



Department of Urban and Regional Planning

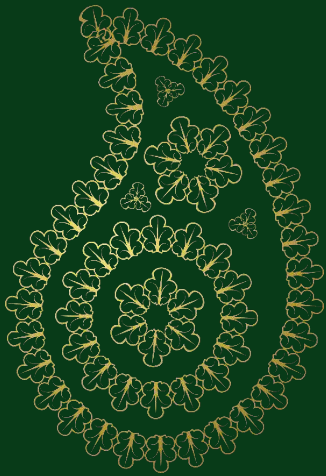


Proposed

San Antonio Sustainability Plan



URP 5453 Urban and Regional
Sustainability
University of Texas at San Antonio
Spring 2014



Part 1

Introduction

Background



- Urban and Regional Sustainability (URP 5453) is a required course in the UTSA College of Architecture's graduate urban and regional planning program but is open to students from other academic disciplines
- Students have been studying sustainability concepts as well as the sustainability and/or climate action plans from other cities
- Tonight's presentation is a draft of their sustainability plan for San Antonio for your comment

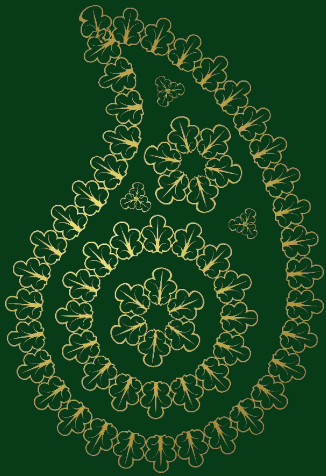


Goals



Area	Current	2040 Target
Water	147 daily gallons per capita	100 daily gallons per capita
Energy	5,673 annual kwh/capita 328 annual gallons of gasoline(equiv.)/capita	3,500 annual kwh/capita 165 annual gallons of gasoline(equiv.)/capita
Transportation & Land Use	24.4 annual VMT/capita 2,879 persons/square mile	21.0 annual VMT/capita 5,578 persons/square mile
Waste	1,200 lbs. annual landfill waste per capita	255 lbs. annual landfill waste per capita
Climate	26.5 annual metric tons of CO2e per capita	12.5 annual metric tons of CO2e per capita





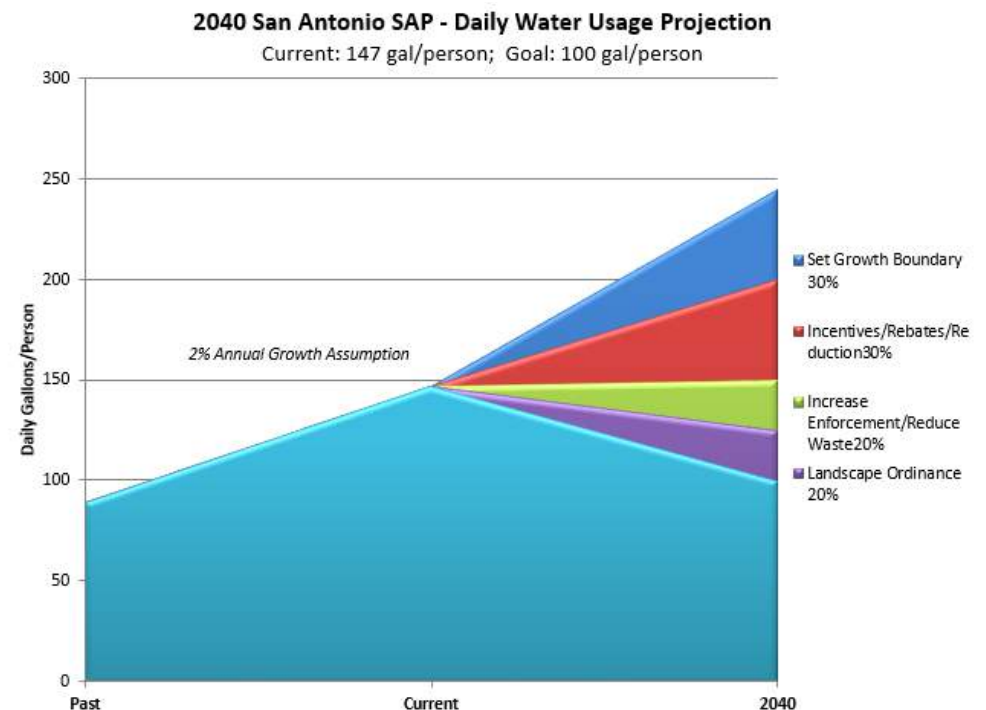
Part 2

Water

Water Goals 2040



- Decrease reliance on Edwards aquifer.
- Efficiently drain and/or prevent flood waters.
- Reduce residential and business water usage.
- Increase enforcement officers to 60.
- Set growth boundary for water services.
- Update landscape ordinances.



Water: Current Situation



- 48,000 acre-ft of water used on lawns in 2012.
- San Antonio draws water from SAWS' aquifer storage facility south of the city. The utility pumps surplus water into the underground reservoir to be used as a backup supply during droughts.
- SAWS offers incentives to reduce landscape water use and other uses.
- New, large commercial buildings must collect air-conditioning condensate and use it on-site.

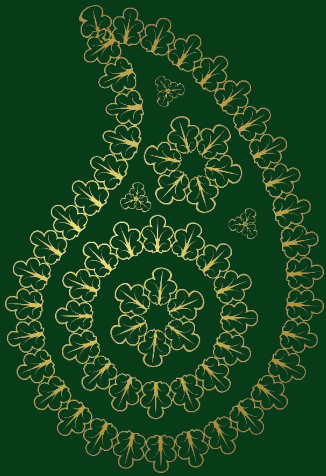


Water: Recommendations



- Create More Incentives
 - Rainwater harvesting and grey-water recycling.
 - Audit rebate and Drought prep programs
- Focus on reducing landscape water use
 - Phase in Synthetic Turf Grass
 - Continue to review and update landscape ordinances to reduce water use
- Recycle and Reuse Flood Waters
 - Permeable surfaces that capture and drain quickly
 - Investigate feasibility of storing and using flood water
- Set Growth Boundary for Water Services.





Part 3

Energy

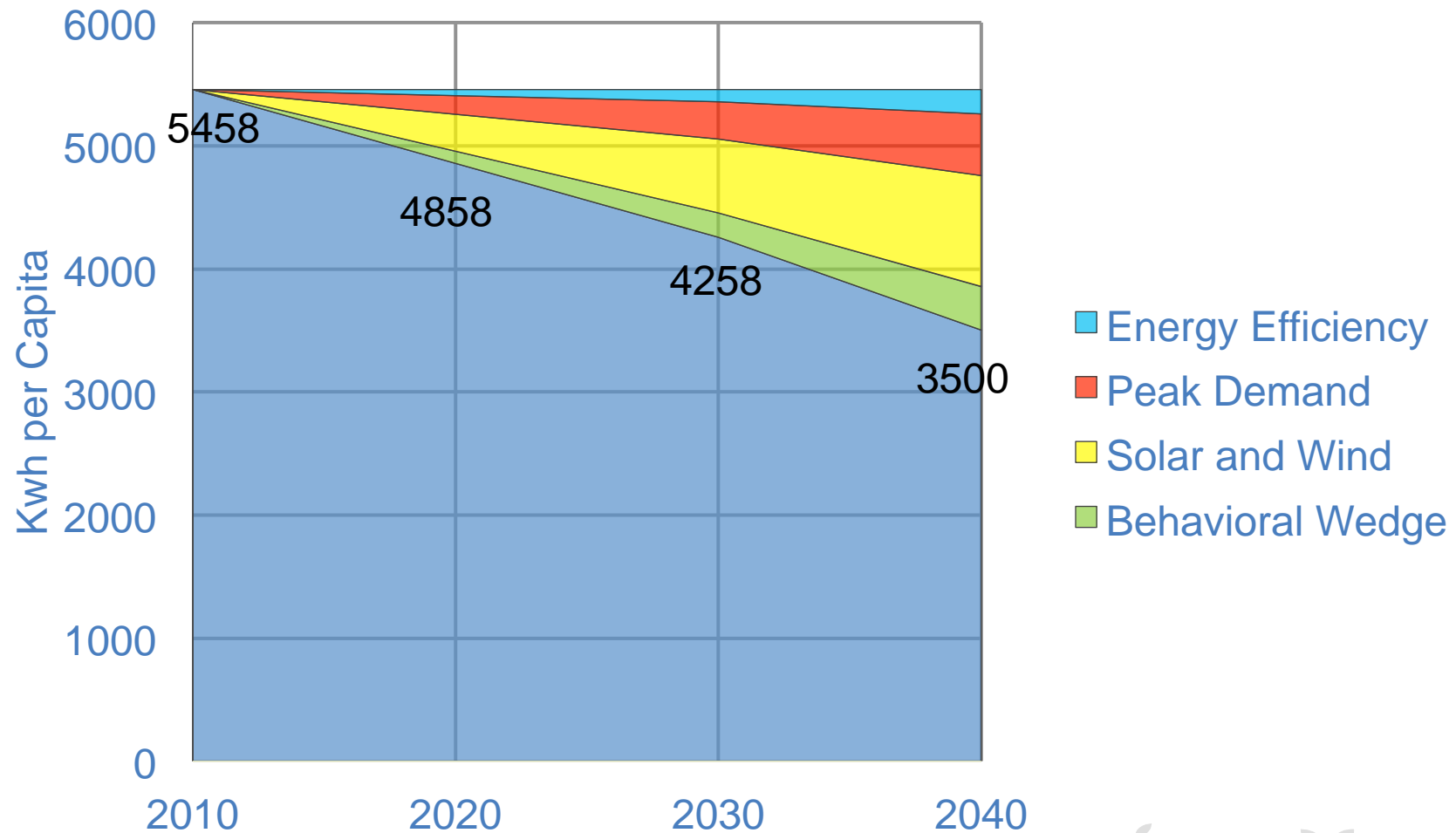
Energy Goals by 2040



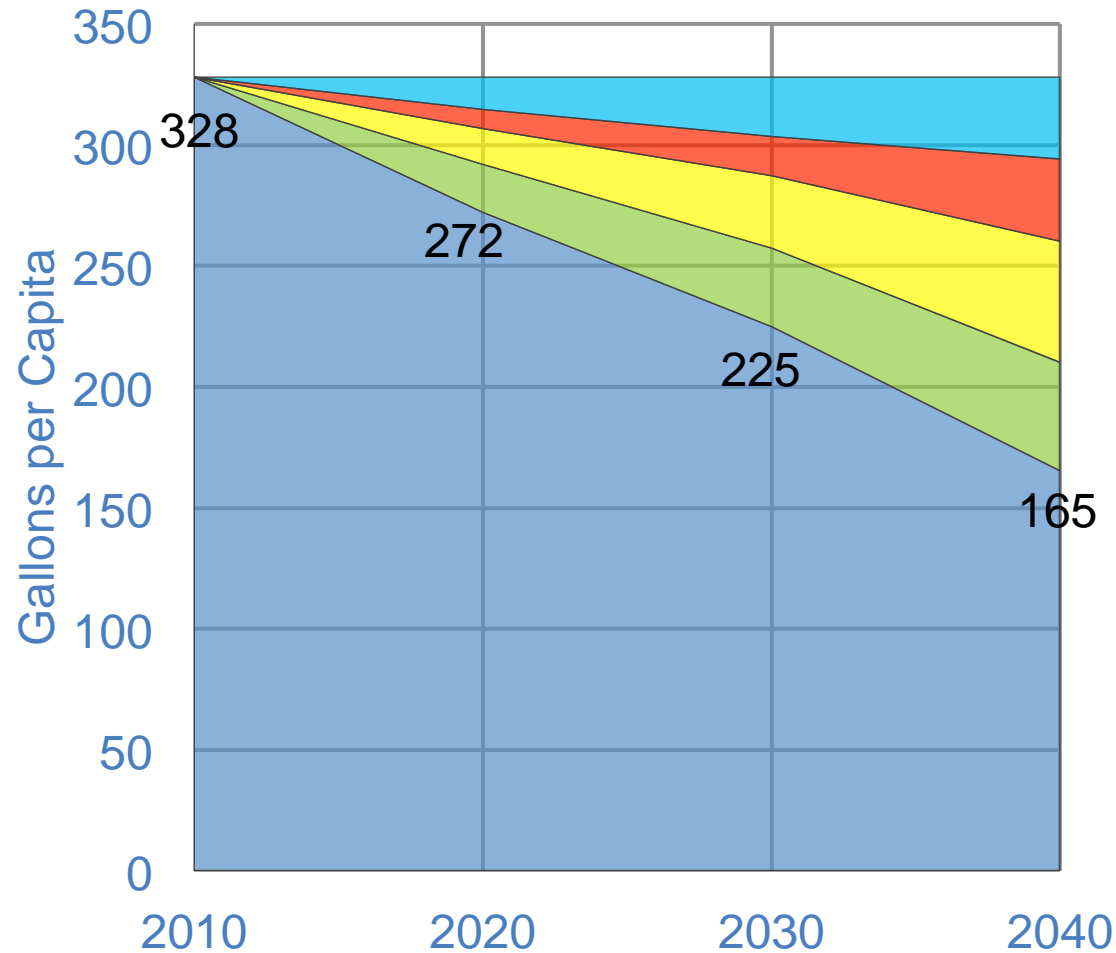
- Reduce consumption to 3,500 kw/h per capita
- 50% of energy capacity to be renewable
- Reduce demand by 1,000 MW
- Reduce gasoline consumption to 165 gallons per capita
- Adoption of the latest IECC/IRC for continuing energy efficiency



Electricity Use



Gasoline Use



- Electric Vehicles
- Improvements in Gas Engines
- Higher Density
- Public Transportation Ridership



Current Programs



- CPS Save for Tomorrow Energy Plan (STEP) program, Renewables Portfolio, Advance Metering Infrastructure (AMI), Personal Energy Management Systems (PEMS) (smart-grid)
- IECC/IRC Codes implementation
- Several Federal/State/Local Incentives
- Energy policies in city departments
- Bexar Energy Management Program (EMP)
- Build San Antonio Green (BSAG)
- Solar San Antonio
- Mission Verde Alliance



Recommendations



- Continuation of CPS STEP program
- Implementation of Demand Pricing during Peak Hours
- Implementation of Micro-grids within neighborhoods
- Explore opportunities for geothermal energy, e.g., Hot Wells, to provide geothermal opportunities
- Compressed Air Energy Storage (CAES) and other forms of electricity storage

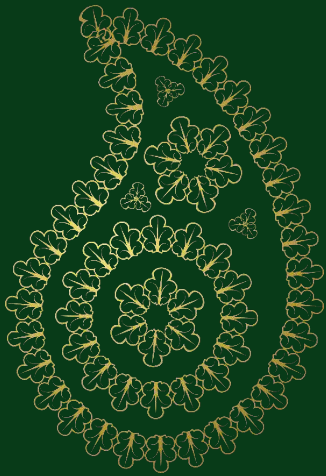


Recommendations



- Partnerships between companies, institutes and city services, e.g., waste heat can be used to heat other buildings.
- Require energy policies for commercial and industrial, e.g., energy plans, 10% of fleet electrical vehicles
- Maximize biogas use
- Programs to educate people about energy savings and future technologies





Part 4

Transportation & Land Use

Goals



Improve transportation accessibility for all citizens of San Antonio by promoting Transit Oriented Developments thus reducing urban sprawl and fostering smart growth.

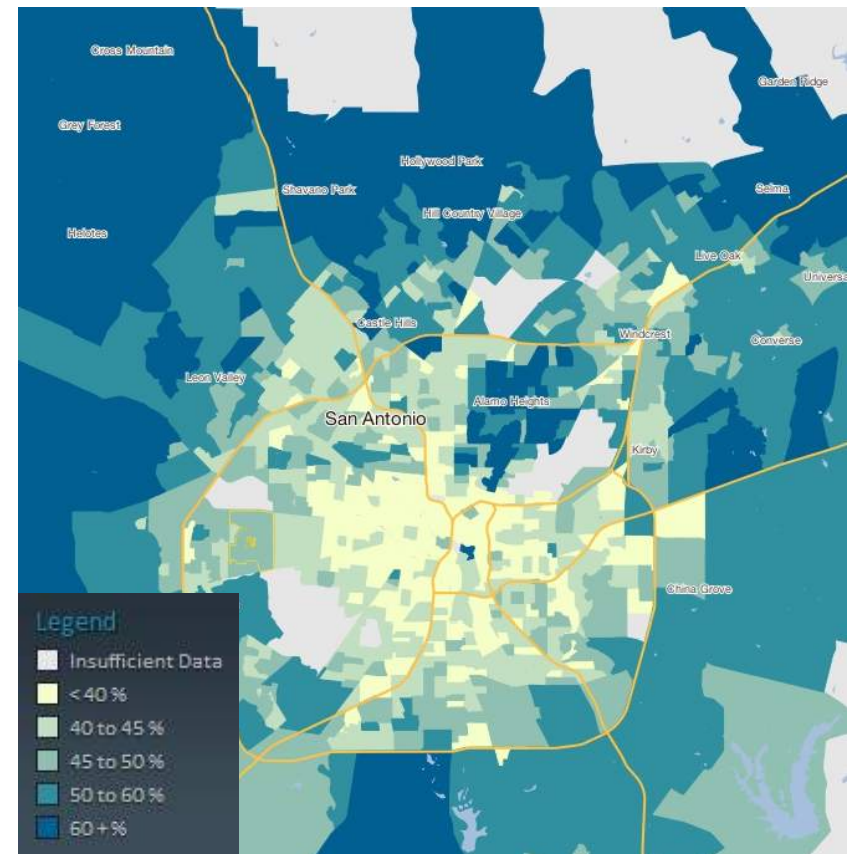


Current Situation (2011)



- Sprawl Index Score
 - 77.37 (Rank #179)
- Vehicle Miles Traveled
 - 24.42 miles/person
- Commute
 - 61.5% of people with <25 miles/day

Housing and Transportation Affordability Index



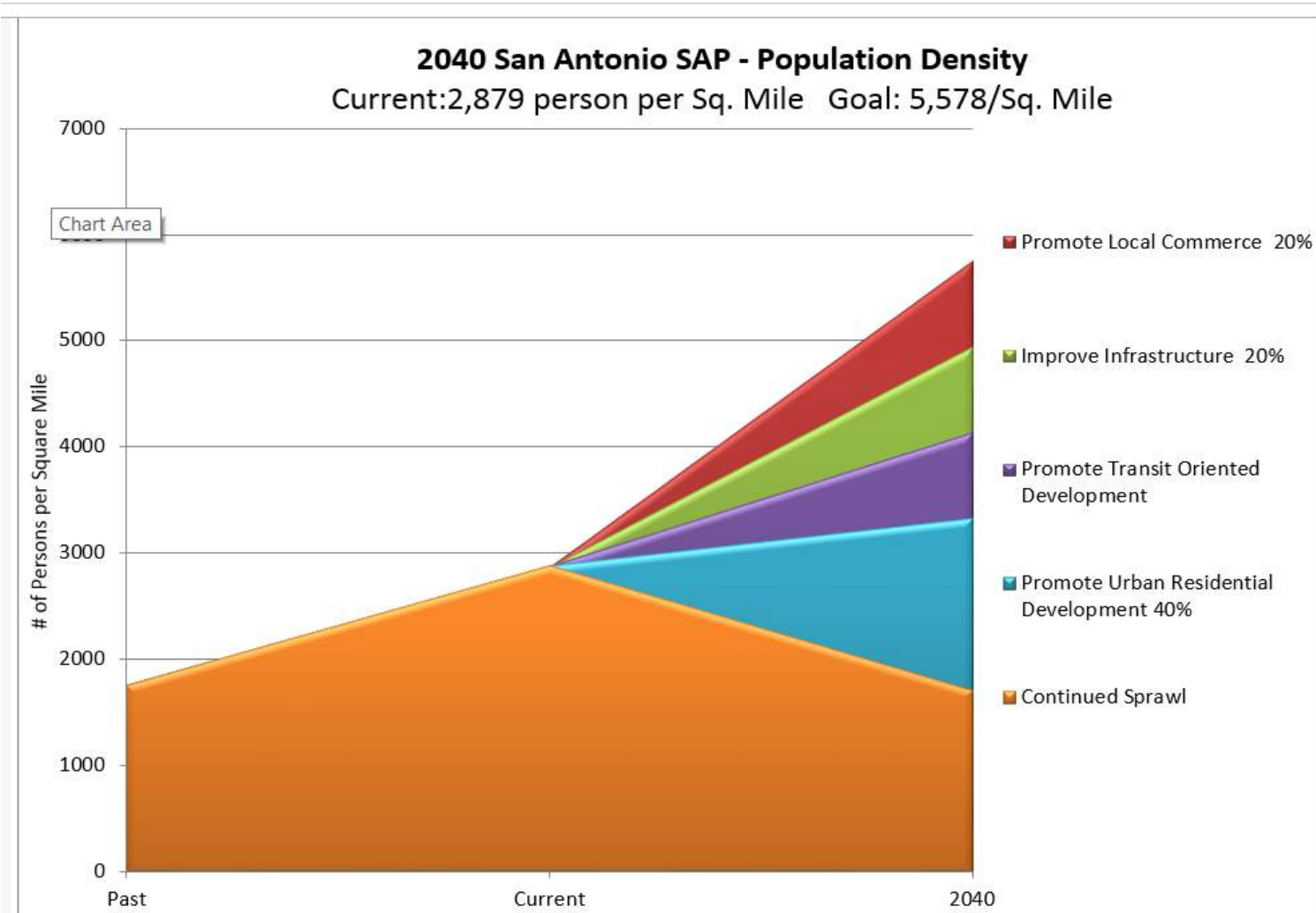
What needs to happen

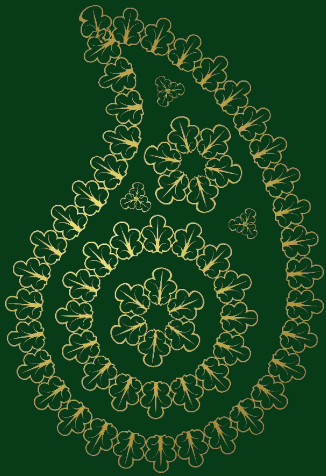


- Increase funding of public transit to improve access by public
- Revise Unified Development Code
- Encourage public/private TOD
 - Review and enhance incentives
 - Implement programs with Economic Development Foundation
- Incentivize “smart growth” and revitalization programs within the city



Population Density





Part 5

Waste

Current Strategies



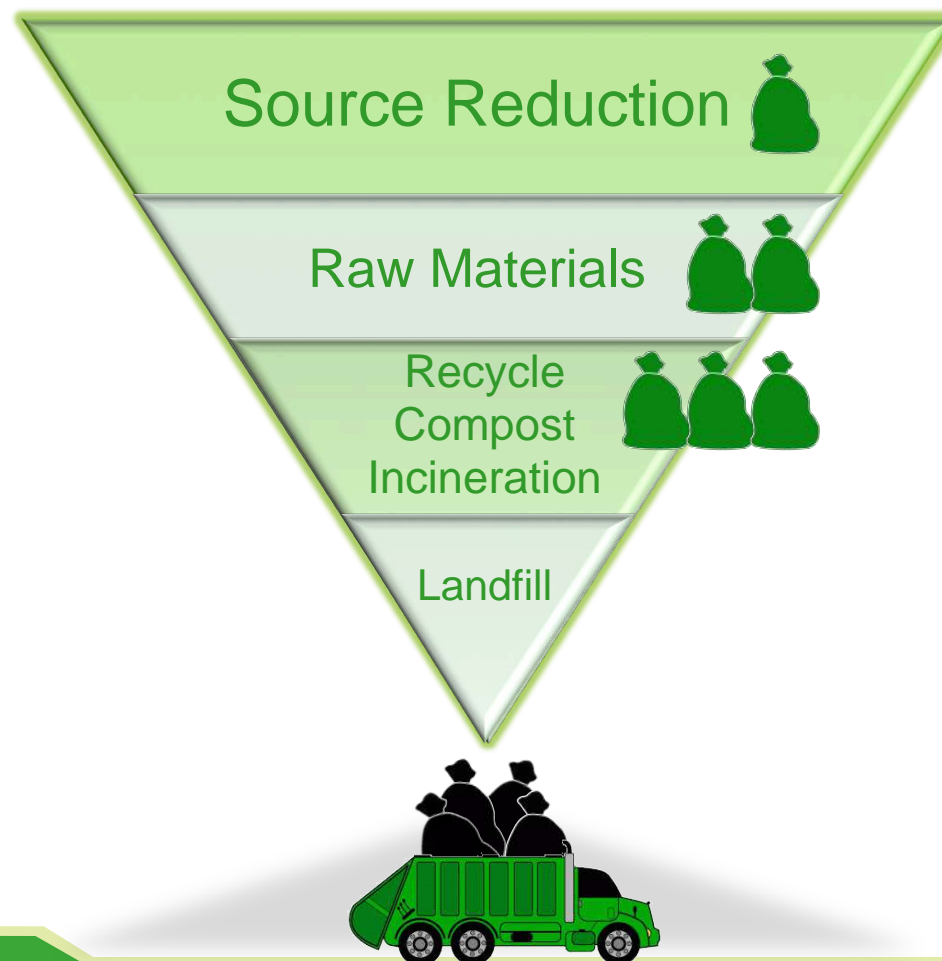
- SA2020 – Make San Antonio Beautiful
 - Reduce amount of material going into landfills
- Recycling and Resource Recovery Plan (2025)
 - “Pathway to Zero Waste”
 - Recycle 60% of the single-family residential waste stream by 2025
 - Ensure all single-family and multi-family residents have access to convenient recycling
 - Improve recycling opportunities for businesses



Goal and Objectives




- 80% zero waste by 2040



Recommendations



- Education
- Zero Waste in Public Schools by 2030
- Innovation
- Incentivize Reusable Containers

 Source Reduction



- Cradle to Cradle
- Promote Green Businesses
- Facilitate Business Relationships

 Raw Materials



- Incineration to Produce Energy
- Compost to Produce Fertilizer
- Recycle to Produce Raw Materials
- Innovation
 - Pneumatic Waste Collection/Solar Power Waste Compactor
 - Reverse Vending/Recycling Banks

 Recycle/Compost/Incineration

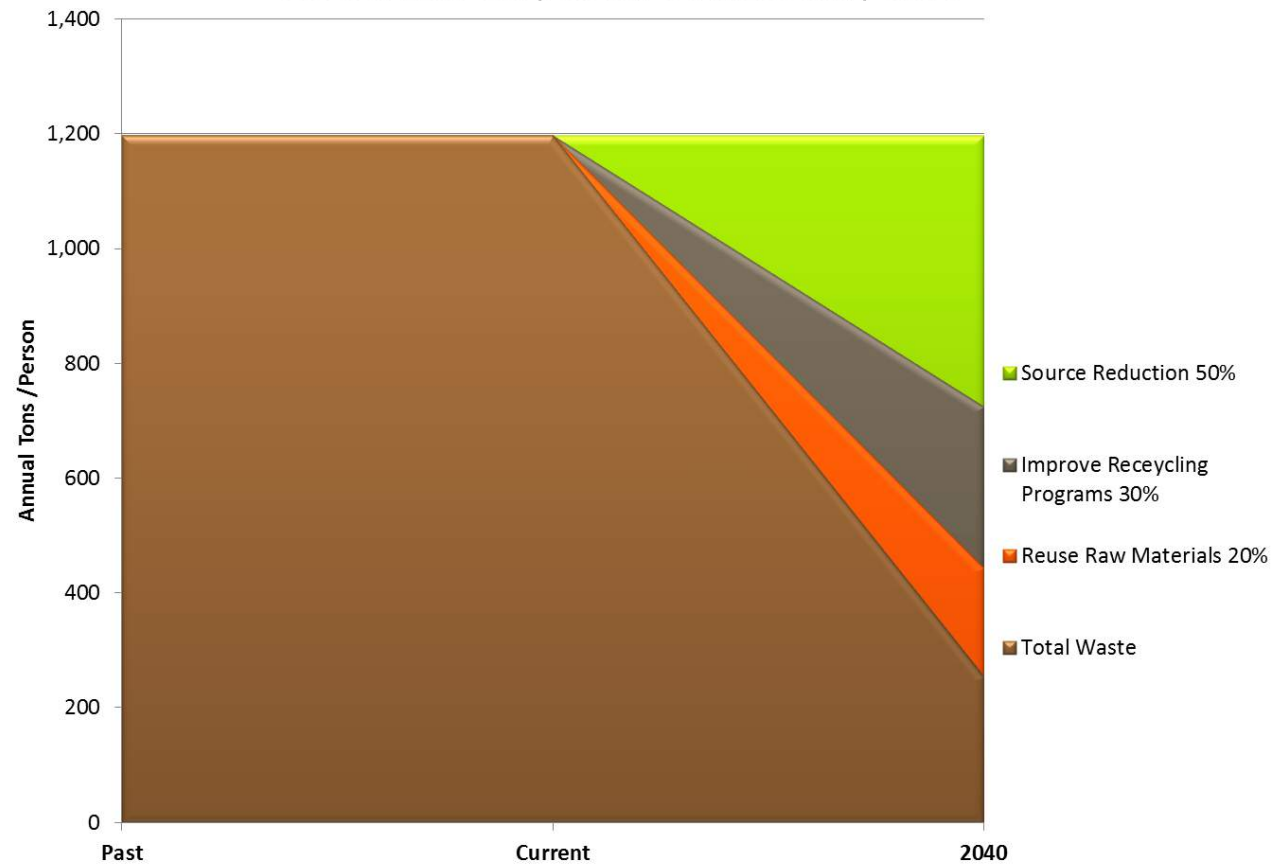


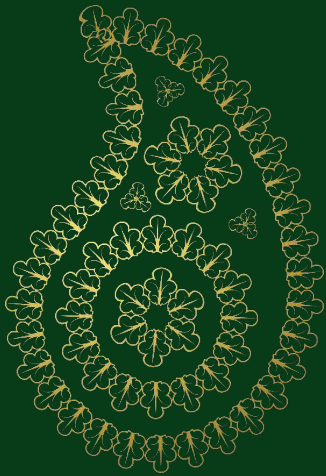
Summary of Waste Reduction Strategies



2040 San Antonio SAP - Annual Waste Projection

Current: 1200 lbs/person; Goal: 255 lbs/person





Part 6

Climate Adaptation and Mitigation

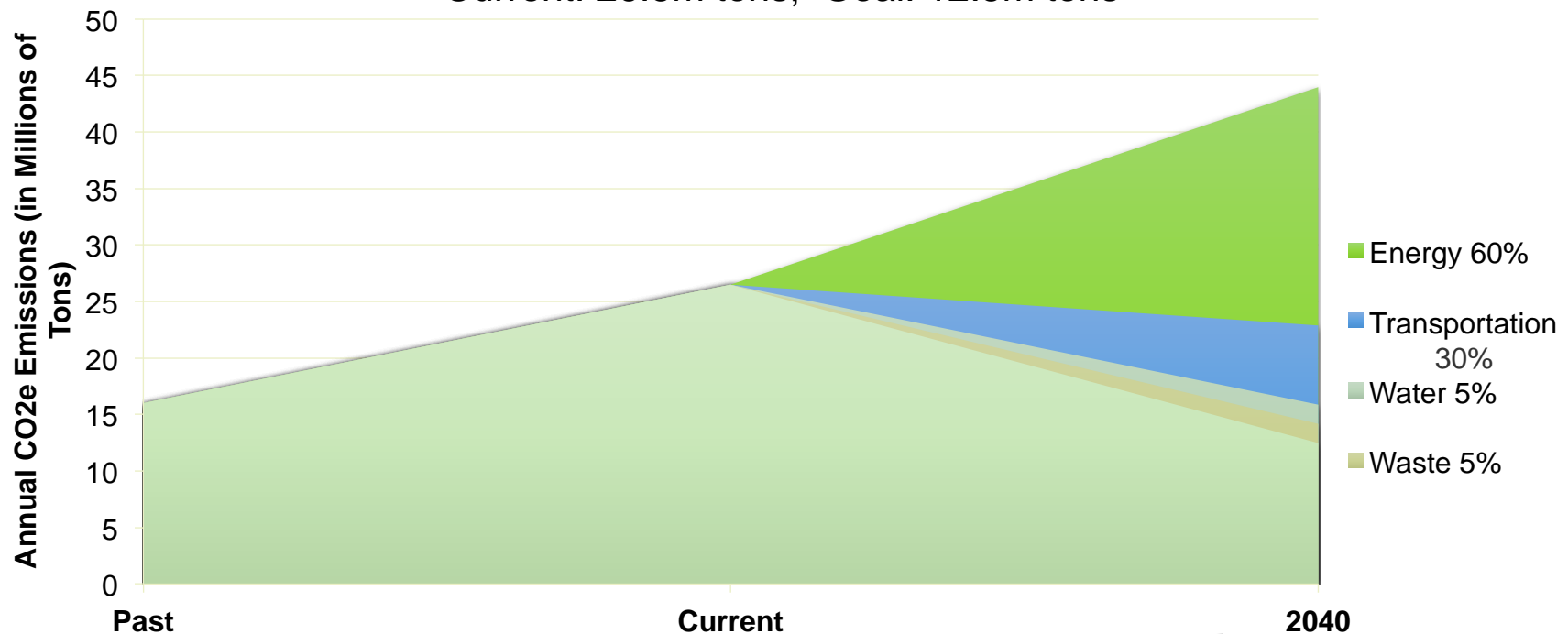
GHG Emissions



GOAL: Decrease CO₂ Emissions **50%** by **2040**

2040 San Antonio SAP - Annual CO₂e Emissions Projection

Current: 26.5m tons; Goal: 12.5m tons



Climate Change Risks



Flooding

Increased intensity
of Storms



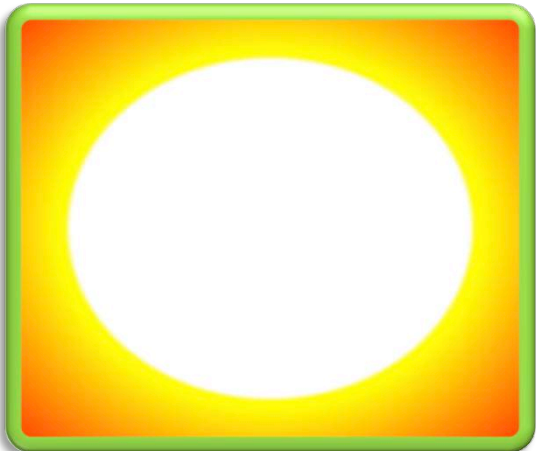
Wildfires

Weather intensifier
effect



Urban Heat Island

Future population/
temperature increase



Drought

Projected decrease
in precipitation

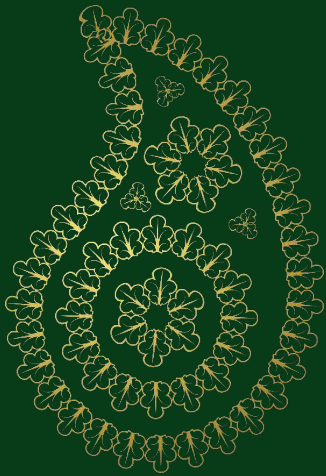


Proposed Strategies



- Incorporate changes in UDC to foster LID
- Promote “cool roofs” and increase urban tree canopy
- Fire adapted communities
- Climate Advisory Technical Committee





Final Part

Questions



Thank You!

