

# Chicago's Bus Rapid Transit Program

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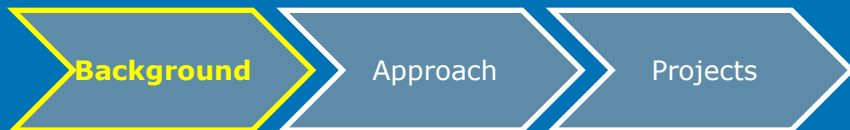
*Chicago, IL*



**2012 BUS & PARATRANSIT CONFERENCE**

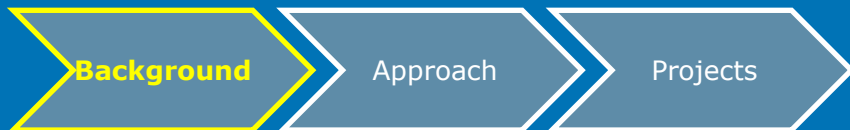
# Chicago's Multimodal Mobility Agenda

- State of good repair projects
- Infill rail stations
- Bike share and bike lanes
- Car Sharing
- Transit information technology
- Bus Rapid Transit



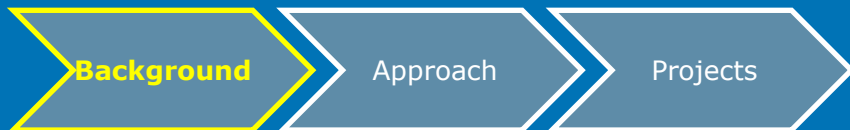
# BRT in Context of The Big Picture

- Agency focus on state of good repair
  - Century old infrastructure requires billions \$ to repair or replace
- Poor economy impacted funding
- Maintain existing service - no increase to operating costs
- CTA provides 1.6 million trips/day
  - 971,000 (60%) are bus trips

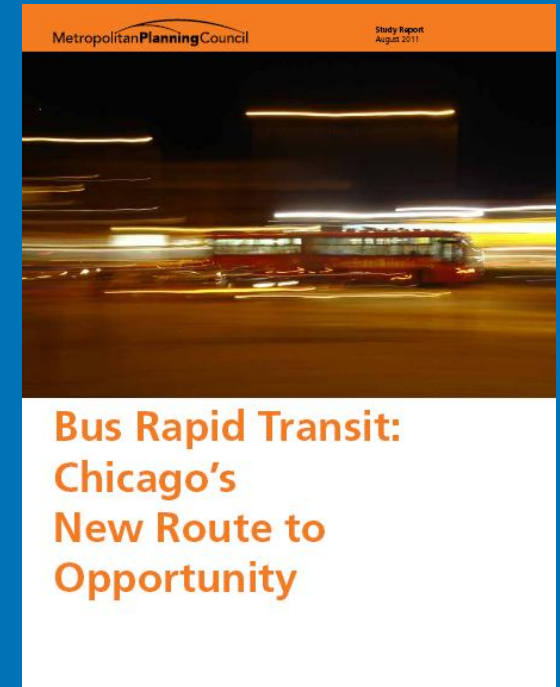


# BRT As a New Mode

- Market niche between local bus and rail
- Foundation for wider BRT network
- Strong agency and political support
- Federal funding opportunities
- Cost-effective investments

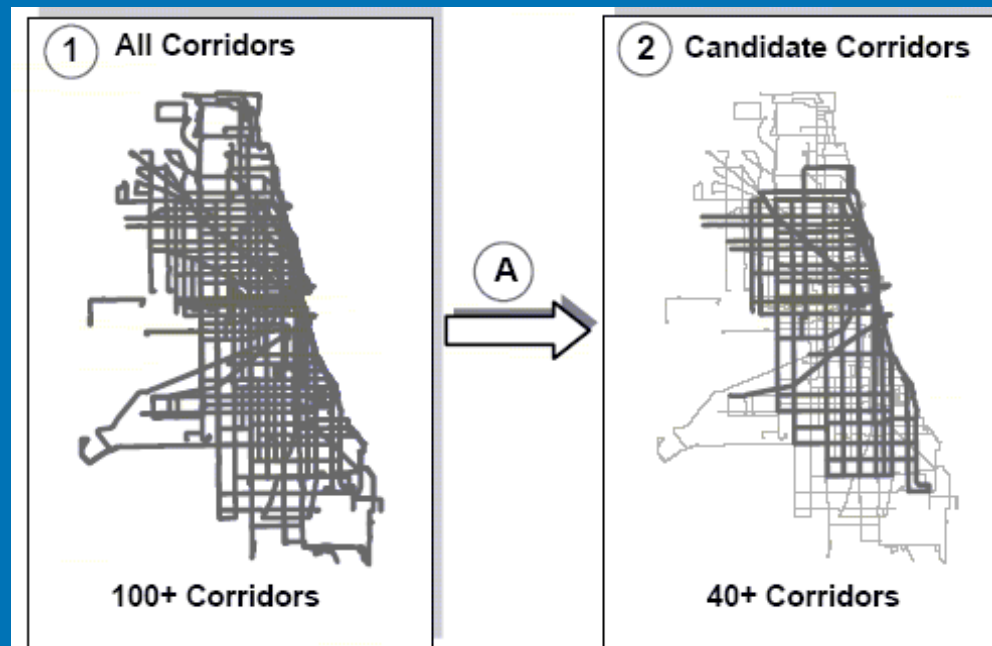


# Local Civic Support



# 2008 Selection of Corridors Step 1

A. Identify corridors with minimum passenger flows of 1,500



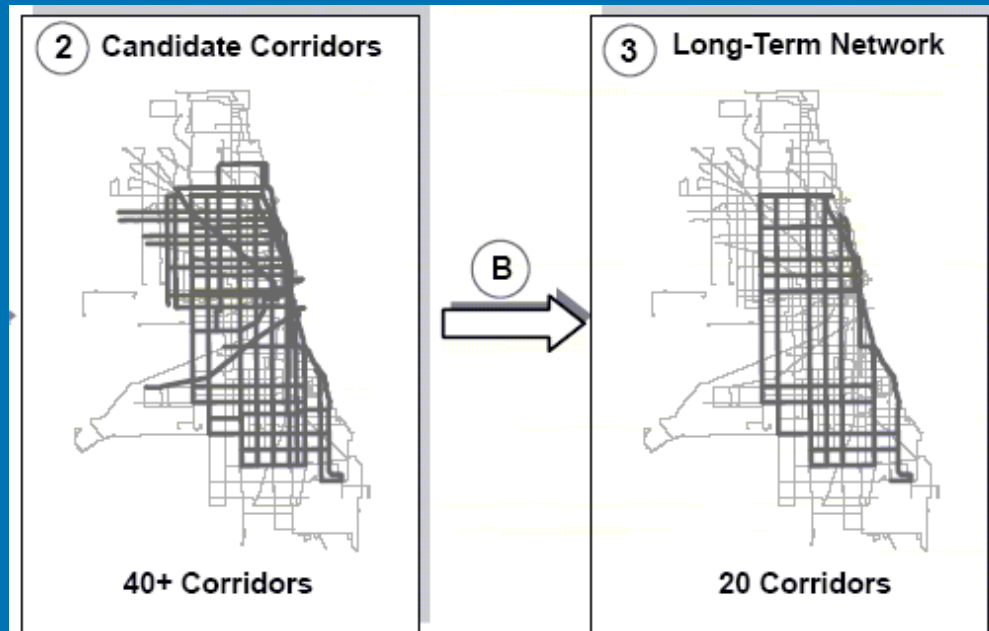
Background

**Approach**

Projects

# 2008 Selection of Corridors Step 2

B. Establish 1 mile minimum spacing between Corridors and avoid duplication to parallel rail lines



Background

**Approach**

Projects



# 2008 Selection of Corridors Step 3

Reduced to 8 Corridors based on:

- Highest potential travel time savings  
(Based on PM peak averages)

$$\left[ \frac{\text{PAX Trip Flow} \times \text{Trip Length}}{\text{Actual Speed}} \right] \times 60 \text{ min.} - \left[ \frac{\text{PAX Trip Flow} \times \text{Trip Length}}{\text{Desired Speed}} \right] \times 60 \text{ min.}$$

- Geographic Equity
  - 2 in Central Loop
  - 2 from North, South, and West Sides

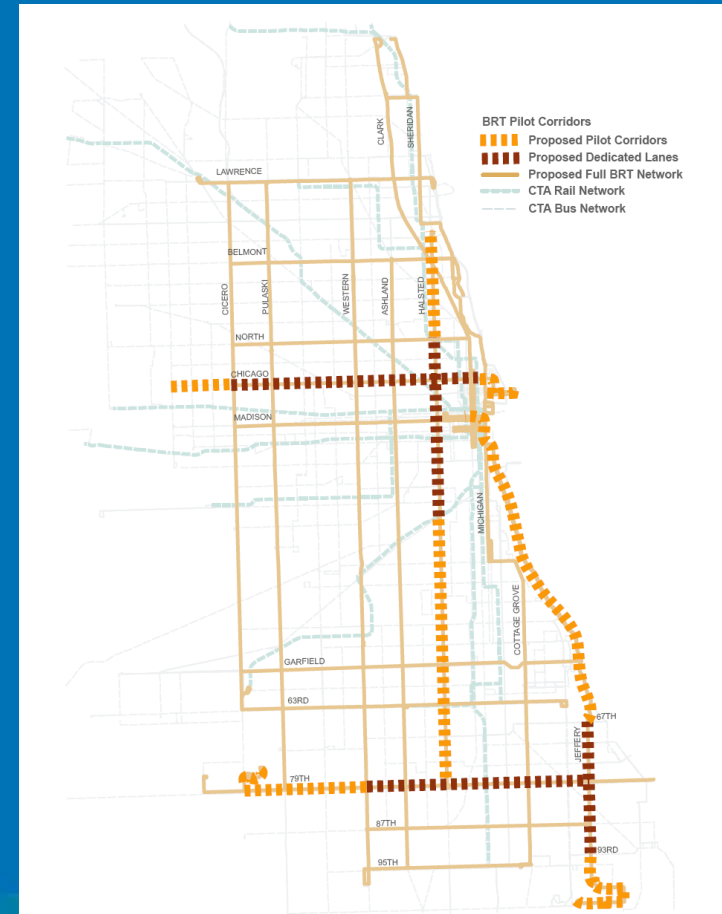




# 2008 Selection of Corridors

## Step 4

- Select various physical and service environments for testing
  - Orientation to Central Area
  - Rail feeder service
  - Connections to bus and rail routes
  - Land use and street conditions
- Chicago Ave, 79<sup>th</sup> St, Halsted St, Jeffery Blvd.



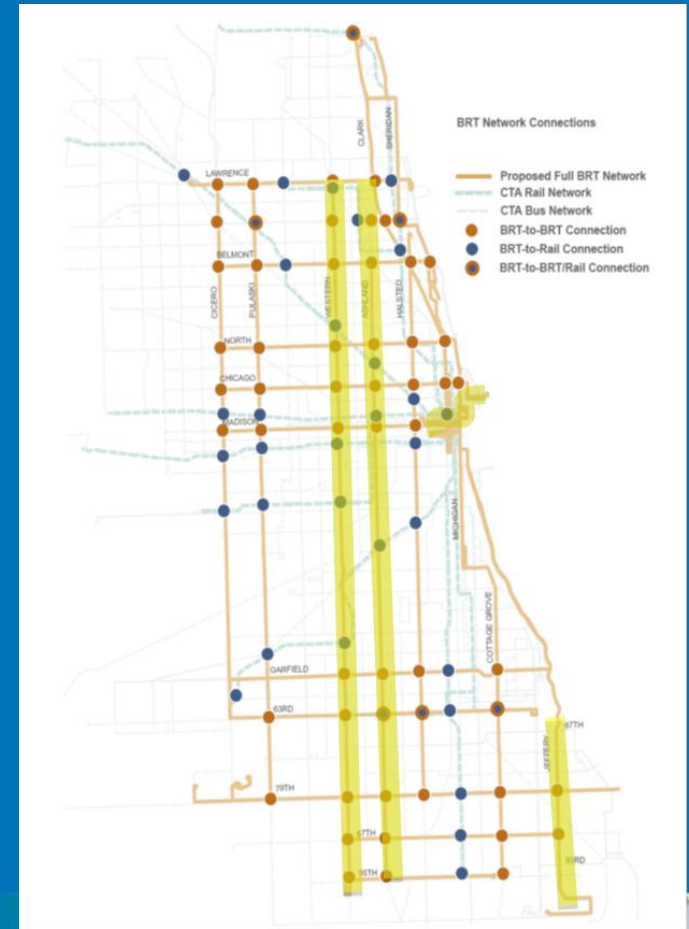
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# Current BRT Program Corridors

- Original 4 Corridors tied to congestion mitigation strategy which did not materialize
- Current program includes
  - Jeffery Pilot Project
  - Central Area (East-West)
  - Western/Ashland
  - Chicago Lakefront



Background

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Projects

# Planning and Design Approach

- Near term approach
  - Funding-based
  - Technical resources
  - Civic and Political Support
  - Proven high value investments
- Deferring more capital and technology intensive solutions to future projects



# Incremental Investments to Improve the Transit Experience

- Focus on high volume bus corridors
  - Travel time savings
  - Reliability
  - Enhance image
  - Amenities
- Forward compatible with future enhancements



# Near Term Design to Budget

- Grant limitations
  - Intended for shovel ready projects
  - Funding limits
  - Obligation deadlines
- Reallocate existing robust bus service
- Minimal impacts (target Categorical Exclusions)
  - Stay within existing right-of-way/curb lines
- Utilize existing CTA and CDOT contracts



# Near Term Elements Miscellaneous

## Dedicated Bus Lanes

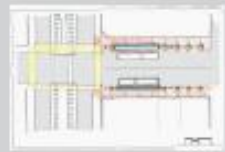


- Dedicated bus lanes
- Standard and Showcase BRT stations
- 1/2 mile station spacing w/exceptions
- JCDecaux shelters (standard and unique)
- Transit Signal Priority
- CTA Bus Tracker at stations and on buses

## BRT Station Amenities



## Showcase Stations



## Transit Signal Priority & Queue Jumps



## Vehicle Enhancements



Background

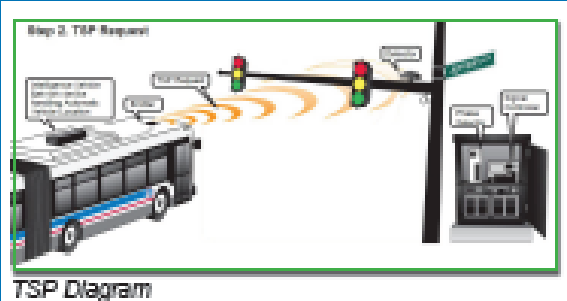
Approach

Projects



# Near Term Elements

## TSP



- Wi-Fi pilot solution on Jeffery
- Compatible with next-generation bus technology and existing signals
- Target open source solution – less reliant on proprietary property
- Expansion to future network

Background

**Approach**

Projects



# Near Term Elements Fleet

- Modify existing fleet
  - Utilize 60 newer articulated, kneeling, hybrid buses
  - Bus wraps
  - Bus Tracker
- Quasi-dedicated fleet
  - Un-interline to extent practical



# Near Term Elements Branding

- Brand is under development
- Strong connection to CTA brand
- One system wide BRT brand
  - CTA system = Bus, **BRT**, Rail
- Applicable to various levels of investment in different corridors



# Future BRT Features

## Off-Board Fare Collection

- Alternatives to be considered
  - Validation while boarding (front and rear doors)
  - Proof of payment
  - Barrier enforced
- Need to weigh the benefits and costs



# Future BRT Features

## Fare Media/Payment

- CTA currently accepts
  - Cash, magnetic strip cards, and Smart cards
- Approved a 12-year contract for new fare-collection system
  - System wide, open-fare solution
  - Credit cards, cell phones, smart cards



# Future BRT Features

## Safety and Security

- Existing safety features
  - All CTA buses have cameras and dispatch communications
  - All shelters have internal lighting
  - CDOT street lighting standards
  - OEMC cameras at key intersections
- Potential future safety features
  - Wireless cameras at shelters
  - Wireless communications equipment at shelters



# Future BRT Features

## Miscellaneous

- BRT service standards
- Headway based schedule control
  - Central dispatch, AVL, TSP
- Traffic Control Aides
- Level boarding
- Precision docking



# Jeffery BRT

## Chicago's First BRT Route

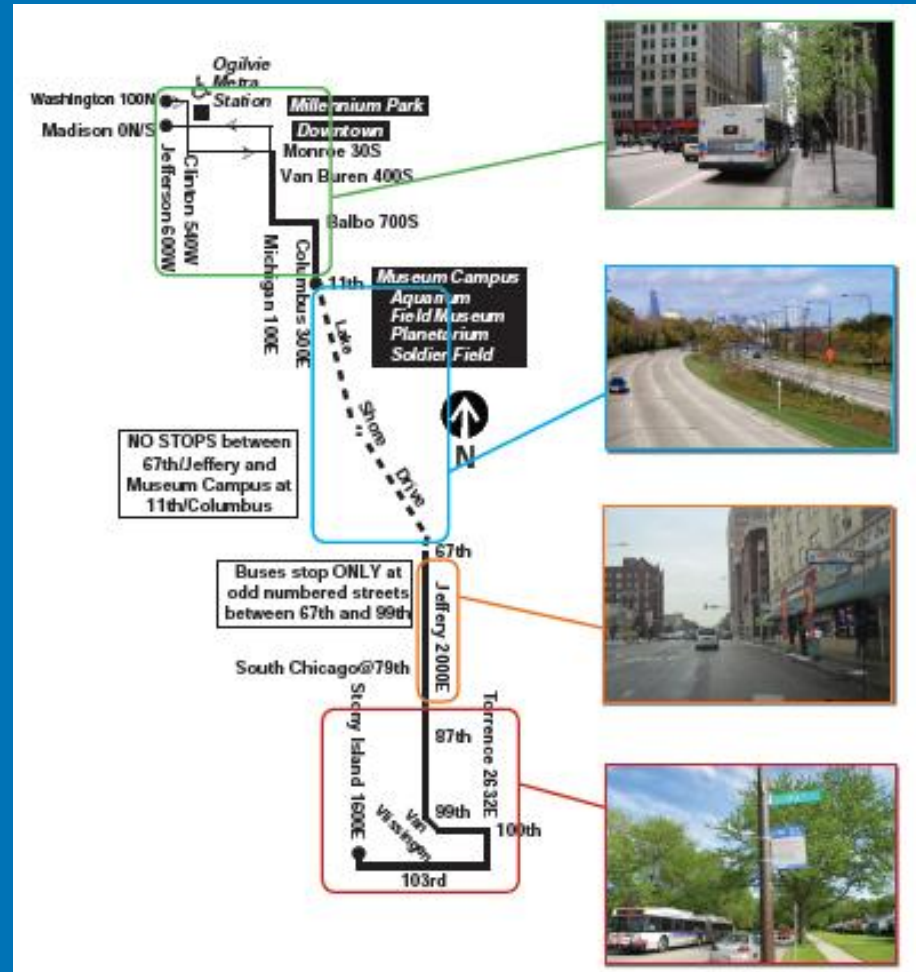
### Project Need:

Faster, more reliable service on local leg of express route

**Status:** Final Design

**Funding:** \$11M FTA Bus and Bus Facilities (5309) grant

**Schedule:** Opening Fall 2012.





# Jeffery BRT Key Elements



- Lighted bus shelters with LED Bus Tracker screens
- TSP
- Bus Queue Jump (First in Chicago)

- Rush Hour Bus Lanes
  - 7-9 AM N/B, 4-6 PM S/B
- BRT Branded Buses with LCD Bus Tracker screens



# Central Loop Corridor

**Project Need:** Provide high-quality, high-capacity transit service connecting Union Station to the Loop to River North/Streeterville

**Status:** Design

## **Funding Sources:**

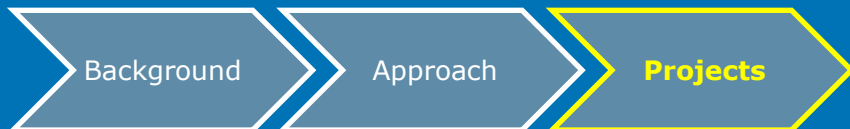
\$24.6M Federal Grant (Urban Circulator)

\$4.7 M Federal Grant (CMAQ for terminal)

\$7.3 M in TIF

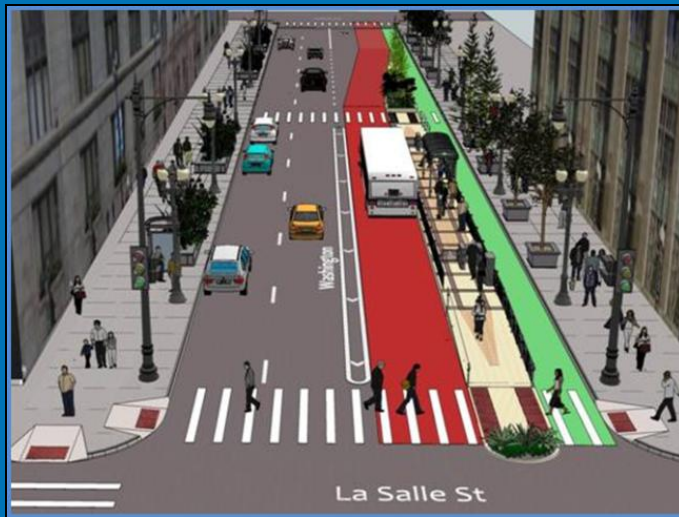
## **Schedule:**

- Design complete by Summer 2013
- Construction complete by late Fall 2014



# Central Loop Corridor Key Elements

- Colored, dedicated bus lanes on Washington and Madison
- Protected bike lane on Washington
- New off-street bus terminal at Union Station



# Western and Ashland Corridor

**Project Need:** Implement a new substantial cross-town, north-south transitway west of the CBD

**Status:** Alternatives Analysis

**Funding Sources:** \$1.6 M FTA Bus Livability Alternatives Analysis

**Schedule:** Alternatives Analysis through 2012, future phases dependent on funding availability

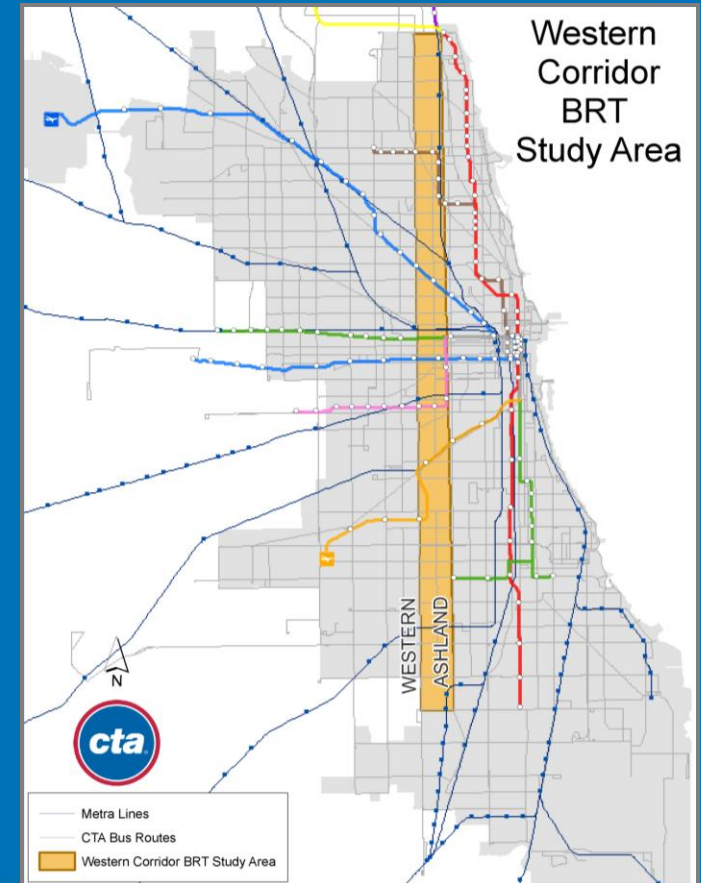
## Key Elements:

21-mile linear corridor on Western and Ashland

Wide ROW corridor

Studying near-term improvements

Design to be determined





# Chicago Lakefront Corridor

**Project Need:** Determine the feasibility and appropriate level of investment for provision of high-capacity transit connections in the 24-Mile linear corridor from Howard Street to 103rd Street

**Status:** Alternatives Analysis

**Funding Sources:** \$2M FTA Bus Livability Alternatives Analysis

**Schedule:** Future phases dependent on funding availability

## Key Elements:

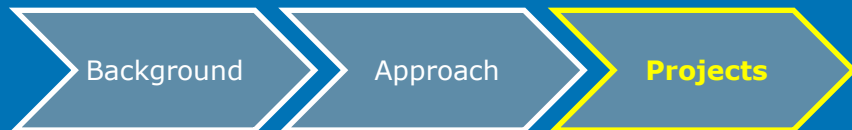
Project area follows the shoreline of Lake Michigan and includes a one mile-buffer to the west

Primary focus of the AA study will be to develop bus service options and facility improvements in order to increase travel speeds and reduce operating costs



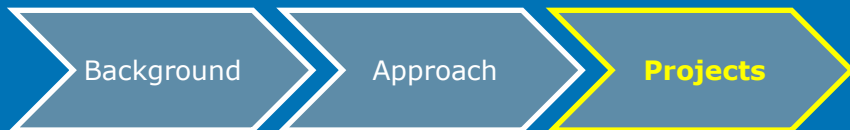
# Moving Forward

- The good news - CTA has a lot to work with!
  - Political support
  - Newer buses, technology, etc
  - 84 (of 140) bus routes provide 3,000 to 32,000 trips per day
    - “Cost-effective” by default



# Expansion

- Modest, near term investments are setting the foundation for expansion
- Several corridors have been identified as potential BRT corridors in the future
- Fill the market gap between standard bus and rail with BRT





# Questions

## Chicago's Bus Rapid Transit Program

