

Article

The Paradox of Public Trust Shaping Local Climate Change Adaptation

Olivia Termini ^{1,†}  and Scott E. Kalafatis ^{2,*,†}

¹ Deloitte Consulting LLP, Government and Public Services, Washington, DC 20004, USA; terminio@dickinson.edu

² Falk School of Sustainability and Environment, Chatham University, Gibsonia, PA 15664, USA

* Correspondence: S.Kalafatis@chatham.edu

† All statements made by the individual are her own and are not made on behalf of Deloitte U.S. firms. This work represents Olivia's personal opinions and not those of Deloitte U.S. firms or its subsidiaries.

Abstract: Growing attention is being directed towards understanding the ways in which climate change policy is shaped by the actions and interests of local governments. This study explores connections between local government's efforts to uphold and maintain the public trust and their considerations about climate change adaptation associated with water management. Document analysis and 24 interviews with local public officials are used to shed light on these considerations in three small municipalities in central Pennsylvania: Chambersburg, Carlisle, and Gettysburg. The analysis provides indications that a paradox of public trust leads to public officials pursuing actions and considerations that are consistent with climate change adaptation, but not recognizing that they are doing so. The implications of this governing mindset for climate change outreach and policy are explored. Suggestions for countering the logic of inaction expressed by public officials that justified a lack of adaptation are identified, and the potential for state and federal interventions to stimulate climate adaptation in contexts like these local governments is explored.

Keywords: resilience; sustainability; spontaneous adaptation; anticipatory governance; adaptation by stealth; cities; municipalities; urban; multi-level governance



Citation: Termini, O.; Kalafatis, S.E. The Paradox of Public Trust Shaping Local Climate Change Adaptation. *Atmosphere* **2021**, *12*, 241. <https://doi.org/10.3390/atmos12020241>

Academic Editors: Tanja Cegnar and Teodoro Georgiadis

Received: 10 December 2020

Accepted: 7 February 2021

Published: 10 February 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

As the impact of climate change increasingly affects communities across the world, local governments need to continue to prepare for these challenges through adaptation. Local governments are frequently at the forefront of climate change adaptation and planning due to the lack of international and national success, their knowledge of citizens' everyday needs, and the ability to interweave climate change adaptation into other policy goals [1,2].

Local government's decisions to engage with climate change adaptation are often enabled by the simultaneous alignment of multiple factors [3]; however, public support and local leadership have been highlighted as particularly critical factors driving local climate policy adoption [4,5]. Local governments pursue climate change policies because these efforts help them fulfill their own internal goals or reduce perceived threats [2,6]. The presence of particular individuals plays a critical role in determining whether climate change adaptation occurs [7–9], as does successfully taking advantage of opportunities to connect adaptation with other initiatives [10–15]. Therefore, it is perhaps not surprising that local adaptation frequently occurs on an ad hoc decision-by-decision basis, rather than resulting from systematic, comprehensive planning efforts [6,16,17]. Climate change adaptations may not even be labeled as climate change policy, further frustrating efforts to assess them [18]. Such responsive and ad hoc efforts can frequently be viewed as spontaneous actions responding to perceived or actual risks emerging in an area's environment [19]. The United Nations Office for Disaster Risk Reduction (UNDRR) defines such spontaneous

adaptation as “an unplanned response to climate impacts triggered by changes in the natural systems” [20].

Despite these advances and the growing perceptions about the seriousness of climate impacts, there are still barriers to local governments’ ability to plan for climate change. Uncertainty about future conditions can lead to a lack of urgency on acting on climate change [21]; however, local government fiscal resources, local leadership, communication with institutions at different levels, and access to climate change information can help relieve this uncertainty [22,23]. Additionally, a local government’s values, social factors, ethics, knowledge, culture, and attitudes towards risk can also expand its ability to plan for climate change [24].

Increased appreciation for the extent to which local governments’ climate change policy efforts are embedded within particular local environmental, political, cultural, and decision-making contexts has led to a call for more attention to be directed to understanding how local climate change policy relates to the everyday experience of local governance [25]. This paper aims to help shed light on how considerations about adaptation in the face of potential future risks relate to one critical aspect of that everyday experience of local governance: maintaining public trust. Drawing on a combination of document analysis and interviews with officials in three municipalities in central Pennsylvania, this study provides indications that decisionmakers in these local governments’ considerations of climate change adaptation are shaped by their desire to preserve the trust of residents who are often skeptical about efforts to address climate change and its impacts.

2. Trust, Governance, and Climate Change

Trust is a complex phenomenon that is discussed in everyday vernacular and debated across a wide range of academic disciplines. It can be described as “the willingness to be vulnerable”, which was the definition most frequently cited in Rosseau et al.’s cross-disciplinary examination of trust [26,27]. When one has or exhibits trust, they accept vulnerability based on having positive expectations about someone’s behavior. Although trust is often referred to as an interpersonal concept, in recent years it has expanded to apply to organizations, institutions, and broader relationships within society.

While there is no universal definition of trust among scholars, there is a consensus that it is important because it enables cooperative behavior and builds adaptable networks [28,29]. Because it allows for society to exist harmoniously, trust is often cited as important for institutions, healthy democracies, and effective policy making [30]. The importance of trust for governmental systems should not be understated. For instance, David Easton famously stated that the legitimacy of democratic political systems depends in large part on the extent to which the electorate trusts the government [31,32]. Godefroidt et al. describe how trust enhances the legitimacy of governments because it links institutions, politicians, and constituents [33]. Essentially, without trust, public officials would not receive the support necessary to govern and implement policy, and distrust or cynicism would lead to institutional decay [34]. The electorate must believe the government is acting in their best interest and “feel” that their government’s performance is fair. Additionally, they must have confidence that their public officials are properly examining and managing risks that the constituency may face in the future [26]. Democratic morality centers on one’s relationship with the government, i.e., the administrative state [35]. Overall, while trust is a fluid concept and hard to measure, it must exist for those in power to govern effectively.

Trust in governmental systems is often measured using governmental transparency and accountability. On one hand, governmental transparency refers to the mechanisms that the government has for citizens to access and learn about its initiatives and progress. This includes open meetings, access to records and information, proactively posting information on public-facing websites, whistle-blower protections, or even information leaked illegally [36]. In order to provide sufficient transparency, mechanisms employed by the government must make citizens feel as though they have a clear view of their elected official’s motives and decisions. On the other hand, governmental accountability centers

around elected officials answering to their citizens for their actions [37]. Citizens must be properly educated and given ample opportunities to discuss concerns with government officials [35]. Governmental accountability has several dimensions, including leadership and executive performance as well as the financial, process, and program components of the system and its actors [38–41]. Communicating these dimensions to the electorate is just as important as the evaluation component.

Although trust is critical for good governance, American public trust in government has decreased significantly over the past few decades [34,42,43]. A July 2019 Pew Research report found that 84% of Americans do not trust public officials [44]. Public trust is at an all-time low with only 17% stating that they can trust the federal government [45]. While American citizens do not trust government officials generally, most citizens still trust their local officials. A 2018 Gallup poll found that 72% of US adults say they have a “great deal” or a “fair amount” of trust in their local government, compared with 63% who say the same about their state government [46].

The relationship between public trust in government and climate change policy has not been heavily investigated. Based on the importance of public support for enabling adaption efforts in cities [4], it is clear that when officials are making decisions about long-term risk and climate change, maintaining buy-in from the citizenry is essential. Because climate change’s effects are often hard to see, policy implementation can be interpreted as misunderstood, neglected, or opposed by the electorate [47]. Citizens must accept that it is a problem or think that preparation for climate change is an adequate use of resources; across many countries, trust and risk perceptions give rise to more climate change policy support and individual behaviors that are consistent with addressing climate change [48]. Through a yearly series of surveys, Leiserowitz and his colleagues have found that a growing majority of Americans believe that global warming is happening, are worried about it, and support national-level policy interventions like regulating CO₂ as a pollutant [49]. However, results from their work also provide indications that political support for many local government initiatives across the country may be more elusive. Like other issues in the US, national averages can hide great spatial disparities. Based on their 2020 survey results, 53.4% of Americans believe that local officials should do more to address global warming [50]. However, the median proportion of residents that support greater local official response within individual counties across the country was 46.6%, with a majority of respondents supporting greater local action in only 29.0% of US counties. While 42.7% of Americans believe that global warming will harm them personally, the median proportion of residents that believe global warming will harm them personally in individual counties across the US is only 36.0% [50].

Climate change’s status as a highly partisan political issue in the US further complicates this response, with political affiliation and related views associated with conservatism being the dominant determinants of people’s opinions on the issue [51]. Since 1990, the political polarization of the country has intensified, with party affiliation increasingly becoming a critical marker of social identity [52], and negative emotional feelings about those affiliated with the opposing political party increasing dramatically [53]. As a result, Americans increasingly distrust and dislike those associated with the other side of the partisan divide [53], and people’s perceptions about issues like climate change can shift in response to the actions of prominent politicians [54]. The response to COVID-19 has provided evidence that such party identification can be leveraged to encourage compliance with risk management activities [55]. While, overall, residents of Democratic-leaning areas complied with pandemic prevention directives at a higher rate than Republican-leaning areas, the observed gap between the two was reduced when Republican politicians gave the directives [55]. However, climate change is much more strongly entrenched as a partisan issue than COVID-19 in American politics; it is generally viewed that openly pursuing climate change-influenced decisions is risky for both politicians and government staff [23].

3. Methods

3.1. Case Study Selection

Three municipalities in central Pennsylvania were examined to gain insight into how those working in local governments negotiate the perceived impact that their decisions about climate change adaptation might have on residents. There is a large degree of variability between local governments in the United States, and Pennsylvania is no exception. The three chosen municipalities were Chambersburg (population of 20,268 in Franklin County), Carlisle (population of 18,682 in Cumberland County), and Gettysburg (population of 7620 in Adams County). They were selected because they are current or historic boroughs in Pennsylvania, county seats of their respective counties, located within a fifty-mile radius of one another, and experience similar challenges with the changing climate (more information about boroughs as local governments in Pennsylvania is provided in Appendix A). Central Pennsylvania is a rich context for examining this question because of the recent prominent role this region played in shifting power across US partisan fault lines and the subsequent policies that affected local climate change decisions. Pennsylvania was one of the states whose majority support for the Democratic candidate for six straight presidential elections became a narrow majority support for Trump in 2016, representing a key shift that transferred control of the presidency from the Democratic to the Republican party [55]. In particular, the Trump vote in small municipalities in rural counties in former industrial states, like those in central Pennsylvania, was a critical factor underlying President Trump's electoral victory [56]. In the 2016 presidential election, Trump's margin of victory over Clinton in Franklin, Cumberland, and Adams Counties was 46.5, 18.6, and 36.4 points, respectively. In the 2020 presidential election, Trump's margin of victory over Biden in these counties was 43.1, 10.5, and 34.2 points, respectively. Residents of these counties might also be less supportive of local climate change actions than the national average. According to the 2020 Yale Program on Climate Communication [50], residents of these counties were less likely to believe that local officials should do more to address global warming than the national average of 53.4%: 48.8% (Franklin), 51.5% (Cumberland), and 47.7% (Adams). Residents of these counties were also less likely to believe that global warming would affect them personally than the national average of 42.7%: 34.8% (Franklin), 35.6% (Cumberland), and 34.1% (Adams).

Despite this lack of perception that residents will be affected personally, central Pennsylvania will face substantial threats from climate change in the years ahead. Variations of temperature and precipitation have already affected Pennsylvania through longer and more intense heatwaves that might lead to droughts, a reduced winter snowpack, and shifts in agricultural patterns [57]. Pennsylvania is included in the northeastern portion of the US that is expected to see the nation's highest increases in the intensity of extreme precipitation events later this century [58]. Central Pennsylvania specifically is expected to experience the state's greatest extremes in temperature and rainfall as well as its heaviest snowfalls [57]. These changes are expected have significant negative impacts on human health and economy through increased heatstroke, agriculture patterns, and increased flooding [59].

3.2. Identifying Adaptive Measures

The focus of this study was narrowed to understanding considerations about water management, because it is one of the main sectors negatively affected by climate change in the central Pennsylvania region, and this selection narrowed the scope of inquiry to a methodologically accessible project. The initial focus of this research was to explore in detail if these boroughs were pursuing climate change adaptation in their water management efforts. If it was found that they were doing so, then the goal would be to explore how they were doing it; if they were not, then the goal would be to determine why. After exploratory initial interviews in each borough, it was found that they were not explicitly planning for or working on climate change adaptation, but that they might be pursuing actions that were consistent with spontaneous adaptations in the face of potential climate change risks.

This led to a new research focus of unpacking how to identify and understand climate change adaptations like these, where officials were unable or unwilling to realize or claim that their efforts could be considered adaptive responses to future climate risks. To explore this question, 45 policy documents related to work in these boroughs were analyzed and 24 interviews with key informants were conducted to identify adaptive measures, or actions taken by the municipality that could be reasonably assumed to help the municipality prepare for or adjust to new conditions climate change might bring, reduce potential harms, or take advantage of new opportunities. Four adaptive measure categories were identified from the qualitative coding of the three municipalities: stormwater management, infrastructure investment and replacement, and drought considerations—i.e., initiatives pertaining to the municipality’s water quantity—as well as an ad hoc general sustainability category. Appendix B provides a table that includes examples and context related to considerations about what were considered adaptive measures in this context.

3.3. Public Trust Coding

While analyzing these documents and interviews, informants’ concerns about how climate change adaptation might affect their efforts to maintain public trust emerged as a common theme. Therefore, coding was also completed, addressing considerations that informants had related to building and maintaining public trust. Topics addressed included: assured reliance related to utility provision and statute compliance, ability to continue expected levels and quality of public service provision, transparency and honesty facilitating accountability about actions and spending, and positive expectations about behavior related to making responsible future investments. The initial actions coded for adaptive measures related to water management were recategorized where applicable to the municipalities’ ability to build and maintain public trust. Additional local government resources and documents were analyzed, and local government official interviews were reviewed to identify other actions related to public trust. Table 1 provides a summary of the codes related to building and maintaining public trust as well as the number of actions identified in each municipality that fit into these categories and subcategories. More detail about each of these actions is provided in the case study descriptions for each municipality provided in the next section.

Table 1. Summary of building and maintaining trust coding.

Coding Categories	Actions in Each Borough		
	Chambersburg	Carlisle	Gettysburg
Assured Reliance ¹	9	6	8
Utility Provision	6	3	5
Meeting State Requirements	3	3	3
Willingness to be Transparent and Honest ²	4	4	2
Open Access to Information	2	2	1
Effort to Communicate Information	2	2	1
Positive Expectations about Behavior ³	7	6	4
Providing Adequate Water Supply	2	2	2
Infrastructure Investment	2	2	1
Community Sustainability	3	2	1

¹ Assured reliance: Will local governments provide the services that are expected from them? In the case of water management, this means providing utilities and meeting state and federal requirements, statutory and non-statutory. ² Willingness to be Transparent and Honest: Will local governments serve their constituencies with transparency and honesty? Will they actively provide open access to information, meeting residents where they are? Is the information attainable and digestible? Is there a defined effort to disseminate information to the public? ³ Positive Expectations about Behavior: Will local governments provide for residents’ basic necessities? In the case of water management, this means providing adequate water supply, investing in infrastructure, and investing in long-term projects that improve community health and resilience.

4. Case Studies

4.1. Chambersburg

The county seat of Franklin County, Chambersburg boasts about its financial independence as the only “full-service” municipality in Pennsylvania, owning and operating all of its own utilities. It manages its own regional water system, regional sewer system, gas utility, and storm sewer utility, and has its own nonprofit electric utility. Its area is 6.58 square miles and it is 50 miles southwest of Harrisburg and 25 miles west of Gettysburg. The borough operates under a council-manager governance structure in which the chief administrative officer is the borough manager, and the borough council is elected by wards for four-year terms. Council is both the legislative and quasi-judicial branch of the local government and elects its own council president and vice-president. The mayor is elected separately and serves as the head of the borough police department and on council as a nonvoting member. Additionally, it operates its own paid and volunteer fire department, emergency services, a recreation department, municipal parking program, a residential rental inspection program, and public works program that actively works on downtown revitalization and neighborhood preservation programming (“Sustainability Comes to Chambersburg”). Chambersburg’s fiscal size is the 13th largest in the state, and it has the third highest revenue over expenditures [60]. Chambersburg views staying fiscally competitive as critical, describing a responsibility to keep taxes low while helping residents increase their quality of life [60].

Chambersburg completed fifteen actions related to public trust under the three categories of assured reliance, willingness to be transparent and honest, and positive expectations about future behavior. Chambersburg completed four actions under assured reliance. For “utility provision”, Chambersburg is the only borough to own and operate all of its own utilities, with the electric utility in particular being the largest in Pennsylvania [61]. Second, there are three actions for the subcategory of federal and state statute compliance: the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Pennsylvania Right-To Know Law (Sunshine Law). Under the CWA, Chambersburg enacted a series of best management practices related to stormwater, created a Municipal Separate Storm Sewer System Department and stormwater utility fee (the “first of such municipal utilities” in Pennsylvania) in 2015, and created a Chesapeake Bay Pollutant Reduction plan to comply with statewide commitments [62,63].

Under willingness to be transparent and honest, Chambersburg completed four actions. The open access to information subcategory includes two actions. The first is Chambersburg borough’s definition of governmental transparency:

Transparent governance means that government officials act openly, with citizens’ knowledge of the decisions the officials are making. Availability of information on government policies and actions, a clear sense of organizational responsibility, and an assurance that governments are efficiently administered . . . we are committed to providing the public with as much information as possible. [64]

Chambersburg also provides all town council agendas, resolutions, ordinances, and agreements on Microsoft Word documents that are directly accessible through their website. They include adopted local laws and other meeting minutes on the online database eCode360. Additionally, the Chambersburg borough provides the public with self-curated documents including frequently asked questions about the borough budget, borough goals, sealed bids and proposals for borough projects, and comprehensive planning documents. They provide the contact information of their borough secretary for specific inquiries and contact information for the borough’s customer service center. In addition to their open access to information, they also have a defined effort to communicate information. They have a comprehensive website that has contact information for local government officials for addressing citizens’ needs, and their local office is open to the public during regular business hours.

The category of positive expectations about future behavior had seven actions. First, the subcategory providing adequate water supply had two actions. One was discussions about building storage behind their current water supply from Long Pine Reservoir. As one official explained, “drought has public concern”; these discussions return every two to three years after fluxes in weather and climate lead local officials to ask citizens to voluntarily conserve water. Chambersburg also integrated water conservation into the design of their distribution system and provided residents with educational resources about personal consumption habits for water conservation. The subcategory infrastructure investment covers Chambersburg’s water infrastructure investments and their government officials. First, their Capital Improvement Program frequently upgrades existing water infrastructure to account for potential growth and community use. The 2019 proposed budget describes the 2017 Street Repair Project as repairing pipes while streets are paved. It also allocates \$3,450,000 for improving water infrastructure [65]. Second, in terms of staff, Chambersburg looks to hire “educated and experienced” local government officials. Chambersburg officials claim their financial standing, competitive salaries, and good quality of life attracts qualified candidates. They invest in personal development for staff like the borough manager. Chambersburg has completed three actions in this subcategory of “sustainability mindset”. First, in the 2008 Comprehensive Plan, Chambersburg adopted keystone principles and criteria for growth, investment, and resource conservation under their Community Development Policy, which included broader sustainability initiatives. It states, “these principles and criteria were designed to support a coordinated interagency approach to fostering sustainable economic development and conservation of resources through the state’s investments in communities” [66]. Second, Chambersburg has obtained the gold level certification through the Sustainable Pennsylvania Community Certification program, a voluntary performance program. Finally, Chambersburg initiated and implemented an inter-municipality agreement with Hamilton township for their MS4 program and plans to expand it to surrounding municipalities.

When asked about climate change, the Chambersburg interviewees’ reactions varied from “I cannot answer that” to acknowledgement that it is a threat. Acknowledgement of climate change or discussions about its effects have not been translated into actions specifically addressing climate change adaptation. For example, one official stated “[we] recognize it’s happening but it hasn’t changed much of our day-to-day”. The justification for this lack of activity follows several interrelated steps. First, the obligation to limit the use of public resources for actions that will clearly address only the immediate concerns of residents means “practicality is imperative . . . [you must] explain what is going on and [why] money is put towards it” and “too much governance drives up cost and inefficiency”. Second, there is a perception that explicit climate change adaptation will not address these concerns. There is a sense that Chambersburg is in a “great” position to deal with climate change and that “[it is] not an urgent problem . . . [we] can’t predict what [problems] you’re going to have” and we are “not near the coast”. Third, there is a sense that officials will therefore not be able to justify making explicit climate change adaptation efforts: “You need to show them [the public] the need for this”, but “government is forced to be reactive” because they can’t act on what they “think may happen . . . and be wrong.” Furthermore, “people come when issues arrive”, and climate change “doesn’t come up” from residents.

4.2. Carlisle

The county seat of Cumberland in the borough of Carlisle is located 26 miles southwest of Pennsylvania’s state capital, Harrisburg. It sits at the intersection of I-81 and the Pennsylvania Turnpike, making it an important transportation hub. The borough is a home rule municipality, having voted to take authority from state laws to its local charter, giving the borough full fiscal and budgetary control [67]. Through their charter, officials operate under a council-manager governance structure, comprised of a mayor and six councilors elected at-large for four-year overlapping terms. The borough’s water management is integrated into their water department within borough administration. There is no separate

water or municipal authority [68]. Carlisle is in very good financial shape, with the second highest bond rating possible (Aa1), allowing it to float bonds to make investments. In 2017, Carlisle issued 2017 Series A (\$9,775,000) and 2017 Series B (\$14,885,000) bonds to support capital improvement projects. Officials also adopted new financial policies for ratios relating to debt versus assessed value, debt service versus expenditures, and fixed cost burden [67]. In terms of their budget, the “... Borough follows the GFOA (Government Finance Officers Association) recommendation of maintaining strong overall fund balances and net position. The Borough has targets for its more significant funds: general (25%), water (25%), sewer (50%), solid waste (25%), and parking (50%). Finally, Carlisle also has received a Certificate of Achievement for Excellence in Financial Reporting for the years 2010–2016.

Carlisle completed thirteen actions related to public trust under the three categories of assured reliance, willingness to be transparent and honest, and positive expectations about future behavior. Carlisle completed four actions under assured reliance. While Carlisle is not a fully self-sufficient borough, it provides water, sewer, and trash services. The borough governs these utilities due to their home rule status. For the subcategory federal and state statute compliance, Carlisle complies with the CWA, the SDWA, and the Sunshine Law. Under the CWA, Carlisle created a Municipal Separate Storm Sewer System Utility in 2017, enacted a stormwater utility fee that began in July 2019, and implemented a Chesapeake Bay Pollutant Reduction plan. Under SDWA, they created a Source Water Assessment in 2017.

Carlisle completed four actions for willingness to be transparent and honest. There are two actions for the subcategory of open access to information. The first is provision of borough meeting minutes, policies and procedures, board and commission details, ordinances, codes, budgets, comprehensive plans, summaries of public meetings, etc., through their website. Carlisle also communicates information with a comprehensive website and contact information for local government officials. The local office is open to the public during regular business hours. Additionally, Carlisle created the position of Public Information Coordinator in July 2017 to increase transparency and keep open lines of communication with its citizens.

For positive expectations about future behavior, Carlisle completed six actions. The subcategory providing adequate water supply includes two actions. The first is the use of data to maintain an adequate water supply for residents. Local officials feel that there may be a point when significant access to surface and groundwater resources will no longer be available. They use data on available groundwater to track the amount of rain Carlisle receives in a year and past weather history to predict future trends. Second, Carlisle’s water treatment plant exceeds EPA standards, and their water treatment plan earned the Phase IV Excellence Treatment Award because the plant was continually updated to optimize performance [69]. Under the subcategory “infrastructure investment” Carlisle completed two actions. First, Carlisle created a five-year capital improvement plan through 2023, and their 2019 budget describes their commitment to invest \$30–50 million in the next fifteen years [68]. Officials have also made efforts to expand their employee base as needed, such as a new Public Information Coordinator position to communicate with the public more effectively.

Carlisle has completed two actions for community sustainability. First, as stated in their 2018–2019 goals, they have assigned borough staff to find options for renewable energy for borough consumption as well as ways to implement renewable energy around town, stating that “... their overall strategy is to pursue options to use renewable energy for Borough energy and consumption ... for example charging stations for electric vehicles” [68]. Next, Carlisle has revitalization plans developed for three Carlisle brown-field sites: Carlisle Tire and Wheel, International Automotive Components Group (IAC), and Tyco. Grant money from the US Environmental Protection Agency was awarded to redevelop these sites. In the Carlisle Borough’s Brownfields Area-Wide Plan, it states that

... the Carlisle Community is taking a proactive role in rebuilding their economy through redevelopment of the three brownfield properties. Carlisle Borough and their many partners embarked on a multi-phased planning effort which first resulted in the preparation of the Carlisle Urban Redevelopment Plan (CURP). One of the first recommendations of the CURP effort was the pursuit of funding from the U.S. EPA's Brownfields Area-Wide Planning program. [70]

When the interviews were conducted, Carlisle was not explicitly pursuing climate change adaptation actions. Interviewees stated, however, that they "are considering climate change in our infrastructure decisions" and that "it's thrown around". One also expressed that the borough's old pipe infrastructure was "clearly affected by changes in climate". But when asked more specifically about how climate change influenced their water management considerations, they responded, "I really can't answer that", "no one really talks about it", and "no one knows what it is going to be". Similar to Chambersburg, lack of demand from the general public and the borough's commitment to using public funds in response to threats of immediate public concern were restricting action. One official described that investment cannot be justified until something happens, because "the American psyche is reactive". The interviewees in Carlisle also emphasized that they felt limited by their interactions with the state and federal government, with one asking that other governments "lead, follow, or get out of the way". These relationships were described as the biggest challenge officials experienced related to water management generally, because policies dictated to them were restrictive and difficult to fund. This lack of support extended to assistance with climate change, where "there are zero resources available".

4.3. Gettysburg

The Gettysburg borough (population 7700) is the seat of Adams County. It has seven council members elected to four-year terms and elected in staggered years. Two council members are elected from three wards and the seventh council member is elected at-large. The mayor is elected for a four-year term. The Gettysburg borough manager is appointed to the position by the borough council and takes care of the borough's day-to-day business. The manager operates under the direction and official actions of the council and is responsible for directing and supervising the daily work of the administrative staff and coordinating the activities of all municipal departments. The Gettysburg Municipal Authority (GMA) provides a "safe, adequate, reliable, and cost-effective supply of water" to all of Adams County, while "planning for future growth" without the direct oversight of the local borough council. The GMA makes autonomous decisions pertaining to Gettysburg's water and sewers [71]. Gettysburg has a large tourism industry, and its economy is centered on its Civil War history [72]. However, this does not mean Gettysburg has financial stability. According to the 2019 budget, Gettysburg has "\$6,009,257 in projected revenues, with \$7,016,642 in projected expenditures" [73].

Gettysburg completed ten actions related to public trust under the three categories of assured reliance, willingness to be transparent and honest, and positive expectations about future behavior. Gettysburg had four actions for assured reliance. First, for utility provision Gettysburg provides all basic utilities except electricity. The GMA runs the water and sewer functions "independently" without the oversight of borough council. The borough council maintains control of the stormwater utility. Under federal and state statute compliance, Gettysburg complies with the CWA, the SDWA, and the Sunshine Law. Under the CWA, Gettysburg created a Stormwater Authority to administer and assess fees to maintain the borough's storm sewer system. Officials also stated their intent to create a stormwater utility fee [74].

Gettysburg completed two actions for willingness to be transparent and honest. The subcategory of open access to information includes Gettysburg's public meeting minutes, agendas, pending and archived resolutions, ordinances, budgets, audits, and comprehensive plans directly accessible through their website. Additionally, Gettysburg has made a defined effort to communicate information. Their website provides contact information for

local government officials, efforts to communicate with residents through social media are being expanded, and the local office is open to the public during regular business hours.

For positive expectations about future behavior, Gettysburg completed four actions. Providing adequate water supply included two actions. First, as mentioned, the independent GMA can address questions about Gettysburg's growth and development without oversight. Because of this role, the GMA has been considering the implementation of a "big pipe" water main interconnection between the GMA and York Water Company since 2006. The GMA and borough council debate over whether Gettysburg will maintain an adequate water supply. Several factors are discussed, including resource access exacerbated by change in climate, growth and development in the area, and rising water costs. Within these discussions, climate change is considered a potential reason for the merger with York Water Company. These climate change considerations were raised by those on the independent GMA, but these concerns are not echoed by other local government officials. Local government officials say the big pipe discussions are strictly about growth, development, and water resources in the borough.

The second action is the GMA's focus on adding capacity for potential well failures, contamination, and reduction of creek flows. Advocates for the big pipe on the GMA board cite a 2015 incident in neighboring New Oxford. On June 15, Miller Chemical and Fertilizer experienced what the emergency services director called the worst fire he has seen in the area. It took more than 300 firefighters from fifteen companies to extinguish. Because of the resulting heightened levels of suspended solids and nitrates amplified by heavy rains, New Oxford shut down their water supply from the south branch of the Conewago Creek. Over 10,000 fish died, and the water was red and frothy. However, New Oxford had a pipe interconnected with York Water Company that they used for two months until the south branch system was ready for service once again [75]. The GMA would like to build similar capacity for instances like these.

Gettysburg completed one action for infrastructure investment. Gettysburg allocates funds to upgrade infrastructure through their Capital Improvement Plan, which outlines their schedule for improvements and costs [73]. The GMA has also been awarded grants for repairs. In 2009, the GMA received \$5 million from the H2O PA Act, which provides grants to municipalities or municipal authorities to assist with the construction of drinking water, sanitary sewer, or storm sewer projects [71].

For community sustainability, Gettysburg completed one action. Together with Cumberland Township and Straban Township, they approved a resolution that approves the adoption of the Central Adams Joint Comprehensive Plan. Although it is not a regulatory document, it provides guidance for Central Adams' land use, development, water and sewer infrastructure, and water access. It also uses broader systems thinking principles and incentivizes inter-municipality collaboration strained by growth. It states,

Primary Designated Growth Area (DGA) . . . Development within these areas should focus on accommodating the bulk of the Region's future population growth and economic development activities . . . This plan seeks to build upon the notion that Gettysburg Borough and the built areas within Cumberland and Straban Townships along the roadways leading out of the Borough are the core of the Central Adams community, and should remain so into the future. [76] (p. 40)

When describing the intermunicipal agreement, government officials talked how it was important to partner with surrounding communities because they share the same resources.

Like Chambersburg and Carlisle, Gettysburg was not explicitly working on climate change adaptation. Similarly, interviewees described that "society is reactionary", climate change is "not a topic that comes up", that climate change "is not urgent" and "no one is concerned", and that "all other issues take a front seat to climate change". One interviewee stated that the "only way people are going to wake up is economics", while another argued that "it's not certain enough" and that they stick to water availability instead because it is "a better financial argument". The lack of clarity about actions was also

reflected in the comment that “we are as educated as you can be”, but “we don’t know what’s going to happen till it’s here”. Still, there was confidence that “we are small but proactive ... [and will] evolve to meet the challenge”. The Gettysburg interviewees particularly emphasized the political risks associated with explicitly pursuing climate change adaptation. Interviewees described climate change as a “stigma” and “politically unpalatable”. This perception limited willingness to engage with the issue: “[it’s] a political issue ... the debate buries it” and “climate change is controversial...this is Trump country ... I avoid it”.

5. Discussion

The three case studies detailed here provide some insight into the considerations that shape governance related to climate change adaptation in small boroughs in central Pennsylvania. The analysis found that each of these boroughs pursued many strategies for building and maintaining public trust. All of them pursued assured reliance through utility provision and meeting state requirements; demonstrated willingness to be transparent and honest through providing open access to information and making efforts to communicate information; and tried to fulfill positive expectations about behavior through providing an adequate water supply, making infrastructure investments, and pursuing community sustainability. A closer look at water management practices through document analysis and interviews shed light on the relationship between these considerations regarding public trust and these local government’s efforts related to climate change adaptation.

None of the three boroughs explored in this analysis were creating integrated climate change adaptation plans, or even pursuing individual water management actions, that they explicitly described as climate change adaptation. However, through the lived experience of navigating challenges associated with adapting to meet their locality’s water needs and maintaining the public service standards they felt that residents demanded and deserved, these boroughs made considerations and took actions that were consistent with climate change adaptation. For example, Chambersburg built additional freshwater storage in response to growing concerns about drought, Carlisle adopted technology that could track current groundwater resources and predict future availability, and Gettysburg was proactively pursuing building a “big pipe” that would provide an alternative source of water after having witnessed a crisis in neighboring New Oxford. In discussions about their work, officials also articulated perspectives that were consistent with building up capacity to handle future risk. One in Chambersburg suggested it is the local government’s obligation to make sure “first and foremost, that they are well funded and looking to get ahead of the curve”, directly connecting the borough’s insistence on financial pragmatism with future capacity. In Carlisle, one official emphasized that “your grandchildren will thank you” if you invest in the borough, and in Gettysburg one described that officials were trying to build the “overall package” for sustainability and create “preparedness to deal with the unforeseen”. These sorts of considerations go beyond reactive spontaneous adaption to existing changes in natural systems [19,20] and towards the kind of proactive foresight and flexibility that is more characteristic of anticipatory governance [77].

Given these examples, the most striking aspect of the interviews was the extent to which some officials denied that climate change adaptation was actually occurring in their boroughs. While the desire to do their jobs effectively and uphold residents’ trust in their local government could drive adaptive behaviors, it seemed to also repress their willingness to claim credit for having done so. This “paradox of public trust” highlights the potential importance of developing climate information that is tailored to support “adaptation by stealth” in communities where the public is skeptical of climate change actions [23]. However, it also raises concern that some public officials might dismiss such information if it is seen as a product designed for climate change adaptation, not use it to its full potential, or may simply not look for it at all if they have convinced themselves that climate adaptation is something their locality will not support. This might help to explain why a number of interviewees expressed that little is known about future conditions, even

though the widespread availability of climate information and its lack of use are common observations in the literature [23].

Similarities and differences in the reasoning underlying these boroughs' lack of focus on climate change adaptation were also revealing. All three boroughs shared common assumptions that they were obligated to devote public resources to actions clearly addressing the immediate concerns of residents, and that they could not justify climate change adaptation because the threat of climate change has not yet met that threshold. In addition to this logic of inaction, Carlisle showed a lack of external support for action, and Gettysburg highlighted the political risk of publicly addressing climate change. Such observations provide insight into addressing both the mentalities [78] and the cultural and economic conditions shaping the everyday experience of what climate change policy looks like in practice and what changes need to take place to make it more impactful [25]. Outreach and policy efforts to encourage more climate change adaptation could be targeted to address this logic of inaction at several points: funding could be used to stimulate proactive measures not immediately of interest to residents, emphasize the relevance and immediacy of the impacts of climate change so that residents are more likely to perceive that they are being personally affected, amplify existing public interest in climate change adaptation to public officials, and illustrate ways in which climate change adaptations address immediate, existing everyday public service provision challenges or emerging threats. Regarding Carlisle and Gettysburg's specific concerns about lack of support and the role of politics, state or federal programs could provide both resources and political cover. All three boroughs complied with the three statutes investigated. Their residents may not necessarily know what statutes their local government is supposed to comply with, but they can trust that their local government is acting in compliance with existing laws. State or federal requirements would help relieve the pressure of climate change adaptation, acting as a political fault line in local politics and making adaptation into a matter of compliance. Even without regulation, financial support in the form of a targeted adaptation block grant program or similar strategy could encourage proactive measures free from concerns over the wise use of local tax revenue and provide political cover to local officials who need to justify these actions to their constituents.

These comparative insights also provoke a number of questions for future research. In what ways does it matter whether or not local officials perceive that their actions are driven by climate change adaptation purposes? Is it more the allocation of public funds or the political stigma associated with the term climate change that actually presents a barrier to action? Additionally, different conditions might influence the extent to which adaptation becomes a political issue. For example, Gettysburg officials were particularly wary of the political impact of pursuing climate change. This might be because water management is an issue with more intense public scrutiny in Gettysburg, as interviewees thought there was "lots of public interest in water policy" and that the issue featured several interest groups. And finally, what strategies might there be for communicating with the public about local climate change adaptation to ensure that climate change adaptation supports the cultivation of public trust rather than undermines it?

6. Conclusions

Through document analysis and interviews with city officials, this study found evidence that concerns about managing public trust shape considerations about climate change adaptation policy related to water management in three local governments in central Pennsylvania. Chambersburg, Carlisle, and Gettysburg were all pursuing actions and making considerations about water management that were consistent with climate change adaptation. These actions were tied to public officials' efforts to maintain the trust of the public by pursuing the best interests of residents, addressing immediate concerns that residents had, and making future investments for the good of the community. Despite these efforts, at the time of the interviews, none of the municipalities were explicitly working on climate change adaptation, and many of the officials interviewed denied that their

work was associated with climate change. This was true for both spontaneous adaptations that were reactively addressing threats as they emerged and more proactive anticipatory considerations that were more consistent with the goal of building in greater flexibility and capacity to address future risks.

These interviews pointed to the presence of a paradox of public trust surrounding the pursuit of climate change adaptation in communities like these. Public officials want to act proactively and adaptively in the name of upholding the public's expectations, and climate change is on some of these local government officials' radars. However, the perception that explicitly pursuing climate change adaptation is not yet in the public's interest blocks the recognition that adaptation is already happening and constrains these local governments' full capacity to pursue further adaptations. Two suggestions were provided for those interested in addressing this paradox. The first was countering the logical steps that officials followed to reach the conclusion that they cannot justify climate change adaptation. The second was the potential for the state and federal governments to simultaneously address resource and political concerns through a block grant or similar program that provides direct funding for proactive climate change adaptation that is less dependent on local government tax revenue.

Overall, as these communities experience the effects of climate change more and more, this work will become more pressing. Local governments cannot solely carry the burden of preparing their constituencies for climate change. Other levels of government and organizations will need to identify ways to facilitate and amplify actions local governments are taking that represent adaptive responses to changing conditions. However, for these efforts to fully enable, empower, and unlock local governments' capacity to combat global climate change, they will need to be attuned to the fundamental considerations about governance held by local governments, such as cultivating and maintaining the trust of their residents.

Author Contributions: This article is an adapted version of O.T.'s undergraduate thesis at Dickinson College. O.T. provided the initial conceptualization for the project, conducted the document analysis, performed and coded the interviews, and was the secondary author on the text of the article. S.E.K. advised O.T. throughout the process and was the primary author on the text of the paper. Both authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Interview questions were developed and submitted to the Institutional Review Board (IRB) at Dickinson College because this research involved the use of human subjects. Ethical review and approval were waived for this study by the review board on October 30, 2018 due to participants' personal information would not be recorded and published and because questions about the local government officials' work experiences were not intrusive.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: To help protect the anonymity of interviewees, data is not published publicly. Readers interested in it may contact the authors for access.

Acknowledgments: The authors would like to thank the editors and staff of the journal *Atmosphere* as well as the anonymous reviewers of this article. They would also like to extend a special thanks to Michael Beevers, Neil Leary, and Kristin Strock for their support and input in the early stages of developing this research.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Boroughs as Local Governments

Local government structure in the United States is very complicated, but it is particularly complicated in Pennsylvania due to its Commonwealth status. In Pennsylvania, local governments are referred to as municipalities. This includes boroughs, cities, home-rule municipalities, first-class cities, second-class cities, and townships. Boroughs can elect to become home-rule boroughs, in which the borough incorporates under its own charter.

Home-rule designation means that the municipality no longer operates under the borough code; however, most home-rule boroughs retain the name “borough” in a ceremonial sense. For the purposes of this study, the boroughs included have been empowered with all of the decision-making authority and independence that many cities have in Pennsylvania and other parts of the United States.

Appendix B

Table 1. Summary Explanation of Adaptive Measure Categories Used.

Adaptive Measure Category	Description	Example	Why Is It “Adaptive” in Central Pennsylvania?
Stormwater Management	Stormwater management is employed to eliminate or reduce the impacts of stormwater runoff. The implementation of Best Management Practices is required under the Clean Water Act’s National Pollutant Discharge Elimination System (NPDES) Program. It is enforced by the Pennsylvania Department of Environmental Protection.	Chambersburg is subject to the Clean Water Act, 33 U.S.C. Section 1251 et seq. (“the Act”) and Pennsylvania’s Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq. NPDES permit since 2004. Due to this provision, they have implemented a series of Best Management Practices, including the implementation of the Rhodes Drive Bio-Retention Basin.	Climate change creates more intense and frequent storms, which amplify stormwater runoff. Best Management Practices for stormwater treatment, e.g., permeable pavement, green roofs, bio-retention basins, etc., provide ways to adapt to changes in precipitation patterns and average temperatures. Specifically, bio-retention basins use landscaped depressions, shallow basins, and vegetation to treat on-site stormwater runoff.
Infrastructure Investment/ Replacement	Pennsylvania towns are facing significant challenges with their aging infrastructure. This adaptive measure assesses whether municipalities are investing in their future water infrastructure and replacing their decaying pipes.	Carlisle, in their 2019 Annual Budget, describes how their commitment to invest \$30–50 million in the next 15 years will help begin to address the problems with their deteriorating sewer collection system.	Carlisle created a Capital Improvement Plan and committed funds to address the deteriorating water distribution system. Due to the effects of climate change, namely extreme variations in temperature and an increased severity and frequency of precipitation events, there will be an increased strain on already aged infrastructure.
Drought Considerations	This adaptive measure centers around whether local governments are adapting and preparing for changes in access to water resources. Termed “Drought Considerations”, it focuses on questions of drought for its constituencies.	The independent entity, Gettysburg Municipal Authority (GMA), has been considering the implementation of a “big pipe” water main interconnection between the GMA and York Water Company since 2006. Climate change considerations were raised by those on the independent GMA, but these concerns are not echoed by other local government officials. The other local government officials say the big pipe discussions strictly have to do with growth, development, and water resources in the borough.	The main reason for debate among GMA board members and the borough council about the “big pipe” is about whether Gettysburg will maintain an adequate water supply. While several factors come into play, it is noteworthy that, within these discussions, climate change is considered a potential reason to for the merger with York Water Company. Gettysburg is trying to consider current and future climate change realities in their water management.
Ad Hoc Sustainability	This category is reserved for all other actions that local government officials referred to in their interviews that did not fit any of the other categories but contributed to the system’s adaptive capacity.	Chambersburg obtained the Gold level certification through the Sustainable Pennsylvania Community Certification program.	The Sustainable Pennsylvania Certification helps municipalities become recognized when applying for grant monies from the Pennsylvania Department of Community and Economic Development. The certification focuses on municipal operations, policies, and practices and is designed to serve as a forum to share best practices with the hope of creating a more sustainable Pennsylvania.

References

1. Bulkeley, H. *Cities and Climate Change*; Routledge: New York, NY, USA, 2013.
2. Bassett, E.; Shandas, V. Innovation and Climate Action Planning: Perspectives from Municipal Plans. *J. Am. Plan. Assoc.* **2010**, *76*, 435–450. [\[CrossRef\]](#)
3. Dilling, L.; Pizzi, E.; Berggren, J.; Ravikumar, A.; Andersson, K. Drivers of adaptation: Responses to weather-and climate-related hazards in 60 local governments in the Intermountain Western US. *Environ. Plan. A* **2017**, *49*, 2628–2648. [\[CrossRef\]](#)
4. Yeganeh, A.J.; McCoy, A.P.; Schenk, T. Determinants of climate change policy adoption: A meta-analysis. *Urban Clim.* **2020**, *31*, 100547. [\[CrossRef\]](#)
5. Krause, R.M. Political Decision-Making and the Local Provision of Public Goods: The Case of Municipal Climate Protection in the US. *Urban Stud.* **2012**, *49*, 2399–2417. [\[CrossRef\]](#)
6. Anguelovski, I.; Carmin, J. Something borrowed, everything new: Innovation and institutionalization in urban climate governance. *Curr. Opin. Environ. Sustain.* **2011**, *3*, 169–175. [\[CrossRef\]](#)
7. Kalafatis, S.E. Comparing Climate Change Policy Adoption and Its Extension across Areas of City Policymaking. *Policy Stud. J.* **2018**, *46*, 700–719. [\[CrossRef\]](#)
8. Kalafatis, S.E.; Lemos, M.C. The emergence of climate change policy entrepreneurs in urban regions. *Reg. Environ. Chang.* **2017**, *17*, 1791–1799. [\[CrossRef\]](#)
9. Kalafatis, S.E.; Grace, A.; Gibbons, B. Making climate science accessible in Toledo: The linked boundary chain approach. *Clim. Risk Manag.* **2015**, *9*, 30–40. [\[CrossRef\]](#)
10. Koehn, P.H. Underneath Kyoto: Emerging Subnational Government Initiatives and Incipient Issue-Bundling Opportunities in China and the United States. *Glob. Environ. Politics* **2008**, *8*, 53–77. [\[CrossRef\]](#)
11. Heinrichs, D.; Krellenberg, K.; Fragkias, M. Urban responses to climate change: Theories and governance practice in cities of the Global South. *Int. J. Urban Reg. Res.* **2013**, *37*, 1865–1878. [\[CrossRef\]](#)
12. Aggarwal, R.M. Strategic Bundling of Development Policies with Adaptation: An Examination of Delhi's Climate Change Action Plan. *Int. J. Urban Reg. Res.* **2013**, *37*, 1902–1915. [\[CrossRef\]](#)
13. Kalafatis, S.E. When Do Climate Change, Sustainability, and Economic Development Considerations Overlap in Cities? *Environ. Politics* **2018**, *27*, 115–138. [\[CrossRef\]](#)
14. Kalafatis, S.E. Identifying the Potential for Climate Compatible Development Efforts and the Missing Links. *Sustainability* **2017**, *9*, 1642. [\[CrossRef\]](#)
15. Kalafatis, S.E. Socioeconomic Reinvention and Expanding Engagement with Climate Change Policy in American Rust Belt Cities. *Atmosphere* **2020**, *11*, 1327. [\[CrossRef\]](#)
16. Krause, R.M. The Motivations behind Municipal Climate Engagement: An Empirical Assessment of How Local Objectives Shape the Production of a Public Good. *Cityscape* **2013**, *15*, 125–141.
17. Carmin, J.; Anguelovski, I.; Roberts, D. Urban Climate Adaptation in the Global South: Planning in an Emerging Policy Domain. *J. Plan. Educ. Res.* **2012**, *32*, 1–15. [\[CrossRef\]](#)
18. Bulkeley, H.; Broto, V.C. Government by Experiment? Global Cities and the Governing of Climate Change. *Trans. Inst. Br. Geogr.* **2013**, *38*, 361–375. [\[CrossRef\]](#)
19. Adger, W.N. Scales of governance and environmental justice for adaptation and mitigation of climate change. *J. Int. Dev.* **2001**, *7*, 921–931. [\[CrossRef\]](#)
20. Commonwealth Secretariat. *Local Governments and Climate Change*; Commonwealth Secretariat Discussion Paper 1, no. 2; The Commonwealth Secretariat: London, UK, 2008; pp. 1–8.
21. Kates, R.W.; Travis, W.R.; Wilbanks, T.J. Transformational adaptation when incremental adaptations to climate change are insufficient. *Proc. Natl. Acad. Sci. USA* **2012**, *109*, 56–61. [\[CrossRef\]](#)
22. Agrawal, A. The Role of Local Institutions in Adaptation to Climate Change. 2008. Available online: <https://openknowledge.worldbank.org/bitstream/handle/10986/28274/691280WP0P11290utions0in0adaptation.pdf?sequence=1> (accessed on 13 October 2020).
23. Rasmussen, L.V.; Kirchhoff, C.J.; Lemos, M.C. Adaptation by stealth: Climate information use in the Great Lakes region across scales. *Clim. Chang.* **2017**, *140*, 451–465. [\[CrossRef\]](#)
24. Adger, W.N.; Dessai, S.; Goulden, M.; Hulme, M.; Lorenzoni, I.; Nelson, D.R.; Naess, L.O.; Wolf, J.; Wreford, A. Are there social limits to adaptation to climate change? *Clim. Chang.* **2009**, *93*, 335–354. [\[CrossRef\]](#)
25. Broto, V.C.; Westman, L.K. Ten years after Copenhagen: Reimagining climate change governance in urban areas. *WIREs Clim. Chang.* **2020**, *11*, e643.
26. Rousseau, D.M.; Sitskin, S.B.; Burt, R.S.; Camerer, C. Not so different after all: A cross-discipline view of trust. *Acad. Manag. Rev.* **1998**, *3*, 393–404. [\[CrossRef\]](#)
27. Mayer, R.C.; Davis, J.H.; Schoorman, F.D. An Integrative Model of Organizational Trust. *Acad. Manag. Rev.* **1995**, *20*, 709–734. [\[CrossRef\]](#)
28. Miles, R.E.; Snow, C.C. Causes of failure in network organizations. *Calif. Manag. Rev.* **1992**, *34*, 53–72. [\[CrossRef\]](#)
29. Smith, J.B.; Barclay, D.W. The effects of organizational differences and trust on the effectiveness of selling partner relationships. *J. Mark.* **1997**, *61*, 3–21. [\[CrossRef\]](#)

30. Yang, K.; Holzer, M. The Performance–Trust Link: Implications for Performance Measurement. *Public Adm. Rev.* **2006**, *66*, 114–126. [CrossRef]
31. Easton, D. *A Framework for Political Analysis*; Prentice Hall: Upper Saddle River, NJ, USA, 1965.
32. Easton, D. Reassessment of the concept of political support. *Br. J. Political Sci.* **1975**, *5*, 435–457. [CrossRef]
33. Godefroidt, A.; Langer, A.; Meuleman, B. Developing political trust in a developing country: The impact of institutional and cultural factors on political trust in Ghana. *Democratization* **2017**, *24*, 906–928. [CrossRef]
34. Gordon, M.T. Public trust in government: The US media as an agent of accountability? *Int. Rev. Adm. Sci.* **2000**, *2*, 297–310. [CrossRef]
35. Redford, E.S. *Democracy in the Administrative State*; Oxford University Press: New York, NY, USA, 1969.
36. Piotrowski, S.J.; Van Ryzin, G.G. Citizen attitudes toward transparency in local government. *Am. Rev. Public Adm.* **2007**, *3*, 306–323. [CrossRef]
37. Staats, E.B. *Accountability for Career Development: A Must for Improved Program Management (Accountability in Government Series 2)*; Bureaucrat: Arlington, VA, USA, 1979; Volume 3, pp. 2–6.
38. Behn, R.D. *Rethinking Democratic Accountability*; Brookings Inst. Press: Washington, DC, USA, 2001.
39. Gormley, W.T., Jr.; Balla, S.J. *Bureaucracy and Democracy: Accountability and Performance*; CQ Press: Washington, DC, USA, 2003.
40. Marlowe, J. Part of the solution or cogs in the system? The origins and consequences of trust in public administrators. *Public Integr.* **2004**, *2*, 93–113.
41. Romzek, B.S.; Dubnick, M.J. Accountability. In *International Encyclopedia of Public Policy and Administration*; Westview: Boulder, CO, USA, 1998.
42. Wu, W.; Ma, L.; Yu, W. Government transparency and perceived social equity: Assessing the moderating effect of citizen trust in China. *Adm. Soc.* **2017**, *49*, 882–906. [CrossRef]
43. Park, M.J.; Choi, H.; Kim, S.K.; Rho, J.J. Trust in government’s social media service and citizen’s patronage behavior. *Telemat. Inform.* **2015**, *4*, 629–641. [CrossRef]
44. Rainie, L.; Keeter, S.; Perrin, A. Trust and Distrust in America: Many Americans Think Declining Trust in the Government and in Each Other Makes it Harder to Solve Key Problems. In *They Have a Wealth of Ideas about What’s Gone Wrong and How to Fix It*; Pew Research Center: Washington, DC, USA, 2019.
45. Pew Research Center. Public Trust in Government Remains near Historic Lows as Partisan Attitudes Shift. In *Numbers, Facts and Trends Shaping the World*; Pew Research Center: Washington, DC, USA, 2017; pp. 1–18.
46. McCarthy, J. Gallup. 8 October 2018. Available online: <https://news.gallup.com/poll/243563/americans-trusting-local-state-government.aspx> (accessed on 20 July 2020).
47. Lorenzoni, I.; Pidgeon, N.F. Public Views on Climate Change: European and USA Perspectives. *Clim. Chang.* **2006**, *77*, 73–95. [CrossRef]
48. Smith, E.K.; Mayer, A. A social trap for the climate? Collective action, trust and climate change risk perception in 35 countries. *Glob. Environ. Chang.* **2018**, *49*, 140–153. [CrossRef]
49. Leiserowitz, A.; Maibach, E.; Rosenthal, S.; Kotcher, J.; Bergquist, P.; Ballew, M.; Goldberg, M.; Gustafson, A.; Wang, X. *Climate Change in the American Mind: April 2020*; Yale University and George Mason University: New Haven, CT, USA, 2020.
50. Howe, P.; Mildenberger, M.; Marlon, J.; Leiserowitz, A. Geographic variation in opinions on climate change at state and local scales in the USA. *Nat. Clim. Chang.* **2015**, 596–603. [CrossRef]
51. Hornsey, M.J.; Fielding, K.S. Understanding (and Reducing) Inaction on Climate Change. *Soc. Issues Policy Rev.* **2020**, *14*, 3–35. [CrossRef]
52. Mason, L. “I Disrespectfully Agree”: The Differential Effects of Partisan Sorting on Social and Issue Polarization. *Am. J. Political Sci.* **2015**, *59*, 128–145. [CrossRef]
53. Iyengar, S.; Lelkes, Y.; Levendusky, M.; Malhotra, N.; Westwood, S.J. The Origins and Consequences of Affective Polarization in the United States. *Annu. Rev. Political Sci.* **2019**, *22*, 129–146. [CrossRef]
54. Dietz, T. Political events and public views on climate change. *Clim. Chang.* **2020**, *161*, 1–8. [CrossRef] [PubMed]
55. Goldstein, D.A.N.; Wiedemann, J. Who Do You Trust? The Consequences of Political and Social Trust for Public Responsiveness to COVID-19 Orders. 2020. Available online: <https://ssrn.com/abstract=3580547>; <http://dx.doi.org/10.2139/ssrn.3580547> (accessed on 6 February 2021).
56. Kennedy, C.; Blumenthal, M.; Clement, S.; Clinton, J.D.; Durand, C.; Franklin, C.; McGeeney, K.; Miringoff, K.; Olson, K.; Rivers, D.; et al. An Evaluation of the 2016 Election Polls in the United States. *Public Opin. Q.* **2018**, *82*, 1–33. [CrossRef]
57. Union of Concerned Scientists. *Climate Change in Pennsylvania: Impacts and Solutions*; UCS Publications: Washington, DC, USA, 2008; p. 62.
58. U.S. Global Change Research Program. *Fourth National Climate Assessment*; NCA4: Washington, DC, USA, 2018. Available online: nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (accessed on 6 February 2021).
59. United States Environmental Protection Agency. *Climate Impacts in the Northeast*; EPA: Washington, DC, USA, 2017. Available online: [Archive.epa.gov/epa/climate-impacts/climate-impacts-northeast.html](https://archive.epa.gov/epa/climate-impacts/climate-impacts-northeast.html) (accessed on 6 February 2021).
60. About Chambersburg. Borough of Chambersburg. Available online: www.borough.chambersburg.pa.us/government/about-chambersburg.html (accessed on 15 March 2019).

61. Chambersburg Manager Releases Proposed 2019 Budget. Available online: <http://www.borough.chambersburg.pa.us/pdf/Press%20Release%20-%20Chambersburg%20Manager%20Released%20Proposed%202019%20Budget.pdf> (accessed on 13 October 2020).
62. 2015 Budget as Approved by the Town Council. Chambersburg Borough. Available online: <http://chambersburgpa.gov/pdf/TownCouncilApproved2015Budget120814.pdf> (accessed on 8 December 2014).
63. Herbert, Rowland and Grubic Inc. Chesapeake Bay Pollutant Reduction Plan for Chambersburg Borough HRG Project No. R004061.0431. September 2017. Available online: www.borough.chambersburg.pa.us/pdf/2017.09.15_ChambersburgBoroughCBPRP.pdf (accessed on 19 March 2019).
64. Local Government Transparency. Borough of Chambersburg. Available online: <http://www.borough.chambersburg.pa.us/government/documents.html> (accessed on 13 October 2020).
65. Chambersburg Borough. 2019 Budget as Proposed by the Borough Manager. Available online: <http://www.borough.chambersburg.pa.us/pdf/2019BoroughManagersProposedBudget110518.pdf> (accessed on 6 February 2021).
66. Johnson, Mirmiran, and Thompson Inc. Chambersburg Borough Comprehensive Plan. November 2008. Available online: <http://www.chambersburgpa.gov/pdf/Planning/Borough%20Comprehensive%20Plan%2011-17-08.pdf> (accessed on 18 March 2019).
67. 2017 Budget. Borough of Carlisle Department of Finance. Available online: <https://cms8.revize.com/revize/carlislepa/finance/Approved%20Budgets/2017%20Borough%20of%20Carlisle%20Budget.pdf> (accessed on 13 October 2020).
68. 2019 Budget. Borough of Carlisle Department of Finance. Available online: <https://cms8.revize.com/revize/carlislepa/finance/Approved%20Budgets/2019%20Borough%20of%20Carlisle%20Budget.pdf> (accessed on 13 October 2020).
69. Carlisle Water Department Water Quality Report 2017. Available online: <http://www.krwa.org/2017ccr/carlisle.pdf> (accessed on 13 October 2020).
70. Carlisle Borough. The Borough of Carlisle Brownfields Area-Wide Plan. August 2015. Available online: https://s-ga.com/wp-content/uploads/2018/06/CARL_AWP-Final-Report-Reduced.pdf (accessed on 13 October 2020).
71. Gettysburg Municipal Authority. Gettysburg 2019. Available online: www.gettysburgma.com/ (accessed on 16 February 2019).
72. Gettysburg Adams Chamber of Commerce. Economic Impact of Tourism—Gettysburg and Adams County, Pa. Tourism—Gettysburg Adams Chamber of Commerce 2019. Available online: www.gettysburg-chamber.org/business-resources/tourism (accessed on 18 March 2019).
73. Gettysburg Borough. 2019 Manager’s Budget. 26 November 2018. Available online: https://www.gettysburgpa.gov/sites/gettysburgpa/files/uploads/managers_budget_message_2019_-_final_01.05.2019.pdf (accessed on 10 December 2018).
74. Gettysburg Borough. Gettysburg Borough Fall/Winter 2018 Newsletter. Available online: www.gettysburgpa.gov/sites/gettysburgpa/files/pages/newsletter_document_final_2.pdf (accessed on 31 March 2019).
75. Reed, L. Hanover Shares Clean Water with New Oxford. Hanover Evening Sun. 18 June 2015. Available online: https://www.witf.org/2015/06/18/hanover_shares_clean_water_with_new_oxford/ (accessed on 13 October 2020).
76. Central Adams Joint Comprehensive Plan (Final Document: April 2019). Available online: https://www.gettysburgpa.gov/sites/g/files/vyhlf3156/f/uploads/cajcp_-_final_04.30.2019.pdf (accessed on 13 October 2020).
77. Quay, R. Anticipatory Governance: A Tool for Climate Change Adaptation. *J. Am. Plan. Assoc.* **2010**, *76*, 496–511. [CrossRef]
78. Strippel, J.; Bulkeley, H. Introduction: On Governmentality and Climate Change. In *Governing the Climate: New Approaches to Rationality, Power and Politics*; Strippel, J., Bulkeley, H., Eds.; Cambridge University Press: Cambridge, UK, 2013; pp. 1–25.