32ND ANNUAL CONFERENCE

FRIDAY JUNE 9, 2017
HOLIDAY INN CHICAGO MART PLAZA

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WELCOME TO TRANSPORT CHICAGO 2017

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 academics and professionals from the Chicago region and beyond, offering an excellent opportunity for the transportation community to make connections and share experiences.

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2017 CONFERENCE STEERING COMMITTEE

Dear Colleagues,

Welcome to Transport Chicago 2017.

As we celebrate our 32nd year, we continue to raise the bar. This year we bring you our largest conference program ever, featuring a mix of old and new faces, cutting edge research, and applied practice from throughout the Chicago region, the Midwest, and the nation.

Looking over the conference program, I hope you share my wonderment that we are in the midst of an era of rapid, seismic change. It is about so much more than emerging technology and disruptive business models. Transportation policymakers are increasingly playing the role of futurist, questioning and reconsidering fundamental notions of mobility and determining the implications for how, when, and where to invest in infrastructure and services. The most challenging questions going forward may well be ones we haven't even thought to ask yet. We won't answer many questions today, but with this many talented and brilliant people in the same room together for a few hours, I hope we can take a few steps in the right direction.

As you enjoy today's conference, please take a moment to notice our talented Steering Committee. These are your coworkers, clients, consultants, and peers, all of whom have worked incredibly hard to bring this wonderful event together. As an all-volunteer organization, Transport Chicago has grown to be an institution in this region. Thanks, in large part, goes to the support of the many public and private employers that fill our bench with talented and hardworking professionals to complete the many tasks, small and large, that make this conference a success. Your generous financial contributions haven't hurt, either. For this and more, we thank you.

I want to take a moment to acknowledge our keynote speakers. The Transport Chicago Steering Committee is pleased to welcome our Morning Keynote speaker, former San Francisco Mayor and former California Speaker of the House, Willie Brown; and our Lunchtime Keynote speaker, Strong Towns founder and president, Chuck Marohn, PE, AICP.

Enjoy the day!

Steve Brown, AICP
Transport Chicago 2017 Conference President

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SESSIONS
SID KENYON - *DUPAGE COUNTY DIVISION OF TRANSPORTATION*
RAYMOND CHAN - *CHICAGO TRANSIT AUTHORITY*
MATTHEW STEGEMAN - *PACE SUBURBAN BUS*
LAUREN FIHE - *REGIONAL TRANSPORTATION AUTHORITY*

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SCOTT GREIG - *CHICAGO TRANSIT AUTHORITY*
MARY ANN KAUFMAN - *UNIVERSITY OF ILLINOIS AT CHICAGO URBAN TRANSPORTATION CENTER*

CONFERENCE SCHEDULE

MORNING

8:45—9:45 AM

MORNING RECEPTION AND BREAKFAST

8:45—9:45 AM

MORNING KEYNOTE

WILLE BROWN, ICONIC TWO-TERM MAYOR OF SAN FRANCISCO CM / 1.0

10:00—11:00 AM

SESSION 1

A. F³: FLEXIBLE FUTURE FLEETS (STEAMBOAT HOTEL) CM / 1.0

B. POWER TO THE PEOPLE (THE BULL'S HEAD) CM / 1.0

C. P3 DOESN'T MEAN FREE: INNOVATIVE FINANCING FOR MAJOR INFRASTRUCTURE PROJECTS (MERCHANTS HOTEL) CM / 1.0

D. NEW DIRECTIONS IN TRANSPORTATION EQUITY (SHAKESPEARE HOUSE) CM / 1.0

11:15 AM—12:15 PM

SESSION 2

A. MR. ROGERS NEIGHBORHOOD PLAN (STEAMBOAT HOTEL) CM / 1.0

B. THEY SEE ME ROADIN' (THE BULL'S HEAD) CM / 1.0

C. ALL FOR ONE; ONE FOR ALL (SHAKESPEARE HOUSE) CM / 1.0

D. RIVERS RUN THROUGH IT (MERCHANTS HOTEL) CM / 1.0

CM / 1.0 *Up to 5.0 PDH / AICP CM credits available for attending all conference sessions (AICP CM credits are approved.)*

AFTERNOON

12:30—1:00 PM

LUNCH AND SPONSOR ACKNOWLEDGEMENTS

1:00—2:00 PM

LUNCH KEYNOTE PANEL

CHARLES (CHUCK) MAROHN, FOUNDER OF STRONG TOWNS CM / 1.0

2:00 - 2:45 PM

POSTER SESSION

CHICAGO RIVERWALK TOUR

MEET AT REGISTRATION TABLE AT 2:00

2:45—3:45 PM

SESSION 3

A. PLANNING THE LAST MILE: LESSONS FROM DUPAGE (STEAMBOAT HOTEL) CM / 1.0

B. ROLL MODELS (THE BULL'S HEAD) CM / 1.0

C. eTOD: MAKING TOD GREAT (AGAIN) (SHAKESPEARE HOUSE) CM / 1.0

D. ASK THE DECISION MAKERS (MERCHANTS HOTEL) CM / 1.0

4:00—6:00 PM

RECEPTION

OUR KEYNOTE SPEAKERS

SAUGANASH GRAND BALLROOM

MORNING 8:45—9:45 AM

WILLIE L. BROWN JR.

Two-term Mayor of San Francisco, legendary Speaker of the California State Assembly, and widely regarded as the most influential African-American politician of the late twentieth century, Willie L. Brown, Jr., has been at the center of California politics, government, and civic life for an astonishing four decades.

His career spans the American Presidency from Lyndon Johnson to George W. Bush, and he's worked with every California Governor from Pat Brown to Arnold Schwarzenegger. From civil rights to education reform, tax policy, economic development, health care, international trade, domestic partnerships, and affirmative action, he's left his imprimatur on every aspect of politics and public policy in the Golden State.

As Mayor of California's most cosmopolitan city, he refurbished and rebuilt the nation's busiest transit system, pioneered the use of bond measures to build affordable housing, created a model juvenile justice system, and paved the way for a second campus of the University of California, San Francisco, to serve as the anchor of a new development that will position the City as a center for the burgeoning field of biotechnology.

Today, he heads the Willie L. Brown, Jr., Institute on Politics and Public Service, where this acknowledged master of the art of politics shares his knowledge and skills with a new generation of California leaders.

AFTERNOON 1:00—2:00 PM

CHARLES MAROHN

Charles Marohn - known as "Chuck" to friends and colleagues - is a Professional Engineer (PE) licensed in the State of Minnesota and a member of the American Institute of Certified Planners (AICP). Chuck is the founder and president of Strong Towns. He has a Bachelor's degree in Civil Engineering from the University of Minnesota's Institute of Technology and a Masters in Urban and Regional Planning from the University of Minnesota's Humphrey Institute.

He is the author of Thoughts on Building Strong Towns (Volume 1) and Volume II (forthcoming), as well as A World Class Transportation System. Chuck hosts the Strong Towns Podcast and is a primary writer for Strong Towns' web content. He has spoken in dozens of towns and cities across North America, and speaks regularly for diverse audiences and venues.

Chuck grew up on a small farm in Central Minnesota. The oldest of three sons of two elementary school teachers, he graduated from Brainerd High School in 1991. Chuck joined the Minnesota National Guard on his 17th birthday during his junior year of high school and served for nine years. Besides being passionate about building a stronger America, he
loves playing music, is an obsessive reader and religiously follows his favorite team, the Minnesota Twins. Chuck and his wife live with their two daughters and two Samoyeds in Brainerd, Minnesota.

Learn more about the work of Strong Towns at StrongTowns.org.

SESSION 1A

10:00AM – 11:00AM

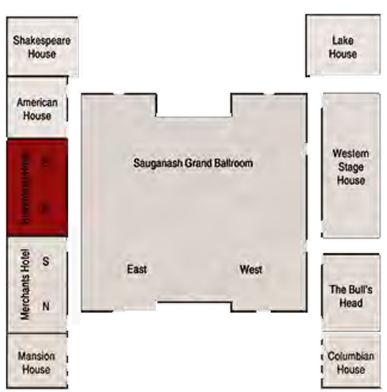
F3: FLEXIBLE FUTURE FLEETS

MODERATOR:
DAVID BERMAN
CHICAGO TRANSIT AUTHORITY

Today, the very face of mobility options is constantly being revamped. Regular paradigm shifts in how mobility is provided are increasingly becoming the norm, both in terms of technology and service delivery models.

To this end, this session will look into the near future, exploring planning and implementation efforts to move towards zero-emission fixed-route transit fleets while also considering what's on the horizon in flexible mobility.

STEAMBOAT HOTEL



SUSTAINABLY AND EQUITABLY PLANNING FOR A ZERO-EMISSIONS BUS FLEET: KING COUNTY METRO BATTERY-ELECTRIC BUS PLAN

ELLEN GOTTSCHLING
SAM SCHWARTZ

King County Metro, WA has set forth a bold plan to transition its bus fleet to a zero-emission fleet by 2034. Transportation emissions are one of the largest sources of climate pollution in King County and Metro Transit is one of the largest consumers of diesel in the State of Washington. Sam Schwartz helped to develop a long-term path to guide transition to a zero-emission fleet, including technological changes, technical issues, maintenance, facility capacity, and vehicle availability issues. This process focused on utilizing current slow-charge and quick-charge technology as a basis for comparison to current fleet to identify phasing opportunities across the system. Our team considered vehicle run times, layovers, headways, bus storage, and charging station siting issues in the recommendation of both near- and long-term phasing.

A key consideration in this transition is how the air pollution benefits of zero-emission technology can advance social equity by first serving communities most vulnerable to air pollution. For our equity analysis we compiled factors for air quality, health, and social conditions for Metro's service area, then developed a system to prioritize bus routes for transition to zero-emission technology. Combined with Metro's assessment of suitable route and base characteristics of battery-electric bus technology, the analysis concluded with a recommendation for deployment at specific Metro operated bus bases.

VIA, CHICAGO, AND THE FUTURE OF SHARED RIDES

YOAV MORDOWICZ
VIA TRANSPORTATION

In ride-hailing's first chapter, smartphone technology revolutionized how everyday vehicles are routed, delivering on-demand rides at an affordable price. In its next chapter, ride-hailing is turning to a new challenge: shared rides. New transportation networks are emerging that deliver passenger aggregation with limited route deviation, at an even more affordable price - but also at a far greater level of technical and operational complexity.

Since coming to Chicago in November 2015 as the city's first provider of shared, on-demand rides, this is the exact problem Via Transportation has set out to solve: creating the infrastructure that coordinates, in real-time, the optimized matching and maximally efficient routing of vehicles and passengers. To operate efficiently, a network like Via's must (1) automatically identify riders whose routes overlap, so they can share a single vehicle without detour; (2) match those riders with the most suitable nearby vehicle; and (3) direct that vehicle along the fastest route to pick up and drop off riders. It's no small feat.

Over the past 18 months, Via Chicago has been an instrumental contributor to Via's greater mission of delivering the flexible transportation network of the future. Here in Chicago, Via has scaled a first-of-its-kind shared ride network across hundreds of vehicles and thousands of riders, adapting its technology to the city's particular needs, and learning a great deal in the process. Join Via General Manager Yoav Mordowicz for a discussion of Via's approach to shared rides in Chicago, and of and Via's vision for the future of transportation.

ARE SELF-DRIVING BUSES A THREAT TO PUBLIC TRANSPORTATION?

BRADY YOUNG
DOUBLEMAP

Are autonomous cars a threat to public transit? Technology such as Tesla and Google's smart self driving cars are working their way into the automobile industry. Recently Tesla, Google, Mercedes, and other companies have released fully autonomous cars and are in the process of releasing fully autonomous buses/shuttles. Will these self-driving buses pose a threat to active public transportation? In this presentation, the audience will learn about what public transit can expect from the autonomous driving industry moving forward, what steps leading agencies have taken to provide their own service, and what new options are available for those interested in on-demand technology for public transit.

SESSION 1B
10:00AM – 11:00AM

POWER TO THE PEOPLE

MODERATOR:
SID KENYON
DUPAGE COUNTY DIVISION OF TRANSPORTATION

Implementers who seek to improve access and mobility through stakeholder outreach would argue that they owe their successes to deliberate and thoughtful public engagement. In Gary, the Livable Broadway Regional Plan engaged advocates, government agencies, and the public together to endeavor on a multimodal revitalization strategy for a corridor that is crucial to Gary's future.

From their quest to pass a transit funding referendum, IndyGo shares lessons learned in marketing and advocacy to provide a framework for a successful campaign to provide sustainable funding for mass transportation. Representatives from CTA and Solomon Cordwell Buenz share insights on a proactive community planning process that was an integral part of the CTA's new transit-oriented development pilot program.

Through public engagement, all three projects resulted in more equitable transportation solutions that are politically and economically sustainable.

MASS TRANSIT MEANS: THE ADVOCACY COALITION + PUBLIC AGENCY EXECUTION A SUCCESSFUL REFERENDUM

LAUREN DAY
IndyGo

In 2016, Indianapolis voters approved a dedicated tax for transit by nearly 60%. Reaching a successful vote was a decade in the making. It included executing the largest public engagement effort in the county, educating public and riders on the value of transit and implications of a successful vote, communicating a consistent message to stakeholders, and winning a positive council enactment.

Successful referendums require the alignment and concentrated effort of both tracks - public agencies and advocacy coalition - while maintaining legal separation. Infusing a consistent message while building and executing a diverse stakeholder coalition yielded immense and essential lessons for Indianapolis.

This presentation will outline the values-message that permeated both tracks, how the robust coalition was organized, and the pain points of maintained consistent direction and ownership of results. Ultimately the work led to a successful tax enactment, and the lessons can be applied equally to large and small scale efforts.

THE BULL'S HEAD

TOWARDS A MORE COMPLETE CORRIDOR: 'LIVABLE BROADWAY' AND THE MULTIMODAL TRANSIT PLAN

DAVID W. WRIGHT
GARY PUBLIC TRANSPORTATION CORPORATION

JAMES CONSIDINE
T.Y. LIN

The Livable Broadway Regional Plan (LBRP) focused on multimodality; government officials, transit planners, active transportation and accessibility advocates fashioned a plan for connecting existing/planned active transportation projects, and promote new ones. The presentation will focus on LBRP, its planning process, stakeholder involvement and subsequent implementation.

The plan presentation will discuss how stakeholder goals combined for comprehensive, multimodal recommendations for Broadway. Funded thru the National Oceanic and Atmospheric Administration (NOAA), the plan included local, state and federal governments as well as environmental, advocacy and philanthropic agencies. The end product focused on transit recommendations but also addressed land use planning and sustainability. The LBRP was recognized by the Indiana Planning Association with its annual awards.

After adopting the plan, the Gary Public Transportation Corporation (GPTC) sought and received pilot funding for creation of new service with rapid elements- branding, limited stops, increased frequency and bus bypass lanes. The "Broadway Metro Express" is set to launch in 2017. It is an experiment in rapid elements on the smaller urban scale as well as a model of cooperation - roadway improvements spearheaded by the Indiana Department of Transportation, adding bus bypass lanes and shelters in the right of way. Local communities have not only signed on to paying for part of the shelters, but one suburban community requested feeder service and will help pay it. Logos and stations art elements are being underwritten by local philanthropic agencies. Lastly, transit-supportive development near stations is being actively promoted, planned and encouraged by local and regional agencies.

TRANSIT AGENCIES AND COMMUNITY PLANNING - CASE STUDY IN SUPPORTING TOD WITH THE CHICAGO TRANSIT AUTHORITY

TERESA FOURCHER
SOLOMON CORDWELL BUENZ

STEVE HANDS
CHICAGO TRANSIT AUTHORITY

Problem Statement: As part of the FTA's Pilot Program for Transit-Oriented Development, the Chicago Transit Authority (CTA) has engaged a multi-disciplinary consultant team to create a Transit-Oriented Development (TOD) plan for two of Chicago's established north side neighborhoods with planned rapid transit infrastructure improvements. The goal is to promote redevelopment in the neighborhood that is successful, thoughtfully designed, and contributes positively to the community and reflects a transit rich lifestyle.

Project Approach: This proactive community planning process is a new initiative for the CTA. The CTA has partnered with the Department of Planning and Development, elected officials, and the consultant team to engage with residents and stakeholders in planning for the neighborhoods along the planned rail corridor improvements. The plan will create a framework to guide future development of the sites that may remain after construction and will incorporate strategies for enhancing the public realm surrounding the rail infrastructure. The plan will be informed by a real estate market analysis, a development proforma, historic preservation coordination, and public outreach process resulting in a framework that capitalizes on the adjacent transit service, is reflective of the community's vision, and is responsive to market demands.

Findings and Conclusions: The project illustrates that by engaging the public throughout the transit corridor planning and construction process, the outcomes of transit improvements themselves, related private development, and public investments can foster a thriving transit rich neighborhood and that transit agencies can provide leadership and foster conversation and collaboration that will ensure success.

SESSION 1C

10:00AM – 11:00AM

P3 DOESN'T MEAN FREE:

INNOVATIVE FINANCING FOR MAJOR INFRASTRUCTURE PROJECTS

MODERATOR:
ELAINE MCKENZIE
CAMBRIDGE SYSTEMATICS

At a time when there seems to be very little agreement on many of the challenges that are facing the nation, there is a near-universal acceptance that our public works are in need of substantial reinvestment.

The Trump Administration has voiced a desire to sharply increase investment in infrastructure, in part through the expansion and encouragement of private market investment, or Public Private Partnerships (P3).

But the application of a P3 to a funding shortfall and deteriorating public works is not a magic bullet; they cannot create project viability where none exists, nor can a P3 extract revenue where none is to be had.

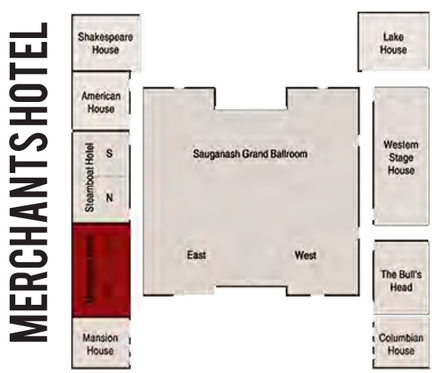
Certain conditions must be met for both the public and private sectors to benefit from a P3 arrangement. Brief presentations from the panelists will be followed by a 45-minute, audience-driven Q&A.

PANELISTS:

ERIN ALEMAN
ILLINOIS DEPARMENT OF TRANSPORTAT ION

RINA CUTLER
AMTRAK

JONATHON HART
CDM SMITH



SESSION 1D

NEW DIRECTIONS IN TRANSPORTATION EQUITY

The Chicago Metropolitan Agency for Planning's Inclusive Growth strategy for the agency's ON TO 2050 comprehensive plan focuses on the role of decreasing inequality in promoting regional economic growth. Inclusive growth strategies aim to ensure that growth and prosperity benefit all segments of the population. The region's transportation system plays a critical role in creating inclusive growth both in its ability to connect to opportunity and the effects transportation projects may have in excluded communities. The panel will focus on the challenges and opportunities involved with bringing projects to promote transportation equity to Chicago's low- and moderate-income communities.

The Chicago Department of Transportation (CDOT) is one of four key City agencies in the development and implementation of Vision Zero, Mayor Rahm Emanuel's initiative to eliminate traffic fatalities on Chicago's streets by 2026. CDOT has played a leadership role in the formulation of the City's three-year Vision Zero Action Plan setting 2020 goals and benchmarks, working with 11 departments and agencies on a new approach to traffic safety. The Plan has a special focus on equity and the disproportionate effect of traffic crashes on communities with high economic hardship levels and explores how investing resources in these areas can reduce barriers to safe mobility.

Bike share and equity are important components of Vision Zero goals to make streets safer for people of all demographics. CDOT also manages Divvy for Everyone (D4E), a program that provides low-cost Divvy bike share memberships to qualifying residents, offering all Chicagoans an affordable, accessible and fun transportation option.

The Shared-Use Mobility Center's (SUMC) Peer-to-Peer (P2P) Carsharing Pilot Project is an initiative of the Center for Neighborhood Technology (CNT) with management assistance from SUMC. The P2P Carsharing Pilot Project is a two year, federally-funded effort to explore the impacts of peer-to-peer carsharing in low-income and low-density neighborhoods in Chicago.

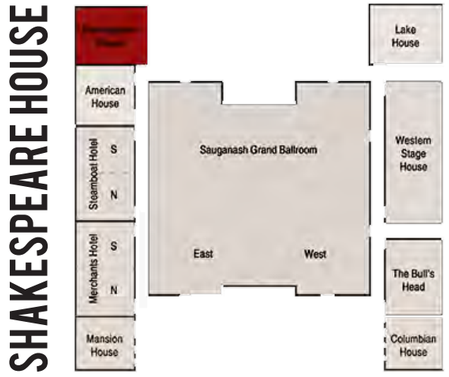
MODERATOR:
ELIZABETH SCOTT
CHICAGO METROPOLITAN AGENCY FOR PLANNING

PANELISTS:

ROSANNE FERRUGGIA
CHICAGO DEPARTMENT OF TRANSPORTATION

AMANDA WOODALL
CHICAGO DEPARTMENT OF TRANSPORTATION

TBD
SHARED USE MOBILITY CENTER



SESSION 2A

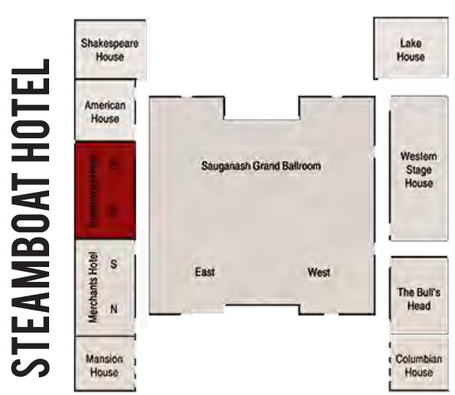
11:15AM – 12:15PM

MR. ROGER'S NEIGHBORHOOD PLAN

MODERATOR:
EDWARD BURY
UNIVERSITY OF ILLINOIS AT CHICAGO
URBAN TRANSPORTATION CENTER

It's a wonderful – and certainly different – kind of day in some Chicago neighborhoods. That's because the fabric within long-standing communities is being altered to accommodate new business, recreational and residential development. Learn about mobility challenges and potential plans ahead for three very different Chicago neighborhoods.

At this session we'll hear from planning professionals who will share insight into the changing streetscape in the former meatpacking Fulton Market district in the West Loop, a transportation plan to accommodate visitors at the Pullman National Monument on the far South Side, and parking management at the growing Illinois Medical District on the Near West Side.



FLEXING A STREET FOR MEATPACKERS AND INNOVATORS

MARK RINNAN
JACOBS

Historic Fulton Market has been rapidly transitioning to entertainment and office land uses, with only a few food distributors determined to remain. An overlaying Innovation District (adopted in 2014) and the Fulton-Randolph Historic District (created in 2015) further define land uses and design guidelines applicable to elements in the public way.

The challenge then is to rebuild a street that; complies with design covenants, provides safe and compliant access for all users, accommodates trucks of all sizes, allows for efficient goods transfer by forklift, and is flexible enough to accommodate day and night traffic and parking needs. This problem was addressed using a standard design development process. The methodology included 12 tasks conforming to Chicago Department of Transportation processes.

Designing a project where the land uses are completely in flux creates complexity. Evolution of the design required substantive consultation with many agencies, public way maintainers, developers, community stakeholders, and the general public. The project included an all-day public workshop and two presentations to the Commission on Chicago Landmarks. Improvements are to be constructed as two sections. The first is the full reconstruction of Fulton Market between Halsted Street and Carpenter Street. The portion between Peoria Street and Morgan Street is designed as a curbless 'flexible' street. The second is from Carpenter Street to Ogden Avenue. Design amenities include; restoration of cobble pavers, custom site furniture, irrigated landscaped infiltration planters, an over-the-road decorative arch for community identity, enhanced crosswalks, and new colorized sidewalk with granite paver accents.

PULLMAN NATIONAL MONUMENT TRANSPORTATION PLAN

SARAH KELLERMAN
SAM SCHWARTZ

The Pullman National Historic Monument is unique from other national parks in scale, urban setting and its potential to link to a variety of multi-modal connections in the area. But, Pullman is a neighborhood first. People live in, attend school, shop, and work in Pullman. There are regional highways, trails, trains and transit throughout the region that could connect to Pullman, but improvements are needed to welcome the projected 300,000 visitors each year. For this site and surrounding neighborhoods, the new designation heightens the need to improve access and address the challenges of increased transportation demand.

The Pullman Transportation Plan, developed by Sam Schwartz Consulting in partnership with NPCA and the National Parks Service, works to not only accommodate increased visitor activity in a way that is sensitive to the context of the neighborhood, but also to create additional neighborhood and regional connections that will support economic development and livability in the far south side of Chicago. Building on work from the Positioning Pullman community visioning plan, his project presents an opportunity for looking at national parks as innovative urban landscapes..

BEST PRACTICES IN PARKING MANAGEMENT: IMD

JANE WILBERDING
SAM SCHWARTZ

The Illinois Medical District (IMD) is the largest urban medical district in the United States, consisting of over 560 acres of land dedicated to various medical facilities, healthcare services, and educational institutions; and visited by employees, patients and visitors who are driving - and parking - for a similar duration of time, at the same hours each day. Accordingly, parking is currently one of the dominant landuses and key concerns in the Districts planning initiatives.

Between the spring and fall of 2016, Sam Schwartz Consultants worked with the IMD to develop a comprehensive parking management plan to balance parking supply, parking demand, and the needs of an active pedestrian environment. Recommendations from this study included funding strategies to create a Transportation Management Association (TMA), partnering with Lyft to increase the first mile/last mile catchment area for employee commuters, and developing a consistent pricing structure within the district as a whole.

This presentation will discuss how this plan used parking management strategies to accommodate the districts individual user groups; promote alternative modes to create a more walkable environment; and prepare for parking's changing role as incoming transportation technologies continue to develop.

SESSION 2B

11:15AM – 12:15PM

THEY SEE ME ROADIN'

MODERATOR: KEVIN O'NEILL

AECOM

Illinois' transportation network continues to be ranked in the top three of all states for number of bridges, roadway miles under state jurisdiction, and freight tonnage. This session will present a wide-ranging look at transportation planning issues facing the State of Illinois and Chicagoland from three different levels.

First, to ensure the maintenance and growth of the nationally significant transportation network, Illinois Department of Transportation (IDOT) is in the process of creating the next statewide Long Range Transportation Plan (LRTP). The plan's current vision for transportation in Illinois is to provide innovative, sustainable and multimodal transportation solutions that support local goals and grow Illinois' economy.

Zooming in, the Central Tri-State is the backbone of the Illinois Tollway system and serves as a critical cog in the regional transportation network. The 22-mile stretch of roadway connects to four other interstates, links the O'Hare-Midway freight corridor, and connects businesses and residents in over 30 municipalities to the Chicago region. The Tollway undertook a Master Plan effort to alleviate the current problems with the roadway and to address the needs of future. Rocco Zucchero, Illinois Tollway Deputy Chief of Engineering for Planning, will discuss the recommendations of the Master Plan and how the improvements to the Central Tri-State will help to support and enhance the region's transportation and economic networks. Finally, a shortage of truck parking in Chicagoland has been known since the mid-2000s. With freight loads expected to increase over 40% by 2045, and with Chicagoland's important role in moving this freight, innovative approaches must be found to accommodate these increased loads. Truck parking is one of the key policy areas to address the challenges of increased freight loads and urban delivery issues. This presentation offers a review and evaluation of potential ways to increase truck and further support efficiency and safety in freight movement.

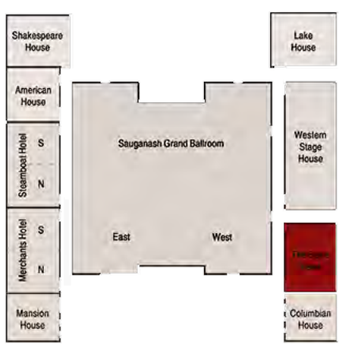
THE ILLINOIS LONG RANGE TRANSPORTATION PLAN

CHRISTOPHER SCHMIDT
ILLINOIS DEPARTMENT OF TRANSPORTATION

Illinois' transportation network continues to be ranked in the top three of all states for number of bridges, roadway miles under state jurisdiction, and freight tonnage. To ensure the maintenance and growth of the nationally significant transportation network, Illinois Department of Transportation (IDOT) is in the process of creating the next statewide long range transportation plan. The plan's current vision for transportation in Illinois is to provide innovative, sustainable and multimodal transportation solutions that support local goals and grow Illinos' economy.

This presentation will provide an update on the work already completed by the department including a gap analysis and data review, the development of the plan's strategic goals, and a look at the performance targets that will measure the plan's progress. The presenters will explain in greater detail how the strategic goals will drive the structure of the plan, how the objectives and strategies were developed, and what performance measures are being considered for measuring the success of the plan. At the end of the presentation, the audience will be asked to provide feedback through the use of keypad polling and questions on the planning process.

THE BULL'S HEAD



THE MISSING PIECE: TRUCK PARKING SOLUTIONS FOR CHICAGOLAND

ERIC OBERHART
CPCS

A shortage of truck parking in Chicagoland has been known since the mid-2000s. As truck volumes increase, the need for truck parking will grow. This presentation explores three potential policy and infrastructure interventions to improve truck parking in Chicagoland: creation of ITS infrastructure or social media applications to collect and broadcast parking information, purchase or reuse of existing highway right of way for additional parking, and reuse of vacant urban parcels for truck parking.

A review of existing practices in ITS and ROW management to support truck parking is teamed with findings of previous research using GIS to identify potential locations for urban truck parking. For the GIS component, location attributes such as lot size, fencing, facilities availability, pavement type, proximity to interstate and business core, and proximity to residential areas are used in the analysis to identify potential parking areas. A case study of this application will be provided from Detroit. Trends in truck parking needs, and the range of parking solutions under development are also presented to establish the importance of an increased focus on providing adequate truck parking in the areas it is needed.

Application of the analysis to three Midwestern cities (Detroit, Columbus, and St. Louis) shows that there is ample urban space that could be adapted for truck parking. GIS parcel evaluation is a useful tool for identifying and ranking potential truck parking locations on brownfields and vacant urban parcels.

CENTRAL TRI-STATE MASTER PLAN

ROCCO ZUCCHERO
ILLINOIS TOLLWAY

The Central Tri-State is the backbone of the Tollway system and serves as a critical cog in the regional transportation network. The 22-mile stretch of roadway from 95th St. to Balmoral Ave. connects to four other interstates, links the O'Hare Midway freight corridor, and connects businesses and residents in over 30 municipalities to the Chicago region. Unfortunately, the roadway is in need of repair. It still has original 1950's pavement in many locations, and major pieces of infrastructure like the Mile Long Bridge are deteriorating. Congestion and chokepoints like the I-290/I-294/I-88 interchange cause commuters and freight vehicles significant delays and threaten the economic vitality of the region.

Recognizing the importance of the roadway and the existing conditions, the Tollway undertook a Master Plan effort to alleviate the current problems with the roadway and to address the needs of future. Seeking guidance and input, the Tollway established a Corridor Planning Council (CPC) of regional and local stakeholders at the project's outset. The CPC developed a set of guiding principles, prioritized roadway issues, and provided the design team with specific recommendations to consider.

Taking the findings and recommendations from the CPC, the Master Plan has evaluated a wide array of mainline alternatives, ranging from an in-kind reconstruction to managed express lanes, and analyzed the issues identified by the CPC. At the conference, the Tollway will discuss the recommendations of the Master Plan, and how the improvements to the Central Tri-State will help to support and enhance the region's transportation and economic networks.

SESSION 2C

11:15AM – 12:15PM

ALL FOR ONE; ONE FOR ALL

MODERATOR: LAUREN FIHE

REGIONAL TRANSPORTATION AUTHORITY

Public transportation systems at best provide options for the varied needs and preferred modes of system users. As technology and data analysis have been utilized to provide users with real-time travel information and comprehensive trip planning tools, improvements have also been made to increase accessibility to transit systems and enhance the pedestrian environment.

This presentation will highlight the findings of a data-driven study on public transit accessibly for individuals with disabilities, discuss the Chicago Transit Authority's current initiative for increasing station accessibility through the All Systems Accessible Program (ASAP), and conclude with a presentation on regional trends in walking and biking and using data to analyze walkability on a regional scale.

SHAKESPEARE HOUSE

REGIONAL TRENDS IN WALKING AND BIKING

LINDSAY BAYLEY
CHICAGO METROPOLITAN AGENCY FOR PLANNING

This report will highlight the major findings from CMAP's ON TO 2050 non-motorized transportation snapshot report. It is divided into three sections: Trends in walking and bicycling, safety for pedestrians and bicyclists, and the importance of walkability. Enabling safe, convenient, and comfortable non-motorized transportation options for all our region's residents will help to create vibrant communities, improve equity and public health, and support local economies.

As more and more pedestrians and bicyclists take to the streets, ensuring their safety is of the utmost importance. Since 2010, municipal interest in walking and biking has grown tremendously. Four areas within which we can look for evidence of change, trends, new ideas and new practices are: (1) Infrastructure (2) Bicycle ridership levels and pedestrian metrics, (3) Programs, policies, and plans, and (4) Funding sources and amounts.

Walkable communities and safe, connected networks for bicycling can reduce the number of automobile trips, ease congestion, and improve the overall performance of the transportation system. Understanding where crashes are happening, at what times of day, and on what types of roadways can provide insight into needed improvements. Knowing what steps local communities have successfully taken to improve conditions for walking and bicycling will provide insight for other communities working to encourage non-motorized travel.

ACCESSIBILITY AT THE CTA – PRESENT AND FUTURE

SONALI TANDON AND AMY SERPE
CHICAGO TRANSIT AUTHORITY

The Chicago Transit Authority (CTA) is committed to making its rail system 100% accessible to people with disabilities. The All Stations Accessibility Program (ASAP) is a new planning effort announced by CTA's President Dorval Carter, Jr., that will establish the first blueprint for making 42 remaining non-accessible rail stations accessible over the next 20 years. The plan for the rehabilitation and/or replacement of 155 existing station elevators is also part of ASAP. In addition to addressing vertical accessibility, the CTA is looking to incorporate wayfinding elements in the ASAP stations to enhance the independent travel for people who are blind or visually impaired, as well as those who have both a hearing and visual disability.

The project team, consisting of CTA staff, as well as other accessibility experts has been researching existing wayfinding technologies and systems that are used in public spaces. It has identified six wayfinding categories, some of which may be more suitable for application within the CTA system, as well as others that may be more suitable for application in certain types of stations. It is anticipated that, while there is no one wayfinding approach that will meet the needs of all transit users, a combination of different solutions may increase overall usability of the system by people with disabilities.

This presentation will provide information on how the CTA's plans and initiatives assist in enhancing accessibility throughout its system..

ESTIMATING AND ENHANCING PUBLIC TRANSIT ACCESSIBILITY FOR PEOPLE WITH MOBILITY LIMITATIONS: A KALAMAZOO COUNTY, MICHIGAN CASE STUDY USING GTFS DATA

C. SCOTT SMITH
TRANSPORTATION RESEARCH INSTITUTE FOR LIVABLE COMMUNITIES, WESTERN MICHIGAN UNIVERSITY

While personal mobility in the U.S. relies heavily on the private automobile and associated infrastructure, numerous social, economic and environmental benefits can be achieved by fostering convenient and effective public transit systems. However, fostering convenient and efficient public transit systems will require both considerable investment and, important to this research, (sub)regional coordination. The separation of urban, suburban and exurban public transportation services has meant that people who travel across jurisdictions—e.g., from cities to rural areas and between suburban areas—often find public transit a difficult or unviable mode of transportation; thus transit agencies and operators and municipalities need to become less parochial and more unified and regional.

This multi-part study extends the application of open source tools and data--specifically, General Transit Feed System (GTFS), OpenTripPlanner, OpenStreetMap and Q(uantum)GIS data to develop performance measures and analytical techniques designed to evaluate, categorize and improve coordination of regional transit operations and services via three case studies: (1) evaluting and enhancing transit access across municipal jurisdictions (DuPage County, IL); (2) evaluating and prioritizing access for limited mobility populations (Kalamazoo County, MI); and (3) examining the effects of regional coordination of public transit (Detroit metropolitan area's Regional Transit Authority). For each study, we examine how open source data and tools can help to identify problems in service provision and measure performance (time and costs). In this way, each case highlights a particular challenge and dimension of regional coordination.

SESSION 2D

11:15AM – 12:15PM

RIVERS RUN THROUGH IT

Chicago's rivers are having a moment. The Riverwalk, new riverfront development, and the city's Our Great Rivers vision have helped turn more and more attention to our rivers. Water Taxi service and ridership continue to grow, as do opportunities for continuous river trail.

With that comes questions - what is the potential, or upper limit, of waterborne transit on Chicago's rivers? Can water taxis be integrated into the regional transit system? What can Chicago learn from global river cities with robust water-based transit? What obstacles face a Chicago River Trail? Can we achieve the Our Great Rivers stated 2030 goals of integrated transit on land water, and continuous riverfront trails?

MODERATOR:
JOSH ELLIS
METROPOLITAN PLANNING COUNCIL

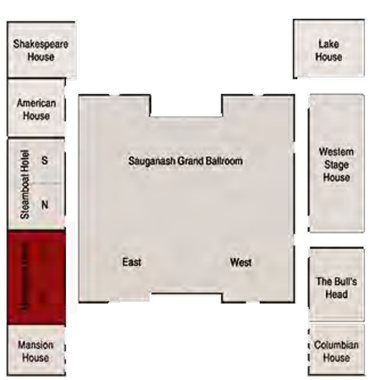
PANELISTS:

JEFF SRIVER
CHICAGO DEPARTMENT OF TRANSPORTATION

ANDREW SARGIS
CHICAGO WATER TAXI

PETRA HURTADO
URBAN BREEZES

MERCHANTS HOTEL



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TRANSPORT CHICAGO REMEMBERS MIKE BOLTON

Mike's distinguished career in public transportation began with a part time job as a CTA bus operator. He also worked at the RTA in its formative years. Going on to serve as General Manager for three public transportation agencies and in several positions in academia and the private sector, Mike eventually returned to Chicagoland to serve as Deputy Executive Director of Strategic Services for Pace Suburban Bus.

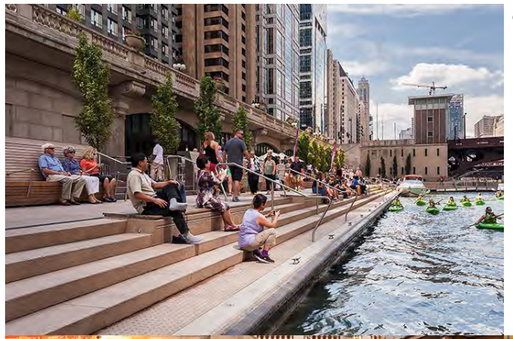
Mike has lived his life in service to others, making great contributions to the public transportation industry nationally, and especially in this region.

Mike was also a great supporter of Transport Chicago over the years, and will be greatly missed.

CHICAGO RIVERWALK TOUR

2:00 – 2:45 PM

LIMITED SPACE
MEET AT THE REGISTRATION TABLE AT 2:00 PM



The Chicago Riverwalk is a major public amenity along lower Wacker Drive, extending from Michigan Avenue west to Lake Street, offering mix of concessions and public activities.

CDOT will lead a short walking tour of Chicago's newest public attraction, where they will provide details about the background and implementation of the project.

POSTER SESSION
2:00PM – 2:30PM

COORDINATED BY:
JASON BIERNAT
CHICAGO TRANSIT AUTHORITY

BLOCKCHAIN IN NEW MOBILITY

JOCHEN RENZ
NEW MOBILITY LAB

Why the Blockchain in New Mobility? The digital transformation of mobility and transportation has far reaching implications for consumers, industry and the public sector. Mobility is critical to economic and social development and must therefore be accessible and affordable to everyone. Driverless vehicles promise a leap in productivity, but at the same time threaten the industrial base and related jobs in view of digital business models, automation and new forms of ownership. At the same time, the digital transformation promises a future where mobility is not only sustainable and zero emission, but shared and available on demand in a highly customized fashion. Such personalization of mobility services relies on data and the ability to translate such data into products and services that consumers value.

Data has become the ultimate control point and is at the center of emerging business models. What are the future business models in this emerging ecosystem of mobility? The Blockchain promises a future where personal identities and data can be protected. At the same time, identities and trust protocols enable a true P2P sharing economy without impacting privacy. It may enable data sharing across value chain participants in a way that puts consumers and commons in control of data and how it may be shared (and in exchange for what).

Ultimately, the Blockchain promises to power not only humans, but autonomous fleets that create a self-governing marketplace of mobility and transportation services. With Illinois' focus on Blockchain (IL Liaison, pilot at Cook County, IDOT looking for use cases) we see this highly relevant.

CASE STUDY OF CROWDSOURCING PACKAGE DELIVERY SERVICE

SUDHEER BALLARE
DEPARTMENT OF CIVIL AND MATERIALS ENGINEERING
UNIVERSITY OF ILLINOIS AT CHICAGO

The rise of e-commerce (U.S. Census Bureau Report, 2016) and the trend of on-demand deliveries has led to the urban retail sector searching for an innovative urban mobility solution to satisfy this variable express demand. Crowdsourcing delivery presents a potential solution while also mitigating the negative impacts of urban logistics. Similar to ride-sharing, crowdsourcing in freight delivery involves making use of everyday individuals, already on road with spare time and capacity to fulfill the variable delivery demand by using real-time web or mobile based technology for coordination (Howe, 2006).

This study was aimed at analyzing the existing crowdsourcing data for a period of 24 months to understand the factors responsible for success of such a delivery system. The key research questions include examining the pricing models with respect to the package size and delivery distance, who the potential customers and drivers are for such a system, where the potential market is, and how to increase market share of crowdsourcing service.

The findings of this study should shed light on crowdsourcing delivery service with respect to pricing models, stakeholder satisfaction, market share potential, as well as opportunities to reduce overall operational costs and improve efficiency.

DYNAMIC MOBILITY FRAMEWORK FOR CHICAGOLAND SUBURBAN REGION USING CONNECTED AND AUTONOMOUS VEHICLES (CAV) AND OTHER EMERGING TECHNOLOGIES

TAQHI MOHAMMED
PACE SUBURBAN BUS

Pace Suburban Bus serves Chicagoland's six-county suburban region in northeastern Illinois, where varying population densities requires several intelligent transportation solutions to address residents' changing needs and preferences as well as opportunities offered by Connected Automated Vehicle (CAV) technologies. One such solution is Pae's Dynamic Mobility Framework. Dynamic Mobility Framework (DMF) puts users at the core of transit services, offering them tailor-made mobility solutions based on their individual needs. The objectives of this framework include seamless and efficient flow of information and people, scalable door-to-door mobility services, an improved level of transit service, and an open ecosystem for information and services.DMF has many components, including a service platform, intelligent infrastructure and fare integration, but this presentation focuses on a Connected Vehicle (CV) based dynamic mobility module and CAV for short-distance first- and last-mile solutions.

The CV module uses Integrated Dynamic Transportation Operations (IDTO) features such as dynamic transit operations and transit connection protection; a dynamic ridesharing application, and a mobility framework integrated with demand responsive CAV's that allow travelers to arrange trips through an automated system using smart phone and other inputs from passengers and drivers before, during and after trips to provide door-to-door transit service.

This poster presentation will also discuss vision, current steps and future opportunities in deploying DMF/CAV technologies in collaboration with regional stakeholders and the private sector.

A CASE STUDY ANALYSIS TO DERIVE THE KEY ATTRIBUTES OF SUCCESSFUL TRANSIT-ORIENTED DEVELOPMENT

HEATHER GLEASON
BKV GROUP

New development in suburban and exurban markets often caters to existing transit use models rather than choosing to support or even encourage new transit use. These developments are inevitably car-focused and can be actively detrimental to community goals of establishing a diverse transit network.

Municipalities continue to struggle to guide developers towards transit-oriented development (TOD) because they have difficulty determining what zoning provisions are necessary to yield TOD of the character and type desired by the community.Through an examination of case studies around the country, we analyzed what metrics, project types, and design techniques have proven successful in a range of markets.

These case studies focus on development types common to suburban and exurban communities including multi-family housing, mixed use, adaptive reuse of existing building stock, and municipal services like police and fire stations. Our conclusions concentrate on three key components: key performance metrics, desirable design elements, and lessons learned. Metric analysis identifies commonalities among successful projects that are transferable to new developments including parking ratios, population density, proximity to transit, transit options available, building height, building amenities, cost, and other applicable elements. The study catalogs elements of building design that go beyond style to successfully encourage transit use and contribute a sense-of-place from new development.

Project specific lessons learned highlight common challenges faced by municipalities, developers and designers and focuses on pitfalls to avoid for future success.

POSTER SESSION (CON'T)
2:00PM – 2:30PM

COORDINATED BY:
JASON BIERNAT
CHICAGO TRANSIT AUTHORITY

FIELD REVIEW FINDINGS OF HIGH PEDESTRIAN CRASH LOCATIONS IN CHICAGO

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

The goal of this project was to identify and review corridors operated by the Chicago Department of Transportation (CDOT) or the Illinois Department of Transportation (IDOT) with high frequencies of pedestrian crashes at locations where traffic is not controlled (not at traffic signals or stop signs). These findings will support the development of guidelines for the placement and design of pedestrian crosswalks at locations where vehicular traffic is uncontrolled.

The methods included an extensive review of existing guidelines and published research on best practices for pedestrian safety; interviews with officials at CDOT and the Illinois DOT; analysis of five years of crash data, and field review of corridors found to have high pedestrian crashes.

MD. ABDUR RAB
The corridors included in the field review were N. Clark St., S. Ashland Ave., S. Pulaski Rd., and W. North Ave. The findings suggested that two-foot buffer zones should be provided for in-street crossing signs, bus stops should be relocated downstream of nearby crosswalks, on-street parking should be removed at least 20 feet upstream of crosswalks, and pedestrian refuge islands should be provided for crosswalks across four or more lanes (> 60 feet wide).

Other findings suggest investigating additional crosswalk locations, and that local municipalities should improve their maintenance of pedestrian signing and striping.

SIMA MORADI BAJESTANI
The corridors included in the field review included IL Rte. 43, Lawrence Ave., and W. 47th St.

The findings suggested that these location could be improved by implementing pedestrian refuge islands, road diets, pedestrian channelization, and removing on-street parking at least 50 feet upstream of crosswalks. Specific sites suggested avoiding brick crosswalks on state routes because high traffic volumes fade the color and well-maintained striping can provide better visibility.

WENDY FIRSCHING
The corridors included in the field review included US 51 and Raab Ave., IL Route 29 and Taft Road, and corridors along Springfield Ave., Kirby Ave., and Gregory St.

The findings suggested that these locations could be improved by implementing pedestrian refuge islands, advanced yield pavement markings, additional signing, evaluating gaps between signalized intersections, road diets, pedestrian channelization, consideration for high pedestrian demand locations, and removing on street parking at least 50 feet upstream of crosswalks. Additional measures taken to encourage the reduction of speed within the vicinity of mid-block crosswalks is also needed.

CATCHING UP TO AUTOMATED TECHNOLOGY: HOW DOTS CAN STAY AHEAD OF THE CURVE FOR FREIGHT

ARIN RUBACI UYGUR AND ROBERT GINSBURG
UNIVERSITY OF ILLINOIS AT CHICAGO

Recently, automotive computing technology has progressed far more rapidly than predicted, and now, the world of transportation needs to plan for an impactful transformation. Major auto manufacturers currently employ automated features such as adaptive cruise control, automated breaking, and lane departure warning. Furthermore, numerous auto manufacturers and information technology companies have started to test their more advanced automated vehicles (AVs) on existing roads under certain, controlled conditions.

AVs are promoted as the solution to improve safety, increase road capacity, and decrease the energy consumption and pollution once enough AVs are on the road.However, AV technology provides greater advantages for Freight transportation because of substantial reductions in fuel costs, increased flexibility, and greater productivity including possible increased hours of operations. Consequently, as automation technology is being developed and tested rapidly with passenger cars, the technology is being implemented in trucking even more quickly. Extensive demonstrations in Europe and Asia in the past few years have accelerated the commercial introduction of AV technologies.

Achieving the promise of AV technology requires careful and focused policymaking at both the state and the federal levels. The National Highway Traffic Safety Administration (NHTSA) has recently issued a report laying out the areas of responsibility for Federal and State governments for AVs with technology certification generally residing federally and general policy, liability, safety and infrastructure requirements with the States. This paper will present a framework for how the State should both oversee and promote the implementation and expansion of AVs in trucking and freight transportation.

WILL I LOSE MY JOB? CHALLENGES TO THE PURPOSE AND NEED ARGUMENT IN THE CONNECTED AND AUTONOMOUS VEHICLE ENVIRONMENT

SAGAR R. SONAR
STANLEY CONSULTANTS

Technology can drive progress and never has this reality been true than in recent years. The advancements in the transportation industry has the potential to change the methods for planning and designing roadway projects. Technology also has the potential to disrupt traditional models and approaches for identifying and selecting projects.Intersection, interchange and corridor projects are justified using the purpose and need argument based on safety, capacity and air quality deficiencies.

Safety concerns are driven by high crash rates mostly involving rear end crashes and turning crashes. Capacity deficiencies can include high delays and extensive queuing issues. Long delays and excessive stopping along corridors affects air quality.Modern vehicles with safety technologies like lane assist, automatic braking, pedestrian detection, dynamic cruise control, etc. can improve safety along our roadways challenging the primary argument for roadway projects. Semi-autonomous and fully autonomous vehicles combined with connected vehicle technologies could effectively increase throughput of corridors by reducing headway needed between vehicles. Increased safety and throughput can potentially make existing deficient infrastructure more efficient. Air quality could also improve as a result of these technologies. This presentation will review the effect of lower headway between vehicles on intersection operations using the HCS software.

The poster presentation will test various scenarios and the need for improvements at a congested intersection. It will review safety and air quality benefits of new technologies. Will the “Purpose and Need” argument be obsolete and the need for improvements diminish requiring fewer engineers? How will technology change the job market?

POSTER SESSION (CON'T)
2:00PM – 2:30PM

COORDINATED BY:
JASON BIERNAT
CHICAGO TRANSIT AUTHORITY

EXPLORING TRIP CHAINS FOR RUSH HOUR RESTAURANT FOOD DELIVERY: PLANNING IMPLICATIONS AND CASE STUDIES IN CHICAGO

XIAOCHEN CHEN
UNIVERSITY OF ILLINOIS AT CHICAGO

Rush hour traffic congestion can often be one of the most difficult issues for the urban transportation system. Not only commuting but also other trips, such as personal errands and freight, contribute to the peak flows. Restaurant food delivery, for example, can overlap rush hours in the evening, and therefore adds pressure for traffic management. Delivery time often should be longer too. Chained trips for restaurant food delivery can decrease the total number of food delivery trips, alleviate traffic congestion, and reduce ensuing greenhouse gas (GHG) emissions.

Studies have shown that traffic congestion can have several effects on drivers, the environment, health and the economy. Many metropolitan areas experience congestion for multiple hours both in the morning and evening on weekdays. With ubiquitous smartphone penetration and increasing adoption of restaurant food delivery services, the restaurant food delivery sector has been rapidly growing. Because of overlap of the traffic rush hours and the restaurant food delivery peak hour in the evening, the restaurant food delivery trips will increase pressure on the transportation system.

Given the ever-growing demand for products and services that generate restaurant food delivery activity in the urban area, there is a need to fundamentally reinvestigate the efficiency of the current restaurant food delivery system to reduce urban traffic congestion and GHG emissions. My project will examine the traffic impact of three chain trip models in Chicago restaurant food delivery system to find out potentials to reduce urban traffic flows while maintaining customer service levels.

MAKING LIGHT RAIL WORK IN CHICAGO

JOHN KRAUSE
CHICAGO STREETCAR RENAISSANCE

Are there corridors in Chicago with enough bus ridership and traffic congestion to warrant investing in light rail? Can it run on downtown streets without getting stuck in trafficäóîand without shutting down traffic on the surrounding grid? How much would it cost and how could we pay for it?

Working together with Mott MacDonald Engineering and the Illinois Institute of Technology, the nonprofit Chicago Streetcar Renaissance is studying a network of six of the busiest and most cost-effective light rail lines in America. The high-ridership lines would replace bus service in the city's busiest corridors, running in dedicated lanes with signal priority at intersections to avoid getting stuck in traffic.
We will discuss:

- Proposed changes to bus network.
- Operating plan and cost; compare to buses replaced.
- Street designs for key segments.
- Traffic modeling and impact analysis.
- Making signal priority work on congested downtown streets.
- Capital cost; compare to other projects.
- Potential (local) funding strategies.
- Ridership; compare to other streetcars, light rail, and the L.
- Mode shift and VMT reduction.

We find the proposed lines cost a small fraction as much to build as the L, and less to operate than the bus service they replace. With much longer vehicles (larger headways) than buses, and modernized signaling and data analysis, signal priority works without shutting down traffic on the grid. The proposal expands both the flow and capacity of people in our streets, speeding travel today and preparing Chicago for a future of growth without congestion.

NEIGHBORHOOD CRIME AND BIKE-SHARE STATION ACTIVITY: EVIDENCE FROM CHICAGO

AMR ELFAR
NORTHWESTERN UNIVERSITY

The main motivation behind this work stems from both urban sustainability and the role of transportation therein. Growing awareness of the role of active travel (walking and biking) in promoting safer, healthier and more sustainable societies motivates looking into the dynamics behind active travel as well as implementing policies to enhance it. In the United States, in particular, the introduction of bike-share systems, or the shared use of a public bike fleets, is one such effort that is gaining momentum. And while research has looked into multiple aspects of bike-sharing, the focus on the role of crimes and criminal activity within the vicinity of bike-share stations is still limited. This is especially important, in areas of relatively elevated crime activity such as Chicago. Using publicly available data for 3-year period of bike share activity for 300 stations in Chicago (Illinois), this work addresses this limitation and examines the extent to which crime activity around a station may affect the number of trips generated from that station.

Considering that some unobserved effects are correlated over time and can affect bike-share activity, a time-series regression model that controls for serial correlation in the data was used. This model was compared and found superior to ordinary-least-squares model.

The results derived from the model first confirm the significance of the role of crime activity on bike-share station use and second establish that this impact depends on the type of crimes around a station. The implication of these results is that neighborhood crime data should also factor into location decisions for bike stations. Such informed decisions can promote biking, shared mobility culture and in turn more sustainable environments.

TO PARTNER OR NOT TO PARTNER? EXPLORING THE RELATIONSHIP BETWEEN TRANSPORTATION NETWORK COMPANIES AND PUBLIC TRANSIT AGENCIES

SARA STEINBERGER
CAMBRIDGE SYSTEMATICS

Transportation network companies (TNCs), like Uber and Lyft, currently operate in over 300 U.S. cities, partnering with more than a dozen transit agencies. Yet, the relationship between these two entities remains unclear. Can TNCs serve as an effective first-last mile solution or do they substitute transit trips? As TNCs play an increasingly large role in urban transportation systems, how must transit planners adjust our thinking?

This presentation explores this controversial topic by drawing from Cambridge Systematics' work on a Comprehensive Operations Analysis (COA) for San Antonio's transit system (VIA). The analysis uses case studies from Pinellas County and Altamonte Springs, Florida to outline how factors such as land use, density, trip patterns, and infrastructure can inform decisions surrounding TNC-transit agency partnerships. Similar to Chicago, San Antonio has a dense urban core with lower density suburban development along the city's periphery. Like many transit agencies, VIA faces the critical challenge of providing service coverage to these areas under significant financial constraint. Participants in this session will learn how TNC-transit agency partnerships can alleviate the cost burden of underperforming routes and what the drawbacks may be.

Operational parameters of service area, service span, subsidies, trip limits, and participant eligibility will be described as well, with a discussion of how these factors can be shaped to provide mobility to the greatest number of people in an equitable and cost-effective way.

ANALYZING DIVVY TRIP LENGTH DISTRIBUTION FOR ACCESSING TRAIN STATIONS

XINGMIN GUO
UNIVERSITY OF ILLINOIS AT CHICAGO

Chicago Divvy Service, as a bike-sharing system, is expected to provide people with a new travel mode for multiple urban activities including commuting, short-distance connection and recreation. People's preference could greatly affect the Divvy facility usage and therefore the value of the system.

The study focuses on Divvy riders' usage pattern in terms of trip length when they use Divvy as their means to access train stations during different time periods. The whole Divvy network is divided into three categories geographically, to reveal the different Divvy trip length distributions. Also, the distributions are fitted for future Divvy facility design and demand forecasting.

POSTER SESSION (CON'T)
2:00PM – 2:30PM

COORDINATED BY:
JASON BIERNAT
CHICAGO TRANSIT AUTHORITY

EFFECTIVE MANAGEMENT OF INFRASTRUCTURE IN THE PUBLIC RIGHT-OF-WAY

KATIE DALEY
COLLINS ENGINEERS, INC.

Cities face the challenge of managing work in the public way while minimizing street cuts and related traffic impacts associated with independent (non-concurrent) renewal and maintenance programs. Stakeholders, including public officials, utilities, and residents, find the lack of coordination frustrating and, potentially, a waste of taxpayer monies.In 2012, Chicago Mayor Rahm Emanuel launched "Building a New Chicago," a plan that introduced a record amount of infrastructure construction with City of Chicago projects accounting for $7 billion over ten years.

The Chicago Department of Transportation (CDOT), Division of Infrastructure Management (DoIM) is responsible for the coordination, permitting, and construction inspection of all surface and subsurface work in the public way.
At the time, CDOT did not have in-house resources to handle the increased number of improvement projects. Additionally, communication and coordination of projects often occurred in information silos with collaboration among private and public agencies based upon interpersonal contacts.

To address these challenges, CDOT implemented the Project Coordination Office (PCO) to provide program management services and review internal processes to improve coordination and provide enhanced management of the public way. This development of process improvements and synergies resulted in savings of over $90 million since 2012. Because of successful coordination efforts and resultant cost savings, Chicago has an annual goal of paving over 300 miles (483 km) of residential and arterial streets by both public and private utilities.

The coordination process from inception to closeout in this paper so other municipalities - big and small - can use the methodologies included herein.environment

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YOUNG PROFESSIONALS IN TRANSPORTATION

SESSION 3A
2:45 – 3:45PM

PLANNING THE LAST MILE:
LESSONS FROM DUPAGE

Through multiple partnerships, DuPage County, Pace Suburban Bus, and the Regional Transportation Authority have endeavored to plan and implement a variety of transit services to overcome last-mile gaps.

Drawing from their experiences, representatives from each agency will discuss the applicability of transit solutions that seek to overcome those gaps and identify context-specific barriers that have affected their performance and sustainability. In addition, representatives from each agency will propose practical approaches to creating partnerships that initiate and sustain last-mile transit services in perpetuity.

Lastly, each agency's representatives will offer their points of view to address philosophical questions about how transit services can most effectively satiate suburban travel demands for employees, particularly in regards to 'reverse-commuters' coming from the more densely populated areas of the Chicago region.

MODERATOR:
AUDREY WENNINK
METROPOLITAN PLANNING COUNCIL

PANELISTS:

JOHN LOPER
DUPAGE COUNTY DIVISION OF TRANSPORTATION

MATTHEW STEGEMAN
PACE SUBURBAN BUS

PETER FAHRENWALD
REGIONAL TRANSPORTATION AUTHORITY

STEAMBOAT HOTEL

SESSION 3B

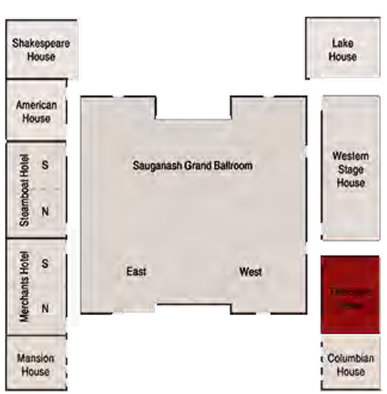
2:45 – 3:45PM

ROLL MODELS

When technology has advanced to provide better tools for modeling complex transportation problems, travelers have also utilized technology to have increasingly complicated travel patterns. In addition, technological advances have allowed organizations to collect extremely large datasets at increasingly narrow time slices. Managing and modeling complex data stretches beyond the typical Excel model.

This session focuses on the latest models and techniques to work with increasingly large data sets in traveller activity choice models, autonomous vehicle and train scheduling.

THE BULL'S HEAD



MODERATOR: RAYMOND CHAN

CHICAGO TRANSIT AUTHORITY

RUNNING TIME ANALYSIS FOR IMPROVING TRANSIT SERVICE RELIABILITY

LOK KWAN
CHICAGO TRANSIT AUTHORITY

Running time is central to the formation of service and operating budget in the transit industry. When schedule running time is shorter than the actual running time, it might lead to the underestimation of vehicle requirement, causing headway irregularity and unreliable service. Too much running time will lead to the overestimation of fleet size and crew requirement, resulting train bunching and an inefficient operating budget. This presentation will explore using running time analysis to continuously adjust rail schedule running time to reflect changes in ridership, slow zones, and operating conditions.

The Chicago Transit Authority (CTA) currently employs track circuits to monitor real-time tracking of train operation. Using a series of nested structured Query Language (SQL) statements, CTA can transform track occupancy information into meaningful train movement data. There is considerable complexity to interpret the data given the unique operating environment of each CTA rail route. Effective running time decision making requires analyzing train movement data in conjunction with rail operation knowledge and scheduling concepts.

Running time analysis results indicated that CTA rail running time display the greatest variability during the shoulder of the late AM peak due to construction activities and terminal congestion. In addition, PM peak running time is generally greater than the AM Peak due to excessive dwell time and loop congestion. Track circuit data allows CTA to seamlessly adjust running time to produce more realistic schedules as the foundation of reliable service.

GO BIG AND GO HOME: MODELING SHORT AND LONG DISTANCE TRAVEL IN A COMMON FRAMEWORK

JEFFERY NEWMAN
CAMBRIDGE SYSTEMATICS

Statewide travel models are typically a fusion of two parts: an "ordinary" daily model with shorter, more frequent trips, plus an "extraordinary" model with long trips undertaken infrequently. It is simpler to segregate the atypical days, maintaining a clean and well behaved ordinary daily travel model. However, it creates an arbitrary distinction at the modeling interface, where crossing the invisible boundary implies a sudden behavioral shift.

For Colorado, we adopted a different approach: fusing both ordinary and extraordinary into a single model. This was done because imposing any reasonable cutoff to differentiate these two models would move substantial portions of the daily commuting and other normal tours into the long-distance realm. Two important challenges arise from building this kind of fused model using a traditional household travel survey: the proper handling of non-closed tours (e.g. overnight travel) in the daily activity diary survey, and the fusion of single-day diary household survey data with longer period long distance survey data.

We encountered a number of challenges in processing the data: correct weighting of long distance log data, the absence of other daily activity matching the long-distance travel, and especially the handling of closed overnight tours, which appear in the data temporally reversed (e.g. come home from work, later leave home to go to work). Overnight tours proved especially challenging in time-of-day models, as they violate the usual constraints. Still, results show a good fit, and the benefits may be worth the effort in particular cases, like Colorado.

COMPARISONS OF MODE CHOICE BEHAVIOR USING FOUR TYPES OF ARTIFICIAL NEURAL NETWORKS

DONGWOO LEE
UNIVERSITY OF ILLINOIS AT CHICAGO

Machine learning (ML) techniques are fast becoming a recommended approach in travel demand modeling, in part thanks to their ability to process high-dimensional and nonlinear datasets without any predetermined statistical assumptions of functional forms. In particular, artificial neural networks (ANN) are nonparametric techniques that hold tremendous potential to substitute traditional discrete choice modeling approaches. ANN also have a particularly simple computational process. Moreover, ANN with strong prediction accuracy have comparative advantages over conventional statistical modeling approaches.

This study compares the performance of four types of ANN models with a conventional multinomial logit model (MNL) to estimate travel mode choice in Chicago. The four types of ANN selected are: backpropagation (BP), generalized regression neural network (GRNN), radial basis neural network (RNN), and probabilistic neural network (PNN). To compare prediction accuracy of the estimated models, both root means square error and absolute percentage error indices are used. In addition to the comparison of overall prediction power of models, this study attempts to assess the contribution of explanatory variables by conducting sensitivity analyses on the significant variables.

This study directly contributes to the literature by demonstrating the advantage of using the ANN techniques and by identifying which type of ANN best performs in travel demand modeling.

STRATEGIES FOR OPERATING A FLEET OF AUTONOMOUS VEHICLES TO PROVIDE PASSENGER TRANSPORTATION SERVICE

MICHAEL HYLAND
NORTHWESTERN UNIVERSITY

Chicago travelers have shown a strong willingness to use mobility services offered by ridesourcing and ridesharing companies. With a fleet of fully-autonomous vehicles (AVs), these companies, or a transit agency operating an AV fleet, can lower their costs and offer travelers lower prices. In addition to the safety benefits of AVs, the potential benefits of AV fleets include reduced transportation costs, a solution to the first/last mile transit problem, and higher quality transportation options for individuals that either cannot operate, or afford to own, a vehicle.

This research employs an agent-based microsimulation tool to model travelers, AVs, and the decisions of an AV fleet operator. Matching traveler requests to AVs and routing/scheduling AVs to pick up and deliver travelers are computationally challenging optimization problems. The microsimulation tool, with an embedded optimization solver, is used to analyze the operational efficiency (i.e. cost) and service quality (e.g. wait time) of AV fleet management strategies. The AV-traveler matching strategies analyzed include the simplistic first-come-first-serve (FCFS) strategy formerly used by taxi dispatchers, matching traveler requests to the nearest idle AV, and less-myopic strategies that allow AVs to divert away from the traveler they are currently traveling to pick up. The research also tests ridesharing strategies/algorithms.

The simulation results strongly suggest that more-advanced (i.e. less-myopic) strategies can significantly reduce costs and wait times, compared with FCFS or assigning travelers to the nearest idle AV. The results also show that ridesharing significantly reduces fleet VMT and passenger wait times, relative to one vehicle-one traveler request services.

SESSION 3C
2:45 – 3:45PM

eTOD: MAKING TOD GREAT (AGAIN)

According to the Metropolitan Planning Council's Grow Chicago research, for decades the region's growth has trended away from the transit system and toward roads. Just eight percent of the region's population now lives within a quarter-mile of a rapid transit station. This change drew people and jobs away from many city neighborhoods, reduced the economic viability of the entire transportation network, narrowed opportunities for working families and increased environmental damage.

Far too many people live with long commutes that require automobiles, excessive transportation costs and few amenities located within walking distance of home. Increasingly, places with excellent transit access price out low and even middle-income residents.

This trend bodes poorly for the city, as the latest research from Harvard University has shown that commuting time - in essence, how easily, or not, a person can get to work - is the strongest factor in determining whether a person escapes the cycle of poverty.

Equitable TOD (eTOD) seeks to increase development while maintaining affordability around transit stations.

MODERATOR:
MAGGIE DALY SKOGSBAKKEN
PACE SUBURBAN BUS

PANELISTS:

KENDRA FREEMAN
METROPOLITAN PLANNING COUNCIL

AARTI KOTAK
CHICAGO DEPT OF PLANNING AND DEVELOPMENT

ROBERTO REQUEJO
L-EVATED CHICAGO

NICOLE PATIN
ARTS + PUBLIC LIFE

SHAKESPEARE HOUSE

SESSION 3D
2:45 – 3:45PM

ASK THE DECISION MAKERS

Back by popular demand. Listen to high-level officials discuss the latest projects at their agencies and participate in a lively discussion. Find out what goes into deciding what gets built and how.

MERCHANTS HOTEL

MODERATOR:
NICOLE NUTTER
ILLINOIS TOLLWAY

PANELISTS:

ELAINE NEKRITZ
STATE REPRESENTATIVE

DON ORSENO, CEO
METRA

T.J. ROSS, EXECUTIVE DIRECTOR
PACE SUBURBAN BUS

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