Evaluation approach for regionally significant projects: transit

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ON TO 2050

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Major Capital Projects

Table 4. Evaluation results for transit projects: 2040 build minus no-build

Project	Fiscal constraint status	Gross regional product ($ millions annually)	Regional congested VHT (daily)	Corridor congested VHT (daily)	Work trip travel time by transit (minutes)	Transit trips (daily)	Number of jobs accessible within 75 minutes by transit	Carbon dioxide emissions (tons/year)	Number of households located in Green Infrastructure Vision areas	New impervious surface in project corridor (acres)	Percent of trip origins within current municipal borders	Percent change in job accessibility in environmental justice areas
Red Line Extension (South)	C	---	---	-860	---	708	2,382	---	---	---	100	0.3
Red/Purple Line Modernization	C	---	---	-2,168	---	1,283	---	---	---	---	100	0.0
UP Northwest Extension	C	---	-8,135	-3,608	---	9,359	17,421	---	356	---	94	0.6
SouthWest Service Improvements	C	$127	---	956	---	1,722	6,156	---	---	---	98	0.2
UP North Improvements	C	---	-7,502	-4,711	-0.17	3,299	5,415	---	---	---	84	0.7
UP West Improvements	C	---	-9,216	-2,703	-0.20	4,315	19,063	---	---	---	99	1.0
Rock Island Improvements	C	---	---	-1,692	---	2,421	---	---	---	---	100	0.3
West Loop Transportation Center: Phase 1	C	---	---	---	---	---	---	---	---	---	---	---
West Loop Transportation Center: Phase 2	U	$417	---	---	-0.89	15,870	34,001	---	---	---	99	NC
Blue Line West Extension	U	---	---	---	---	4,372	8,153	---	---	---	100	NC
Brown Line Extension	U	$149	---	2,743	---	881	---	---	---	---	100	NC
Circle Line South (Phase II)	U	$416	---	---	-0.11	5,926	-8,379	-41,194	---	---	100	NC
Circle Line North (Phase III)	U	$437	---	---	---	5,583	-4,859	---	---	---	100	NC

Background

- **ON TO 2050 will include a capital element**

- **Evaluation methods build on previous plans and work by other agencies**

- **Staff seeking feedback on evaluation methods for transit projects**

- **Highway project evaluation presented at July 2016 forum**

- **Main product is a "project need and benefits" report in summer 2017**

- **Evaluation aimed at producing information on benefits, not a ranked list of projects**

- **We want to collaborate with RTA and service boards on project evaluation**

Regionally significant project categories for ON TO 2050

- **Transit capacity projects (if ≥$100 m and have separate ROW or priority over other traffic)**

  – Evaluation with travel demand model and select other methods

- **State of good repair / system preservation ($250 m or more)**

  – Document need for project, mostly qualitatively

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Capacity project evaluation

Needs analysis

- Asset condition

- Capacity constraint

- Reliability

Travel benefits

- Change in ridership

- Change in work trip transit travel time

- Change in jobs accessible within X minutes

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Capacity project evaluation

Planning factors

- **Equity**

- **Local planning support / support for infill areas**

- **Transit availability**

- **Economic benefits**

- **Environmental impact**

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Needs analysis

Asset condition

- **A capacity improvement that also addresses SOGR is a higher priority (other things equal)**

- **Potential approaches:**

  – TERM scale: rates asset condition from 1 – 5 (poor to excellent) for vehicles, track, stations, equipment, etc.

  – Reduction in monetary value of condition backlog

  – Some other quantitative condition assessment

- **Project sponsors or RTA would provide these estimates**

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Capacity constraint

- **Simple rating of severity of the capacity constraint that a project addresses**

- **Modified FTA Core Capacity method**

  – Heavy rail: square feet of space per passenger in the peak hour in the peak direction

  – Commuter rail: Number of trains each day ≥ 95% occupied

- **Scale to 1 – 10 value**

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Reliability

- **Current on-time performance for service improved by project**

- **Could consider other measures of reliability in addition to on-time performance if supplied by project sponsor**
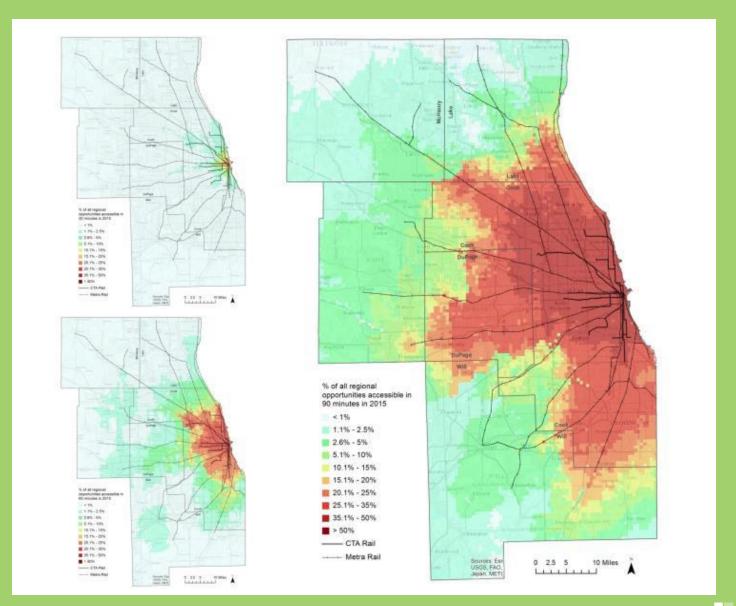
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ADA Accessibility

- **ADA improvements a major factor in service board capital programming**

- **Score either as:**

  – Yes/No for whether project includes ADA improvements

  – 1 – 5 ranking based on level of ADA improvement (e.g., number of stations improved or riders benefitting)

Travel benefits

Travel benefits: mobility and accessibility

- **Change in ridership (trips per day)**

- **Work trip transit travel time**

- **Number of jobs accessible within X minutes**

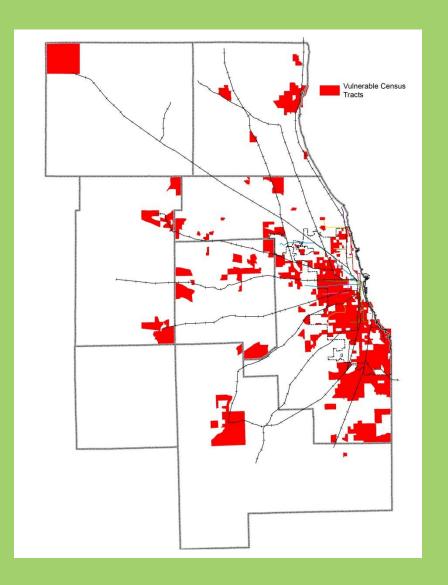# Access to jobs by transit (30, 60, 90 min)

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Base modeled travel benefits on current conditions

- **Socioeconomic forecasts for 2050 not yet available**
- **High-level project comparison doesn't really need exacting evaluation of future market for project**
- **However:**
  - **Growth in corridor can be a planning factor**
  - **Conformity analysis will be carried out later with 2050 forecasts**
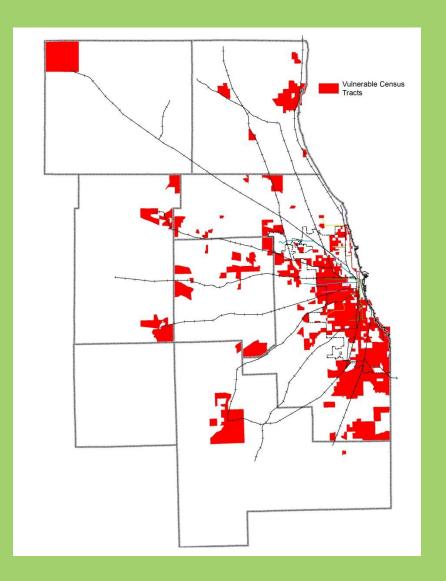
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Planning priorities

Equity impact (1)

- **Fraction of ridership that comes from excluded communities: 0 – 100 index**

  - Defined in inclusive growth strategy paper based on demographics

Vulnerable Census Tracts
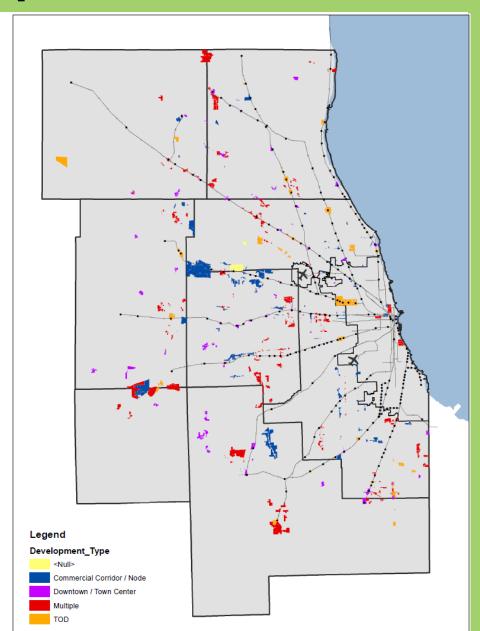
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Equity impact (2)

- **Change in number of jobs accessible within 75 minutes for excluded communities**

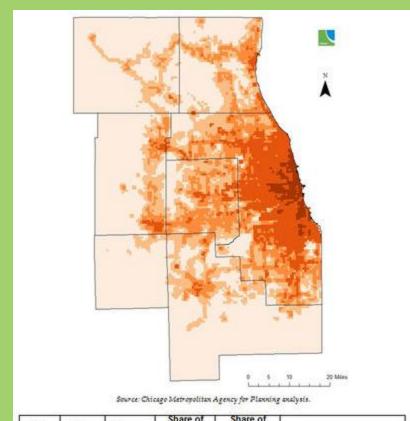- **Change in criteria pollutant emissions affecting excluded communities**

Vulnerable Census Tracts

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Local planning support / infill areas

- **High/medium/low assessment of whether project serves infill supportive areas and/or locally-identified reinvestment areas (name TBD)**

Legend

Development_Type
- <Null> (yellow)
- Commercial Corridor / Node (blue)
- Downtown / Town Center (magenta)
- Multiple (red)
- TOD (orange)

Transit availability

- **CMAP Transit Availability Index classifies region on 1 – 5 scale by frequency of service, destinations accessible, proximity to transit, and walkability**

- **Report change in index × population and jobs benefitting**

Source: Chicago Metropolitan Agency for Planning analysis.

Color Code	Index Value	Subzone count	Share of Regional Population	Share of Regional Employment	Transit Access Level
	1	8,922	7.9%	6.5%	Low
	2	9,424	21.2%	18.1%	Moderately Low
	3	2,146	20.8%	25.4%	Moderate
	4	1,668	37.5%	30.8%	Moderately High
	5	283	12.7%	19.2%	High

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Economic impact

- **Analysis using commercial economic impact software (TREDIS) and simpler "effective density" method**

- **Estimate change in economic output from improved population access to job centers**

- **Report long-term gross regional product with project versus without project**

  - **GRP is the market value of all goods and services produced in the region**

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Environmental impact

- **Greenhouse gas emissions**

State of good repair projects

- **Document need for project, mostly qualitatively**
- **Indicate TERM rating, presence of slow zones, etc.**
- **Examples**
    - Blue Line Forest Park branch reconstruction
    - A-2 crossing reconstruction

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Questions?

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