

# Greenhouse Gas Emissions from the University Park Campus



# Overview

- Introduction to the inventory
- Inventory methods
- Current & projected emissions
- Transportation model
- Significance of inventory

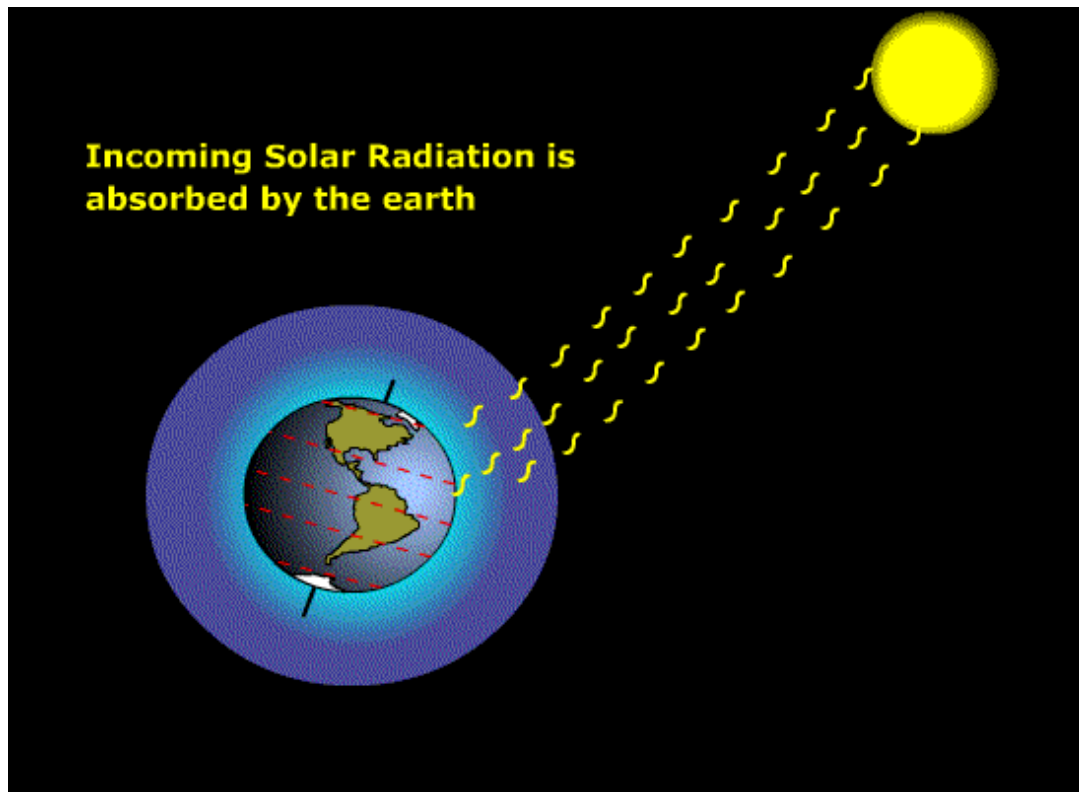


# Introduction to the Inventory

- The greenhouse effect
- Greenhouse gas (GHG) basics
- Why inventory GHGs?



# The Greenhouse Effect



[http://earthsci.org/weather/weaimages/greenhouse\\_effect.gif](http://earthsci.org/weather/weaimages/greenhouse_effect.gif)

# GHG Basics

- The greenhouse effect is natural
- Humans augment the greenhouse effect
- Most GHGs occur naturally
- Some GHGs are manmade

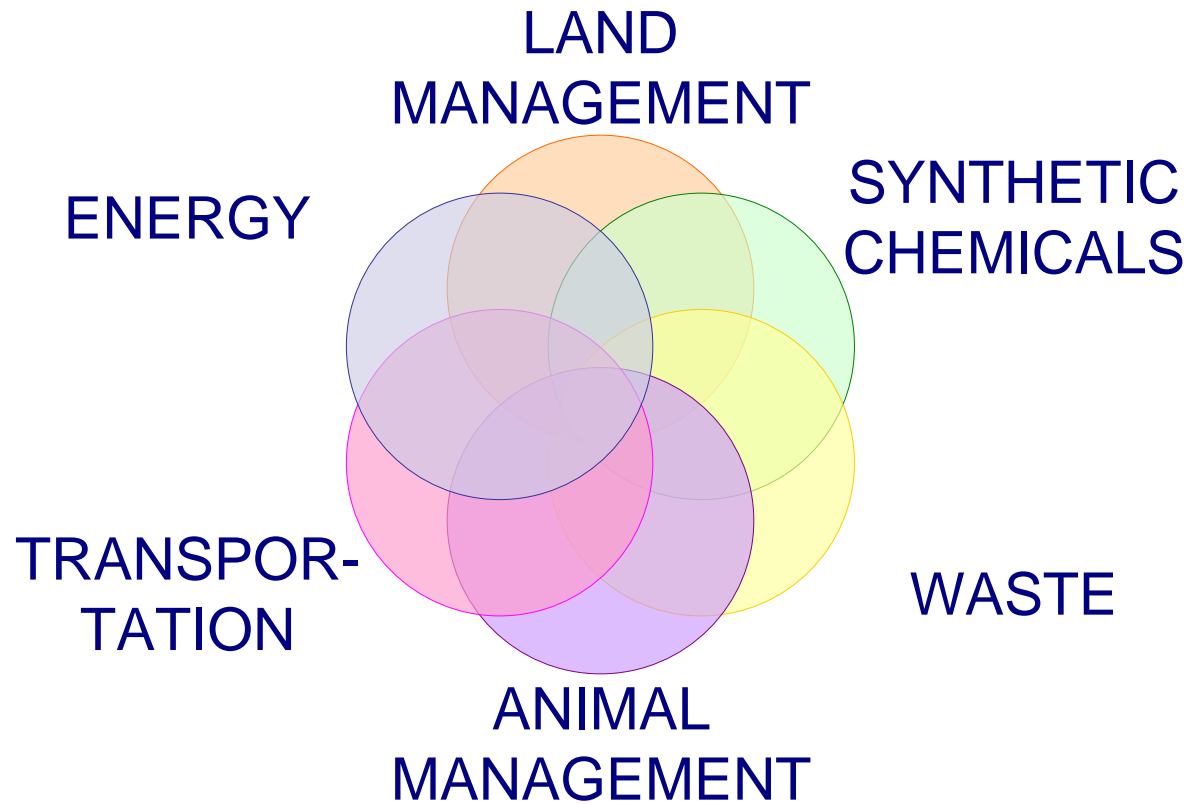


# Why Inventory GHGs?

- To estimate total GHGs from an area
- To identify important sources of GHGs



# Inventory Methods



# Inventory Methods

GHG emissions = activity data \* emissions coefficient

- Activity data

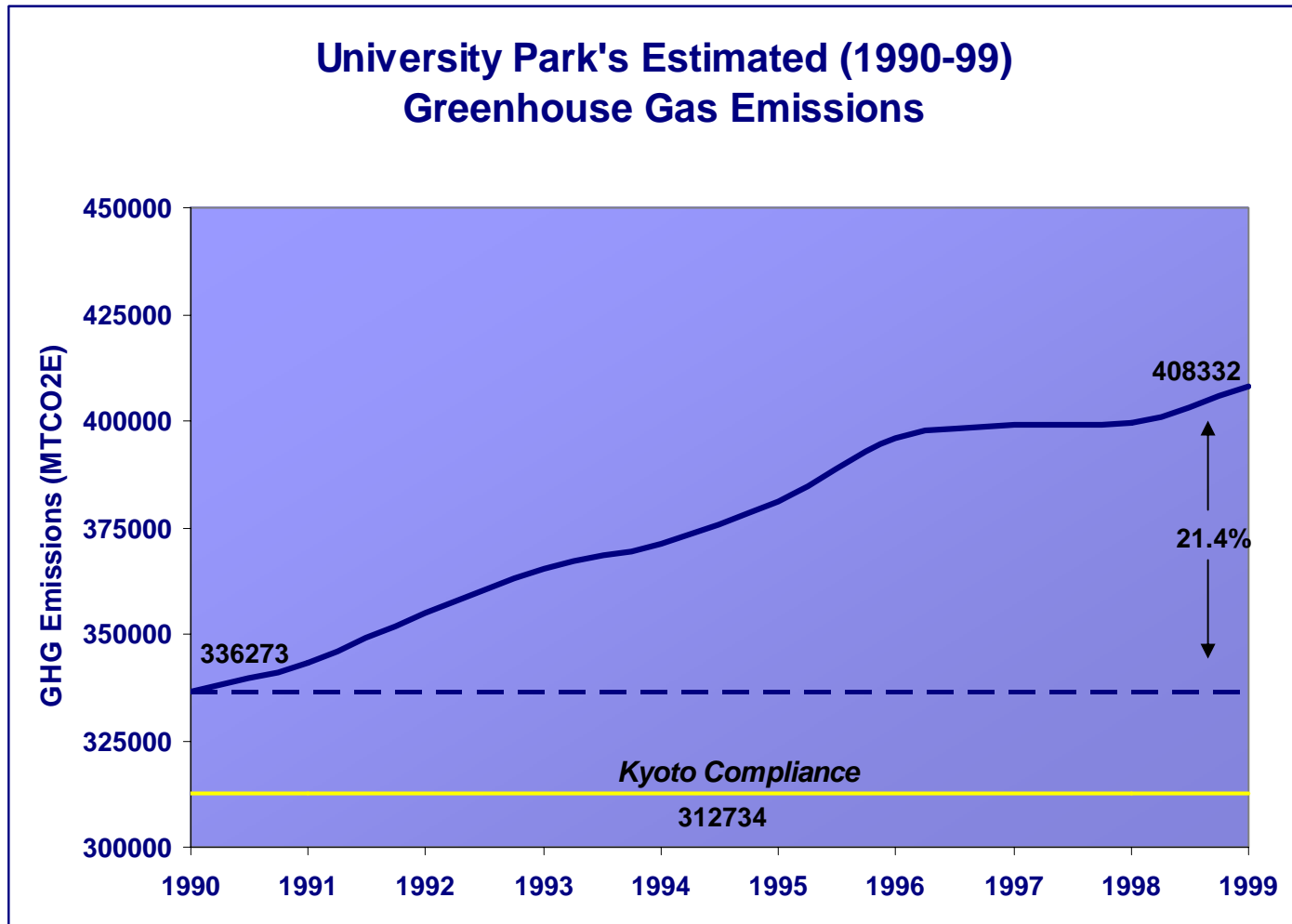
- Tons of coal burned, total commuter miles traveled

- Emissions coefficient

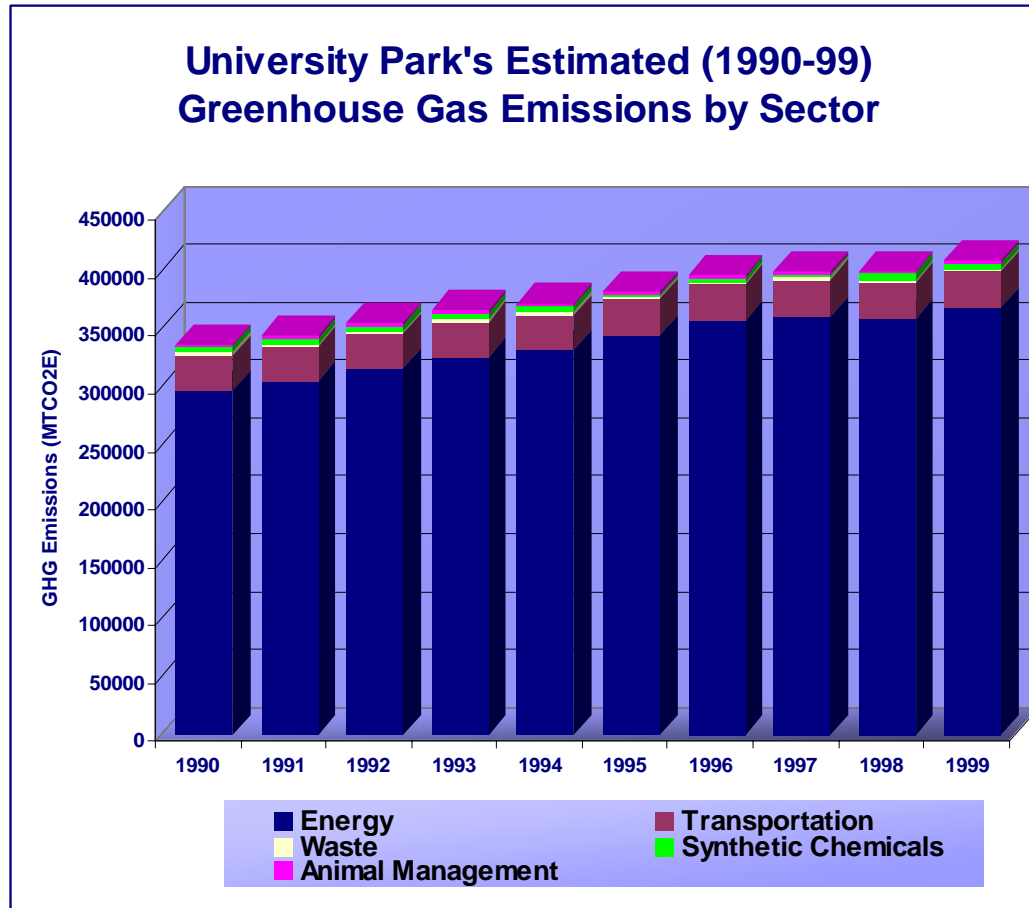
- CO<sub>2</sub> per ton coal, N<sub>2</sub>O per commuter mile traveled



# Current Emissions



# Current Emissions

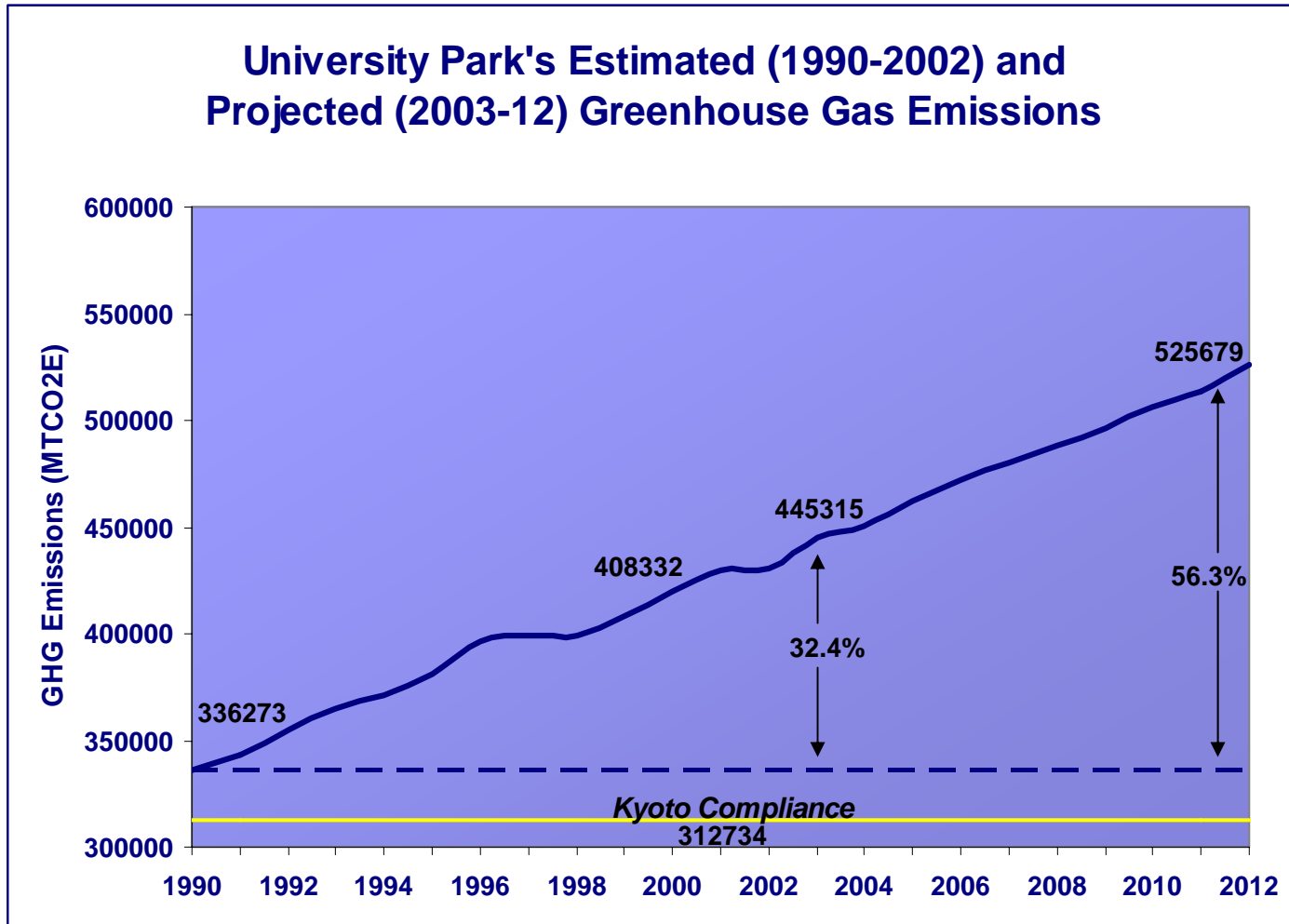


# Projected Emissions

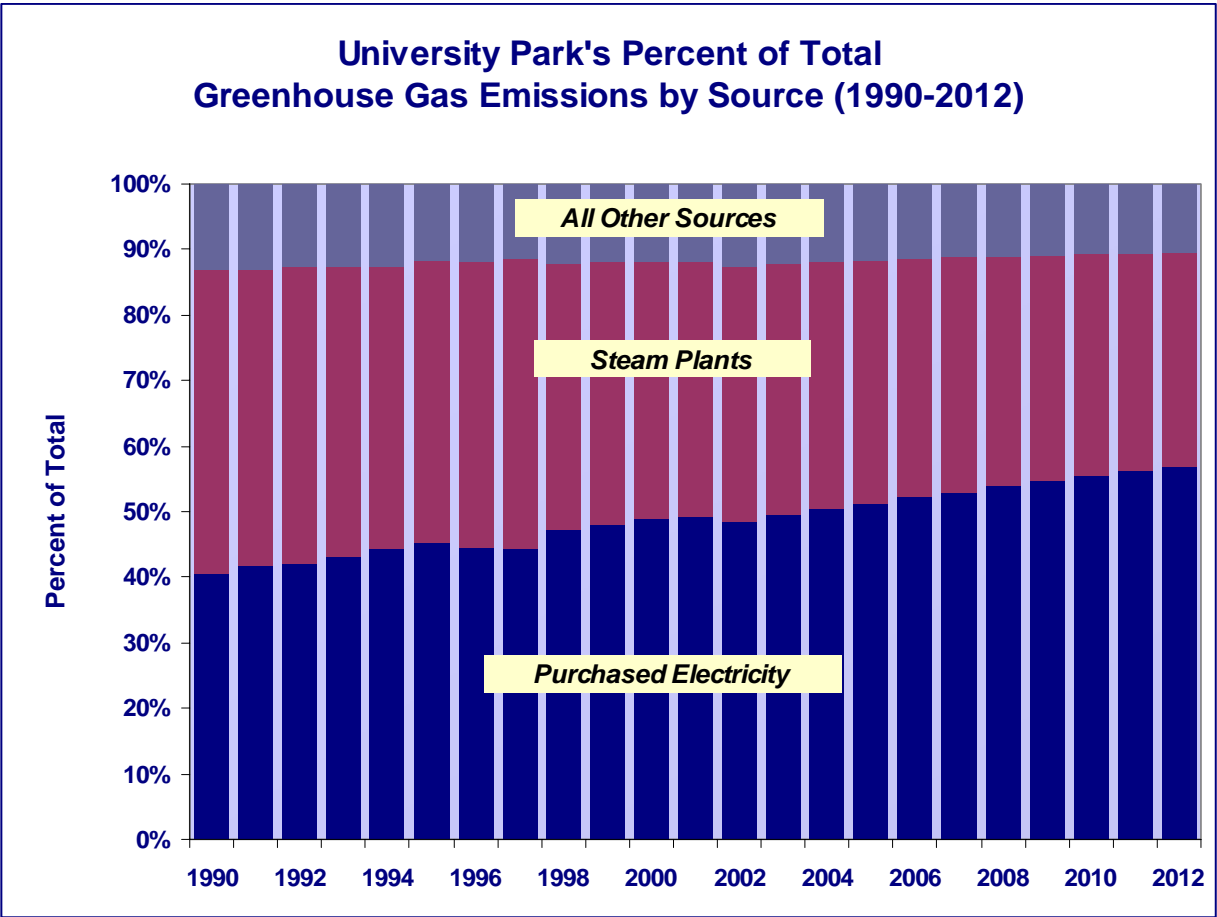
- New building construction
- Increased electricity use
- Environmental stewardship



# Projected Emissions



# Projected Emissions



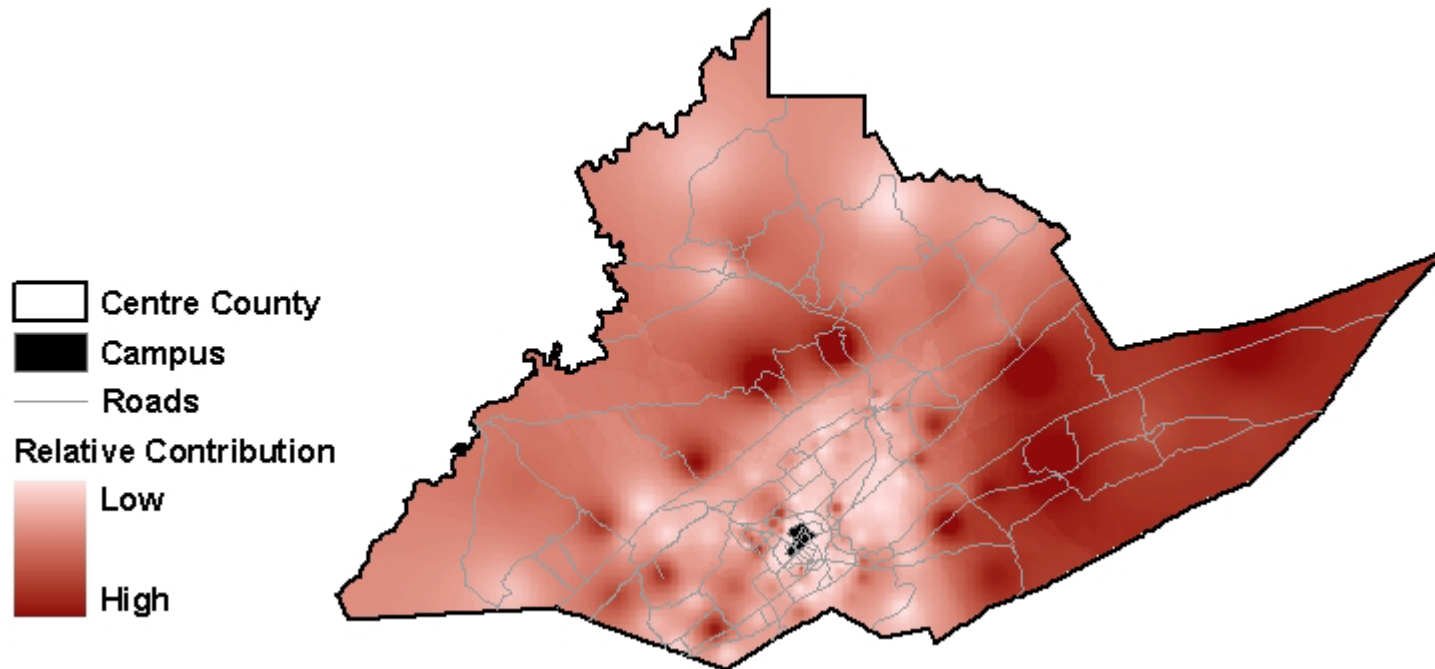
# Transportation Model

- Uses origin-destination data
- Computes total distance of commute
- Converts distance into GHG emissions



# Transportation Results

## Relative Contribution of Residential Areas to GHG emissions by University Park Commuters



# Significance of Inventory

- Identified key sources of GHGs
- Identified key data & data gaps
- Paved way for mitigation planning

