

From Desert City to Suburban Metropolis:  
Urban Growth and Environmentalism in Phoenix, 1945-1980

by

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## ABSTRACT

Postwar suburban sprawl resulted in environmental consequences that engendered a backlash from those concerned about the quality life in the places they lived, played, and worked. Few cities grew as rapidly as Phoenix and therefore the city offers an important case study to evaluate the success and limits of environmentalism in shaping urban growth in the postwar period.

Using three episodes looking at sanitation and public health, open space preservation, and urban transportation, I argue three factors played a critical role in determining the extent to which environmental values were incorporated into Phoenix's urban growth policy. First, the degree to which environmental values influenced urban policy depends on the degree to which they fit into the Southwestern suburban lifestyle. A desire for low-density development and quality of life amenities like outdoor recreation resulted in decisions to extend municipal sewers further into the desert, the creation of a mountain preserve system, and freeways as the primary mode of travel in the city. Second, federal policy and the availability of funds guided policies pursued by Phoenix officials to deal with the unintended environmental impacts of growth. For example, federal dollars provided one-third of the funds for the construction of a centralized sewage treatment plant, half the funds to save Camelback Mountain and ninety percent of the construction costs for the West Papago-Inner Loop. Lastly, policy alternatives needed broad and diverse public support, as the public played a critical role, through bond approvals and votes, as well as grassroots campaigning, in integrating environmental values into urban growth policy. Public advocacy campaigns---led by civic groups,

government officials, and especially newspapers---played an important role in setting the policy agenda and framing the policy issues that shaped policy alternatives and the public's receptivity to those choices.

Urban policy decisions are part of a dynamic and ongoing process, where previous decisions result in new challenges that provide an opportunity for debate, and the incorporation of new social values into the decision-making process. While twenty-first century challenges require responses that reflect contemporary macroeconomic factors and social values, the postwar period demonstrates the need for inclusive, collaborative, and anticipatory decision-making.

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## CHAPTER 1: “The Arizona Good Life:” Phoenix’s Environment and Creating a Desert Metropolis

Following World War II, urban growth rapidly occurred on the fringe of cities. Between 1945 and 1980, 18 of the 25 largest cities in the nation lost population; in 1980, 40% of Americans lived in the suburbs.<sup>1</sup> Federal policies that subsidized the construction of single-family housing and highways, as well as defense-related spending fueled this growth, which resulted in a backlash from those concerned about the environmental consequences of suburban development. Americans had long advocated for pollution abatement, conservation of natural resources, and preservation of wilderness areas. The postwar environmental movement expressed similar quality of life concerns, but aimed its critiques, influenced by middle-class suburban values, at the environmental costs of suburban sprawl. The new struggle had roots in earlier conservation goals and rhetoric about protecting nature, most visible in the open spaces movement of the 1950s and 1960s, as well as the City Beautiful Movement, and concern over industrial smoke-abatement campaigns during the Progressive Era. It manifested most emphatically in suburban areas, where the countryside and city entangled. “The fight to preserve the spectacles of nature---the majestic rivers, the remote mountains, the wild canyons---is 100 years old,” journalist Ben Bagdikian explained in his seminal 1966 article criticizing suburban sprawl, “The Rape of the Land,” but “the struggle to save the modest beauty of men’s own backyards is new and promising.”<sup>2</sup> In 1965, the Johnson Administration held

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<sup>1</sup> Statistics from Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1987), 283 and 4.

<sup>2</sup> Ben Bagdikian, “The Rape of the Land,” *Saturday Evening Post* 18 June 1966, 26.

A Conference on Natural Beauty that acknowledged the widespread public clamor against the unintended consequences of sprawl and for the protection of open spaces. Organizer Laurence Rockefeller explained the agenda of the conference was “new conservation” centered where “most people live and work---our cities and suburbs.”<sup>3</sup>

Historian Kenneth T. Jackson traced the origins of suburbanization to the late 19<sup>th</sup> century as well-to-do city dwellers sought to escape the negative aspects of cities, like overcrowding, pollution, and crime, for a home with more space closer to nature, separated from poor conditions in inner city slums and the minorities who lived there.<sup>4</sup> In 1966, for the first time in American history, suburban dwellers outnumbered center city residents. The environmentalists of the 1960s and 1970s were predominantly but not exclusively white, middle class, suburbanites. They included housewives, hippies, college students, business leaders, public officials, and others, expressing concern about human impact on the environment. Most commonly, they expressed concern over the places they knew best, as urban areas encroached into the natural environment at the fringe of cities. Postwar environmental movements focused on the “environment,” rather than “nature” because it more accurately described their experiences with the natural world in the suburbs. The “environment” became an umbrella term that included things not often

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<sup>3</sup> See Christopher Sellers, *Crabgrass Crucible: Suburban Nature and the Rise of Environmentalism in Twentieth-Century America* (Chapel Hill: University of North Carolina, 2012), 252. For the Rockefeller quote see *Beauty for America: Proceedings of the White House Conference on Natural Beauty, Washington D.C. May 24-25, 1965* (Washington, D.C.: Government Printing Office, 1965), 687.

<sup>4</sup> Jackson, *Crabgrass Frontier*, chapters 2 and 3 discuss the appealing aspects of the suburbs, while chapters 11 and 12 analyze the racial and class aspects of suburbanization.



considered natural but endemic to cities, like sewers and streets, and therefore urban growth policies became an important aspect of environmentalism.<sup>5</sup>

The postwar environmental movement emerged within the socio-economic context of the period. Generally, four factors help to explain the postwar environmental movement: unprecedented affluence, mass protests over a variety of social issues, technological innovation that provided many societal benefits but also threatened the environment, and the emergence of ecology as a popularized science that provided new insights into the consequences of transforming nature. Middle-class women, as well as high school and college students played an important role in the movement as activists. Often they collaborated with “experts” from academia to build credibility for their causes, combining local knowledge with more esoteric technical knowledge to challenge the assumptions behind unimpeded growth.<sup>6</sup>

In part, the environmental movement stemmed from the shift from what historian and Democratic Party adviser Arthur Schlesinger called the “quantitative liberalism” of the New Deal to “qualitative liberalism” of the 1960s.<sup>7</sup> Moreover, historian Samuel Hays argued that postwar concerns about the quality of life issues, like the health of the environment, largely emanated from the suburbs, where a wide array of issues----like

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<sup>5</sup> For population statistics see, Sellers, *Crabgrass Crucible*, 247.

<sup>6</sup> See Adam Rome, “Give Earth a Chance: The Environmental Movement and the Sixties,” *The Journal of American History* 90, no. 2 (September 2003), 525-554. In this article, Rome contextualizes the emergence of the postwar environmental movement by tracing it to three developments in the 1960s: the revitalization of liberalism, the growing discontent of middle-class women, and the explosion of student radicalism and countercultural protest. He makes the same argument in the first chapter of *The Genius of Earth Day: How a 1970 Teach-in Unexpectedly Made the First Green Generation* (New York: Hill and Wang, 2013).

<sup>7</sup> See Rome, “Give Earth a Chance,” 528. The full quote is as follows: “Schlesinger put the point succinctly: ‘Instead of the quantitative liberalism of the 1930s, rightly dedicated to the struggle to secure the economic basis of life, we need now a ‘qualitative liberalism’ dedicated to bettering the quality of people’s lives and opportunities.’”

clean water and air, maintenance of sanitary conditions, and the aesthetic and recreational value of natural spaces---converged and coalesced. Quality of life concerns emerged not only in response to urban growth, but also shaped it, as municipal officials and the public sought to define exactly what those values meant and the extent of their influence in urban growth policies. The rise of government planning that began during the Progressive Era and continued through the postwar period presented an opportunity to obtain a better recognition and implementation of environmental values after the war. In *The Quiet Crisis*, a 1963 call to action, Secretary of the Interior Stewart Udall argued America faced a crisis and that policymakers needed to take decisive action “to assert the people’s right to clean air and water, open space, to well-designed urban areas, to mental and physical health.”<sup>8</sup>

While these debates occurred nationwide, Hays argued that “the expression of environmental interests usually focused on a specific place where people lived, worked, and carried on their leisure-time activities. Values were shaped by, and expressed within the environmental quality of that place.”<sup>9</sup> In the postwar period, increasing numbers of people lived in the suburbs, especially in sprawling cities like Phoenix and the dynamics

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<sup>8</sup> For more on the role of middle class, suburban values in shaping postwar environmentalism, see Samuel Hays, *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985* (New York: Cambridge University Press, 1987). Also, see Robert Gottlieb, *Forcing the Spring*, 46, 81, and 87-98. Adam Rome argues for the importance of suburbanization to the environmental movement following World War II in *Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (New York: Oxford University Press). For a discussion of decision-making and urban growth in Phoenix, see Grady Gammage Jr., *Phoenix in Perspective: Reflections on Developing the Desert*. (Tempe: Herberger Center for Design, 1999). Chapters five through twelve are particularly relevant to postwar growth and suburban sprawl. I disagree with sociologist Robert Wood, who argued that suburbanites did not care about city politics in his classic on the suburbs, *Suburbia: Its People and Their Politics*. Boston: Houghton Mifflin, 1958 For Udall quote see, Stewart Udall, *The Quiet Crisis* (New York: Holt, Rhinehart and Winston, 1963), 159-60.

<sup>9</sup> For Hays quote, see Samuel Hays, *Beauty, Health, and Permanence*, 432.

of suburban living---its culture, natural setting, and politics---influenced the way in which people expressed concern about the environment. Federal policies boosted both suburban development and local activism that sought to mitigate the unintended consequences of sprawl. Historian Hal Rothman argued, “Americans embrace environmentalism when it is convenient and inexpensive, but when it challenges the comforts to which they are accustomed, they ignore or avoid it.”<sup>10</sup> Environmental values were one of a number of values that made the suburbs an appealing place to live, including a desire for private space and larger living space in homes, new technological living with electric homes and appliances, and the freedom of mobility provided by the use of automobiles. Government officials, developers, businesses, and the public weighed these values against one another.<sup>11</sup>

Compared to other American cities of similar size, Phoenix, the fifth largest city in the nation, has been the singular focus of relatively few historical examinations. Much of the existing scholarly work utilizes urban growth as an organizing theme. Moreover, it has even fewer environmental histories.<sup>12</sup> While there are numerous environmental histories of the American Southwest, especially Los Angeles, there is relatively little attention to where the majority of westerners live: urban areas. Yet, few cities grew as

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<sup>10</sup> For quote, see Hal Rothman, *The Greening of a Nation?: Environmentalism in the United States Since 1945* (Forth Worth, TX: Harcourt Brace College Publishers, 1998), xii.

<sup>11</sup> For a discussion of environmentalism and urban planning, see Samuel Hays, *Beauty, Health, and Permanence*, 378-379.

<sup>12</sup> See Philip VanderMeer, *Desert Visions and the Making of Phoenix, 1860-2009* (Albuquerque: University of New Mexico Press, 2010) and Michael Logan, *Desert Cities: The Environmental History of Phoenix and Tucson* (Pittsburgh: University of Pittsburgh Press), 2006. Also see Douglas Kupel, *Fuel for Growth: Water and Arizona's Urban Environment* (Tucson: University of Arizona Press, 2006), Elizabeth Tandy Shermer, *Sunbelt Capitalism: Phoenix and the Transformation of American Politics* (Philadelphia: University of Pennsylvania Press, 2013) and Andrew Ross, *Bird on Fire: Lessons from the World's Least Sustainable City* (New York, Oxford University Press, 2011).

rapidly as Phoenix in the postwar period or in such a sprawling fashion. Therefore, because Phoenix's most salient historical trend is growth, and in particular, suburban sprawl, the city provides an excellent case study to examine the extent to which environmental concern influenced urban growth policy. Lastly, rapid urban growth facilitated in large part by warm weather and plentiful sunshine was not unique to Phoenix after World War II, as other "Sun Belt" cities like Dallas, Albuquerque, Atlanta, and Charlotte experienced similar growth. Therefore, this thesis provides a framework from which other scholars can compare and contrast Sunbelt cities to each other, as well as the experiences of cities that followed different demographic trajectories.

Using three episodes looking at sanitation and public health, open space preservation, and urban transportation, I argue three factors played a critical role in determining the extent to which environmental values were incorporated into Phoenix's urban growth policy. First, the degree to which environmental values influenced urban policy depends on the degree to they fit into the low-density Southwestern suburban lifestyle. A desire for low-density development and quality of life amenities like outdoor recreation resulted decisions to extend municipal sewers further into the desert, the creation of a mountain preserve system, and the construction freeways to meet transportation needs. Second, federal policy and the availability of funds guided policies pursued by Phoenix officials to deal with the unintended environmental impacts of growth. For example, federal dollars provided half the funds to save Camelback Mountain, and ninety percent construction costs of the West Papago-Inner Loop. Lastly, policy alternatives need broad and diverse public support, as the public played a critical

role, through bond approvals and votes, as well as grassroots campaigning, in integrating environmental values into urban growth policy. Public campaigns---led by civic groups, government officials, and newspapers played an important role in setting the policy agenda and framing the policy issues that shaped policy alternatives and the public's receptivity to those choices.

No history of Phoenix is complete without an examination of water, but while most existing scholarship focuses on supply or quantity, this thesis analyzes the often-overlooked process of ensuring water quality and sanitation.<sup>13</sup> The second chapter examines municipal officials' attempts to remove the pestilent threat of septic tanks through the extension of the municipal sewer system and the construction of the 91<sup>st</sup> Avenue Sewage Treatment Plant, a centralized metropolitan sewage treatment facility. In the next chapter, I analyze a grassroots open space preservation campaign in Phoenix to protect Camelback Mountain from private development in the late 1950s through the early 1970s. The fourth chapter of this thesis looks at the debate over the future of the city's transportation system, in particular the West Papago-Inner Loop freeway, and concern over a myriad of environmental and social issues like aesthetics, air pollution, and community cohesion. First, though, a brief examination of the environment and other

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<sup>13</sup> There is a voluminous literature on water in the west. For examples of studies on Phoenix's water supply see, Douglas Kupel, *Fuel for Growth*; Dean Mann, *The Politics of Water in Arizona* (Tucson: University of Arizona Press, 1962); VanderMeer, *Desert Visions*, 143-147; Karen L. Smith, "Community Growth and Water Policy" ed. Wesley Johnson, *Phoenix in the Twentieth Century: Essays in Community History* (Norman: University of Oklahoma Press, 1993) and Michael Logan, *Desert Cities*. The emphasis on supply followed a broader trend in studies on the West and water, which often feature the Central Arizona Project. For example see, Donald Worster, *Rivers of Empire: Water, Aridity & The Growth of the American West* (New York: Pantheon Books, 1985); Marc Reisner, *Cadillac Desert: The American West and Its Disappearing Water* (New York: Penguin, 1986); and Philip K. Fradkin, *A River No More: The Colorado River and the West* (Berkeley: University of California Press, 1996).

factors that brought people to Phoenix provides the context for which to evaluate the success and limits of environmentalism in shaping urban growth in postwar Phoenix.

*Phoenix and its Environment, 1900-1945*

Desert and mountains surround and define the landscape of the Phoenix urban area.<sup>14</sup> Phoenix sits in the northeastern reaches of the Sonora Desert, in the Salt River Valley, giving it a hot, dry climate. Heat and aridity shape the valley's ecology, as a variety of cacti and desert flora spread over red and orange rocks. The rocks contrast with clear blue skies. Phoenicians enjoy over 330 days of sunshine a year, providing many opportunities for them to take advantage of any number of outdoor activities, including hiking, rock climbing, golf, baseball, and swimming. The Salt River, the largest tributary of the Gila River, winds through Scottsdale, Mesa, Tempe, and then south of downtown Phoenix past South Mountain; infrequent rain and a series of dams and diversions ensure the riverbed through the cities (with the exception of Tempe Town Lake) is usually dry, sparsely vegetated, and rather pathetic looking. Mountains demarcate the Valley's boundaries, which from atop provide panoramic views of the Valley below. The Sierra Estrella Mountains mark the southwestern boundary, while the South Mountains rise south of the Salt River, seven miles from downtown. From the west, the White Tanks capture the horizon; arching northwest to northeast, the Phoenix Mountains Preserve cast their shadow on the furthest northern reaches of the city, while the McDowell Mountains

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<sup>14</sup> In the postwar period, "urban area" and "metropolitan area" are used almost interchangeably. While postwar planners more often use the term metropolitan area, I use the term urban area and metropolitan area to include Phoenix, Tempe, Scottsdale, Glendale, and Mesa, as well as their suburbs and smaller towns within Maricopa County. The legal definitions of "urban area" and "metropolitan area" have undergone considerable changes since the 1940s. The contemporary Phoenix metropolitan area includes all of Maricopa and Pinal County, which is the definition I refer to in the conclusion.

and Superstition Mountains tower in the more distant northeast and east. This environment offered a set of amenities--consistently warm weather, lots of land, mountains, and open spaces--that provided the foundation from which Phoenicians envisioned and created a desert metropolis.<sup>15</sup>

In 1900, the city of Phoenix was a small farming center with a population of only 5,544. City boosters---government officials, local businessmen, and civic groups, among others---envisioned transforming the desert into an agricultural Eden. “To realize this vision,” historian Philip VanderMeer argued, “Phoenicians worked to change the natural environment, to create a complementary built environment, and to develop the accouterments of modern American culture.” In *Desert Visions*, VanderMeer shows how three different visions, beginning with an agricultural vision, influenced the growth policies toward specific goals; at no point did they seriously consider slowing growth. Assistance first came from the Federal Reclamation Act of 1902, which provided funds for the Bureau of Reclamation to construct Roosevelt Dam on the Salt River in 1911 to store water for the Salt River Project Irrigation District. Boosters, including the Santa Fe Railway, promised fertile soil, plentiful sunshine, and now a stable water supply to attract migrants to the valley. By 1930, the city’s population had grown population to 48,118. The invention of the air conditioner in the early 1930s made valley summers more hospitable, and growth continued.<sup>16</sup> In the 1940s, Phoenix leaders envisioned a new kind of city, which relied on high-tech manufacturing industries, tourism, and housing

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<sup>15</sup> Climate information can be found at *Western Regional Climate Center*, <http://www.wrcc.dri.edu/cgi-bin/cliiled.pl?az23183> (accessed January 23, 2014).

<sup>16</sup> For air conditioning in Phoenix see, Bob Cunningham, “The Box That Broke the Barrier: The Swamp Cooler Comes to Southern Arizona,” *Journal of Arizona History* 26, No. 2 (1985), 163–74. For national context and federal funding for central air through the FHA, see Gail Cooper, *Air Conditioning America: Engineers and the Controlled Environment, 1900-1960* (Baltimore: Johns Hopkins University Press, 1998).

construction. To make this dream a reality required the transformation of the built agricultural environment into a modern postwar city.<sup>17</sup>

*Phoenix's Postwar Vision: Selling Natural and Human Capital*

In 1949, the city of Phoenix underwent a political transformation that shaped the next thirty years of the city's history. The Phoenix Charter Government Committee (CGC) ran on a reform platform that emphasized managerial expertise and efficiency, and swept the 1949 mayoral and city council elections. The CGC consisted of business and civic leaders, who "embraced government power and planning in order to reconstruct a developmental state that would privilege industry" and make the city more attractive to homebuyers, tourists, and businesses. Until the late 1970s, the CGC remained the dominant political group in the city and its desire to turn Phoenix into a desert metropolis played an important role in city policy in the postwar period.<sup>18</sup>

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<sup>17</sup> For population statistics, see Philip VanderMeer, 39. VanderMeer's quote can be found on page 9 and a discussion of the city as an agricultural Eden on pages 76-78. VanderMeer describes the vision of Phoenix leaders during and after World War II in Chapter 4. For a discussion of the Salt River Project and construction of the Roosevelt Dam, see Karen Smith, *The Magnificent Experiment: Building the Salt River Reclamation Project, 1890-1917* (Tucson: University of Arizona Press, 1986).

<sup>18</sup> Like other postwar Southwestern cities, municipal reformers sought to replace partisan "bossism" politics with non-partisan administrators. From 1914 to 1949, twenty-four individuals served thirty-one separate appointments as Phoenix's city manager, with the average length of tenure just fourteen months. For the quote, see Elizabeth Shermer in *Sunbelt Capitalism*, 3. Shermer argues Sunbelt cities such as Phoenix were at the epicenter of modern Conservatism. For municipal reform in the Southwest specifically, see Chapter 5 in Amy Bridges, *Morning Glories: Municipal Reform in the Southwest* (Princeton, NJ: University of Princeton Press, 1997). For Phoenix and the CGC, see VanderMeer, *Desert Visions*, chapters 5 and 8, Wesley Johnson, "Generations of Elites and Societal Change in Phoenix." In *Community Development in the American West: Past and Present Nineteenth and Twentieth Century Frontiers*, edited by Jessie L. Embry and Howard A. Christy (Salt Lake City: Signature Books, 1985), 79-109. For more on this issue see Carl Abbott, *The Metropolitan Frontier: Cities in the Modern American West* (Tucson: University of Arizona Press, 1993), 40-43 and Carl Abbott, *The New Urban America: Growth and Politics in Sunbelt Cities* (Chapel Hill, NC: University of North Carolina Press, 1987). City manager figure comes from Paul Kelso, *A Decade of Council-Manager Government in Phoenix Arizona* (Phoenix: 1960), 7.



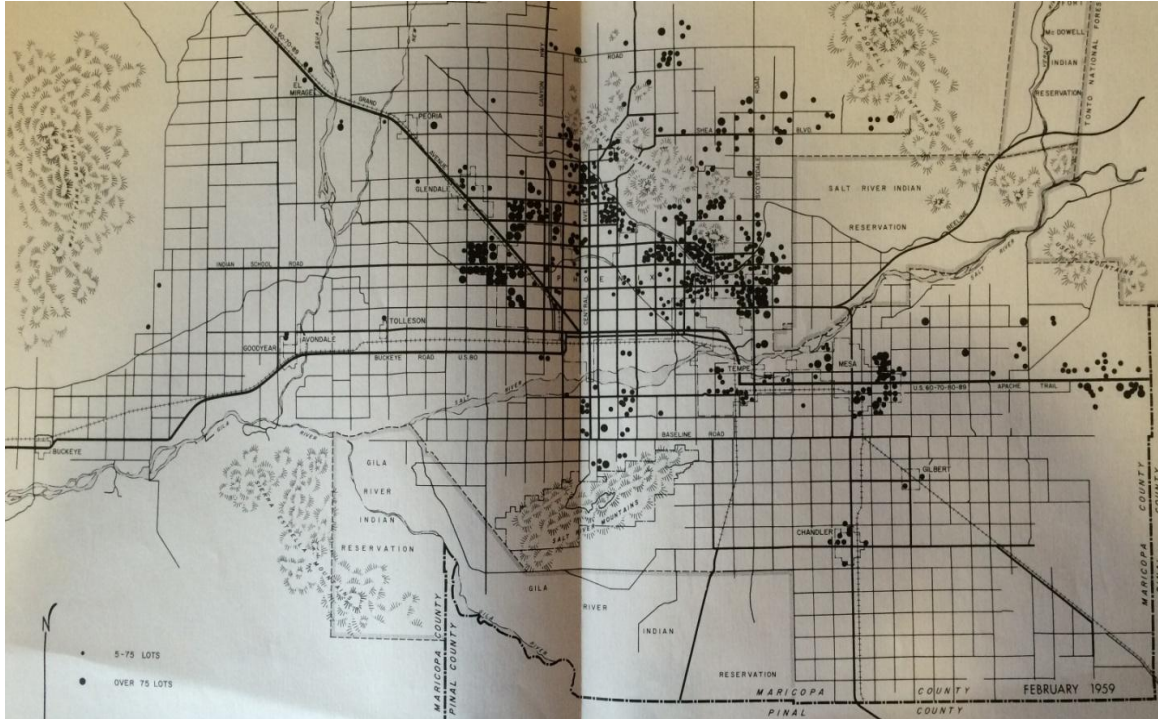


Figure 1. Map of Phoenix Subdivision Construction in Phoenix, 1956 to 1958. The map highlights the mountains that surround Phoenix, as well as its major rivers, the Salt and Gila. The black dots represent new subdivisions built between 1956 and 1958. Much of the development is around Camelback Mountain and what would later become the Phoenix Mountains Preserve.<sup>19</sup>

Following World War II, urban planning became critical to ensuring growth according to Phoenix boosters' high-tech suburban vision.<sup>20</sup> Boosters' used a variety of pitches to attract industry, tourists, and migrants to the Valley of the Sun and transformed a city not even in the top 95 most populous in the nation in 1940 into the 12th largest city in the nation by 1970.<sup>21</sup> Coordination between public and private interests, as well as

<sup>19</sup> This image can be found in City of Phoenix and Maricopa County, *Land Use in the Phoenix Urban Area: A Study Basic to Long Range Planning*, Advanced Planning Task Force (Phoenix, 1959), plate 8.

<sup>20</sup> See VanderMeer, *Desert Visions*, Part II.

<sup>21</sup> Census Bureau, "The Population of the 100 Largest Urban Places: 1980," Table 21 <http://www.census.gov/population/www/documentation/twps0027/tab21.txt>. For the efforts of other Sunbelt cities to utilize their climate as part of an urban growth strategy, see Bridges, *Morning Glories* and Abbott, *The New Urban America*.

between different levels of government was crucial to this growth. Phoenix Chamber of Commerce President Frank Snell later emphasized the relationship between public and private partnerships in efforts to promote the growth of Phoenix. “You can’t do it individually,” Snell explained, “It was a network.”<sup>22</sup> The city dedicated itself to planning in order to make its leaders’ visions a reality. Following the war, Phoenix had more planning officials per capita than almost any other city in the nation.<sup>23</sup> Phoenix’s growth mirrored larger trends in the American West, which added 20 million people between 1940 and 1970. Between 1960 and 1970, the West contained 20 of the 30 fastest growing cities in the nation, both by percentage gain and absolute numbers. Federal money, especially defense contracts, helped spur this growth.<sup>24</sup>

VanderMeer argued Phoenix boosters “valued nature, but primarily for how it could be transformed into a saleable commodity.” Barry Goldwater, a city council member with the CGC and later a long-time Senator and failed Presidential candidate, later explained that following the war, “The natural thing to which to turn was the capitalization of our climate, our natural beauties, and the romance of the desert.” The region’s environmental assets---climate, sun, and natural landscape---were ubiquitous in boosters’ pitches of the “Arizona Good Life.” Boosters linked these assets to a particular kind of quality of life, one that emphasized health, recreation, open spaces, cultural assets

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<sup>22</sup> Snell quote is from an interview with Kristina Minister, April 26, 1988, audiotape, side 1, tape 10, and side 1, tape 11, Chamber Centennial Oral History Interviews, Greater Phoenix Chamber of Commerce, Phoenix. It can be found in Shermer, *Sunbelt Capitalism*, 52.

<sup>23</sup> See Kelso, *A Decade of Council-Manager Government*, 58-65. Phoenix ranked fifth in number of employees and eighth in expenditures in per capita measures for cities with a population of 250,000 to 500,000. See, International City Management Association, *The Municipal Year Book, 1961* (Washington, D.C., 1961), 274.

<sup>24</sup> The Population figure comes from Findlay, *Magic Lands*, 17-18. For federal support of this growth, see *ibid*, 18-23, Gerald Nash, *The Federal Landscape: An Economic History of the Twentieth-Century West* (Tucson: University of Arizona Press, 1999), 43-74, and Abbott, *Metropolitan Frontier*, 9 and 70-77.

like museums and parks, efficient municipal services, affordable low-density housing, and good jobs. The astonishing growth of the city testified to their success. Between 1940 and 1980, Phoenix's population rose from 65,414 to 789,704.<sup>25</sup>

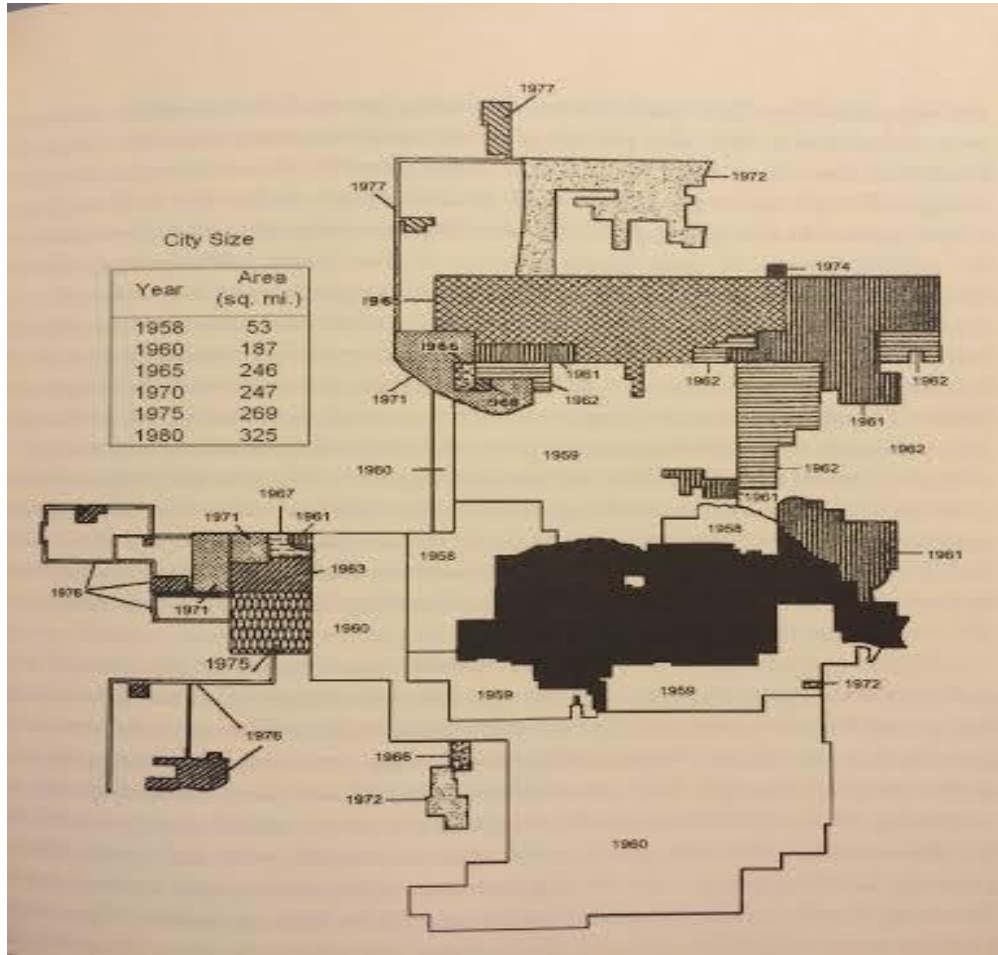


Figure 2. Phoenix's Growth Between 1940 and 1980. The image depicts Phoenix's growth in the postwar period. The black area represents the city boundaries in 1958.<sup>26</sup>

During and after World War II, elected leaders, the Chamber of Commerce, and U.S. Congressmen like Carl Hayden and Barry Goldwater helped persuade defense

<sup>25</sup> For the quote see Philip VanderMeer, *Desert Visions*, 93. For population statistics, see pages 89 and 191. For a discussion of Phoenix cultural institutions see pages 65-71, 93-94, and 167-171. Goldwater quote can be found in Arthur Horton, *An Economic, Political and Social Survey of Phoenix and the Valley of the Sun*, (Tempe: Southside Progress, 1941), 145.

<sup>26</sup> Map is from Philip VanderMeer, *Desert Visions*, 279.

industries, specifically those related to aircraft, to locate in Phoenix. Clear skies, dry weather, and sunshine made Phoenix an ideal place to locate airfields and aviation training facilities. Examples include Litchfield Air Force Base at Goodyear, Williams Air Field in Mesa, and Luke William's Air Force Base (now called the Goldwater Air Force Range). One Goodyear official commented that because of Phoenix's sunshine, "planes could be flown and tested every day of the year." President of the Chamber of Commerce, Frank Snell, explained the value of clear skies to the area's economy: the Chamber "did not want dirty industries" and if "there was talk of a refinery in this area... we [the Chamber of Commerce] did our best to kill it."<sup>27</sup>

Federal defense contracts and Phoenix's Chamber brought high-tech manufacturing and electronics firms to the Valley, the latter being particularly suitable because of the dry climate. During the Second World War, the Aluminum Company of America (ALCOA) opened one of the nation's largest aluminum plants in the Valley. AiResearch opened a research lab plant following the war after John J. Ross, President of the Company, visited and enjoyed the lifestyle and climate. Electronics giant Motorola opened a plant in 1948. University of Arizona researchers queried Motorola executives about their choice to locate in Phoenix and executives responded, "the principal factor in favor of Phoenix was the city's outstanding climate and its nation-wide reputation as a resort and health center." Those at Sperry Rand and General Electric, which also opened manufacturing centers in the Valley, expressed similar views. Phoenix boosters

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<sup>27</sup>Frank Snell interview by G. Wesley Johnson, September 22 1977, transcript 6, Phoenix History Project; Allen Rosenberg interview by Kristina Minister, March 28, 1989, audiotape, side 2, tape 11, Chamber Interviews; Board of Directors, Minutes of Meeting, July 11, 1949, 4, volume: "1949-1950," Board of Directors Records, Greater Phoenix Chamber of Commerce, Phoenix. The quotes were found in Shermer, *Sunbelt Capitalism*.

emphasized to potential tourists and migrants, that “no smokestacks insult the Arizona sky.” Other factors that influenced companies to relocate to Phoenix were favorable right-to-work laws, as well as low taxes on industry.<sup>28</sup>

The environment became a primary attraction in bringing tourists to the area. Snell explained the goals of the Chamber of Commerce’s 1946-1947 national advertising campaign: to extend the tourist season, to cause dissatisfaction with the winter climate in the Midwest and northeast, and to promote the Valley as a resort area. By the mid-1950s, both Phoenix and Maricopa County paid \$50,000 annually to fund advertising campaigns in local, regional, and national magazines. Funds rose to \$85,000 by 1962. The economic value of tourism grew 111% in the next two years: in 1951, the city did not have enough rooms for 10,000 visitors, but by the end of the decade, the city had 43,000 available rooms for tourists.<sup>29</sup>

During the 1950s and 1960s, Arizona consistently ranked in the top three states in net migration, with most moving to urban centers like Phoenix. A survey by *Arizona Highways*, a state-funded magazine, found that non-Arizona subscribers (94% of their total subscribers), who said they planned to move to the state within the next ten years most often cited the climate, for both its health values and the opportunity it afforded for

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<sup>28</sup>Tim Kelly, “Changing Face of Phoenix,” *Arizona Highways* 40 (March 1964), 2-23, especially pages 3, 10 and 13; Elizabeth Tandy Shermer, *Sunbelt Capitalism*, 74-76 and 88-90; “Chamber is Credited with New City Plant,” *Whither Phoenix* (March 1946), 1; John Shirer, “The Motorola Research Laboratory in Phoenix,” *Arizona Business and Economic Review* 2 (February 1953), 2. By 1960, Motorola employed 5,000 people in the Valley. For more on Motorola and postwar industrial growth in the Valley see Bradford Luckingham, *Phoenix: The History of a Southwestern Metropolis* (Tucson: University of Arizona Press, 1989), 156. William Collins, *The Emerging Metropolis, Phoenix, 1944-1973* (Phoenix: Arizona State Parks Board, 2005), 179.

<sup>29</sup> For Snell’s goals for the Chamber, see Board of Directors, Minutes of Meeting, December 16, 1947, vol.: “1946-1947,” Board of Directors Records, Greater Phoenix Chamber of Commerce, Phoenix. VanderMeer, *Desert Visions*, 46-48. Tourism expenditure information can be found in “Chamber Achieves Major Objectives,” *Phoenix Action* (May 1953), 1-3; “National Advertising Committee, *Phoenix Action!* (July 1962), 6. For the number of tourist accommodations, see VanderMeer, *Desert Visions*, 108-9.

outdoor recreation, as their top reason.<sup>30</sup> Moreover, according to a 1979 community survey, 78% of respondents cited the climate as a factor they most liked about the city, more than any other factor. The second and third most cited factors were the “friendly people” and amenities, like outdoor recreation, education, and cultural facilities. Homebuilders emphasized these amenities to potential buyers, often referencing environmental factors in the name of subdivisions. For example, Del Webb built Sun City as a retirement community that specifically targeted out of state residents. Advertisements emphasized outdoor activities, such as golf, hiking, and gardening. On January 1, 1960, thousands flocked to the opening of Sun City.<sup>31</sup>

Backyards became extensions of the living environment. Phoenix builder Cliff May explained, “you do not just take the outdoors as it is. You manipulate it for your own purposes.” Advertisements depicted backyards with kids playing in the pool, a proud father tending the barbeque while mom set the table in the lush green grass; often they noted swimming and outdoor activities were possible almost year-round. A 1955 article in *Arizona Highways* attempted to lure migrants using Phoenix’s unique environment: “When the work at your desk, whatever it be, grows dull, you have only to listen to the call of Arizona’s awakening. Close your eyes and see the breezes tousling the heads of flowers on the Desert.” The magazine consistently featured the unique aspects of the

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<sup>30</sup> Migration statistics were taken from Charles Sargent, *Metro Arizona* (Scottsdale: Biffington Books, 1988), 64. Source: decennial censuses of population, 1940, 1960, 1970. The *Arizona Highways* survey can be found in Thomas Cooper, “Arizona Highways: From Engineering Pamphlet to Prestige Magazine,” (master’s thesis, Tucson: University of Arizona, 1973),” 113-118 and 149. For examples of booster literature to attract migrants, see VanderMeer, *Desert Visions*, 187-96 and 201-203.

<sup>31</sup> For the community survey, see City of Phoenix, *Urban Form Directions, Community Attitude Survey: Cross Tabulation Report*, Phoenix Planning Department (October 26, 1979), 3. For a discussion of Sun City, see John Findlay, *Magic Lands: Western Cityscapes and American Culture After 1940* (Berkeley: University of California Press, 1993), 173. Specific advertisements emphasizing recreational activities can be found on pages 180 and 191.

Arizona's environment. The Grand Canyon, the state's most iconic and incredible natural wonder, graced the cover of the magazine more than any other subject, appearing 25 times from 1925 to 1972. Cacti appeared as the most photographed image in the magazine. A *Holiday* magazine article noted that Phoenicians "can escape to desert and mountain picnic areas of untouched natural beauty, ten minutes from Phoenix." Boosters' efforts paid off, as letters came into the mayor offices from potential migrants seeking employment in the city, noting the climate as a primary factor. Furthermore, only 28.9% of the 581,346 persons aged five years or older who lived in the Phoenix metropolitan area in 1960 had been there prior to 1955.<sup>32</sup>

#### *Urban Planning, Environmental Planning in Postwar Phoenix*

During the 1950s, the city's population grew 311%, the highest percentage growth of any in the nation during the decade, but the city soon also contended with the unintended environmental consequences of urban growth.<sup>33</sup> One of the first ways in which city officials sought to incorporate postwar environmental concern into urban growth policy was through the creation of a metropolitan sewage system. Municipal officials and engineers worried over the public health threat caused by the proliferation of

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<sup>32</sup> U.S. Bureau of the Census, *Census of the Population: 1960* (Washington, D.C.: Government Printing Office, 1963), Volume PC (2)-2C, Mobility for Metropolitan Areas, Table 3, 32-47. VanderMeer, *Desert Visions*, 199-202. Cliff May quotation from *Sunset*, April 1950, 50. Similar comments can be found in *Sunset*, May 1950, 44, and *Sunset*, August 1950, 38. For an example of an advertisement portraying the "Arizona Good Life," see *This is Arizona: Fiftieth Anniversary*, special edition of *Arizona Days and Ways Magazine*, (11 February 1962), 73. For *Arizona Highways* article, see Joyce Rockwood Muench, "Pilgrimage Into Spring," *Arizona Highways* (February 1955), 28. For Arizona Highways topics, see Thomas Cooper, "Arizona Highways," 49. For the *Holiday* magazine article see "Phoenix in the Valley of The Sun," *Holiday* (March 1953), 62. Letters can be found in box 4, folder 23, City of Phoenix Government Records Collection, 1955-66, Arizona Historical Society, Tempe-Papago, Arizona.

<sup>33</sup> Figures on Phoenix's growth can be found in Gammage, *Phoenix in Perspective*, 63.

failure-prone septic systems in suburban developments that created unsanitary environmental conditions. Through public campaigns and citizen involvement, city officials persuaded voters to approve several large bond elections for municipal sewer expansions and improvements to deal with the problem. With significant assistance from federal funds, the city created a centralized sewage treatment facility and extended municipal sewer lines to suburban areas to curb the public and environmental health threat of faulty and overcrowded septic tank systems, but did little to restrain suburban growth, and in many ways encouraged it.

Unlike the extension of municipal sewers and the later construction of West Papago-Inner Loop, city officials in the 1960s explicitly restricted growth in an important recreation area in the valley by prohibiting land development on Camelback Mountain and protecting the area as open space. In the 1960s, a citywide grassroots campaign helped raise support to protect the city's most iconic natural landmark. Moreover, the successful campaign reveals the benefits of public-private collaboration, as well as cooperation among multiple levels of government as federal funds paid for nearly half of the land purchases required for preserving the mountain. Camelback Mountain, and its aesthetic and recreational value, congealed with many Phoenicians' preference for low-density development and wide-open skies that brought many to the Valley in the first place. In a 1977 survey, open space or access to open space was the most commonly cited factor among residents in selecting a place to live. Over three-quarters said they would rather live near open space than not.<sup>34</sup>

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<sup>34</sup> *Urban Form Directions*, 9 and 16.



The fight over West Papago-Inner Loop in the 1970s demonstrates the limits of the incorporation of environmentalism into postwar urban growth policy. First, many Phoenicians and especially government officials at the local and state level believed that only a freeway could serve the city's transportation needs because mass transit alternatives did not mesh with the city's alleged low density construction. They argued that mass transit such as rapid rail required higher population densities in the city, even though the city's density was about the average in the nation when excluding the substantial amount of land preserved in mountain parks.<sup>35</sup> While freeways and automobiles provided freedom in mobility, mass transit seemed rigid and restrictive. Moreover, many believed only freeways could continue to foster urban growth, which rallied business interests to strongly support freeways in a very effective public campaign that wore down opposition groups. Last, federal policies provided generous subsidies to freeway construction, while offering little funding assistance to mass transit alternatives until the 1980s. The debate over the West Papago-Inner Loop underscores the difficulty in incorporating environmental values in public policy when it required significant social and cultural change to the suburban lifestyle that drew so many to Phoenix. City leaders promoted suburban development, which many pro-freeway advocates later conflated with low-density development to argue that the city needed a transit system that relied heavily on freeways instead of mass transit. The construction of freeways then impacted the suburban feel of the city as freeways had to be built all over the metropolitan area, often adjacent to formerly quiet bucolic neighborhoods. While 70% of the city in 1977 believed

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<sup>35</sup> For more on Phoenix and sprawl see Patricia Gober, *Metropolitan Phoenix: Place Making and Community Building in the Desert* (Philadelphia: University of Pennsylvania Press, 2005), 119-121, 128-135, and 202-208. Also see, Gammage, *Phoenix in Perspective*, chapter 5.

Phoenix had been growing too fast, 34% of those respondents also claimed the city's density was too high. Moreover, the likelihood that someone felt the city grew too fast and that the density was too high increased with the duration of residency in Phoenix.<sup>36</sup>

The values of incoming migrants and decisions made by policymakers in the postwar period had lasting impact on contemporary Phoenix's natural and built environment. Therefore, an examination of those key historical decisions can provide insight into policy decisions today that will guide the city's growth into the twenty-first century. While not every consequence of a policy decision is knowable, the lasting impact of decisions demonstrates the importance of long-term planning and the need to consider carefully the environmental effects of development plans.

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<sup>36</sup> *Urban Form Directions*, 17.

## Chapter 2: Sprawl and Septic Tanks: Urban Growth and Pestilence in Phoenix, 1946-1964

As urban areas expanded rapidly following World War II, municipal officials across the nation concerned themselves with ensuring orderly growth and public health; orderly meaning the maintenance of growth without sacrificing what Phoenix Mayor Sam Mardian described in 1963 as the elements of a “mature city.”<sup>37</sup> These included parks, libraries, fire and police protection, water and sewers. In Phoenix and across the nation, municipal officials increasingly turned their attention to pestilent conditions in growing suburban fringe areas due to poorly designed individual human waste disposal systems. In 1954, Mark Hollis, Assistant Surgeon General and Chief Engineer of the U.S. Public Health Service (USPHS), explained that sanitary engineering is “a science of the environment” that sought to “eliminate those stresses man need not bear and to moderate those which he must.”<sup>38</sup> Throughout the nation, municipal officials, engineers, and the public recognized that their health was linked to the health of the environment, which the proliferation of septic tanks in suburban subdivisions threatened. Suburban development in fringe areas of cities often came at the expense of the countryside; 60% of the new urban territory added in Phoenix between 1955 and 1975 came from desert and mountain areas on the city’s fringe.<sup>39</sup> Throughout the 1950s, municipal leaders, often following

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<sup>37</sup> Samuel Mardian Jr. Collection, 1960-1964, box 5, folder 26 in Arizona Collection, Arizona State University Library, Tempe, Arizona. These remarks were part of a speech in 1963 that celebrated the city reaching half a million people.

<sup>38</sup> For Mark Hollis quote, see Martin Melosi, *The Sanitary City: Urban Infrastructure in America from Colonial Times to the Present* (Baltimore: John Hopkins University Press, 2000), 294.

<sup>39</sup> Kim Knowles-Yanez, Cherie Moritz, Jana Fry, Charles L. Redman, Matt Bucchin, and Peter H. McCartney, *Historic land use: phase I report on generalized land use* (Tempe: Center for Environmental Studies, Arizona State University, 1999), 9-11 and 16.

alarming pollution reports, tried to improve sanitation systems in the face of rapid urban development.

While city governments usually managed centralized sewer and waste treatment systems in the urban core, individual waste disposal systems, especially septic tanks, proliferated in the suburban and rural areas. Subdivision developers preferred septic tanks because they reduced costs and expedited the building process compared to connecting to municipal sewers or creating a neighborhood-wide sewer of their own. Septic tanks became a major public health concern because human waste often seeped into homeowners' drinking water wells or emerged at the surface exposing people and wildlife to domestic sewage. By 1960, a large body of evidence had accumulated that suggested the contamination of groundwater by septic tanks. For example, the USPHS found that synthetic detergents had shown up in 37% of drinking wells tested for contaminants, traveling from washing machines through septic tanks and into the groundwater. If the detergent suds had made it to the groundwater, then it was quite likely the wells also experienced biological contamination from effluent that had been seeping its way into the water supply. Nationwide one-third of subdivision septic tanks failed within the first three years.<sup>40</sup> The widespread and high risk of water contamination led to increasing collaboration between local, state, and national governments to find solutions to the problem.

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<sup>40</sup>For more on detergents and industrial contaminants, see Rome, *Bulldozer in the Countryside*, 103-114. Long Island, New York became an infamous case of groundwater contamination from septic tanks. See Sellers, Chapter 4. The failure rate of septic tanks is taken from Rome, *Bulldozer in the Countryside*, 92.

During the 1950s, federal aid for homes and government defense contracts, as well as successful efforts by city boosters to promote Phoenix caused the city's population to grow 311%, the highest rate of any city in the nation. The expansion of the Phoenix metropolitan area created problems for municipal officials, who attempted to maintain the quality of life expectations of citizens in the valley: low-density and affordable housing, and environmental quality. A series of federal laws provided funds to help mitigate the threat of water contamination through the expansion of sewer lines, construction of water treatment plants, and the creation and expansion of regulatory bodies. Phoenix's experience provides one example of how desire for environmental quality intersected with public health concerns to influence urban growth policy following World War II.<sup>41</sup>

In this case, environmental concern and policy reform came from the top-down. Municipal officials, engineers and other technical experts drove these efforts, not only for the altruistic reasons of ensuring public health, but as part of a larger campaign to promote the growth of the city. Still, sanitation efforts received public support via bond approvals, participation in citizens' committees, and in some cases, the formation of sanitary districts to petition for sewers. Phoenix officials mostly struggled to keep waste treatment at pace with urban growth during the 1950s and early 1960s because the city's jurisdictional reach was limited and real estate developers enjoyed the more libertarian, less regulated style of government in the county. The concern over inadequate sanitary

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<sup>41</sup> I calculated population growth from data in VanderMeer, *Desert Visions*, 152 and 191. For a comprehensive study on municipal, state, and federal policy regarding sanitation in the United States, see Martin Melosi, *The Sanitary City*.

systems provided significant support for coordinated planning because they threatened public health, which along with other environmental considerations, became key components of urban planning. Additionally, to prevent unincorporated areas in the county from becoming “satellite towns” and suburban subdivisions that “landlocked” Phoenix’s growth the city undertook extensive annexation campaigns in the 1950s.<sup>42</sup> During this campaign, Phoenix officials specifically used municipal services to support their campaigns, as they promised the public more and better service at a cheaper price as part of a municipal sewer system. Often the city extended services prior to annexation to make it more appealing to people there and an easier transition into city governance. Phoenix later collaborated with other cities in the metropolitan area, as well as state and national governments to find comprehensive sanitary solutions.

The construction and expansion of the 91<sup>st</sup> Avenue Sewage Treatment Plant marks the beginning of a comprehensive sewage network based on future planning, as opposed to the extension of services to areas already blighted by unsanitary systems. While sewage treatment plants effectively curbed contamination of water from human excrement, the plant required continuous expansions to accommodate the metropolitan area’s growth over the last fifty years. Moreover, by the 1960s and 1970s environmental concern shifted to toxic chemical contaminants. In this way, the sources of environmental concerns have evolved, but a desire to maintain public and environmental health

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<sup>42</sup> John Wenum, *Annexation as a Technique for Metropolitan Growth: The Case of Phoenix, Arizona*. (Tempe, 1970), 41, 55-57. The quote comes from an interview conducted by Wenum with the Assistant City Manager in the 1950s, Charles Esser. This point of view was also expressed in the City of Phoenix’s 75<sup>th</sup> anniversary pamphlet, which claimed that rapid growth brought Phoenix “to a crossroads in its development.” The report declared the city faced a choice, to become “a large city capable of planning for sound growth throughout the area...or becoming a relatively small city surrounded by a number of ‘bedroom’ towns.” See City of Phoenix, *75<sup>th</sup> Anniversary Report* (Phoenix, 1960), 8.

remained essential to urban growth and planning. Furthermore, the expansion of sewers in the metropolitan area marks some of the earliest cooperation between municipalities in the Valley of the Sun, and reveals the benefits of collaborative decision-making and comprehensive planning in solving environmental problems.<sup>43</sup>

### *Post-War Urban Sprawl and Septic Tanks*

Following World War II, a host of macroeconomic factors fueled the demand for housing: increased standard of living, federal subsidies, new home building techniques, and a desire for open space outside crowded cities. Post-war legislation, such as the G.I. Bill and other federal policies aided returning veterans in purchasing homes, while federal spending created a wealth of new jobs, especially in the defense and high-tech manufacturing industry, which opened many offices in Phoenix.<sup>44</sup> To meet the surging demand for homes, builders' like William Levitt of New York used prefabricated materials and specialized labor to assemble homes quickly and at minimal costs. In Phoenix, no other builder utilized postwar homebuilding techniques better than John Long. In 1956, he won first prize in the "under \$16,000" category of the American Builder Awards for his \$9,800 home that included all the amenities of modern living: three bedrooms, a pool, and wiring for a washing machine within a community of gently winding streets and cul-de-sacs. The next year Long set a housing record when he

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<sup>43</sup> For a discussion of the concern with detergents and industrial chemicals in 1960s Long Island, New York, see chapter four in Christopher Sellers, *Crabgrass Crucible* and chapter three from Rome's *Bulldozer*. Rome's chapter spawned the idea for my examination of septic tanks in Phoenix.

<sup>44</sup> Two strong sources on this topic include Jackson, *Crabgrass Frontier* and Rome, *Bulldozer in the Countryside*. Many other sources also cover this topic, both broadly and in regards to the West. Gerald Nash's *The Federal Landscape: An Economic History of the Twentieth-Century West* is a great example of a regional perspective on federal spending. Some of this is covered in the introduction chapter of this thesis.

constructed 115 homes in only four days. Overall, the efforts of Long and other Phoenix area builders resulted in homes costing about 10% less than elsewhere in nation for comparable size ranch homes throughout the 1950s.<sup>45</sup>

Growth on the urban fringe also resulted from producer and consumer desires. Many of the homes built in the Phoenix metropolitan area by developers like John Long occurred on the fringe of the city boundary, where they could keep land costs down by putting distance between themselves and other subdivisions, as well as avoid city taxes. Moreover, development in outlying areas also allowed builders to create larger lot sizes for homes. Suburban homes also reflected consumers' desire for the "good life." Phoenix Planning Director John Beatty summarized the consumer desire for suburban living and the rapid growth of the area:

[T]he shift of population to the fringe areas can be reasoned to be the individual's desire for more room and air, his desire to raise his family in a suburban atmosphere, as escape from city regulations and most important, because of the large percentage of new residential construction which is going on outside the city limits.<sup>46</sup>

As a result, the Phoenix fringe area population grew at a more rapid rate than the central city through the 1940s. In 1950, the central city contained a population of 106,818 while the surrounding unincorporated area had a population of 224,952. The revenue generated by the city from home building permits reflected the increased volume of homebuilding in the metropolitan area: in 1952, the value of permits totaled \$13,182,472

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<sup>45</sup> "Here's the Hottest Value," *American Builder* (December 1956). The FHA statistic can be found in "Long Sets Home-Building Record; 115 Completed During 4-Day Week," *Arizona Republic* 29 December 1957, 5:8. For a comparison between homes in Phoenix and the rest of the nation, see VanderMeer, *Desert Visions*, 201-204.

<sup>46</sup> John Beatty, "The Urban Fringe Problem," in Arizona State Department of Health, Bureau of Sanitation, *Proceedings Housing Seminar* (November 12-14, 1952), 43.



and by 1959, that number ballooned to \$89,621,786. Federal Housing Administration Commissioner Julian Zimmerman noted the importance of federal funds to this growth, which provided low-interest loans to builders and consumers. He visited Phoenix in 1958 and reported that about 90% of FHA loans in the city went towards new home construction. Moreover, FHA loans accounted for nearly half of all loans processed in Phoenix in 1959.<sup>47</sup>

The appeal of septic tanks for builders was mostly financial, but also stemmed from a desire to build homes quickly. Homebuilders in Phoenix and elsewhere sought cheaper land, which meant putting distance between themselves and other subdivisions, as well as public utilities because beginning in 1951, homes built within the city limits required connection to the public sewer system. Septic tanks required less up-front capital than the construction of neighborhood sewage-treatment systems or connection to a municipal system, so that instead of massive preconstruction costs, developers could install individual systems simultaneous with the construction of each home. Moreover, using individual sewage disposal systems circumvented the need for comprehensive subdivision sewer plans, which usually required more time and money, the antithesis of postwar homebuilding principles. Thus, septic tanks congealed with suburban ideals and pervaded there. “The demand for housing outstripped the ability to supply sewer and

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<sup>47</sup> Valley National Bank, *Arizona Statistical Review* (September 1961), 24; Pumo, *The Home Builders Association of Central Arizona*, 86.

central treatment plants,” an EPA report later explained, “and the unsatisfied demand was generally met by providing septic tanks and cesspools.”<sup>48</sup>

Erma Bombeck opens her best-selling novel on life in the suburbs, *The Grass is Always Greener over the Septic Tank*, with a woman sinking into the mire of soggy marshland. ““It’s a septic tank”” the woman realizes, ““I’ve discovered the suburbs!””<sup>49</sup> Satire aside, Bombeck relates a key component of postwar suburban sprawl. In the mid-1950s, the number of septic tanks in the country was increasing by roughly 400,000 to 500,000 per year. However, septic tanks soon became a symbol of the folly of unplanned growth and increasingly a threat to the environment and public health. Discussions concerning septic tanks filled the pages of popular journals such as *American Home*, *Better Homes and Gardens*, *Popular Mechanics*, and *Good Housekeeping*, as well as engineering, homebuilding, and public works trade journals. Often, the discussion centered on the threat malfunctioning septic systems posed to public health.<sup>50</sup>

### *Pestilent Nation*

Septic tank systems consist of three main parts: a settling (septic) tank, distribution box, and an absorption field or seepage pit. Effluent leaves the home, travels through a sewer line and enters the settling tank. There, heavier solids settle at bottom

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<sup>48</sup> S.N. Goldstein, V.D. Wenk, M.C. Fowler, and S.S. Poh, *A Study of selected economic and environmental aspects of individual home wastewater treatment systems* (Washington D.C.: The Mitre Corporation 1972), v.

<sup>49</sup> Erma Bombeck, *The Grass is Always Greener Over the Septic Tank* (Boston: G.K. Hall & Co., 1972), forward.

<sup>50</sup> “Here’s the Hottest Value” and “Long Sets Home-Building Record,” 5:8. For a discussion on the debate over septic tanks, see Rome, *Bulldozer*, chapter 3. The census bureau did not begin counting septic tanks until 1960, so historians have only estimates of the number of septic tanks by government officials. The figure I refer to comes from United States Public Health Service, *Manual of Septic Tank Practice* (Washington, D.C.: GPO, 1957), v.

and become sludge while lighter particles, mostly greases, rise to the top of the liquid and are retained as scum. Anaerobic bacteria, which thrive in the absence of oxygen, then decompose a significant portion of both sludge and scum into liquids so that household wastes may be more readily absorbed into the surrounding soil. Liquids travel through pipes to the distribution box, which channels effluent to several lateral leaching lines to spread waste equally across the absorption field or seepage pit. Absorption of liquids occurs through an open-jointed system of pipes laid in trenches partially filled with coarse filter material, like sand or gravel, as liquids seep into the soil. Meanwhile, gases vent out of the tank, usually through a home's plumbing stack. Then, all that remains is the solid materials, which requires cleaning the tank and disposing of the waste periodically. During the 1950s and 1960s, sanitarians acknowledged that septic tanks worked as a preliminary treatment, but seldom treated waste to the degree they would call "sanitary." Septic systems worked fine in theory and were appropriate technology for rural areas with plenty of room for a leach field and setbacks for a drinking water well, but they became problematic when placed in suburban subdivisions with less room. Failures typically occurred from human negligence or misunderstanding that resulted in improper design, installation, and maintenance. The expansion of municipal sewers sought to prevent the installation of septic tanks altogether.<sup>51</sup>

Concern with septic tanks and urban water quality prevailed nationwide, and underscores the difficulty in controlling urban growth and its unintended consequences

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<sup>51</sup> Veterans Administration, *Individual Sewage-Disposal Systems*, March 15, 1955, (Washington D.C. Pamphlet 4A-12), 5 and 13-14. Quotations from Arizona Health Services, *Annual Report, 1948-9* (Phoenix: 1949), 15; Arizona Health Services, *Annual Report, 1947-8* (Phoenix: 1948); Goldsmith et al, *A Study of selected economic and environmental*, 1-2.

after World War II. In 1945, septic tanks served 17 million people, predominantly in suburban or rural areas, and by 1960, that number rose to 49 million.<sup>52</sup> Cities in the “Sunbelt,” like Las Vegas, Tucson, and San Diego in the Southwest, as well as Atlanta, Miami, and Charlotte in the South, experienced tremendous urban growth after World War II. Many soon came to believe this growth was uncontrolled, which as historian John Findlay explained, “bred a kind of powerlessness over the urban scene.”<sup>53</sup> FHA officials were some of the first to recognize issues with septic tanks, as they helped finance mortgages across the nation and worked with local health departments to inspect homes.

The agency conducted studies and surveys through the late 1940s and 1950s and began to publish reports and technical bulletins, primarily for homebuilders and public health officials. In 1955, the Veterans Administration issued a report on septic tanks in which they described them as a “menace to public health.” One official likened septic tanks to “a country cousin that came to town and got into trouble,” and noted that “in its place---a rural setting,” septic tanks worked fine, “but it was never intended for use in settlements with more than one family dwelling per acre.” Another recalled “tracts of homes with failing septic-tank systems.” An urban planner faulted septic tanks for creating “chaos in the suburbs.” Sanitarians looked on in horror at the spread of septic systems, which threatened to bring back the “old and presumably solved problem” of sanitation from the late eighteenth and early nineteenth century. They concluded cities and counties needed to create metropolitan authorities to plan for growth and ensure the adequate provision of public services to protect public health. Importantly, this included

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<sup>52</sup> The figure comes from Melosi, *Sanitary City*, 322.

<sup>53</sup> For the quote, see Findlay, *Magic Lands*, 16 and for a broader discussion of the growth of Sunbelt cities in the West see pages 14-51. Also see, Carl Abbott, *New Urban America*.

building the human capacity to recognize the development issues related to public health. At a nationwide conference on water contamination in 1961, U.S. Chief Sanitary Engineer Robert Taft noted that while improvements had been made, “continued rapid population growth in the suburbs kept the areas with septic systems constantly expanding, making this an ongoing problem.” Local officials, including those in Maricopa County and Phoenix, agreed. During the 1950s and 1960s, they echoed national concern over the lack of funding, regulation, infrastructure, and trained personnel to deal with the issue.<sup>54</sup>

#### *Pestilent Phoenix, 1946-1957*

In 1946, one sewage treatment plant served the city of Phoenix: the 23<sup>rd</sup> Avenue Sewage Treatment Plant. The city constructed the plant in 1932 in anticipation of an additional 20,000 people estimated to become part of the city’s population, but septic tanks continued to prevail where municipal sewers’ reach ended.<sup>55</sup> That year the Director of the Division of Sanitation of the State Department of Health explained that growth beyond Phoenix’s limits resulted in “many hundreds of cesspools and septic tanks.” In 1948, the USPHS conducted a study of dysentery and diarrhea, and selected five cities to

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<sup>54</sup> Rome, *Bulldozer in the Countryside*, 92-99. See Rome’s excellent footnotes in this chapter for examples of reports and studies, as well as articles and critiques pertaining to septic tanks. For recruiting issues and lack of funds for local health and sanitary departments see W.A. Hardenbergh, “Recruiting and Training of Personnel,” *American Wastewater Association*, 49, no. 10 (October 1957), 1283-1287; Milton Rosen, “Problems in Personnel Recruiting,” *American Wastewater Association*, 49, no. 10 (October 1957), 1279-1282. The quote comes from *Individual Sewage-Disposal Systems*, 1-2. Taft quote from, *Groundwater Contamination: Proceedings of the 1961 Symposium*, April 5-7, 1961 Cincinnati, Ohio, U.S. Department of Health, Education, and Welfare (Washington, D.C.: GPO, 1961), 1.

<sup>55</sup> City of Phoenix, *Metropolitan Phoenix Facility Plan, 1978, Current Situation- First Draft*, John Carollo Engineers (Phoenix, 1978), I-1, II-25. For a broader discussion of the construction of the 23rd Avenue Plant see Douglas Kupel, “Urban Water in the Arid West: Municipal Water and Sewer Utilities in Phoenix Arizona” (PhD diss., Arizona State University, 1995), 313-318.

test a new fly control program. With an infant diarrhea rate three times the national average, the USPHS chose Phoenix as one of the cities for the five-year federal program. The study identified disease-carrying flies that bred in areas outside the city limits where lax county regulations led to inadequate waste disposal systems that produced conditions for pathogens and breeding flies that acted as vectors. In 1949, city officials counted 649 privies and discovered a fly count fifteen times greater in one recently annexed area in south Phoenix than in other parts of the city. The recently annexed area had previously been mostly farmland but was undergoing residential development. As a result, the city extended municipal sewer lines to the area, but many other pockets of pestilence remained outside city limits. By now, the city and state both identified these conditions as a threat to public health and detrimental to its quality of life. “Certainly,” the State Health Department proclaimed in its annual report, “a safe water supply should be expected by citizens of every community in this modern state.”<sup>56</sup>

Of the 69,000 people living in the fringe of the Phoenix metropolitan area in 1951, only 739 homes connected to city sewer services. The rest relied on septic tanks and cesspools. Homes beyond the city’s official limits fell under the jurisdiction of Maricopa County. In 1951, the County Health Department consisted of only five sanitarians, which meant that if one considers only the fringe area, each sanitarian had

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<sup>56</sup> Jim Blakeslee, “Phoenix Pest Census Nears Final Stages,” *Arizona Republic* 22 November 1948, 2; “Garbage Can Action May Assure Funds,” *Arizona Republic* 30 November, 1950, 4; “Chicken Pens Present City Council Problem,” *Arizona Republic* 1 July 1950: 1-4; The city gave a 6 month period for residents to comply with city sanitation standards, “City Buffer Time Urged for New Areas,” *Arizona Republic* 10 May 1952, 15. Part of the reason for the gain in infant deaths was the city’s growth by annexation, which added a population of people often living in less than sanitary conditions, which the city sought to rectify. “Gain in Infant Deaths Shown For Phoenix,” *Arizona Republic* 27 September 1953, 7:3; quote was taken from, Arizona State Health Department, *Annual Report, 1948-9* (Phoenix, 1949), 15.

responsibility for nearly 14,000 homes.<sup>57</sup> The State Health Department, which gave final approval of subdivisions following the County's inspection, also found itself "insufficiently staffed with trained sanitary engineers and sanitarians." Therefore, challenges abounded at multiple levels of government. All identified septic tanks and cesspools as the primary and continued threat to human and environmental health.<sup>58</sup>

In November of 1952, municipal and health department officials from around Arizona met in Phoenix to discuss the most pressing challenges they faced. There, they identified problems associated with suburban development as a primary concern to ensuring public health, and further noted woefully understaffed and underfunded local health departments as an obstacle. "Unplanned sprawl," Phoenix Planning Director John Beatty explained, "describes perfectly the situation" in some areas. He went on to describe the "miserable consequences of unplanned sprawl": limited sewers, minimal fire and police protection, and essentially no parks. He argued for a collective sewage system designed to serve the entire metropolitan area and advocated for more collaboration between local, county, and state agencies, as well as more emphasis on long-term planning.<sup>59</sup>

In 1953, the city of Phoenix commissioned Headman, Ferguson & Carollo Consulting Engineers to assess its sewage system and provide recommendations. The firm concluded that "the suburban aspect of the Phoenix Metropolitan sewerage problem

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<sup>57</sup> For figure on fringe area see "A Fringe Area Study for the Phoenix Urban Area," Planning Department (Phoenix, May 1951), 56; Maricopa County, *Annual Report 1951-1952*, Maricopa County Health Unit (Phoenix, 1952).

<sup>58</sup> Quotations from Arizona State Health Department, *Annual Report, 1948-9*, 15; Arizona Health Services, *Annual Report, 1947-8* (Phoenix: 1948); Goldsmith et al, *A Study of selected economic*, 1-2.

<sup>59</sup> Arizona Health Department, *Proceedings Housing Seminar*, November 12-14, Bureau of Sanitation (Phoenix, 1952), 5, 18-21 and 46-8. For Beatty quote see page 46.

is the most critical one,” surpassing the problem within in the city “to a very considerable degree” because it involved an aggregate population approximately equal to the city, but almost completely lacking municipal service. Suburban areas relied on local underground disposal through the “generally uncertain, uneconomical, and frequently trouble-some septic tank and cesspool.”<sup>60</sup>

Carollo also identified two large contiguous suburban areas abutting Phoenix. These areas contained an aggregate population of 65,000 people, some of which already received sewer service from the city, but largely relied on septic tanks for their sewage disposal needs. In 1953, the northwest area formed Phoenix Sanitary District #1, roughly bounded by Bethany Road on the northern slope of Camelback Mountain, 56<sup>th</sup> Street to the east, the Southern Pacific Railroad to the south, and at its furthest west, 16<sup>th</sup> Street (See Figure 3). The District commissioned its own engineering report, which reached similar conclusions as Carollo: “the need for a sanitary sewer system in the District is rapidly becoming acute” due to rapid population growth. In 1950, the area had a population of 21,000, up from 7,000 a decade prior, and by 1953, it mushroomed to 37,000. The reliance on septic tanks caused concern. “In an area where the population density is increasing as it is here,” the report exhorted, “this practice becomes a sanitary hazard and a public health nuisance.” Within a few years, much of these two contiguous suburban areas became part of the city through annexation.<sup>61</sup>

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<sup>60</sup> City of Phoenix, *Sewerage Problems of Phoenix and Its Suburbs*, Headman, Ferguson, & Carollo Consulting Engineers (Phoenix, 1953), 38. Similar conclusions are found in a 1955 report. See, Michael Konig, “Toward Metropolitan Status,” citing Carollo, “Arizona Cities Face Tough Problems in Water and Sewage Works Planning,” 58.

<sup>61</sup> *Sewerage Problems of Phoenix*, 22-23. For map of sanitary districts, see *ibid*, Appendix, map 3. For the report on Phoenix Sanitary District Number One, see Phoenix Sanitary District#1, *Engineering Report Phoenix Sanitary District No. 1*, Johannessen & Girard Consultant Engineers (Phoenix, 1953), 1 and plate



A concurrent study by the USPHS of the Gila River Basin, which included the Phoenix metropolitan area, echoed similar concerns, noting “ineffectual” septic tanks posed a threat not only to those in the immediate area, but also “the diner many miles away who consumes inadequately washed fresh vegetables” watered with contaminated groundwater.<sup>62</sup> Both reports advocated expanding the municipal sewer system “farther and farther out into the suburbs whenever and wherever required” to ensure orderly growth and protect public health.<sup>63</sup>

The State Health Department reported that gastroenteritis (diarrhea or stomach flu) was the fourth leading cause of childhood deaths in the state in 1953. These diseases commonly resulted from drinking water contaminated with human waste. The State Health Department declared sanitation “a way of life” and identified the prevalence of individual waste disposal systems in the mushrooming suburbs as a threat to that quality of life. While the Maricopa County Health Department inspected 692 septic tanks and cesspools in 1952, it struggled to keep up with the rapid development of the area as the construction of hundreds of new subdivision homes continued to stress the Department’s resources. Blighted areas on the fringe of Phoenix continued to threaten water supplies and public health.<sup>64</sup>

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1 for population data. The report can be found in Roland Gail Baker Collection, box 14, folder 9, Arizona Collection, Arizona State University Library, Tempe, Arizona.

<sup>62</sup>U.S. Public Health Service, *Report on Water Pollution Control Gila River Drainage Basin, 1952* (Phoenix, 1952), 23-24.

<sup>63</sup> *Sewerage Problems of Phoenix*, 94.

<sup>64</sup> Arizona Health Department, *Arizona Public Health News* (January 1953), 6-7. Arizona Health Department, *Arizona Public Health News* (April 1953), 18. Arizona Health Department, *Arizona Public Health News* (August 1953), 5. Arizona Health Department, *Arizona Public Health* (September 1953), 5.

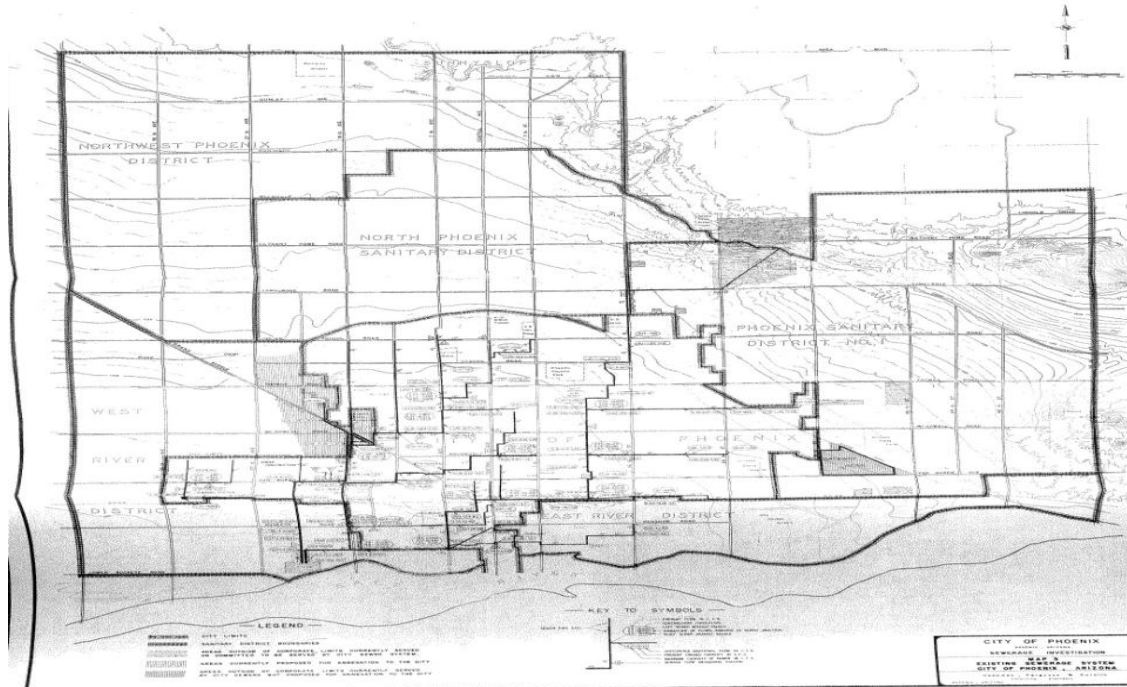


Figure 3. Map of Phoenix Sewer System and Sanitary Districts. The map shows existing municipal sewer lines in 1953, largely concentrated in the urban core. It also shows the three sanitary districts on the outskirts of Phoenix. Phoenix’s city limits follow the Grand Canal in the north and bend toward Gateway Park in the east at Van Buren Street before heading south and then west along the Southern Pacific Railroad to 35<sup>th</sup> Ave where it curves at Indian School Road back toward the Grand Canal.<sup>65</sup>

In 1955, the same year the VA issued a report cautioning against the use of septic tanks, the Maricopa County Health Department asked for sole responsibility for inspection and approval of all subdivision homes sponsored by the VA and FHA in addition to the non-VA and non-FHA homes they already inspected. The federal agencies approved the request, but the Health Department had never before undertaken such responsibilities. At the time, 25,000 subdivision homes, or 70% of homes in the Phoenix metropolitan area, relied on septic tanks, treating roughly 15 million gallons of sewage

<sup>65</sup> Figure 3 can be found in the Carollo, *Sewerage*, appendix.

daily.<sup>66</sup> County Health officials, now in charge of inspecting the systems, lacked the resources necessary to carry out their duties to protect public health. The Health Department had seven field sanitarians on staff, two of whom only monitored food and drink establishments. This left five individuals responsible for 182 subdivisions, or roughly 12,740 homes in the first year. In its first year, the County inspected only 508 septic tanks. Moreover, the health department lacked state or county regulations for septic tanks and therefore relied on relatively lax Federal Housing Administration standards.<sup>67</sup>

By 1956, the County Health Department found septic tanks a persistent problem. A lack of housing and plumbing regulations in the County, though, handicapped the agency's ability to regulate septic systems in the fringe area and did little to ensure builders and homeowners' understood how to install and properly maintain septic systems. The Division emphasized major sewerage problems in suburban areas around Phoenix, in particular the west Valley near Glendale, Gila Bend, and Buckeye. Much of this area became part of the metropolitan sewer system.<sup>68</sup>

The problems identified by the health department were directly attributable to suburban sprawl. Increasing land values in the metropolitan area encouraged builders to put large homes on small lots to maximize profit, but this left little room for the proper installation of septic systems. Builders often installed waste disposal systems too close to the foundation of homes, which placed undue stress on seepage pits from the home

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<sup>66</sup> A. Anne Dunbar and Joseph Weinstein, "City-County Control of Subdivision Sewage Disposal," *Public Works* 89 (January 1958), 102. Dunbar was the Supervising Sanitarian and Weinstein was the Sanitary Engineer for the Health Department of Maricopa County, Arizona.

<sup>67</sup> Number of homes based on figure given for the number of subdivisions multiplied by the average number of homes in Phoenix subdivisions can be found, as well as information on the County Health Department in *ibid*, 102-103.

<sup>68</sup> See in Maricopa County, *A Review of Progress, 1955-1956*, Maricopa County Health Department (Phoenix, 1956), 4-23.

settling above it, increasing the chance of subsidence. Another problem caused by the lack of space for adequate sewage systems occurred between the seepage pit and the septic tank. In almost every case where a septic tank tilted and broke connection lines, inspectors found the cause to be the weakening of the soil structure by percolation from a seepage pit located too close to a tank. In the inspection of one subdivision, sanitarians found 22 of 50 homes had septic tanks one size too small. This increased the likelihood of a system overflowing. More alarming, health department officials encountered, from time to time, “an almost unbelievable situation... a septic tank installed backwards.” If left in this condition the homeowner would soon find their waste quickly clogged and flowing back into their house: through their faucets, out of their toilet, and up through their drains. A situation anything but sanitary.<sup>69</sup>

A number of technical soil problems affected the design and construction of septic tanks, often beyond postwar builders’ knowledge. The key to an effective system was finding the area below ground that allowed good percolation and far enough from ground water, but this “Goldie Locks Zone” differed greatly across the Valley, making standardized septic tank systems largely ineffective, and necessitating inspections of every proposed system to ensure proper conditions for the installation and design of the septic tank. The use of seepage pits dismayed public health officials, who noted the danger of groundwater contamination. Sanitarians found in one instance the “Goldilocks Zone” was 18-feet below ground for one home while another across the street was 98-feet. Another four to five square mile section of the metropolitan area containing eight or nine subdivisions, water tables varied from 12 to 30 feet below ground. Individual

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<sup>69</sup> Ibid, 103.

inspections of each lot required a great deal of time and resources from an already overburdened agency. In some cases, the State Health Department allowed builders to hire their own engineer to conduct inspections, and then forward the report along for approval to the County to expedite the process. The State Health Department found many of the seepage pits received approval for sewage disposal before the County commenced its supervisory program. Subsidence had already occurred at several properties.<sup>70</sup>

In addition, consumer ignorance about maintenance also contributed to pestilence in the suburbs. The responsibility for maintaining septic tanks fell upon homeowners. Unfortunately, municipal officials and professional sanitarians too often found that homeowners lacked adequate knowledge to maintain and repair septic tanks properly. Many failures resulted from the lack of regular maintenance for sludge build up and pumping, so that the tanks overflow. Often, this took only one to three years to occur, especially if the rate of addition of new wastes is greater than the ability of the septic tank to break down waste or the soil to absorb. The prevalence of garbage disposals, a new appliance of modern living in suburban homes, increased the amount of waste going into septic tanks and thus contributed to their failure. Phoenix's concern over water quality and sanitation problems mirrored dismay elsewhere in the nation, as one-third of septic tanks nationwide failed within the first four years.<sup>71</sup> The Sanitary Division of the County Health Department explained that they constantly received complaints about individuals servicing and emptying individual sewage disposal systems in inappropriate areas. Often,

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<sup>70</sup> Ibid, 102-104.

<sup>71</sup> Goldsmith et al, *A Study of selected economic*, 8 and 19-24; Federal Housing Administration, *Causes and Prevention of Failure of Septic-Tank Percolation Systems*, P.H. McGauhey and John Winneberger (Washington D.C.: GPO, April 1964), 2; *A Review of Progress, 1955-1956*, 23. Unfortunately, due to a lack of records, I could not find information on the failure rate of septic systems in the Phoenix area. Given parallels to the nationwide problem, one may reasonably assume the figure is similar.

individuals either neglected maintenance or did so with equipment too small, which led to waste strewn on the highway or dumped into the nearest manhole, stream, or ditch.<sup>72</sup>

Other cities in the metropolitan area faced similar challenges.

In 1957, the City Manager of Glendale, W.A. Gilchrist, noted deficiencies with the city's sanitary sewers. Built in 1920, Glendale's plant proved insufficient to meet the city's growing needs, which caused "a critical sanitary sewer problem for many years." Gilchrist stated, "there was almost no treatment" from Glendale's small plant because "the community was rapidly outgrowing the collection system and, due to adverse grades, it was impossible to extend the sewer system to serve all areas inside the present city limits." Between 1940 and 1950, the population of Glendale grew by 91%, from 8,179 to 15,696. Much of Glendale's growth resulted from annexations of subdivision developments. Part of the growth explosion in the western area around Glendale stemmed from the construction of John Long's master-planned community in 1955, Maryvale, which contracted with the city of Phoenix for sewer services.<sup>73</sup>

Government officials likened individual sewage disposal systems to an adversary in their efforts to ensure orderly growth and protect public health. They remained confident in their abilities to overcome this challenge--so long as they received a sufficient number of skilled engineers, the funds required to carry out their activities and construct the proper infrastructure, and good planning. One Phoenix utility engineer compared the city's sanitary problems to Greek hero Hercules's task to clean the Augean

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<sup>72</sup> See in Maricopa County, *A Review of Progress, 1955-1956*, Maricopa County Health Department (Phoenix, 1956), 4-23.

<sup>73</sup> W.A. Gilchrist, "Phoenix and Glendale Jointly Face Critical Sanitary Sewer Problem," *Western City* 31 (April 1958): 37. City of Glendale, *Report on Projected Operations of the Water and Sewer Departments*, John A. Carollo Engineers (Phoenix, 1961), 1-2. Shortly after extending sewers to Maryvale, Phoenix annexed the area. See below.

stables, left unclean for over thirty years, noting that to clean Phoenix required no act of god, but science, engineering, and good planning.<sup>74</sup>

### *Federal Solutions for a Sanitary Nation*

“If we do not halt pollution,” a USPHS report proclaimed, “we will not be able to meet the needs of a growing population and expanding economy.” In response to nationwide concerns over water quality, the U.S. Congress passed the Water Pollution Control Act, which became effective July 31, 1956. A federal report on sewage treatment noted that municipalities had spent only half the required amount necessary for adequate sewage disposal. The Act emphasized that, “Water pollution is a national problem but a local job.” It expanded on the 1948 Water Pollution Control Act, which only offered funds to states for the management of interstate bodies of water, to include federal grants to municipalities to assist in building sewage treatment works. The law sought to “accelerate programs of treatment works by providing an incentive to take action now.” The law made federal grants up to \$250,000 or 30% of the total cost of a sewage treatment works available. In the first two years, Congress appropriated \$95 million, over 80% of which went to new construction of sewage treatment works. In the first year, the federal government spent \$38 million, with communities adding \$129 million of their own; the local-federal ratio of funds demonstrates municipalities’ eagerness for the funds and importance placed on ensuring adequate sewer systems and treatment plants. Between 1945 and 1970, the population served by sewage treatment plants in the U.S.

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<sup>74</sup> Art Vondrick, “Operation & Maintenance Costs of Sanitary Sewers,” Arizona Sewage and Water Works Association, *1960 Official Bulletin* Volume XX, No. 1 (Tucson, 1960), 68.

nearly tripled. The Act also established the Water Pollution Surveillance System for nationwide sampling and analysis for major national-water courses, as well as an inventory of water treatment works updated every five years. In addition, the law offered funds to set up state agencies or aid the operation of existing agencies to study methods to prevent water pollution.<sup>75</sup>

The prevalence of septic tanks and concern over the public health threat caused by their malfunction also prompted action by the USPHS. One sanitary engineer explained, “at best, septic tanks and subsurface sewage disposal systems are poor substitutes for the treatment of domestic sewage.” In 1957, over 24 million people relied on nearly six million individual sewage waste disposal systems to treat their wastewater. That same year, the UPHS issued its *Manual on Septic Tank Practice*, which offered guidelines, recommendations, and technical information regarding the design, installation, maintenance, and proper use of septic tanks systems. It emphasized however, the solutions proposed by sanitarians and municipal officials: “connection to an adequate public sewerage system is the most satisfactory method of disposing of sewage.” Moreover, the *Manual* underscored the importance of adequate sewers and listed a number of diseases associated with water contaminated by sewage: typhoid fever,

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<sup>75</sup>Arizona Health Department, *Annual Report, 1956-1957* (Phoenix, 1958), 9-10; Callis H. Atkins, “USPHS Activities and the Water Industry” in *American Wastewater Association* 56, no. 10 (October 1964), 1293. Specific quotes and data, as well as the major components of the law can be found in United States Public Health Service, *The water pollution control program of the U.S. Public Health Service, a report on progress under the Federal water pollution control act for 1957*, (Washington, D.C.: GPO, 1958), 4-15. For an overview of federal legislation during this time period, see Melosi, *Sanitary City*, 315-320 and 331-337. Only 13% of the funds from the 1956 Act went to cities with a population over fifty thousand. The population figure comes from Figure 16.2 on page 330.



dysentery, and various types of diarrhea. These federal policies soon trickled down to influence municipal and state policy.<sup>76</sup>

*Local Solutions for a Sanitary City: Phoenix, 1946-1957*

The city and county took a number of actions to improve sanitary conditions where lax regulations that provided little control over suburban development led to the proliferation of faulty septic tanks. Both the city and county expanded their environmental sanitation and public health departments, which merged in 1957 to more efficiently address sanitary problems. Most importantly, Phoenix expanded its municipal sewer system. Federal aid from the 1956 Water Pollution Control Act, as well as publicly supported municipal bonds funded these efforts. Municipal officials aggressively pursued and promoted the expansion of sewers, utilizing sanitary reports to launch public campaigns to defeat pestilence. Moreover, the extension of urban services like municipal sewers became a staple in annexation campaigns whose primary purpose was to ensure orderly growth by preventing the development of satellite towns that would limit Phoenix's growth and create inefficiency in governance with hundreds of jurisdictions in the valley with varying laws and regulations.<sup>77</sup> Eventually, Phoenix officials' desire for orderly growth and the maintenance of public health helped spur the creation of a centralized, metropolitan area sewage system with several other cities in the Valley of the Sun.

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<sup>76</sup>The sanitary engineer was John E. Kiker, who described the problem in "Developments in Septic Tank Systems," *American Society of Civil Engineers Transactions* 123 (1958), 83. Found in Melosi, *Sanitary City*, 323. Additional quotes from USPHS, *Manual of Septic Tank Practice*, v, 1, and 13-20.

<sup>77</sup> This concern was related to John Wenum by Assistant City Manager Charles Esser. See Wenum, *Annexation as a Technique for Metropolitan Growth*, 57. See page 42 for a chart of responses of why city officials supported annexation.

In 1946, the city expanded the 23<sup>rd</sup> Avenue Sewage Treatment Plant's capacity to 20 million gallons per day to meet the needs of a growing population. Located in southern Phoenix along the Salt River near Broadway Road and 23<sup>rd</sup> Avenue, gravity guided effluent down to the Plant.<sup>78</sup> In 1951, Phoenix updated its city code for the first time in twelve years and included a new provision that stipulated "anybody with lot, ground, or premises within the city and installs or installed a toilet, urinal, lavatory, wash basin, or other like thing shall connect or cause to be connected to the city sewer." This provided legal precedent to sewer new construction within the city, but did not address the critical problem of areas outside the city's jurisdiction.<sup>79</sup>

City officials quickly took action based on the recommendations in the 1953 *Sewerage* report. They sought to connect unsewered areas on the suburban fringe, as well as within Phoenix, to the city's municipal system. From 1953 to 1957, the city constructed over 300 miles of sewer lines both within the city limits and in fringe areas, and in the process connected 26,000 homes to the municipal sewer system. To help offset the costs of this expansion and encourage outlying areas to join the city, users outside the city paid a higher monthly rate.<sup>80</sup> In both cases, the expansion of the sewer system received strong public support. The successful annexation campaigns during the 1950s

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<sup>78</sup> *Metropolitan Phoenix Facility Plan, 1978*, I-1, II-25. For a broader discussion of the construction of the 23<sup>rd</sup> Avenue Plant see Kupel, "Urban Water in the Arid West", 313-318.

<sup>79</sup> *The Code of the City of Phoenix, Arizona* (Charlottesville: Michie City Publications Company, 1951), Chapter 22, §11.

<sup>80</sup> This strategy was common among municipalities that expanded their sewer system to outlying suburban areas. See Melosi, *Sanitary City*, 322-325. For figures on Phoenix's sewer rates, see "30,000 Eligible to Vote In Tuesday's Bond Election," *Arizona Republic* 4 May 1957, 1 and "\$70 Million City Bond Issue Has No Organized Opposition," *Arizona Republic* 6 May 1957, 9. Those outside the city paid \$3.50 per month for sewer connection. Also see, Water and Sewers Department, *Annual Report Water and Sewers Department, City of Phoenix, 1967-1968* (Phoenix, 1968) and Water and Sewers Department, *Annual Report Water and Sewers Department, City of Phoenix, 1975-1976*, (Phoenix, 1976).

and the formation of sanitary districts showed that people living on the fringe desired connection to a municipal system, among other services, while voter approval of large general obligation bonds demonstrates support within the city for the expansion of sewers.

In order to extend sewers outside city limits, as well as entice annexation to Phoenix, the city encouraged fringe areas to form sanitary districts, which could connect to city sewers. Sanitary districts made annexation both more appealing because residents would enjoy the benefit of city services, and an easier process to administer because areas would already be connected to municipal services. Under Arizona law, only unincorporated towns or settlements could organize as a sanitary district. To do so, the unincorporated area needed to obtain the signatures of people representing at least 51% of total land ownership in a petition that they then submitted to a County Board of Supervisors. The petition also had to include evidence that the establishment of a district promoted public health, comfort, convenience, necessity, or welfare. If the board of supervisors approved the petition, then the district became a municipal corporation capable of contracting with a city for municipal services. The sanitary improvement district system disadvantaged areas outside the city that lacked the affluence to pay the higher outside rental fees; places like South Phoenix, where large minority populations lived. These areas connected to the municipal system later. The use of outside sewer fees to pay for the expansion of sewers within the city also neglected Phoenix's inner city,

with privies prevalent into the 1960s. A 1965 study of a 33 square mile area of the inner city revealed nearly 800 privies in use.<sup>81</sup>

Phoenix officials dealt with the sanitary problems in outlying areas in part through aggressive annexation policies, whereby areas on the outskirts of the city became part of the city's official limits, which compelled areas to connect to the city's sewer system. The primary goal of annexation was to ensure orderly growth.<sup>82</sup> Assistant City Manager Charles Esser recalled he and City Manager Ray Wilson "had to roughshod a few members of planning and finance because they wanted things paid for first," but the council thought "that would be too late...that a ring of 'bedroom'-towns would start to develop."<sup>83</sup> From 1950 to 1960, Phoenix grew from 17 to 187 square miles as the city's population quadrupled. To help manage this growth, the city appointed John Burke Director of Annexation in 1950. Under Arizona law, a city could only annex an area with which it shared a border. The annexing municipality could initiate annexation or residents of the annex area could petition for annexation. Either way, success depended on a majority on the petition signed by "the owners of not less than one half in value of the real and personal property as would be subject to taxation by the city or town in the event of annexation." Burke, along with other city officials, including Mayor Jack Wilson,

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<sup>81</sup> For an explanation of how sanitary districts worked, see Phoenix City Council, *Analysis of the Sanitary District Act of 1941 & the Improvement Act of 1945*, Research Staff of the Arizona Legislative Council (Phoenix, 1954), 4-6. For the inner city study, see City of Phoenix, *Phoenix, Arizona: a Survey of the Inner City*, Maricopa County Health Department (Phoenix, 1965). The study included 37 census tracts.

<sup>82</sup> Wenum, *Annexation as a Technique for Metropolitan Growth*, 41. For an outlook on the reasons for annexation nationally, see Table 15 on page 42. The most frequently cited responses were to enlarge the municipal tax base.

<sup>83</sup> This quote can be found in *ibid*, 57.

aggressively pursued annexation---producing videos and pamphlets, attending public meetings, and even using paid circulars to pitch the benefits of annexation.<sup>84</sup>

Efficient city services---fire, police, water, and sewer---were cornerstones of these campaigns and Phoenix often extended these services prior to annexation to make it more appealing to those on the fringe. Sanitary Districts often served this purpose. The city also annexed areas to increase their tax base, and prevent surrounding “satellite towns,” such as Tempe and Scottsdale, from limiting the spatial growth of Phoenix. Sometimes, this resulted in conflict, as Scottsdale and Phoenix both attempted to annex portions of the Paradise Valley in 1961, with the latter ultimately succeeding. Often, brochures compared the costs and quality of services outside with those within the city. One brochure entitled, “An Invitation to Become Part of the City of Phoenix,” promised that the annexed area would receive improved water and sewer service, and at lower rates, plus a variety of public health services. Annexation was a strategy common to growing western cities, such as Albuquerque and Tucson, but faced resistance from people that wanted to avoid higher taxes. In Phoenix, the campaigns enjoyed tremendous success, and faced little organized resistance. The majority of annexation petitions between 1950 and 1965 received well over the 50% requirement, with most close to sixty percent. In 1960, 75% of people in the City of Phoenix lived in areas annexed in previous decade.<sup>85</sup>

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<sup>84</sup> Ibid, Table 5. For more on the annexation process and logic guiding Phoenix officials, see *ibid*, 42-43, 67-70 and 97-100. The specific quote regarding the petition can be found on page 43. For the 1960 population statistic, see *iv-v*. Carollo also notes that the extension of sewers “helps simplify the problems of future annexations which are bound to occur as long as Phoenix continues to develop.” See *Sewerage*, 39.

<sup>85</sup> Examples of brochures from annexation campaigns can be found in Michael Konig, “Toward Metropolitan Status: Charter Government and the Rise of Phoenix, Arizona, 1945-1960,” (PhD. diss., Arizona State University, 1983), 98-99. The annexation approval figures come from Wenum, *Annexation as a Technique for Metropolitan Growth*, Table 18, page 62. The lowest approval rating was 52.58% while

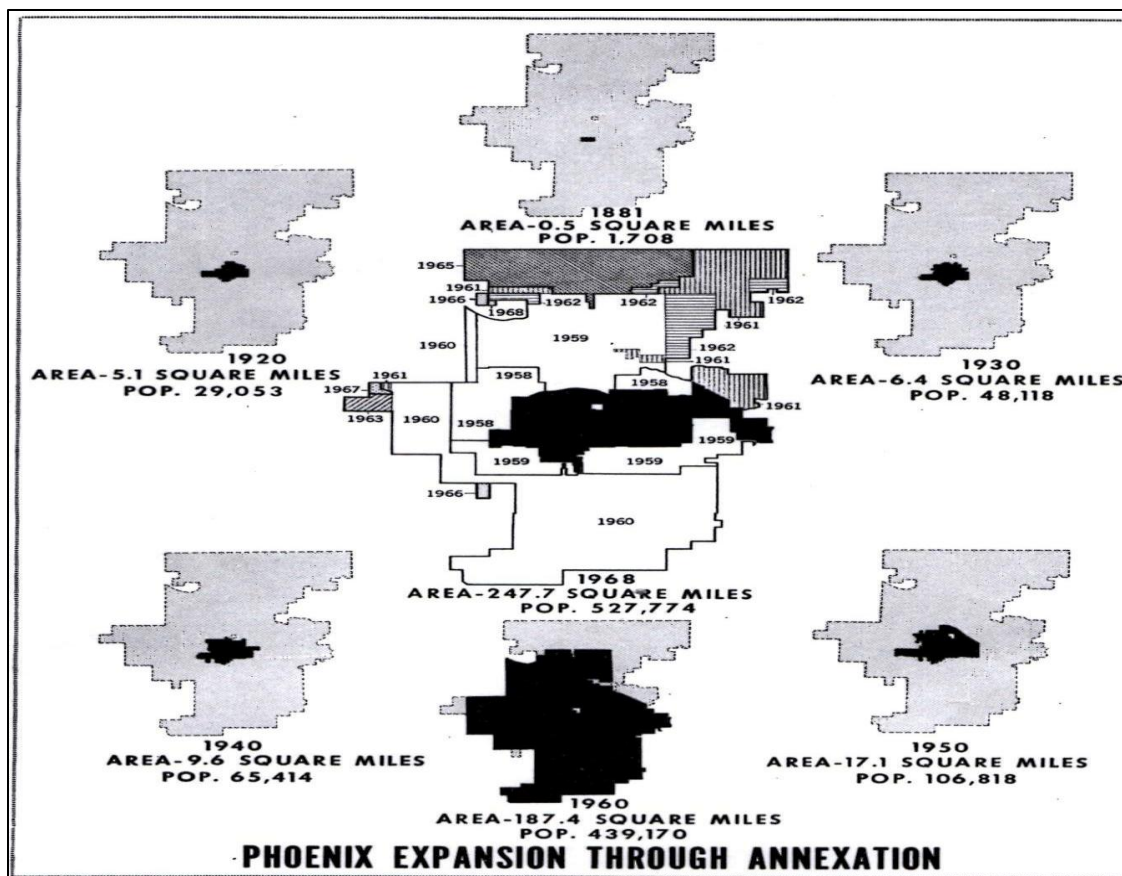


Figure 4. Phoenix's Growth Through Annexation.<sup>86</sup>

In 1953, following the sanitary engineering report, David Campbell, Chairman of Phoenix Sanitary District #1, proposed integrating the District with the city sewer system to Phoenix Mayor Hohen Foster and the Phoenix City Council. This area included many affluent subdivisions adjacent the base of Camelback Mountain who could afford the higher user fees. In his letter, Campbell cited the engineering report and noted a “mutual problem...to provide adequate sewer service.” He proposed extending sewer services to

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the highest was 82.75%. For a discussion of annexation efforts by the city of Tucson, Arizona and the resistance to these campaigns in the post war period, see chapters 2-4 in Michael Logan's, *Fighting Sprawl and City Hall: Resistance to Urban Growth in the Southwest* (Tucson: University of Arizona Press, 1995). Cities including Milwaukee and Los Angeles used similar methods in their annexation efforts in the 1950s. See Melosi, *Sanitary City*, 296-301.

<sup>86</sup> For figure, see Wenum, *Annexation*, xi.

make annexation easier later and explained that annual rental fees would more than repay the cost of extending lines. Similarly, the other abutting area to the north of the city formed a sanitary district and asked for integration into Phoenix's sewer system. Phoenix agreed. Funding the project remained the last hurdle.<sup>87</sup>

Multiple bond issues supported municipal sewer projects. City officials pitched the bonds as a vote for a "coordinated, integrated community plan, which will do away with the cesspool menace." Moreover, city officials argued the city needed "a modern sewer system to protect the health of children...and to provide for the future" growth of the city. David Campbell appeared on the radio to make the case for Sanitary District #1. Radio advertisements in 1954 specifically referenced the city's high infant mortality rate and noted the threat of water contamination from malfunctioning septic tanks and cesspools. These advertisements reflected the findings of the Carollo report as well as a 1954 public health survey. The city asked the Public Health Director to conduct a survey of the southwestern area of the city, which found one place where a privy served the needs of three different families. In short, the survey found many places "just right for fly breeding and disease transmission." Additionally, the city promised that the bond issue would not raise taxes because new customer fees would offset the costs of expansion.<sup>88</sup>

Phoenix voters overwhelmingly supported the expansion of the municipal sewer system, voting in favor of the bonds by a ratio of two to one. Opposition came almost

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<sup>87</sup> Personal correspondence, David Campbell to Mayor and City Council of Phoenix in Roland Gail Baker, box 14, folder 9.

<sup>88</sup>City of Phoenix and Maricopa County, *Land Use Of the Phoenix Urban Area: A Study Basic to Long Range Planning*, Advanced Planning Task Force, City of Phoenix and Maricopa County, Arizona, (May 1959), 36; For city officials argument for the 1954 sewer proposal see, Stephen C. Shadegg Papers, 1855-1991, box 122, folders 39 and 40, Arizona Collection. Arizona State University Library, Tempe, Arizona. Arizona State Health Department, *Arizona Public Health News* (October 1954), 3-5.

entirely from districts south of Van Buren, where those living in multifamily housing feared higher taxes. These districts contained large portions of the city's minority populations and remained largely in opposition to future sewer bonds. Nonetheless, the bonds provided over \$3 million to sewer both sanitary districts and parts of Phoenix, including areas near Van Buren.<sup>89</sup>

The state, as well as the cities in the metropolitan area took advantage of federal legislation to expand their human capital. First, the Arizona Health Department's Bureau of Sanitation used federal funds to establish a water pollution control section within the Bureau, with regional offices in each county. In 1956, the County Health Department expanded to include fifteen sanitarians, "to the end that a more realistic attack might be made on our environmental health problems."<sup>90</sup> The following year, the Maricopa County Health Department, who aided the FHA and VA in inspecting septic systems in homes sponsored by those agencies, created its first planned and integrated environmental sanitation services that year in a division of sanitation. Moreover, the Department established a training program for sanitarians.<sup>91</sup>

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<sup>89</sup> Arizona Health Department, *Arizona Public Health News* (July 1956), 5-7. From the 1953 bond election, \$1,352,600 went to Sanitary District #1, \$1,909,928 to Northwest Sanitary District, while Phoenix paid \$1,091,900 to extend services. Neither district issued bonds, as the rental fees were used to pay back the city's investment. See, *City Manager's News Bulletin*, Vol. 4, No. 48 (Phoenix, November 27, 1953). For information on the opposition to the bond election, see "30,000 Eligible to Vote,"<sup>1</sup> Roger Lewis, "All Ten Questions Approved," *Arizona Republic* 8 May 1957, 1, and Roger Lewis, "All Ten Questions Approved," *Arizona Republic* 8 May 1957, 1. For information on poor conditions in minority districts within the city see, Bob Bolin, "The Geography of Despair: Environmental Racism and the Making of South Phoenix, Arizona, USA." *Human Ecology Review* 12, no. 2 (2005), 163-164. For a discussion of minority communities and maps of these districts see, Bradford Luckingham, *Minorities in Phoenix: A Profile of Mexican American, Chinese American, and African American Communities, 1860-1992* (Tucson: University of Arizona Press, 1994), 59-65, 150-163.

<sup>90</sup> *A Review of Progress*, 4-23.

<sup>91</sup> Dunbar and Weinstein, "City-County Control of Subdivision Sewage Disposal," 102-104.



In 1957, the City and County Health Departments merged to consolidate sanitation efforts and more efficiently address problems. The merger transferred City employees to the County, which assumed responsibility for all sanitary inspections, while the Phoenix Division of Water and Sewers received Departmental status to accommodate the city's growing population the following year. The municipal reorganization moved one-fifth of the city's two-thousand employees to this Department, demonstrating the importance of sanitation services to the city's growth. Moreover, it demonstrates how environmental and public health values reshaped metropolitan political institutions. Collaborative and more expansive efforts continued to shape government officials' responses to shared sanitary problems, but soon efforts focused on planning for growth, rather than responding to it. These measures mark the acknowledgement of countywide sanitation problems and the first steps toward the creation of a comprehensive, metropolitan area sanitation program. In the coming years, the metropolitan area cities increasingly coordinated their sanitation efforts.<sup>92</sup>

*Towards a Regional Approach: Phoenix and Glendale, 1957-1961*

Phoenix and other metropolitan area cities sought out federal funds under the 1956 Water Pollution Control Act. Phoenix and Glendale city councils met throughout 1956 and 1957, and agreed to construct a joint-sewage treatment plant in March of 1957. Phoenix and Glendale both sought to finance the construction of the 91<sup>st</sup> Avenue

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<sup>92</sup> *City Manager's News Bulletin*, Vol. 8, No. 22 (Phoenix, May 22, 1957) and *City Manager's News Bulletin* 8, no. 51 (Phoenix, December 19, 1957). The consolidation of the city and county health departments were part of a larger nation-wide trend. For additional information, see Melosi, *Sanitary City*, 295.

Wastewater Treatment Plant and an extension of sewer lines through bond elections, as well as federal funds from the 1956 Water Pollution Control Act. Phoenix received \$180,000 while Glendale received \$105,730 from the federal government. Glendale voters approved a \$1.5 million sewer and water bond by a margin of four to one. In Phoenix, the \$14 million sewer bond issue largely reflected the recommendations of the Phoenix Growth Committee (PGC), a group of over four hundred citizens. The PGC mostly consisted of businessmen and civic leaders representing banks, real estate developers, pipefitting companies, General Electric and other engineering firms, and plumbing suppliers.<sup>93</sup>

PGC urged voters to approve the bonds, making over seventy-five speeches to business, citizen, and church groups throughout the city. In their presentation to the Phoenix city council, Water and Sewer Divisions Chairman Alfred Rasor, a prominent real estate executive, explained the bonds were needed to meet the needs of a growing population, and the city “must not...dare not” let the city continue to grow and “deny those people the protection of an adequate sanitary sewer system.” The bonds faced no organized opposition. Voters approved the sewer bond proposal by a margin of two and a half to one, demonstrating widespread appeal for sewer expansion. Following the public vote in May, the Citizen’s Bond Advisory Committee of the PGC approved a budget plan

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<sup>93</sup> Ibid, 37. Arizona Health Department, *Arizona Public Health News*, (August-September, 1957), 2-3; and Arizona Health Department, *Arizona Public Health News* (December 1958), 26. For Rasor quote, see City of Phoenix, *Final Reports of the Phoenix Growth Committee*, Phoenix Growth Committee (Phoenix, 1957), 1-2 in Mardian, box 22, folder 15. Other members of the sanitary sewers subcommittee and the rest of the Phoenix Growth Committee in both 1957 and 1961 can be found in Sam Mardian, box 14. The 1961 roster of the Water and Sewers Division is particularly illuminating, it included: Mr. J.M. Lancaster, Pipeline Division Manager, Fisher Contracting Company; Mr. Alfred Rasor; Mr. Robert Cummins, civil engineer with General Electric; Mr. George DeTelante, labor union executive; and was chaired by Mr. Burton Lewin, President of Pioneer Plumbing Supply Co.

developed by John Carollo Engineers in December. The cities shared the costs of construction equally, and divided operation costs based on the proportion of flows from each area.<sup>94</sup>

Following construction of the plant, Phoenix and Glendale made efforts to connect as many people as possible in the westerly lying areas to the municipal sewer system, which now included the five million gallons per day capacity of the 91<sup>st</sup> Avenue Sewage Treatment Plant. This encompassed an area demarcated by the Black Canyon Highway on the east, 43<sup>rd</sup> avenue on the west, and between Olive Road to the north and Thomas Road to the south.<sup>95</sup> Phoenix used the bonds to expand the sewer service area from 33 square miles to 195 square miles and provided service to an estimated 25,000 people, most of whom lived outside the city limits for the time being, as Phoenix annexed many of these areas in the following years. In Maryvale alone, municipal sewers prevented the installation of or replaced over 5,500 septic tanks.<sup>96</sup> The widespread and overwhelming support for such measures demonstrate the high value the public placed on sanitary conditions as a key component of their quality of living. Phoenix Mayor Jack Williams optimistically explained that the bond election put Phoenix “in a position where it can catch up with its growth.” While extending sewer lines, Phoenix continued its aggressive annexation campaign, absorbing large portions to the south, west and

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<sup>94</sup>Gilchrist, “Phoenix and Glendale,” 37 and Konig, “Toward Metropolitan Status,” 293-294; City of Phoenix, *Annual Report Water and Sewers Department, 1967-1968*, Phoenix Water and Sewers Department (Phoenix, 1968), 24.

<sup>95</sup> Phoenix Public Works Department, *Construction Schedule and Progress Report for Month Ending March 31, 1961*, Public Works Department Division of Engineering, (Phoenix, 1961), 5-7.

<sup>96</sup> *City Manager's News Bulletin*, 9, no. 14 (Phoenix, April 3, 1958); volume 9, no. 33 (Phoenix, August 14, 1958) and volume 12, no. 20 (Phoenix, May 18, 1961). These three articles give an idea of the extent to which the 1957 bonds extended sewer trunk lines. For Maryvale figure, see volume 8, no. 26 (Phoenix, June 27, 1957). For information on the activities of the Phoenix Growth Committee see volume 8, No 18, (Phoenix, May 2, 1957).

northeast into the city. These areas included Maryvale, South Phoenix, and Sunnyslope, bringing over 100,000 people into the city limits, which required connection to municipal sewers. In 1959 and 1960, the city expanded its borders by almost 135 square miles. Despite these tremendous efforts by the city, many of the cities in the metropolitan area, including Phoenix, quickly outgrew their sewage treatment facilities due to “increased subdivision development.”<sup>97</sup>

The 91<sup>st</sup> Avenue Plant provided much needed relief for Phoenix and Glendale, “alleviating public health problems in the area” while making good on CGC’s promise of efficiency, saving the two cities’ money they otherwise would have spent on separate treatment plants. W.A. Gilchrist believed that with 91<sup>st</sup> Avenue online, “the septic tank and cesspool problem should be a thing of the past and the pollution of highly valued ground water stopped...within a few years.” Still, problems persisted into the 1960s in Phoenix and elsewhere.<sup>98</sup>

In 1959, the city commissioned yet another report on its sewage system. Like studies earlier in the decade, the 1959 *City of Phoenix Sanitary Sewer Report* by Yost and Gardner Engineers argued for the need to replace septic tanks and cesspools with

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<sup>97</sup> Lewis, “All Ten Questions Approved,” 1; Vondrick, “Operation & Maintenance,” Table III, 76-77; City of Phoenix, *The Water System Capital Improvement Program To Be Financed With \$35,000,000 in Water Revenue Bonds City of Phoenix, Arizona* (Phoenix, 1958), 2-3; Arizona Health Department, *Arizona Public Health Plan* (Phoenix, 1960), 1. For Williams quote, see *City Manager’s News Bulletin*, volume 8, no. 19 (Phoenix, May 19, 1957). For annexation figures between 1958 and 1960, see Konig, “Toward Metropolitan Status, 112-113. For the specific 1959 and 1960 figures on population and city size, see Wenum, *Annexation as a Technique for Metropolitan Growth*, Table 18, page 62. Besides Phoenix, other areas helped bring fringe areas into city limits. In 1958, 42.2% of the county’s population lived in incorporated areas; by 1960, that number dropped to 15.5%. This drop is attributable in large part to the incorporation of Tempe and Scottsdale in 1960. See Table 5 in, Maricopa County Department of Planning and Zoning, *A Report on the Department on Planning and Zoning*, Donald Hutton, (Phoenix, 1963).

<sup>98</sup> See Gilchrist, “Phoenix and Glendale,” 37. For Taft, see previous citation in footnote 14.

expanded municipal sewer system. The *Report* also highlighted the growth of subdivisions near Phoenix's fringe, such as Westtown, Village Meadows, Moon Valley, South Phoenix and Country Club near Deer Valley, as well as growth in the Town of Paradise Valley, Peoria, Youngtown, and Del Webb's master planned retirement community, Sun City. A successful bond election in 1961, whose proposal originated with Yost and was endorsed by the PGC, would help bring many of these areas, including vast portions of Paradise Valley; northwestern areas around Phoenix, and South Phoenix into the Phoenix metropolitan sewer system and eventually much of these areas were annexed in the early 1960s. Between 1958 through 1961, Phoenix installed 354.63 miles of sewer lines.<sup>99</sup>

The Yost study noted that at its current capacity of five million gallons per day, urban growth would overload the 91<sup>st</sup> Avenue Plant by 1962. In Phoenix and elsewhere, suburban growth continued to outpace the provision of adequate sewage treatment. "The major groundwater contamination problem," noted a nationwide study undertaken by the American Waste Water Association, "resulted from construction of housing developments in which each dwelling is serviced by its individual well and sewage

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<sup>99</sup>City of Phoenix, *City of Phoenix Sanitary Sewer Report*, Yost and Gardner Engineers (November 1959), 1-17. For information on the 1961 bond election, see "All Major Bonds Pass," *Arizona Republic* 24 May 1961, 1, City of Phoenix, *Official Statement of the City of Phoenix, Arizona Relating to \$8,000,000 Water System Revenue, Series 1962* (Phoenix, 1962), and *City Manager's News Bulletin*, volume 12. Deer and Moon Valley also became part of the metropolitan system shortly after the bond election. The other towns would not connect to the municipal system until after the expansion of the 91<sup>st</sup> Avenue Treatment Plant in 1965. For figure on the expansion of Phoenix's sewer system see, Department of Water and Sewers, *Sewer Improvement District Work Accomplishment Report* (Phoenix, February 15, 1962). The distribution of funds to specific projects can be found in the *1960 Capital Improvement Plan* in Mardian, box 19, folder 1. The funds helped build the following sewer lines: 37 miles in Paradise Valley and Arcadia, 70 miles in the northwest (mostly along 51<sup>st</sup>, 59<sup>th</sup>, and 67<sup>th</sup> Avenue), 30 miles in South Phoenix and the southwest portion of the metro area from Broadway between 19<sup>th</sup> and 59<sup>th</sup> Avenue, as well as along Southern Avenue and Baseline Road. It should be noted that the Town of Paradise Valley is separate from the Paradise Valley annexed by Phoenix. The Town of Paradise Valley incorporated in 1961.

disposal system.” Phoenix Mayor Sam Mardian described the 91<sup>st</sup> Avenue Plant as a model for future joint projects for both its efficiency in treating sewage and cost-effectiveness. In June of 1961, the five major cities in the metropolitan area---Phoenix, Scottsdale, Tempe, Mesa, and Glendale---began discussing such a project.<sup>100</sup>

### *Shared problems, Shared Solutions: Metropolitan Sewage Treatment*

Beginning in the summer of 1961, the cities convened to discuss the problem of sewage treatment and disposal in the area, although cooperation between municipal entities and suburban areas was nothing new. Historian Sarah Elkind described a similar process of regionalism and the creation of metropolitan authorities that increased coordination between urban areas and their surrounding suburbs during the Progressive Era in Boston and the California Bay Area to deal with water contamination problems.<sup>101</sup> In the Valley of the Sun, regional meetings focused on the expansion of the 91<sup>st</sup> Avenue Plant, and the necessary trunk lines, to serve the metropolitan area cities’ mutual needs. In August 1961, the Phoenix City Council adopted a resolution expressing approval of a cooperative effort to establish a joint sewage disposal system for the five cities in order to “solve possible contamination and health problems” from improper sewage disposal. On August 8, 1962, the Scottsdale City Council passed Resolution 213. The Resolution noted that the five cities faced “common and similar problems relating to sewage disposal

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<sup>100</sup> Ibid, 17. “Municipal Policy New Construction and Operation of Joint Sewerage Facilities”, Mayor Sam Mardian July 31, 1961; Robert Coop, “Declared ‘No More Sewage Treatment Problems,’” *Report of City Activities Monthly Review*. volume 11, no. 6 (December 16, 1964). The American Waste Water Association study can be found in Graham Walton, “ABS Contamination,” *Journal American Water Works Association*,” 52, no. 11, (November, 1960), 1357.

<sup>101</sup> See Sarah Elkind, *Bay Cities and Water Politics: The Battle for Resources in Boston and Oakland* (Lawrence: University of Kansas Press, 1998).

systems and provision for effluent waters” and committed Scottsdale to working toward a regional solution. These remarks followed a published study of the Salt River Valley’s rapidly growing cities. The report argued that “ineffectual protection to public health is provided by the individual waste disposal units in the large unsewered communities” like Scottsdale. Moreover, individual sewage disposal units threatened “underground waters, and in densely populated areas, the same water strata into which the wastes are discharged may be tapped for domestic or irrigation.” At the same time, a sanitary report of Tempe noted that rapid growth resulted in many areas of the city served “by means of substandard, temporary, and in some cases uneconomical means.”<sup>102</sup>

As metropolitan area cities sought a comprehensive sewer system, the Arizona Legislature adopted new standards in 1962 for septic tanks modeled off the USPHS *Manual for Septic Tank Practice*. The new standards created stringent requirements that sought to limit the use of septic tanks, but left significant discretion to local and county health departments. The standards listed a number of conditions where septic tanks or individual sewage disposal would not receive approval, which largely relied on health departments to decide where connecting to a public sewage system was “practical.” Moreover, the bulletin included a number of best practices to prevent problems such as those highlighted by the Maricopa Health Department. These included design recommendations and installation requirements, such as the distance between the home

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<sup>102</sup> For Phoenix City Council Resolution see, *City Manager’s News Bulletin*, volume 12, no. 34 (Phoenix, August 24, 1961). Also see, Sam Mardian Papers, box 25, folder 26. The study was reported in *Arizona Public Health News August-September*, 4-8. For Tempe study see, City of Tempe, *Sanitary Sewer Report*, Ferguson Brooks, and Kelly Consulting Engineers (January 1963), 1-2.

and the septic system, as well as between the septic tank and leaching field, and minimum requirements for tank size.<sup>103</sup>

Mesa's city council authorized the project and held a successful bond election in 1962, while Tempe approved the project in November of 1963. By July 18, 1963, all the cities had approved the project and secured enough local money to supplement federal funds necessary to expand the plant. Like the earlier agreement between Phoenix and Glendale, the Joint Sewer Agreement divided construction costs equally among the cities, but shared operation costs proportionate to their contracted flow. Again, federal dollars from the 1956 Water Pollution Control Act, whose maximum contribution increased to \$600,000 due to a 1961 amendment, helped pay for construction costs. Phoenix received the maximum allowable funds, the largest construction grant in the city's history at that point. The cities added three units capable of treating 15 million gallon per day, bringing the plant's capacity to 45 million gallons per day, which could serve the metropolitan area for over a decade. In November of 1965, it began doing so.<sup>104</sup>

*Coda: Sanitary Success, but Continuing Challenges*

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<sup>103</sup> Arizona Health Department, *Engineering Bulletin No. 12 The Septic Tank: A Method of Sewage Disposal for Private or Public Buildings*, Environmental Health Services, (Phoenix, 1965), 1-9. This is an updated version of the 1962 standard.

<sup>104</sup> The Joint Sewer Agreement can be found in the Sam Mardian Papers, box 25, folder 21. *Metropolitan Phoenix Facility Plan, 1978*, 26. The federal government provided grants to each of the cities as follows: \$600,000 to Phoenix, \$155,100 to Mesa, \$159,000 to Tempe, and \$192,240 to Scottsdale. See, Sam Mardian, box 25, folder 23 and *City Manager's News Bulletin*, volume 12, no. 52 (Phoenix, December 27, 1962).



By 1968, three-quarters of the Phoenix metropolitan area enjoyed the benefits of municipal sewers, with only several small towns like El Mirage, Surprise, Peoria, and Youngtown largely unsewered. While unconnected, the towns had reached agreements to connect with the 91<sup>st</sup> Avenue Plant in the future.<sup>105</sup> The precedent set in the 1950s, of expanding the sewer system outward as the city grew continued through the 1960s and subsequent decades. From 1959 to 1968, the city increased the number of sewer taps by 185%, the size of the service by 316%, and the miles of sewer line by 192%.<sup>106</sup> The expansion of this system and the consolidation of the Phoenix metropolitan area's sewage in centralized treatment plants has remained the focal point of urban policy regarding wastewater management as they have sought to stay ahead of growth. Two more additions to the plant, in 1969 and 1975, brought its total capacity to 95 million gallons per day. In April 1975, voters in Phoenix approved the sale of \$30 million in general obligation bonds to finance sanitary sewer system improvements, which in addition to expanding the 91<sup>st</sup> Avenue Plan also extended municipal sewer connections to serve Deer Valley, North Phoenix, and the town of Paradise Valley. A number of additional expansions over the next three decades brought the plant's capacity to 230 million gallons today.<sup>107</sup>

The collaborative efforts of municipal and state officials, along with funds from the federal government, created a metropolitan sanitary sewer system that spared Phoenix residents the most serious consequences of communicable disease from human waste.

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<sup>105</sup> *Wastewater Report for the Valley*, i.

<sup>106</sup> *Annual Report Water and Sewers Department, 1967-1968*, 27.

<sup>107</sup> City of Phoenix, *Annual Report Water and Sewers Department, 1977-1978*, Water and Sewers Department (Phoenix, 1978), 43. For figure on current plant capacity see, Sub-regional Operating Group, "The 91<sup>st</sup> Avenue Unified WWTP Targets 100 Percent Reuse," *26<sup>th</sup> Annual WasteReuse Symposium*, September 14, 2011.

Top-down reform, driven by municipal and industry experts, continued to characterize wastewater management policy, but the public also continued to support the efforts. Municipal officials appealed to concern over public health and disease, which provided the justification for constructing and expanding the municipal sewer system. In the 1950s, the public expressed their environmental concerns repeatedly in bond elections and through participatory governance, like the Phoenix Growth Committee and the formation of Sanitary Districts.

Concern over water supply resulted in agreements intended to conserve water. Agreements transferred treated effluent from the 91<sup>st</sup> Avenue Plant to other uses in the metropolitan area, but followed guidelines set forth in the 1972 Clean Water Act, and subsequent amendments. Some effluent goes to agriculture fields on the outskirts of Phoenix, such the Buckeye irrigation district west of the city. Other effluent is discharged into riparian and wildlife areas, such as the Base and Meridian Wildlife area where rare bird species such as Virginia rail find a home. More recently, effluent from 91<sup>st</sup> Avenue Plant helped create the Tres Rios Wetlands, which became home to a wide variety of plant and animal life. Another agreement began in 1973 sends effluent to the Palo Verde Nuclear Power Plant, the largest in the nation, where it cools reactors that generate electricity for the metropolitan area and larger Southwest. In 2011, the city announced its goal of reusing 100% of the wastewater from the plant. While the plant has increased its capacity to meet the needs of a growing population, and found ways to put wastewater to reuse, the construction of permanent, inflexible infrastructure is not without its drawbacks. By the 1960s, the limitation of this infrastructure became

apparent. Mark Hollis, Assistant Surgeon General and Chief Engineer of the USPHS explained that the cleanliness of the nation's drinking waters depended on whether one included new toxic chemical contaminants. Then and now, this infrastructure lacks the ability to deal with new water pollution threats from nonpoint sources, mostly inorganic, such as the increased use of chemical pesticides, and agriculture runoff.<sup>108</sup>

The infrastructure may not adequately meet the new challenges that emerged in the 1960s and have continued to pollute the nation's water supplies, but the collaborative efforts of multiple levels of government provides an important framework from which solutions may arise. Perhaps the most important lesson lies in the pragmatism and cooperation between municipal governments to find solutions to shared, complex urban problems. It also highlights the precarious balancing act municipal leaders walked in promoting growth, while also seeking to manage its unintended consequences. Moreover, these efforts did little to prevent or slow suburban sprawl, but instead accommodated it. During this time, metropolitan leaders or technical experts never discussed the reduction

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<sup>108</sup> John Carollo Engineers identified treated effluent as an important source of secondary water in the coming decades in Maricopa County Association of Governments, *Waterworks Report for the Valley Metropolitan Area of Phoenix, Arizona* (Phoenix, 1968), ii and 191. In compliance with section 208 of the 1977 Amendments to the Clean Water Act, MAG produced a report that identified the importance of effluent to the maintenance of the Base and Meridian Wildlife area. For more information see, U.S. Environmental Protection Agency, *Final Environmental Impact Statement, Maricopa County Association of Governments Point Source Metro Phoenix 208 Wastewater Management Plan*, Maricopa Association of Governments (July 1979), III-41. Additional information can be found in City of Phoenix, *23<sup>rd</sup> and 91<sup>st</sup> Avenue Wastewater Treatment Plants*, Arthur Beard Engineers, volume 5 (Phoenix, August, 1980), I-4, II-8-9 and 15-24. For information on the use of effluent in irrigation districts in Maricopa County see *ibid*, volume 6, II-17. Information on effluent use at Palo Verde can be found in *Ibid*, I-47. The actual agreement can be found on file with the Phoenix City Clerk Department, Contract no. 13904, April 23, 1973. For a general discussion on the reuse of effluent in the 1980s and 1990s, see Kupel, *Fuel for Growth*, 215-217. For plans to reuse wastewater at 91<sup>st</sup> Avenue, see "The 91<sup>st</sup> Avenue Unified WWTP..." For Hollis statements see, Mark Hollis, "Pollution and National Water Sources," *AWWA*, volume 52, no. 8 (August 1960), 959-964.

of waste. They only sought ways to accommodate more of it. The latticework of sewer lines crisscrossed further and further out into the desert.

Much of the sanitary infrastructure, however, would not have been possible without aid from the federal government, which would continue to play an important role in shaping Phoenix and providing funds to solve environmental problems shared by cities across the nation. As metropolitan centers grew after World War II, the shared environment became a common concern and played an important role in urban planning. The values of the open space movement and preservation of mountain areas in Phoenix followed a different pattern, a more bottom-up approach to environmental policy-making. The visible deterioration of the environment rallied the public to demand their government do more to carefully consider additional values in urban planning: aesthetics and recreation.

### CHAPTER 3: A Mountain in a Sea of Sprawl: Preserving Phoenix's Camelback Mountain, 1954-1973

The campaign to preserve Camelback Mountain, Phoenix's most iconic landmark, demonstrates the irony of suburban development. Just as the pastoral appeal of suburban living, with its appreciation of scenic mountain landscapes, both for aesthetics and recreation, brought people to Phoenix, it also engendered a backlash against development in outlying areas. Suburban growth helped create the conditions that framed the open space movement, spawned in the postwar environment of booming economic growth and home ownership. The movement's resistance to unrestrained growth was rooted in local environmental concerns for protecting the city's mountainous areas---symbols of quality of life and identity---from residential development. The fact that both the growth of the suburbs and the preservation of open spaces relied upon federal funds meant that the federal government, so essential to Phoenix's growth, would continue to play a commanding role in shaping the city. The tension among growing suburbs, private property rights and the preservation of open spaces, personified by the quest to preserve Camelback Mountain, remains an important issue to contemporary debates about urban growth. Efforts in community organization and outreach in the 1950s and 1960s to save Camelback provide lessons for the present. By the 1970s, open spaces were a cornerstone of the city's urban planning.

Like many cities after World War II, the population of Phoenix and its physical boundaries exploded. Many came to the suburbs in part to be closer to nature.<sup>109</sup>

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<sup>109</sup> See chapter three in Kenneth T. Jackson's *Crabgrass Frontier*. Dolores Hayden discusses the suburban "triple dream:" a home, nature, and community in, *Building Suburbia: Green Fields and Urban Growth, 1820-2000* (New York: Pantheon Books, 2003). For the pastoral ideal in American history see, Leo Marx,

Throughout the 1950s, cities and suburbs around the nation consumed a piece of land the size of Rhode Island from the countryside.<sup>110</sup> At the same time, the ecological, social, and aesthetic value of open space, popularized by social critics like William Whyte, became part of the national debate about urban growth.<sup>111</sup> Open space activists employed three kinds of arguments: 1) conservation, 2) outdoor recreation, and 3) aesthetic. The postwar growth of cities like Phoenix left many people concerned, as bulldozers transformed diverse ecosystems---hillsides, forests, prairie, wetlands, and deserts---into homogenous, characterless strips of commercial and residential development. This environmentalism did not arise from some abstract philosophy; it involved places people knew intimately and that embodied values that became a part of the community's identity.<sup>112</sup>

Over time, residents wove the mountains surrounding the city into the cultural and social fabric with which they identified themselves as Phoenicians. When developers began transforming open desert and mountain spaces into strip malls and housing, some residents became alarmed. Camelback quickly became the source of legend, poems,

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*Machine in the Garden: Technology and the Pastoral Ideal in American History* (New York: Oxford University Press, 1964).

<sup>110</sup> See, Hays, *Beauty, Health, and Permanence*, 54 and Ann Louise Strong, *Open Space for Urban America* (Washington, D.C.: U.S. Department of Housing and Urban Development, 1965), 1.

<sup>111</sup> For William Whyte and the open space movement see, Adam Rome, "William Whyte, Open Space, and Environmental Activism," *Geographical Review* 88, no. 2 (April 1998), 259-274 and Melvin Scott, *American City Planning Since 1880*, (Berkeley: University of California Press, 1969), 568. For arguments for open space by William Whyte, see "A Plan to Save Vanishing U.S. countryside," *Life* 47 (August 17, 1959). Also see John Brewer Moore, "Wanted: More Open Space in Growing Areas," *American Cities* 71 (1956) and "The Importance of Land," *Recreation* 50 (1958). On the need for open space and parks in cities, see Edward Higbee, *The Squeeze: Cities without Space* (New York: William Morrow and Company, 1960) and Walter A. Tucker, ed. *The Crisis in Open Land* (Wheeling, WV: American Institute of Park Executives, 1959).

<sup>112</sup> Adam Rome, *The Bulldozer in the Countryside*, 120-123. Rome gives a detailed account of the debate over open spaces in chapter four and for specific reference to hillside development see pages 166-173. For sources and examples of the arguments made by open space activists see Rome's footnote on page 123, note 9.

photography, stories, and pride for Phoenicians—in short, something they cared deeply about and would lobby their elected officials to protect.<sup>113</sup>

The mountain itself belonged not to the city, but instead to numerous private individuals. In this way, the burgeoning sprawl that characterized postwar Phoenix affected Camelback as well. As open space preservation became a component of urban planning in the 1950s and 1960s, government officials struggled to balance the promotion of economic growth with a public desire for natural areas within the city. Historian Samuel Hays argued that the urban fringe nurtured “many ideas about environmental quality, support for environmental organizations, and political action.”<sup>114</sup> The suburbs became a conflict zone between development and environmental concerns. With little experience in open-space preservation, municipal officials initially responded without a well-developed strategic plan, as they attempted to balance private property and public interests. In the subsequent struggle, community activists promoted the mountain’s aesthetic and recreational value. Camelback was part of many Phoenicians’ everyday lives: a view they enjoyed on their ride to work or while relaxing in their yard; a place where they picnicked, hiked, or rode horses. In short, it was the place that people most identified with the city they called home. It ultimately would require mobilization of the city elite and other community members, federal funds, and a political commitment to secure Camelback as open space and to save the mountain from the developer’s bulldozer.

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<sup>113</sup> For examples, see “Sonnet to Camelback Mountain,” *Voice of Motorola* 15 December 1965. A photographic essay by John Dutson, demonstrating the pervasive presence of the mountain from any place in the Valley can be found in “It’s There from Everywhere” *Arizona Republic* in Margaret Kober Collection, box 1, folder 8, “Preservation of Camelback Mountain Foundation, 1959-1973,” Arizona Historical Foundation, Tempe.

<sup>114</sup> For the first quote, see Hays, *Beauty, Health, and Permanence*, 36.

*Origins: The Birth of a Mountain and a Movement*

The Camel emerged 1.7 billion years ago, when two subterranean plates collided and initiated the transformation of molten rock into granite. Seismic activity over the next billion years thrust parts of the rock upward, with the greatest upheaval creating a 2,704-foot peak, taller than any other peak in the surrounding area. From its summit, the entire Valley unfolds below, just as the Camel's hump is within view from anywhere on the valley floor. Located just seven miles from downtown Phoenix near the border of Scottsdale, and Paradise Valley, the mountain affords city and suburban dwellers access to aesthetic beauty and recreation within the city's limits. Before Phoenix's founding, the mountain served as a sacred ceremonial center, a connection between heaven and earth, for the Salt River Valley's indigenous population, including the Hohokam and, later, the Salt River Pima and Maricopa Indians. In 1879, President Rutherford B. Hayes ordered an expansion of the Salt-River Pima Reservation that completely engulfed the land containing Camelback. After lobbying from the Arizona territorial legislature, Congress reduced the size of the reservation, transferring Camelback and much of the current Phoenix metropolitan area to the Arizona territory. The territory sold some parcels of land to private citizens before its statehood in 1912, but the state stepped up the pace after Arcadia Water Company dug a well and built a pipeline near the mountain in 1919.<sup>115</sup>

Scenic areas attract people. Camelback was no exception. In the 1930s and 1940s, people rode horses and picnicked with family and friends in the mountain's shadow. By 1960, the state and private developers sold, resold, and subdivided almost all the land on

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<sup>115</sup> Gail Taylor "Holding onto Camelback's High Ground," *Arizona Republic* 5 March 1995, A1; Gary Driggs, *Camelback: Sacred Mountain of Phoenix* (Tempe: Arizona Historical Foundation, 1998), 24-27 and 108-115.



Camelback. Developers built luxury resorts, like the Camelback Inn, near the base of the mountain to cater to winter visitors from the frigid northeast or Midwest. By 1960, snowbirds enjoyed numerous nesting options; eleven resorts surrounded the mountain. Meanwhile, wealthy businessmen and professionals flocked to adjacent residential and prestigious neighborhoods, such as the city of Paradise Valley and the Arcadia Residential District. In 1960, a home near the mountain cost on average \$34,583, at a time when the average home price elsewhere in Phoenix cost \$13,980.<sup>116</sup> Even so, the population adjacent the mountain, bounded by Scottsdale Road on the east, 55<sup>th</sup> Street on the west, McDonald Road on the north, and the Arizona Canal to the south nearly doubled between 1960 and 1965. People valued the mountain, and expressed those values through a willingness to pay, assuming they could afford it, two and a half times more for a home near the mountain than elsewhere. As the population at the mountain's base grew, people went to even greater lengths in search of aesthetic beauty and recreation. Up the mountain, homes climbed.<sup>117</sup>

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<sup>116</sup> For information on the price of homes near the mountain see, personal correspondence, J. Leslie Hansen & Son Appraisers to the Preservation of Camelback Foundation on June 16, 1965, 6-10 in Goldwater Collection, box 50.

<sup>117</sup> See Driggs, *Camelback*, 37-38 and 43-44. Also see VanderMeer, *Desert Visions*, 108.

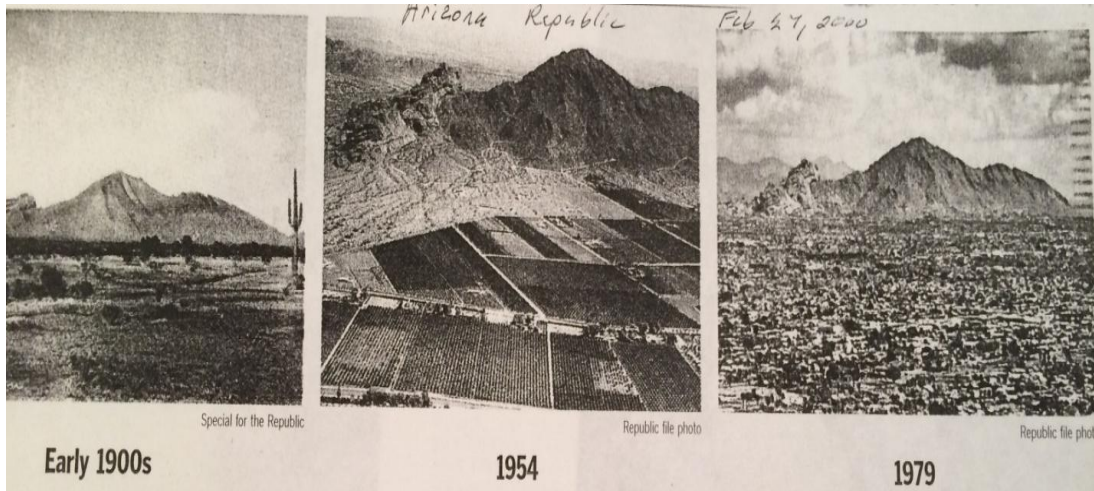


Figure 5. Suburban Development around Camelback Mountain, 1900 to 1979. This image shows the increased suburban development around Camelback Mountain.<sup>118</sup>

As more homes dotted the slopes of the mountain the Maricopa County government moved to expand its park and open space lands. As a precedent, it looked to the 1924 acquisition of South Mountain, which the city purchased for \$17,000 from the federal government; at nearly 16,000 acres, it is one of the largest municipal parks in the nation. In 1954, the County government purchased from the federal government a 250-acre tract adjacent to 400 acres of land already leased from the state, which served as the foundation of Estrella Mountain Park west of the City. Improvements, including a softball diamond, outdoor fireplaces, and ramadas, soon followed. The county also expanded parkland to the northeast of Phoenix. In 1954, the county purchased 275 acres of land previously used as a campground for the Phoenix Indian School for North Mountain Park. Two years later the County acquired Squaw Peak from the state.<sup>119</sup>

<sup>118</sup> This image appeared in Arizona Republic on February 24, 2000.

<sup>119</sup> The figure for South Mountain Park comes from Susanne Rothwell, "Background of Acquisition for the Phoenix Mountain Preserve and How the Phoenix Mountain Preserve Council was Able to Influence the Land Acquisition Program" in Dorothy Gilbert Collection, Arizona State University Digital Repository.

The city, on the other hand struggled to provide adequate parks for the booming population, which grew from 65,414 in 1940 to 106,818 in 1950. Phoenix added only ten acres of parks from 1945 to 1948, at a time when developers subdivided 5,280 acres of land for housing. Although the city passed several bond measures in subsequent years, it failed to convert money into comprehensive action, instead purchasing several small lots for neighborhood park development, including softball fields and playgrounds.

Camelback Mountain remained in private hands and subject to suburban development.<sup>120</sup>

By 1954, the increasingly crowded Valley floor near Camelback had pushed homes upward to the 1,600-foot mark, only 1,000 feet from the summit. In response, local residents formed the Camelback Improvement Association (CIA), with its goal to preserve the remaining undeveloped parts of the mountain in its “natural state.” The CIA acted as a watchdog and liaison between developers and the county planning commission, as builders continued to seek approval for construction of homes above 1,600-feet. C. Tim Rogers met a storm of resistance in 1954, when he proposed the first subdivision above 1,600-feet and began constructing roads prior to gaining county approval. E.B. Myrick spoke on behalf of the CIA, decrying the construction of homes and roads, which he said would “utterly destroy its beauty.”

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Estrella Mountain Park contained over 20,000 acres as of 2005. Additional information on county parks can be found in William Collins, *The Emerging Metropolis*, 132-139. For population statistics see VanderMeer, *Desert Visions*, 89 and 152. The city changed the name of Squaw Peak to Piastewa Peak in 2003. The name honors army officer Lori Piastewa from Tuba City, who had recently died in combat in the Iraq War. See, Michael Kiefer, “Piastewa Peak’s Path to Prominence,” *Arizona Republic* 17 May 2003, E1:E10.

<sup>120</sup> For population statistics see VanderMeer, *Desert Visions*, 89 and 152. The city changed the name of Squaw Peak to Piastewa Peak in 2003. The name honors army officer Lori Piastewa from Tuba City, who had recently died in combat in the Iraq War. See, Michael Kiefer, “Piastewa Peak’s Path to Prominence,” *Arizona Republic* 17 May 2003, E1:E10. For city parks information, see Collins, *Emerging Metropolis*, 132-139.

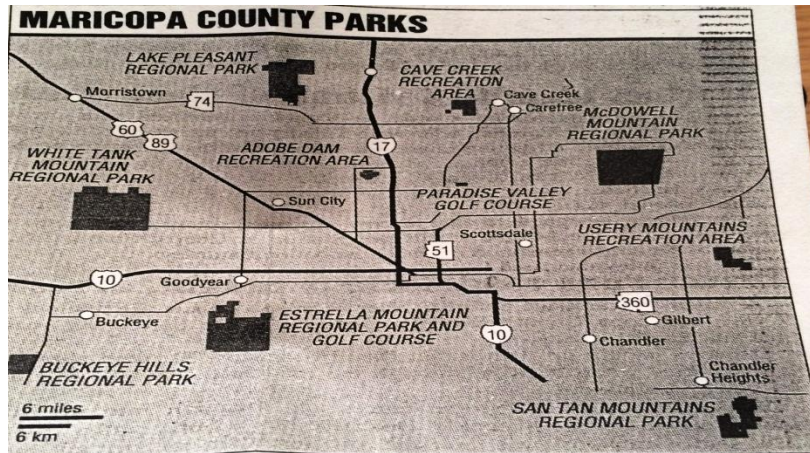


Figure 6. The Maricopa County Park System.<sup>121</sup>

Two local women, Louise Woolsey and R.C. Saddler, who both lived on the southern slope of Camelback, spearheaded CIA publicity efforts. Woolsey and Saddler circulated petitions and lobbied city and county officials to pass zoning regulations prohibiting development on the mountain. Casey Abbott, Chairman of the Maricopa County Planning and Zoning Commission (MCPZC), proved a sympathetic ally to the conservation cause. Although the commission acted only in an advisory role to the county board of supervisors, and had no legal authority to enforce or even create a law preventing development, Abbott delayed development proposals, ostensibly citing sanitation and safety reasons. The delay provided time for conservationists to organize.<sup>122</sup>

After a bulldozer graded a road above 1,600-feet in 1957, Woolsey helped bring together at least one representative from each of thirty different Valley garden clubs to raise support for protecting the mountain. In April of 1959, she presented twenty petitions from various organizations urging the planning commission to do more to stop

<sup>121</sup> The map can be found in an undated newspaper clipping in the Preliminary Inventory of the Dorothy Hall Papers, Arizona Collection, Arizona State University Library, Tempe, Arizona.

<sup>122</sup> For information on the formation of the CIA and hearings before the MCZPC, including Myrick's quote, see *Arizona Republic* 17 June 1956, 8 and *Arizona Republic* 21 June, 2.

development on Camelback. “The characteristic silhouette of Camelback has stood for millions of years,” she reminded commissioners, “it scarcely seems that it should be the privilege of this generation to disfigure and destroy it.” Abbott’s stall tactics could only last so long though. Slowly, homes and roads continued to carve into the mountain. Yet, MCPZC’s inability to protect the mountain only invigorated and expanded preservation efforts. Phoenicians, as they had in the past, turned to the federal government for help.<sup>123</sup>

### *How to Save the Hump: Lobbying for Federal Legislation*

In 1960, concern about Camelback, along with other conservation issues brought together community councils from Phoenix and Tucson, with representatives of conservation groups throughout Arizona. During a meeting at the Phoenix Public Library, they discussed the formation of a statewide organization to pursue conservation goals. The conclave spawned the Arizona Conservation Council (ACC), representing a diverse coalition of sixteen groups that included the Arizona Game Protective Association, the Arizona Federation of Women’s Clubs, the State Parks Association, as well as groups representing birdwatchers, yachtsmen, campers, and photographers. Preserving Camelback was near the top of its agenda. The ACC envisioned a two-part plan to protect the mountain: guard the 1,600-foot line, at the time the highest point of development, until the Council figured out some way to return the mountain to public ownership. This

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<sup>123</sup> “Save-Camelback Campaign Opened,” *Arizona Republic* 16 April 1959, 39. Scottsdale-Paradise Valley residents did not want a restaurant or flashing neon signs on top of the mountain and protested that development would scar Camelback. See “Scarface Mountain,” *Arizona Republic* 21 October 1954, 6. For a summary of the early efforts of the Camelback Improvement Association see Henry Fuller, “The Cry Went Up Years Ago,” *Arizona Republic* April 10, 1966, 4-E. For Woolsey quote see *Arizona Republic* 10 June 1959.

large and diverse coalition concentrated their efforts on negotiating with private landowners and pressuring elected government officials.<sup>124</sup>

As conservationists fought to protect Camelback, Phoenix built on the earlier efforts of Maricopa County to expand the park system. The county agreed to lease land on Squaw Peak and North Mountain to the city in 1960, but the city's efforts to expand the park area faced opposition from mining interests that claimed the mountain might contain valuable minerals. Judicial decisions eventually resolved this issue in favor of the city, and in 1968, Mayor Milton Graham dedicated the new city parks. This success represents a very different situation from the one facing Camelback, as the county or state owned almost all the land in question, rather than private homeowners. While Phoenix compared favorably to other cities in terms of acres of parkland, this was mostly attributable to the city's acquisition of South Mountain Park. Phoenix still lacked a comprehensive park system.<sup>125</sup>

Following World War II, a Public Administration Service (PAS) report recommended that Phoenix develop a parks plan to meet the demand for recreation. Over the next few years, the city worked in a piecemeal fashion, developing different recreation spaces throughout the city. In 1945, it bought a pair of parks from the Phoenix Elementary School District and purchased a strip of land to round out the borders of Encanto Park, near 15<sup>th</sup> Avenue, in central Phoenix. The following year, the city built a

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<sup>124</sup>For information on the Arizona Conservation Council, see *Arizona Conservation Council*, "Proposed Objectives, Fund Raising Procedures, and Current Projects" in Preliminary Papers of Dorothy Gilbert, Accession# 1998-01906, box 1, folder 5, Arizona Collection, Arizona State University Library, Tempe, Arizona and Deder, "Women Rebel," 19.

<sup>125</sup>Collins, *Emerging Metropolis*, 157; Preliminary Inventory of the Dorothy V. Gilbert Papers, 1906-1997, Accession #1998-01906, box 8, folder 51, "Squaw Calendar of Events," Arizona Collection, Arizona State University Library, Tempe, Arizona.

4,500-seat softball park. By 1948, the city parks board developed a plan that reflected the PAS recommendations. Utilizing bond issues in subsequent years, by the early 1950s, the parks board developed new parks, baseball fields, and golf courses, as well as a nighttime recreation program consisting of supervised activities. The increasing interest in city parks made Camelback's lack of protection all the more salient.<sup>126</sup>

The ACC tirelessly tried to forge a compromise with Camelback property owners. In 1961, roughly one-half the property owners, who held two-thirds of the acreage, expressed a willingness to either sell the land at market value or trade their Camelback property for other equally valuable land elsewhere. John McChesney spoke on behalf of the group, explaining the property owners felt the idea of gifting land to the city to be an "insult;" but they "would probably be willing to make the trade" at the right price. McChesney estimated the value of the land to be worth \$2.5 million. Although ACC chair Odd Halseth acknowledged that "private property is sacred" and stated that the ACC had worked to determine a fair price. The prohibitive figure quoted by McChesney led the ACC to promote the idea of trading public land for the Camelback properties. They began lobbying local congressional representatives to take action.<sup>127</sup>

Community pressure organized by the ACC produced draft legislation. On March 26, 1962, U.S. Congressman John Rhodes of Mesa introduced House Resolution 10922. The product of collaboration between Rhodes and the ACC, with the ACC providing maps and a list of Camelback property owners, the proposed legislation sought

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<sup>126</sup> Collins, *Emerging Metropolis*, 131-134.

<sup>127</sup> "Land Trade Believed to Be Way to Save Camelback Scene," *Arizona Republic* 13 September 1961, 25:33 and Don Deder, "Owners of Camelback Have Their Side Too," *Arizona Republic* 30 April 1963, 25:28.

authorization to exchange federal lands for land on Camelback in order to protect the area on Camelback above 1,600 feet from development. Rhodes received numerous letters of support from members of the community who lamented recent construction and hoped it was not too late to preserve the mountain.<sup>128</sup>

Secretary of the Interior and Arizona native Stewart Udall noted how residential subdivisions spreading from the city center posed the main threat to the mountaintop. Nevertheless, Udall opposed the bill, “Because of the location we believe the local community”---and not the federal government---“should be encouraged to preserve the mountain top in some form for public use,” he argued.<sup>129</sup> The bill failed to leave the House Committee on Interior and Insular Affairs.<sup>130</sup> A similar bill, introduced by Barry Goldwater and Carl Hayden in the U.S. Senate the following year, similarly faltered in committee, as the number of landowners above 1,600-feet grew to seventy-three.<sup>131</sup> Failed efforts to pass federal legislation forced the ACC to turn its efforts to the state level, where stronger support existed to preserve the local landmark.

### *An Appeal to Arizonans: Trying for State Legislation*

On February 1, 1963, Isabel Burgess, John Pritzlaff, and John Reese introduced House Bill 312, which proposed authorizing the state land commissioner to exchange

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<sup>128</sup>“Camelback Bill Filed By Rhodes,” *Arizona Republic* 27 March 1962, 1. A copy of Rhodes bill, as well as various letters of support can be found in John J. Rhodes Papers, Series V: 87th Congress, Subseries A: Committees, box 21, folder 1, HR 10922 To Authorize Sec of Interior to Exchange Certain Lands in Arizona (Camelback Mountain), 1961-1963.

<sup>129</sup> “Udall says Camelback up to City” *Arizona Republic* 28 September 1962, 21.

<sup>130</sup> Don Deder, “Phoenix Upmanship: Camelback’s Tops,” *Arizona Republic* 1 May 1963, 17-18 and “Camelback’s Beauty Object of House Bill” *Arizona Republic* 2 February 1963, 34.

<sup>131</sup> Goldwater’s bill can be found in Series III: Legislative Files, box 179, folder 30: 88<sup>th</sup> Congress Camelback Preserve, Insular and Interior 1963-1964. Also see Deder, “Owners of Camelback,” 25.



state owned lands for the properties above the 1,600-foot mark on Camelback. The legislation attempted to circumvent a state law that prohibited the disbursement of state land, except through public auction or trade with the federal government, by proposing to preserve the acquired land as a state landmark managed by the state parks board. Governor Fannin, the ACC, the Phoenix Chamber of Commerce, and Arizona's congressional delegation, as well as community organizations, local businesses, and school groups all expressed support for the bill. The House sent the bill to committee for discussion.<sup>132</sup>

In October of 1963, a student at Phoenix's Arcadia High School initiated a grassroots teenage campaign that hoped to "succeed where their parents have failed." Shari Hume, editor of the school paper, drew up a petition on behalf of "The young people of Arizona" urging "the State Legislature of the State of Arizona to take appropriate action to permanently preserve Camelback Mountain in its present state for the viewing pleasure of future generations."<sup>133</sup> A running tally compiled by the *Arizona Republic* revealed that, while schools nearest Camelback, such as Camelback and Arcadia high schools, accounted for 72% of all signatures, students from as far away as Tucson, Tolleson, and Duncan had also rallied to the cause. The petition circulated around Arcadia's campus and soon spread to other Valley schools. At Representative Burgess's invitation, Hume and more than one hundred other students presented the petition at the State Capitol. Afterward, they gathered on the Capitol lawn and unrolled

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<sup>132</sup>"Phoenix Upmanship," 17-18 and Josh Protas, "The Straw that Broke the Camel's Back: Preservation of an Urban Mountain Landscape," in eds. Matthew Lindstrom and Hugh Bartling, *Suburban Sprawl: Culture Theory, and Politics* (Oxford, U.K.: Rowman & Littlefield Publishers, 2003), 91.

<sup>133</sup>The petition can be found in "Children Crusade to Save Camelback," *Arizona Republic* 20 October 1963, B-1.

the petition---more than 300 feet long and bearing the names of 12,679 students---for the press.<sup>134</sup>

Public concern increased that same month, when Mr. and Mrs. Carruth, Camelback property owners, tried to blast an 18,000-pound boulder away from his home near the Camel's head. In the end, the seventy sticks of dynamite generated more momentum to save the mountain than it did to move the actual boulder, which shifted only four inches. An angry editorial in the *Republic* fumed, "First the ear, then the humps, and then the tail, and finally the camel will be no more." The community anxiously followed the course of the bill in the Arizona legislature.<sup>135</sup>

The fate of House Bill 312 lay in the hands of the Judiciary, Livestock and Public Lands subcommittee. Despite widespread community support, powerful interest groups in the state opposed the measure. The Arizona Education Association (AEA), ranchers and agricultural interests lobbied state legislators and pressured State Land Commissioner O.M. Lassen to keep state lands in trust, so they could later be used for "productive" purposes. The State Land Commission's advisory committee featured prominent

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<sup>134</sup> The number of signatures collected in order of signatures collected from Phoenix High Schools: Camelback 1,719; Arcadia: 1,586; Scottsdale: 1,442; Washington: 1,242; Cortez: 1,241; Alhambra: 1,085; and Coronado: 931. See Don Deder, "Last, Best Chance to Save Camelback," *Arizona Republic* 21 February 1964, 17. See also Don Deder, "Youngster's Fill Gallery for Event," *Arizona Republic* 22 February 1964. Sheri Hume, "Teen Prove Interest in Worthy Projects," *Arizona Republic* 23 February 1964, B1. Hume was a guest columnist for Don Deder in the Sunday edition of the paper following the introduction of Bill 312. Don Deder, "Camelback Bill Wins Support," *Arizona Republic* 21 February 1964, 17. Don Deder, "Last, Best," 17.

<sup>135</sup> For information on the Carruths, the couple who attempted to dynamite the boulder, see *Arizona Republic* 15 February 1964.

representatives from each of these interest groups, who also advised Lassen to oppose the proposed legislation—which he did.<sup>136</sup>

The AEA, in particular, vehemently opposed HB 312 because revenue generated from public land leases provided an essential revenue stream for public schools in the state. They explained that, although they did not oppose Camelback preservation per se, the proposed “bill... would involve trading productive state school land for an unproductive scenic mountain.” AEA representatives objected to the enormous cost of buying land at the top of Camelback and argued that the proposed land swap violated state law, which stipulated that state lands be held in trust and could not be sold or leased, in whole or part, except to the highest bidder at public auction. The AEA pressured Waldo DeWitt, chair of the Livestock and Public Lands Committee, who helped keep the bill from reaching the House floor.<sup>137</sup>

### *Grassroots: The Preservation of Camelback Mountain Foundation*

Legislators’ inability to overcome the influence of important interest groups put the preservation of Camelback in a precarious position. Under the threat of imminent construction of new homes and roads, the effort to save Camelback shifted from the government to the public. In 1965, the Valley Beautiful Citizens Council (VBCC), whose

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<sup>136</sup> Representatives of the Commissioner’s advisory committee included Olas Lunt, Prescott rancher Norman Fain, and Phoenix agriculturalist W.W. Pickerell. See “State Group Opposes Swap of Its Land for Camelback,” *Arizona Republic* 9 December 1964, 12.

<sup>137</sup> Arizona Education Association, *Public Lands and the Public Schools of Arizona*, 1959-60, Public Lands Committee of the AEA, (Phoenix, 1960). Don Dederer “AEA Camelback Opposition Aired,” *Arizona Republic* 5 March 1964, B 1-2. In the article, Dederer submitted questions to Dix W. Price, executive secretary of the AEA and Olas Lunt, a member of the AEA public lands committee. The AEA also opposed a parkway on school land as well as working for doubling grazing fees on state school land. Efforts to obtain reports or hearings from this subcommittee were stymied, as these records were lost, possibly to flooding.

members comprised a “who’s who” of Phoenix, made preservation of Camelback its top agenda item. The VBCC’s most prominent members included City Council woman Margaret Kober; Henry Luce, the man behind the Time, Inc. publishing empire; Walter Bimson, President of Valley National Bank; and HB 312 sponsors Isabel Burgess and John Pritzlaff. Like similar groups nationwide, the VBCC concerned itself with preserving and enhancing their community’s aesthetics. Its members promoted green spaces and the planting of flowers, housing codes to ensure appealing neighborhoods, and a limitation on billboards that blocked scenic views. Through 1964 and 1965, the VBCC discussed the best way to protect Camelback, including lobbying Phoenix, Scottsdale, and Paradise Valley to pass strict zoning regulations and even purchasing the mountain.<sup>138</sup>

Many VBCC members lived near Camelback, and were concerned, like Margaret Kober, whose house was on the south side of the mountain, that their support would be “misinterpreted” as “trying to save [her] own backyard.” Henry Luce dismissed these doubts in an address to board members in early May. “If this organization shouldn’t be concerned with saving the likes of Camelback Mountain, then I don’t know why we exist,” he proclaimed. On May 10, 1965, VBCC announced the formation of the Preservation of Camelback Mountain Foundation (PCMF), a non-profit corporation comprised of the most prominent members of the group, including Kober, Luce, and senator and former presidential candidate Barry Goldwater. Kober and Goldwater wasted

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<sup>138</sup> Walter W. Meek, “Save Camelback Mountain is Objective of Valley Beautiful,” *Arizona Republic* 8 December 1964, 1:5. Valley National Bank Collection, 1898-1992, box 38, folder 365: Valley Beautiful Citizens Council, 1963-5, Arizona Historical Society, Tempe-Papago Park, Arizona. This folder contained meeting minutes and agendas for the VBCC from 1963 to 1965.

no time before sending letters to friends and businesses asking for donations, and imploring property owners on Camelback to donate land. Meanwhile, PCMF Treasurer Harry Montgomery persuaded Phoenix City Manager Robert Coop to stymie development on Camelback by putting on hold applications to build on the mountain.<sup>139</sup>

The PCMF committed itself to acquiring the properties atop Camelback through tax-deductible land donations and by raising money to purchase land on the mountain, which the Foundation then planned to give to the city. The foundation drew the line of development at 1,800 feet. Two factors informed this decision. First, by concentrating on the land above 1,800 feet the foundation needed only to negotiate with twelve property owners, compared to at least seventy-three who held title to land above the 1,600-foot mark. Second, it allowed the foundation to preserve the silhouette of the mountain intact. Lewis Ruskin, the foundation's chair, hoped that property owners "pride in their community... would be great enough that they would not seek an undue profit at the expense of the community."<sup>140</sup> By late October, Kober and Goldwater's efforts had secured two tracts on the mountain and a promise from Elizabeth Arden, who owned 38 acres on the eastside of the mountain, to leave her land undeveloped.<sup>141</sup>

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<sup>139</sup>Kober Collection, box 1, folder 8. A list of founding members as well as their addresses can be found in this folder. Personal correspondence, Harry Montgomery to Barry Goldwater on May 20, 1965, in Goldwater Collection, box 50, folder 3. For examples of letters written by Goldwater in the first month of the campaign, see box 50, folder 3. Also see Meek, "Save Camelback Mountain," 1:5.

<sup>140</sup>"Foundation Formed to Save Mountain," *Phoenix Gazette* 10 May 1965; Goldwater Collection, box 50, folder 2 and 3. Phoenix Title and Trust Company sent the list of property owners above the 1,600-foot mark to Goldwater; For Ruskin quote see Charlotte Buchen, "Group Organizes to Save Camelback," *Arizona Republic* 11 May 1965, 1:9.

<sup>141</sup> By October 4 1965, PCMF had acquired Foxgal land, the Ratliff property, and had a written promise from Elizabeth Arden that nothing will ever be built on her land. See personal correspondence, Goldwater to Robert Bayless on October 4, 1965; For a list of the largest property owners on the mountain, see Ephemera Collection, Places, box 149, folder 6, "Camelback and Echo Park," Arizona Historical Society, Tempe-Papago Park, Arizona.

The PCMF launched their fund-raising campaign on October 26, 1965. At an event held in Camelback High School's gymnasium, the foundation announced their intention to raise \$300,000 to reclaim Camelback's peak. They hoped to complete the purchase as a Christmas present to the City of Phoenix, an idea first suggested by *Arizona Republic* journalist Don Dedera, who also served as the master of ceremonies for the evening. The meeting drew over four hundred people, including members of thirty sportsmen's clubs, a long list of garden and service clubs, as well as students and teachers from Valley high schools. Dedera's opening remarks created a sense of urgency that other speeches built upon: "If we don't save Camelback Mountain...our valley will lose its most important landmark."<sup>142</sup> Attendees next heard rousing speeches from Goldwater and Kober, who emphasized the importance of preserving a landmark "as significant to some people as the Grand Canyon." Lewis Ruskin insisted that preserving Camelback was a critical milestone in Phoenicians' quest to "grow, keep clean air, and a clean life."<sup>143</sup>

The PCMF ideals echoed a growing national concern over the loss of open space. In 1963, President Kennedy urged the nation to "expand the concept of conservation" to meet the problems of the new age. Secretary of the Interior Udall, no doubt familiar with Phoenix's impending challenges, went further: "Our cities have grown too fast to grow well, and today they are the focal point of the quiet crisis in conservation," he wrote.<sup>144</sup>

Arizona Governor Sam Goddard compared the effort to save Camelback with a "great

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<sup>142</sup> Personal correspondence, Barry Goldwater to Don Dedera on October 4, 1965. For Dedera's remarks see "Maryvale Supports Save Camelback Campaign," *Phoenix Gazette* 8 November 1965.

<sup>143</sup> "Save Camelback Meeting Tonight," *Arizona Republic* 26 October, 1965 and "Rally to Save Camelback Generates Wide Response," *Arizona Republic* 27 October 1965, 19:21; Victor Pawlae, "Teens Committed to Save Camelback," *Arizona Republic* 30 October 1965, 33.

<sup>144</sup> Udall, *The Quiet Crisis*. For Kennedy quote see page xiii and for Udall quote see 159-160.

awakening” at “all levels of government and society...to the perils of loss of identity with the great natural backdrops.” In November 1965, Goddard formed the Governor’s Commission on Arizona Beauty, which emphasized the protection of air and water quality, along with the state’s scenic beauty. Legislation at the national and state level had failed to save the mountain, and so it turned to the local community, led by its most prominent members, to save their mountain.<sup>145</sup>

Goldwater, fresh from defeat in the 1964 Presidential campaign, devoted himself wholeheartedly to the campaign to preserve Camelback. Goldwater had grown up at the base of the mountain and memories from his childhood informed his love of the desert and mountain landscape, which fueled his devotion to the cause. He also concerned himself with the image of Arizona’s largest metropolitan center. “If we ruin Camelback,” Goldwater chided, “people will think of Phoenix as the city that made something ugly of the most beautiful thing it had.” Goldwater sent thousands of letters to his neighbors in Paradise Valley and Arcadia, soliciting donations and in-kind support from Valley businesses and community leaders. He helped convince local businesses to provide printed materials and legal services that minimized the costs of the campaign. These included Maricopa Printers, Don McGraw Printers, Arizona Messenger, Amy Chuka, and S.W. Envelope Company. Moreover, local hotels, ranchers, and motels enthusiastically donated to preserve a view that drew tourists to their doors. In an interview with Deder, Goldwater confessed, “saving that mountain has become the most important goal of my life.”<sup>146</sup>

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<sup>145</sup> “The Glories Around Us,” *Phoenix Gazette* 7 December 1965.

<sup>146</sup> For examples of letters, see Kober Collection, box 1, album 8 and Goldwater Collection, box

The Pulliam newspapers provided persistent support. The shared downtown office of the *Arizona Republic* and *Phoenix Gazette* enjoyed a tremendous view of the mountain to the north---similar to the view the papers' owner, Eugene Pulliam, appreciated from his backyard. From the launch of the campaign to December 25, the *Republic* and the *Gazette* produced no less than sixty-three articles, editorials, and cartoons that translated into daily coverage of the preservation effort. In addition, both papers published advertisements and information encouraging people to donate to the campaign. *Republic* cartoonist Reg Manning's "Drowning Camel" image of the mountain surrounded by a sea of private development became a symbol featured on PCMF mailers. Individuals or groups that donated \$10 or more received a commemorative certificate from the *Republic*. While reporters and staff at both newspapers promoted preservation efforts, the campaign enjoyed no more exuberant media cheerleader than the *Republic's* Don Dederer.<sup>147</sup>

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50. For first quote see, Peter Iverson, *Barry Goldwater: Native Arizonian* (Norman: University of Oklahoma Press, 1997), 206. For second quote see, Don Dederer, "Goldwater Fights For A Mountain," *San Diego Union* 22 May 1964. For more on Goldwater's conservation efforts, ed. Elizabeth Tandy Shermer, *Barry Goldwater and the Remaking of the American Political Landscape* (Tucson: University of Arizona Press, 2013).

<sup>147</sup> Kober Collection, box 1, album 8. For examples of advertisements, see *Arizona Republic* 21 November, 3-A, "A Gift for All Time," *Arizona Republic* 2 December 1965, and "Give Yourself Camelback for Christmas," *Arizona Republic* 8 December 1965. Reg Manning's cartoon can be found in the June 2, 1968 edition of the *Arizona Republic*; "Camelback 'Savers' To Get Certificates," *Arizona Republic* 14 November 1965.



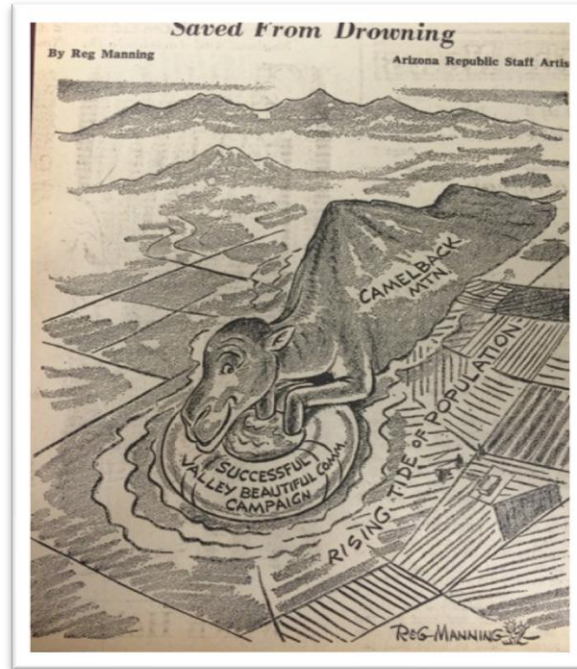


Figure 7. Reg Manning’s “Drowning Camel” Cartoon. This cartoon became a widespread image for the campaign.<sup>148</sup>

Many Valley residents kept abreast of the latest news concerning the campaign to preserve Camelback by reading Dedera’s column, which provided a steady stream of cautious optimism. Dedera created a sense of drama around each moment; the fate of the mountain always jeopardized, yet in the capable hands of Valley residents. He characterized the preservation effort as something more important than just protecting a piece of land: “The influence of an unspoiled Camelback extends beyond resorts and neighborhoods on its slopes, beyond the cities around it, beyond the Salt River, and beyond the borders of Maricopa County,” he wrote. “A ruined Camelback would be the shame of Arizona.” Dedera also publicized fund-raising events and dedicated space in his column to Valley residents who supported the campaign, including the publication of a

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<sup>148</sup> This image can be found in the Reg Manning Collection, 1936-1981, box 10, folder 8, Arizona Collection, Arizona State University Library, Tempe, Arizona. This collection houses all of Manning’s cartoons from the *Arizona Republic*.

flurry of letters. Shari Hume, the Arcadia High School student and leader of the teenage campaign, even appeared as a guest columnist. Dedera provided her with advice on organizing efforts.<sup>149</sup>

Other journalists also used their columns to support the campaign. Eleanor Shultz, editor of the *Republic's* Home and Garden section, described the plight of the Camel facing the rising tide of suburban sprawl, “his eyelids heavy with houses.” Shultz implored residents of the Valley “to save him from the conquerors.” Robert Glasgow lamented the “homogenization of individual characteristics” created by sprawl, “the very things that make it possible for people to identify with where they live.” For many, Camelback Mountain was a defining moment in arresting the worst characteristics of urban sprawl.<sup>150</sup>

This point became clear in responses to PCMF requests for contributions. The foundation encouraged anyone who donated to attach a written message explaining the reason for his or her contribution. Nearly all the messages described specific personal experiences with the mountain that related at least one aspect of arguments commonly made on behalf of open spaces.

For some, the loss of the mountain meant the loss of recreation. They “grew up climbing” Camelback, which one respondent described as the “Alma Mater” of their

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<sup>149</sup> The specific quote is from Don Dedera, “Even Tucson in Act to Save Camelback” *Arizona Republic* 31 October 1965; Dedera’s articles are cited through this chapter. For examples see Don Dedera, “Camelback Controversy at Crucial Stage,” *Arizona Republic* 28 April 1963, B 1:2; Don Dedera, “Women Rebel Trying to Save Camelback,” *Arizona Republic* 29 April 1963, 19; Don Dedera, “Owners of Camelback Have Their Side Too,” *Arizona Republic* 30 April, 1963, 25:28; Don Dedera, “Phoenix Upmanship: Camelback’s Tops,” *Arizona Republic* 1 May 1963, 17-18; Don Dedera “Rescue Camelback? It Just Takes Money,” *Arizona Republic* 2 May 1963, 19:21; Don Dedera, “Children Crusade to Save Camelback,” *Arizona Republic*, 20 October 1963, B-1.

<sup>150</sup> Both editorials appeared in the *Arizona Republic* and can be found in the Kober Collection, box 1, album 4.

childhood. One elderly gentleman, who recalled fond memories of hiking and exploring the mountain, triumphantly declared, “this mountain is my mountain.” Climbers relished the mountain’s challenging rock face and proximity to downtown. Others lamented the potential loss of their favorite horse-riding venue, a popular activity dating back to the 1930s and 1940s. Many noted Camelback as one of their favorite picnic areas, a place they escaped on holidays, birthdays, and dates.<sup>151</sup>

For some Phoenicians, the loss of the mountain meant the loss of scenic beauty. They contrasted Camelback’s natural beauty with suburban sprawl that many viewed as ugly and homogenous. They supported Camelback’s preservation because the mountain was “uniquely beautiful” and held inherent value---not in terms of dollars, but instead held in memories. For others, it represented more than just a mountain; its beauty offered a “source of inspiration.” The mountain also bestowed character on the city that set Phoenix apart from other communities. One woman explained, in a handwritten letter, that people “came far an’ near” to see Camelback, but if development continued, the mountain would look like “any other business district.”<sup>152</sup>

For some Phoenicians, the loss of the mountain meant the loss of habitual comfort. Whether driving to work or the first thing they “look[ed] at every morning,” they felt the view belonged to them. Recent arrivals found that the longer they lived in Phoenix, “the more we treasure *our mountain*.” Camelback Mountain had become “part of our everyday environment,” the Arcadia High School newspaper reflected, as it urged

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<sup>151</sup> Don Deder, “Reasons for Saving Camelback,” *Arizona Republic* 14 December 1965, 19; Howard Hughes, “All Out for Camelback,” *Arizona Republic* 24 December 1965, 7; Don Deder, “Camelback, Praying Monk Meaningful to Arizona Mountaineering Club,” *Arizona Republic* 13 January, 1966, 23; Gary Driggs, *Camelback*, 44.

<sup>152</sup> Deder, “Reasons for Saving Camelback,” 19; personal correspondence, Mrs. Stein to Barry Goldwater on December 8, 1965, in Goldwater Collection, box 50, folder 3.

students and faculty to support the cause. Still others wanted “to keep Camelback free of more houses” because they believed it “the last barrier” protecting them from “highrise, glitter, and smog.” New immigrants, such as Phoenix Union High School superintendent Howard Seymour, adopted Camelback as a reliable landmark in an unfamiliar city; it became his favorite spot to take out-of-town visitors. Whatever their reasons, residents made it clear they did not want “to see old Camelback desecrated.”<sup>153</sup> For each of them, the mountain meant *something* worth protection.

Meanwhile, Goldwater, Kober, and other PCMF members continued to negotiate with landowners on the mountain. A few, such as Robert Bayless and Lee Noble, donated their property to the foundation; however, they proved to be the exception and not the rule.<sup>154</sup> Most owners wanted what they considered fair compensation on their investment. Charles Alberding, owner of the Jokake Inn and its forty-six acre plot, told Goldwater he would be “glad to trade the rump of Camel...for a dedicated horse trail around the mountain.” PCMF President Harry Coblentz contacted the State Parks Board as well as the Arizona Horsemen’s Association about the suitability of cutting a horse trail. A reconnaissance survey revealed an unstable terrain. More importantly, the city could not begin work on a trail until it actually possessed the mountain. This impasse stalled negotiations indefinitely between PCMF and Alberding.<sup>155</sup>

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<sup>153</sup> Emphasis of our mountain is my own. Dedera, “Reasons for Saving Camelback,” 19. Jean Robbins, “Save Camelback Campaign Starts,” *Arcadian*. The date of publication is unclear, but it is likely sometime around October 1965. Found in Kober Collection, box 1, album 4; “Thanksgiving, Christmas, and ‘Save Camelback’ Go Together,” *Phoenix Union High Schools and Phoenix College System District Newsletter*, volume 15, no. 3 (November 19, 1965), 1:4.

<sup>154</sup> Personal correspondence Harry Coblentz to Lee Noble on June 15, 1965.

<sup>155</sup> “Camelback and Echo Park,” Arizona Historical Society; personal correspondence, Goldwater and Alberding on June 7, 1965, June 28, 1965, October 4, 1965, October 8, October 21 1965; personal

In a series of letters between 1965 and 1966, Margaret Kober negotiated with *Arizona Republic* journalist Maggie Savoy a fair price for her land on Camelback Mountain. Initially, Kober asked her to donate the land in exchange for a tax credit, but the recently widowed Savoy explained herself incapable of working full time and described her financial condition as “not in the best health.” Savoy owned fourteen undeveloped acres of land on the mountain and hoped to gain more than just interest on the money she invested. Her asking price of \$31,000, or ten percent of the foundation’s fundraising goal, seemed a high price in Kober’s eyes. Nevertheless, Kober persisted until she reached a satisfactory accommodation with Savoy a few months later. Similar negotiations took place with other property owners, who also sought a fair return on their investments.<sup>156</sup>

While PCMF members solicited donations and negotiated with Camelback property owners, Valley teenagers conducted their own campaign to preserve the mountain. They raised less money, but their efforts created great publicity. The teenagers organized a series of events that culminated in the Save Camelback Dance, one week before the Christmas deadline. In November, more than one hundred students from twenty-five high schools participated in fund-raising car washes throughout the Valley.<sup>157</sup> Valley high schools also competed in a “Cans for Camelback” contest sponsored by local radio station KRIZ. The Newell Salvage Company offered to pay twenty dollars per ton collected, with the school that collected the most winning a concert sponsored by the

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Correspondence, Goldwater to Walter Kieckhefer on December 10, 1965; Richard Nilsen, “Camelbacker: Savior of Landmark Peak Still Its Biggest Booster,” *Arizona Republic* 24 November 2003, E1.

<sup>156</sup> Personnel Correspondence, Maggie Savoy to Margaret Kober, May 27, 1965 and March 10, 1966, Goldwater Collection, box 50, folder 7.

<sup>157</sup> “Cars to Shine for Camelback,” *Arizona Republic* 27 November 1955, 17; Vic Pawlak, “Spirits Not Damp, But Sneakers Are,” *Phoenix Gazette* 20 November 1965.

radio station. The teenagers piled up over 14,500 pounds of cans into a half dozen six-by-ten U-Haul trailers in the East Camelback Shopping Center parking lot. Camelback High School led the way and collected the prize. On December 18, Valley teenagers converged on the State Fairgrounds for a series of performances by rock-and-roll bands, enlivened by food, drinks and good company. Barry Goldwater surprised the crowd with an unannounced appearance, during which he serenaded the audience with his rendition of “Silent Night” played on the trombone. The dance raised another \$300 that night for the campaign.<sup>158</sup>

Despite the best efforts of PCMF members, the media, high school students, and the generosity of 2,000 contributors, on December 25, the campaign fell short of their \$300,000 goal. The foundation, however, did secure critical areas of the mountain. Only the Camel’s neck remained in private hands. In the end, contributions ranged from forty-seven cents to the large donations from Goldwater and his mother, each of whom contributed \$25,000 to the campaign. Other large contributions came from Henry Luce, who also donated \$25,000 and from the *Republic* and *Gazette*, as well as John Pritzlaff, who each donated \$10,000. Kober never wavered. “The drive will continue,” she assured supporters; “we will not stop.”<sup>159</sup>

Negotiations between private landowners and the PCMF continued into 1966. By February, the foundation had received nearly 3,000 contributions. In March, Goldwater

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<sup>158</sup> Don Deder, “Teen-Agers Collect Cans for Camelback,” *Arizona Republic* 15 December 1965; Goldwater Collection, box 50, folder 6; Don Deder, “It’s All Set Now! They Have 2 Bands,” *Arizona Republic* 2 December 1965 and “Youth’s Aid Camelback Drive,” *Phoenix Gazette* 6 December 1965; “Barry Blares Out,” *Arizona Republic* 18 December 1965. Later, Camelback High School received a plaque in the shape of the mountain from the Valley Beautiful Citizens committee as a symbol of their accomplishment and active participation in the campaign. See, personal correspondence, Howard Seymour to Margaret Kober on June 18 1968, in Kober Collection, box 1, folder 8.

<sup>159</sup> “Christmas Gift: Camelback,” *Arizona Republic* 25 December 1965, 1:14.

announced that the group had completed the purchase of the south side of the mountain, but acknowledged that a long road lay ahead before it could secure the northern slope. To do so, the foundation required additional funds.

*Collaboration Leads to Preservation: Federal Funds for Camelback*

Newly passed federal legislation came to Camelback's rescue. In 1964, President Lyndon Johnson signed into law the Land and Water Conservation Fund Act, which became effective in January 1965. The law authorized federal grants to provide financial assistance to cities for a variety of activities, including up to fifty percent of the costs of buying and developing land for parks and conservation. Each state received an allocation of available funds for various conservation projects, subject to approval by the state's Outdoor Recreation Coordinating Commission, which sent the application to the federal Bureau of Outdoor Recreation (BOR) for final authorization. The act also established a contingency fund from which states could apply for grants. In September, Johnson signed the Housing and Urban Development Act of 1965, which among other things provided funds for urban beautification under a Housing and Urban Development's (HUD) Open Spaces Program. Both laws were among a slew of federal laws passed by Congress in the 1960s to address environmental concerns. Between 1963 and 1968, Johnson signed into law almost 300 conservation and beautification measures, supported by more than \$12

billion in authorized funds. The PCMF aggressively pursued funds from both these sources.<sup>160</sup>

Throughout the 1960s, Phoenix sought to expand its parks program, emphasizing the construction of parks for recreational purposes within the urban core. This initiative stemmed from a desire to provide children safe places for recreation. These parks contrasted with the more remote county mountain parks, as the city attempted to provide parks within walking distance of neighborhoods throughout the city. The shrinkage of available land, and its rising costs, however, precluded the development of large city parks, especially in older parts of the city. Instead, the Phoenix Parks Department promoted “miniparks” to serve the needs of inner-city residents. The city mostly relied on federal funds made available through the 1960’s legislation to erect playground equipment on a small piece of land, usually less than one acre. By the end of 1971, the city boasted fifty-seven developed parks on 1,650 acres and thirteen undeveloped parks on 660 acres. In addition, it had constructed thirty-nine miniparks, mostly located in the inner city.<sup>161</sup>

During March and April of 1966, the PCMF and VBCC looked into the possibility of obtaining funds from either the Land and Water Conservation Fund or the Open Spaces Program to purchase additional parcels on Camelback Mountain. To that end, members met and spoke with officials from the federal office of the Bureau of Outdoor Recreation, Housing and Urban Development, the Regional Bureau of Outdoor

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<sup>160</sup> Martin Melosi, “Lyndon Johnson and Environmental Policy,” in ed. Robert Divine, *The Johnson Years, Volume Two: Vietnam, the Environment, and Science* (Lawrence: University of Kansas Press, 1987), 113 and 130-140.

<sup>161</sup> Collins, *Emerging Metropolis*, 146-150. For a broad depiction of the “minipark” movement throughout the nation, see Galen Crantz, *The Politics of Park Design: A History of Urban Parks in America* (Cambridge: MIT Press, 1989), 138-147.



Recreation, Maricopa County Parks Department, and the Arizona Game and Fish Department. After these discussions, the City of Phoenix applied for a \$200,000 grant from the Land and Water Conservation Fund to acquire the remaining land on top of Camelback. In April, the Bureau of Outdoor Recreation informed the city it failed to meet two key requirements of the Land and Water Conservation Fund, and turned down the application. First, the BOR noted, the few primitive hiking trails on Camelback failed to satisfy the law's requirement that the project promote active participant-type recreation. Secondly, both the city and county lacked a comprehensive recreation and open spaces plan, another prerequisite for federal funding. The agency recommended that Phoenix first develop a comprehensive plan, and then move forward with an application to the Open Spaces Program.<sup>162</sup>

The Phoenix city council took the BOR's advice and utilized a metropolitan area transportation study for the Papago Freeway (see next chapter) to fulfill the comprehensive plan requirement, while also passing a resolution in August to develop an open spaces plan for the Phoenix Mountains. On December 13, 1966, the city council passed a resolution to submit an application to the Open Spaces Program for \$250,000.<sup>163</sup> The PCMF and the city's confident hopes for funding were quickly dashed. In January of 1967, the assistant secretary of HUD's San Francisco regional office issued a grim report on the possibility that Phoenix would receive any federal funds. The Open Spaces

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<sup>162</sup> For correspondence with the various federal, state, and county departments, see Goldwater box 50, folder 7; *Phoenix Gazette* April 22, 1966; personal correspondence, Assistant director of BOR, Heaton Underhill to Wendell Swank, Director of the Arizona Game & Fish Department on April 12, 1966, in Goldwater, box 50, folder 7.

<sup>163</sup> Preliminary Papers of Dorothy Gilbert, box 8, folder 51, "Squaw Peak Calendar of Events"; "Council Seeks Grant to Buy Camelback Top," *Arizona Republic* 14 December 1966, 21; See Resolution 12469 in Phoenix City Council, *Meeting Minutes*, volume 63, December 13, 1966, 256.

Program “was extremely popular,” he explained. At the time of the city’s application, the demand for funds exceeded available appropriations by an almost six-to-one ratio, and that number would climb to twenty-to-one by the end of the year. Phoenix would not be receiving any HUD money.<sup>164</sup>

On June 2, 1967, the PCMF and the City of Phoenix once again applied for a grant from the Land and Water Conservation Fund. This time they asked for \$269,625. The Camelback application competed with forty-three other applications within the state, including three others from the Phoenix alone. In total, the proposed projects asked for more than \$2 million, at a time when the federal government had allocated only \$800,000 for distribution through the Arizona Outdoor Recreation Coordinating Commission (AORC). The AORC had decisions to make. To improve Camelback’s odds, the Phoenix city council voted unanimously to give its application priority status over the city’s three other proposals, which included a tennis court, new park sites, and a swimming pool. The council argued that those projects faced no imminent danger, while development on Camelback meant the loss of something unrecoverable. Vice-mayor Jarrett Jarvis touted the project’s value to Phoenix taxpayers because it required no expenditure of local public funds; only private donations collected by PCMF and federal funds. Once Phoenix had submitted its application, City Manager Ray Wilson wrote to AORCC chairman Dennis McCarthy asking that Camelback receive top priority.<sup>165</sup>

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<sup>164</sup> Personal correspondence, Assistant Secretary for Renewal and Housing Assistance in HUD, San Francisco Regional Office to Barry Goldwater on January 16, 1967 in Goldwater, box 50, folder 8.

<sup>165</sup> Harold Cousland, “Camelback Fund Gets Priority,” *Arizona Republic* 2 August 1967, 1-A-3-A; “Mountain Given High Priority,” *Phoenix Gazette* 2 August 1967, B-1, Goldwater box 50, folder 9; “Deserved Priority,” *Arizona Republic* 6 August 1976, 6. A copy of the application can be found in Goldwater, box 50, folder 8. Clarence W. Bailey, “Camelback’s Hump Spared by Funds,” *Arizona Republic* 23 August 1967, 1:13.

The strategy paid off. McCarthy explained that Camelback warranted priority because of its status as a “nationally recognized landmark” and because there existed “widespread support in the community, as evidenced by the amount of money raised through public subscription.” On August 22, 1967, the AORCC voted unanimously to recommend a grant of \$215,700 (80% of the city’s request), for the preservation of Camelback Mountain. Shortly thereafter, the Bureau of Outdoor Recreation approved the grant for \$211,250, to match funds collected by the PCMF. Stewart Udall officially bestowed the grant to the city on May 28, 1968. Lady Bird Johnson, a strong advocate for beautification projects and conservation, sat in attendance.<sup>166</sup> On October 29, 1968, the Phoenix city council passed Resolution 13059, which authorized the acceptance of money and land donated by PCMF to secure Camelback “for all time in its natural beauty.” Land purchased by the city over the next few years added another seventy acres. By February 1971, the city owned all but one of the original parcels sought by PCMF. Charles Alberding never sold his property on Camelback Mountain, but Maggie Savoy did.<sup>167</sup>

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<sup>166</sup> Charlotte Buchen, “Beaming Lady Bird Charms Phoenixians: Says Beauty ‘Food for Soul of America,’” *Arizona Republic* 29 May 1968, 1:17; “Council vows to preserve Camelback,” *Arizona Republic* 30 October 1968, 19; Phoenix City Council, *Meeting Minutes*, Resolution 13059, volume 71, October 29, 1968, 95, 101; Margaret Kober Collection, box 1, folder 8. For a discussion of Lady Bird Johnson’s efforts to promote beautification, see Lewis Gould, *Lady Bird Johnson and the Environment* (Lawrence: University of Kansas Press, 1988).

<sup>167</sup> Bailey, “Camelback’s Hump,” *Arizona Republic* 13 and AORCC, *Meeting Minutes*, August 21-2, 1967; personal correspondence, Harry Montgomery to Barry Goldwater on February 24, 1971; Driggs, *Camelback*, 54.

*Loose Ends: A Mountain to See, But Not Yet to Play*<sup>168</sup>

By 1971, the City of Phoenix had saved the view of and from Camelback, but had failed to secure public access for recreation. While the city preserved the land above 1,800-feet from development, the area below remained open to developers who sought to take advantage of the scenic views from the mountain's ridges and construct luxury homes and resorts. In addition, property owners resisted efforts to create a public park and trails to the summit of the mountain that would cross their property or viewshed. To make Camelback a "meaningful area," *Arizona Republic* columnist Ben Avery explained, the public must have access. "It is imperative," he urged, that "Echo Canyon be added."<sup>169</sup> The bowl-shaped formation nestles under the Camel's head, also known as Praying Monk, on the western side of the mountain, and straddles the border of Paradise Valley, Scottsdale, and Phoenix. In the 1920s and 1930s, the bowl served as a concert venue, hence the formation's name. Little development occurred in this area and it remained one of the "pristine" examples of a Sonoran Desert ecosystem.

In December 1970, architect Joe Lort walked into Western Savings Bank. Western Resources had hired Lort to do something with the 129 acres they owned near Echo Canyon. He hoped Gary Driggs, President of Western Savings, would provide a loan for the development of a subdivision of single-family homes. Driggs, however, was not your average banker. He grew up in the shadow of the mountain. There, among the granite and cactus, Driggs had his self-proclaimed finest high school moments, spent with high school sweethearts. An avid climber, Driggs made one of the first ascents of the

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<sup>168</sup> Gary Driggs uses a similar subheading in *Camelback* when discussing the acquisition of Echo Canyon.

<sup>169</sup> Ben Avery, "Much Remains for Camelback," *Arizona Republic* 30 May 1968.

mountain's famous rock, Praying Monk, in 1951. And he never tired of explaining the natural history of the mountain to climbing or hiking companions. John Driggs, mayor of the city in 1970, also happened to be his brother. So, when Joe Lort walked into his office, Gary Driggs quickly rushed to defend his mountain.<sup>170</sup>

Meanwhile, on the northeastern side of Camelback, residents on Cholla Lane made life difficult for hikers. Residents complained of trespassers, who made parking difficult and threatened to turn the road into a "Lover's Lane," that invited litter and all sorts of "devious" activity, including vandalism and burglary. Cholla Lane residents posted "No Parking Signs" and verbally harassed those seeking access to the hiking trail. On one trip, they even harangued Barry Goldwater, who told them politely to go to hell. Editorials in the *Arizona Republic* expressed similar sentiments. The recalcitrant property owners made it "practically impossible for anyone to use the trail," which ran northwesterly toward Echo Canyon.<sup>171</sup>

Gary Driggs called his brother and convinced the Phoenix Mayor that the preservation of Echo Canyon required immediate action. The brothers worked out a deal between Western Resources and the city. Under their plan, the city acquired ninety-one acres from Western Resources for the development of a park and recreation area, while the developer received forty acres of flat land near McDonald Drive to build a cluster

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<sup>170</sup> Gary Driggs, *Camelback*, 59-61; Michael Clancy, "Camelback Mountain, Phoenix Landmark Celebrated," *Arizona Republic*. <http://archive.azcentral.com/travel/arizona/features/articles/archive/camel.html> (accessed September 25, 2014).

<sup>171</sup> "Camelback is Nice to Climb--If You Don't Mind the Insults," *Arizona Republic* 3 November 1969, 7; personal correspondence Goldwater to Kober on November 1969; personal correspondence, Barry Goldwater to Mayor John Driggs on January 20, 1970; personal correspondence, Barry Goldwater to Robert Bayless on February 16, 1970; personal correspondence Goldwater to Frank Fitzgerald on March 6, 1970; personal correspondence, Dino DiCenso to Goldwater on July 16, 1970; and personal correspondence Jerome Fisher to Goldwater on March 2, 1970.

subdivision further down the mountain's slope. The cluster-housing plan required a change of zoning laws to allow a higher residential density, but this allowed the city to acquire a larger chunk of land. The city approved the plan on December 15, 1970, and the following month sent an application for federal aid under the Land and Water Conservation Fund. Mayor Driggs paid a visit to present the city's case for federal aid to the Secretary of Interior Walter Hickel.

In March 1972, the Bureau of Outdoor Recreation approved Phoenix's application and granted Phoenix \$207,500, which it used to purchase 75.8 acres of land. The city failed, however, to resolve the dispute between several landowners in the path of the proposed hiking trail and other residents who saw the park as a hindrance to their land rights. Nonetheless, Mayor John Driggs dedicated the park on November 17, 1973, with Margaret Kober presenting the last of the PCMF funds to the city. Today, a ramada and parking area are the park's only fabricated trimmings. A sign reminds visitors:

“Let no one say  
And say it to your shame  
That all was beauty here  
Until you came.”<sup>172</sup>

Visitors to Echo Canyon, however, still encountered difficulties. Hikers following an undeveloped trail that had been in use for decades had to cross three parcels of privately held land, two vacant lots, and one residential property. The property owners, Paradise Valley residents, resented the proposed park. Feeling that it infringed on their

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<sup>172</sup> Driggs, *Camelback*, 61-67; “Echo Canyon Park Survives Luxury Home Critics,” *Arizona Republic* 6 January 1971; personal correspondence, Robert Jantzen, chairman of the Arizona Outdoor Recreation Coordinating Commission to U.S. Department of Interior on November 17, 1972 in Governor John Williams Papers, box 654, Arizona State Archives, Phoenix, Arizona; Kober present a check for \$1,551.59, Kober Collection, box 1, folder 9.

land rights and disrupted the solitude they sought when they initially acquired the property, they filed lawsuits to reduce the flow of hikers. The city first tried to create public access through condemnation of a portion of the properties, but a Maricopa County court ruled in favor of the property owners. Over the next three years, the city attempted to work out a deal to purchase the land, but struggled to find a price that the property owners would accept. In the meantime, one property holder attempted to charge hikers a five-dollar toll. Eventually they came to an agreement. In 1975, the city purchased the two vacant lots (2.4 acres) for a total of \$68,900. Backed by a court ruling, the City of Phoenix condemned a twenty-foot wide easement in the back of the third residential property to provide open access to the hiking trail, which the city surrounded with a fence to prevent trespassing. At this time, the PCMF dissolved. Hikers continued to use an unofficial trail at Cholla Lane until the city reached an agreement in 1979 with the Phoenician resort, which bought the Jokake Inn, and allowed the construction of a public access trail in the mid-1980s. More than one-hundred volunteers helped build the trail. Finally, the city truly possessed its mountain, with a trail extending to the peak.<sup>173</sup>

*Coda: A Mountain's Meaning*

Phoenix's first public preservation campaign did more than protect the summit of the city's iconic mountain. Phoenicians demonstrated that they valued Camelback's aesthetic and recreational values above economic development. Sixteen of the twenty-six

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<sup>173</sup> "Hiking Trail Suit by City is Dismissed," *Phoenix Gazette* 19 January 1972; John Vesey, "Feud Simmers Over Trail to Camelback Mountain," *Phoenix Gazette* 25 November 1974 A-1:A4; "City Nearer Providing Camelback Hiking Path," *Phoenix Gazette* 12 February 1975; Driggs, *Camelback*, 119-122; For dissolution of PCMF paperwork, see Kober Collection, box 1, folder 8.

municipal governments operating across the Valley feature mountains on their logo, and hiking continues to be a popular activity. Every year, 300,000 people ascend Camelback.<sup>174</sup> In 1992, the city designated Camelback Mountain one of twenty-five “points of pride,” and acknowledged it as the Valley’s most iconic landmark. It remains one of the most popular urban hikes in America. Moreover, the name “Camelback” appears more frequently than any other “signature name or icon” in the Valley, appearing on buildings, streets, neighborhoods, and schools.<sup>175</sup> The *Arizona Republic* celebrated the thirtieth anniversary of the establishment of Echo Canyon Park with a weeklong series dedicated to the mountain. Most importantly, every time new developers have sought to build on the mountain, such as the proposed expansion of the Phoenician resort in 1995, the city has risen to the challenge of defending the mountain’s 1,800-foot mark. Based on aerial photographs, the city parks department determined no perceptible change in vegetation on the mountain occurred from 1971 to 1995.<sup>176</sup>

The campaign also provided useful lessons for future, larger preservation efforts. First, development of Camelback’s slopes demonstrated what could happen without preventative action, and the difficulty and expense of attempting to reclaim privately held land for public purposes. Efforts to establish the North Mountains Preserve in the 1970s, which at the time included time over 7,000 acres, modeled and expanded their public

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<sup>174</sup> “Valley Loving Camelback to Death,” *The Tribune* 50, no. 301 (November 2, 1998), A1.

<sup>175</sup> The prevalence of mountain iconography, and specifically Camelback’s presence in the Valley is studied in Kevin Blake, “Mountain Symbolism and Place Identity in the Southwestern Landscape” (PhD. diss., Arizona State University, 1996), 138-147.

<sup>176</sup> Gail Taylor “Holding onto Camelback’s High Ground,” *Arizona Republic* 5 March 1995, A1; Nilsen, “Camelbacker: Savior of Landmark,” E1:E3; “Contractor Details Plans for Camelback Mountain Homes” *Phoenix Gazette* 7 May 1976; Driggs, *Camelback*, 73 and 121.



campaign after the PCMF.<sup>177</sup> The Phoenix Mountains Preservation Council (PMPC), a non-profit corporation similar to PCMF, relied on monthly newsletters, bumper stickers, special concerts, media support in the city papers, and a non-profit corporation, Save Our Mountains, to collect donations of land and money. Several bond approvals, including \$23 million in 1973, demonstrate their success, as well as the resoluteness with which Phoenicians have embraced natural and publicly owned mountains as part of their quality of life. Like their predecessors, activists persistently attended city council meetings and zoning hearings to pressure city leaders to protect the mountains. The effort to save Camelback preserved over three hundred acres on the mountain's summit, but this remained elusive until federal legislation opened up matching funds for the preservation in the mid-1960s. Recognizing that the effort to save 300 acres on Camelback's summit required congressional legislation to open up federal funds, future campaigns relied heavily on federal coffers. Efforts to establish the North Mountains Preserve required several federal grants throughout the 1970s. Like the preservation of Camelback, the funds came from the Land and Water Conservation Fund.

The PMPC never disbanded, and continues to make open space preservation part of the growth dialogue in the city. The Phoenix Mountains Preserve, which now includes Camelback, South Mountain, North Mountain Park, and others, is the largest protected mountain area within any city's limits in the country. In 1998, Arizona voters passed the Growing Smarter Act, which authorized the state to provide \$20 million per year to assist cities to acquire and maintain open spaces. Phoenix has actively pursued these funds in

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<sup>177</sup> The North Mountain Preserve is now called the North Mountain Park, which is part of the Phoenix Mountains Preserve.

acquiring and maintaining open spaces. Finally, the preservation of Camelback Mountain demonstrates the power of community action and public-private partnerships in confronting urban challenges.

While local concern initiated the campaign to save Camelback, decisions by federal, state, and local government officials turned sentiment into action. Beginning with MCPZC chair Casey Abbot, a number of municipal, county, and state bureaucrats played an important role in the preservation efforts' success. In particular, federal funds proved crucial to preserving Camelback. This is especially ironic as Barry Goldwater, a staunch libertarian and fiscal conservative, and PCMF had to ask the federal government for funds. Moreover, local and state government decisions to prioritize Camelback over other projects eligible for federal funds further demonstrate the necessity of government intervention to protect the environment as a public good. Without federal legislation in the 1960s, it is hard to imagine PCMF preserving the mountain as they struggled to raise sufficient funds to buyout private landowners. Phoenix City Council Resolution ultimately protects the mountain in perpetuity, but civic watchdog groups remain crucial to raising the alarm when open spaces are threatened.

When open spaces emerged as an important factor in quality of life and urban growth debates in the 1950s, Phoenix government officials and private citizens lacked the know-how and the resources to protect and preserve mountain and desert landscape, especially when the land was privately held. For twenty-years, they stumbled and progressed in a haphazard fashion, but they learned--how to organize, how to foster private-public collaboration, how to appeal to the public and decision-makers, and where

to seek funds. By the 1970s, open spaces were a cornerstone of Phoenix's urban planning. The city's 1971 Open Space Plan makes that clear: "We must not continue to regard natural beauty, open space and recreation opportunity as luxuries to be bought only out of surplus funds." Instead, the report recommended the city ensure "the kind of environment that satisfies a larger measure of the intangible qualities of our local lifestyle." New problems plagued the Camel as the city continued to grow through the 1970s when Phoenicians debated how to best solve the city's transportation problems while also maintaining clean air. The debate centered on the West-Papago Inner Loop freeway. By the 1990s, the Camel was appearing in commercials, choking on the automobile exhaust and smog, in efforts to curb air pollution.<sup>178</sup>

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<sup>178</sup> Collins, *Emerging Metropolis*, 160. Quote from City of Phoenix. *An Open Space Plan for the Phoenix Mountains*. Van Cleve Associates, (Phoenix, Arizona: Maricopa Association of Governments, 1971), 5. Other examples of planning documents considering open spaces include City of Phoenix, *Phoenix forward: citizen participation in planning : a citizen report on objectives and goals for metropolitan Phoenix*, Phoenix Forward Task Force (Phoenix, 1970); City of Phoenix, *The Park and Recreation Plan, Phoenix Arizona*, City of Phoenix Planning Commission (Phoenix, 1969); Maricopa County, *A Park Recreation, and Open Space Study Maricopa County, Arizona*, Maricopa County Planning and Zoning Department (Phoenix: Acme Blueprint and Photo-Craft co., September 1970); Maricopa County, *A Report Upon Future General Land Use for Maricopa County, Arizona* prepared by the Maricopa County Planning and Zoning Commission (Phoenix, 1967). For Camelback and smog, see "Camelback Sends Smog Message," *Arizona Republic* 13 November 1996, B1-B2; "Valley Loving Camelback to Death."

## CHAPTER 4: Phoenix and the Fight over West Papago-Inner Loop, 1969-1979

“What is the number one problem in Phoenix,” Mayor John Driggs asked in 1971. “Quite simply it is planning for orderly growth and one of the most vital elements in this whole planning process is a total transportation plan.” During the 1960s, Phoenix continued to be among the nation’s leaders in urban growth, but faced serious transportation problems. Like the issues of sanitation and open spaces, this problem largely stemmed from federally subsidized suburban development, in the form of favorable home loaning policies and funds for highway construction. Assistant City Manager Edward Hall explained, “large areas around the city of Phoenix developed without the streets constructed to proper standards,” often too narrow or unpaved, and the city needed to find a way to ameliorate this situation. Postwar transportation in Phoenix largely followed national trends towards automobile-centric living. Between 1947 and 1957, the number of cars in the city tripled, which put Phoenix ahead of the national average in cars per person, but the development of the city’s freeways, often seen as the solution to postwar transportation issues, lagged considerably behind other cities of similar size.<sup>179</sup>

Nationwide, well-intentioned government officials sought to deal with transportation related urban growth problems by facilitating traffic through the city with

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<sup>179</sup> Driggs’ quote can be found in The Preliminary Inventory of the Edward Hall Papers, 1940-2006, box 10, folder 30, Arizona Collection, Arizona State University Library, Tempe, Arizona. Hall quote can be found in Edward M. Hall, “Streets for the People of Phoenix,” October 1963, in Edward Hall Papers box 10, folder 22. Maricopa County got 30% of total state revenue, which it divided 10% proportionately among cities within their jurisdiction. See Kevin McCaulkey, “Public Transport and Streets in Phoenix, 1950-1980,” in G. Wesley Johnson *Phoenix in the Twentieth Century: Essays in Community History* (Norman: University of Oklahoma Press, 1993), 197 and 202. The automobile figures for Phoenix were taken from VanderMeer, *Desert Visions*, 146.

freeways, but faced backlash from citizens concerned with “freeway blight,” namely air pollution and the destruction of downtown residential neighborhoods. The lack of effective air pollution regulations, especially on automobiles led to clouds of eye-stinging, lung hacking, pollution; an epic problem epitomized by smog clouds in Los Angeles and other large U.S. cities.<sup>180</sup> By the late 1950s, cities across the nation---San Francisco, New Orleans, Boston, and Seattle---successfully revolted against urban freeway proposals.<sup>181</sup> A study funded by the 1955 Air Pollution Control Act found Phoenix had the fourth worst air pollution in the nation. Robert Moses, architect of New York City’s freeway system and many others, noted that urban freeway segments of the interstate system were “the hardest to locate, the most difficult to clear, the most expensive to acquire and build, and the most controversial.”<sup>182</sup> Phoenix’s West Papago- Inner Loop underwent a similar struggle.

Like policies to protect public health through the creation of a centralized sewage treatment plant and efforts to preserve open spaces, federal policy and funds played a crucial role in directing local solutions to transportation problems. The federal government offered limited funds for mass transit until Congress established the Mass Transit Fund in 1982, but the Federal-Aid Highway Act of 1956 provided a nine-to-one

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<sup>180</sup> For smog in Los Angeles, see Sellers, *Crabgrass Crucible*, chapter 7.

<sup>181</sup> For nationwide opposition to highways, see, Tom Lewis, *Divided Highways: Building the Interstate Highways, Transforming American Life* (Ithaca, NY: Cornell University Press, 2013), 171-173 and 187-211 for nationwide opposition to highways. In “Stop the Road,” Mohl discusses commonalities between various freeway revolts in the 1950s and 1960s, including the proposed freeway through New Orleans French Quarter, an inner loop in Boston, and a double-decked freeway in San Francisco. For some discussion of freeways in Los Angeles, see Eric Avila, “L.A.’s Invisible Freeway Revolt: The Cultural Politics of Fighting Freeways,” *Journal of Urban History* 40, no. 5 (September 2014), 831-842.

<sup>182</sup> For the air pollution study, see Collins, *Emerging Metropolis*, 27. For Robert Moses quote, see Raymond Mohl, “Stop the Road: Freeway Revolts in American Cities,” *Journal of Urban History* 30, no. 5 (July 2004), 678.

federal-local ratio for freeway construction, which helped create 41,000 miles of interstate highway. Many cities, like Los Angeles, Denver, and Atlanta, developed networks of freeways that connected cities across the nation and linked cities with outlying suburbs.<sup>183</sup>

Part of these plans called for a southern transcontinental freeway (Interstate 10), linking Jacksonville, Florida to Santa Monica, California. One of the final segments of the original Interstate 10 went through more than two decades of controversy and was not completed until 1990. This section, the West Papago-Inner Loop, went through the heart of Phoenix. By 1969, when the city commissioned engineering firm formally proposed the urban freeway, significant portions of Interstate 10 had already been completed in Arizona and around metropolitan Phoenix. In the east, the interstate ran nearly linear from Tucson until stopping abruptly at 19<sup>th</sup> Avenue and Durango. From there, drivers' had to take a circuitous route on city streets to head west, where they could pick up the interstate again near Buckeye, before heading toward Los Angeles. As downtown traffic congestion worsened, finding a solution became a top priority for policymakers and the public. As the city debated the Inner Loop, State Highway engineers continued to expand and develop the east and west ends of the interstate, making the absence of the middle portion all the more salient.<sup>184</sup>

While federal transportation policy aided the creation of freeways and in turn, complemented federal subsidies for housing that incentivized suburban development,

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<sup>183</sup> The 1956 Act built upon the theoretical framework for an interstate system laid out in the Federal Highway-Aid Act of 1944. See Owen D. Gutfreund, *Twentieth Century Sprawl: Highways and the Reshaping of the American Landscape* (New York: Oxford University Press, 2004), 54-57.

<sup>184</sup> For a timeline of the construction of Interstate 10 in Arizona, see Don Dederer *The Final Mile: Commemorating the Completion of Interstate-10* (Phoenix, 1990).

federal environmental policy provided legal precedent for opposing freeways. The U.S. Congress passed the first federal legislation concerning air pollution in 1955, although the 1955 Air Pollution Control Act only provided funds for research. Over the next two decades, Congress expanded the law by prescribing specific pollution controls for both stationary and mobile sources to regulate an increasing number of contaminants, and required states' to establish and enforce ambient air quality standards. The 1970 National Environmental Policy Act (NEPA) compounded freeway planners' frustrations. It required Environmental Impact Statements (EIS) from major federal projects, such as those utilizing federal money to construct freeways, which assessed the project's environmental consequences. Often, EISs slowed freeway construction and opened them to public debate.<sup>185</sup>

The city had already grappled with some of the unintended environmental consequences of rapid growth, like the loss of open space, and the rhetoric of environmentalism had become part of debates about urban growth. People and the institutions they serve, however, interpreted and incorporated environmental values into their pre-existing values differently in attempts to balance individual freedom and mobility, single-family homes, natural aesthetics, outdoor recreation, and clean air and water. Yet, neither the extension of municipal sewers nor the preservation of Camelback infringed on the "Southwestern" suburban lifestyle like the West Papago-Inner Loop did. Freeways and urban sprawl tended to support one another in low-density, decentralized development because public transit often could not efficiently serve outlying areas. Moreover, highways allowed subdivisions to stretch further from central cities. The

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<sup>185</sup> See, Hays, *Beauty, Health and Permanence*, 83-84 and 279.

debate over the West Papago-Inner Loop highlighted a growing concern about the consequences of urban sprawl. The Inner Loop underwent three public votes in Phoenix. Initially, the public opposed the freeway, but in less than a decade overwhelmingly supported it, and so each vote acts as a window through which to examine the extent to which environmentalism influenced urban growth policy.

Ultimately, decisions about the West Papago-Inner Loop had roots in policy and urban planning dating back to the 1940s, but also reflected growing postwar concern for the environment. City and state transportation plans always assumed the construction of a cross-town freeway and subsequent network of outer-loop freeways to meet the city and its outlying areas' transportation needs. The policy decisions based on these assumptions ultimately limited the success of those who opposed to the West Papago-Inner Loop. While the basic location of the freeway proved immovable, the opposition did have success altering the design of the mid-town segment. Unlike other successful grassroots campaigns in Phoenix, like the preservation of Camelback, the anti-freeway movement did not receive sustained support in the newspapers nor did it sustain widespread public activism. Moreover, the anti-freeway campaign offered few visible and viable alternatives to the freeway, which limited their ability to persuade voters to oppose the freeway. For many, a vote for the freeway became a vote about maintaining a low-density lifestyle, while many viewed a vote against the freeway as a decision to change that lifestyle. Postwar decisions have carried enormous weight in shaping contemporary Phoenix's transportation system, as a ring of freeways surrounds the city, and only within the past decade has public opinion and policy begun to change.



*Birth of the Inner Loop, 1944-1969*

Explosive suburban growth at the end of World War II and planning reports and policy decisions to promote that growth ultimately resulted in the West Papago-Inner Loop proposal in 1969. In 1944, the *Phoenix Metropolitan Survey* became the first report to advocate for a cross-town freeway, explaining that, “if the city is to continue to grow and expand...other traffic arteries must be provided.”<sup>186</sup> In 1948, the city shut down its streetcar system and shifted to a public bus system because its flexibility more readily serviced suburban areas. At the same time though, the State Legislature placed a “conditional ban on municipalities competing with private business in the utility or transportation field.” This ban included any municipal competition with private bus lines, and along with rising operating costs to service outlying areas, limited the city’s ability to extend transportation services to suburban areas. Between 1947 and 1954, the number of miles operated by the city bus system declined by 891,981 miles. In 1959, the city divested from its public bus system, and over the next decade, average daily ridership plummeted from 58,000 to 14,000 by 1970. Meanwhile, the city expanded and improved its streets.<sup>187</sup>

The expansion and improvement of city streets became an endless cycle of need and fulfillment to meet the requirements of growth. City streets increased from 346 miles in 1950 to 1,630 miles in 1960. Despite the expansion of paved city streets, the number of unpaved County roads also increased, largely because the County did not require

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<sup>186</sup> Arizona Highway Department, *The Phoenix Metropolitan Survey* (Phoenix, 1944), 29.

<sup>187</sup> Senator Marvin E. Smith, a representative from Maricopa County and a real estate broker, presented State Bill 52. See Jerry Abbitt, *A History of Transit in the Valley of the Sun, 1887 to 1989* (Phoenix: City of Phoenix Transit System, 1990), 1-3, 89-90, 102 and 115. Also see “Bill Offered Curbing City Business Field,” *Phoenix Gazette* 31 January 1947. For figures on average daily ridership see, VanderMeer, *Desert Visions*, 250.

subdivision contractors to pave streets. This mirrored city officials' attempts to extend municipal sewers to meet the requirements of growth in outlying areas. Developers also neglected to pave roads in order to minimize costs. As a result, traffic in and out of the city increasingly slowed and city officials began to look for a way to reduce congestion.<sup>188</sup>

Following the passage of the Federal Highway Aid Act of 1956 and the availability of funds for transportation planning, the city commissioned a traffic study in 1957, *Better Roads for Tomorrow*, to help create a highway plan. In 1960, the city commissioned the engineering firm Wilbur & Associates, who used data from the *Better Roads* study, to conduct a major street study assessing long-range traffic needs, which laid the groundwork for the Papago Freeway. The report found that the number of travelers from the outlying suburbs and nearby cities going east and west through downtown Phoenix already met or exceeded the desirable limits of existing roads. To meet the city's current and future needs, the study advocated for a 200-mile network of freeways, with a downtown freeway that ran between Roosevelt Street and McDowell Road as the centerpiece. The downtown freeway would run from Black Canyon Freeway (I-17) in the west to the Maricopa Freeway in the east (I-10). While advocating for an attractive public transit system, the study demurred on recommendations for its expansion, claiming they were "not within the scope" of the study. These transportation planners believed as did many others that low-density development made public transit infeasible, and few envisioned any growth scenario that strayed from this vision of the Southwestern lifestyle. This refrain would often be repeated in favor of the freeway

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<sup>188</sup> VanderMeer, *Desert Visions*, 146-48. Also see Collins, *Emerging Metropolis*, 109-111.

construction over the next two decades. The Arizona Highway Commission, Maricopa County Board of Supervisors, and the City Council of Phoenix, Glendale, Avondale, Mesa, Buckeye, and Tempe adopted the Wilbur plan. Other western cities like Denver underwent similar car-centric planning.<sup>189</sup>

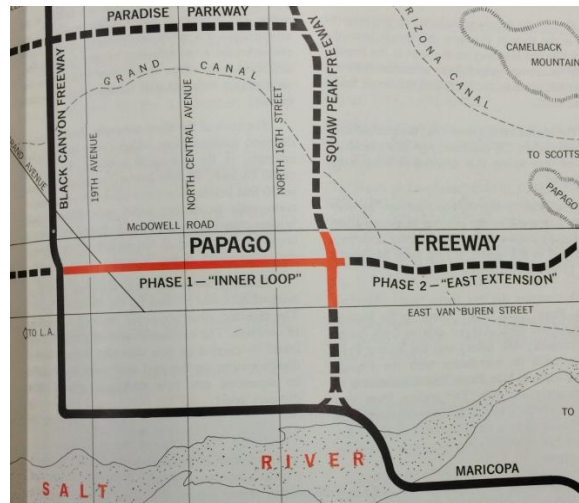


Figure 8. Map Showing the Location of the West Papago-Inner Loop. The map shows the location of the Papago through the city in red.<sup>190</sup>

As the Denver urban area’s population doubled between 1940 and 1960, the city stretched out in all directions across the South Platte River Valley; city officials found their streets inadequate to meet the growing number of people in an increasingly decentralized urban area. City planners focused exclusively on automobile-related

<sup>189</sup> See, City of Phoenix and Maricopa County, *Better Roads for Tomorrow: Phoenix-Maricopa County Traffic Study* (1957). The Wilbur Study utilized and extrapolated much of the data recorded in the *Better Roads* study. See, City of Phoenix, *A Major Street and Highway Plan Phoenix Urban Area*, Wilbur Smith and Associates (Phoenix, 1960), 1-2 and 6-10. See also *ibid*, Introduction Summary. For the quote on public transit see page *ibid*, 43. Also, see page 62 and for a map of the proposed freeways see figure 31 on page 68. The additional freeways proposed were the Squaw Peak Freeway at approximately 22<sup>nd</sup> Street and Black Canyon Freeway, already under construction at 23<sup>rd</sup> Avenue. Maricopa Association of Governments, *Interstate 10 Transportation Corridor Alternatives Study*, Gruen Associates (Phoenix, Arizona, February 1975), 1.

<sup>190</sup> This image can be found in Arizona Highway Department, *The Papago Freeway*, Johannessen and Girand, Consulting Engineers, Inc., (Phoenix, 1968), 17.

solutions, such as street expansions and highway construction. Like Phoenix, they accepted auto-dependency as an unalterable fact. Urban planning reports excluded or disparaged public transit options, and sought to allow “maximum freedom in direction and speed” to the automobile to liberate urban growth from traffic congestion. Through the 1960s, government officials in cities like Denver and Phoenix sought federal highway funds to implement their transportation plans.<sup>191</sup>

Over the next nine years, Phoenix sought to implement the Wilbur plan, but the city and state had to grapple with air pollution problems too. Phoenix requested the McDowell alignment (also referred to as Moreland Corridor) for the mid-town segment of the freeway to the Arizona Highway Department (AHD) in November 1962.<sup>192</sup> On January 7, 1964, the Arizona Highway Commission and the Phoenix City Council, with support from groups like the Phoenix Chamber of Commerce, and the Downtown Development Corporation of Phoenix, approved the McDowell alignment as the official location of the Papago Freeway through the city. Five months later, the Highway Commission authorized the first of 20 miles of right of way purchases. Eventually, 1,700 homes and 60 businesses were demolished or relocated to make room for the freeway. That same month, the U.S. Bureau of Roads approved the Papago as part of the Interstate Highway System, making it eligible for federal financing.<sup>193</sup>

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<sup>191</sup> For an examination of highways in the Denver metropolitan area following World War II, see chapter 3 in Gutfreund, *Twentieth Century Sprawl*. For statistics on Denver’s metropolitan growth, see page 109. Specific quote can be found on page 89-90.

<sup>192</sup> City of Phoenix, *1967 Major Street and Highway Six-Year Capital Improvement Program* (Phoenix, 1967), 12-13. In 1963, the legislature increased State gasoline tax one cent per gallon, 80% of which went to cities and towns. This was the fifth annual report made possible through those funds.

<sup>193</sup> The first right of way purchase was a 200-foot strip of property on the northeast corner of Moreland Street and Central Avenue. See, Margaret Hance, “Papago Freeway Inner Loop Policy Position Paper,” (Phoenix, 1981), 2-3 and 10. *The Missing Link* can be found in the Ed Hall Papers, box 28, folder 10.

In December 1966, with the freeway alignment now in place, the Arizona Highway Department contracted Johannessen and Girand Engineers to design the freeway and “investigate the total impact on the Metropolitan Phoenix area of the construction of a freeway across mid-town Phoenix.” This included a section dedicated to the freeway’s potential effects on the environment. The report, commissioned and funded by the Highway Department, however, limited its investigation only to freeway designs, lacking a discussion of freeway alternatives. It defended this limitation by stating, “we need freeways, and we will need more” because the automobile was a “hard reality of American life.”<sup>194</sup>

While the engineering team designed the freeway, national concern over air pollution and public health led to federal legislation that affected states’ policies. By the 1960s, the medical community had identified smog as a contributor to respiratory illnesses and concluded that the young and elderly were particularly vulnerable.<sup>195</sup> The 1963 Clean Air Act established a program within the U.S. Public Health Service to research techniques to monitor air pollution, and in 1967, the Air Quality Act expanded these efforts and funded ambient air quality studies as well as stationary pollution source inspections.<sup>196</sup> During the 1960s, Phoenix consistently ranked in the top ten of worst air

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<sup>194</sup> Arizona State Highway Engineer William N. Price contracted the Phoenix Office of Johannessen and Girand Consulting Engineers. See *The Papago Freeway*, 13. Mohl, “Stop the Roads,” 680-81. The U.S. Bureau of Roads approved the final alignment of Papago Freeway from Black Canyon Highway to Sixty-Seventh Avenue in 1967, before being merged into the Department of Transportation. See, “Freeway Clearance Underway,” *Phoenix Gazette* 12 January 1968. For quotes about the purpose of the study and focus on automobiles see, *The Papago Freeway*, 18 and 15 respectively. Other information can be found on pages 1-2, and 157. The study noted that speeds in 1966 averaged 26 mph in the city, and if no freeway was built this would fall to 20 mph by 1980.

<sup>195</sup> Sellers, *Crabgrass Crucible*, 234-240.

<sup>196</sup> For a brief overview of federal legislation, see “History of the Clean Air Act,” *EPA*, <http://www.epa.gov/air/caa/amendments.html> (accessed January 6, 2015). Also see, Walter Rosenbaum, *Environmental Politics and Policy* (Washington, D.C.: Congressional Quarterly Press, 2013), 203-217.

pollution cities in the nation. The Governor's Commission on Arizona Beauty concerned itself with not only preserving open space, but also the declining quality of the city's air. In 1966, the Commission's *Interim Report* found air pollution a "detriment to the natural beauty and attractiveness of Arizona" and recommended the state do more to curb pollution. Feeling the pressure, Mayor Milton Graham formed a commission to study and provide recommendations to deal with the city's air pollution problem. From atop South Mountain, the commission noted, they could not see downtown Phoenix. Despite acknowledging the automobile's role in the problem, the committee merely recommended more studies after fierce lobbying from automotive interests in the Valley. The state legislature finally passed its first air pollution control act in 1967, requiring counties to form air pollution control districts, and authorizing the state to step in if counties' failed to curb air pollution satisfactorily. The legislation, though, lacked the regulatory teeth to penalize violators and the state seldom intervened.<sup>197</sup>

In December 1968, Johannessen-Girand firm provided their freeway design recommendation to government officials. The *Papago Freeway* report advocated an elevated concept design, with the Papago running from 91<sup>st</sup> Avenue to 22<sup>nd</sup> Street. First, the design cost the least of three options under review, the other two being depressed and variable-grade designs. Second, the team believed the elevated concept had superior

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<sup>197</sup> For air pollution study see Collins, *Emerging Metropolis*, 27 and VanderMeer, *Desert Visions*, 281. For Arizona legislation regarding air pollution see personal correspondence, Governor Jack Williams to House Of Representatives (TX) Rex Baum on March 14, 1967, in Williams' Papers, box 393. A brief history of legislation can be found in Division of Air Pollution Control, State Department of Health, "History of Air Pollution Legislation in Arizona," Memo to Senator Douglas S. Holsclaw May 7, 1970, in Williams' Papers, box 522. The first air pollution bill in Arizona passed in 1962, but it merely provided funds for research and provided no basis for controlling pollution. For Mayor Graham's Commission, see Collins, *Emerging Metropolis*, 27-28. For Arizona Beauty report, see "Interim Report--Governor's Commission on Arizona Beauty," (August 5, 1966), in William's Papers, box 405.

aesthetic and recreational potential. The design attempted to incorporate environmental values, noting Secretary of the Department of Transportation Alan Boyd's call on freeway builders to take more care to protect cities' air, water, parks, and neighborhoods. They undertook a survey, which found that Phoenicians most commonly cited the suburban and rural atmosphere as the factors they liked best about the city. The team highlighted these values in a promotional pamphlet that emphasized opportunities for many recreational activities underneath the freeway.<sup>198</sup>

The freeway would average 25-feet above ground through the city; two "helicoil" interchanges spiraled 280 degrees and lifted automobiles 100-feet onto the elevated portion of the freeway between 7<sup>th</sup> Street and 7<sup>th</sup> Avenue. The design included a 43-acre park with walking and cycling paths, fountains, and an outpost of the Phoenix Art Museum underneath the freeway. This was a major section the West Papago-Inner Loop, the 5.5-mile stretch through downtown along Moreland and Culver Streets. The elevated freeway concept was not a novel design though. Futuristic urban planners made similar proposals for New York, New Orleans, Seattle, and San Francisco around the same time; all met significant public resistance. None called for a freeway to soar 100-feet in the air.<sup>199</sup>

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<sup>198</sup> See *ibid*, 1 and 24. Supplement J of the report details the costs of each design. Part of the reason the elevated concept cost less was because it required less right of way purchases. The aesthetic aspects of the project were developed by Arizona State University professor of architecture James Elmore and his team. For the survey results, see *ibid*, 17-22. For the pamphlet disseminated by the engineering firm, see John Girard Engineers, "Multiple Land Use of Papago Freeway," (1970) in James Elmore, box 6, folder 16.

<sup>199</sup> For images and concept designs of the park, see figures on pages B-E-1 and B-E5. A diagram of the proposed helicoils is on page 40, Figure A-15. For another image of the helicoils, see Figure A-16 page 49. For a map of the section see figure E-4 page 72. For Elmore's comments, see pages 5,9, and 16-20. Also see, Dederer, *The Final Mile*: 6-7. Additionally, see Lewis, *Divided Highways*, chapter 7 for a discussion of freeway revolts.

Still, VBCC President Sam Mardian endorsed the design explaining “the essential importance of the park-like atmosphere associated with the Freeway.” The city created a concurrent report that argued for “an adequate freeway” to solve transportation problems in Phoenix “now and in the future” because Phoenixians desire for low-density living made public transit difficult. In 1969, the city had only 26 miles of freeway, while freeway experts claimed there should be one mile for every 10,000 people, which meant Phoenix “needed” 80 miles. The Phoenix City Council and Arizona Highway Commission both endorsed the plan within a month of the report’s completion and prior to a public hearing. At the public hearing, city residents expressed serious misgivings about the prospect of a 100-foot tall freeway “soaring” over downtown.<sup>200</sup>



Figure 9. The Papago Free Elevated Concept Design. The image shows the elevated concept design of the Inner Loop with the helicoids.<sup>201</sup>

<sup>200</sup> For Mardian’s endorsement of the freeway see personal correspondence Sam Mardian, to Justin Herman, on January 21, 1969, in James Elmore Collection, box 4. For the city’s report, see City of Phoenix, *Mobility--Phoenix Style: A Summary Report in Transportation*, Advance Transportation Planning Team, (Phoenix: City of Phoenix, 1969). The quote can be found on page 1. Also see pages 8-13. Arizona Highway Department, *Public Hearing on East Papago Freeway and Squaw Peak Connection*, Ryan & Powers Court Reporters (Phoenix, June 28, 1972), 59-61, 66-67, 71, and 74.

<sup>201</sup> For this image, as well as images of the other designs, see *The Papago Freeway*, Supplement C.



*Freeway Fracas: Public Resistance to the Papago, 1969-1973*

By the late 1960s, freeway revolts were underway in cities across the nation in response to the unanticipated consequences of complete reliance on the automobile and the construction of urban freeways. While Phoenicians considered the West Papago-Inner Loop, for example, opposition to the Riverfront Freeway in New Orleans gained national attention. In 1965, the Riverfront Freeway, which would cut through New Orleans' historic French Quarter as it ran along the Mississippi River 40-feet in the air, first sparked resistance from residents of the district. Many felt the freeway would cut off those residents from the rest of the city and the river, as well as create noise and air pollution in the historic neighborhood. The opposition frequently pointed to the harm caused by the section of Interstate 10 that ran along Claiborne Avenue as an example of the unintended consequences of freeways. That segment of freeway resulted in noise and air pollution, and effectively divided neighborhoods. Despite support for the freeway from the Central Business District of New Orleans, the opposition waged a successful public campaign that garnered not only citywide support, but support from around the nation, as the *New York Times* and *San Francisco Chronicle* followed the events. In the end, the opponents defeated the Riverfront Freeway.<sup>202</sup>

Phoenicians' too, began to reconsider urban freeways. These concerns primarily focused on the freeways location and design, as well as air pollution from a greater concentration of cars downtown. While Arizona State University School of Architecture

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<sup>202</sup> For a discussion of the Riverfront Freeway in New Orleans, see Lewis, *Divided Highways*, 181-210. For more information of freeway revolts in the late 1960s, see Gutfreund, *Twentieth Century Sprawl*, 102-105. Also see sources listed in footnote 4. [I marked this in your previous draft, too. You say "see sources in footnote 4," but there is only one source cited in footnote 4: Jackson's Crabgrass Frontier.]

Dean, James Elmore, gave the elevated concept the highest aesthetic grades, noting that piers lifting the freeway made it appear to “float” along the horizon, much of the public saw it as an eyesore; a “Berlin Wall” dividing the city that would produce noise and air pollution. Despite support from the VBCC, the group remained cautionary over the effects of air pollution: “Phoenix averages more hours of sunlight than any city in the Western Hemisphere, but this God-given treasure will be rendered useless if a smog cover precludes residents from enjoying it.” However, freeways and individual mobility remained the primary focus of city planners, not public transit, with no official more supportive than Assistant City Manager Ed Hall. By 1971, the private bus company serving the city was in dire financial straits and required a bailout by the city. While the city resumed ownership over the system, the private company remained in control of operations. The bus system did not receive the same attention as freeways, barely mentioned, if at all, in the city’s transportation plans. Moreover, the deteriorated state of the bus system meant public transit advocates lacked a visible, successful policy alternative to freeways. This left Phoenix mayors reluctant to support public transit initiatives, especially with little federal funding for such projects. For instance, Mayor Milton Graham readily accepted federal funds for highways, but turned down federal money for the city’s bus system.<sup>203</sup>

Until 1969, the Papago Freeway remained largely a matter planned and promoted by government officials. Though the city held prior public hearings about an east-west

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<sup>203</sup> Elmore’s comments can be found in *Public Hearing on East Papago*, 5-20. Huck quote can be found in VanderMeer, *Desert Visions*, 281. For information on pro-freeway dominance in city and state planning see Collins, *Emerging Metropolis*, 115-117 as well as 371-372. For more on the decline of the Phoenix bus system, see Abbitt, *A History of Transit*, 3-5 and 152-159. For population statistic, see Margaret Hance Papers, 1971-1990, box 4, folder 4, Arizona Collection, Arizona State Library, Tempe, Arizona. The city’s population grew 55% during the decade.

downtown freeway, in 1957, 1960 and 1965, they were poorly advertised and failed to garner the widespread public response the 1969 hearing did. Many homeowners in the downtown route of the freeway became aware of the freeway only when the highway department began making right-of-way purchases in 1965. Johannessen's proposal for the elevated freeway design through central Phoenix prompted a hotly contested debate. It centered on whether the city needed a freeway at all and what potential alternatives existed; if a freeway was necessary, what should it look like. The latter gained the most widespread traction, as the public and press harangued the elevated design, despite efforts by the designers to assert its social and environmental benefits.<sup>204</sup>

The public hearing held on January 23, 1969 gave citizens the chance to voice their concerns, but since right of way purchases had already begun and the freeway plan had already been underway since 1960, it carried significant institutional momentum that limited possible changes. At the hearing, the freeway design team and government officials from Phoenix and the State Highway Department presented the benefits of the freeway, emphasizing the elevated design's lower costs, as well as its aesthetic and recreational value. A large portion of public comments regarded right of way purchases from those living in the freeway corridor. Mrs. E.P. O'Rourke, a homeowner on West Latham Street, worried the city would construct the freeway right in front of her home and create an eyesore. She lived in Greater Encanto-Palmcroft neighborhood, one of the oldest in Phoenix and home to the strongest and most persistent resistance to the freeway. Mrs. Derek Van Dyke, who also lived in the Encanto area, expressed similar concerns.

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<sup>204</sup> William Collins argues the design of the freeway and whether one was needed at all were the focus of the Papago debate in *Emerging Metropolis*, 116. The 1957 hearing successfully moved the east-west freeway further to the south after motel owners expressed concern. See VanderMeer, *Desert Visions*, 149.

By 1972, nearly 2,000 homeowners in the area banded together to form the Encanto Citizens Association to oppose both the location and design of the freeway.<sup>205</sup>

While many felt the city should give more attention to public transit, only a vocal minority actively pursued these ends. Renz Jennings, a former State Supreme Court Justice, expressed misgivings about the freeway and the lack of dialogue about mass transit, especially when cities like Montreal, San Francisco, and Tokyo were in the midst of building new rapid rail transit systems. Public transit activists continually asked why the city refused to consider a rail system. Jennings feared the freeway would put Phoenix on the path of becoming a mini Los Angeles, with its well-publicized traffic congestion and smog, and he helped form one of the primary opposition groups to the downtown freeway in December 1969, Citizens for Mass Transit Against Freeways (CMTAF).<sup>206</sup>

As the public debated the freeway, municipal planning groups had their own discussions. The Land Transportation Committee of Phoenix Forward, an urban planning committee consisting of prominent business and civic leaders largely in favor of freeways, reviewed a number of transportation reports and studies before making their recommendation. The Committee ranked flexibility and personal choice as top priorities for a transportation system and produced a report that favored automobiles and freeways.

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<sup>205</sup> For the opening remarks, see *Public Hearing on East Papago Freeway*, 11-16. For Mrs. O'Rourke's comments, see *Ibid.*, 97-98. Mrs. Van Dyke's comments can be found on pages 99-100. A letter was sent to the State Highway Department signed by nearly 100 people opposed to the elevated concept design. The majority of signatories lived on the downtown streets the freeway would cut through: Latham Street, Portland Street, Culver Street, and Moreland Avenue. For the letter, see the addendum to the public hearing. For other questions from property owners in the right of way path, see 101-115 and 120-124. For more on the Encanto-Palmcroft neighborhood and its role in opposing the freeway see, G.G. George and Leigh Conrad. *Phoenix's Greater Encanto-Palmcroft Neighborhood* (Charleston: Arcadia Publishing, 2014), chapter six. The Association was formed by G.G. George, who serves as its President as of 2014.

<sup>206</sup> *Ibid.*, 87-89. For a discussion of mass transit in the aforementioned cities, see *Phoenix Gazette* 22 January 1969, 20. Jennings also goes on to cite Hans Bloomfield's book, *The Modern Metropolis*, for ideas about how to build a successful public transit system. For the formation of CMTAF, see "Antifreeway Group Names Head," *Phoenix Gazette* 5 December 1969, 14.

They noted that “Phoenicians want to live with a lot of open space; they want to travel about our valley in their own cars, free to come and go when they want.” Motel and hotel owners opposed the freeway route because as planned it lacked interchanges on Van Buren Street where a large concentration of lodging was located. Largely though, they proved to be the exception and not the rule. Most business interests, increasingly located in the outlying areas of the city near suburban subdivisions, and municipal planners concerned with promoting economic and urban growth, supported the freeway.<sup>207</sup>

Business interests worried that traffic problems would hurt tourism and make it difficult to recruit corporations to Phoenix. Nationwide, states offered hundreds of millions of dollars in freeway related contracts, and the auto industry accounted for millions of jobs. In Phoenix, cross-town streets carried 30% more traffic than they were designed to: in 1968, 93% of the households in the city owned private transportation while almost 40% owned two or more cars. This statistic, however, excludes multi-family housing, which put car ownership closer to 50%. Phoenix banker Gary Driggs explained the situation, “If we don’t do something about it, Phoenix will become famous for its traffic snarls the same way Los Angeles is. Growth will slow.” A report by Valley Area Traffic and Transportation Study (VATTS), formed by Maricopa Association of Governments (MAG) in 1966, provided nearly identical conclusions.<sup>208</sup>

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<sup>207</sup> Phoenix Forward, Land Transportation Committee, *Meeting Minutes*, October 8, 1969 in James Elmore, box 7, folder 2. The quote about open space comes from a study by James Elmore. For the report, see James Elmore, “The Automobile and Freedom of Choice in Phoenix,” (September 17, 1969), 1. Michael Mikol, director of Phoenix Motel Association, noted that the freeway would bypass their businesses, see *Public Hearing on East Papago*, 91. For similar comments see pages 76-77.

<sup>208</sup> Statistics on freeways and the auto industries role in economic growth can be found in Gutfreund, *Twentieth Century Sprawl*, 54 as well as Lewis, *Divided Highways*, 163-168. Elmore cites a survey by the *Arizona Republic* and *Phoenix Gazette* in 1968 for the car ownership figures. The Driggs quote can be found on page 2. The report can be found in James Elmore Collection, box 5, folder 12. Information

There lacked consensus though. One-third of the Transportation Committee opposed the recommendation given to the city council and created a *Minority Report*. They argued that the city needed to further consider public transit alternatives, and that the *Papago* report failed to consider the total impact of pollutants from car exhaust like sulfur dioxide. Furthermore, they claimed the Committee's recommendation reflected the bias of members who represented local contracting firms, engineering firms, builder suppliers, and others who would profit from freeway construction while dividing downtown neighborhoods and weakening communal identity. Still, others noted that reliance on private automobiles disadvantaged non-drivers: the disabled, poor, and elderly.<sup>209</sup>

By the late 1960s, the downtown character of Phoenix, like many American cities, but especially automobile-centric western cities, had changed considerably, as office-buildings replaced retail stores and residential buildings. Shopping centers anchored by box stores and supermarkets shifted to outlying areas. Downtown became a commuter center, where those living the suburban dream worked to ensure payments on their FHA mortgage. In 1970, the U.S. Congress passed the National Environmental Policy Act,

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regarding the Black Canyon Freeway come from City of Phoenix, *Land Use Plan, 1990*, Phoenix Planning Department, (Phoenix, 1972), 41. For the VATTS study see, Valley Area Traffic and Transportation Study Group, *Transit and the Phoenix Metropolitan Area* (Phoenix: City of Phoenix, 1970), 1-2 and 18.

<sup>209</sup> The committee consisted of 32 members, of which 20 attended three or more meetings. Moreover, the ten in the minority noted that the average meeting size was about 15 or less. See "Statement by Members of the Land Transportation Committee of the Phoenix Forward Task Force" (1970) in Federal Highway Administration, *Draft Environmental/Section 4(f) Statement Administrative Action for Interstate & Defense Highway 10: Comments and Replies to the Draft Environmental Statement*, Arizona Department of Transportation, Arizona Highway Department (Phoenix, 1972), D-134-5. James Elmore brings up problems created for non-drivers in "The Automobile and Freedom of Choice," 12. The VATTS report also raised this issue.

which required an environmental impact statement for the Papago Freeway and provided more time for public discussion as resistance to the freeway grew.<sup>210</sup>

While the ADOT created an EIS, Phoenix commissioned a survey to gauge public opinion over the freeway. Residents living in central Phoenix least desired an east-west freeway, but as one moved further east or west to suburban areas, more residents expressed a desire for a freeway. The survey also found that the public favored the depressed design over the elevated one, but regardless of which concept they preferred, respondents cited aesthetic and recreational factors, such as the elimination of noise and pollution, the preservation of natural scenery and views, and the opportunity for parks, as important factors in their decision. Meanwhile, the U.S. Congress passed the 1970 Clean Air Act (CAA), which established National Ambient Air Quality Standards (NAAQS) to control stationary and mobile sources of air pollution. One of the goals of the law was to achieve NAAQS in every state by 1975, something Arizona struggled to accomplish, in part because of reliance on automobiles, but also due to a large number of dirt roads in the county and emissions from mining operations along with natural sources like dust. The 1977 Amendments expanded the law by providing a detailed timetable for the reduction of carbon monoxide and hydrocarbons from automobiles. Nevertheless, the 1970 CAA provided ammunition from which freeway opponents assailed the Papago proposal.<sup>211</sup>

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<sup>210</sup>For the decentralization of the city and deterioration of downtown, see VanderMeer, *Desert Visions*, 273-278 and Sargent, *Metro Arizona*, 144-150. For a national perspective, see Lizabeth Cohen, "From Town Center to Shopping Center: the Reconfiguration of Community Marketplaces in Postwar America," *American Historical Review* 101, no. 4 (October 1996), 1050-1081.

<sup>211</sup>City of Phoenix, *An Opinion Survey relating to the Proposed East Papago and Indian Bend Urban freeways in Metropolitan Phoenix*, John Herbert & Associates (Phoenix, 1970), 17, 21-22, and 38. For the 1970 CAA, see Rosenbaum, *Environmental Politics*, 203-209 and EPA, "Summary of the Clean Air Act,"

Public concern over the quality of the environment provided the impetus behind the 1970 CAA and subsequent environmental legislation in the 1970s. The first Earth Day was the culmination of this sentiment, with teach-ins and demonstrations held in cities, at college campuses, high schools, and places of worship around the nation. In New York, activists convinced Mayor John Lindsay to shut down Fifth Avenue from Fourteenth Street to Fifty-Ninth—all automobiles were banned from noon until midnight. Fifth Avenue became a carnival and educational experience with over two hundred booths and exhibits. Demonstrators put cars on trial for damage to the environment, while others delivered capital punishment, tearing them apart as crowds cheered. Nearly 250,000 people attended the day's festivities in New York, with millions participating around the country. In Phoenix, Earth Day activists also focused on the automobile, but demonstrations were on a smaller scale. For instance, Arizona State University held a full day of activities, including workshops, lectures, and forums, that averaged 200 or more people in attendance. Renz Jennings led a discussion on air pollution and the lack of emissions controls for automobiles. Many high schools held bike or walk to school days, and Washington High School students even "skinned" an automobile, pulling it apart bit by bit. Furthermore, the 1970 *Arizona Town Hall*, an annual report on the city's progress, problems, and outlook by government officials, civic and business leaders, academics, and the public, focused on "The Total Environment." Participants expressed particular concern for air pollution problems. The group went so far as to recommend, "mass

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<http://www2.epa.gov/laws-regulations/summary-clean-air-act> (accessed January 4, 2015). For information regarding the development and implementation of Arizona's Air Pollution Plan, see personal correspondence, Paul De Falco to Governor Jack Williams on May 26, 1972, in Jack Williams' Papers, box 667. Also see, Governor Williams Statement, News Release August 25, 1972 in Williams' Papers, box 667.



transportation be recognized as a social and economic end, both for individuals and for the preservation of our environment.” Phoenicians had begun to pay more attention to the air quality problem in the city at the same time the Highway Department was assessing the environmental impacts of the West Papago-Inner Loop. Increased public awareness and interest of air quality issues in the city promised a careful evaluation of the EIS.<sup>212</sup>

In 1972, the AHD completed the draft EIS for comment by federal and state agencies, interested organizations, and the public. The report attempted to assuage concern over the environmental impact of the freeway, claiming it would have “no serious or prolonged effect on land use,” it would reduce air pollution by mitigating stop-and-go traffic, and provide recreational opportunities. While it included lots of technical data, EPA Regional Director Paul De Falco called the EIS myopic because it failed to consider the full range of transportation alternatives available to the city. The report contained a literature review that merely displayed alternatives created by others, but showed no evidence that it seriously evaluated them or undertook its own studies. Lastly, the draft provided no comparison between the impacts of the freeway and mass transit options on air pollution, which was especially notable since freeways would increase long-term dependence on the car, widely acknowledged as the source of Phoenix’s severe air quality problem. The Department of Interior found similar weaknesses in the EIS.<sup>213</sup>

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<sup>212</sup> For more information on Earth Day in New York, see Rome, *The Genius of Earth Day*, 117-22. Information of Earth Day activities in the Phoenix area can be found in several newspaper articles. See “Campuses bustle, bristle on Earth Day,” *Arizona Republic* 23 April 1970, 1:28:4, “Earth Day Dawns for Better Tomorrow,” *Arizona Republic* 22 April 1970, 1:4, and “People More Significant,” *Phoenix Gazette* 22 April 1970. Also, see *Seventeenth Arizona Town Hall: Preserving and Enhancing Arizona’s Total Environment* (Phoenix: Arizona Academy, 1970). The quote can be found on page xi.

<sup>213</sup> Region IX Administrator Paul De Falco provided the EPA’s comments. See, *Environmental/Section 4(f) Statement Administrative Action For Interstate & Defense Highway 10: Comments and Replies to the Draft Environmental Statement*, volume 2, Section D (Phoenix, 1972), comments 1-4. For the Department of

Public response echoed these critiques, with groups like Saguaro Cactus Club and Arizona Women’s Political Caucus, expressing concern over the lack of public transit alternatives and the omission of nitrous oxides (NOx) and its role in smog creation. Moreover, they argued that the 100-foot helicoils promised to strain car engines, and increase emissions. Already, in 1969, 79% of NOx pollution in Maricopa County came from cars. No group though, excoriated the report more severely than CMTAF. The organization comprised of many members from the Land Transportation Committee minority, and Phoenix College chemistry professor Gerald Judd spearheaded their critique of the freeway plan. Judd attacked their conclusions about the total pollutant load contributed by the 100,000 to 150,000 additional cars the downtown freeway would carry. In particular, Judd lambasted the complete lack of discussion of sulfur dioxide (SO<sub>2</sub>), a notable absence considering 62.5% of SO<sub>2</sub> emissions in Phoenix came from automobiles. Moreover, Judd criticized the lack of discussion of the medical effects of pollutants created by cars, already acknowledged by the medical community in places like Los Angeles. The AHD brushed off these complaints claiming, “the primary purpose of this freeway is to move people and goods.”<sup>214</sup>

During the first half of 1972, Phoenix and the AHD held six community forums on the future of transportation, inviting numerous transportation experts from the Valley and around the country to speak. Walter Scheiber, Executive Director of the Metropolitan Washington Council of Governments, gave the keynote address and explained, “the

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Interior, see comments 6-16 on pages 1-2. The Department of Interior explained the “failure to discuss feasible and prudent alternatives to the proposed highway location” as the major weakness of the report.  
<sup>214</sup> Ibid, Comments 33-46. Judd’s comments about air pollution can be found on pages 92-102. For the entire section of comments from CMTAF see 47-103.

important question should be not how fast does your community grow, but how well does your community grow.” Despite this exhortation, discussions largely centered on freeways, more specifically their necessity, because most of the experts invited were involved in freeway planning. The forum planners grouped all the public transit advocates in the third forum, with citizen proposals, including a broad outline for a light rail plan by CMTAF, in the fourth.<sup>215</sup>

Most freeway advocates argued that cars and freeways afforded people flexibility and freedom, while reducing traffic congestion and the associated environmental effects. Moreover, many presented themselves as mediators of an environmental agenda gone too far. J.W. McDonald, representing the Phoenix Automobile Club, agreed, “the increased sensitivity which we all have developed with regard to negative environmental side-effects is good,” but he explained “that we are in some cases over-reacting.” Others argued that the city grew up with the automobile and low density living, even though the city’s density was about average when excluding preserved areas like Camelback. Further, they argued that while certain types of mass transit worked for denser cities like New York or Philadelphia, they were incompatible with Phoenix’s low-density layout. Freeway advocates believed freeways would allow the city to continue growing without damaging the environment. Phoenix Planning Director John Beatty explained “highways are needed essentially to open new lands and new opportunities in the areas adjoining

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<sup>215</sup> For transcripts of all of the community forums, see Edward Hall Papers, box 10, folder 42. Also included is a list of all speakers. Most of the discussion on mass transit was on March 27, which included some officials from San Francisco, who were beginning to construct a rapid rail system.

Phoenix,” but “the future growth of Phoenix is highly dependent on both the quantity and quality of the whole living environment.”<sup>216</sup>

Conversely, Thomas Deen, Vice President of a Washington, D.C. urban planning firm, noted that while cars provided freedom, they created a host of other problems for urban planners like air pollution and traffic congestion. Moreover, public transit like rapid rail uses less land and allows room for more open spaces. While public transit advocates could muster strong and pointed criticism of freeways, they seldom produced attractive, visible, and viable alternatives for a sprawling city like Phoenix. If they did attempt to point to the success of the subway system in New York City, freeway advocates argued Phoenix was different and therefore the solution did not apply. The deteriorated public bus system in the city certainly did not help mass transit arguments. This led many, including Phoenix Mayor John Driggs, to view the freeway as essential to an effective and efficient transportation system for Phoenix.<sup>217</sup>

In March 1972, Mayor Driggs organized a freeway support group that sought to expedite the construction of Inner Loop by shifting public opinion in favor of the freeway. They gave public presentations in favor of the freeway and received support from business groups. For example, the Civic Plaza Business Association created a

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<sup>216</sup> Ibid. McDonald went on to compare public transit to moving people like “freight.” In 1979, Phoenix’s population density was 2,286; its size was 302 square miles. New York was 300 square miles but had a population density of 26,343. Philadelphia was 128 square miles and had a population density of 15,164. See, Paul Bracken, *Arizona Tomorrow: A Pre-Cursor of Post-Industrial America*, The Hudson Institute (New York, Croton-On-the-Hudson, 1979), Table 3-2, 63.

<sup>217</sup> Ibid. Judd called for 420 miles of subway along with 1,000 busses as part of his transportation plan. See Gerald Judd, “Valley-wide Subways,” Fourth Community Forum on Total Transportation in the Phoenix Urban Area; Joyce Mulholland’s presentation can be found in “Freeways, Not Mass Transit, Said Best for Phoenix,” *Phoenix Gazette* 11 May 1972. She noted thirty other major cities, including San Francisco, San Diego, Tempe, Scottsdale and Miami, had made plans for future bikeways. Moreover, the climate and topography of the city is perfectly suited for cycling.

pamphlet that sought to provide “The Truth About Freeways,” linking cars to freedom and opined that “within the next ten years emissions from motor vehicles will be virtually pollution-free” due to emission standards set in the 1970 CAA. Still, the city’s two major newspapers, which played an important role in building support for the preservation of Camelback, actively opposed the freeway, bashing and belittling the Inner Loop, especially the helicoil section, on a daily basis. This worried the pro-freeway lobby.<sup>218</sup>

Mayor Driggs met with Eugene Pulliam, publisher of both the *Arizona Republic* and *Phoenix Gazette*, whose personal opposition to the freeway colored his papers’ coverage, and tried to persuade him to see the situation differently. He failed. Pulliam argued the West Papago-Inner Loop would destroy the low-density lifestyle he loved and further congest downtown with tailpipe exhaust. “I don’t care if we grow in our density pattern all the way to Wickenburg,” Pulliam exclaimed, “that would be better than the environmental change to our lifestyle that would occur from a major urban freeway plan.” With Pulliam’s assistance, the tide was indeed turning. Architect Jerome Diethelm, who helped design the freeway, stated that constructing the freeway would be “socially destructive and environmentally undesirable on many counts,” noting air and noise pollution as two. In April 1973, the mayor wanted the issue settled, and announced a citizens’ advisory election in May rather than the general election in November, to

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<sup>218</sup> “Formative Meeting of Freeway Support Group,” “Meeting with Community Leaders,” and “Freeway Meeting with News Papers,” in Edward M. Hall Papers, box 28, folder 14. A copy of the slideshow presentation created by the group can also be found in this box. The Civic Plaza Business Association material can be found in Elmore, box 7, folder 1.

prevent other issues from submerging it and to potentially reduce voter turnout in an off season election.<sup>219</sup>

The next month both sides campaigned vigorously, with the Central Business District spending over \$15,000 on the pro-freeway campaign. Support also came from homebuilders, and others involved in housing and road construction, including the Central Arizona Labor Council, mostly because they believed it would aid future growth.<sup>220</sup> Meanwhile, CMTAF, Encanto Citizens Association, and the “Pulliam Press” continued to attack the environmental impacts of the freeway. CMTAF produced a counter-EIS, which outlined the “disastrous process of building urban freeways” to all school and public libraries in Maricopa County. The counter-EIS included a plan for a light rail system, but the city and state never seriously considered the proposal. Promotional materials asked citizens “Who Loved Mountains?” and noted that more cars meant more smog, and less visible mountains. CMTAF conducted a survey, printed in both the *Republic* and *Gazette*, which found half of respondents supported public transit alternatives and were willing to pay, so long as they moved people as or more efficiently than cars and costs did not climb above four dollars daily to ride. Pulliam’s newspaper coordinated with the Encanto Citizens’ Association for reporting and editorial pieces, as

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<sup>219</sup> For Pulliam quotes see, “Road to Oblivion,” *Arizona Republic* 24 March 1985. Diethelm was head of the department of landscape architecture at the University of Oregon. See “Doubt on Freeway,” *Phoenix Gazette* 11 September 1972. Bruce Merrill, “An Analysis of the Papago Freeway Vote: A Behavioral Perspective,” (Phoenix, May 18, 1973), 11 and Appendix C. For more information on the referendum see, *Arizona Republic* 18 April 1973.

<sup>220</sup> The amount spent by the CBD was equivalent to what was spent on a mayoral campaign, which testifies to the importance of the freeway issue. “Businessmen Support Freeway,” *Arizona Republic* 3 May 1973, 1. For example, both the Home Builders Association of Central Arizona and The Phoenix Real Estate Board endorsed the freeway, citing the need for orderly community growth. “Homebuilders to support Papago Freeway plans,” *Arizona Republic* 15 December 1972 and personal correspondence, Phoenix Real Estate Board to Mayor John Driggs on January 18, 1973 in Ed Hall, box 28, folder 16.

well as to publicize anti-freeway events. One editorial in the *Phoenix Gazette* exclaimed, “Wherever the freeway might go, it threatens to wreck the way of life here for enormous segments of the population.”<sup>221</sup>

The Phoenix Planning Commission split over the issue. Dwight Busby, a member of the Commission since 1964, accused the city, namely Ed Hall, of being “inflexible” and claimed “the only comprehensive (transportation) planning the city has done is on a freeway system.” Commissioner Sid McClee expressed the feelings of many city officials. “The whole problem is not answered by freeways,” he said, “but we don’t yet have the answer to the transportation problem.” William Bell, another commissioner, took this sentiment one-step further. Bell explained, “nothing else has been proposed” and “until we have something else I suppose we have the freeway.” Over time, this sentiment exerted strong influence on the debate over the downtown freeway, as the public and government officials increasingly felt pressure to take action to solve the city’s transportation issues.<sup>222</sup>

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<sup>221</sup> For information on CMTAF’s challenge to the EIS, see Citizens for Mass Transit Against Freeways, *Second Citizen Challenge to the Final Environmental Impact Statement* (Phoenix, 1973), 4-5. According to the survey, a majority said they would support a high-speed, rail-subway transit system which would get them anywhere in the Valley at twice to five times the speed of automobiles. Fifty percent also said they would be willing to pay between \$2.50 to \$3.50 weekly for guaranteed transit on the subway-rail system. See, “Poll Shows Preference for Subway to Freeway,” *Phoenix Gazette* 7 June 1972 C1. Also see, “U.S. Wants Impact Study on City Freeways,” *Arizona Republic* 16 February 1973, 29:2 and “Anti-Freeway Report Sent to Libraries,” *Phoenix Gazette* 17 October 1975. CMTAF promotional material can be found in Elmore, box 6, folder 23. CMTAF was also supported by Papago Loop Alternatives Now (PLAN). See, “Newly Formed Group to Fight Freeway Plan,” *Arizona Republic* 18 October 1975 B1. For the *Gazette* editorial, see “Freeways Mean Spoil,” *Phoenix Gazette* 30 August 20 1972, 6. For information on the support of the Central Arizona Labor Council see, The Preliminary Inventory of the Bob Stump Papers, 1950-20003, box 26, folder 23, Arizona Collection, Arizona State University Library, Tempe, Arizona. For the collaboration between the Encanto Citizens’ Association and Pulliam’s newspapers see, George, *Phoenix’s Greater Encanto-Palmcroft*, 96-98. Ron Warnicke, attorney and President of the Association in 1972, acted as a liaison between the two.

<sup>222</sup> For Busby quote, see “Freeway Alternatives Still to be Studied,” *Arizona Republic* 15 April 1973, 1:2. For comments by other members of the Phoenix Planning Commission, see “City Urged to review Freeway

As the city considered the West Papago-Inner Loop, state officials attempted to develop an air quality plan, as mandated by the 1970 CAA. The EPA disapproved Arizona's plan in 1972 because it lacked effective controls for sulfur dioxide and nitrogen oxides, which led to unacceptable air quality levels in urban areas. Governor Jack Williams, among other government officials, explained the difficulty in attempting to curb air pollution from automobiles. Reducing the number of vehicle miles driven in the city meant subjecting "the people of Arizona to vast and permanent alterations in their lifestyle" that placed "a high value on low density living." The state passed a law later in 1972 that funded the construction of a vehicle emissions testing lab. Two years later the legislature passed a law that required mandatory emissions inspections for vehicles, which in addition to new federal emissions requirements, was commonly cited by pro-freeway advocates as the technological solution to air pollution.<sup>223</sup>

On May 8, 1973, voters spoke: 58% rejected the Inner Loop as proposed in the *Papago* report and the city council passed Resolution 14111, which called for abandoning the proposed Inner Loop. While the elevated design was the primary reason for opposition, Phoenicians also voted against the freeway due to design factors, its location and the division of neighborhoods, concern over air pollution, and to a lesser

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Options" *Arizona Republic* 15 October 1972, A1:A20. The Black Canyon Freeway problem was reported in Paul Schatt, "Car Flow to be controlled on freeway," *Arizona Republic* 15 October 1972.

<sup>223</sup> De Falco also noted poor air quality in areas near mining operations, in particular Phelps-Dodge's copper smelter near Douglas. Numerous pieces of correspondence between Governor Jack Williams, state officials, and EPA Regional Administrator Paul De Falco can be found in Governor Jack Williams' Papers. For information regarding the development and implementation of Arizona's Air Pollution Plan, see personal correspondence, Paul De Falco to Governor Jack Williams on May 26, 1972, Jack Williams' Papers, box 667. Also see, Governor Williams Statement, News Release August 25, 1972 in Box 667. For the quote from the State Health Commissioner, see personal correspondence, Louis C. Kossuth to Paul De Falco March 1, 1972 in Jack Williams', box 667. The quote about lifestyle changes comes from Ben Dibble, "Statement Before the United States Environmental Protection Agency concerning Indirect Sources," Arizona State Health Board, in Jack Williams' Papers, box 691. For the state law, see Jack Williams' Papers, box 691.



extent a desire for mass transit alternatives. Moreover, a study found Pulliam's newspapers played an important role in influencing their vote against the freeway. The city council resolution to abandon the Inner Loop required the Arizona Highway Commission to "once again examine all feasible alternatives for connecting Interstate 10 in Phoenix and to choose the most feasible plan."<sup>224</sup>

#### *Papa-go-go: Finally a Freeway, 1974-1979*

In January 1974, the AHD hired the Gruen engineering firm to design alternatives for the Papago. While Gruen carried out the study and engaged in an extensive program of citizen involvement from January to March 1974, MAG, the Central Arizona Chapter of American Institute of Architects (AIA), and Valley Forward sponsored a team from the AIA to visit Phoenix to provide recommendations for urban growth. The AIA team characterized Phoenix's way of life as a "Western suburban ethic:" a fondness for open spaces where land, resources, or the potential for growth seemed unlimited. AIA recommended limited, depressed freeways carefully placed to ensure neighborhood and communities retain character, but also felt mass transit should be a key element in the proposal. This report helped shape the Gruen study.<sup>225</sup>

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<sup>224</sup> *Phoenix Gazette* 14 June 1973. The order of the questions was reversed on half the ballots in each precinct, to assure impartiality. For the specific wording of the advisory vote, see City of Phoenix Press Release April 23, 1973, "Freeway Poll Wording Announced." "City Council to Ditch Inner Loop," *Arizona Republic* 10 May 1973, 1:6; "U.S. Hints at Rejection of Papago Freeway," *Arizona Republic* 18 May 1973, 1:3. The study interviewed four hundred Phoenix voters to gauge the reasons for voters' choice. See, Merrill, "An Analysis of the Papago Freeway," 2, 4, and 6. For quote from Arizona Highway Commission, see Maricopa Association of Governments, *Interstate 10 Transportation Corridor Alternatives Study*, Gruen Associates (Phoenix, Arizona, February 1975), 2.

<sup>225</sup>"Phoenix Rx for Planned Development," *American Institute of Architects* (March 1974), 24-29.

In February 1975, Gruen produced its alternatives study and concluded that the extension of I-10 through the heart of Phoenix would be the “costliest, most destructive and most polluting” of the five alternative routes studied. Instead, Gruen advocated for a depressed freeway south of the city, the Durango Alignment. MAG and the Phoenix City Council endorsed this option for the I-10 in March. Meanwhile, Phoenix Mayor Timothy Barrow established the Moreland Corridor Ad Hoc Advisory Committee, which recommended a multi-use parkway in the downtown freeway corridor. The Phoenix City Council and Mayor Barrow endorsed the recommendation. However, the downtown freeway option had momentum on its side: the Highway Department already had cleared 85% of that route and the report also showed it would accommodate the largest volume of traffic.<sup>226</sup>

With freeway construction now stalled for five years, many had grown frustrated by continuing traffic problems in the city. Those in favor of the freeway aggressively pursued its completion and on May 8, 1975, Use Now I-10 Effectively (UNITE) began a petition to put the freeway back on the ballot on November 8. By July 2, they gathered 15,204 signatures, almost double the amount required to get a proposal on the ballot. The ballot asked the public to vote for or against a depressed freeway in the Moreland Corridor, dropping the elevated design that sparked much of the controversy in the previous ballot.<sup>227</sup>

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<sup>226</sup> “Voters Vindicated,” *Arizona Republic* 13 March 1975, A6; *Arizona Republic* 23 January and 4 March 1974. For Phoenix City Council endorsement, see Jana Bommersbach, “Council Favors Durango as route for Interstate-10,” *Arizona Republic* 18 March 1975, A1:A6. Arizona Governor Raul Castro also favored parkways over freeways. See, “Support for Parkway,” *Phoenix Gazette* 1 October 1975. As of February 1975, 1,177 of 1,794 parcels (66%) required for the Papago Freeway acquired. See, *Interstate 10 Transportation Corridor Alternatives Study*, 6.

<sup>227</sup> *Arizona Republic* 25 May 1975 and *Phoenix Gazette* 2 June 1975.

A large portion of UNITE's support came from residents on the western fringe of the city. They had to cross the Black Canyon Freeway, railroad tracks, and diagonal intersection across Grand Avenue to reach the rest of Phoenix; in some cases, it took an hour to reach the eastern part of the city. UNITE had \$75,000 in campaign funds, which dwarfed the opposition's funds. Part of the campaign included a series of advertisements that argued freeways could be beautiful and did not have to have a negative impact on the environment. For example, one ad showed a picture of the Los Altos Hills section of Interstate 280, Junipero Serra Freeway near San Francisco, blending into the surrounding tree covered hills. Another advertisement argued that a "Modern, streamlined Papago Freeway cannot be as ugly as the decaying Central and Moreland [Corridor]." <sup>228</sup>

Meanwhile, opposition to the freeway softened, as they lost two significant allies in the public battle. CMTAF's status as a non-profit organization prevented it from receiving campaign funds and Eugene Pulliam, one of the staunchest freeway opponents, passed away in the summer of 1975. While most of the opposition lived in the center of the city, a survey found that 75% of registered voters opposed the construction of freeways in their areas, but residents often were ambivalent about freeways not planned in their backyard. <sup>229</sup>

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<sup>228</sup> "Road to Oblivion" *Arizona Republic* 24 March, 1985. Jana Bommersbach, "Rival roadway plans compete for rejected freeway path," *Arizona Republic* 22 June 1975, A-20. Oscar Palmer spent \$10,000 on the ads. For examples, see "Freeways can be beautiful and so useful," *Arizona Republic* 30 October 1975 and "Freeways can be beautiful" *Arizona Republic* 29 October 1975, A1:A14. Another advertisement showed a freeway through Minneapolis. "Prompt freeway construction is sought," *Arizona Republic* 16 November 1975, B1. For the last advertisement, see "Death of a Freeway," in Ed Hall Papers, box 8, folder 11.

<sup>229</sup> Jana Bommersbach, "Only central areas opposed freeway," *Arizona Republic* 6 November 1975, B1:B5; "Opinion Spilt on 2 Freeways, survey shows," *Arizona Republic* 27 October 1975.

Other opposition came from those in the city who already experienced the impacts of freeways in their neighborhoods. Many South Phoenix residents' experience with the Maricopa Freeway fostered negative opinions of urban freeways. Speaking on behalf of his community, South Phoenix Planning Committee Chairman Earl deBerge opposed the Inner Loop because it would divide neighborhoods, just like the Maricopa. Instead, he favored a parkway plan to "provide an aesthetically pleasing transportation system." Kenneth Killian, a mayoral candidate from the area, made similar comments.<sup>230</sup>

At least six citizen groups advocated a "no" vote on the Papago. They represented 8,600 homeowners along the freeway route, mostly concentrated near the Encanto neighborhood, but also in the western parts of the city where support for the freeway was also strongest. Without large campaign funds, they mostly relied on door-to-door advocacy. Better Urban Ideas for Land Development (BUILD) helped lead the campaign, with support of State Senator James Walsh, a former President of the Encanto Citizens Association. Like CMTAF in 1973, they argued for alternatives to the freeway because Phoenix "can't worship any longer at the shrine of the automobile." However, most politicians stayed clear of the divisive issue altogether. Few of the eight mayoral candidates or twenty-six city council candidates actively supported or opposed the freeway publicly.<sup>231</sup>

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<sup>230</sup> "City's south likely to vote no on freeway," *Arizona Republic* 8 October 1975 B1:B2; "Citizens' groups feel freeway would ruin areas along route," *Arizona Republic* 16 October 1975 B1:B10. Killian explained, the Maricopa Freeway was "not a positive force (in our community) because the state has not landscaped it." The Black Canyon Freeway was also the source of derision, as Phoenix Traffic Engineer claimed it looked like "half a sewer pipe." See Bommersbach, "Rival roadway," *Arizona Republic*.

<sup>231</sup> The six groups included the Greater Alvarado-Los Olivos Neighborhood Association, the Central Phoenix Preservation Association, the Machan Community Service Committee, and the Alzona Park Neighborhood Association. For the Walsh quote see, "Newly Formed group to fight freeway plan," *Arizona Republic* 18 October 1975 B1. "Reaction is Mixed on Freeway Vote" *Phoenix Gazette* 5 November 1975;

On November 6, 1975, several factors---frustration with traffic congestion, the money already spent on clearing land for the downtown corridor, diminished opposition to the freeway in the papers, and the extensive pro-freeway campaign---worked in favor of the freeway. Voters approved the ballot initiative 54% to 46%. As a result, the freeway moved back into the Moreland Corridor. The Arizona Department of Transportation (ADOT) approved the plan, on the condition that the AHD “redesign, construct and appropriately landscape the improvements...in conformity with current environmental requirements, without helicoils and without excessively high spans between 7<sup>th</sup> street and 7<sup>th</sup> avenue.” CMTAF and Encanto Citizens’ filed suit under section 134 of the Federal Highway Act, arguing the city did not include area-wide study of modes of transportation other than the automobile, and did not follow procedure concerning right-of-way purchases. The court ordered AHD to stop all right of way purchases in the Moreland Corridor until there were further studies and property assessments were redone. Mayor Barrow supported the Durango route and a parkway along the Moreland Corridor, but more than anything he wanted something done. In December 1975, Phoenix asked for another EIS from the Highway Department, this time for a depressed freeway, to get the project underway, finally.<sup>232</sup>

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“Door-To-Door Anti-Freeway Drive Planned,” *Arizona Republic* undated and “Freeway lacks candidate support,” *Phoenix Gazette* undated, in Ed Hall, box 28, folder 11. For information on James Walsh, see George, *Phoenix’s Greater Encanto-Palmcroft*, 98-99.

<sup>232</sup> For election results, see Jana Bommersbach, “Freeway Initiative is approved by 54%,” *Arizona Republic* 5 November 1975 A1:A12. Federal Highway Administration, *Final Environmental Impact Statement and Section 4(f) Statement, Interstate 10, 91<sup>st</sup> Avenue to Junction I-10, Maricopa County, Arizona*, Arizona Department of Transportation, Arizona Highway Department. volume I (Phoenix, 1978), 1-14. UNITE took a “thank you” note in the papers. See *Arizona Republic* 8 November 1975, A-22. Judd’s comments can be found in “Reaction is Mixed on Freeway Vote,” *Phoenix Gazette*. In addition to the lawsuit, he also claimed the ballot was unclearly and “weasily-worded.” Barrow noted that “there is a lot of pollution through downtown where it is already congested” and he was not sure the added pollution would be

In June 1976 the Highway Department finished a draft EIS and circulated copies for comment. Two public hearings over the next year elicited strong public response, with the final EIS containing over 300 pages of comments. These responses mostly echoed past sentiments about traffic congestion, air pollution, aesthetics, community unity, and public transit options. Many stated their preference for the Durango option to prevent a freeway from dividing the city and keeping air pollution out of the city. Phoenix in fact, already experienced difficulty meeting federal air quality standards for pollutants like carbon monoxide (especially in downtown), one of the toxic chemicals spewed from the exhaust pipes of vehicles.<sup>233</sup> *Republic* columnist Ben Avery called the downtown freeway “shortsighted” and “foolish.” State Senator Joseph Shaughnessy Jr. stated, “It will be a great tragedy...if the unique atmosphere of Phoenix is buried beneath concrete freeways.” Many also expressed a desire for a parkway in the downtown corridor, “with bus lanes, bike and horse trails, trees, playgrounds, and small lakes.”<sup>234</sup>

Support for the downtown freeway, however, grew stronger in the western suburbs, with support also growing in other suburban areas to the north and east. Between

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permitted under federal laws. For Barrow’ concerns, see John L. Carpenter, “Pollution Issue Called Potential Freeway Detour,” *Phoenix Gazette* 5 November 1975, A1:A4.

<sup>233</sup> For a discussion of the proposed freeways impact on air quality, see section VI of *ibid.* The first deadline to meet NAAQS was July 1, 1976 as required by the Clean Air Act. Phoenix also missed the extension date of July 1, 1977. Five of the six sites tested in downtown Phoenix exceeded federal air quality measures. Additionally, the EIS drew from two detailed studies of the freeway’s impact on the city’s air quality. See, M.S. Chan et al. “Air Quality Impact Analysis, Interstate 10, Maricopa County, Arizona, AV FR 639 (Pasadena: AeroVironment, Inc., 1976) and M.W. Chan and P.J. Drivas, “Modeling of the Carbon Monoxide and Ozone Air Quality Impacts of the West Papago-Inner loop (I-10) Freeway in Phoenix, Arizona, AV FR 7020,” (Pasadena: AeroVironment, Inc., 1977). In August, 1,200 people showed up to the first public hearing. See, *Final Environmental Impact Statement 1978*, Executive Summary, I-15. For examples of public comments opposed to the downtown freeway, see *Ibid.*, III-29, 36 and 44.

<sup>234</sup> For examples of public comments in favor of a parkway see, *Final Environmental Impact Statement 1978*, III-38, 41, 44, and 49. For the quote from Senator Shaughnessy, see “Position Paper on I-10 and Transportation in the Phoenix Metropolitan Area and Final Challenge to EIS-76-1,” *Citizens for Mass Transit Against Freeways* (July 29, 1977), 1-2. Shaughnessy’s concern also reflected the energy crisis in the 1970s. He asked: “What are we to do with our freeways when the world supply of fossil fuel runs out?”

1969 and 1976, Maricopa County increased its population by 300,000, adding 150,000 cars with it, much of it in the suburbs and “super-suburbs” of Tempe, Mesa, and Scottsdale. Commuters’ stressed city roads, which stressed commuters. Attorney John Burger spoke on behalf of a number of west side property owners who felt that a “high speed east-west carrier [was] vitally needed” because travel times across the city continued to increase.<sup>235</sup>

The MAG Regional Council recommended the downtown freeway option to ADOT, which selected the alternative on October 22, 1976. They cited the 1975 referendum, MAG’s recommendation, and the clearance of the freeway corridor since the 1960s in support of their decision. In 1977, UNITE circulated a report explaining that Phoenicians “adopted a spacious lifestyle,” and the city’s transportation problems threatened “to destroy the attractive way of life and economic well being of the community.”<sup>236</sup> The city commissioned a public survey the same year to determine public opinion about urban growth issues. Respondents most frequently mentioned transportation issues as a factor they disliked about living in Phoenix. Moreover, two-thirds of commuters perceived traffic congestion as a problem, especially in areas north and west of the city. Again, CMTAF challenged the Highway Department’s EIS based on the familiar concern of aesthetics, air pollution, community unity, and the lack of public

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<sup>235</sup> Ibid, III-64. Population statistics for Tempe and Mesa can be found in VanderMeer, *Desert Visions*, Table 7.1 on page 191. Tempe grew from 24,894 to 106,919 in 20 years, while Mesa ballooned to 152,453 in 1980 from 33,772 in 1960. VanderMeer uses the term “super-suburb” to describe the growth of four municipalities adjacent to Phoenix: Tempe, Mesa, Scottsdale, and Glendale. See pages 221-225. Carl Abbott coined the term “super-suburb” in *The Metropolitan Frontier: Cities in the Modern American West* (Tucson: University of Arizona Press, 1995), 142.

<sup>236</sup> For population and car statistics, see Bracken, *Arizona Tomorrow*, 130. UNITE, “The Papago Freeway: The Completion of Interstate 10 Through Phoenix, Arizona” (August 17, 1977), 4-6. A chart demonstrating Phoenix’s position nationwide in freeway miles can be found on page 4.

transit alternatives. The EPA expressed similar sentiments, and emphasized concern over increased air pollution in the downtown area, as Phoenix struggled to meet federal air quality standards.<sup>237</sup>

The final EIS report in 1978 acknowledged that the Moreland Corridor route “would have comparatively greater environmental impacts than most of the other alternatives,” but highlighted “significant overall advantages” for the downtown freeway “in terms of transportation service, corridor planning, and creation of a direct I-10 connection.” In response to concern that the freeway would create more air pollution, the Highway Department explained the freeway would not add cars, but instead accommodate anticipated urban growth. A discussion of public transit was limited to an express bus lane on the freeway. The Federal Highway Administration and Department of Transportation approved the EIS on October 5, 1978, provided that the freeway be depressed, not interfere with archaeological sites, and environmental effects upon the city be minimized.<sup>238</sup>

In 1979, the Encanto Citizens’ Association and other anti-freeway groups, led by Dr. Robert Hurt, made a final effort to prevent the freeway by gathering enough signatures to force a third ballot proposal, this time for a grid plan that called for the abandonment of all planned intercity freeways, replacing the Moreland Corridor route

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<sup>237</sup>For the survey results, see *Urban Form Directions*, iv, 5, 6, 25. Also see, “Position Paper on I-10,” 21-26. The EPA largely concerned itself with air pollutants, such as carbon monoxide, sulfur oxide, and nitrous oxide emissions. Again, the EPA found a lack of significant consideration of public transit alternatives to the freeway. See comments 77.1 and 82.1 in the *Final Impact Statement 1978* for EPA comments and the Highway Departments response. *Final Environmental Impact Statement 1978*, Executive Summary, I-15-20.

<sup>238</sup> A discussion of alternatives besides number 7, the Moreland Corridor option, can be found in *Final Environmental Impact Statement, 1978*, section VIII. See specifically, pages 4-7. *Phoenix Gazette* 10 April, 20 October, and 27 December 1978.



with the Durango option. The plan also called for using federal freeway money to finance street improvements and establish an “efficient” bus service, a somewhat difficult and complicated process that would impose additional delays, but other cities had successfully done so. Despite strong public support for the Durango alignment, city and AHD felt it could not pursue it for various reasons. For one, it required a third time-consuming EIS, and each month of delay added another \$5 million to the costs of the freeway. Secondly, officials, most notably Phoenix Mayor Margaret Hance, argued the Durango route would not alleviate commuter traffic through the city.<sup>239</sup>

Freeway opponents advanced familiar rhetoric used in 1975, arguing the freeway would increase the city’s air pollution and divide communities. A “yes” vote supported the grid plan, while a “no” vote supported the downtown freeway. Business leaders, developers, and labor unions opposed the grid plan, as did politicians who believed the elimination of 100 miles of planned freeways would condemn the city to more traffic congestion. One pamphlet insisted that “poor transportation will begin eating away the lifestyle we cherish in this Valley.” A MAG report urged the completion of the Papago “as rapidly as possible” since it was the building block of the planned freeway network, including the Squaw Peak freeway and an outer belt of suburban freeways.<sup>240</sup>

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<sup>239</sup> See Margaret Hance to Phoenix City Council, “Facts about Transportation,” November 3 1978, in Bob Stump Papers, box 26, folder 23. Hance made similar remarks in her 1978 mayoral campaign. See Hance Papers, Box 2, Folder 8. Additional pamphlets can be found in Ed Hall, box 28, folder 1.

<sup>240</sup> For the grid plan, see “Ballot Issue will decide future of Phoenix Transportation,” *Arizona Republic* 5 November 1979 A12, Bonnie Bartak and Frank Turco, “Voters to give decisions on Grid Plan, city races,” *Arizona Republic* 6 November 1979 and “Papago vs. Grid Plan becomes focus of city election,” *Arizona Republic* 5 November 1979, A1:A12. It should be noted that the city’s own transportation plan called for 91 miles of street widening and an approved bus service, while the grid plan called for 204 miles of widening. The main difference between this and the grid plan was the inclusion of freeways through the city. For the information on the city’s planned freeways, see Bonnie Bartak, “Papago Extension with Outer Loop urged as Priorities,” *Arizona Republic* 10 November 1979. Pro-freeway promotional materials included a mailer and pamphlet distributed by Citizens Transportation Council entitled “Look at the Jam We’re In,” which

On November 6, 1979, voters overwhelmingly favored the downtown freeway plan, 73% to 27%. The freeway initiative actually drew more voters than the mayoral election that year, a sign of pent-up frustration and desire for a solution to traffic problems. For many, the freeway vote provided much needed relief. The city had widened and improved streets over the past decade, but struggled to keep pace with urban growth. Over the next four years, the state earmarked 70% of all interstate highway expenditures for the Papago Freeway (\$457 million). However, it would take three more years before the AHD could meet all the conditions for final approval outlined by the Secretary of Transportation, including several years of archeological surveys. Construction of the West-Papago Inner Loop began in 1983.<sup>241</sup>

*Coda: Freeways and the Future of Metropolitan Transportation in Phoenix*

In 1973, the West Papago-Inner Loop represented everything that was bad about freeways at the time: it would cut a swath through one of the oldest neighborhoods in central Phoenix, create an eyesore in the city's prized views, increase air pollution, and neglect the transportation needs of half the city's population who did not have a car. Lou Lagomarsino, president of Johannessen and Girand, explained, "The defeat of the Papago

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can be found in Ed Hall, box 28, folder 1. The Interstate statistic comes from Hance, "Papago Freeway Inner Loop," (Phoenix, 1981), 2. For freeway support, see "Freeways win Backing," *Phoenix Gazette* 15 December 1977, A1:A29. The Outer Loop proposed would run along Pima and Price Roads from the Superstition Freeway to Shea Boulevard.

<sup>241</sup> For election results, see "Papago Freeway Ok'd 3-to-1," *Arizona Republic* 7 November 1979, A1:A19. Five percent more voted in the freeway initiative than the mayoral election. "Finally--It's a Papago go! Go!" *Arizona Republic* 11 August 1990, A1:A20. For information on the Highway Department's issues meeting the requirements of the Department of Transportation, see "News Release," October 8, 1981 in Governor Bruce Babbitt Papers, box 213, folder 9, Arizona State Archives, Phoenix, Arizona, as well as "Papago Freeway Archaeological Status," in Babbitt, box 19, folder 1 and Babbitt, box 19, folder 5. The Past and Future Foundation filed lawsuit against the State under section 4(f) of the Federal Department of Transportation Act, but the suit was dismissed in 1982.

(in 1973) set transportation back more than anything else... When the people voted against it, the politicians retrenched.”<sup>242</sup>

By 1979, however, the public mood had changed drastically. Pro-freeway advocates successfully downplayed objections, scrapping the controversial elevated design in 1975. Moreover, continued traffic congestion became a greater priority, especially as freeway opponents failed to produce a visible, viable public transit alternative. Key opponents, such as Pulliam’s papers, faded as the decade progressed and with it widespread public opposition. Most believed the freeway was necessary to meet the needs of growth and maintain a low-density lifestyle. In the 1980s, the city unveiled a new freeway plan, with a tunnel replacing the Inner Loop, and a park above the freeway instead of below. Moreover, the city attempted to humanize the freeway: salvaged and replanted palm trees destroyed in the Moreland Corridor lined part of the downtown route; sandy-colored noise walls blended into the desert, pedestrian bridges over the freeway connected neighborhoods, and the freeway included a median where a light rail might eventually go. In 1990, 21 years after the first proposal for a downtown freeway, the AHD completed West Papago-Inner Loop.<sup>243</sup>

Despite efforts by the city and state to improve air quality through more emission controls, poor air quality persisted. In the 1980s, the city continually violated the maximum standard for carbon monoxide, almost entirely attributable to cars, and in 1984 the city ranked worst in the nation (Phoenix violated the standard 99 times). Voters continually approved and extended sales taxes to fund highway expansion plans by MAG

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<sup>242</sup> For quote see, “Road to Oblivion.”

<sup>243</sup> The cost of the freeway in the late 1980s shot to \$700 million where it was \$50 million in 1969. “Road to Oblivion” and “Finally--It’s a Papago go! Go!” Margaret T. Hance Park opened April 25, 1992.

because traffic congestion persisted; freeways became part of the cycle of road expansions begun in the 1950s, temporary solutions at best. Freeways eased traffic congestion at first, but they also facilitated additional growth in outlying areas and commuting that not long after exacerbated traffic congestion, which then led to more freeway construction. Through the 1990s, the Phoenix metro area ranked worst in air pollution than any western city except Los Angeles. In 2004, voters approved a 21-year extension of the sales tax for highway funding. Despite the continued growth of freeways, demand for mass transit grew as travel times and traffic continued to increase, as did concern over air pollution. Still, transportation plans since the 1980s have more seriously considered the value of public transit, even if implementing those visions has proven difficult.<sup>244</sup>

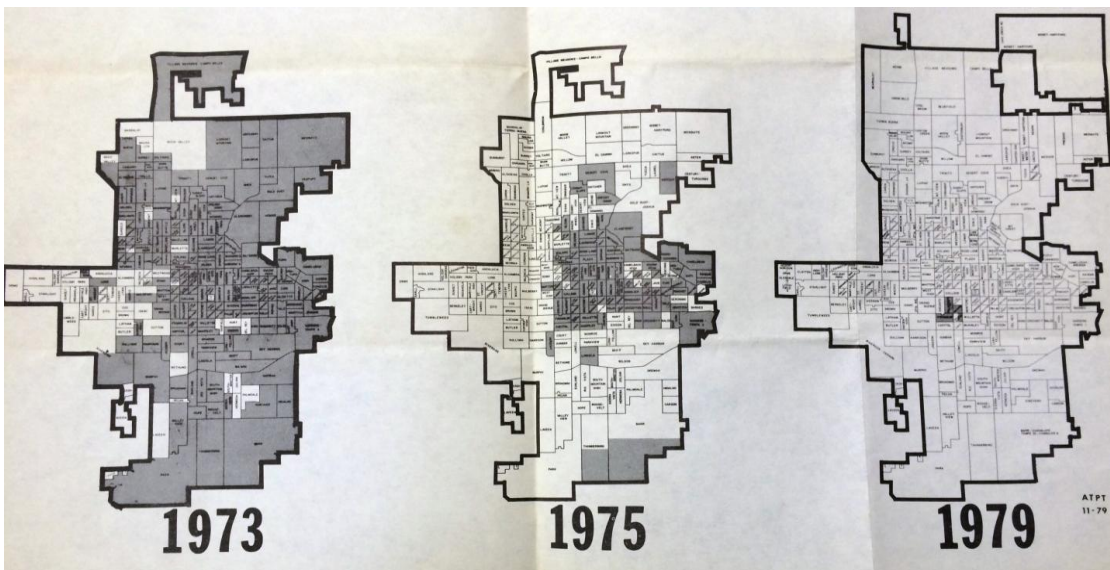


Figure 10. Papago Freeway Votes: 1973, 1975, and 1979. The maps show the diminishing opposition (grey) for the Papago Freeway. Opposition to the freeway declined everywhere except the inner city near Encanto. After 1975, the northeastern

<sup>244</sup> VanderMeer, *Desert Visions*, 350-353.

areas, such as Arcadia and Paradise Valley, came to support the freeway as traffic congestion increased in the city.<sup>245</sup>

All government transportation proposals for the Phoenix urban area since the final approval of the Papago included increased funding for buses, which expanded ridership each time. The first effort to create a mass transit system with a rail component occurred in 1989 with ValTrans, a countywide transportation plan that included 103-miles of rail. Voters rejected the plan, largely in opposition to a tax increase required to fund it. Voters in Phoenix, Scottsdale, and Chandler rejected separate transit taxes for light rail proposals in 1996 and 1997 as well. Opposition largely stemmed from a resistance to raise the sales tax by half a cent, a belief that light rail would not curb traffic congestion and would not receive enough use to justify its expense, and lastly that using taxes to fund mass transit diverted funds from necessary highway improvements. Moreover, the pro-mass transit campaigns lacked strong support from the business community, while just days before the election, Arizona Governor Fife Symington, ADOT, and the Arizona Department of Environmental Quality staged a press conference in opposition to the proposal.<sup>246</sup>

By 2000, the opposition to light rail in the city and Valley had begun to turn. Proposition 2000 asked voters to approve a \$0.004 increase in the sales tax to fund a transportation plan that included 20 miles of light rail, in addition to expanding the bus system. Unlike efforts in the 1970s, the pro- light rail group had successful mass transit alternatives that they could point to. They pointed to successful light rails in places like San Diego and Dallas, as well studies that demonstrated people would ride the light rail if

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<sup>245</sup> This image can be found in the Ed Hall Papers, box 27, folder 9.

<sup>246</sup> Ibid. Also see, Mary Jo Pitzl, "Top State Officials Mum on Phoenix Transit Vote," *Arizona Republic* 3 March 2000, B7. The 1997 ballot measure lost by only 122 votes.

built. Moreover, light rail projects in these cities and others demonstrated mass transit's potential as an economic driver, spurring retail, commercial, and residential development in areas with rail stations. This brought support from business interests in the Valley. With large support from Valley businesses and corporations, the pro-transit campaign held over \$1 million in their coffers, whereas the opposition group, De-Rail the Tax, did not even muster \$10,000 in campaign funds. In an extensive TV advertisement campaign, the pro-Prop 2000 group argued the light rail would reduce traffic congestion, especially during rush hour, where the fictional "Dr. Gridlock" guided people out of cars on the freeway and into seats on a sleek, rapid rail system. Moreover, the pro-light rail group touted its benefits to city air quality. Lastly, the campaign explained to voters that the plan was eligible for significant federal funding that could provide up to half the costs of construction of the light rail. In March 2000, voters approved the tax by a margin of sixty-five percent to thirty-five percent.<sup>247</sup>

In 2004, a \$15.8 billion MAG transit plan, funded by an extension of the 1985 sales tax, reached the ballot. While the plan provided more than half its funds for highway improvement, \$2.3 billion would go towards adding 27-miles of light rail to the 2000 plan. Other funds would expand the bus system. Like the 2000 ballot proposal, the business community and Arizona politicians overwhelmingly supported Proposition 400. In addition, several former Phoenix Mayors, including John Driggs put their support behind the measure. Again, the pro-transit side outspent opposition groups, this time by a two-to-

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<sup>247</sup> See Janie Magruder, "Merits of Transit Tax Debated Ballot Measure Arguments Heard from Committees on Both Sides," *Arizona Republic* 13 May 1999, "Corporate Support Put Transit Tax Over the Top Result Dramatic Change from 1997 Defeat," *Arizona Republic* 15 March 2000, Mary Jo Pitzl, "Transit Tax Foes Deride Light-Rail Plan," *Arizona Republic* 10 March 2000, B1 and Bob Petrie, "Prop. 2000 Ads Cut Corners on Truth About Light Rail," *Arizona Republic* 10 March 2000 B-2.

one ratio. Moreover, under the proposed plan, the federal government would pay half the bill. The plan created a combined light rail system serving Phoenix, Tempe, and Mesa, with the first link connecting Phoenix and Tempe in 2008. The level of use exceeded all expectations and in 2015 the line extended to downtown Mesa.<sup>248</sup>

The fight over West Papago-Inner Loop highlights many of the issues Phoenicians and metro area residents continue to consider, as the city grows in the twenty-first century. It demonstrated that support existed for mass transit, at least broadly, but in order to succeed any form of transportation needs strong public support, institutional support, and perhaps most importantly a system that reflects the values of the metropolitan area. These include low-density living, mobility and individual freedom, clean air and blue skies, and open space. The city approved the freeway, but altered its design and appearance. Decades later, the success of the first phase of the light rail system presents promise for public transit in the Valley and perhaps finally a turning point toward freeway alternatives once dismissed as incompatible with Phoenicians' "western suburban" lifestyle.

Other western cities followed a similar postwar transportation trajectory, but like Phoenix, they too are beginning to implement mass transit alternatives. Denver, another

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<sup>248</sup> Ibid. For the debate over Proposition 400 see "Transit Measure Fight Not Letting Up," *Arizona Republic* 31 October 2004, A2 and "Milestones Archive," *Valley Metro* [http://www.valleymetro.org/about\\_lightrail/milestones\\_archive#sthash.s5uQk8t7.dpuf](http://www.valleymetro.org/about_lightrail/milestones_archive#sthash.s5uQk8t7.dpuf) (accessed March 14 2015). Phoenix Mayor Phil Gordon wrote a letter to the *Arizona Republic*, co-signed by five former Phoenix mayors. See, ("Prop. 400 Will Deliver Balanced Transit Plan," *Arizona Republic* 31 October 2004. For a discussion of Phoenix's light rail and future mass transit in the metro area, see Jonathon Thompson, "Transportation Transformation," *High Country News* Vol. 46, No. 20 (November 24, 2014), 20-28. For more on the Regional Transportation Plan, see Arizona Department of Transportation, Maricopa Association of Governments, METRO Light Rail and Regional Public Transportation Authority, *Regional Transportation Plan: Projects and Services Supported by regional public transportation funds--2006-2026* (Phoenix, 2004).

auto-centric, sprawling western city, is years ahead of Phoenix in terms of public transit. Its light rail connections spider in all directions across the South Platte River Valley, toward Boulder, Golden, and Aurora. While Denver's downtown still boasts a large number of office buildings, the city has attempted to revitalize the area, turning an abandoned warehouse district into a pedestrian area with restaurants, shops, and parks affectionately known to locals as LoDo (lower downtown). Other old buildings in downtown were transformed into loft apartments. Furthermore, Houston, whose city boundaries cover over 600 square miles, built a light rail line to service the densest part of the city, and now the line has second highest average daily ridership in the nation. The city plans to expand the system in other dense areas of the city in coming years. Phoenicians would be wise to follow events in Denver and elsewhere, as it may provide a visible, viable example of how mass transit might connect a sprawling western metropolis, reduce air pollution from cars, and help revitalize a deteriorated downtown. Revitalization requires more than just building a light rail, but creating destinations that ensure ridership, things that reflect Phoenix's values, as part of a larger metropolitan plan.<sup>249</sup>

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<sup>249</sup> Thompson, "Transportation Transformation." A side-by-side picture of light rail connections in each city can be found on page 27. Additional information on the light rail and the revitalization efforts in downtown Denver can be found in Gutfreund, *Twentieth Century Sprawl*, 118-125. Houston plans to expand on the highly successful 7.5-mile Red Line For Houston light rail, see Stephen J. Smith, "In 2014 Houston Heads West as Light Rail Heads East," *Next City*. January 2, 2014 <http://nextcity.org/daily/entry/houston-heads-west-as-light-rail-goes-east-with-buses-to-plug-the-gap1> (accessed January 14, 2014).



## CHAPTER 5: Environmentalism and Sustaining a Desert Metropolis

In 1963, Stewart Udall pointed out the divergence in America's economic and environmental conditions. The nation stood "poised on a pinnacle of wealth and power," he explained, "yet we live in a land of vanishing beauty, of increasing ugliness, of shrinking open space, and of an overall environment that is diminished daily by pollution and noise and blight."<sup>250</sup> Udall charged that American cities had been "growing too fast to grow well."<sup>251</sup> Few cities grew as rapidly as Phoenix.

Over the last half century, Phoenix grew into the fifth most populous city in the United States. Phoenix boosters' promoted and fulfilled their vision of creating a modern desert metropolis, but found themselves challenged to meet the requirements of rapid, low-density development. The population boom that followed World War II resulted in inadequate infrastructure and environmental degradation, and citizen complaints and pressures to address these problems resulted in a debate over quality of life issues. Initially, city officials found themselves unprepared to address the problems and worked fastidiously to keep pace with growth, but more often than not policy solutions adapted to growth. Eventually, they became better at long-term thinking and comprehensive planning, which helped them anticipate growth and deal with some of its negative consequences. The three episodes examined demonstrate that urban growth is a dynamic and ongoing process where macroeconomic forces like federal policy and changing social values, such as quality of life concerns, intersect with the biophysical environment to affect policy decisions.

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<sup>250</sup> Udall, *Quiet Crisis*, viii.

<sup>251</sup> *Ibid*, 159-160.

*Looking Back: Postwar Growth and Environmentalism in Perspective*

In his 1970 State of the Union Address, President Nixon explained, “The answer is not to abandon growth, but to redirect it” to ensure it is “compatible with the maintenance and improvement of our total environment.”<sup>252</sup> Postwar environmental values, rooted in the specificity of local places, found avenues of expression in postwar planning as all levels of government sought to transform postwar values into policies that reflected visions of the future.<sup>253</sup> Phoenix was no different. During the postwar period, government officials did more than ever before to incorporate environmental values into urban planning, setting important precedents and providing lessons for how to turn environmental values into effective policy. The professionalization of government planning following World War II, guided by the Charter Government’s ethos of managerial efficiency, allowed Phoenix officials to not only catch up with growth, but eventually create policies that anticipated growth.

I argue that three dynamic factors influenced the extent to which environmental values were incorporated into urban growth policy. Federal policies provided crucial dollars and legal precedents that guided Phoenix’s policy solutions dealing with the consequences of growth, but solutions also had to have public support---grassroots

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<sup>252</sup> For Nixon quote see, *Seventeenth Arizona Town Hall: Preserving and Enhancing Arizona’s Total Environment* (Phoenix: Arizona Academy, 1970), 4. For more on the Nixon Administration’s environmental record, see, Russell E. Train, “The Environmental Record of the Nixon Administration,” *Presidential Studies Quarterly*. Vol. 26, No. 1 (Winter, 1996), 185-186 and John Brooks Flippen, “Containing Urban Sprawl: The Nixon Administration’s Land Use Policy,” *Presidential Studies Quarterly*. Vol. 26, No. 1 (Winter, 1996), 199-203.

<sup>253</sup> For more on this, see Graham, *Toward a Planned Society: From Roosevelt to Nixon* (New York: Oxford University Press, 1976), i-iii. Graham traces efforts on the national level from the 1930s to 1970, at first promote and then control growth on pages 94-218.

advocacy as well as electoral support for bond measures---and last the solutions had to congeal with the suburban characteristics and values that defined Phoenix.

Each of the three episodes went through a similar policy process that reflects the evolving undercurrents of urban growth policy in postwar Phoenix. First, the unintended consequences rapid urban growth and relatively lax county regulations led to public concern and pressure on government officials to redress externalities like the destruction of recreation space, and better incorporate quality of life issues into urban planning. The successful efforts of the PCMF and the less successful campaign waged by anti-freeway groups provide lessons in grassroots activism. Initially, policy decisions sought to keep pace with growth, by extending municipal sewers to outlying areas, trying to purchase or trade other land for privately held land Camelback Mountain, or expanding city streets to meet the growing number of people and their cars in the valley. Eventually, after citizen lobbying and with the assistance of federal dollars through programs like the Land and Water Conservation Fund, the city created a centralized sewage treatment facility, preserved an important recreation area, and constructed of a network of freeways. While these anticipated and planned for growth, they also promoted more growth, which led to new unintended consequences and challenges. In this way, urban growth policy is an ongoing process, where each challenge, as exemplified by the three episodes in the postwar period, offers an opportunity to incorporate new values and concerns into policy decisions.

The debate over the West Papago-Inner Loop serves as a microcosm for the nuanced way in which the dynamic forces of growth interacted with the factors critical to

incorporating environmental values into postwar urban growth policy. Clear and differentiated policy choices existed to meet the transportation requirements of the growing city, but macroeconomic factors like federal funding and a desire by city officials and the public to continue pursuing a path of low-density development defeated the mass transit option. Moreover, it demonstrates how past policy decisions influence later ones, as policies predicated on the assumption of freeway construction created institutional inertia that grassroots activists could not overcome. Yet the continued traffic congestion and the ongoing cycle of need and fulfillment in freeway construction, continuing air pollution problems, increased public support for mass transit alternatives, and the availability of federal funding for mass transit have created a new context for transportation policy. Forty years later, city officials and the public are reconsidering whether freeways are the best option to meet transportation needs, as the city plans to continue expanding the light rail system that opened in 2004. Transportation policy, like other urban growth decisions, is part of a reciprocal process; a dialogue between city officials, the public, and various experts, that seeks to balance the status quo with visions of the future. The challenges of the twenty first century, such as climate change, will provide more opportunities to chart a new course for the city.

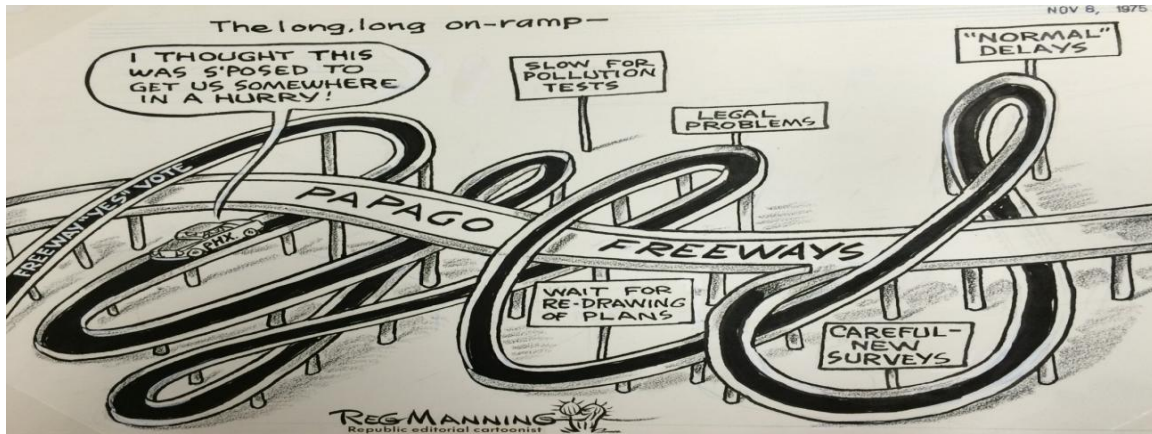


Figure 11. Reg Manning’s Cartoon “The Long-long on Ramp.” Reg Manning’s cartoon depicts the long-delays and frustrations with the Papago Freeway.<sup>254</sup>

### *Looking Forward: History Carries Weight in Policymaking*

Contemporary policy discussions “are infused with institutional memories of past events and nuanced with expectations for the future.”<sup>255</sup> These policy decisions shaped the urban character of contemporary Phoenix by setting it on a policy trajectory that has been slow to change. Between 1980 and 2010, the population of the city grew from 789,704 to 1,445,632 and sprawls over 500 square miles.<sup>256</sup> Despite infill programs and strategies aimed at directing growth in particular corridors, growth in outlying areas continued to outpace urban core development. Like many cities, Phoenix has continued to

<sup>254</sup> The cartoon appeared in *Arizona Republic* 8 November, 1975. It can be found in the Reg Manning Collection, box 287, folder 9.

<sup>255</sup> See Walter Rosenbaum, *Environmental Politics*, 84.

<sup>256</sup> Population figures can be found in “Phoenix (city) QuickFacts from the US Census Bureau” *U.S. Census Bureau*. <http://quickfacts.census.gov/qfd/states/04/0455000.html> (accessed June 12, 2014) and Riley Moffett, *Population history of western U.S. Cities and Towns, 1850-1990* (Lanham: Scarecrow Press, 1996), 14. The figure for the area of the city refers to the Phoenix-Mesa-Glendale metropolitan area. See, “Largest Urbanized Areas With Selected Cities and Metro Areas,” *U.S. Census*, November 15, 2012. <https://www.census.gov/dataviz/visualizations/026/508.php> (accessed February 1, 2014).

sprawl.<sup>257</sup> Moreover, the city continues to attract migrants; one-quarter of Phoenix residents in 2000 had arrived from outside the urban area within the past five years.<sup>258</sup> Rapid growth continues to present challenges and opportunities. City officials and the public can draw on previous experiences to guide contemporary decisions: the importance of anticipatory planning, the role of citizen groups to raise awareness of issues and pressure city leaders to solve problems, and the importance of environmental factors to quality of life and a successful urban design.

Debates over how and where the city grows remains a central topic in newspapers and among experts in policy reports. For example, the Morrison Institute of Public Policy at Arizona State University has advocated for policies that encourage higher density development to cope with projected growth in the twenty-first century. Critiques of the city's growth policies, like Andrew Ross' *Bird on Fire*, which declared Phoenix the "least sustainable city in the world," are often framed through a sustainability lens and a concern over depleting resources and climate change. The latter remains the one of the greatest challenges of the twenty-first century.<sup>259</sup>

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<sup>257</sup> Information on population density can be found in "Population of the 100 Largest Cities and Other Urban Places in the United States: 1790 to 1990," *US Bureau of the Census*. <http://www.census.gov/population/www/documentation/twps0027/twps0027.html> and Gammage, *Phoenix in Perspective*, 63 and 69. For an interesting interactive tool that displays population density in US cities, see "Population Density for US Cities Map," *Governing*. <http://www.governing.com/gov-data/population-density-land-area-cities-map.html> (accessed March 1, 2015). In 1970 and 1980, Phoenix had the lowest population density of any large American city. The 1985 General Plan and 1994 Strategic Growth Plan both utilized an "urban village" concept. See VanderMeer, *Desert Visions*, 278. The infill program included 1,699 projects as of 2000. See Heim, "Leapfrogging, Urban Sprawl," 252-268 and Gammage, *Phoenix in Perspective*, 128-137.

<sup>258</sup> See Larissa Larsen, Sharon L. Harlan, Bob Bolin, Edward J. Hackett, Diane Hope, Andrew Kirby, Amy Nelson, Tom R. Rex, and Shaphard Wolf, "Bonding and Bridging: Understanding the Relationship between Social Capital and Civic Action," *Journal of Planning Education and Research* 24, no. 1 (September 2004), 68.

<sup>259</sup> For examples of the debate in newspapers see, Gammage, *Phoenix in Perspective*, 2 and VanderMeer, *Desert Visions*, 357-359. For academic analysis of growth see, *Growth in Arizona: The Machine in the*

Central Arizona's environment---the hot, dry, nearly always sunny desert surrounded by mountains---helped attract millions to the valley and exacerbated growth challenges, but also offers an opportunity for adaptive solutions. No asset in the Phoenix urban area is more abundant than sunshine and the Greater Phoenix has some of the highest solar energy potential in the nation.<sup>260</sup> The need to reduce greenhouse gas emissions from electricity generated by fossil fuel-fired power plants presents a tremendous challenge but also an opportunity for the public, non-governmental organizations, utilities and other businesses, and public officials to forge new partnerships for innovative solutions that harness the valley's solar potential. Government officials, utilities and businesses will have to plan and prepare for a future where the majority of the city's energy needs are met not by fossil fuels, but by cleaner forms of energy, sources like solar. The public will play a critical role in pressuring elected officials, who have largely been apathetic in dealing with climate change, to take action. Macroeconomic forces have driven down the costs of producing solar panels, as well as EPA regulations requiring states to reduce their greenhouse gas emissions from power plants may make policies favorable to solar more attractive.

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*Garden*, Morrison Institute for Public Policy, Arizona State University (Tempe, 1998), *Megapolitan: Arizona's Sun Corridor*, Morrison Institute for Public Policy, Arizona State University (Tempe, 2008) and *Sun Corridor: A Competitive Mindset*, Morrison Institute for Public Policy, Arizona State University (Tempe, 2014). For Ross's book, see Andrew Ross, *Bird on Fire: Lessons from the World's Least Sustainable City* (New York: Oxford University Press, 2011).

<sup>260</sup> *Megapolitan*, 2. For more information on Arizona and Phoenix's solar energy production and potential see U.S. Energy Information Administration, "State Profiles: Arizona," *EIA* <http://www.eia.gov/state/?sid=AZ> (accessed February 27 2015). Coal is responsible for 41% of the state's electricity.

Climate change's effects are projected to be particularly challenging for the Southwest, where water supplies are already stretched beyond their limits.<sup>261</sup> Phoenix and other valley cities reuse nearly all their wastewater, with significant amounts of effluent going toward cooling the reactors at the Palo Verde Nuclear Power Plant and the fields of valley farmers. Wastewater though, represents a small slice of the much larger picture of water use in the valley. Projections of regional supply and demand show that in the coming decades, new acquisitions and better conservation of water, as well as the construction of new infrastructure to manage the region's water supply are required to sustain Phoenix.<sup>262</sup> New acquisitions of water seem a dubious and naïve strategy given that the Colorado River is already overallocated. Conservation as a strategy permits continued growth, as one person's recycled water often goes to a new home elsewhere. Moreover, growth predicated on conservation makes communities' with a finite water source, like Phoenix, more vulnerable, for when they finally reach the last drop of water, they have less flexibility because the only thing left to cut back on are the essentials. Still, conservation does provide a buffer before the last drop of water is reached. Climate change will lead to longer, more frequent and intense droughts in the American Southwest to which city officials will have to adapt. At some point, the water supply will no longer support growth. In the not-so-distant future, the city will likely sit at the negotiating table with a host of thirsty cities and states from the Colorado River watershed, as well as agricultural and energy interests. City and state officials will have

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<sup>261</sup> William DeBuys, *A Great Aridness: Climate Change and the Future of the American Southwest* (New York: Oxford University Press, 2013), chapters 2 and 6.

<sup>262</sup> See *ibid.* Also see, *Megapolitan*, chapter 4.



difficult decisions to make about who gets water and who does not, and perhaps place restrictions on urban growth.<sup>263</sup>

Sustainable growth policies should seek to make the built environment reflect and complement a places' natural environment. The Valley floor continues to fill with urban development that turns natural areas into subdivisions, shopping malls, and other facets of modern American suburban living. Phoenix and Maricopa County however, have worked to protect the unique ecology of the Valley. In the late 1990s, Phoenix collaborated with conservation and civic groups to establish the Sonoran Desert Preserve in the northern part of the city.<sup>264</sup> The prevention of urban development in the desert abets summer heat in the metropolitan area by replacing heat-retaining pavement with natural landscape, while utilizing natural water-conserving desert flora instead of water intensive lawns. Moreover, the valley residents can enjoy hiking and mountain biking trails, as well as camping, in addition to the aesthetics of the desert. Conservation and other civic-minded groups need to continue to pressure city leaders to not only remedy the unintended consequences of growth, but to pursue policies that plan ahead to maintain and improve the quality of life in the valley, including environmental amenities.<sup>265</sup>

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<sup>263</sup> DeBuys, *A Great Aridness*, 310-311. Also see chapters 2 and 6 for the effects of climate change on the southwest's climate and water supply. For more on Phoenix's efforts to conserve and manage its groundwater supplies, see Paul Hirt, Annie Gustafson, and Kelli L. Larson. "The Mirage in the Valley of the Sun." *Environmental History* 13 (July 2008), 482-514 and Paul Hirt, K.L. Larson, and A. Gustafson, "Insatiable Thirst and a Finite Supply: Assessing Municipal Water Conservation Policy in Greater Phoenix, Arizona, 1980-2007." *Journal of Policy History* 21, no. 2 (2009): 107-37. For wastewater gas, see City of Phoenix, *2012 city of Phoenix Greenhouse Gas Emissions Reductions Summary Report*, Walton Sustainability Solutions Services Global Institute of Sustainability, Arizona State University (Tempe, 2012), 4.

<sup>264</sup> City of Phoenix. *Sonoran Preserve Master Plan: an Open Space Plan for the Phoenix Sonoran Desert*. City of Phoenix Parks, Recreation and Library Department (PRLD) in cooperation with the Phoenix Sonoran Preserve Committee (Tempe: Herberger Center for Design, 1999).

<sup>265</sup> *Ibid*, 355-358. For more on the heat island effect, see *Megapolitan*, chapter 5.

Public and business support for freeway alternatives, as well as federal funds to offset construction costs made CMTAF leader Gerald Judd's dream come true, although forty years later. While freeways remain the dominant form of transit in the Phoenix urban area, in 2008 a light rail line opened, connecting downtown Tempe to Phoenix. The Phoenix City Council recently approved a \$30 billion transportation plan that includes funds for 30-miles of new light rail. It currently awaits public approval.<sup>266</sup> City officials and the public must continue to discuss what kind of urban area they desire and pursue policy solutions to make visions a reality. As the city grows, it will need to make room for more people, either in the existing urban area or by expanding urban boundaries further into the desert. Mass transit complements denser and mixed-land use, where residents can walk or bike from their homes, shop, get a bite to eat. Cities like San Diego and Dallas, as well as Houston and Denver have already shown that public transit can not only work in sprawling cities, but also add to residents' quality of life and stimulate the economy, something difficult to put a price tag on. Moreover, public transit limits air pollutant emissions from cars, the largest source of greenhouse gas emissions in Phoenix. According to a federal study based on nationally averages, light rail systems produce

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<sup>266</sup> The plan includes more than \$5 billion invested in development along the Phoenix light-rail corridor, with \$3.6 billion of private investment. See Brenna Goth, "Phoenix council to weigh \$30 billion transportation plan," *Arizona Republic* 2 March 2015, <http://www.azcentral.com/story/news/local/phoenix/2015/03/02/phoenix-council-weigh-billion-transportation-plan/24288773/> (accessed March 2 2015) and Goth "Phoenix Passes \$30 billion transportation plan," *Arizona Republic* 4 March 2015, <http://www.azcentral.com/story/news/local/phoenix/2015/03/04/phoenix-council-passes-billion-transportation-plan/24354033/> (accessed March 4 2015).

62% less greenhouse gas emissions than automobiles.<sup>267</sup> Moreover, public transit connects downtown destinations throughout Valley communities.<sup>268</sup>

While the Phoenix metropolitan area grew rapidly through the latter half of the twentieth century, in the twenty-first century, a broader picture emerges. Phoenix, along with Tucson, forms the central core of the “Sun Corridor,” a potential megapolitan region stretching from Nogales on the Mexican border to Prescott in the middle of Yavapai County; it contains 20% of the state’s land but 80% of its population. In 2010, it held a population of 5.73 million; by 2040, that number is projected to balloon to 9 to 10 million.<sup>269</sup> Economic, social, and cultural interconnections define the Sun Corridor and other megapolitan regions like New York-Philadelphia and Southern California. The growth of these regions offers both challenges as well as opportunities for creative solutions. Furthermore, environmental challenges are increasingly national or global in scale, which makes it difficult for municipalities to effectively deal with issues like climate change singularly. Municipal, county, and state leaders would be wise to consider policy actions on a wider scale, much as municipal officials after World War II increasingly collaborated at the county level to ameliorate unintended environmental

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<sup>267</sup> Based on national averages the estimated pounds of CO2 emissions per mile traveled for private cars is .96 while light rail is .36. If at full capacity, that number drops to .14. See U.S. Department of Transportation, “Public Transportation’s Role in Responding to Climate Change.” Federal Transit Administration. 2010. <http://www.fta.dot.gov/documents/PublicTransportationsRoleInRespondingToClimateChange2010.pdf> (accessed April 4 2015). 1-2.

<sup>268</sup> Michael Clancy, “Study: Transportation is primary source of emissions in Phoenix area,” *Arizona Republic* 19 October 2012. <http://www.azcentral.com/news/articles/20121016study-transit-primary-source-emissions-phoenix-area.html> (accessed March 1 2015). The article cites a study conducted by ASU researchers, presumably the *City of Phoenix Greenhouse Gas Emissions Reductions Report*.

<sup>269</sup> For the definition of a megapolitan region as well as statistics on the Sun Corridor, see *Megapolitan*, 14-15. For more on defining characteristics of the Sun Corridor, see *ibid*, 11-25. The population figure comes from *Sun Corridor*, 25. The *Megapolitan* study projected the population of the sun corridor to be 10 million by 2040.

consequences of growth. Moreover, municipal officials pursued more comprehensive planning that incorporated new quality of life values into urban planning, such as the inclusion of open spaces. Yet, challenges persist. No policy can forecast the future, nor predict, much less control how social values will change or what macroeconomic factors might influence urban growth, and so the process continues through cycles of challenges and responses; each decision reverberates into future debates and decisions.



Figure 12. Map of the “Sun Corridor.”<sup>270</sup>

In 1945, few outside of city boosters might have predicted the transformation of Phoenix from a small desert city into the fifth largest city in the nation. It was a mammoth and coordinated undertaking to promote the growth of the city while attempting to maintain an attractive quality of life, including environmental conditions.

<sup>270</sup> Ibid, 25.

The challenges currently facing Phoenix require the same enthusiasm and effort, albeit toward different ends if the city plans to sustain itself and a desirable quality of life for its residents. Just as decisions fifty years ago helped create modern Phoenix, contemporary decisions will shape the city's future. The question remains: to what end goal? Perhaps, sixty years removed from the end of World War II and the beginning of contemporary Phoenix, it is time to reflect on what values will guide the city's development over the next sixty years. On December 17, 1945, the front-page headline of the *Arizona Republic* exclaimed, "Planning Holds Key to City Future." It remains as true today as it did then.

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