Infrastructure Accessibility Task Force Report

Fall 2012

I. Executive Summary

The Infrastructure Accessibility Task Force (IATF) was created by the Chicago Transit Authority (CTA) in 2010 as a resource to assist CTA in its strategic planning to enhance rail accessibility for people with disabilities. To that end, over the course of more than a year, some two dozen internal CTA staff and external transportation and disability experts collaborated simultaneously on several fronts.

First, the group created an enduring method for identifying the highest priority stations to make accessible. Over time, members came to agree that the following geographically based criteria measure a station's significance for riders with disabilities: general ridership; ridership by people with disabilities; paratransit users; senior ridership; population (actual and projected); employment (actual and projected); university and college; senior services; senior housing; points of interest; and gaps between accessible stations. Based on a combination of percentiles and weighted criteria, each inaccessible rail station was given a score. All of the stations were then ranked by their scores, both system wide and by region (Loop, Outer Loop, North, Northwest, South, and West). At the time that the IATF finalized this method, the highest ranking station overall in customer need for accessibility was Wilson Station (Red Line).[1]

Second, IATF members evaluated feasible concepts for incorporating accessibility into the highest priority stations. CTA and Chicago Transit Partners (CTP) developed conceptual station accessibility schemes with rough order of magnitude costs for a number of regionally high ranking stations:

- West: Racine (Blue Line) and Austin (Green Line)
- South: 63rd (Red Line)
- Northwest: Damen (Blue Line) and Addison (Blue Line)
- Downtown Loop: Washington/Wabash (CDOT project) and Adams/Wabash
- Outer Loop: Clark/Division (Red Line) (CDOT project)
- North: Wilson (Red Line)

Assessing specific concept schemes demonstrated the sometimes complex technical constraints that face CTA, helped quantify the level of effort required to convert an inaccessible station, and prompted IATF discussions that resulted in valuable insights on design features with general applicability.

[1] In part because of this IATF analysis, Wilson Station, as well as two other stations, are now slated for reconstruction or rehabilitation in the next several years. Accordingly, during the drafting of this White Paper, the IATF decided to update its station priority ranking tables to reflect both the anticipated accessibility of these three stations and more recent demographic data. Thus, as of the date of this White Paper, the highest ranking station overall in terms of need for accessibility is Bryn Mawr Station (Red Line).

Third, IATF determined general planning recommendations and developed design considerations for future accessibility improvements. The overarching recommendation of the IATF is that CTA adopt as its ultimate goal full accessibility for its entire rail system. To achieve that goal, the IATF proposes that CTA: (1) ensure that all rehabilitation or reconstruction projects meet applicable ADA, Illinois, and local accessibility requirements; (2) continue to develop such initiatives as the IATF to reinforce CTA's commitment to full accessibility; (3) continue to reference, review and update the station priority list described in this White Paper; (4) consider and incorporate accessibility from the onset of new capital projects; (5) when funding is constrained, add as many accessibility features as possible to inaccessible stations not otherwise undergoing alterations; and (6) develop an approval process to identify and mitigate negative accessibility impacts of CTA's more routine projects.

Finally, IATF members worked in close partnership to produce this White Paper. With its numerous helpful attachments, the White Paper captures in a concise and user-friendly way both the evolution and the essence of the IATF's vision for future accessibility. It is intended to be an essential reference for CTA's rail system capital projects. Indeed, the findings embodied in the White Paper are already generating significant new capital initiatives, such as the reconstruction of Wilson Station and the installation of an elevator at 63rd Street Station. It is the IATF's hope that this White Paper will guide not only today's CTA officers, planners and engineers, but succeeding leaders and infrastructure professionals.

II. Background

On July 14, 2010, in recognition of the 20th anniversary year of the Americans with Disabilities Act (ADA), the Chicago Transit Board affirmed the Chicago Transit Authority's "commitment to further develop and implement meaningful and proactive accessibility initiatives consistent with the spirit as well as the letter of the Americans with Disabilities Act." (Resolution No. R010-6.) Such support for accessibility for people with disabilities beyond basic ADA requirements informed all of the work of the IATF.

In spring 2010, CTA created the IATF to help guide future accessibility planning for its rail stations.[2] Based on recommendations of the internal IATF members, in the summer of 2010, then-CTA President Richard Rodriguez invited the following transportation and/or disability

[2] Throughout this White Paper, the term "accessible" is used to indicate the presence of a compliant, accessible elevator and/or ramp at a station, as well as the other accessibility features required by federal, state and local codes and standards. At the time that the IATF first convened, 90 of 143 stations (63%) were accessible via elevators or ramps. As of the date of this White Paper, with the April 2011 completion of the renovation of Cermak-Chinatown (Red Line), the December 2011 completion of the reconstruction of Grand/State (Red Line), and the construction and opening of two wholly new stations, Oakton (Yellow Line) and Morgan (Green and Pink Lines) in spring 2012, 94 of 145 rail stations (65%) are accessible. (*See* Attachment 1 for a list and a map of accessible and inaccessible CTA rail stations.)

accessibility experts to join the IATF. All of these individuals agreed to volunteer their time to the IATF.

- Joseph Russo (Deputy Commissioner of Compliance, Mayor's Office for People with Disabilities)
- Luann Hamilton (Deputy Commissioner, Chicago Department of Transportation)(sometimes accompanied or represented by Thomas Ambry, Coordinating Architect II, Chicago Department of Transportation)
- Jack Catlin (Partner, LCM Architects)(often accompanied or represented by Christine Scully, Architect, LCM Architects)
- Greg Polman (Senior Vice President, The Chicago Lighthouse for People Who are Blind or Visually Impaired)
- Glenn Hedman (Director, Assistive Technology Unit, University of Illinois at Chicago)
- Mike Ervin (Member, Chicago ADAPT)
- Kevin Irvine (Chair of CTA ADA Advisory Committee)

Internal IATF members were drawn from the following CTA departments: ADA Compliance, Engineering, Planning, Rail Operations, and Capital Construction. The core group of internal members included Leah Dawson Mooney (Chief of Capital Construction Financials), Robert Vance (Manager, Traffic Planning), Lee Rogulich (Architect), Michael Connelly (Vice President, Scheduling and Service Planning), Cara Levinson (ADA Compliance Officer), and Richard Newton (General Manager, Pink and Blue Lines). Numerous other CTA staff provided substantial support, including James Harper (Chief Engineer), Kevin O'Malley (General Manager, Strategic Planning and Policy), Mervin McKinney (Manager, Rail), and Joe Iacobucci (Manager, Strategic Planning and Policy).

In addition, consultant Chicago Transit Partners (CTP) -- a capital program management joint venture -- provided significant project management, technical assistance and planning work for the IATF. The primary CTP support came from Elizabeth Gallagher (CTP Program Manager), Joanna Littrell (Deputy Program Manager, Planning), Lillian Yan (Planner/Engineer), and Jonas Packer (Architect).[3]

III. IATF's Purpose, Goals and Strategy

On September 13, 2010, the full complement of internal and external IATF members held a kick-off meeting at CTA headquarters, 567 W. Lake Street, Chicago, Illinois. During the meeting,

[3] CTA and CTP job titles reflect the most recent positions held by these individuals at these entities as of March 2012. By that time, however, Richard Newton and Elizabeth Gallagher were no longer at CTA and CTP, respectively.

internal members outlined the purpose of the IATF and the role of its members, as well as the task force's goals and objectives.

The purpose of the IATF was to function as a resource for CTA in developing initiatives to enhance accessibility for people with disabilities at CTA's rail stations. Serving in an advisory role, IATF members were to assist with capital planning, provide technical engineering and architectural knowledge, and integrate informed perspectives from the disability community for the reconstruction, renovation or rehabilitation of inaccessible stations.

At the initial meeting, CTA staff also elucidated what CTA envisioned as the IATF's goals and objectives:

- Identify the highest priority stations to make accessible.
- Evaluate feasible concepts for incorporating accessibility into the highest priority stations.
- Identify general planning recommendations and develop design considerations for future accessibility improvements.
- Determine next steps for achieving full accessibility of the CTA rail system.

Through discussion by IATF members, a strategic approach was identified to achieve these goals and objectives. This approach was comprised of three key steps.

1. Develop a list of criteria and an evaluation methodology to prioritize stations to make accessible.
2. Develop station accessibility schemes, including draft architectural concept drawings, with rough order of magnitude costs for the top priority stations.
3. Using the accessibility concepts developed for each station, identify general planning and design recommendations for future improvements.

(*See* Attachment 2, PowerPoint Presentation, September 13, 2010 Meeting.)

After the initial meeting, the IATF convened at CTA headquarters on the following dates, working throughout the period to achieve the three steps described above:

- October 5, 2010 (*see* Attachment 3)
- November 2, 2010 (*see* Attachment 4)
- December 7, 2010 (*see* Attachment 5)
- January 4, 2011 (*see* Attachment 6)
- February 1, 2011 (*see* Attachment 7)
- March 1, 2011 (*see* Attachment 8)
- April 5, 2011 (*see* Attachment 9)
- June 7, 2011 (*see* Attachment 10)

- October 17, 2011
- January 30, 2012

IV. Approach to Prioritizing Station Accessibility Needs

A foundational assumption of CTA capital planning is that, given the severe financial constraints under which CTA currently operates, as well as the practical limitations of undertaking multiple simultaneous station reconstructions in any economy, making all outstanding stations accessible in short order is not feasible. Therefore, a key task for the IATF was to develop an enduring method by which CTA can evaluate both today and at any future point the needs of customers with disabilities and seniors[4] for a particular non-accessible station to be converted to an accessible station.

A. Appropriate Criteria

The first part of that task was to identify criteria that accurately capture a particular station's objective importance to customers with disabilities and seniors. Over the course of several meetings, IATF members discussed and reached consensus on the following criteria.

1. Ridership
   - Total CTA rail station entries recorded from October 2009 through September 2010 for all fare types (Source: CTA)

2. People with Disabilities (PWD) Ridership
   - CTA rail station entries recorded from October 2009 through September 2010 for the following farecard types (Source: CTA):
     - RTA Circuit Breaker Permit (PWD below a certain income ride free)
     - RTA Reduced Fare Card
     - Military Service Pass (veterans with disabilities)
     - ADA Paratransit ID Card

3. Paratransit Home Addresses
   - Count of registered paratransit home addresses within ½ mile radius of station (Source: Regional Transit Authority)

[4] Although station accessibility legal requirements and the IATF itself were developed to address the needs of people with disabilities, many of the same concerns of and solutions for the disability community are concerns of and solutions for Chicago's growing senior population.

4. Senior Ridership
    - CTA rail ridership by seniors recorded from October 2009 through September 2010 for Seniors Ride Free Smart Card (Source: CTA)

5. Population
    - 2010 (actual) and 2040 (forecast) population within ½ mile radius of station (Source: Chicago Metropolitan Agency for Planning)

6. Employment
    - 2010 (actual) and 2040 (forecast) employment within ½ mile radius of station (Source: Chicago Metropolitan Agency for Planning)

7. University
    - Enrollment data for colleges and universities (Source: 2006-2007 school year data provided to CTA by schools)

8. Senior Services
    - Senior centers, hospitals, and other health care facilities (Source: City of Chicago)

9. Senior Housing
    - Designated senior housing locations (Source: City of Chicago)

10. Points of Interest
    - Count of points of interest within ½ radius of station (Source: City of Chicago)
        - Movie theaters, performing arts centers, etc.
        - Hotels
        - Courthouses, village/city halls, community centers, police stations
        - Post offices
        - Libraries

11. Station Gaps
    - Calculation of distance from the closest accessible station on the same rail line (Source: CTA)

Additional criteria were considered, but ultimately rejected, by the IATF. *Education*, for example – the number of high schools and colleges within ½ mile of the station – was omitted in favor of University because (1) most public high school students with disabilities currently are bused to school by the Chicago school system and (2) the number of colleges and universities near a station is less meaningful than actual enrollment figures at those institutions.

Similarly, *Connections* – the number of CTA and Pace bus routes within ½ mile of the station – was considered, but eventually excluded because the available data only count the total number of bus routes near a station and do not measure the frequency of the connecting bus service. *Pedestrian Areas* – mobility areas and heavy pedestrian streets as defined by the City of Chicago -- was another early criterion, but was also excluded because only a few rail stations are located near these areas and no such areas were defined for the suburbs that CTA's rail system serves.

Of the criteria that remained, a number of these were refined through the IATF meeting process. For instance, Gaps was originally calculated as a combination of two distances: "Absolute" or "as the crow flies" distance from one accessible station to the closest accessible station, even if on a different rail line , and "Along the Line" distance to the closest accessible station on the same rail line. In time, the IATF determined that absolute distance would be meaningless to a customer who could not use the rail line at the closest absolute distance station to get to their intended destination. Likewise, *Seniors* began as a single criterion encompassing senior ridership, senior housing, and senior destinations (senior centers, hospitals and health centers). Eventually the IATF concluded that each of these measures was significant enough to merit a stand-alone criterion.

B. Scoring Procedure

While the IATF as a group determined which criteria were most useful, CTA developed a method to compare the inaccessible stations. The method is based on weighted percentages of the agreed-upon criteria. First, each inaccessible rail station was given a score for each criterion. Scores were assigned by percentiles using a scale of 1 to 5 (1 being low and 5 being high). The top 20 percent of stations with the highest values received a score of 5, the second 20 percent received a score of 4, and so on. Thus, each station received a score of 1 through 5 for each criterion.

Second, the IATF determined how much weight to assign each criterion. This was perhaps the most challenging and critical of the IATF's tasks. The weight distributions, that is, the relative importance to each criterion, were established through an iterative process and vigorous discussions.

To better understand the relationships among the various criteria and assign appropriate weights, in time the IATF decided to group the criteria into the three major categories: Origins, Destinations, and Neutral. Origins were ultimately given greater weight than Destinations because when the CTA's key stations were determined in 1992, destination stations were deemed more important than origin ones; the IATF sought to offset that original partiality. Neutral criteria were given the greatest weight because the IATF members agreed that the total number of riders and the gaps between accessible stations on a given rail line were among the most critical indicators of accessibility need.

Over the course of several meetings, the group arrived at final consensus on these criteria weights.

Neutral (Total at 40%)
Ridership - 15%
PWD Ridership - 5%
Senior Ridership - 5%
Station Gaps -15%

Origins (Total at 35%)
Population - 10%
Paratransit Home Addresses - 20%
Senior Housing - 5%

Destinations (Total at 25%)
Employment - 7%
University - 7%
Senior Services - 7%
Points of Interest - 4%

Third, to determine a station's weighted score for a given criterion, the weight was multiplied by the station's percentile score for the criterion. For example, if Station X's Ridership was rated a 3 because its average number of riders placed it in the 40-60 percentile, the weighted score for that criterion for Station X would be 0.45 (3 x 0.15). The sum of all of a station's weighted scores determined its rank among the other inaccessible stations.

C. Results

The resulting table of stations was sorted two ways. The first sorts the stations by highest score, regardless of station location, for a system wide ranking. The second groups stations by geographic regions and then sorts them by highest score within those areas. Viewing the stations by region was the IATF's preferred analytical method to help ensure a geographically balanced approach to station accessibility.

At the time that the IATF was developing and refining this methodology, from November 2010 through February 2011, the three highest scoring stations within the following six (6) regions, and their weighted scores, were:

West (Blue Line-Forest Park and Green Line-Harlem/Lake)

1. Austin (Green Line) (3.0)

2. Pulaski (Blue Line) (2.85)
3. Racine (Blue Line) (2.77)

South (Red Line-Dan Ryan)

1. 63rd (3.18)
2. Garfield (3.08)
3. 87th (3.05)

Northwest (Blue Line-O'Hare)

1. Damen (3.45)
2. Belmont (2.87)
   Irving Park (2.87)
3. California (2.81)

Downtown Loop (All Lines)

1. Randolph/Wabash (3.66)
2. State/Lake (3.56)
3. Adams/Wabash (3.36)

Outer Central Business District (All Lines)

1. Clark/Division (Red Line) (4.38)
2. North/Clybourn (Red Line) (3.65)
3. Division/Milwaukee (Blue Line) (3.36)

North (Red Line-Howard and Purple Line)

1. Wilson (4.75)
2. Lawrence (4.40)
3. Argyle (4.26)

The highest ranking station overall in terms of need for accessibility was Wilson Station (Red Line). (*See* Attachment 11 for complete tables of this initial set of station rankings, both system wide and by region.)

At the date of this White Paper, Red Line stations Wilson, Clark/Division and 63rd Street were slated for construction to make them fully accessible. The 63rd Street station, along with stations at Garfield and 87th Street, will each add an elevator as part of the Red Line South reconstruction in 2013.

Wilson station funding was received after the IATF regular monthly sessions had ended. This station was selected in part because the IATF analysis demonstrated that Wilson was the highest priority station in the entire rail system. The funding for Wilson covers the design and total reconstruction of the station and its infrastructure. CTA also applied for and won a separate federal bus livability grant that will also be applied towards accessibility and bus connections at Wilson. It is anticipated that the fully reconstructed station will be completed and accessible in early 2015.

Finally, reconstruction of the Clark/Division subway station – a CDOT project – began in September 2012 and will be completed in two phases. Construction Phase 1, which will construct a new entrance at LaSalle/Division, will make the mezzanine and platform levels of the station accessible by the end of 2014. Construction Phase 2, which will rehabilitate the Clark/Division entrance as an auxiliary entrance, is slated for completion by the end of 2016.

Since these stations will become accessible in the next several years, during the drafting of this White Paper the IATF decided to update its station priority ranking tables. When 63rd Street, Wilson and Clark/Division stations are excluded from the analysis and total ridership, people with disabilities ridership and senior ridership are updated to reflect 2011 data, the three highest scoring stations within the six (6) regions, and their weighted scores, become:

<u>West (Blue Line-Forest Park and Green Line-Harlem/Lake)</u>

1. Austin (Green Line) (3.0)
2. Racine (Blue Line) (2.92)
3. Pulaski (Blue Line) (2.85)

<u>South (Red Line-Dan Ryan)</u>

1. Garfield (3.23)
2. 87th (2.90)

<u>Northwest (Blue Line-O'Hare)</u>

1. Damen (3.50)
2. California (3.16)
3. Belmont (2.92)

Downtown Loop (All Lines)

1. Randolph/Wabash (3.66)
2. State/Lake (3.49)
3. Madison/Wabash (3.36)

Outer Central Business District (All Lines)

1. North/Clybourn (Red Line) (4.05)
2. Division/Milwaukee (Blue Line) (3.66)
3. Harrison (Red Line) (3.21)

North (Red Line-Howard and Purple Line)

1. Bryn Mawr (4.09)
2. Berwyn (4.00)
3. Sheridan (3.99)

Thus, as of the date of this White Paper, the highest ranking station overall in terms of need for accessibility is Bryn Mawr Station (Red Line). (*See* Attachment 12 for complete tables of these updated station rankings, both system wide and by region.)

The IATF urges CTA to continue to update these tables (and the underlying criteria data) periodically to reflect the effects of changing demographics on stations' scores, as well as the new rankings that remaining inaccessible stations will occupy as formerly inaccessible stations are converted into accessible ones. Further, the IATF strongly recommends that these tables be consulted by CTA on an ongoing basis as a key tool to inform both its maintenance projects and its capital planning.

V. Financial Resources, State of Good Repair and Accessibility Improvements

As the IATF carried out its work, CTA staff asked that the IATF be mindful of (1) competing interests for CTA's financial resources; (2) serious shortfalls in funding presently available for CTA's operational as well as infrastructure requirements; and (3) the interrelationship between CTA's State of Good Repair needs and station accessibility improvements.

CTA was particularly concerned about this latter consideration. In April 2009, the Federal Transit Administration (FTA), released "Rail Modernization Study Report to Congress," a report that called attention to a critical backlog in state of good repair projects for the seven oldest rail agencies in the United States. CTA was one of them. In the Report, the FTA considers an asset or system in a state of good repair when no backlog of capital needs exists. CTA bases its State

of Good repair standards on performance standards for both its rolling stock and fixed assets, including rail lines free of slow zones, with reliable signals; rail cars rehabilitated at quarter- and half-life intervals and replaced at 25 years; maintenance facilities replaced at 40 years (70 years if rehabilitated); and rail stations that are comfortable and secure, and replaced or rehabilitated at 40 years.

In spite of investments in CTA's assets in recent years, the percentages of CTA assets beyond their useful life are substantial (*see* Table 1 below). As of 2010, CTA estimated its five (5) year unfunded capital needs at $6.8 billion, the lion's share of which was earmarked for State of Good Repair projects.[5]

Table 1: Infrastructure Useful Life

Asset	Number	Useful Life	% Beyond Useful Life
Stations	143[6]	40 years	38%
Track	224 Miles	40 years[1]	22%
Substations	61	24-30 yrs[2]	45%
Bus Garages[3]	8	60	37%
Rail Cars	1,190	25 years	32%

1 Track Miles refers to revenue track; useful life is for tangent rail.
2 Substation useful life is based on usage
3 Bus Garages includes 7 active and 1 inactive

For purposes of the IATF's work, CTA considers its State of Good Repair needs to go hand in hand with the IATF's recommended accessibility improvements. Adding elevators, new signage, tactile edging, accessible routes and the like all require a sound infrastructure in good condition. For example, to add an elevator requires, among other things, code-compliant electrical service and structural stability. Hence, to improve accessibility at a particular rail

[5] According to CTA's FY2012 Budget Book, "Even if the entire capital backlog was funded, the CTA estimates a need of $844 million annually just to keep [sic] system in a state of good repair. The average funding level of the period 2012-2016 is $593 million. And even if the CTA system was in a state of good repair, the annual program funding would be insufficient to maintain this condition, with each year's deficit approximately $251 million."
[6] The station total as of September 2012 is 145.

station, CTA must also overhaul whatever deteriorated infrastructure exists at or near that station. In CTA's view, State of Good Repair and accessibility are in many ways interrelated and interdependent.

As the IATF monthly meetings progressed, CTA staff presented information to the members about other, competing interests for CTA's limited resources. These included smaller scale accessibility projects, such as replacement or reconditioning of elevators and escalators (*see* Attachment 4), and installation and/or upgrading of LED informational signage and audio equipment at the majority of rail stations (*see* Attachment 7). The IATF recognizes that such smaller scale projects are also important for rail station accessibility for people with mobility, vision and/or hearing difficulties.

VI. Station Concept Development

A. General

To help understand the overall capital investment required to achieve station accessibility, as the tables of ranked stations began to emerge and take their final forms, CTA and CTP developed conceptual station accessibility schemes with rough order of magnitude costs for a number of regionally high ranking stations. This was the second step in the IATF's overall strategic approach. Over the months of meetings, multiple station concepts were created, reviewed and evaluated by IATF members.

A key assumption was to design with a minimalist approach to cost and operational impacts. Specific station rehabilitation or renovation concepts demonstrated the sometimes complex technical constraints that face CTA and helped quantify the level of effort required to convert an inaccessible station into an accessible one. Developing specific concept schemes not only initiated the planning process for those particular stations, but prompted in-depth discussions among IATF members that resulted in valuable insights on design features with general applicability.

At the outset, the hope was that general station concepts could be developed for the following configuration types:

- Median expressway stations
- Embankment stations
- Subway stations
- Elevated Loop stations
- Historic stations
- Elevated North Red Line stations

It was anticipated that this work would result in prototypical accessible station concepts that could be applied to multiple stations of a similar type. An order of magnitude cost associated with each prototypical station concept would then be developed and applied to the remaining inaccessible stations, ultimately leading to a total program cost to achieve full accessibility system wide. (*See* Attachment 3.)

Unfortunately, this plan was unachievable in practice. The development work demonstrated that every inaccessible station -- although superficially encompassed within one of the six configurations listed above -- requires site-specific accessibility solutions achievable solely in an individualized configuration. In the end, it was determined that only a few of the median expressway stations on the Blue Line will be receptive to a prototypical design. The rehabilitation or reconstruction of the majority of inaccessible stations will be constrained by such site-specific issues as placement within expressways (for example, stations along the Blue Line's O'Hare branch); the presence of landmarked adjoining properties (such as the Damen Station on the Blue Line); pre-existing, unmodifiable track alignments; locations next to embankments (for example, stations along the Green Line's Harlem/Lake branch); and other unique location constraints.

B. Specific Station Concepts Developed

The stations listed below were strategically selected to develop concept alternatives. This list represents a number of inaccessible stations within each geographic region with both a pressing need for accessibility and what appears to be a fairly straight forward opportunity for concept development.[7] Brief descriptions of the resulting schemes and challenges identified for each of these stations are presented hereafter.

- West: Racine (Blue Line) and Austin (Green Line)
- South: 63rd (Red Line)
- Northwest: Damen (Blue Line) and Addison (Blue Line)
- Downtown Loop: Washington/Wabash (proposed reconstruction project by CDOT) and Adams/Wabash
- Outer Central Business District: Clark/Division (Red Line)
- North: Wilson (Red Line)

Using current applicable federal, state and local code requirements, CTA and CTP staff developed schemes for these stations based primarily on adding vertical access as a key component of accessibility. The general concept development approach was to minimize the number of elevators and provide comparable routes to the platform and to exits for customers

[7] Irving Park (Blue Line), for example, was a station highly ranked within its region as needing accessibility. However, a concept scheme was not developed at this time because of the numerous challenges this site presents including, among other issues, its long station configuration, with elevated walkways and multiple complex entrances and exits to and from street level underneath the expressway.

with disabilities as for customers without disabilities. Rough order of magnitude cost estimates for each station were also developed to quantify the level of effort required (*see* Table 2 below).

Other accessible elements -- for example, accessible paths of travel and communication systems -- were not the focus at this time but of course will be addressed when a particular concept is further refined for an actual station rehabilitation or reconstruction project.

Table 2: Summary of Concept Schemes

Station	***Scope of Work***	***Est. Cost***
Racine (Blue Line-Forest Park) *MEDIAN EXPRESSWAY TYPE* • Scheme A • Scheme B • Scheme C (preferred)	A: Remove non-compliant ramp, install enclosed ADA compliant ramp. B: New elevator, new stairs, new walkway, update existing fare array, relocate electrical room. C: New elevator with new enclosed walkway and new enclosed ADA compliant ramp, reconfigure electrical room and fare array.	A~$3M B~$6M C~$8M
63rd Street (Red Line-95th) *MEDIAN EXPRESSWAY TYPE*	New elevator; existing stair and escalator to remain.	~$2M
Addison (Blue Line-O'Hare) *MEDIAN EXPRESSWAY TYPE*	New elevator, modify existing fare array and electrical room, relocate existing stair to new location; existing escalator remains.	~$5M
Washington/Wabash (Loop) *ELEVATED LOOP TYPE*	Completely new station reconstruction. Replaces Randolph/Wabash and Madison/Wabash stations.	~$75M
Clark/Division (Red Line-Howard) *SUBWAY TYPE*	Completely new mezzanine at La Salle/Division with elevator access; renovation at Clark/Division end.	~$85M
Adams/Wabash (Loop) • Scheme A • Scheme B (preferred) *ELEVATED LOOP TYPE*	A: Install 2 new elevators, new transfer bridge, new CA room at platform level. B: Install 3 new elevators, 3 new enclosed walkways, reconfigure existing fare control area at mezzanine.	A~$20M B~$20M
Wilson (Red-Howard)	Install 1 end-loaded elevator, extend platform to	~$4M

ELEVATED NORTH RED LINE	the south, add new stairway down to street level (exit to Wilson Ave).	
Damen (Blue Line-O'Hare) *HISTORIC TYPE* • Scheme A1 • Scheme A2 (preferred, but highly problematic) • Scheme B1 • Scheme B2	A1: Install 2 elevators, one to street level, add transfer bridge, add new fare array at elevator location. A2: Install 2 elevators, both to street level, add new enclosed walkway. B1: New stationhouse across Damen, install 2 elevators, one to street level, new bridge over adjacent alley. B2: same as B1 but no transfer bridge by placing elevator over alley to street level. *New SE exit stairs at all 4 schemes	A1~$12M A2~$12M B1~TBD B2~TBD
Austin (Green Line-Lake) *EMBANKMENT TYPE* • Scheme A (preferred) • Scheme B	A: Install 1 elevator inside station house, add access ramp to station entrance from street level B: Install 1 elevator at secondary abandoned exit location, add access ramp to secondary station entrance from street level.	A~$6M B~TBD

Because of various unique station types, structure configurations, and site specific constraints that exist in the CTA rail stations, only Racine (Blue Line-Forest Park) could be developed into a prototypical station concept for these other Blue Line-Forest Park stations: Western, Pulaski, and Cicero. All other inaccessible stations in the CTA rail system will require custom concepts.

C. Racine, 63rd, Addison and Other Median Expressway Stations

CTA median expressway stations have platforms that are typically below grade (street level) and located in the median between outbound and inbound expressways. The station house is located at street level, usually on an overpass, with long ramps connecting it to the platform level. This type of station presents engineering challenges to reconfigure the existing steep, uninterrupted ramps to meet current accessibility standards without realignment of tracks. Because these stations are located many feet below and midway between two major overpasses bridging the expressways, their platforms that are among the longest in the CTA's rail system. Accordingly, elevators will need to load at the end of platforms and there will be long paths on the platforms to the train berthing positions.

The 63rd Street station (Red Line) is an example of a median expressway station that was configured from its inception to accommodate an elevator. Therefore, a single, straightforward concept scheme was developed for this station. (*See* Attachment 5 for 63rd Street Station plan concept.) Likewise, adding accessibility to the Addison (Blue Line) station required a fairly straightforward, if more costly, concept scheme. This scheme involves adding an elevator,

modifying the current fare array and electrical room, and relocating the stairs. (*See* Attachment 5 for Addison Station plan concept.)

Adding vertical accessibility to the Racine station (Blue Line) is a bit more challenging. Three concept schemes were developed. The IATF members opted for the scheme for the Racine station that both replaces the existing ramp with one that meets current ADA requirements and installs an elevator in the station. This approach was the preferred option over single vertical access options because it allows for access to an elevator while providing the ramp as an alternative device in case of an elevator outage. (*See* Attachment 5 for Racine Station plan concepts.)

D. Clark/Division and Subway Stations

The subway stations have historically been problematic to convert to accessible stations due to complex physical site and operational constraints. Varying street configurations and infrastructure also limit possible locations for elevators. For most subway stations, the station house is located at a mezzanine level below street level; island type platforms are located another level below the mezzanine. Subway stations are usually located in highly congested areas and may require property acquisitions. Because of tight site constraints, subway stations with island platforms will require a minimum of two elevators. Those with side platforms will require a minimum of three elevators. As a result, there are significant cost implications for the rehabilitation or reconstruction of subway stations.

The City of Chicago Department of Transportation (CDOT) presented a concept scheme for the Clark/Division (subway) station as part of the agency's downtown rail station rehabilitation program currently under development. Reconstruction of this station began in September 2012. (*See* Attachment 7 for Clark/Division Station plan concept.)

E. Washington/Wabash, Adams/Wabash and Elevated Loop Stations

CDOT has proposed the Washington/Wabash station for a complete reconstruction given its age and condition. (*See* Attachment 6 for Washington/Wabash plan concept.) Given the age of the inaccessible Loop elevated stations, they could all benefit from complete reconstruction. Nevertheless, it may be possible at some of these stations to achieve accessibility through major rehabilitation.

Elevated Loop station houses are usually located above street level at mezzanine or platform level. Space and height restrictions at these stations are problematic. The side platform configuration of these stations (i.e., two platforms) requires more than a single elevator, as well as construction of transfer bridges for bi-directional travel. Moreover, their locations within highly congested areas with adjacent building constraints will add to the complexity of these accessibility projects.

IATF members reviewed two concept schemes for the Adams/Wabash station as a potential rehabilitation project. One of the proposed schemes includes a transfer bridge over the existing tracks to allow for passengers to board trains in both directions. After discussion by the members, the transfer bridge scheme is not recommended due to the additional elevator wait time and the inconvenience of having to traverse longer distances. The resulting scheme without a transfer bridge is preferred. It proposes three elevators to allow for easy transfer to both directions of travel at the mezzanine level. (*See* Attachment 6 for Adams/Wabash plan concepts.)

F. Damen and Historic Stations

Stations that are considered historic landmarks present unique challenges. Historic station houses often are located at street level, and their platforms are side-loaded and located above street level. Because of the age of these stations and their historical significance, CTA envisions developing these concept schemes with a spartan approach to minimize impacts to historical elements of the station.

In the case of the historic Damen station (Blue Line-O'Hare), which is surrounded by other landmarked buildings, the challenge to rehabilitate is even greater. Four concept schemes were developed for Damen station, all requiring two elevators, one for each of the side platforms. Two of the concepts involve a transfer bridge to connect riders to both platforms. The third concept requires reconfiguration of the existing stationhouse to accommodate the new elevators and an extended walkway. The fourth concept involves a new stationhouse on the opposite side of Damen Avenue from the existing stationhouse; that new stationhouse would require an elevator that would impact the existing alley on the south side of CTA's right of way. IATF members favor the accessible schemes that do not require a transfer bridge and that provide the most direct accessible path to the platforms. All four Damen Station schemes are highly complex and require additional analysis to further develop these schemes. (*See* Attachment 9 for Damen plan concepts.)

G. Austin and Embankment Stations

Typically, embankment stations have a station house located at street level below the tracks, with either a center platform bound by the tracks or two side platforms. The embankment configuration may require two elevators, as well as ramps to access the entrance of the station house from street level.

Embankment stations on the Green Line, however, are configured like the Austin Station (Green Line-Harlem/Lake). Its station house is located above street level, with a center island type platform above street level and narrow platforms bound by the rail lines of other carriers and by adjacent streets.

Two concepts for the Austin Station were presented. The existing narrow platforms are bounded by Metra rail lines to the north. An auxiliary street to the south poses issues for an accessible path of travel to/from the station. The preferred concept scheme adds an elevator inside the existing station house and an access ramp to the station entrance from street level. Coordination with CDOT will be required regarding intersection improvements near the station that CDOT has already planned. (*See* Attachment 10 for Austin plan concepts.)

H. Wilson Station (North Red Line Elevated Station)

At one of the IATF's meetings, CTA's Strategic Planning department gave a presentation on CTA's Red and Purple Modernization (RPM) project – part of CTA's Red Ahead rail improvement initiative -- to the IATF members. The presentation focused on the various options being considered in the initial scoping process under the National Environmental Policy Act (NEPA) requirements. Accessibility aspects for each of the various station configurations options were summarized for the IATF members. (*See* Attachment 8 for RPM project description.)

Because of its pivotal location, three of the RPM options envision Wilson as one of two new transfer stations. Wilson was also ranked the highest in both the region and system wide tables that the IATF developed to evaluate station accessibility needs. Fortunately, on November 3, 2011, Illinois Governor Patrick Quinn and Chicago Mayor Rahm Emmanuel announced the commitment of $1 billion in funding towards rebuilding CTA's Red Line. This work will include, among other items, replacement of the Wilson station (discussed earlier in this paper).

I. CDOT Initiatives and Projects to Achieve Accessibility

The City of Chicago Department of Transportation (CDOT) Division of Engineering is currently developing a downtown rapid transit rehabilitation program. A total of 13 facilities are included in the program, to be financed mainly by federal CMAQ (Congestion Mitigation and Air Quality program) funds Of those, the Grand/State station (Red Line) and the LaSalle/Congress Intermodal Transfer Center are recently completed. Final design for Washington/Wabash station (Loop) has been funded. Reconstruction of the Clark/Division station (Red Line) began in September 2012. (*See* Attachment 6 for information current as of January 4, 2011 about CDOT's downtown program.)

VII. Rail Station Survey

To help CTA understand current accessibility conditions at its vertically inaccessible stations, the IATF developed and oversaw a survey of these 51 stations. The survey was intended to provide

a comprehensive overview of the existence and state of various exterior and interior elements.[8] The survey was based upon current FTA and City of Chicago accessibility standards.

With significant logistical assistance from Prof. Valerie Werner, Assistant Dean for Undergraduate Affairs, College of Urban Planning and Public Affairs (CUPPA), University of Illinois at Chicago, six CUPPA juniors and seniors surveyed all of CTA's inaccessible rail stations. The students were trained on measurement techniques and data collection by IATF member Joseph Russo and staff from the Mayor's Office for People with Disabilities and, using MOPD equipment, worked in the field from the end of January through mid-April 2011.

The survey was in the form of a checklist: each element was examined for compliance with accessibility standards. At each station, the UIC students had to determine the existence and measurement of exterior elements – such as sidewalk curb ramps, path of travel, bus areas, entry doors and signage – and interior elements – such as circulation paths, fare array, stairs, landings, handrails, ramps, escalators, gap fillers, and platforms. If an accessibility element did not exist, the students noted its omission; if the element existed, but was noncompliant, the students recorded its actual measurements.

In the field, the UIC students completed the station survey checklist, took photographs of each accessibility element, and marked the location of the elements on an architectural drawing of the station. Later, they uploaded all of these documents to ProjectNet, CTA's web-based project management system, with substantial guidance by Michael Goff, the system's manager. CTA is in the process of creating another, user-friendly database for all of the information gathered by the students, one that lends itself to easy sorting and updating of data.

Once the students completed their field work, they analyzed the data. They found a wide range of accessibility compliance among the inaccessible stations. A number of stations had, apart from their lack of elevator or ramp, many accessible elements fully compliant with current ADA standards. Many other stations had far fewer elements that comply with today's standards. At the end of April, the students made presentations to the IATF members and to senior CTA staff about their findings. (*See* Attachment 13 for the students' PowerPoint presentation.)

The rail station survey provided CTA with up-to-date knowledge about 51 of its station assets. It also prompted internal discussion at CTA about the efficacy of undertaking smaller scale rehabilitation projects that address a particular accessibility element, rather than deferring the issue until such time as the station undergoes a complete renovation or reconstruction. As one of the UIC students stated, "It's better to let the public know that CTA is aware of a problem and cares enough to fix it, than to wait until there is money to fix the whole station." For

[8] Although at the time that the surveying began there were actually 53 inaccessible stations, two Red Line stations -- Cermak-Chinatown and Grand/State – were omitted because they were being renovated and made fully ADA compliant.

instance, it may be appropriate for CTA to install at one time tactile edging along the platforms of all the inaccessible stations that remain without such edging. Other possible projects include system wide replacement of all non-compliant handrails or enhancement of station lighting.

VIII. IATF Recommendations

The third step in the IATF's strategy was to develop recommendations. The following recommendations resulted from discussions of the members and represent their consensus views. They are twofold: (1) general recommendations to address accessibility issues in early planning of capital projects and (2) specific design preferences to consider during project development of station improvements or new construction.

A. General Recommendations

The overarching recommendation of the IATF is that CTA adopt as its ultimate goal full accessibility for its entire rail system. To that end, the IATF proposes that CTA accomplish the following:

1. Ensure that all rehabilitation or reconstruction projects meet all applicable federal, Illinois, and local accessibility requirements.

2. Continue to develop such initiatives as the IATF to reinforce CTA's commitment to full accessibility.

3. In recognition of CTA's funding challenges, develop a phased approach to accessibility projects. When funding is available, upgrade inaccessible stations into fully accessible stations where feasible. When funding is constrained, add as many accessibility features as possible. These features may include tactile edges on platforms, powered or power-assist entry doors, or compliant handrails. Although incomplete, adding accessibility elements incrementally will enhance the station environment for people with disabilities and seniors who do not need an elevator.

4. Focus not only on vertical access at stations but provide accessibility elements for all types of disabilities. One example is that both visual and audio electronic communications are in need of major upgrades and improvements. Such improvements will help meet the needs of people with vision, hearing and cognitive difficulties.

5. Using the station evaluation criteria and ranking methodology discussed in this white paper, continue to reference, review and update the station priority list as additional or new information becomes available. This continual process of evaluation will aid CTA decision making on accessibility requirements in future capital improvement projects.

6. Consider and incorporate accessibility from the onset of new capital projects. For instance, include accessibility issues in the project master plan (PMP). This will ensure that accessibility needs are taken into account from the earliest design and costing initiatives. As the project develops, accessibility considerations will then continue to factor throughout the design phase for detailed design to be addressed. By including accessibility considerations in the PMP process, they will also be integrated into capital planning of State of Good Repair projects.

7. Develop an approval process to identify and mitigate negative accessibility impacts of CTA's more routine projects, as for example with maintenance or repair work at the stations. Such a process would ensure that as routine work occurs it does not create accessibility issues.

B. Specific Design Preferences

Using the various perspectives of the members, the IATF identified design preferences to be considered in future capital planning and design. These recommendations are not intended to be a reiteration of code requirements but to highlight those elements that are important to the IATF members that were discussed in the past months. Physical conditions exist at certain CTA stations that pose unique challenges for planning, design and operations. The IATF members' design recommendations are preferences for improving accessibility and achieving fully ADA-compliant stations, notwithstanding these challenges.

Paths of Travel

Provide accessible paths of travel to and from the station entrances. At a minimum, accessible paths within the CTA's project limit lines and alignment right-of-way should be provided, including but not limited to the sidewalks and curb ramps immediately around the rail station. The IATF encourages CTA to coordinate with other agencies, such as CDOT, to expand the accessible paths of travel outside of the CTA station's project limits.

Entrances

For new and renovated station entrances, plan for both main and auxiliary entrances to be made accessible, where feasible. Although applicable statutory requirements only require that 60% of entrances be made accessible in new construction, the IATF recommends that where possible all new construction should make any entrance, whether primary or secondary, accessible. The IATF also recommends that CTA investigate alternatives for creating non-staffed accessible entrances, such as new technologies available for remotely controlled elevators with camera assistance, staying mindful, however, of the labor implications of these

alternatives. Finally, ensure that all entrances include at least one or more powered doors for wheelchair users.

Weather Protection

Provide weather-protected walkways or ramps, where feasible, to access stations and platforms. Weather protection for accessible routes is not only a reasonable request, but may have a secondary benefit of reducing winter maintenance needs.

Circulation Paths

Where possible, provide a clear and direct circulation path for people with disabilities to reach the boarding positions on platforms. The indirect routes and overly long ramps that are currently present for wheelchair users at a number of accessible stations are viewed as problematic by the IATF members: they should be avoided in future station rehabilitation and construction projects. Because obstructions currently exist on the circulation paths at some stations, CTA should remove such obstructions and proactively monitor and maintain clear and direct paths. Relatedly, develop a definition for "pinch points" (for example, any area less than 5 feet wide, including the platform's two-foot wide tactile edging) and ensure that current and future stations remain clear of such points, to the extent feasible.

Provide escalators at least 36" wide to accommodate people with disabilities and service animals. Provide cane-detectable barriers under and around stairs, escalators, or ramps to prevent individuals from walking into low headroom structures. Ensure existing detectable barriers are adequate and provide new ones where applicable.

Provide tactile warnings for all changes in level in the stations and along the edges of all rail platforms where such warnings do not currently exist.

Elevators

A key concern is the unreliability of elevators at certain of CTA's currently accessible rail stations. Adding an elevator to an inaccessible station or constructing a new station with elevator access will be meaningless if outages occur. Finding ways to reduce elevator outage time will be important to adding accessibility to the rail system.

Many of the CTA's current elevators are hydraulic, and appear to be less reliable than traction elevators. CTA should research lifecycle costs, including down time, as well as other comparisons such as energy usage, for hydraulic versus traction elevators.

As stations are reconstructed for accessibility, CTA should add redundancy to station vertical accessibility, where funding and physical space permit. Designs should include a second

elevator, as well as a ramp, to ensure that elevator outages do not make an otherwise accessible station unusable by people with mobility impairments.

Electronic Communications

Install audible devices at stations with extended platforms to help customers who are blind or have low vision identify train boarding positions.

Provide advance notification by visual and audio communications of escalator and elevator outages, prior to customers entering the fare array.

Provide both visual and audio communications of impending train arrival times. Ensure that audio messages clearly state the color of the particular rail line of each train as it arrives.

Signage

Reexamine the use of color-only signage and messaging. Where lettering is used, it is challenging for some customers with visual impairments to read lettering that is not black against a white background or white against a black background. It is difficult for others to differentiate among colors. For example, if there is a Pink Line sign in with white lettering against a pink background, there should also be a Pink Line sign with white lettering against a black background.

Lighting

Develop standards for lighting levels that not only promote energy efficiency, but consider the impact on riders with low vision. Control glare and color quality with lighting trending towards warmer rather than cooler colors.

Overall

Finally, CTA staff and consultants should strive to keep current with the latest accessibility-related technologies and best practices. As much as possible, such accessibility improvements should be incorporated into existing and future stations.

IX. Next Steps

Finally, while recognizing the funding constraints that CTA faces, the IATF members recommend the following steps to continue its vision to develop fully accessible stations system wide.

1. Incorporate IATF's recommendations listed in this white paper into CTA's overall capital plan and long term strategic plan. Every capital improvement plan – annual and longer-term – should include accessibility projects.

2. Develop targeted funding strategies for improving accessibility. Utilizing the influence of and help from disability advocates, explore a CTA-IATF partnership to persuade funding sources to support rail station accessibility projects.

3. Engage IATF in future capital planning as needed. As CTA continues to plan capital projects and State of Good Repair projects, input from IATF members, as well as other disability advocates and members of the disability community, will be valuable.

4. Review and improve accessible elements at existing accessible rail stations for all types of disabilities, including but not limited to mobility, visual, hearing and cognitive impairments.

5. Continue to develop concept schemes for CTA's 51 remaining inaccessible stations.

6. Train facilities maintenance personnel to recognize impediments to accessibility and changes to accessibility elements. Develop a regular maintenance checklist for accessibility elements in rail facilities to ensure that such elements are kept in compliant condition at all times.

7. Implement a system to ensure that accessibility impacts are considered with any policy or procedure change.

Attachments

1. List of Accessible and Inaccessible CTA Rail Stations as of Fall 2012
2. Presentation, September 13, 2010 Meeting
3. Presentation, October 5, 2010 Meeting
4. Presentation, November 2, 2010 Meeting
5. Presentation, December 7, 2010 Meeting
6. Presentation, January 4, 2011 Meeting
7. Presentation, February 1, 2011 Meeting
8. Presentation, March 1, 2011 Meeting
9. Presentation, April 5, 2011 Meeting
10. Presentation, June 7, 2011 Meeting
11. Initial Set of Station Rankings, System Wide and By Region
12. Updated Set of Station Rankings, System Wide and By Region
13. UIC Student Presentation on Elements of Inaccessible Stations