



# Climate and Community Innovation

**City of Davis**

# Plan – Guiding Principles



*Engage Community  
Directly*

Achieve Measurable  
GHG Reductions

Plan

Begin Process to  
Successfully Adapt to  
Transitioning Climate  
and Economy

Prioritize Cost  
Effective Actions that  
build on past success

# Overview



- **Why do we need to develop the ability?**
- **What has Davis done?**
- **Needs**
- **What gives us hope?**

# Background



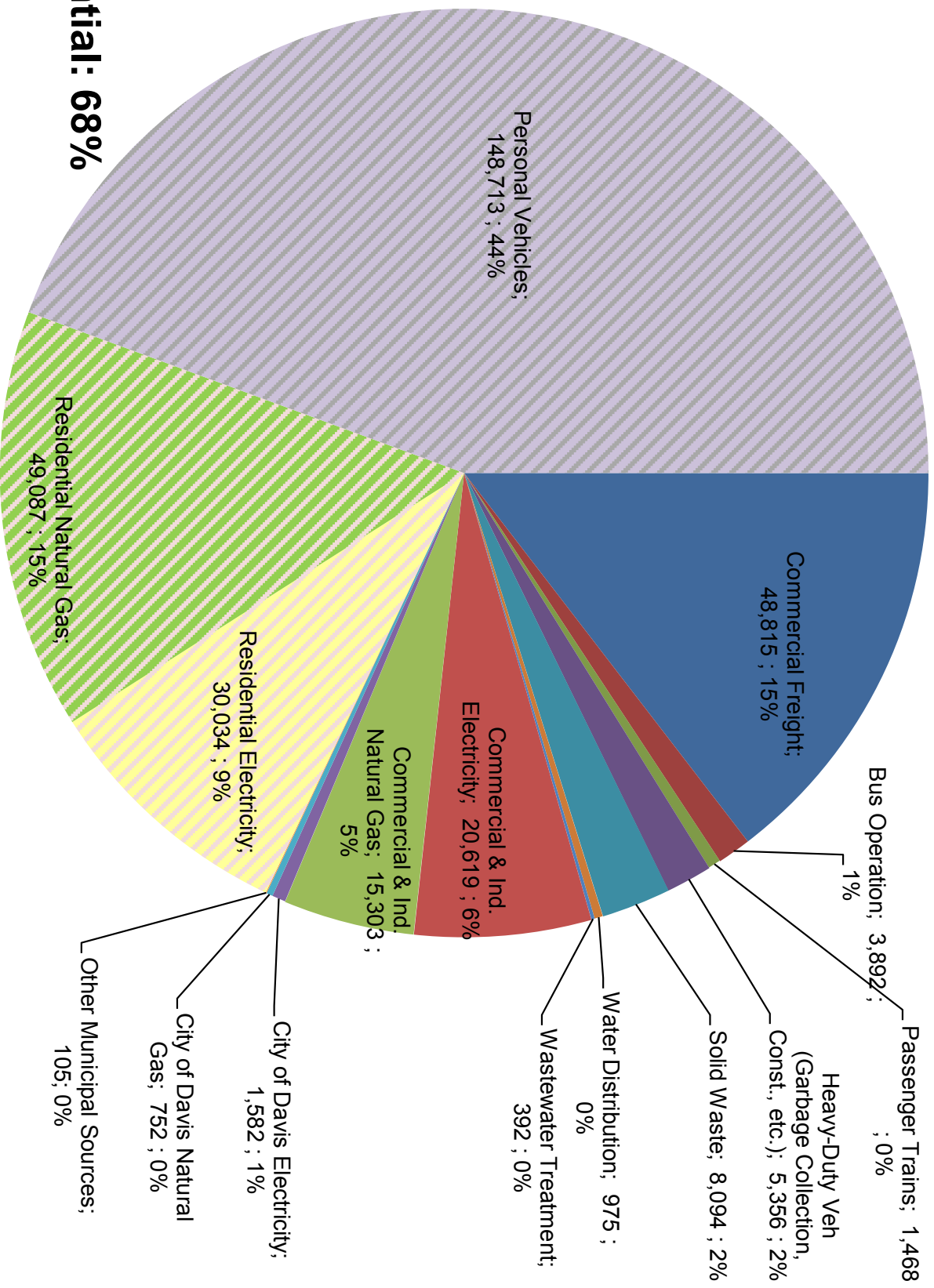
- **Why do we need to develop the ability?**
- The science and evidence
- Residential sector produces high % of GHG emissions
- Organized community gives us the best opportunity to mitigate and adapt successfully
- May be the most cost effective way forward
- This is where local government can be most effective

# Key steps



- **Understanding the role residential sector plays**
- **Due Diligence / Preparation (finding a tool(s) that fits)**
- **Test it**
- **Learn**

# Understanding Residential Sector Inventory



**Residential: 68%**

# Understanding Residential Sector Community Goals



2010

- 2000 Levels (min)
- 1990 Levels (desired)

2015

- 1995 Levels
- 15% Below 1990 Levels

2020

- 1990 Levels
- 28% Below 1990 Levels

2050

- 80% Below 1990 Levels
- Carbon Neutral

# Understanding Residential Sector Per capita Goals



2010

- Base Year – 8.1 MT/Person

2015

- 6.5 MT/Person (min) = 20% reduction
- 4.1 MT/Person (desired) = 51% reduction

2020

- 4.8 MT/Person (min) = 41% reduction
- 3.5 MT/Person (desired) = 57% reduction

2050

- 1.0 MT/Person (min) = 88% reduction
- Net 0 MT/Person (desired) = 100% reduction



# Due Diligence / Preparation



- **Find a well constructed tool(s)**
- Needs and abilities of households
- Structure for peer-to-peer support
- Small group structure anchored in broad vision with strategy to scale

# Test it



- **Pilot Program (Low Carbon Diet, 2009)**
  - 100 households across geographic/socio-economic range
  - Households across the range could reach GHG reduction goals
  - Worked best when households had social connections
  - Did not perform as well in larger group (10 households)
  - Difficult to verify “stickiness” of actions
  - Needed support/resources/training to replicate and scale

# Test it - Outcomes



- **Pilot Program (Low Carbon Diet, 2009)**
  - Proof of concept & due diligence
  - Formation of a Community Organization with aligned objectives: Cool Davis
  - Recognition that this could be delivery platform for sustainability programs and many other city programs/services

# Needs



- **Understand Community at deeper level**
- **Build/support community organization**
- **Build support from outside organizations and funders to recognize the need and potential**

# Key Learnings



- **Do not underestimate the effort**
- **Do not underestimate the value (and power) of co-benefits**
- **Prepare a business case for the actions**
- **Make it Enjoyable**

# Community Innovation



# THE DAVIS EXPERIMENT

## CONTENTS

**1 DAVIS, CALIFORNIA.** The citizens of Davis have been involved in progressive city planning and energy conservation since 1965, when the City Council decided to localize bicycle transportation by developing a system of bike ways. In 1972, the City drew up a general plan for future development, based on guidelines distributed to residents. Their goals were to limit growth and to conserve land, water, energy, and other natural resources.

**2 ENERGY USE.** An important part of Davis' General Plan was to determine how energy was being used by residents. A survey of residents showed that automobiles represented 50 per cent of energy consumption, and space heating and cooling accounted for 20 percent. 80, transportation and building construction became important focal points in the Davis Plan.

**3 BUILDING CODES.** The Energy Use Survey revealed that a building's placement on a lot — its siting and orientation — greatly influenced its space heating and cooling needs. Insulation, amount of window area, exterior roof and wall colors, easting shading, and other factors were also important. Armed with this information, the City Council drew up a building construction code which local developers have followed successfully.

**4 SOLAR HOUSES.** To demonstrate to local builders and developers methods for complying with Davis' new construction code, the city is building model solar homes — one single-family dwelling which took advantage of natural exposure, exposure sunlight, and thermal mass buildings which create a basic site that could be adapted to difficult siting ("weird owner") situations.

**5 SOLAR DRYERS.** Like many other communities, several years ago Davis banned the use of clotheslines on unsightly lots. After the Energy Use Survey, Davis reversed its position and nullified its restrictive burning ordinances.

**6 SWIMMING POOLS.** When the Energy Use Survey revealed that many of Davis' 700 swimming pools cost \$40 to \$60 a month to heat, the city decided to ban any new pool heating equipment systems, and to require that current gas-heated pools be converted to solar heating within the next ten years.

**7 FENCES AND HERDS.** In most communities, fencing regulations require that fences be constructed relatively close to houses — leaving a large amount of yard space between the fence and the street. Davis had similar regulations until the city realized that fencing close to a house blocks the winter sun.

**8 WORK IN THE HOME.** By encouraging cottage industry, Davis hopes to cut down on home-to-office transportation and to reduce some of the need for new office-building construction.

**9 STREETS.** As new developments are built, Davis believes that reducing street width from 34 to 28 feet or less will not only save space — it would also use less asphalt and may contribute to slower auto speeds, thereby enhancing fuel efficiency.

**10 RECYCLING.** Davis' recycling effort began two years ago and has grown into a full-fledged trash-collection, curbside, and recycling center that handles newspapers, cans, glass, green waste oil. With large initial investments in drop boxes, collection centers, trucks, and a loan curbside, the recycling effort lost money in the early years. But now, the operation breaks even by selling \$20,000 worth of recyclables every month.

**11 SHADE TREES.** Trees provide important shading for the city's streets and buildings, and the city maintains them with care. Davis plants a large number of evergreen trees to decrease the need for heat during the fall.

**12 BICYCLES.** Davis' bikeways and bicycle safety programs provide unique incentives to bicycle transportation unrequited anywhere else in the U.S. In a city of 20,000 people, Davis has some 25,000 bicycles registered.

**13 BUSES.** By using second-hand, solar-bus, double-decker buses, Davis is able to provide convenient public transportation facilities at minimum cost and energy use.

**14 APPEALS.** To assist other city planners and public officials, Davis' city codes, ordinances, and plans related to residential construction, and bicycle trails are reproduced in appendices A, B, and C.

“most importantly, this shows that a small community can have an affect on a global issue”

Davis Experiment 1977

ONE CITY'S PLAN TO SAVE ENERGY

