



Department of  
Environmental  
Conservation

# Climate Justice Working Group Draft DAC Criteria Update


November 17, 2021

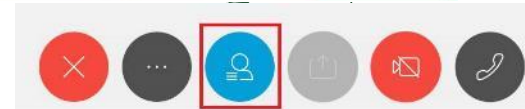
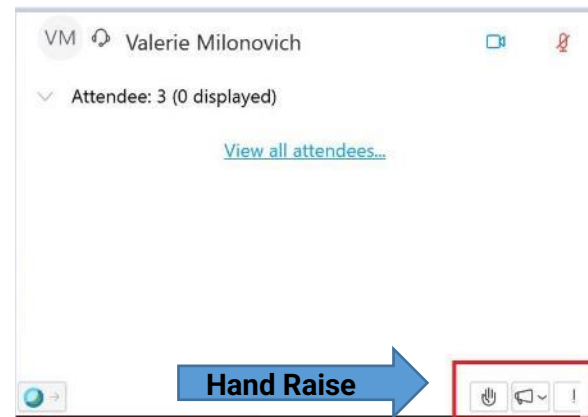
# Meeting Procedures

## Before beginning, a few reminders to ensure a smooth discussion:

- Working Group Members should be on mute if not speaking.
- If using phone for audio, please tap the phone mute button.
- If using computer for audio, please click the mute button on the computer screen (1<sup>st</sup> visual).
- Video is encouraged for Working Group members, particularly when speaking.
- In the event of a question or comment, please use the hand raise function (2<sup>nd</sup> visual). Click the participant panel button (3<sup>rd</sup> visual) for the hand raise function. Someone will call on members individually, at which time please unmute
- Please state your name before speaking



You'll see  when your microphone is muted



# Welcome and Roll Call



# Agenda for November 17

1. Barriers & Opportunities Study input (30 minutes)
2. DAC Criteria Legislative Review
3. DAC Criteria:
  - Progress from October 19 meeting
  - Developing rules for DAC definition
  - 10 minute break –
4. DAC Criteria: Preparing to Vote
  - What would you like to see/review before a vote?
  - Schedule



# Barriers Study Update



# Barriers and Opportunities Report

Report must be submitted by January 1, 2022

§ 6. Report on barriers to, and opportunities for, community ownership of services and commodities in disadvantaged communities.

1. On or before two years of the effective date of this act, the department of environmental conservation, in cooperation with the New York state energy research and development authority and the New York power authority, with input from relevant state agencies, the environmental justice advisory group, the climate justice working group and Climate Action Council shall prepare a report on **barriers to, and opportunities for, access to or community ownership of** the following services and commodities in disadvantaged communities as identified in article 75 of the environmental conservation law....

- Distributed renewable energy generation
- Energy efficiency and weatherization investments
- Zero-emission and low-emission transportation option
- Adaptation measures to improve the resilience of homes and infrastructure
- Services and infrastructure to reduce health risks from climate-related hazards



# The “how” for the Draft Scoping Plan

Goal of report: Recommendations for Agencies and other organizations to implement strategies in the scoping plan to improve **access to or community ownership** of services & commodities among DACs

This is about the “**how**” of implementing the strategies in the scoping plan (while your input on the Advisory Panel Recs was about the “**what**”)



# THANK YOU for help with focus groups and public input!

- ✓ 8 focus groups with 65 participants (from 326 sign-ups)
- ✓ 2 public hearings with 97 attendees and 21 speakers
- ✓ Written public comments
- ✓ Reviewed existing reports, plans, proceedings
- ✓ Agency workshops

We are in the middle of analysis/synthesis of everyone's ideas





# Two areas we'd like your help

1

Provide 1-3 top principles or recs for **how to increase community (or community member) access, use or ownership** of programs, services or commodities

The “how” of implementation rather than the “what”

2

Scan the Barriers Framework (memo will become part of report)

Does it generally capture the most significant barriers to community access, use or ownership?

Optionally, please provide ideas or feedback before Thanksgiving (Nov 23)



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# Draft Barriers Framework

Category	Barrier to Access or Community Ownership
Physical and Economic Structures and Conditions	<ul style="list-style-type: none"> <li>• Building stock: Age and disrepair</li> <li>• Multifamily/Rental structure (split incentive)</li> <li>• Product/service availability</li> <li>• Physical infrastructure limitations</li> <li>• Data / IT limitations</li> </ul>
Financial and Knowledge Resources and Capacity Barriers	<ul style="list-style-type: none"> <li>• Lack of access to capital or financing</li> <li>• Lack of time or planning capacity</li> <li>• Staff resources</li> <li>• Lack of (or lack of access to) personal, professional or information networks</li> <li>• Community programmatic and information capacity limitations</li> <li>• Workforce constraints</li> </ul>
Perceptions and Information Barriers	<ul style="list-style-type: none"> <li>• Unaware or uncertain risk or needs</li> <li>• Lack of trust in program/service provider</li> <li>• Perceptions of limited benefits/value</li> <li>• Information not provided in best channel, source, language, format</li> </ul>
Programmatic Design and Implementation Barriers.	<ul style="list-style-type: none"> <li>• Lack of baseline/ benchmarking and impact assessment data</li> <li>• Program not designed for DAC members</li> <li>• Program eligibility constraints</li> <li>• Insufficient/ inconsistent program resources</li> <li>• Lack of program coordination</li> <li>• Insufficient outreach</li> </ul>

Barriers include barriers for:

- (1) Individuals and households
- (2) Small/local businesses
- (3) Organizations (municipal and/or CBO)

# Draft Principles & Opportunities Framework

Category	High-Level Principle
Include People More / Include More People	<ul style="list-style-type: none"> <li>• Co-design programs or projects with and for DACs</li> <li>• Provide Meaningful Opportunities for Public Input in Government Processes/Proceedings</li> <li>• Address Needs Holistically Through Cross-Cutting Collaboration</li> </ul>
Make Everything Easier to Navigate and Access	<ul style="list-style-type: none"> <li>• Transition to program models that require zero to little effort to participate and benefit (e.g., automatic)</li> <li>• People-centered policies, programs, and funding across local, state, and federal governments</li> <li>• Find and support resource-constrained communities, from end-to-end</li> </ul>
Emerging Issues	<ul style="list-style-type: none"> <li>• Mobilize and facilitate citizen participation and action</li> <li>• Face housing issues head-on to address the energy climate crisis</li> </ul>

Within each Principle, there are 3-6 sub-recommendations (not shown), and tangible examples

Recommendations are designed to serve:

- (1) Individuals and households
- (2) Small/local businesses
- (3) Organizations (municipal and/or CBO)



# DAC Criteria Legislative Review



# Purpose of DAC definition

The [climate justice] working group, in consultation with the department, the departments of health and labor, the New York state energy and research development authority, and the environmental justice advisory group, will establish criteria to identify disadvantaged communities **for the purposes of co-pollutant reductions, greenhouse gas emissions reductions, regulatory impact statements, and the allocation of investments** related to this article



# 40% Benefits Goal

"State agencies, authorities and entities, in consultation with the environmental justice working group and the climate action council, shall, to the extent practicable, invest or direct available and relevant programmatic resources in a manner designed to **achieve a goal for disadvantaged communities to receive forty percent of overall benefits of spending** on clean energy and energy efficiency programs, projects or investments in the areas of housing, workforce development, pollution reduction, low income energy assistance, energy, transportation and economic development, provided however, that disadvantaged communities shall receive **no less than thirty-five percent** of the overall benefits of spending on clean energy and energy efficiency programs, projects or investments and provided further that this section shall not alter funds already contracted or committed as of the effective date of this section."

The CJWG has discussed that the 40% goal should be considered a minimum, and that non-DAC communities are still available for the remaining ~60% of funds.



# Legislated Criteria

“Communities that bear burdens of negative public health effects, environmental pollution, impacts of climate change, and possess certain socioeconomic criteria, or comprise high-concentrations of low- and moderate-income households.”

§ 75-0111 (1) (c)

“Disadvantaged communities shall be identified based on geographic, public health, environmental hazard, and socioeconomic criteria, which shall include but are not limited to:

Areas burdened by cumulative environmental pollution and other hazards that can lead to negative public health effects.

Areas with concentrations of people that are of low income, high unemployment, high rent burden, low levels of home ownership, low level of educational attainment, or members of groups that have historically experienced discrimination on the basis of race or ethnicity.

Areas vulnerable to the impacts of climate change such as flooding, storm surges, and urban heat island effect.”



# Opportunity for Annual Review

The [climate justice working] group will meet no less than annually to review the criteria and methods used to identify disadvantaged communities and may modify such methods to incorporate new data and scientific findings. The climate justice working group shall review identities of disadvantaged communities and modify such identities as needed

With the opportunity for annual review, these draft scenarios are a starting point





# DAC Criteria Progress and Options



# Review of Critical Decisions

## Progress Made

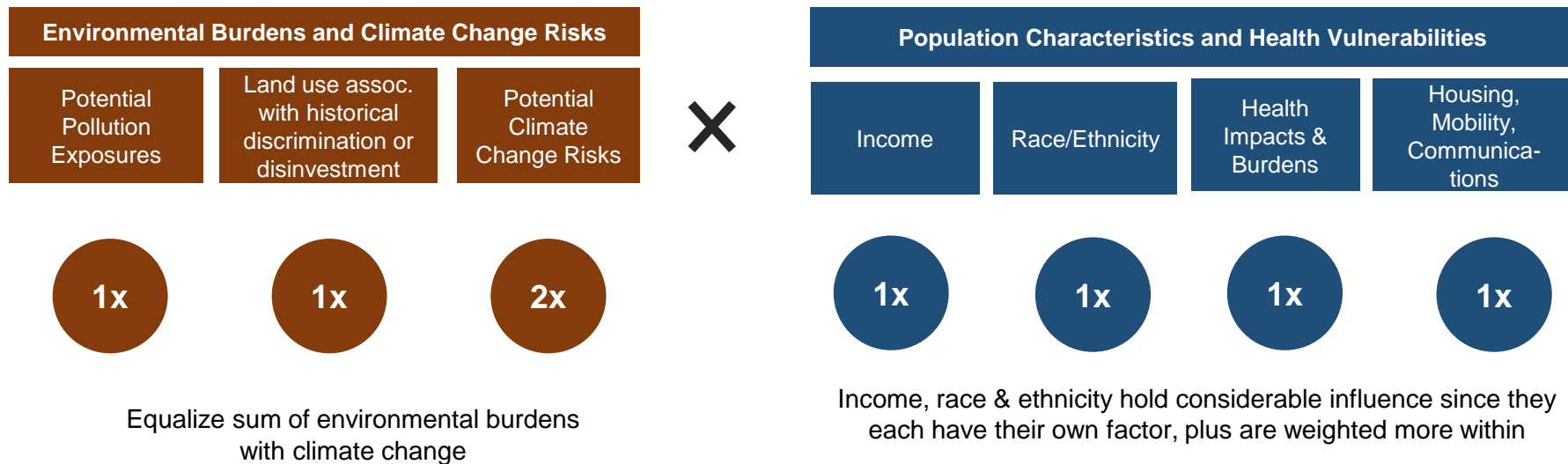
- ✓ 44 indicators in approach that balances three “pillars” of legislation
- ✓ Designate ~35-40% of state (leaning toward smaller list to start)
- ✓ Adding low-income households could fill gaps that geographic definition can’t reach
- ✓ Iterative approach – Evaluate each year
- ✓ Revisited “framing principles”

## Critical Decisions to Make

- ? Discuss/confirm decision to add low-income households
- ? If added: How to define low-income households?
- ? Designation thresholds for geographic definition: 35% or 40% depending on low-income households?



# Balanced set of indicators and weighting



Note: Since Burdens and Vulnerabilities are multiplied, they have equal influence, regardless of the # of factors or how you weight things within them.



# Framing Principles (from 9/29 meeting)

Don't want to leave people most at risk of climate crisis behind –  
Direct funding to people & groups who are most vulnerable

Income is important indicator of ability to respond or adapt

Want agencies to design and target efforts geographically – to  
community-scale (or larger) outreach and investments

Initial investments should go to the hardest-hit communities first

Consider who is least able to participate in transition to clean  
energy and clean energy economy

Beware unintended consequences – Don't want to create  
disadvantaged communities (e.g., by re-directing funding too  
much toward some communities)

## Potential Approaches:

Start with smaller set of DACs and  
add later (would a large set dilute  
resources?)

Tiered approach – DAC plus LMI  
communities or households?

Iterative approach – Evaluate  
each year



# Designate $\leq$ 40% of state as DACs

Designate *less than* 40%



**Pros:** May encourage proportionally *more* money to go to DACs

Room to expand later

**Cons:** Leaves out some LMI and socially-vulnerable DACs

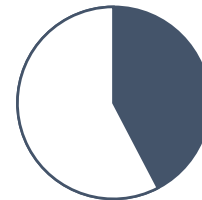
Designate *about* 40%



**Pros:** Captures more groundtruthed and LMI DACs

**Cons:** Still may not capture some LMI and socially-vulnerable DACs

Designate *more than* 40%



**Pros:** Captures more groundtruthed and LMI DACs

**Cons:** Proportion of DACs is less than the funding goal  
Difficult to remove DACs later

On 10/19 several people expressed interest for designating less than 40% to drive greater-than-proportional benefits



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# Not all LMI households can be covered by a geographic definition

Even if we adjusted the scores to include absolutely all of the lowest-income tracts, we could not close the gap for including all LMI households, because they are dispersed throughout the state, including moderate and high income areas

35% DAC Scenario	Number of Households (Estimate) <sup>a</sup>		Percentage of Households	
	Not in DAC	In DAC	Not in DAC	In DAC
Households in New York	4,792,000	2,551,000	65%	35%
Households with income <80% Area Median Income	1,671,000	1,562,000	52%	48%
Households with income below Federal Poverty Line	441,000	579,000	43%	57%

<sup>a</sup> Household counts are from 5-year ACS data so may appear slightly lower than current Census counts.

Good news:  
DACs have **proportionally more** lower-income households: 48% of low-to-moderate income households, and 57% of households reporting incomes below federal poverty line.

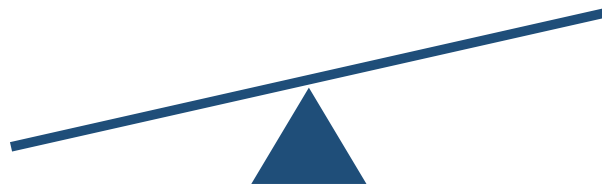
However:  
There are still over 441,000 households in poverty not in DACs (43%).



# Finding a balance

Is it better to ....

(1) Leave no DAC behind,  
and have communities that  
are less economically/socially  
vulnerable (or don't need as  
much help?)



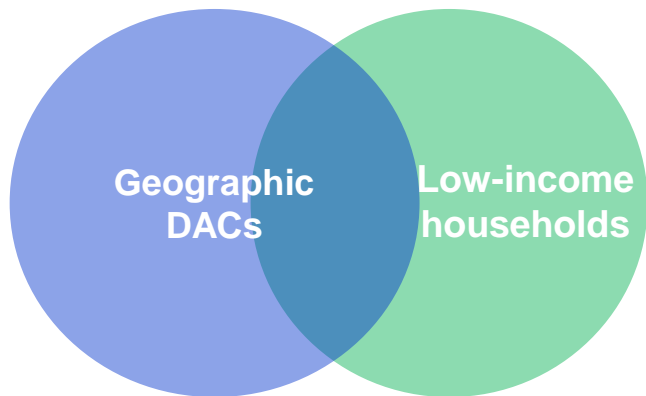
On October 19, several CJWG members preferred this option, as long as geographic definition could be coupled with lower-income households

(2) Restrict DACs to those most in need, and possibly miss some communities that are vulnerable

^ this may be mitigated with "individual" definition like household income



# What do we mean by “individual” criteria?



By “individual criteria” we’re talking about the characteristics of the **people in the household**, not the building location

For example, low-income households are **people** with household incomes below a certain threshold



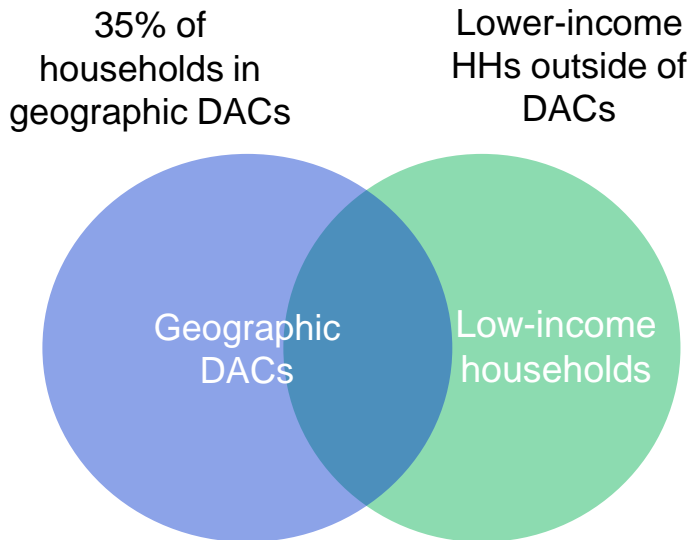


# How to define “low income” or “low-to-moderate-income” households?

- Align with program eligibility?
  - **Low income:** Less than 60% State Median Income (SMI) or 150% of FPL (whatever is higher) (LIHEAP, utility bill assistance, and others)
  - **Moderate income:** Less than 80% of Area Median Income (and sometimes 80% state median income) (Energy programs, housing and rent relief, and others)
- Affects portion of state included in 40% benefits accounting →



# What portion of the state would be included if we add lower-income households?



Income Threshold	Additional HHs outside of DACs adds	Total % of State (geographic + individual DAC)
Adding <100% FPL	+6%	41%
Adding <200% FPL (~60% State Median)	+14%	49%
Adding <80% Area Median Income (AMI)	+23%	58%

\*200% Federal Poverty Line is similar to 60% of State Median Income, which is LIHEAP criteria

# Example income for two-person household

Location (Examples)	2-person Household:		
	100% of Federal Poverty Line*	60% of State Median Income	80% of Area Median Income**
Albany-Schenectady-Troy, NY MSA	\$17,420	\$42,828	\$61,200
New York, NY HUD Metro FMR Area	\$17,420	\$42,828	\$76,400
Buffalo-Cheektowaga-Niagara Falls, NY MSA	\$17,420	\$42,828	\$50,500
Nassau-Suffolk, NY HUD Metro FMR Area	\$17,420	\$42,828	\$75,950
Lewis County, NY	\$17,420	\$42,828	\$44,400
Clinton County, NY	\$17,420	\$42,828	\$46,000
Poughkeepsie-Newburgh-Middletown, Metro	\$17,420	\$42,828	\$63,950

All income levels are household size. The Federal Poverty Line is lower, but the same nationally. Area Median Income is higher, and indexed to metropolitan areas or fair market rent areas.

2021 Federal Poverty Level. Source: <https://www.healthcare.gov/glossary/federal-poverty-level-fpl/>

2021-2022 HEAP income limits (60% state median income): <https://otda.ny.gov/programs/heap/>

[https://www.acf.hhs.gov/sites/default/files/documents/ocs/comm\\_liheap\\_im2002smiattachment\\_fy2021.pdf](https://www.acf.hhs.gov/sites/default/files/documents/ocs/comm_liheap_im2002smiattachment_fy2021.pdf)

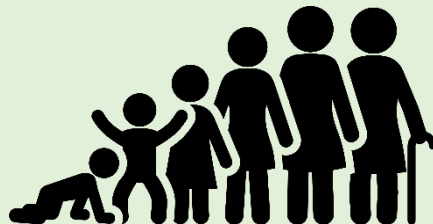
2021 AMI. Source: <https://www.huduser.gov/portal/datasets/il/il21/Section8-IncomeLimits-FY21.pdf>



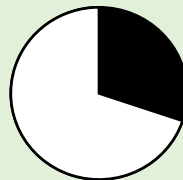
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# Recap of Key Questions

How to define  
“lower income”  
for individual  
definition?



If there are other layers –  
What percentage of state  
should be designated  
a geographic DAC?



# Updated Maps for 35% Scenario (Nov 17)

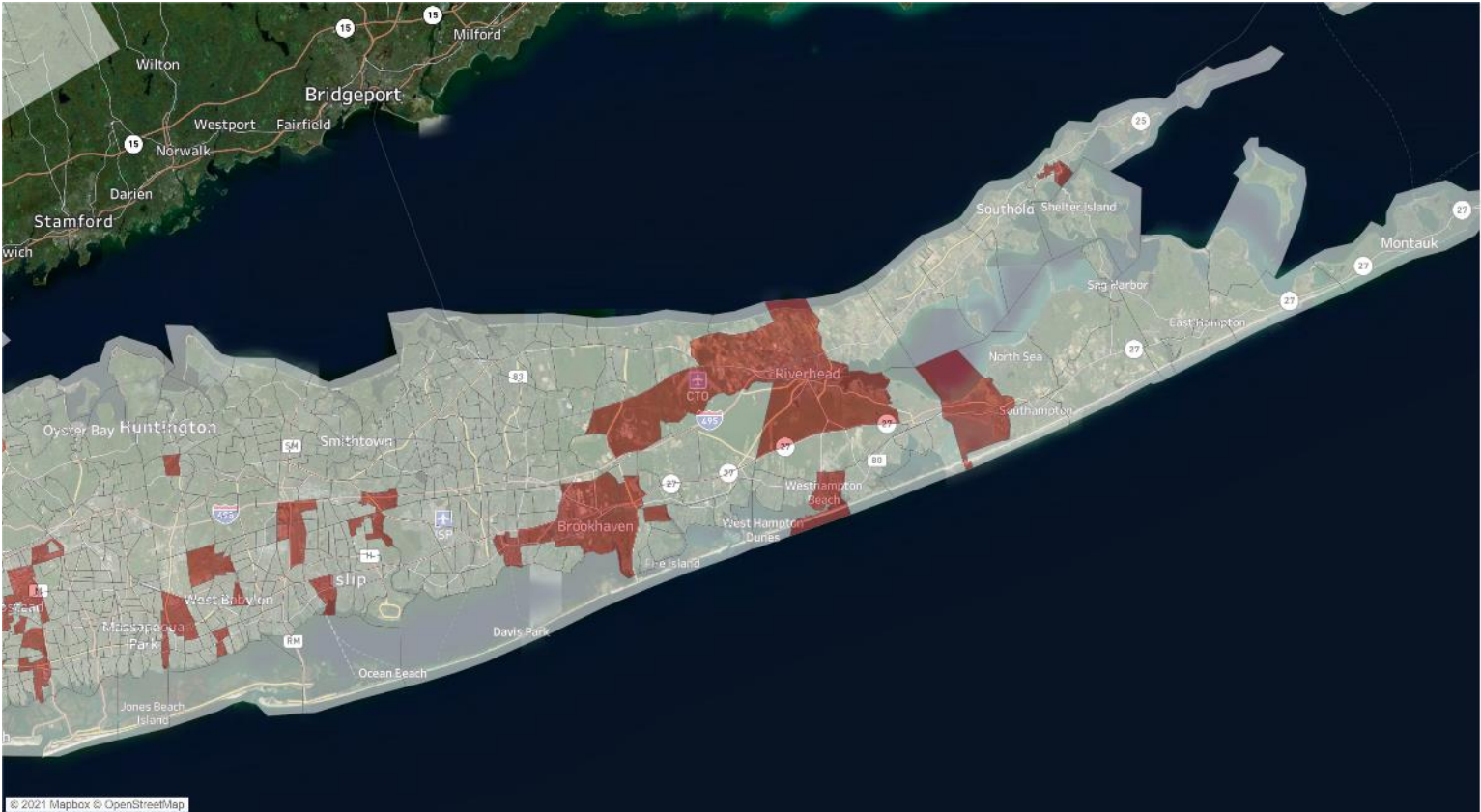


# Coastal Long Island

35%  
Scenario

**Model**  
DAC

**CJWG Response**  
DAC  
Non-DAC



# Massena (North Country)


35%  
Scenario

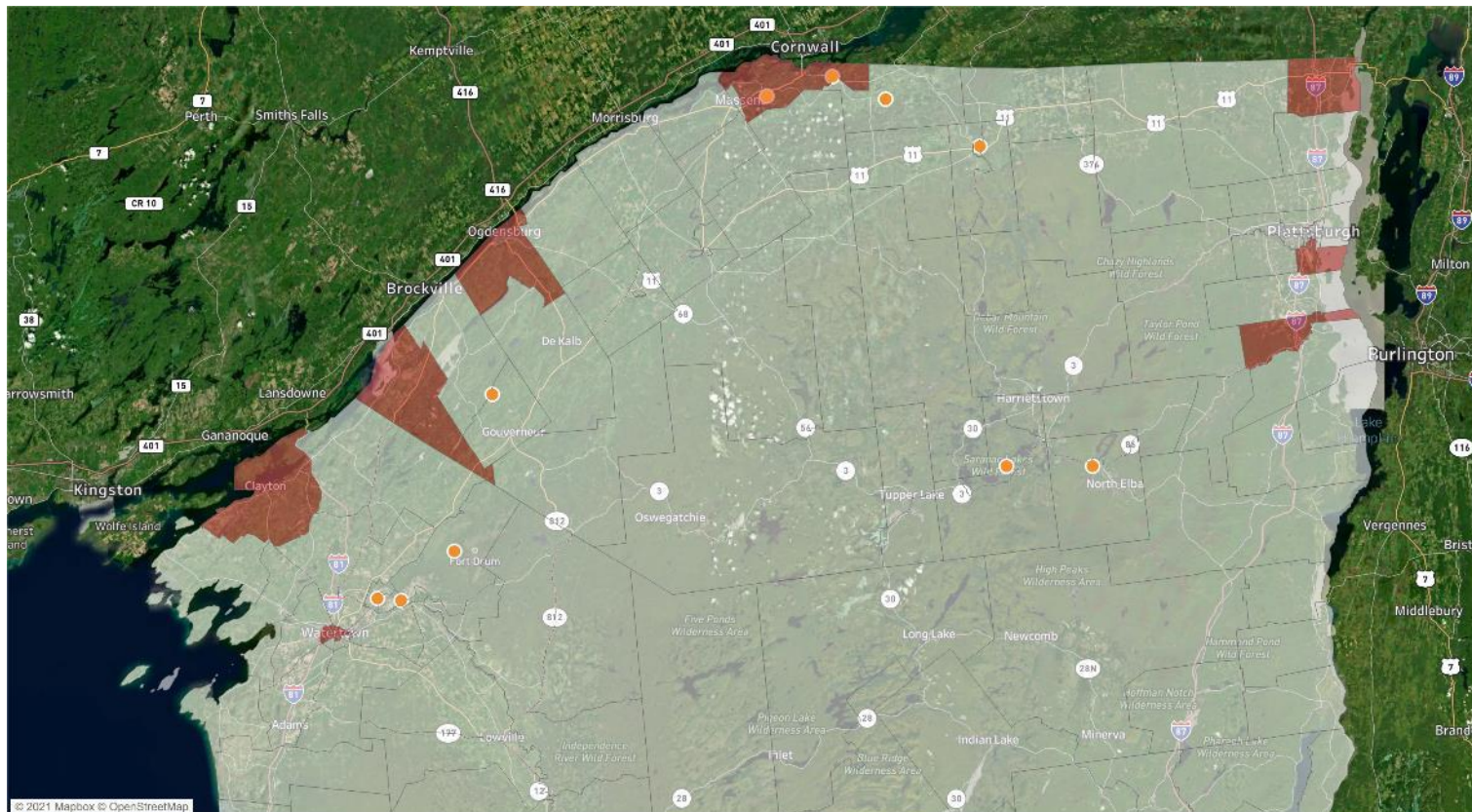
## Model

 DAC

## CJWG Response

 DAC

 Non-DAC



35%  
Scenario

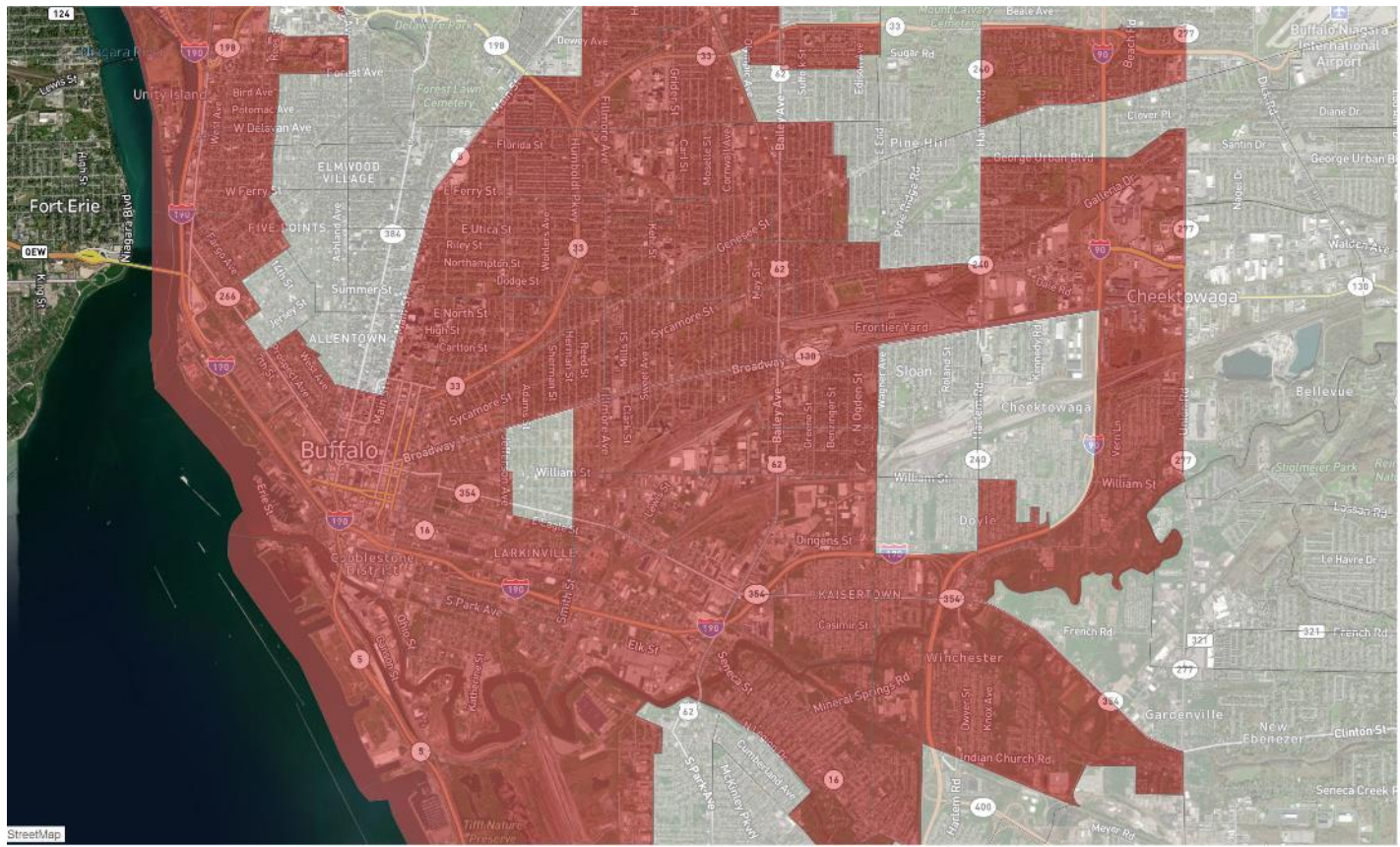
# Buffalo

**Model**

- DAC

**CJWG Response**

- DAC
- Non-DAC





# Sunset Park


35%  
Scenario

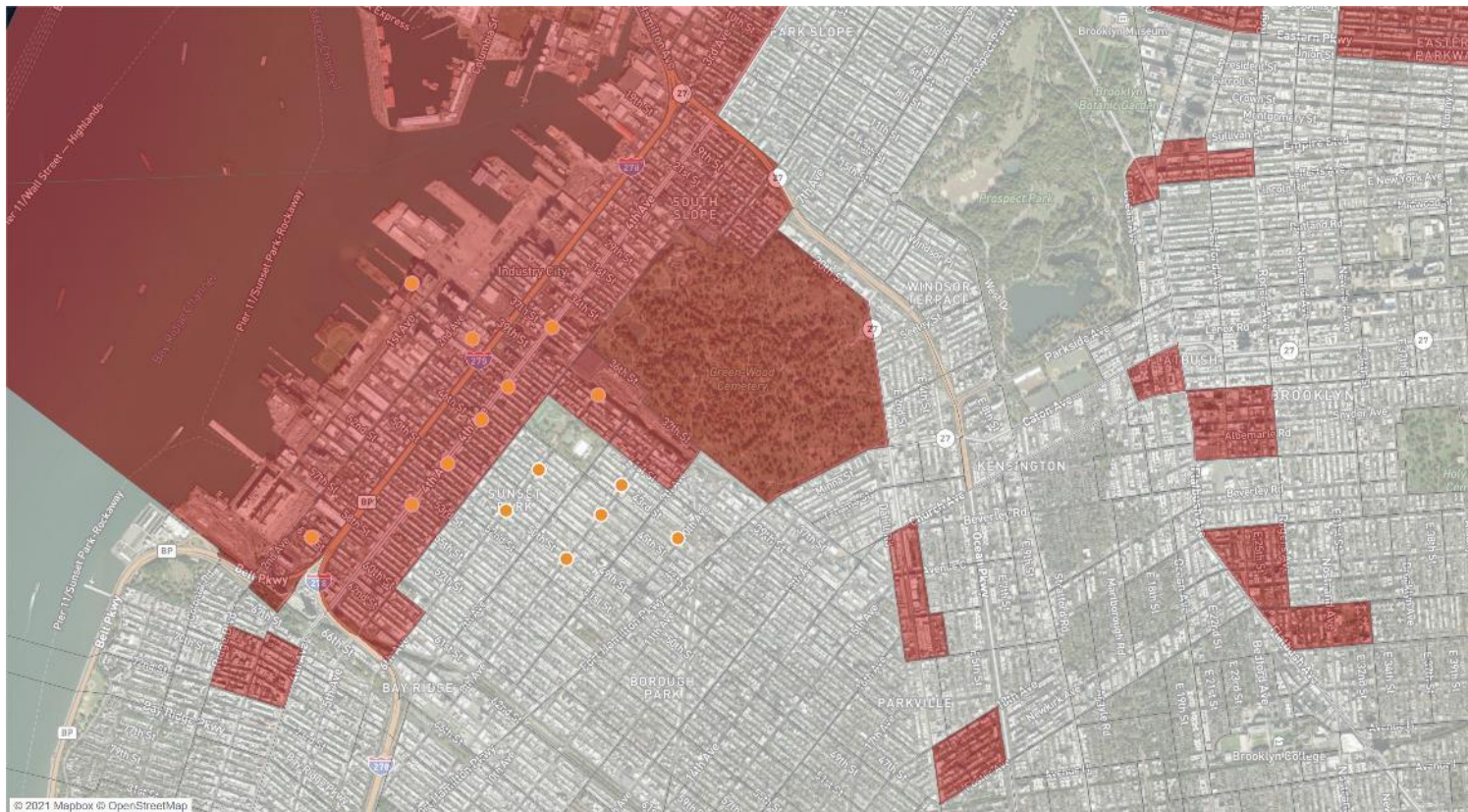
## Model

 DAC

## CJWG Response

 DAC

 Non-DAC



# Hudson River area (higher flood risk)

35%  
Scenario

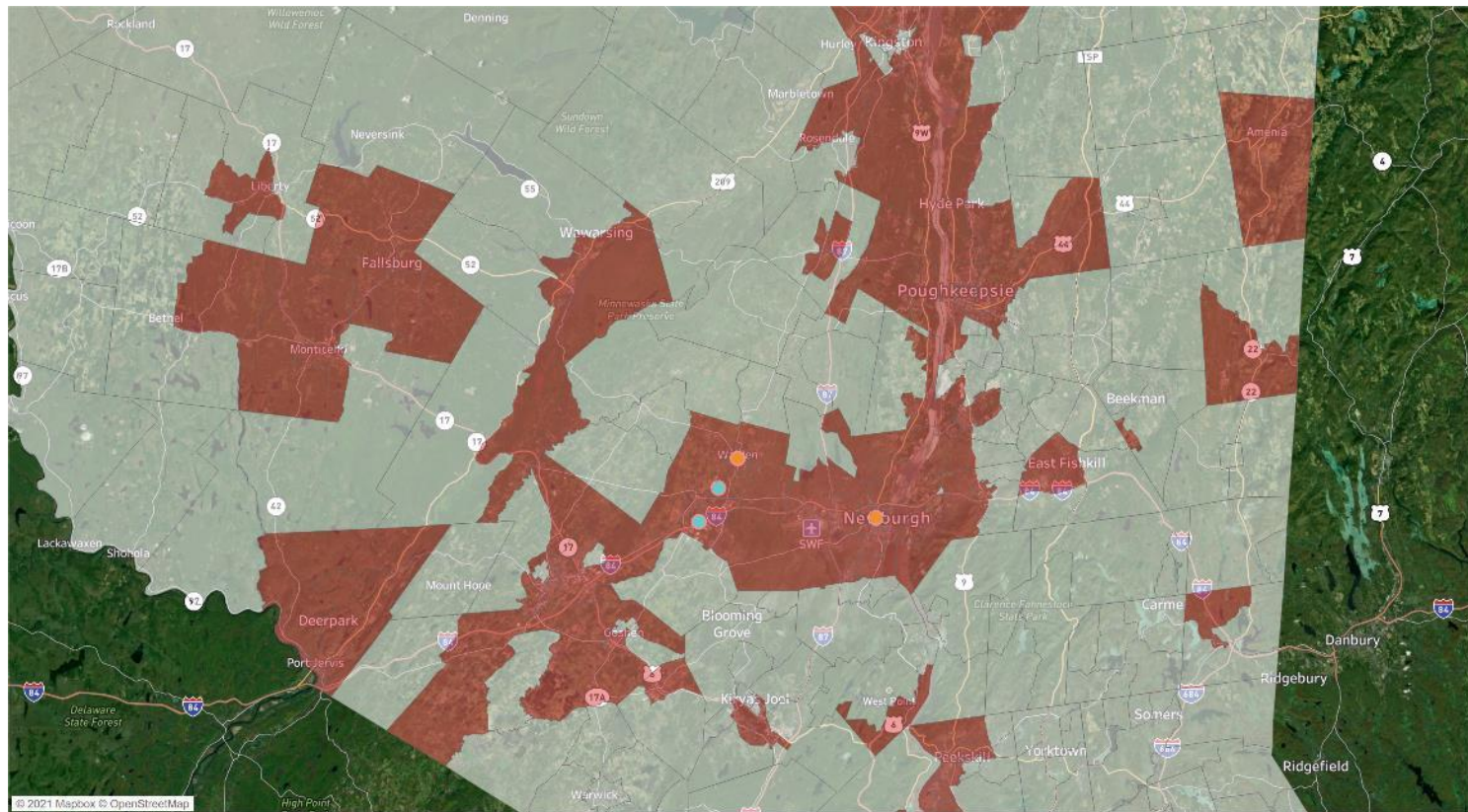
## Model

 DAC

## CJWG Response

 DAC

 Non-DAC



# Preparing to Vote



# Voting starts public process + annual review

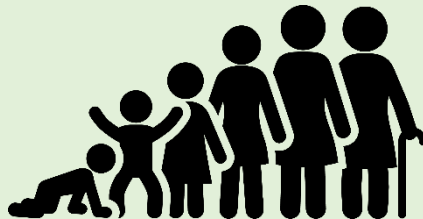
Opportunity to adjust further following public comments

Opportunity for annual review/updates



# Thoughts on critical decisions?

Individual definition  
and criteria?



What percentage of state  
should be designated  
a geographic DAC?



# Live summary of critical questions

Geographic  
Designation  
35%

Geographic  
Designation  
35%



Indiv  
Criteria  
(HH  
Income)

Agency To Do:  
What are the programs that  
leverage the different income tiers?

100% FPL

60% AMI

60% SMI

80% AMI

DRK  
ITY

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# Draft timeline before DAC vote

DAC Work	Proposed Dates
Agency Investments & Benefits (90 min) Implications for DAC designation (30 min)	Oct 13 (2-4pm)
Decide how to construct the DAC definition from the scenarios/"building blocks" we have (what "building blocks" to use; what thresholds/rules) Schedule (20 min)	Oct 19 (12-3pm)
Revisit critical questions: Percent of state to designate as DAC; individual LMI definition	Nov 17 (12-3pm)
Review draft definition and maps Ask ad hoc questions as needed	Nov 22 to Dec 3
Pre-Vote Meeting	Week of Nov 29 (morning of Dec 2?)
Vote on DAC scoring approach + scenario(s) to post for public comments	Week of Dec 13 (if needed, Dec 21/22)

CAC Meetings
Oct 14 — Preview of Draft Scoping Plan. Attend/listen.
Nov 16 – CAC meeting



# Temperature check before voting

What do you want to see or review before voting?





# Updated Scenario Results (Nov 17)



# Environmental Burdens and Climate Change Risks: Included Indicators

## Potential Pollution Exposures

- Vehicle traffic density
- Diesel truck and bus traffic
- Particulate Matter (PM2.5)
- Benzene concentration
- Wastewater discharge

## Land use and facilities associated with historical discrimination or disinvestment

- Remediation Sites (e.g., NPL Superfund or State Superfund/Class II sites)
- Regulated Management Plan (chemical) sites
- Major oil storage facilities (incl. airports)
- Power generation facilities
- Active landfills
- Municipal waste combustors
- Scrap metal processors
- Industrial/manufacturing/mining land use (zoning)
- Housing vacancy rate

## Potential Climate Change Risks

- Extreme heat projections (>90° days in 2050)
- Flooding in coastal and tidally influenced areas (projected)
- Flooding in inland areas (projected)
- Low vegetative cover
- Agricultural land
- Driving time to hospitals or urgent/critical care



# Population Characteristics and Vulnerabilities: Included Indicators

## Income

- Pct <80% Area Median Income
- Pct <100% of Federal Poverty Line
- Pct without Bachelor's Degree
- Unemployment rate
- Pct Single-parent households

Within this factor, both income metrics have 2x weight

## Race & Ethnicity

- Pct Latino/a or Hispanic
- Pct Black or African American
- Pct Asian
- Pct Native American/Indigenous
- Limited English Proficiency
- Historical redlining score

Within this factor, Pct Latino/a and Pct Black have 2x weight

## Health Impacts & Sensitivities

- Asthma ED visits
- COPD ED visits
- Heart attack (MI) hospitalization
- Premature Deaths
- Low Birthweight
- Pct without Health Insurance
- Pct with Disabilities
- Pct Adults age 65+

## Housing, Mobility, Communications

- Pct Renter-Occupied Homes
- Housing cost burden (rental costs)
- Energy Poverty / Cost Burden
- Manufactured homes
- Homes built before 1960
- Pct without Internet (home or cellular)



# As designed, DACs have far more, but not all, lower-income and BIPOC New Yorkers

35%  
Scenario

Indicator	Average in DACs	Average in Non-DACs
<80% AMI	62%	36%
<100% FPL	23%	10%
Black/African-American	29%	12%
Latino/Latina	32%	11%
Asian	8%	10%
Burden Score	38	30
Vulnerability Score	61	40

As designed, DAC tracts have far more lower-income, Black/African American and Latino/Latina households.

As designed, DACs have higher burdens and vulnerabilities scores



# Regional Distribution

Region	% Designated DAC
New York City	45%
Long Island	11%
Mid-Hudson	44%
Western NY	31%
Finger Lakes	36%
Capital Region	22%
Central NY	36%
Southern Tier	18%
Mohawk Valley	20%
North Country	15%
<b>Total</b>	<b>35%</b>

About 45% of NYC would be designated a DAC.

35% of tracts are designated. This is adjustable.

## Share of NY Population (reference)



Region	% of NY Population
New York City	43%
Long Island	15%
Mid-Hudson	12%
Western NY	7%
Finger Lakes	6%
Capital Region	6%
Central NY	4%
Southern Tier	3%
Mohawk Valley	2%
North Country	2%
<b>Total</b>	<b>100%</b>

# Rural Areas

After adjusting the methodology for classifying low population tracts, the proportion of rural areas that are classified as DACs is approximately equivalent to the proportion of rural tracts in the state.

**Percent of Region Designated**

	Number of Tracts	Pct DACs
Rural	130	15%
Suburban	371	25%
Urban	1,221	48%

The proportion of rural and urban tracts designated as DACs is now very close to the proportion of tracts in the state that are rural and urban

**Pct of Statewide Population**

	Number of Tracts	Pct of Population
Rural	857	17%
Suburban	1,479	33%
Urban	2,570	49%

As a reference, about 17% of New York's population lives in rural census tracts

The NCES locale framework classifies all territory in the U.S. into four types of areas -- City, Suburban, Town, and Rural. Each area is divided into three subtypes based on population size (in the case of City and Suburban assignments) and proximity to urban areas (in the case of Town and Rural assignments). The [classifications \(350 KB\)](#) rely on standard urban and rural designations defined by the U.S. Census Bureau, and each type of locale is either urban or rural in its entirety.



# Comparison with groundtruthing

Groundtruthing is one of multiple ways we assess how well scores fit CJWG interests and legislated criteria – including theory, scientific review and other DAC-like metrics (e.g., PEJA). Relatively few of New York's 4,918 tracts are groundtruthed. As such, this is not the key driver of our shifts in scenarios, but one of several ways we look at how the scenarios work.

Overall agreement	% Agreement	63%
CJWG & Scenario both agree it's a DAC	% Agree - DAC	61%
CJWG & Scenario both think it's not a DAC	% Agree – Non-DAC	65%

# Appendix 1: Slides from 10/19





# A geographic definition will never capture all lower-income households

Numbers are from 10/19 scenario where 39% of state designated DAC

1. In combined scoring (all indicators) we don't capture 100% of lower-income communities.
  - Some (13%) are not included because environmental or climate burdens are relatively low
  - While removing environmental and climate indicators gets us closer, with 24 population & health indicators, even Scenario #2 doesn't capture all lower-income tracts
2. Any geographic-only scenario can't capture all low-income households
  - About ~38% (~387,000) households in poverty aren't in a DAC
  - Because they are dispersed throughout the state, including in higher-income areas, no geographic scenario can reach them all



# The majority of lowest-income tracts are included

Numbers are from 10/19 scenario where 39% of state designated DAC

Most, but not all, lower-income tracts are included.

In combined scoring (Scenario 1) some aren't included if **Environmental or Climate burdens are relatively low.**

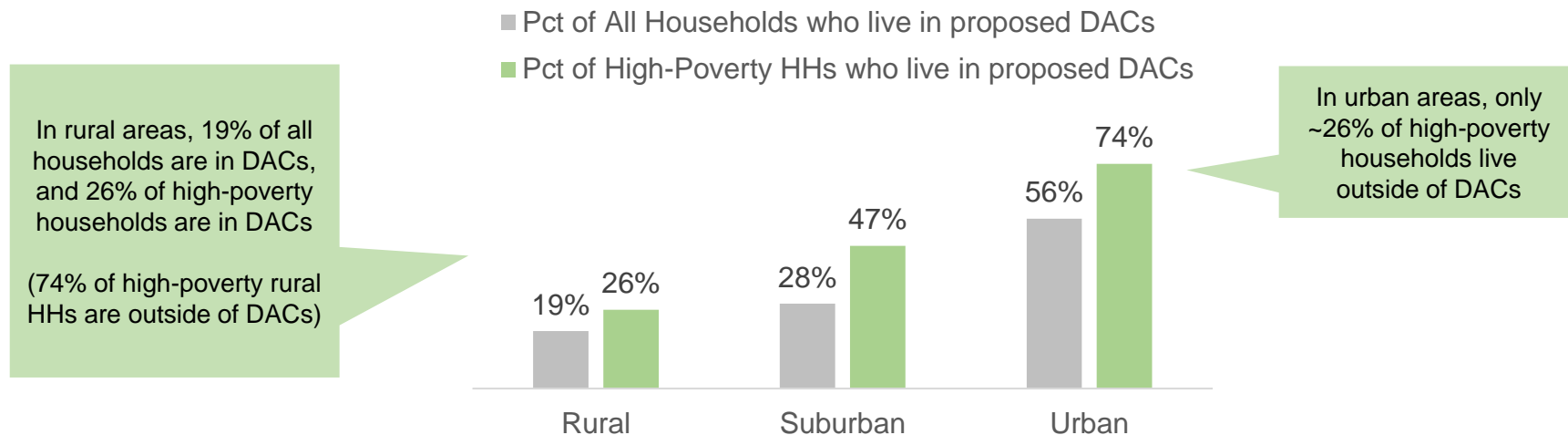
In the lowest 20% of income levels (927 tracts):

- **87% of tracts are included as DACs (893 tracts)**
- If environmental & climate indicators were removed, 92% of lowest income tracts would be included



# Where are high-poverty households outside of DACs?

Numbers are from 10/19 scenario where 39% of state designated DAC



Source: 5-year American Community Survey data (2015-2019).

In rural areas, about 10% of households have income below federal poverty line (compared with 6% in suburban areas and 18% in urban areas)



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# Individual Criteria

Justice40 and California include individuals in definitions and benefits framework

Justice40 includes individuals in community definition

**Community** – Agencies should define community as “either a group of individuals living in geographic proximity to one another, or a geographically dispersed set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions.”<sup>5</sup>

California Climate Investments considers spending for “priority populations”

“Priority populations” are DACs, LMI communities and LMI households

Low-income communities and households are those with incomes either at or below 80 percent of the statewide median or below a threshold designated as low-income by the Department of Housing and Community Development

# Appendix 2: Review of Approach

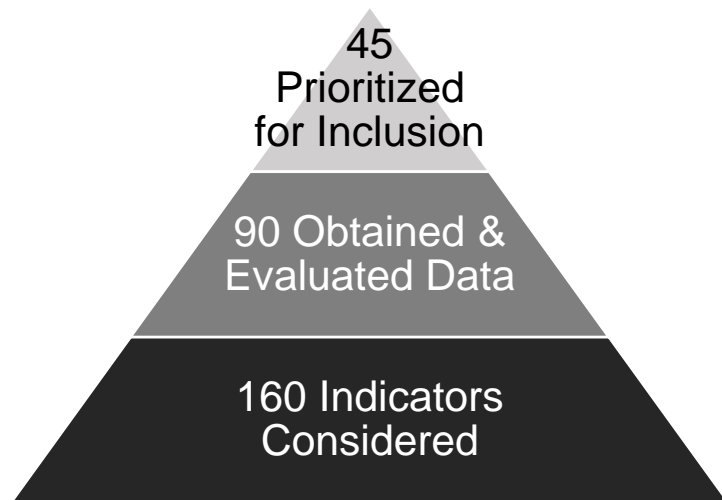


# Inclusion Considerations

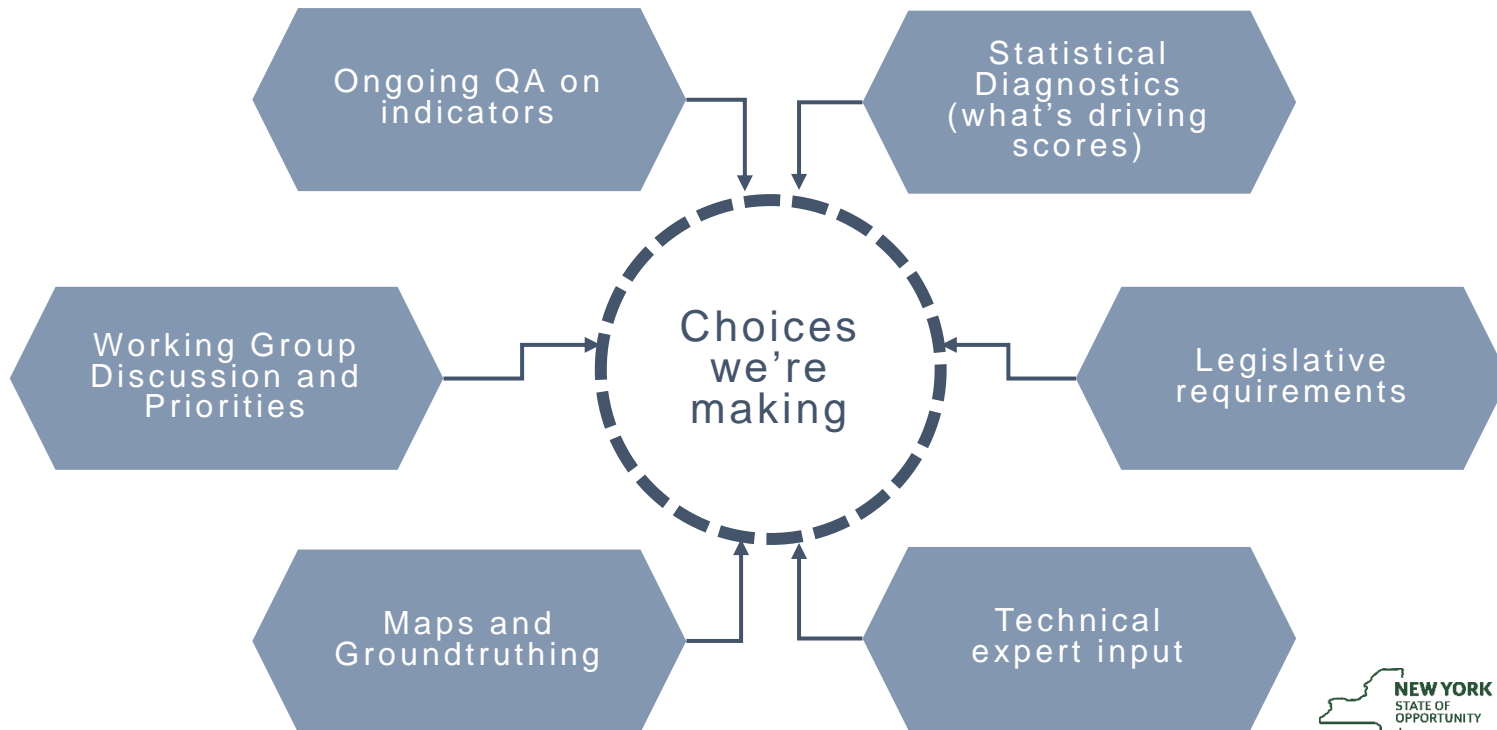
Inclusion decisions consider:

- Data coverage & granularity
- Data quality (e.g., measurement or sampling error)
- Modeled vs. directly-collected or measured data
- Correlations
- Technical guidance (e.g., DEC, DOH, DOS)

So far, we obtained & evaluated data for 90+ indicators  
(a) on their own, and (b) in combination



# Multiple inputs to inform approach



# Annual Update Process

Document what CJWG and staff team want to improve  
(future data collection or advanced analysis)

Additional data needs may emerge from public comment –  
Save time/budget to address

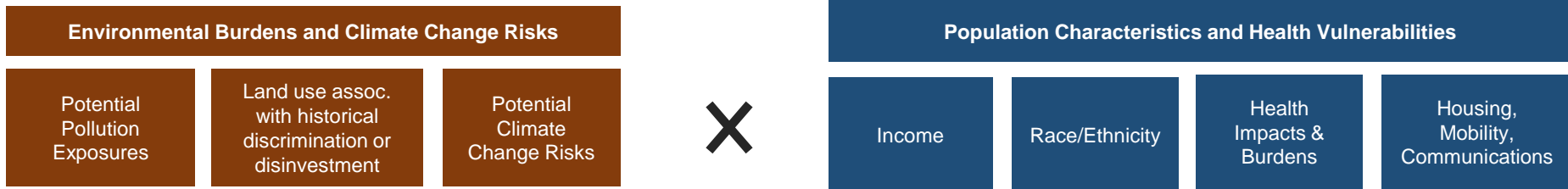
CJWG can recommend annual process to review and improve  
indicators (*← what do you recommend?*)





# Revised factors: Split income and race/ethnicity

In August, we split Income indicators (5 indicators) and Race/Ethnicity indicators (5 indicators) into two separate factors to ensure these critical indicators do not get overshadowed by other sociodemographic indicators.



**Note: Since Burdens and Vulnerabilities are multiplied, they have equal influence, regardless of the # of factors or how you weight things within them.**



# Environmental Burdens and Climate Change Risks: Included Indicators

## Potential Pollution Exposures

- Vehicle traffic density Diesel truck and bus traffic
- Particulate Matter (PM2.5)
- Benzene concentration
- Wastewater discharge

## Land use and facilities associated with historical discrimination or disinvestment

- Remediation Sites (e.g., NPL Superfund or State Superfund/Class II sites)
- Regulated Management Plan (chemical) sites
- Major oil storage facilities (incl. airports)
- Power generation facilities
- Active landfills
- Municipal waste combustors
- Scrap metal processors
- Industrial/manufacturing/mining land use (zoning)
- Housing vacancy rate

## Potential Climate Change Risks

- Extreme heat projections (>90° days in 2050)
- Flooding in coastal and tidally influenced areas (projected)
- Flooding in inland areas (projected)
- Low vegetative cover
- Agricultural land
- Driving time to hospitals or urgent/critical care



# Population Characteristics and Vulnerabilities: Included Indicators

Income	Race & Ethnicity	Health Impacts & Sensitivities	Housing, Mobility, Communications
<ul style="list-style-type: none"> <li>• Pct &lt;80% Area Median Income</li> <li>• Pct &lt;100% of Federal Poverty Line</li> <li>• Pct without Bachelor's Degree</li> <li>• Unemployment rate</li> <li>• Pct Single-parent households</li> </ul>	<ul style="list-style-type: none"> <li>• Pct Latino/a or Hispanic</li> <li>• Pct Black or African American</li> <li>• Pct Asian</li> <li>• Pct Native American or Indigenous</li> <li>• Limited English Proficiency</li> <li>• Historical redlining score</li> </ul>	<ul style="list-style-type: none"> <li>• Asthma ED visits</li> <li>• COPD ED visits</li> <li>• Heart attack (MI) hospitalization</li> <li>• Premature Deaths</li> <li>• Low Birthweight</li> <li>• Pct without Health Insurance</li> <li>• Pct with Disabilities</li> <li>• Pct Adults age 65+</li> </ul>	<ul style="list-style-type: none"> <li>• Pct Renter-Occupied Homes</li> <li>• Housing cost burden (rental costs)</li> <li>• Energy Poverty / Cost Burden</li> <li>• Manufactured homes</li> <li>• Homes built before 1960</li> <li>• Pct without Internet (home or cellular)</li> </ul>

Within this factor, both income metrics have 2x weight

Within this factor, Pct Latino/a and Pct Black have 2x weight



# Why Two Income Measures?

Both included income metrics, <100% of Federal Poverty Line and <80% of Area Median Income, are indexed to household size.

**Federal Poverty Line:** Lower threshold, but the same nationally. Included to find deeper entrenched poverty.

**Area Median Income:** Higher threshold, and indexed to metropolitan areas or fair market rent areas. Included to find low-to-moderate income (LMI).

# Example Income Thresholds

Both included income metrics, <100% of Federal Poverty Line and <80% of Area Median Income, are indexed to household size. The Federal Poverty Line is lower, but the same nationally. Area Median Income is higher, and indexed to metropolitan areas or fair market rent areas.

Location (Examples)	2-person household	
	100% of Federal Poverty Line*	80% of Area Median Income**
Albany-Schenectady-Troy, NY MSA	\$17,420	\$61,200
New York, NY HUD Metro FMR Area	\$17,420	\$76,400
Buffalo-Cheektowaga-Niagara Falls, NY MSA	\$17,420	\$50,500
Nassau-Suffolk, NY HUD Metro FMR Area	\$17,420	\$75,950
Lewis County, NY	\$17,420	\$44,400
Clinton County, NY	\$17,420	\$46,000
Poughkeepsie-Newburgh-Middletown, Metro	\$17,420	\$63,950

\*2021 Federal Poverty Level. Source: <https://www.healthcare.gov/glossary/federal-poverty-level-fpl/>

\*\* 2021 AMI. Source: <https://www.huduser.gov/portal/datasets/il/il21/Section8-IncomeLimits-FY21.pdf>



# Review: Combining Data

Group Indicators into Factors



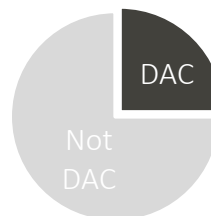
Combine Factors into Components



Calculate Statewide & Regional Scores



Designate DACs based on their relative score



# Combining Factor Scores

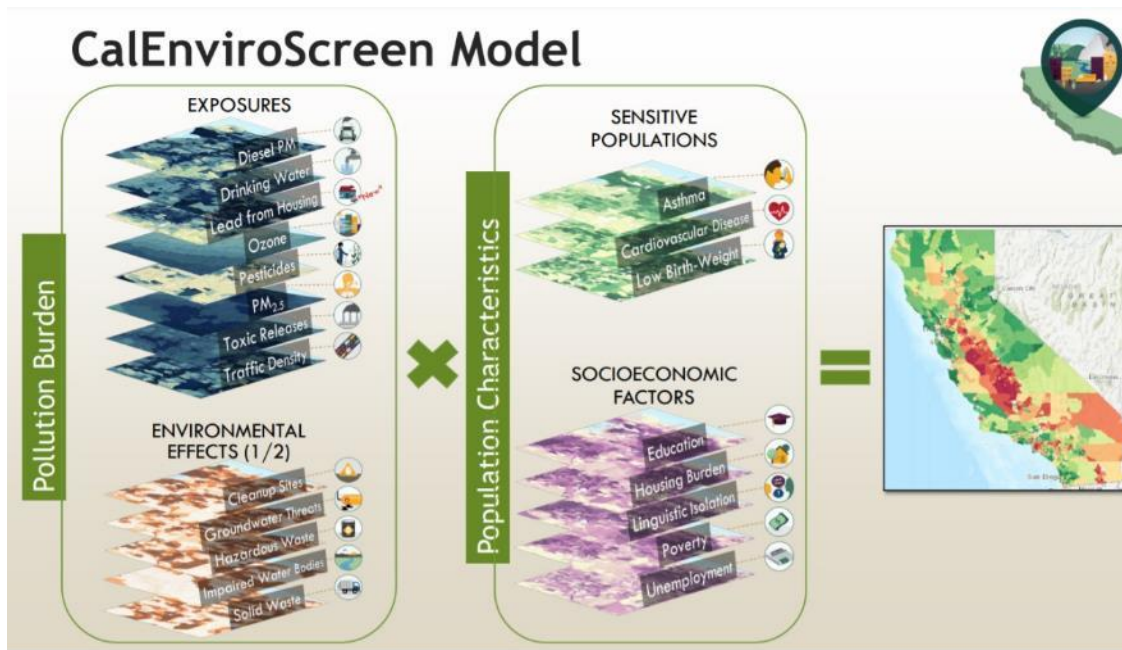
Similar to California's CalEnviroScreen approach, we multiply Environmental/Climate Burdens by Population/Health to reflect the "effect modifier" relationship wherein sociodemographic characteristics and/or health sensitivities may exacerbate or mitigate place-based burdens/risks:



Factor scores are weighted and added before multiplying:



# Multiply to represent that Vulnerabilities serve as Effect Modifiers to Burdens





# Consider Statewide and Regional ranking to designate DACs

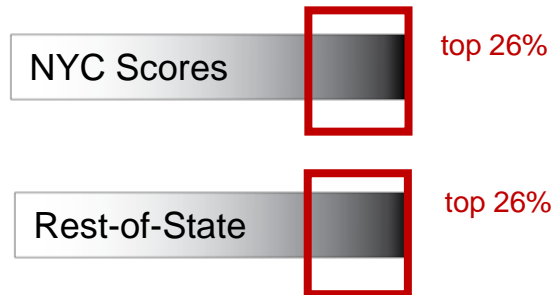
## Statewide Score

How each community ranks (on all of the data) within the **entire** state



## Regional Scores

How each community ranks (on all of the data) in NYC and Rest-of-State separately



35%  
Designated

Designate communities that score in either top 25% **statewide** OR **regionally**



Department of  
Environmental  
Conservation

# Automatically including 19 Tribal and Indigenous Areas

Census Tract	County	Census Place Name	Nation	Land	Pct of Tract Land Area
36009940200	Cattaraugus		Seneca Nation	Reservation	100%
36029940100	Erie		Tonawanda Seneca	Reservation	100%
36003940200	Allegany		Seneca Nation	Reservation	100%
36033940000	Franklin	Akwesasne CDP	Saint Regis Mohawk Tribe	Reservation	100%
36067940000	Onondaga	Nedrow CDP	Onondaga Nation	Reservation	99%
36037940100	Genesee		Tonawanda Seneca	Reservation	99%
36063940001	Niagara		Tuscarora Nation	Reservation	99%
36009940300	Cattaraugus	Salamanca city	Seneca Nation	Reservation	99%
36009940000	Cattaraugus		Seneca Nation	Reservation	99%
36029940000	Erie		Seneca Nation	Reservation	99%
36063940100	Niagara		Tonawanda Seneca	Reservation	98%
36013037600	Chautauqua	Forestville CDP	Seneca Nation	Reservation	6%
36103159511	Suffolk	Mastic CDP	Unkechaug Nation	Reservation	6%
36103190705	Suffolk	Tuckahoe CDP	Shinnecock Nation	Reservation	6%
36099950300	Seneca	Seneca Falls CDP	Cayuga Nation	Owned	13%
36053030103	Madison	Oneida city	Oneida Nation	Owned	10%
36053030300	Madison	Canastota village	Oneida Nation	Owned	7%
36063021100	Niagara	Niagara Falls city	Seneca Nation	Owned	7%
36053030600	Madison	Munnsville village	Oneida Nation	Owned	6%

Tribal and Indigenous Nation Lands if:

- Tract contains >5% federally-designated reservation territory (Source: Census)
- Tract contain >5% of nation-owned land (Source: NYS parcel ownership data)



# Low Population Areas

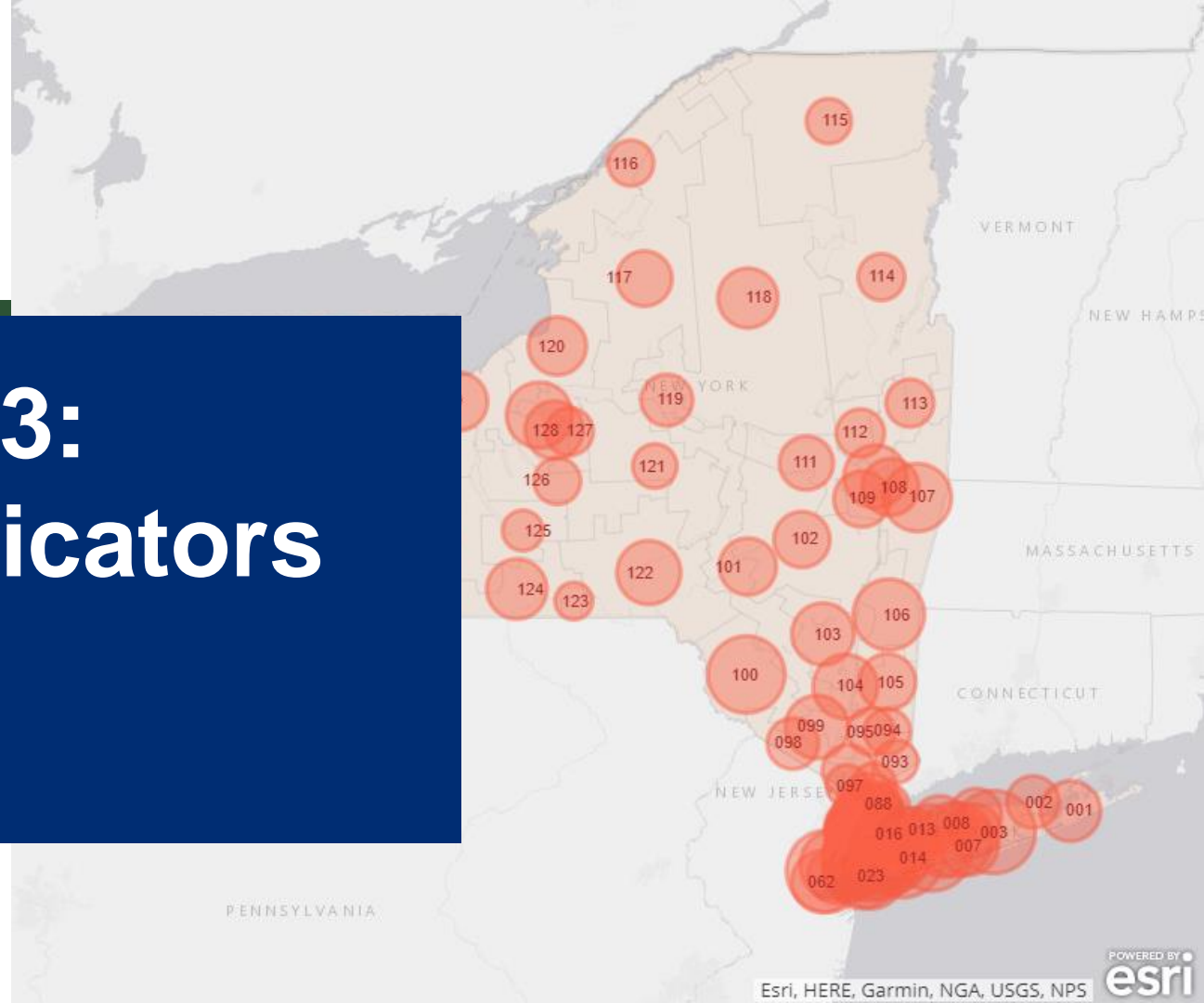
138 of 4,918 tracts (2.8%) have populations that are too low for reliable people & household data (<300 households or <500 people)

This includes sparsely-populated areas as well as group quarters like correctional facilities where there is no “household” data on things like household income

**We include them on the basis of Environmental/Climate Burdens alone** (if their Burdens score fall in the top ##% statewide or top ##% for NYC or Rest-of-State) (using same designation threshold as overall scoring)



# Appendix 3: Health Indicators



# Considerations for Health Indicators

## Link to Environmental Factors

- Environmental (geographic) component of health outcomes
  - For chronic conditions, exposures may have occurred many years prior and/or in places other than where the health outcome is recorded
  - Environmental factors exacerbate or trigger acute events for some conditions more than others (e.g., asthma, MI)

## Data Availability and Granularity

- NYSDOH only “sees” a health outcome when it appears in a dataset - Births, deaths, ED visits, hospitalizations, surveys, registries
- Need higher event frequency for stable/reliable rates and ability to share data (confidentiality)
- Data availability for small geographies in time for Draft DAC Scenarios



# Potential Health Indicators

## Included Indicators

- Asthma ED visits
- COPD ED visits
- Heart attack (MI) hospitalization
- Premature Deaths
- Low Birthweight
- Pct without Health Insurance
- Pct with Disabilities
- Pct Adults age 65+
- Distance to ED/critical/urgent care

## Considered but Not Included

- COVID-19
- Heat stress
- Cancer
- Diabetes
- Pre-term births
- Mental Health
- Childhood Lead Exposure



Potential Indicator	Rationale for Inclusion
Asthma ED visits	Strong scientific literature associating asthma with environmental exposures. Managing asthma is linked with socioeconomic status and healthcare access.
COPD ED visits	COPD is considered a sub-set of respiratory disease, associated with air toxics as well as personal behaviors. We considered de-prioritizing though COPD outcomes are influenced by access to healthcare.
Heart attack (MI) hospitalization	Cardiovascular disease in general (not MI hospitalization specifically) increasingly associated with air pollution and criteria pollutants. However, MI hospitalization data is/was readily-available, though less stable at the sub-county level.
Low Birthweight	Broadly represents maternal health, which is a factor of environmental, social, and structural policies. Data is available at the sub-county level.
Premature Deaths	Broadly represents deaths due to cancer, diabetes, heart disease, lung disease, accidents, homicides, etc., to capture systemic disadvantage. Could also be indicator of avoided deaths resulting from environmental/health policy changes
Pct with Disabilities	Represents susceptibility to power outages and emergency situations due to extreme weather events
Pct without Health Insurance	Represents access to screening, ability to manage conditions, affordable car. May indicate structural and socioeconomic disadvantage.
Pct Adults age 65+	Represents susceptibility to power outages and emergency situations due to extreme weather events.

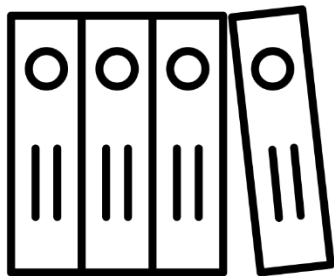
Indicator	Rationale for Exclusion	Potential Correlates (among included indicators)
COVID-19	Data not yet available; cases under active investigation; testing rates not equivalent across the state and through course of the pandemic	Socioeconomic status (SES), race/ethnicity
Heat Stress	ED visits or hospitalization either unavailable or unreliable at sub-county level. Heat deaths too small to report at sub-county level.	High temps, vegetative cover & road density (urban areas), housing quality, health vulnerabilities
Cancer	Cancers is multifactorial and represent a range of diseases. Some cancers are more vs. less environmentally or spatially-related.	Health insurance, SES (for certain types)
Diabetes	Hard to capture in NYSDOH datasets that contain ED visits & hospitalization. Clinic/pharmacy data would better capture disease. Also, diabetes may have a weaker environmental component.	Premature deaths, sociodemographic correlates and health insurance
Pre-term births	Generally captured by low birthweight	Low birthweight births
Mental Health	Mental health not well-captured in DOH data because they have ED visits & hospitalization; would only see co-occurring ICD-9 codes. Clinic/pharmacy data would better capture disease.	
Childhood Lead Exposure	Exposure data is small/unreliable at sub-county level.	Age of home, renters & rental costs, income



# Other indicators may capture risk factors for health outcomes

- Environmental exposures
- Potentially (or formerly) hazardous facilities
- Housing conditions
- Socioeconomic indicators
- Health insurance
- Language barriers

# Indicator Limitations



Documentation (for public comment) will discuss:

- Indicators/data we **considered** but did not pursue, and why
- Data limitations, including Census (e.g., not specific enough to race/ethnicity), public health data (e.g., limited data @ sub-county level), and more
- Recommendations for future/additional community-level data (e.g., migration)
- Potential for periodic indicator review/updates

# Legislation allows for continuous improvement

We are cataloging recommendations for data to gather  
and consider in the future.

