CivicPulse Insights

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LOCAL GOVERNMENT SPENDING IN THE WAKE OF COVID-19

REPORT 2G: SANITATION, SEWAGE, AND WATER

June 29, 2020

CivicPulse Insights, produced by CivicPulse and Power Almanac, delivers proprietary research throughout the year to empower local governments and their suppliers. Learn more at PowerAlmanac.com/research or CivicPulse.org.

About *CivicPulse Insights* and the Publishers

About *CivicPulse Insights*. CivicPulse and Power Almanac have teamed up to bring you ***CivicPulse Insights***, a research service dedicated to analyzing critical issues of local governance, providing national and regional benchmarks for local governments, and identifying strategic implications for their suppliers. Using Power Almanac's comprehensive contact information for local government officials across the US, CivicPulse conducts random-sample surveys of township, municipal, and county officials, and completes careful analyses to identify key trends and insights that will guide your decision making.

About CivicPulse. CivicPulse is a nonprofit, nonpartisan organization dedicated to filling the gap in access to high quality information about local government. Founded in 2018 by a few PhD students at Stanford University's Department of Political Science, and led by Dr. Nathan Lee, professor of public policy at the Rochester Institute of Technology (RIT), CivicPulse combines recurring national surveys of local government leaders with a variety of other data sources to provide trustworthy insights for policymakers, citizens, and the broader stakeholder community.

About Power Almanac. Power Almanac's mission is to make it easy for organizations with the ability to help local governments serve their citizens more efficiently and effectively to reach out and connect with key decision makers at the right local governments. We provide the most comprehensive and accurate database of contact information for local government decision makers, with more than 250,000 records from 21,000 cities, counties, and townships. 100% phone-verified every 6 months.

Local Government Spending Priorities in the Wake of COVID-19: Summary of Reports

The coronavirus has ushered America into its worst economic downturn since the Great Depression. Local governments are on the frontlines of this crisis, as they navigate how to continue providing essential services to meet the growing needs and declining resources of their citizens.

In ***CivicPulse Insights'*** inaugural report series, "*Local Government Spending Priorities in the Wake of COVID-19*," we bring fresh data and analysis to bear—based on a nationally representative survey of the top elected leaders of local governments—to unpack the widespread uncertainty about the looming local budget changes in the wake of the COVID-19 crisis.

In our first report of this series, we characterize local policymakers' expectations about changes in both revenue and spending in the next twelve months, including comparing projected spending across 12 different program and functional areas. The report also examines how expected changes in spending will vary by a range of local factors, including population size, government type, geographic region, the severity of COVID-19's impact, and the locality's political leaning.

The second report, which comes in 12 parts, offers a deeper dive into key local government program and functional areas.

In summary, the report series will be composed of:

Report 1: *Spending projections by program, function, and local factors*

Report 2: *Analyses of projected spending in specific program and functional areas*

Program Areas

a. Health services
b. Housing and community development
c. Public safety
d. Public welfare and social services
e. Public works
f. Roads and highways
g. Sanitation, sewage, and water

Functional Areas

h. Capital investment
i. Citizen communication and engagement
j. Financial administration
k. Technology
l. Workforce

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Key Findings

Below are the key findings in this report, based on our analysis of our nationally representative survey of top elected leaders of local governments:

1. **Overall trajectory.** Spending on sanitation, sewage, and water is likely to stay the same in the next year, with 56% expecting no change and the remainder split almost evenly between expecting an increase or decrease.

2. **Findings by population size.** Localities with between 3,000 and 10,000 residents are most likely to increase spending, relative to other localities with fewer or more residents.

3. **Findings by government type.** Township and municipal governments are more likely to see spending increase on sanitation sewage, and water, while county governments are more likely to see a decrease.

4. **Findings by region.** Spending on sanitation, sewage, and water is most likely to increase in the Northeast, while it is most likely to decrease in the West.

5. **Findings by COVID-19 incidence.** Spending on sanitation, sewage, and water is more likely to increase in localities with higher COVID-19 disease incidence.

6. **Findings by political leaning.** Spending on sanitation, sewage, and water is more likely to increase in Democrat-leaning localities than in Republican-leaning localities.

I. Overall Spending Trajectories on Sanitation, sewage, and Water

In our first report in this series – based on our national survey of local elected officials – we found important differences in expectations about local government spending trajectories across specific program and functional areas. The remainder of this report series tackles each program and functional area separately.

This report presents a deep dive into local government spending on *sanitation, sewage, and water,* one of the seven Program areas asked about in our survey.

As Figure 1 shows, a majority of local governments expect no change in spending (gray segment). However, a substantial number of local governments expect spending to either increase (blue segment) or decrease (orange segment).

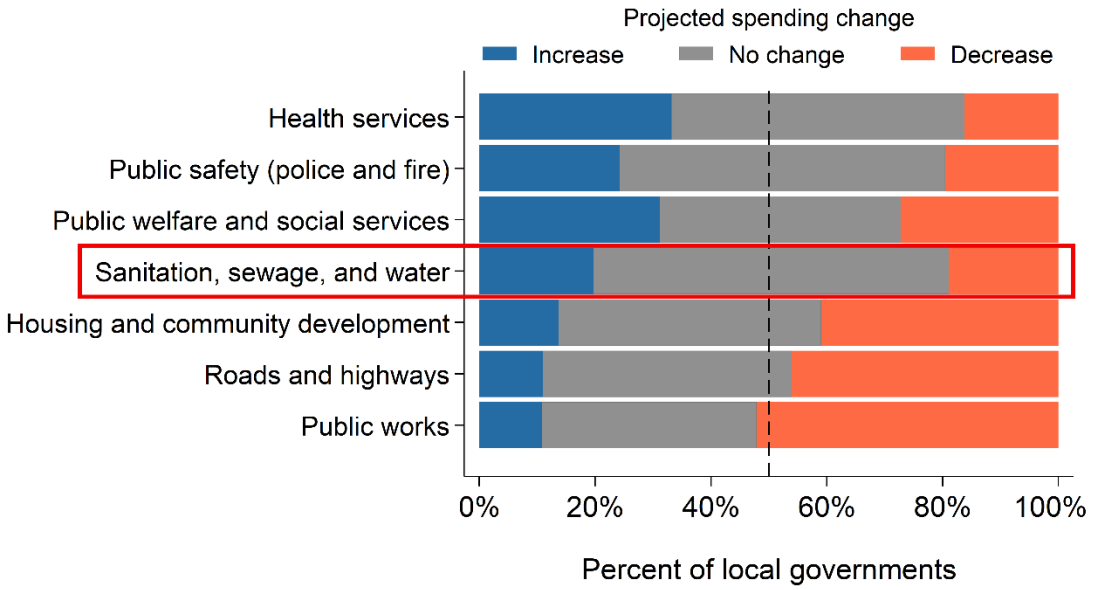

Figure 1. Spending on sanitation, sewage, and water is equally likely to increase as it is to decrease in the next year. For each program area, the percentage of local governments expecting an increase, no change, or decrease is shown.

In this report, we investigate the factors that determine whether a given local government is more likely to be toward the right or left side of the figure above. To do so, we use the *net likelihood score*.

The net likelihood score represents the difference between the percentage of local governments expecting spending to increase (Fig 1, blue), minus the percentage of local governments expecting a spending decrease (Fig 1, orange).

In this case, the overall net likelihood score for local governments' spending on health services is 20% minus 19%, or 1 percentage point (see Figure 2).

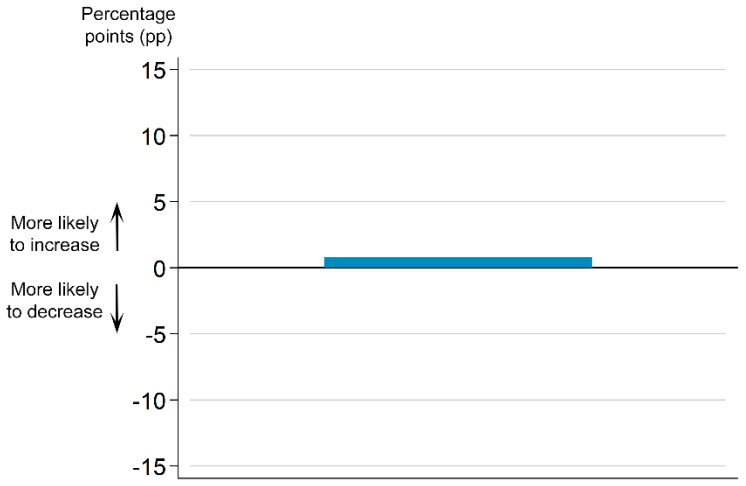

Figure 2. Spending on sanitation, sewage, and water has a net likelihood close to zero for the next year. This plot shows the difference in likelihoods (or "net likelihood") that annual overall spending increases versus decreases (equivalent to the difference between the blue and orange bars in Figure 1).

In other words, it is more likely that the average local government will experience a spending increase on sanitation, sewage, and water than a spending decrease.

In the remainder of this report, we use this net likelihood measure to analyze how expected spending changes on capital investment might vary in terms of five local factors:

- Population size
- Government type
- Region
- COVID-19 incidence
- Political leaning

II. Spending Trajectories by Population Size

In this section, we disaggregate our analysis of expected changes in local government spending in terms of the locality's population size.

In Figure 3 below you can see that the net likelihood score is lowest for higher-population localities (greater than 10,000 residents), meaning that they are the *most likely* to decrease spending. By comparison, communities with fewer than 10,000 residence (Figure 3, left two bars) are more likely to project an increase in spending than decrease.

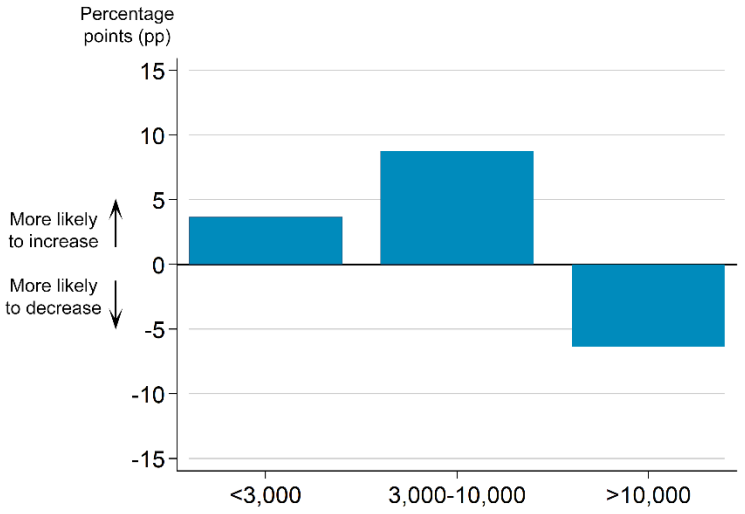

Figure 3. Spending on sanitation, sewage, and water most likely decrease in higher population communities. Each bar shows, by population size, the difference in likelihoods (or "net likelihood") that annual spending increases versus decreases.

III. Spending Trajectories by Government Type

Next, we explore how expected spending on sanitation, sewage, and water will vary by the type of government. In township and municipal governments, it turns out that spending is more likely to *increase*, while in counties, spending is more likely to *decrease* (Figure 4). This is indicated by the positive net likelihood score for municipalities and townships versus the negative score for counties.

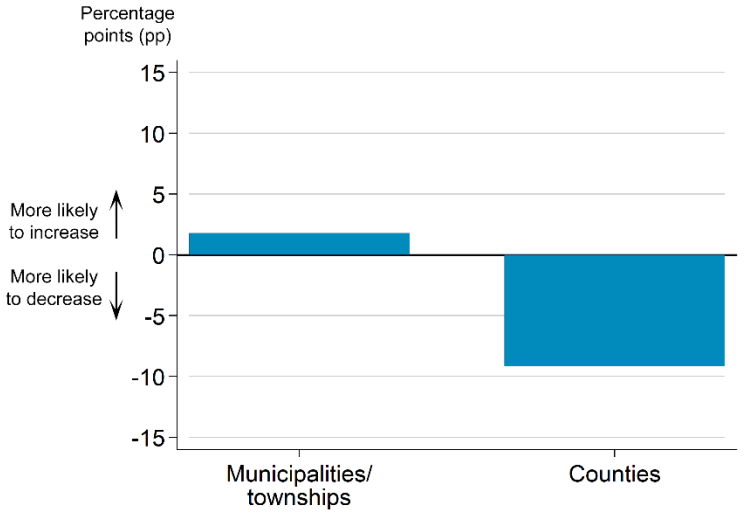

Figure 4. Municipalities and townships project a spending increase, while counties project a decrease. Each bar shows, by government type, the difference in likelihoods (or "net likelihood") that annual spending increases versus decreases.

IV. Spending Trajectories by Region

How will spending on sanitation, sewage, and water changes vary by region? Answering this question, Figure 5 shows how the net likelihood score varies across different regions of the United States.

In the Midwest and Northeast, spending is more likely to increase than decrease by 4 percentage points. This contrasts with projections in the South and West, where spending is more likely to decrease by about 5 points.

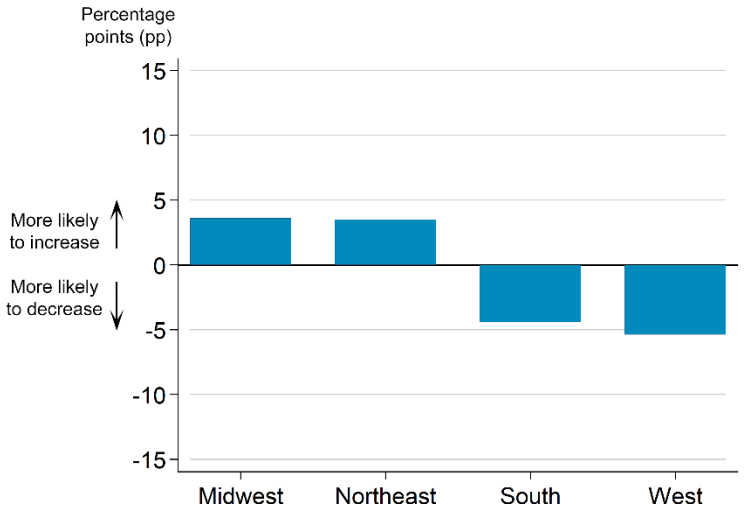

Figure 5. Spending on sanitation, sewage, and water more likely to increase in the Midwest and Northeast, more likely to decrease in the South and West. Each bar shows, by region, the difference in likelihoods (or "net likelihood") that annual spending increases versus decreases.

V. Spending Trajectories by COVID-19 Incidence

We now investigate whether future local government spending on sanitation, sewage, and water depends on the level of COVID-19 disease incidence in their community.

Our projections show that, on net, communities with a lower COVID-19 incidence project a decrease in spending, while communities with a higher disease incidence project an increase in spending.

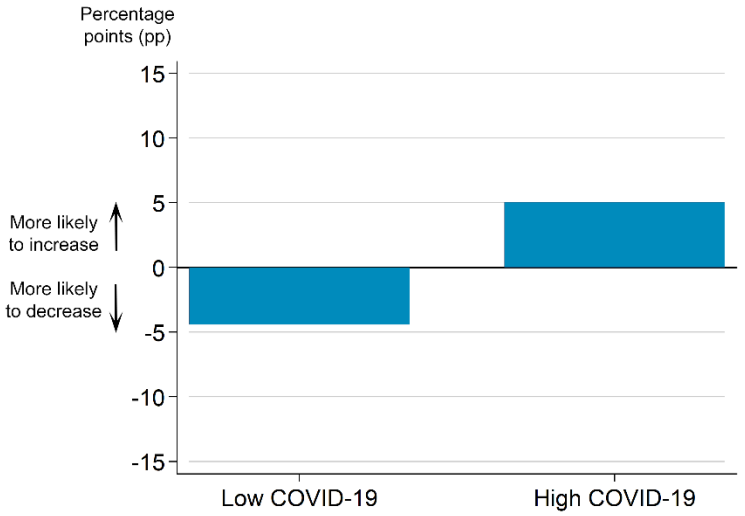

Figure 6. A higher COVID-19 incidence is associated with a greater net likelihood of increasing spending on sanitation, sewage, and water. Each bar shows, by level of disease incidence, the difference in likelihoods (or "net likelihood") that annual spending increases vs decreases. Level of COVID-19 incidence is based on the number of cases per capita in the county at the time of the survey.

Because the spread of COVID-19 is related to a community's population size, we further partition the data by both disease incidence and population.

We find that, regardless of population size, a higher COVID-19 incidence is associated with a higher net likelihood score (Figure 7). This is consistent with the overall projections in Figure 6.

Splitting the sample in this way also reveals how, regardless of disease incidence levels, lower population localities with under 10,000 residents have a higher net likelihood score than higher population localities.

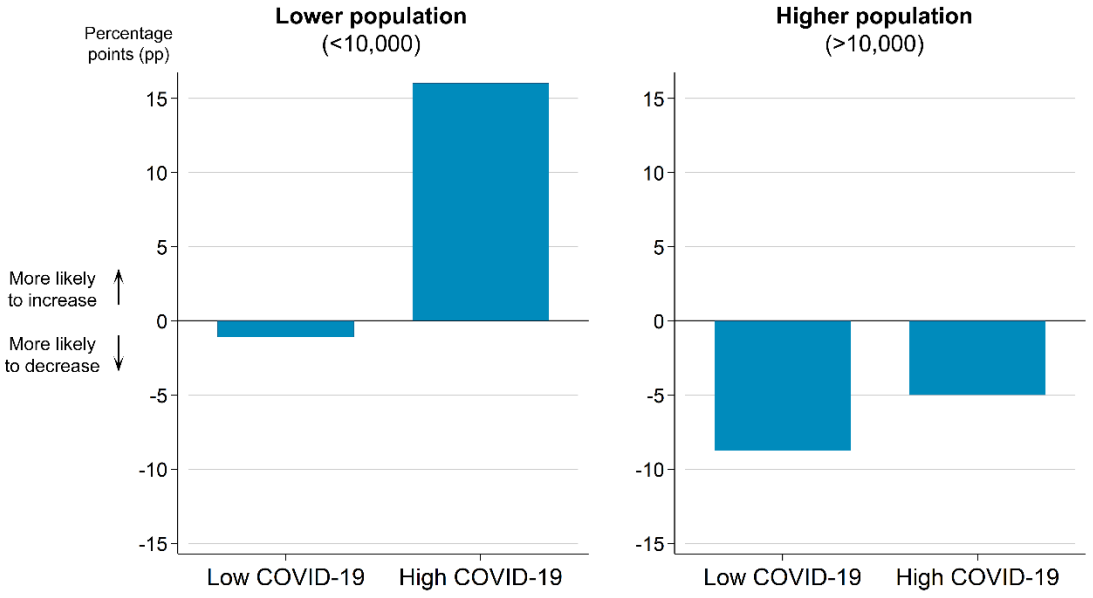

Figure 7. Regardless of population size, communities with a higher COVID-19 incidence are more likely to increase spending on sanitation, sewage, and water. Each bar shows, by disease incidence and population size, the difference in likelihoods (or "net likelihood") that annual spending increases versus decreases.

VI. Spending Trajectories by Political Leaning

Lastly, we investigate whether patterns in projected spending differ by the political leaning of the locality.

To do so, we divide local governments between those that had a higher percentage of residents voting for Donald Trump in 2016 and those that had a lower percentage of votes for Trump (Figure 8).

If 50% or more in the relevant county voted for Donald Trump, the locality was classified as 'Lean Republican.' If less than 50% voted for Trump, the locality was classified as 'Lean Democrat.'

This analysis reveals a moderate difference between Republican- and Democrat-leaning localities. Local governments in Democrat-leaning communities are more likely to see a spending increase than local governments in Republican-leaning communities.

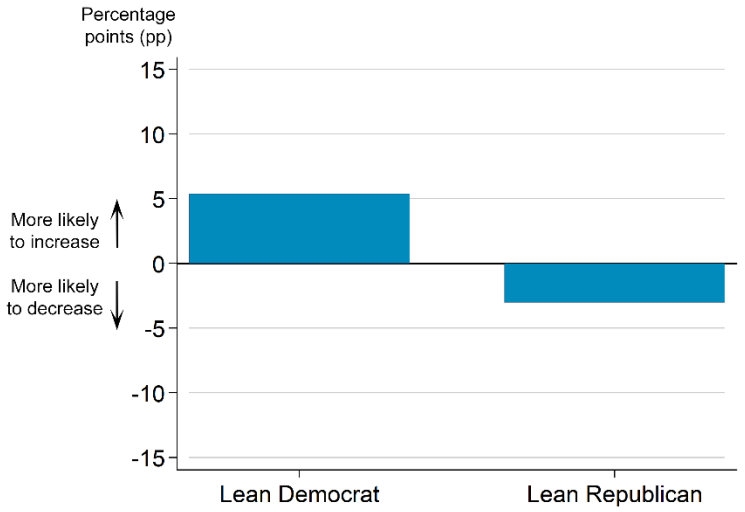

Figure 8. Democrat-leaning localities more likely to see spending increase on sanitation, sewage, and water. Each bar shows, by political leaning, the difference in likelihoods (or "net likelihood") that annual spending increases versus decreases. Political leaning is based on the locality's county vote share in the 2016 presidential election.

Because population size and political leaning often go together, we further disaggregate the spending data between these two factors (Figure 9).

Across population sizes, Democrat-leaning communities are more likely to increase spending (or less likely to decrease). But regardless of political leaning, lower population areas are also more likely to project a spending increase.

Overall, Democrat-leaning, lower-population localities are the most likely to increase spending on sanitation, sewage, and water, while Republican-leaning, higher-population localities are the most likely to decrease spending.

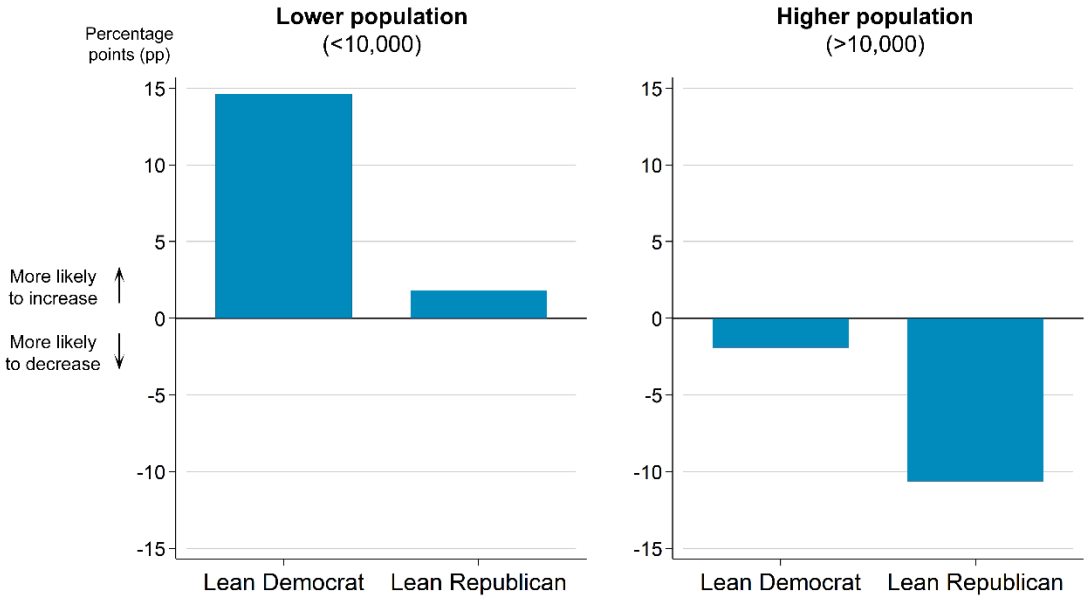

Figure 9. Democrat-leaning communities in lower population areas most likely to increase spending, Republican-leaning communities in higher population areas most likely to cut spending in sanitation, sewage, and water. Each bar shows, by political leaning and population size, the difference in likelihoods (or "net likelihood") that annual spending increases versus decreases.

Appendix

Methodology and Sample

CivicPulse uses Power Almanac's continuously updated contact list of the appointed and elected officials associated with all townships, municipalities, and counties in the United States with populations of 1,000 or more (98% coverage).

Each survey includes a random sample of officials from this list. The data used in this report is from a survey of 733 responses collected in April and May of 2020 from 47 states. This report draws from a sub-sample of 646 respondents from this survey that answered questions specifically on sewage, sanitation, and water.

Table A1 breaks out survey respondents by the type of local government each represents.

Table A1. Survey Respondents by Type of Government.

	Sample Proportion
Townships	0.23
Municipalities	0.63
Counties	0.14
Total	1.00

The geographic distribution of the survey respondents approximates the population distribution of the United States (Figure A1).

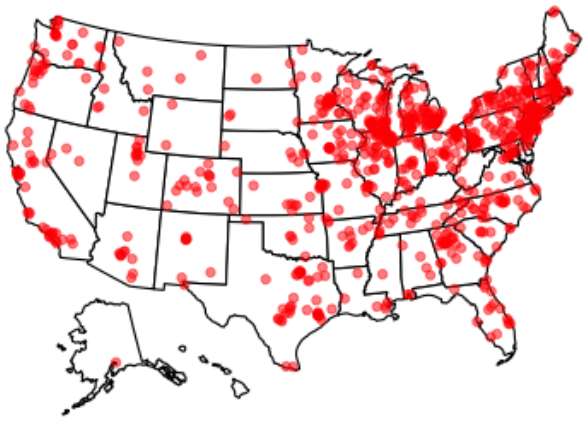

Figure A1. Geographic distribution of respondents.

To characterize the representativeness of our survey sample, we match these respondents to the U.S. Census using the FIPS system. Tables A2-A3 compare the sample and population medians for four Census-area spatial characteristics: population size, urbanicity, the proportion of residents with a 4-year college education, and the proportion of residents who voted for Trump in 2016.

Table A2. Sample Representativeness among Sub-County[1] Officials

	Sample Median	Population Median
Proportion Urban	0.97	0.85
Proportion College-educated	0.27	0.21
Population Size	6,500	3,700
GOP Vote Share[2]	0.52	0.57

[1] *This group includes officials from townships and municipalities*

[2] *Vote share estimated at the county level. Each sub-county government is matched to the relevant county in which it is contained.*

Table A3: Sample Representativeness among County Officials

	Sample Median	Population Median
Proportion Urban	0.53	0.40
Proportion College-educated	0.21	0.19
Population Size	51,000	26,000
GOP Vote Share	0.62	0.67

Survey weights were also tabulated based on these four spatial characteristics using a post-stratification raking procedure. The findings in this report are consistent with or without the use of survey weights.

Questionnaire

1. Given COVID-19, how do you expect your government's spending to change over the next twelve months in each of the following areas? *{Respondent views a grid with rows and columns listed below.}*

   Rows (Program Areas):

   - Public safety (police & fire)
   - Highways and roads
   - Housing and community development
   - Sanitation, sewage, and water
   - Public works (NOT including highways/roads)
   - Health services
   - Public welfare and social services

   Columns (Answer choices):

   - Decrease more than 20%
   - Decrease 1-20%
   - Stay about the same
   - Increase 1-20%
   - Increase more than 20%
   - No spending in this area

Alternative Visualization of Projections by Local Factors

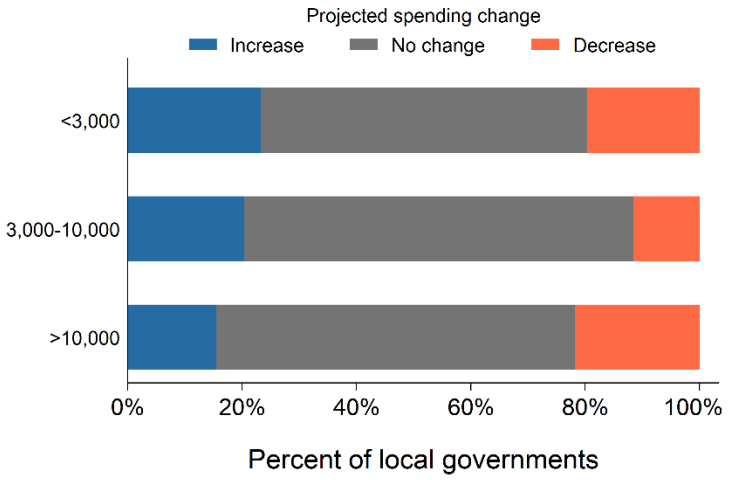

Figure A2. Distribution of responses by population size. Percentage of local governments expecting an increase (blue), no change (gray), or decrease (orange) in annual spending, by population size.

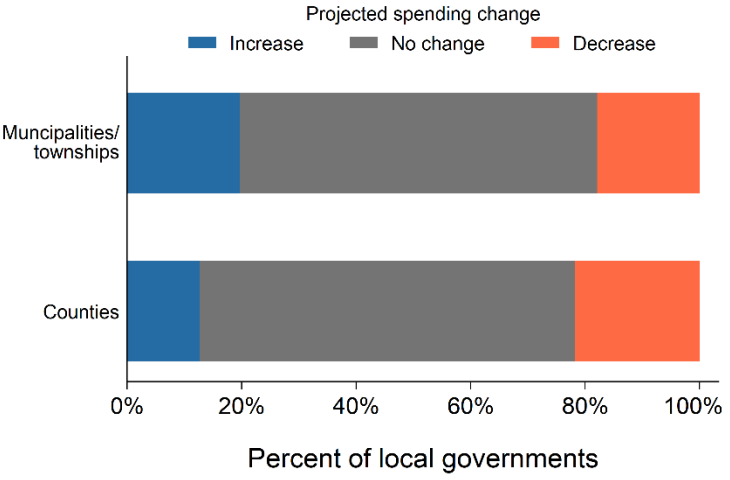

Figure A3. Distribution of responses by government type. Percentage of local governments expecting an increase (blue), no change (gray), or decrease (orange) in annual spending, by government type.

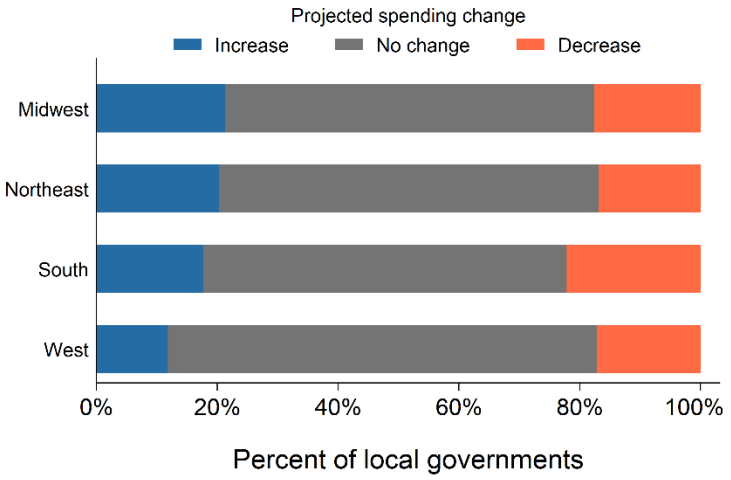

Figure A4. Distribution of responses by region. Percentage of local governments expecting an increase (blue), no change (gray), or decrease (orange) in annual spending, by Census region.

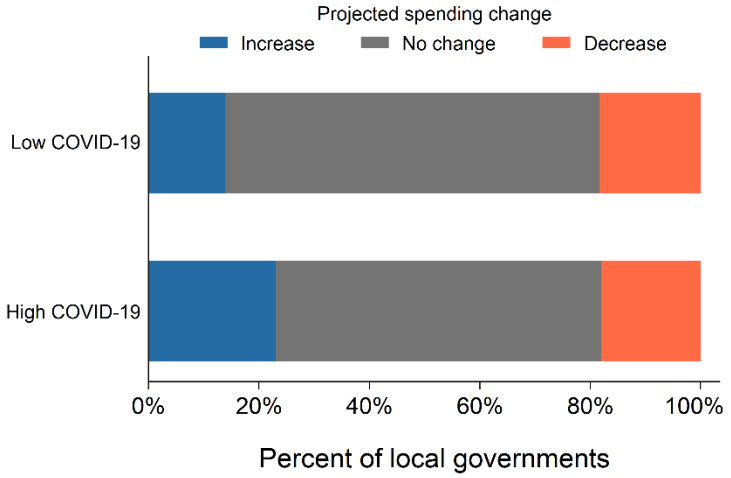

Figure A5. Distribution of responses, by COVID-19 disease incidence. Percentage of local governments expecting an increase (blue), no change (gray), or decrease (orange) in annual spending, by disease incidence. Disease incidence is based on the number cases per capita by county at the time of the survey.

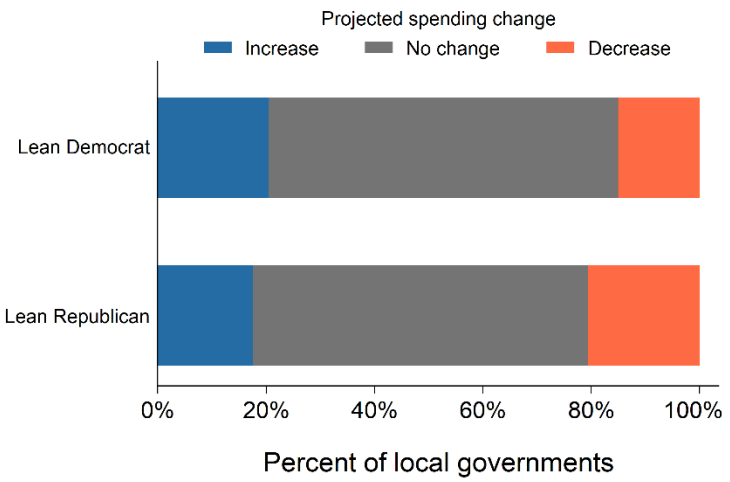

Figure A6. Distribution of responses by political leaning. Percentage of local governments expecting an increase (blue), no change (gray), or decrease (orange) in annual spending, by the locality's political leaning. Political leaning is based on the locality's county vote share in the 2016 presidential election.

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