

## Office of the NEW YORK STATE COMPTROLLER

## **Cost of Adapting to Climate Change**

Welcome to the New York State Comptroller's Survey on Local Government Climate Change-Related Expenditures!

We invite you to complete this survey to help OSC quantify local government spending to adapt infrastructure to climate change. This includes measures to increase adaptive capacity as well as capital and maintenance projects undertaken to react to climate change-related events (such as more frequent and intense flooding and extreme weather). Our office plans to summarize this information in a report on these challenges.

We estimate the survey will require 15-60 minutes to complete and may need input from municipal staff in multiple departments. Where you are unsure of an answer, please enter your best estimate and use the comment boxes to elaborate.

Navigate using the Previous/Next buttons. Your responses are automatically saved so you can answer at your own pace - just be sure to click "Done" when you are finished.

\* Name of local government:

Not listed (please specify):

\* Name (first and last):

\* Title:

\* Email:

\* Phone number:

Actions to Improve Syst	temic Resilience
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These actions increase adaptive capacity, meaning they can improve the ability to withstand and recover from a range of hazards, regardless of the specific exposure(s) your local government might face.

Note: The balance of this survey will focus on hazard-specific actions, so please use the comment box to expand on any of the topics on this page before moving on.

\* From the choices below, please SELECT ALL of the actions your local government has undertaken:

	Formed or participated in committees meant to guide efforts in your community to address climate change (and its fiscal impacts).
	Adopted building standards intended to address increasing risks related to climate change.
	Initiated a study, inventory, mapping project, planning exercise, database creation or other activity intended to assess climate change risks to physical infrastructure.
	Educated property owners (and/or insurers, developers, lenders) on local climate change risks.
	Adopted climate change adaptation and resiliency standards in planning or zoning regulations or the comprehensive municipal plan.
	Identified public or private resources to provide flood shelters, cooling centers, misting stations, or warming centers during an extreme weather event.
	None of these.
Pleas	e use this space to share any additional information on the choices you selected:

#### Hazard-Specific Actions

Hazard-specific actions reduce the impact of a specific hazard or enhance the community's ability to recover from that hazard. Hazards include flooding (inland or coastal), sea level rise, extreme heat, extreme winter weather, drought and erosion.

Note: This page presents a summary of the hazard-specific actions as a preview for the next set of ten questions. We will ask about each of them again, individually and in more detail, on the following pages. You should only fill out those pages for which your community has planned, started, or completed a project related to that hazardspecific action.

\* From the choices below, please SELECT ALL of the actions your local government has completed in the past five years (2017- 2021) or that you are planning to complete in the next five years (2022-2026):

1	Retrofit, raise, or rebuild municipal buildings to adapt to new climate conditions. Examples include changes to roofs, windows or
_	building envelopes; flood- or other weather-proofing inside the building or on the grounds; purchase of emergency power
	generators, etc.

Relocate or demolish municipal buildings, critical facilities, emergency facilities or other critical infrastructure. Examples include
municipal buildings, garages, and storage facilities; police and fire stations; correctional facilities; and drinking or wastewater
infrastructure such as wells, reservoirs or treatment facilities.

Rebuild or retrofit critical infrastructure (other than buildings). Examples include infrastructure related to wastewater, drinking water or other municipal utilities.

Address increased pavement deterioration on road projects.

- Enlarge, replace, or create culverts; or make significant changes to culvert maintenance.
- Replace, build, or raise bridges; or make significant changes to bridge maintenance.

Build or make significant improvements to other protective structures. Examples include dams, levees, berms, seawalls, gr	oins,
retaining walls, wind barriers, etc.	

Undertake natural systems protection. Examples include protecting, enhancing, restoring or creating: wetlands, riverbanks, dunes, fisheries, or wildlife or plant habitats.

Replace trees or other vegetation lost due to weather events, pest infestations or other occurrences that are likely linked to climate change; and/or plant new trees or vegetation to adapt to changes in the climate.

Additional projects that do not fit into the categories above but serve to adapt your municipality to climate change-related hazards.

We have not taken any actions or started any projects that actively or passively adapt to climate change-related hazards, nor do we have any plans to do so.

Note: Marking this box will take you to the end of the survey.

(1/10) Retrofit, Raise or Rebuild Buildings

## \* Has your municipality started, completed or planned for future projects to <u>retrofit</u>, <u>raise or rebuild municipal buildings</u> to adapt to new climate conditions?

Examples include changes to roofs, windows or building envelopes; flood- or other weather-proofing inside the building or on the grounds; purchase of emergency power generators, etc.

Include all relevant projects for the ten years between 2017 and 2026.

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🔵 No

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?

**Identify any other climate change hazards specifically being addressed by the project(s).** You can choose to leave this question blank.

Flooding (not related to sea-level rise)

Sea-level rise

Extreme heat

Extreme weather

Erosion

(1/10) Retrofit, Raise or Rebuild	Buildings		
* When did/will the project(s) start	and end?		
START CALENDAR YEAR			
FINISH CALENDAR YEAR			
* How much did/will the project(s) (Enter rounded whole dollars without	<b>cost?</b> dollar signs or comm	as.)	
* What percentage of the cost of th For example, you might say that the i to adapt to climate change-related ex expected cost to maintain, fix or repla	is project would you ncremental cost of re treme precipitation ev ice the culvert with a	u attribute to climate change? placing a culvert with one that has vents was approximately X% highe similar one.	a larger diameter r than the
0% - Adapting to climate change was a cost neutral benefit of the project(s)	50%	100% - Adapting to climate change was the cost driver of the project(s)	
* Estimate the respective shares of Federal Sources (grants or aid) State Sources (grants or aid) Local Sources (property tax, other local funds)	<sup>•</sup> <b>each major funding</b> , loans, etc.)	g category (should add to 100%)	
Elaborate here on any of your answ including project details, timing, c	vers related to retro osts and funding.	fitting, raising or rebuilding mun	icipal buildings,

(2/10) Relocate or Demolish Buildings

### \* Has your municipality started, completed or planned for future projects to <u>relocate or demolish municipal buildings, critical</u> <u>facilities, emergency facilities or other critical infrastructure</u>?

Examples include municipal buildings, garages and storage facilities; police and fire stations; correctional facilities; and drinking or wastewater infrastructure such as wells, reservoirs or treatment facilities.

Include all relevant projects for the ten years between 2017 and 2026.

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🔵 No

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?

Flooding (not related to sea-level rise)
Sea-level rise
Extreme heat
Extreme weather
Erosion
Drought

(2/10) Relocate or Demolish Build	lings		
* When did/will the project(s) start a	nd end?		
START CALENDAR YEAR			
FINISH CALENDAR YEAR			
* How much did/will the project(s) c (Enter rounded whole dollars without c	ost? Iollar signs or comma	5.)	
* What percentage of the cost of the For example, you might say that the in to adapt to climate change-related ext expected cost to maintain, fix or repla	is project would you acremental cost of rep creme precipitation even ce the culvert with a s	<b>attribute to climate cha</b> lacing a culvert with one t ents was <i>approximately X</i> milar one.	<b>nge?</b> hat has a larger diameter % <i>higher</i> than the
0% - Adapting to climate change was a cost neutral benefit of the project(s)	50%	100% - Adapting to cl change was the cost of the proje	imate driver ect(s)
* Estimate the respective shares of Federal Sources (grants or aid) State Sources (grants or aid)	each major funding	category (should add to	9 100%):
Local Sources (property tax, other local funds, Elaborate here on any of your answ critical facilities, emergency facilitie costs and funding.	loans, etc.) vers related to reloca es or other critical in	ting or demolishing mu frastructure. Include pro	nicipal buildings, bject details, timing,

(3/10) Retrofit Critical Infrastructure (Other Than Buildings)

# \* Has your municipality started, completed or planned for future projects to <u>rebuild or retrofit critical infrastructure</u> (other than buildings)?

Examples include wastewater, drinking water or other municipal utilities.

Include all relevant projects for the ten years between 2017 and 2026.

🔵 Yes

🔵 No

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?

Identify any other climate change hazards specifically being addressed by the project(s). You can choose to leave this question blank.

Flooding (not related to sea-level rise)
Sea-level rise

Extreme	heat

Extreme weather

Erosion

(3/10) Retrofit Critical Infrastructu	re (Other Than E	3uildings)
* When did/will the project(s) start a	nd end?	
START CALENDAR YEAR		
FINISH CALENDAR YEAR		
* How much did/will the project(s) c (Enter rounded whole dollars without d	ost? Iollar signs or comi	mas.)
* What percentage of the cost of this For example, you might say that the ind to adapt to climate change-related extr expected cost to maintain, fix or replace	project would your cremental cost of re eme precipitation e e the culvert with a	<b>Su attribute to climate change?</b> eplacing a culvert with one that has a larger diameter events was <i>approximately X% higher</i> than the a similar one.
0% - Adapting to climate change was a cost neutral benefit of the project(s)	50%	100% - Adapting to climate change was the cost driver of the project(s)
* <b>Estimate the respective shares of e</b> Federal Sources (grants or aid)	each major fundin	ng category (should add to 100%):
State Sources (grants or aid)		
Elaborate here on any of your answe than buildings). Include project deta	ers related to rebu ils, timing, costs	uilding or retrofitting critical infrastructure (other and funding.

(4/10) Road Projects

# \* Has your municipality started, completed or planned for future projects to <u>address increased pavement deterioration on road</u> projects?

Include all relevant projects for the ten years between 2017 and 2026.

C	)	Yes
C	)	No

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?

Identify any other climate change hazards specifically being addressed by the project(s). You can choose to leave this question blank.



	* When	did/will	the	pro	ject(s	) start	and	end?
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* How much did/will the proiect(s) cost?	
FINISH CALENDAR YEAR	
START CALENDAR YEAR	

(Enter rounded whole dollars without dollar signs or commas.)

#### \* What percentage of the cost of this project would you attribute to climate change?

For example, you might say that the incremental cost of replacing a culvert with one that has a larger diameter to adapt to climate change-related extreme precipitation events was *approximately X% higher* than the expected cost to maintain, fix or replace the culvert with a similar one.

0% - Adapting to climate		100% - Adapting to climate
change was a cost neutral		change was the cost driver
benefit of the project(s)	50%	of the project(s)
$\sim$		

#### \* Estimate the respective shares of each major funding category (should add to 100%):

Federal Sources (grants or aid)

State Sources (grants or aid)

Local Sources (property tax, other local funds, loans, etc.)

Elaborate here on any of your answers related to road projects. Include project details, timing, costs and funding.

(5/10) Enlarge, Replace or Create Culverts

### \* Has your municipality started, completed or planned for future projects to <u>enlarge</u>, <u>replace</u>, <u>or create culverts</u>, <u>or make significant</u> <u>changes to culvert maintenance</u>?

Include all relevant projects for the ten years between 2017 and 2026.

Yes

No

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?



(5/10) Enlarge, Replace or Create Cu	ulverts		
* When did/will the project(s) start and e	end?		
START CALENDAR YEAR			
FINISH CALENDAR YEAR			
* How much did/will the project(s) cost? (Enter rounded whole dollars without dolla * What percentage of the cost of this pro For example, you might say the incrementa	r signs or commas <b>Dject would you a</b> al cost of replacing	a culvert with one that has a large	er diameter to
adapt to climate change-related extreme process to maintain, fix or replace the culvert w	recipitation events vith a similar one.	was approximately X% higher tha	n the expected
0% - Adapting to climate change was a cost neutral benefit of the project(s)	50%	100% - Adapting to climate change was the cost driver of the project(s)	
* Estimate the respective shares of each	n major funding c	ategory (should add to 100%):	
Federal Sources (grants or aid)			
State Sources (grants or aid)	otc )		
Elaborate here on any of your answers i	related to culvert	projects and maintenance. Inclu	ide project

(6/10) Replace, Build or Raise Bridges

### \* Has your municipality started, completed or planned for future projects to <u>replace</u>, <u>build</u>, <u>or raise bridges</u>, <u>or make significant</u> changes to bridge maintenance?

Include all relevant projects for the ten years between 2017 and 2026.

Yes

🔵 No

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?

Identify any other climate change hazards specifically being addressed by the project(s). You can choose to leave this question blank.

Flooding (not related to sea-level rise)

Sea-level rise

Extreme heat

Extreme weather

Erosion

_				
(6/2	10) Replace, Build or Raise E	Bridges		
•	, , , .	5		
* W	/hen did/will the project(s) start	and end?		
	START CALENDAR YEAR			
	FINISH CALENDAR YEAR			
* <b>H</b> c (Ent	ow much did/will the project(s) ter rounded whole dollars without	<b>cost?</b> t dollar signs or comm	as.)	
* WI For to ac	hat percentage of the cost of the example, you might say that the dapt to climate change-related examples the automatic fix or replace the automatic fix or repla	nis project would you incremental cost of rep streme precipitation ev	u attribute to climate change? placing a culvert with one that has a la vents was <i>approximately X% higher</i> th	arger diameter an the expected
COSI	t to maintain, its of replace the cu	iven with a similar one	₽.	
	0% - Adapting to climate		100% - Adapting to climate	
	change was a cost neutral	500/	change was the cost driver	
0	benefit of the project(s)	50%	of the project(s)	
C	)			
* Es	stimate the respective shares o	f each major funding	a category (should add to 100%).	
Fodo	-		g outegory (should use to 100/0).	
Feue	eral Sources (grants or aid)			
State	eral Sources (grants or aid) e Sources (grants or aid)			
State	eral Sources (grants or aid) e Sources (grants or aid) al Sources (property tax, other local funds	;, loans, etc.)		
State Loca Elat fund	eral Sources (grants or aid) e Sources (grants or aid) al Sources (property tax, other local funds borate here on any of your ans ding.	s, loans, etc.) wers related to bridg	Jes. Include project details, timing,	costs and
Elak fund	eral Sources (grants or aid) e Sources (grants or aid) al Sources (property tax, other local funds borate here on any of your ans ding.	s, loans, etc.) wers related to bridg	Jes. Include project details, timing,	costs and
Elat	eral Sources (grants or aid) e Sources (grants or aid) al Sources (property tax, other local funds borate here on any of your ans ding.	s, loans, etc.) wers related to bridg	Jes. Include project details, timing,	costs and
Elat fund	eral Sources (grants or aid) e Sources (grants or aid) al Sources (property tax, other local funds borate here on any of your ans ding.	s, loans, etc.) wers related to bridg	Jes. Include project details, timing,	costs and

(7/10) Build or Improve Other Protective Structures

## \* Has your municipality started, completed or planned for future projects to <u>build or make significant improvements to protective</u> <u>structures</u>?

Examples include dams, levees, berms, seawalls, groins, retaining walls, wind barriers, etc.

Include all relevant projects for the ten years between 2017 and 2026.

Yes

) No

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?



(7/10) Build or Improve Other Protection	ve Structures			
* When did/will the project(s) start and e	nd?			
START CALENDAR YEAR				
FINISH CALENDAR YEAR				
* How much did/will the project(s) cost? (Enter rounded whole dollars without dollar signs or commas.)				
* What percentage of the cost of this project would you attribute to climate change? For example, you might say that the incremental cost of replacing a culvert with one that has a larger diameter to adapt to climate change-related extreme precipitation events was <i>approximately X% higher</i> than the expected cost to maintain, fix or replace the culvert with a similar one.				
0% - Adapting to climate change was a cost neutral benefit of the project(s)	50%	100% - Adapting to c change was the cost of the pro	limate driver ject(s)	
* Estimate the respective shares of each	major funding ca	tegory (should add te	o 100%):	
State Sources (grants or aid)				
Local Sources (property tax, other local funds, loans,	etc.)			
Elaborate here on any of your answers related to other protective structures. Include project details, timing, costs and funding.				

(8/10) Protect Natural Systems

## \* Has your municipality started, completed or planned for future projects to protect natural systems?

Examples include protecting, enhancing, restoring or creating wetlands, riverbanks, dunes, or fisheries, wildlife and plant habitats.

Include all relevant projects for the ten years between 2017 and 2026.

Yes

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?

Identify any other climate change hazards specifically being addressed by the project(s). You can choose to leave this question blank.



Sea-level rise

Extreme heat

Extreme weather

Erosion

(8/10) Protect Natural Systems			
* When did/will the project(s) start	and end?		
START CALENDAR TEAR			
FINISH CALENDAR YEAR			
* How much did/will the project(s) (Enter rounded whole dollars without	cost? dollar signs or comma	s.)	
• What percentage of the cost of th For example, you might say that the i to adapt to climate change-related ex expected cost to maintain, fix or repla	<b>is project would you</b> ncremental cost of rep treme precipitation even ace the culvert with a s	attribute to climate change? lacing a culvert with one that has a ents was <i>approximately X% higher</i> imilar one.	larger diamete than the
0% - Adapting to climate		100% - Adapting to climate	
change was a cost neutral	500 <u>6</u>	change was the cost driver	
	30%		
0			
* Estimate the respective shares of	f each major funding	category (should add to 100%):	
Federal Sources (grants or aid)			
State Sources (grants or aid)			
Local Sources (property tax, other local funds	, loans, etc.)		
Elaborate here on any of your answ timing, costs and funding.	wers related to natura	al systems protection. Include pr	oject details,

(9/10) Plant or Replace Trees or Other Vegetation

\* Has your municipality started, completed or planned for future projects to <u>plant new trees or vegetation</u> to adapt to changes in the climate? Has your municipality started, completed or planned for future projects to <u>replace trees or other vegetation</u> lost due to weather events, pest infestations or other occurrences that were likely linked to climate change?

Include all relevant projects for the ten years between 2017 and 2026.

$\cap$	Yes

O No

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?

Flooding (not related to sea-level rise)
Sea-level rise
Extreme heat
Extreme weather
Erosion
Drought

(9/10) Plant or Replace Trees or Ot	her Vegetation		
* When did/will the project(s) start and	l end?		
START CALENDAR YEAR			
FINISH CALENDAR YEAR			
* How much did/will the project(s) cos (Enter rounded whole dollars without doll	<b>t?</b> lar signs or comma	s.)	
* What percentage of the cost of this p For example, you might say that the incre to adapt to climate change-related extrem expected cost to maintain, fix or replace	project would you emental cost of rep me precipitation eve the culvert with a s	attribute to climate change? placing a culvert with one that has ents was <i>approximately X% higher</i> imilar one.	a larger diameter r than the
0% - Adapting to climate change was a cost neutral benefit of the project(s)	50%	100% - Adapting to climate change was the cost driver of the project(s)	
* Estimate the respective shares of ea	ach major funding	category (should add to 100%):	
Federal Sources (grants or aid)			
State Sources (grants or aid)			
Local Sources (property tax, other local funds, loa	ins, etc.)		
Elaborate here on any of your answer Include project details, timing, costs a	's related to replac	cing or planting trees or other ve	egetation.

(10/10) Other Hazard-Specific Actions

In addition to the previously listed projects, has your municipality started, completed or planned for future projects which adapt your municipality to climate change-related hazards?

Include all relevant projects for the ten years between 2017 and 2026.

\_\_\_\_Yes

🔵 No

\* Give the project(s) a short descriptive name. Use the comment box at the bottom of this page to elaborate as necessary.

\* If you are aggregating multiple projects related to this topic, specify how many. If not, answer 1.

\* What is the primary climate change hazard being addressed?

Identify any other climate change hazards specifically being addressed by the project(s). You can choose to leave this question blank.



Sea-level rise

Extreme heat

Extreme weather

Erosion

(10/10) Other Hazard-Specific Actions	
* When did/will the project(s) start and end?	
START CALENDAR YEAR	
FINISH CALENDAR YEAR	
* How much did/will the project(s) cost?	
	5.)
* What percentage of the east of this project would you	attribute to climate change?
For example, you might say that the incremental cost of repl	acing a culvert with one that has a larger diameter
to adapt to climate change-related extreme precipitation eve	nts was approximately X% higher than the
expected cost to maintain, fix or replace the culvert with a si	nilar one.
0% - Adapting to climate	100% - Adapting to climate
change was a cost neutral benefit of the project(s) 50%	change was the cost driver of the project(s)
0	
* Estimate the respective shares of each major funding of	category (should add to 100%):
* Estimate the respective shares of each major funding of Federal Sources (grants or aid)	category (should add to 100%):
* Estimate the respective shares of each major funding Federal Sources (grants or aid) State Sources (grants or aid)	category (should add to 100%):
* Estimate the respective shares of each major funding of Federal Sources (grants or aid) State Sources (grants or aid) Local Sources (property tax, other local funds, loans, etc.)	category (should add to 100%):
* Estimate the respective shares of each major funding of Federal Sources (grants or aid) State Sources (grants or aid) Local Sources (property tax, other local funds, loans, etc.)	category (should add to 100%):
<ul> <li>* Estimate the respective shares of each major funding of Federal Sources (grants or aid)</li> <li>State Sources (grants or aid)</li> <li>Local Sources (property tax, other local funds, loans, etc.)</li> <li>Elaborate here on any of your answers related to the oth details, timing, costs and funding.</li> </ul>	category (should add to 100%):
<ul> <li>* Estimate the respective shares of each major funding of Federal Sources (grants or aid)</li> <li>State Sources (grants or aid)</li> <li>Local Sources (property tax, other local funds, loans, etc.)</li> <li>Elaborate here on any of your answers related to the oth details, timing, costs and funding.</li> </ul>	category (should add to 100%):
* Estimate the respective shares of each major funding of Federal Sources (grants or aid) State Sources (grants or aid) Local Sources (property tax, other local funds, loans, etc.) Elaborate here on any of your answers related to the oth details, timing, costs and funding.	er actions you have taken. Include project
* Estimate the respective shares of each major funding of Federal Sources (grants or aid) State Sources (grants or aid) Local Sources (property tax, other local funds, loans, etc.) Elaborate here on any of your answers related to the othe details, timing, costs and funding.	er actions you have taken. Include project
* Estimate the respective shares of each major funding of Federal Sources (grants or aid) State Sources (grants or aid) Local Sources (property tax, other local funds, loans, etc.) Elaborate here on any of your answers related to the oth details, timing, costs and funding.	er actions you have taken. Include project

\* Are you interested in receiving a copy of your submission via email?

Yes

Is there anything else you would like to share with us regarding how your local government is adapting to climate change?



### Thank you for taking our survey!

If you need further assistance or have a comment or question, please contact OSC's Local Government and School Accountability Research Unit at (866) 321 - 8503 or localgov@osc.ny.gov.