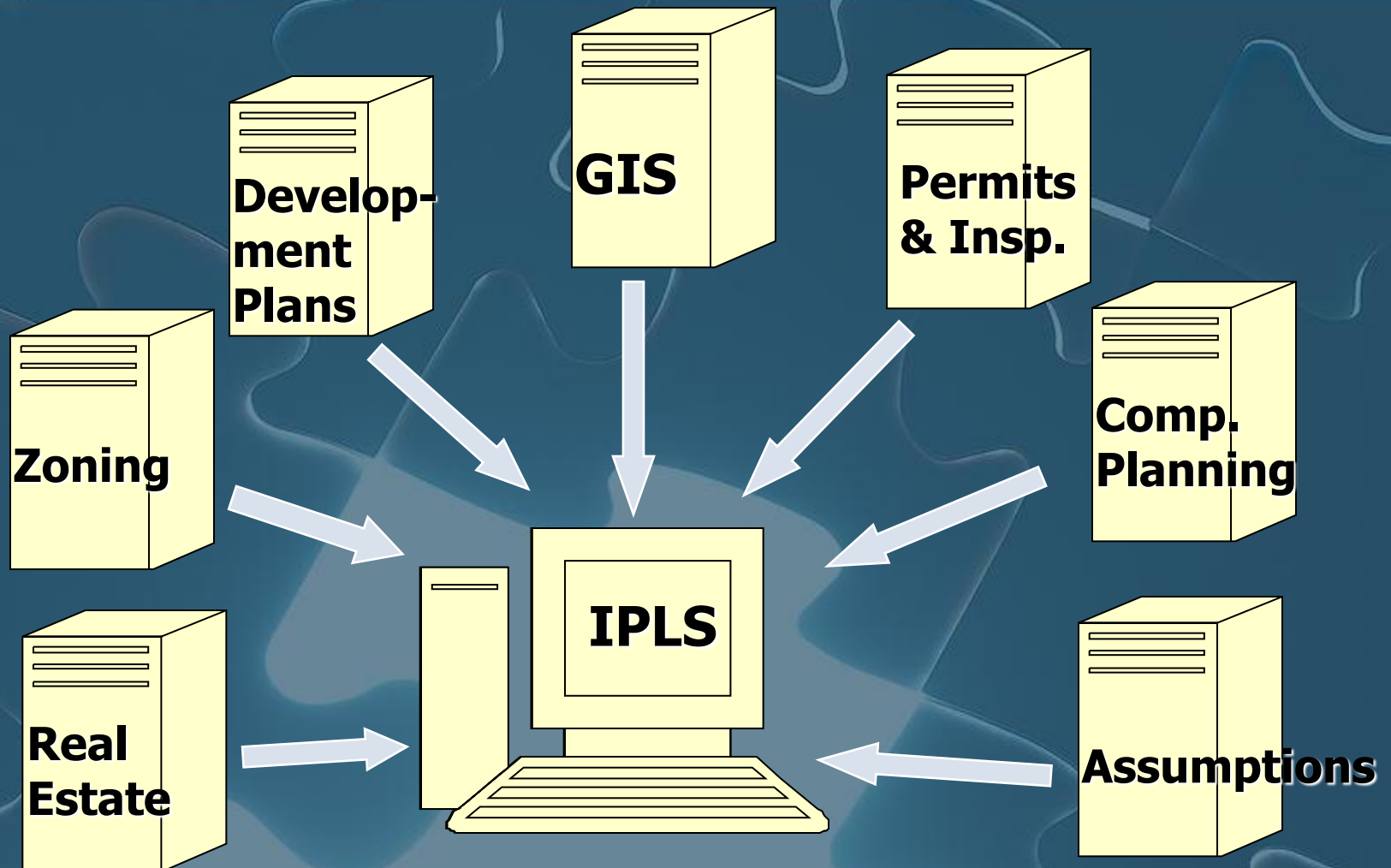


# **Methodology for Housing Units, Households and Population**

**Integrated Parcel Lifecycle System (IPLS)**

Fairfax County Department of Neighborhood and Community Services

# Data Sources





# Data Sources

## **GIS Data:**

- Land parcels & centroids**
- Master address file**
- Parcel history**
- Various geography layers**

## **Zoning Data:**

- Proposed rezonings**
- Approved rezonings**
- Existing zoning layer**

## **Real Estate Data:**

- Land & lot characteristics**
- Housing characteristics**
- Commercial & Industrial structure characteristics**
- Property sales information**
- Existing land use**

## **Development Plan Data:**

- Proposed development plans**
- Approved development plans**
- Project types**
- Housing units**



# Data Sources

## **Permits & Inspections Data:**

**Building permits issued**

**Building permit  
inspections**

## **Comprehensive Planning Data:**

**Planned land use layer**

**Plan options for mixed &  
alternative use areas**

## **Assumption Data:**

**Average household size**

**Vacancy rates**

**Rental complexes with  
mixed structure types**

**Forecasting assumptions**



# Parcel Level Data Created



**Housing Units**



**Population**



**Development  
Pipeline**



**Existing  
Land Use**



**Households**



**Housing Value**



**Gross Floor Area**



# Concepts

- Data can be summarized by ***any*** geography because
  - Parcels are the primary building blocks,
  - Data are assigned to parcel centroids, and
  - Layers are spatially registered.
- IPLS data are accessible to all county staff via GIS clients (ArcMap) and Oracle clients (SQLplus, Toad, SAS, etc.).





# Housing Unit Estimates

- **Fields in table**
  - Parcel identification number
  - Housing unit type
  - Existing land use code
  - Year built
  - Current number of units
  - Valid from date
  - Valid to date



# Housing Unit Estimates

- **Housing unit types**
  - SF – Single family detached
  - TH – Townhouse
  - DX – Duplex
  - MP - Multiplex
  - LR – Low-rise multifamily
  - MR – Mid-rise multifamily
  - HR – High-rise multifamily
  - MH – Mobile home



# Households & Population



- Households are occupied housing units.
- Three estimates for current households and population.
  - Most likely estimate
  - Low estimate
  - High estimate

# Household Methodology

10 Housing Units and 9 Households



# Household Methodology

10 Housing Units and 9 Households  
Vacancy rate is spread across all housing units.





# Population Methodology

- Average household size information from the Decennial Census by small area and type of unit.
  - Adjustments are made using American Community Survey information along with administrative data such as school membership information.



# IPLS Forecasts



- IPLS demographic forecasts:
  - Housing units, households and population forecasts for a 30 year period.
  - Low, high and most likely forecasts.
  - Mixed use, alternative use and plan option information captured.
  - Forecasts vary based on parcel characteristics such as age of structure, location, steepness, flood plains, etc.



# IPLS Forecasts



- IPLS short range forecasts are:
  - Those within a five-year horizon.
  - Based on residential development activity.
- IPLS long range forecasts are:
  - Those beyond the five-year horizon.
  - Based on the Comprehensive Plan and plan options.
  - Based on existing parcel characteristics



# IPLS Reporting Tool



- User reports available through ArcMap extension
  - Population Density Map
  - Report of Current and Forecasted Population, Housing Units & Households
  - Report of Residential Condominiums
  - Report and Map of Housing Units Authorized by Building Permits
  - Report and Map of Housing Starts
  - Report and Map of Housing Units Completed
  - Report of Market Value of Housing Units



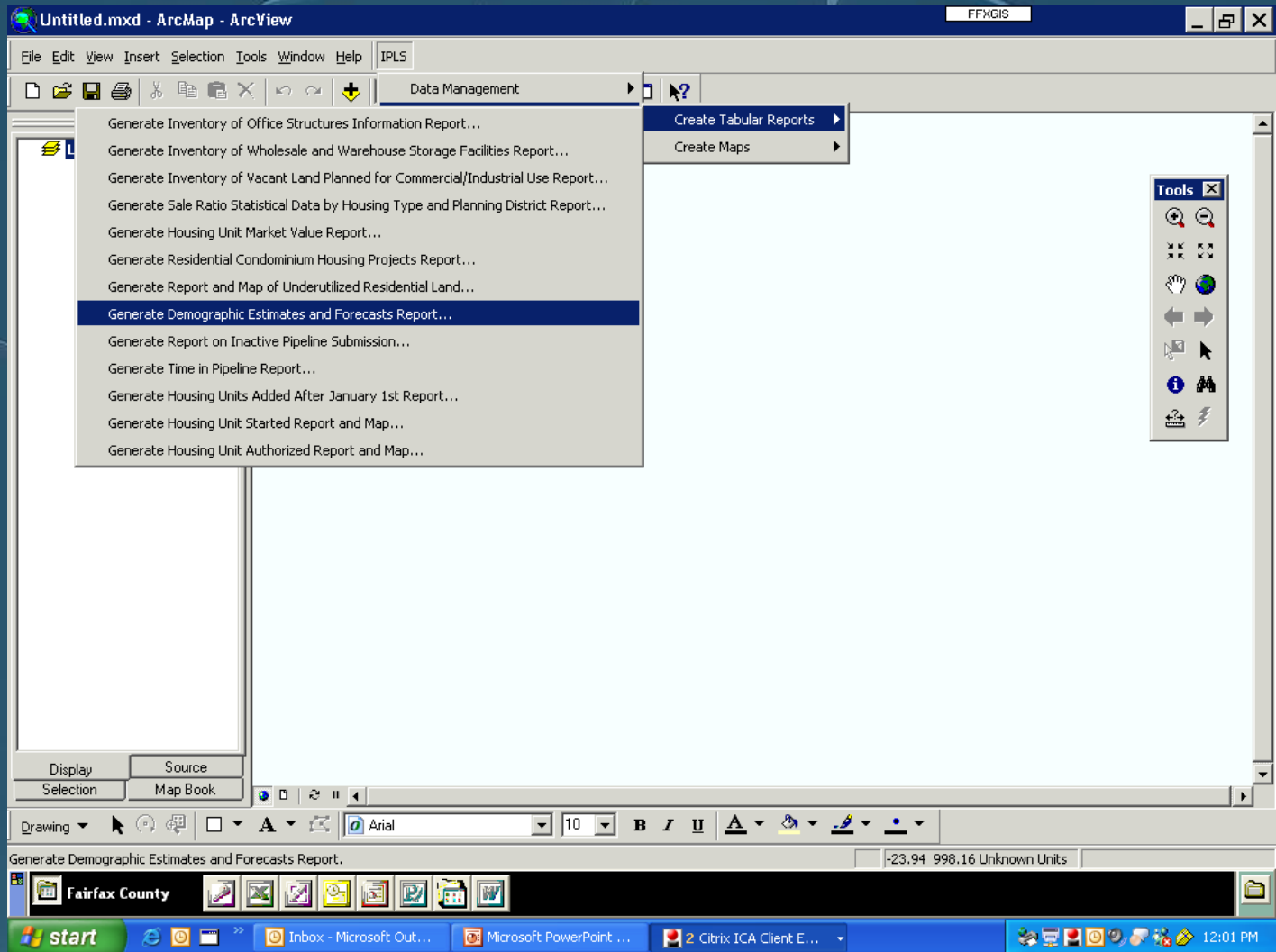
# IPLS Reporting Tool



- User reports available...continued
  - Report of Inventory of Office Space
  - Report of Inventory of Wholesale & Warehouse Storage Facilities
  - Report and Map of Vacant Land Planned for Commercial or Industrial Use
  - Report and Map of Underutilized and Vacant Land Planned for Residential Use
  - Existing Land Use Acres by Geography
  - Zoned Acres by Geography



# IPLS Report Tool



# IPLS Report Tool

Untitled.mxd - ArcMap - ArcView FFXGIS

File Edit View Insert Selection Tools Window Help IPLS

Layers

**IPLS - Derived Data and Analysis Management**

Task Information

**Generate Demographic Estimates and Forecasts Report**

Valid From: 2004-12-31

Valid To: 2005-01-01

Overall Progress:

Elapsed Time:

Process	Status	Start	End
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Help... View Log... View Output... Launch Close

Display Source Selection Map Book

Drawing Arial 10 B I U A

Generate Demographic Estimates and Forecasts Report. 31.31 972.38 Unknown Units

Fairfax County

start

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# IPLS Report Tool

Untitled.mxd - ArcMap - ArcView FFXGIS

File Edit View Insert Selection Tools Window Help IPLS

Layers

IPLS - Derived Data and Analysis Management

Task Information

**Generate Demographic Estimates and Forecasts Report**

Valid From: 2004-12-31  
Valid To: 2005-01-01  
Elapsed Time:

Overall Progress: **Gathering input parameters...**

Process

**Demographic Estimates and Forecasts Report Parameters**

Geographic Layer

Layer: Supervisor Districts

- Federal Census Blocks
- Human Services Regions
- Planning Districts
- Political Jurisdictions
- Sewersheds
- Supervisor Districts
- Transportation Analysis Zones
- Voting Precincts

Help... View Log... View Output... Cancel Close

Display Source Selection Map Book

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Generate Demographic Estimates and Forecasts Report. 47.88 926.34 Unknown Units

Fairfax County

start

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# Sample IPLS Report

Microsoft Excel - Population\_Housing\_Households

File Edit View Insert Format Tools Data Window Help

A35 fx

**Fairfax County Government**  
**Department of Systems Management for Human Services**  
 12011 Government Center Parkway  
 Fairfax, Virginia 22035

**Current and Projected Population  
 by Planning Districts  
 Fairfax County, January 2005**

Generated on: 2007-08-29 12:39 PM

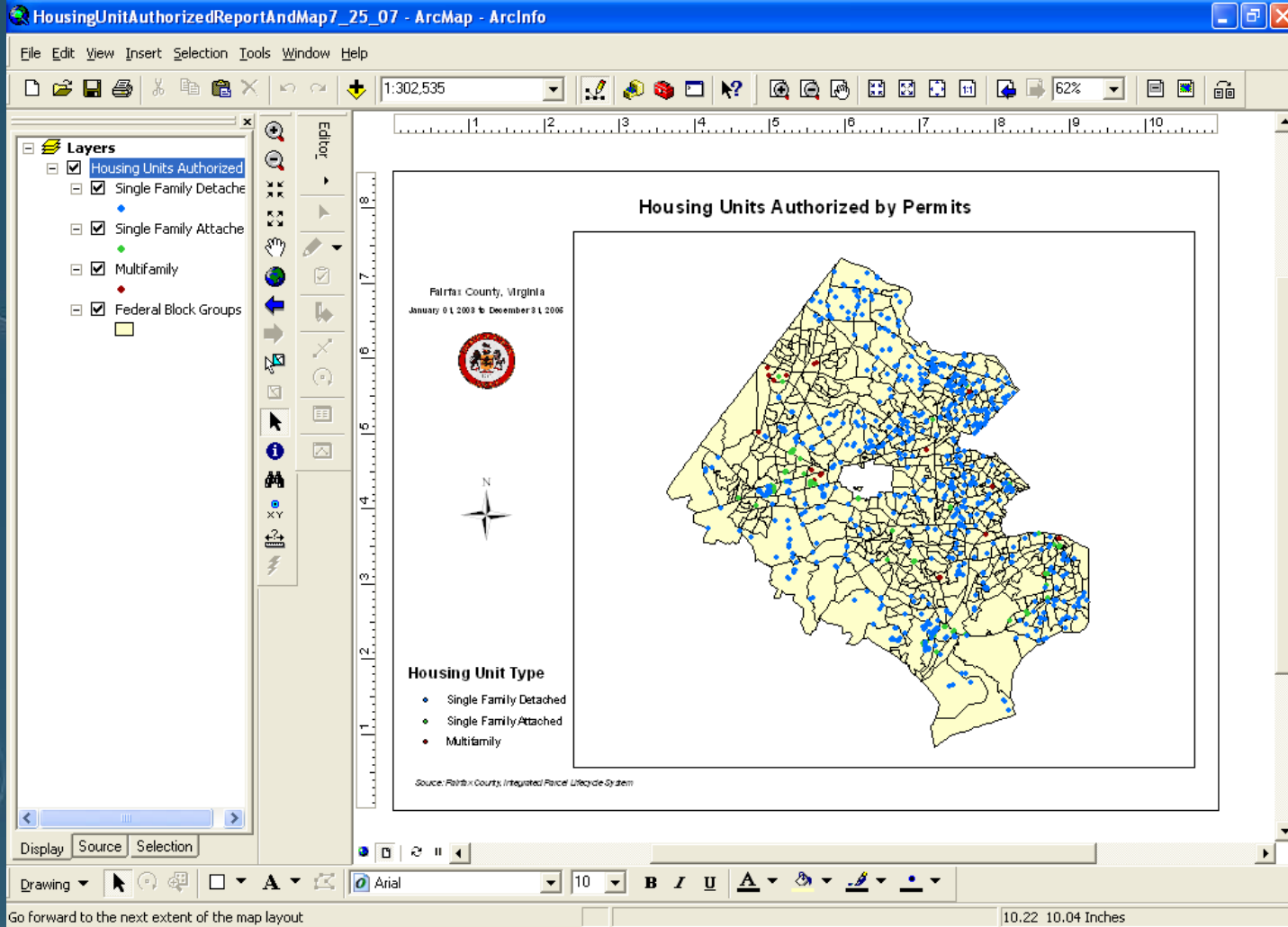
Note: Population includes both household population and group quarters population. Countywide totals may vary by geography depending on how well the geographic layer aligns with actual county boundaries.

Planning Districts	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Upper Potomac	190,771	178,726	179,457	180,074	180,458	180,506	271,952	275,057	278,160	281,265	284,371	197,298	199,341	201,384	203,427	205,471	205,471
McLean	68,575	64,642	64,864	64,912	64,934	64,937	66,274	67,587	68,913	70,229	71,534	72,925	73,836	74,768	75,683	76,612	76,612
Bull Run	113,520	118,026	119,793	120,759	121,080	121,126	122,854	124,478	126,104	127,730	129,343	130,501	131,635	132,772	133,912	135,052	135,052
Vienna	63,781	62,875	63,061	63,110	63,339	63,882	64,370	64,813	65,257	65,701	66,145	66,481	66,791	67,102	67,413	67,723	67,723
Fairfax	62,309	53,225	54,209	55,531	57,485	57,743	58,595	59,229	59,867	60,501	61,136	61,814	62,261	62,706	63,152	63,597	63,597
Jefferson	48,409	48,586	48,700	48,741	48,783	48,789	49,771	50,748	51,724	52,701	53,678	54,360	55,045	55,729	56,414	57,098	57,098
Baileys	42,388	42,270	42,342	42,396	42,503	42,518	43,188	43,600	44,012	44,424	44,836	45,018	45,306	45,594	45,883	46,171	46,171
Annandale	70,410	69,288	69,469	69,519	69,560	69,566	69,431	69,679	69,926	70,182	70,430	71,487	71,665	71,843	72,020	72,198	72,198
Lincolnia	17,331	17,702	17,758	17,788	17,795	17,795	17,938	18,047	18,156	18,265	18,374	18,454	18,530	18,606	18,682	18,758	18,758
Pohick	139,652	139,670	140,800	141,061	141,232	141,255	141,640	141,887	142,130	142,372	142,620	142,706	142,877	143,048	143,218	143,389	143,389
Rose Hill	48,420	48,185	48,514	48,725	48,805	48,811	49,348	49,641	49,934	50,227	50,520	50,696	50,901	51,106	51,311	51,516	51,516
Mount Vernon	88,340	87,415	88,400	89,129	89,696	89,756	91,683	93,504	95,342	97,163	99,004	100,321	101,593	102,889	104,162	105,456	105,456
Springfield	51,290	49,473	49,653	49,691	49,709	49,712	50,391	51,060	51,728	52,396	53,065	54,000	54,470	54,939	55,408	55,878	55,878
Lower Potomac	28,451	19,360	20,241	20,955	21,352	21,386	21,704	21,996	22,288	22,580	22,872	23,073	23,280	23,479	23,685	23,894	23,894

Population / Housing Units / Households

Ready NUM

# Sample IPLS Map





# Integrated Parcel Lifecycle System

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