at least 90 drivers and 200 riders to participate
- To have a minimum of 125 users trips made
- Reducing emissions by 586 metric tons of CO₂ per year
- Identify the average number of vehicle miles traveled by project participants
- Quantify what critical mass of participants is required to create a self-sustaining, dynamic rideshare system
- Identify the most motivating incentives to IL commuters

FY 2017 - Phase I Preliminary Estimated Costs:

<i>Building Block</i>	<i>Cost Component</i>	<i>Quantity</i>	<i>Average Input Unit Cost</i>	<i>Average Simulated Total Cost</i>
Multimodal Travelers	App Support (per user)	1,000	\$200	\$200,000
Multimodal Travelers	App for mobile device: D-RIDE	1,000	\$50	\$50,000
Multimodal Travelers	Multimodal Traveler Training Hours	2,000	\$21	\$42,000
Systems Architecture and Data Analytics	Database Development & Testing: D-RIDE	1	\$100,000	\$100,000
Systems Engineering Costs				\$55,000
TOTAL COSTS				\$447,000

Source: USDOT Co-Pilot Software

VI. PROJECT DESCRIPTION Please describe the project. For outreach, promotion or marketing efforts give specific details of the campaign. Describe the coordination of this project with respect to other such campaigns

FY 2019 - Phase II Preliminary Estimated Costs:

<i>Building Block</i>	<i>Cost Component</i>	<i>Quantity</i>	<i>Average Input Unit Cost</i>	<i>Average Simulated Total Cost</i>
Multimodal Travelers	App Support (per user)	1,000	\$200	\$200,000
Multimodal Travelers	App for mobile device: D-RIDE	1,000	\$50	\$50,000
Multimodal Travelers	Multimodal Traveler Training Hours	2,000	\$21	\$42,000
Marketing Campaign-one year kick-off *				\$75,000
Systems Engineering Costs				\$55,000
Website Integration				\$8,000
TOTAL COSTS				\$430,000

Source: USDOT Co-Pilot Software

*Please note that marketing could include a spring and fall digital campaign costing about \$40,000 per season. See Addendum page 2 for participation numbers of previous campaigns. Other marketing would be provided through the Pace External Relations Department.

Dynamic rideshare can expand the Transportation Demand Management (TDM) strategies in the region. According to [the Metropolitan Planning Council's Commute Options surveys](#), one of the main reasons commuters are solo driving in IL is the need for flexibility which dynamic rideshare offers. The mobile app will educate commuters on all rideshare options available in their area, allow them to make travel requests on short notice and make it easier for drivers to open their vehicle to ridesharing on the spur of the moment.

The real-time rideshare mobile app and service will coordinate well with Pace's future regional plans of an [Integrated Dynamic Transit Operations](#) which bundles three applications: (1) connection protection (T-CONNECT) provides commuters successful transfer between types of service, (2) dynamic transit operations (T-DISP) allows travelers to make real-time trip requests and (3) dynamic ridesharing (D-Ride) identifies and accepts potential rideshare opportunities. With a connected vehicle environment, commuters will be able to request trips that use one travel type or many (public transit, shared-ride, walking and bike, etc.) and obtain itineraries using a mobile device or personal computer. Pace Rideshare service will have connection protection increasing the likelihood of transfers between a Pace vanpool or carpool and other forms of transportation and Pace will be able to respond better to demand based on traffic conditions, vehicle capacity, travel patterns and ridership.

During the Pace Rideshare Real-Time Pilot project, dynamic rideshare could provide a first and last mile connections between existing fixed routes service and employment locations resulting in selecting public transportation over solo driving. Real-time rideshare could also service as a valuable backup for Pace Vanpool and carpool trips, providing rideshare participants with the confidence that they can get home if their schedule changes unexpectedly as well as making the existing Pace Traditional Vanpool program more efficient by filling open seats when regular participants are not riding or there are vacancies increasing rideshare ridership.

Air quality in Northeastern Illinois can be improved by the launch of dynamic ridesharing through the Pace Rideshare Real-Time Pilot Project. With the number of open seats on the road and the need for flexible commutes, dynamic rideshare can bring this supply and demand equation together. By transporting more people while using existing infrastructure more efficiently, creating a new first and last mile connection to existing public transportation, providing real-time and low cost commuter options and matching, Pace Rideshare can reduce the number of solo vehicles trips, levels of single-occupancy vehicle miles traveled and amounts of CO₂ emission.

Pace Rideshare Addendum

The Pace Rideshare Program aims to reduce the number of single occupancy vehicle trips in the Northeastern IL area and thus improve air quality and reduce congestion.

In July 2006, when the regional rideshare program was transferred from CATS to Pace, Pace became the Regional Rideshare Administrator bringing together two great rideshare resources: online ridematching with a successful Pace Vanpool Program and making it possible for Pace to encourage the formation of carpools and transform some carpools into Pace vanpools. In addition, commuters could have a one-stop rideshare website for finding open seats on existing Pace vanpools. Please note that, previously, commuters had to go to two websites to complete a search for rideshare opportunities – www.SharetheDrive.org for carpools and creating new vanpools and www.pacebus.com to find open seats on existing Pace vanpools by using the tool called the Pace Vanpool Finder.

In the early years, the Pace Rideshare Program was focused on improving the matching software and promoting awareness and use of PaceRideShare.com, an online ridematching website and a toll-free phone line.

In 2007, Pace procured the GreenRide ridematching system to replace the Ridematch21 system and secured the domain www.pacerideshare.com. The new software was selected for the purpose of improving matching capabilities and carpool registration.

By March 2008, PaceRideShare.com was launched and replaced SharetheDrive.org. With the Pace Business Development Department overseeing the website, registration and interest in rideshare as a workday commute option grew in the region from 700 SharetheDrive.org registrants to 4,000 PaceRideShare.com users. About \$477,000 (\$350,000 came from CMAQ FY 2008 funds) was budgeted for website design, media buys and purchasing carpool registration welcome kits to kick-off the new program. In addition to regional marketing, Pace staff provided outreach and held events at HR organizations such as Human Resources Management Association of Chicago (HRMAC) and Society of Human Resource Professionals (SHRP) and conducted one-on-one outreach to municipalities and key employers including: Advocate hospitals, FBI, Panduit, Lake Cook County TMA employers, Prairie Stone Business Park employers, Illinois Medical District employers, McDonald's, BP, Comcast, Veterans Health Administration locations throughout the region, to name a few.

Finally, the Pace Rideshare Program leveraged regional partners to broaden outreach. Working with Illinois EPA, through Partner for Clean Air campaign, PaceRideShare.com initially appeared on the main page of cleanair.org and ridesharing was incorporated into the Partners "Green Pays on Green Days" promotional events. Pace Rideshare also appeared on the RTA's Drive Less Live More campaign website and ridesharing was mentioned as part of the Clean Air Counts employer strategies. Coordination was made possible through Pace's participation on the Steering Committee of the Partner for Clean Air, as a member of Clean Air Counts and as a branch of the RTA.

In 2009, to address the number of Indiana residents commuting to jobs in Chicago, the Pace Rideshare Program partnered with Northwestern Indiana Regional Planning Commission (NIRPC) to promote PaceRideShare.com in Northwest Indiana. Pace continued participation on the Steering Committee of the Partner for Clean Air and partnering on outreach events. Pace Business Development promoted Pace Rideshare in almost all interactions with business clients and presentations to their employees and continued outreach to HR organizations and employers with goals of forming 300 new carpools and 50 new commuter vanpools. A CMAQ grant request for \$350,000 was received and expended on:

- Fuel cards and other raffle prize items. These prizes served as an incentive for carpool participants to submit their monthly commuting data, which allows the system to calculate emission savings and SOV miles saved
- Media buys- as a continuation of the 2008 timeline, such as:
 - Billboards
 - Gas pump advertising
 - Moving billboards
 - TV/Radio traffic sponsorships
 - Online banners
 - Search Optimization
- Marketing materials
 - Brochure development and production
 - Promotional items such as pens, key chains, etc.

By 2013, PaceRideShare.com was updated under a five-year contract through 2017 with new website features. CMAQ funds of \$308,000 were used for a marketing campaign to promote the new website experience. The campaign ran from July – December. There were approximately 100 million impressions resulting, the website had over 47,000 visitors of which 39,000 were new or unique, and over 2,300 users were added. The 2013 YTD number of carpools added was 209 bringing the active total to 277 which equates to over 150,000 carpool rides. Twelve of these vanpools call Metra-Feeder vans took advantage of a partnership with Metra and provided a connection for the first and last mile. Because the Pace Rideshare Program supports the formation and retention of Pace commuter vanpools, there were 53 vanpool matches, with 20 commuters placed and 33 wait-listed. YTD total number of new commuter vanpools was 37 bringing the total to 324 with ridership of 1,013,981. In 2013, Pace partnered with Active Transportation Alliance on their Commuter Challenge project.

In 2014, CMAQ funds of \$42,000 were spent on a portion of the total cost for the digital and marketing campaign. PaceRideShare.com had 24,000 new and 7,000 returning visitors, and over 2,000 users were added. The YTD number of carpools added was 99 bringing the active total to 162 groups which equates to approximately 88,000 carpool rides. There were 66 vanpool matches, with 13 commuters placed, 16 wait-listed and 10 commuters joining a carpool. The Pace Rideshare Program continued involvement with Active Transportation Alliance, NIRPC and through Partners for Clean Air on their Air Quality Awareness Week the Illinois EPA.

From 2012- 2014, Pace has been involved with a Transportation Demand Management (TDM) working group consisting of RTA, IDOT, CDOT and MPC. Pace has been in discussions with the Illinois Department of Transportation regarding their Northeastern Illinois Travel Demand Management Pilot Program to coordinate with www.PaceRideShare.com in order to reduce costs and improve results by leveraging previous investments and resources to develop rideshare efforts.

Pace Rideshare Program offers a regionally promoted commuter website & URL, toll-free phone number, social media pages, employer commuter program toolkit, developmental guidelines, employer and community partnerships and regional commuter relationships. At present, our target focus is to assist commuters (including IN and WI residents) entering and traveling in Northeastern Illinois. The Pace Rideshare Program can provide commuter options, match commuters into groups for carpooling/vanpooling, biking and walking and we are currently developing an incentive program to encourage commuter behavior change.

In 2015, the Pace Rideshare Program has adjusted our processes to incorporate TDM strategies. The key 2015 priorities of the Pace Rideshare Program are: (1) to provide a broader spectrum of free commuter assistance such as transportation coordination and analysis, commuter information, rideshare open seat announcements and assistance with forming new rideshare groups, (2) to market open rideshare seats and newly forming group through new avenues, (3) to promote the program to attract more participation thus achieving critical mass to produce matching results even in less dense areas, (4) to improve analysis capabilities through website development, (5) to encourage change in commuter behavior by offering incentives and a Commute Calendar to track regional emission reductions when travelers report their commute data.

The focused actions to support these priorities include:

- (1) Shift our approach from “Let’s rideshare” (a regional message) to “Let’s fill this open seat and create a rideshare group for [insert particular routing and times] (a local message)
- (2) Utilize incentives on a regular basis and set up a more robust tracker calendar program
- (3) Email rideshare opportunities to target audiences (registered users and employees/students at destinations) and post through social media avenues
- (4) Contact new registrants daily to offer assistance with: (a) completing their commute profile, (b) joining our social media and (c) learning about matching ideas beyond the website
- (5) Update and expand the employer contact database
- (6) Analyze travel patterns to create new rideshare groups and identify potential for open rideshare seats
- (7) Creation of website pages that offer resources to commuters, employers and developers

Through implementation, the Pace Rideshare Program expects to increase the number of new rideshare groups formed by 25%, continue vanpool retention and increase vanpool ridership to reach over 1 million participants. In addition, the Pace Rideshare Program will have environmental measures generated from those logging on the commute calendar.

In the coming years, Pace Rideshare Program plans to develop a mobile app, improve website features, expand employer outreach, increase carpool registration and expand the offering of incentives and use of an online Commute Calendar