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Airport Infrastructure in the Shrinking City: Planning for Smart Decline in Cleveland's Regional Airport System and Its Role in a Dynamic Urban Future

Garret Forst
gforst19@gmail.com

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Garret Forst

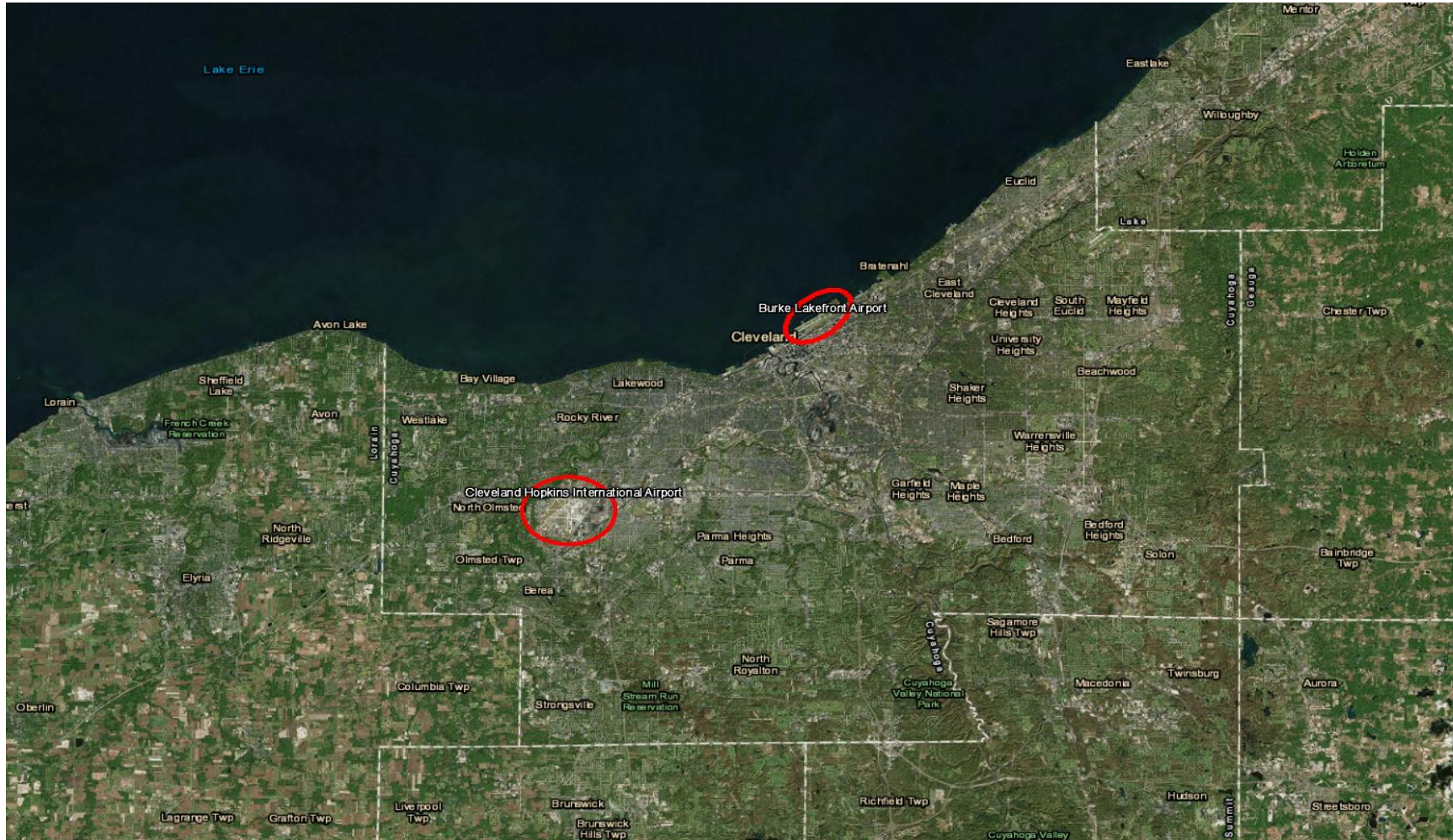
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Professor Garth Myers

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The Cleveland Region

Map created by author. Basemap courtesy of ESRI.



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Introduction

Like dozens of post-industrial American cities in the 21st Century, the city of Cleveland, OH sits at a crossroads position in terms of its future. On one hand, a strong sense of positivity and pride surrounds the city and its region. The year 2016, for example, has locally become known as a renaissance year. That year, Cleveland successfully hosted the Republican National Convention. Tens of thousands of visitors flocked to the city for about a week to attend this highly successful event. During the convention, national media news outlets posted videos and stories trumpeting the city's resurgence.¹ Also around that time, Cleveland State University's Levin College of Urban Affairs released a study heralding Downtown Cleveland as a growing regional business hub. Highlights in the report included a surging residential demand for housing, a rising population, and rising incomes for Downtown.² And on a more symbolic note, the Cleveland Cavaliers basketball team won the NBA Championship in 2016, ending a 52-year drought of professional sports titles. Confidence since that year has been beaming.

This positivity surrounding the region can help in its attempts to move forward, and the feeling is not without warrant. After all, the region is perhaps through the worst of its decades-long decline. There are no massive crises on the horizon like late 20th Century deindustrialization in which Cleveland lost hundreds of thousands of jobs and residents. However, this confidence still masks the reality that Cleveland is **a)** a city and region that has lost significant numbers of people and resources and **b)** a city and region that continues to shrink albeit at a slower pace. The former recognizes that the city has drastically fallen from its peak

¹ "Cleveland Begins to Shine Again," *CBS News*, 17 July 2016, <https://www.cbsnews.com/news/cleveland-is-back/>.

² Richey Piiparinen, Jim Russell, and Charlie Post. "Downtown Cleveland: The Dynamic Engine of a Talent-Driven Economy," *Urban Publications* at Cleveland State University (May, 2016): 1-2.

population of 914,808 people in 1950 to an official count of 396,815 in 2010.³ Cuyahoga County, the county in which Cleveland resides, fell from 1,389,352 to 1,280,122 in this same time period.⁴ This county's decline does not appear to be so steep, but it is masked by the fact that the county's population actually peaked in 1970 at 1,721,300.⁵ These declines, while they have slowed, they have not stopped. As of 2017, Cleveland's population is estimated to be 385,552 while the county is projected to sit at just 1,248,514.⁶ The Cleveland Metropolitan Statistical area, comprised of five counties, has also fallen in just the past 17 years from 2,148,143 in 2000 to 2,058,844 in 2017.⁷ This is just the story of population and does not even begin to take into account other important indicators of economic health like unemployment and household income. These measures will become relevant later. Regardless, Cleveland remains a shrinking city and region and has to contend with the effects of that shrinkage. Urban shrinkage affects city services, urban life, and the built environment. Shrinking cities as a concept, the effects of urban shrinkage, and the applicability of a shrinking cities label to Cleveland is discussed in greater detail later. This brief introduction sets up the focus of this piece: the role that smart decline planning in Cleveland's regional airport system can play in creating a dynamic urban future for this still shrinking region.

Cleveland's regional airport system represents one of the systems that has felt the brunt of urban shrinkage. The system consists of more than half a dozen airports, but the two largest

³ United States Census Bureau, "T1-Total Population," United States Census (1950), in *SocialExplorer.com*, <https://www.socialexplorer.com/a9676d974c/explore>.; United States Census Bureau, "T1-Total Population," United States Census (2010), in *SocialExplorer.com*, <https://www.socialexplorer.com/a9676d974c/explore>.

⁴ Ibid.

⁵ United States Census Bureau, "T1-Total Population," United States Census (1970), in *SocialExplorer.com*, <https://www.socialexplorer.com/a9676d974c/explore>.

⁶ United States Census Bureau, "T1-Total Population," American Community Survey 1-Year Estimates (2017), in *SocialExplorer.com*, <https://www.socialexplorer.com/a9676d974c/explore>.

⁷ Ibid.

and most important are the subject of this piece: Cleveland Hopkins International Airport “Hopkins” (CLE) and Burke Lakefront Airport “Burke” (BKL). Hopkins handles the region’s commercial and freight air traffic. Burke is Hopkins’ primary reliever airport and handles a mix of air traffic including private charters, flight schools, air shuttles, and anything else that is “general aviation.” Major air traffic decline has occurred at both airports since the turn of the 21st Century. Burke, the airport occupying the lakefront adjacent to Downtown Cleveland, has experienced a striking decline. Burke has seen its operations (landings and takeoffs) decline from 100,321 in 2000 to a mere 34,497 for 2018.⁸ Burke (and Hopkins), illustrate that the concept of the shrinking city/region impacts infrastructure and airport infrastructure with the result being negative consequences for the entire region.

Despite Cleveland’s airport system being emblematic of the shrinking city/region phenomenon, this piece argues that, through the **smart decline** of Cleveland’s regional airport infrastructure in terms of airport operations and land uses, Cleveland can confront the challenges posed by shrinkage. Just as cities apply the doctrine of smart decline to the challenge of housing (through land-banking) to strengthen the local urban fabric, this piece argues that smart decline in infrastructure systems like airports can also make major impact in accomplishing this task. In promoting a policy of smart decline for airport infrastructure in Cleveland, Hopkins and Burke can be planned so as to achieve positive urban outcomes like de-fragmentation, densification, and financial sustainability among other outcomes. The above argument therefore has to answer the following research questions:

⁸ Federal Aviation Administration, “Airport Facilities Data,” Federal Aviation Administration (2018), https://www.faa.gov/airports/airport_safety/airportdata_5010/menu//; William Ondrey Gruber and Joanne Kaufman, “Burke Lakefront Airport: A Report on Its History, Its Current Status and Its Future,” *GreenCityBlueLake* (September, 2002), 12, <http://www.gcbl.org/files/resources/burkereport.pdf>.

- What are the effects of urban shrinkage on cities and regions?**
- How does smart decline as an urban and regional planning framework work to mitigate the unique challenges found in shrinking cities?**
- How can the shrinking cities/smart decline framework be extended to include infrastructure, especially airport infrastructure?**
- What is the state of Cleveland’s regional airport system and infrastructure as a “shrinking” system? How might future planning and smart decline play a role in mitigating Cleveland’s infrastructural woes?**
- How can smart decline turn this infrastructure into a tool for dynamic place-making that draws upon the region’s unique assets?**

Below is an outline of the chapters that this work utilizes to progress through these questions. This piece begins by discussing the dual theories of shrinking cities and its potential solution of smart decline with a focus on infrastructure (hence answering the first three questions). Then, this piece moves towards establishing a) the Cleveland region and b) its regional airport system as both being emblematic of the shrinking city and its problems (answering the fourth question). Finally, this piece concludes with a strategy for the smart decline of the Cleveland airport system by establishing a three-step process for airport system smart decline: identification of system issues and fragmentation, airport system consolidation, and finally land reutilization (again answering the fourth question in addition to the fifth).

In Chapter 1, the concept of shrinking cities and its solution of smart decline as a strategy for promoting dynamic local land uses is thoroughly explored in order to set up the analysis of the airport system. Planning scholar Alan Mallach, for example, frames shrinking cities as places that are defined by both population decline and economic decline.⁹ A shrinking region is a metropolitan region that is experiencing both of these woes. With shrinkage comes a host of

⁹ Alan Mallach, “What We Talk about When We Talk about Shrinking Cities: The Ambiguity of Discourse and Policy Response in the United States,” *Cities* 69 (September, 2017): 110, <https://www.sciencedirect.com/search/advanced?docId=10.1016/j.cities.2017.01.008>.

urban challenges including austerity, abandonment, and land underuse. Infrastructure, like airport infrastructure, is not exempt from these ills. Keeping in mind these realities, the policy of smart decline can be a mitigating and transformative solution for shrinking cities. Instead of “planning for growth,” smart decline entails policies of “greening” and “re-sizing” as cities shrink their bases of service and infrastructure.¹⁰ Furthermore, this literature review shows how the policy of smart decline fits into an approach of urban development that seeks to maximize local assets, the process of what Coppola call “becoming.”¹¹ That is, as they seek to reutilize their lands, shrinking cities can employ a host of innovative strategies in their reinvigoration.

Chapter 2 focuses on providing a brief profile of the Cleveland region in terms of its demographic and economic characteristics. This section reveals that Cleveland, despite seemingly being beyond the most crippling stages of deindustrialization, is a city and region that is still shrinking and economically stagnating. Cleveland embodies the characteristics of the shrinking city/region discussed in the prior chapter. Just as regional planning bodies like the Hartford Foundation for Public Giving (HFPG) produce statistical profiles to inform regional decision-making, this study does the same in preparation for the analysis and planning discussion of the airport system. This chapter seeks to capture the health of the region and its economy as inspired by the Metro Hartford Progress Points. Keeping the Progress Points in mind as a model, this chapter discusses the Cleveland region in terms of key indicators like population, job

¹⁰ Sujata Shetty, “Shrinking Cities in the Industrial Belt: A Focus on Small and Mid-size cities in Northwestern Ohio,” *Urban Affairs Center* (December, 2009): 9,

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.498.1115&rep=rep1&type=pdf>.

¹¹ Alessandro Coppola, “Projects of Becoming in a Right-Sizing Shrinking City,” *Urban Geography*, January (2018): 15, Taylor & Francis Online,

<https://www.tandfonline.com/doi/full/10.1080/02723638.2017.1421391?scroll=top&needAccess=true>.

growth, income, educational attainment, vacancy and more.¹² It tracks urban and regional conditions whenever possible using sources like the United States Census and the American Community Survey. Historical data (to capture regional conditions over time) and comparative data (to capture regional conditions across place) are both critical to this section.

Chapter 3 begins the analysis of the regional airport system. In 2014, Cleveland's airport system dominated the local news when United Airlines decided to "de-hub" Hopkins.¹³ Hopkins, as an airport, features four concourses and United's decision left Concourse D (constructed recently in 1999) closed and vacant.¹⁴ Today, that concourse remains vacant. It is the very symbol of an airport system that, along with the region, has experienced shrinkage.

This chapter identifies the Cleveland regional airport system of Hopkins and Burke as a shrinking system in the sense that it is underutilized in terms of its capacity, is financially costly to the region, and a system that makes poor use of Cleveland's lands. These lands contain unique features that could be considered for alternative land uses. This section analyzes data and scholarship regarding the airports including airport master plans for Burke and Hopkins, Federal Aviation Administration data, news articles, and financial reports to reach this conclusion.

In Chapter 4, the discussion shifts to what a policy of smart decline could look like in the context of the regional airport system. Most popular among Cleveland residents (a policy of smart decline that has organically been developed over time) is the belief that Burke airport should be decommissioned. This idea has been thrown around for the better part of the past two

¹² Hartford Foundation for Public Giving, "Metro Hartford Progress Points," Hartford Foundation for Public Giving (2016) MetroHartford Progress Points (July, 2016), http://www.hfpg.org/files/5314/7032/1039/Metro_Hartford_Progress_Points_report_2016_FINAL.pdf.

¹³ Allison Grant, "What Can Be Done with Cleveland Hopkins' Vacant Concourse D? A Look to Other Airports Might Offer Clues," Cleveland.com, 19 April 2014, https://www.cleveland.com/metro/index.ssf/2014/04/cleveland_hopkins_joins_airpor.html.

¹⁴ Ibid.

decades and reared itself as recently as December 2018 when participants in a much-touted public forum made it one of the most popular topics.¹⁵ A closed Burke would reshuffle the entire airport system. This chapter analyzes what a smart decline policy would look if it were to happen with a focus on the process of airport system consolidation. However, it also explores the benefits of this process and obstacles to it. Benefits include the densification of infrastructural assets (becoming a smaller yet more powerful system) and financial sustainability. However, barriers on the planning, legal, and political fronts do exist. The FAA, for example, has a 20-year funding rule that prevents airport closure until 20 years after a particular airport has received federal grant funding.¹⁶ Any such plan to carry out smart decline would require confronting these challenges.

Chapter 5 explores what would happen after the consolidation of the airport system. The reshuffling of air operations and traffic would open up the opportunity to remake urban space in a way that promotes dynamic public uses. After all, the policy of smart decline opens up the opportunity for place-making at Burke. A potential closure of Burke would open up 480 acres of lakefront land for redevelopment. And, in terms of redevelopment schemes, there are many options. One option, per a team of past planning Master's students at Cleveland State University, is to turn the land into a mixed-used, mixed-income community along the lines of Denver's Stapleton airport.¹⁷ However, many options exist for the site, and this final section

¹⁵ Peter Krouse, "Participants in Online Economic Development Forum Like Spending Tax Dollars on Public Transit, not Sports Venues," *Cleveland.com*, 3 December 2018, <https://www.cleveland.com/news/2018/12/participants-in-online-economic-development-forum-like-spending-tax-dollars-on-public-transit-not-sports-venues.html>.

¹⁶ Daniel J. McGraw, "Did Burke Lakefront Airport Miscalculations Add to Hopkins Hub Troubles in Cleveland," *BeltMag*, 4 February 2014, <https://beltmag.com/clevelandairporttroubles/>.

¹⁷ Patrick Christie-Mizell, James DeRosa, Jessica Dunn, Michael Graham, John Story, "Burke Lakefront: Taking It to New Heights" (Capstone Final Project), *Cleveland State University* (May, 2003), 27.

provides an overview of the options available, highlighting how they could promote dynamic local uses.

This study then ends with a conclusion that recaps the study, reemphasizing how this project is an application and expansion of shrinking cities/smart decline planning to Cleveland's airport infrastructure (with an eye towards infrastructure elsewhere as well).

This thesis, however, also includes one appendix chapter that supplements the main narrative. Beginning as early as 1974 but continuing until today, Hopkins embarked on a frenetic pace of infrastructural development as it sought to transform into an airport that could compete with others across the nation. Improvements and expansions were needed to meet the changing economic needs of the Cleveland region. And, for a time, growth in air traffic did occur. However, this story is a cautionary tale for future airport planning. At Hopkins, a certain pro-growth mentality set in, and the result was the unmaking of a large section of Cleveland's Riverside neighborhood. This neighborhood, as a direct result of airport planning, saw over 600 single family homes torn down in a period of about 20 years.¹⁸ This section of Riverside remains vacant today, while portions of it have been transformed into a sprawling business park. The result was a "splintered" urban landscape given that the airport area was prioritized and the neighborhood section was turned into a "ghost ward."¹⁹ It is a cautionary tale that illustrates the power that pro-growth infrastructure planning has to unmake the city and gives context as to why smart decline may be a better alternative for the Cleveland region. This chapter, while placed in

¹⁸ United States Census Bureau, "T80-Year-Round Housing Units," United States Census (1980), in SocialExplorer.com, <https://www.socialexplorer.com/a9676d974c/explorer> ; United States Census Bureau, "T155-Housing Units," United States Census (2000), in SocialExplorer.com, <https://www.socialexplorer.com/a9676d974c/explore>.

¹⁹ Stephen Graham and Simon Marvin, *Splintering Urbanism* (London and New York: Routledge, 2011), 288.

the appendix, can be read in conjunction with Chapter 3 as it illustrates the consequences of when a “growth mindset” fails to account for the realities of shrinkage.

A Note on Methods

This project utilizes a mixed-method approach to research. Quantitative research and archival research predominate at most stages in this project. Here, these methods are needed to obtain a statistical understanding of the region and airport system in addition to an understanding of the specifics of these places. However, this project does bring in qualitative research techniques. Interviews inform the final chapter of this study that focuses on policy implementation and potential for place-making. The past and present realities of the airport system are easy to define and analyze using statistics and archival methods. However, the system’s future is a bigger, more open question and one which this researcher cannot attempt to dominate.

Regarding the statistical and archival research that is integral to this project, these techniques are used to capture the sheer quantity of information that is necessary to study the past and current state of an entire region and its airport system. What is essentially being created is a “community profile” of the region and its airport system.²⁰ Behind each geography under study whether that geography be an area (i.e. county, city, or neighborhood) or a system (the Cleveland airport system) there is a lot of place specific information that needs to be provided as context (while also balancing the need of “Not overdoing it” with the quantity of information as Ward (2014) recommends).²¹ Take the example of Hopkins airport. There are a number of

²⁰ Ernest Stringer, “Look: Gathering Data,” In *Action Research*, (SAGE Publications: Thousand Oaks, 2014), 27-28.

²¹ Stephen V. Ward, “Archival Research,” In *Researching the City*, edited by Kevin Ward (SAGE Publications: London, 2014), 32, 33.

specific questions that need to be answered surrounding its current state. These questions require studying its quantity of flight operations, the types of flight operations that pass through, its current facilities, its financial state, and more. Much of this is specific information that can only be found by researching government databases for statistics and archives/libraries like Cleveland's Public Administration Library, the city's official library and depository for information of this kind. Most of this information resides in spreadsheets, master plans, and other sources of spatial data. The benefit of these quantitative and archival sources is that they bring this very specific yet important information to public light. Stoudt, in "Quantitative Methods," for example, notes that quantitative information often tends to serve as the "gatekeeper to participation separating expert from layperson."²² Archival research, whether quantitative or not, falls under this category as it deals with hidden information that few individuals are likely to see. For example, few Cleveland residents have ever read the airport master plans. The quantitative and archival research used in this project brings to light the highly specific and often hidden information about these places that does indeed exist.

The qualitative research method of interviewing is utilized for it is critical to the discussion of the airport system's future. As mentioned before, for example, it is very easy to establish the airports' past and present states through quantitative and archival research. There is a lot of legwork and reading involved to provide context and specifics, but the necessary information all exists. Charting the course for the system's future, on the other hand, has very little precedent. Changing the current system and thinking about alternatives for its future, while similar changes have occurred in other urban contexts like Denver and Chicago, has not yet

²² Brett G. Stoudt, "Quantitative Methods," In *Encyclopedia of Research*, edited by David Coghlan and Mary Brydon-Miller, (SAGE Publications: London, 2014), 4.

occurred in Cleveland. What could future change in the Cleveland airport system and its land look like? This researcher has some ideas about potential change. However, options for change should come from others who have also studied the issue and those who are community members. On one hand, this study incorporates informal interviews with those who understand airport systems and regional dynamics the most: real estate attorneys, airport managers, and political leaders. For the other set of interviews, I talked to Cleveland residents about the land uses they would like to see at Burke. Both sets of interviews were unstructured as my goal was to have individualized conversations about particular topics like federal airport regulations, airport politics, etc.²³ These interviews, six in total, were not meant to be quantifiable as I was most interested in the specific knowledge of each individual.²⁴ They supplement the quantitative and archival research of this project.

²³ Laura Johnson, "Interviewing," in *Community-Based Qualitative Research* (Sage: Thousand Oaks, 2017), 82.

²⁴ Laura Johnson, "Interviewing," 82

Chapter 1

Shrinking Cities, Smart Decline, and the Goal of “Becoming”: A Theoretical Perspective on the Shrinking City-Region

Before exploring the Cleveland’s regional airport system and opportunities for change within that system, this study has to establish a theoretical framework for guiding on-the-ground regional planning. For example, the introduction argued a few key points: The Cleveland region is a “shrinking” metropolitan region, its regional airport system is a bulky and underutilized entity, and policies of smart decline and infrastructural management can help reverse these ills. Therefore, the theory of shrinking cities/urban shrinkage needs to be discussed as this theory clarifies the airport system’s challenges. Similarly, smart decline needs to be explored as the policy that can be used to mitigate the mismatch between a city-regions population/resource base and its built environment. Most importantly, what needs to be highlighted is the role of smart decline in creating a dynamic urban fabric that makes use of local assets and strengths.

What is the Shrinking City?

As urbanists, planners, and geographers have understood it, the shrinking city exemplifies the process of loss/exodus from the city. Scholars typically associate urban shrinkage with the loss of economic resources (capital, jobs) which is then quickly followed by massive and sustained urban population loss. This process can and often does take place at the regional level.

To begin, the general consensus among scholars is that shrinking cities are defined by the initial process of economic loss and resource drainage from the urban core (thus shrinking the economic base of the city). Pallagst, Martinez-Fernandez, and Wiechmann (2014), for example, argue that “urban shrinkage is considered to be the effect of economic decline. Marked by a loss

of employment opportunities and attendant out-migration of population.”²⁵ Notice how they identify shrinkage initially as being an economic issue. Urban shrinkage is an economic process in which the loss of manufacturing jobs (as they shift elsewhere) has defined the American context.²⁶ Others, in this spirit, have followed their lead and begin by defining the shrinking city as a place of shrinking economic opportunity. Sujata Shetty (2009), citing the work of Pallagst, for example, follows the same trend of associating economic decline as the first stage of urban shrinkage from which other types of shrinkage follow.²⁷ Other, scholars, however, expand on this definition of shrinking cities as being places of diminished economic opportunity. For Ivonne Audirac (2014), urban shrinkage is the process of the post-Fordist economy at work.²⁸ Her very notion is that economic shrinkage results from the notion of the “postmetropolis” in which the urban economy flees the city as industrial “agglomeration” loses importance.²⁹ Audirac’s approach is therefore similar to other scholars, but she further develops the meaning of these economic losses.

Keeping in mind that shrinking cities are cities of shrinking economies, the next stage of shrinkage (and the stage most associated with shrinking cities) is population shrinkage. Population loss occurs, because city residents have very little reason to stay in jobless urban cores. For all scholars studying shrinking cities, population loss from the old industrial city,

²⁵ Karina Pallagst, Christina Martinez-Fernandez, and Thorsten Wiechmann, “Introduction,” In *Shrinking Cities: International Perspectives and Policy Implications*, edited by Karina Pallagst, Thorsten Wiechmann, and Christina Martinez-Fernandez (Routledge: New York, 2014), 3.

²⁶ Ibid. 3.

²⁷ Sujata Shetty, “Shrinking Cities in the Industrial Belt: A Focus on Small and Mid-size cities in Northwestern Ohio,” *Urban Affairs Center* (December, 2009): 2, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.498.1115&rep=rep1&type=pdf>.

²⁸ Ivonne Audirac, “Shrinking Cities in the Fourth Generation,” In *Shrinking Cities: International Perspectives and Policy Implications*, edited by Karina Pallagst, Thorsten Wiechmann, and Christina Martinez-Fernandez (Routledge: New York, 2014), 42-43.

²⁹ Ibid.

whether that loss be headed for the suburbs or another part of the country, defines the shrinkage process. Population loss in American industrial centers began in the 1950s and, while it has slowed, continues to this day. However, scholars have defined this process from different angles. Shetty characterizes American urban population loss as a “doughnut” effect in which the urban core hollows out in terms of population with the hole in the middle growing over time.³⁰ Wiechmann and Pallagst (2012), in a different piece, take issue with the “hollowing out” understanding of population loss as it privileges the growth of suburbs in this discourse, but they are otherwise on board with the concept of central city population loss as being definitive of urban shrinkage.³¹ However, when discussing population loss, perhaps Robert Beauregard gives the best understanding of population loss for he makes a critical contribution in defining this characteristic of the shrinking city. He argues that shrinking cities are places that have sustained and “persistent” population loss.³² In his view, many cities have lost population (ex. Dozens of cities experienced this between 1950 and 1980, including New York City), but only a select few are shrinking cities due to continuous long-term population loss.³³ These cities primarily include those of the industrial Midwest and Northeast.

As a side note to this debate on population loss, some scholars do deemphasize the terms “urban shrinkage” and “shrinking city.” Alan Mallach, one of the leading scholars on this topic, offers the alternative term “legacy city” as it tends to be more appropriate given where he

³⁰ Sujata Shetty, “Shrinking Cities in the Industrial Belt: A Focus on Small and Mid-size cities in Northwestern Ohio,” 3.

³¹ Thorsten Wiechmann and Karina M. Pallagst, „Urban Shrinkage in Germany and the USA: A Comparison of Transformation Patterns and Local Strategies,” *International Journal of Urban and Regional Research* 36:2 (March, 2012), 273, Wiley, <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1468-2427.2011.01095.x>.

³² Robert A. Beauregard, “Shrinking Cities in the United States in Historical Perspective: A Research Note,” In *Shrinking Cities: International Perspectives and Policy Implications*, edited by Karina Pallagst, Thorsten Wiechmann, and Christina Martinez-Fernandez (Routledge: New York, 2014), 36-38.

³³ *Ibid.*, 38.

believes most cities are in their current temporal trajectories.³⁴ In Mallach's (2017) view, the shrinkage found in legacy cities (economic, population) was largely from the past.³⁵ The term "legacy" points to his belief that cities are dealing with the vestiges of the past, a past which has also delivered a host of assets to these cities. Whether this term is appropriate or not depends on each individual shrinking city. For some cities, economic shrinkage and population shrinkage have already occurred while other cities like Cleveland are still experiencing this process to some extent.

Finally, the last task in defining shrinking cities is to expand the concept to different scales and geographies. Here, there needs to be a minor reframing of geographical perspective. All of the above scholars typically associate the shrinking city with the **shrinking central city**. However, many scholars recognize the need to scale this definition up to the regional and metropolitan levels. Shetty, for example, recognizes that often times "economic decline is felt by their metropolitan region as a whole."³⁶ This is a connection that Audirac also immediately makes. Audirac, again drawing upon a global understanding of the post-Fordist economy, argues that "any city, suburb, or periphery skipped over by global production chains" can experience shrinkage.³⁷ The perspectives of these scholars are exceptionally useful for they recognize that regional shrinkage is a reality. This is especially important given that this project deals with the legacies of metropolitan shrinkage in the form of a regional airport system.

³⁴ Alan Mallach, "What We Talk about When We Talk about Shrinking Cities: The Ambiguity of Discourse and Policy Response in the United States," *Cities* 69 (September, 2017): 113, <https://www.sciencedirect.com/search/advanced?docId=10.1016/j.cities.2017.01.008>.

³⁵ Ibid.

³⁶ Sujata Shetty, "Shrinking Cities in the Industrial Belt: A Focus on Small and Mid-size cities in Northwestern Ohio," 4.

³⁷ Ivonne Audirac, "Shrinking Cities in the Fourth Generation," 47.

Effects of Urban Shrinkage: The Challenges of Abandonment and Underutilization

Whenever a massive swath of resources and people exit the city, grave consequences typically result for the affected city or region. Urban shrinkage, when discussed in the context of housing and residential life, typically results in a toxic situation of abandonment and hence physical deterioration of the housing stock. However, when discussing the topic of urban infrastructure (the aspect of the built environment that is perhaps most fixed in place) the result is a host of “unders” (funding, utilization, and maintenance) and even system failure.

To begin, the effects of urban shrinkage have typically been most associated with deterioration in the housing stock and quality of life for that housing stock’s inhabitants. Urban shrinkage in this sense results in intense residential abandonment. Mallach and Brachman (2013), for example, recognize that intense residential abandonment and vacancy occur in a shrinking city due to an excess supply of housing stock and minimal housing demand.³⁸ Shetty also focuses on “vacant and abandoned properties” as the highlight of the effects of shrinkage.³⁹ Housing vacancy operates due to a particular logic. Given that cities like Detroit, Cleveland, Buffalo, etc. once provided housing for over twice as many inhabitants in decades past, there now exist dozens of properties that are no longer in demand due to economic and residential outflows. Residents may have left, but these houses are still standing. On the market, they have no exchange value. Hence, vacancy results.

Housing abandonment then results in the deterioration of neighborhoods in both a physical sense and in terms of urban life. Vacant properties, according to Mallach and

³⁸ Alan Mallach and Lavea Brachman, “Regenerating America’s Legacy Cities” (Policy Focus Report), Lincoln Institute of Land Policy (2013): 9, <https://ti.org/pdfs/LegacyCities.pdf>.

³⁹ Sujata Shetty, “Shrinking Cities in the Industrial Belt: A Focus on Small and Mid-size cities in Northwestern Ohio,” 4.

Brachman, physically deteriorate due the lack of care they receive.⁴⁰ This deterioration comes in the form of speculators who buy up swaths of property seeking to make quick money, through absentee owners and landlords who never pay attention to these properties, or by the sheer decay that is characteristic of pure vacancy.⁴¹ Either way, these properties deteriorate over time and can go a few decades with any attention. Deterioration in the housing built environment also means diminished quality of life. Pallagst (2014), for example, notes that, after abandonment, challenges like increased “poverty, segregation, and homelessness result.”⁴² Entire neighborhoods are affected at the residential level.

What was just discussed was the typical narrative that is associated with shrinkage’s effects. That is, shrinkage causes housing abandonment. Abandonment, over time, then eats away at the fabric of neighborhoods. The effects of shrinkage on urban and regional infrastructure follow a similar trajectory in that they negatively affect shrinking city residents. However, the impact of shrinkage on infrastructure features unique differences.

Before discussing the effects of urban shrinkage on infrastructure specifically, scholars have made it a point to denote a certain characteristic of infrastructure that makes it very vulnerable to urban shrinkage. Infrastructure is highly **fixed** in place. It is a very inflexible aspect of the city and its built environment. For Stephen Graham in *Splintering Urbanism*, “infrastructure networks must be fixed and embedded in space” in order to facilitate capitalism, a system in which mobile people and goods utilize the fixed infrastructure.⁴³ Therefore, he notes

⁴⁰ Alan Mallach and Lavea Brachman, “Regenerating America’s Legacy Cities,” 9.

⁴¹ Ibid.

⁴² Karina Pallagst, “The Interdependence of Shrinking and Growing: Processes of Urban Transformation in the US in the Rust Belt and Beyond,” In *Shrinking Cities: International Perspectives and Policy Implications*, edited by Karina Pallagst, Thorsten Wiechmann, and Christina Martinez-Fernandez (Routledge: New York, 2014), 61.

⁴³ Stephen Graham and Simon Marvin, *Splintering Urbanism* (London and New York: Routledge, 2011), 191-192.

that infrastructures like transport, water, communications, and more all tend to be highly permanent.⁴⁴ Some infrastructure types are more fixed than others though. Hoornbeek and Schwarz (2009), both scholars working within shrinking cities specifically, also lament the fixity of infrastructure.⁴⁵ After all, networks of infrastructure are meant to be the anchors of urban life. However, given the reality of how much faster the urban economy and population can change and do so in often unexpected ways, infrastructure's fixity means that urban shrinkage will affect it in ways that are different than less-fixed places like housing.

With this in mind, scholars of shrinking cities and infrastructure highlight the high cost burdens that plague infrastructure in this urban context. Faust, Abraham, and McElmurry (2016), for example, note that between 75% and 80% of the cost of operating water infrastructure is fixed.⁴⁶ However, in shrinking cities, the municipality's tax base, especially its property tax base, has declined immensely.⁴⁷ Therefore, infrastructure service provision becomes too costly. According to Faust et al, rates of service have to skyrocket in order to maintain these hulking systems.⁴⁸ Skyrocketing costs are another issue mentioned in the Kent State Urban Design Collaborative study of shrinking cities and infrastructure.⁴⁹ This high cost burden is especially unique to infrastructure in the shrinking city. Unlike a house, infrastructure

⁴⁴ Stephen Graham and Simon Marvin, *Splintering Urbanism*, 193.

⁴⁵ John Hoornbeek and Terry Schwarz, "Sustainable Infrastructure in Shrinking Cities: Options for the Future" (Report), *Cleveland Urban Design Collaborative* (July, 2009), 6; Kasey M. Faust, Dulcy M. Abraham, and Shawn P. McElmurry, "Water and Wastewater Infrastructure Management in Shrinking Cities," *Public Works Management and Policy* 21:2 (2016): 129, Sage Journals, <https://journals.sagepub.com/doi/pdf/10.1177/1087724X15606737>.

⁴⁶ Kasey M. Faust, Dulcy M. Abraham, and Shawn P. McElmurry, "Water and Wastewater Infrastructure Management in Shrinking Cities," 131.

⁴⁷ Kasey M. Faust, Dulcy M. Abraham, and Shawn P. McElmurry, "Water and Wastewater Infrastructure Management in Shrinking Cities," 131; Alan Mallach and Lavea Brachman, "Regenerating America's Legacy Cities," 9.

⁴⁸ Kasey M. Faust, Dulcy M. Abraham, and Shawn P. McElmurry, "Water and Wastewater Infrastructure Management in Shrinking Cities," 131.

⁴⁹ John Hoornbeek and Terry Schwarz, "Sustainable Infrastructure in Shrinking Cities: Options for the Future," 7.

cannot be “abandoned” due to the fixity that is necessary to maintain the entire network. Therefore, cost burden, as opposed to vacancy, is the most immediate impact of shrinkage on infrastructure.

The high cost burden of infrastructure in the shrinking city, however, means that infrastructure is especially prone to abrupt failure. Mahendra Katta (2016) presents the worst case scenario in an urban context. She argues, in part, that the ongoing Flint Water Crisis was the result of infrastructure failure.⁵⁰ According to Katta, these systems initially “were starting to show wear” as evidenced by points of the infrastructure like water pipes which were in poor condition.⁵¹ This wear on the system is critical to understanding the crisis, but what tipped it over the edge? When the state of Michigan took over Flint’s budget in crisis, it switched the source of Flint’s water to the cheaper Flint River.⁵² This example illustrates the worst case scenario of the effects of urban shrinkage on infrastructure. Due to shrinkage, Flint had to make an abrupt cost-saving measure. It is a prime example of the infrastructure network failure that Stephen Graham writes of extensively.⁵³ Basically put, infrastructure, when improperly financed and serviced, can negatively harm a city or region’s population through system failure. This is a common issue for infrastructure in the shrinking city. Infrastructural failure is the worst case effect of shrinkage. But, more likely than not though, shrinking cities will experience the cost-burdens and underuse associated with infrastructure in these cities. The flow chart below better

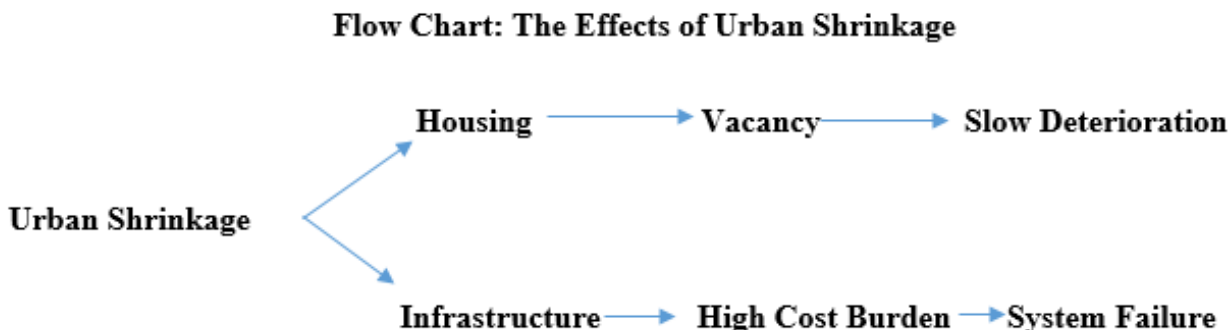
⁵⁰ Mahendra Katta, “Public Health Leadership Failure-Flint” (Masters Paper), University of North Carolina at Chapel Hill (Fall, 2016), 3, <https://cdr.lib.unc.edu/indexablecontent/uuid:918ca88e-4c3b-4ce3-8ec6-0c8e8d949006>.

⁵¹ Ibid.

⁵² Ibid., 2.

⁵³ Stephen Graham and Simon Marvin, *Splintering Urbanism*, 25.

illustrates the effects of urban shrinkage on both housing and infrastructure:



Smart Decline as a Mitigation Tool: Overview and Process

Given these unique realities facing shrinking cities and their infrastructure, scholars and urban theorists have developed planning techniques that allow these cities to be cognizant of their long-term trajectories and strive for success and sustainability. Remember, for example, that shrinking cities need to be understood as places of historic population and economic losses. While these trends have slowed in some cases, these cities are by no means on the cusp of rapid urban growth. Therefore, the traditional planning model that prioritizes growth, expansion, and development is not appropriate. Scholars, on the other hand, have established the doctrine of smart decline which, according to Hollander and Nemeth (2011), plans for an urban future where city services, the built environment, and land use contract and consolidate in order to better meet the needs of a city or region’s existing population.⁵⁴ Coppola (2018) refers to this model as the rise of the “right-sizing” discourse which means that cities have to contract “their physical

⁵⁴ Justin B. Hollander and Jeremy Nemeth, “The Bounds of Smart Decline: A Foundational Theory for Planning Shrinking Cities,” *Housing Policy Debate*, 21:3 (2011): 354, Taylor & Francis Online, https://www.tandfonline.com/doi/full/10.1080/10511482.2011.585164?casa_token=IE6kl_HFvXcAAAAA:-DUjB4YdvxJXAeUHHOCOomhayQTLjZWlLo9vRR02lf3_wVxu6rjZk4oBS_i-UWtK3z-3ZQblwpg97M.

footprint so that it is more consistent with current and near-future demographic realities.”⁵⁵ This section reviews how the smart decline planning doctrine operates in theory and in practice. As the literature defines it, smart decline planning theory seeks to guide the shrinking city through its current challenges and fragmentation. It is essentially a three-step process in practice. This process begins with identifying urban assets. Smart decline then prioritizes the development and maintenance of so-called viable parts of the city. A smart decline process then concludes by banking and repurposing those areas of the city that have become abandoned and/or underutilized.

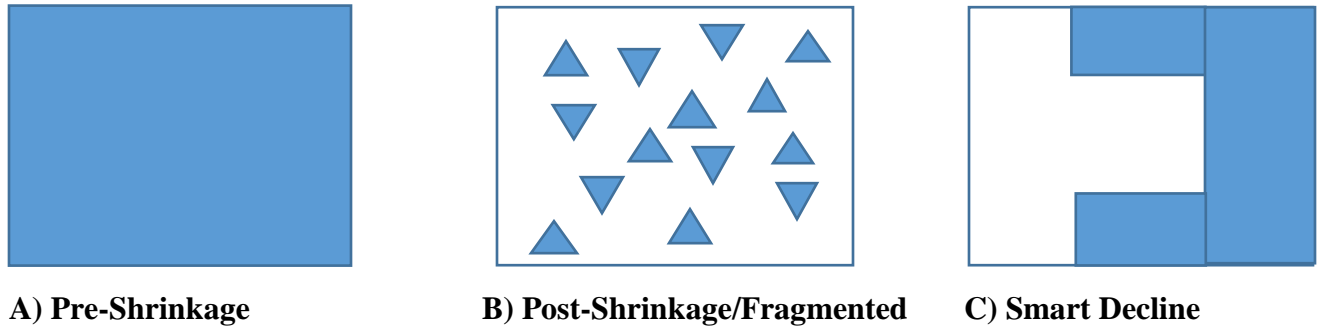
At the theoretical level, smart decline seeks to consolidate and reorganize the shrinking city through a theory that promotes densification and mitigates fragmentation. For example, consider the shrinking city to be something of a hodge-podge of fragmented urban nodes as defined earlier. A smart decline theoretical model seeks to parse out these fragments, strengthening and connecting those that are considered to be viable while removing and repurposing those nodes that are not viable. Pallagst (2014) explains this theory well. She writes, “The whole process aims at rebuilding the city on a smaller scale. It incorporates new principles like *not* planning for new settlement areas, instead creating a land-management pool to make room for new parks and green spaces, and focusing on strengthening existing local businesses in the health, education, public administration, and cultural sectors.”⁵⁶ The areas that have been vacated, according to Coppola, are areas of “transformative potential” where new and creative uses can flourish.⁵⁷ The end vision of a smart decline approach is a city that contains

⁵⁵ Alessandro Coppola, “Projects of Becoming in a Right-Sizing Shrinking City,” *Urban Geography*, January (2018): 4, Taylor & Francis Online, <https://www.tandfonline.com/doi/full/10.1080/02723638.2017.1421391?scroll=top&needAccess=true>.

⁵⁶ Karina Pallagst, “The Interdependence of Shrinking and Growing: Processes of Urban Transformation in the US in the Rust Belt and Beyond,” 67.

⁵⁷ Alessandro Coppola, “Projects of Becoming in a Right-Sizing Shrinking City,” 3-4.

denser, larger nodes of viability and potential. This model of smart decline, inspired by the work of Brent Ryan in *Design after Decline* (2012), better illustrates this theory:⁵⁸



Essentially, this graph points to the intended outcome of a smart decline approach. Before decline, all or nearly all of the city was considered to be so-called viable. This is not to say that a place like pre-shrinkage Cleveland had no problems of its own. Rather, it did not feature gaping sections of urban inactivity. In a post-shrinkage city, viable nodes do exist. However, these nodes are fragmented. In a smart decline framework, these nodes have been connected and consolidated. Its vacant lands are places that are ripe for opportunity. The above figure is simply meant to be a model of smart decline theory. On the ground, this theory plays out through a specific process in order to reach point C in the model above. With an understanding of this planning theory in mind, it is now possible to transition to how it operates in practice.

In the process of smart decline, urban scholarship establishes the steps through which these dense nodes of the city are established while areas of potential are also created and banked for future use. This process begins with a comprehensive review of urban assets and liabilities, strengths and weaknesses. Mallach and Brachman, for example, argue that revitalization and “regeneration” occur around the existing assets of legacy cities.⁵⁹ What defines an asset is open-

⁵⁸ Brent Ryan, *Design after Decline* (University of Pennsylvania Press: Philadelphia, 2012), 215-221.

⁵⁹ Alan Mallach and Lavea Brachman, “Regenerating America’s Legacy Cities,” 11.

ended. Mallach and Brachman suggest aspects of the city and particular places that they consider assets. These include stable neighborhoods, museums, bodies of water, public transit networks, hospitals, foundations, ethnic communities, and much more.⁶⁰ Specific places they name include Baltimore's Johns Hopkins Medical Center, Detroit's Eastern Market, and the Amish community in Lancaster, PA.⁶¹ In Cleveland, comparable assets would include places like the Cleveland Clinic, the West Side Market, and communities like the Latino community of Clark-Fulton. In a smart decline framework, these assets must be inventoried.⁶² In addition to identifying and inventorying these assets though, Mallach and Brachman recognize the need to identify "disinvested" areas that are continuously losing population and resources (essentially the liabilities of the shrinking city).⁶³ Hoornbeek and Schwarz second the need for the asset identification approach. They call for stronger asset management systems to "inventory" and analyze the components of a given community.⁶⁴ What is occurring in smart decline practice, then, is the identification of a community's strengths and weaknesses. This is a very tricky task for planners, leaders, and community members to carry out. After all, some individuals may have a very narrow view of what cities should consider assets. Hollander and Nemeth point to the 1960s and 1970s career of Roger Starr, a figure who took this approach but was ultimately responsible for waves of deliberate disinvestment in certain New York neighborhoods due to his quick labelling of poor communities as liabilities.⁶⁵ Therefore, while it is important in smart

⁶⁰ Alan Mallach and Lavea Brachman, "Regenerating America's Legacy Cities," 12.

⁶¹ *Ibid.*, 30.

⁶² *Ibid.*, 30.

⁶³ *Ibid.*, 26.

⁶⁴ John Hoornbeek and Terry Schwarz, "Sustainable Infrastructure in Shrinking Cities: Options for the Future," 25.

⁶⁵ Justin B. Hollander and Jeremy Nemeth, "The Bounds of Smart Decline: A Foundational Theory for Planning Shrinking Cities," 355.

decline practice to have a process for analyzing a city's assets and zones for opportunity, this process has to be thoughtful, deliberate, and open-minded.

After planners have taken inventory of the shrinking city or region, the smart decline approach then seeks to consolidate resources and energy. A smart decline approach typically begins with targeted investment that builds around identified community assets. Scholars lay out how this consolidation phase works by citing examples, and the case of Youngstown, Ohio and its famous *Youngtown 2010 Plan* dominates the smart decline literature. Rhodes and Russo (2013) for example, detail how Youngstown pumped millions of dollars into the city's identified assets through tax incentives, stimulus funds, and private investment.⁶⁶ Youngstown focused on both the central city and region with downtown Youngstown receiving over \$100 million in funding for various projects while regional assets like the General Motors' plant in nearby Lordstown also received support.⁶⁷ Audirac also recognizes that the Youngstown plan "capitalizes on having a university campus and downtown legacy architecture."⁶⁸ Unfortunately, as of this writing though, the Lordstown plant is in danger of permanently closing as GM has discontinued production of the Chevrolet Cruze. What has occurred and is occurring in Youngstown overall though, is the targeting and prioritization of the shrinking city's existing identified assets. For Mallach and Brachman, the architects of much of this theory, this stage of smart decline means prioritizing investment in the "core" and "intact" areas.⁶⁹ As the rest of these cities shrink, these assets can act as incubators and anchors for the rest of the city.

⁶⁶ James Rhodes and John Russo, "Shrinking 'Smart?': Urban Redevelopment and Shrinkage in Youngstown, Ohio," *Urban Geography* 34:3 (2013), 312, Taylor & Francis Online, <https://www.tandfonline.com/doi/abs/10.1080/02723638.2013.778672>.

⁶⁷ Ibid. 312.

⁶⁸ Ivonne Audirac, "Shrinking Cities in the Fourth Generation," 50.

⁶⁹ Alan Mallach and Lavea Brachman, "Regenerating America's Legacy Cities," 25-26.

However, a smart decline strategy recognizes that some areas are not viable enough to continue along their current decline trajectory. This realization may seem pessimistic, but for shrinking cities' limited budgets, the cost of making them viable in their current form is simply too high. To prepare these areas for new opportunities, smart decline de-urbanizes select areas. The literature names a number of tools meant to accomplish this task. Perhaps the most popular technique being implemented in shrinking cities is land banking.⁷⁰ Land banks facilitate the transfer of vacant land and abandoned property to better owners while also coordinating the demolition of the worst properties.⁷¹ For those familiar with shrinking city dynamics, this can mean the demolition of rows of consecutive abandoned buildings. What is essentially occurring in practice is conscious de-urbanization. Again, this de-urbanization process does warrant some caution. In the *Youngstown 2010 Plan*, for example, the re-location of remaining residents out of the city's so-called worst areas has been utilized as a strategy to de-urbanize.⁷² This strategy, again, is eerily reminiscent of the top-down urban renewal policies of the past in which entire neighborhoods met the bulldozer. It again illustrates that, when implementing smart decline, there is always a need to be careful in determining what gets de-urbanized. And, typically, a land banking system tends to be the most systematic in its approach as land banks have clear protocols for evaluating the conditions of property and land.

Finally, in smart decline practice, the goal is not to de-urbanize parts of the city in order to let them lie fallow. Rather, this technique aggressively pursues alternative and creative uses for these areas. Most dominant in the literature is the trend of repurposing vacant areas of the

⁷⁰ Alan Mallach and Lavea Brachman, "Regenerating America's Legacy Cities," 35-36.

⁷¹ *Ibid.*, 35-36.

⁷² Justin B. Hollander and Jeremy Nemeth, "The Bounds of Smart Decline: A Foundational Theory for Planning Shrinking Cities," 355-356; James Rhodes and John Russo, "Shrinking 'Smart'? Urban Redevelopment and Shrinkage in Youngstown, Ohio," 315.

city for so-called “green uses.”⁷³ These can include “greenways, forests, meadows, green infrastructure, and farms at different scales.”⁷⁴ Green uses for de-urbanized lands appears repeatedly in the rest of the literature. Rhodes and Russo identify the development of green lands and green infrastructure as being definitive of Youngstown’s efforts to repurpose vacant lands.⁷⁵ Similarly, Coppola points to efforts in Cleveland to implement urban agriculture in the form of the *Green City Growers Cooperative* in the city’s formerly vacant “Forgotten Triangle” area.⁷⁶ In sum, then, green uses tend to dominate the repurposing of de-urbanized lands. Regardless of the actual uses which these areas do eventually adopt (whether or not they become areas of green land uses), the smart decline framework identifies these zones of opportunity.

This three-step smart decline process is perhaps best encapsulated in sum by the Detroit Future City Strategic Framework Plan. This plan outlines twelve “Imperative Actions” that Detroit must carry out in future planning.⁷⁷ Among those actions are supporting current residents, promoting density, “sizing the networks for a smaller population,” and finding uses for open and vacant lands.⁷⁸ Within the twelve actions outlined by Detroit Future City, the call for shrinking cities to carry out some form of smart decline is clear.

When it comes to the intersection of smart decline planning and infrastructure, there is only minimal scholarship that confronts how this planning framework can be studied and applied at this level of the urban fabric. Unfortunately, there is no scholarship that discusses smart

⁷³ Alan Mallach and Lavea Brachman, « Regenerating America’s Legacy Cities, » 28.

⁷⁴ *Ibid.*, 28.

⁷⁵ James Rhodes and John Russo, “Shrinking ‘Smart’?: Urban Redevelopment and Shrinkage in Youngstown, Ohio,” 315

⁷⁶ Alessandro Coppola, “Projects of Becoming in a Right-Sizing Shrinking City,” 12.

⁷⁷ Detroit Future City, *Detroit Strategic Framework Plan* (Inland Press: Detroit, 2012), 15, https://detroitfuturecity.com/wp-content/uploads/2017/07/DFC_Full_2nd.pdf.

⁷⁸ Detroit Future City, *Detroit Strategic Framework Plan*, 15.

decline as it relates to airport infrastructure specifically. Therefore, this study of Cleveland's regional airport infrastructure will add to a very understudied field by applying smart decline planning to the airport system. Regardless of the lack of scholarship on this subject, there are a few voices that dive deeper into the topic attempting to chart a course for infrastructure planning in the shrinking city. Namely, Faust et al and Hoornbeek and Schwarz follow the smart decline approach in terms of identifying infrastructural assets and liabilities. They then propose practical planning techniques to achieve smart decline in infrastructure whether that infrastructure be water, transport, energy, or another aspect of the city.

In reviewing these two studies of infrastructure planning techniques, what is common to both is that they attempt to identify how planners and city policymakers can identify nodes of value within infrastructure networks. This technique of identifying value varies by infrastructure type. For example, Faust et al are primarily concerned with water infrastructure. This is a unique type of infrastructure which necessitates a unique approach to planning for smart decline. These authors, for example, note that the population distribution of a city is important when determining the value of each node of water infrastructure.⁷⁹ However, population size and distribution is not the only factor that makes a given node of regional water infrastructure worth operating or not. Certain nodes may be important due to “the connectivity of the network, as well as the criticality of the component for providing fire flow demands and adequate pressures.”⁸⁰ What they are essentially saying is that even nodes (i.e. pipelines) in depopulated areas could be valuable to keep if they are integral to the operation of the entire system. Asset management and identification, likewise, is a process that is emphasized heavily in Hoornbeek

⁷⁹ Kasey M. Faust, Dulcy M. Abraham, and Shawn P. McElmurry, “Water and Wastewater Infrastructure Management in Shrinking Cities,” 143.

⁸⁰ *Ibid.*, 143.

and Schwarz for each specific type of infrastructure. These authors, in reference to transportation infrastructure, argue for “complete inventories of their assets (roads, buses, trains, tracks, etc.) their condition, and their criticality to services for the public.”⁸¹ Therefore, in both of these studies, asset identification is critical for cities looking to shrink their infrastructure. It is a process that looks different depending on infrastructure type given the unique characteristics of each particular network though.

Both studies, likewise, provide examples of planned decline techniques that are specific to infrastructure. Whereas smart decline on a grander urban and metropolitan scale included policies like land banking and the more cautionary example of resident relocation, techniques to shrink infrastructure accomplish the same end of de-urbanizing a given area. Common to both studies is the possibility of downright decommissioning infrastructure nodes.⁸² This technique is considered to be a more intense approach, and it is actually one that Hoornbeek and Schwarz caution against due the ability of decommissioning (and hence elimination) to induce a path dependent trajectory that is inflexible to the needs of future growth.⁸³ Both studies, however, raise the possibility of other decline policies that are less intense but still useful. Hoornbeek and Schwarz, in reference to road infrastructure, raise the possibility of narrowing the roads that receive minimal traffic.⁸⁴ Faust et al, in discussing sewage infrastructure, suggest options like investing in more permeable surfaces to minimize system intake.⁸⁵ These are just two strategies out of dozens that can be utilized for the smart decline of infrastructure. However, what the two

⁸¹ John Hoornbeek and Terry Schwarz, “Sustainable Infrastructure in Shrinking Cities: Options for the Future,” 19.

⁸² John Hoornbeek and Terry Schwarz, “Sustainable Infrastructure in Shrinking Cities: Options for the Future,” 11, 17, 21; Kasey M. Faust, Dulcy M. Abraham, and Shawn P. McElmurry, “Water and Wastewater Infrastructure Management in Shrinking Cities,” 140-141.

⁸³ John Hoornbeek and Terry Schwarz, “Sustainable Infrastructure in Shrinking Cities: Options for the Future,” 2

⁸⁴ *Ibid.*, 17-18.

⁸⁵ Kasey M. Faust, Dulcy M. Abraham, and Shawn P. McElmurry, “Water and Wastewater Infrastructure Management in Shrinking Cities,” 141.

studies discussed here is the potential for smart decline practices to be applied to infrastructure. It can be either decommissioned or minimized in use as long as the technique promotes a worthwhile benefit in savings and sustainability. These policies, of course, do not come without risks. The two studies both spend significant time highlighting the risks and challenges of removing portions of a city's infrastructure. The risks and challenges of applying a smart decline policy to Cleveland's regional airport system will have to be confronted later in this work.

The Goals of Smart Decline

As a policy, smart decline (be it applied to an entire city or a specific aspect of it like vacant property or infrastructure) is meant to reinvigorate the shrinking city. On one level, it can create tangible reinvigoration. Hoornbeek and Schwarz put it best by noting "Increasingly, cities also need to identify strategies that are most likely to result in cost savings, efficient service delivery, and improved functioning of urban systems over time."⁸⁶ High per-capita service costs, poor service delivery, and fragmentation are all negative effects found in shrinking cities and their infrastructure as was highlighted earlier in the chapter. Smart decline, as a planning approach, is meant to mitigate these tangible challenges. However, there is perhaps an even more powerful goal that smart decline strives to meet. As the fabrics of shrinking cities have deteriorated over time, for example, these cities have increasingly become characterized by placelessness. Coppola describes this reality as a "dystopian post-urban condition."⁸⁷ What can a policy of smart decline (if applied with care, perspective, and judgement) accomplish then? For Coppola, smart decline actions, when coordinated by diverse voices and perspectives, "can be understood as innovative forms of collective action addressing issues" within the city.⁸⁸ They

⁸⁶ John Hoornbeek and Terry Schwarz, "Sustainable Infrastructure in Shrinking Cities: Options for the Future," 4.

⁸⁷ Alessandro Coppola, "Projects of Becoming in a Right-Sizing Shrinking City," 3.

⁸⁸ *Ibid.*, 14.

can lead to “‘projects of becoming’ . . . that produce relevant and lasting transformation.”⁸⁹ This goal is at the heart of this planning technique. Any smart decline plan, of course, must be cautious in its approach, thorough, and open to broader input and feedback for it would be all too easy to repeat the mistakes of the past. Yet, it is an approach being used to transform shrinking cities across the country. This study adds to this conversation in terms of how it can be applied to infrastructure and to Cleveland’s airport system more specifically.

⁸⁹ Alessandro Coppola, “Projects of Becoming in a Right-Sizing Shrinking City,” 15.

Chapter 2

Cleveland as a Shrinking City-Region: A Data Story

So far, the question of what makes a shrinking city a shrinking city has been answered by a review of the shrinking cities literature. That is, shrinking cities/regions are places that have experienced and may still experience long-term outflows of people, economic activity, and resources. However, why is the Cleveland region part of this discussion as a shrinking city/region? Based on key characteristics of a shrinking city/region, the Cleveland region fits this profile. This brief chapter explains how Cleveland features some of the salient characteristics of shrinking cities. It takes the form of a regional data profile and story that evaluates the Cleveland Metropolitan Statistical Area, the “Cleveland region,” on important statistical indicators. The Cleveland MSA includes the following five counties: Cuyahoga, Lorain, Medina, Geauga, and Lake. This chapter is primarily inspired by and modeled after two studies that evaluated cities and regions based on statistical indicators: The Metro Hartford Progress Points and Mallach and Brachman’s method for evaluating “legacy cities” in their report “Regenerating America’s Legacy Cities.” The former technique is unique for it approaches spatial data from a regional point of view.⁹⁰ The latter technique is applicable to this chapter for Mallach and Brachman outline specific indicators that legacy cities should be using when they evaluate their “strength.”⁹¹ This study will apply a number similar indicators to the Cleveland region in order to measure its vitality, economy, and built environment. What results

⁹⁰ Hartford Foundation for Public Giving, “Metro Hartford Progress Points,” Hartford Foundation for Public Giving (2016) MetroHartford Progress Points (July, 2016), http://www.hfpg.org/files/5314/7032/1039/Metro_Hartford_Progress_Points_report_2016_FINAL.pdf; Alan Mallach and Lavea Brachman, “Regenerating America’s Legacy Cities” (Policy Focus Report), Lincoln Institute of Land Policy (2013): 20-21, <https://ti.org/pdfs/LegacyCities.pdf>.

⁹¹ Alan Mallach and Lavea Brachman, “Regenerating America’s Legacy Cities,” 20-21.

is a stronger understanding of where the Cleveland region fits within the shrinking cities framework. Below is a chart detailing the Cleveland region on the indicators discussed and referenced in this chapter. The chart includes measures for both the Cleveland and Columbus, OH regions (MSA). Adding Columbus into this discussion is useful given that Columbus is close to Cleveland, of a comparable size, and is not considered a shrinking city/region. Each region is measured for the years 2000, 2010, and 2017.

MSA/Year	Population	Percent with Bachelor's Degree or higher	Unemployment Rate	Real Median Household Income	Real Median Home Value	Vacancy Rate
Cleveland 2000	2,148,143	23.9%	5.3%	\$64,433	\$178,454	6.4%
Cleveland 2010	2,077,240	27.7%	11.6%	\$53,238	\$168,935	10.6%
Cleveland 2017	2,058,844	30.8%	6.0%	\$53,771	\$154,073	10.3%
Columbus 2000	1,675,013	27.6%	4.1%	\$67,203	\$178,018	6.6%
Columbus 2010	1,836,536	32.5%	10.2%	\$58,775	\$188,281	8.7%
Columbus 2017	2,078,725	35.9%	4.0%	\$65,321	\$186,752	8.5%

Sources: Census 2000, Census 2010, American Community Survey 2010 1-Year Estimates American Community Survey 2017 1-Year Estimates. All Values in 2018 Inflation Adjusted Dollars

Cleveland is still shrinking in population at both the central city and metropolitan levels.

As a central city, it is no secret that Cleveland has lost a significant portion of its population since historical peak of 914,808 residents in 1950.⁹² However, it continues to lose population. As of the most current projections, the Cleveland central city sits at 385,552

⁹² United States Census Bureau, "T1-Total Population," United States Census (1950), in *SocialExplorer.com*, [https://www.socialexplorer.com/a9676d974c/explore](https://www.socialexplorer.com/a9676d974c/explore;);

residents.⁹³ This is a significant dip from its 2000 population of 478,403. Regionally though, it continues to lose population. In 2000, the population of its MSA stood at 2,148,143. As of the most current projections, the Cleveland region sits at 2,058,844. The Cleveland MSA is one of the few in the country that is still losing population.

Regional economic realities and prospects remain mixed as collections of talent grow but productivity lags.

In using measures similar to those utilized by Mallach and Brachman, the health of Cleveland's regional economy is mixed. Some signs point to stabilization and perhaps fomenting economic growth. Other signs suggest that its economic realities have worsened since 2000 and that the city has struggled to rebound from the Great Recession in ways that nearby growth regions have been able to rebound.

Cleveland, on one hand, does appear to be laying the seeds for future economic growth in terms of its residents' educational attainment. The percent of those with a bachelor's degree or higher in the region has risen significantly since 2000. In 2000, only 23.9% of the population over 25 had a bachelor's degree. Today, that number is estimated to be at 30.8%. Institutions like Cleveland State and Case Western Reserve University dominate as the region's largest universities. The Cleveland region has over 100,000 more college graduates than it did in 2000 despite shrinking in total population, and the region's percent change in college graduates rivals that of the Columbus region, one of the metropolitan regions in the Midwest most typically associated with growth. These numbers suggest that Cleveland is not experiencing some form of

⁹³ United States Census Bureau, "T1-Total Population," American Community Survey 1-Year Estimates (2017), in *SocialExplorer.com*, <https://www.socialexplorer.com/a9676d974c/explore>.

a “brain drain,” and that the region has a growing base of talent on which to grow the regional economy. However, the region has to leverage this potential and keep its talent from leaving.

Other indicators of economic health, however, suggest dimmer regional realities. The quantity of jobs available to residents remains modest in comparison with Columbus. The Cleveland region, for example, since 2000 has typically had a higher unemployment rate than Columbus (5.3% versus 4.1%). However, Cleveland’s unemployment rate has not made it back to those pre-recession numbers while Columbus, a region of growth, has made it back to those levels (6.0% in Cleveland versus 4.0% in Columbus). These unemployment numbers, which do suggest that Columbus is outpacing the Cleveland region in job creation, do not suggest that there is desert of job availability in Cleveland though. What is more concerning, however, is the stunning drop in household income in the Cleveland area in contrast to Columbus. Real median household income was chosen to reflect household purchasing power as all dollar values are inflation adjusted to 2018. In 2000, for example, Cleveland and Columbus were near each other in terms of real household income at the regional scale (\$64,433 versus \$67,203). However, as of the most current projections, real median income in Cleveland has taken a sharp downturn (\$53,771 in Cleveland versus \$65,321 Columbus). The real income in 2010 in Cleveland stood at \$53,238 which suggests that essentially no real wage growth has occurred in the region since the Great Recession. This is especially concerning when taking into account that cities like Columbus rebounded from the recession while Cleveland did not in this way. What is therefore clear is that there is less economic activity flowing within the region today than there was just two decades ago. Today, the Cleveland region has fewer workers, and those workers have significantly less purchasing power than they did in the past.

Regional economic shrinkage has ramifications for the region's built environment.

When there is less income being paid to workers in the regional economy, less income is being spent in the city and region and **on** the city and the region. The tax base within the region most obviously shrinks as a result of this reality given that there is less income to tax. Less money is spent on maintaining the city, and this negatively affects the fabric of the built environment.

Just as real incomes have fallen in the region, so has the demand for the region's housing stock. The real median home value in the Cleveland area in 2000, for example, was \$178,454, a number of the par with that of the Columbus region. However, today it stands at \$154,073. Real home values in Columbus exceed that number by over \$30,000. There is simply less demand for property in the Cleveland region. Less is being spent on property in Cleveland, and the results are disparities in measures between the two regions on indicators like vacancy. In 2000, for example, the vacancy rate in the Cleveland region used to be slightly lower than that of Columbus. Today, however, Cleveland's vacancy rate is worse than that of Columbus (10.34% versus 8.45%). What has essentially happened is that this pattern of shrinkage has continued into the 21st Century. The sum of all economic activities in the region is smaller than in the past, and it is clearly affecting the physical fabric of the urban and regional built environment through themes like residential vacancy.

Conclusion

As a region, Cleveland is either in a state of decline or stagnation. Its population decline continues at a trickle. However, what is most concerning is the region's decline in terms of real income and the ramifications that these declines in income mean for the regional economy. That

is, less is being spent on goods and services like real estate. Therefore, increases in vacancy should not be surprising. Some may argue that these declines are the sole result of the Great Recession and that these declines are only cyclical. However, given that regions like Columbus have made rebounds from the Recession while Cleveland has struggled suggests that the cycle may have actually exacerbated what has been a long-term structural economic pattern in the Cleveland region. Therefore, the challenges within the regional airport system that the next chapter discusses should not be surprising giving these regional realities.

Chapter 3

The Cleveland Regional Airport System as Shrinking Entity: Overview and Current System Challenges

The previous chapter took a data-driven approach in analyzing the Cleveland region as a whole. It clearly established that Cleveland, based on key indicators measuring the region's economic vitality, continues to feel the effects of urban and regional shrinkage into the 21st Century. The Great Recession definitely played a major role in this process as it did in the stagnation of metropolitan regions across the country. For Cleveland though, it **perpetuated and exacerbated** long-term regional economic challenges. Namely, what was most concerning from this analysis was the decline in real income for families across the region. That regional analysis thus frames this chapter. Those regional economic trends have had a real impact on individual economies and infrastructures within the region. Cleveland's regional airport system (and its air travel economy) have not emerged unscathed from these trends. This chapter is an analysis of Cleveland's regional airport system as a **shrinking system**. As a reminder, Cleveland's regional airport system is being defined as Cleveland Hopkins International Airport (CLE) and its reliever Burke Lakefront Airport (BKL) although other smaller airports do play a role in the operation of the system. Just as Cleveland's economy is confronted with the legacy of economic shrinkage, the regional airport system reflects this legacy in its own way through diminished operations of the system itself, precarity in the system's finances, and the challenge of land underutilization. Cleveland's airport system fits the urban shrinkage mold in that, just like the metropolitan region as a whole, it is experiencing decline, instability, and/or underuse that must be taken into account in future planning efforts.

Cleveland's Airports: Hopkins and Burke

Before discussing the specifics of the airport system's challenges, a descriptive overview of the system first needs to be given in order to establish each airport's respective role and function within the regional airport system. While both are airports, they occupy different spaces and roles within the overall system and have to be judged and evaluated accordingly.

Cleveland Hopkins International Airport (CLE) is the Cleveland region's primary airport and its largest airport. Within the regional airport system, it acts as the center of commercial passenger air traffic for the region, and its tenants include the largest airlines in the industry.⁹⁴ Also central to Hopkins purpose is that it serves as the region's hub for cargo air traffic.⁹⁵ Therefore, in terms of the airport's fleet mix (mix of aircraft types), aircraft utilizing the airport typically consist of small to medium "narrow-body" passenger jets (ex. an Embraer 175 on the smaller end and/or a Boeing 737 on the larger end).⁹⁶ As with any airport, Hopkins' most important facilities are its passenger terminal and its airfield. Hopkins passenger terminal consists of four concourses (Concourses A,B, C, and D).⁹⁷ In total, these four concourses house 81 gates.⁹⁸ As for its substantial airfield, the airport, per its 2013 Airport Layout Plan consists of three runways (i.e. three stretches of pavement).⁹⁹ Please note that some aviation industry publications may refer to these three runways as constituting six runways (i.e. each stretch counts

⁹⁴ Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan), March 1999, retrieved from Cleveland Public Administration Library, Cleveland, OH, 1-4.

⁹⁵ Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan), 1-4; Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan Distillation), 2009, 13, <https://www.clevelandairport.com/sites/default/files/CLE-Master-Plan-PP.pdf>.

⁹⁶ Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan Distillation), 20.

⁹⁷ *Ibid.*, 7.

⁹⁸ *Ibid.*, 7.

⁹⁹ Landrum & Brown, *Cleveland Hopkins International Airport Layout Plan* (Airport Layout Plan), December 2013, 4, <https://www.clevelandairport.com/sites/default/files/Airport%20Layout%20Plan.pdf>.

as two runways given that planes can come from both directions). The dimensions for these three stretches are as follows: 9000' x 150', 9956' x 150', and 6018 x 150'.¹⁰⁰ The two longest runways run parallel to each other while the shortest runway runs tangent to the northern endpoints of the longest runways.¹⁰¹ The two longest runways are primarily used for the passenger and cargo jets that use the airport. As for location, Hopkins is located approximately ten miles from downtown Cleveland and is ideally located near the interchange of I-71 (which connects to downtown) and I-480 (which connects to the region's outlying suburbs).¹⁰² In terms of public transportation, Hopkins is connected to downtown Cleveland via the Red Line heavy rail.¹⁰³ These details may seem superfluous now, but they will be highly relevant later in this chapter and in the other chapters.

Burke Lakefront Airport is the primary reliever airport for Hopkins. Within the regional airport system, its role is to capture the diverse mix of smaller air traffic (often classified as general aviation) that Hopkins only services on a limited basis (if at all) including corporate travel, air taxi, leisure aviation, and flight school traffic.¹⁰⁴ The well-known commercial airlines do not fly out of Burke. Also of note is that Burke holds the annual Labor Day Air Show, an event well-known to residents of the Cleveland region.¹⁰⁵ Burke's fleet mix, therefore, is highly diverse as planes of all different types use the airfield including corporate jets, non-jet planes, small single engine propeller planes, and more.¹⁰⁶ As for the airport's terminal, it consists of a

¹⁰⁰ Landrum & Brown, *Cleveland Hopkins International Airport Layout Plan* (Airport Layout Plan), 4

¹⁰¹ *Ibid.*, 3.

¹⁰² Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan), 1-4.

¹⁰³ *Ibid.*, 1-4.

¹⁰⁴ Landrum & Brown, *Burke Lakefront Airport Master Plan Update* (Public Workshop Presentation), August 2007, 9, http://www.airportsites.net/MasterPlans/BKL-MP-Update/pdf-files/BKL%20Public%20Workshop-Open%20House%20Boards%20_v3.pdf.

¹⁰⁵ *Ibid.*, 11.

¹⁰⁶ Landrum & Brown, *Burke Lakefront Airport Master Plan Update* (Stakeholder Meeting Presentation), October 2007, retrieved from Cleveland Public Administration Library, Cleveland, OH.

single terminal building for passengers, office uses, and administrative uses in addition to the International Women's Air and Space Museum.¹⁰⁷ Per the airport's website, it features two runways (or four depending on counting preference) with the respective dimensions: 6003' or 6425' x 150' (different lengths depending on aircraft direction) and 5197' x 100'.¹⁰⁸ These runways run parallel to each other. However, the most intriguing point regarding Burke is its location. It sits directly on the Lake Erie coast on 480 acres of land that borders Downtown Cleveland.¹⁰⁹ These aspects of Burke, especially its lakefront location, will be critical when evaluating the state of the regional airport system. With this understanding of the airport system's basic structure and function, its current state can now be better evaluated.

Airport Air Traffic and Facility Usage: Patterns of Shrinkage

In evaluating the health of the regional airport system, perhaps the most important question to ask is whether or not the system itself is being physically utilized to its fullest potential by residents. Past and present data from the Federal Aviation Administration suggest that shrinkage in airport system usage has occurred to a severe extent regarding air traffic. This sharp decrease in air traffic and airfield usage, a dip that has occurred since just 2000, has resulted in the extreme underuse of its facilities.

There are different measures that can be used to evaluate the quantity of air traffic that is present within a regional airport system. The primary measure used by the FAA and airport planners, though, is an airport's count of operations. An airport's count of operations is a key

¹⁰⁷ Landrum & Brown, *Burke Lakefront Airport Master Plan Update* (Public Workshop Presentation), 11.

¹⁰⁸ Burke Lakefront Airport, "Runway Specifications," Burke Lakefront Airport, <https://www.burkeairport.com/services/runway-specifications>.

¹⁰⁹ William Ondrey Gruber and Joanne Kaufman, "Burke Lakefront Airport: A Report on Its History, Its Current Status and Its Future," *GreenCityBlueLake* (September, 2002), 10, <http://www.gcbl.org/files/resources/burkereport.pdf>.

measure that appears in all of the airport planning documents that were reviewed for this study including the most recent and available master plan documents (no earlier than 1999).¹¹⁰ The term simply refers to each time an aircraft uses an airport's airfield (take-offs and landings).¹¹¹ For both Hopkins and Burke, operations have plummeted since 2000. Per the Federal Aviation Administration's Air Traffic Activity Data System (ATADS), operations at Hopkins in 2000 stood at 334,443 and for 2018 have since fallen to 126,478.¹¹² This constitutes a 62.2% decrease in air traffic in just two decades. At Burke, the situation is equally concerning. In 2000, Burke's operations stood at 100,321, and for 2018 the count stood at 34,497.¹¹³ This decline is equivalent to a 65.6% decrease. Burke's drop-off in air traffic is perhaps even more concerning than the decline at Hopkins considering that Burke had a steeper decline in total operations percentage-wise and **did not** have to contend with a major adverse event like the United de-hubbing of Hopkins in 2014.

In better understanding these declines in airport operations though, looking within the numbers paints a more meaningful portrait of these declines as they tended to occur in the areas most important to each airport. Hopkins, for example, as established earlier, is significant for it handles commercial passenger traffic and cargo for the Cleveland region. Passenger traffic and air cargo are roughly encapsulated by the FAA operations' designations of Air Carrier (passenger and cargo) and Air Taxi (passenger).¹¹⁴ Nearly all of Hopkins' declines in operations have been in these two categories.¹¹⁵ As for Burke, its calling card is that it is the hub for

¹¹⁰ Federal Aviation Administration, "Glossary," *ATADS*, 2014, <https://aspmhelp.faa.gov/index.php/Glossary>.

¹¹¹ Federal Aviation Administration, "Airport Operations," *ATADS*, 2018, <https://aspm.faa.gov/opsnet/sys/Main.asp?force=atads>.

¹¹² *Ibid.*

¹¹³ *Ibid.*

¹¹⁴ Federal Aviation Administration, "Glossary."

¹¹⁵ Federal Aviation Administration, "Airport Operations."

corporate aviation in the region. The FAA does not have a category for corporate aviation operations. However, in the 1999 Burke Master Plan, planners noted that corporate air activity is most closely tied to the category General Aviation-Itinerant.¹¹⁶ An itinerant operation means that a given aircraft either came from outside of the airport's airspace or is leaving it as opposed to an operation that stays within the local airspace.¹¹⁷ From 2000 to 2018, Burke's count of General Aviation-Itinerant operations dropped from 51,474 to 13,695, a decrease of 73.4%.¹¹⁸ This trend most likely aligns with reality that Cleveland's East Ninth business district (the section of downtown nearest Burke) is perhaps the area of Downtown Cleveland that has struggled the most to stay viable in recent years. Therefore, the operations' types that are most closely related to Burke's central purpose have particularly declined.

Yet another way to measure airport activity is through counting passenger traffic. Landrum and Brown, the airport planning consulting firm that is responsible for all of Cleveland's airport master plans, recommends passenger traffic as a useful variable for it helps with planning the terminal section of the airport.¹¹⁹ At Hopkins, just as the number of operations utilizing the airport's runways has declined, so has the quantity of passengers utilizing its facilities decreased. Since 2000, Hopkins passenger volume has decreased from 13,288,059 to 9,642,729.¹²⁰ However, it should be noted that the 2018 figure is an improvement from Hopkins' nadir of 7,609,404 in 2014.¹²¹ Unfortunately, passenger data are not available for Burke given the nature of its operation types. However, what the data at Hopkins show is that

¹¹⁶ Landrum & Brown, *Burke Lakefront Airport Master Plan Update* (Master Plan), September 1999, retrieved from Cleveland Public Administration Library, Cleveland, OH. 1-18.

¹¹⁷ Ibid.

¹¹⁸ Federal Aviation Administration, "Airport Operations."

¹¹⁹ Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan), March 1999, 2-2.

¹²⁰ Cleveland Hopkins International Airport, "Facts & Figures," Cleveland Hopkins International Airport, 2018, <https://www.clevelandairport.com/about-us/facts-figures>.

¹²¹ Ibid.

less people are travelling to and from Cleveland via air. The extent of passenger declines at Hopkins is not quite as drastic as that of its decline in operations though.

While the discussion of the airport's decrease in traffic is concerning given that it establishes a pattern of decline, the discussion so far has not established that these declines also represent a trend of underuse in the infrastructure. What must be recognized when analyzing the airport system's declines in operations and passenger traffic is that these declines, when taken in conjunction with the scale of system's current facilities, point to severe airport underuse. For example, when airport planners attempt to plan an airport so that it operates optimally and efficiently, they measure airport demand (i.e. a given airport's actual count of operations or passengers) against overall **capacity**. There are multiple capacities which airport planners need to measure that include the capacity of an airfield in terms of flight operations, terminal facilities in terms of passengers (i.e. lounges, concessions, etc.), the capacity of ground transportation systems in terms of automobiles, etc. For the sake of simplicity, this analysis will measure demand against the capacity of the airfield. Airfield capacity can be measured in terms of the annual count of operations an airfield can handle. This is a measure which airport planners have established for both Burke and Hopkins. Landrum and Brown, in Hopkins' 1999 master plan, define airfield capacity as the annual number of operations an airport can handle that results in no more than six to twelve minutes of delay for a given flight (annual service volume).¹²² For Hopkins in 1999, Landrum and Brown established the low end of Hopkins' airfield capacity (six minutes delay without demand management practices) to be 323,000 annual operations.¹²³ However, since that study, Hopkins has reconfigured its runways that allow a significantly

¹²² Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan), March 1999, 3-8.

¹²³ *Ibid.*, 3-7.

higher capacity for allowable air traffic. A 2004 *USA Today* article, heralding the airport's new airfield/runway configuration, reported Hopkins' airfield capacity to be 525,000 operations.¹²⁴ The runway configuration from this article is the current runway configuration at Hopkins. What this suggests, therefore, is that Hopkins is operating at around 24.1% capacity of its airfield. Burke is in a nearly identical position. Landrum and Brown, in 1999, estimated Burke's capacity to be 222,000 operations meaning that Burke currently operates at 15.5% capacity.¹²⁵ Therefore, not only has the degree of air traffic in the airport system decreased, it has resulted in the underutilization of the airport system.

This underutilization has had significant ramifications for the usage of the airport systems' land-side facilities. Perhaps the biggest and most obvious effect of this on the system's facilities was the closure of Hopkins' Concourse D. In 2014, United Airlines pulled out of Hopkins which resulted in the closure of the 27 gate concourse.¹²⁶ Gate counts for Concourse D had to be estimated by comparing old planning documents with airport maps as this forgotten concourse has been removed from all current documents. Today, Cleveland collects about \$12 million per year per a lease agreement with United Airlines and will continue to do so for the next 10 years which perhaps acts as an incentive to keep this facility shuttered and forgotten.¹²⁷ As for Burke, its facilities are much less active than they were just two decades ago. Per Burke's 1999 master plan, for example, the airport was the home of four flight schools, two fixed-base

¹²⁴ "New Runway Boosts Capacity at Cleveland Airport," *USA Today*, 5 August 2004, https://usatoday30.usatoday.com/travel/news/2004-08-05-cleveland-airport_x.htm.

¹²⁵ Landrum & Brown, *Burke Lakefront Airport Master Plan Update* (Master Plan), September 1999, 2-9.

¹²⁶ Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan Distillation), 2009, 7; Cleveland Hopkins International Airport, "Airport Terminal Map," Cleveland Hopkins International Airport, <https://www.clevelandairport.com/airport/airport-terminal-map>.

¹²⁷ Andrew Horansky, "As Cleveland Pockets Millions for Closed Concourse D, Travelers Look for Better Options," *WKYC*, 14 November 2016, <https://www.wkyc.com/article/money/business/as-cleveland-pockets-millions-for-closed-concourse-d-travelers-look-for-better-options/351754256>.

operators (abbreviated as FBO, refers to a company that provides aviation-related services like the sale of jet fuel) just to name a sampling of tenants.¹²⁸ Today, according to the airport's website, there are now only three flight schools, one fixed-base operator, and no restaurant.¹²⁹ Therefore, what can be seen is a clear progression from declines in operations to declines in passenger traffic with the culmination being an underuse of airport facilities.

To conclude, Cleveland's regional airport system, in terms of its actual operation, has experienced noticeable functional drops in activity. Even more concerning, perhaps, is the degree to which no party is willing to admit it. Landrum and Brown, the airport planning consulting firm behind the various master plans cited in this study, has only projected sharp increases in traffic at both airports. Back in 1999, for example, Landrum and Brown predicted that at the end of the 2010s, Hopkins would house over 500,000 operations and approximately 14.5 million annual passenger enplanements (29 million annual passengers).¹³⁰ For Burke, Landrum and Brown predicted approximately 134,000 annual operations.¹³¹ Landrum and Brown's 2009 update for Hopkins predicted a similar growth pattern.¹³² Landrum and Brown failed to account for regional economic trends. What was key to their projections were great rises in real per-capita income.¹³³ As the previous chapter showed using median household income, the reverse actually happened. The reality, then, is that the shrinking airport system can be tied to the economic realities of the region. The initial result is the functional decline and

¹²⁸ Landrum & Brown, *Burke Lakefront Airport Master Plan Update* (Master Plan), September 1999, i-3, 2-34.

¹²⁹ Burke Lakefront Airport, "Tenant List," Burke Lakefront Airport, <https://www.burkeairport.com/business-opportunities/tenant-list>.

¹³⁰ Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan), March 1999, 2-7.

¹³¹ Landrum & Brown, *Burke Lakefront Airport Master Plan Update* (Master Plan), September 1999, 1-28.

¹³² Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan Distillation), 2009, 4.

¹³³ Landrum & Brown, *Cleveland Hopkins International Airport Master Plan Update* (Master Plan), March 1999, 2-8.

underuse of the regional airport system. However, underuse of the airport system itself is just one facet of the consequences associated with a shrinking regional airport system.

Precarities in Airport System Finances

The one key issue that results directly from the decline and underuse of the airport system itself is its impact on airport system finances. After all, airports make their money by bringing in more passengers and more flights. Yet, a review of the airport system's most recent financial statements for the year 2016 reveals that it currently faces financial challenges that place it in a state of precarity. This financial precarity is by no means as severe as the drops in actual usage at the airports. However, it is emblematic of airport system shrinkage for it points to the lack of financial sustainability that results when less traffic flows through the airport system. In the short term, the airport system is on solid financial ground, but there is the challenge of long term unsustainability.

At first glance, the financial stability of the airport system is solid. An analysis of the system's most recent financial statements suggests that this is the case. To make a note, the finances of Cleveland's two airports are taken as one in these documents except where the statements discuss individual airport revenues. Overall, the system is on short-term stable ground. For example, the airport system, for the year 2016, did increase its net position in terms of assets and liabilities by approximately \$2.5 million on its balance sheet.¹³⁴ This improvement occurred relative to a nearly \$14 million loss of position the year prior.¹³⁵ In addition, the system paid down a substantial chunk of its outstanding debt, debt that exists mostly in the form of old

¹³⁴ City of Cleveland Department of Port Control, *Report on Audit of Financial Statements for the Year Ended December 31, 2016* (Report), June 2017, retrieved from Cleveland Public Administration Library, Cleveland, OH, 3.

¹³⁵ City of Cleveland Department of Port Control, *Report on Audit of Financial Statements for the Year Ended December 31, 2016* (Report), 11.

outstanding municipal bonds. Much of the debt paid down, however, was repaid through the issuance of new municipal bonds for which repayments are now due at a much later date.¹³⁶ In short, though, the airport system is not in any immediate or impending financial danger.

However, there remain certain questions regarding the system's long-term financial stability and efficiency. Each of these issues and precarities result most closely from the dips in the airport system's functional performance. In other words, a bustling, growing airport system would not have to worry about these financial challenges. They are as follows:

The Eventual End of the United Airlines Lease on Concourse D

In 10 years, United Airlines lease on Concourse D at Hopkins will end. Per the 2016 financial statements, over \$14 million in operating revenues came from concourse rentals titled "other."¹³⁷ These are distinguished from concourse rentals that are for "scheduled airlines."¹³⁸ However, this lease will not exist forever, and it is a source of revenue (approximately 10% of total revenue) that will dry up unless provisions are made. The lease ends in 2029.¹³⁹ As of now, the interest in holding the lease appears to be mutual for both United Airlines and the city as the airline can prevent competition from moving in at the airport while the city can continue collecting this rent per the lease agreement.

¹³⁶ City of Cleveland Department of Port Control, *Report on Audit of Financial Statements for the Year Ended December 31, 2016* (Report), 29.

¹³⁷ *Ibid.*, 19.

¹³⁸ *Ibid.*, 19.

¹³⁹ Andrew Horansky, "As Cleveland Pockets Millions for Closed Concourse D, Travelers Look for Better Options," *WKYC*, 14 November 2016, <https://www.wkyc.com/article/money/business/as-cleveland-pockets-millions-for-closed-concourse-d-travelers-look-for-better-options/351754256>.

Burke's Revenue Gap

As an airport, Burke itself is a drain on the airport system's finances. In terms of revenues and expenses, Burke operated at an approximately \$1 million deficit for 2016.¹⁴⁰ In the grand scheme of the airport's finances, this amounts to a very small sum. However, perhaps the bigger story here is that Burke plays a virtually nonexistent role in the airport in a financial sense despite it being an airport of substantial size. It brought in only \$1.6 million in revenues for the year 2016 against \$2.7 million in expenses.¹⁴¹ Both its revenues and expenses are paltry compared to the vastly larger sums of money being exchanged at Hopkins. However, Burke is still a financial drain on the airport system and does not make any meaningful financial contribution to the overall system.

Confronting A Long-Term Debt Load

Perhaps the biggest financial challenge confronting the airport system is that, despite its shrinkage in operations, is that it has to pay back a shockingly large sum of debt over the next 15-20 years, mostly in the form of municipal bond (airport revenue bond) debt. Hopkins has approximately \$724 million in outstanding long-term debt.¹⁴² In addition, it has a relatively poor debt-service coverage ratio (DSCR) of 1.4 according to Fitch Ratings.¹⁴³ The DSCR refers to the net revenues an airport brings in a given year over its debt service cost for a given year. It is not uncommon for airport systems to have high total debt loads. For example, the New York airport system (JFK, LaGuardia, Newark,

¹⁴⁰ City of Cleveland Department of Port Control, *Report on Audit of Financial Statements for the Year Ended December 31, 2016* (Report), 49.

¹⁴¹ *Ibid.*, 49.

¹⁴² *Ibid.*, 30.

¹⁴³ Fitch Ratings, "Airport Data Map," 2018, <https://www.fitchratings.com/site/infrastructure/airportdatamap>.

and Stewart) has nearly \$23 billion in debt! However, the New York system has a DSCR of 2.1.¹⁴⁴ The New York system's high ratio is the result of the high net revenues the airport system brings due to the high demand for that system. Both systems have steep debt mountains to climb, but the Cleveland system's mountain is much more threatening given that it has to consistently service this. A bustling system with a pattern of sustained system growth would not have to worry about this issue, but a system that has a history of shrinkage in terms of operations and passengers has this challenge hanging over its head.

This high debt load thus sets off a string of other challenges for the airport system. One key challenge of this high debt load is that Hopkins is limited in what it can carry out in terms of infrastructural improvements. Before any other major projects can be carried out at the airport, the airport system would have to pay down a significant portion of this debt.

The other issue that results from this high debt load is that it forces the system to charge a variety of fees in order to keep revenues up. After all, given its high debt load, Hopkins has to bring in net revenues of at least 116% of all of its annual debt service obligations (revenue bond debt and other debt).¹⁴⁵ Part of these revenues come in the form of high landing fees. For example, Hopkins' has very high landing fees that result in one of the country's highest costs per enplanement (CPE).¹⁴⁶ CPE refers to the average cost that an airline has to pay for every enplanement. Large cities like Chicago and New York have comparable CPEs to Cleveland, but these cities, in contrast to Cleveland, experience high

¹⁴⁴ Fitch Ratings, "Airport Data Map."

¹⁴⁵ City of Cleveland Department of Port Control, *Report on Audit of Financial Statements for the Year Ended December 31, 2016* (Report), 30.

¹⁴⁶ Susan Glaser, "Cleveland Hopkins Charges Airlines Among the Highest Fees of U.S. Airports," *Cleveland.com*, 4 February 2018, https://www.cleveland.com/travel/index.ssf/2018/02/cleveland_hopkins_charges_airs.html.

demand for their airports so a high CPE in these cities will not deter airlines to the degree that a high CPE would in Cleveland. Other fees at Hopkins include the new drop-off and pick-up fees that are being levied on ride-share drivers, private drivers, taxis, and shuttles to raise additional revenue.¹⁴⁷ Fees like this result in an additional burden for travelers.

What is essentially happening in these cases is that the system, due to the lack of demand needed to keep revenues up, is looking for these additional ways to bring in revenue.

This financial situation is nearly identical to a shrinking municipality upping its property tax rates in order to bolster its budget.

Land Use Underuse

Finally, Cleveland's airport system suffers from a third malady that is a consequence of its broader pattern of shrinkage. Whereas the underuse of the airports themselves and the system's financial precarities are more directly related to the workings of the airport system itself, the challenge of "land use underuse" is an additional problem that can be derived from the troubles of the shrinking airport system itself. Land use underuse, as taken in this analysis, refers to the failure of the airport system to put the land on which the airports sit (the case of Burke) or the land near the airports (the case of Hopkins) to productive use.

At Hopkins, land use underuse is most pronounced in the failure of the airport system to promote productive land use on the lands immediately surrounding the airport. After all, a significant portion of the land surrounding Hopkins actually lies in a state of brownfield vacancy. To illustrate this, GIS can be used to measure just how much vacant land exists adjacent to the

¹⁴⁷ Susan Glaser, "City Hall Reverses Policy, Will Allow Curbside Drop-Off, Pickup at Cleveland Hopkins Airport by Commercial Vehicles," *Cleveland.com*, 11 February 2019, <https://www.cleveland.com/news/2019/02/city-hall-reverses-policy-will-allow-curbside-drop-off-pickup-at-cleveland-hopkins-airport-by-commercial-vehicles.html>.

airport. The measurement of the vacant land was taken manually, and should not be taken to be as exact as the measurement of a surveyor. However, to be as exact as possible, manual measurements traced the parcel boundaries as they are established by Cuyahoga County.¹⁴⁸ This analysis revealed three concentrations of vacancy adjacent to Hopkins: a portion of the former Riveredge Township (a former community destroyed by airport expansion decades ago), a portion of Cleveland's Riverside neighborhood (also vacated by residents due to past airport expansion) and the land upon which Ford Motor Company's former Cleveland Engine Plant No. 2 used to stand.¹⁴⁹ All land is within a half mile radius of the airport's boundaries. In total, this analysis determined that 315 acres of airport adjacent land lies vacant. This constitutes a significant portion of the developable land surrounding the airport as the airport's entire western and southwestern boundary is already bounded by the Cleveland Metroparks' Emerald Necklace. This degree of vacancy, however, illustrates that the airport cannot currently support land uses surrounding it that are productive.

Where Burke exemplifies land use underuse is the fact that the airport itself represents land use underuse given the alternative productive capabilities that that land features. As it stands today, Burke occupies 480 acres of lakefront land with over three miles of its perimeter directly on water (again measured using GIS). It represents what is perhaps Cleveland's best asset for it holds economic and public use potentialities. As a public good, the land is the best ticket to restoring lakefront access in Downtown Cleveland and in the region. Currently, Downtown Cleveland's only lakefront space for public use is Voinovich Bicentennial Park, a

¹⁴⁸ Cuyahoga County, "Combined Parcels-Cleveland Only" (Dataset), Cuyahoga County Open Data, 2019, <https://data-cuyahoga.opendata.arcgis.com/datasets/combined-parcels-cleveland-only>. ; Cuyahoga County, "Combined Parcels-Non Cleveland Only" (Dataset), Cuyahoga County Open Data, 2019, <https://data-cuyahoga.opendata.arcgis.com/datasets/combined-parcels-non-cleveland-only>.

¹⁴⁹ Ibid.

beautiful park but a relatively isolated park that is only about five acres in size. The rest of the downtown coastline is dominated by the Port of Cleveland, the Cleveland Browns First Energy Stadium, the Rock and Roll Hall of Fame, and the city's science center. While some of these institutions experience a high degree of traffic by the public, namely the Rock Hall and science center (and the stadium eight times per year), very little of this land provides any direct lakefront access.

As an economic commodity though, Burke's 480 acres may just represent the most valuable land in the entire region in terms of its development potential. For example, consider that it meets all of geographer Richard Florida's four criteria for locational advantage: "proximity to the urban core," "proximity to transit," "proximity to major universities and institutions," and "proximity to natural amenities."¹⁵⁰ Burke, for example, borders Downtown Cleveland. It is also positioned at the end point of the Regional Transit Authority's (RTA Waterfront Line). Given that it is in downtown, it is near major institutions like the Rock Hall, Playhouse Square, and more. Finally, it is a short drive from the University Circle and the two hospital giants of the Cleveland Clinic and University Hospitals (this area is often considered Cleveland's other Central Business District). Finally, as is most obvious, it is in close proximity to natural amenities, that being Lake Erie. While it is impossible to get an exact valuation of this land, the value of the lakefront property nearby is telling of just how valuable this property is. In Cleveland's nearby Edgewater neighborhood, a community with a lot of private waterfront access, no single-family unit within three blocks of the lake sells for less than \$360 thousand.¹⁵¹

¹⁵⁰ Richard Florida, *The New Urban Crisis* (Basic Books: New York, 2017), 124.

¹⁵¹ "Cleveland OH Real Estate," *Zillow*, 28 February 2019, https://www.zillow.com/homes/for_sale/Cleveland-OH/pmf,pt/24115_rid/globalrelevanceex_sort/41.494604,-81.740073,41.480989,-81.76314_rect/15_zm/.

And, the most expensive home in the region, currently on the market for \$9.5 million, is within this neighborhood.¹⁵² Burke may very well be the most valuable land in the Cleveland region.

Conclusion

This chapter has traced the shrinkage and decline of the Cleveland regional airport system. Just as the Cleveland region has experienced outflows of people and resources, so has the airport system. The result is an oversized collection of infrastructure that is underutilized and exists in a state of financial precarity. From these challenges, land use underutilization can also be derived as a key feature of the system. This story is not completely one of decline. In recent years, Hopkins has begun to slowly reassert itself as a key regional actor in terms of passenger traffic. However, there is a long way to go towards solving this challenge presented by the shrinking region phenomenon that has occurred/is occurring in Cleveland. It is a challenge that must be taken into account with an eye towards planning for the future of the regional airport system. This is the subject of the next section of this analysis.

¹⁵² Cleveland OH Real Estate," *Zillow*.

Chapter 4

Smart Decline Phase I: Airport System Consolidation, Benefits, and Obstacles

So far, this analysis has focused on the effects of shrinkage that have plagued the Cleveland region and its airport system. Since just the turn of the century, Cleveland continues to experience outflows from the region with these trends clearly manifesting themselves in the airport system. As this analysis has made clear, Cleveland's airport system is underutilized, in a precarious financial position, and perhaps, most of all, presents the region with a steep opportunity cost as to what **could be** for the airport system and its lands. The current configuration of the airport system embodies the shrinking city/region *par excellence*, and a changes have to be made to maximize the system's potential. With this reality in mind, this analysis shifts towards implementing a policy of smart decline within the system. As was established much earlier in this piece, the smart decline process essentially includes three steps: identification of assets/issues, consolidation around key assets, and repurposing/planning for the future. The last chapter focused on identifying the problems in the system. Now it is time to turn to system consolidation. This chapter presents a simple yet transformative smart decline plan for consolidating Cleveland's regional airport that revolves around the decommissioning of Burke Lakefront Airport. This consolidation will mitigate airport system underutilization and financial precarity by strengthening Hopkins as Cleveland's key asset of airport infrastructure. Given that promoting a policy of smart decline in infrastructure is difficult due to the fixity of infrastructure, this chapter also explore the obstacles that could stand in the way of this consolidation.

A Plan for Airport System Consolidation

This plan to consolidate the Cleveland airport system is not exhaustive as it is relatively simple in terms of the actual steps that need to be taken in order to consolidate this airport system. This proposed smart decline plan is as follows:

- 1) Decommission and close Burke Lakefront Airport- Perhaps the most obvious, important, and self-explanatory part of this plan, Burke Lakefront Airport should close. It functions as a redundancy in the regional airport system. The action to close it would set off a chain of subsequent steps in this consolidation process.
- 2) Redistribute existing Burke operations throughout airport system- As established in the last chapter, Burke operates a highly diverse assortment of flight operations and plane types (fleet mix) that range from air taxi to local general aviation. Its closure would mean that these various flight types would have to be absorbed into the regional system. The most logical approach to this would be to redirect each flight type to the airport that would most easily absorb that particular type. In this case, Hopkins should absorb the air taxi and general aviation-itinerant (primarily corporate) flights that utilize Burke. This would amount to approximately 24,790 new flight operations at Hopkins.¹⁵³ Hopkins currently handles 44,524 operations that the FAA classifies as falling under these two categories.¹⁵⁴ As for the remaining general aviation-local flights at Burke, these could easily be absorbed at any of a number of the Cleveland region's small general aviation airports. Cuyahoga County Airport, a general aviation airport located about 15 minutes from downtown Cleveland in the suburb of Richmond, would be an ideal location as it

¹⁵³ Federal Aviation Administration, "Airport Operations," *ATADS*, 2018, <https://aspm.faa.gov/opsnet/sys/Main.asp?force=atads>.

¹⁵⁴ *Ibid.*

too has seen a steep drop-off in flight operations since 2000 (65,177 to 21,180 in total operations).¹⁵⁵ Redistributing Burke's flights would not have to occur exactly in this way, but it would make the most sense given the facilities present at the Cleveland region's airports.

- 3) Retrofit airport facilities, especially at Hopkins, in order to make for a smooth consolidation- Given the influx of flights, especially at Hopkins, there would be a need to prepare existing airport facilities for this transition. Hopkins, for example, has corporate aviation facilities, but these may not be prepared to handle the influx of these types of flights.¹⁵⁶ An interesting solution would be to consider preparing the now vacant Concourse D to serve as this facility (or at least part of the concourse as it is quite large). It may also be that retrofitting Concourse D may not be a difficult task considering that, when it was constructed in 1999, it was built to handle small regional jets and turboprops in the first place.¹⁵⁷

These steps make up the backbone of this consolidation plan for the Cleveland regional airport system. They may seem highly simplified. For readers more familiar with this debate, this plan might have raised certain questions or concerns. Were an official master plan to be constructed for this plan, for example, dozens upon dozens of sub-steps and modifications would fill out these larger steps. However, it is this general plan that would characterize define the consolidation process. The specific challenges and obstacles in implementing are thoroughly discussed later in this chapter.

¹⁵⁵ Federal Aviation Administration, "Airport Operations."

¹⁵⁶ Landrum & Brown, *Cleveland Hopkins International Airport Layout Plan* (Airport Layout Plan), December 2013, 3, <https://www.clevelandairport.com/sites/default/files/Airport%20Layout%20Plan.pdf>.

¹⁵⁷ Leila Atassi, "What Will Become of Concourse D after United Airlines Cuts Regional Flights at Cleveland Hopkins International Airport?," *Cleveland.com*, 4 February 2014, https://www.cleveland.com/cityhall/2014/02/what_will_become_of_concourse.html.

Consolidation Benefits

As a policy, the closure of Burke Lakefront Airport and its consolidation into Hopkins presents a host of benefits that would mitigate the challenges that were present in the old system. A closure of Burke and its reabsorption into Hopkins would provide a jolt of operations into the underutilized airport system at Hopkins, promoting it as a node of density and aviation activity clustering. The airport system's financial issues would begin to gradually disappear as a) the airport system would no longer have to support an unprofitable Burke and b) any proceeds from selling/leasing Burke's land could be re-injected into the airport system to work towards issues like debt service.

At its most theoretical level, the consolidation of Burke airport into Hopkins strikes at the fragmented underutilization of Cleveland's airport system and instead promotes the development of denser clusters of aviation activity at Hopkins. This fragmented underutilization is perhaps the core issue within Cleveland's airport system. Remember, for example, that the Cleveland airport system of Hopkins and Burke currently combines to operate a mere 160,975 annual flight operations across a system currently constructed to adequately handle 747,000 (21% capacity).¹⁵⁸ Moving Burke's air taxi and corporate flights to a place like Hopkins while eliminating Burke from the system would allow Hopkins to operate at roughly 29% capacity in terms of annual service volume (ASV).¹⁵⁹ The fact that this number does not change drastically upon closing Burke further underscores just how underutilized this system really is. However, closing Burke

¹⁵⁸ Landrum & Brown, *Burke Lakefront Airport Master Plan Update* (Master Plan), September 1999, 2-9.; "New Runway Boosts Capacity at Cleveland Airport," *USA Today*, 5 August 2004, https://usatoday30.usatoday.com/travel/news/2004-08-05-cleveland-airport_x.htm; Federal Aviation Administration, "Airport Operations," *ATADS*, 2018, <https://aspm.faa.gov/opsnet/sys/Main.asp?force=atads>.

¹⁵⁹ "New Runway Boosts Capacity at Cleveland Airport," *USA Today*.

eliminates fragmentation and promotes density. Within this increased density, however, then comes the creation of economic clusters. Mallach and Brachman, in *Regenerating America's Legacy Cities*, argue that building on “existing activity clusters” is a useful way to promote economic growth in cities within particular industries.¹⁶⁰ He uses Detroit’s Eastern Market as an example of a dense cluster of food businesses that promote that industry in Detroit. In the case of Cleveland’s airport system, consolidation would work towards building a cluster of corporate/business travelers at Hopkins given that corporate flights would increase from roughly 8,302 to 21,997 if using the FAA’s general aviation-itinerant category.¹⁶¹ This is an estimate, and it assumes that all corporate travelers would shift to Hopkins. However, the benefit of this, albeit not perfectly measurable, is clear. That is, Hopkins would densify and would begin to develop potentially valuable clusters like that of corporate/business travelers.

An increase in density and clustering at Hopkins, though, begs the question as to why clustering and densification matter. Clustering at an airport such as Hopkins is one of the key steps needed to turn Hopkins into a stronger regional economic engine. Airports, according to planner John Kasarda, have the potential to be the key economic engines of cities, so much so that they can form what he calls “aerotropolis.”¹⁶² An aerotropolis is an “urban form” in which economic activity ranging from light industry, office space, entertainment, and variety of mixed-uses pop up around an airport.¹⁶³ The idea essentially compares an airport to a central business district in which the city develops around the airport.¹⁶⁴ About ten years ago, planners explored

¹⁶⁰ Alan Mallach and Lavea Brachman, “Regenerating America’s Legacy Cities” (Policy Focus Report), Lincoln Institute of Land Policy (2013): 31, <https://ti.org/pdfs/LegacyCities.pdf>.

¹⁶¹ Federal Aviation Administration, “Airport Operations.”

¹⁶² John D. Kasarda and Greg Lindsay, *Aerotropolis: The Way We’ll Live Next* (Farrar, Strauss, and Giroux: New York, 2011), 5.

¹⁶³ John D. Kasarda and Greg Lindsay, *Aerotropolis: The Way We’ll Live Next*, 5.

¹⁶⁴ *Ibid.*, 5-6.

Hopkins' potential to support an aerotropolis. The planners made a series of recommendations, for both the short term and long term in order to bring a Cleveland aerotropolis to fruition that included “clustering business activity,” “increasing the number of domestic and international flights,” and “working to create a more business friendly resource center at the airport.”¹⁶⁵

Bringing over a modest quantity of travelers and their resources from Burke is not going to bring an aerotropolis to Hopkins overnight. However, what is clear is that the densification and clustering of economic resources, when it comes to airports, can beget greater densification and clustering. Decommissioning Burke and transferring its operations to Hopkins would work at fulfilling the requirements (more travelers, more flights, and the clustering of talent and resources) for creating an airport zone that can act as a stronger economic engine for the region.

At the more measurable level though, this consolidation mitigates the financial cost of operating an unneeded reliever airport in terms of actual costs and opportunity costs. In going back to the airport balance sheet, for example, there would no longer be a nearly \$1.1 million deficit at Burke to cover each year.¹⁶⁶ Economies of scale would likely occur at Hopkins as economies of scale, according to urban economists, tend to manifest themselves in transportation systems (i.e. the increased efficiency of operating one airport as opposed to two).¹⁶⁷ However, a further analysis of the exact changes in revenues and costs would have to be undertaken in order to establish the extent of these economies of scale by operating only Hopkins. However, what is perhaps most enticing about a consolidation plan is the degree to which consolidation could

¹⁶⁵ Claudette Robey, Daila Shimek, James Wyles, Brian A. Mikelbank, Jim Robey, Kevin O’Brien, et al, “Assessing the Feasibility of an Aerotropolis around Cleveland Hopkins International Airport, Executive Report,” *Urban Publications* at Cleveland State University (January, 2010): 14-15. https://engagedscholarship.csuohio.edu/urban_facpub/411/.

¹⁶⁶ City of Cleveland Department of Port Control, *Report on Audit of Financial Statements for the Year Ended December 31, 2016* (Report), 49.

¹⁶⁷ Arthur O’Sullivan, *Urban Economics* (Irwin/McGraw-Hill: New York, 1996), 604.

bring more money into the airport system through disposal of the Burke property. When Cincinnati, for example, decided to sell 130 acres of the now defunct Blue Ash Airport to the suburban municipality of Blue Ash, it hauled in \$37.5 million.¹⁶⁸ The potential windfall from a disposal of the Burke property could be much greater than this. After all, Burke constitutes approximately 480 acres of land and occupies a very desirable location as was established earlier in this analysis. Whether this disposal be in the form of a sale or a lease, the proceeds could be great, and they could be reinvested into Hopkins. Any added investment at Hopkins would be welcome given its high debt load. At a time when other airports in the region are forging ahead, like Pittsburgh International Airport as evidenced by its unveiling of a brand new \$1 billion terminal, the proceeds from the disposal of Burke (from a sale, lease, and/or tax revenue from economic development) could be critical in paying down airport system debts and looking ahead to new projects.¹⁶⁹ Therefore, consolidation would not only make an immediate impact on the airport system's balance sheet, it has the potential to haul in a brand new source of revenue.

Obstacles to Airport System Consolidation

What distinguishes this smart decline project is that, as a project dealing with urban and regional infrastructure, there are a host of potential obstacles that could prevent such an ambitious project from taking hold. After all, infrastructure tends to be highly fixed in terms of its existence and function. Therefore, this project, which deals with the consolidation of an airport system, has to take into account the obstacles which make an airport system so “fixed” in the first place. None of these obstacles are insurmountable. The right combination of expertise

¹⁶⁸ “Plans to Sell Blue Ash Airport Raises Serious Questions,” *WLWT*, 10 August 2012, <https://www.wlwt.com/article/plans-to-sell-blue-ash-airport-raises-serious-questions-1/3524339>.

¹⁶⁹ Steven Litt, “Ambitious Pittsburgh Airport Plan Offers Lessons for Cleveland Hopkins,” 8 March 2019, <https://expo.cleveland.com/news/g66l-2019/02/94ca4b8b739940/ambitious-pittsburgh-airport-plan-offers-lessons-for-cleveland-hopkins-steven-litt.html>.

and political willpower would be sufficient to overcome these obstacles (i.e. transportation planners, land-use attorneys, etc.). However, these challenges represent the core of what would make this airport system consolidation concept difficult and hence emblematic of the fixity challenge of right-sizing infrastructure.

Technical Feasibility

Perhaps the most obvious challenge to consolidating the airport system would be the difficulty in actually carrying out the project from an operational perspective. The central questions being asked here is: Can Burke simply close and be seamlessly absorbed by the rest of the airport system, namely Hopkins? In 2007, Landrum and Brown, in its master plan update, highlighted the two major logistical challenges facing a potential closure of Burke. First, the planners concluded “Closure of BKL would have a significant and adverse impact to capacity at CLE.”¹⁷⁰ Secondly, they noted “Closure of BKL, would accelerate the need for a new \$1 billion runway, planning would need to begin immediately.”¹⁷¹ Therefore, the two major logistical challenges center around Hopkins’ capacity and the ability of its airfield to handle increased traffic.

Regarding the issue of Burke’s closure being a threat to Hopkins’ capacity as raised by Landrum & Brown, this is not a relevant logistical concern given where the airport system is at this point in time. Without rehashing the capacity bump that would occur at Hopkins due to a Burke closure, the change is so minimal (24.5% to 29% of annual service volume at Hopkins) that it makes the closure of Burke seem like far less of a bold idea. Even when taking into

¹⁷⁰ Landrum & Brown, *Burke Lakefront Airport Master Plan Update* (Stakeholder Meeting Presentation), October 2007, retrieved from Cleveland Public Administration Library, Cleveland, OH.

¹⁷¹ *Ibid.*

account the fact that flights of a specific type (air taxi and general aviation-itinerant) would see significant bumps at Hopkins (raising the specter of capacity issues for certain flight types), these concerns are greatly mitigated upon realizing that Hopkins operated more general aviation-itinerant and air taxi in 2000 than that which would operate at Hopkins after a potential Burke closure.¹⁷² Perhaps a capacity strain would have been a greater concern to planners in 2007 as a closure of Burke would have bumped Hopkins operating capacity up to 51% at that time.¹⁷³ In addition, Landrum & Brown has tended to make growth-oriented projections so it is possible to see why the firm worries about a capacity strain as a potential challenge in closing Burke. However, when taking into account the state of today's airport system, a capacity strain, while a concern that is important to discuss for airports more generally, is a minimal logistical obstacle if it is one at all for the Cleveland system.

From an operational point of view, perhaps the more salient obstacle noted by Landrum & Brown is the issue of Hopkins runway system (airfield). Can Hopkins' runways physically handle any increased traffic resulting from the potential closure of Burke without having to be replaced? While an important consideration, there is no reason to believe that Hopkins' runways are physically incapable of such a move. First, despite the type of air traffic at Burke being different than the traffic at Hopkins (general aviation as opposed to air carrier), the airfield should be considered to be compatible. For example, general aviation operations, according to industry publications, can operate from the largest of primary airports to the smallest of general aviation airports.¹⁷⁴ Airports in other American cities that are comparable in size to Hopkins

¹⁷² Federal Aviation Administration, "Airport Operations."

¹⁷³ Ibid.

¹⁷⁴ *General Aviation: Status of the Industry, Related Infrastructure, and Safety Issue* (Report), United States General Accounting Office, in *Air Transport World* (August, 2001): 3.

operate already operate general aviation flights. As noted previously, Signature Flight Support is the fixed-base operator that is located at Burke that provides service for private planes. Yet, it should be noted that Signature also provides its services out of airports comparable to Hopkins in size including Chicago Midway International, Baltimore Washington International, and Indianapolis International.¹⁷⁵ Put this way, the argument that the airfield of a large airport cannot handle the general aviation operations of a small airport is incorrect. There would be no reason to construct a brand new runway. Of course, increased air traffic would result in a minimal increase in the rate of wear and tear on Hopkins airfield. Wear and tear, though, simply comes with the territory of having more flight operations. If Hopkins were to see bumps in its own flights independent of Burke, the need for more regular runway maintenance would also increase. Yet, no individual would argue for Hopkins to limit how many flights it operates. In addition, having to maintain one airfield on a slightly more regular basis is a far better alternative than having to maintain two whole airfields.

Laws and Regulations That Complicate Consolidation

Perhaps the most poignant challenge to any challenge to close Burke comes in the form of the legal issues which could pose a threat to any potential consolidation plan. Having discussed these issues with a former experienced airport manager, any potential closure of Burke would run into legal challenges at both the governmental level (federal and state) in addition to potential legal challenges from private stakeholders.

At the governmental level, any closure of Burke (and subsequent consolidation) has its ultimate fate at the hands of the Federal Aviation Administration (FAA). The FAA has very

¹⁷⁵ "Locations," Signature Flight Support, accessed April 14, 2019, <https://www.signatureflight.com/locations?region=us>.

clear guidelines as to when an airport can close permanently. The following is excerpted from an FAA letter to the airport manager of South Lake Tahoe Airport, another airport considering closure, the FAA lays out these six clear guidelines as excerpted from that letter:¹⁷⁶

- 1) The reasonableness and practicality of the sponsor's request.
- 2) The effect of the request on needed aeronautical facilities.
- 3) The net benefit to civil aviation.
- 4) The compatibility of the proposal with the needs of civil aviation.
- 5) The existing airport must be in a safe and operable condition, and not in disrepair.

Other FAA considerations include airport system capacity, operations forecasts, the state's interest (Ohio Department of Transportation), as well as the "interests of aeronautical users and service providers."¹⁷⁷ In the previous chapter, this study laid out the issues that exist within the current regional aviation system. The beginning of this chapter also outlined the potential benefits of airport system consolidation. While the arguments and reasons provided in this study are compelling, all arguments would have to meet the strict guidelines of the FAA.

And, if the FAA does decide that any airport closure plan does meet these guidelines, Burke has received grant funding from the FAA, which according to the FAA letter and my discussions with a former airport manager, would complicate a consolidation process.¹⁷⁸ As stated in the FAA letter, "the FAA may require the sponsor, as a condition of the release, to reimburse the federal government or reinvest in an approved AIP eligible project."¹⁷⁹ Therefore,

¹⁷⁶ "Information on Airport Closure South Lake Tahoe Airport," (Letter), *Federal Aviation Administration*, 14 April 2014, <http://www.cityofslt.us/DocumentCenter/View/4305/Final-Handouts---Public-Meeting-052914?bidId=>, 1.

¹⁷⁷ *Ibid.*

¹⁷⁸ Informant #3, interviewed by Garret Forst, March 2019; "Information on Airport Closure South Lake Tahoe Airport," *Federal Aviation Administration*, 2.

¹⁷⁹ "Information on Airport Closure South Lake Tahoe Airport," *Federal Aviation Administration*, 2.

the FAA's share of any proceeds coming from the disposal of the Burke land would have to be either be given back to the FAA or placed into "another operating publicly-owned airport" in the region.¹⁸⁰ According to the FAA's most updated grant assurances regulations, the useful life of a grant cannot "exceed twenty (20) years from the date of acceptance of a grant offer of Federal funds for the project."¹⁸¹ In Burke's case, the total amount of grant funding issued in the last 20 years (1999-2019) amounts to about \$19.7 million per FAA records.¹⁸² And, this is just the FAA. The Ohio Department of Transportation (ODOT) has also issued grants to Burke for which the last recorded grant is 2019.¹⁸³ Therefore, any potential closure will have to confront the specifics of each issued grant with the ultimate goal being to repay federal and state shares through reinvestment into airports like Hopkins.

In addition to the governmental regulations complicating Burke's closure are the leases present at both Hopkins and Burke that keep both airports fixed in their current configurations. Gruber and Kaufman's 2002 reported on leases being a unique characteristic of Burke that cannot be forgotten when planning the airport's future.¹⁸⁴ I requested Burke's current set of leases, and there are a total of 13 at the airport, amounting to an annual amount of about \$425,000.¹⁸⁵ The last lease will expire in 2043.¹⁸⁶ Per my discussion with this airport manager,

¹⁸⁰ Information on Airport Closure South Lake Tahoe Airport;" Federal Aviation Administration, 3.

¹⁸¹ "Assurances," Federal Aviation Administration, March 2014,

https://www.faa.gov/airports/aip/grant_assurances/media/airport-sponsor-assurances-aip.pdf, 1.

¹⁸² "Grant History Look Up," Federal Aviation Administration, 14 April 2019,

https://www.faa.gov/airports/aip/grant_histories/lookup/.

¹⁸³ "Ohio Airport Grant Program," Ohio Department of Transportation, 14 April 2019,

<http://www.dot.state.oh.us/Divisions/Operations/Aviation/Pages/Airports.aspx>.

¹⁸⁴ William Ondrey Gruber and Joanne Kaufman, "Burke Lakefront Airport: A Report on Its History, Its Current Status and Its Future," *GreenCityBlueLake* (September, 2002), 19,

<http://www.gcbl.org/files/resources/burkereport.pdf>.

¹⁸⁵ "BKL Leases," City of Cleveland Division of Port Control, March 2019, retrieved from Cleveland Public Records Center.

¹⁸⁶ *Ibid.*

one of two options exists when dealing with these leases. First, the Department of Port Control could simply let these leases expire.¹⁸⁷ The other scenario would be for a set of agreements that would compensate and move tenants prior to the leases' expirations.¹⁸⁸ These agreements would likely differ from lease to lease. Regarding this scenario, the airport manager cautioned against it given that a negotiating process could be messy and expensive.¹⁸⁹ Finally, on the Hopkins' side, there are also leases fixed in place which could present a challenge there. United has leases on both Concourses C and D until 2029.¹⁹⁰ Why does this matter? It could prevent Burke's operations from moving to Hopkins. For example, the United lease would make re-opening Concourse D a challenge. Again, this lease would either have to expire or an agreement would have to be made.

Therefore, these legal obstacles are perhaps the most complicating factor in any airport system consolidation process. More than any other obstacle, they illustrate just how fixed in place these systems of infrastructure are in reality. A piece of infrastructure, unlike a house, has the potential to have multiple long-term leases attached to it and a host of regulations impacting its fate. It is this fixity that leads to the level of path-dependency that maintains the current structure of the airport system. However, it should be emphasized that the consolidation plan being proposed here is a long-term plan itself which allows time for these moving parts to get sorted out.

¹⁸⁷ Informant #3, interviewed by Garret Forst.

¹⁸⁸ Ibid.

¹⁸⁹ Ibid.

¹⁹⁰ Andrew Horansky, "As Cleveland Pockets Millions for Closed Concourse D, Travelers Look for Better Options, WKYC, 14 November 2016, <https://www.wkyc.com/article/money/business/as-cleveland-pockets-millions-for-closed-concourse-d-travelers-look-for-better-options/351754256>.

Political Interests

A less technical obstacle standing in the way of a Burke closure are the political interests that maintain Burke Lakefront Airport. Namely, given Burke's perception as an economically essential corporate airport, there are interest groups and political leaders that have a stake in keeping the airport open. This idea of Burke as a necessary corporate airport was identified in the early 2000s by Cleveland State graduate students in a capstone project and in my own interview with former Cleveland City Councilman and mayoral candidate Zack Reed.¹⁹¹ Reed described the airport as an "airport for the rich."¹⁹² The current mayoral administration of Frank Jackson seems to maintain this perception of Burke. A Jackson spokeswoman in 2014, as quoted by *Cleveland.com* columnist Alison Grant, stated, "Burke is an integral part of the Cleveland airport system. It adds value to overall air service delivery in Cleveland."¹⁹³ While political interests, namely those of the current administration, may appear to be in support of keeping Burke open, the political attitude towards it may be changing. In early 2019, Ed Rybka, the Chief of Regional Development for Jackson, was on the record for advocating the need to look at what Burke could be in "10 years, 15 or 20 years" through an updated master plan.¹⁹⁴ This is by no means a call to close Burke, but it could point to a shift in the attitude of an administration that has largely supported Burke continuing as an airport.

¹⁹¹ Patrick Christie-Mizell, James DeRosa, Jessica Dunn, Michael Graham, John Story, "Burke Lakefront: Taking It to New Heights" (Capstone Final Project), *Cleveland State University* (May, 2003), 6; Zack Reed, interviewed by Garret Forst, March 2019.

¹⁹² Zack Reed, interviewed by Garret Forst.

¹⁹³ Allison Grant, "Burke Lakefront Airport : Should It Close?," 21 March 2014, https://www.cleveland.com/metro/2014/03/burke_lakefront_seen_through_n.html.

¹⁹⁴ Jay Miller, « Opening New Fronts on Cleveland Lakefront Development, » 24 February 2019, <https://www.crainscleveland.com/government/opening-new-fronts-cleveland-lakefront-development>.

Conclusion

This chapter presented a plan for consolidating the Cleveland airport system by providing an actual set of policy actions while outlining the benefits of those actions. Namely, the consolidation phase of this project would help mitigate operational and financial challenges within the system. However, this phase is not without obstacles to overcome. Certain obstacles, a host of logistical, legal, and political factors, cause the airport system to continue along a path-dependent trajectory. These factors, while not lethal to a consolidation plan, do complicate it.

Chapter 5

Smart Decline Phase II: Repurposing Burke for the Future

Were Burke Lakefront Airport to close and be consolidated into the rest of the airport system, this 480-acre tract of land would have no use. In completing a plan for smart decline, Burke must have a future. Given that it is located on the city's lakefront and centrally located in the region, the land has great potential. Using Coppola's framework, Burke has the potential to "become" something through placemaking.¹⁹⁵ This chapter lays the groundwork for planning the future at Burke. It highlights how other cities in America have transitioned their airports towards other uses. These examples can serve as inspiration for Burke. With these examples in hand, this chapter then highlights what uses could be inaugurated at the Burke site with an emphasis on Burke as a green space and a mixed-use community. Finally, as with the last chapter, certain obstacles could complicate this redevelopment scheme. These need to be explored in order to create the highest quality public space at Burke.

From the Airport to the Urban: Examples of Land Use Transformation in the United States

In considering the potential for alternative land uses at Burke, it should be noted that this is not the first time an airport has transitioned from being an airport into an urban space. Two examples stand out: Meigs Field Airport in Chicago and Stapleton Airport in Denver. The former is an example of airport that transformed from an airport into a lakefront park. The latter is an example of an airport that is deep in the process of becoming a mixed-use community.

¹⁹⁵ Alessandro Coppola, "Projects of Becoming in a Right-Sizing Shrinking City," *Urban Geography*, January (2018): 4, Taylor & Francis Online, <https://www.tandfonline.com/doi/full/10.1080/02723638.2017.1421391?scroll=top&needAccess=true>.

To begin, Meigs Field illustrates the example of an airport being transformed from an airport into a natural public space. Meigs Field, as an airport, was very similar to Burke. It was a general aviation airport that sat just south of the Loop in Chicago. In 2002, the year before it closed, it serviced 32,050 operations.¹⁹⁶ Whereas Burke is located close to some of Cleveland's largest institutions like FirstEnergy Stadium (home of the Cleveland Browns), the Great Lakes Science Center, and the Rock and Roll Hall of Fame, Meigs Field sat near Soldier Field (home of the Chicago Bears), the Adler Planetarium, and the Shed Aquarium. On the night of March 30, 2003, Mayor Richard M. Daley, in the manner typically associated with Daley politics, shuttered the airport by gashing "X's" in the airport's runway with bulldozers.¹⁹⁷ After years of battling with the FAA, Chicago successfully created Northerly Island Park, a park accessible to the general public.¹⁹⁸ The park today includes the Huntington Bank Pavilion for concerts and shows, the 12th St. Beach, and winding trails through the area that used to be the airport.¹⁹⁹ Meigs Field is the prime example of how an airport can be turned into community green space.

Stapleton Airport, on the other hand, was Denver's primary international airport that served that region until 1995. However, Denver decided to close Stapleton and move all operations to the new, larger Denver International Airport. Instead of operating two airports, Denver closed Stapleton. Given that a very large swath of Denver now sat empty, developers have since turned it into a large mixed-use community. As of today, it is a community of 12

¹⁹⁶ Federal Aviation Administration, "Airport Operations," *ATADS*, 2018,

<https://aspm.faa.gov/opsnet/sys/Main.asp?force=atads>.

¹⁹⁷ Mark Johnson, "The End of An Era for Chicago's' Meigs," *Planning* 71:5 (May, 2005): 30,

https://search.proquest.com/docview/206697225?accountid=14405&rfr_id=info%3Axri%2Fsid%3Aprimo.

¹⁹⁸ Blair Kamin, "Northerly Island Park: Beguiling Lakefront Landscape Justifies Daley Raid," *The Chicago Tribune*, 2 September 2015, <http://www.chicagotribune.com/news/columnists/ct-northerly-island-park-kamin-column-20150901-column.html>.

¹⁹⁹ "Northerly Island Park," Chicago Park District, accessed April 14, 2019,

<https://www.chicagoparkdistrict.com/parks-facilities/northerly-island-park>.

neighborhoods.²⁰⁰ It is a mixed-used, mixed-income area that has neighborhoods complete with schools, parks, and public transit.²⁰¹ Approximately 29,000 residents live at Stapleton, and over 170 stores and restaurants call Stapleton home.²⁰² The community features 1116 acres of parkland.²⁰³ Stapleton is much larger than Burke. The Stapleton community sits on 4700 acres in total.²⁰⁴ However, it represents an airport that was transformed into a new mixed-use community complete with nearly every urban amenity available. In this way, it can serve as a guide for Burke.

Both examples highlight what could potentially happen on the land at a decommissioned Burke Lakefront Airport. Burke is large enough to house significant public spaces, and these past airport redevelopment projects show that the possibilities for Burke are wide-ranging and extensive.

Pursuing Redevelopment Strategies: Potential Parks and Neighborhoods at Burke

With these two examples in mind, this study turns to envisioning the future at Burke itself. To envision what Burke could look like, I first conducted a collection of interviews with Cleveland residents. Both green space and mixed-use community stood out as being forefront in residents' minds.

For the Cleveland residents with whom I discussed Burke, some form of lakefront park access, similar to what exists Meigs Field, stood out to residents. All interviewees expressed interest in building a park at Burke and felt that downtown Cleveland did not have enough

²⁰⁰ "From Airport to 12 Neighborhoods," Forest City (2018), <https://www.stapletondenver.com/>.

²⁰¹ "From Airport to 12 Neighborhoods," Forest City.

²⁰² "The Big Picture-Stapleton by the Numbers," Forest City (2019), 1-2, <https://www.stapletondenver.com/wp-content/uploads/TheBigPicture2.pdf>.

²⁰³ *Ibid.*, 1.

²⁰⁴ *Ibid.*

lakefront access.²⁰⁵ When discussing the shape of what a park at Burke could look like, the nearby Edgewater Park came up as a point of comparison.²⁰⁶ Edgewater Park is located a few miles to the west of Downtown. It was recently revamped with a beach house and has become somewhat iconic for Clevelanders in recent years. It is something of a social media hotspot as it is the location of a “Cleveland script sign,” a three dimensional sign of the word that is very popular as a location for profile picture shots. Other residents, on the other hand, envisioned perhaps more modest scaled-down parks like those that could fit within a mixed-use community.²⁰⁷ In sum, Burke as a park highly appealed to this handful of Clevelanders.

Regarding the potential of having a mixed-use community, this was also a highly popular idea for Burke. One respondent, in particular, gave an extremely rich account as to what to include in a mixed-use community. This individual envisioned the following: homes, apartments, condominiums/townhouses, affordable housing, living for senior citizens, a recreation center, a community center, outdoor recreational facilities like basketball courts and tennis courts, a little quaint park, a dog park, a park for children, living for seniors, supermarkets (even mentioning affordable ones like Aldi), small (not big-box) retail, gas stations, sufficient parking, and more!²⁰⁸ Simply put, this resident was attempting to envision a full-scale neighborhood and all of the amenities that would need to be a part of a community of this kind. Other informants also envisioned a mixed-use community but emphasized more singular uses. For example, one resident envisioned something similar to Beachwood’s Legacy Village.²⁰⁹ Legacy Village, located in suburban Beachwood, OH, is akin to what city planners call a

²⁰⁵ Informant #1, interviewed by Garret Forst, April 2019; Informant #2, interviewed by Garret Forst, April 2019, Zack Reed, interviewed by Garret Forst, March 2019.

²⁰⁶ Informant #2, interviewed by Garret Forst.

²⁰⁷ Informant #1, interviewed by Garret Forst.

²⁰⁸ Ibid.

²⁰⁹ Informant #2, interviewed by Garret Forst.

“lifestyle center.” Legacy centers are mixed-use communities built in the new urbanist tradition. They incorporate themes of urbanism like walkability and density, but they are primarily retail-focused developments. Overall though, residents’ vision and preference for a mixed-use community was generally very strong.

With these preferences in mind, it is worth discussing the benefits that turning Burke into a community park (a la Meigs Field) or a mixed-use community (a la Stapleton) would have for the city and region.

If Burke were to become a park, Downtown Cleveland would move much closer towards having multiple, interconnected public green spaces, a goal that city leaders have been pursuing in earnest. Investment in Cleveland’s green spaces has been a priority in the past decade or so as Cleveland’s Public Square, the Flats East Bank on the Cuyahoga, and the Cleveland Mall (originally part of the Daniel Burnham’s Group Plan of 1903) have all been developed and/or renovated since 2010. Other green space projects in Downtown are in the works as well. With the goal of increasing access to the Cuyahoga River and expanding the presence of the Flats, for example, the organization Canalway Partners has plans to construct the Canal Basin Park, a proposed 20-acre park that will sit adjacent to the current Flats East Bank development.²¹⁰ The Canal Basin Park will serve as the “hub” connecting Downtown Cleveland with the 101-mile long Towpath Trail (a popular trail that runs south through the Cuyahoga River Valley).²¹¹ Finally, another fascinating project of greenspace is in the works for Downtown Cleveland. Known as the “Land Bridge,” this proposed bridge is a 5.5 acre park that would connect the

²¹⁰ “Canal Basin Park,” (Framework Plan), Canalway Partners, November 2015, 6, <http://canalwaypartners.com/towpath-trail/canal-basin-park/>.

²¹¹ *Ibid.*, 10.

Cleveland Mall with the major public institutions that sit on the city's lakefront.²¹² The Lake Erie coast of Cleveland's downtown (the area that includes Burke), is currently choked off from the rest of downtown by train tracks and the Shoreway expressway. The Land Bridge will cover both the train tracks and the Shoreway, allowing Clevelanders and tourists to freely pass from Downtown to the lakefront and vice versa.²¹³ Planning is in the very early stages for this project. A Burke park redevelopment comes in for it can serve as the final link in a potentially very impressive system of green spaces. After all, riverfront green space is increasing with new developments in the Flats off of the Cuyahoga River, and green space in downtown proper is ample with the renovations of the Cleveland Mall and Public Square. Burke has the potential to be that green space that opens up the lakefront. The map below illustrates all of Cleveland's green spaces, both existing and potential. It illustrates how Burke as a green space would fit within the larger system of green spaces in Downtown Cleveland.

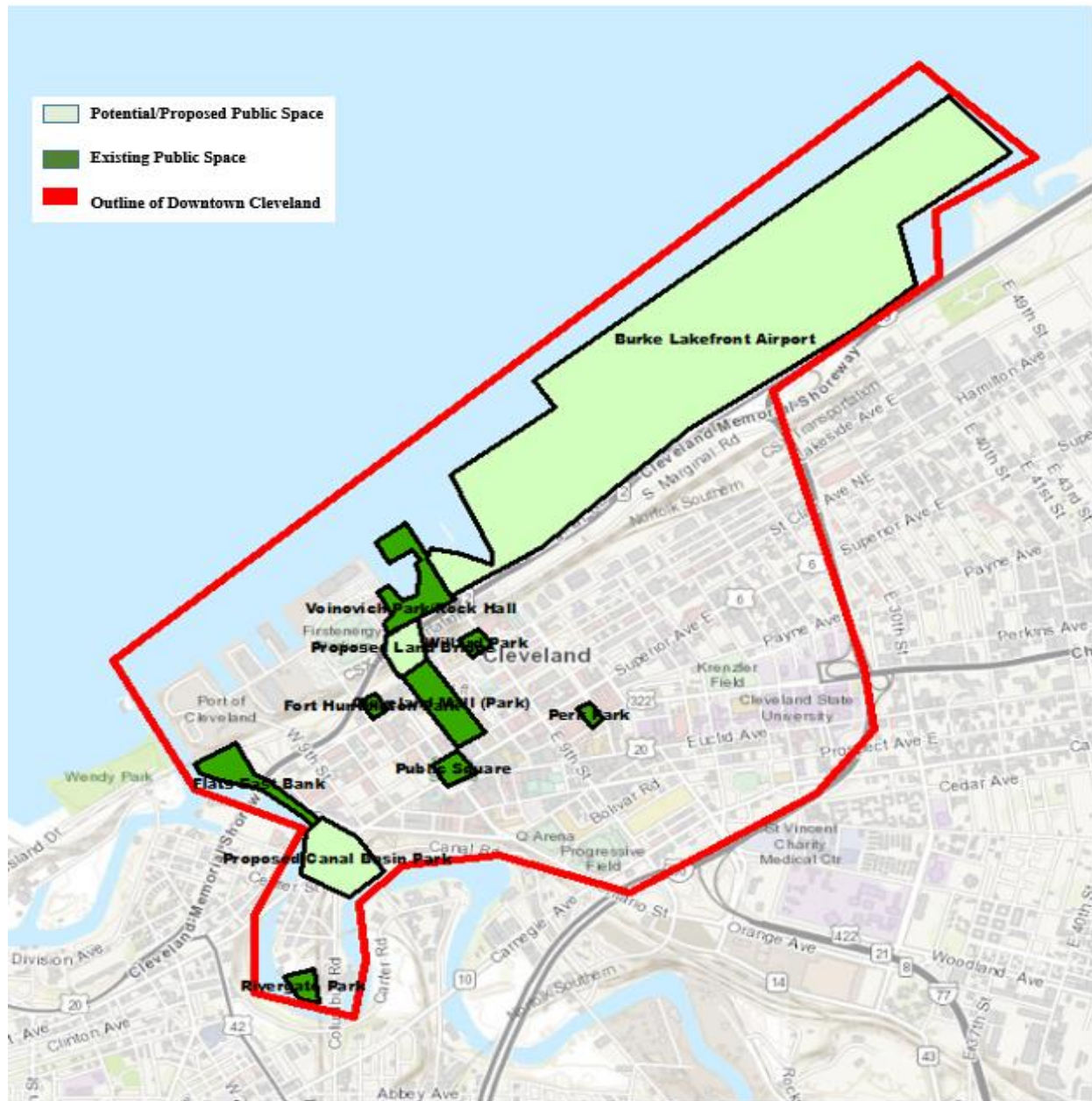
If Burke were turned into a mixed-use community, the benefits would include those outlined in the paragraph above in addition to others. A mixed-use community, in addition though, would reap in a substantial economic benefit for Cleveland. To estimate this benefit, I adapted some of the work from a 2003 Capstone project on Burke that actually explored these benefits in terms of the tax revenues that a redeveloped Burke could have for Cleveland. Per the capstone's demand study for that land, the authors estimated that demand exists for Burke to hold over 5,000 housing units of a mixed style and at varying price points.²¹⁴ That team

²¹² "Cleveland Mall/Mall North Coast Harbor Land Bridge Proposal," Green Ribbon Coalition, 2018, <https://www.greenribbonlakefront.org/projects/landbridge/>.

²¹³ "Cleveland Mall/Mall North Coast Harbor Land Bridge Proposal," Green Ribbon Coalition.

²¹⁴ Patrick Christie-Mizell, James DeRosa, Jessica Dunn, Michael Graham, John Story, "Burke Lakefront: Taking It to New Heights" (Capstone Final Project), *Cleveland State University* (May, 2003), 21.

Map 1: Downtown Cleveland's Public Spaces, Existing and Proposed. Map Created by Garret Forst. Basemap Courtesy of ESRI.



accounted for real estate taxes being paid on the land for the initial 400 units to be erected at the site.²¹⁵ While constructing 5000 units would require at least a decade and perhaps two decades, I scaled up the tax revenue calculation to 5000 units, adjusting the numbers for both changes in the

²¹⁵ Patrick Christie-Mizell, James DeRosa, Jessica Dunn, Michael Graham, John Story, "Burke Lakefront: Taking It to New Heights" (Capstone Final Project), 32.

mill rate and inflation. In 2019 dollars, a full-scale Burke redevelopment could net an annual \$15,486,031 in property taxes. In addition, approximately \$6,056,375 could be gained in Cleveland income tax (calculated using Cuyahoga County median income for 2017 plus the City of Cleveland's 2.5% income tax rate).²¹⁶ This tax revenue would be in addition to any revenue that could come as a result of a developer leasing, purchasing, or engaging in revenue sharing with Cleveland. However, per the 2003 Capstone project, the authors believe that a developer would demand to lease the land for one dollar in the interest of promoting local economic development.²¹⁷ Regardless of the tax revenue side of this project, a mixed-use community at Burke could bring over 5,000 households to live in Cleveland central city, a far better alternative than the nearly abandoned airport that sits on that land now.

Obstacles to Burke Land Redevelopment

Just as a consolidation plan for the regional airport system presents certain challenges, so does a redevelopment of Burke's land. On one hand, there is the challenge of financially coordinating a significant redevelopment. Finally, Burke, given its lakefront location and land composition, is a unique environmental challenge for any redevelopment.

From the perspective of financially coordinating a Burke redevelopment, obstacles exist from beginning to end in financing the project. In project planning and conception, a developer (most likely in conjunction with the public sector in a public private partnership) first would need to have the **confidence to invest** in this large scale project (i.e. believe there is demand for

²¹⁶ United States Census Bureau, "T57-Median Household Income (In 2017 Inflation Adjusted Dollars)," American Community Survey 1-Year Estimates (2017), in *SocialExplorer.com*, <https://www.socialexplorer.com/a9676d974c/explore>.

²¹⁷ Patrick Christie-Mizell, James DeRosa, Jessica Dunn, Michael Graham, John Story, "Burke Lakefront: Taking It to New Heights" (Capstone Final Project), 28.

the site). The 2003 Capstone project that most extensively studied this issue highlighted that, over a 25-year period, Burke could support between 1221 and 5234 housing units.²¹⁸ The latter number is the Capstone team's "aggressive" target, but the authors of that study are confident that this aggressive target could be exceeded.²¹⁹ Before pursuing development at Burke any further, an updated market demand analysis of Burke should be completed.

As the project would progress to the financing stage, a **package of funding sources** acceptable to all parties involved would have to be worked out. Funds from a variety of sources would have to be necessary to pull off the construction of any redevelopment project. The authors of the Capstone study suggest that construction loans, developer equity, grant funding, and perhaps even bond funding from the Port of Cleveland (different agency than the Department of Port Control that issues the airport revenue bonds) may all be necessary.²²⁰ Exact numbers on the costs for a Burke redevelopment and the amount of financing needed would both vary depending on the scale of redevelopment, type of redevelopment (i.e. park, mixed-use, etc.) and project timeframe (10-year, 25-year). For example, incorporating a community park into the development may be able to better secure a national grant than say, a 30-unit apartment complex, thereby necessitating a different financing arrangement.

Finally, Burke, being situated on Cleveland's lakefront, presents unique environmental issues that could complicate redevelopment. First, the airport, like the other institutions on Cleveland's lakefront, is situated on landfill. Per Gruber and Kaufman's 2002 report, of the 480 acres at Burke, approximately 22 acres contain solid waste landfill while the rest is clean

²¹⁸ Patrick Christie-Mizell, James DeRosa, Jessica Dunn, Michael Graham, John Story, "Burke Lakefront: Taking It to New Heights" (Capstone Final Project), 21.

²¹⁹ *Ibid.*, 21.

²²⁰ Patrick Christie-Mizell, James DeRosa, Jessica Dunn, Michael Graham, John Story, "Burke Lakefront: Taking It to New Heights" (Capstone Final Project), 29.

landfill.²²¹ The 2003 capstone recognizes the environmental implications of redeveloping Burke and called for over \$4 million in brownfield remediation to be included in project costs.²²² Burke, therefore, presents a minor issue in terms of environmental safety. Perhaps the more pressing concern in redeveloping Burke is the enhancement and conservation of its unique lakefront habitat. A 1980 report, described in rich detail the types of natural habitats that exist at Burke. While the airport in its current state inhibits the growth of native plant growth, the area sees about 24 fish species that can “successful reproduce” near Burke in addition to dozens of bird species including the great blue heron, the mallard, the black duck, and various gull species.²²³ Redevelopment at Burke should seek to protect existing species while perhaps promoting the return of others.

Conclusion

Burke represents a prime opportunity for Cleveland to conduct placemaking within the smart decline framework. A closed Burke airport means that Cleveland will have 480 acres of land to pursue the creation of dynamic urban spaces. Redeveloping Burke represents the final stage of a significant smart decline opportunity in Cleveland. It answers the question of what could happen after airport system consolidation. A smart decline framework does not just seek to consolidate assets like airport infrastructure. Smart decline seeks alternative land uses that are transformative for cities and their regions.

²²¹ William Ondrey Gruber and Joanne Kaufman, “Burke Lakefront Airport: A Report on Its History, Its Current Status and Its Future,” *GreenCityBlueLake* (September, 2002), 10, <http://www.gcbl.org/files/resources/burkereport.pdf>.

²²² Ibid.

²²³ Polytech Inc., *Existing Airport Facilities and Natural Environment: Cleveland Hopkins International Airport and Burke Lakefront Airport*, (Peat, Marwick, Mitchell, & Co.: San Francisco, 1981): E-36-38, retrieved from Cleveland Public Administration Library.

Conclusion

Smart Decline, Cleveland, and the Future of Infrastructure

For shrinking cities and regions, infrastructure is the next frontier for which the smart decline framework must be applied. In Cleveland's case, the city and region both remain shrinking entities. Although there are signs of hope, Cleveland continues to lose population and economic resources. While smart decline steps have been taken to mitigate the effects of shrinkage like residential vacancy, little has been done to mitigate the effects of shrinkage on the region's airport infrastructure and infrastructure in general. This study traced how that mitigation tool, smart decline, could be applied to Cleveland's regional airport system. It began by highlighting the regional macro-indicators that set the context for why an airport system could potentially struggle like falling household incomes. Then, it explored the "shrinkage" of Cleveland's two airports, Cleveland Hopkins International Airport and Burke Lakefront Airport. At this stage, this study paid close attention to trends in the airports' operations and finances, highlighting how the system is oversized and struggles to operate in an optimal manner. After outlining the problem, this study proposed the consolidation of the Cleveland airport system. Both Hopkins and Burke may have been needed in the past, but current realities suggest that this is no longer the case. Closing Burke and consolidating its operations into Hopkins and, when necessary, into other small surrounding airports, would strengthen the entire system from both an operational and financial point of view. Cleveland would no longer have to support two systems of infrastructure, it could put vacant airport facilities at Hopkins back to use, and it could use the savings (and other potential cash windfalls from development at Burke) to bolster Hopkins. Finally, a closed Burke would present the opportunity to remake 480 acres of lakefront land for

uses that would benefit Cleveland region residents far more than the existence of a semi-abandoned airport. Whether a park, a mixed-use community, or something else are pursued at this site, the potential for dynamic place-making is vast. Certain obstacles may complicate this transformation, but Cleveland has the unique opportunity to pursue a new type of smart decline thinking that could transform its infrastructure for the future.

While this project may have focused extensively on the close relationship between smart decline planning and the future of Cleveland's airport system, this is not to say that this idea stops there. Cleveland is not the only shrinking city in the United States or the world. This study, using the Cleveland airport system, highlighted the unique practice of incorporating infrastructure into smart decline planning discourse. That is, it highlighted the importance of analyzing the state of infrastructure systems based on the unique attributes of each system type. Airport systems, for example, have to be evaluated on different criteria than water networks. In addition, this study, in making it a point to emphasize obstacles throughout the process of transforming the Cleveland system, illustrated the increased fixity and path-dependency that complicates the smart decline of infrastructure. Therefore, this study, while especially focused on applying smart decline planning to Cleveland's infrastructure, can be used as the touchstone for future transformative smart decline planning.

Appendix Chapter

The Airport Growth Machine and the Fragmentation of Neighborhood Space: Lessons from the Unmaking of Cleveland's Riverside Neighborhood

For the residents of Cleveland's Riverside neighborhood, a small working class neighborhood of modest single family homes on the city's west side, Cleveland Hopkins International Airport ("Hopkins") is well known to the community. Located right under the flight paths of Northeast Ohio's busiest airport, Riverside residents experience the spectacular sights and sounds of jet planes flying overhead on a daily basis.²²⁴ The planes fly by closely, almost appearing to graze the trees of the neighborhood's streets. The presence of the planes is even humorous in a way for residents in the neighborhood. On many an occasion, for example, the pastor at Saint Patrick Parish will pause his sermon and then resume once the roar of a jet has ceased. Simply put, the lives of Riverside and Hopkins are interconnected. However, the lives of the neighborhood and the airport are more intertwined than they appear at first glance. A short drive down Rocky River Drive reveals a much deeper connection than the simple noise of the jets passing overhead. The entire physical environment and landscape of the neighborhood transforms along the section of Rocky River approaching to the airport. The rows of Levittown-style bungalows and ranches turn into vacant fields, a small business park, Hopkins' rental car center, and a surface area airport parking lot aptly named "Brown Lot." While a significant section of the neighborhood is vibrant, this portion of Riverside has a ghostly, empty feeling.

²²⁴ Federal Aviation Administration, "Airport Facilities Data," Federal Aviation Administration (2018), https://www.faa.gov/airports/airport_safety/airportdata_5010/menu/.

Rewind to the mid-1970s, and a different story can be told of this portion of Riverside. Namely, this was the location of over 600 single family homes.²²⁵ These homes were just like the single family homes that characterize the far west side of Cleveland today. This area, at that time, was simply a continuation of the rest of the Riverside neighborhood. And, an array of businesses dotted the landscape along Rocky River Drive leading towards Hopkins. Favorites included the York Steakhouse, Papa Nick's Pizzeria, and the Homeway Drug.²²⁶ In terms of social and family life, this part of Riverside, given its abundance of single family homes, was well known for its multitudes of large "Baby Boomer" families. So many children lived in the neighborhood, for example, that it supported two separate baseball leagues that existed within a few blocks of each other (the Puritas and Riverside leagues respectively).²²⁷ This area of Riverside was a full scale neighborhood that was complete in terms of amenities and services.

Therefore, this begs the question as to what happened to this area beginning in the 1970s and leading up to the present. What drove this transformation of the built environment and urban social life in the first place? What were its effects on the Riverside neighborhood? Underlying this change is the relationship between the airport and this neighborhood. What becomes apparent in examining this story is that Hopkins and the planning decisions surrounding it had a much greater impact on the neighborhood than perhaps previously understood. Through its own expansions in terms of its scale and infrastructure that began in the 1970s, the airport was responsible for the neighborhood's transformation. And as the description of the neighborhood's past and present landscapes suggests, this transformation was not for the better. This appendix

²²⁵ United States Census Bureau, "T80-Year-Round Housing Units," United States Census (1980), in SocialExplorer.com, <https://www.socialexplorer.com/a9676d974c/explorer>. ; United States Census Bureau, "T155-Housing Units," United States Census (2000), in *SocialExplorer.com*, <https://www.socialexplorer.com/a9676d974c/explore>.

²²⁶ Informant #4, interviewed by Garret Forst, Cleveland, OH, November 2018.

²²⁷ Ibid.

chapter will argue that airport infrastructural development, especially when motivated by an unquenchable desire to use it as a means for achieving global economic success, contains the potential to unravel the urban fabric around it. What occurred at Hopkins and Riverside was the unintended victim of Cleveland's speculative airport development policies. These policies diminished Riverside's sense of place and ultimately led to its destruction. The result of speculative airport development practices, once again placing Riverside into its theoretical framework, was the production of a fractured urban landscape that struggles to maintain its viability.

Airport Development as The Perceived Key to Global Economic Success: Motivations for Speculative Development

Before exploring the story of Hopkins' expansion process and its implications in the unmaking of Riverside, it is first important to explain why cities place a premium on developing airport infrastructure in terms of urban theory. These motivations are what ultimately drive development policies that privilege airports. Given that global economic success and prominence has become the benchmark for cities in their development priorities, airports receive development priority as they are deemed to be critically important in creating those perceived economic interconnectivities. This ethic motivates the growth-focused policies that privilege airports.

To begin, as scholars who study cities and their economies have identified, the widely recognized benchmark for urban success that defines urban governance and leadership is the desire to be economically connected in a global sense. The geographer David Harvey unfavorably calls this process "the spreading malaise of the individualistic neoliberal ethic"

amongst cities.²²⁸ According to Friedmann (1992), as a result of striving to be significant in a “world cities” hierarchy, planning discourse and practice makes a particular shift to accommodate this ethic that privileges certain voices at the expense of the “systematic disempowerment” of others.²²⁹ Economic growth in city planning, therefore, is the dominant discourse, and it shapes city planning in a concrete way.

That concrete way is that most planning and development practice tends to strive for economic growth of which scholars provide a host of examples. In discussing urban economies, for example, Sassen (1990) notes that cities strive to attract “specialized producer services” like finance and insurance which she later connects to growth-minded urban policy.²³⁰ Mitra (2015) captures this phenomenon on a global scale. She notes, for example, that cities in the Global South are in a constant race to attract and connect with ICT firms (Information and Communications Technology).²³¹ As they do so, they make great accommodations and concessions for these firms like the creation of special subsidized business parks.²³² Kusno (2013), also points to the tendency of cities to construct “Mega-imagistic” projects within their boundaries as they strive towards the goal of global interconnectivity.²³³ All of these are examples of cities pursuing growth-minded policy. What their work establishes is that cities’ governance patterns are typically dominated by this strong desire to be hubs of global economic growth. And, they may do so at the expense of policies catered to the needs of local residents for

²²⁸ David Harvey, *Rebel Cities* (Brooklyn: Verso, 2012), 15.

²²⁹ John Friedmann, *Empowerment: The Politics of Alternative Development* (Blackwell: Cambridge, MA and Oxford, 1992), 30-31.

²³⁰ Saskia Sassen, “Economic Restructuring and the American City,” *Annual Review of Sociology*, 161:1 (1990): 472, 486.

²³¹ S Mitra, “Anchoring Transnational Flows: Hypermodern Spaces in the Global South,” in *Cities of the Global South Reader*, edited by Faranak Miraftab and Neema Kudva (London and New York: Routledge, 2014), 107.

²³² *Ibid.*, 108.

²³³ Abidin Kusno, “Mega-Imagistic Urban Projects in Asia,” in *The Emerging Asian City*, edited by Vinayak Bharne (Routledge: London and New York, 2013), 175-176.

as Robinson (2002) recognizes that the cities that do not feature these global economic connections and flows are often labeled as inferior.²³⁴ This is where airport development comes in as a privileged form of development.

Given that this discourse of urban economic success is so prominent in urban governance, cities are thus constantly looking for ways to modify themselves in order to reach that degree of global economic success. While cities attempt to do this by utilizing an array of tools, however, the expansion of airports and their infrastructure proves to be one of the most popular given that airports are recognized as hubs of interconnectivity. To begin, an airport is, after all, the node of a city that is most connected with the rest of a nation (the United States) and the world. Goods and people can travel around the country and the world in a matter of hours. Therefore, they are naturally seen as the urban feature most likely to promote these desired economic interconnectivities. Woodburn (2016), in her dissertation, argues that “Airports function as the nodes for global passenger flows and are widely considered critical junctures in the era of globalization.”²³⁵ This thinking, according to Woodburn, dominates despite the lack of evidence that cities with great airports (those that are typically hub-status airports) are indeed the drivers of urban economic growth (i.e. more flights does not necessarily equate to a stronger urban economy if those flights are just passing through among other reasons).²³⁶ Yet, this discourse of governance endures and has led cities to strive for business hubs fed by airports in which cities are encouraged “to embrace their airports by developing advanced, modally integrated facilities

²³⁴ Jennifer Robinson, “Global and World Cities: A View from off the Map,” *International Journal of Urban and Regional Research* 26:3 (September, 2002): 535, <https://doi.org/10.1111/1468-2427.00397>.

²³⁵ Andrea V. Woodburn, *Pushback in the Jet Age: Investigating Neighborhood Change, Environmental Justice, and Planning Process in Airport-Adjacent Communities* (Doctoral dissertation) (University of Pennsylvania: Philadelphia, 2016), 32, <https://repository.upenn.edu/edissertations/2101/>.

²³⁶ *Ibid.*, 87-88.

that can maximize locational advantages for New Economy industries” (Addie, 2014).²³⁷ The example Addie uses is that of the O’Hare Modernization Program in Chicago which was heralded as the magic bullet for solving the Chicago region’s economic woes.²³⁸ Put this way, airport development is identified as being able to solve a region’s economic woes and/or be able to propel an urban region to economic success.

The Expansion of Cleveland Hopkins Airport (1974-2002)

The expansion of Hopkins can thus be understood in this context. Hopkins was not immune from this growth-minded discourse, and it underwent notable infrastructural expansions and renovations meant to make it into a world class global airport. These transformations did not always directly pave over the Riverside neighborhood. However, they are critical for they created the circumstances (namely the increased air traffic and noise) which would ultimately lead to the neighborhood’s unmaking. At all points in this process, the discourse of these projects as ensuring Cleveland’s global economic success remained tantamount among leaders.

To begin, Hopkins’ transformation has its roots in the period 1974-1982. In this period, Cleveland experienced a flurry of renewed interest in transforming its airport, and ultimately did a complete renovation and expansion of its terminal. Just to put into perspective the scope of the work done at the airport during this time, renovations and expansions included main terminal expansion, new baggage and ticketing areas, and a new two level road system for pickups and drop-offs.²³⁹ The result was essentially a new airport capable of handling over 14 million

²³⁷ Jean-Paul D. Addie, “Flying High (In the Competitive Sky): Conceptualizing the Role of Airports in Global City-Regions through ‘Aero-Regionalism,’” *Geoforum* 55:C (August, 2014): 88, <https://doi.org/10.1016/j.geoforum.2014.05.006>.

²³⁸ *Ibid.*, 92.

²³⁹ Carl P. Remensky, “Airport’s New Look Will Rank Facilities with Best in Nation.” *The Cleveland Plain Dealer*, 22 August 1976, 33. <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/image/v2%3A122AFBBA107AC9E4%40EANX-NB->

passengers a year, well above the airport's current traffic of 6 million at that time.²⁴⁰ Moreover, this major project was framed within this discourse of achieving economic prominence. In the same article detailing these infrastructure projects, the author noted "City officials, airline spokesmen, and architect engineers involved with the airport renovation agree Hopkins' remodeled facilities will rank with the best airports in the nation."²⁴¹ The \$55 million project (\$244 million when adjusted for inflation) was rationalized by the \$500 million (\$2.2 billion when adjusted for inflation) in impacts leaders believed it would have on the local economy.²⁴² To put these renovations and expansions back into perspective though, they were ultimately responsible for the total remaking of the airport and one that endures to this day. In terms of its scale, the project dwarfed its most recent renovation which was itself significant (the 2016 renovation cost \$36 million).²⁴³ For city leaders, this revamped airport was going to bring the city into the jet age. It signaled to the rest of the country and the aviation industry that Cleveland was a place open for national and international business activity.

While no renovations or expansions occurred after the 1974-1982 project on this massive of a scale, there are nonetheless a few significant changes the airport made in the decades following meant to keep it competitive with other American airports. Minor infrastructural improvements were made throughout the airport throughout the 1980's. They included updates to concourses, the airport's road infrastructure, and air traffic control infrastructure leading one travel reporter to remark "I've always found Hopkins to be on the leading edge in terms of

[1361E47FE13126C2%402443013-136098A50AA7BA3E%4032-136098A50AA7BA3E%40?p=AMNEWS&hlterms=hopkins%3B%20expansion.](https://www.cleveland.com/metro/index.ssf/2016/06/cleveland_hopkins_renovations.html#incart_2box)

²⁴⁰ Carl P. Remensky, "Airport's New Look Will Rank Facilities with Best in Nation."

²⁴¹ Ibid.

²⁴² Ibid.

²⁴³ Ginger Christ. "Cleveland Hopkins Renovations: What to Look for, What Travelers Think (Photos)," Cleveland.com, 27 June 2016,

[https://www.cleveland.com/metro/index.ssf/2016/06/cleveland_hopkins_renovations.html#incart_2box.](https://www.cleveland.com/metro/index.ssf/2016/06/cleveland_hopkins_renovations.html#incart_2box)

services and facilities.”²⁴⁴ However, the last set of major changes occurred at the turn of the century. In 1999, motivated by a new sense of development rigor under the ambitious mayor Mike White, the airport opened the brand new Concourse D to help serve what was then Continental Airlines.²⁴⁵ Finally, that project was followed up by a new runway in 2002.²⁴⁶ The runway, 6L-24R, when seen from a map, is angled directly into the Riverside neighborhood (See Image A in image gallery). Regarding the new runway, the President of the Greater Cleveland Growth Association exclaimed, “You can’t be a major-league city without a first-class airport.”²⁴⁷ Therefore, while none of these projects transformed the airport on the scale that the 1974-82 renovation did, they were all nonetheless significant in terms of expanding the airport’s operational capacity. It is no coincidence that these projects took place just as the Riverside neighborhood next to the airport was experiencing its period of decline.

The Unmaking of the Riverside Neighborhood: The Effects of Airport Development (1974-Present)

What needs to be noted about the above expansion projects is that they did not encroach upon the Riverside neighborhood in a physical sense (although airport satellite industries eventually did). That is, airport infrastructure (i.e. runways, terminals, the tarmac) never directly replaced Riverside’s neighborhood infrastructure. However, what needs to be recognized is that the **footprint** of Hopkins expanded due to its infrastructural developments. Whereas Hopkins

²⁴⁴ Grant Segall, “Just Passing through but Travelers Like Hopkins,” *The Cleveland Plain Dealer*, 13 July 1987, 51. <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/image/v2%3A122AFBBA107AC9E4%40EANX-NB-13186C73F7EDDCD7%402446990-13185EC4410F63F0%4050-13185EC4410F63F0%40?p=AMNEWS&hlterms=hopkins%3B%20renovation>.

²⁴⁵ James F. Sweeney, “A Classy New Concourse: Continental, Cleveland Cut Ribbon on a Major Addition at Hopkins,” *The Cleveland Plain Dealer*, 14 May 1999, 1B, <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/news/0F80D3AF9FC7CB28?p=AMNEWS>.

²⁴⁶ Mark Rollenhagen, “Hopkins Gets Breathing Room: Cleveland Airport to Inaugurate Long-Awaited Runway Thursday,” *The Cleveland Plain Dealer*, 8 December 2002, A1, <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/news/0F7D80488A0D9B24?p=AMNEWS>.

²⁴⁷ Ibid.

and Riverside had been somewhat disconnected from each other in the past, these infrastructural improvements allowed for a certain degree of air traffic increase at Hopkins. This meant more noise and air traffic directly over the Riverside neighborhood. To understand this, it is useful to analyze Hopkins air traffic over the course of these infrastructural developments. In 1980, for example, Hopkins' annual passenger traffic stood at just over 6 million.²⁴⁸ However, by 2000, annual passenger traffic had grown to 13 million.²⁴⁹ This growth in air traffic over this 20-year period was not unique to Hopkins. The growth of the aviation industry was a national trend (this initial growth occurred in shrinking cities and growing cities alike). However, this initial growth would have never been possible if not for Hopkins' improvements and expansions of infrastructure. The goal of bringing this up is not to condemn the expansion and capital improvement projects that occurred during this period as airports do have to adapt to new economic circumstances. Rather, it is to recognize that the stasis between the neighborhood and the airport had been broken (and in such a way that harmed the neighborhood). More and more jets could now fly over Riverside, and neighborhood residents could do nothing about it. Whereas a balance of power and influence had existed prior to Hopkins' growth, that balance was tipped in Hopkins' favor at the expense of setting off the soon to be discussed flurry of changes to which the neighborhood struggled to adapt.

Riverside's unmaking is an ongoing process, but it is one that happened most dramatically in the 25 years following the 1974 expansions. And, it is unlike that of cases where

²⁴⁸ Sandra Livingston, "Hopkins Capacity Crunch," *The Cleveland Plain Dealer*, 26 November 1989, 73, <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/image/v2%3A122AFBBA107AC9E4%40EANX-NB-131B19179C74E8E8%402447857-13166FF613F45B31%4072-13166FF613F45B31%40?p=AMNEWS&hlterms=hopkins%3B%20capacity%3B%20crunch>.

²⁴⁹ Cleveland Hopkins International Airport, "Facts and Figures," Cleveland Hopkins International Airport (2018), <http://www.clevelandairport.com/about-us/facts-figures>.

the bulldozer was taken to neighborhoods seemingly overnight (i.e. Robert Moses and his infamous highway constructions). Rather, Riverside underwent a slow demise. This unmaking began through the destruction of the neighborhood's sense of place (most notably through the increase of air traffic noise) which resulted in abandonment, vacancy, and the rise of satellite industries on the land that once made up the neighborhood

The progression of Riverside's demise ultimately traces back to the airport's influence. As the airport's influence expanded, it brought with it an unpleasant set of circumstances that delivered the initial blows to the neighborhood in terms of its sense of place and security. Most notably, airport noise became unbearable during this period and greatly frustrated residents. The issue of airport noise is first mentioned in a 1983 piece on the airport where one Mapleside Avenue resident could not take the roar of jets flying over his home any more.²⁵⁰ However, the noise problem worsened over time. In a 1993 piece on the relationship between the airport and the neighborhood (already a number of residents had left), the city's real estate manager at the time put the plight of residents well. She noted "In terms of health and welfare, I could see where they would find the noise excruciating."²⁵¹ This raises the question then: can noise really be that big of an issue in the life of a neighborhood? Does it actually have the ability to damage a neighborhood's sense of place? The evidence from Riverside residents suggests that this is the case, and similar findings exist in other urban contexts. A study on community noise and stress for residents living near Stockholm's Arlanda Airport actually recognized a link between airport

²⁵⁰ Steve Luttner, "Uproar at Hopkins: Neighborhood Reels Under Plans to Extend Runway," *The Cleveland Plain Dealer*, 17 July 1983, p. 25, 32, <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/image/v2%3A122AFBBA107AC9E4%40EANX-NB-130D9345423D6679%402445533-130D4059E4A23340%4024-130D4059E4A23340%40?p=EANX-NB&hlterms=uproar%3B%20at%3B%20Hopkins>.

²⁵¹ Frenchie Robles, "Neighborhood Taking Flight Airport Noise Abatement Plan Leaves Deafening Silence," *The Cleveland Plain Dealer*, 31 January 1993, 1B, <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/news/0F807041D0722C41?p=AMNEWS>.

noise and stress/hypertension.²⁵² Therefore, what was present in the Riverside case were the first steps of frustration with the neighborhood's sense of place. Residents enjoyed the neighborhood given what it offered in terms of amenities and family life. In that sense, it offered a strong sense of place. However, over time, the increasing presence of the airport began to erode that sense of place. Bigger changes to the neighborhood were on the horizon as tensions and frustrations mounted regarding its quality of life.

When the quality of life in a neighborhood deteriorates, it is no secret that those frustrated by the neighborhood will leave it if possible. Residents will move their livelihoods elsewhere. In the case of Riverside, not only did the presence of the airport lead to tension and frustration, it led to the next stages of neighborhood decline: displacement and disinvestment. As mentioned before, the deafening noise had residents ready to move, and they began to do so in the decades during the airport's expansion. Perhaps these tensions and frustrations could have been mitigated by the airport which would have prevented displacement. However, this process was only facilitated by Hopkin's policies for in 1987 the airport instituted a home buyout program that was federally funded and allowed the airport to buy Riverside houses at market value.²⁵³ Displaced residents then bought or were placed in comparable homes throughout the rest of the region. The result of all of this process was not residential displacement in the sense that the airport forced residents out of their homes using heavy-handed techniques. Rather, it was a process of long-term planning that snowballed into abandonment over time. Displacement bred greater displacement. As a few residents moved, more followed them. The author of the same

²⁵² Charlotta Eriksson, Mats Rosenlund, Goran Pershagen, Agneta Hilding, Claes-Goran Ostenson and Gosta Bluhm. "Aircraft Noise and Incidence of Hypertension," *Epidemiology* 18:6 (November, 2007): 716, https://www.jstor.org/stable/20486460?seq=1#metadata_info_tab_contents.

²⁵³ Frenchie Robles, "Neighborhood Taking Flight Airport Noise Abatement Plan Leaves Deafening Silence," 1B.

1993 piece explains, “Those left behind live in houses surrounded by grass, in areas so desolate they fear for their lives and property.”²⁵⁴ After all, what urban resident would want to live in the middle of a field? What began as simple discontent within the neighborhood had spiraled into a full scale exodus.

The extent to which residential displacement occurred is corroborated by neighborhood data. In total, airport development and policy was responsible for the displacement of at least 600 homeowners. To arrive at this number, note that Riverside consists of two Census tracts. For example, in 1980, the count of housing units in the neighborhood stood at 2662.²⁵⁵ By 2000, that number had fallen to 1982 housing units.²⁵⁶ Given that this number measures housing units in the rest of the tracts, it is likely that these two measures also included changes in the housing stock elsewhere in the two tracts in addition to minor tract boundary changes. However, the housing stock outside of the section of Riverside affected by the airport did remain relatively constant over that time period. The only change was the construction of the Puritas Park condominiums (approximately 150 units) on the north side of the neighborhood in the mid-1990s.²⁵⁷ Therefore, the count of housing units in 2000 is likely inflated as there would have been far fewer units if not for Puritas Park. If anything then, an estimate of 600 homes lost due to displacement from the airport is somewhat conservative.

To continue with this story though, whenever residents leave a neighborhood, they take their money with them as well. Therefore, overall disinvestment in the neighborhood’s businesses and social organizations occurred in addition to the aforementioned story of housing

²⁵⁴ Frenchie Robles, “Neighborhood Taking Flight Airport Noise Abatement Plan Leaves Deafening Silence,” 1B.

²⁵⁵ United States Census Bureau, “T80-Year-Round Housing Units.”

²⁵⁶ United States Census Bureau, “T155-Housing Units.”

²⁵⁷ Puritas Park, “Home,” Puritas Park (2018), <https://www.puritaspark.com/>.

abandonment. Essentially, due to the disinvestment in housing which occurred in the neighborhood, the demand for the neighborhood's goods and services dramatically decreased. A 1998 *Plain Dealer* piece first hints at this disinvestment in the neighborhood. A number of neighborhood businesses, for example, were reporting drop-offs in sales at \$1000 per day.²⁵⁸ Another interesting case that speaks to this issue is the story of Saint Patrick Parish that Grant also mentions. Saint Patrick's lost approximately 1000 worshippers out of 3000 due to this residential displacement.²⁵⁹ The story of Saint Patrick Church extends beyond this loss of parishioners though when it was announced that in 2009 the church was slated to close along with 51 other Catholic parishes in the Catholic Diocese of Cleveland (with the closed churches being mostly city and inner-ring suburban churches).²⁶⁰ What was once a massive Catholic parish and school eventually ended up closing, and the airport's role in decimating its territory and parishioner base cannot be denied as a key cause of this closing. After all, the airport situation meant that the parish was attempting to operate a large complex when the service area that sustained it had shrunken significantly. Fortunately, this story does have a happy ending as the parish did reopen a few years later. This is a fascinating story of urban resilience in itself. But, it should be noted that the parish does operate on a smaller scale than it did before the closing as it no longer operates a school. The parish had to adjust to changed neighborhood realities. This is a reality that a number of neighborhood institutions had to confront in the wake of airport-induced circumstances.

²⁵⁸ Allison Grant, "Neighborhood Waits for Bulldozers: Residents Near Hopkins Airport Accept News of Speeded-up Buyout Plan with Sorrow, Relief," *The Cleveland Plain Dealer*, 4 February 1998, 1B, <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/news/0F80CF6E218E4030?p=AMNEWS>.

²⁵⁹ Ibid.

²⁶⁰ Robert L. Smith and Martin O'Malley, "Parishioners in Churches Getting the Ax Ask, Why Us? Most Closings Are in Cleveland, Inner-Ring Suburbs, Akron, Lorain," *The Cleveland Plain Dealer*, 16 March 2009, A1, <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/news/12702967C3023BB0?p=AMNEWS>.

Finally, this process of the neighborhood's unmaking eventually ran its course. The placelessness and disinvestment that occurred over this time period culminated in the wholesale destruction of this section of Riverside. In other words, a casual passerby would never know that this large swath of land used to contain small businesses, hundreds of homes, and a few thousand people. The neighborhood that existed was simply paved over and few traces of the old neighborhood remained. The houses of displaced residents were obviously knocked down. That was a part of the destruction that took place. However, a smattering of developers moved in to ensure that this landscape had been thoroughly destroyed. A 1995 *Plain Dealer* piece first announced this plan for the wholesale transformation of this space with the construction of a 250-acre business park.²⁶¹ This business park was heralded as a development that could work in conjunction with the airport and the nearby NASA branch to provide 6,000 local jobs.²⁶² Former mayor Mike White, always on the lookout for development opportunities, spearheaded the project.²⁶³ And, upon this land, an iteration of this business park did get built and is now known as the Cleveland Business Park. As of today, according to the developer Chelm Properties Inc., the park currently contains five buildings on 55 acres, a far cry from the ambitious park that was initially proposed.²⁶⁴ Other aspects of this land include the airport's rental car facilities, surface area parking, and much vacant land. And with this development, what is made clear is that the neighborhood had thoroughly been destroyed and with a sense of permanence. All of the land, per Cuyahoga County's property database, has been rezoned for commercial uses, typically light

²⁶¹ Tom Breckinridge, "Cleveland Unveils Technology Park Plans Site Is Near Hopkins; Brook Park Protests," *The Cleveland Plain Dealer*, 20 January 1995, p. 1A, <https://infoweb-newsbank-com.ezproxy2.cpl.org/resources/doc/nb/news/0F8083F6F7B43184?p=AMNEWS>.

²⁶² *Ibid.*

²⁶³ *Ibid.*

²⁶⁴ Chelm Properties Inc., "Cleveland Business Park Brochure," Chelm Properties (2018), <http://www.chelmproperties.com/property/cleveland-business-park/>.

industry.²⁶⁵ Only a small handful of homes remain on the land (less than five) and there is no indication that this area used to be a neighborhood. It speaks to the power of the airport to completely wipe clean that which had previously existed.

As for the state of the Hopkins today, the airport is also facing its fair share of troubles in terms of its service as its facilities outgrew its demands. Air traffic for the year 2017 was down to 9,642,729 from a peak of 13,288, 059.²⁶⁶ Most notably, in 2014, United Airlines removed Cleveland Hopkins as a hub airport. The result was the closing of Concourse D, the same concourse Mike White had constructed in 1999.²⁶⁷ It sits vacant to this day. This current state of the airport speaks to the developmental speculation which occurred in the past. That is, the planning policies and priorities of the past can have great consequences on the present. In this case, these planning decisions unmade the Riverside neighborhood and did not do any long term favors for the airport either.

Airport Development and the Splintered Metropolis

Having now told the story of Riverside's unmaking, it is possible to explore the broader theoretical implications this story has for understanding the relationship between infrastructural development and the areas affected by these planning decisions. That is, when airport development speculatively occurs in this context of achieving a global economic city, it has the potential to create an extreme degree of spatial inequality and fragmentation in the city. The

²⁶⁵ Cuyahoga County, "MyPlace," (2018), <https://myplace.cuyahogacounty.us/>.

²⁶⁶ Cleveland Hopkins International Airport, "Facts and Figures."

²⁶⁷ Allison Grant, "What Can Be Done with Cleveland Hopkins' Vacant Concourse D? A Look to Other Airports Might Offer Clues," Cleveland.com, 19 April 2014, https://www.cleveland.com/metro/index.ssf/2014/04/cleveland_hopkins_joins_airpor.html.

result of development patterns like those at Hopkins is a splintered (or fragmented) city in which certain areas of the city are privileged while others are not privileged and hence deteriorate.

To begin, when it comes to airport infrastructural development, the initial result is that certain areas of the city, namely those of the airport in this case, reap the rewards of infrastructural development in terms of the attention and resources they receive. These areas constitute one fragment of this splintering city. In *Splintering Urbanism*, Graham and Marvin (2001) lay out this type of urban fragment. Hopkins, in this case then, becomes the part of the city that is provided with services and urban connections that are “higher quality, more resilient...for the most valued users.”²⁶⁸ It is one of the “zones and enclaves for users provided with specialized infrastructure services.”²⁶⁹ In this sense, airports like Hopkins, as this paper has shown, become the areas of the city that receive the most funding. All of the projects discussed here that went into constructing the Hopkins of today cost millions of dollars. Then, as a result of that funding and prioritization, it becomes a state-of-the-art node within the city. Those utilizing Hopkins, typically the most-valued users in the hierarchy which Graham and Marvin lay out, thus experience some of the best that the city has to offer in terms of services and amenities. When thinking in terms and Graham and Marvin’s framework of nodes and fragments, Hopkins became the prioritized fragment.

However, when thinking in terms of splinters and fragments, there are areas of the city that fall on the other side as well. Areas like the Riverside neighborhood thus end up as the fragments of this story that are isolated, underserved, and in some cases destroyed. Graham

²⁶⁸ Stephen Graham and Simon Marvin, *Splintering Urbanism* (London and New York: Routledge, 2011), 176.

²⁶⁹ *Ibid.*

and Marvin frame areas like Riverside as the “bypass” areas of the city.²⁷⁰ That is, places like Riverside constitute the “users and places who are effectively bypassed by the new parallel networks.”²⁷¹ Here, the authors are referring to networks as meaning any type of infrastructure whether these infrastructure types be telecommunications, transportation, housing, neighborhoods, etc.²⁷² However, the point in mentioning this is that Riverside did become one of these bypass areas and was effectively not even considered part of the city. As Hopkins grew as a priority for Cleveland, Riverside diminished as a priority. Now, there are no horror stories of the city purposely making life hard for Riverside residents in order to push them out of the neighborhood. However, the story of the neighborhood does suggest that the needs and priorities of the neighborhood were bypassed in favor of those of the airport. This is an issue in and of itself. However, in the case of Riverside, this ended in an extreme outcome. Not only was the neighborhood bypassed and deprioritized, it underwent a process of destruction. For example, Graham and Marvin note that one of the more extreme outcomes of splintering urbanism is the creation of “ghost wards.”²⁷³ The term ghost ward is ironic given that Cleveland’s political system is organized into wards of which Riverside occupied a significant portion of an actual ward. This former neighborhood section can aptly be considered a ghost ward given its current state. And, this outcome for Riverside is especially concerning given that it was widely considered to be a viable neighborhood prior to its unmaking. It speaks to the power of airport development to fragment the city in such a striking manner. Infrastructure planning decisions

²⁷⁰ Stephen Graham and Simon Marvin, *Splintering Urbanism*, 167.

²⁷¹ Stephen Graham and Simon Marvin, *Splintering Urbanism*, 168.

²⁷² *Ibid.*, 168.

²⁷³ *Ibid.*, 288.

may sometimes seem disconnected from their broader urban environment. However, they have the ability, as in the case of Hopkins and Riverside, to cause unintended harm and consequences.

Conclusion

Cleveland Hopkins International Airport and the Riverside neighborhood are two areas of the city that, although adjacent to each other, lived in a state of relative balance for decades. However, as the airport, driven by the desire to be nationally and internationally dominant, expanded in influence, tensions between the two mounted. Over time, Hopkins' expansion and growth began to impede on Riverside. For Riverside, the presence of Hopkins went from being a mere nuisance to a more severe menace. The neighborhood's sense of place diminished, and the neighborhood deteriorated over time. Residential life ceased to exist and the social institutions within the neighborhood took a major hit. Riverside had become a ghost ward. And in the meantime, the land upon which the neighborhood once stood is only minimally used. And the airport, due to diminishing air traffic, never did reach its goal of creating being an international business hub. Such is typically the effect of speculative airport infrastructure development. Given that it prioritizes certain areas over others, the result is a fragmented metropolis. Some nodes in the city receive priority (i.e. the airport) while others undergo the unmaking that Riverside experienced. It serves as a cautionary tale for the effects of infrastructural development and airport planning. It highlights why a smart decline framework for planning may be a better alternative for certain cities.

Images

IMAGE A: Map Image of Hopkins Runway 6L-24R. Note the Riverside neighborhood to the north of I-480. Image from Google Maps



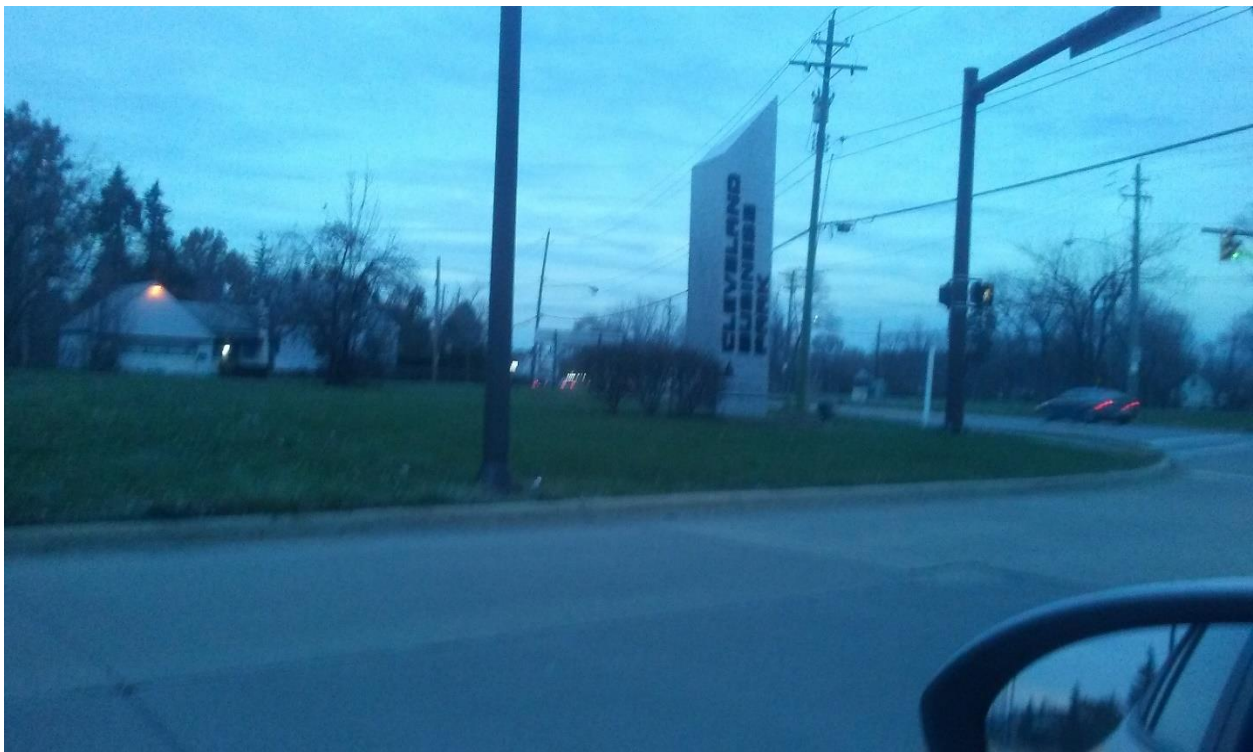
IMAGE B: Photograph of Forestwood Avenue where all houses have been demolished. Note the remaining road infrastructure. Photograph by author.



IMAGE C: Hopkins' rental car center. The center occupies a portion of the former Riverside neighborhood. Photograph by author.



IMAGE D: Sign for the Cleveland Business Park. Photograph by author.



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