29th Annual Transport Chicago

Friday, June 6, 2014
UIC Student Center East
750 S Halsted St Chicago, IL 60607

#TransportChicago
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TRANSPORT CHICAGO IS AN ANNUAL CONFERENCE THAT PROVIDES A FORUM FOR THE EXCHANGE OF KNOWLEDGE IN TRANSPORTATION RESEARCH, POLICIES, AND PRACTICE. THE CONFERENCE, FIRST HELD IN 1986, EXPLORES A BROAD RANGE OF TRANSPORTATION MODES AND ISSUES. THIS EVENT REGULARLY ATTRACTS OVER 200 ACADEMICS AND PROFESSIONALS FROM THE CHICAGO REGION AND BEYOND, OFFERING AN EXCELLENT OPPORTUNITY FOR THE TRANSPORTATION COMMUNITY TO MAKE CONNECTIONS AND SHARE EXPERIENCES.
WELCOME

THE COMMITTEE

LETTER FROM THE PRESIDENT

CONFERENCE SCHEDULE

SPEAKER PROFILES

ABSTRACTS

IN TRANSIT

HOUSE HUNTERS

MAN VS. WILD

REAL WORLD: TRANSIT

EXTREME MAKEOVER: TRANSIT EDITION

WORKSHOP: PACE TRANSIT SUPPORTIVE GUIDELINES

WORKSHOP: DESIGN AND ANALYSIS OF CHICAGO’S BIKE SHARE SYSTEM

POSTER SESSION

TAKE THE MONEY AND UPGRADE

TRAINS, TRUCKS, AND BIKES!

WORKSHOP: COMPLETE STATIONS ASSESSMENTS: A ROAD MAP TO A BETTER TRAIN STATION IN YOUR NEIGHBORHOOD

WORKSHOP: CONNECTING COOK COUNTY

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SHUWEI CHEN — ILLINOIS INSTITUTE OF TECHNOLOGY

GRAPHICS:
ARNOLD KASEMSARN – UNIVERSITY OF ILLINOIS AT CHICAGO

KEYNOTE SPEAKER:
MAULIK VAISHNAV — CHICAGO TRANSIT AUTHORITY

OUTREACH:
MARISSA DOLIN — ACTIVE TRANSPORTATION ALLIANCE (LEAD)
ELAINE MCKENZIE — CAMBRIDGE SYSTEMATICS

REGISTRATION:
RON FINLEY — METRA (LEAD)
EMMA CHAPMAN — PARSONS BRINCKERHOFF

SESSIONS:
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To learn more about the 2013 MCI® Commuter Coach, go to mcicoach.com/public-sector/public.htm
Dear Conference Attendees,

Thank you for joining us for the 29th Annual Transport Chicago Conference. The Steering Committee has dedicated countless volunteer hours to bring you a relevant and exciting program of trends in the transportation field locally and nationally. We are happy to have you joining us today to continue the conversations on important, current transportation topics.

With many changes in transportation environments since last year, good, bad, and treacherous, we are here again to discuss the updates and talk amongst ourselves on a topic we all love so much. Nationally, Secretary Foxx has recently proposed a new $302 billion four year surface transportation reauthorization bill partnered with the GROW AMERICA Act after a nationwide bus tour, funding through core capacity for transit projects has moved forward, and improved safety laws for airlines have moved into effect.

As Commissioner Gabe Klein stepped down from his two year term to be replaced by Rebekah Scheinfeld many transportation projects stole the headlines in Chicago. The Red Line South project’s successful completion was followed by a shaky transition to the new fare card system, Ventra, and a $79 million TIFIA loan approval for the 95th Street Red Line Station rehabilitation project was announced just as Blue Line slow zone removal construction began for the summer and final steps in the Central Loop Bus Rapid Transit project began to fall into place. Many changes have started happening locally that we can see every day: the Circle Interchange construction broke ground; the Divvy Bike Share system opened just after the 2013 conference and has seen great successes; the Wells Street Bridge project was completed, opening the road up to personal vehicles again; and construction began on the Bloomingdale Trail 606 project and the Navy Pier Flyover. As projects modernize our city, we have more to learn from to improve our transportation future.

Please take the opportunity of being here to make new connections and reconnect with old colleagues in the field. We hope you walk away from the conference with new perspectives, relationships, and knowledge about your transportation system. On behalf of myself and the Transport Chicago Steering Committee, thank you for being an important part of the conference and welcome to Transport Chicago!

Sincerely,

Rebecca Geissler, President
Transport Chicago 2014
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PEOPLE AND PLACES

Would you agree that’s what it comes down to? Connecting people and places, the smartest way you know how, and getting them there safely. We know the challenges facing the transit manager, city planner and regional decision makers. Just as you deliver people to places, let Transystems deliver our transit solutions to your doorstep.

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Mr. Ward is the Executive Vice President at Dragados USA, a Spanish construction firm in New York City.

Prior to joining Dragados USA, Mr. Ward served as the Executive Director of the Port Authority of New York and New Jersey and is credited with leading the accelerated completion of the World Trade Center Memorial Plaza for the 10th anniversary of 9/11. Prior to his involvement, the $20 billion-plus project had slid over budget and behind schedule, and his speech at Transport Chicago will bring a unique perspective on large scale resiliency efforts post disasters or attacks.

Mr. Ward has wide experience throughout the public and private sectors, including serving as Commissioner of the New York City Department of Environmental Protection, the Chief of Planning and External Affairs and Director of Port Development at the Port Authority of New York and New Jersey, and Managing Director of the General Contractors Association of New York, Inc. He has also served at the New York City Economic Development Corporation and the New York City Department of Consumer Affairs.

Mr. Ward received his bachelor’s degree from McAlister College in Saint Paul and a Master of Theological Studies from Harvard.

As the Federal Aviation Administration’s Manager of the Chicago Area Modernization Program Office, Ms. Drouet oversees all the FAA activities that contribute to the O’Hare Modernization Program and is the City of Chicago’s “portal” into the FAA.

Ms. Drouet has over 20 years of FAA experience in a variety of technical and managerial roles. She holds a BS in Civil Engineering from the University of Illinois at Urbana-Champaign and a Master of Public Administration from the Illinois Institute of Technology. She is also a registered professional engineer in three states, including Illinois.
Mr. Garcia is the Program Manager for the O'Hare Modernization Program. As a graduate Civil Engineer with a Master’s in Engineering Administration, he has been involved in airport development, including planning, design, construction and management, for the last 29 years. He joined the O'Hare Modernization Program in 2006. Mr. Garcia previously managed the implementation of projects in the south and north airfield. Mr. Garcia is a Vice President with AECOM, a global provider of consulting services.

As a Director with Ricondo & Associates, Mr. Graham specializes in airfield and aviation facilities planning, with a focus on implementation and construction phasing planning of airport improvement projects. He has worked in Airport Planning with Ricondo & Associates for over 18 years. His primary role over the last 13 years has been to serve as the lead Airport Planning Consultant for the Chicago Department of Aviation to plan and implement the O'Hare Modernization Program.

In this role, Mr. Graham collaborates extensively with the Federal Aviation Administration, airlines, airport users and other governmental agencies to ensure that the overall plan is designed and built safely while minimizing disruptions to one of the world’s busiest airports. This is done while responding to the constant evolution in the aviation industry that includes new aircraft models, modifications to airfield and airspace operations, changes to design criteria and the consolidation of airlines.

Mr. Graham has also provided technical airport planning consulting services at airports including London-Heathrow, San Francisco, Oakland, San Antonio, Miami, and Phoenix Sky Harbor International Airports. He has developed master plans and impact assessment studies for development at smaller airports, such as Rostraver in Pennsylvania, Stinson Municipal in San Antonio, and most recently, Beef Island in the British Virgin Islands.

As the Chief Operating Officer for the Chicago Department of Aviation, Mr. Leach is responsible for overseeing all design and construction activities at O'Hare and Midway. In addition, Mr. Leach manages the Department’s Environment Division which administers all sustainable initiatives for the Department’s airports. Mr. Leach responsibilities also include the management of all facilities, airside and landside operations at O'Hare. Mr. Leach has been with the Chicago Department of Aviation since February 2010.
Transit agencies and advocacy groups have been using data to improve performance of current systems and develop solutions to today's urban transportation needs. This session will highlight a few local projects that aim to improve mobility throughout the region.

Increased Utilization of Existing Transit Data through Visualization (James Garner, Mike Bolton, Patricia Santillan — Pace Suburban Bus)

Almost all transit agencies, large and small, collect enormous amounts of data as part of their ongoing operations and management. This data includes schedule adherence (On-Time Performance) data, farebox information, and data collected from Automated Passenger Counters (APCs).

This data can be used to give direct feedback on service and ridership. However, this data is often not utilized or under-utilized because spreadsheets and other common reporting tools do not easily convey the information. Critical information that could be used in service planning is wasted because the data isn’t easily understood or interpreted, and columns of percentages just don’t register.

Pace Suburban Bus has developed data visualizations to more easily pinpoint areas of concern to planners and operating personnel. Using data visualization tools such as Tableau, our staff can quickly identify problem areas in On-Time Performance and begin to discuss solutions almost immediately. Another benefit is that visualizations give a common language for everyone to speak and understand. We also use visualizations developed in-house to analyze ridership and bus assignments, as well.

Pace staff will demonstrate how these visualizations have been developed from existing data. Case studies will be provided. In addition, Pace staff will provide information as to the savings gained from using such techniques.

Participants will be able to take the concepts presented in this session and apply them to their own data, developing tools custom-made for their needs.
Strategic Public Transit Bus Reliability Improvements (David Vanderzee, Jack Chalabian — Chicago Transit Authority)

Problem:
As part of the strategic route management process, one of CTA's busiest routes, #66 Chicago has undergone an extensive review and analysis in order to improve the overall performance of this route and improve customer experience. #66 Chicago faces several challenges, including congestion and slow bus speeds, service reliability, overcrowding and changing ridership markets.

Ongoing Situation:
- Some of the challenges included significant ridership increase of 31 percent between 2003 and 2013
- The route ranks, as the second highest ridership bus route, at over 25,000 rides per weekday
- Slow bus speeds on the east portion of the route in the downtown area
- Improving the reliability of service involves several strategies
- Improving bus spacing between bus stops on the downtown portion of #66 Chicago could be modified to improve stop efficiency and reduce delay
- Improving pull trips out of the garage to improve reliability at the start of the route via the garage
- Optimizing the running time, in order to adhere to the scheduled time points

Initial Outcomes:
- Improved reliability for PM westbound buses
- Reduced crowding on buses
- Improved customer satisfaction

Introducing the Chicago Streetcar: Cost-Effective Rapid Transit for a Growing City (John Krause — Chicago Streetcar Renaissance)

Chicago Streetcar Renaissance is a non-profit formed to plan and advocate for a network of modern streetcars in Chicago.

The Chicago Streetcar is a high-capacity, low-floor, electric railway operating on city streets like a European tramway. It runs with priority in its lane and at traffic signals, so it never gets stuck in traffic. It uses low-floor vehicles with level boarding right from the sidewalk and runs on clean, renewable wind power generated by Illinois farmers.

The Chicago Streetcar upgrades some of our busiest bus routes to faster and more cost-effective rail service. Where ridership is high enough, long streetcars cost less than buses because each driver carries several times as many people. Our proposed routes carry several times as many riders per mile as the average CTA train line, but cost 10 percent as much to build. It’s a cost-effective way to expand rapid transit, a complement to BRT at the high end of the ridership spectrum.

The streetcar is a proven catalyst for dense, mixed-use, walkable urban development built around rapid transit and local shopping. It boosts property values and the foot traffic that drives local business.

The streetcar expands the capacity of the street and reduces the congestion of cars driving into and parking downtown. It's a model for growth without congestion; for growing our population and economy while making Chicago easier to get around in and more convenient to live in every year.
Why are we attracted to transit-oriented communities? This session explores three Chicagoland programs that underscore the trend to drive less and live more.

Promoting Chicagoland TOD: Finance, Regulations, and Engagement (Yonah Freemark — Metropolitan Planning Council)

Until the 1950s, growth in Chicagoland occurred almost exclusively in areas within a reasonable walking distance of the city’s rail lines. The rate of transit ridership in the City of Chicago, however, has declined from about 385 annual rides per capita to 185 today, and now just 22 percent of the region’s jobs and 9 percent of its population are located within a quarter mile of rapid transit.

The Metropolitan Planning Council (MPC) is implementing an innovative three-part program to encourage Transit-Oriented Development (TOD) to support the CMAP goal of doubling transit ridership by 2040. The program incorporates regulatory reform, new financial support for TOD, and improved community outreach. With participation from local governments, MPC is pushing for new zoning rules in urban and suburban settings that will reduce parking minimum requirements and increase allowed densities. With a group of non-profit financial institutions, MPC is developing a TOD fund similar to those in place in the south and west suburbs designed to fill the gap in financing for certain transit-adjacent projects. And with a series of community workshops, MPC is encouraging discussion of neighborhood-scale TOD.

This presentation will describe the ridership effects of previous TOD investments in the region, then explore MPC’s process, analyzing lessons learned from outreach to public and private officials, as well as local residents. It will offer insight into developments thus far and progress on community acceptance of denser new construction. This multi-element TOD initiative provides a useful model to encourage more growth in communities near transit.

Why Residents Choose to Live Near Transit (Tony Manno — Regional Transportation Authority)

Empirical research in the Northeastern Illinois region about what factors motivate people to move into a Transit-Oriented Development (TOD) area is limited. Such research is necessary to inform and enhance the future planning of TOD areas. The RTA administered a TOD Resident Survey to 35,000+ residents of 14 suburban TOD areas throughout the region in early 2014. The purpose of the survey was to gain a better understanding of why individuals chose to live in a TOD area and how it may have changed their travel habits from their previous residence. The survey also collected information on how the availability of transit service and living in a TOD area may impact lifestyle choices and behaviors.
An online survey was developed consisting of 32 questions ranging from simple demographics to detailed questions on the resident’s travel behaviors, when and why they moved to their current home, and where they use to live. The survey questions were vetted through the RTA’s Regional TOD Working Group, which includes Metra, Pace and CTA. Residences within a half-mile of the 14 municipalities’ rail stations were mailed a postcard describing the purpose of the survey and a link to the survey online.

The survey results will be analyzed and summarized in a report that will inform the RTA’s TOD technical assistance efforts moving forward and help local municipalities make appropriate land use decisions near their rail stations that will attract the most residents.

Site Selection Criteria and Site Design for High Speed Rail in Illinois (Arnold Kasemsarn — University of Illinois at Chicago)

The Illinois Department of Transportation (IDOT) recently commissioned a study into a 220 mph High Speed Rail line between Chicago, Champaign, St. Louis, and Indianapolis. The project proposed using an existing Canadian National right of way between Chicago and Champaign. Although many parts of this corridor are wide enough to accommodate another set of tracks, site constraints and existing developments along the corridor limit how these areas could be modified and where stations could be accommodated. This project identifies some of those constraints and potential opportunities. It also initiatives a design study to mitigate those constraints while meeting often demanding High Speed Rail requirements. The project focuses on two geographic sub-regions in Northeastern Illinois: the Chicago Southland region and the Kankakee Area Transportation Study.

The project establishes a methodology for evaluating potential station sites by utilizing municipal and county zoning policies, local and regional planning studies, retail market estimates, traffic estimates, and environmental and topological data to identify whether particular sites could support a High Speed Rail station site. It uses qualitative and quantitative data to identify where land use and zoning issues would preclude station siting and where opportunities may exist but are undervalued or hidden by existing local conditions. These methods identified sites in Richton Park and the City of Kankakee and the particular constraints of each site. The project also proposes station area plans that attempt to address local issues while accommodating users and passengers from different parts of the region and meeting the spatial requirements of a High Speed Rail corridor.
Policies of the past are becoming inadequate. This session presents the necessity for new transportation practices in the wake of climate change, dangerous trail crossings, and oversized parking lots.

Addressing Climate Change Vulnerabilities to Transportation Infrastructure (Jason Hyde — Cambridge Systematics)

The National Oceanic and Atmospheric Administration’s National Climate Assessment predicts major modifications to the Midwest’s climate over this century. Changes in precipitation, temperature, and potentially the water levels of the Great Lakes are expected to yield more frequent and severe weather events, flooding, changing freeze-thaw cycles, wildfires, and other challenges that will seriously impact transportation infrastructure. For the Michigan Department of Transportation (MDOT), Cambridge Systematics (CS) is using a risk management approach that considers the expected likelihood and impact of these events to help the DOT understand how to address potentially more frequent and severe weather events. The project team is identifying potential climate change and extreme weather risks and addressing how this information can be integrated into MDOT’s asset management systems and decision-making processes. As part of this project, CS is working with the DOT and an advisory committee of outside stakeholders to identify critical assets. Based on climate modeling for the region, the project team is collaborating with MDOT and the TAC to perform a vulnerability assessment, identifying assets potentially at risk in the future, and integrating this information into the state’s existing asset management practices. CS is also conducting a more urban-focused vulnerability assessment for the six-county Capital Area Metropolitan Planning Organization (CAMPO) in Austin, Texas. Mr. Hyde is a member of both project teams, and his presentation will represent a hybrid of the lessons learned from both the Michigan and Austin area efforts as they apply to transportation planning and asset management in the Chicagoland area.

Complete Crossings: Developing Roadway Typologies and Corresponding Design Strategies for Trail Crossings in Northeastern Illinois
(Marissa Dolin — Active Transportation Alliance | Kelly Conolly — Gewalt Hamilton Associates)

Trails provide an opportunity for people of all ages and abilities to choose healthy and active forms of transportation, but roadways that cross over trails often are barriers for trail users. Vehicles traveling at high speeds, roads with high average daily traffic, uncontrolled crossings, and a lack of connectivity between trail segments and surrounding land uses can inhibit the trail user experience and lead to people making unsafe choices. Furthermore, a lack of wayfinding system or a standardized
approach to trail crossing design can confuse trail users and prevent them from fully enjoying trails and their surrounding land uses.

This study looked at the relationship between land use near trail crossings and roadway features, such as posted speed limit, roadway geometrics, and average daily traffic, to develop a typology matrix for trail crossing countermeasures. The study concludes with recommended design elements and a way finding system for roads that intersect trails to improve trail access and connectivity to adjacent communities. Study areas used to inform the recommendations made in this area include the Des Plaines River Trail and the Illinois Prairie Path.

Right Sizing Parking (Gregory Newmark, Peter Haas — Center for Neighborhood Technology)

Multi-family rental housing is increasingly seen as an important tool to advance local sustainability. Such housing provides a new option for residents and can lead to increased land use intensity, economic activity (and resilience), social diversity, and attainment of affordability goals for municipalities. A perennial concern of developing multi-family rental facilities is appropriately sizing associated parking. Existing residents seek ample off-site parking to eliminate spillover to surrounding streets; developers seek to minimize parking as each spot entails costs; planners seek to balance these concerns while protecting the urban form and streetscape. While research has shown that land use features, such as building intensity, street walkability, and transit access, as well as rental property strategies, such as charging parking fees, incorporating affordable housing units, and catering to senior citizens, can all reduce the demand for parking, no research has analyzed the differential contribution of each of these factors to inform policy—until now.

The Center for Neighborhood Technology, as part of its mission focus on location efficiency, is currently undertaking several studies in regions across the United States to statistically assess the impact of urban form, transit availability, and building characteristics (including unit sizes, rents, parking pricing, affordable housing, senior units, etc.) on the demand for parking at multi-family rental facilities.

This paper presents the findings from this research which are critical for municipalities seeking effective policies to right size parking for these new residential land uses.
Real World: Transit

11:15AM SESSION A / Cardinal Room / Moderator: Edward Bury — University of Illinois at Chicago

Public transit operates in the real world, requiring agencies to deliver real world solutions to address challenges. In this session, experts will present findings on customer preferences for rail car seating, a process to monitor existing conditions and state of good repair investment needs and how transit agencies communicate with members of Chicago’s large Polish-speaking community.

Is This Seat Taken? A Multi-Faceted Research Study to Inform Chicago Transit Authority’s Future Rail Car Seating Design (Tara O’Malley, Maulik Vaishnav — Chicago Transit Authority)

Chicago Transit Authority (CTA) conducted a research study to inform future rail car design that included customer surveys, qualitative observations of customer behavior and quantitative analysis. Traditionally, CTA rail cars were configured with forward or backward facing seats with varying number of seats, standing room, and supporting infrastructure for standees. Since November 2011, CTA has been phasing in the 5000-series cars, with inward facing seats providing potential for more standing room and increased capacity especially during peak periods.

The study explored customers’ preferences of rail car type, along with seating or standing preferences through online and intercept surveys. Researchers also observed customer behavior in heavily loaded rail cars during peak periods to qualitatively gauge “crowdedness” while collecting maximum load data for each seating configuration. Station dwell times were also observed assessing if any particular seating configuration contributed to excessive crowding and lower boarding process.

Results indicate that majority of the riders prefer forward facing seats. Rail cars with inward facing seats are unable to accommodate more people than other cars as customers’ varying leg lengths restrict room for standees. People are able to find more comfortable standing spaces in existing 3200-series cars, which have a combination of single and double seats in the center of the car creating a staggered standing room pattern. New rail cars would also benefit from more support structures near ADA areas to accommodate more standees in peak periods.
Asset Management Program at the Regional Transportation Authority (Bea Reyna—Hickey — Regional Transportation Authority)

The Regional Transportation Authority (RTA) is responsible for planning, funding, and oversight of all public transportation in northeastern Illinois. This network serves the third largest US transit market. With some of the nation’s oldest transit assets in the nation, though, RTA and its three Service Boards (CTA, Metra and Pace) face significant and growing reinvestment needs to attain and maintain a state of good repair (SGR).

This presentation will examine how one of the country’s largest, oldest, multi-modal, multi-agency transit systems has developed and implemented an annual process to track changes in asset conditions and SGR reinvestment needs at the regional, agency, mode and asset levels. The scope of study for this presentation is first the qualification and quantification of the scope of the region’s SGR “problem.” Second, the presentation will address the formulation of strategies to address the growing backlog of needs and ongoing required investments in a challenging fiscal environment.

The methods used by RTA will also be explored in the presentation. These include, but are not limited to: ongoing agency commitment, close collaboration with regional stakeholders; gradual refinement of regional inventories of assets, in-field condition assessments, implementation of the Capital Optimization Support Tool (COST), project prioritization, and outreach to decision makers.

RTA will present results from the five-year effort to date in terms of the regional backlog of needs, and 10-year capital need for reinvestment. The speaker will also discuss the current shortfall in terms of revenue generating strategies envisioned now and in the future, and how RTA is positioning for emerging new Federal requirements for asset management.

Marketing Transportation Services to the Chicago Area’s Polish Community (Timothy Grzesiakowski, Zygmunt Czykiet — Metropolitan Planning Council)

The Chicago area has one of the largest Polish-speaking communities outside of Poland. Polish is the second largest foreign language spoken in the Chicago area after Spanish. Our presentation will look at what resources currently exist for transportation information in Polish, demographics of this community, how this group gets information and how to best reach them to provide transportation information. We will review current demographics of the Polish and Polish-American community in the Chicago area through a literature search and maps, as well as lessons and concepts that would be applicable in working with other foreign language speaking groups to promote transportation services.

Our study will attempt to address the following questions:

1. How large is the Polish speaking community in the Chicago area?
2. Where do they live? What is the mix of city vs. suburban residents?
3. What public transportation information currently exists in Polish?
4. How does the Polish media in Chicago cover transportation issues?
5. What events and outreach should be used going forward to reach this community?
6. What lessons can we learn that can be applied in marketing transportation services to other ethnic/niche markets in the Chicago area?

We will also discuss the importance of correct translations of materials, and the consequences that can occur if materials are not correctly translated.

#TransportChicago
Chicago Union Station Master Plan Study (David Phillips — TranSystems)

Chicago Union Station (CUS) is the third-busiest rail station in the United States, with 15 million passengers annually. It is a dual stub-end station built in 1925, primarily to serve long-distance train operations, including extensive mail and package express service. Today, the primary user of the station is Metra commuter rail, although it is the hub of Amtrak’s rapidly growing Midwest regional services and the terminal for the largest concentration of Amtrak’s long-distance trains with eight trains (most operate every day) to destinations on the East Coast, West Coast, and the Gulf of Mexico. The Station operates at/near capacity during peak periods for train handling, passenger handling, and street level access. Since the 1968 demolition of the original concourse part of the Station, navigation has been very difficult, particularly for occasional travelers not familiar with the facility.

In an effort to understand CUS’s potential for increasing capacity, TranSystems was asked to conduct a study of the existing conditions and to determine what cost–effective options were feasible. This presentation will report of the process and the results of this study for the City of Chicago DOT. It identified opportunities to assist Amtrak, Metra, and other Station stakeholders in preparing for future improvements to increase CUS’s capacity and quality of service. Preliminary simulation modeling analysis shows a potential capacity increase of over 50 percent.

This required a creative approach and, working closely with a variety of stakeholders, a number of engineering design solutions were identified to reconfigure the existing facilities at CUS.

Updating Transit in Lake County: From Heritage System to Multi-Nodal Network (Seth Morgan — Pace Suburban Bus | Valbona Kokoshi — Lake County Division of Transportation)

Like many communities in the outer Chicago suburbs, Waukegan was historically an independent city, with its own transit network. It was the economic and commercial center for much of Lake County, and the transit network reflected that for many years. Today, the growth of Chicago has led to Waukegan’s relative importance diminishing in comparison to its neighbors. Places like Gurnee, Grayslake and Libertyville have grown exponentially as economic realities have changed, yet the transit network did not fully adapt, with most routes being radial in nature and based on a single timed transfer point in Waukegan.

In 2011, Pace Suburban Bus partnered with the Lake County Division of Transportation and Cambridge Systematics to conduct a transit market analysis of Lake County. The resulting report helped identify opportunities, and late in 2013 Pace took the first steps to reform the transit network into a more decentralized system.

Rather than a single radial network with a single transfer point, the new system has three timed transfer points spread out throughout the northern half of the county. While no new corridors were served, the new structure helps prepare the network for future growth and creating new transfer opportunities in new growth parts of the county. Key to this project was the establishment of strong partnerships between community stakeholders, which helped smooth the transition and save resources and capital construction costs. This presentation will discuss the background of this project, the crucial cooperative efforts that led to successful implementation, and future network development strategy.
Local Economic Activity around Rapid Transit Stations: The Case of Chicago’s Orange Line (Julie Cooper — University of Chicago Harris School of Public Policy)

The positive relationship between improved transit access and economic growth is highly promoted by planners and administrators across the country and the world. While the primary focus is on improving the connection between workers and jobs, there is an assertion that transit can improve the economy of the neighborhoods it touches. This impact is often measured through resulting changes in land values, but there is also an interest in understanding how the presence of transit—particularly transit stations—affects local economic activity and development.

Through a case study of Chicago’s Orange Line train route, this project explored the potential for transit stations to impact the level of local economic activity near transit stations, using quantitative and qualitative means. The quantitative analysis suggested that the stations were not unequivocally good for the vibrancy of the local economy. The qualitative analysis identified certain policies and actions that may have held back economic growth, and considered how different approaches may have lead to different outcomes. The lesson of the project is that cities that see economic development as a goal of transit projects need to consider early on how planning decisions around the project may hurt or hinder that goal, and incorporate supportive actions and policies into their plans from the start.
To have access to effective public transit, every step of the user's trip must be accessible, efficient, safe, and comfortable. The transit system must eliminate barriers—real or perceived—in order to make it a viable or preferred alternative to the personal automobile. The goal of these Design Guidelines for Transit Supportive Communities is to foster reliable, efficient, convenient, and accessible transit, from the customer's front door to his or her final destination.

Pace would like to get involved in municipal and private planning processes at the very beginning—even in communities not currently served by Pace. If new development is transit friendly, Pace will be able to serve that area in the future without the costs associated with retrofitting the roadway. This is an expensive and time consuming process that often prevents Pace from providing effective service. Infrastructure built today typically has a 20–50 year lifespan. If this development does not accommodate transit by integrating Pace’s guidelines, communities risk being precluded from service in the future.

Pace’s Transit Supportive Guidelines for the Chicagoland Region present principles and standards that may be implemented by municipalities, designers, engineers, and many others. Ultimately, it is Pace’s vision to provide a higher level of bus service to places that actively remove barriers to transit as a viable transportation choice. Workshop participants work in small groups to make pedestrian and transit friendly upgrades to a transit corridor. Participants will have a “menu” of transit accommodations from which to choose, and they will be asked to stay within a budget.
DESIGN AND ANALYSIS OF CHICAGO’S BIKE SHARE SYSTEM

11:15AM WORKSHOP B / Monarch Room / Moderator: Marissa Dolin — Active Transportation Alliance

Morgan Whitcomb, PE; Stacey Meekins, AICP — Sam Schwartz Engineering
Tim Garibay — AES Services

Chicago launched one of the largest bike share systems in the country in July 2013. Sam Schwartz Engineering was tasked with the design of the system, from determining the service area extents, to selecting specific station locations. This one-hour session will take the audience through the methods and considerations used in designing the 300-station service area and in planning for expansion. First we will discuss the geographic analysis, heat mapping and regression analysis techniques used to evaluate the service area and determine station densities. We will discuss the outreach methods used to obtain input on station locations, including interactive online maps, public meetings, and community meetings, and how this input was used to determine station locations. Attendees will then go on a walking tour in the area that highlights technical and qualitative considerations in determining and evaluating station locations.
Economic Benefits of Truck-to-Rail Mode Shift (Alexandra McNally — University of Illinois at Chicago)

Every year, the interchange of millions of tons of intermodal freight from all regions of the United States takes place in metropolitan Chicago and its surrounding counties. The high volumes of freight along with projections of highly congested highway systems suggest Illinois’ need for an efficient intermodal system to accommodate the complex interchange of freight. CenterPoint Properties in Elwood, Illinois is a major intermodal logistics center (ILC) located in a surrounding county of metropolitan Chicago. This study uses the technique of “difference-in-differences” to compare treatment and control groups of trucking corridors. It concludes that intermodal logistics centers were related to significantly larger increases in industrial property values along these corridors. In accordance with these findings, planners should recognize these increases in industrial property value along transportation corridors, when evaluating the economic feasibility of a project that involves an intermodal logistics center and utilizing value capture tools. Transportation planners must consider more than the immediate vicinity around the intermodal logistics center, because the impact may be found miles away along major trucking corridors.

Effectiveness of Radar Speed Signs in a University Environment (Michael Williamson, PhD candidate; Ryan Fries, PhD — Southern Illinois University Edwardsville)

Vehicular speeds are of particular interest in areas with a high number of pedestrians. This study investigates the effect of a radar speed sign placed for an extended period of time in an area known to be troublesome in regards to speed violations and frequented by law enforcement. Speeds were recorded at a point where drivers could first read the radar speed sign display and when they passed the display, allowing drivers ample time and distance to decelerate to the posted speed. Two groups were compared using statistical testing and conclusions drawn on the effect of radar speed signs on driver behavior. A total of 820 driver speed samples were recorded during the morning, midday, evening and off peak times. Overall the results indicated that drivers traveling above the posted speed limit of 25 mph decreased their speed upon seeing the radar speed sign display indicating they were violating the speed limit and maintained a reduced speed thru the study area. On the contrary, drivers that were traveling at or below the posted speed limit of 25 mph, increased their speed after confirming the absence of law enforcement in the area. These results suggest that drivers fit into two groups the first is self-correcting when notified of a speed violation, and the second group disregards the speed limit with the absence of law enforcement. The results from this study would be useful to safety engineers, for the purpose of understanding driver behavior in a university environment.
One shortage common among developed activity-based travel demand models is the way they present the results. In these models, the decision-making process is a black box to their users and just the final decision on choices like travel mode, location, start time, etc. is presented. Visualization in these models is limited to displaying outcomes of these decisions such as traffic flow. In this study, an innovative GAlaxy-shaped Behavioral Activity-Travel modeling Visualizer (GABATOV) is presented. The proposed model, which has a similar graphical presentation to astronomical objects, provides a better understanding of the complex activity-travel behaviors. GABATOV can be used not only for presentation purposes, but also for finding possible bugs in activity-based models.

How Can Citi Bike Promote Cycling as an Urban Transportation Choice? A Preliminary Evaluation (David Perlmutter — Columbia University)

Citi Bike premiered in May 2013 as a transformative new transportation choice for New York City residents and visitors. As the largest bike-sharing program in the United States, Citi Bike provides a dynamic case study of a new class of global transportation programs modeled on the theory of collaborative consumption. Operated as a public–private partnership between New York City D.O.T., Citibank, and Alta Bicycle Share, LLC, Citi Bike offers a dense network of 4,300 bikes accessible from 330 docking stations located throughout Manhattan and northern Brooklyn at virtually no cost to taxpayers. Citi Bike has the potential to achieve several key New York transportation objectives: increase its relatively low cycling mode share; improve overall cyclist safety; and promote linked trips with transit. However, Citi Bike also faces significant challenges that jeopardize its long-term viability: an unstable public–private finance model; low adoption rates among low-income communities; and lack of gender parity among its participants. This paper evaluates Citi Bike against these objectives and proposes several policy recommendations to improve the program’s long-term effectiveness. Participants will learn about Citi Bike as an instructive case study among bike-sharing programs that provides Best Practices for practitioners operating or planning for similar bicycle infrastructure in their cities.

The Impact of Traffic Incidents on Evacuation Clearance Time (Karzan Bahaaldin, PhD student — Southern Illinois University Edwardsville)

Modeling emergency evacuations can help engineers and emergency managers identify the approximate time it would take for evacuees to leave disaster areas. Unfortunately, many evacuation studies do not model the impact of traffic incidents. Because of the congestion on the evacuation routes and drivers’ stress during evacuations, minor traffic incidents are anticipated. This paper examines the impact of traffic incidents by modeling them during a no notice emergency evacuation in the eastern St. Louis metropolitan area. The roadway network was modeled using VISSIM, loaded with the expected traffic volumes that were determined by the regional planning agency, with input from the transportation engineers at the Illinois Department of Transportation (IDOT). The incident locations were selected based on the historical data of minor traffic incidents. The results suggest that incidents occurring upstream of key bottlenecks have a lower impacts than incidents near or downstream of these locations. Specifically, traffic incidents upstream of key bottlenecks do not increase the delay. Thus, during no notice emergency evacuations, traffic managers should devote resources to quickly detect and clear traffic incidents that are downstream of bottlenecks, instead of upstream.
Investigating the Impact of Local Real-Time Traffic Information Provision Strategy in a Connected Vehicle System (Shuwei Chen — Illinois Institute of Technology)

Nowadays, the application of sensor technology has enabled the real-time collection and distribution of traffic information. Meanwhile, the wireless communication technology has made the information exchange between vehicles. The combination of these technologies has connected the modern transportation system as never before, the Connected Vehicle System (CVS) has been gradually formed. Based on this technology background, the new generation of routing guidance employing real-time traffic information would be capable to help people to avoid traffic congestion and relieve the congestion problems.

However, since the current guidance system basically relies on independent, selfish-routing systems and real-time global traffic information is uniformly provided, the real-time traffic information system may potentially guide exceeding volume of traffic flow into some corridors within a short time period and cause traffic congestion.

Motivated by the above view, this research explores the possible causes and solutions to address this phenomenon through simulation methods. We propose an information service strategy, which provides local information rather than global information to each vehicle in the network, and expects to balance the traffic flow distribution by separating the paths for different vehicles and preventing the major corridor to overload. To estimate the effect of this approach, this research adopts a series of methods to identify the range of local information provision. Numerical experiments based on Borman network are conducted to demonstrate the performance of the network under different traffic load and service penetration. The result of tests suggested a significant benefit under heavy traffic load conditions and a positive relation between the effect and service penetration.

Millennials’ Transit Preferences in the Suburban Context (Jeremy Halpern, Joseph L. Schofer — Northwestern University)

Recently, trade organizations such as the American Public Transportation Association and mainstream media have called attention to reported declines in private car usage, highlighting the role of Millennials as purportedly avid users of public transit. These reports do not take into account that the majority of Millennials, defined as those born in the early 1980s—early 2000s, live in dense urban areas. Do those traveling in the suburbs have similarly strong preferences for public transit? How do they rank certain transit-related factors compared to other age cohorts?

Chicago’s Pace Suburban Bus Service conducted customer satisfaction surveys on 32 service attributes assessing customers’ decisions to use Pace. Using factor analysis, the 32 attributes were reduced to three key factors: passenger comfort, passenger certainty and service availability. Results indicate that certainty is significantly more important to Millennials than to other age cohorts. While age alone does not significantly differentiate passengers on overall satisfaction, it does interact with other attributes.

Demographics such as age and income are easier to quantify than perception of service quality and access. Transit operators may be tempted to rely on these in determining where to focus service. Results of this study indicate those factors alone are poor predictors of use and satisfaction. Millennials are more sensitive to changes in overall satisfaction in deciding whether to recommend Pace bus service to others.

This study fills a gap in prior research, which has largely focused on urban areas by quantifying differences in transit preference between age groups in the suburban context.
Train Planning On a Single Track Shared-Use Passenger and Freight Corridor with Demand Considerations (Ahmadreza Talebian, Bo Zou — University of Illinois at Chicago)

This paper studies strategic level train operation planning on shared use passenger and freight rail corridors. With comprehensive consideration of realistic values for different cost components involved and the fact that passenger trains are given scheduling priority over freight trains on shared corridors in the US, we develop a hypergraph based, two-level modeling approach in which passenger and freight side costs are sequentially minimized. We explicitly consider passenger schedule delay and freight foregone demand as a function of train schedules, which are largely ignored in previous research. In particular, incorporating passenger schedule delay makes the passenger train scheduling a quadratic integer programming problem. We explore different solution approaches and conclude that a modified linearized formulation which takes advantage of the special structure of the problem achieves superior computational performance. We find that schedule delay cost could be as important as line-haul travel time. Scheduling more passenger trains on a shared corridor lowers passenger schedule delay but at the price of freight side cost increase. The resulting marginal freight cost increase is in most cases higher than the marginal passenger schedule delay reduction, especially when frequent passenger train services already exist on the corridor. The results also indicate that the train speed heterogeneity significantly affects freight side cost, most of which comes from foregone demand.

Weather Effects on Divvy Usage (Wade Van Nortwick)

Bike share programs have started sprouting up around the United States. Cycling is generally associated as a recreational or exercise activity in the United States. Recently, investments in cycling infrastructure are attempting to change people’s perception and usage of cycling in urban areas to include commuting, quick local trips and solve the final mile problem with transit. This study is to better understand the effects of weather on the bicycle share system and cycling habits in the City of Chicago. The source will be from public trips data from the Chicago Divvy Bike share system from June 27, 2013 to December 31, 2013 and National Weather Service data as reported from the Midway Airport.

The primary benefits for this research is that it can be used as a policy guide for cycling infrastructure design and data collection. This would also shed light on user habits of bike share users which tend to be short distance, not regular cyclists. The results show that primary usage of Divvy bikes is during the day on weekends and weekday evenings during good weather.
User fees, value capture, and public–private partnerships offer the hope of sustainable funding — but how are these approaches working out? Hear diverse perspectives on the business case and implementation of non–traditional funding across modes.

Transit Value Capture Coordination: Best Practices and Recommendations (Stephen E. Schlickman, JD; Jordan Snow, MUPP; Tom Bothen, MBA — UIC Urban Transportation Center | Janet Smith, PhD; Yittayih Zelalem, JD — UIC Voorhees Center for Neighborhood and Community Improvement)

Transit authorities are being challenged to rely more on local sources of funding to develop and renew their infrastructure. Federal transit officials have urged the transit industry to use value capture strategies to fund their capital investments. Value capture allows transit authorities to monetarily regain some of the value that their investments provide to private property owners and businesses.

The literature provides extensive review on the various tax based tools that can be used to achieve value capture. What is not well covered in the literature are the coordination challenges transit authorities face in implementing value capture strategies. This study addresses that topic.

Specifically, this study consists of a literature review, case studies of four the United States’ oldest and largest rail transit systems (Chicago, New York City, San Francisco and Washington, D.C.), and recommendations based on the information collected. The study will show that transit authorities need to effectively coordinate with local government entities that control value capture taxing authority and the development community to achieve the best outcome from a successful value capture endeavor. Preliminary results indicate that the most successful projects involve a very close working relationship with local taxing authorities. In addition, findings based on interviews with developers indicate a high willingness—to–pay for clearly stated transit benefits. This suggests a necessary step in effective value capture efforts is for transit agencies to measure, comprehend, and effectively present the benefits provided by their investments.
Concession: The Future of Parking Management in Chicago (Chrissy Mancini Nichols – Metropolitan Planning Council | Lindsay Bayley – Chicago Metropolitan Agency for Planning)

Managing parking to support local business districts requires a balance of supply and demand. Local business districts in Chicago have unique challenges and are not well-suited to a one-size fits all approach. CMAP’s “Parking Strategies to Support Livable Communities” outlines a methodology for understanding local challenges and developing strategies to tackle those challenges. In a recent Local Technical Assistance project with the Wicker Park Bucktown Chamber of Commerce (WPB), staff from the Chicago Metropolitan Agency for Planning (CMAP) and Metropolitan Planning Council (MPC) helped walk the Chamber through those steps. We found that the biggest obstacle to successfully managing parking at the local level is the assortment of restrictions set forth in the Concession Agreement with Chicago Parking Meters that limits a neighborhood’s ability to balance supply and demand.

In this paper, we will describe the process to evaluate WPB’s parking supply and demand, the recommendations offered, a review of how the Concession Agreement will affect parking management for the City, and the bold steps our City Council needs to take to make the most out of our 75-year relationship with parking meters.

Washington State Road Usage Charge Assessment (Eric Cempel – Cambridge Systematics)

Like most states, Washington is concerned about the sustainability of revenues for funding its transportation system. Several studies in Washington State considered and/or recommended alternatives to the gas tax, with many pointing toward road usage charging as a potential approach. The basic idea with road usage charging is that drivers pay for roads as they do for utilities based on how much they use. At the direction of the Legislature, Washington first assessed the feasibility of road usage charging, and then evaluated the business case. This project is relevant since GO TO 2040 recognizes the need for a sustainable revenue source and encourages exploration of innovative approaches.

Guided by an appointed Steering Committee, the underlying strategy has been to follow a deliberative process. The first step addressed whether a road usage charge is feasible. This included exploring experience elsewhere, discussing policy objectives, and evaluating high-level operational concepts. The Committee found that road usage charge is feasible. The next phase involved creating a smaller, detailed set of operational concepts, bringing policy objectives into focus, and developing a financial model and non-financial factors to evaluate the business case. The Committee found that a business case could be made for three potential road usage charge concepts or combinations.

The Committee’s report was submitted to the Legislature with a request to continue these investigations. Future work might include refinement of operational concepts to address policy, technical, and public acceptance issues that have been identified as well as the design of a potential pilot.
TRAINS, TRUCKS, AND BIKES!

2:45PM SESSION B / Fort Dearborn Room / Moderator: Christopher Lindsey — Northwestern University

Freight, public transit, and bikes have taken on greater importance in urban transportation planning as decision-makers have begun to realize their impacts on and potential for creating sustainable communities. The presentations in this session concentrate on measuring and creating indices of accessibility for these disparate modes; the results are metrics useful for transportation planning and economic development efforts.

Truck Score (Martin Menninger — UIC Urban Transportation Center)

Streets serve many purposes and users. Metrics such as Walk Score or Transit Score help us understand the city for select users. Freight for urban businesses must travel the same contested streets as all other users. Truck Score is a metric that attempts to visualize the city as a truck sees it.

Attributes such as crash data, parking tickets, and low bridges that reflect impacts on the route and delivery space were prioritized using an Analytical Hierarchy Survey. Each attribute is then weighted and aggregated based on this priority. The end result is a heat map showing the best and worst places to deliver in the city. By evaluating the factors that limit and support freight movement, urban planners will be able to target areas of the region for improvements and better understand the needs of the urban freight industry.

Modeling the Accessibility of Chicago’s Public Transit: A Dasymetric Mapping Approach for Handling Shortcomings in Census Data (Michael Ribant — Northern Illinois University)

This paper describes techniques to more accurately compute and map population accessibility measures for Chicago’s bus and rail lines. It uses dasymetric mapping to generate the spatial distribution of population, yielding more precise population density estimates than traditional mapping methods. It also uses ancillary mapping techniques intended to visualize the sampling errors inherent in today’s census data.
Modeling transit accessibility using census data has become more challenging recently for two reasons. First, transit accessibility modeling is commonly displayed using traditional choropleth methods, which aggregate results to arbitrary areal units such as census tracts, thus hiding the variability of the underlying data. Second, the American Community Survey has replaced the decennial census as the official source of demographic data and while this data is more timely than that provided in the past, it is sample-based and thus has inherent sampling errors which are both wide and widely misunderstood.

This research asks the following questions. First, can the dasymetric mapping method be applied to cartographically represent the results of transit accessibility in Chicago more effectively than choropleth mapping? Second, can the labyrinth of error reporting inherent with current data reporting from the American Community Survey be articulated visually? By employing dasymetric mapping and geovisualization techniques to demographic data supplied by the American Community Survey, this research shows that transit accessibility measures for Chicago can be more accurately portrayed with dasymetric mapping relative to choropleth techniques, and that the inherent errors of the underlying sample data can be simply understood visually.

Measuring the Contribution of Bike Infrastructure to Accessibility (Vig Krishnamurthy — Sam Schwartz Engineering)

While there is a growing recognition of the need to focus on accessibility rather than mobility to make progress on the problems of auto-dominated planning, bicycle planning goals are often still articulated in terms of mobility measurements—for example, Mayor Emanuel’s target to build 100 miles of protected bikeways in Chicago. However, from the perspective of the user a bike lane is a means to an end of achieving access; and, from the perspective of the network not all bike lane segments contribute the same to enhancing access.

The results of a “before and after” GIS analysis of how bike lane expansion in the Chicago region has influenced accessibility will be presented. This analysis shows how the benefits to accessibility can vary based on the location of investments in proximity to the other facilities in the bike network. The spatial analysis is also used to generate a “catchment area” of accessibility enhancement, which can be in turn used to evaluate the demographic characteristics of communities benefiting from the investments. Basic concepts in the graph theory measurements of networks will also be presented as a complimentary approach to identifying bike infrastructure investments with a potential high-impact on improving accessibility.
Transit riders often become accustomed to the routine of their commute and resign themselves to navigating outdated or inadequate infrastructure. These inadequacies also act as a barrier for many people who continue to choose driving instead of biking, walking and transit. Active Transportation Alliance has created a new community organizing tool to help communities evaluate their local transit stations and advocate for improved passenger amenities and access to the station by all modes of transportation. The assessment gives transit riders a tool to improve their transit experience and helps make it easier to choose walking or biking to transit while leaving the car at home.

This new assessment applies place-making ideas to public transit infrastructure, thereby encouraging more transit travel. Active Transportation Alliance partners with individuals and community organizations to conduct Complete Stations Assessments of local train stations. The audience is typically a group of engaged residents (5-30 people) with interest in improving transit in their neighborhood. Through our assessment, residents rethink their train stations and suggest improvements, which are then used to inspire community lead advocacy and get the attention of important stakeholders.

This station assessment tool has been successful in engaging over 50 community members in outreach activities designing better train stations. To date, we have conducted five station assessments on train lines operated by three different agencies. Of the five, three have been presented by the advocates to local public officials and one has prompted a municipality to seek funding for improvements. Workshop participants will use the UIC-Halsted stop on the Blue Line to conduct an assessment on an operating CTA station. Please note this is not a mobile workshop and will take place at the conference site.
CONNECTING
COOK COUNTY:
THE FIRST LONG RANGE TRANSPORTATION
PLAN FOR COOK COUNTY SINCE 1940

2:45PM WORKSHOP B / White Oak Room / Moderator: Jordan Snow — University of Illinois at Chicago
Urban Transportation Center

María Choca-Urban — Cook County Bureau of Administration

Cook County Department of Transportation and Highways (DOTH) has embarked upon the development of Connecting Cook County, Cook County’s first Long Range Transportation Plan (LRTP) since 1940. The plan will provide a broad vision and a coherent strategy for transportation investments by tying them to greater economic growth and to making communities desirable places to live and work. The planning process officially began in February 2014 with a joint meeting of the Plan’s Advisory and Program Committees and will conclude in September 2015 with a final plan.

Connecting Cook County will marshal the combined resources of 130 mayors in suburban Cook County whose municipalities in aggregate represent an equal number of people, businesses and jobs as there are in Chicago so that the City benefits from having strong suburban neighbors just as suburban Cook profits from having a strong central city. Other agencies look at transportation through narrower lens: geographically at the municipal level or by type of transportation at the agency level. Our plan will look at the universe of policies and projects and prioritize them from a uniquely Cook County perspective to give us a better return on our investment across jurisdictions.

The federal government requires local governments to have long range plans as a condition for receiving transportation funds. In recent years, the U.S. Department of Transportation has rewarded government innovation by funding key projects that are central to local and regional plans. Cook County has missed out on those opportunities. This plan will change that.

Join us at this session to learn where we are with our analysis of all forms of transportation within the County’s borders and how you can participate in the process. Participants will have an opportunity to discuss the plan and provide feedback on the strengths, weaknesses and opportunities facing Cook County.
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