



DATE: August 10, 2015

AGENDA ITEM # 4

**TO:** Environmental Commission

**FROM:** J. Logan, Staff Liaison

**SUBJECT:** Climate Action Plan Dashboard

## **RECOMMENDATION:**

Receive report on the Climate Action Plan Dashboard

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## **BACKGROUND**

The Environmental Commission Climate Action Plan Dashboard Subcommittee members, Commissioners Bray and Eyre, developed a Dashboard for presentation to the Commission and for discussion of its use as an educational and metrics resource.

## **DISCUSSION**

Commissioner Bray's outline and presentation of the Dashboard provided the following information:

A City website-based Dashboard presenting annual community resources usage data, GHG emissions and reduction targets will help engage the community in Climate Action Plan (CAP) implementation.

Dashboard objections are:

- Present foundational data on aggregate annual resources usage, GHG emissions and associated trends
- Describe resource usage and GHG emissions data relative to CAP targets to help answer the question "how are we doing?" year over year, and versus general CAP targets
- Provide the information in a visually interesting, easy to understand format that engages residents
- Address usage metrics and trends for key resources comprising the community GHG inventory:
  1. Total GHGs and pie chart breakdown vs goals
  2. Annual vehicle miles traveled/GHG per VMT
  3. Residential natural gas use/GHG
  4. Residential electricity use/GHG
  5. Commercial electricity use/GHG
  6. Commercial natural gas use/GHG
  7. Annual community-wide water use/GHG
  8. Annual community-wide solid waste disposal tonnage/GHG
  9. Household/per capita averages

- Update with data reported by staff annually to the Environmental Commission and City Council utilizing implementation and monitoring tool described in Chapter 5 of the CAP.

The proposed use is to have the dashboard on the City of Los Altos website to provide the status of environmental progress and measures for Los Altos Climate Action Plan on an ongoing basis. The Dashboard is designed to have past usage, trends, and goals for water, natural gas, electric use, waste diversion, vehicle miles traveled, GHG emissions and other pertinent data.

The Commission will continue discussion of the Dashboard, utilization of GHG and water conservation data and review updates to the Dashboard as presented by the Subcommittee.

**Attachment:**

- A. Community Resources Use and GHG Emissions – Discussion Document – Draft ‘Dashboard Reporting’ Data

# Community Resource Use and GHG Emissions

## Discussion Document - Draft 'Dashboard Reporting' Data

Los Altos Environmental Commission  
August 2015

A City website-based 'dashboard' presenting annual community resource use data , GHG emissions and reduction targets will help engage the community in CAP implementation.

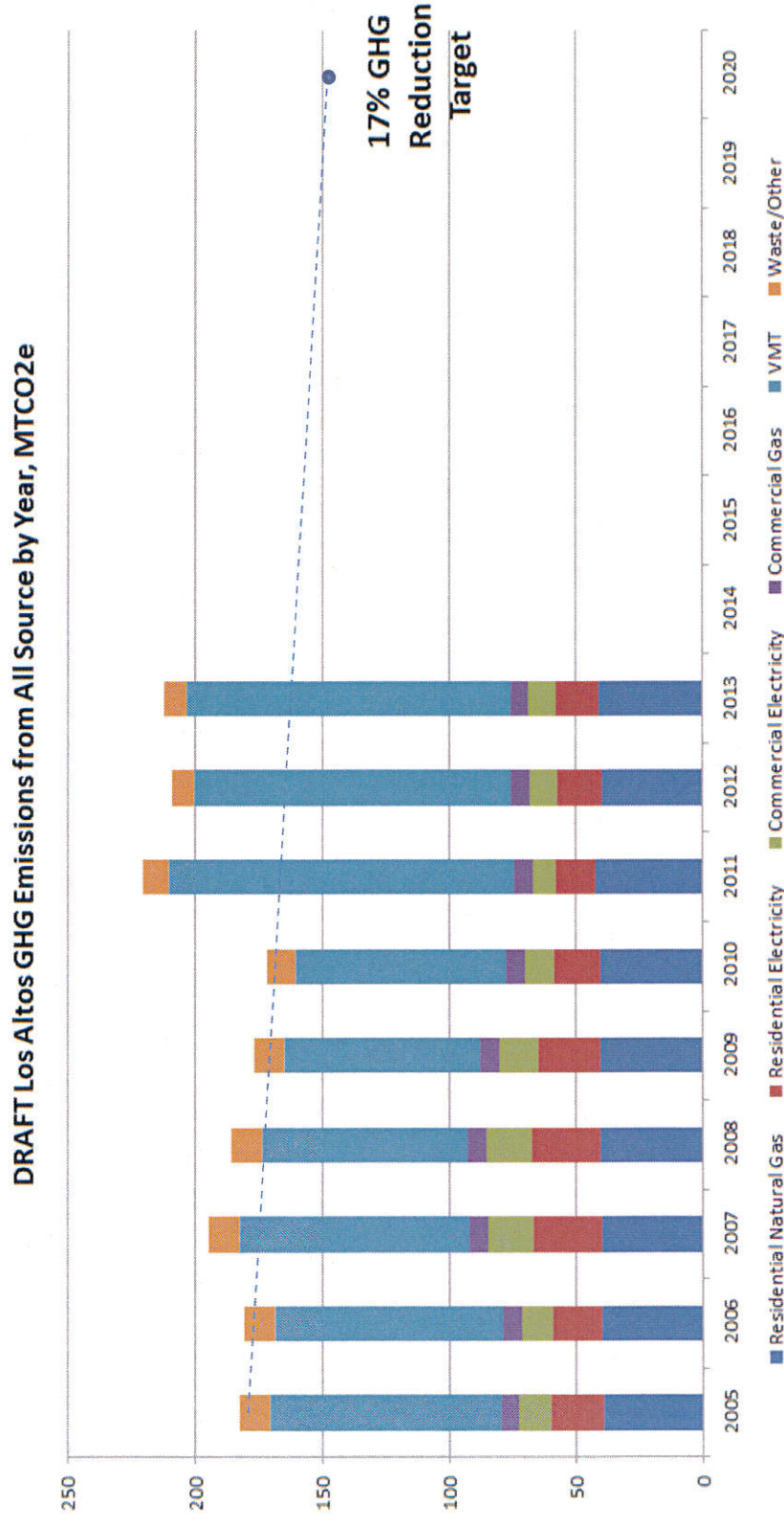
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## Dashboard Objectives

- Present foundational data on aggregate annual resource use, GHG emissions, and associated trends
- Describe resource use and GHG emissions data relative to CAP targets – to help answer the question “how are we doing?” year over year, and versus general CAP targets
- Provide the information in a visually interesting, easy to understand format that engages residents
- Collection of year over year dashboard data between 2005 and 2013, GHG calculations, and development of associated dashboard graphics is in process; drafts are now developed and attached in this presentation:
  - 1a) Total GHGs and pie chart breakdown, vs. goals (Electricity and Natural Gas Use only)
  - 3) Residential natural gas use/GHG
  - 4) Residential electricity use/GHG
  - 5) Commercial electricity use/GHG
  - 6) Commercial natural gas use/GHG
  - 7a) Annual community-wide water use
  - 7b) Community-wide water use by month, and 2013 baseline data
- Update with data reported by staff annually to the Environmental Commission and City Council, utilizing implementation and monitoring tool described in Chapter 5 of the CAP

NOTE: CalTrans HPMS Vehicle Miles Traveled (VMT) data is still being verified and analyzed; it is the largest single contributor to Los Altos GHG emissions. Data as reported has been incorporated into a draft version of 1a) Los Altos GHGs from All Sources, by Year. The underlying VMT data, and a major jump in 2011, is currently under review with CalTrans.

## 1a. GHG Emissions Summary (DRAFT)

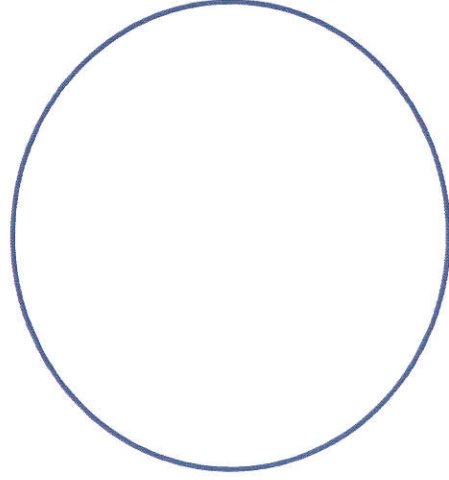


- Based on activity data as of 2013, overall GHG emissions are higher than in 2005, and are trending significantly higher than the reduction target
- Emissions from vehicle miles traveled (VMT) are the largest contributor to Los Altos GHGs, and have grown significantly since 2005
- The major jump in VMT for Los Altos in 2011 was reported by CalTrans HPMS; the root cause of this increase is currently being researched with CalTrans.



## 1b. GHG Emissions Summary – Breakdown by Source

Develop pie chart showing breakdown of GHG sources from 1a, for most recent year, and table showing actual GHG emissions, in MTCO<sub>2</sub>e, by source.



( VMT and Waste activity data being validated )

## 2. Trends in Vehicle Miles Traveled, and Associated GHGs

- Vehicles represent the largest source of GHGs in Los Altos
- More fuel-efficient vehicles and electric vehicles are reducing GHGs per vehicle mile travelled
- [Need to explain jump in CalTrans VMT data as 2011, and possibly re-baseline]

VMT by year

GHGs per VMT, by year

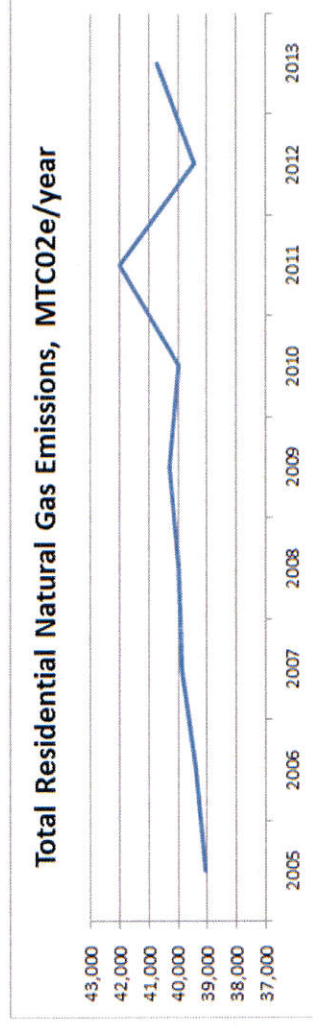
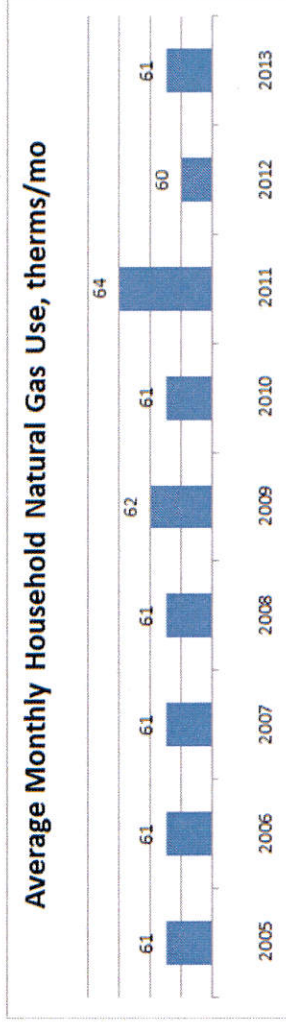
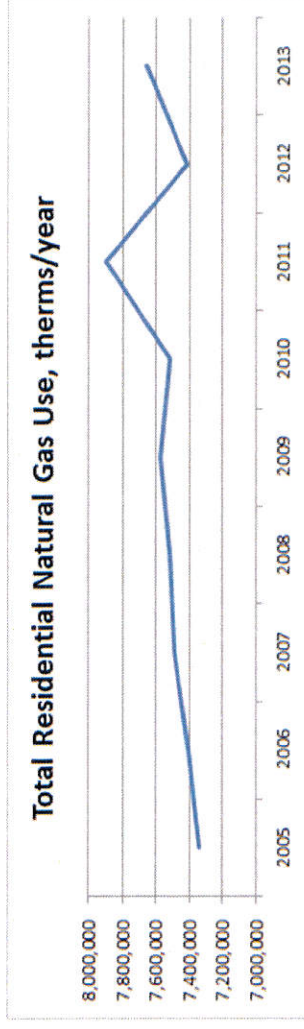
Total GHGs from VMT in Los Altos, by year

% change from Baseline, GHGs from VMT by year

( questions about reported CalTrans VMT activity data being researched )

### 3. Trends in Residential Natural Gas Use and Associated GHGs

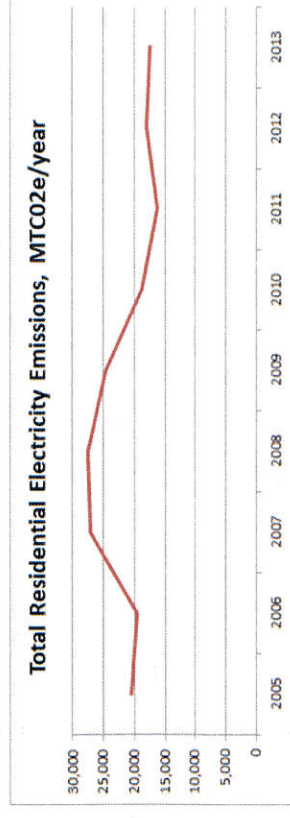
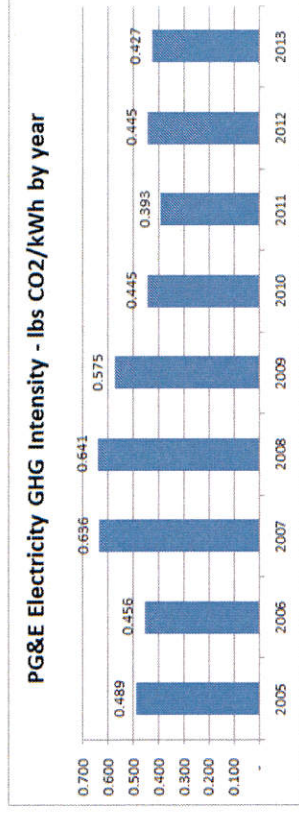
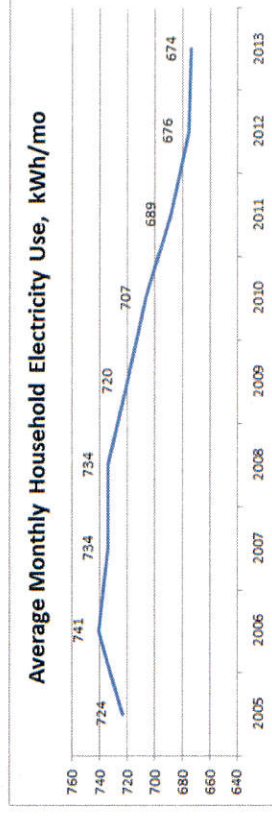
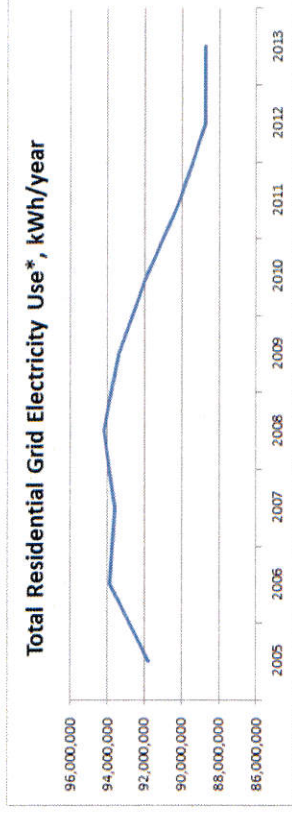
- Total residential natural gas use and associated emissions are 4.3% higher in 2013 than 2005
- Average monthly household usage has remained fairly constant – colder or warmer weather introduces some year-to-year variation
- While homes are generally becoming better insulated and more energy efficient, square footage is increasing and offsetting efficiency gains





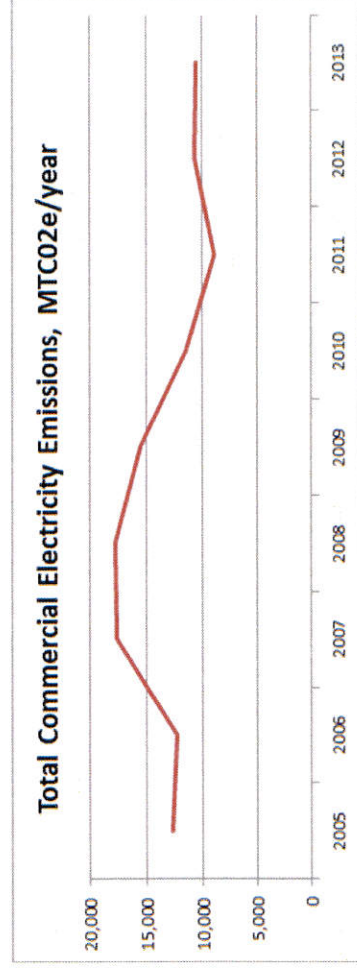
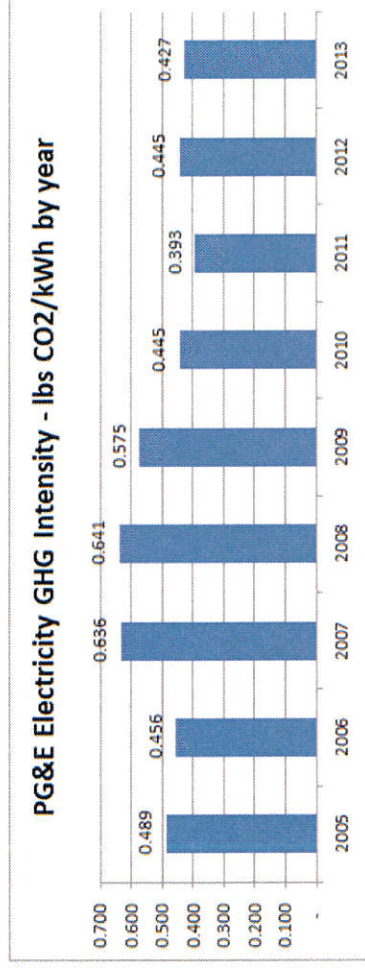
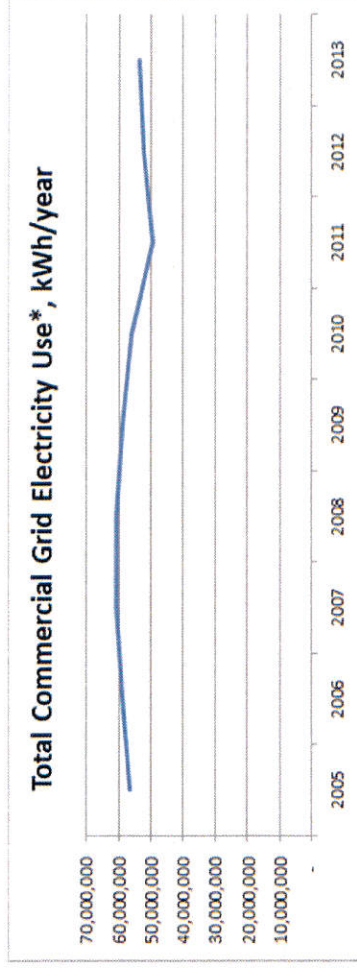
#### 4. Trends in Residential Electricity Use and Associated GHGs

- Use of grid electricity was 3.3% lower in 2013 than 2005, due to growth in residential solar, and more efficient lighting and electronics
- Los Altos households used an average of 56 kWh of grid electricity per month in 2013, 7% less than in 2005
- In 2013, the PG&E energy mix was less CO<sub>2</sub>-intensive than in 2005, as more renewable energy is now on the grid
- Grid electricity use has fallen, and CO<sub>2</sub> intensity has also decreased; overall GHG emissions from residential electricity are 15.5% lower in 2013 than 2005



## 5. Trends in Commercial Electricity Use and Associated GHGs

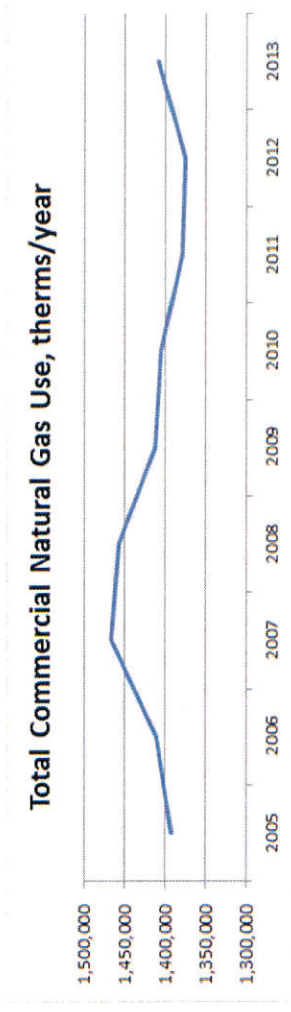
- Overall commercial electricity use is 4.9% lower in 2013 than 2005
- Recently, significant improvements in commercial energy efficiency are being offset by economic growth, and usage is trending upward again
- The PG&E energy mix is less CO<sub>2</sub> intensive in 2013 than in 2005, as additional renewable energy is now on the grid
- Commercial electricity use has fallen, and the carbon intensity of electricity is also reduced – resulting GHG emissions are 16.9% lower in 2013 than in 2005



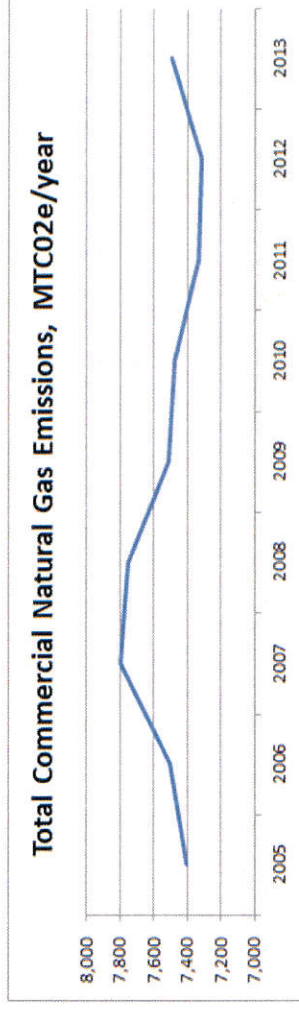


## 6. Trends in Commercial Natural Gas Use and Associated GHGs

- Commercial natural gas use and associated GHG emissions are 1.2% higher in 2013 than in 2005

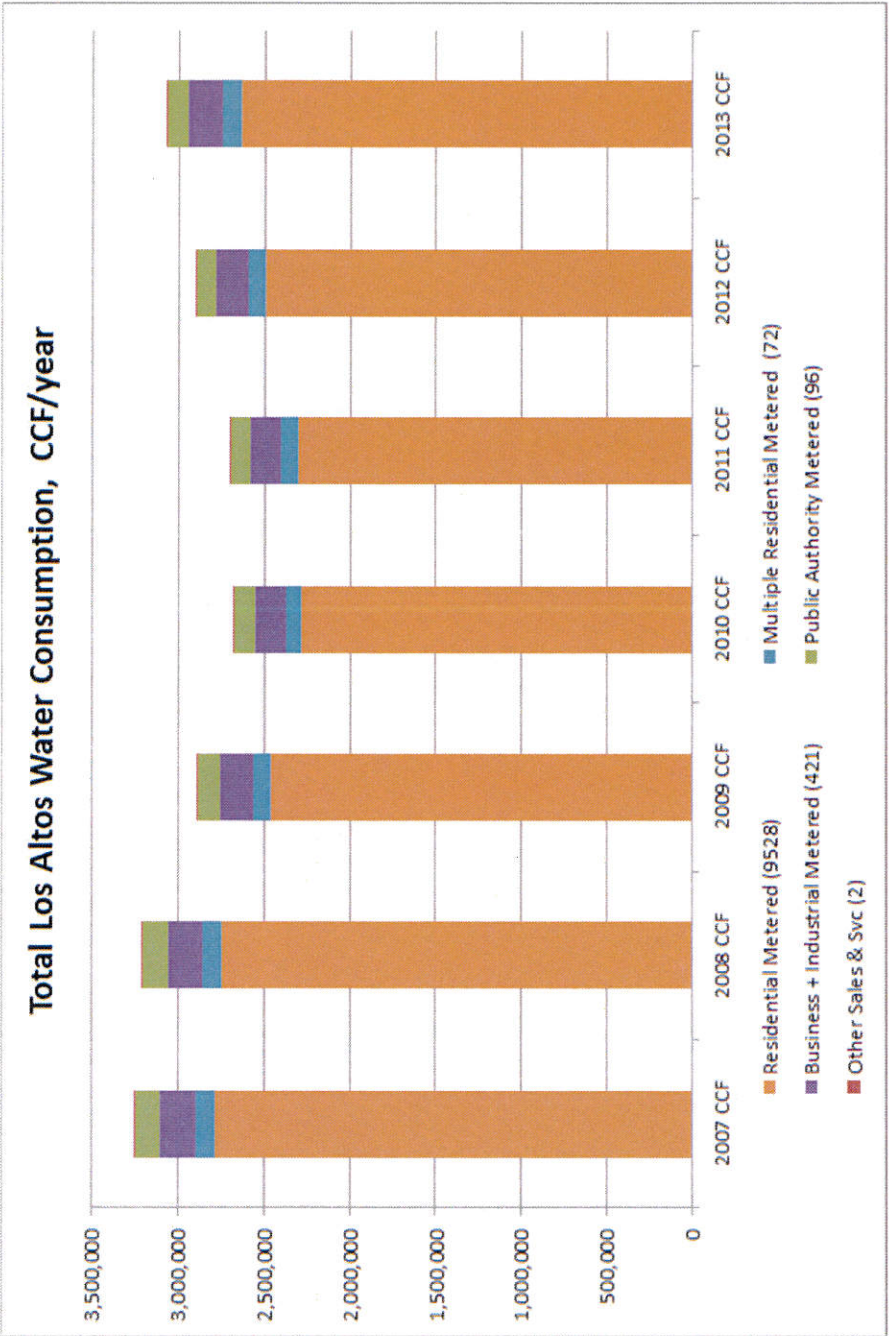


- Commercial buildings are generally becoming better insulated and more energy efficient, but smaller older buildings are often being replaced with larger buildings



- Year to year, commercial sector natural gas use is significantly influenced by current economic conditions

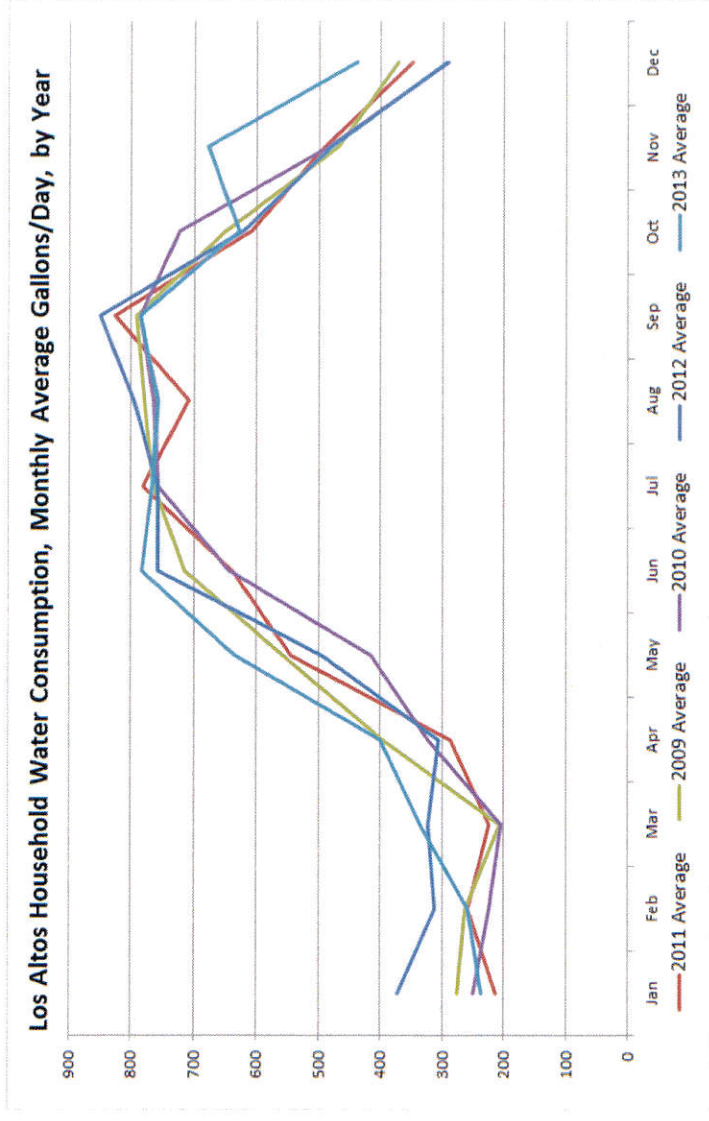
7a. Los Altos Water Usage Summary and Trends, by Sector



- Households use the majority of water in Los Altos, an average of 569 gallons per household per day in 2013
- In 2013, households in Los Altos used a total of over 1.9 billion gallons of water, an average of 207,859 gallons/household/year

## 7b. Los Altos Residential Water Use by Month, and by Year

- Residential water use in Los Altos is three times higher in the summer than in the winter, due mainly to landscape irrigation
- Water budgets beginning in 2015 aim to reduce usage by 32% from 2013; monthly average residential usage for 2013 is shown below



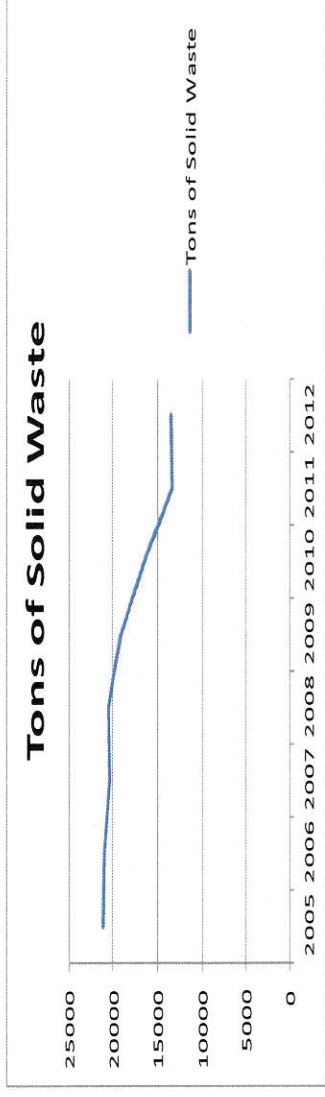
Los Altos Average Household Water Consumption by Month, 2013

	Minimum Subsistence (CalWater)	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	2013 Average
Gallons/Day/Household	145	236	258	337	400	636	784	765	758	786	628	678	439	559
Gallons per Month/Household	4,488	7,327	8,007	10,452	12,397	19,706	24,300	23,726	23,511	24,363	19,461	21,007	13,603	17,322
CCF per month/Household	6	10	11	14	17	26	32	32	31	33	26	28	18	23



## 8. Los Altos Solid Waste Disposal Summary and Trends

- Key takeaway #1
- Key takeaway #2



Tons of Recycling/Diverted Waste Stream?, by year?

GHG's from Solid Waste, by Year

Solid Waste per Household, by year/day, vs. target?

( incomplete data – development still in process )