DESIGN COMPETITION  Reimagine the Buffalo Skyway, 2019

Sponser: Empire State Development

CNU Freeways Without Futures: 2014
BUFFALO SKYWAY  Existing Conditions
DESIGN OBJECTIVES  Addressing Systemic Impacts

- Human created climate change
- Eliminate Transportation Pollution & Emissions
- Urban growth boundaries
- Sustainable industrial processes
- Renewable energy generation
- New energy grid

- Environmental Justice
- Address historic systematic discrimination
- Reverse housing segregation
- Equitable distribution of investments
- Housing affordability
- Global vs Declining cities
- Police and criminal justice reforms to stop over-policing and police brutality

- Physical activity integrated with daily life
- Community Health and Safety (Vision Zero)
- Increase Biodiversity
- Organic Local food network (farm-to-table)
- 8-80 Cities
- Local Live-Work-Play Balance

- Land Value Tax
- Growth emerging economic industries
- Equitable distribution of wealth
- Expand stake in new economic growth
- Leverage existing and prior projects and planning
- Sustainable funding sources
- Adaptable / resilient
DEVELOPMENT HISTORY  Buffalo and WNY Region

Founding
& Historic
Development

Buffalo’s
Heyday

Highway Building &
Urban Renewal

Comeback

- Joseph Ellicott radial and grid city plan
- Erie Canal Completed
- Dart Elevator: invention of grain elevator
- Olmsted Park and Parkway System Plan
- First hydroelectric power plant in world
- Louis Sullivan Guaranty Building
- Federal home underwriting map "redlining"
- FLW Larkin Administration Building Completed
- Skyway Completed
- Humboldt Parkway demolition for Kensington Expressway
- St. Lawrence Seaway completed, begin locally known era of de-industrialization

- 2000’s Start of Buffalo’s Comeback
  - Restoration of Buffalo River
  - Canalside
  - Adaptive Reuse
ERIE COUNTY, NY  Population Growth 1970-2010

City of Buffalo Population 1950:  
580,000 people
ERIE COUNTY, NY  Population Decline 1970-2010

City of Buffalo Population 2010:

261,000 people
ERIE COUNTY, NY  Population Sprawl 1970-2010

Source: One Region Forward, University at Buffalo Regional Institute
ERIE COUNTY, NY 1993-2017

POPULATION CHANGE
-12%

HIGHWAY LANE MILES CHANGE
1%

TRAFFIC DELAY CHANGE
175%

ERIE COUNTY, NY  Intra-city Highway Building 1950-1993
HIGHWAY IMPACTS  1950’s to Today

Humboldt Parkway, 1951

Highway = Loss of Urban Fabric

Increasing Poverty Concentration

Increasing Suburban Sprawl

Diverging Global vs. Secondary Cities

Case Study: Buffalo to NY State

Humboldt Parkway

Street

Building

Humboldt Parkway

Source: Sanborn Maps

Increasing Poverty Concentration

Poverty Rates

Source: Social Explorer

Population Loss

< 25%

25 - 49%

50 - 100%

< 25%

25 - 49%

50 - 100%

> 100%

Source: One Region Forward

Diverging Global vs. Secondary Cities

Source: Google Earth, 2019
SEGREGATED CITIES  Buffalo, NY is #4

White/Non-White Dissimilarity Index, 2019

Median Property Value: Summer 2019

Source: Trulia
BUFFALO SKYWAY VISION  Design Principles
REVERSING HIGHWAY IMPACTS

Case Study: Buffalo to NY State

Humboldt Parkway, 2019

Parkway = Rebuild Urban Fabric

First/Last Mile Connections

Transit-Oriented Neighborhoods City

High-Speed Rail Connect Global & Secondary Cities

- building
- Kensington Expressway
- existing building
- infill building
- restored parkway
- infill community parks
- building
- open space
- bicycle lane
- path to transit station
BUFFALO SKYWAY VISION Design Concept

EXISTING HIGHWAY CORRIDOR

OLMSTED PARKWAY AS MODEL

NEW TRANSPORTATION TECHNOLOGIES

MODERN PARKWAY CORRIDOR

INFRASTRUCTURE FOR 21ST CENTURY ECONOMY
RECONNECT STREET GRID  Phase 1
RECONNECT STREET GRID  Phase 2

EXISTING  HISTORIC GRID  PHASE 2
RECONNECT STREET GRID  Phase 3

EXISTING

HISTORIC GRID

PHASE 3
RECONNECT STREET GRID  NACTO Standards
TRAVEL TRIPS  United States: less than 1 mile

- 28%
- 2.2%
- 35%
- 60%
TRAVEL TRIPS United States: less than 2 miles

40%

2.0%  26%  68%
TRAVEL TRIPS  United States: less than 3 miles

- 50% of trips are 3 miles or less.
- 72% of trips are 3 miles or less.
- 21% of trips are 3 miles or less.
- 1.8% of trips are 3 miles or less.

Walking access shed: 1 mile radius.
Biking access shed: 3 mile radius.
ACTIVE TRANSPORTATION TRENDS

2^{nd} AVENUE WEDNESDAY BICYCLE COUNT

<table>
<thead>
<tr>
<th>Year</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>332</td>
</tr>
<tr>
<td>2015</td>
<td>1311</td>
</tr>
<tr>
<td>2016</td>
<td>1217</td>
</tr>
<tr>
<td>2017</td>
<td>1245</td>
</tr>
<tr>
<td>2018</td>
<td>1704</td>
</tr>
</tbody>
</table>

DAILY BICYCLE COMMUTERS

Implementation of Protected Bicycle lane(s)

Source: Streetsblog USA
TRAVEL TRIPS  Less than 3 miles

Percent of All Trips

- <1 mile: 28%
- <2 miles: 40%
- <3 miles: 50%

Shifting Percent of Trip Modes by Distance

<table>
<thead>
<tr>
<th>Distance</th>
<th>Walking</th>
<th>Biking</th>
<th>Car</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 mile</td>
<td>2%</td>
<td>35%</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>&lt;2 miles</td>
<td>2%</td>
<td>26%</td>
<td>68%</td>
<td></td>
</tr>
<tr>
<td>&lt;3 miles</td>
<td>2%</td>
<td>21%</td>
<td>72%</td>
<td></td>
</tr>
</tbody>
</table>

Source: National Household Travel Survey
MULTI-PURPOSE BRIDGE  Concept Design
OPEN SPACE NETWORK  Concept

REGIONAL

POCKET

AGRICULTURE

PERSONAL

NEIGHBORHOOD

TOWN SQUARE

OPEN SPACE NETWORK  Concept

REGIONAL

POCKET

AGRICULTURE

PERSONAL

NEIGHBORHOOD

TOWN SQUARE
OPEN SPACE NETWORK  Restoring + Expanding Olmsted System

HISTORIC OLMSTED PARK & PARKWAY SYSTEM

EXPANDED PARK & PARKWAY NETWORK

Existing
New
URBAN FORM COMPARISON  Buffalo Downtown Waterfront
URBAN FORM COMPARISON  Buffalo Downtown Waterfront
URBAN FORM COMPARISON  Aspirational Cities

BUFFALO 2019

PORTLAND

COPENHAGEN

LONDON
### URBAN FORM COMPARISON  Peer Cities

<table>
<thead>
<tr>
<th></th>
<th>AERIAL</th>
<th>BUILDINGS</th>
<th>OPEN SPACE</th>
<th>BICYCLES</th>
<th>PUBLIC TRANSIT</th>
<th>HIGHWAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BUFFALO 2050</strong></td>
<td><img src="image1" alt="AERIAL" /></td>
<td><img src="image2" alt="BUILDINGS" /></td>
<td><img src="image3" alt="OPEN SPACE" /></td>
<td><img src="image4" alt="BICYCLES" /></td>
<td><img src="image5" alt="PUBLIC TRANSIT" /></td>
<td><img src="image6" alt="HIGHWAYS" /></td>
</tr>
<tr>
<td><strong>PORTLAND</strong></td>
<td><img src="image7" alt="AERIAL" /></td>
<td><img src="image8" alt="BUILDINGS" /></td>
<td><img src="image9" alt="OPEN SPACE" /></td>
<td><img src="image10" alt="BICYCLES" /></td>
<td><img src="image11" alt="PUBLIC TRANSIT" /></td>
<td><img src="image12" alt="HIGHWAYS" /></td>
</tr>
<tr>
<td><strong>COPEHAGEN</strong></td>
<td><img src="image13" alt="AERIAL" /></td>
<td><img src="image14" alt="BUILDINGS" /></td>
<td><img src="image15" alt="OPEN SPACE" /></td>
<td><img src="image16" alt="BICYCLES" /></td>
<td><img src="image17" alt="PUBLIC TRANSIT" /></td>
<td><img src="image18" alt="HIGHWAYS" /></td>
</tr>
<tr>
<td><strong>LONDON</strong></td>
<td><img src="image19" alt="AERIAL" /></td>
<td><img src="image20" alt="BUILDINGS" /></td>
<td><img src="image21" alt="OPEN SPACE" /></td>
<td><img src="image22" alt="BICYCLES" /></td>
<td><img src="image23" alt="PUBLIC TRANSIT" /></td>
<td><img src="image24" alt="HIGHWAYS" /></td>
</tr>
</tbody>
</table>
TRANSIT RIDERSHIP TRENDS United States, 1997-2017

Average 10%-20% cuts to bus service nation-wide

Gradual response creates delayed ridership declines

Source: Federal Transit Administration National Transit Database
TRANSIT RIDERSHIP TRENDS  Seattle, 2010-2017
SOUTHTOWNS PARKWAY  Proposed Phased Highway Removal

EXISTING

PHASE 1
- New Trees
- road diet (flexible center lane)

PHASE 2
- Chicanes
- remove center lane for parkway
- new development along Fuhrmann Blvd

PHASE 3
- full removal of vehicle traffic
- new developments

bike Path
Fuhrmann Blvd
Parkway
Bldg Entrances
Bike Path
SOUTH TOWNS PARKWAY  Proposed Mixed-Use Neighborhood

RETAIL OR LIVE/WORK

COMMERCIAL GREENHOUSE

MULTI-FAMILY APARTMENTS

SINGLE-FAMILY HOME
RENEWABLE ENERGY PRODUCTION  Creating Multiple Benefits from Infrastructure
## Costs

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Estimated Cost</th>
<th>Public</th>
<th>Private</th>
<th>Non-Profit / Philanthropic</th>
<th>P3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove Skyway Interchange Ramps</td>
<td>$18 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Southtowns Connector Road Diet - Phase 1</td>
<td>$45 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Remove Elevated Skyway Bridge</td>
<td>$40 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. New Downtown Streets (Skyway Corridor)</td>
<td>$20 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Food Market / Shed Hill Development</td>
<td>$15 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Buffalo Municipal Housing Authority Development</td>
<td>$70 m</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7. Michigan Street Lift Bridge</td>
<td>$10-15 m</td>
<td></td>
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<tr>
<td>8. Restore Olmsted Terrace Park</td>
<td>$8 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. New Bicycle / Pedestrian Bridge</td>
<td>$45 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Downtown Road Diets</td>
<td>$100-150 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>11. Solar Panel Sculptures (Bethlehem Steel Site)</td>
<td>$400 m</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12. Canalside Development</td>
<td>Market</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>13. Downtown Infill Development</td>
<td>Market</td>
<td></td>
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</tr>
<tr>
<td>14. Southtowns Connector Road Diet - Phase 2</td>
<td>$45 m</td>
<td></td>
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</tr>
<tr>
<td>15. Parkway Bicycle Paths</td>
<td>$3 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>16. Parkway Neighborhood Agriculture / Green Industry</td>
<td>Market</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Southtowns Public Transit Extension</td>
<td>$600 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Southtowns Connector Road Removal (Phase 3)</td>
<td>$60 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Parkway Neighborhood Residential / Commercial</td>
<td>Market</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. I-190 Phase 1 Parkway Replacement + LRT Tunnel</td>
<td>$724 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. East Side / Airport Public Transit Line</td>
<td>$1.5 b</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>22. I-190 Phase 2 Parkway Replacement + LRT Tunnel</td>
<td>$776 m</td>
<td></td>
<td></td>
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<tr>
<td><strong>Total Proposed Costs</strong></td>
<td><strong>$1.3 b</strong></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
PHASING STRATEGY  Achieving Climate & Equity Goals

NYS CLIMATE ACTION PLAN TARGETS

TOTAL BENEFITS

SKYWAY CORRIDOR

- 60 acres open space
- 6.3 million SF development
- $590 million development value (2030) proposed

I-90 CORRIDOR

- 34 acres open space
- 9.3 million SF development
- $1.3 billion development value (2030) proposed

ADJACENT/INFILL

- 9 acres open space
- 9.9 million SF development
- $1.3 billion development value (2030) proposed
### COST vs. BENEFITS  Status Quo vs. New Approaches

#### Estimated Highway/Road Expansion Construction

- **Skyway Maintenance 25 Years**
  - $66 million

- **Estimated Highway/Road Expansion Construction**
  - $1.4 billion

- **ONGOING Maintenance**
  - $1.3 billion

- **REDUCED Maintenance**

---

#### NEW BENEFITS BY

<table>
<thead>
<tr>
<th>Year</th>
<th>Acres Available</th>
<th>Land Value</th>
<th>Tax Revenue</th>
<th>New Residents</th>
<th>New Jobs</th>
<th>Agricultural Output</th>
<th>Potential Energy Production</th>
<th>CO₂ Emission Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Development (proposed)</td>
<td>Open Space (proposed)</td>
<td>Inner Loop / I-88 Presidencies</td>
<td>Residential</td>
<td>Commercial</td>
<td>Retail / Entertainment</td>
<td>Agriculture / Green Industry / Flex</td>
<td>Residential</td>
</tr>
<tr>
<td>2030</td>
<td>38 acres dvlp</td>
<td>16 acres open space</td>
<td>$133 million land value</td>
<td>64%</td>
<td>16%</td>
<td>8%</td>
<td>29%</td>
<td>48%</td>
</tr>
<tr>
<td>2040</td>
<td>54 acres dvlp</td>
<td>53 acres open space</td>
<td>$172 million land value</td>
<td>64%</td>
<td>20%</td>
<td>4%</td>
<td>12%</td>
<td>64%</td>
</tr>
<tr>
<td>2050</td>
<td>67 acres dvlp</td>
<td>34 acres open space</td>
<td>$202 million land value</td>
<td>58%</td>
<td>28%</td>
<td>7%</td>
<td>7%</td>
<td>58%</td>
</tr>
</tbody>
</table>

#### NEW BENEFITS BY

- **Seniority**
  - 2030
  - 2040
  - 2050

- **Resident Population**
  - 8,200
  - 14,000
  - 14,500

- **New Jobs**
  - 5,000
  - 8,000
  - 12,300

- **Agriculture Output**
  - 2.5 million lbs/year
  - 1.7 million lbs/year
  - 1.1 million lbs/year

- **Potential Energy Production**
  - $43.8 million/year
  - $7.2 million/year
  - $8.0 million/year

- **CO₂ Emission Reduction**
  - 198,000 tons CO₂ reduction
  - 32,000 tons CO₂ reduction
  - 36,000 tons CO₂ reduction

---

#### Increasing: Sprawl, Congestion, Ggh Emissions, Pollution Run-off, Habitat Degradation, Segregation
MEASURING COST vs. BENEFITS

STATUS QUO

INCREASE TRANSPORTATION CAPACITY

Demand
Capacity

REDUCE INFRASTRUCTURE + HEALTH COSTS

• Reducing road and stormwater infrastructure reduces long-term maintenance obligations
• Reduced GgH emissions:
  • Reduced environmental costs
  • Reduced individual healthcare costs

NEW DEVELOPMENT AREA = INCREASED REVENUE

• More efficient infrastructure costs
• Tax Increment Financing (TIF) District

NEW HOLLISTIC APPROACH

• Expand new green energy grid with telecommunication infrastructure
• Pair infrastructure with new developments
• Internet infrastructure used to heat buildings and public space
• Natural water infiltration

TOTAL CAPACITY
HIGHWAYS TO PARKWAYS  Integrating Development Spheres
INTERSTATE HIGHWAY SYSTEM  1950's-Present: 70 years
POPULATION CHANGE United States 1945-2010

130%

86 million

249 million
URBANIZED AREA CHANGE  United States 1945-2010

- 1945: 86 million, 23,456 sq miles
- 1950: 86 million, 23,456 sq miles
- 1960: 130%, 86 million, 23,456 sq miles
- 1970: 208%, 249 million, 106,386 sq miles
- 1980: 249 million, 106,386 sq miles
- 1990: 249 million, 106,386 sq miles
- 2000: 249 million, 106,386 sq miles
- 2010: 249 million, 106,386 sq miles
1960 Atlanta City Planning Report:

the layout of I-20 west of downtown,

“would be the boundary between the White and Negro communities.”
ATLANTA 1990-2017

POPULATION CHANGE

60%

HIGHWAY LANE MILES CHANGE

38%

TRAFFIC DELAY CHANGE

143%
INDUCED DEMAND  The Congestion Con

United States

- 42%
- 32%

San Diego, CA

- 22%
- 26%

Omaha, NE

- 146%
- 45%

Jackson, MS

- 71%
- 9%

Pensacola, FL

- 121%
- 39%

Boise, ID

- 141%
- 117%

Buffalo, NY

- 1%
- -12%

144%

88
URBAN COMPARISON  Barcelona vs. Atlanta

BARCELONA
2.8 MILLION (1990)

ATLANTA
2.5 MILLION (1990)
500 ft of Freeway:
1.2 million people

1,000 ft of Freeway:
2 million people

HEALTH ISSUES:
• Asthma
• Lung Cancer
• High Blood Pressure
• Pregnancy Complications
• Fetal Development
• Gestational Diabetes
• Obesity
• Heart Disease / Cardiac Complications
• Stroke

LOS ANGELES HIGHWAY NETWORK  Impacted Residents
CITY COMPARISON

LOS ANGELES

LONDON

BOGOTA
CITY COMPARISON  Area

LOS ANGELES  Sq Miles: 502

LONDON  Sq Miles: 606

BOGOTA  Sq Miles: 685
CITY COMPARISON  Population

LOS ANGELES
Sq Miles: 502  4.05 million

LONDON
Sq Miles: 606  8.8 million

BOGOTA
Sq Miles: 685  8.08 million
CITY COMPARISON  Open Space
OBESITY RATES  Adults 1990
OBESITY RATES  Adults 2000
OBESITY RATES  Adults 2010
OBESITY RATES  Adults 2017
OBESITY RATES  Adults 2019

Total Population

Black

Hispanic, Non-White
HEALTHCARE COSTS Percent of National GDP

GAP BETWEEN UNITED STATES AND SWITZERLAND:

$1 Trillion per year

GAP BETWEEN UNITED STATES AND OECD36:

$2 Trillion per year

Source: World Bank
Ghg EMISSIONS  2020 Projection

-5% CO₂ EMISSIONS
(2.5 BILLION TONS CO₂)

Guardian graphic. Source: Global Carbon Project (GCP), Carbon Dioxide Information Analysis Center (CDIAC)
Ghg EMISSIONS  Projected Reductions by Industry Sector

70% of projected CO₂ reduction from TRANSPORTATION sources

-25% Heathrow Flights: 27 March 2019: 1,615 27 March 2020: 525

-9.4% for 2020 Daily Oil Demand (Millions of Barrels) 2019: 100 2020: 97.5

-500 M TONS CO₂

-200 M TONS CO₂
COVID-19 IMPACTS  Reduced Driving Demand

United states Vehicle Trips

-50% 100% NORMAL

MARCH 1 APRIL 17

SOURCE: Inrix

SOURCE: BBC
**CO₂ Emissions Reductions (and Corrections)**

**Past Major Global Events**

---

**CO₂ Emissions per Household by Income Group**

- **SOURCE:** Environmental International "Scale, distribution and variations of global greenhouse gas emissions driven by U.S. households"
1945
Carbon emissions fell by 750m tonnes after WW2

1975
Carbon emissions fell by 100m tonnes over 2 years in the 1970s recession

1983
Carbon emissions fell by 1bn tonnes over 4 years in the early 1980s recession

2009
Carbon emissions fell by 300m tonnes in the global financial crisis

2020
Prospect of 5% fall this year

40 billion tonnes of CO₂
Thank You
TOWARD UNIVERSAL MOBILITY
Charting a Path to Improve Transportation Accessibility
What is Universal Mobility?

Universal Design + Community Mobility = Universal Mobility
Figure 1. Prevalence of Disability in the Chicago Region, 2017

Workers by Disability Status

<table>
<thead>
<tr>
<th>Has disability</th>
<th>Does not have disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>53.2% Full-time</td>
<td>80.9% Full-time</td>
</tr>
<tr>
<td>46.8% Part-time</td>
<td>19.1% Part-time</td>
</tr>
</tbody>
</table>
Fractured Accessible Transit System

Accessible Transit Services for Northeast Illinois

- County & Chicago Borders
- ADA Paratransit
- Pace On Demand
- Dial-a-Ride (multiple colors)
- Dial-a-Ride buffer zones (multiple colors)

Sources: RTA, Pace
Fractured Sidewalk Network
RECOMMENDATIONS
Improve service coordination
Unlock mobility options with information

“We’d like to see transportation systems that are fully integrated every step of the way. No matter the mode of transportation, no matter your disability…” - Adam Ballard
Upgrade technology to improve the customer experience
Improving the Final Steps of the Journey
Upgrade Accessibility of Fixed-Route Transit
Improve Funding Structures
“Barriers to independence are usually a function of societal and architectural barriers, rather than of a disabled individual’s reluctance to pursue independence.” - Andrew Webb
Carrots vs Sticks in Transport Policy

Russell Pildes and Jesse Boudart

25 Sept 2020
Warning:

This is a provocation.
Why This?

• Transportation = ~29% of US energy consumption and GHG emissions
• ~39,000 people died in traffic incidents

Sources: EPA, EIA, NHTSA, TTI, Brent Toderian
Why This?

- Transportation = ~29% of US energy consumption and GHG emissions
- ~39,000 people died in traffic incidents

Sources: EPA, EIA, NHTSA, TTI, Brent Toderian
Analytical Framework

Policy Motivators
- Carrots
  - Sticks

Groups to Motivate
- Funders
  - Spenders

Outcomes
- Stuff we get for our tax dollars
Carrots

A carrot is a gift that makes it easier to do a desired activity.

Basic examples: transit priority, midblock crossings, Ben & Jerry’s free cone day, etc.
FAHP and the Federal Match
FAHP and the Federal Match

Are they carrots or sticks?
FAHP and the Federal Match

Are they carrots or sticks?

Carrots! They are a structured approach to make roadbuilding easier.
FAHP and the Federal Match

Are they carrots or sticks?

Structured approach to make roadbuilding easier.

Most DOT modal administrations use the same basic structure.
FAHP and the Federal Match

Are they carrots or sticks?
- Structured approach to make roadbuilding easier.
- Most DOT modal administrations use the same basic structure.

What do they do?
FAHP and the Federal Match

Are they carrots or sticks?

Structured approach to make roadbuilding easier.
Most DOT modal administrations use the same basic structure.

What do they do?

1) Feds kick in money for your eligible projects.
FAHP and the Federal Match

Are they carrots or sticks?
   Structured approach to make roadbuilding easier.
   Most DOT modal administrations use the same basic structure.

What do they do?
   1) Feds kick in money for your eligible projects.
   2) Feds pay a share of the total cost.
The Big Dig
The Big Dig

Purpose: bury I-93
Timeline: decades
Planned cost: $7.4bn
Actual cost: $22bn
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Was the project worthwhile?
The Big Dig

Purpose: bury I-93
Timeline: decades
Planned cost: $7.4bn
Actual cost: $22bn

Original MA Share
Planned cost: $1.2bn
Actual cost: $3.3bn

Was the project worthwhile?

Congress revised its offer. Had it not...
**FAHP and the Federal Match**

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## FAHP and the Federal Match

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If the match is the same, but the amount is so much smaller, policy has its finger on the scale.
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Proposition:
Highway-funded transit is a false flag.
Highway-funded Transit is a False Flag

- Congestion Mitigation and Air Quality Improvement (CMAQ) Program
  - $2.5bn annual appropriation to implement the Clean Air Act
  - Eligible projects include transit expansions and active transportation
Highway-funded Transit is a False Flag

- Congestion Mitigation and Air Quality Improvement (CMAQ) Program
  - $2.5bn annual appropriation to implement the Clean Air Act
  - Eligible projects include transit expansions and active transportation

If CMAQ’s carrot were effective, it would make it easier to do the right thing for people and the environment… right?
Highway-funded Transit is a False Flag

“In using CMAQ funds for operating assistance, the intent is to help start up viable new transportation services that can demonstrate air quality benefits and eventually cover costs as much as possible. Other funding sources should supplement and ultimately replace CMAQ funds for operating assistance.”

- CMAQ Revised Interim Guidance (July 2014)
Sticks

A stick adds burdens to make unwanted behaviors less desirable.
Proposition:

Sticks are more effective than carrots to achieve stated policy goals.
Example: Congestion Pricing

If your goal is to reduce auto travel and associated environmental and safety impacts...

Why not just do that?
Example: Congestion Pricing

If your goal is to reduce auto travel and associated environmental and safety impacts...

Why not just do that?

Increase reliability, decrease air pollution and incident exposure.

Raise revenue.

Success stories: London, Stockholm, Gothenburg, Singapore, Milan
Synthesis: A Bigger Picture

Expect Delays
Why This?

- Transportation = ~29% of US energy consumption and GHG emissions
- ~39,000 people died in traffic incidents

Sources: EPA, EIA, NHTSA, Ian Lockwood
Thank you!

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