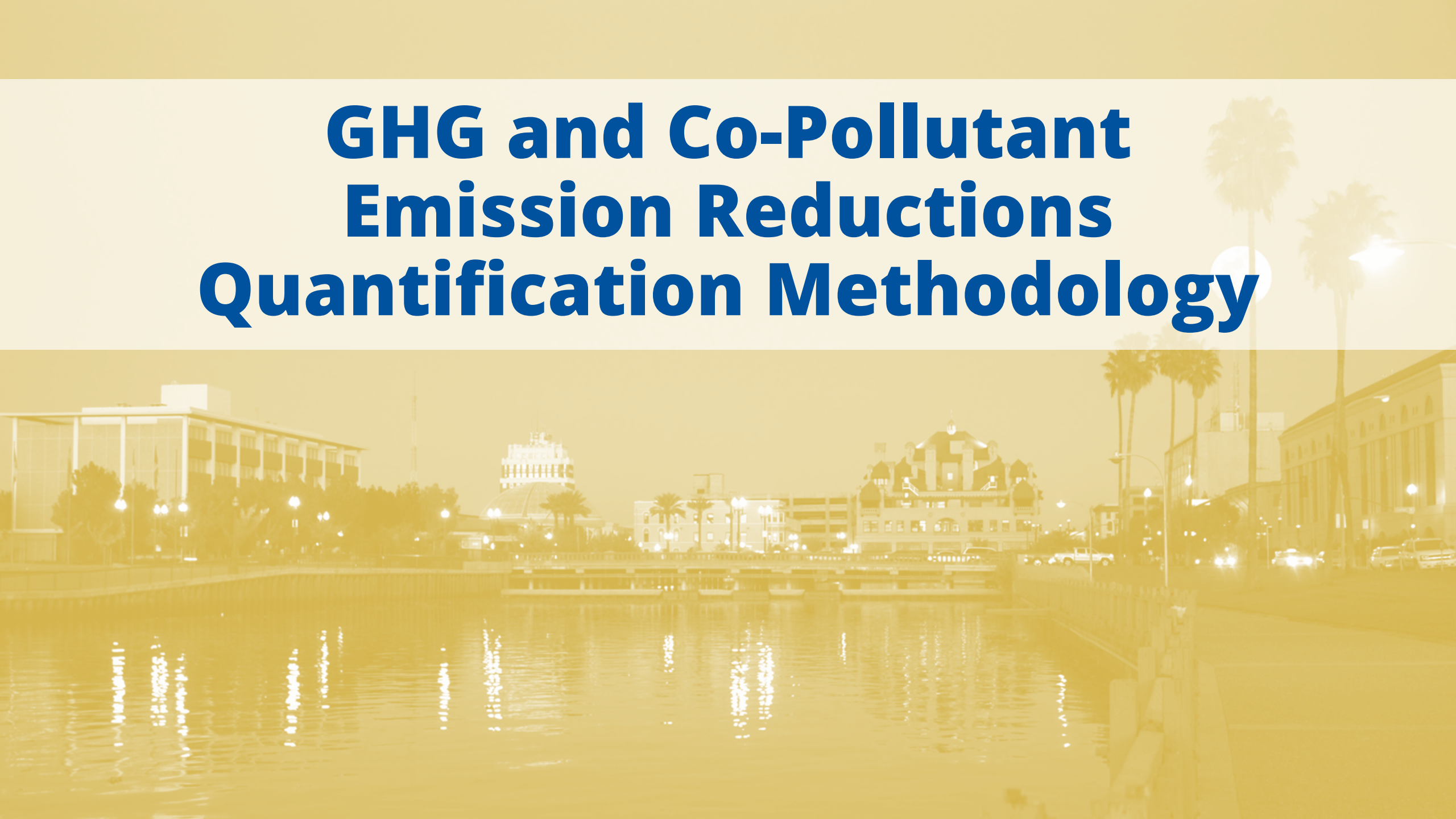
GHG and Co-Pollutant Emission Reductions Quantification Methodology



Reduction Methodology Principles

- CCAP efforts are focused on **identifying priority actions**
- Actions are written broadly as they apply across multiple jurisdictions (e.g., no detailed information on exact extent, number of people reached, money allocated, etc.)
- Therefore, CCAP action emissions reductions are **high-level, rough order of magnitude estimates**
- Estimates can be refined during implementation plan development, when details are reviewed with implementers

Identifying Action Types

- Actions are written from the perspective of local governments (e.g., cities, counties)
- An action's emission reduction type is determined by understanding:
  1) the level of control local governments have over the emission source; and
  2) the action implementation mechanism.

Emissions Reduction Type	Definition	Examples	Reliability of Emission Estimates
Direct	Actions where the local government has full influence over the activity shift and therefore the resulting emissions reductions.	Local governments transitioning fleets to ZEVs, installing solar panels on public facilities, planting trees, etc.	Higher Reliability
Indirect	Actions that are meant to influence behavior change and therefore indirectly impact activity shifts and the resulting emissions reductions.	Financial incentives (e.g., heat pump rebates), investments in infrastructure that promotes low-emissions behaviors (e.g., bike lanes), informational campaigns (e.g., waste education), regulatory requirements (e.g., all-electric building requirements)	Lower Reliability (requirements can have higher reliability)
Foundational	Actions that support the implementation of indirect or direct actions. The emissions reductions of these types of actions are not quantified.	Plans, studies, research and development, pilot programs	Not Quantified

Quantifying Emissions Reductions

- The CCAP attempts to quantify each action's **maximum annual GHG reduction potential** range (low to high) for 2030 and 2050 to enable:
  - Consistent, standardized comparison across actions
  - More efficient data collection, given that most actions currently lack sufficient implementation detail to estimate a feasible emissions reduction range
  - The development of an emissions reduction 'ceiling' to illustrate how close the actions could theoretically come to meeting emissions reduction targets

- Note that the collective action reductions will most likely not meet the identified GHG targets – this is common for communities as most emissions sources are out of local government control and dependent on external factors to meet targets (e.g., local governments can't require residents to use ZEVs).

Example – T14: Convert municipal fleets to cleaner fuels

- Action Emissions Reduction Type: Direct
  - Reductions have higher reliability as municipal fleets are under local government control
  - Emissions reductions account for reductions in fleet gasoline emissions and increases in electricity emissions.
- Assumptions:
  - Percent regional on-road emissions from municipal vehicle fleets: 1%
  - Average fleet vehicle life: 12 years
  - Assuming fleet transitions to electric and end of life starting in 2027
- Outputs:
  - By 2030: X MTCO2e reduced/year
  - By 2050: Y MTCO2e reduced/year

Example 2 – A2: Implement best management practices for manure management

- Action Emissions Reduction Type: Indirect
  - Local governments are trying to influence agricultural emissions, which they do not directly control – reductions have lower reliability.
- Assumptions:
  - Percent of farms with anaerobic digesters in the county: <1%
  - Manure emissions reductions from best management practices: 15-80% (depending on practice)
  - Percent of farms that will implement practices due to action: 20% by 2045

We will attempt to confirm assumptions with lead implementers, but most will be a rough estimate for CCAP (estimates can be refined later during implementation plan development)