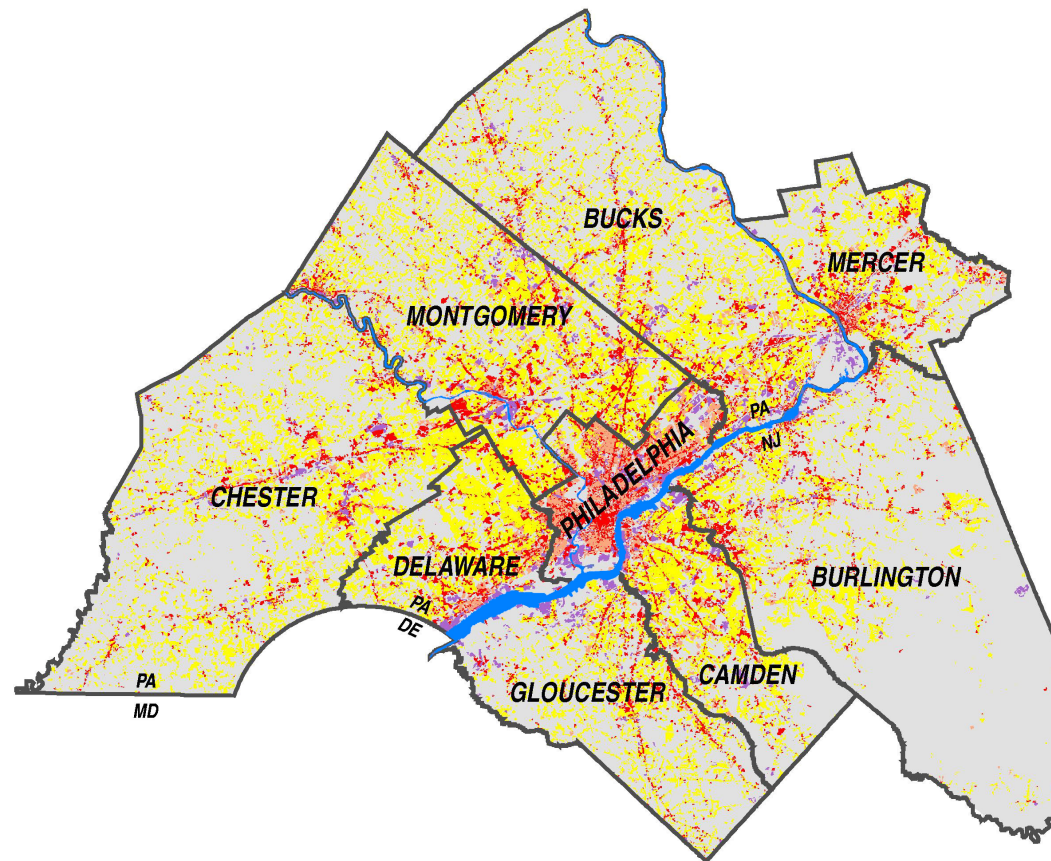


UPlan Land Use Planning Model Implementation



Presentation for the Information Resource Exchange Group
June 13TH 2007



Delaware Valley Regional Planning Commission

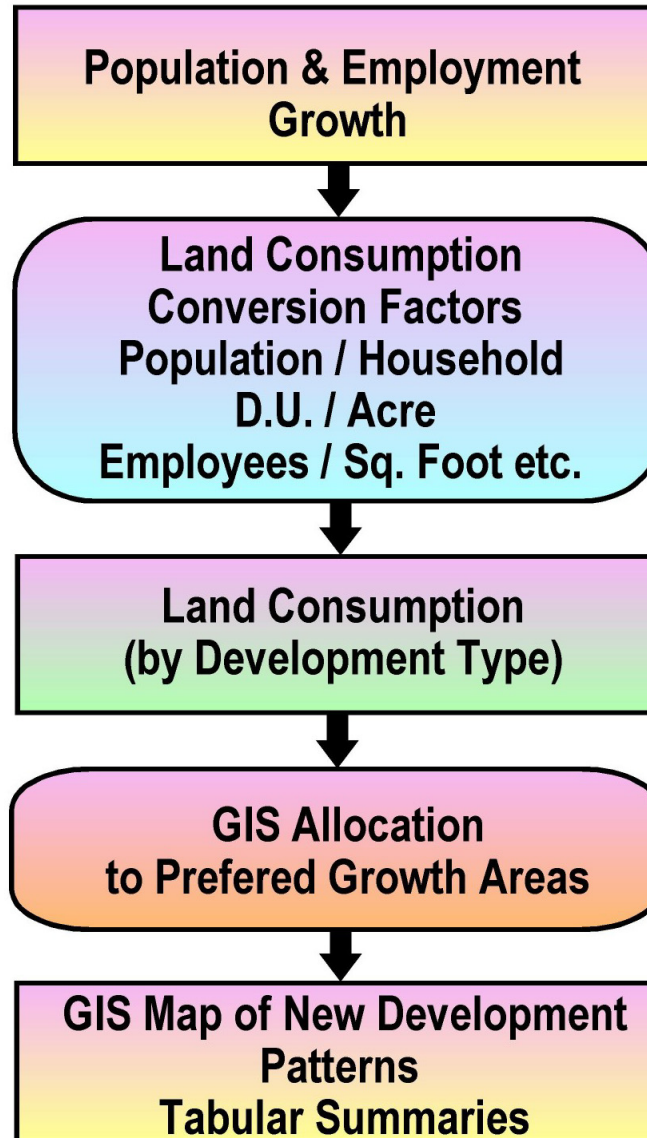
UPlan

- **UPlan is a general purpose GIS based land use planning, analysis, and forecasting tool.**
- **Pulls together many kinds of demographic, employment, land use, and transportation data into an integrated GIS structure.**
- **Easy to use with specialized predefined analytical functions within Arcview.**
- **Fully integrated into TranPlan and MS Office**

Some Uses for UPlan

- **Transportation/land use Feedback.**
- **Zoning Build-out Analyses.**
- **County-wide Scenario Planning.**
- **Environmental Impact Analysis.**
- **Building Site Identification.**
- **Assist Municipal Socioeconomic Forecasting.**

UPlan Flow Chart



New Land Use GIS Allocation

- **Suitability Grid (50 meter or 150 ft).**
- **Each grid represents an imaginary parcel.**
- **Future Growth Areas.**
- **Based on net numerical grid score of:**
 - **Attractions.**
 - **Discouragements.**
 - **Exclusions.**

Development Attractions

- **Transportation Infrastructure.**
 - **Freeway Interchanges.**
 - **Other Roadways.**
 - **Rail Stations and Bus Lines.**
- **Similar Existing Development.**
- **Positive Government Policy.**

Freeway Interchange and Major Arterial Attraction Buffers



Development Discouragements

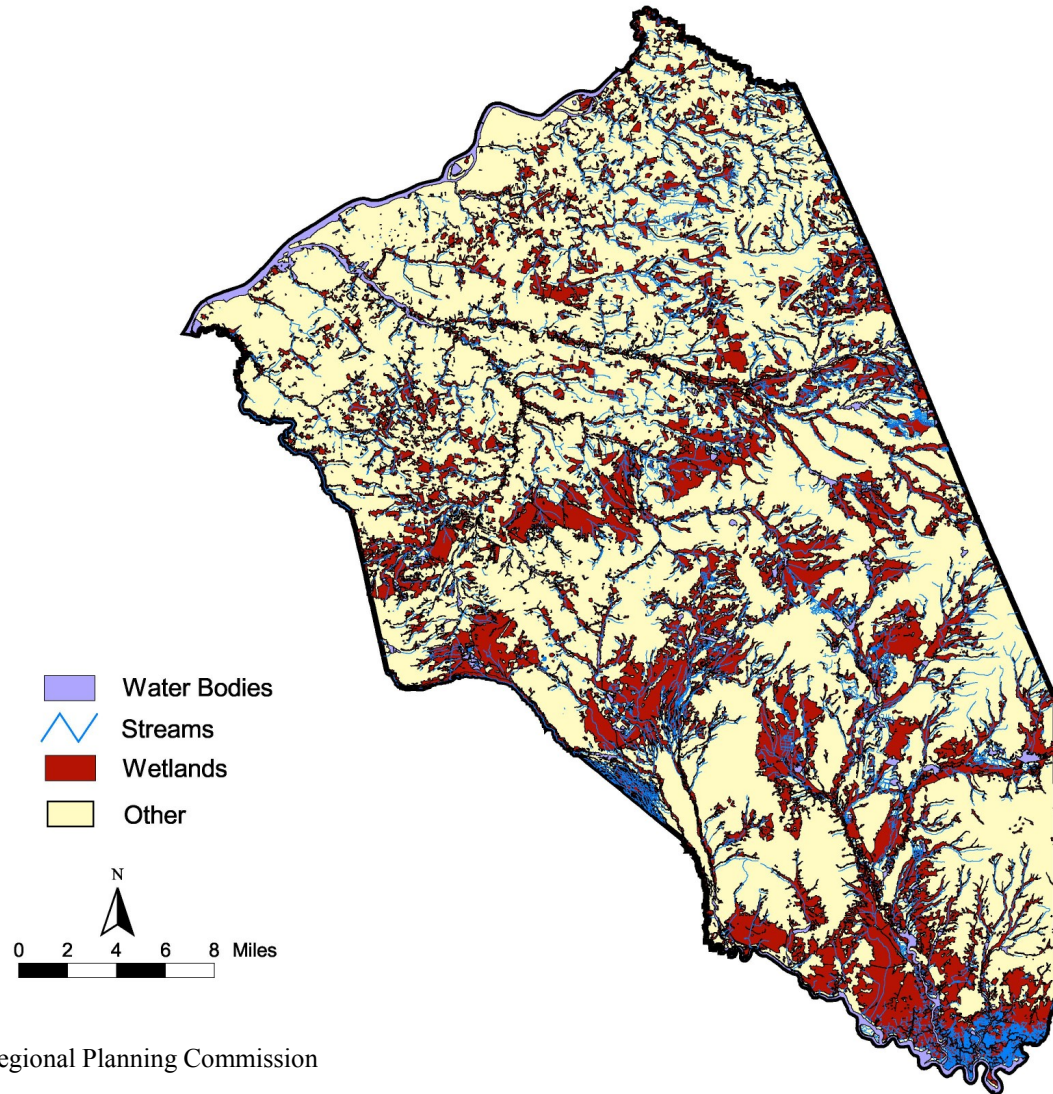
(Discourage, but not prohibit)

- **Farmland and Preservation Areas.**
- **Flood Plains and Wetlands.**
- **Steep Slope.**
- **Negative Government Policy.**
- **Highway Congestion.**

Development Exclusions

- **Parks, Defense Installations, and Recreation Areas.**
- **Environmental Conservation Areas.**
- **Water Bodies, Streams, and Wetlands.**
- **Existing Development.**

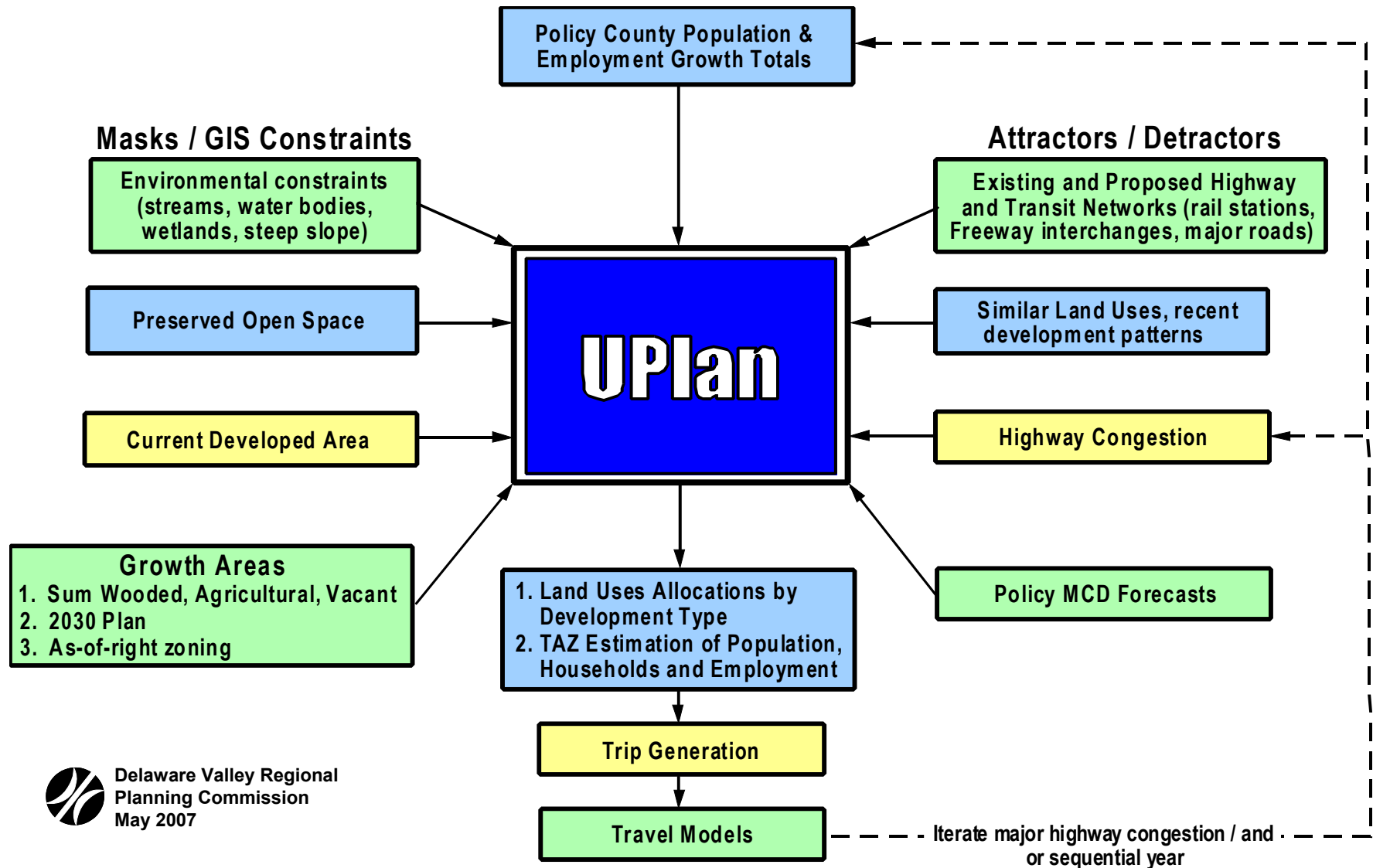
Water Bodies, Streams and Wetlands



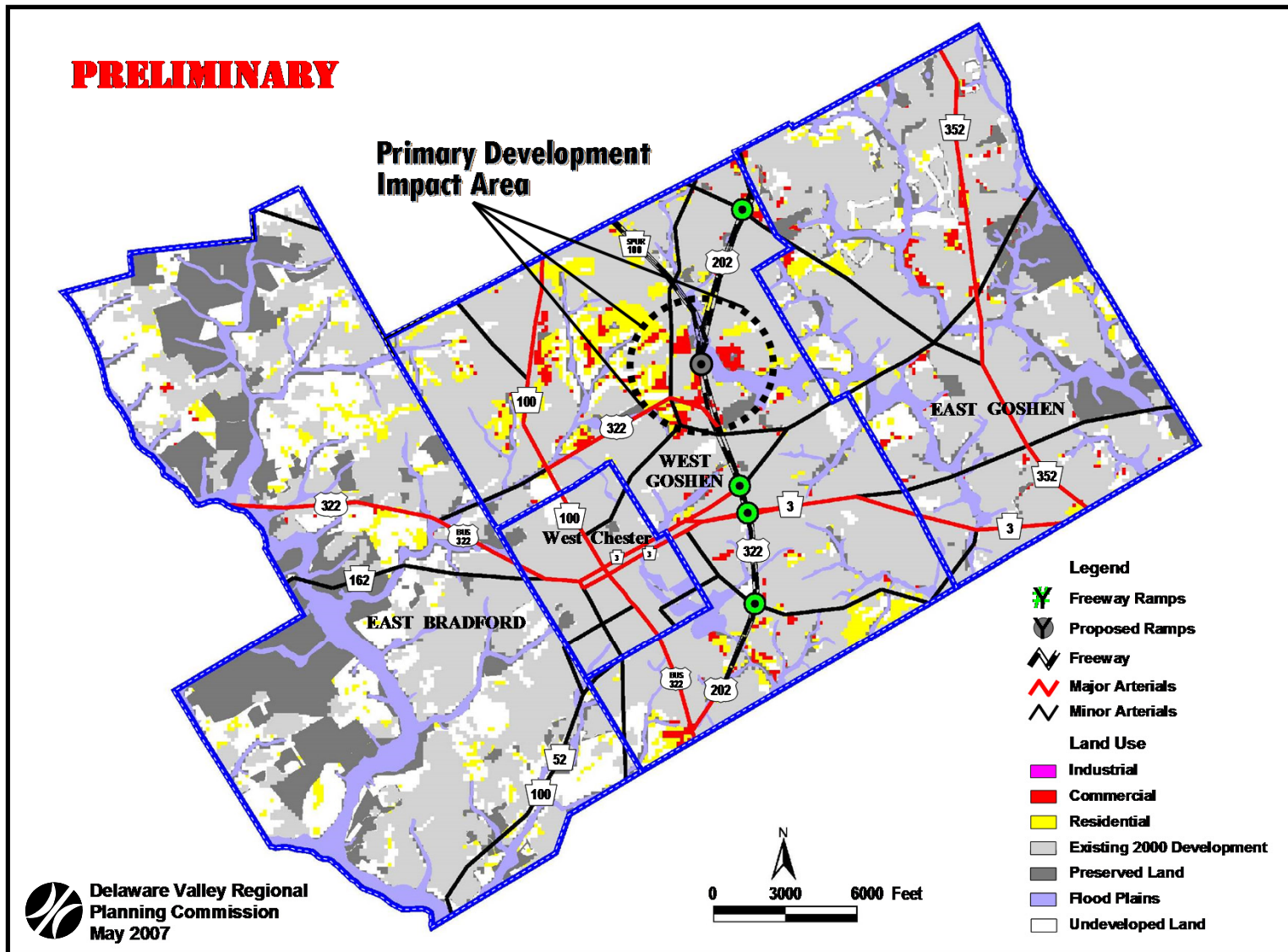
Allocation Areas

- **Planned Growth Areas.**
- **As of Right or Proposed Zoning.**
- **Existing Open Space (Wooded, Vacant, and Agricultural).**
- **Urban Infill/redevelopment.**

UPlan; General Land Use Planning Model



UPlan 2030 No-Build Land Use Allocation



Average Absolute UPlan MCD Population Allocation Error by County

County	Average Absolute	
	Diff.	Percent Diff. (2000 Pop.)
Bucks	462	5.7%
Chester	363	6.9%
Delaware	119	1.7%
Montgomery	483	6.0%
Sub-Total Pennsylvania	367	5.3%
Burlington	401	2.6%
Camden	270	2.5%
Gloucester	403	3.7%
Mercer	358	2.6%
Sub-Total New Jersey	356	2.8%
Regional Total	360	4.5%

Average Absolute UPlan MCD Employment Allocation Error by County

County	Average Absolute Percent Diff.	
	Diff.	(2000 Emp.)
Bucks	305	11.5%
Chester	369	21.2%
Delaware	421	7.9%
Montgomery	480	10.1%
Sub-Total Pennsylvania	393	13.3%
Burlington	276	7.8%
Camden	228	5.6%
Gloucester	315	10.7%
Mercer	554	7.0%
Sub-Total New Jersey	302	7.6%
Regional Total	364	11.5%

UPlan Progress Report

- **Completed Model Calibration.**
- **Completed UPlan Pilot Studies.**
 - **General planning/zoning build-out.**
 - **Transportation/landuse feedback.**
 - **Schuylkill Watershed Land Prioritization Strategy**
- **Member Government Involvement.**
 - **Land Use Impacts of Proposed Highway Ramp**
 - **Aid in Preparing Municipal Forecasts**
- **ARCGIS 9.1 Version with MCD Controls**

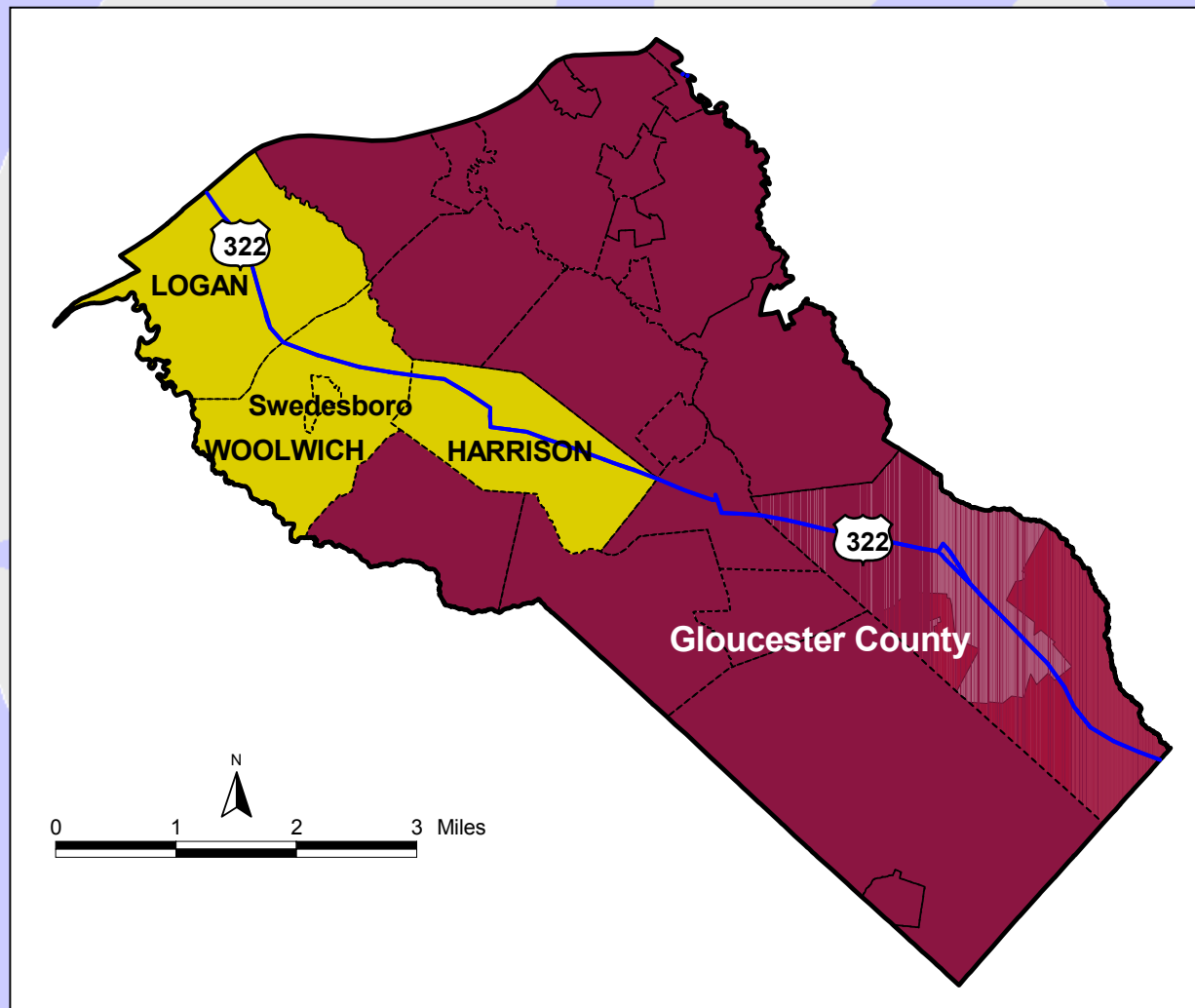


**UPlan
Transportation-Land Use
Pilot Studies**

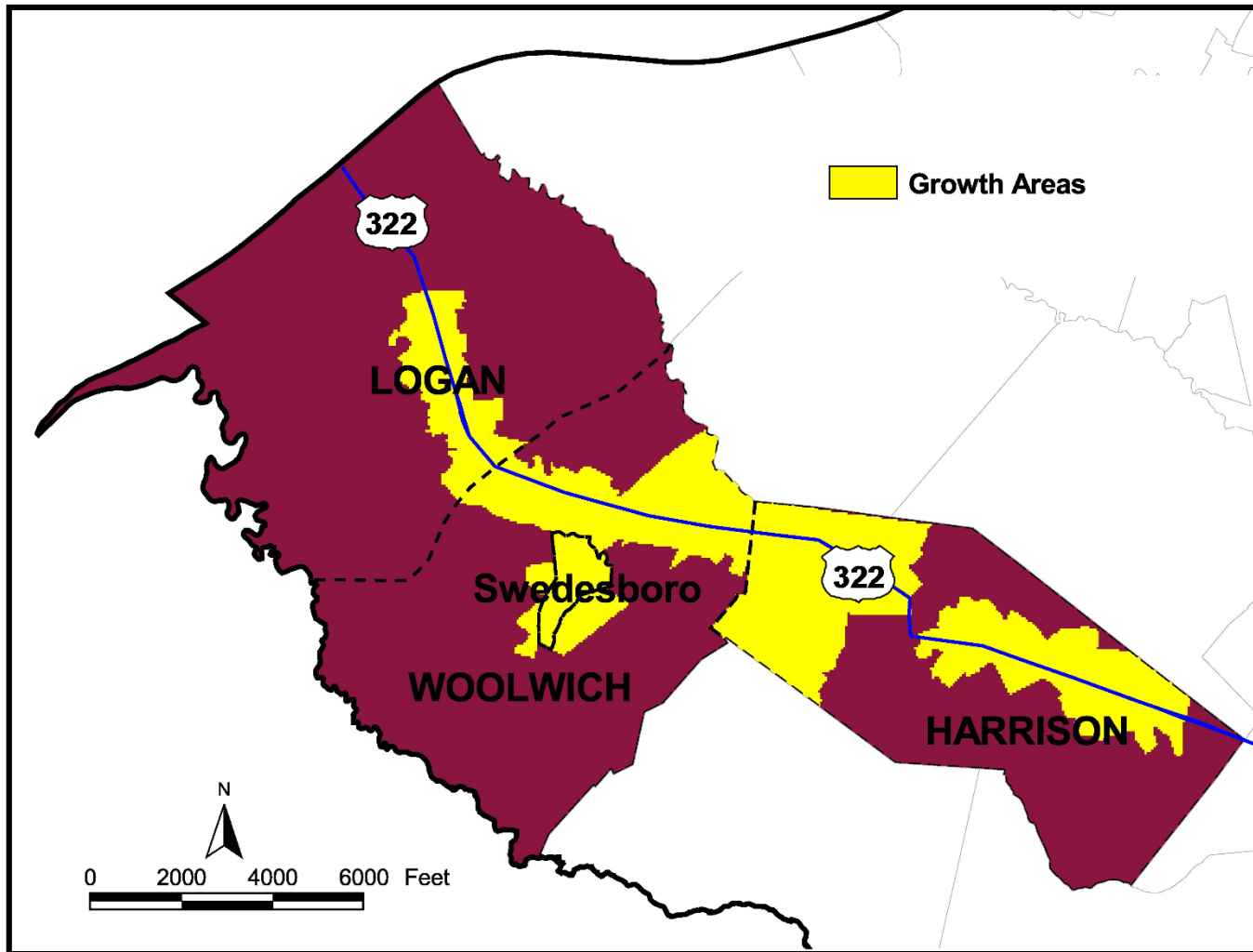
US 322 Build-Out Analysis

- **UPlan used to estimate 2030 population and employment build-out along US 322 corridor in Gloucester County**
- **What is the maximum population and employment possible with certain constraints?**
- **Three alternatives: (1) only build in existing sewerred areas; (2) only build in designated growth areas and (3) unconstrained development in corridor MCDs**

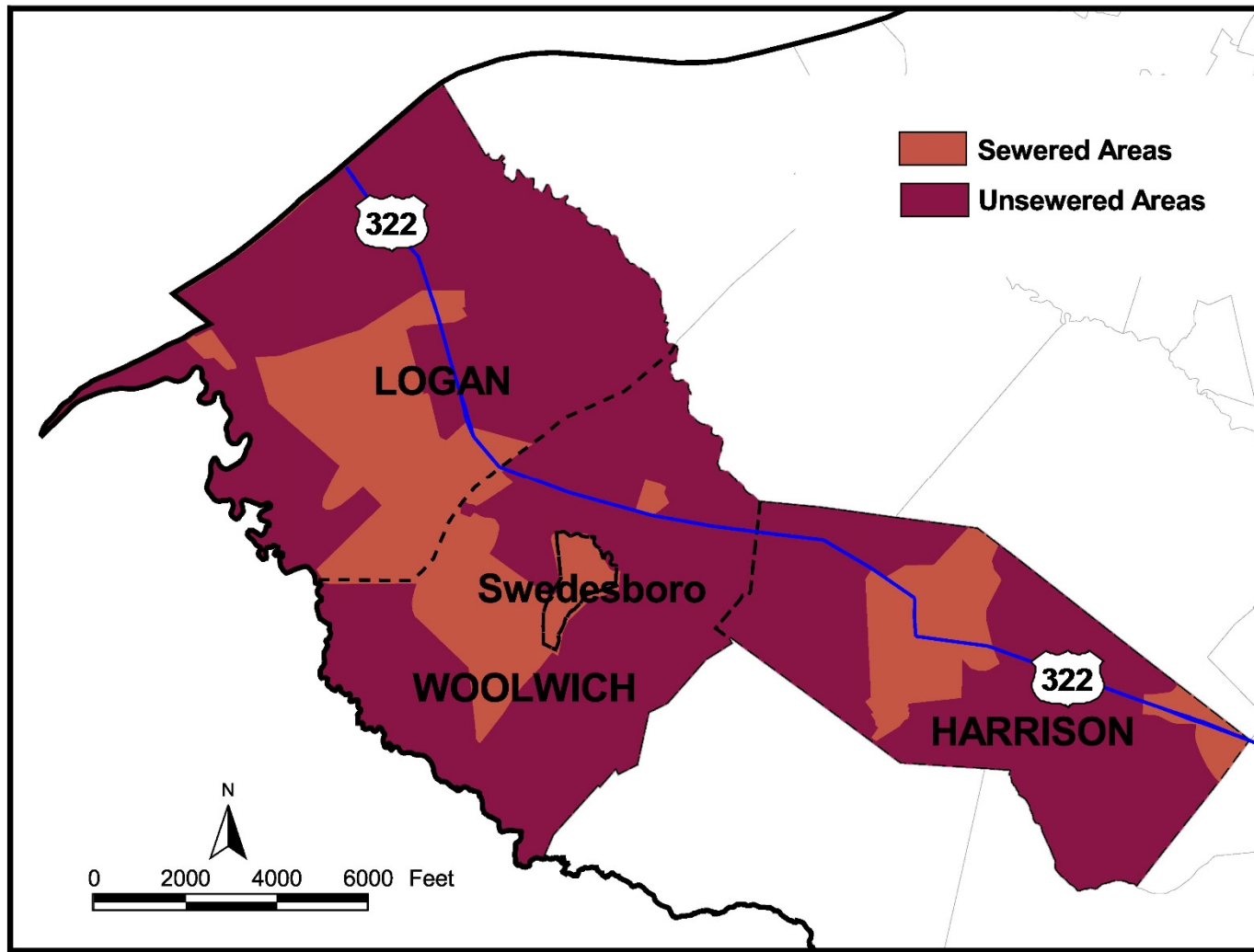
US 322 Corridor MCDs



US 322 Growth Areas



US 322 Sewered Areas



US 322 Build-Out Forecasts

2030 Household Forecasts

Municipality	Board Adopted	Maximum Build-out	Corridor Constrained	Sewer Area Constrained
Harrison Township	5,839	7,967	5,355	4,180
Logan Township	2,501	3,658	2,178	2,843
Swedesboro Borough	864	939	937	939
Woolwich Township	5,392	24,931	7,156	14,735
Total	14,596	37,495	15,626	22,697

2030 Employment Forecasts

Municipality	Board Adopted	Maximum Build-out	Corridor Constrained	Sewer Area Constrained
Harrison Township	5,167	65,137	27,839	31,042
Logan Township	10,965	94,972	36,353	39,086
Swedesboro Borough	2,635	4,097	4,046	4,026
Woolwich Township	4,457	30,466	27,134	2,550
Total	23,224	194,672	95,372	76,704

US 322 Build-Out Findings

- **Build-out estimates can vary significantly between alternatives**
- **Unconstrained development (maximum build-out) results in much higher growth in study MCDs**
- **UPlan can be utilized for relative comparison of growth scenarios in long-range planning and provide inputs for travel forecasting**
- **Simulated congestion levels useful in evaluating required transportation improvements**

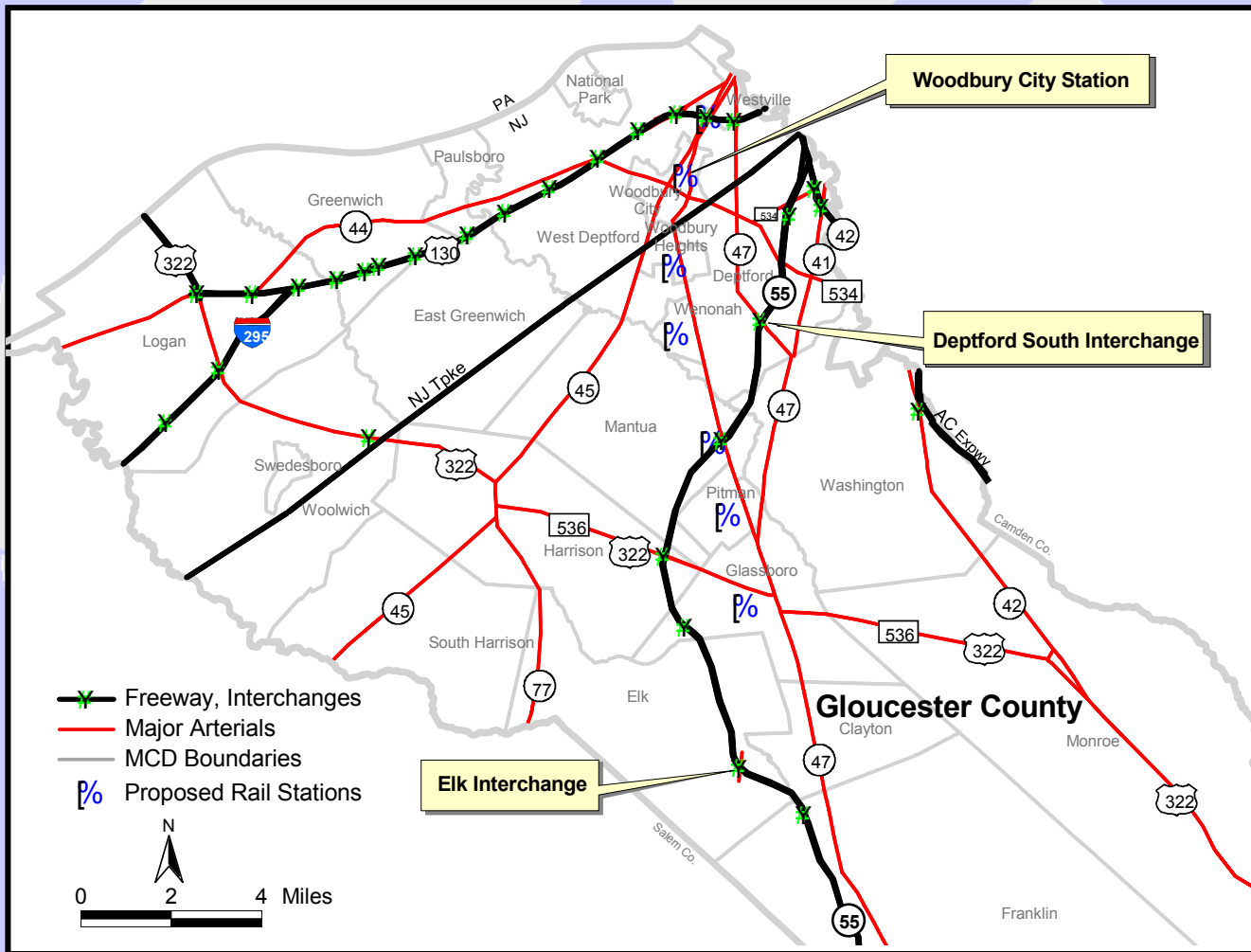
NJ 55/LRT Impact Analysis

- **Federal regulations require a methodology to estimate the impact of transportation projects on land use.**
- **What land use changes occur as a result of a new highway or transit line? Can UPlan show these changes in its allocation?**
- **Gloucester County used for testing: NJ 55, a recent (c. 1990) new highway and a proposed transit line (RiverLINE southern extension) included in analysis.**

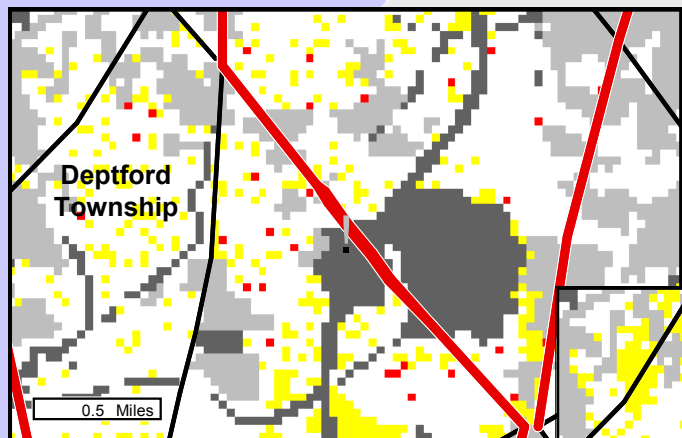
NJ 55/LRT Impact Analysis

- **UPlan produced 2030 land use allocation from 1990 base year; compared with census numbers and DVRPC forecasts**
- **1990 and 2005 (preliminary) DVRPC land use datasets also used for comparison with UPlan output**
- **NJ 55 removed from alternative to simulate land use change without it (no-build)**
- **Proposed light rail line also tested**
- **Would UPlan allocation match what actually happened?**

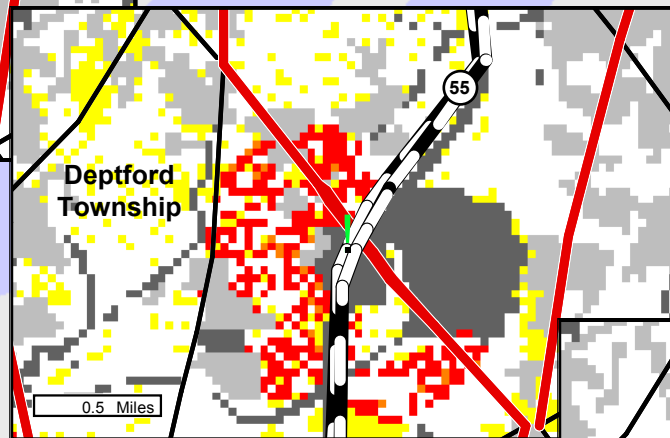
NJ 55 / LRT Impact Analysis



NJ 55 Deptford South Interchange














← UPlan allocation
without NJ 55

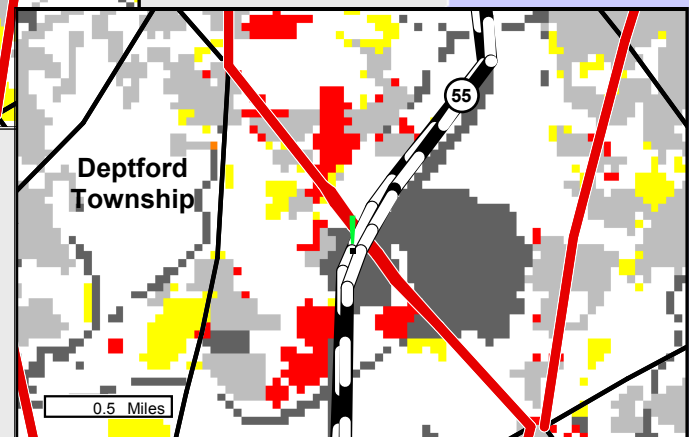


← UPlan allocation
with NJ 55

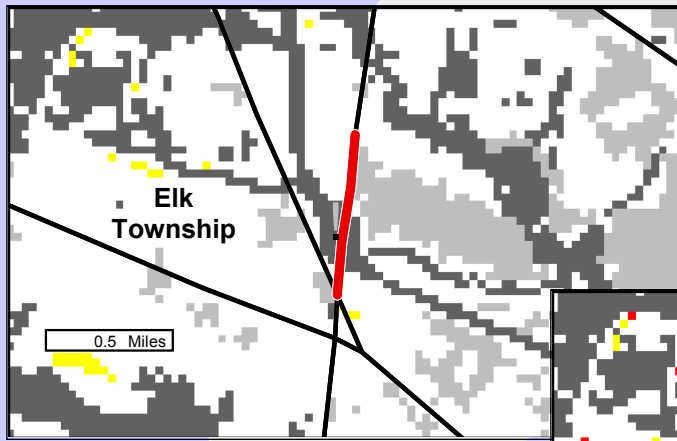
Legend

-  Freeway Interchange
-  Freeway Interchange (Unbuilt)
-  Freeway
-  Major Arterial
-  Minor Arterial
-  1990 Existing Development
-  Undevelopable Land
- Land Use**
-  Commercial
-  Industrial
-  High-Density Residential
-  Medium/Low-Density Residential

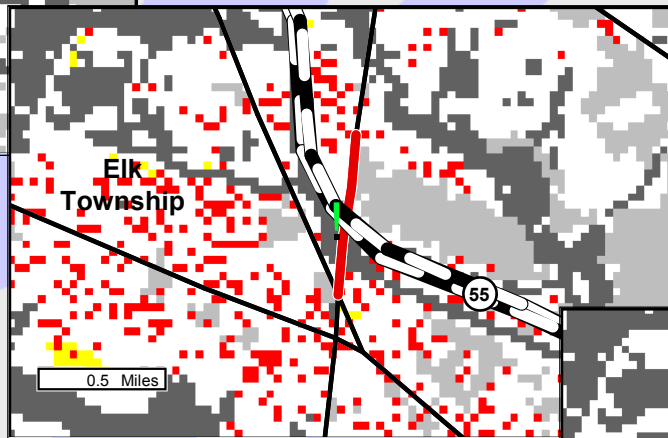
1990-2005 land
use change →



NJ 55 Elk Interchange














← UPlan allocation
without NJ 55

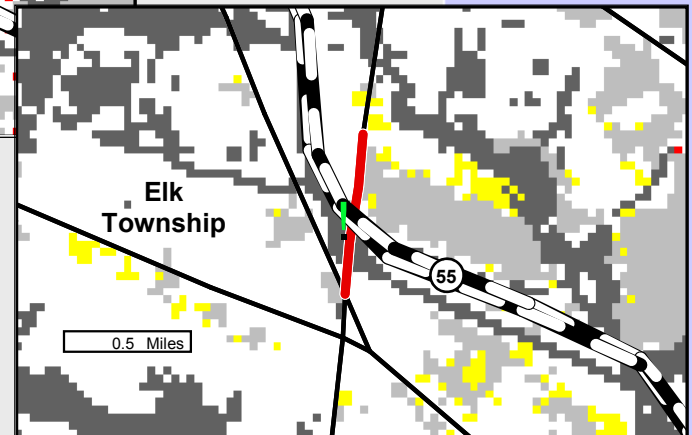


← UPlan allocation
with NJ 55

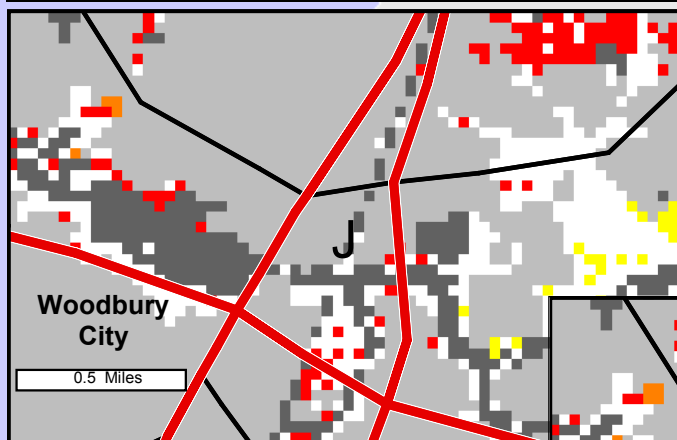
Legend

-  Freeway Interchange
-  Freeway Interchange (Unbuilt)
-  Freeway
-  Major Arterial
-  Minor Arterial
-  1990 Existing Development
-  Undevelopable Land
- Land Use**
-  Commercial
-  Industrial
-  High-Density Residential
-  Medium/Low-Density Residential

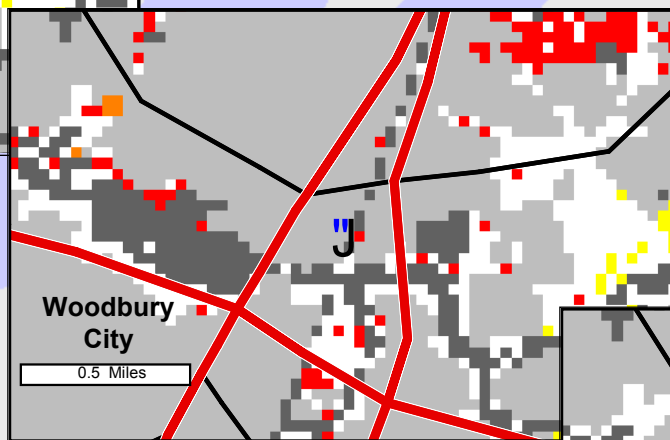
1990-2005 land
use change →



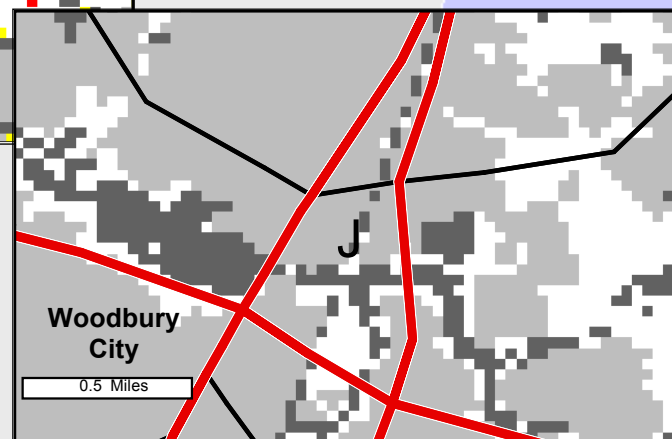
Woodbury Light Rail Station



← UPlan allocation
without rail station



← UPlan allocation
with rail station



1990-2005 land
use change →

Legend

- Rail Station
- Rail Station (Unbuilt)
- Freeway
- Major Arterial
- Minor Arterial
- 1990 Existing Development
- Undevelopable Land
- Land Use**
- Commercial
- Industrial
- High-Density Residential
- Medium/Low-Density Residential

NJ 55 Forecasts

2030 Population Forecasts

NJ 55 Corridor MCDs	1990 Census Population	2030 No-Bld Pop Change (from 1990)	NJ 55 Build Pop Change (from No-Bld)	Build / No-Bld % Change
Deptford Township	24,137	+3,755	+1,458	39%
Elk Township	3,806	+1,530	-133	-9%

2030 Employment Forecasts

NJ 55 Corridor MCDs	1990 Census Employment	2030 No-Build Emp Change (from 1990)	NJ 55 Build Emp Change (from No-Bld)	Build / No-Bld % Change
Deptford Township	10,740	+3,242	+534	16%
Elk Township	523	0	+3,373	—

LRT Forecasts

2030 Population Forecasts

Proposed NJ Transit Riverline Light Rail Extension Corridor MCDs	1990 Census Population	2030 No-Bld Pop Change (from 1990)	Rail Build Pop Change (from No-Build)	Build / No-Build % Change
Woodbury City	10,904	+81	-20	-25%

2030 Employment Forecasts

Proposed NJ Transit Riverline Light Rail Extension Corridor MCDs	1990 Census Employment	2030 No-Bld Emp Change (from 1990)	Rail Build Emp Change (from No-Build)	Build / No-Build % Change
Woodbury City	10,103	+176	-27	-15%

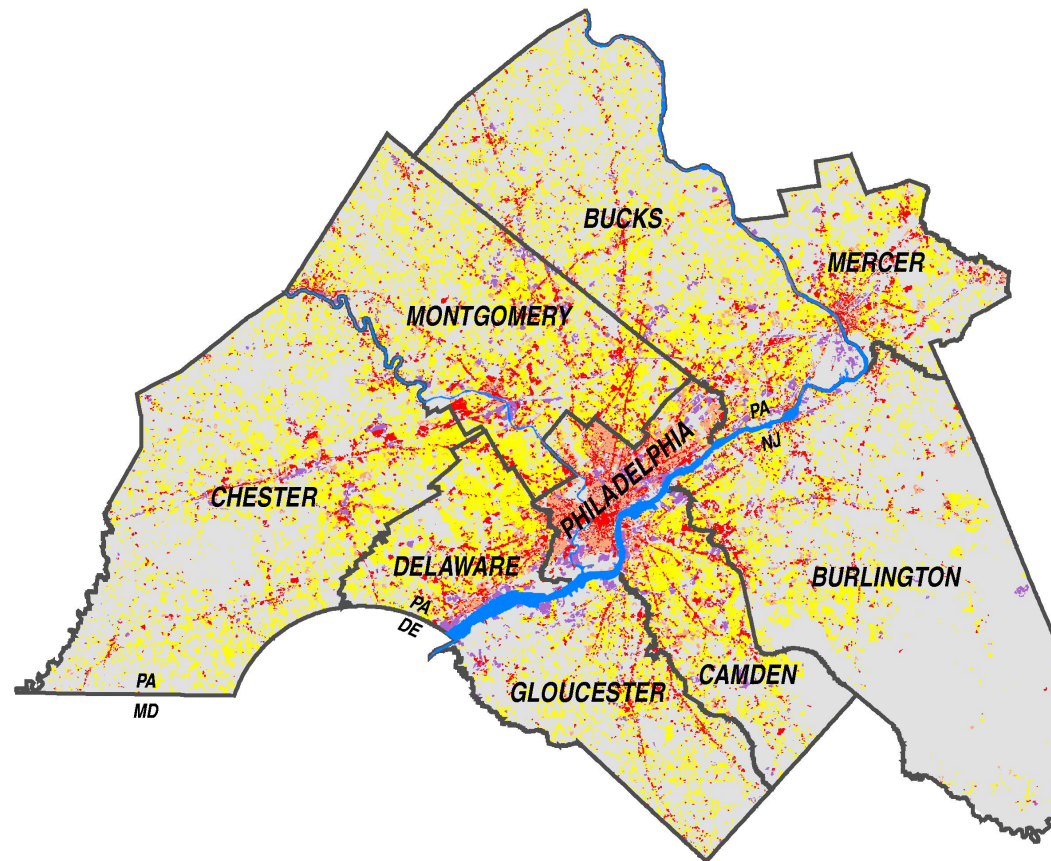
NJ 55/LRT Impact Findings

- **UPlan allocation generally consistent with actual land use changes from 1990-2005**
- **Some areas may not develop until later in time**
- **Development clusters near freeway interchanges (where land is available)**
- **Little new (greenfields) development near rail stations because these areas are largely built out**



Questions?

UPlan Land Use Planning Model Implementation



Presentation for the Information Resource Exchange Group
June 13TH 2007



Delaware Valley Regional Planning Commission

Landscapes2 Survey Process

Or:

How I learned to stop worrying and love
third-party software

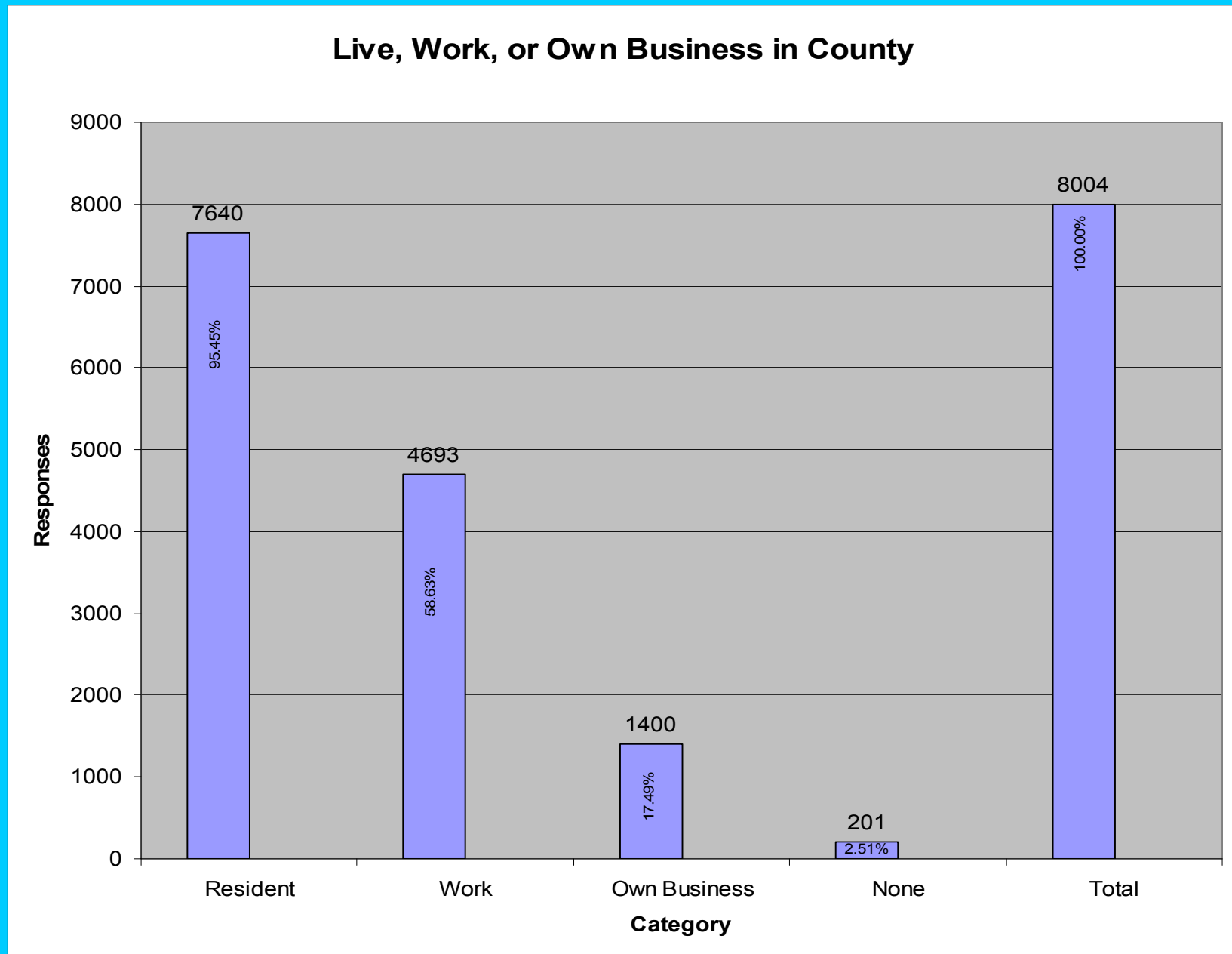
A presentation by:

Brian Sweeney

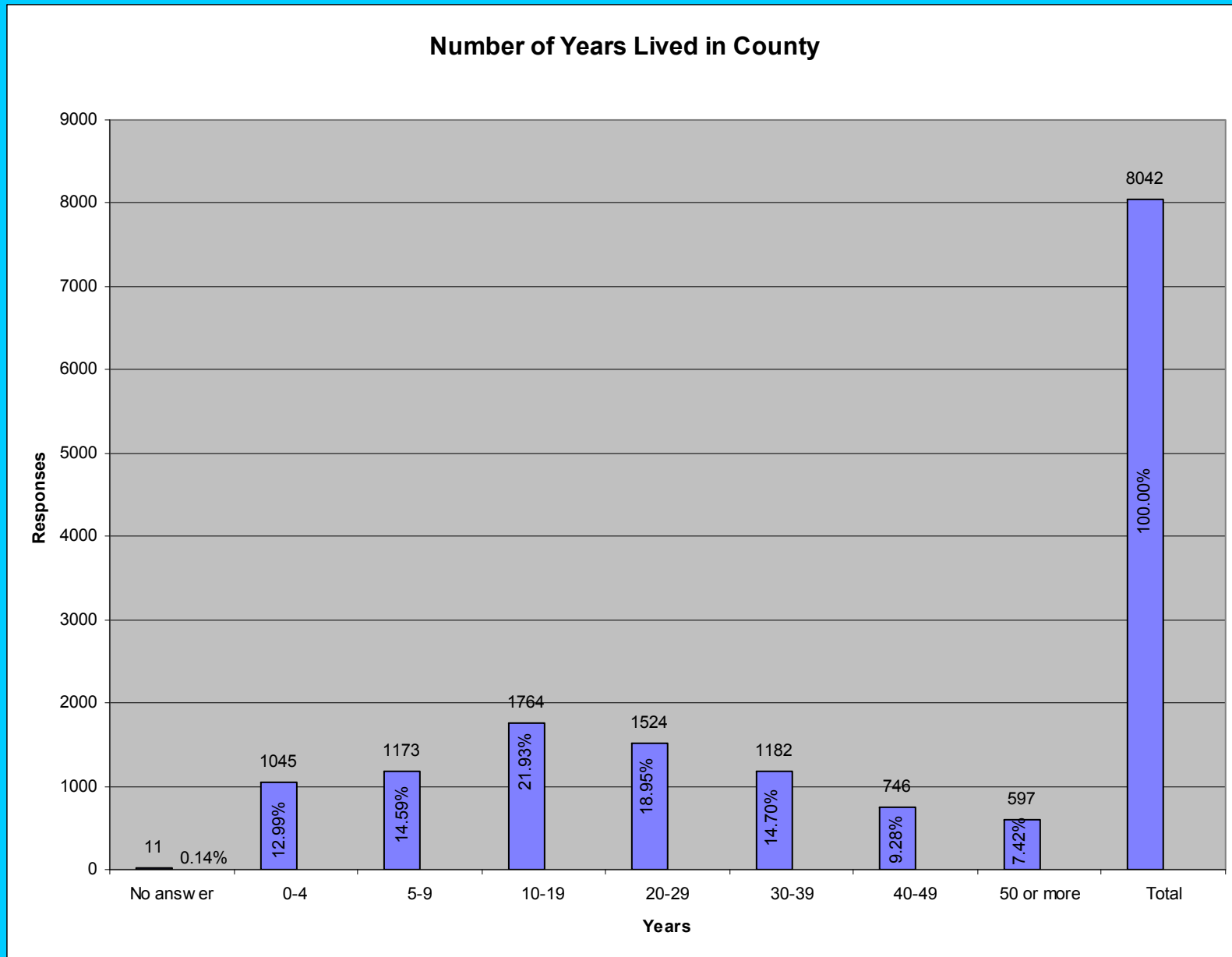
Chester County Planning Commission

bsweeney@chesco.org

What's a nice person like you doing in a place like this?



Haven't I seen you here before?



Where are you from?

PUBLIC OPINION SURVEY				
Comparison between 2006 and 1995 surveys				
	2006 SURVEY		1995 SURVEY	
TOTAL RESPONSES		8040		5000
MEDIA				
Written Responses		267	3%	5000 100%
Web responses		7773	97%	
DISTRIBUTION				
Municipal Officials and PC members		596	7%	116 2%
Residents/Businesses		7444	93%	4884 98%
Northern		1132	14%	639 13%
Northwest		524	7%	181 4%
Western		919	11%	545 11%
Southwest		473	6%	181 4%
Avon-Grove		495	6%	217 4%
Kennett-Chadds Ford		408	5%	210 4%
West Chester		1882	23%	1392 28%
Eastern		872	11%	638 13%
Downingtown-Exton		1335	17%	997 20%

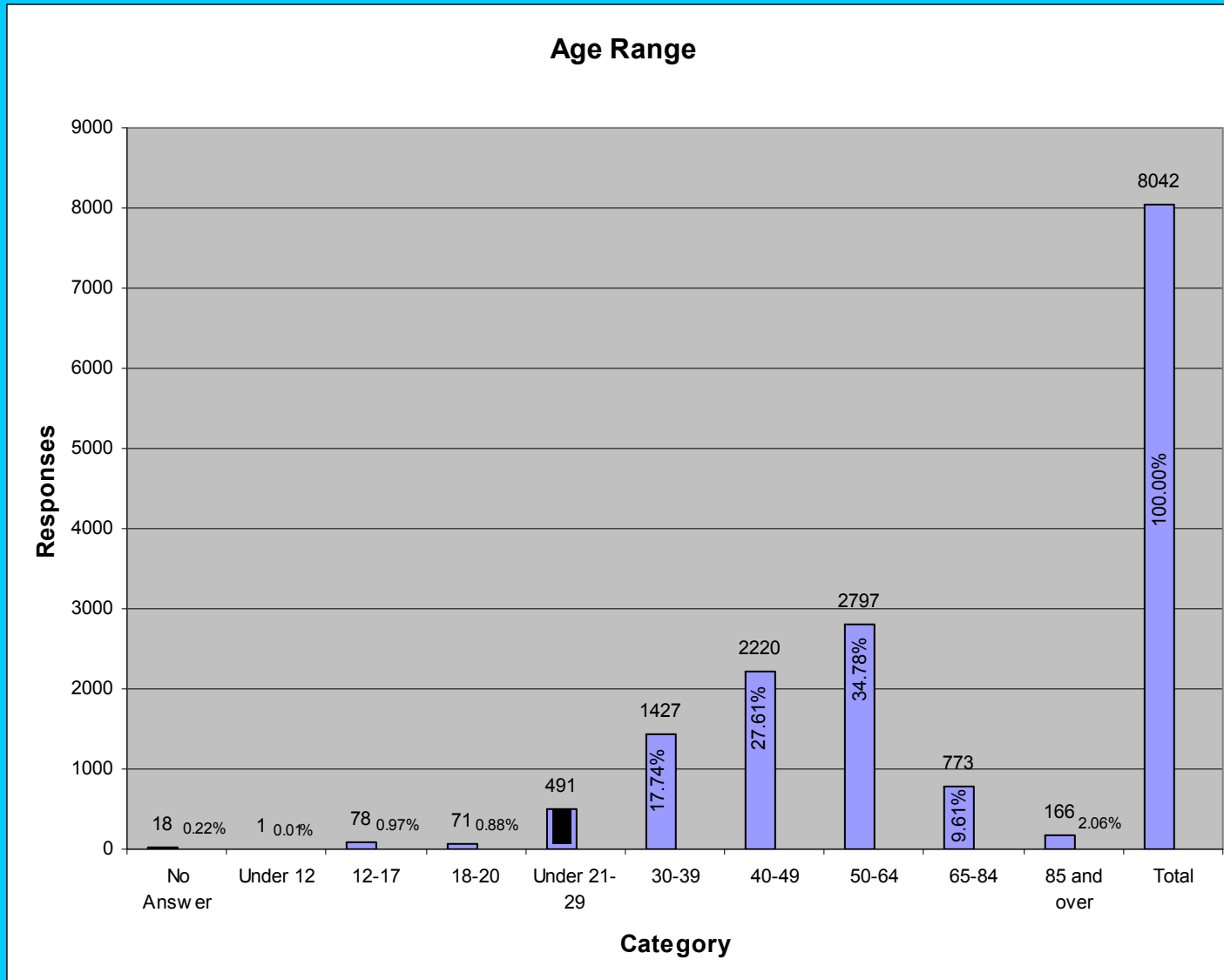
Where do you see yourself in 10 years?

COMPARISON OF PREFERENCES			
1. What do you like MOST about Chester County?	1	Farmland/Rural Charac.	88%
	2	Quality of Schools	44%
	3	Cultural/Historic Sites	43%
		Clean air and water	
		Parks and recreation	
2. What do you like LEAST about Chester County?	1	Traffic Congestion	70%
	2	Loss of farmland	68%
	3	Property tax rates	46%
	4	High cost of housing	37%

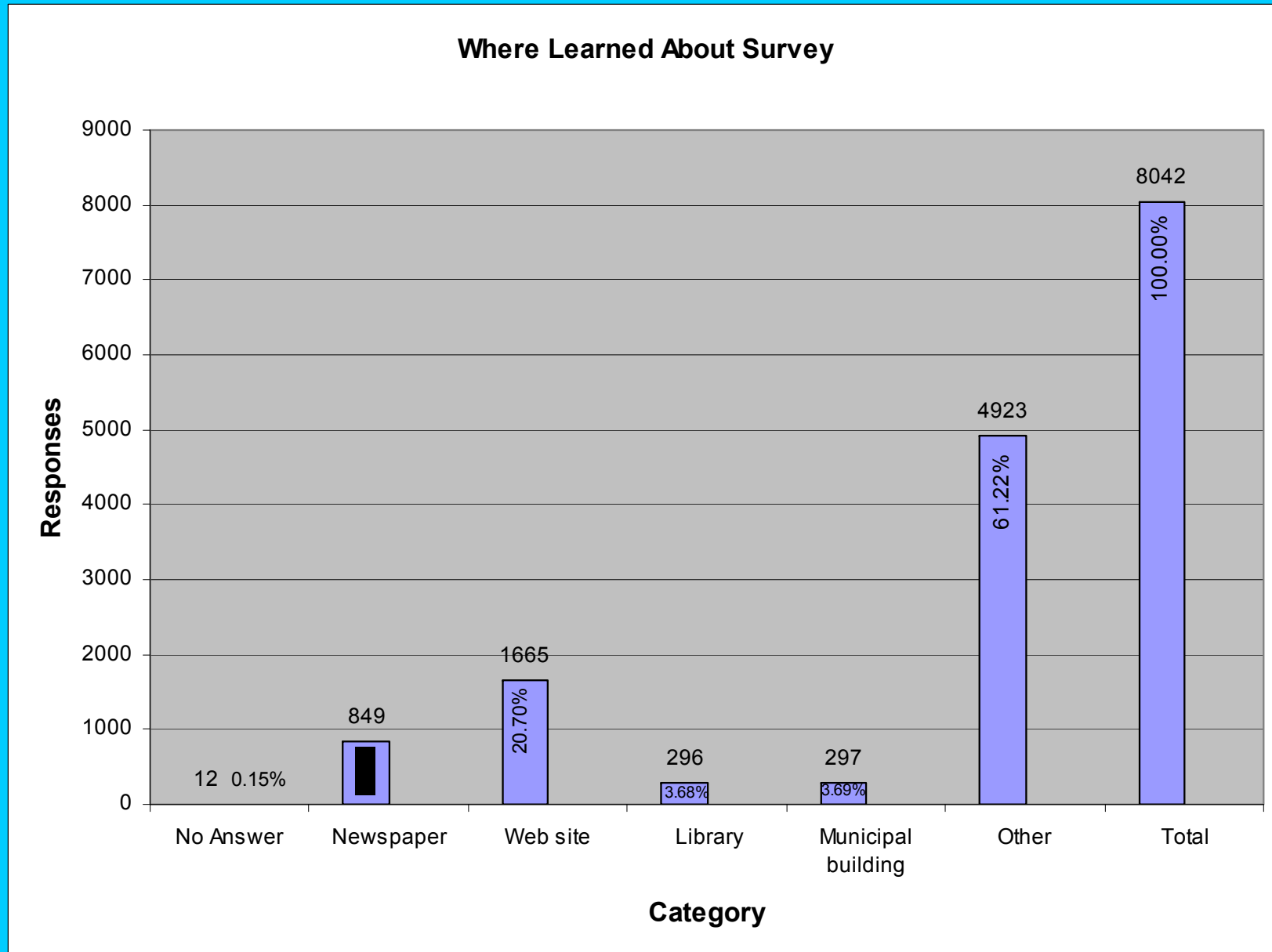
You got a problem with that?

COMPARISON OF ISSUES					
4. Where should future development be encouraged?	1	Existing urban areas	84%	Existing town centers	45%
	2	Existing suburban	35%	Existing development	42%
	3	Existing villages	26%	Existing villages	14%
5. What would you prefer to see MORE of in Chester County?	1	Farmland/Open Space	72%	Open Space	79%
	2	Downtown revitalization	50%	Farmland	71%
	3	Cooperative Planning	38%	Parks/Recreation	37%
6. What would you prefer to see LESS of in Chester County?	1	Traffic Congestion	78%	Traffic congestion	71%
	2	Downtown vacancy	71%	Housing in rural areas	42%
	3	Housing in rural areas	49%	Downtown vacancy	38%

What's your sign?




What brings you here?



Let's use the web form capability from our website!

Planning: Landscapes 2025 Public Opinion Survey Page 1 of 5


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Chester County Planning Commission
601 Westtown Rd, Suite 270, P.O. Box 2747, West Chester, PA 19380-0990 Phone: 610-344-62

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Landscapes 2025 Public Opinion Survey

Do you live, work, or own a business in Chester County? (check all that apply)

Resident of County

Work in County

Own a Business in County

None of the above

If you are a resident:

Do you live in a borough, the City of Coatesville, or a township?

A borough

City of Coatesville

A township

How many years have you lived in Chester County?

Your zip code:

Is this your:

Home?

Work?

1. What do you like *most* about Chester County? (check up to four)

Farmland, rural character, and natural beauty

Ease of travel by automobile

Public transportation (bus and rail)

Variety of housing types

Cost of housing

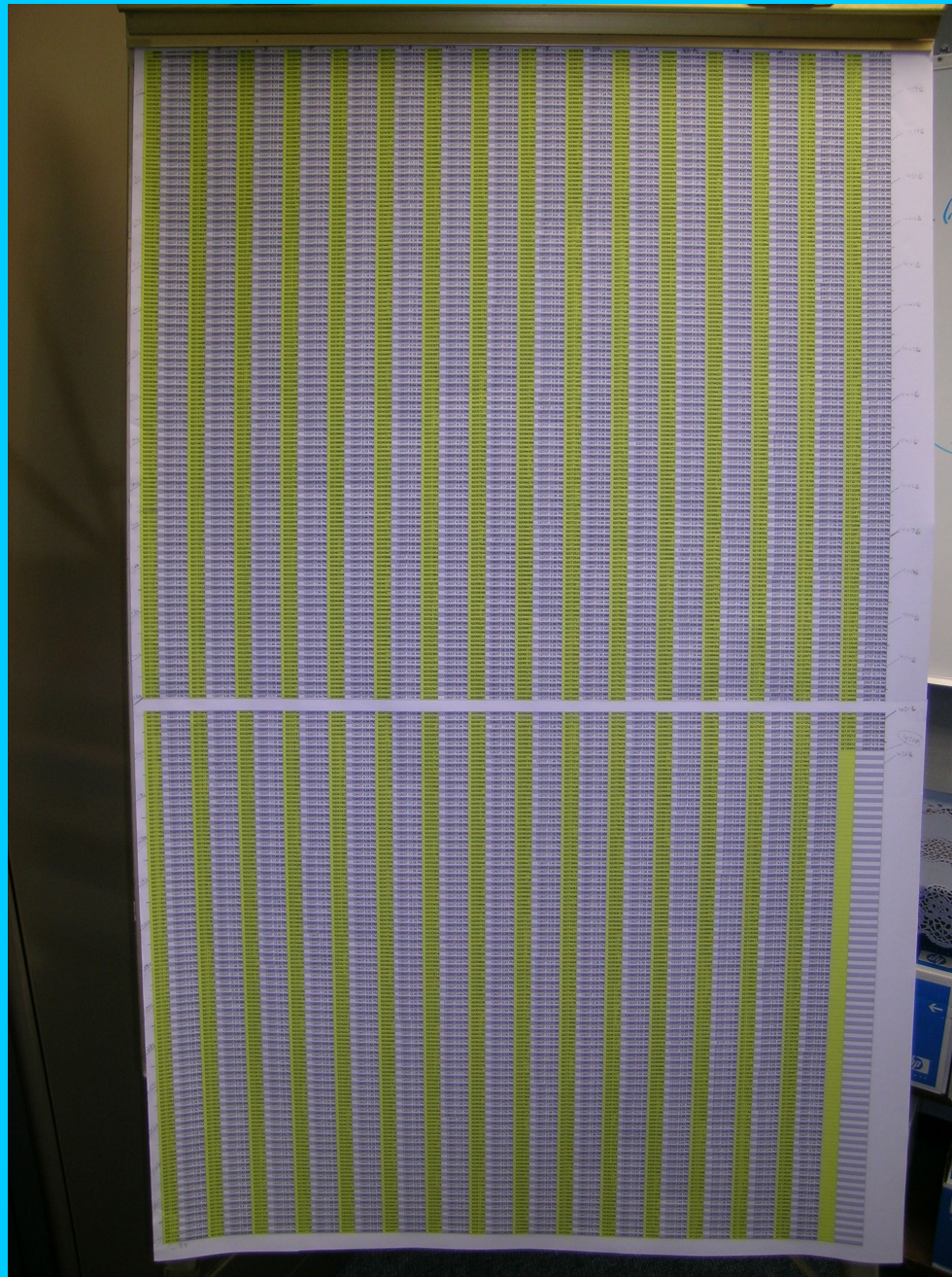
Shopping and entertainment opportunities

Jobs/business opportunities

Quality of schools

<http://dsf.chesco.org/planning/cwp/view.asp?a=3&q=628141> 4/25/2007

Um, maybe not.



Data Mining 101



E-Mail Data Entry

Microsoft Access - [E-mail Data Entry]

File Edit View Insert Format Records Tools Window Help Adobe PDF

Survey ID: 1

Question 1	Questions 2-3	Questions 4-5	Questions 6-7
Do you live, work, or own a business in Chester County? (check all that apply)	<input checked="" type="checkbox"/> 1 Resident of County <input type="checkbox"/> 2 Work in County <input type="checkbox"/> 3 Own a business in County <input type="checkbox"/> 4 None of the above		WORKOWNBUSINESS
Do you live in a borough, the City of Coatesville, or a township?	1 A borough 2 City of Coatesville 3 A township		WHEREYOU LIVE
How many years have you lived in Chester County?	1 0-4 2 5-9 3 10-19 4 20-29 5 30-39 6 40-49 7 50 or more		HOWMANY YEARS
Your zip code:	19425		YOUR ZIP CODE
Is this your:	1 Home? 2 Work?		HOMEWORK
1. What do you like most about Chester County? (check up to four)	<input checked="" type="checkbox"/> 1 Farmland, rural character, and natural beauty <input checked="" type="checkbox"/> 2 Ease of travel by automobile <input type="checkbox"/> 3 Public transportation (bus and rail) <input type="checkbox"/> 4 Variety of housing types <input type="checkbox"/> 5 Cost of housing <input checked="" type="checkbox"/> 6 Shopping and entertainment opportunities <input type="checkbox"/> 7 Jobs/business opportunities <input type="checkbox"/> 8 Quality of schools <input type="checkbox"/> 9 Property tax rates		WHAT LIKEMOST

Paper Copy Data Entry

Microsoft Access - [1222091251130]

File Edit View Insert Format Records Tools Window Help Adobe PDF

Invest 6 minutes in your future.
 Help shape Chester County's growth and preservation priorities.
 All answers are strictly confidential.

Survey ID: 1

1. Do you live, work or own a business in Chester County? *(check all that apply)*

Resident of County
 Work in County
 Own a business in County
 None of the above

If you are a resident:
 Do you live in a borough, the City of Coatesville, or a township? *(select one)*

1 A borough
 2 City of Coatesville
 3 A township

How many years have you lived in Chester County?

1 0-4
 2 5-9
 3 10-19
 4 20-29
 5 30-39
 6 40-49
 7 50-59

Your zip code: 19425

Is this your: 1 Home? 2 Work?

2. What do you like least about Chester County? *(check up to four)*

Loss of farmland, rural character, and natural beauty
 Traffic congestion
 Physical condition of roads (road surface, maintenance)
 Limited public transportation (bus and rail)
 Limited variety of housing types
 High cost of housing
 Limited shopping and entertainment opportunities
 Limited job or business opportunities
 Quality of schools
 Property tax rates
 Crime rate/lack of safety and security
 Limited cultural and historic sites
 Limited public parks and recreational facilities
 Problems with water or air quality
 Other

3. What issues do you believe are the most important facing Chester County today? *(check up to four)*

Open space/farmland preservation
 Managing new growth and development
 Revitalizing urban centers (i.e., boroughs, City of Coatesville)
 Housing needs and affordability
 Employment opportunities
 Natural resource protection (water/air/woodlands)
 Traffic congestion and road conditions
 Providing more transportation choices (public transit/bike paths/walking paths)
 Controlling taxes
 Providing parks and recreational opportunities
 Historic resources protection
 Other

4. Where in the County should future development be encouraged? *(check up to five)*

In existing urban centers (i.e., boroughs, City of Coatesville)
 In existing suburban areas
 In existing villages
 In new villages or towns
 In undeveloped rural areas
 Other

5. What would you prefer to see more of in Chester County? *(check up to four)*

Farmland retention and open space conservation
 Clustered residential development with preserved open space
 Housing in rural areas
 Greater variety of housing types (smaller houses/townhouses/apartments)
 Affordable housing
 Retirement housing opportunities
 Downtown revitalization
 Office buildings/business parks
 Retail stores/shopping centers
 Job opportunities
 Opportunities to walk or bike to places
 Shorter trips between work, home, and shopping
 Public transportation options
 Parks and recreational facilities
 Healthcare facilities
 Cooperative planning between local governments
 Other

6. What would you prefer to see less of in Chester County? *(check up to four)*

Farmland retention and open space conservation
 Clustered residential development with preserved open space
 Housing in rural areas
 Residential development in any location
 Vacant buildings in downtowns/commercial areas
 Office buildings/business parks
 Retail stores/shopping centers
 Traffic congestion
 Parks and recreational facilities
 Other

7. Do you have any other comments or concerns about the future of Chester County?

To help us better understand the results, please tell us a few facts about yourself.

Your age:

1 Under 12
 2 12-17
 3 18-20
 4 21-29
 5 30-39
 6 40-49
 7 50-64
 8 65-84
 9 85 and over

Are you a municipal elected official, planning commission member, or other appointed municipal official? *(check all that apply)*

Elected official
 Planning commission
 Other appointed official
 None of these

Where did you learn about this survey?:

1 Newspaper
 2 Web site
 3 Library
 4 Municipal building
 5 Other

If you received a 3-digit code from your municipality or organization, please enter it here:
 Group code: 100

Record: 1 of 8042
 Resident of County

Zoomerang to the Rescue!

Zoomerang

Page 1 of 3



Invest 6 minutes in your future.
Help shape Chester County's growth and preservation priorities.

Landscapes is an award-winning program of the Chester County Planning Commission

Questions marked with an asterisk (*) are mandatory.

1 *Do you live, work, or own a business in Chester County? (check all that apply)

- Resident of County
- Work in County
- Own a Business in County
- None of the above

2 *Do you live in a borough, the City of Coatesville, or a township?

- A borough
- City of Coatesville
- A township

3 *How many years have you lived in Chester County?

4 *Your zip code:

5 *Is this your:

- Home?

And they lived happily ever after...

For more information:

www.landscapes2.org