

**William G. Petit, P.E.**  
**District Executive**  
**PennDOT**

# Content for Session

- 1 The Transportation World is Changing
- 2 What is Smart Transportation
- 3 What are we Doing
- 4 Lessons Learned



1

# The Transportation World is Changing

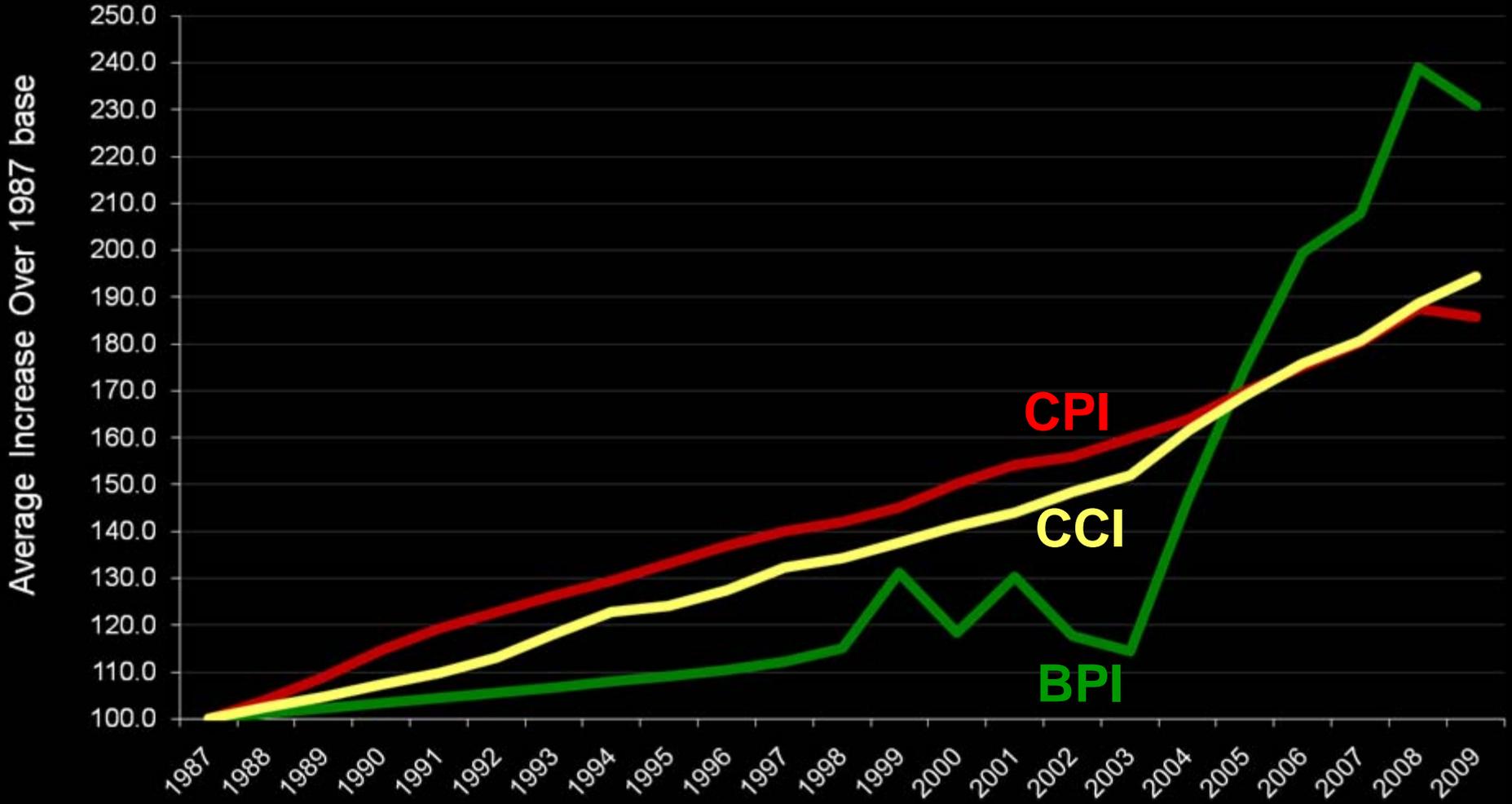








# Inflation Indices



Sources: FHWA Bid Price Index for PA (BPI), Engineering News Record Construction Cost Index (CCI), Bureau of Labor and Statistics Consumer Price - Index (CPI), compared to 3% Annual Increase Base Line (Calendar Year);, Data for 2009 is through 6/16/09



Revenue sources  
for financing  
transportation projects  
are **severely limited.**



Nearly 25% of Pennsylvania's bridges are structurally deficient, compared with just 12% in the U.S.

Pennsylvania ranks last in the nation in this statistic.

**UPDATE with NEW STATISTICS**





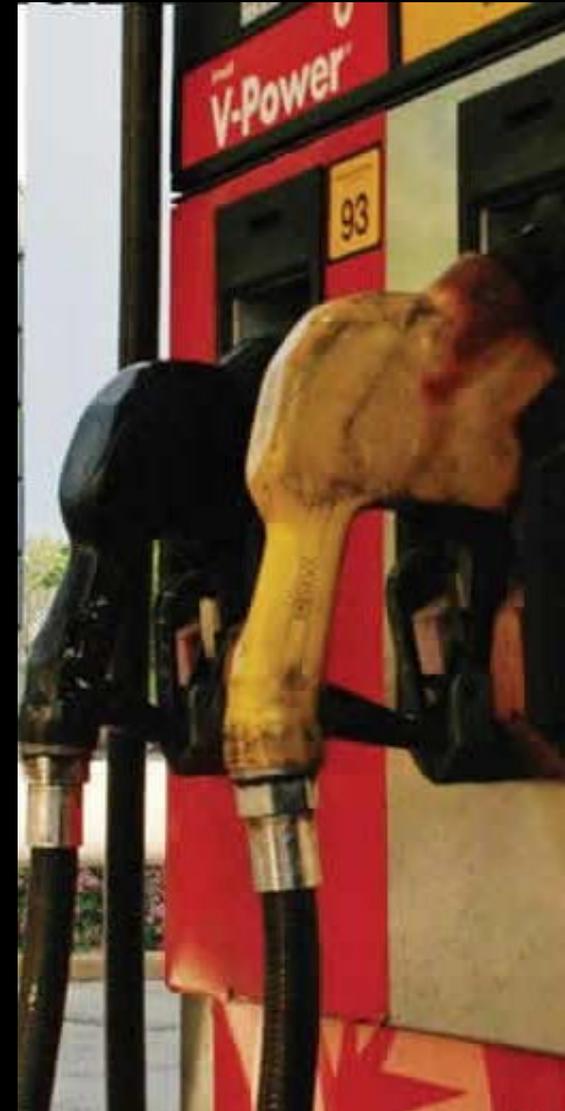
Even if we did have the money,  
we **can no longer afford** the  
conventional approach to  
tackling transportation/  
land use issues.

# Our families cannot afford it...

	Jan 2003	Mar 2010	Increase
Gasoline	\$1.41	\$2.80	<b>+96%</b>
Diesel	\$1.50	\$2.94	<b>+96%</b>

**\$8,000:** avg. annual cost of owning a car

**18%** of an average household budget spent on transportation





# Our environment **cannot afford it...**



Photographer: rosevita. Used through license agreement with morguefile.com





“**Sustainability** must be reflected in all our infrastructure investments...

... it implies a **commitment to** the principles of **livability**...

The era of one-size-fits-all transportation projects must give way to one where **preserving and enhancing unique community characteristics**, be they rural or urban, is a primary mission of our work rather than an afterthought.”

*Secretary Ray LaHood, US DOT  
January 21, 2009*



# EPA, HUD, and DOT Partnership on Livability

1. Provide more transportation choices
2. Promote equitable, affordable housing
3. Enhance economic competitiveness
4. Support existing communities
5. Coordinate and leverage federal policies and investment
6. Value communities and neighborhoods



# Partnership on Livability

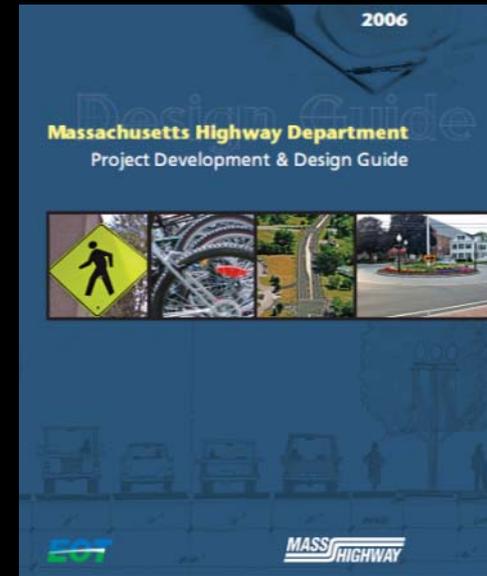
- **Enhance integrated planning and investment.** integrate housing, transportation, water infrastructure, and land use planning and investment.
- **Redefine housing affordability.** Develop housing affordability measures that include housing and transportation costs.
- **Redevelop underutilized sites.** Target development to locations with infrastructure and transportation choices.
- **Develop livability measures and tools.**
- **Align HUD, DOT, and EPA programs.**





# What other State DOTs are doing

- Revised Project Process to include more thoughtful Planning Upfront
- Shift to Multi-Modalism
- Emphasis on System Preservation
- Performance Based Programming
- Organizational Change to Increase Planning/ Respond to Emerging Issues





# 2

## What is Smart Transportation?

*“Smart Transportation is **partnering to build great communities** for future generations of Pennsylvanians by **linking transportation investments and land use planning and decision making.**”*

# The Smart Transportation Themes

1. Money counts
2. Leverage and preserve existing investments
3. Choose projects with high value/price ratio
4. Safety always and maybe safety only
5. Look beyond level-of-service
6. Accommodate all modes of travel
7. Enhance local network
8. Build towns not sprawl
9. Understand the context; plan and design within the context
10. Develop local governments as strong land use partners





# Smart Transportation is about

- Linking land use & transportation decisions/investments
- Partnering with communities
- Creating a more predictable and affordable transportation program



# Transportation + Land Use

	Define State Mobility Plan	Develop LRTP	Select TIP Projects	Implement TIP Projects	Negotiate HOP Projects	Develop Comp Plans	Define Zoning & Subdivisions	Inform Land Use
PennDOT Central Office	●	○						
PennDOT Districts		○	●	●	●			
Other State Agencies	○			○				○
MPO/RPOs	○	●	●	○				○
Legislators and Elected Officials		○	○	○		●	○	●
Counties		○	○			●	○	○
Municipalities		○	○	○	●	●	●	●
Development Community			○	○	●			●
General Public				○				

● Involved in task ○ Partially involved in task

# Typical Land Development Pattern















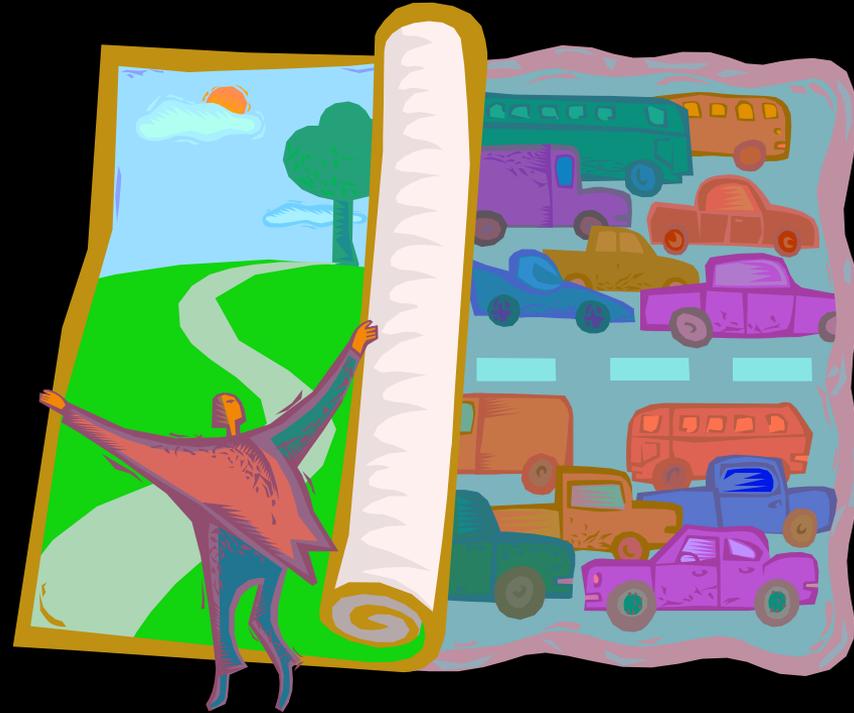
# Land Development Retrofit using Smart Transportation







# Between 1990 and 2000....



Developed land in PA increased by 53.6%...

But our population only grew 3.4%

**1.6 acres were developed for every  
person added to PA population!**

# Four BASIC Land Use Tools

- Comprehensive plans
- Zoning
- Subdivision ordinances
- Planning commissions



## Pennsylvania Municipalities Planning Code

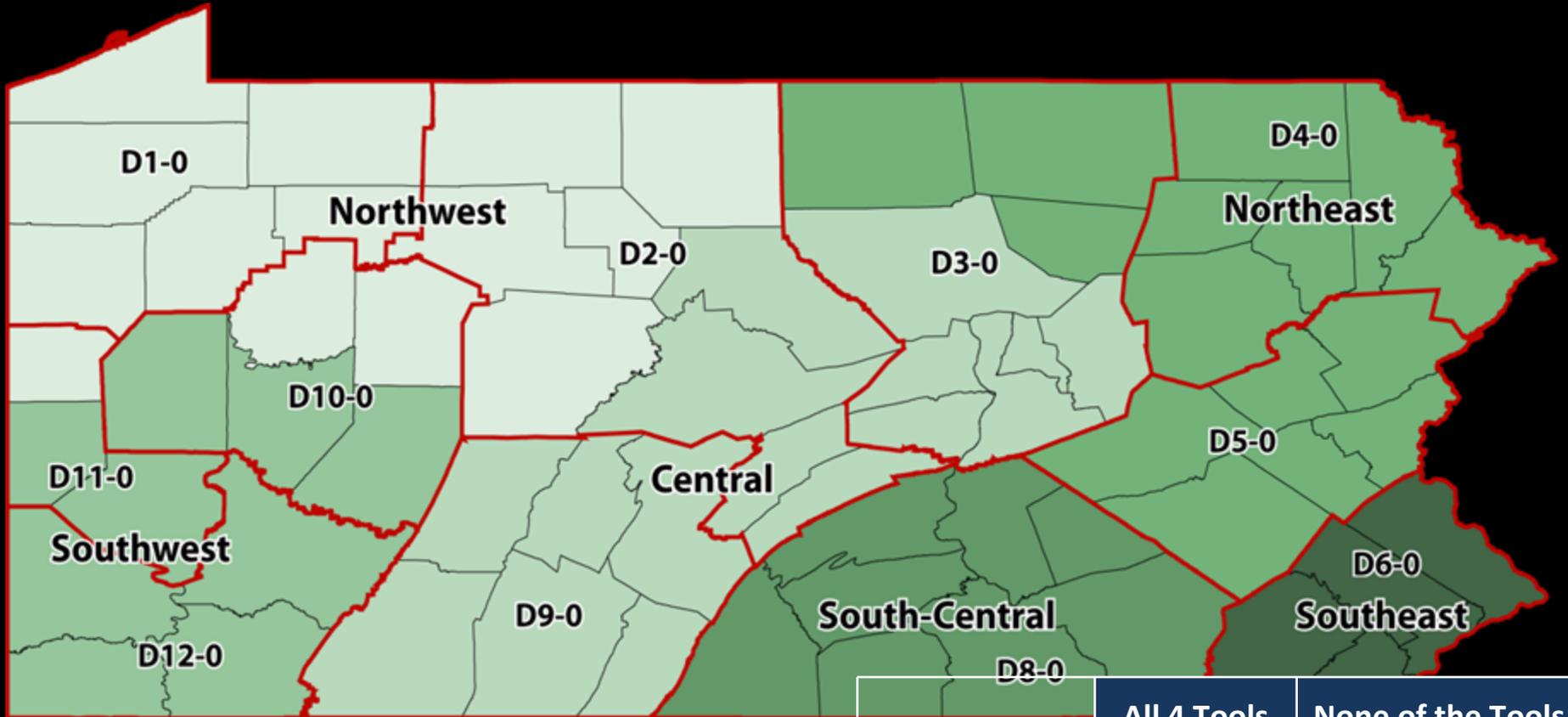
Act of 1968, P.L. 805, No. 247  
as reenacted and amended.



Commonwealth of Pennsylvania  
Edward G. Rendell, Governor  
[www.state.pa.us](http://www.state.pa.us)

Department of Community and Economic Development  
Dennis Yablonsky, Secretary  
[www.inventpa.com](http://www.inventpa.com)

# The Challenge...



	All 4 Tools	None of the Tools
Northwest	15%	47%
Southwest	31%	32%
Central	19%	37%
South-Central	61%	8%
Northeast	43%	27%
Southeast	87%	1%



# Transportation + Land Use

	Define State Mobility Plan	Develop LRTP	Select TIP Projects	Implement TIP Projects	Negotiate HOP Projects	Develop Comp Plans	Define Zoning & Subdivisions	Inform Land Use
PennDOT Central Office	●	●		●				
PennDOT Districts	●	●	●	○	●	○	○	○
Other State Agencies	○	○	○	○		○		○
MPO/RPOs	●	●	●	○		○		○
Legislators and Elected Officials		○	○	○		●	○	●
Counties	○	○	○		○	●	○	○
Municipalities	○	○	○	○	○	●	●	●
Development Community			○	○	●			●
General Public		○		○	●	○	○	○

● Involved in task   
 ○ Partially involved in task   
 ● Additional Involvement   
 ○ New partial involvement



# What Problems Are We Solving?

- 1 We cannot keep up with demand
- 2 Our policies and procedures do not allow the flexibility that we need
- 3 Our program and project delivery is unpredictable



3

What We Are  
Doing

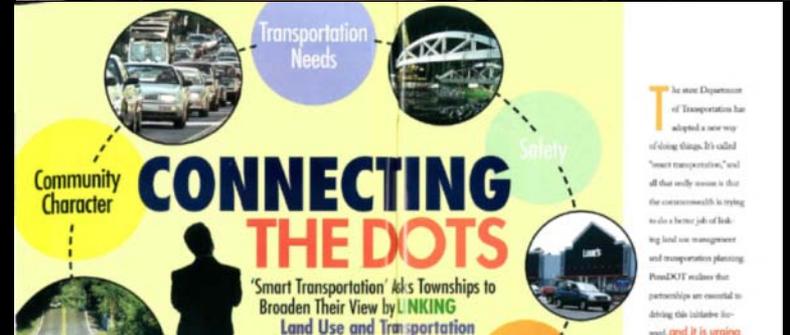


# Implementing Smart Transportation

- 1 Increasing Partnership Efforts
- 2 Changing the Rules
- 3 Changing the Decision Making Processes

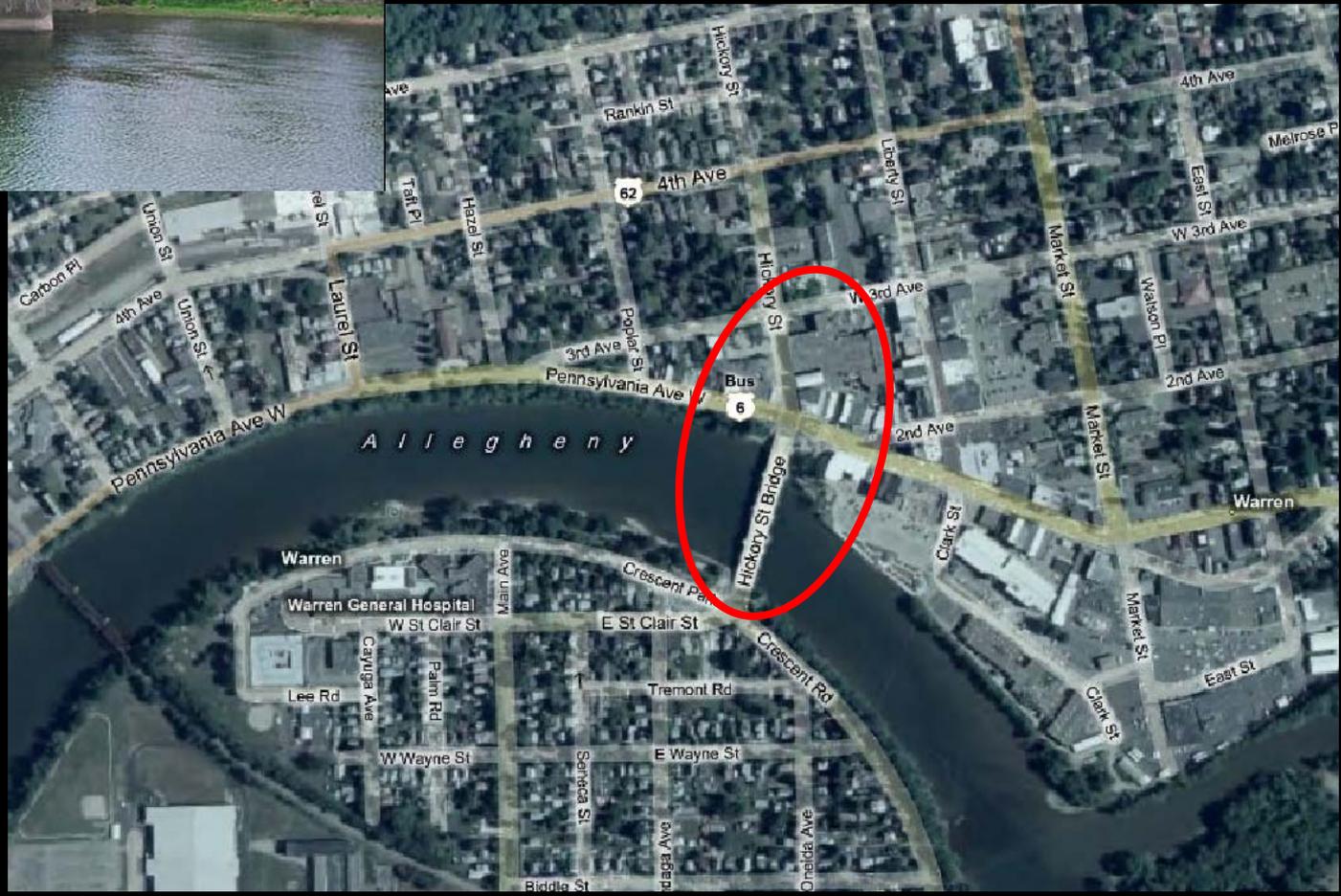
# 1. Increasing Partnership Efforts

- Sharing Smart Transportation message
- Strategic discussions with partner agencies and organizations and local municipalities
- Outreach activities and interactive workshops with local officials and professionals



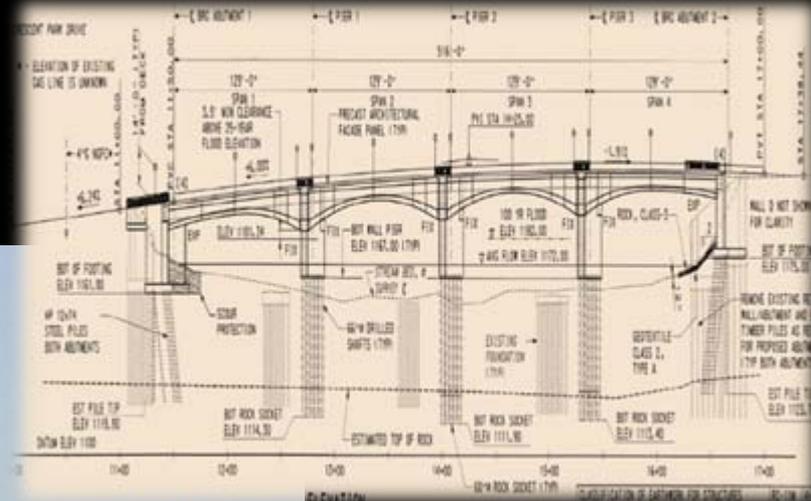


# Hickory Street Bridge, District 1





# Hickory Street Bridge, District 1



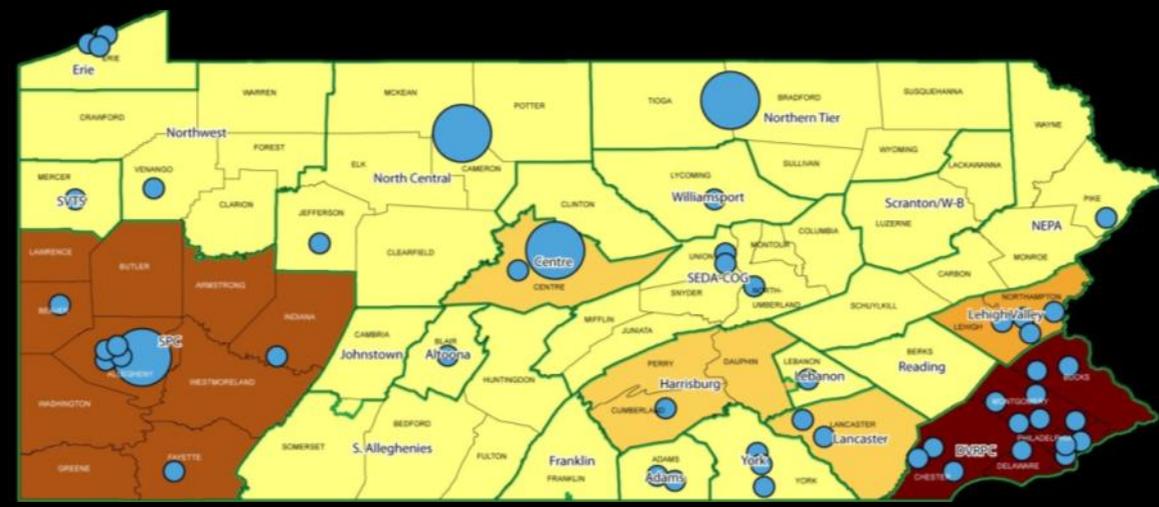
# Hickory Street Bridge, District 1





# Pennsylvania Community Transportation Initiative

- Applications received: **403** requesting **\$600 million**
- Applications selected: **50** granting **\$59.3 million**



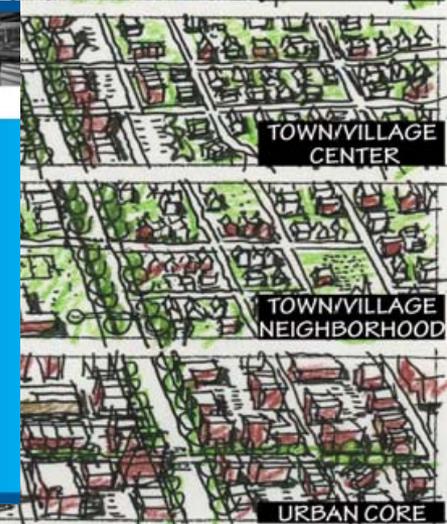
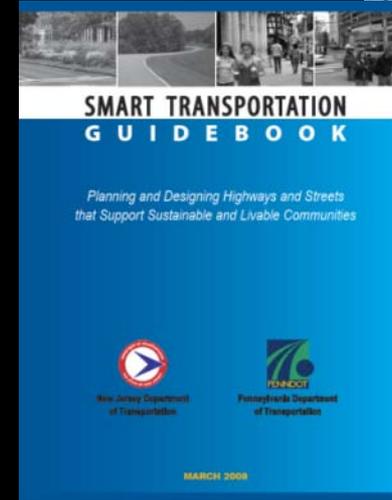
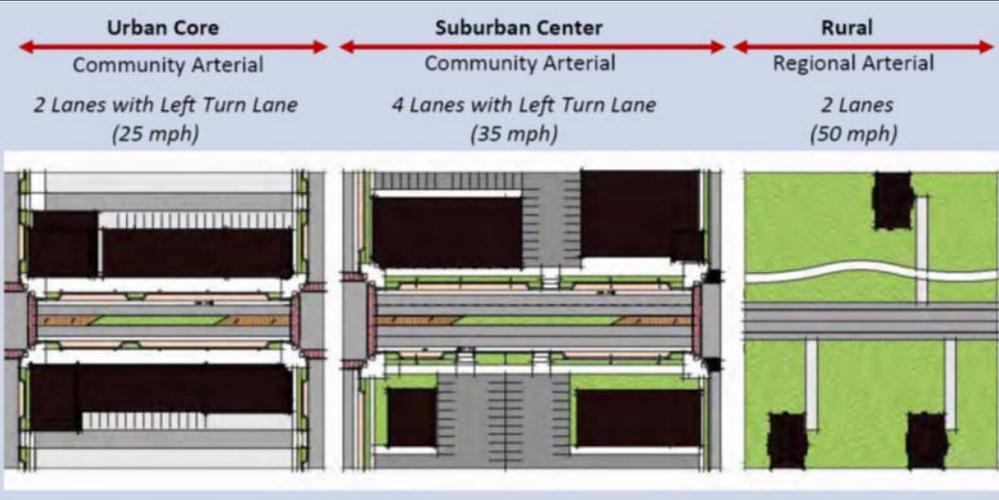
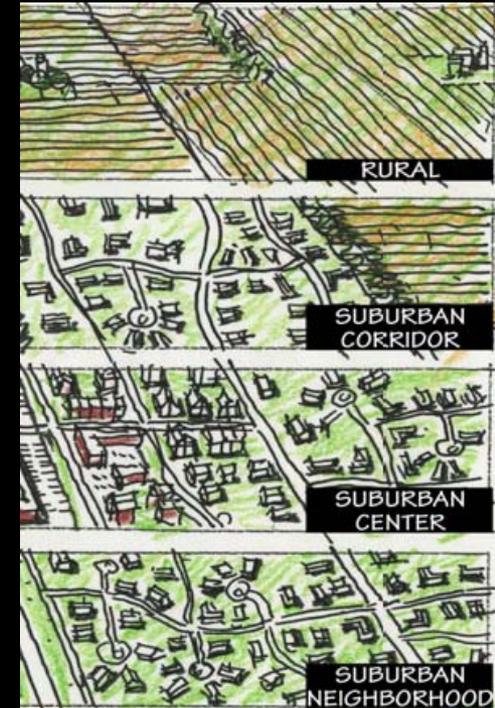
Type of Project	# of Selections	% of Total Selections	Total Funding for Selected Projects	% of Total Funding
Bicycle/Pedestrian	9	18%	\$ 9,230,405	16%
Roads/Intersections/Local Network	6	12%	\$ 9,937,000	17%
Intermodal/Transit-oriented Development	13	26%	\$ 14,007,200	24%
Land Use & Transportation Planning/Redevelopment	13	26%	\$ 7,666,500	13%
Streetscape/Traffic Calming	8	16%	\$ 18,158,887	31%
Regional Planning	1	2%	\$ 285,000	0%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>	<b>\$ 59,284,992</b>	<b>100%</b>

# 2. Changing the Rules

## Smart Transportation Guidebook

(incorporated with Design Manual 2)

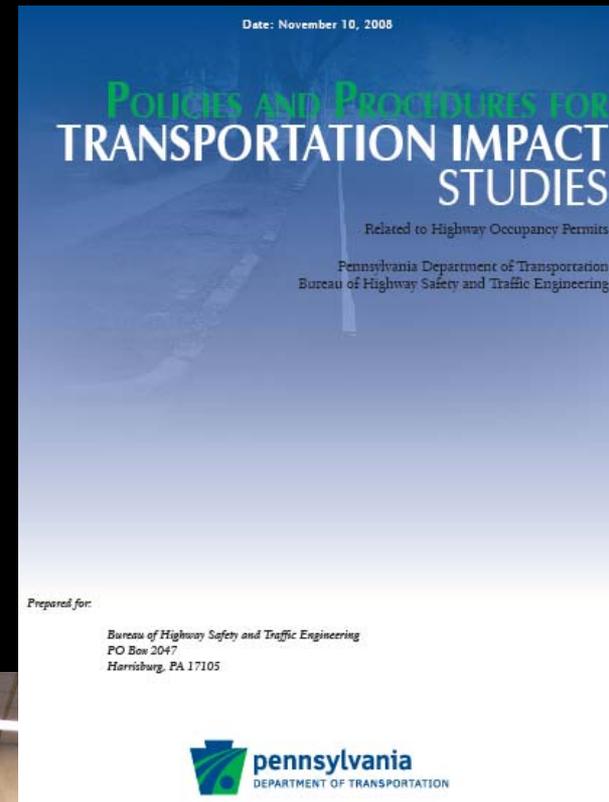
- Use **flexible design** on all projects
- **Increase coordination** with local municipalities
- **Link existing and future land use contexts and roadway design values**
- Design to a **desired operating speed**



## 2. Changing the Rules

### Revised HOP Guidelines

- Consistency with **Smart Transportation Guidebook**
- **Local coordination** throughout process
- **Mitigation** applied with consistency across the state
- **Alternative mitigation strategies** including local network, transit, TDM
- **Predictable timelines** for approval





# 3. Changing the Decision-Making Processes

## Revised Project Delivery Process:

- Developed with planning partners
- Emphasizes planning
- Requires asset management at LRTP phase





EXISTING PROCESS

Strengthening the first 4 steps leads to:

- A clear understanding of problem prior to solutions being identified
- A clear understanding of potential solutions, costs, schedules, and risks prior to project being programmed
- Additional opportunities for utilizing full range of alternative land use and multi-modal transportation solutions

If the process starts here, project is identified prematurely and sets false expectations

Alternatives evaluated at a later phase entailing more detailed and costly studies

Risks related to costs and schedules are realized late in the game



FUTURE PROCESS

If the process starts here, problem is clearly defined.

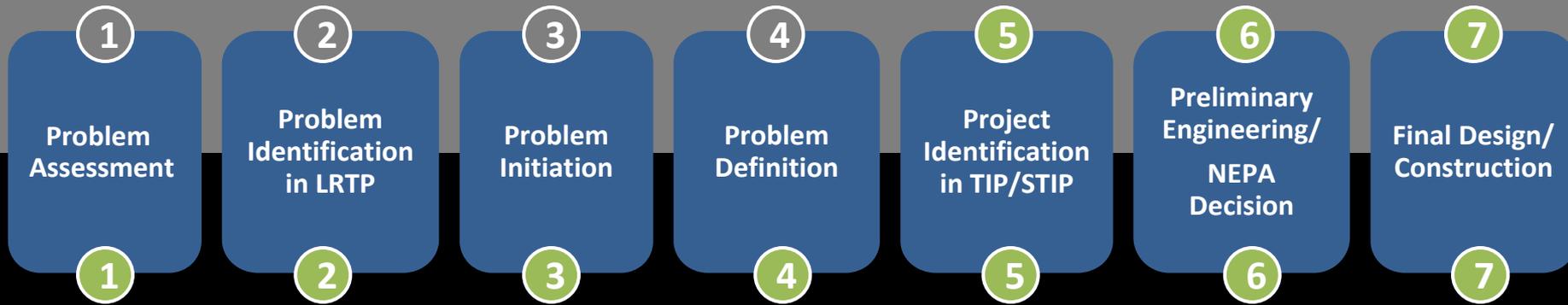
Understand priority of the problem in the region's context; and begin to identify potential costs, schedules, and risks

Better understanding of alternative land use and transportation solutions; potential costs, schedules, and risks and further refined

Projects are identified only after an understanding of potential costs, schedules, and risks

Detailed analysis and engineering are conducted for smaller set of more realistic alternatives

More accurate schedules and costs will increase predictability and streamline project delivery



1

2

3

4

5

6

7

Problem Assessment

Problem Identification in LRTP

Problem Initiation

Problem Definition

Project Identification in TIP/STIP

Preliminary Engineering/NEPA Decision

Final Design/Construction

1

2

3

4

5

6

7



# Route 6N, Edinboro

- Land use & transportation planning study
- PennDOT was part of land use decision-making process that will ultimately dictate transportation needs



# Route 6N- Study Context



Potential  
redevelopment of  
old golf course

New water  
and sewer  
infrastructure

New Hotel  
Wal-mart

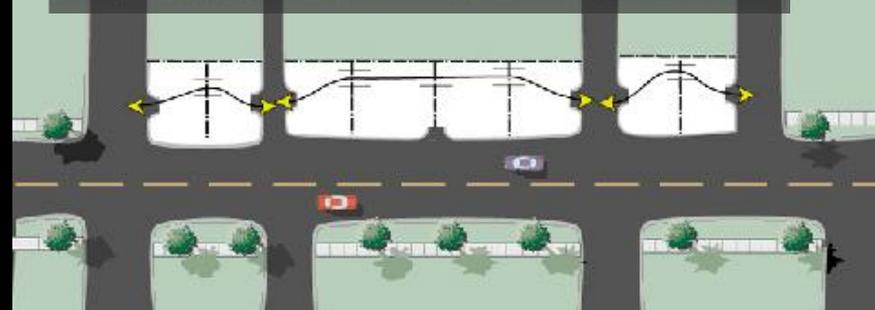
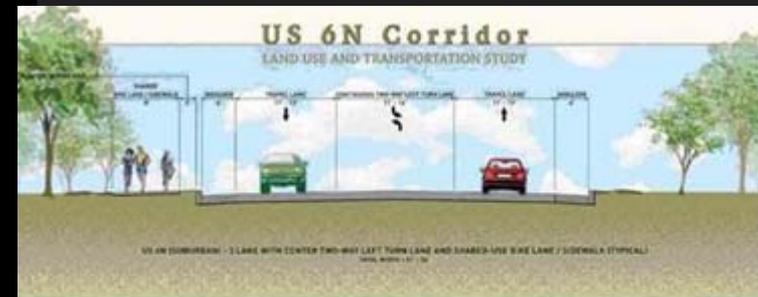
# Route 6N- Land Use & Transportation Considerations

Review and analysis of:

- Existing Land Use Conditions
- Growth Patterns & Trends
- Future Land Use Plans
- Access & Growth Management
- Zoning & Subdivision Ordinances
- Community Assets

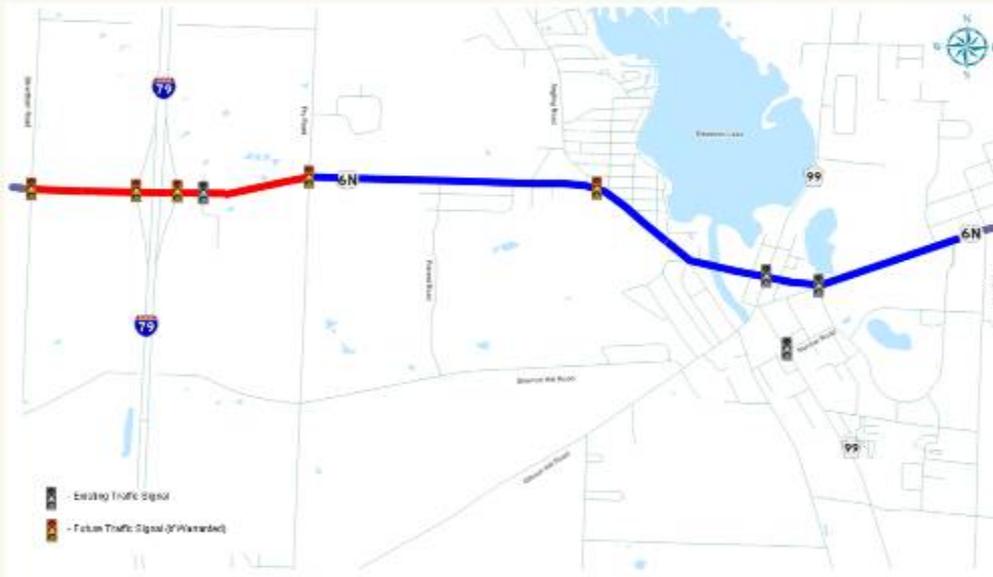
Recommendations for changes to local regulations to help guide future development and achieve corridor vision

- Minimum Use Driveway
- Access Management Standards
- Traffic Access and Impact Studies
- Developer's Agreement
- Official Map





# Route 6N



## PROS

- ◆ Improves mobility and access along US 6N
- ◆ Expected reduction in crashes
- ◆ Improves bicycle and pedestrian circulation
- ◆ Provides full access at all intersections / driveways

## CONS

- ◆ Moderate community and environmental impacts
- ◆ Moderate Construction / right-of-way costs
- ◆ Diversion to enhanced Fry/Crane Road needed for acceptable signal and side-street operations

## LAND USE AND TRANSPORTATION STUDY



# Alternative Analysis- Land Use and Transportation

# Erie Parking & Transit Study

- Study to explore solutions to Bayfront Parkway congestion through transit/ land use measures
- Alternatives require partnership with local municipalities, transit providers, and parking authority



Parking Supply

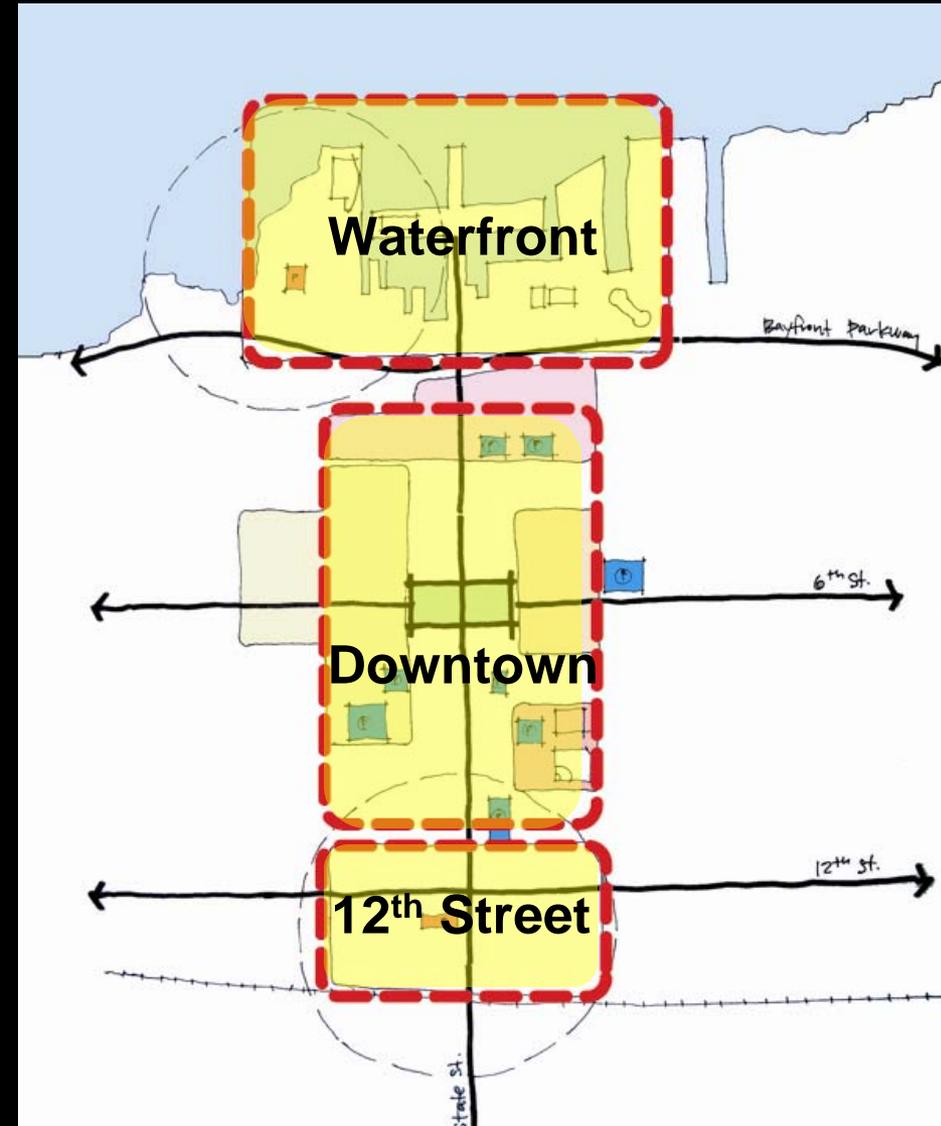


Existing Transit

# Erie Parking & Transit Study

## Study Recommendations

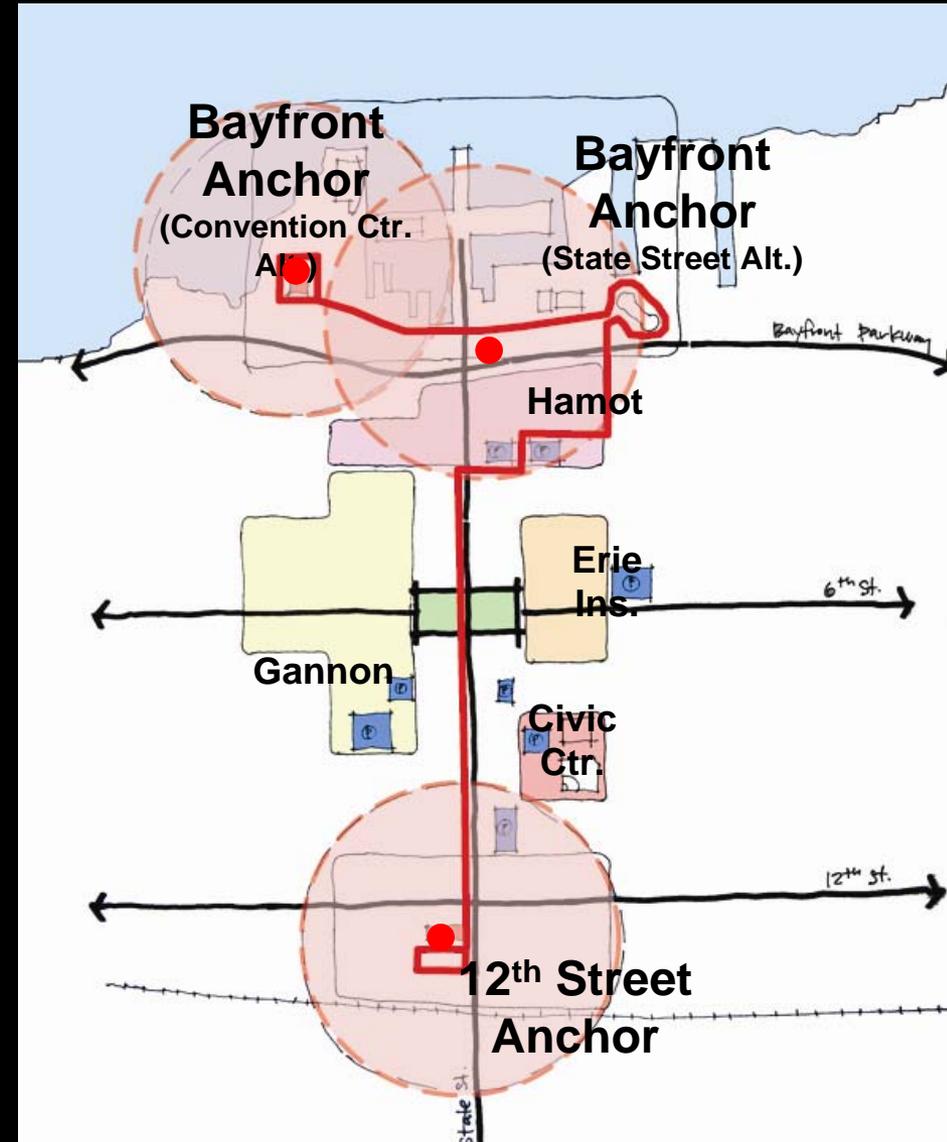
- Rethink parking supply arrangement—Utilize parking to support redevelopment
- Encourage transit use through targeted redevelopment—district approach to redevelopment
- Explore urban design and parking regulations that support transit use and redevelopment (i.e. appropriate parking and site design standards)



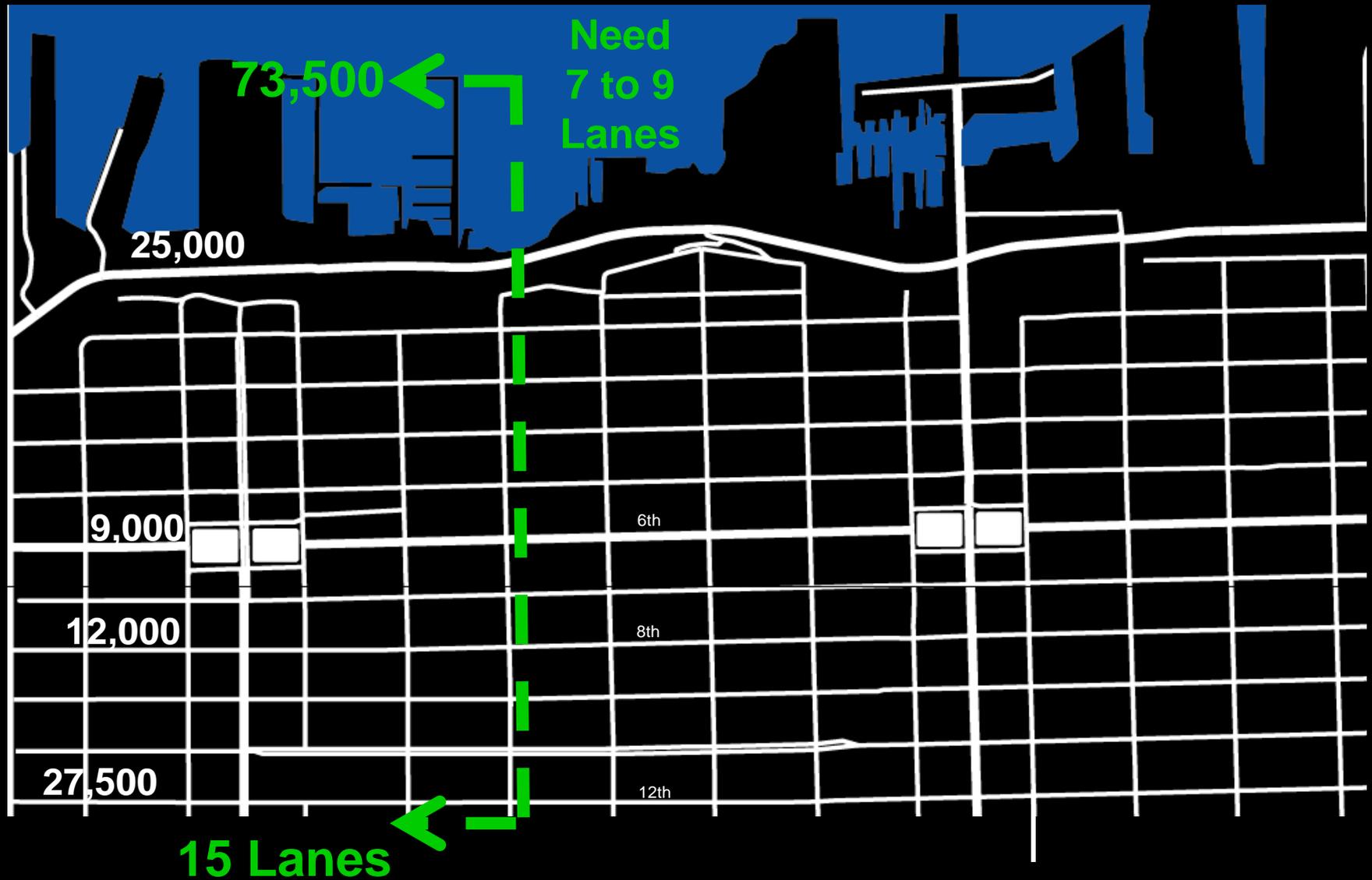
# Erie Parking & Transit Study

## Transit “Anchor” Strategy

- Public parking ramps on the “edges” of downtown
- Parking serves commuters & development
- Eliminate the Liberty Park-n-Ride and tighten up the shuttle route
- Utilize “anchor” garages to catalyze development in the Bayfront and 12<sup>th</sup> Street districts



# Bayfront Parkway Study



# 12th Street Road Diet



# Frew Mill Bridge, Lawrence County, District 11

## History

- Rural Local Road
- ADT = 360
- Slippery Rock Creek
- Design Speed 30 MPH
- Park-Like Setting



# Frew Mill Bridge

## Original Design

- No exceptions
- Realigned roadway 1400 ft.
- Obtrusive ROW takes
- Not a favorable location to the residents
- Original estimate cost \$4 M



# Frew Mill Bridge

- Fits within context of surrounding area
- Criteria matches adjacent roadway
- Minor design exceptions
- Bid costs 10% under estimate
- Aesthetics cost \$40,000 – 2% of project cost





4

# Key Lessons Learned

# Lessons Learned

Know what problem we are trying to solve

- Organize for Change at ALL Levels
- Be prepared for a strong “we already do that” mentality; nurture the change anyway



# Lessons Learned

- Tackle the Technical Argument/Resistance
- Counteract “we can’t do this” attitude



# Lessons Learned

- Make it easy to do
- Communicate, communicate, communicate
- Work with your land use Partners





Anjou  
French / Asian Restaurant  
Lounge & Sushi Bar  
anjouphilly.net

Please Wait To Be Seated

LUNCH @ ANJOU  
Anjou Salad  
Steak, Shrimp, or  
Chicken

Charlie's

Campos  
Pilsener Beer

FIJI WATER

FAQs

10 Themes of  
Smart Transportation

Implementing  
Smart Transportation

Smart Transportation  
Guidebook



Smart Transportation is partnering to build great communities for future generations of Pennsylvanians by linking transportation investments with land use planning and decision-making.

Smart Transportation is:

**more**

creativity  
flexibility  
listening  
efficiency  
choices

**less**

costs  
constraints  
conflicts  
confusion  
limitations