

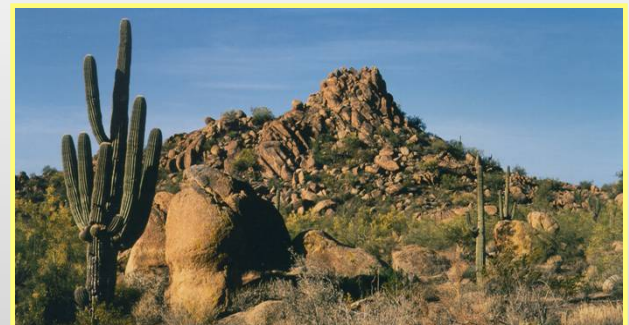


Climate Challenges and Case Studies

October 18, 2012

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*Office of Environmental Programs,
City of Phoenix*



Phoenix Case Study

- Water Services Department
- Human Services - Heat Relief Network
- Phoenix Climate Action Plan

Water / Wastewater Overview

- Service area: 540 square miles
- Population served: 1,502,287
- Accounts: 404,647 (Water), 403,000 (Sewer)
- Miles of pipe: 6,962 (Water), 4,965 (Sewer)
- Water Treatment plants: 5
- Active wells: 24
- Wastewater Treatment Plants: 2
- Reclamation Facility: 1
- Remote Facilities: 200+

Phoenix Water Portfolio



Colorado River - CAP (43%)



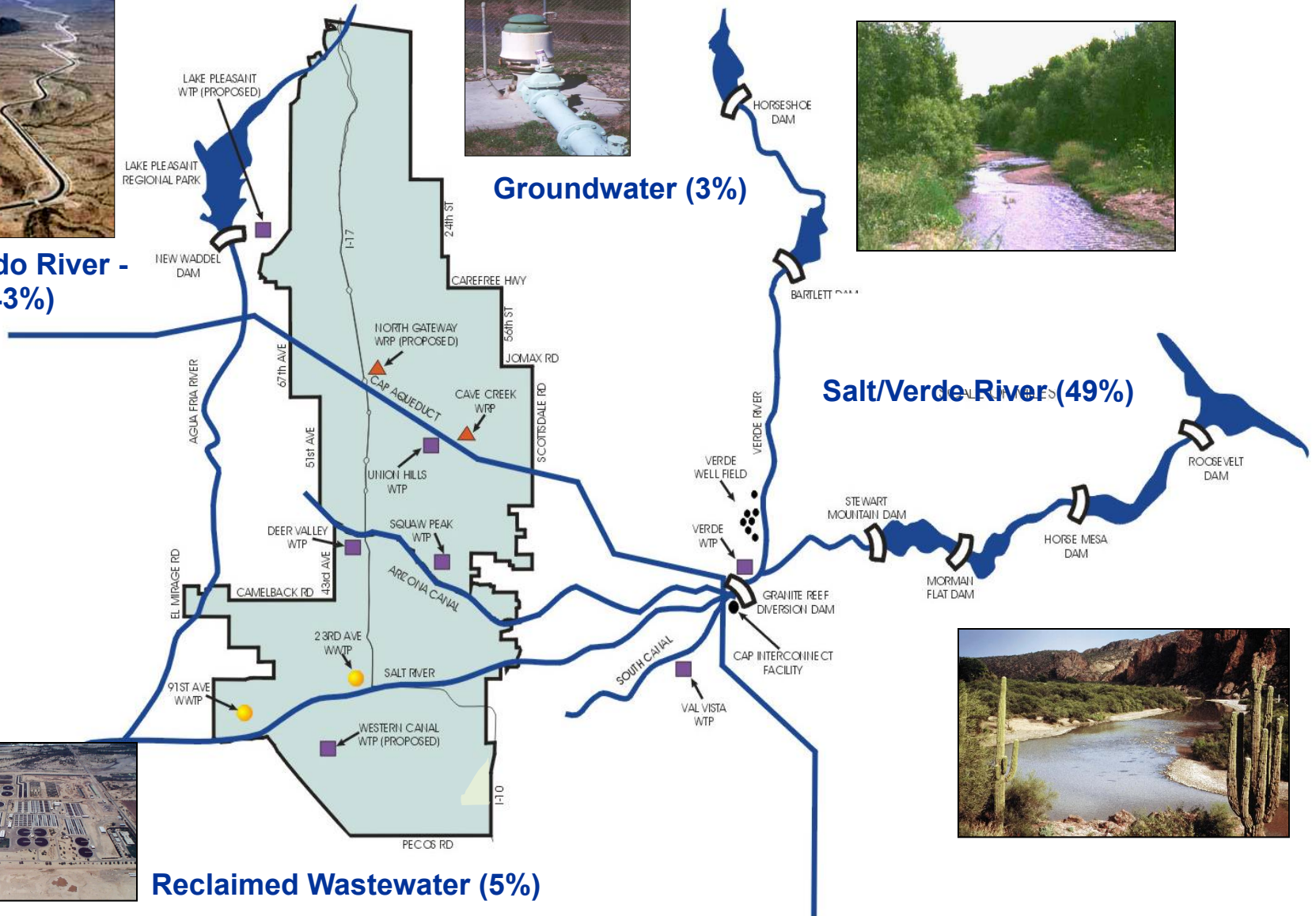
Groundwater (3%)



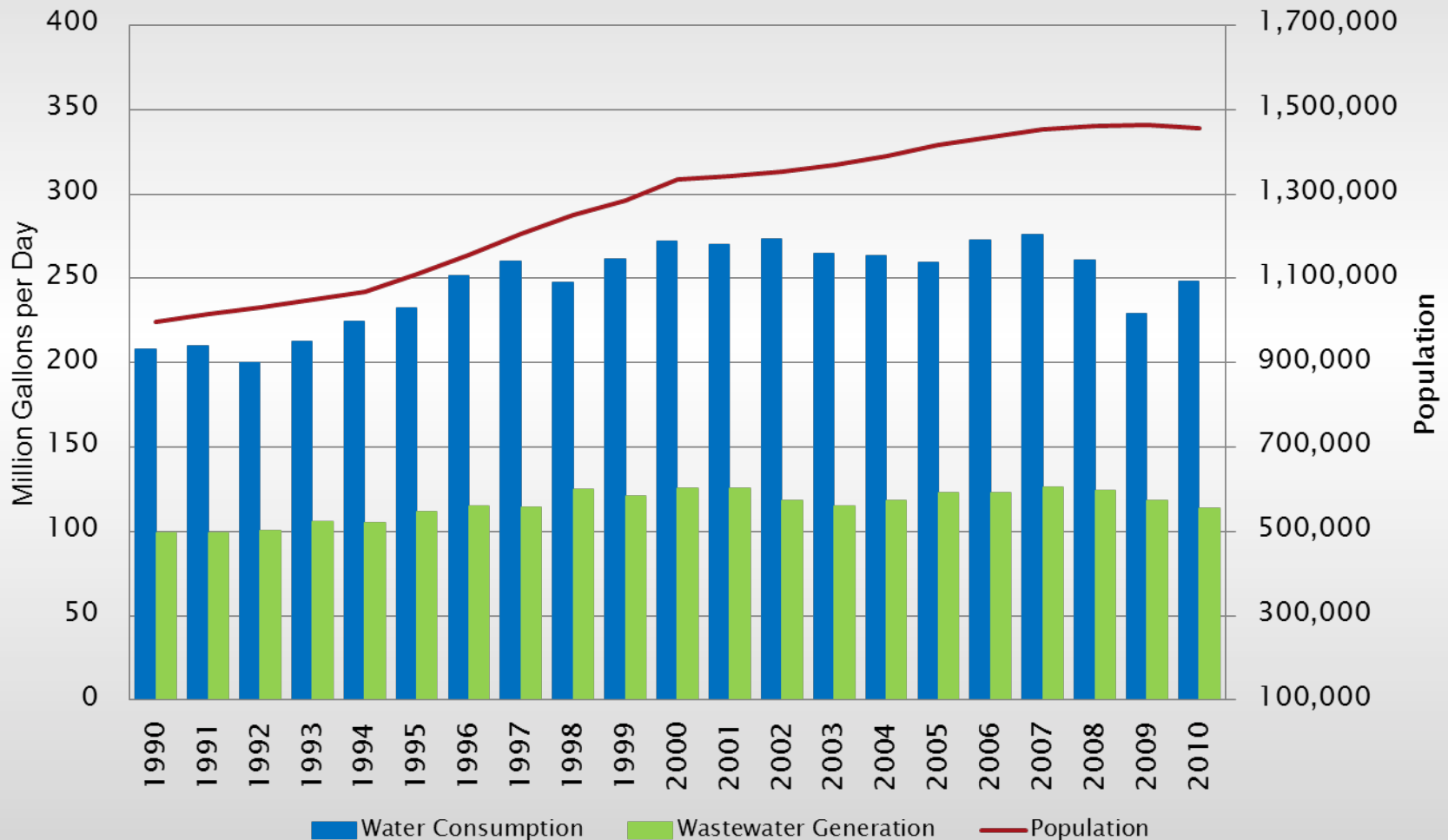
Salt/Verde River (49%)



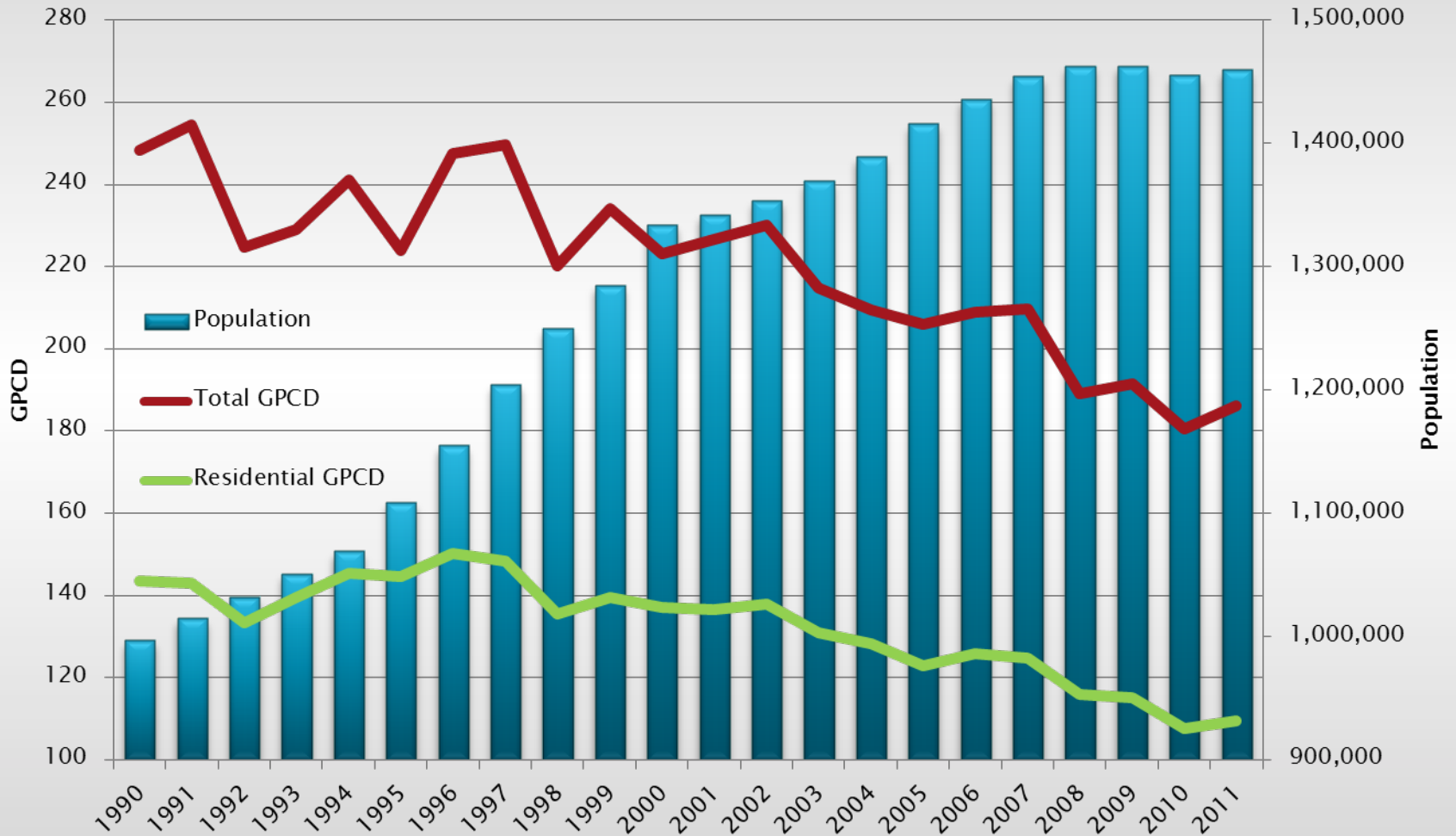
Reclaimed Wastewater (5%)



Total Water Use / Wastewater Generation Remain Stable



Gallons per Capita per Day (GPCD)



Water Resources

■ 50 year Water Resource Plan

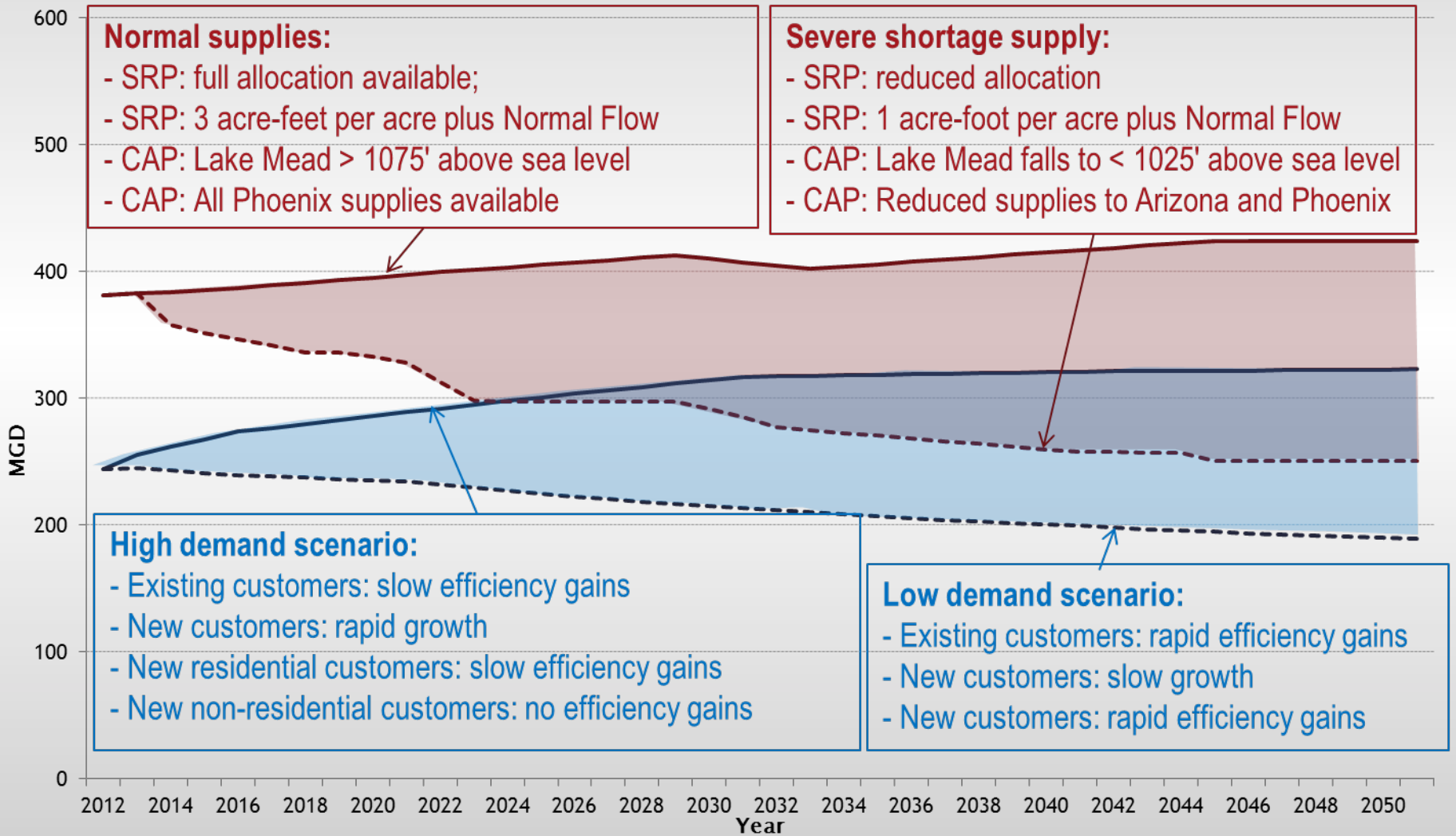


- Assured Water Supply Compliance
- Growth
- Drought Projections / Climate Variability

■ Demand Management

- Water conservation / water use efficiency
- Demand curtailment⁷ planning

Resource Management



Shortage Preparation

PHASE	LEAD TIME	DEMAND RELATED ACTIONS
MONITOR	Continuous	<ul style="list-style-type: none"> • Monitor growth and usage trends • Anticipate trend changes • Research large water uses to better understand potential for demand reduction • Maintain public awareness
EXPLORE AND PLAN	Near term - decades	<ul style="list-style-type: none"> • Advocate for plumbing code changes to generate long-term savings • Support customer actions to improve landscape water efficiency • Prepare customers for future drought conditions (landscape retrofits, etc.)
PREPARE AND DEPLOY LONG RANGE	5-10 Years	<ul style="list-style-type: none"> • Evaluate large commercial and industrial customers and sectors for opportunities to develop cooperative agreements
DEPLOY SHORT RANGE	2-5 Years	<ul style="list-style-type: none"> • Execute demand reduction agreements with specified large customers or sensitive customers in anticipation of shortage • Establish general customer outreach strategy
OPERATE	1 Year	<ul style="list-style-type: none"> • Prepare customers for mandatory demand curtailment measures • Implement drought surcharge • Implement curtailment measures
MANAGE	During Shortage	<ul style="list-style-type: none"> • Assist customers in meeting voluntary or mandatory reduction measures • Enforce mandatory measures

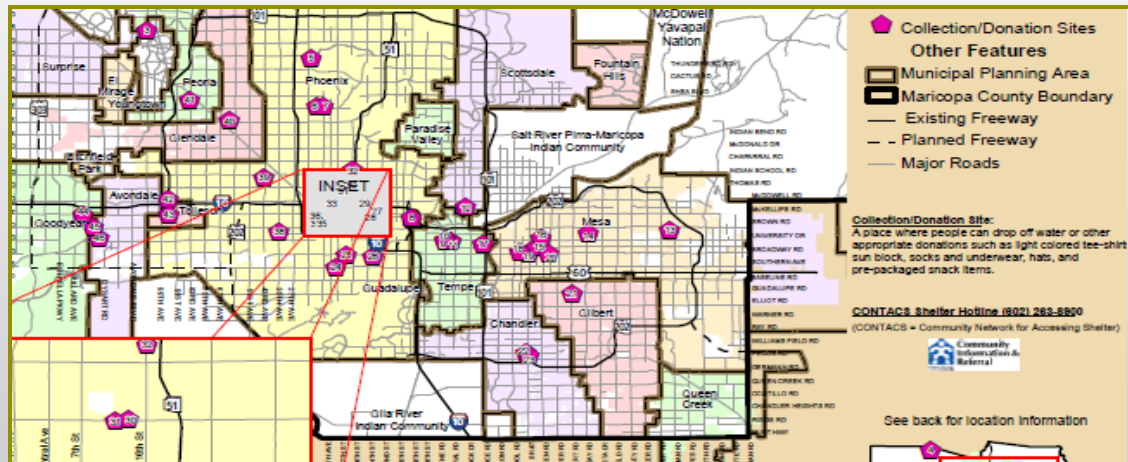
Human Services Heat Relief Network

- Provides community resources to homeless, elderly and disabled whenever:
 - Temp consistently above 100F
 - High nighttime temperatures
 - Extreme heat advisories issued by National Weather Service



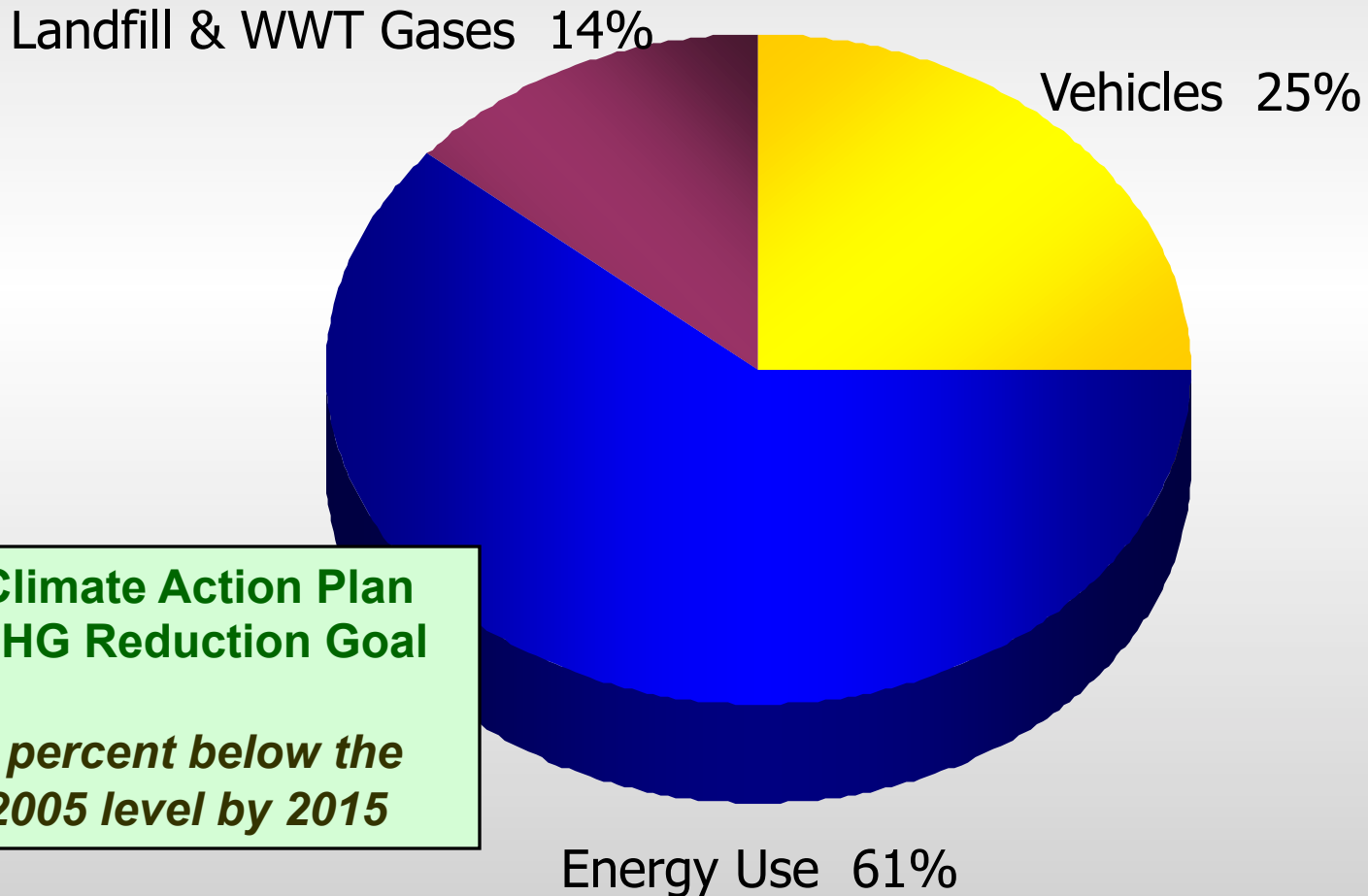
Human Services Heat Relief Network

- Augments community and faith-based organizations
- Services provided:
 - Hydration stations
 - Heat refuge
 - Water Donor/collector efforts
 - Wellness checks



Climate Action Plan

Greenhouse Gas Emissions City of Phoenix Operations 2005



**Climate Action Plan
GHG Reduction Goal**

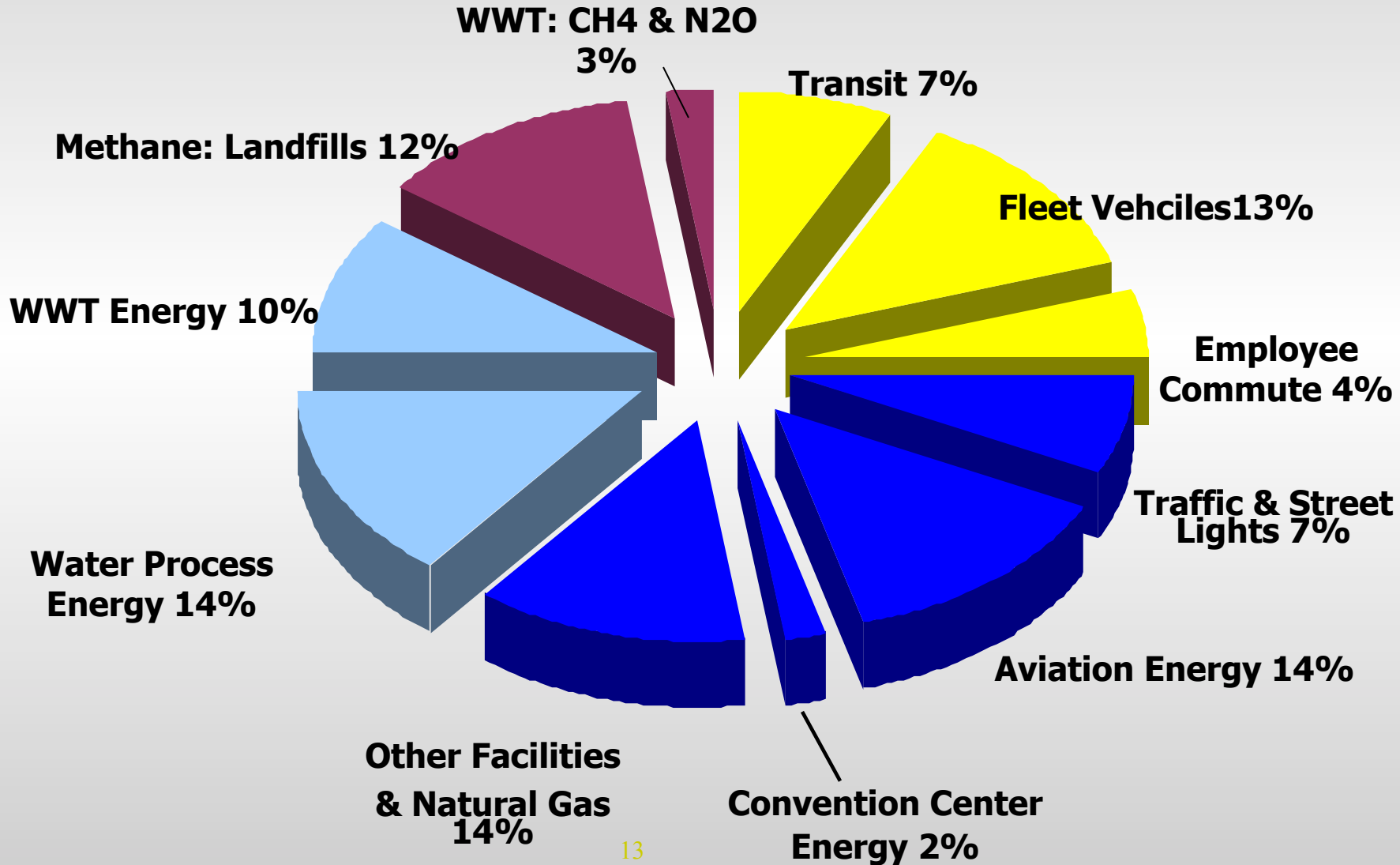
*5 percent below the
2005 level by 2015*



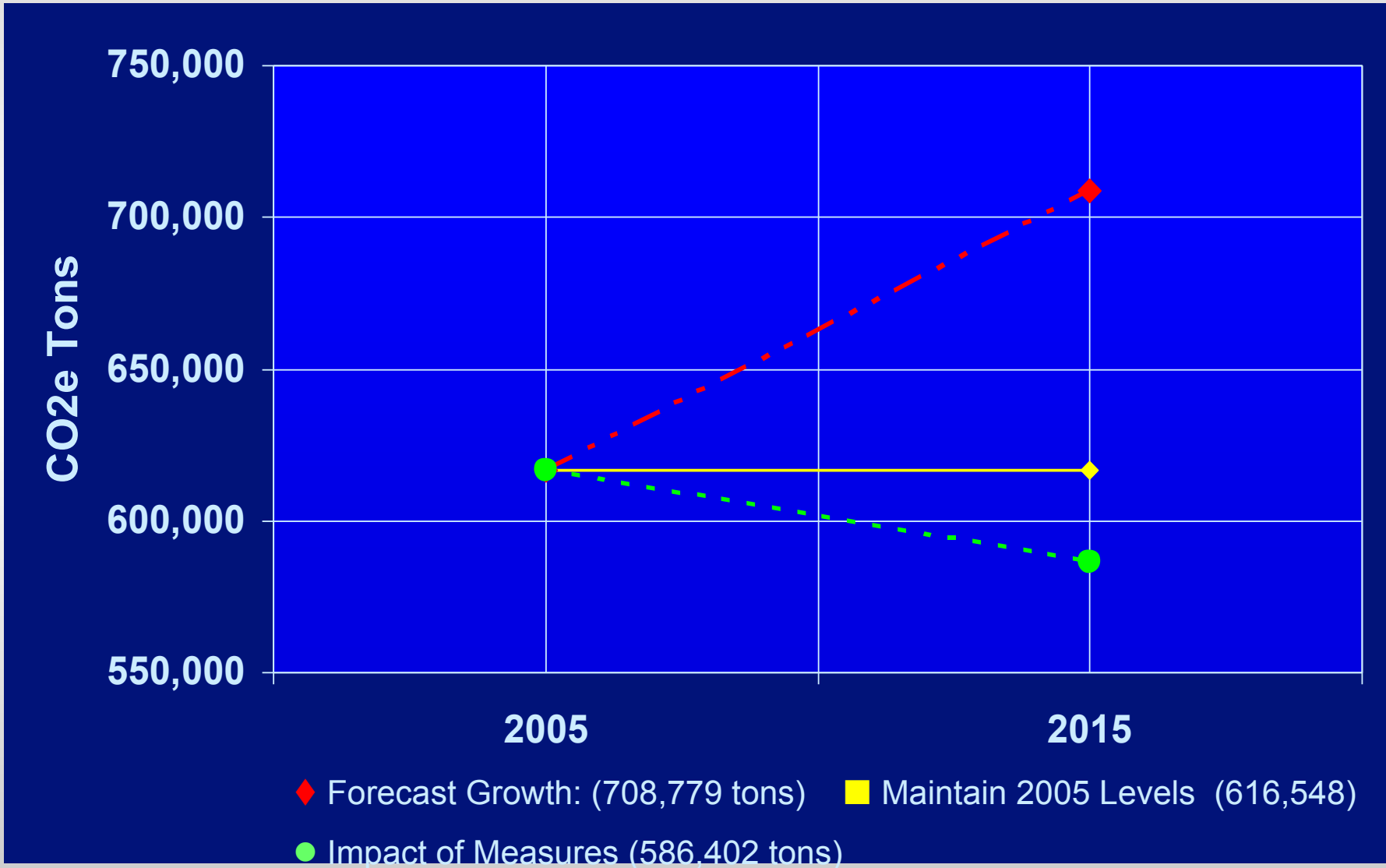
Greenhouse Gas Emissions

City of Phoenix Operations 2005

618,682 CO₂e Tons

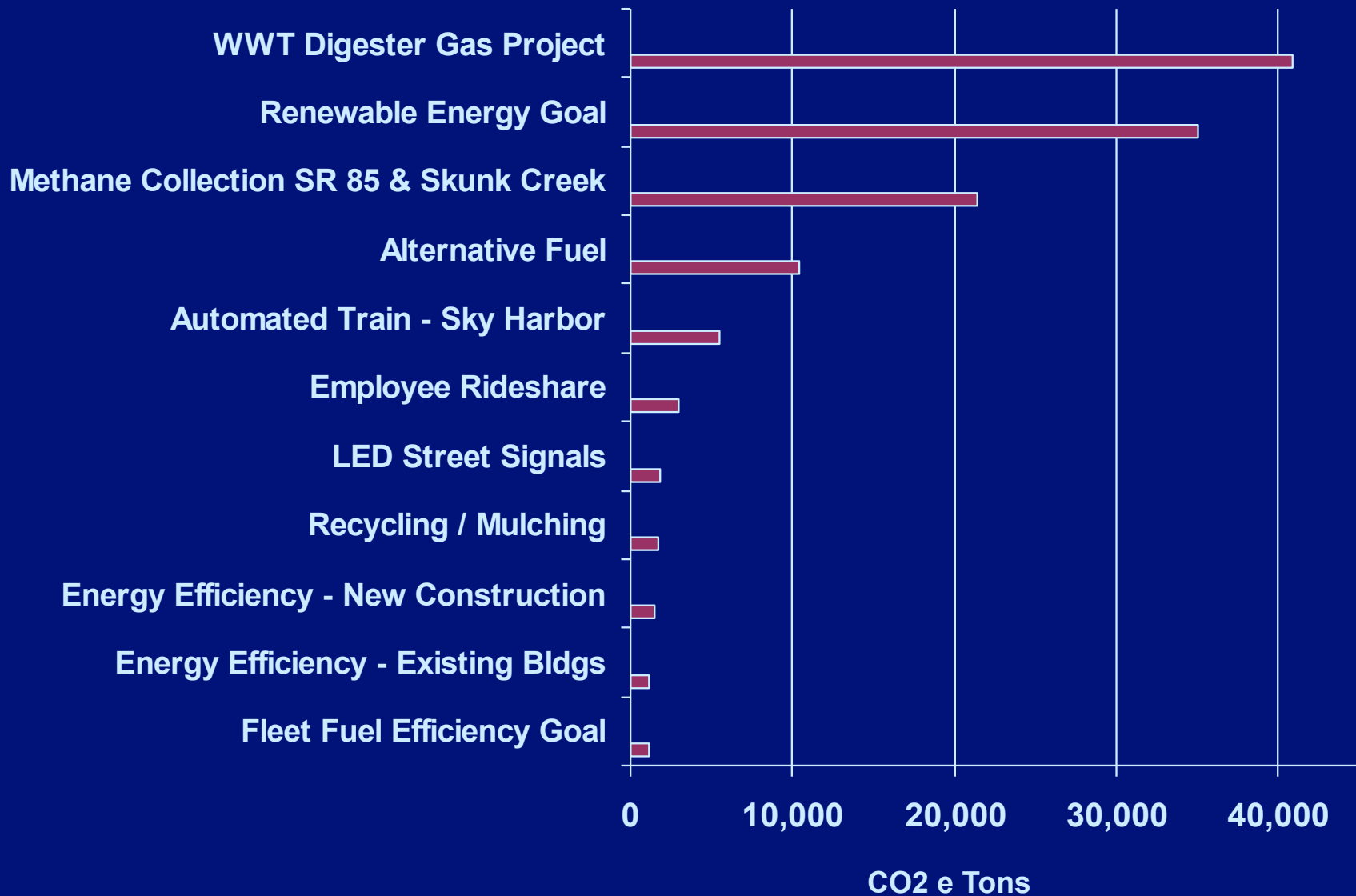


City of Phoenix Operations GHG Impact of Measures 2015



Selected Measures

GHG Reductions by 2015



Renewable Energy



- Clean technologies which avoid greenhouse gas generation
 - Solar
 - Wind
 - Hydroelectric
 - Geothermal
- 22 solar installations produce over 7 mega-watt electricity
- 12 mega-watts solar by end of 2012 (2400 homes !)
- City Renewable Energy Goal:
 - 15% by 2025
 - Solar, landfill-to-gas, algae, and biomass projects.



Skunk Creek Landfill

Solar Energy at Sky Harbor



Rental Car Center Solar Installation: 4.2 Mega-watts

- ***Enough to power about 1000 Valley homes; or equivalent to removing 1230 cars from the road for ONE year***

Green Buildings

Municipal Construction

- June 2005: The city adopts LEED-NC, a “whole system” approach to green building as the standard for its new construction
- 15 buildings certified or registered to LEED so far.
- Burton Barr Library certified as first LEED-Existing Building in 2010.



Burton Barr Central Library – LEED-EB 18



*Phoenix Convention Center – West:
LEED-NC Silver*

Green Fleet

- Vehicles create 28% of all air pollution nationwide.

- City:

- Over 4,090 alternative or clean fuel vehicles
- 53% of the total fuel.

Includes:

- Compressed Natural Gas
- Liquefied Natural Gas
- Biodiesel
- E85



Community Initiatives

- Energize Phoenix
- Transit – Light Rail
- Phoenix Green Construction Code (Green Building Code)
- Adaptive Reuse Policy
- Solar Phoenix 2
- NSD Home Retrofits



Questions?



phoenix.gov/environment

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