

Kingston Climate Action Planning

City of Kingston, New York
Rich Schiafo, Climate Analyst
Climate Smart Communities Webinar Series
September 15 2011



2009

- **Conservation Advisory Council**
- **Climate Smart and Green Jobs Community Pledge**
- **Climate Smart Community**



City of Kingston Climate Action Planning

City of Kingston Climate Action Planning

- **Climate Smart and Green Jobs Community Pledge**

“the City of Kingston, shall strive to reduce greenhouse gas emissions and adapt to a changing climate...”



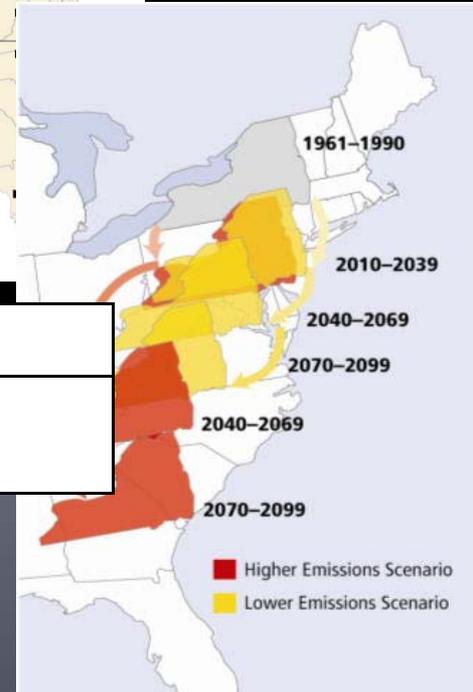
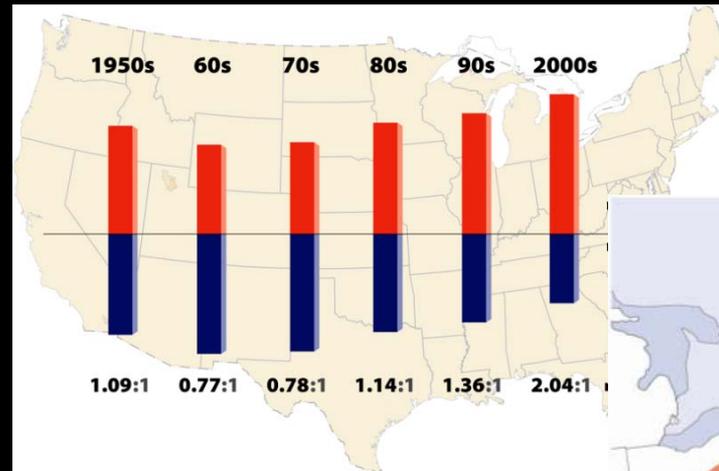
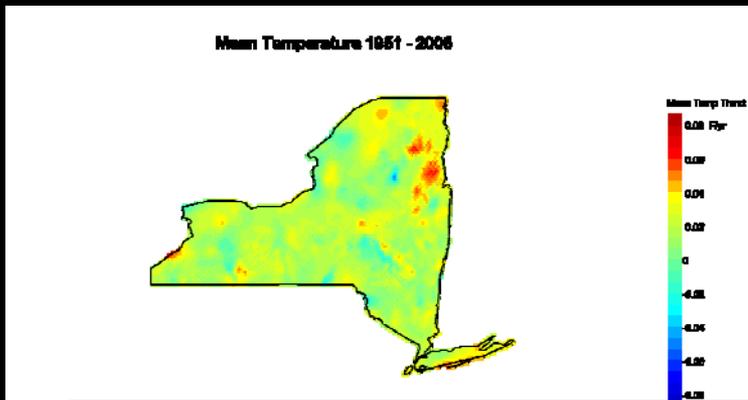
City of Kingston Climate Action Planning

2010

- NYSERDA Energy Management Personnel Grant

2011

- Climate Analyst



Equation 10.7

Process N₂O Emissions from WWTP with Nitrification/Denitrification

Annual N₂O emissions (metric tons CO₂e) =
 $((P_{total} \times F_{ind-com}) \times EF_{nit/denit} \times 10^{-6}) \times GWP$

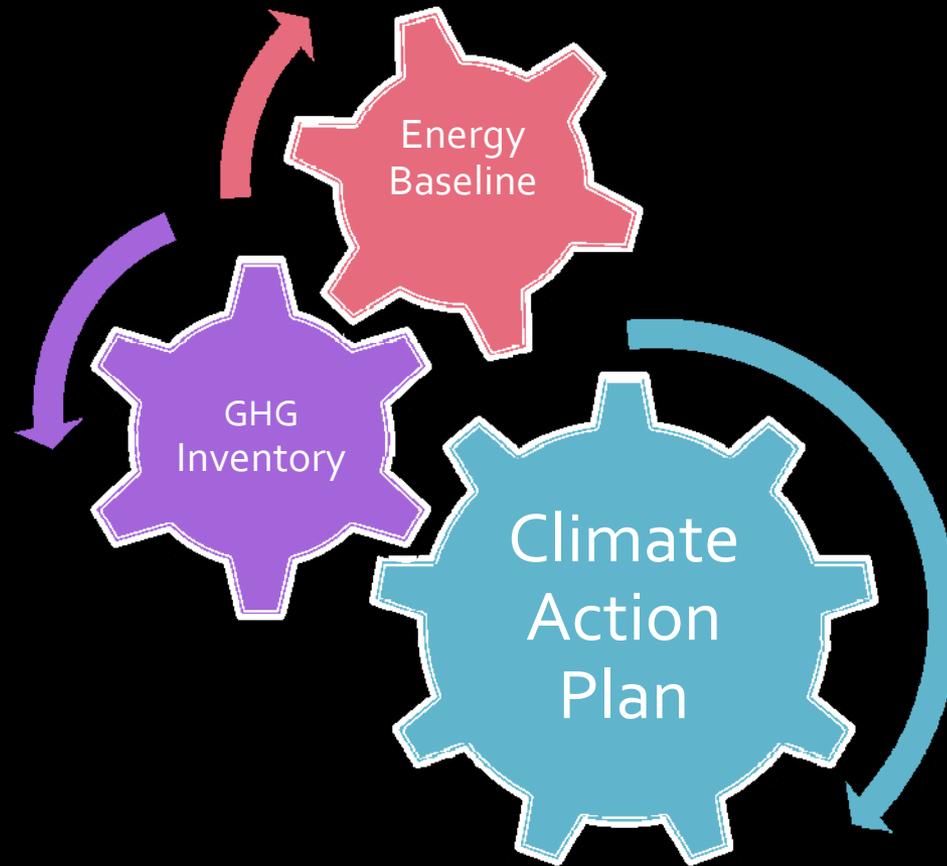
Equation 10.1

Stationary CH₄ from Incomplete Combustion of Digester Gas
 (site-specific digester gas data)

Annual CH₄ emissions (metric tons CO₂e) =
 $(Digester\ Gas \times F_{CH_4} \times \rho(CH_4) \times (1-DE) \times 0.0283 \times 365.25 \times 10^{-6}) \times GWP$

Draft Timeline - Kingston GHG Inventory and Draft Climate Action Plan

| TASK | 2011 | | | | | | 2012 | | | | | |
|--|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | April | May | June | July | August | Sept | Oct | Nov | Dec | Jan | Feb | March |
| Review other Plans | Yellow | Yellow | | | | | | | | | | |
| Raise Funds for ICLEI or other software | Orange | Orange | Orange | Orange | Orange | | | | | | | |
| Develop scope/baseline for utility/data | Brown | Brown | | | | | | | | | | |
| Choose/Develop GHG protocol | Green | Green | Green | Green | Green | | | | | | | |
| Conduct baseline energy assessment | Light Green | Light Green | Light Green | Light Green | Light Green | | | | | | | |
| Gather best available data for community inventory | Dark Green | Dark Green | Dark Green | Dark Green | | | | | | | | |
| City Vehicle Inventory and Analysis | | Teal | Teal | Teal | Teal | | | | | | | |
| Input energy data into GHG software | | | | | Dark Blue | Dark Blue | | | | | | |
| Dept review-GHG/energy baseline | | | | | | Blue-Gray | | | | | | |
| 1st draft of GHG Inventory for TF Review | | | | | | Blue | Blue | | | | | |
| Meet w/Council to advance plan | Light Blue | Light Blue | Light Blue | Light Blue | Light Blue | Light Blue | Light Blue | Light Blue | Light Blue | Light Blue | Light Blue | Light Blue |
| Submit GHG Inv to Council for Approval | | | | | | | | Blue | Blue | | | |
| Develop and Grow Task Force | | Light Purple |
| Develop Mission/Vision for Task Force | | Purple | Purple | Purple | | | | | | | | |
| Develop outline for CAP | Pink | Pink | Pink | Pink | Pink | | | | | | | |
| TF - Measurable Outcomes | | Light Orange | Light Orange | Light Orange | | | | | | | | |
| TF input for Plan sections | | Dark Red |
| Draft Plan sections (w/Task Force input) | | Gold | Gold | Gold | Gold | Gold | Gold | | | | | |
| First completed Draft Plan | | | | | | | | Brown | | | | |
| Task Force Review of Draft Plan | | | | | | | | | Yellow | | | |
| Complete TF Review of first draft | | | | | | | | | 12/31/2011 | | | |
| Public meeting(s)? | | | | | Green | Green | Green | Green | Green | Green | | |
| Redraft Plan based on input | | | | | | | | | | Light Green | Light Green | |
| Finalize Draft Plan | | | | | | | | | | | Teal | |
| Present Plan to Common Council | | | | | | | | | | | | Dark Green |



City of Kingston Climate Action Planning

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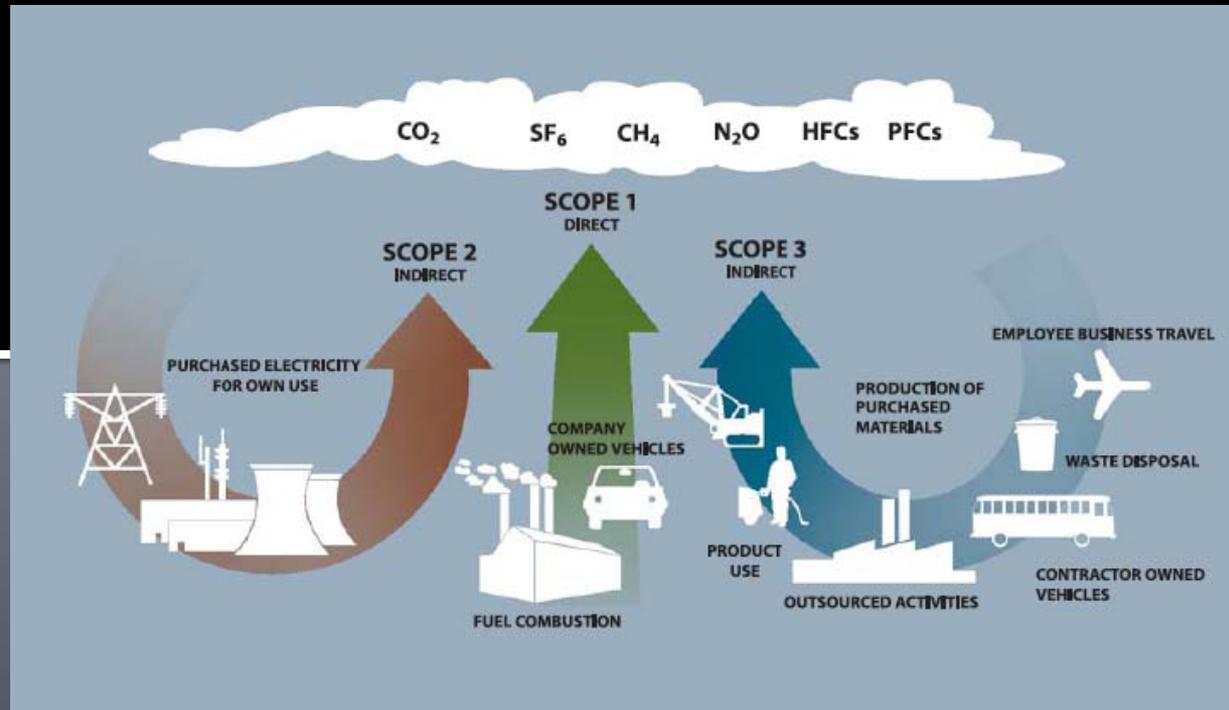
Clean Air Cool Planet
Community Catalyst Fund



City of Kingston Climate Action Planning

LGOP

- Organizational Scope
- Choosing a Baseline Year
- Defining Sectors
- Scopes and Emissions Sources



City of Kingston Climate Action Planning

Data Collection

Government

- Utilities
- City Departments

Community

- Energy Information Administration
- American Community Survey
- Utilities
- NYSDEC Office of Climate Change



| CITY OF KINGSTON TOTAL ELECTRICITY USAGE | | |
|--|--|-----------------|
| Sector-Department | 2010 Total Annual Electricity Usage (CH) - KWH | Total Cost (\$) |
| WWTP & Sewer | | |
| Public Lighting | | |
| Police | | |
| Park & Rec | | |
| Water Dept | | |
| DPW | | |
| City Hall | | |
| Fire | | |
| TOTALS | | |
| CITY OF KINGSTON TOTAL GAS USAGE | | |
| Sector-Department | 2010 Total Gas Usage (CH)-CCF | Total Cost (\$) |
| Parks & Rec | | |
| WWTP & Sewer | | |
| DPW | | |
| Fire | | |
| City Hall | | |
| Police | | |
| Water Dept | | |
| Public Lighting | | |
| TOTALS | | |
| | | |
| | | |
| | | |

City of Kingston Climate Action Planning

ICLEI Membership



9/7/2011

INCOMPLETE DRAFT

City of Kingston
 Government Greenhouse Gas Emissions in 2010
 DRAFT Summary Report*

Scope 1 + Scope 2

| | CO ₂ (tonnes) | N ₂ O (kg) | CH ₄ (kg) | Equiv CO ₂ (tonnes) | Energy (MMBtu) | Cost (\$) |
|-----------------------------------|-----------------------------|--------------------------|-------------------------|-----------------------------------|-------------------|------------------|
| Buildings and Facilities | <u>1,090</u> | <u>9</u> | <u>68</u> | <u>1,095</u> | <u>16,103</u> | <u>335,316</u> |
| Streetlights & Traffic Signals | <u>702</u> | <u>10</u> | <u>18</u> | <u>706</u> | <u>7,735</u> | <u>534,809</u> |
| Water Delivery Facilities | <u>203</u> | <u>2</u> | <u>14</u> | <u>204</u> | <u>2,639</u> | <u>71,237</u> |
| Wastewater Facilities | <u>918</u> | <u>12</u> | <u>33</u> | <u>923</u> | <u>11,134</u> | <u>294,631</u> |
| Solid Waste Facilities | <u>8</u> | <u>0</u> | <u>0</u> | <u>8</u> | <u>85</u> | <u>3,702</u> |
| DRAFT Total | 2,922 | 34 | 133 | 2,935 | 37,695 | 1,239,695 |

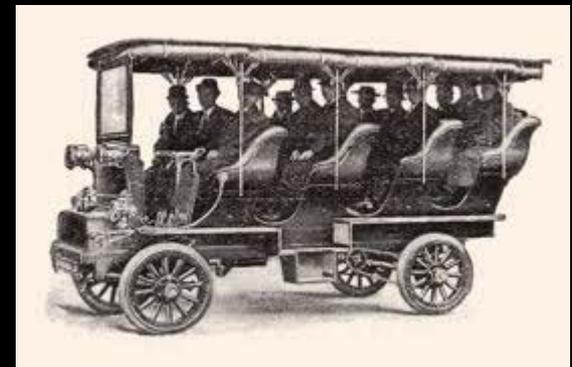
NO VEHICLE DATA

This report has been generated for City of Kingston, New York using ICLEI's Clean Air and Climate Protection 2009 Software.

*THIS DATA REPORT IS PRELIMINARY AND INCOMPLETE.
 IT IS DISPLAYED FOR DEMONSTRATION AND ILLUSTRATION
 PURPOSES ONLY AND SHOULD NOT BE USED TO REPRESENT
 GHG EMISSIONS FOR THE CITY OF KINGSTON.

City of Kingston Climate Action Planning

Vehicle Inventory



| Parks & Rec | | | | | | | | | |
|-------------|-------|------|--------------|------------------|----------------|------------------------|-------------------------------|-----------|----------|
| Veh No. | Key # | Year | Make | Vehicle Model | Vehicle ID No. | Estimated Mileage 2010 | Estimated Hours of Usage 2010 | Fuel Type | Veh Type |
| 200 | 50 | 2001 | Chevy | 1500 Pickup | | 7224 | | Gas | HT |
| 202 | 50 | 2005 | Chevy | 3500 Dump | | 7336 | | Gas | HT |
| 203 | 50 | 2008 | Chevy | 3500 Dump | | 7648 | | Gas | HT |
| 204 | 50 | 2002 | Chevy | 3500 Dump | | 10320 | | Gas | HT |
| 205 | 50 | 2006 | Ford | F250 | | 4774 | | Gas | HT |
| 207 | 50 | 2004 | Ford | F250 | | 3326 | | Gas | HT |
| 208 | 50 | 2001 | Dodge | Ram 2500 | | 2595 | | Gas | HD |
| 209 | 50 | 1995 | Ford | Crown VIC | | 838 | | Gas | P |
| 210 | 50 | N/A | John Deere | 430 | | | 273 | Diesel | OFF |
| 211 | 50 | N/A | John Deere | 670 | | | 19 | Diesel | OFF |
| 212 | 50 | 2001 | Dodge | Van | | 4401 | | Gas | LT |
| 213 | 50 | 2006 | Ford | Van | | 6363 | | Gas | LT |
| 214 | 50 | 2008 | Chevy | Van | | 3879 | | Gas | LT |
| 215 | 50 | 2006 | | Smithco | | | 68 | Gas | OFF |
| 216 | 50 | N/A | Toro | Mower | | | 57 | Diesel | OFF |
| 217 | 50 | 2007 | Jeep | Grand Cherokee | | 6175 | | Gas | OFF |
| 218 | 50 | N/A | John Deere | 850 | | | | Diesel | OFF |
| 219 | 50 | 1999 | Grasshoppe | 725K | | | 53 | Diesel | OFF |
| 220 | 50 | N/A | Toro | Grounds Master | | | 9 | Diesel | OFF |
| 221 | 50 | N/A | Toro | Grounds Master | | | 378 | Diesel | OFF |
| 222 | 50 | N/A | John Deere | 777 | | | 352 | Diesel | OFF |
| 223 | 50 | N/A | Cherryton | Beach Comber 950 | | | | Diesel | OFF |
| 224 | 50 | 1992 | Mid Atlantic | Utility Trailer | | | | N/A | OFF |
| 225 | 50 | 2000 | Mid Atlantic | Utility Trailer | | | | N/A | OFF |

| Park & Rec Veh Type* | Total # Veh | # Off-Road Veh,Eqmt | # Gas Veh | # Gas Off-Road Veh/Eqmt | % Gas/Eqmt Veh (20) | Gas (Gal) | Gas Cost (\$) | # Diesel Veh | # Diesel Off-Road Veh/Eqmt | % Diesel Vehicles/ Eqmt | Diesel (Gal) | Diesel Cost (\$) |
|----------------------|-------------|---------------------|-----------|-------------------------|---------------------|--------------|-----------------|--------------|----------------------------|-------------------------|--------------|------------------|
| Heavy Truck | 8 | | 7 | | 35 | 2,661 | \$6,387 | 1* | | 10 | 10.32 | 25.8 |
| Light Truck | 5 | | 5 | | 25 | 1,901 | \$4,562 | | | | | |
| Pass | 1 | | 1 | | 5 | 380 | \$912 | | | | | |
| OFF ROAD | | 16** | | 7 | 35 | 2,661 | \$6,387 | | 9 | 90 | 92.88 | 232 |
| TOTALS | 14 | 16 | 13 | 7 | 100 | 7,604 | \$18,249 | 1 | 9 | 100 | 103.2 | 258 |

*Parks and Rec has 1 Diesel School Bus - inventoried as 'HT'

**plus 2 trailers that do not use fuel

Gas Average Price per gallon \$2.40

Diesel Average Price per gallon \$2.50

Highway Vehicle Types

Heavy Truck: Trucks with a Gross Vehicle Weight over 8500 lbs. Example: A tractor-trailer truck; or a public transit bus, A three-axle, 10-tire delivery truck.

Light Truck/SUV/Pickup: The light truck category includes Sport Utility Vehicles (SUVs), Pickup Trucks, minivans and vans or trucks.

Light trucks have a Gross Vehicle Weight up to 8500 lbs. Includes vanpool vans - A vanpool van is a van that can normally accommodate 8 passengers.

Typically, these are large light trucks (Gross Vehicle Weight of between 6001 and 8500 lbs, and an Adjusted Loaded Vehicle Weight greater than 5750 lbs).

An example would be a Ford E150 Econoline XL Wagon.

Passenger Car: This category includes compact cars, sub-compact cars, sedans and station wagons.

Transit Bus: A transit bus is a 40-foot or longer single body unit or articulated bus operated in urban areas by transit authorities.

Gross Vehicle Weight of these vehicles is 40,000 lbs and greater.

City of Kingston Climate Action Planning

Community Inventory



9/8/2011 **INCOMPLETE DRAFT**

City of Kingston

Community Greenhouse Gas Emissions in 2010

DRAFT Summary Report*

Scope 1 + Scope 2

| | CO ₂ (tonnes) | N ₂ O (kg) | CH ₄ (kg) | Equiv CO ₂ (tonnes) | Energy (MMBtu) | |
|----------------------|-----------------------------|--------------------------|-------------------------|-----------------------------------|-------------------|------------------|
| Residential * | 19,458 | 327 | 2,755 | 19,617 | 666,171 | |
| Commercial * | 34,078 | 542 | 3,289 | 34,315 | 859,363 | |
| Industrial | 1,392 | 22 | 59 | 1,401 | 38,472 | |
| Transportation | <u>91,012</u> | <u>5,102</u> | <u>4,339</u> | <u>92,685</u> | <u>1,284,637</u> | |
| DRAFT Total s | | 145,940 | 5,993 | 10,442 | 148,017 | 2,848,644 |

***ONLY ELECTRICITY AND GAS- THIS REPORT DOES NOT INCLUDE FUEL OIL DATA**

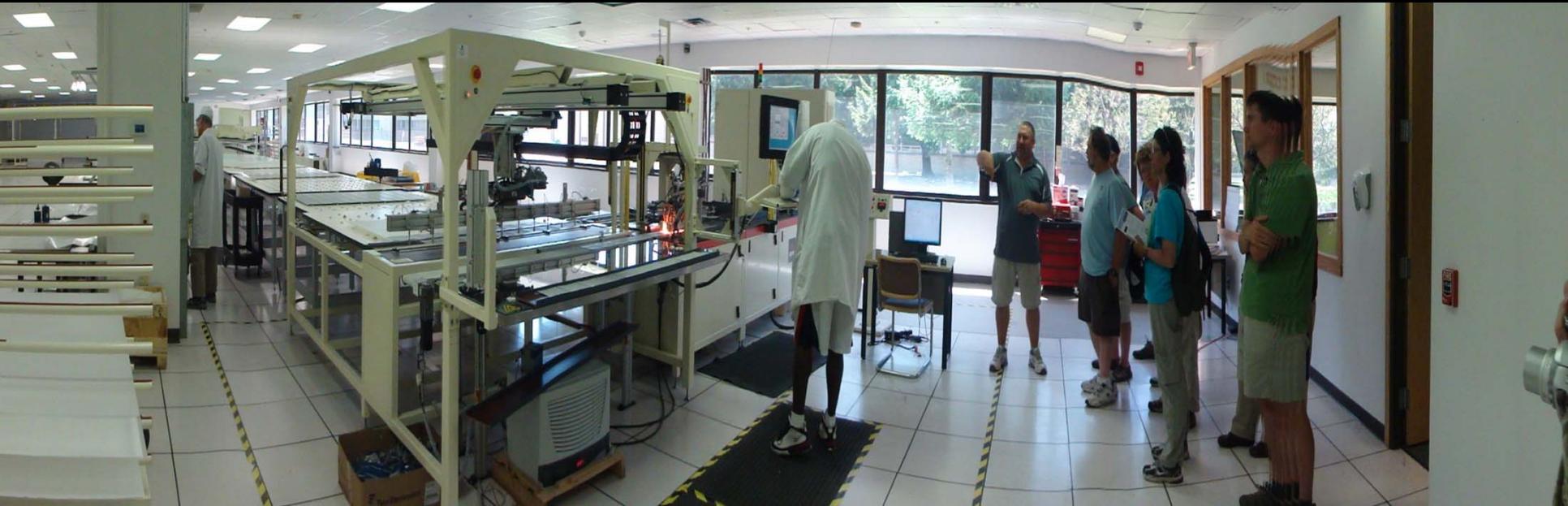
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Kingston Climate Action Planning

Community Outreach

- Climate Action Webpage
- Climate Action Updates
- Renewable/Solar Tours
- Planning Board Workshop
- Brochure





act
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2



What is
the plan? 

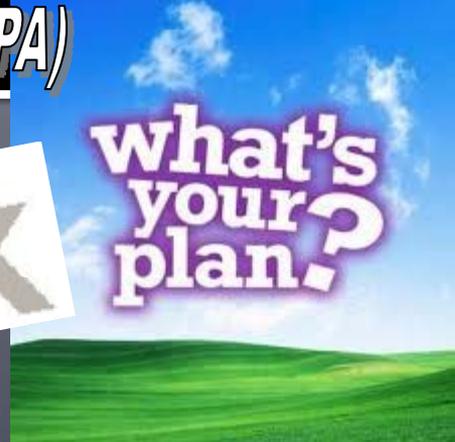
DRAFT
Climate
Action
Plan



Climate and Air Pollution Planning Assistant (CAPPA)



think



QUESTIONS



Rich Schiafo

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845-334-3925