SIPRAC Meeting

September 11, 2014
TransformCT is not a conventional plan

• Visionary
• Quantitative
• Action oriented
• Investment driven
• Measurable Objectives
• Long-Range Vision
• Sustainable

Strategic planning—“disciplined effort to produce fundamental decisions and actions that shape and guide what an organization is, what it does, and why it does it.”

-Bryson 1996.
Support Other State Initiatives

- Economic growth
- Sustainable development
- Affordable housing
- Energy conservation
- Preserve & enhance CT’s
  - Environment
  - Quality of life

Visit www.TransformCT.org
Overview

• Visioning
• Public Engagement
• Baseline Revenue Forecast
• System Needs Analysis
• Scenario Development/Economic Modeling
• Strategic Management
• Identify Strategies for Implementation

We are here
Long Range Multi-Modal Vision

50 year plan

- Rail
- Highway
- Ports
- Transit
- Bike/Ped
- Aviation
- Freight
Why 50 Years?
Vision: An Iterative Process

- Extensive Public Engagement
  - Full sweep of Connecticut
  - Outreach online, in person, & non-traditional methods too.

- Identify Needs

- Build a Vision
  - Backbone & Framework of the Plan
2010 Decennial Census
Population by County of Residence

Legend
2010 County Population
- Blue: 120,000 - 120,000
- Dark Blue: 130,000 - 350,000
- Light Blue: 360,000 - 580,000
- Yellow: 590,000 - 800,000
- Dark Orange: 810,000 - 920,000
In Person Outreach Density Map

74 Meetings over 12 months
Approx. 4,898 people engaged
Online Interactions
www.TransformCT.org

Approx. 13,483 Comments & Ideas exchanged
Household Survey

# of Respondents by County of Residence
Concerns about the U.S. Highway Trust Fund

Federal gas tax is not indexed to inflation

Since 1993...

- Federal gas tax remains 18.4 cents / gal.
- Fuel efficiency standards have risen significantly, meaning diminishing tax revenue
- Federal Highway Trust Fund lost 33% in purchasing power

$53.3 billion needed from U.S. general fund since 2008 for federal transportation needs

Source-Basso, 2012, Transportation Research Board, 282nd session.
Scenario Planning

Scenario 2

Current Trend

Scenario 3

Now

Future

Technology
Economy
Infrastructure
Condition
Revenue
Demographics
Scenario Planning

- Economic Growth
- Current Trend
- Investment Scenario 2
- Investment Scenario 3
Change in Business Practice

- Asset Management
- Performance Management
- Strategic Management
- Transparency
- Credibility
- Customer Service
Statewide Freight Plan

- Support Economy through the efficient movement of goods

- Create an Action Plan per Moving Ahead for Progress in the 21st Century (MAP-21)

- Establish a State Freight Advisory Committee

- Establish System Performance

- Extensive Engagement with the Private Sector
  - ie. Distributors, shippers, and operators
    - Key to successful Action Plan
Freight Planning

- Stakeholder Identification
- Private/Public
- Stakeholder Interviews
- Action Plan
- Statewide Freight Plan
- Local Inventory
- Public Outreach
- Needs Assessment
Congestion Relief

I-84, Hartford Metropolitan Area
I-95, NY to New Haven

How can we relieve congestion
What is electronic tolling?

vastly different from the old manned toll booths used in the past

Toll booths created traffic problems

- Congestion
- Accidents
- Air quality problems

Tolling in CT circa 1980
New Electronic Methods do not create traffic problems

Electronic sensors mounted overhead on special gantries

- EZ Pass readers
- Cameras for video tolling
  - for drivers without EZ Pass

- no booths
- no stopping
- no need to slow down
  - no traffic delays
  - no safety problems
**Congestion Pricing** is a congestion relief method that works by managing demand during peak traffic periods.

Congestion pricing uses **higher toll rates** during peak periods to encourage drivers to:

- shift to *less congested times*
- shift to *less congested routes*
- shift to *transit*
- shift to *other lanes*
  - key factor for *express toll lanes*

Congestion pricing can provide **sustainable relief** by managing peak use even as demand grows.
Most popular tolling method for new projects

Gives drivers a choice
- pay a toll & bypass congestion
- most drivers value having a choice
  - across all income levels

Congestion relief
- proven & effective tool for congestion management

Shift to other lanes:
‘Express Toll’ or ‘Managed’ Lanes: form of congestion pricing

- general purpose lanes
- express toll lanes
- general purpose lanes
I-95 Corridor: New York/New Haven

also monitor impacts on Route 1 & I-84
Morning congestion is severe & focused in Bridgeport – Stamford section

**Southbound A.M. Bridgeport – Stamford Area**

- Starts at 6:30 in Bridgeport
- Expands towards Stamford
- 20 miles long at peak
Travel speed data illustrates extent & duration of the problem

Morning congestion can last over 4 hours

Southbound A.M. Bridgeport – Stamford area

Duration = 4+ hours
6:30 – 10:30 am
Travel speed data illustrates extent & duration of the problem

Afternoon congestion is just as severe

Northbound P.M. period Bridgeport – Stamford area

Duration = 4+ hours
3:00 – 7:00 pm

20+ miles long at peak
Transit plays a vital role in corridor & *must be part of the solution*

What can be done to enhance its role?

**Rail service**

- How will I-95 tolls affect rail ridership?
- How to address parking problems?
- How to serve growing # of ‘intrastate’ trips?

**Bus service**

- What bus service improvements are needed?

**New opportunities:** *express toll lanes* ....
I-84 is part of regional network

primary area of study
I-84 Viaduct:
¾-mile long, 50 years old, heavily congested
Connecticut’s *busiest* freeway

175,000 = daily traffic volume  (higher than I-95)

6-7 mile traffic jams

• Most congested of Hartford freeways  *(nearly 50% of region’s congestion)*
• Less congestion than I-95, but still a problem
I-84 traffic speeds: ‘extent’ of congestion

PM = 6-7 miles

AM = 3 miles

westbound

outbound

AM = 6 miles

inbound
eastbound

PM = 4 miles

I-91

Main St
E. Hfd

Rt 9

city line

Sigourney St.
I-84 Traffic Speeds: *duration* of congestion

**AM = 1.5+ hours**
- **3 miles**

**PM = 2.5 hours**
- **6-7 miles**

**AM = 1.5+ hours**
- **6 miles**

**PM = 3 hours**
- **4 miles**

**3 pm – 6 pm**

**6 am**
- Westbound
- Outbound

**12 noon**
- Eastbound
- Inbound

**6 pm**
- Westbound
- Outbound

**I-84 Traffic Speeds:**

<table>
<thead>
<tr>
<th>Duration</th>
<th>Speed (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20</td>
<td>Red</td>
</tr>
<tr>
<td>20-40</td>
<td>Orange</td>
</tr>
<tr>
<td>40-60</td>
<td>Yellow</td>
</tr>
<tr>
<td>60-80</td>
<td>Light Green</td>
</tr>
<tr>
<td>80-100</td>
<td>Green</td>
</tr>
<tr>
<td>100-120</td>
<td>Light Green</td>
</tr>
<tr>
<td>120-140</td>
<td>Orange</td>
</tr>
<tr>
<td>140-160</td>
<td>Red</td>
</tr>
<tr>
<td>160-180</td>
<td>Red</td>
</tr>
<tr>
<td>180-200</td>
<td>Red</td>
</tr>
<tr>
<td>200-220</td>
<td>Red</td>
</tr>
<tr>
<td>220-240</td>
<td>Red</td>
</tr>
<tr>
<td>240-260</td>
<td>Red</td>
</tr>
<tr>
<td>260-280</td>
<td>Red</td>
</tr>
<tr>
<td>280-300</td>
<td>Red</td>
</tr>
<tr>
<td>300-320</td>
<td>Red</td>
</tr>
<tr>
<td>320-340</td>
<td>Red</td>
</tr>
<tr>
<td>340-360</td>
<td>Red</td>
</tr>
<tr>
<td>360-380</td>
<td>Red</td>
</tr>
<tr>
<td>380-400</td>
<td>Red</td>
</tr>
<tr>
<td>400-420</td>
<td>Red</td>
</tr>
<tr>
<td>420-440</td>
<td>Red</td>
</tr>
<tr>
<td>440-460</td>
<td>Red</td>
</tr>
<tr>
<td>460-480</td>
<td>Red</td>
</tr>
<tr>
<td>480-500</td>
<td>Red</td>
</tr>
<tr>
<td>500-520</td>
<td>Red</td>
</tr>
<tr>
<td>520-540</td>
<td>Red</td>
</tr>
<tr>
<td>540-560</td>
<td>Red</td>
</tr>
<tr>
<td>560-580</td>
<td>Red</td>
</tr>
<tr>
<td>580-600</td>
<td>Red</td>
</tr>
<tr>
<td>600-620</td>
<td>Red</td>
</tr>
<tr>
<td>620-640</td>
<td>Red</td>
</tr>
<tr>
<td>640-660</td>
<td>Red</td>
</tr>
<tr>
<td>660-680</td>
<td>Red</td>
</tr>
<tr>
<td>680-700</td>
<td>Red</td>
</tr>
<tr>
<td>700-720</td>
<td>Red</td>
</tr>
<tr>
<td>720-740</td>
<td>Red</td>
</tr>
<tr>
<td>740-760</td>
<td>Red</td>
</tr>
<tr>
<td>760-780</td>
<td>Red</td>
</tr>
<tr>
<td>780-800</td>
<td>Red</td>
</tr>
<tr>
<td>800-820</td>
<td>Red</td>
</tr>
<tr>
<td>820-840</td>
<td>Red</td>
</tr>
<tr>
<td>840-860</td>
<td>Red</td>
</tr>
<tr>
<td>860-880</td>
<td>Red</td>
</tr>
<tr>
<td>880-900</td>
<td>Red</td>
</tr>
<tr>
<td>900-920</td>
<td>Red</td>
</tr>
<tr>
<td>920-940</td>
<td>Red</td>
</tr>
<tr>
<td>940-960</td>
<td>Red</td>
</tr>
<tr>
<td>960-980</td>
<td>Red</td>
</tr>
<tr>
<td>980-1000</td>
<td>Red</td>
</tr>
</tbody>
</table>

**I-91**

- Sigourney St.
- Rt 9
- Eastbound
- Westbound

**Main St**

- E. Hfd
- 3 miles

**3-5 mph = 1.5+ hours**

**6-7 mph = 2.5 hours**

**6-7 miles**

**6 am**
- Westbound
- Outbound

**12 noon**
- Eastbound
- Inbound

**6 pm**
- Westbound
- Outbound

**3 miles**

**4 miles**

**3 pm – 6 pm**

**6 am**
- Westbound
- Outbound

**12 noon**
- Eastbound
- Inbound

**6 pm**
- Westbound
- Outbound

**3 pm – 6 pm**

**6 am**
- Westbound
- Outbound

**12 noon**
- Eastbound
- Inbound

**6 pm**
- Westbound
- Outbound

**3 pm – 6 pm**

**6 am**
- Westbound
- Outbound

**12 noon**
- Eastbound
- Inbound

**6 pm**
- Westbound
- Outbound

**3 pm – 6 pm**

**6 am**
- Westbound
- Outbound

**12 noon**
- Eastbound
- Inbound

**6 pm**
- Westbound
- Outbound

**3 pm – 6 pm**

**6 am**
- Westbound
- Outbound

**12 noon**
- Eastbound
- Inbound

**6 pm**
- Westbound
- Outbound

**3 pm – 6 pm**

**6 am**
- Westbound
- Outbound

**12 noon**
- Eastbound
- Inbound

**6 pm**
- Westbound
- Outbound

**3 pm – 6 pm**
Shift to transit

Transit options will be improved with opening of CTfastrak in 2015.
Impacts differ by type of storm & environmental setting:

*Coastal storms*

*Inland Storms*
COASTAL STORMS

- Sea level is rising & flood zones expanding
  - Many state facilities are outside flood zone
  - Some facilities within coastal flood zone are elevated ‘above’ flood level

- Rail facilities are concentrated along coast
  - special reason for concern

**Types of Problems:**

- Beach erosion
- Tidal & backwater flooding
  - Facility closure, but minimal damage
  - Some assets can be moved for storm: rail cars, buses, highway maintenance trucks
- Wind damage ????
INLAND STORMS

• Inland problems *more extensive* due to larger geography

• Inland events can be *more damaging* to transportation infrastructure
  - Increasing frequency
  - Increasing intensity of storms
    - Larger rainfall amounts
    - Higher flood levels in streams & rivers

**Types of Problems:**

• Bridge damage
• Culverts washed out
• Roadways washed out
• Wind damage
Frequency & Budget Impacts of Extreme Events

Number of Emergency Declaration Projects Initiated by Year

- Increasing frequency trend
- Increasing Fiscal Impact on Department Budget

INTENSE RAIN, $5,849,308.00
HURRICANE SANDY, $6,828,102.00
WINTER STORM ALFRED, $40,339,301.00
TROPICAL STORM IRENE, $10,548,389.00
HOW DOT IS ADAPTING

Variety of Strategies & Responses required:

• **Preparation for approaching storms**
• **Storm response**
• **Longer term strategies & adaptations**
Thank you

Transform CT

David Elder, AICP, GISP
Office of Strategic Planning and Projects
Connecticut Department of Transportation
David.Elder@ct.gov
860-594-2139