



# Town of Goffstown

## CTAP Buildout Report



**CTAP  
PROGRAM**



**BUILDOUT  
METHODS**



**COMMUNITY  
SCENARIOS**



**BUILDOUT  
RESULTS**



**INDICATORS**



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A project of  
CTAP - Community  
Technical Assistance  
Program

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## **Introduction**

This report details the Community Technical Assistance Program (CTAP) Buildout Analysis results for the Town of Goffstown, New Hampshire. CTAP is a five-year initiative designed to assist communities that will be affected by the rebuilding of I-93. This buildout, one of 26, is designed to allow a community to assess their future needs and help them reduce any negative consequences from the increased development pressure caused by the widening of I-93.

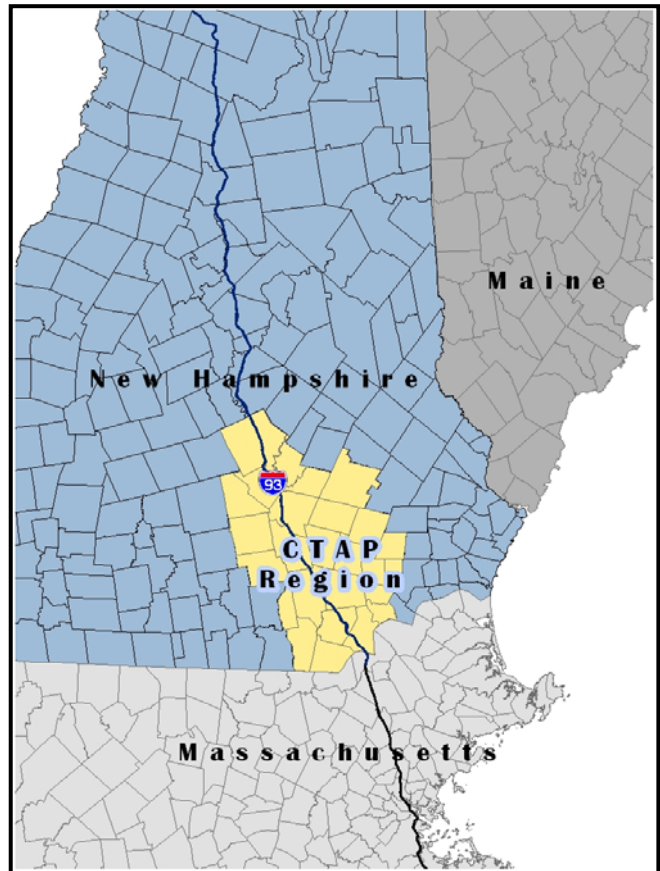
### What is CTAP?

CTAP is a joint effort between the 26 communities in the corridor, state agencies, regional planning commissions, and several non-profit organizations. The purpose of CTAP is to promote beneficial growth patterns and development practices that minimize the negative effects of growth on community services, remaining open space, schools, traffic patterns, environmental quality, and existing residential and commercial development. The CTAP initiative consists of several projects, one of which is a buildout analysis. A standardized buildout analysis will be completed for each of the 26 CTAP communities.

### What is a Buildout?

A buildout is a tool that allows planners to estimate future development based on different scenarios. This buildout is an analysis of existing adopted municipal policy. The buildout method allows for the potential testing of alternative land use regulation, open space planning and major development scenarios. A buildout consists of one

**The Buildout analysis shows the maximum growth that is likely to occur in a community under current land use regulations (zoning).**



or more scenarios. This buildout contains three scenarios: base, standard alternative, and community alternative. The process is designed with the capability for conducting future alternative scenario testing.

Comparing various scenarios allows planners to test the effects and consequences of new zoning ordinances. Changing setbacks, densities, and building restrictions can significantly alter a buildout. The analysis of results allows planners to evaluate the effectiveness and viability of changes to the zoning code. Questions that can be answered by a buildout scenario testing include: Where do I want my community to be at buildout? How much open space will there be? What will the traffic patterns look like? What will the quality of our environmental resources be like? Where will people live and what will the development patterns look like? The purpose of CTAP is to promote beneficial answers to all of these

questions. The CTAP program aims to achieve goals that cover four themes: community infrastructure, environment protection, land use, and open space, downtown/village centers and community vitality and the local economy. The CTAP Buildout project is a community empowerment tool to help people make the best long-term planning decisions.

### What a Buildout is not?

A Buildout is not a prediction of what will occur. It is a planning tool to allow community decision makers to understand the impacts of growth under a set of land use rules. In addition, the Community Specified scenarios in this report do not necessarily represent official policy goals or a plan for the community, but are merely a test of one alternative growth scenario.

### Scenario Planning

Scenarios are an analysis about what might be. They are not predictions about what will happen but they are possible futures based on what already exists, on current trends, and on the values and on the preferences of a community. Each community is unique and may have different goals and face

different challenges to how it will change over time. The scenarios in this report are based on both standardized methods, repeated for each CTAP Community, and a scenario where the details have been specified by community leaders and stakeholders. The scenarios are built as a way to compare outcomes and learn about the potential effects of government policies over a long span of time. Because the analysis is quantitative, scenarios can be compared directly utilizing charts and maps. The point is to help discover which long-term growth scenarios our preferable and most closely match the goals and values of the community.

### Report Template

The format of this report is a template that will be used to uniformly present the buildout results for each of the 26 communities in the CTAP Region. Maps, charts and a few paragraphs of text will change for each community. This report presents only the results of the buildout scenarios. It does not attempt to be a planning analysis of those results. Each Community Report will contain the same Introduction and Overview sections on the process. Only maps, charts and the Community Scenario section will change for each different community.

### **Buildout questions:**

- **Where do I want my community to be at buildout?**
- **How much open space will there be?**
- **What will the traffic patterns look like?**
- **What will the quality of our environmental resources be like?**
- **Where will people live and what will the development patterns look like?**



## Methods

### Tools and Data

Buildouts were conducted using Geographic Information systems (GIS) software. The application used for this project is developed by the mapping software company ESRI. ArcMap and CommunityViz are the core programs used in the analysis. The CommunityViz program is an extension that works with ArcMap and is used specifically to perform buildout analyses. CommunityViz was developed by the Orton Family Foundation in order to provide communities with an affordable tool to perform buildout studies.

The GIS data used in this study originates from several sources. The base shapefiles (road centerlines, conservation lands, wetlands, etc.) were provided by GRANIT, the official New Hampshire GIS data provider. The land use polygons were created through a prior CTAP project, using 2005 aerial images provided by the NH Department of Transportation. The classification applied to the land use polygons is very detailed, using over 50 land uses. The current building points were also determined using the 2005 aerial images.



## CTAP Existing Land Use

- Multi Family
- Single Family
- Group and Transient Quarters
- Commercial Retail
- Government
- Institutional
- Educational
- Other commercial, services, and institutional
- Industrial
- Mining
- Transportation and Utilities
- Commercial Complex
- Mixed Use
- Outdoor Recreation
- Vacant
- Agricultural land
- Brush or transitional land
- Forest land
- Water
- Wetlands
- Barren Land

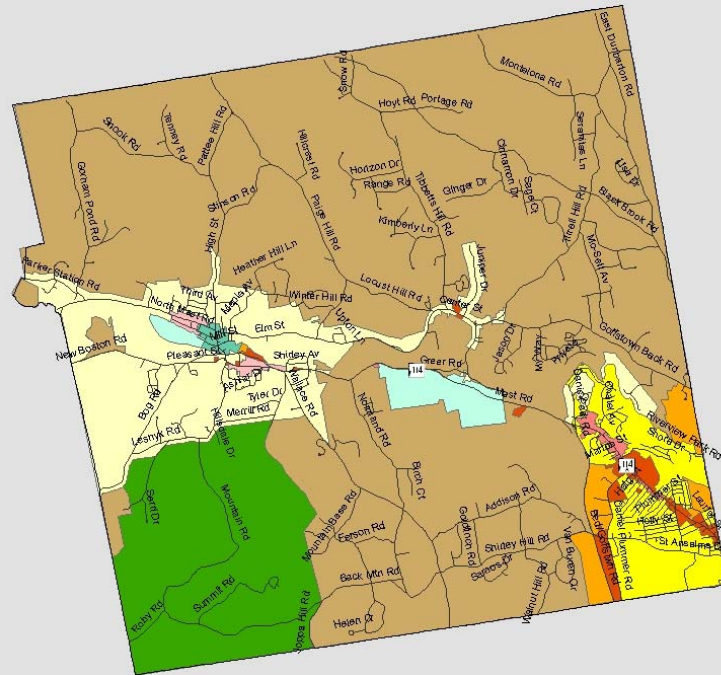






# Goffstown Zoning

- Agricultural
- Commercial Industrial Flex Zone (CIFZ)
- Commercial
- Conservancy
- Industrial
- Residential 1
- Residential 2
- Residential Small Buisness Office (RSBO1)
- Residential Small Buisness Office (RSBO2)
- Village Commercial



## Procedures

To complete the buildouts a CTAP Buildout Working Group was established. Members of the group consisted of the Four Regional Planning Commissions, who would be performing the analysis: Central New Hampshire Regional Planning Commission, Nashua Regional Planning Commission, Rockingham Regional Planning Commission & Southern New Hampshire Regional Planning Commission. This group was responsible for defining the tools, methods and procedures for performing the buildouts. The group is also responsible for the format of the presentation of results. Staff from each Regional Planning Commission conducted the buildout for communities in their region.

All CTAP buildouts follow the same basic procedures allowing them to be combined upon completion. The existing data used for each municipality is obtained from statewide layers, and clipped for each town. The data created for the buildout follows a strict set of guidelines in order to produce a uniform set for the CTAP region.

CommunityViz software uses the land use and zoning inputs with the constraint layers to create a buildable area GIS layer. First a numeric buildout is calculated using lot size and allowable density information. Next a spatial buildout is conducted. This process takes into account spatial restrictions (i.e. Setbacks from roads, distance between buildings). The spatial restrictions for the base buildout are determined using the current zoning ordinances. This produces a layer of new estimated buildings and places them as points

### Map layers used in the Buildout Analysis.

Land use inputs:

### Constraint layers:

on the map. Standard Alternative and Community Alternative Buildouts using the same process with adjustments to the land use rules (Zoning changes, allowable uses & allowable densities) that are specified in those scenarios.

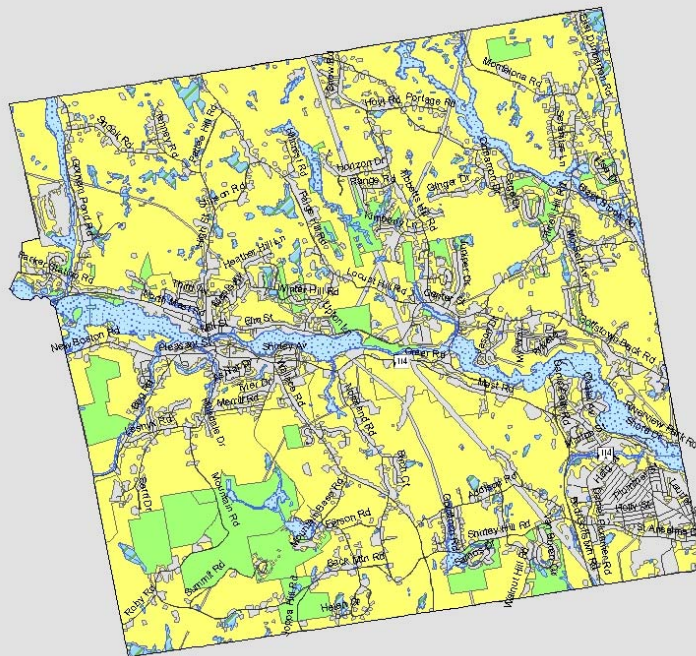
Once the buildout is complete, a template, containing all assumptions, indicators and charts is applied. All indicators are calculated from the basic buildout results. The standard template ensures that the calculations and charts are the same for all of the region's buildouts.

Detailed input and output reports, produced directly from the CommunityViz software, are available in Appendix A.



## Developable Lands & Constraints

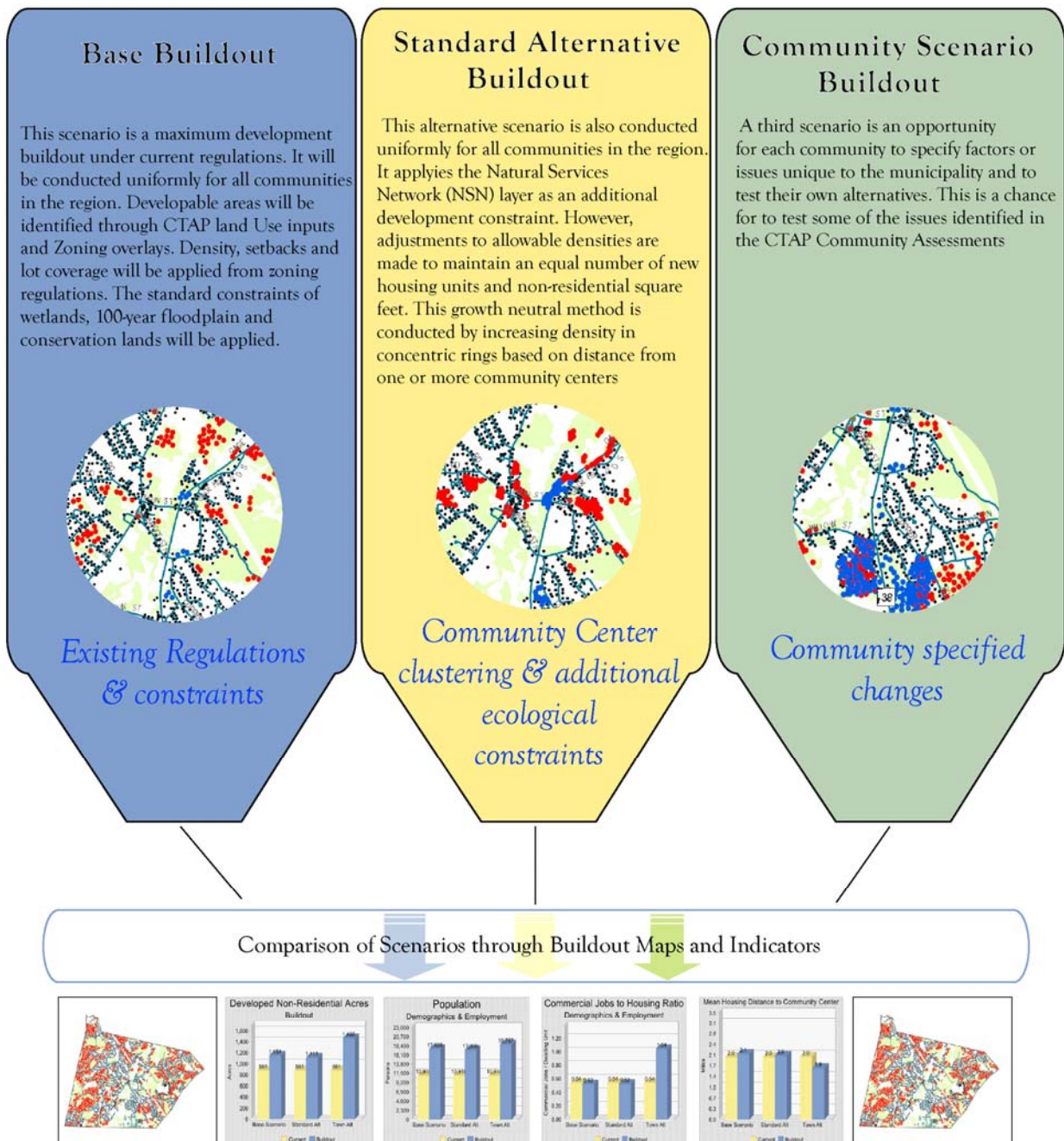
-  100 Year Floodplain  
 NWI Wetlands  
 Conservation Land  
 Developable Land





## Buildout Scenarios

This report tests and compares three alternative scenarios for growth. Each scenario produces different land use patterns, different densities and different development totals. The mix of jobs and housing, available open space, traffic, schools, water and air quality and community character are all impacted in different ways. By comparing the maps and charts produced by each scenario, a community can analyze how that growth pattern will affect their city or town.





## Base Scenario

The first scenario, conducted for all communities, is the Base Scenario. This scenario represents what buildout would look like following the current land use regulations. Density, setbacks and lot coverage is applied from the current zoning regulations. The standard development constraints of wetlands, 100-year floodplain and conservation lands are applied.

If current zoning is a blueprint for how the community should grow then this scenario is the culmination of the existing regulations. The indicators in this report are meant to portray a wide range of conditions at buildout. Development

growth means more than additional persons, houses or commercial buildings. It can have impacts on

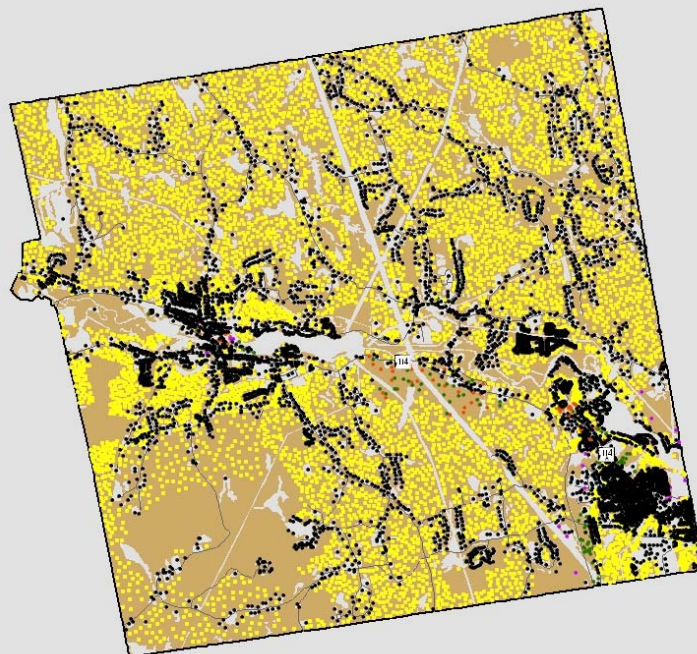
If current zoning is a blueprint for how the community should grow then the Base Buildout Scenario is the culmination of the existing regulations.

finances, traffic, municipal services, environmental quality and sense of community or place. The land use pattern for how a community grows, where development will take place and in what densities, can also have a significant impact.



## Base Buildout

- Current Buildings
- Buildings**
- Mixed Use
  - Multi-Family Residential
  - Commercial
  - Single Family Residential
  - Buildable Land



### Standard Alternative

The standard alternative scenario will also be conducted uniformly for all communities in the region. The scenario is different from the Base Scenario in a couple of key ways. First, it applies the Natural Services Network (NSN) layer as an additional development constraint. Second, adjustments to allowable densities will be made to maintain an equal number of new housing units and non-residential square feet. This growth neutral method will be conducted by increasing density in concentric rings based on distance from one or more community centers.

This scenario is focused on creating densely developed downtown areas, sparing important ecological areas identified in the Natural Services

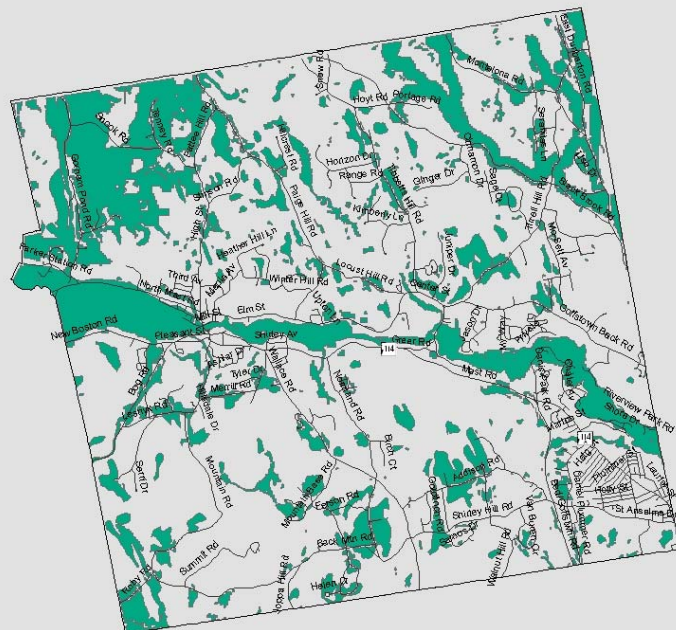
Network (NSN). The NSN is a co-occurrence analysis and includes four components: water supply lands, flood storage lands, productive soils, and important wildlife habitat.

The Standard Alternative Scenario does not represent a policy proposal for the community. It is a standardized method to analyze an alternative growth scenario that can be applied uniformly to all CTAP communities.



## Natural Services Network Constraint

## Natural Services Network (NSN)



The key to the Standard Alternative Scenario is to adjust allowable development densities so that an approximately equal amount of growth occurs as the Base Buildout despite the fact that more land has been set aside as un-buildable. This scenario is applying a standardized, uniform growth alternative to all communities in the CTAP region. It is not

limiting the amount of commercial and residential growth that might occur in the community, but it is managing it differently.

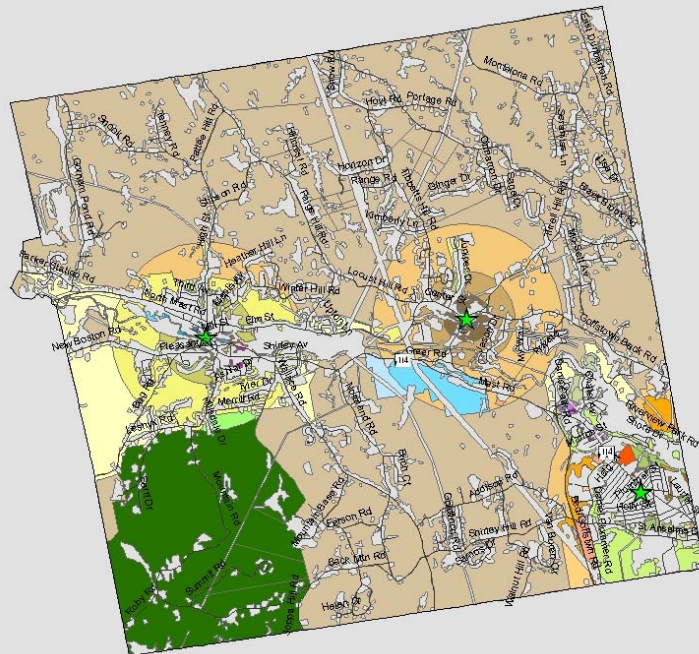
### Standard Alternative Scenario:

- NSN added as additional development constraint.
- Greater density around community centers.
- Same amount of growth as base scenario



## Standard Alternative Density Changes

- ★ Community Centers
- Buildable Areas**
- AGRICULTURAL--outside 1 mile
  - AGRICULTURAL--within 1 mile
  - AGRICULTURAL--within 1/2 mile
  - AGRICULTURAL--within 1/4 mile
  - CIFZ--outside 1 mile
  - CIFZ--within 1 mile
  - CIFZ--within 1/2 mile
  - CIFZ--within 1/4 mile
  - COMMERCIAL--outside 1 mile
  - COMMERCIAL--within 1 mile
  - COMMERCIAL--within 1/2 mile
  - COMMERCIAL--within 1/4 mile
  - CONSERVANCY--outside 1 mile
  - CONSERVANCY--within 1 mile
  - INDUSTRIAL--outside 1 mile
  - INDUSTRIAL--within 1 mile
  - INDUSTRIAL--within 1/2 mile
  - RESIDENTIAL 1--outside 1 mile
  - RESIDENTIAL 1--within 1 mile
  - RESIDENTIAL 1--within 1/2 mile
  - RESIDENTIAL 1--within 1/4 mile
  - RESIDENTIAL 2--outside 1 mile
  - RESIDENTIAL 2--within 1 mile
  - RESIDENTIAL 2--within 1/2 mile
  - RESIDENTIAL 2--within 1/4 mile
  - RSBO1-BOTH--outside 1 mile
  - RSBO1-BOTH--within 1 mile
  - RSBO1--within 1/2 mile
  - RSBO2--outside 1 mile
  - RSBO2--within 1 mile
  - RSBO2-BOTH--outside 1 mile
  - RSBO2-BOTH--within 1 mile
  - VILLAGE COMMERCIAL--within 1/2 mile
  - VILLAGE COMMERCIAL--within 1/4 mile



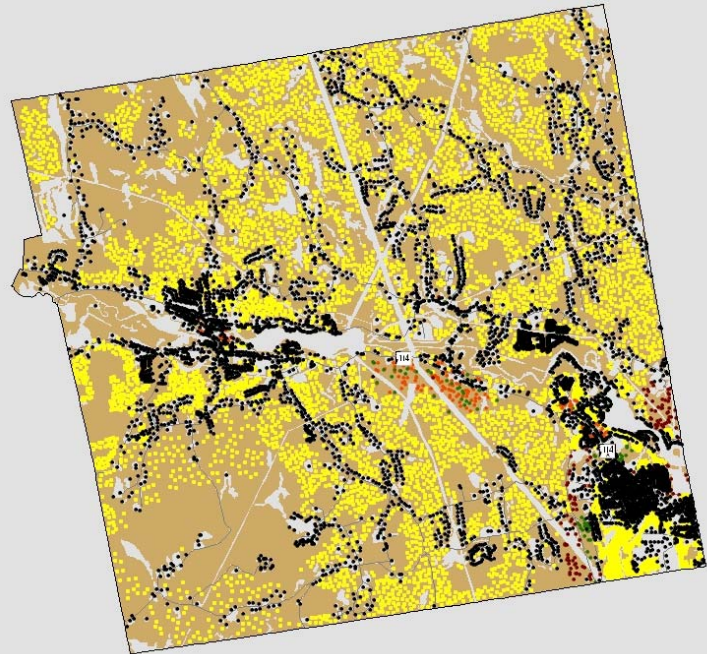


## Standard Alternative Buildout

- Buildable Land
- Current Buildings

### Buildings

- Mixed Use
- Multi-Family Residential
- Commercial
- Single Family Residential





## Community Alternative

A third scenario was provided for each community to specify factors or issues unique to the municipality and to test their own alternatives. This scenario is known as the **community alternative**. This is a

The Community Alternative scenario is only a test of an alternative growth pattern. It is a planning tool conducted to see what changes might occur. It does not necessarily represent a policy plan for the community

chance for certain properties to be removed or added to the developable areas list or for particular regulation changes to be implemented. In order to

get the community's input for their scenario, meetings were conducted with local officials and volunteers. This was an opportunity for the community leaders to test what would occur if their Town or City were to grow in a different way. This is a chance to apply goals specified in Master Plan or other planning document, or to test the affects of purchasing large tracts of land for conservation.

The Community Alternative scenario is only a test of an alternative growth pattern. It is a planning tool conducted to see what changes might occur. It does not necessarily represent a policy plan for the community. Unlike the Standard Alternative Scenario, the Community Scenario does not require growth to be equal to the Base Buildout. Significantly lower or greater amounts of development are possible.

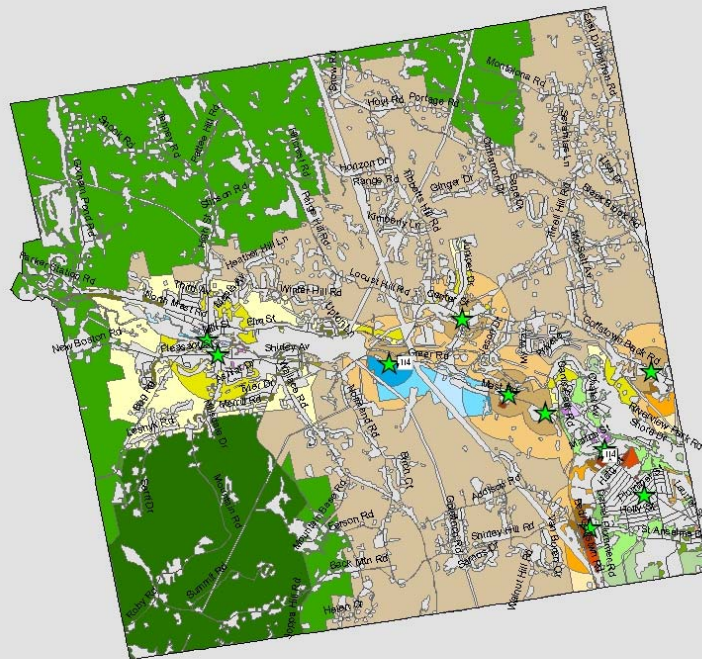


## Town Alternative Scenario

★ New Community Centers

### Town Alternative Scenario Buildable Lands

- Agricultural
- Agricultural within 1/2mile
- Agricultural within 1/4mile
- CIFZ
- CIFZ within 1/2mile
- CIFZ within 1/4mile
- Commercial
- Commercial within 1/2mile
- Commercial within 1/4mile
- Conservancy
- Industrial
- Industrial within 1/2mile
- Industrial within 1/4mile
- New Conservancy
- RSBO1 within 1/2mile
- RSBO1 within 1/4mile
- RSBO1
- RSBO2 within 1/2mile
- RSBO2 within 1/4mile
- Residential 1
- Residential 1 within 1/4mile
- Residential 1 within 1/2mile
- Residential 1-Water/Sewer
- Residential 1-Water
- Residential 2
- Residential 2 within 1/2mile
- Residential 2 within 1/4mile
- Residential 2- Both
- Village Commercial within 1/4mile



The town alternative buildout, also known as the community scenario, in Goffstown is based off of the 2006 Master Plan Update. It consists of changes in zoning regulations and increases in zoning densities within ½ mile and ¼ mile to additional community centers in order to create clustering.

The conservancy zoning district consisting of a minimum lot size of 5 acre was expanded to include northern and western Goffstown as well as the land just east of the current conservancy district.

Additional community centers were added to create a total of 9 community centers throughout the town. Clustering was created by increasing zoning densities to 10 dwelling units per acre within ¼ mile of each community center and 7 dwelling units per acre within ½ mile.

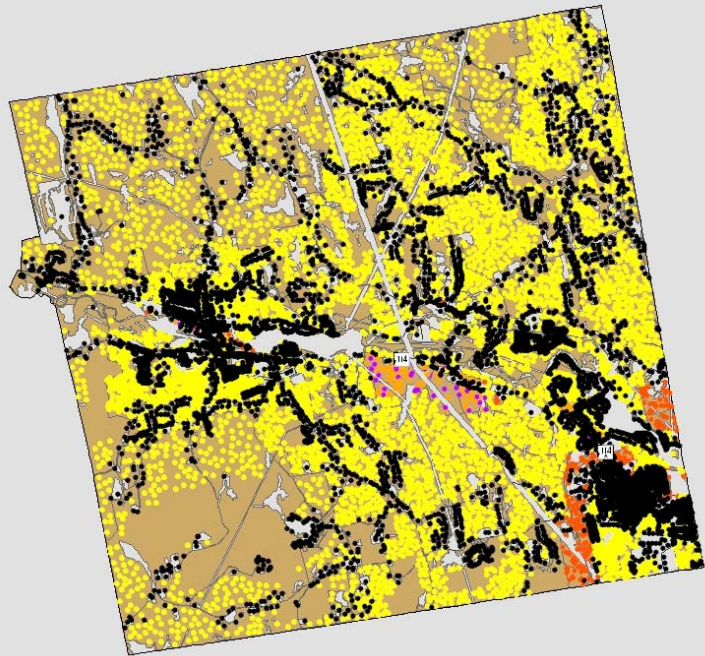
A timescope is a tool used to determine the year a town will reach its buildout capacity based on growth rates. An exponential growth rate was used in this timescope because it was determined to be a more realistic projection than a linear timescope. Based on the houses built per year from 1979 until the present the rate of growth is 3.4%. The buildout years for each scenario can be found in the table below.

Scenario	Year Buildout	Population 2020	Population 2040
Base	2032	21, 076	31, 058
Standard Alternative	2030	21, 076	29, 161
Town Alternative	2031	21, 076	29, 806



## Town Alternative Buildout

- Current Buildings
  - Town Alternative Buildable Lands
- Buildout Buildings**
- Mixed Use
  - Multi-Family Residential
  - Commercial/Industrial
  - Single Family Residential

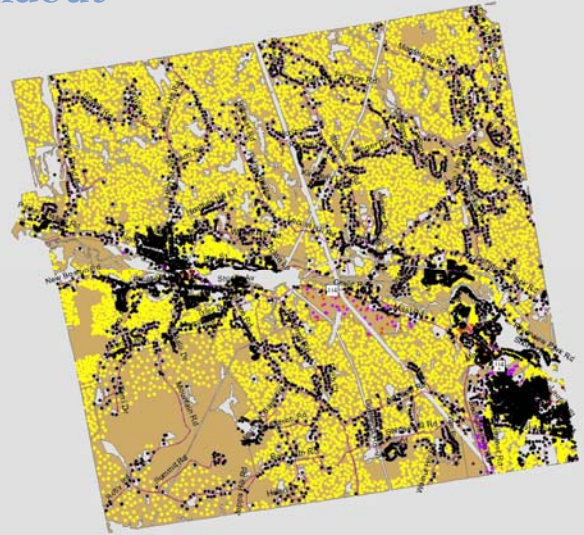




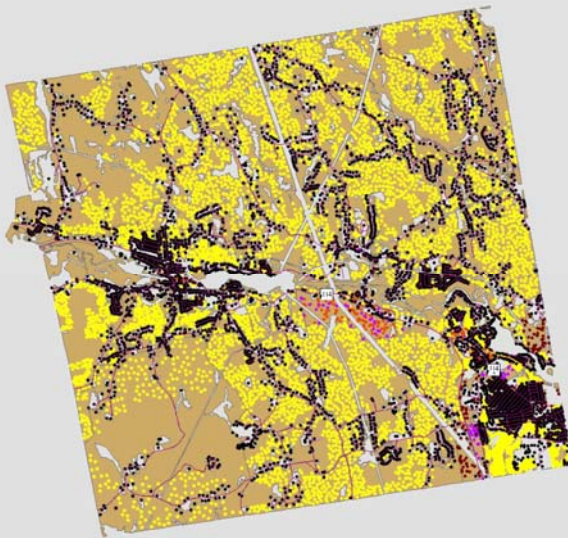
## Buildout Scenario Comparison

### Base Buildout

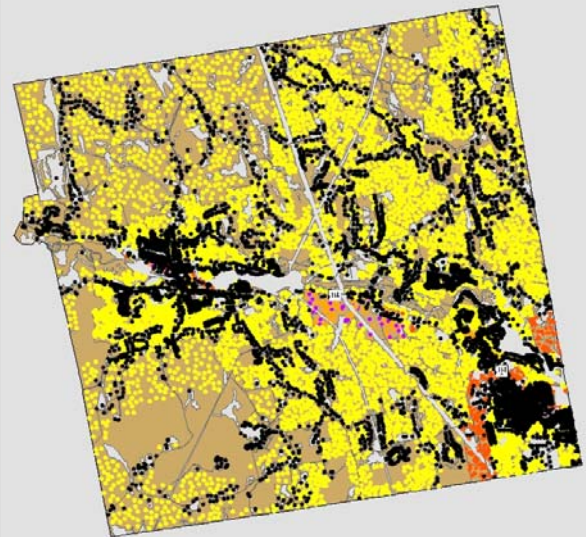
- Current Buildings
- Buildout Buildings**
- Mixed Use
  - Multi-Family Residential
  - Commercial/Industrial
  - Single Family Residential



### Standard Alternative



### Town Alternative







## Indicators

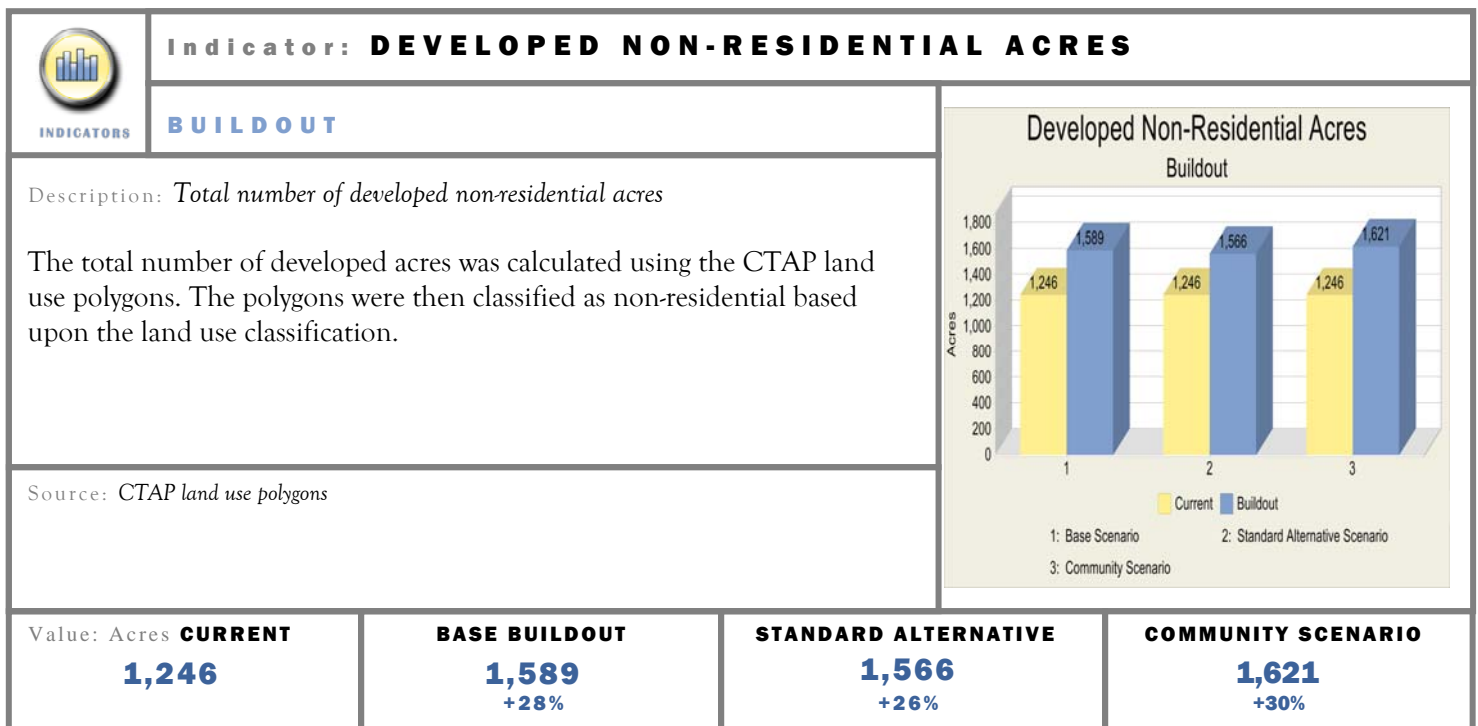
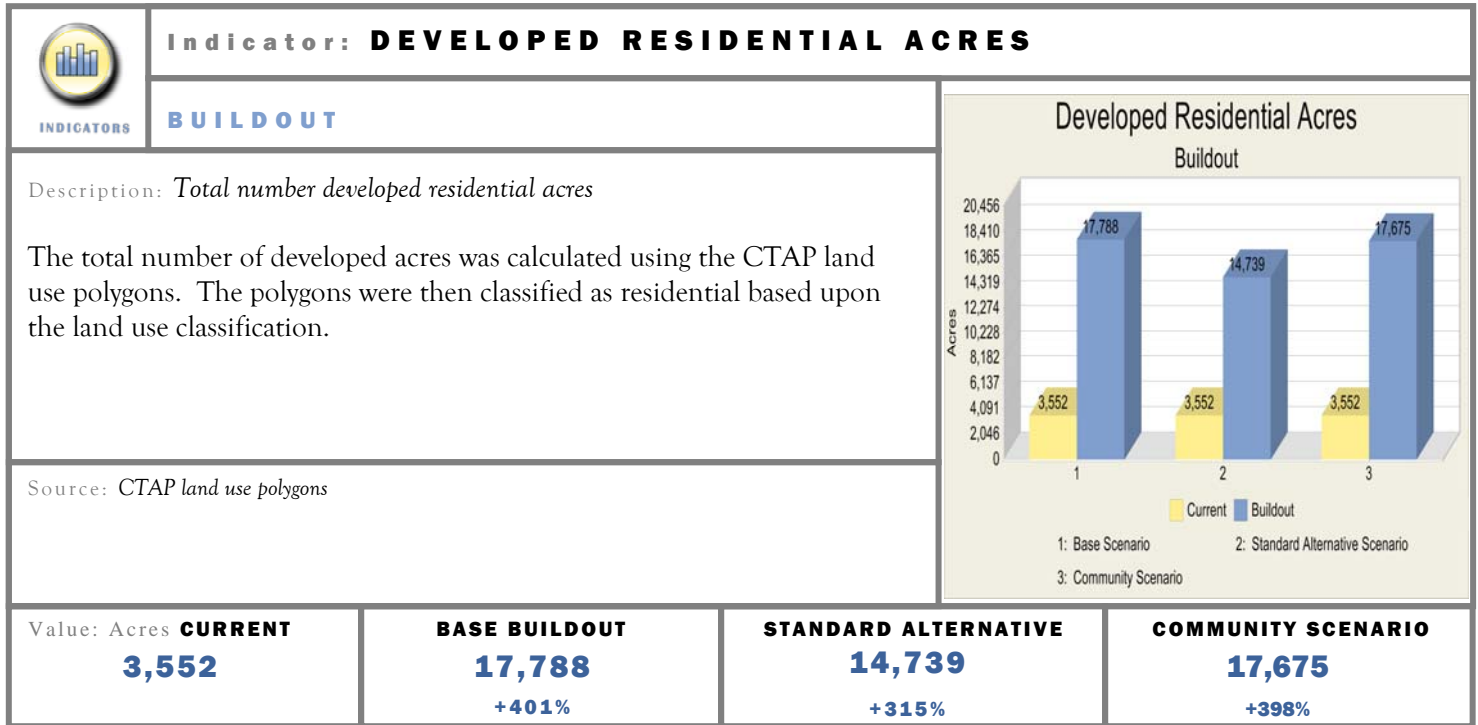
Indicators are impact or performance measures that help people choose alternatives that best match their objectives or desired outcomes. An indicator is a calculated value that represents the impacts or outcomes of a scenario. An indicator might be used to evaluate costs, revenues, average household size, or total daily auto trips. The buildout indicators in this report are meant to provide a macro, overall picture of how a community could look at buildout.

Comparing indicators by the different buildout scenarios provides an assessment of the effects different development patterns may have. There are 40 indicators arranged in seven categories: Buildout, Demographics & Employment, Environmental & Open Space, Land Use Characteristics, Municipal Demands, Water & Energy Use & Transportation. The following pages explain what each indicator means and chart the differences by scenario.

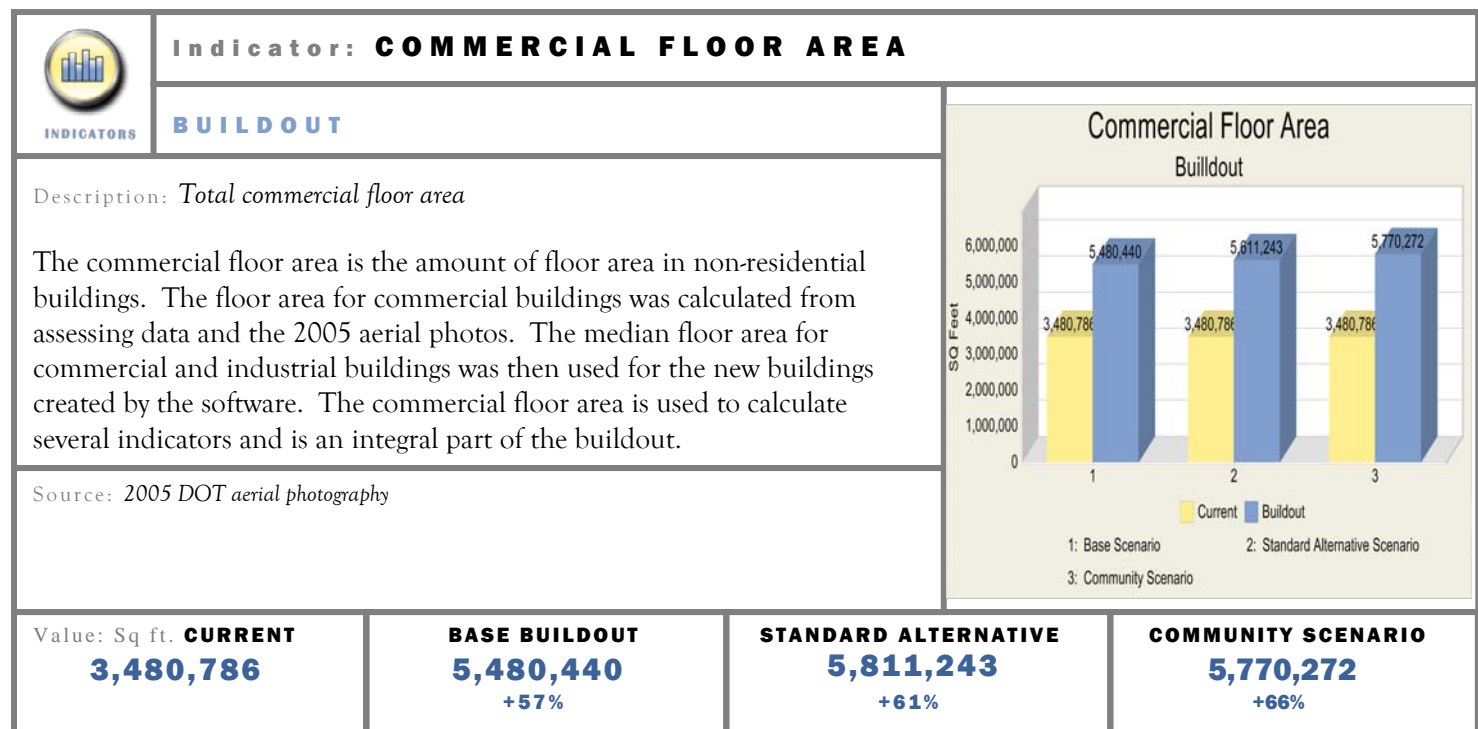
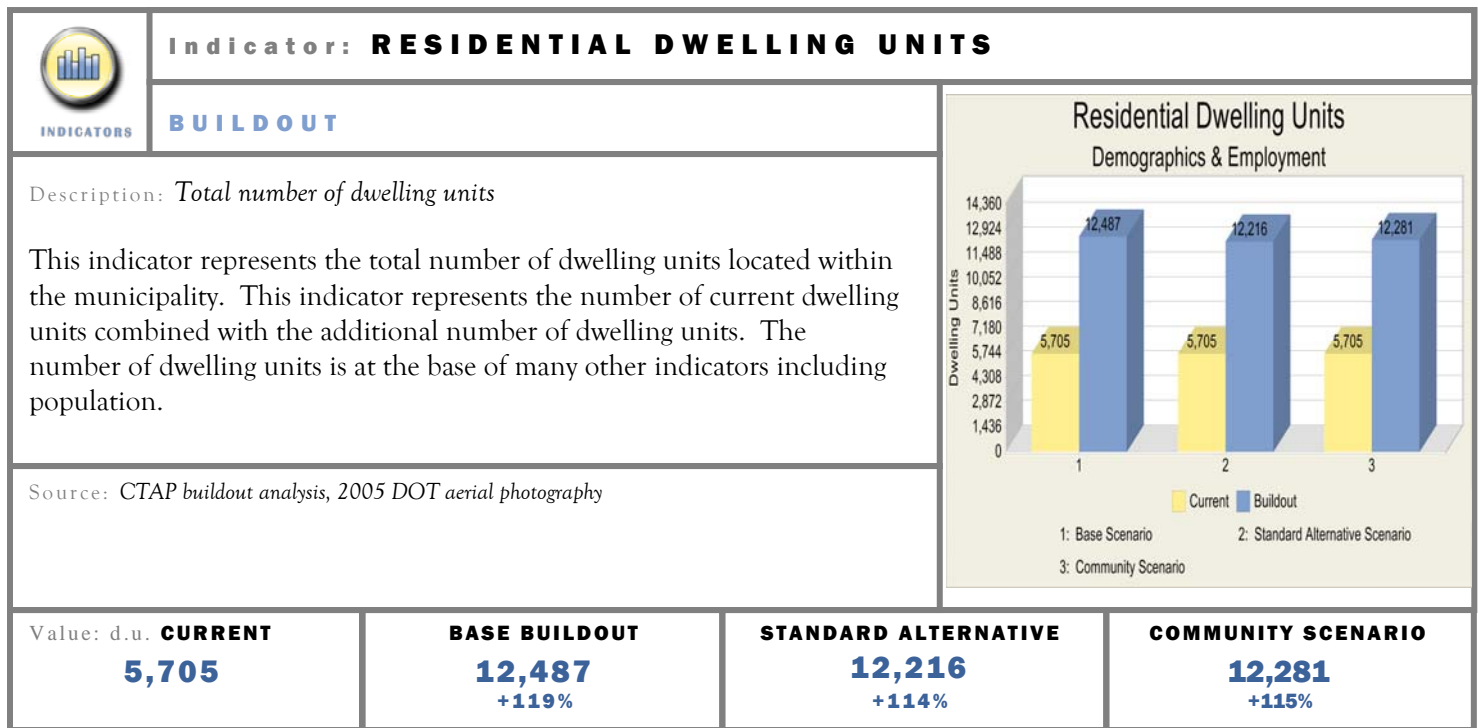
Category	Indicator	Units	Current	Base Buildout	Percent Change	Standard Alternative Scenario	Percent Change	Town Alternative Scenario	Percent Change
Buildout	Developed Residential Acres	Acres	3,552	17,778	401%	14,739	315%	17,675	398%
	Developed Non-Residential Acres	Acres	1,246	1,589	28%	1,566	26%	1,621	30%
	Residential Dwelling Units	d.u.'s	5,705	12,487	119%	12,216	114%	12,281	115%
	Commercial Floor Area	sq. ft	3,480,786	5,480,440	57%	5,611,243	61%	5,770,272	66%
Demographics & Employment	Population	Persons	14,605	31,967	119%	31,273	114%	31,439	115%
	School Kids Population	School Kids	2,760	6,042	119%	5,911	114%	5,942	115%
	Labor Force Population	Workers	5,972	13,071	119%	12,788	114%	12,856	115%
	Commercial Jobs	Jobs	4,229	6,659	57%	6,818	61%	7,011	66%
	Jobs to Housing Ratio	Jobs/d.u.	0.74	0.53	-28%	0.56	-24%	0.57	-23%
Environmental & Open Space	Open Space Supply	Acres	18,894	4,315	-77%	7,387	-61%	4,396	-77%
	Impervious Surfaces	Percent	4.7	15.9	238%	13.6	189%	15.9	238%
Land Use Characteristics	Total Density	Persons/mi <sup>2</sup>	388	850	119%	832	114%	836	115%
	Residential Housing Density	d.u./Acre	1.61	0.7	-57%	0.83	-48%	0.69	-57%
	Residential Development Footprint	Acres/d.u.	0.62	1.42	129%	1.21	95%	1.44	132%
	Recreation Density	Ft <sup>2</sup> /person	590	267	-55%	273	-54%	274	-54%
	Housing Proximity to Recreation	Miles	0.71	0.87	23%	0.81	14%	0.79	11%
	Housing Proximity to Community Centers	Miles	1.1	1.4	27%	1.4	27%	1.3	18%
	Housing Proximity to Amenities	Miles	0.71	0.94	32%	0.91	28%	0.87	23%
	Walkability	Percent	23.33	13.69	-41%	13.7	-41%	14.93	-36%
	Housing Proximity to Transit	Miles	2.52	3.05	21%	2.84	13%	2.8	11%
Municipal Demands	Employment Proximity to Transit	Miles	2.52	3.05	21%	2.85	13%	2.8	11%
	Fire & Ambulance Service	Calls/Years	1,168	2,577	121%	2,502	114%	2,515	115%
	Police Service	Calls/Years	18,548	40,598	119%	39,717	114%	39,928	115%
Water & Energy Use	Solid Waste Demand	Annual Tons	7,887	17,262	119%	16,887	114%	16,977	115%
	Total Energy Use	mbtu/hh/yr	1,003,227	1,885,937	88%	1,776,024	77%	1,762,124	76%
	Residential Energy Use	mbtu/hh/yr	655,845	1,338,989	104%	1,206,022	84%	1,186,251	81%
	Commercial Energy Use	mbtu/hh/yr	347,382	546,948	57%	560,002	61%	575,873	66%
Transportation	Residential Water Use	mgals	699	910	30%	810	16%	803	15%
	Vehicles	Vehicles	10,497	22,976	119%	22,477	114%	22,597	115%
	Vehicle Trips per Day	Trips/Day	51,593	113,347	120%	107,440	108%	107,176	108%
	Annual CO Auto Emissions	Grams/Yr	7,771,094	17,113,453	120%	15,862,178	104%	15,733,048	102%
	Annual CO <sub>2</sub> Auto Emissions	Tons/Yr	161	354	120%	328	104%	325	102%
	Annual NO <sub>x</sub> Auto Emissions	Grams/Yr	487,201	1,072,911	120%	994,464	104%	986,368	102%
	Annual Hydrocarbon Auto Emissions	Grams/Yr	981,574	2,161,616	120%	2,003,566	104%	1,987,256	102%



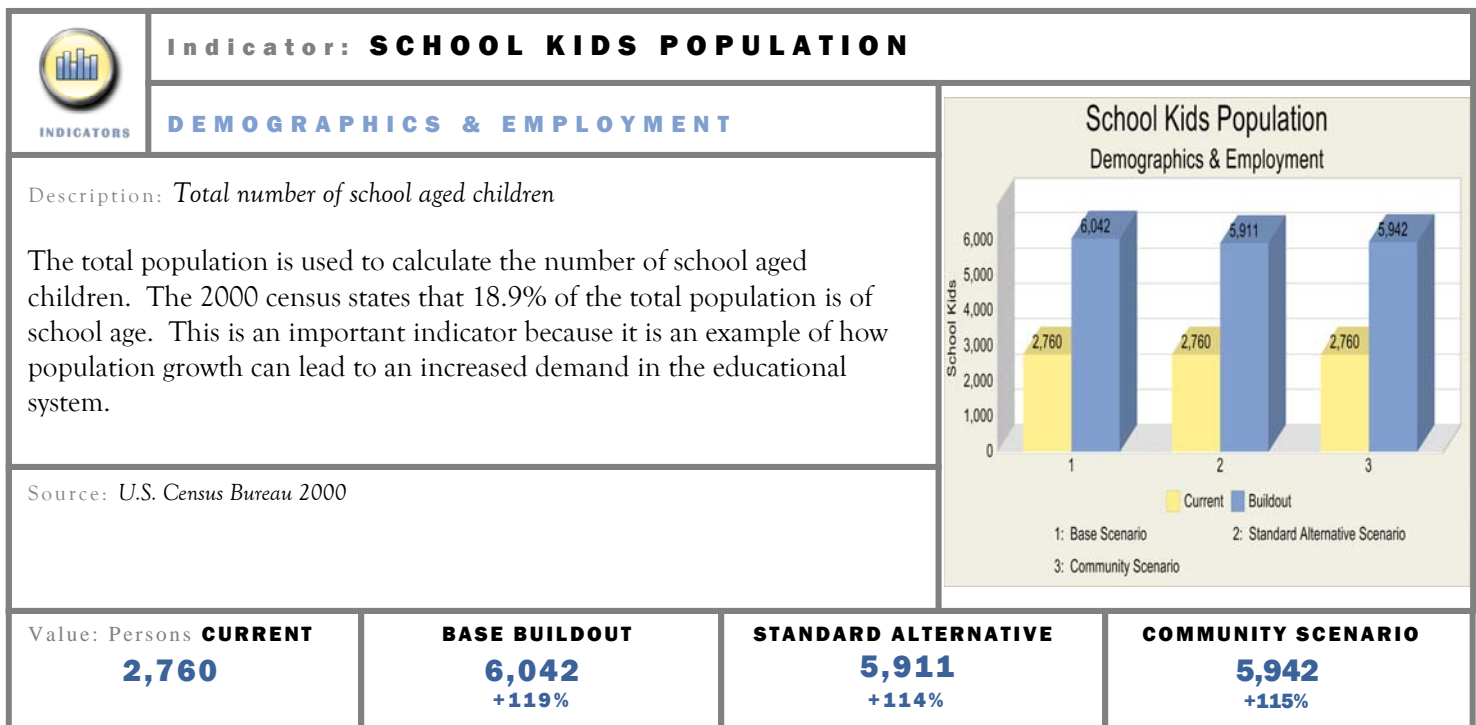
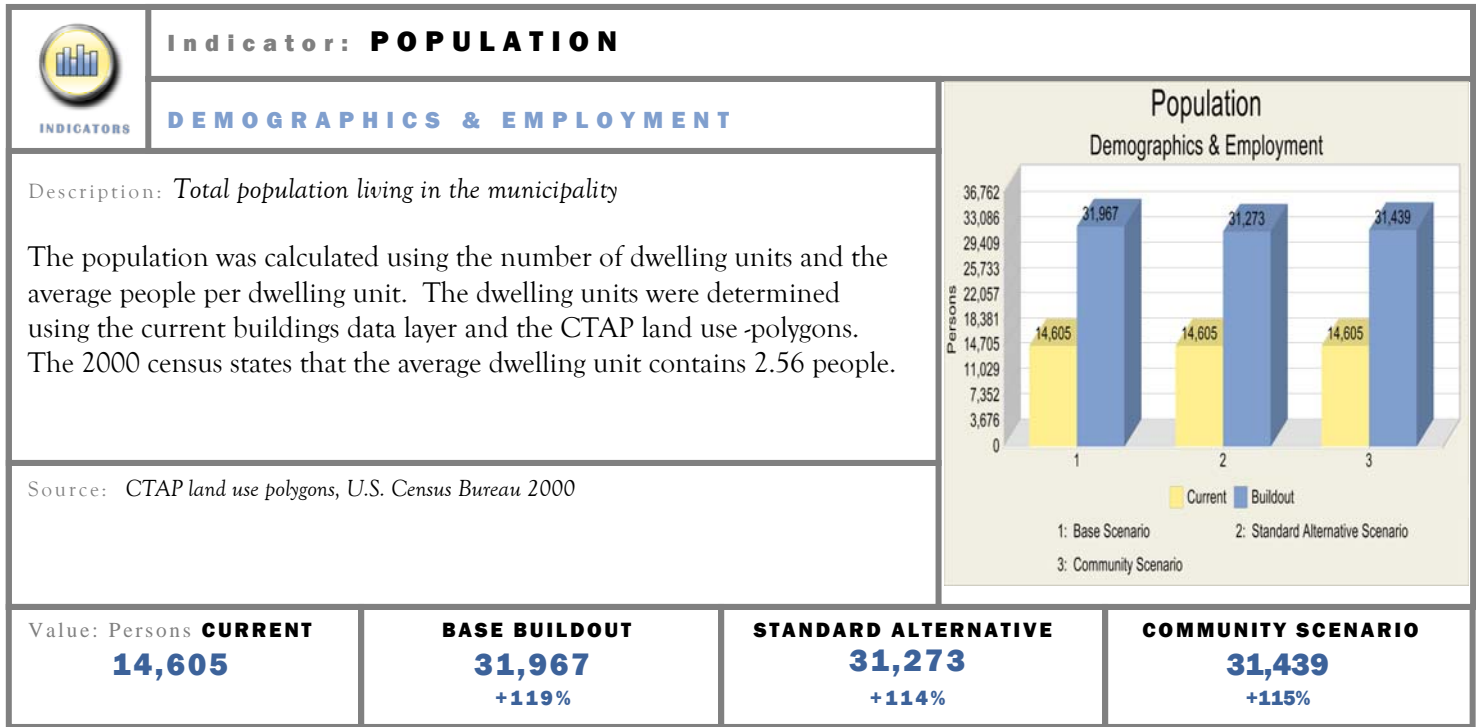
## Indicators - BUILDOUT



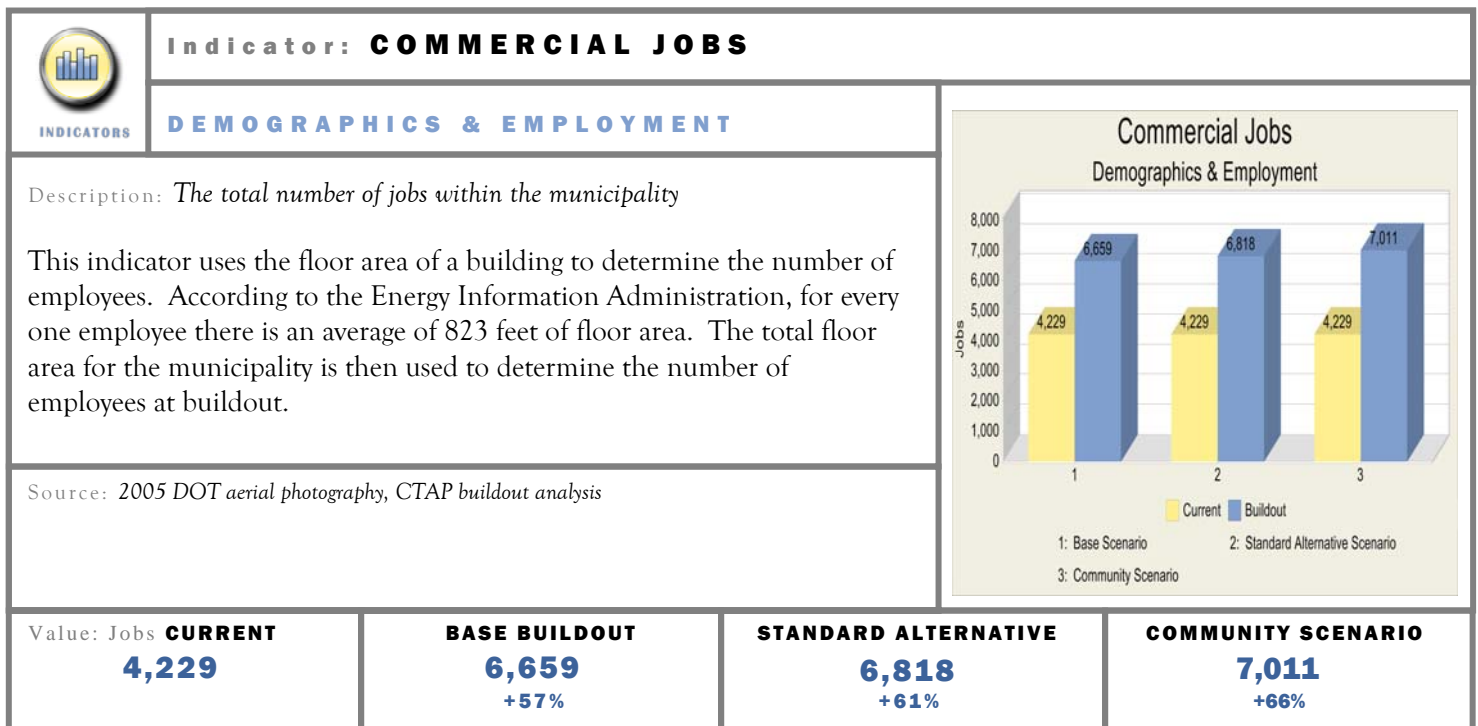
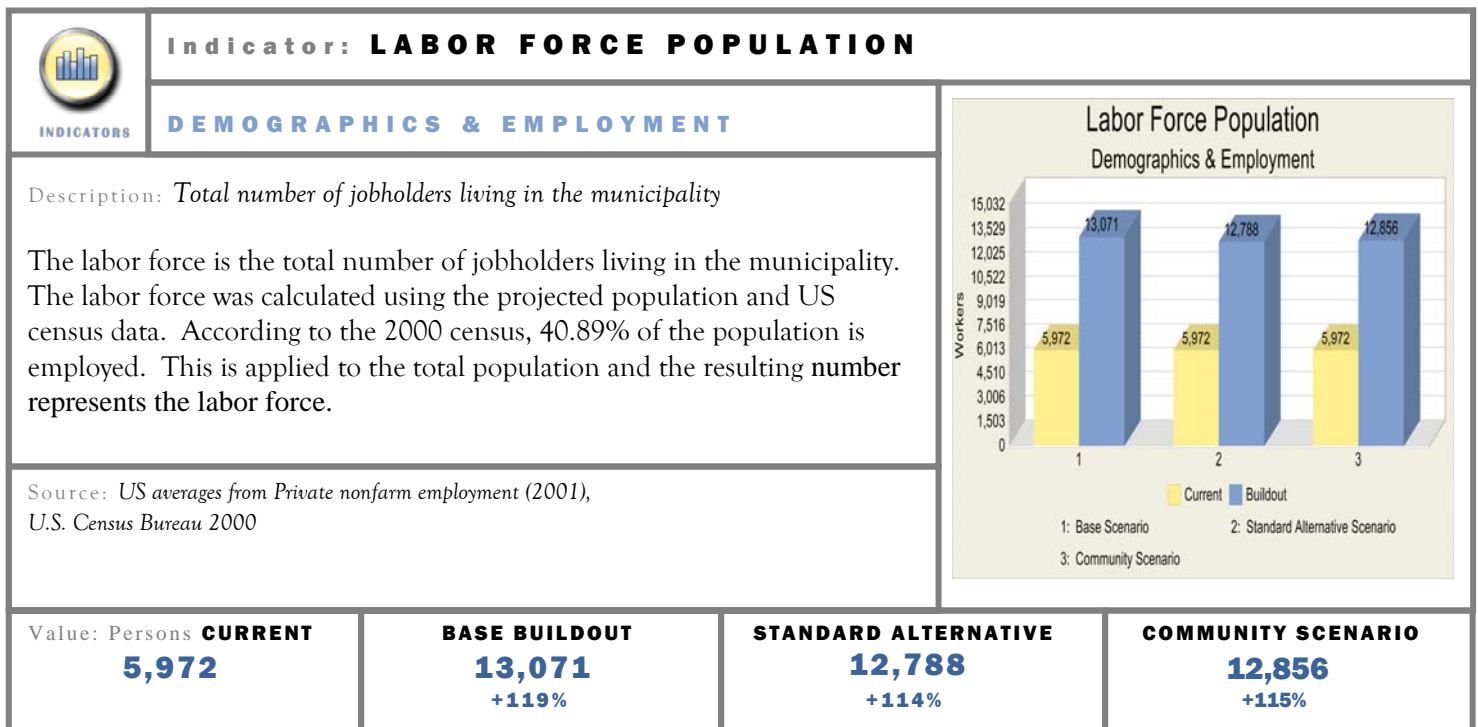
## Indicators - BUILDOUT cont.



## Indicators - DEMOGRAPHICS & EMPLOYMENT


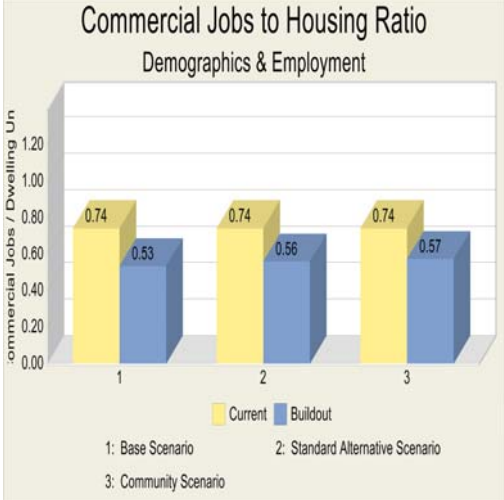


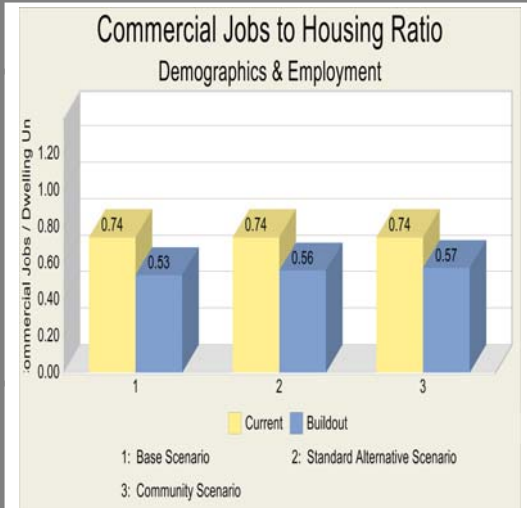
Indicators - DEMOGRAPHICS & EMPLOYMENT cont.



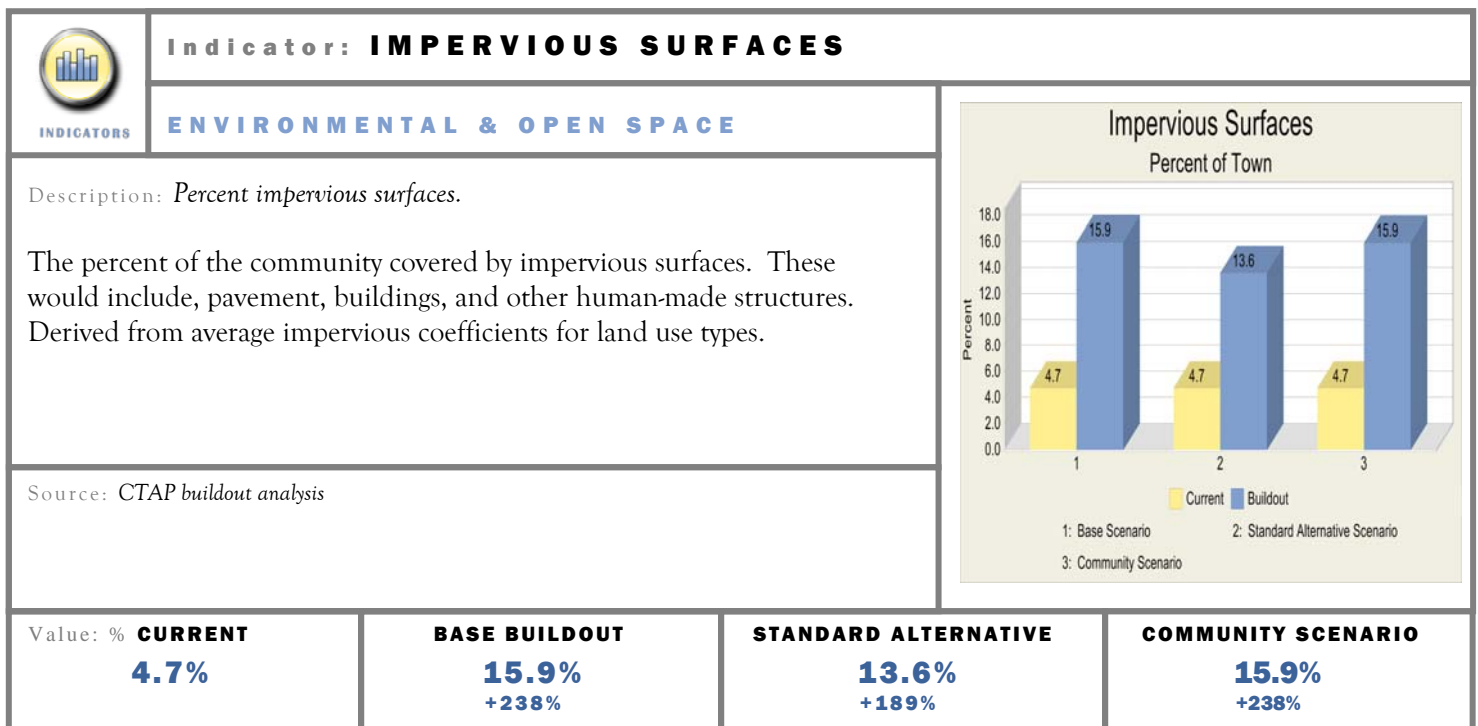
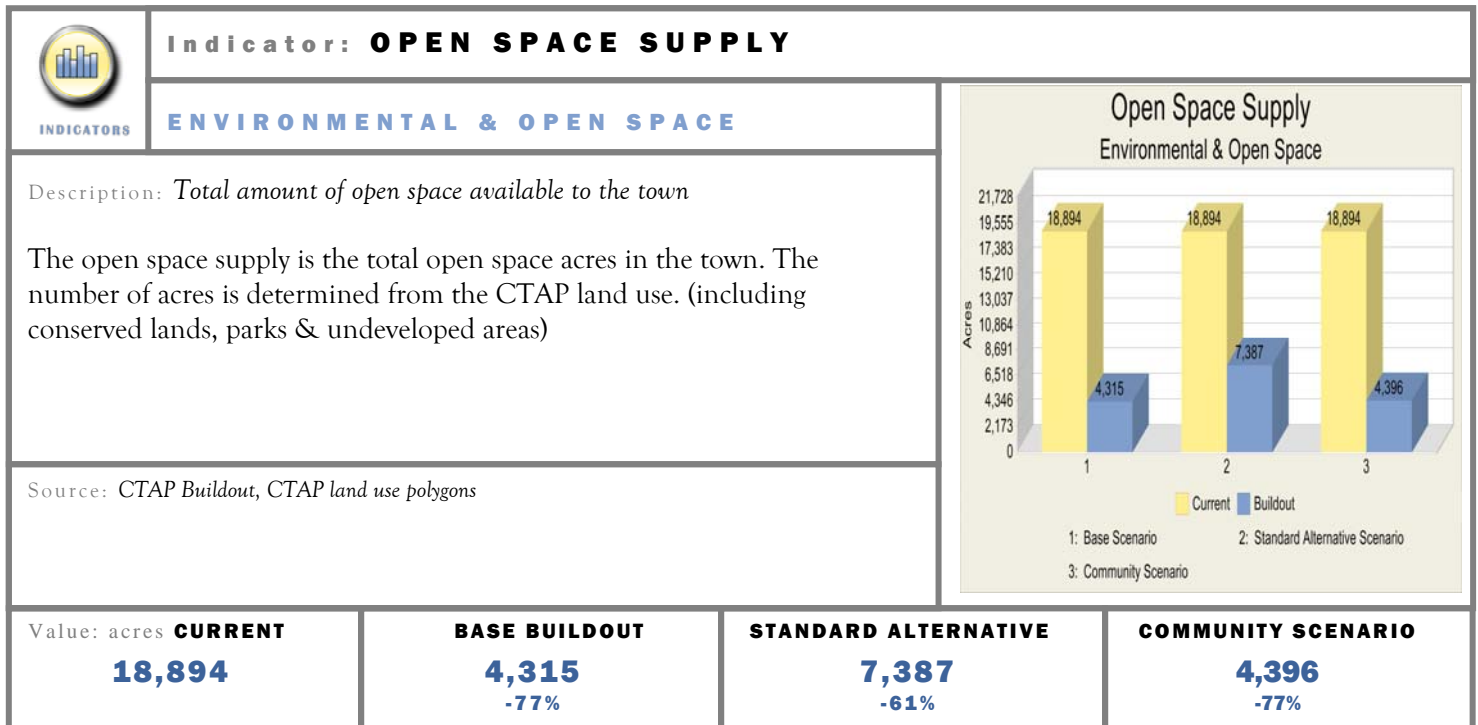


Indicators - DEMOGRAPHICS & EMPLOYMENT cont.

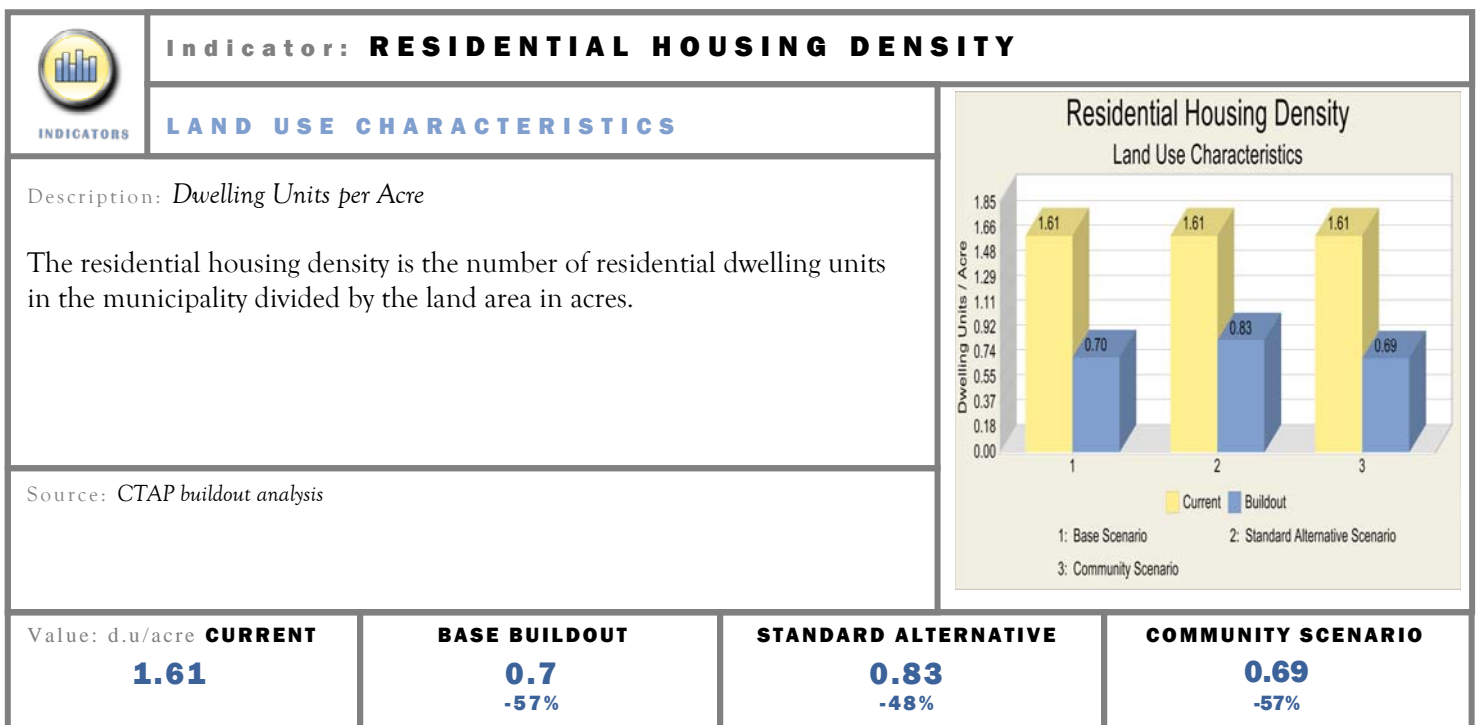
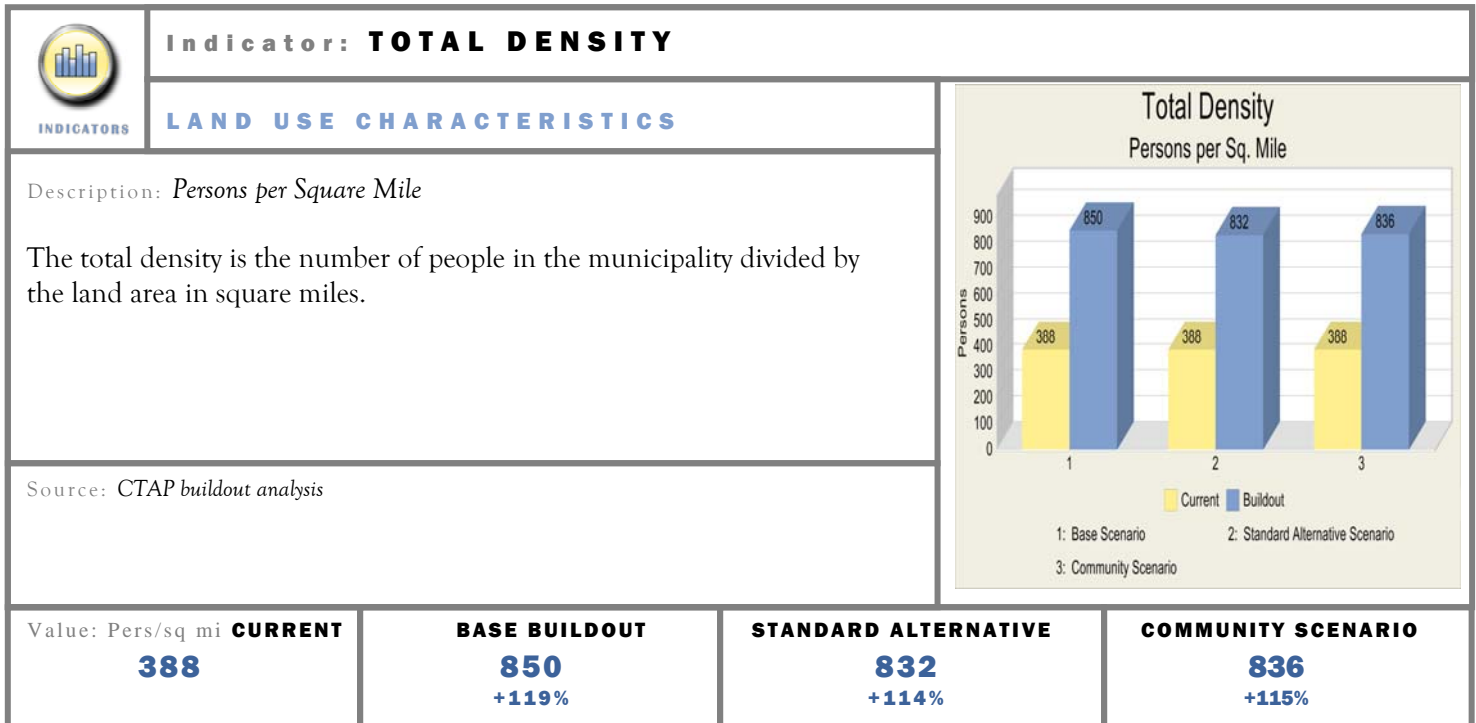
 INDICATORS	Indicator: <b>JOBS TO HOUSING RATIO</b>			
DEMOGRAPHICS & EMPLOYMENT				
<p>Description: <i>Number of commercial jobs per dwelling unit</i></p> <p>The commercial jobs to housing ratio is the number of jobs per dwelling unit. This indicator is a representation how many jobs are located in the municipality relative to the population.</p> <p>Source: CTAP buildout analysis</p>				
				
Value: Pers/job <b>CURRENT</b> <b>0.74</b>	<b>BASE BUILDOUT</b> <b>0.53</b> -28%	<b>STANDARD ALTERNATIVE</b> <b>0.56</b> -24%	<b>COMMUNITY SCENARIO</b> <b>0.57</b> -23%	



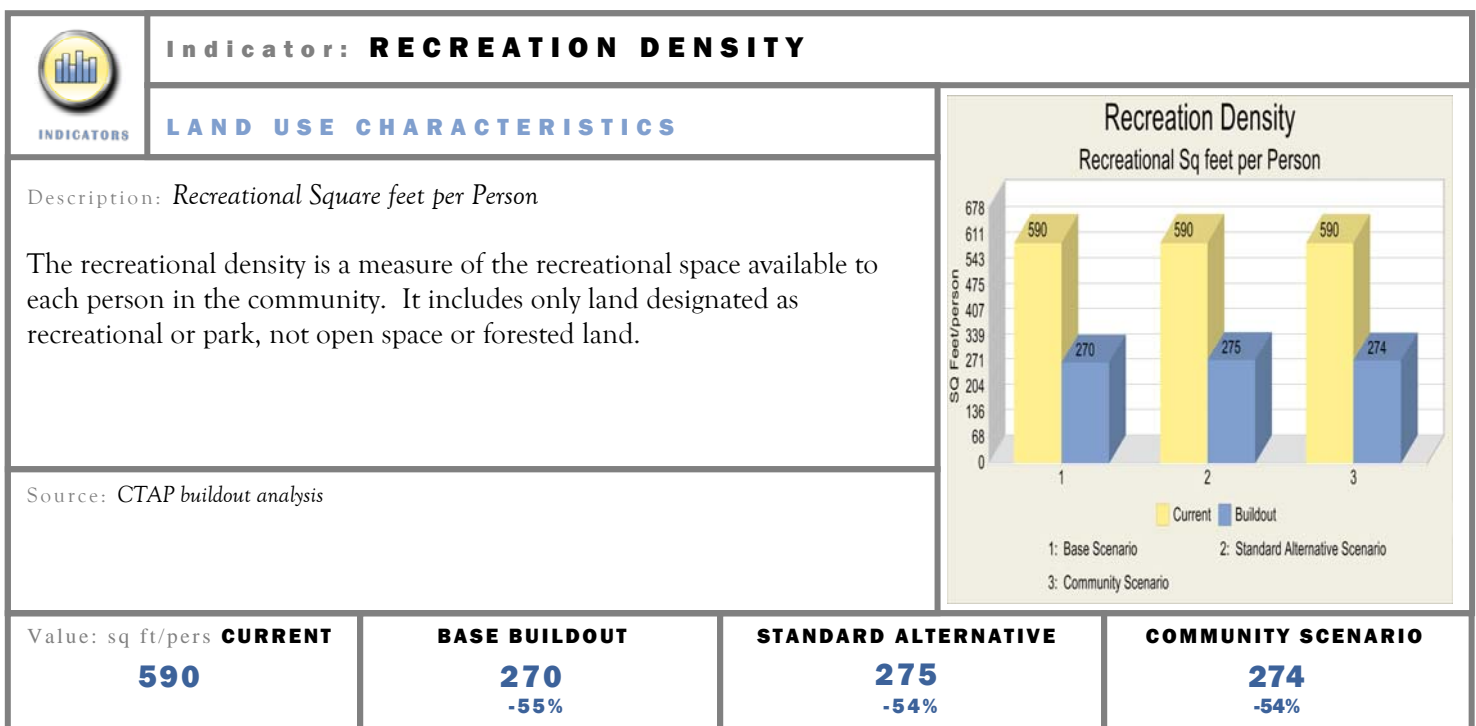
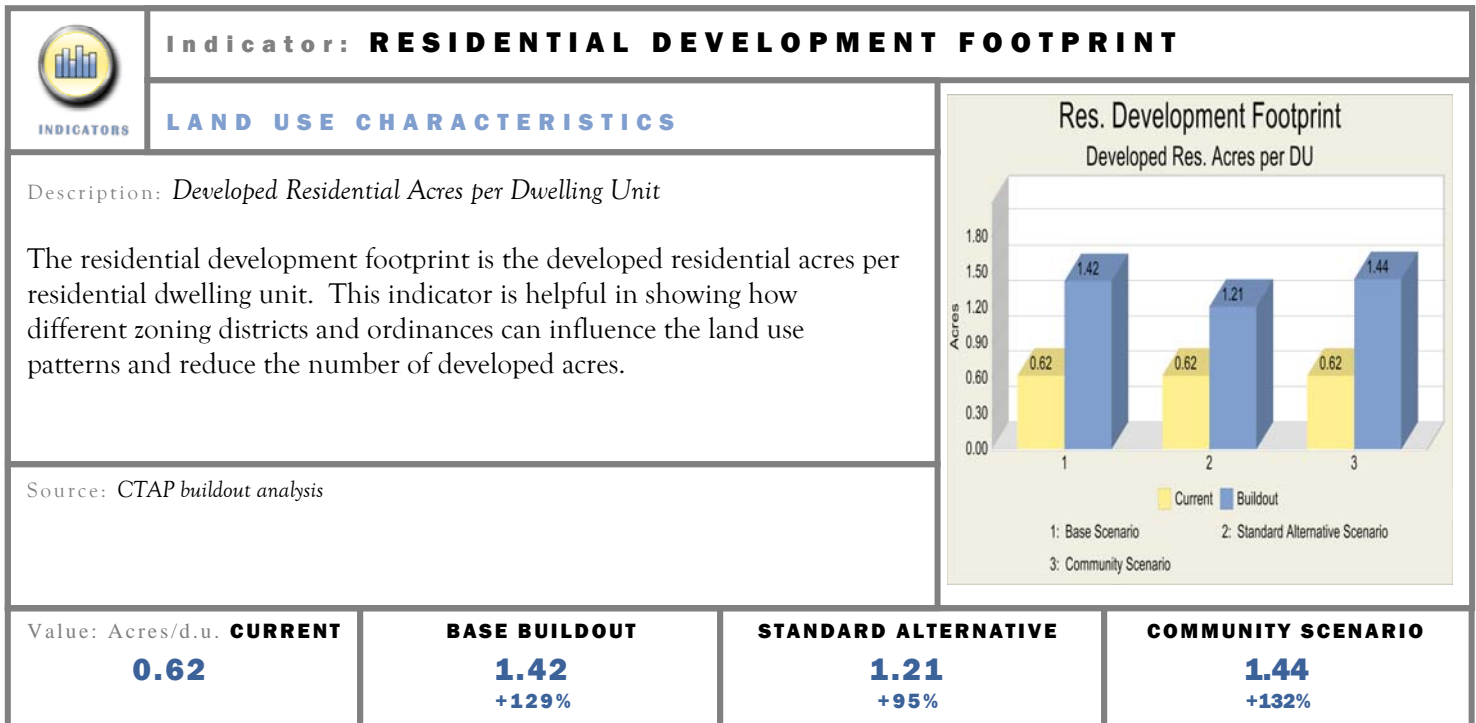
## Indicators - ENVIRONMENTAL & OPEN SPACE



## Indicators - LAND USE CHARACTERISTICS

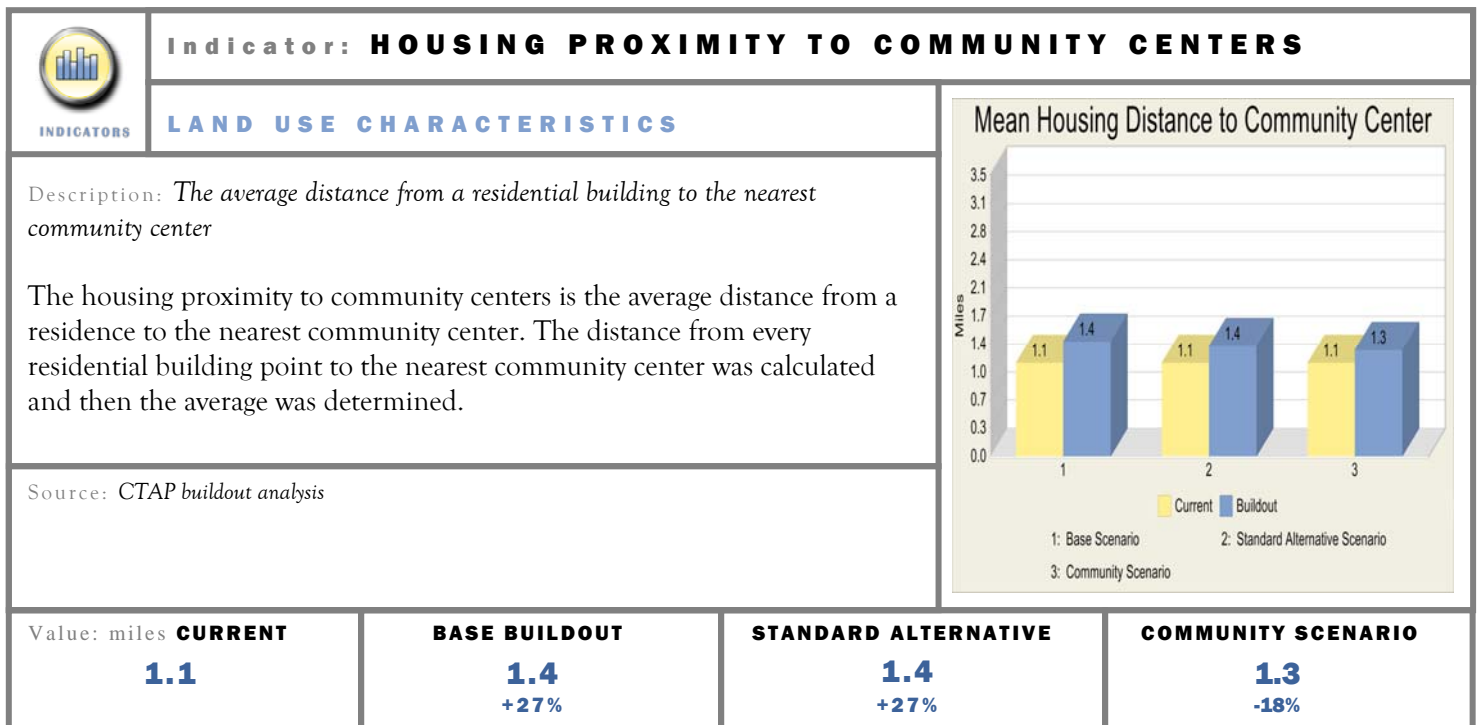
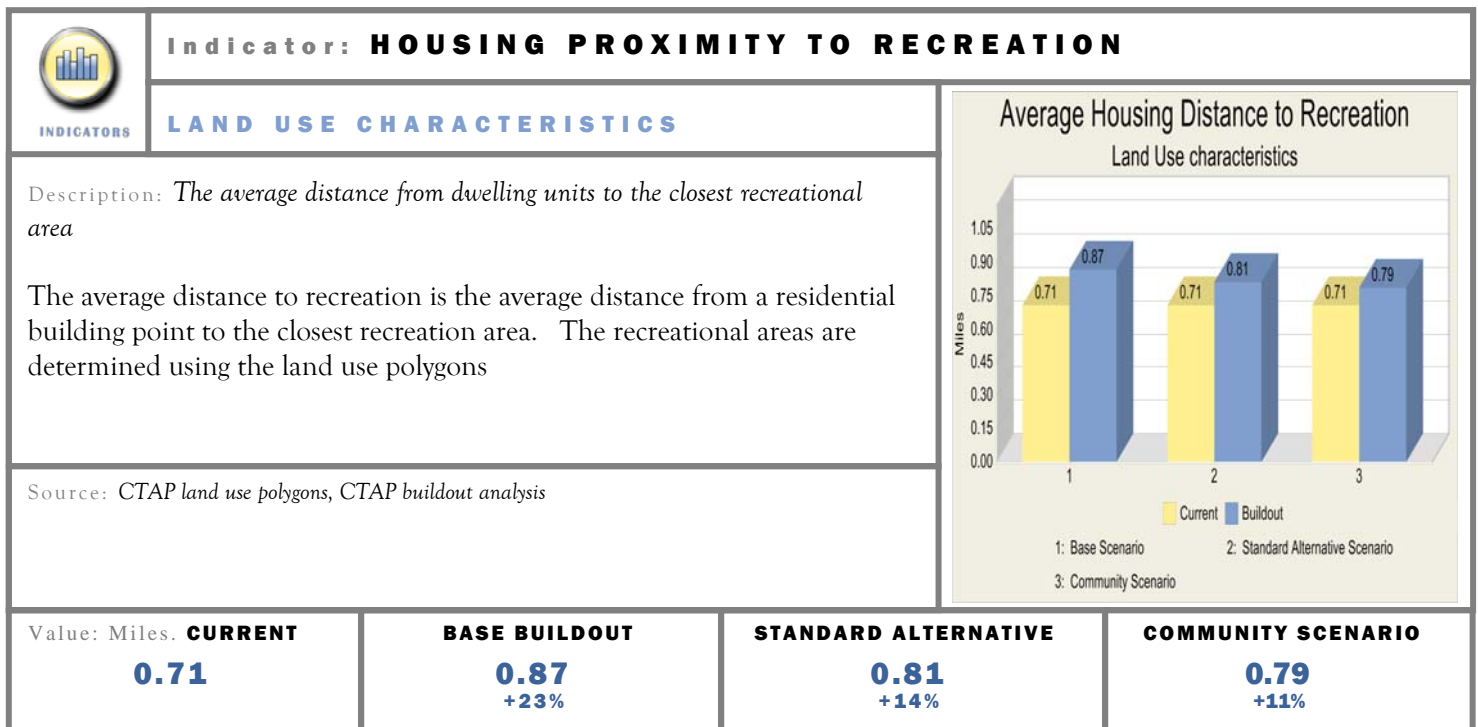


## Indicators - LAND USE CHARACTERISTICS cont.

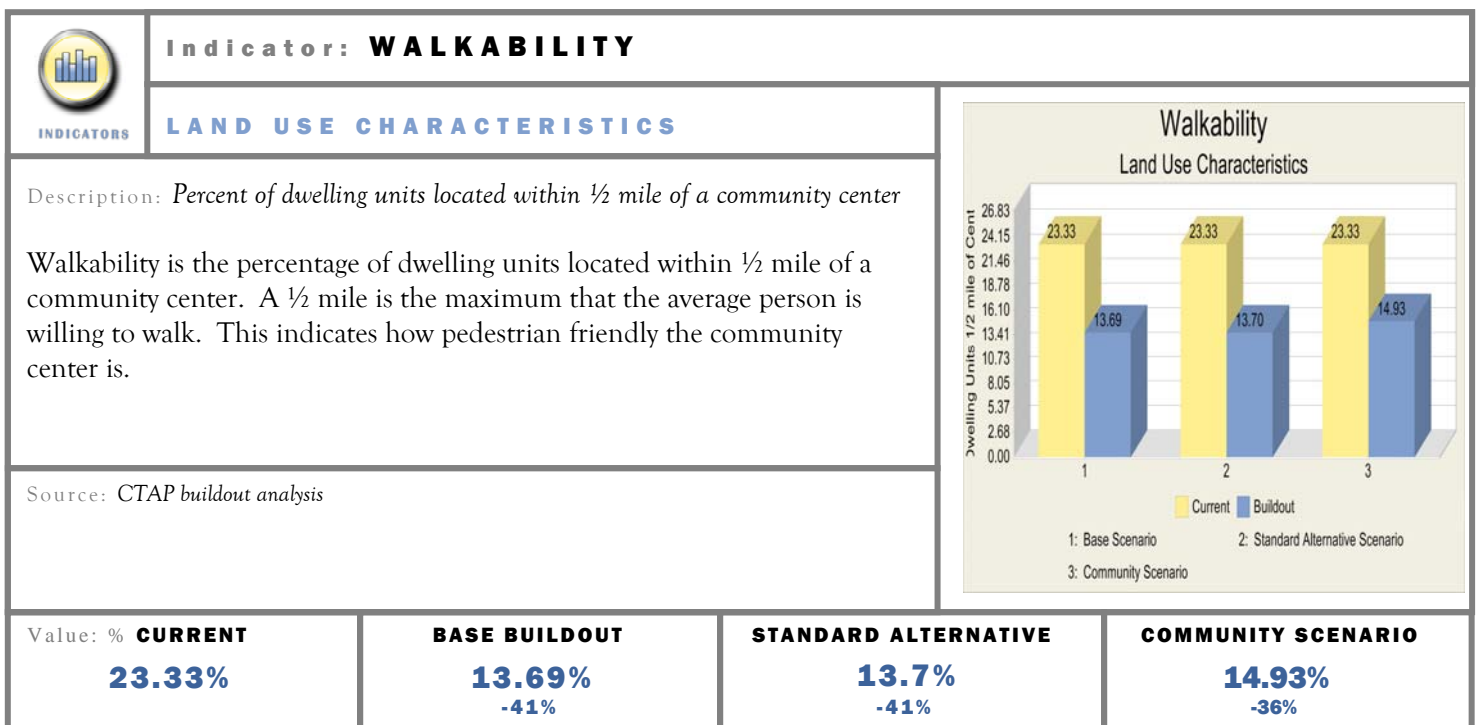
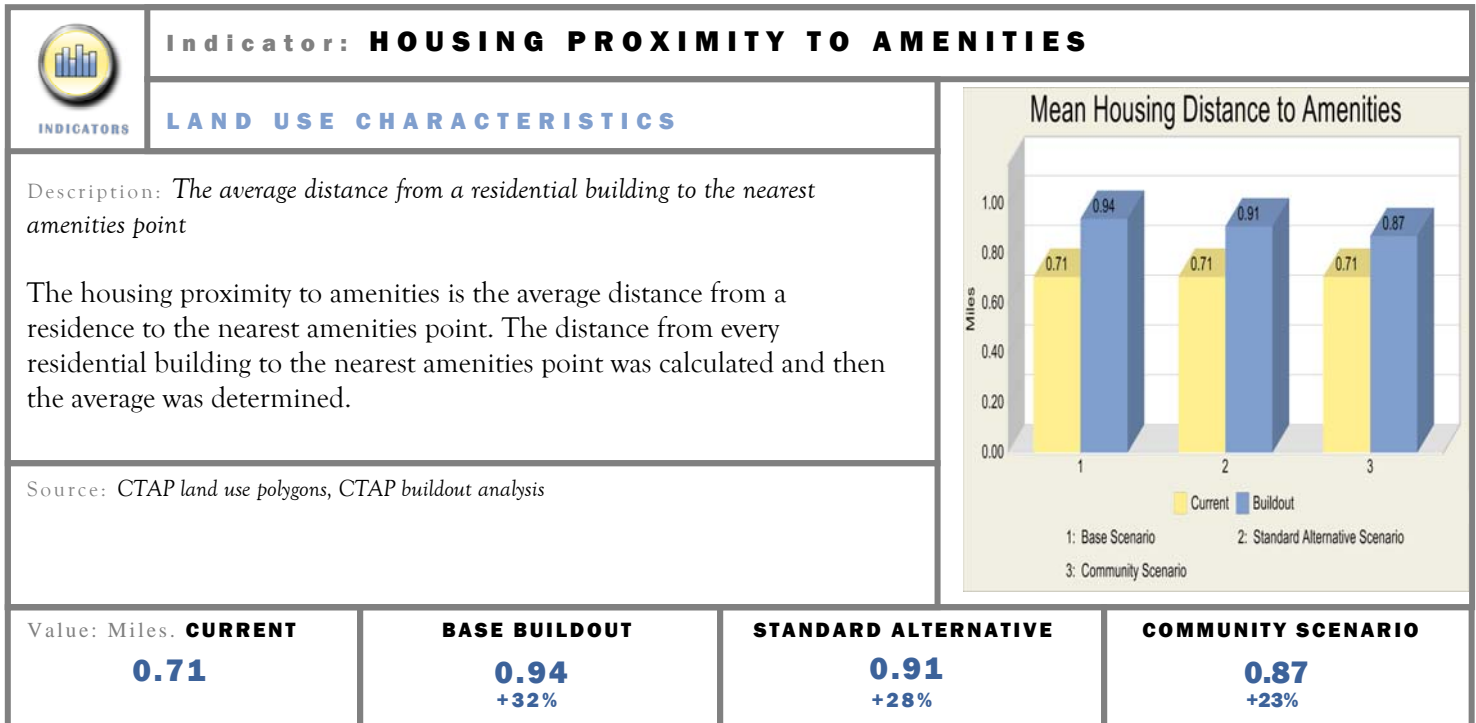




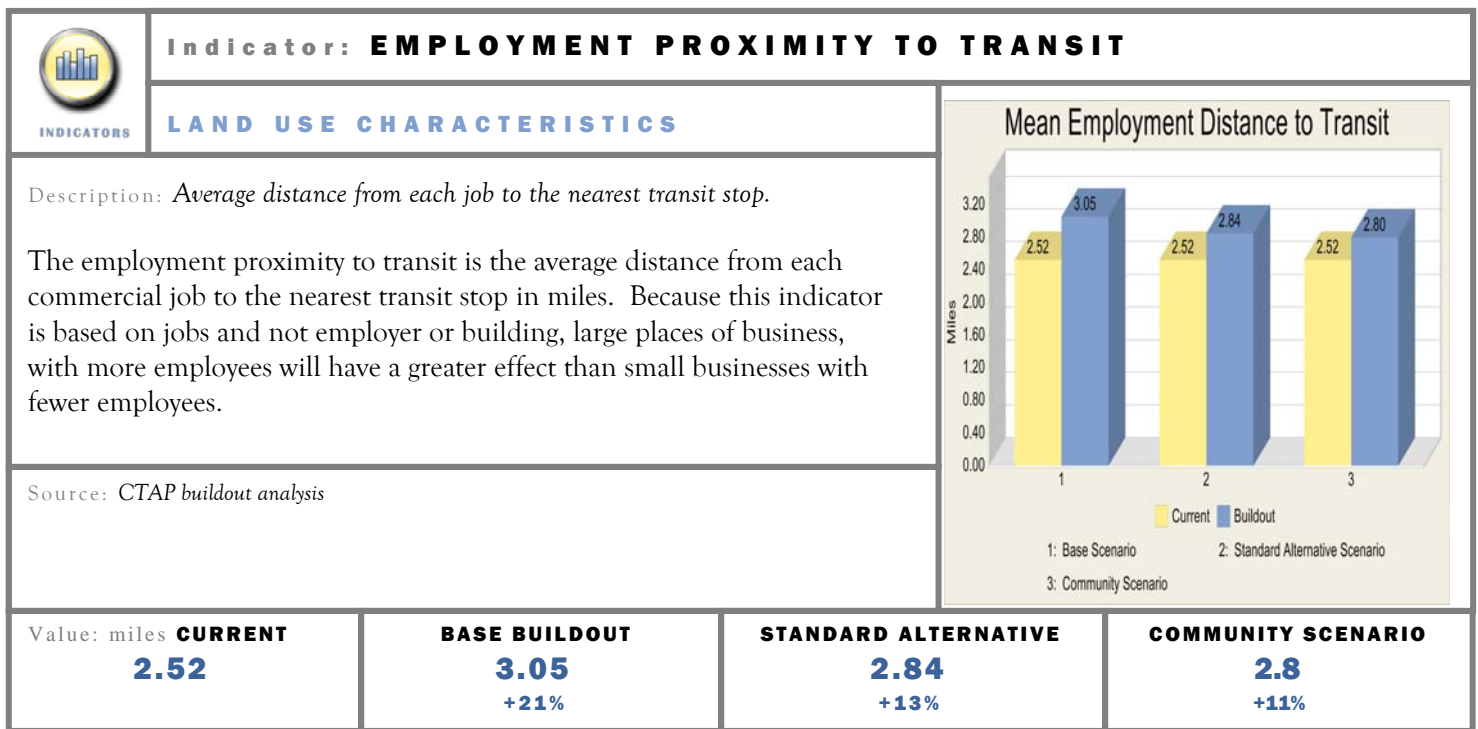
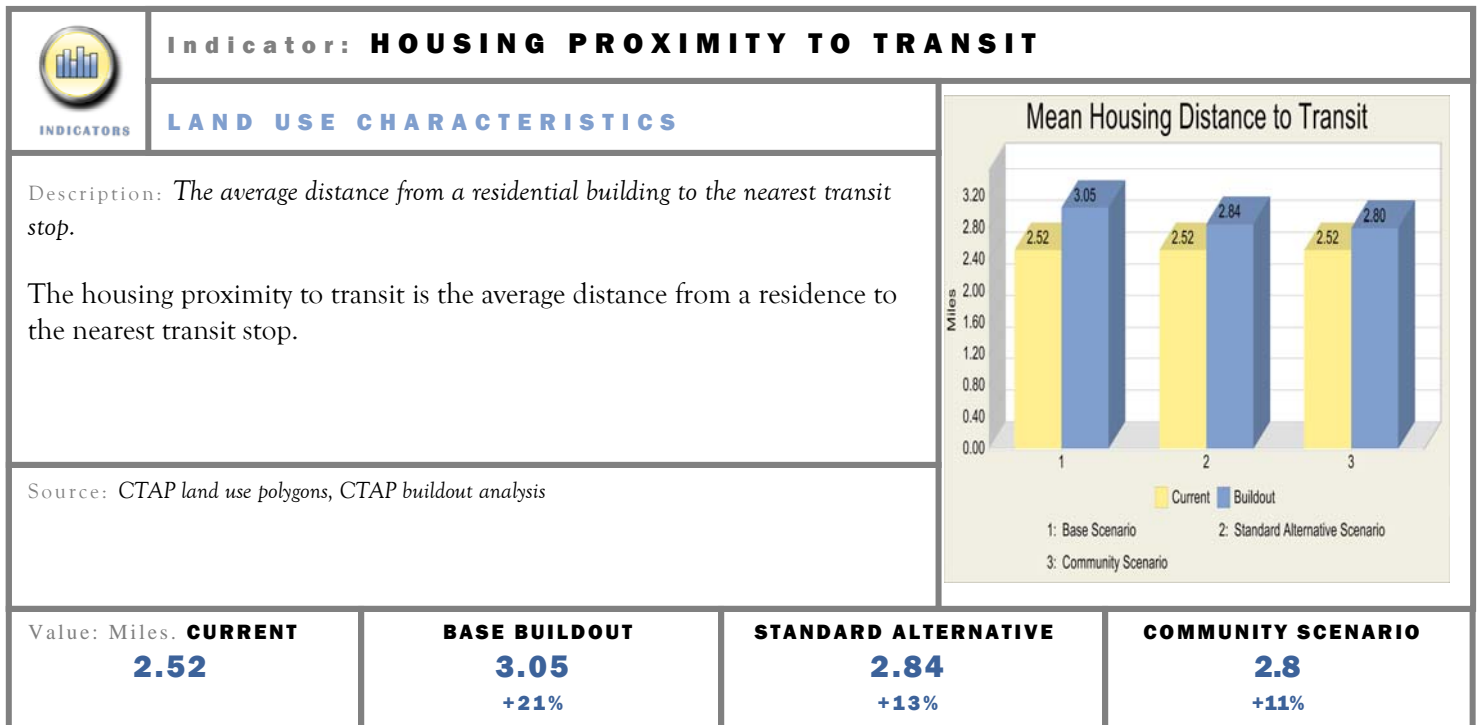
## Indicators - LAND USE CHARACTERISTICS cont.



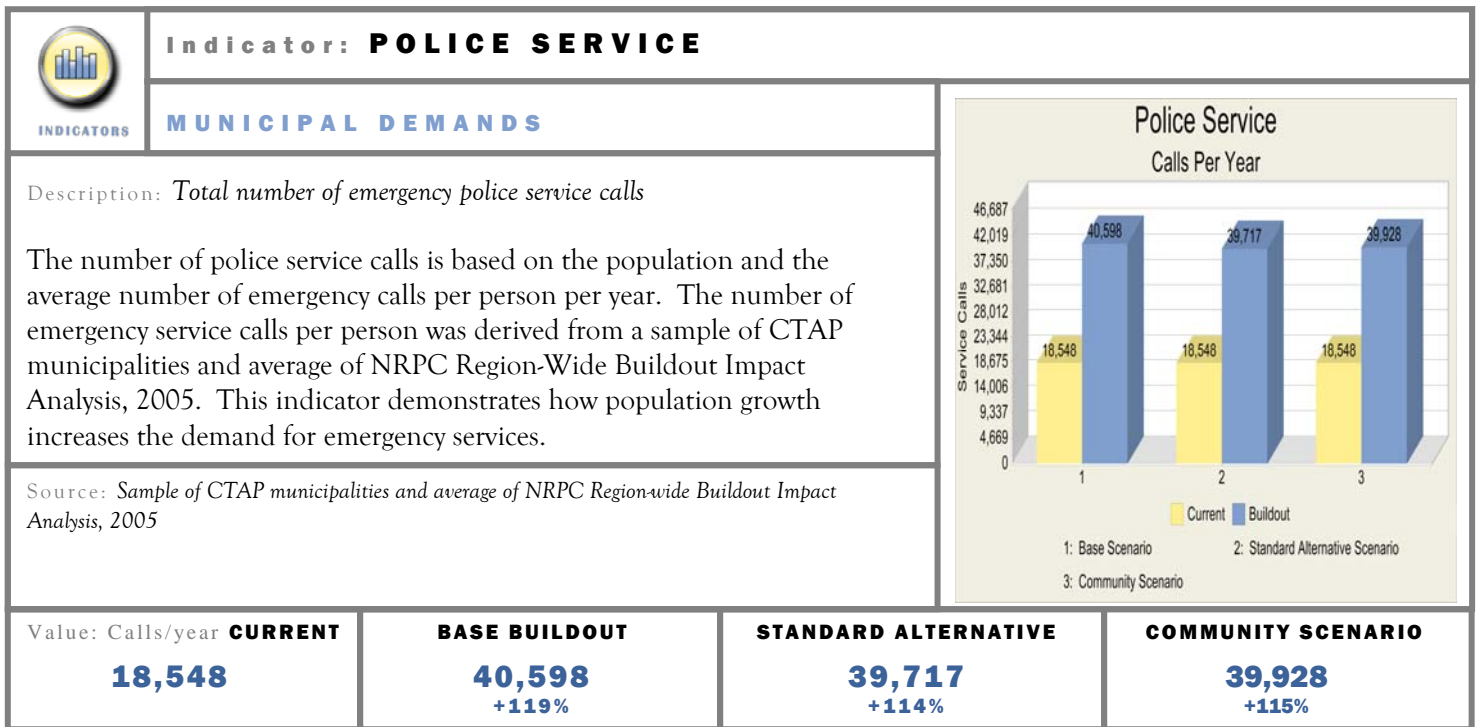
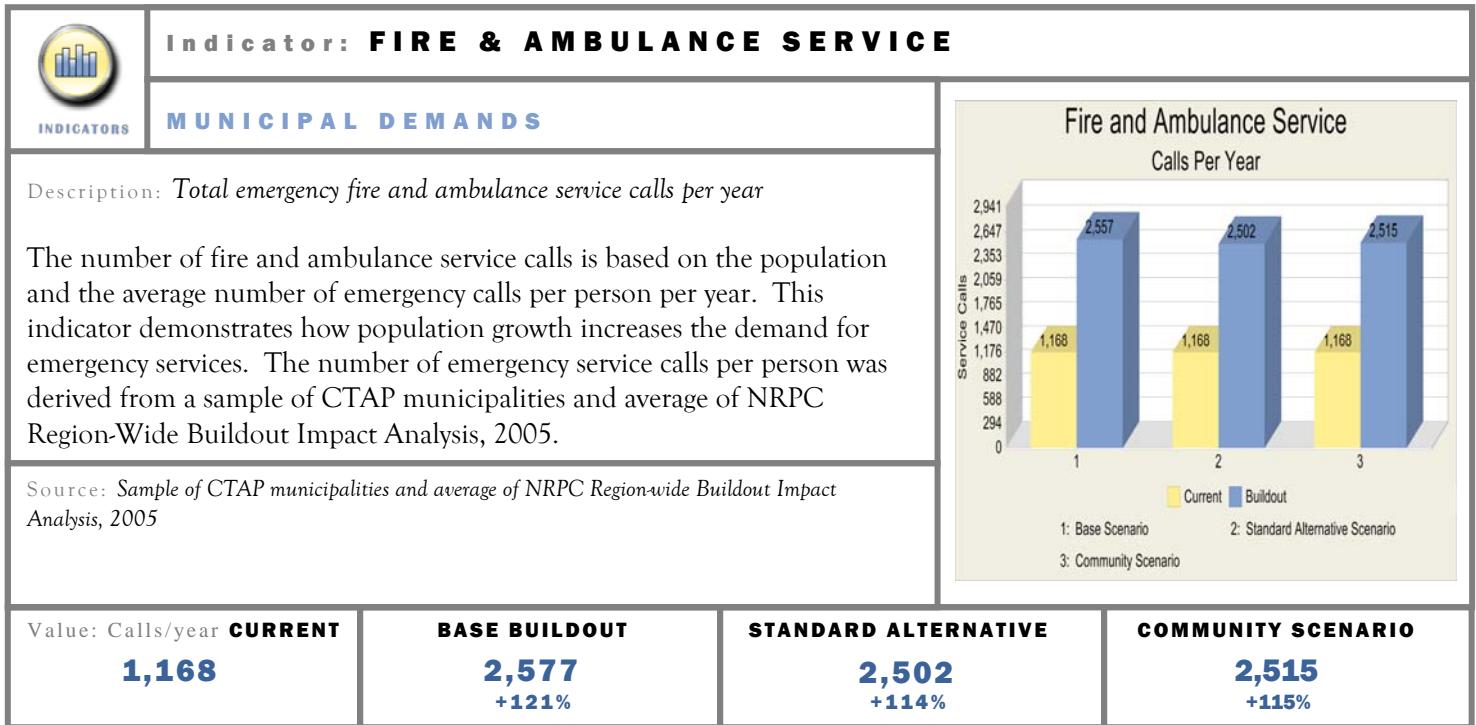
## Indicators - LAND USE CHARACTERISTICS cont.



## Indicators - LAND USE CHARACTERISTICS cont.

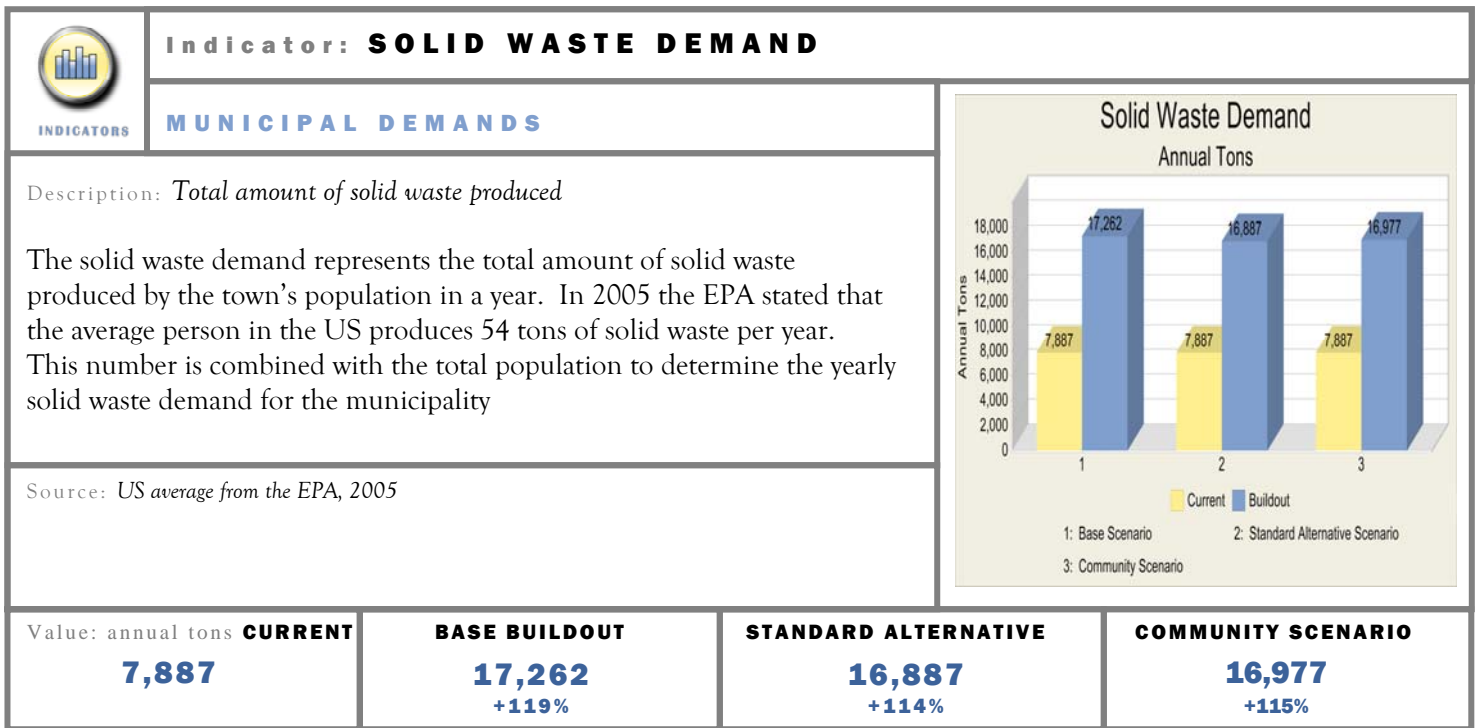


## Indicators - MUNICIPAL DEMANDS

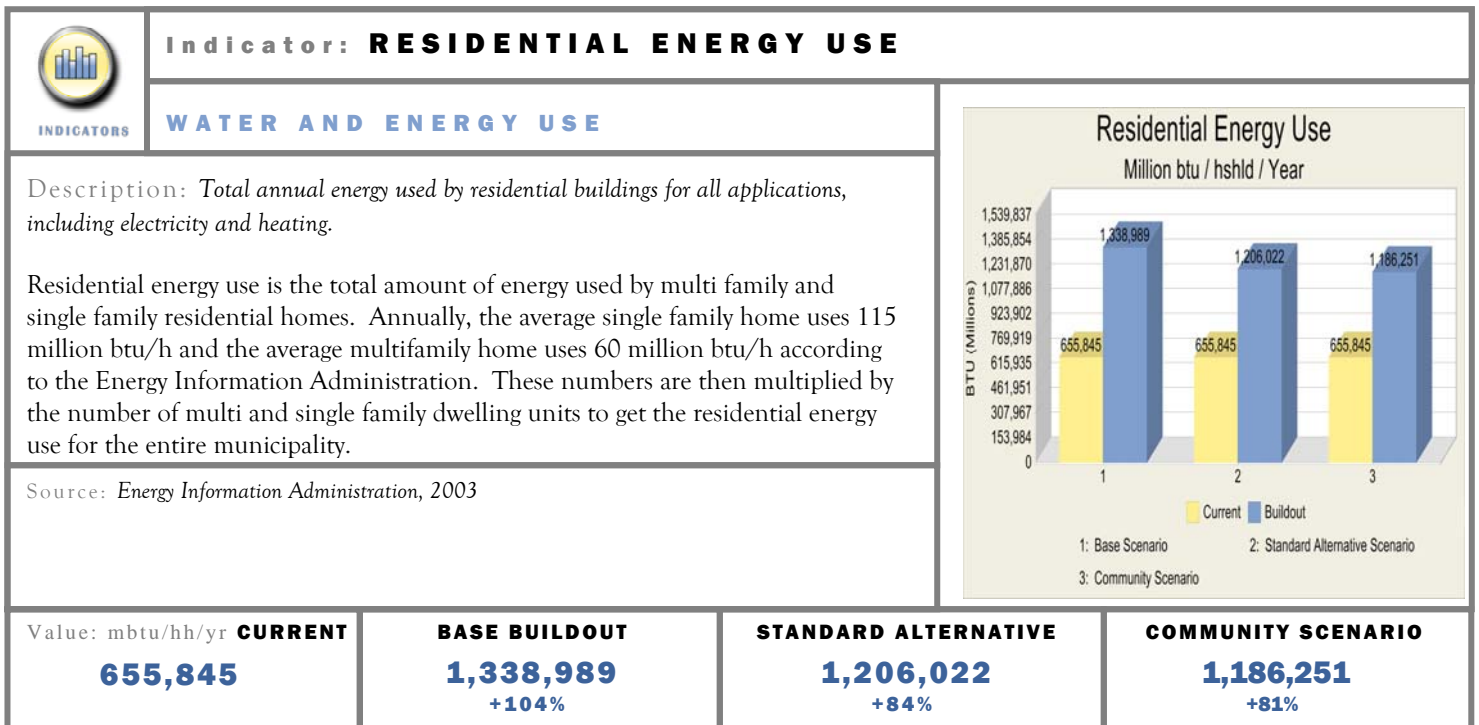
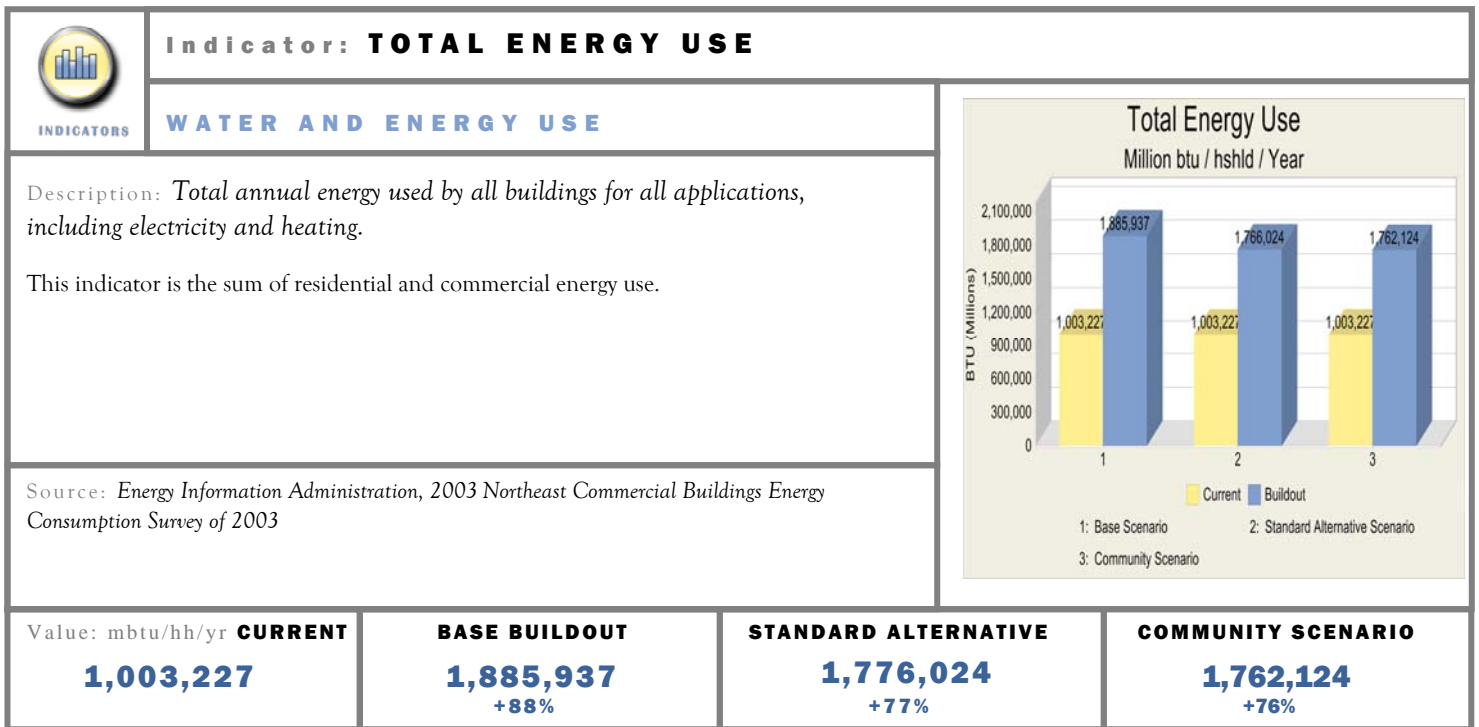




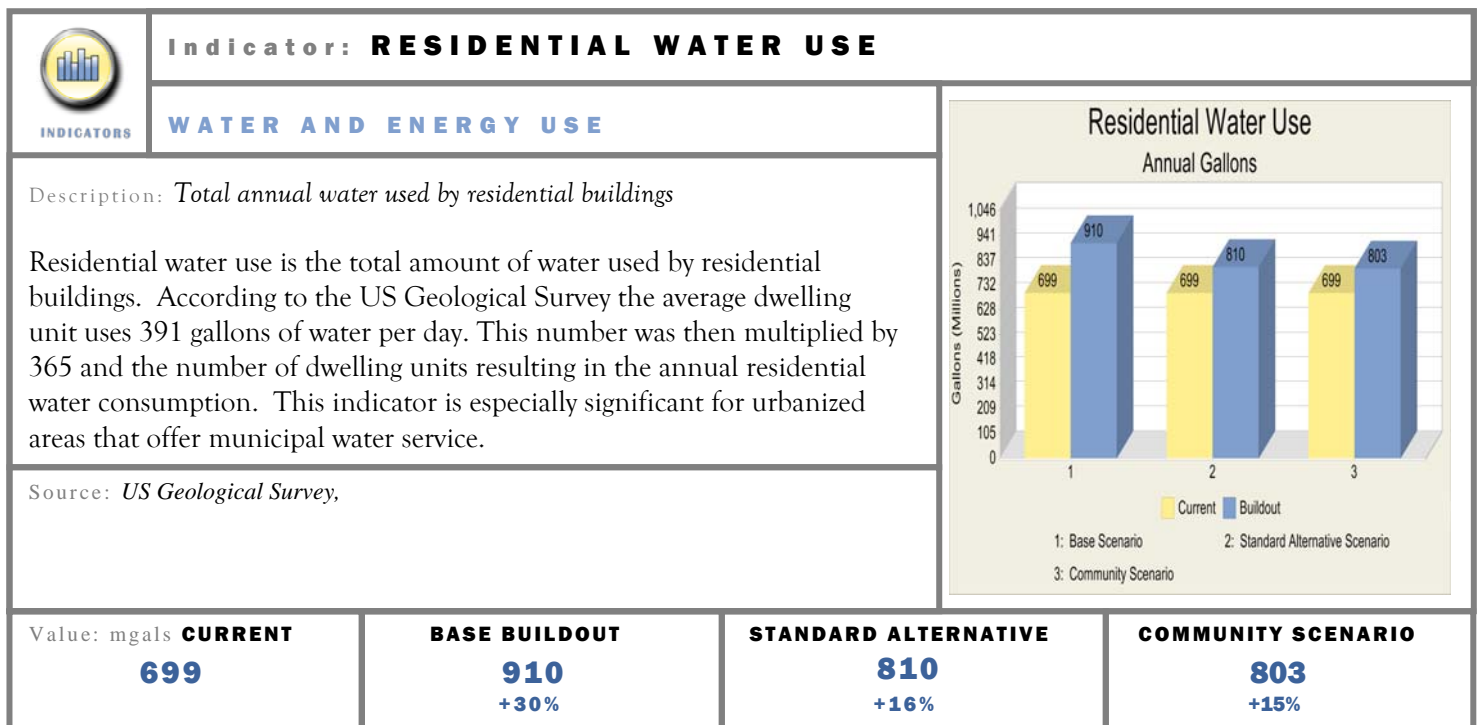
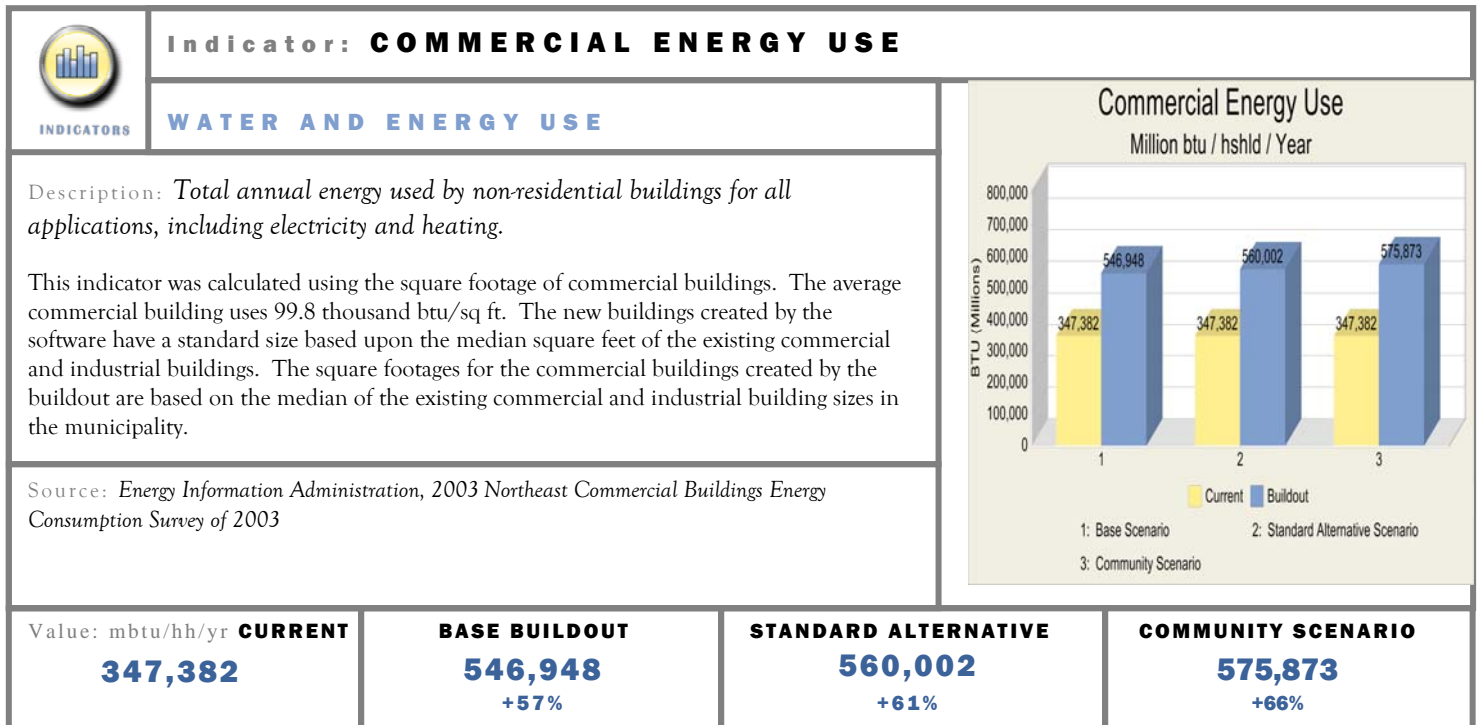
Indicators - MUNICIPAL DEMANDS cont.



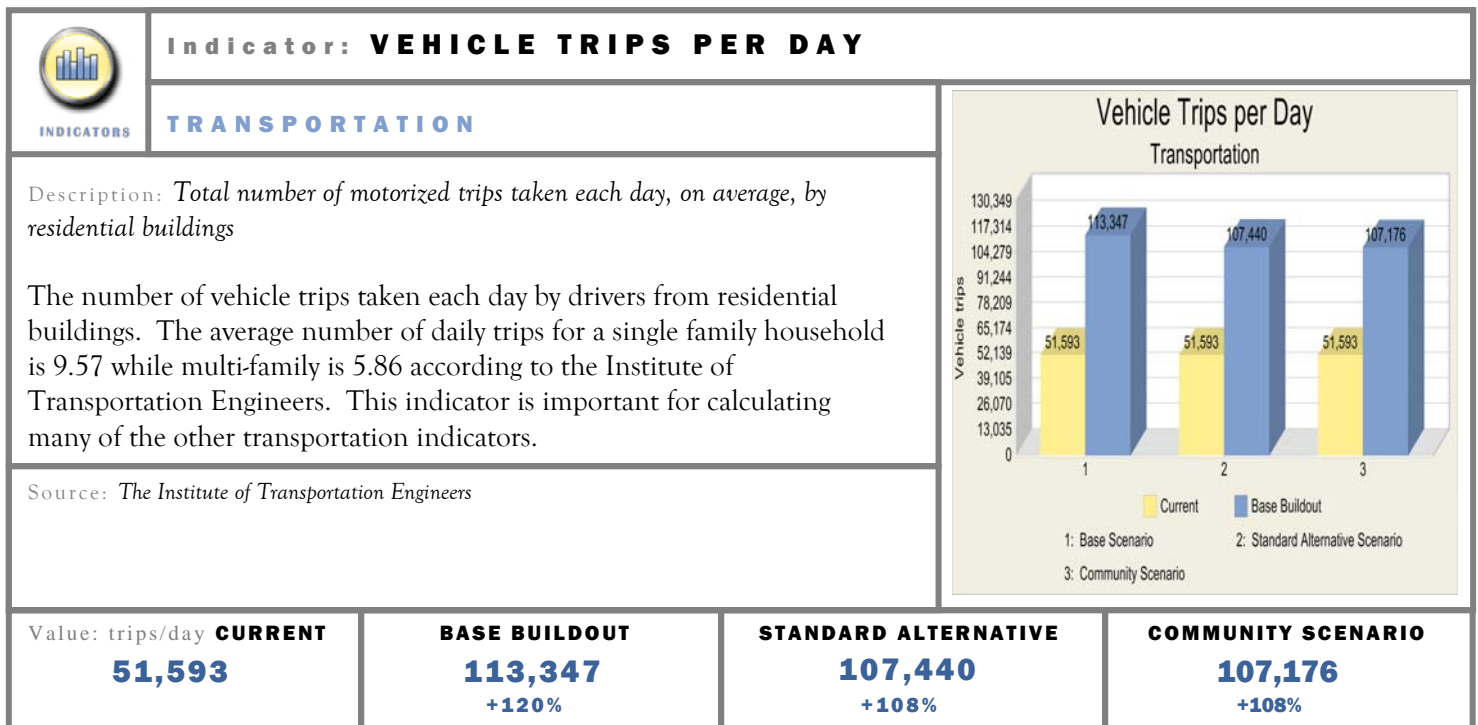
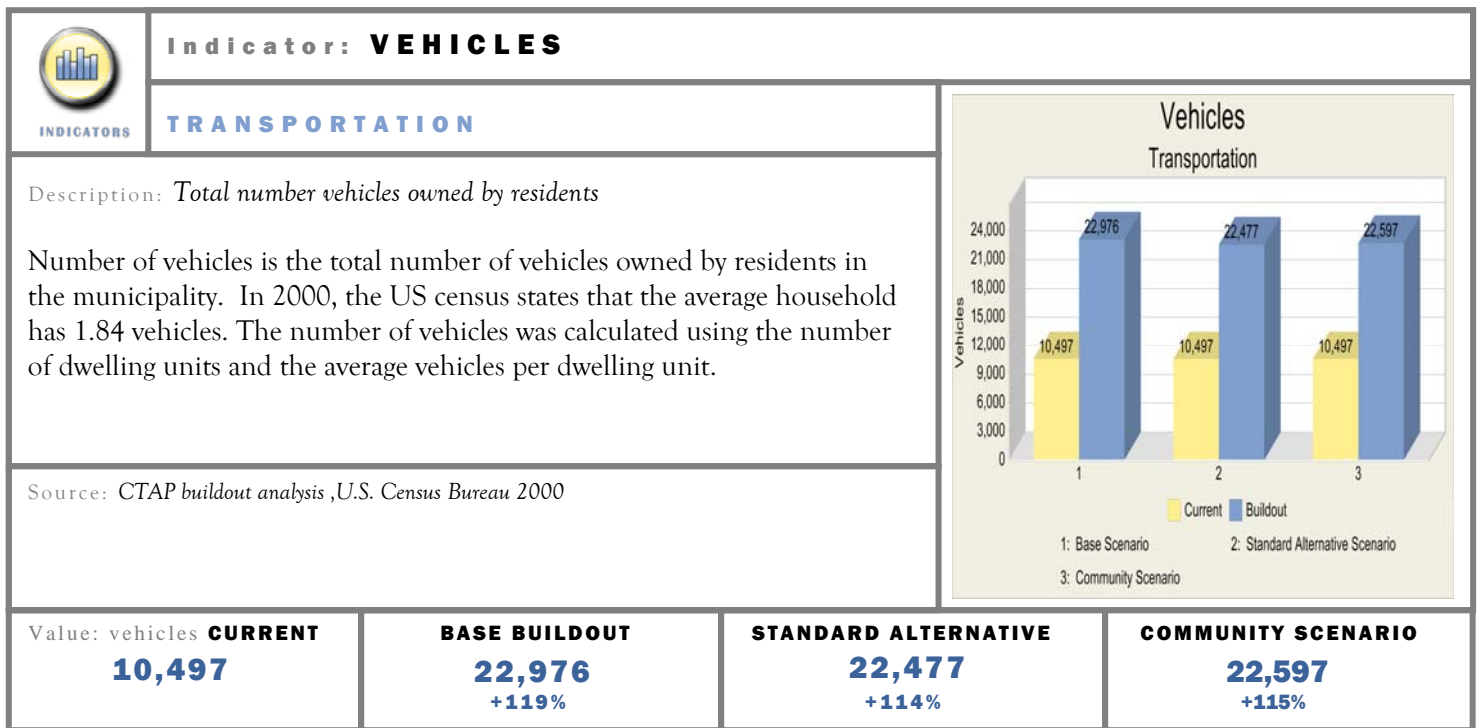
## Indicators - WATER AND ENERGY USE



## Indicators - WATER AND ENERGY USE cont.

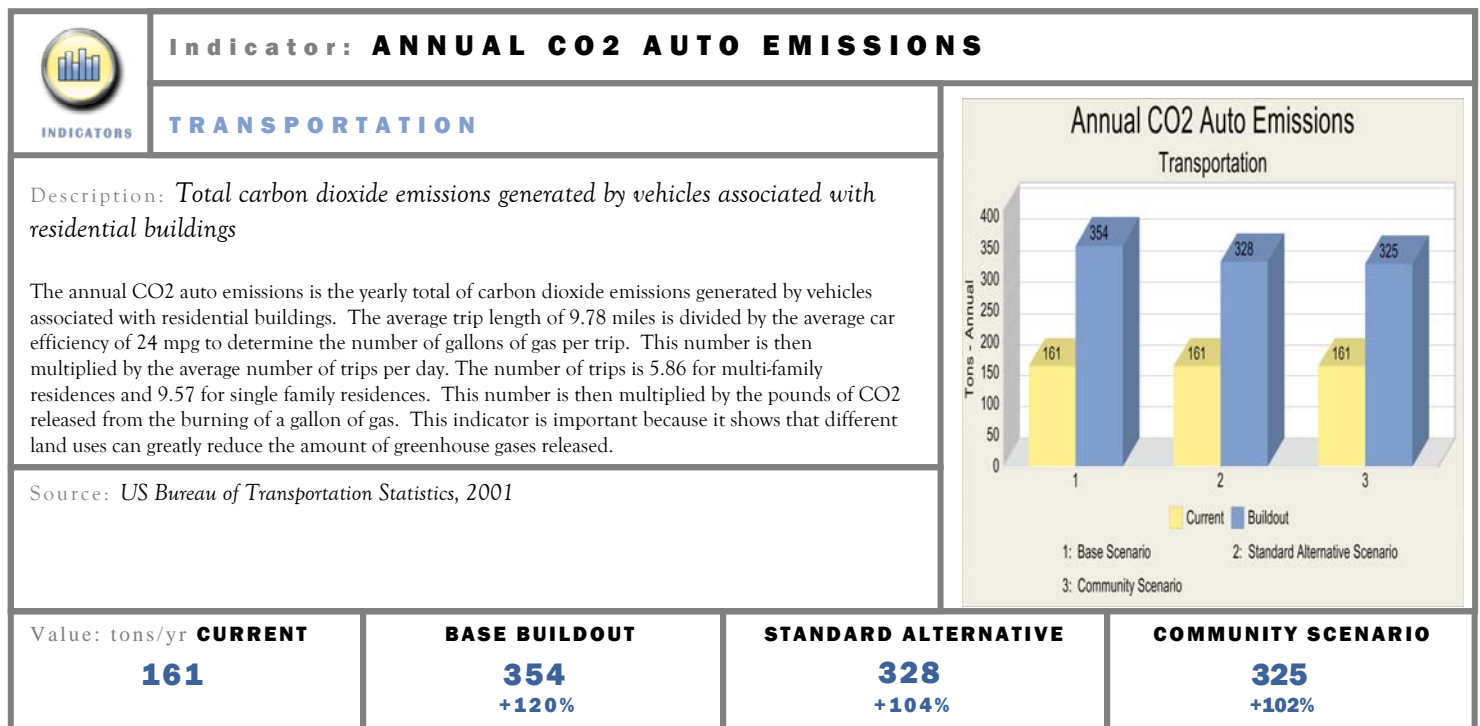
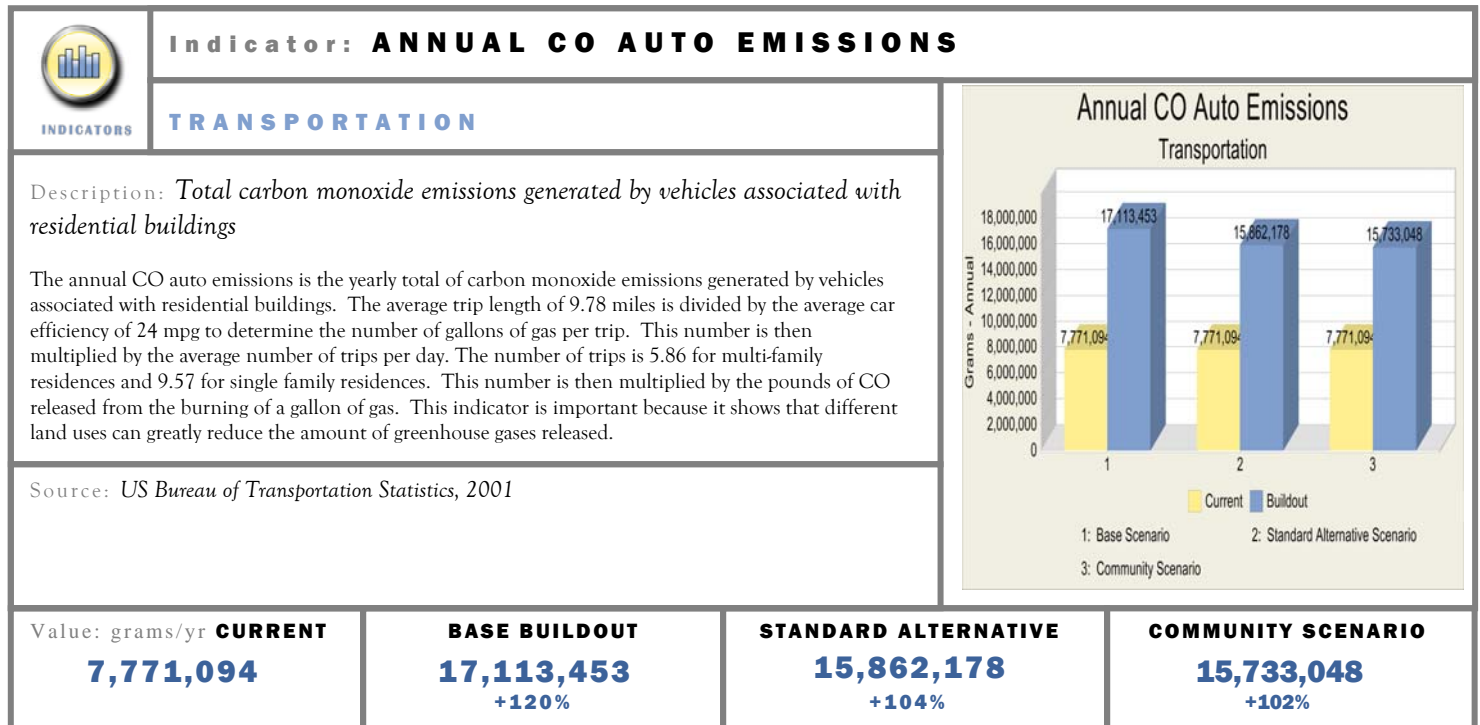


## Indicators - TRANSPORTATION

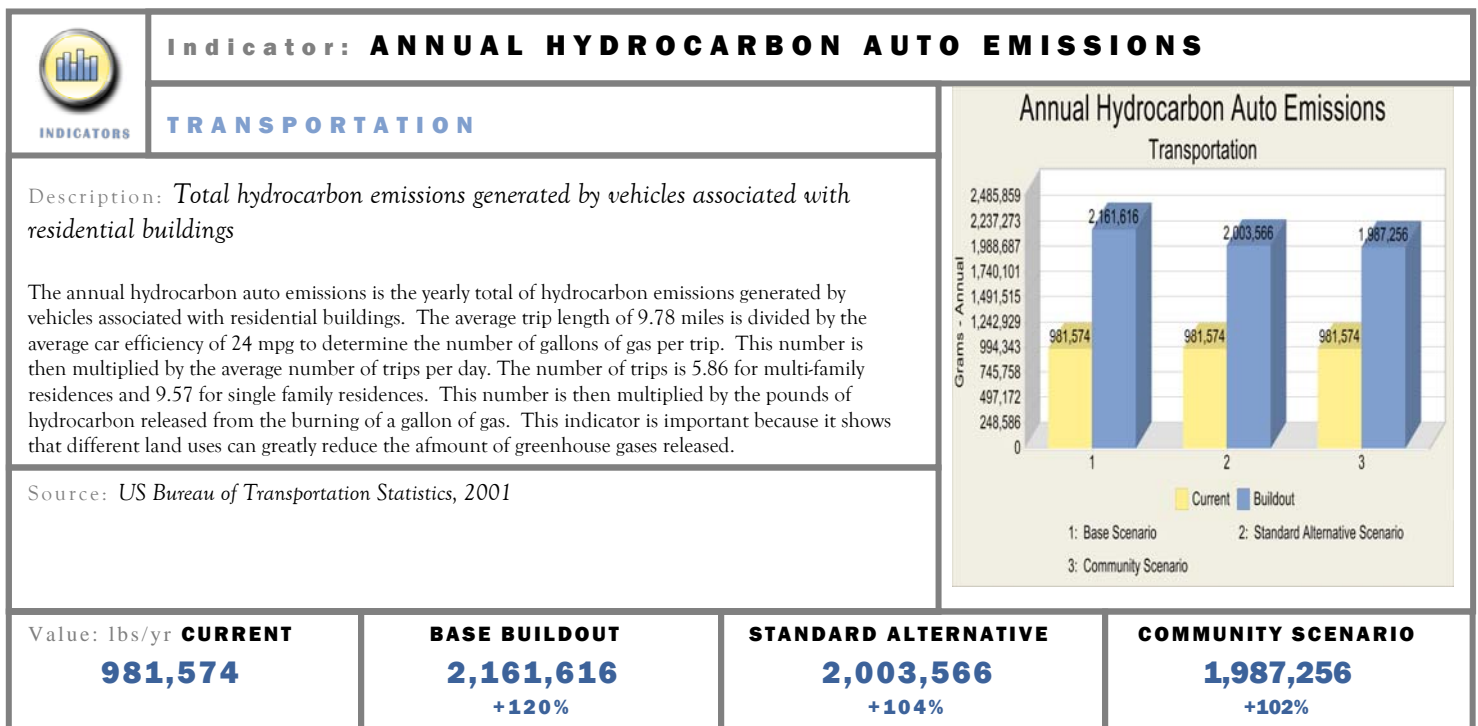
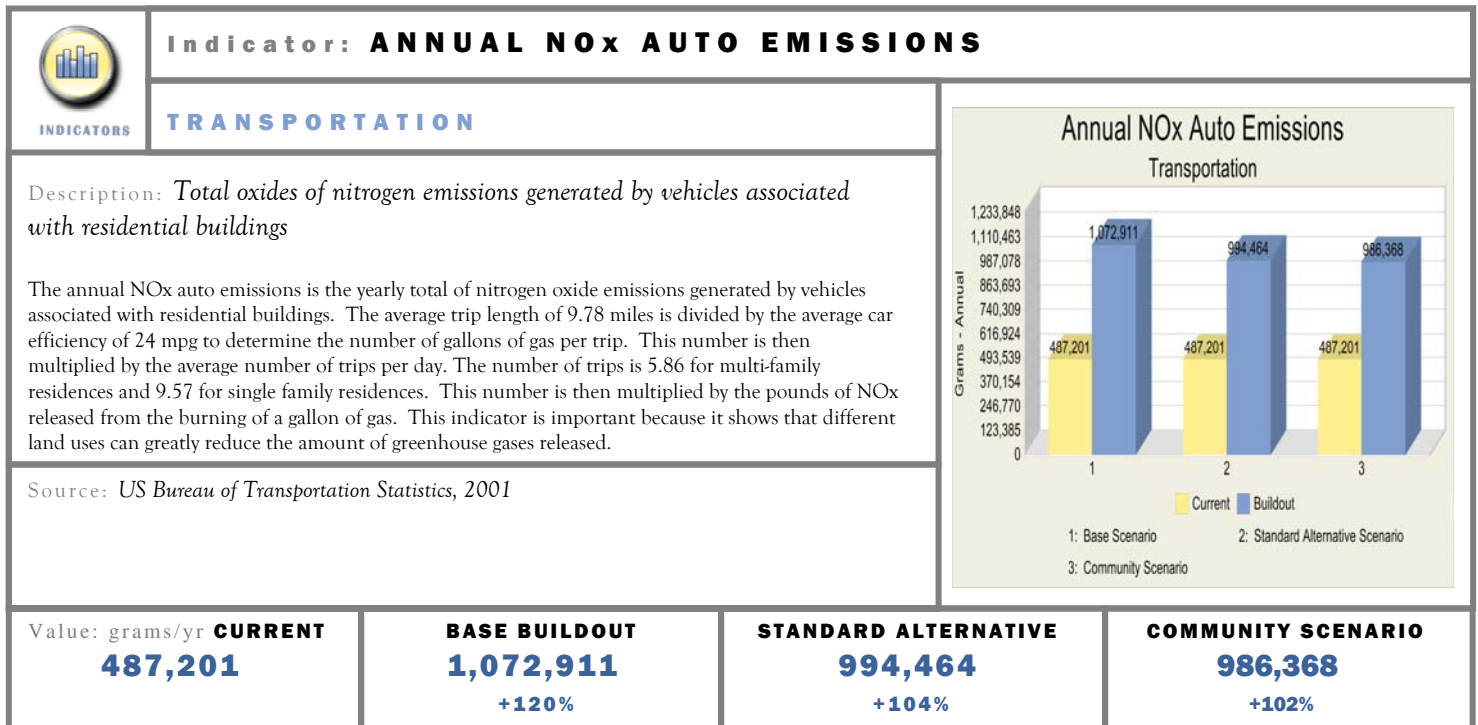




## Indicators - TRANSPORTATION cont.



## Indicators - TRANSPORTATION cont.



## **A p p e n d i c e s**

- A. Buildout Reports - Base & Standard Alternative & Community Scenarios
- B. Additional Maps
- C. CTAP Buildout FAQ