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FROM CORN TO CHIPS: RURAL VIEWS FROM INSIDE CENTRAL TEXAS' EMERGING TECHNO-INDUSTRIAL CORRIDOR

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ABSTRACT

Amidst a changing climate, mitigating the loss of prime agricultural lands are of major concern for maintaining global food security without compromising planetary thresholds. Yet, often proximate to metropolitan areas, prime farmlands are highly susceptible to degradation and development. Central Texas is a hotspot for urban sprawl, development of suburbs, and the rapid conversion of agricultural lands into other uses. Furthermore, sites on urban peripheries in Texas and the American South are increasingly targeted for novel techno-industrial development for semiconductor fabrication, renewable energy deployment, electric vehicle production, and datacenter siting. Williamson County uniquely embodies these trends as home to an emerging techno-industrial corridor anchored by firms like Tesla and Samsung. Stemming from promised benefits like job creation and economic stimulation, these firms are the beneficiaries of public incentives packages unprecedented in Texas state history.

The success of firms in Williamson County hinges on the ability of local government to make available the requisite land, infrastructure, and resources, a process which occurs largely in a "black box". Discourse from local and county officials normalizes this economic development as both natural and desirable progress, while making little room for the perspectives of rural communities where techno-industrial facilities are being sited. Utilizing GIS analysis, archival research, and interviews with farmers, landowners, and other key informants, this research demonstrates patterns of land use change associated with new development typologies, reveals historic precedents that accelerate present-day acquisitions of farmland, and identifies a myriad of uneven legal, financial, and environmental pressures leveraged to "clear the way" for the techno-industrial development of rural areas.

This research utilizes scholarship on land use/land cover change, agri-food regimes, and neoliberal natures to contextualize historical precursors to development and the impact of socio-natures being displaced and produced in rural Williamson County. This thesis argues that rural siting allows firms to operate in obscurity and to exercise public powers unavailable to them otherwise through unprecedented articulations of public-private partnerships. Findings reveal not only broad patterns of land use change, but also the mechanisms by which rural land is "opened" for development far beyond factory footprints—thus offering a nuanced, place-based account that adds empirical richness to the scholarly literature. This inquiry comes at a critical time as semiconductor fabrication is reshored in the US and environmental justice questions are raised about uncritical support of this industry and green technologies in general at their sites of production.

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PREFACE

In the Spring of 2023, my mom called with a troubling update on a housing development going in next to the farm where she lives and where I grew up. According to the neighbors, developers had just filed a domestic wastewater permit application for the right to discharge 0.96 million gallons of treated wastewater per day into an ephemeral spring-fed creek that flows along the south side of our property. Just about a quarter mile away, that creek feeds into a larger one, already extremely prone to flooding. It was lucky the neighbor caught it too. The public comment period had already started. The permit application was in a binder, and that binder was tucked into a tiny alcove at the public library where it was "on public view" with all the other pending permits. If you miss the binder, you miss the boat for commenting. If you miss the comment period—well, you have no standing to complain when the thing gets built.

Nine-hundred and sixty-thousand gallons of treated wastewater pumped onto my family farm was not a surprise and did not make us unique amongst rural residents of eastern Williamson County. The probable impacts of wastewater services for the 2,115-unit development were more like the latest round of bad news. When I was still too young for elementary school, I remember putting stamps on the biggest stack of mail you'd ever seen. My mom and neighbors were organizing a letter writing campaign against a municipal airport planned for the same location as that housing development is now. Fourteen years later, at my first paid job, we'd clock out at six, break out the folding tables in the vet's examination room, and a group of local women would spend hours going through documents. We'd all just been notified about the county's plans to expand our two-lane farm-to-market road (more traversed by tractors than cars) into a highway. We were assured we wouldn't see it in our lifetimes. Seven years later, the highway is nearly completed, and it has a clear purpose—to provide incoming industries with quick access to major transportation routes. In 2021, Samsung Semiconductor LLC was officially sited in rural eastern Williamson County with an address on the newly minted "Samsung Highway". While there have always been periodic development booms in the county and long-pending encroachment from Austin to the southwest, the current mode of development is novel in scope, impact, and pace as a techno-industrial corridor rises in the east. This local mode of development is part of a larger emerging trend as techno-industries are relocated across America, especially in Texas and the southern states (Park & Lee; Varas, 2020). This trend is brought on by policies to reshore semiconductor manufacturing (Rinehart & Kirchhoff, 2023), increasing demand for datacenters (Siddik et al., 2021), and relocations and expansions of tech companies from Silicon Valley (Salgado, 2024). Williamson County exemplifies a nuance in this trend as firms pass over metropolitan entrepreneurial hubs, opting instead for sites in the urban periphery.

My family's farm is just over two miles away from Samsung's new fabrication plant. Over the course of construction, I've witnessed the disruption of agricultural corridors, the

quick transfer of family-owned farms to land speculators, and the vanishing of stars from the night sky. In my community, many folks have been involved in eminent domain proceedings chipping away at parts of their properties for road projects, utility easements, and more. Our once quiet FM roads are now a stream of motion and noise as eighteen-wheelers cart Telsa Cybertrucks (of all things) across the county to a new rail depot. I cannot square what I see today with my memories, and the feeling evoked in me is grief—deep and wide, for the land, for the animals, and for the people who once lived there.

At the time of the phone call in 2023, I had not chosen a topic for my thesis. But as I had my mom scan me the permit application, started emailing hydrology professors in the engineering department, and made an appointment with student legal services, I realized I'd have more than enough for a thesis if I wanted to open the can of worms right under my nose. I never started graduate school with the intention of studying my own community, yet the skills I was gaining in the classroom were shaping new and more critical queries tugging at the back of my mind about the inherently contradictory structures reshaping the landscape back home.

While hesitant to take on such a personal project for my thesis, I realized that my experiences and place-based knowledge could be an asset to the research. Political geographer Jesse Heley recognizes the potential methodological benefits of being local to your case study. Heley (2011) writes on the possibility of positionality to enhance qualitative research through proximity and propinquity, or kinship. Geographical closeness complemented by a degree of shared culture and understanding, he writes, mitigates some of the challenges in ethnography such as identifying a case to study, building a network, and gaining trust and access (Heley, 2011). Furthermore, in the field of urban planning, Porter et al. (2012) comment on the potential benefit of emotional connection to study site, saying that, "loving attachment brings to the fore questions that may not be as prominent in more detached approaches to social inquiry," (Porter et al., 2012, 597). Routledge and Driscoll Derickson (2015) extend this notion in the context of scholar activism, emphasizing the importance of emotions and intuition in driving scholarship that has the potential for situated solidarity and actionable change. Each scholar I've mentioned advocates that local identification of the researcher with the community under study promotes an ethics which goes beyond the requirements of the academy and aligns with community standards. Likewise, these scholars agree that such community-based research with personal connections necessitates intense reflexivity, as the researcher must navigate an obligation to community (as a member of it themselves) that goes beyond the dynamic of researcher-participant. These critical reflections and the observations they produce are a hallmark of rigor in qualitative study (Dowling, 2016). That being said, none of these scholars ignore the challenges that such closeness brings, which I will reflect on more in the *Methodology* section. Yet, each holds that the benefits of this mode of research and the quality of knowledge it produces far outweigh any challenges.

My place-based knowledge and experience of eastern Williamson County guide my inquiry into the processes that are remaking it. These processes are not democratic or inevitable but are speculative, rushed, and opportunistic. Official discourse from county and municipal officials as reported in local media tells a rags-to-riches story of eastern Williamson County, lucky and clever enough to have struck gold in deals bringing techno-industry and economic development to the area. Agriculture, though very much alive, is consigned to heritage in this discourse, and "sleepy" rural towns are put on the map so to speak, now of national importance for the futuristic products they will produce (Covo, 2024). I aim to complicate official narratives which serve the expansion of techno-industrial development by engaging with the experiences of those living in its proximity. Contradictions are evident and widespread. Some of the most productive farmlands in the country are being permanently supplanted by novel economic sectors despite farmers' commitment to continuity. Promises of job creation and economic stimulus come at the cost of the largest tax abatement package in state history. Housing developers build neighborhoods before they have the utility infrastructure to support them or the tenants. And, as towns go on boil water notices, municipalities furnish water and new utility infrastructure to firms on their fringes, drawing on the same water resources for semi-conductors and people.

My attachment to Williamson County grants me both prior knowledge and existing networks to focus my research. It also lends an expansive temporality to my inquiry. I deeply desire a future there where farming is not doomed and the communities I grew up in can grow, adapt, and continue. My attachment necessitates speculation beyond the zero-sum binaries of city-farm, rural-urban, past-future, and progress-decline. In addition to time spent in the archives finding historical throughlines that shape contemporary development, I thought a lot about the future and invited participants of my study to do the same. Everyone is speculating in Williamson County—the commissioners who spend public funds on private promises, the developers who put up houses quicker than population demands, and the river authorities deciding who deserves water contracts. Why should farmers and rural residents not be allowed to imagine futures for the land too? And, in fact, *they do*. Beyond strategies to resist agricultural land use change, folks have dreams for their land that puts conventional agriculture in the rear-view mirror, from growing drought tolerant hemp for sustainable building materials in Granger to community supported agriculture in Walburg. Even confronted with bleak news from the county government, farmers imagine a future where agriculture continues and adapts to remain a viable livelihood, where farms and municipal communities could be connected for mutual benefit, and where the land is livable for long-time residents and newcomers alike.

ACKNOWLEDGEMENTS

It is necessary to start this thesis by thanking all those who contributed to it. Foremost, I have immense gratitude for the folks who sat down with me for interviews. I wish everyone could hear the same conversations you all had with me. I think they are far more illustrative than anything I'm capable of writing. This thesis would be completely lacking conviction without your contributions. Thank you for trusting me, especially concerning such a sensitive and personal topic. I'm truly thankful to have gotten to know each of you and your stories.

I'd also like to thank my family, particularly my parents and all my grandparents who gave me a childhood on a farm and deep love for plants, animals, and the land. You always told me to be a good steward of the land, and you raised me with a critical eye to what that means.

Additionally, I must acknowledge my committee, especially my chair and advisor, Dr. Diana Denham. Diana, you have always been incredibly gracious, prioritizing me not as a student, but as a person first. You've given me more opportunities than I could possibly list here.

Furthermore, this work would be impossible without my friends in my program who encouraged me. You continually insisted that my topic was interesting and original and gave me the confidence to academically articulate the importance of my study. I also appreciate all the volleyball games we played together to get our bodies out of the office and our minds at ease. Special thanks to Adam Anwar for reviving my rusty GIS skills and helping me so much with my maps; you brought my vision to life and I'm really proud of the end product. An additional thanks to Belem Carrasco Galvon for organizing the summer writing group. Your kind encouragement, subtle goal setting, and positive attitude were key to me finishing my thesis revisions.

Lastly, much of my work would have been impossible without field work funding from the Southwest Division of the American Association of Geographers and the Association of Geography Graduate Students at OU. Completing a thesis is an incredibly stressful process and to be supported financially alleviates many burdens for graduate students operating on tight timelines, allowing us to focus on the work that brought us here.

1. INTRODUCTION

1.1 The problem of farmland loss

In 2019, the UN Secretary General announced that globally, twelve million hectares of arable land are lost annually (UN Secretary General, 2019). These losses of agricultural land are driven by abandonment as well as urban expansion. In the former case, yields and arability may be compromised through overuse and extractive land management (Olsson et al., 2023) and/or the impacts of climate change (Zhang & Cai, 2011) resulting in the degradation and abandonment of once productive land. In the second case, losses of agricultural land result from urban expansion and sprawl, half of which occur over farmlands globally (Huang et al., 2020).

This phenomenon is accelerating, and is concentrated in China, the United States, Brazil, and India (Huang et al., 2020). What's more, urban expansion, where it occurs most rapidly, is noted to outpace population growth, indicating patterns of low-density development exacerbating the trend of farmland loss (Seto et al., 2011). In fact, over the next five years, global urban areas are expected to occupy a footprint three times their size at the turn of the century, chipping away at the productive agricultural lands that typically surround their periphery, historical supplying them (Seto & Ramankutty, 2016).

While farmland loss is an age-old phenomenon, it has been intensified contemporarily as populations urbanize, rates of consumption grow, and climate change makes evident the planetary thresholds humanity is approaching. The problem of farmland loss due to urbanization has large implications for global food insecurity (Xie et al., 2023)

and ecosystem services supported on farms like carbon sequestration (Power, 2010; Kehoe et al., 2017). Additionally, loss of farmland typically triggers land use change elsewhere as production to meet the ever-increasing global demand for food is offset to other, previously uncultivated areas (van Vilet, 2019). Given that the arable land supply is finite, intensification of production in existing croplands and the expansion of agriculture into new frontiers comes at the expense of endangering other planetary boundaries related to biodiversity and habitat loss, nutrient cycling, and freshwater availability (Haberl & Erb, 2017; Gerten et al., 2020). Moreover, these impacts are not evenly distributed as expansion and intensification of agriculture is concentrated in climate stressed regions of the Global South, entrenching worldwide inequities in the distribution of food and the burden of production (Olsson et al., 2023).

Global trends of farmland loss are well represented in the United States where every day, two-thousand acres of agricultural land is lost (Hunter et al., 2022). More than 50% of agricultural production in the US happens close to urban areas (Olson & Olson, 1999). Amidst a changing climate which will alter geographies of viable agricultural production, the most fertile farmlands in the United States are also the site of half of all agricultural land-use conversions (Xie et al., 2023). This troubling fact indicates the potential for climate change to wreak havoc on American agriculture as production is displaced to regions which may require more land, water, and chemical inputs to grow the same volume of products (Rosa et al., 2019). Xie et al. (2023) project that status quo development patterns could lead to the loss of 18.2 million acres of farmlands nationally by 2040, concentrated in California and the southern states, like Texas. Therefore, given that

farmland loss is typically irreversible (Xie et al., 2023; Seto & Ramankutty, 2016), the difficult act of balancing urban development with the continuity of prime agricultural land is an urgent matter of concern in the United States and globally.

1.2 Review of Literature

A few literatures that tell us more about the global loss of farmlands are Land Use/ Land Cover Change (LULCC), Food Regime Studies, and Neoliberal Natures. Agreeing on the impacts of farmland loss, these areas of study approach the problem from different perspectives to enrich our understanding of where and under what circumstances farmland loss occurs.

1.2.1 Land Use/ Land Cover Change (LULCC)

LULCC is a category of scholarship in geography and related disciplines that studies the causes and effects of changes in land use and land cover, driven by human-environment interactions (Turner, 2007). LULCC has origins in the Berkeley School where in the mid twentieth century, Carl Sauer led a turn in geographical thought away from environmental determinism towards the explanatory power of cultural geography to examine changes in the environment (Warf, 2010a). This theoretical turn prompted the studies of land use and land cover change, which had formerly been separated into social and physical geography respectively, to coalesce in a single pursuit (Warf, 2010b). Turner et al. (1995) first introduced this pursuit as land use/land cover change science in their report outlining a research agenda to integrate social science and biophysical land use change science in the study of human dimensions of environmental change.

The advent of satellite technologies which produced regularly available maps of the earth's surface as well as increasing awareness of global environmental changes and thresholds (such as the impact of greenhouse gas emissions) led to the increasing popularity of LULCC science in the 1980s and 1990s. As remote sensing technologies experienced exponential advancement with the proliferation of computing, LULCC has sought to standardize global classifications of land use and land cover as well as model and predict their changes to an increasingly fine grain (Turner et al. 2007; Dangayach & Kumar Pandey, 2025). Remote sensing allows LULCC scientists to monitor and document global patterns in hydrological flows (Xu et al., 2014), agricultural production (Mulla, 2013), urban expansion (Kadhim et al., 2016), and many other kinds of environmental change (Ahmad et al., 2023). As Turner noted in his account of the field, "no facet of land change research has been more contested than that of cause," (Turner, 2007, 20667). Güneralp (2020) confirms this ongoing debate in the field coming from the means of data collection which enables the LULCC scientist to make connections between changes and proximate drivers, but fails to capture spatially distant linkages, increasingly disconnected across space by globalization. To that end, teleconnection (Seto et al., 2012) and telecoupling (Hull & Liu, 2018) emerged in LULCC remote sensing studies to theoretically account for coupled systems that are spatially separated. While these theoretical frameworks are vital for breaking down constructed binaries like land use or cover classifications and the rural-urban dichotomy, they remain an ongoing challenge to quantify, model, and predict (Güneralp, 2020).

LULCC scholarship on farmland loss centers around abandonment of croplands (Lofti et al., 2023; Zhang et al., 2023), urban encroachment (Seto et al., 2011; Hou et al., 2021), and the impacts of agricultural expansion and intensification (Rosa et al., 2019; Patel et al., 2019). In particular, LULCC scholars concerned with the food-energy-water nexus study linkages in farmland loss and expansion with global stocks of freshwater (Liu et al., 2017; Rosa et al., 2019). Given limited supply of available freshwater globally (Shiklomanov, 1993), its compromising through pollution and climate change (Oki & Kanae, 2006; Milly et al., 2005), and the fact that seventy percent of freshwater stocks are used in global agriculture (Mekonnen & Hoekstra, 2016) these scholars are chiefly concerned with the intensification and expansion irrigated agriculture (Liu et al, 2017; Damkjaer & Taylor, 2017).

Working from a resource management and remote sensing perspective LULCC scholars can correctly identify *where* and *in what quantities* critical farmlands are in transition globally. However, there is often a need to nuance the *how*. Satellite imagery can show trends in land use and land cover change but does not convey thick descriptions from the ground, including social drivers and impacts. Furthermore, the field's focus on global datasets and thresholds are limited in the specificity of research outcomes including actionable local recommendations (Gerten et al., 2020).

1.2.2 Food Regime Studies

Around the same time LULCC was gathering popularity in the 1980s and 1990s, political economy and political ecology geographers as well as rural sociologists were

involved in an effort to critically theorize the impacts of colonialism, industrialization, and globalization on the restructuring of global food systems in the period following WWII (Whatmore, 2002). This effort cohered as food regime studies, encompassing research that examines how institutional governance and new modes of agricultural production shape what kind of food we produce, in what quantities, and how that food is distributed unevenly through global markets (Goodman et al., 1987). Food regime scholars examine a variety of areas in the global food system including the technological advancements that allow agricultural production to escape natural constraints (Weis, 2007), the reinforcement of imperial oppression in food supply chains (McMichael, 2009), the contradiction of food overabundance and persistence of malnutrition (Patel, 2007), the dominance of corporate food firms in global markets (McMichael, 2013), and environmental degradation produced by conventional agriculture (Goodman & Watts, 1997).

Friedmann, later accompanied by McMichael conceptualize epics, or "regimes" in the structural mode of global food production which punctuated the twentieth century (Friedmann, 1982; Friedmann & McMichael, 1989). Friedmann and McMichael's three restructuring regimes are characterized by increasing productivity, decreasing variety in products, standardization of operations, and the globalization of markets driven by industrially produced off-farm inputs and state intervention (Friedmann & McMichael, 1989; McMichael, 2009). Following a first food regime characterized by colonialism and enslavement (Friedmann 1982), the second, known as the "surplus regime," starts after WWII when novel synthetic inputs like chemical fertilizers and pesticides spurred an increase in productivity (Friedmann, 1982). As its name suggests, this period is

characterized by surplus production, which Global North nations leveraged in combination with new agro-technologies to shape development interventions in the Global South (Friedmann, 1982). McMichael theorizes a third "market" regime beginning in the 1980s, characterized by a withdrawal of support from farmers, demonization of subsidies, expansion of intensive agriculture in the Global South, and the rise of corporate farming domestically, all in line with the proliferation of neoliberal policies throughout that period (McMichael, 2009; Graddy-Lovelace & Diamond, 2016).

Like all scholarship grounded in social theory, food regime studies grapples with weighting the roles and entanglements of institutional structures and individual agency that shape outcomes. However, like LULCC scientists, they contend that local food systems are variegated, and that food transitions look different in different places (Goodman & Watts, 1997). Food regime studies offers critical historical insight into the structures shaping agricultural production and the organization of farmlands which are contemporarily so prone to land use change, as noted in the former section. Yet, while this body of scholarship extensively studies transitions *within* agricultural systems (such as corporatization), it stops short of addressing linkages between agri-food system restructuring and the conversion of agricultural land into other uses.

1.2.3 Neoliberal Natures

Neoliberalization became a popular political action when world leaders shifted hard towards its ideology and policy resulting in global economic and political restructuring in the late 1970s and early 1980s (Centeno & Cohen, 2012). Neoliberalism is a political theory

that states should liberate markets by scaling back regulations and interventions with the idea that a free market will regulate itself (Harvey, 2007). As Harvey writes, this political turn manifested in deregulation of corporate activity and privatization of public resources and services globally as governments fundamentally shifted their roles from being the providers of public and social services to that of market protectors. This is the restructuring which drove the third food regime (McMichael, 2009) and has allowed for private accumulation of capital by elite classes and the uneven development across space (Harvey, 2005).

Critically, neoliberalism entails the extension of markets as well as the creation of them where none previously existed (Harvey, 2007; Bakker, 2015). Since the neoliberal political turn, critical geographers have published literature from biophysical and political economy perspectives to describe the "neoliberal environments" being shaped in the non-human world (Castree, 2010a). This pursuit coalesced in the description of neoliberal natures, the ways that natural resources are commodified, marketized, and (de/re) regulated, such as the consolidation of commodity agriculture, privatization of water resources, enclosure of public lands, and creation of carbon markets (Heyen & Robbins, 2005; Castree, 2008; Castree, 2010b). Neoliberalism and the neoliberal natures it produces are not monolithic and do not follow "immutable laws" (Brenner & Theodore, 2002); rather they are understood to be highly variable across space and place as they are articulated unevenly through local institutional and governance contexts (Mansfield, 2004). Scholars who study neoliberal natures grapple with questions about the tensions between neoliberal ideology and its practical manifestations (Bakker, 2010), whether or not

valuation of natural resources as ecosystem services can avoid commodifying nature (Dempsey & Robertson, 2012), and the ways neoliberal tendencies can be avoided in governance subvert the reproduction of neoliberal natures (Hursh & Henderson, 2014).

Neoliberalism takes shape in environmental governance as endorsements of a "green capitalism" which holds that market mechanisms can be employed to solve for environmental problems first through regulation by marketization (Castree, 2008) and second by the claim that production and consumption of technological innovations will mitigate environmental change (Fox, 2022). Following such assumptions, a "green" industrial revolution has begun, driven by the potential for new products to overcome limiting environmental factors or to replace existing problematic technologies such as electric vehicles for transportation or solar panels for energy production (Rouhana et al., 2024; Monaco, 2023; Kumar, 2020). Yet, like all industrial revolutions before it, this one represents new frontiers of land use, raw materials extraction, and labor demand (Tienhaara, 2014; Hudson, 2023). Therefore, while proponents of green capitalism hold it to be a win-win solution for nature and the economy, critical scholars demonstrate the temporary nature of green-washed technological and spatial fixes. Such fixes can offset externalities over space and time but do not tackle root problems inherent in the crises of capital accumulation (Harvey, 2003; Johnston, 2018; Taffel, 2018). Furthermore, greenwashing, the employment of misleading or unclear environmentally friendly marketing to sell products, obscures the true impacts of such technological fixes (Prudham, 2009; Williams, 2024). These impacts can be revealed on closer inspection across the life cycles of green technology (Sovacool, 2021), as exemplified by the

infringement of Indigenous sovereignty in the Isthmus of Tehuantepec wind corridor (Huesca-Pérez et al., 2016), child labor and environmental degradation in cobalt mines of the DRC for lithium-ion battery production (Ulimwengu & Sanginga, 2025), and toxicity of e-waste recycling hubs in Ghana (Aware et al., 2020).

Beyond greenwashed ethics of consumption (lucrative for firms), the urgent nature of the problems green technologies purport to solve can trigger rapid uptake and normalization in a period prior to understanding their full impact. Moyano-Fernandez et al. (2024) describe this period as the "green honeymoon," where, in their study for example, ardent and uncritical adoption of AI in the healthcare system leads in the long term to compromising of other dimensions of health on which human life depends such as ecosystem functionality. Similarly, Mulvaney (2013) finds that socio-environmental impacts across solar technology commodity chains remain in a "black box" including labor conditions, resource extraction, and siting. All the while, solar technology is praised for its potential to stimulate new economies and is discursively treated as an essential for the climate crisis. In these cases, Moyano-Fernandez et al. and Mulvaney exemplify how a present solution comes at a cost displaced by time and space respectively. Therefore, it is possible to investigate claims made by proponents of green capitalism by examining closely those sites of extraction, manufacturing, and shipping that occupy their supply chains. To that end, Kojola and Agyeman (2021) contrast a green transition with the framework for a just transition, described as centering, "workers' rights, racial and gender justice, and Indigenous sovereignty," as humanity makes structural changes to status quo

systems to address climate change. Therefore, critiquing tenets of green capitalism often exposes issues of environmental justice (Kuehn, 2004).

The deployment of new markets and consumption of new technologies under green neoliberalism paradigms is also reflected in agricultural restructuring across scales from smallholders to corporate enterprises. Globally, smallholder agricultural practices have been reshaped and dispossessed in marketized environmental governance like REDD+ projects and green enclosures (Asiyanbi et al., 2019; Koot et al., 2022). As described in the former section, technological innovations striving to extract crop production from natural variation since WWII compose the commodification and marketization of nature as it relates to the process of farming (Stock et al., 2014). These neoliberal natures of agriculture have been shaped and driven through global competition as the US and other states withdrew farmer supports in the 1980s and liberalized agricultural commodity markets, resulting in the devaluation of family operations and the rise of corporate agriculture (Essex, 2016). Additionally, neoliberal policies in city governance have led to the prioritization of private investment and growth, which does not account for the externalities of urban sprawl and expansion but is driven instead by market rationales to maximize financial value of land use (Peck & Tickwell, 2008). Scholars like Bakker (2010) emphasize the limitations of neoliberalism as a uniformly explanatory process and argue for emphasis on its uniquely local iterations. Furthermore, while scholarship on neoliberal natures does a great deal to analyze the effects of neoliberalism in its many manifestations, it is less focused on local actors and the mechanisms they utilize to drive effects, emphasizing instead the explanatory power of capital in search of profits.

1.3 Research Questions

Considering these bodies of literature, I pose three research questions about why prime agricultural lands—areas with a high degree of natural fertility (soil quality, abundant water, climate resilience), which are critical for food security and maintenance of planetary thresholds—are so vulnerable to land use change:

(1) What historical processes explain how prime farmland in the U.S. becomes vulnerable to change out of agricultural use despite increasing productivity?
(2) How are local public mechanisms used to accelerate the conversion of prime agricultural lands into other uses?
(3) When prime farmlands are supplanted by other uses, what are the local and regional socio-ecological impacts, and what implications do these impacts carry for local sustainability?

These questions call for an inquiry into the past, present, and future of what makes and unmakes farmlands. To explore these questions, I proposed a case study that could elucidate the locally variegated ways in which prime farmlands are historically predisposed to land use change, contemporary public mechanisms utilized to accelerate that process, and its socio-ecological effects.

1.4 Introducing the case study: The rise of "Silicon Fields" in Eastern Williamson County, Texas

1.4.1 Case Relevance

In a report from the American Farmland Trust, Hunter et al. (2022) identify the potential for a trend in low-density residential development in Texas to contribute to the loss of more than half a million acres of farmland by 2040. In terms of agriculture, Texas is the fourth highest producing state and home to more than twelve percent of US farms (Texas Comptroller, 2022). Commodities pricing (Tomascik, 2025), urban encroachment (Xie et al., 2023), and groundwater depletion (Kaiser, 2010) threaten agricultural futures across the state. These challenges are magnified by a changing climate which brings shifting precipitation patterns, the intensification of drought cycles, and more extreme weather events across the state (Ray et al., 2018; Nielson-Gammon, 2020). Given this context, the loss of productive and climate resilient farmland on urban peripheries in Texas is an urgent matter of concern.

The US Census Bureau recognizes Texas as the state with the fastest growing population in the county (US Census Bureau, 2024). Much of this growth is concentrated in the so called "Texas Triangle" whose borders are several of the largest state highway systems and whose vertexes are the Austin/San Antonio, Dallas-Fort Worth, and Houston metropolitan areas, composing a region where the majority of Texans live already (Zhang & Chen, 2009). These large cities are home to a number of corporations, in the oil/gas, energy, healthcare, and information technology sectors. However, there's a new wave of

techno-industrial growth coming to the rural, often agricultural spaces between them. Major techno-industrial firms known for some combination of green technology, futuristic ideas, and disruptive innovations are moving into urban peripheries across the state including Space X in Cameron County (Raulston, 2024; McGaughy, 2025; Brumfiel, 2024; Clua-Losada, 2024; Garcia et al., 2025), Tesla in Travis County (Maas, 2020), and the Boring Company and X in Bastrop County (Tremayne-Pengelly, 2023).

In Central Texas, the prime farmlands of eastern Williamson County are ground zero for the development of one such techno-industrial corridor, coined as "Silicon Fields" by U.S. Representative Lloyd Doggett (McCleod, 2024b). Williamson County is exemplary of this novel trend in semi-urban techno-industrial development, yet it is unique in scale and pace of change, securing the largest direct foreign investment in state history when Samsung Semiconductor anchored their $17 billion factory there in 2021 (The Sunday Sun, 2021). The rapidly developing Silicon Fields, populating with semiconductor supply chains and datacenters, also happens to be supplanting some of the most historically productive non-irrigated agriculture in the county and the state, offering a nuanced driver in the statewide trend of farmland loss (Scarbrough, 2005; White, 2006).

Eastern Williamson County is a compelling case to study because of the contemporary and global relevance both of what is being *produced* and *displaced* there. Examining this case has the potential to shed light on a relatively novel and unpublic process transforming portions of rural agricultural lands in Texas and the American South into novel zones for techno-industrial production. These obscured processes include the historical structures that make farmlands vulnerable to land use and land cover change,

public mechanisms utilized to organize the resources and infrastructures that support techno-industrial development, and the socio-environmental harms and conflicts emerging from it. Given the concentration of prime agricultural lands implicated in visions for techno-industrial development, the case of farmland loss in eastern Williamson County can draw on and nuance the three literatures reviewed and research questions posed.

Scholars critical of green capitalism and the technological fix tell us what we might expect in terms of socio-environmental conflicts emerging from the production of so-called green technologies like the electric vehicles, semiconductors, and datacenters of Silicon Fields. Applying these scholar's directives to document spatially and discursively obscured externalities at production and manufacturing sites highlights the soil, food, and water resources sacrificed for their production and the ironies of win-win framing of technological solutionism.

Extending on these warnings of socio-environmental burdens unevenly shouldered in the rapid and uncritical adoption of green technologies, an accounting of the historical restructuring of agricultural production guided by food regime scholarship reveals whose shoulders are in question-- the livelihoods, communities, and structures impacted, and the paradoxes innate in their disruption by this techno-industrial mode of development. "Silicon Fields" is taking shape in the urban periphery—in extra-territorial jurisdictions or recently annexed areas. It does not take up room in town or utilize existing structures. Farms are increasingly targeted in speculative land acquisitions to accommodate the footprint of new construction (Hernandez, 2024). Food regime scholarship provides a historical paradigm for understanding the critical nature of the farming being displaced by

Silicon Fields and its addition to this thesis confronts official discourse which portrays rural Williamson County as a blank slate by enriching the rural imaginary.

Official governmental narratives of progress around techno-industrial development in Williamson County walk hand-in-hand with neoliberal ideas of what a city must be, do, and become to survive, in this case, resulting in the fairly undemocratic and speculative opening of new frontiers for development in exchange for promised benefits of economic stimulus. Therefore, Williamson County offers a place-based account of how "actually existing neoliberalism" (Brenner & Theodore, 2002) functions in Central Texas to accelerate agricultural land use change, bringing into focus the discursive and ideological paradigms that drive and justify both the advancement of farmland loss and the reproduction of the technological fix across rural space.

1.4.2 Case Study Background

Eastern Williamson County is a promising case study for historical and contemporary drivers as well as impacts of development on prime Texas farmlands. Chartered in 1848, Williamson County composes just over one thousand square miles of land in central Texas, including a thin strip of the most historically productive farmland in the country (Odintz, 2021). From its founding through most of the twentieth century, agriculture was both the dominant economic sector and land use there (Scarbrough, 2005). Initial booms in population and economic development can be linked to the confluence of cattle trails running through the county and the intersection of two railroads that established a key shipping node for regional agricultural products in the town of Taylor

(Stearns Scarbrough, 1998). Wealth from the cattle and cotton booms of the mid and late nineteenth century respectively, built the historic municipalities of the county and the countless small communities that dot its countryside (Odintz, 2021).

Contemporarily, Williamson County is no stranger to urban development with a population just under 700,000 as of 2023, more than doubling since the year 2000 (US Census Bureau, 2024). Just north of Austin, the state capital, the county falls directly in the "Texas Triangle". The completion of transnational Interstate 35 in the 1960's and the anchoring of Westinghouse Electric in 1972 and Dell Computers headquarters in 1996 accelerated economic development away from cattle ranching in the county's western half and grew its towns into cities (Scarbrough, 2005). This growth to the west was supported by the construction of several Army Corp dams in the 1970s and 1980s to provide reliable drinking water supplies to developers and municipalities.

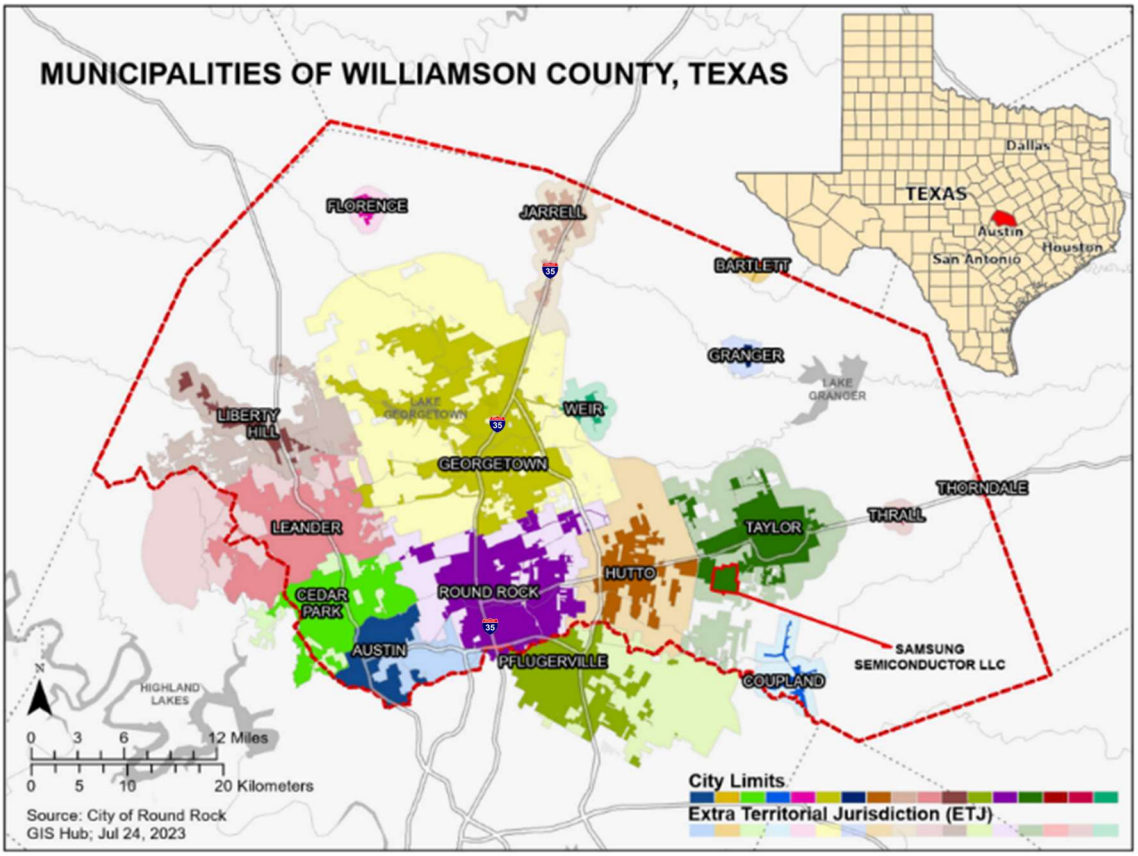

Figure 1. Reference Map of Williamson County, Texas: City limits of incorporated municipalities are indicated by dark shading and their extraterritorial jurisdictions (ETJ's) are denoted in the corresponding lighter shades. The position of Williamson County is highlighted on a map of Texas counties. The east-west division referenced in this paper is roughly demarcated by Interstate 35 which runs North-South through Jarrell, Georgetown, and Round Rock. Note that Austin's city limits fall within the Williamson County line. Key surface water sources are also visible on the base map including Lake Georgetown and Lake Granger, both completed by the Army Corp of Engineers in the 1980's (Scarbrough, 2005), as well as the Highland Lakes just southwest of the county which are administered by the Lower Colorado River Authority (Texas State Historical Association, 1995). The site of Samsung Semiconductor LLC's new American fabrication headquarters is outlined in red on the Southwest edge of Taylor. This map was created by the author with data layers from Williamson County Appraisal District, City of Round Rock GEOhub, and the Texas Department of Transportation. For more details on this map, see Appendix D.

Occasional growth spurts have pushed urban development eastward as sprawl spills over from Austin, such as the 2006 completion of Toll Road 130, a 1990's Turnpike Authority project which brought a boom in home building to Hutto and Pflugerville (Zhao et

al., 2020; Dunn, 2007). Yet, a stark East-West rural to urban gradient remains visible. Through the twenty-first century, eastern municipalities retained stable or falling populations and have functioned largely as bedroom communities for Austin or large municipalities in the county's western half, enjoying occasional small business investment in their historic downtowns. The majority of land there has remained rural, family-owned, and dominated by dryland commodity cropping, still a leading economic sector of the county, regularly producing over one hundred million dollars in farm products yearly since 2002 on majority family-owned properties (USDA, 2002; 2007; 2012; 2017).

The Samsung Deal

Everything changed for the eastern side of the county in November of 2021, Governor Gregg Abbott announced that Samsung Semiconductor LLC, after much deliberation, had selected a site on the outskirts of Taylor, Texas for its American manufacturing headquarters representing an estimated $17 billion investment (The Sunday Sun, 2021; De los Santos, 2021). To see the exceptional nature of the Samsung deal amid a trend in techno-industrial relocations, we need only compare it with Apple's new Austin headquarters (2018) and Tesla's new world headquarters and Gigafactory (2020). Samsung outweighs each of their initial direct investments by about 16 billion dollars and is expected to generate tax revenue for Williamson County 15 and 75 times greater than Tesla and Apple respectively (Waner, 2021). The location of Samsung on the county's eastern side set a novel developmental trajectory, benchmarking a shift in mode, magnitude, and concentration of development within the county and across the region.

In the weeks following the Samsung announcement, details of the deal that secured it emerged in local and national media. The county judge told of a phone call from the governor's office with an invitation to throw his hat in the ring for a great opportunity (The Sunday Sun, 2021). Samsung was looking to build a manufacturing facility, and the competition was fierce, including sites in South Korea, Samsung's home country, as well as Austin, where it already had a facility, established in 1996. The county judge publicly attributed Samsung's choice to, "the perfect combination of outstanding schools, safe communities, and quality of life," (Gravell, 2021). However, reporters found that ostensibly, what set Taylor apart from its competitors was the size of the incentives package it assembled, worth upwards of one billion dollars (De los Santos, 2021). Three arms of local government with taxing authority signed performance agreements with Samsung making essentially abating the firm's ad valorem property taxes for the next twenty to thirty years—the entire life of the manufacturing plant (The Sunday Sun, 2021).

Samsung is also the beneficiary of state and federal funds that complement local incentives including $27 million from the Texas Enterprise Fund (Office of the Texas Governor, 2021) and $6.4 billion in federal grants through the Creating Helpful Incentives to Produce Semiconductors (CHIPs) Act (McLeod, 2024). This federal investment represents over eight percent of total CHIPs funds appropriated by Congress, which will be used to promote additional investment in the area (US Department of Commerce, 2024a). The firm is also pursuing the Investment Tax Credit from the US Treasury which could exempt a quarter of its purchases from federal taxes (US Department of Commerce, 2024b).

"Silicon Fields" Emerging

In a triumph of public-private partnership, big tech landed in eastern Williamson County in 2021. Samsung's announcement seemingly opened the agricultural landscape to development in following years as other firms were sited there in close succession including many Samsung suppliers and datacenters (Warner, 2021; Poling, 2024; Zuvanich, 2024a). Overnight, the value of land proximate to the proposed fabrication plant exploded, and eastern Williamson County properties were the target of unprecedented interest from private developers and investors. Amidst the COVID-19 pandemic, rural properties quickly began changing hands. As 2021 drew to a close, construction was everywhere, seemingly all at once, and of all kinds. A newly planned set of county highways, giant cookie-cutter industrial pad sites, housing developments from apartments to ranchettes, and even new rail depots materialized on the landscape. If you had passed through every couple of weeks, you would have found eastern Williamson County hard to recognize each time.

Williamson County is truly experiencing an economic development boom and by the account of some officials, themselves supportive of the Samsung deal, there are a lot of growing pains (Kugle, 2024). As the dust settles and gets kicked up again, the instrumental figures in the wooing of Samsung have retreated from public eye, and eastern municipalities struggle to accommodate growth while capitalizing on the promises made by firms (Osborn, 2025). Farmland closest to municipalities and techno-industrial construction struggle to maintain their operations, many sporting "for-sale" signs. As of the last agricultural census in 2022, 11% of farms, representing 32% of remaining farmland in the county had been lost (USDA, 2022).

Even though Samsung has yet to initiate full scale production as of 2025, an expanding volume of socio-environmental conflicts are emerging as towns, cities, farmers, developers, and techno-industrial firms compete in a rapidly compressing footprint to acquire all that's needed for their sustenance and growth. A chaotic and contradictory image emerges. Towns are limited by capacity to provide basic utilities and services to the populations that already live there while new techno-industrial projects are greenlit to draw on the same resources (Cardona 2021; Hernandez 2022). As existing roads fall into disrepair, millions are invested in new highway corridors to ship technology goods (Maness, 2025a). Much is rumored about the environmental track record of new techno-industrial neighbors when it comes to water quality (Thompson, 2022), and water itself is in question as hand dug wells run dry and housing developments fail to find utilities provisions (Zuvanich, 2024b). It's certainly an open question in many minds across the county as to whether promised economic stimulus is worth the facelift it's wrought.

Thesis Scope

A few key ingredients make a factory possible. You need labor to build and run it, and those people will all require housing, goods, services, and amenities in surrounding towns. You need transportation infrastructure to bring your supplies in and your products out to market —roads fit for heavy truck traffic or perhaps a convenient rail line. You need ample water and electricity to run your factory, and it would be nice if your suppliers could set up shop close by to cut down on supply chain costs. And the main ingredient, without which, there is no factory, no roads, no water or electric lines, is land. None of these ingredients existed in the necessary configurations at the time Samsung was announced in

2021 and their assembly, enabled public private partnerships which actuate local governmental powers, has resurfaced the rural landscape.

This thesis addresses the ways in which the rapidly materializing "silicon fields" has been provisioned with all necessary infrastructure, resources, and land and the experiences of the people and livelihoods displaced in the process, elucidating the temporal and procedural black box between eastern Williamson County farms and a few tons of concrete. I hypothesize it's the provisioning of agricultural land for industry that has been the bedrock for the rapid techno-industrial development, positioning farmers and rural landowners, for better or worse, the last barrier against it. I aim to provide a window into *how* exactly farmland is lost through an in-depth qualitative inquiry into the rural areas of Williamson County where change is concentrated and residents there are best equipped to describe it.

1.5. Methodology

Burawoy (1998, 5) instructs that in depth case studies can be a mechanism to, "extract the general from the unique, to move from the 'micro' to the 'macro,' and to connect the present to the past in anticipation of the future." To that end, this case may be taken to understand techno-industrial supplantation of agriculture in depth as a *specific phenomenon* occurring in Williamson county, driven by a unique set of factors manifesting locally. Yet, *transferable* generalizations may be drawn from this case to better explain the regional trend it's a part of (Burawoy et al., 1991). Therefore, the case study presented in this thesis is idiographic—focusing in depth on one case to find, "what might be common among cases," (Baxter, 2016, 134), the lessons, themes, and experiences we might take

from Williamson County to investigate and understand where and why novel techno-industrial development unfolds elsewhere across Texas and the United States so that we might anticipate and mitigate its impacts.

This study centers Williamson County's spatial and discursive municipal periphery in extra-territorial jurisdictions and unincorporated communities where the most rapid development of farmland is occurring for industry, housing, and corridor projects. It is here where experiences are most minimized in official public discourse around economic development and "progress". Taking Interstate 35 as a rough dividing line, this study focuses on the eastern, agricultural half of the county. While Samsung's 2021 announcement marked a new pace and type of development in that half of the county, I argue that the groundwork was set long before and therefore take a historical approach in this inquiry on contemporary land use change. The current lack of scholarship on techno-industrialization of rural central Texas, peripheral location of development, and minimization of rural experiences by county officials necessitated fieldwork to seek out answers. Therefore, this case study is constructed primarily through mutually informative qualitative methods. Life history interviews and with rural residents of the county was the primary method, complemented by select interviews with key informants, archival explorations, and some GIS analysis.

Key to establishing rigor in qualitative methods is the maintenance of a hermeneutic circle, which serves to document the research process and illustrates the credibility of results by iteratively checking in with both participant and interpretive communities (Burawoy et al., 1991; Stratford & Bradshaw, 2016). Triangulation is also a key part of the

process, where other sources and methods are included to "check" findings. In this case, extensive archival reviews (historic collections and contemporary news media) as well as key informant interviews (municipal government, press, business owners) and follow-ups with select life history interview participants were utilized to enrich and deepen understanding of the emerging themes raised in the initial interviews.

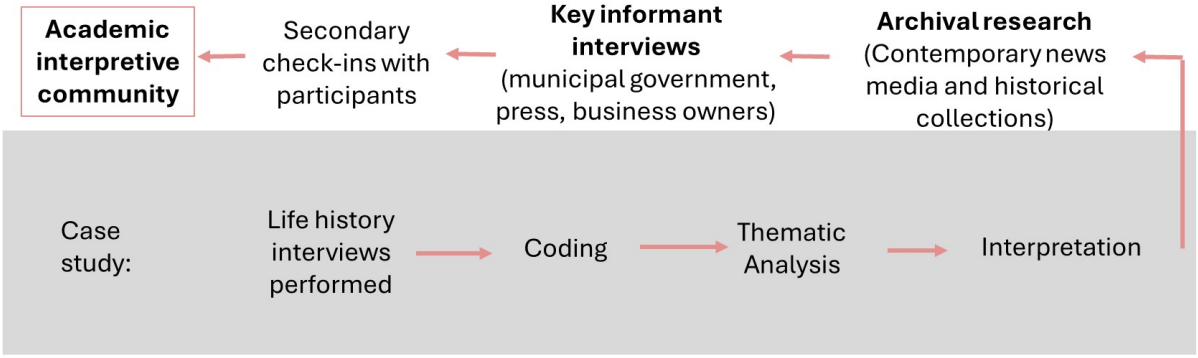

Figure 2. Conceptual methodology as represented by the hermeneutic circle: Iterative check-ins along the course of the study ensure credibility and inform future directions. Further triangulation is included in the top half of the circle to extend on and confirm accounts in initial interviews. Finally, checking in with the academic community through presentations and publishing allows for feedback and critique that inform future directions in this case study and others that will cover the same theoretical issues. Design adapted from Stratford & Bradshaw (2016, 126).

1.5.1 Interviews

My fieldwork unfolded from September 2024 to February 2025. During this time, I conducted twenty-two life history interviews with rural residents and supplementary semi-structured key informant interviews in the study area (Dunn, 2016, 150). Criteria for participation in the former was some tie to agricultural livelihoods in eastern Williamson County (farmer, landowner, rural resident). The latter participants included local government officials, members of the media, and business owners with unique insight into the growth and transformation of east Williamson County.

With 2,352 farms and 4,089 operators in the county (USDA, 2022), and certainly more rural landowners than that, a survey would have been the only feasible tool to capture a representative sample of farmer experiences suitable for statistical analysis. However, it would lack the detail I was after, as well as the opportunity to illicit deep descriptions of such a sensitive topic. Therefore, in the case, an n of 22 depth-oriented life history interviews yielded nearly more relevant details than I had the capacity to process.

Recruitment

In the first round of life history interviews, I relied on some local contacts to recruit several first participants, and from there, I was able to utilize the snowball sampling method to recruit other participants unknown to me. This sampling style was necessitated by the sensitive nature of the topic and the prevalence of distrust in rural communities (Stratford & Bradshaw, 2016). At the end of each interview, I asked participants if they knew anyone who might have insights into my research. If they did, I would accept a phone number or introduction to determine if the potential participant fit the criteria for the study, thus continuing the snowball.

A number of key informants graciously responded to cold contact in the form of emails, calls, or Facebook messages. I also spent some time at several public events like the Taylor Car Show and community group meetings and town halls like *Preserve Wilco Now!* where I observed and chatted with a number of folks about the ongoing changes and their experiences. I recruited additional interview participants through these interactions.

Over the course of fieldwork, I had more interviews available to me than I had time to conduct or process making time a limiting factor for my sample size and making it important to reflect on the potential of each participant's impact on the study before I conducted an interview. Therefore, I aimed to keep my participant pool an even mix of landowners and farmers, inclusive of multiple scales of farm operations, incorporating strata of distance from major techno-industrial development projects, varied in terms of geographical location across eastern Williamson County (and closest municipality), and varied in terms of type of development project a participant was closest to and had most experience with.

Interview Format

Life history interviews lasted up to three hours and on average took place over the course of one hour and forty minutes. They were conducted in locations deemed comfortable by the participants ranging from the rodeo to a coffee shop, to their kitchen table. Each participant was asked for permission to record the interview audio. With consent, most of the interviews were taped using a handheld voice recording device. If participants were uncomfortable with the audio recording, their responses were recorded using hand-taken notes. Unstructured life history interviews allowed for participants to share their most pressing concerns rather than those preconceived by the researcher which is crucial for a topic like this where the details of conflict and competition are largely obscured (Dunn, 2016; Stratford & Bradshaw, 2016). Additionally, the depth of these interviews gave historical insights, tapping into the lived experience of many participants who've seen and can recall the changes in the county that have paved the way for the

contemporary transformation under study. While the format of these interviews was unstructured, allowing relevant conversations to flow, I used interview guides to ensure several categories of inquiry were covered with each participant. These question categories, life history, characterizing contemporary development, roads and mobility, land sales/ acquisitions, infrastructure/ utilities, and future oriented questions as well as the themes emerging from participant's responses to them are detailed in the table below. A full interview guide including all questions can be found in Appendix B. However, it should be noted that many of these questions varied in the order they were asked to participants based on the flow of conversation and additional questions certainly arose in each interview. The guide is merely that—meant to keep the interviewer and the participant on track.

Categories of Questions	Emergent Themes
Life History	historically local food systems
	Farming in younger years
	Changes in farming
	Changes in neighbors
Characterizing Contemporary Development	Most impactful developments in recent years
	Drivers of development
Roads and Mobility	Mobility Impacts
Land sales/acquisitions	eminent domain
	Zoning for development
	Unsolicited offers
Infrastructure/ Utilities	water availability
	water access
	water quality
	flooding
	Electricity
Future Oriented Questions	Resistance
	Agricultural futures
	Identity

Figure 3. Interview Questions and Emerging Interview Themes: Each life history interview consisted of six categories of interview questions: life history, characterizing contemporary development, roads and mobility, land sales/ acquisitions, infrastructure/ utilities, and

future-oriented questions. In qualitatively coding the interview transcripts for this study, several key themes emerged related to each set of questions. For a full list of interview questions, see the interview guide in Appendix B. For a full list of emergent codes see Appendix C.

Semi-structured interviews with key informants were conducted to complement rural and agricultural experiences with urban and institutional perspectives. These interviews were likewise recorded with participant's consent and lasted on average 45 minutes. The content of these interview guides varied from participant to participant and were informed by areas of concern that emerged in life history interviews (Dunn, 2016).

Ethics

As a study involving human-subjects, I gained approval from my institutional review board prior to the start of my research (OU IRB#: 17014). However, the IRB review is understood to be limited in scope, prioritizing institutional liability over community-specific ethics (Price, 2012). Therefore, I made additional considerations to protect participants. As many rural landowners are currently or soon to be involved in legal proceedings regarding their land, and retribution from county officials is a common fear, all participants' names have been changed unless specifically requested. Furthermore, all information that could in some combination lead to deductive reidentification (Dowling, 2016) has been removed from the thesis. Finally, I instituted iterative check-ins with participants to ensure their proper anonymity and their satisfaction with my interpretations. I transcribed audio-recorded interviews and typed up interview notes from non-recorded interviews, sending copies of these records to each participant for their review. Participants had full discretion to edit, redact, or add to the record as they saw fit.

Qualitative Coding

The field notes and transcripts I accumulated over the course of my fieldwork are raw data which were processed through qualitative coding, a data processing method that facilitates synthesis where the researcher reviews the transcript documents and tags sections of text with meaningful descriptors that are recurring across records (Cope, 2016; Fitawok et al., 2023). On average, interview transcripts were 32 pages long and consisted of about 15,000 words. As this project focuses on emerging issues, most codes were inductive, meaning they were derived from the data rather preconceived and applied to the data (Cope, 2016). Codes were categorized into broader themes which organize data for analysis by identifying experiences common across interviews and organizing individual experiences. A full list of codes emerging from interviews can be found in Appendix C. The table below details the process of coding—going from a given excerpt of text in an interview transcript to a more general code, and finally to a theme that describes multiple codes.

Interview exerpt	**Code assigned**	**Theme**
"The creek always floods. But last year the water came up to the porch. That's never happened before. I was told I needed flood insurance."	Increased impervious surfaces	Flooding
"With all the things they are putting in, where is all the water going to go? Because we get big heavy rains in a short time here. Where does it go if it can't soak into the earth like it's meant to? So now I'm worried about floods."	Changing floodplains	

Figure 4. Sample coding spreadsheet: Excerpts from interviews relating to water issues that participants are currently experiencing or see the potential for are assigned a recurring code that describes a specific water-related issue. Codes are then organized into broader themes which represent four key categories of emerging water concerns in Wilco.

1.5.3 Archival Explorations

	Archive	Date Range	Address
Contemporary	Community Impact News	2005-2025	https://communityimpact.com/print-archives/austin/pflugerville-hutto/2015
	Williamson County Sun	2014-2025	https://publisher.etype.services/The-Sun/archives
	Taylor Press	2021-2025	https://publisher.etype.services/Taylor-Press/archives
	East Wilco Insider	2022-2025	https://publisher.etype.services/East-Wilco-Insider/archives
Historical	Jno Trilca Collection at the Harry Ransom Center at the University of Texas at Austin	1920's-1940's	The University of Texas at Austin, 300 W 21st St, Austin, TX 78712

Figure 5. Table of archives: A list of each archive I referred to in this project. For local newspapers and new magazines, I reviewed the entire online available archive as indicated by the date range for each. For the historical archive, I visited in person at the University of Texas at Austin's Harry Ransom Center. This archive included informative photography and documents about immigrant farming communities of Eastern Williamson County in the first half of the twentieth century.

Contemporary Archives

I relied extensively on local media archives to establish a timeline of events in recent years that led to the anchoring of Samsung and the influx of industries to follow. Of particular importance were the *Taylor Press* and the *Williamson County Sun*, the two most prominent newspapers in the study area, with *The Sun* providing countywide news and emphasis on county government and the *Taylor Press* covering eastern municipalities more extensively. In addition, *Community Impact News*, founded in Pflugerville to report on growth brought on by the completion of Toll Road 130, features invaluable reporting on

development across the county. *The East Wilco Insider*, an offshoot of the *Taylor Press,* is a monthly news magazine founded in 2022 specifically to cover the impact of Samsung and related development in the rural eastern communities of the county. I reviewed the entire digital archive of each of these newspapers, pulling any articles relevant to this study. I determined article relevance based on subject matter related to farmland loss, techno-industrial development, or any qualitative codes emerging from interviews. I read each of these articles, looking for any details that corroborated or disputed narratives from participants. I was also looking for any discourse as quoted in these articles from county officials about new development. This digital archive review was key for the triangulation of concerns identified by rural residents and to analyze official discourse used to describe Samsung and related development in the county.

Historical Archives

Some participants in the life history interviews shared personal or family artifacts with me. With their consent, I have included some historical photos and telling excerpts from letters that they were kind enough to share. In retelling the history of Williamson County agriculture, in addition to these family artifacts, I was helped immensely by the Jno Trlica collection at the Harry Ransom Center at the University of Texas at Austin. Mr. Trlica was a Czech photographer who operated a portrait studio in Granger, Texas (once a bustling agricultural town) at the turn of the century. His photography documents the agricultural economy and various immigrant communities of eastern Williamson County in the early 1900s. Furthermore, his “studio ephemera” including personal papers, pamphlets, festival

programs, and mutual aid proceedings grant insight into community and state institutions and interventions at that time.

1.5.4 GIS analysis

Lastly, I employed some GIS analysis to further triangulate participant narratives through mapping. Principally, I investigated claims about speculative land acquisitions by holding companies in the second chapter of this thesis. Participants explained that land was changing hands in areas surrounding techno-industrial development and new road construction, but that the change wasn't immediately obvious as the buyers were investment companies, waiting to flip the land. Without the land use changing yet from agriculture, I could not use remote sensing to show this trend. So, I utilized parcel ownership data from the county, filtering for changes in owner name that included "limited liability companies" and "limited partnerships". By choosing areas where I could reasonably manually exclude corporatized family agricultural operations from these filters, I was able to show a massive uptick from 2021 to 2024 in agricultural parcels being purchased by investor companies. Furthermore, I investigated claims about eminent domain for roadways triggering speculative land sales by overlaying newly constructed roadways on LLC/LP acquisitions.

1.5.5 Positionality

Essential to community-engaged social science research, is crafting a positionality statement (Mansvelt & Berg, 2016). In human-subject research, positionality delineates the space between the researcher and their participant-- identities shared and unshared which

reveal the structures of power that craft the relationship between the two (Burawoy, 1998). As indicated in the preface to this thesis, I have much more in common with my participants than perhaps is typical of graduate student research. I also have a lot at stake in this research topic. The fact that I was both from the community and was personally affected by growth and development helped me to have a rapport with the people I interviewed. Having shared experiences with the participants meant that we spoke the same language of development. Time or patience did not have to be wasted getting me up to speed about their experiences. Multiple participants in life history interviews shared that they would not have talked with someone outside of the community.

While I had a lot in common with the folks I interviewed, it is important to reflect on our differences. While my family's farm is close to Samsung, we are not going through eminent domain proceedings and there are currently none expected. If we have to sell, it will be because agriculture on our land has become unfeasible and we lose our agricultural exemption, a governmental intervention that lowers the tax rate on land participating in certain modes of agricultural production. This is not the case for a number of participants. When eminent domain comes into play, they have much less agency and are unwilling sellers. This is an experience I can only sympathize with, and I have been given a great responsibility by being entrusted with their stories. I feel a great obligation to the people who spoke with me —both as research participants, and as friends, new and old —to represent them well.

Finally, my positionality, as someone who grew up on a farm in Williamson County, certainly makes me a subjective researcher (not that an objective one exists). I endeavored

to balance my own subjectivity and connection to the problem of farmland loss by triangulating the interviews I conducted—seeing if I could articulate the same narratives of participants (which I'm biased to relate with) through other methods. Furthermore, beyond initial interviews, I endeavored to engage with participants from other parts of the county, other backgrounds, and other relationships to development, including a number of participants and key informants who live in municipalities.

1.6 Description of Chapters

Chapter Two | Preconditions to development: Historical devaluation of prime farmlands

As we conceptualize land use change in Williamson County, the most obvious question is why agricultural land that retains high productivity is so easily acquired by firms. I hypothesize that in part, this answer lies in the restructuring of the rural economy and community over the twentieth century (Friedmann & McMichael, 1989; Goodman et al., 1987). Putting participant narratives in conversation with food regime scholarship, I identify key transitions in the agricultural landscape that have made it less resistant to change including the decoupling of local food production and commodity production once co-located on farms and the decline of collective practices. Yet, I find that farmers have exercised personal agency to adapt and maintain profitability and continuity of family-run operations despite economic restructuring and the multi-dimensional devaluation of their land and livelihoods. Therefore, despite its continuity, the place of agriculture in the county's identity is consigned to heritage. I find this consignment to be a key precondition for the pace and volume of farmland loss post 2021.

Chapter Three | Mechanisms of Displacement

Chapter two covers the clearing out of rural east Williamson County to make room for industry and its needs. I draw on neoliberal governance scholarship, participant narrative, and contemporary archives, to identify the mechanisms that contribute to farmland loss and agricultural livelihoods. I find that while private land dealers, developers, and investors are certainly at work in the county, it is public governmental mechanisms that provide an opening for change. I account for these mechanisms in two parts—visible and obscured. Beginning with an accounting of visible mechanisms from contemporary archives, I highlight the levers of local government that are pulled explicitly to lure industry to the county and to provide the necessary resources for its reproduction. Then, drawing extensively on participant narratives, I provide rich documentation of the dynamics in play leading up to land changing hands, clarifying the "black box" in which landowners are prompted to sell. Public mechanisms of displacement range from the direct use of eminent domain (especially for the routing of highway corridors) to a variety of indirect factors that chip away at the feasibility of farming and reveal apparent contradictions in the justifications for the public development taking place across the rural landscape. I find that in most cases, acquisitions, and the projects they support, are intentionally obscured. Furthermore, they are careless of farming continuity. Finally, they are speculative in purpose, a characterization which stands in contrast to the official justifications for such projects.

Chapter Four | Emerging impacts: Scarcity in the "Land of Good Water"

Following the chaotic picture of land use change in chapter two, I ask what socio-environmental conflicts are already emerging. Given the limited length of this format, I focus on conflicts relating to one resource—water—which I hypothesize should be the next limiting factor of development behind land. Already, provisioning of water has triggered a great volume of concerns related to competition in the county relating both to scarcity and overabundance. I complement commonly occurring concerns identified by interviewees with contemporary media archives to index a list of twelve distinct emerging water issues in eastern Williamson County, each with their own histories and implications. I draw on neoliberal natures and governance scholarship to analyze emergent socio-natures of both of flooding and scarcity in the county, finding several policy pathways that enable various actors to circumvent scarcity and a power gradient which corresponds to the ability of an actor (city, housing development, firm, individual) to access water in the quantities they require. I find that the visible mechanisms which brought firms to the area were not the end of public-private partnerships, now functioning to circumvent scarcity preferentially.

Conclusion | Speculating on futures

Following a summary of the chapters, I conclude this thesis with two activities that meet the emerging concerns raised in chapter three by speculating on the future. First, I highlight a comprehensive development masterplan, a key planning document recently adopted in the eastern Williamson County municipality of Taylor, which provides frameworks for growth and demonstrates possible measures available for cities to govern

it. Second, this thesis concludes with a brief practice in futuring. Drawing on responses from interview participants, I speculate on alternative futures for east Williamson County other than that of a built-out techno-industrial corridor, utilizing Whyte's (2021) framework for epistemology of collaboration as a guide.

CHAPTER TWO | Preconditions to development: Historical devaluation of prime farmlands

"*The Czech frequently uses an endearing term when he speaks of land-- 'the good mother earth.' He looks upon the land as his benefactress and feels that he must repay the land with care and labor…to them, the farm is not a speculative enterprise but is valued as an asset to be cared for and built up in productivity,*"

-Robert Skrabanek, *The Influence of Cultural Backgrounds on Farming Practices in a Czech-American Rural Community*, 1951, p. 263

Cult of the soil

Growing up, I loved playing sports, and I was put in everything. I've been a little duck for Kiwanis basketball, a lady hippo for the track and field team, and even a pink cheetah once for youth softball. I've worn a lot of uniforms, but the one that really stuck for me was volleyball. Fortunately, there was a local club team that practiced at the high school gym, and for four years, my jersey didn't sport an animal. I played Blackland Volleyball, and the soil was our mascot.

The Blackland Prairie ecoregion, a thin strip of some of the most fertile land in the country extends from the high plains southward, where it thins and terminates just south of Williamson County (Mathewson, 2015). The county's biogeography is divided in two by the Balcones Fault line, roughly demarcated today by Interstate 35. West of I-35 is the karst hill country and eastward are the flat expanses of characteristically dark-black, nutrient rich soil punctuated by plentiful creeks, rivers, and springs flowing from the westward hills (Stearns Scarbrough 1998). That rich black soil, affectionately known as "black gumbo" (White, 2006) or the "black waxy" (Scarbrough, 2005), is many thousands of years in the making. Back a ways in geological time, Texas was not Texas, but a shallow ocean, rich with marine life, living, dying, and over time becoming a part of limestone bedrock that today

sits below the Blacklands (Mathewson, 2015). As well as forming the aquifers of central Texas, the ancient erosion and weathering of this bedrock provided the basis for mineral rich soils today (White, 2006).

Prior to agriculture at scale, the Blackland's were home to prairie ecosystems which created and maintained the soil through thousands of years of complex relationships between mycorrhizae, bunchgrass, bison, climate, and Indigenous fire stewardship (Dowhoser, 2021; Samson and Knopf, 1996). Thousands of years of accumulated organic matter, bison disturbance and fertilizer, and carefully managed Indigenous fire regimes built a rich, deep, and life-giving topsoil (Stearns Scarbrough, 1998; White, 2006). As an added nutrient bonus, periodic floods have long replenished the eastern lowlands with lush alluvial deposits (Scarbrough, 2005).

Clearly ideal for agriculture, the Blackland's are well known for continued fertility (Scarbough, 2005), somewhat resistant to the well understood impacts of modern farming on the degradation of soil health (Weiss, 2007). The soils are heavy, water retaining, and naturally cycling (White, 2006). Capable of holding a great deal of moisture, the soil acts as a reservoir for prairie plants and crops alike during dry spells. The heavy clay in the Houston series also retains organic plant matter so that soils are not so prone to leaching of nutrients, even during the course of annual tilling, a process the soil itself engages in. Great cracks, maybe better described as crevices, open in the clay during the dry season--perfect for breaking ankles or losing a small child in. When the rains come, organic matter from the surface is washed into the cracks and forced downwards in typical vertisol cycling. As White (2006, 36) describes, the natural shrinking and expanding of the soil

causes it to behave, "… like waves on the sea moving in slow motion…" constantly mixing organic materials from the surface with minerals from the bedrock below, just like a big pot of soil gumbo.

In the 1950's, on the same land where now twelve hundred acres of Samsung concrete sits, "…it was said that a competent farmer could make a handsome living on topsoil forty to sixty feet thick," (Scarbrough, 2005, 4). Go too far west and you hit rocks, too far east and it's all sand and forest. But in the middle was a sweet spot where you could nearly make a living by accident (White, 2006). Many hands worked the Blackland soil of Williamson County. The Tonkawa tribe hunted and farmed in eastern Williamson County up until their forced removal to Fort Griffen in 1884 by the American settler state (Tonkawa Tribe of Oklahoma, u.d.). Likewise, the Lipan Apache farmed on the western side of the county prior to the Texas government breaking treaties with the tribe which prompted a diaspora of Lipan Apache bands enforced by state violence (Lipan Apache Tribe of Texas, u.d.). Following white settlement in the 1850s, some plantations, which relied on the labor of enslaved people, were established in the county, and the majority of agricultural labor force was composed of Mexican Americans and newly arrived European immigrants working as sharecroppers or tenant farmers (Odintz, 2021).

At the turn of the century, the eastern half of Williamson County was one of the most productive farming regions in the United States. Cotton was king in Texas and Taylor was the inland cotton capital of the world. By that time, many of the tenant farmers who populated the area were newly arrived immigrants from Eastern Europe, where they lived as landless agricultural laborers under oppressive regimes (McCandles, 1992; Skrabanek,

1951). Particularly organized and tight knit was the Czech community. Often indenturing themselves to make the trip, their Old Country agricultural knowledge combined with fertile land and the prospect of property ownership led to experimentation, innovation, and enterprise on their farms and a cult-like appreciation termed by local scholar, Linda Scarbrough (2005, 23) as "land worship… a reverence for the soil that is hard to exaggerate and difficult for modern Americans to comprehend," (emphasis added).

For local food systems, commodity agriculture, and rural communities throughout the twentieth century, the dark black soil is the main character. Although eastern European immigrants faced ethnic prejudice, they escaped racial discrimination. After a couple of generations, they were able to assimilate, and many were able to purchase the farms they'd once worked for others. The eighty-to-hundred-acre farms that supported these families through the first part of the 20th century have largely been passed down, and in the last Agricultural Census, 96% of all operations in the county were still family run, down just 2% from the last count in 2017 (USDA, 2022). To this day, soil is revered by people participating in agricultural livelihoods, and the shame of removing it was a common and unsolicited subject from interview participants. More than one likened the covering up of any large stretch of it to a criminal act. The people of east Williamson County are proud of their soil—proud enough to put it on a volleyball jersey, anyway.

I opened with this lengthy description in response to Edelman and Wolford's (2017) call to recenter the biophysical and social lives of soil in critical agrarian pursuits. A better understanding of soil contextualizes why losing land for an east Williamson County farmer is so much more than losing an economic investment. As I trace the erosion of rural

identity and community alongside the global restructuring of agriculture in the coming chapter, it is imperative to keep the soil at the front of our minds.

2.1 Introduction

As discussed in the introduction, part of what makes the case of farmland loss and techno-industrial development in eastern Williamson County unique is the scale, location, and breakneck pace of land use change. The key prerequisite to the development of Samsung's anchor factory and the techno-industrial corridor quickly manifesting around it is the apparent ease with which rural land can be acquired. Despite official narratives that portray this rural land as open, vacant, or underutilized, it is owned as private property and is actually quite full—of homesteads, communities, and agricultural businesses that have operated there in many cases for at least a hundred years. Therefore, the birth of "silicon fields" is premised on the clearing out of Blackland farms. The subsequent two chapters deal with the specific contemporary mechanisms utilized to displace agricultural livelihoods and the emerging impacts of that displacement. However, I show that some predispositions to development existed in eastern Willaimson County, which set the stage for the rapid pace of change we see today, long before any incentives package was pitched, no matter how aggressive. To get the full picture, we need to understand the precarious state of farming and the ways in which agriculture is devalued leading up to the arrival of big tech.

In this chapter, I utilized archives, participant narratives, and food regime literature to answer my first research question in the context of Williamson County:

(1) What historical processes explain how prime agricultural land in the U.S. becomes vulnerable to conversion to non-agricultural industrial uses?

In this chapter, I position the contemporary state of Williamson County agriculture in the context of its vibrant history in two parts. In part one, I elaborate on the interplay between individual agency and the structures that have made the agricultural economy vulnerable to destabilization in spite of the land's continued natural fertility. I argue that the national restructuring of the agricultural economy as described by the second (Friedmann, 1982) and third (McMichael 2009) agri-food regimes has resulted in the reorganization of Williamson County's rural communities and economies as well as the farm itself, making the county's overall agricultural landscape less resistant to change over time. In part two, I account for the state of the rural landscape in the lead up to 2021, identifying critical thresholds for change. I also illustrate how agriculture, once central to the county's identity, has been made marginal even though farming is still a major economic boon[1] , a livelihood embraced by new generations, and a place for creativity, ingenuity and adaptation in the face of economic and environmental change. I argue that this marginalization results in a devaluation of agricultural land structurally, practically, and discursively, and that it is this devaluation that makes farmland and by extension, Blackland soils, vulnerable to supplantation.

[1] According to the last agricultural census, farms in Williamson county generate products worth about $96 million every year (USDA, 2022).

2.2 Restructuring of agriculture: Illustrating precarity

Since its founding, the dominant economic activity and source of sociopolitical power in Williamson County was agriculture (Scarbrough, 2005). Today, it remains a large economic sector in the eastern part of Williamson County (USDA, 2022), but it is a far cry from the lively scenes of the 1920's cotton trading days when there were gins in nearly every town, more local grocers (supplied by local farmers) than you could count on one hand, and ample investment and amenities even for the smallest communities[2] (Stearns Scarbrough, 1998; McCandles, 1992). The changes in Williamson County agricultural economies over the twentieth century are partially accounted for by the global restructuring of agriculture characterized by standardization of operations, decreased variety in products, increased productivity, and globalized markets which are driven by industrially produced synthetic inputs and state intervention (Friedmann and McMichael, 1989; Whatmore, 2002; Mann, 1990; Goodman et al., 1987).

Scholars of food regime studies from the perspective of cultural and political ecology conceptualize changes in the global agri-food system as being modulated by tensions and entanglements of institutional structures and individual agency (Borras 2009, 9-12; Friedmann, 2021, 18; Bernstein et al. 2018, 689). Specific attention is paid to the systemic forces that affect the lives of rural people (Sutton and Anderson 2010, 26), but this attention on systems comes in tandem with considerations of human agency,

[2] Granger, Tx for example, with a population of less than 2,000 became the first town of that size to gain paved roads in the nation. It also had multiple hotels, department stores, banks, newspapers, and even an opera house (McCandles, 1992; Scarbrough, 2005)

characteristic of cultural ecology (Gezon 1997, 644). Therefore, I organize my historical analysis of the restructuring of Williamson County agriculture into structural changes predicted by food regime literature and local responses to those structures which illustrate the ways that land and agriculture are organized across rural space in the lead up to 2021.

The farmers of Williamson County have participated in global markets since the 1850s, growing cash crops, primarily cotton as well as milo, corn, and winter wheat (Odintz, 2021). Taylor, once the county seat, economic center, and most populated town gained local power and global recognition prior to twentieth century restructuring due to the geology, climate, and plentiful water tables of the Blacklands that set its production capacity apart from other areas. However, the post war period brought new inputs and novel mechanisms of state intervention into American agricultural production that leveled the playing field (Friedmann and McMichael, 1989). In essence, the production of a crop over time has been extrapolated physically and economically as much as possible from the naturally occurring conditions where it is grown (Mann, 1990). As such, the extreme fertility that made Williamson County stand out at the turn of the century were less and less important over time for competitive production. Through life history interviews and historical archives, I trace how agri-food structures, namely the addition of synthetic off-farm inputs and fluctuation in state support, have altered production over the last century.

2.2.1 Synthetic Off-farm Inputs

Where the factory is controllable as a closed system, the farm evades such standardization and predictability; therefore, it has been a great preoccupation of agro-

industrial production to bring natural variability in check. To that end, over the course of the last hundred years, agriculture both globally and in Williamson County has become increasingly characterized by its inputs that are produced off-farm by corporations (Kloppenburg, 2005):

Agro-chemicals

Through synthetic chemical fertilizers, natural nutrients and soil health became less important for production (Goodman et al., 1987). Likewise, pesticides and herbicides applicable by backpack sprayer, tractor, or crop duster made careful weeding and on-farm pest management unnecessary (Weiss, 2007). In 1930, only a fraction of one percent of farms utilized any kind of fertilizer in Williamson County (Templin 1938), and by the end of the century it was ubiquitous (USDA, 2002). Most of these chemical inputs have their origins in chemical warfare as companies searched for new markets for their creations at the close of World War II. In his classic book on the rise of the turfgrass industry, Robbins (2005) describes a process where chemical additives actually impoverish soil health, and prompt future plant growth to require more artificial interventions to thrive, known as the "chemical treadmill" which Weis (2007) confirmed in agricultural settings. While they may come with temporary boosts in plant productivity, externalities of agrochemicals are well documented globally, despite the chemical industry's huge investment in fighting lawsuits and creating scientific studies to prove that the chemicals they manufacture are not residual in ecosystems or cancer causing (Robbins, 2005).

Local farmers, including those interviewed, were certainly aware of the impacts of these additives on the environment and on health, as they and their families are on the frontline of its deployment. Yet, regardless of the participant's risk perception of chemical additives which ran the gamut, all agreed that the subsidized agriculture they practice makes it impossible to opt out. Below, one participant describes a poignant memory from the time when chemical inputs were being introduced in east Williamson County, demonstrating the impact of chemical applications on the environment and local agriculture production. Herself a farmer, she shares a lament for worms after she moved closer to town:

> "*I'd be working in the yard- this used to be a field- and say, 'Where are the worms?' I had no worms. The fertilizers and the insecticides had killed all our worms. So, when the boys would go fishing down to the creek and they'd have to go to the store to buy worms, I said, 'Bring me all your worms back.' Because I need to get worms started in this dirt, you know? Which- once you put a lot of mulch and things, it got richer again. So I was able to have worms. But I missed the worms. Little things like that that, you know, we took for granted back then. And then all of a sudden, where is it? You know, it's called progress. Now we have fertilizers and poisons and all that. Which is not good, in the long run. You know, even the smell of dirt. That used to be… oh, the best smell when they would be plowing in the field or we'd plow up the potatoes. It was such a good, clean smell. And there's no smell like that anymore in the dirt. It's so sad. Those little things that we miss, we really do. And my kids, grandkids, especially great grandkids, they'll never know that, you know?"* (Bell, 2024)

GMO Seeds

In addition to novel chemical inputs, the most essential component to production has been abducted from the farm and confined to corporate laboratories from whom it must now be purchased (Wattnem, 2016). The seed, the most basic unit of a farm's success, contains within it the power of its own reproduction, a natural process that has been ended over the course of the twentieth century (Weis, 2010; Pescahrd and Randeria, 2020). The genetic code for commodity crop seeds has been patented and a biotechnology industry has emerged, preoccupied with the development of varieties more resistant to variations in the environment like pests and drought (Goodman et al., 1987). This process has resulted in the decline of heirloom and hand bred crop varieties, traded in for genetically modified ones, often synthetically produced to pair with specific brands of chemical pesticide (Wattnem, 2016).

Interviewees who grew up on east Williamson County farms agree that though it was sometimes supplemented with purchased seed, it was standard practice in the New Deal Era and prior to save seed from year to year. Those who still farm today do not engage in that now criminal act, and they remarked on the rising costs of everything on the farm, including seeds. While inflation has certainly impacted seed prices, agro-industry suppliers are well known for monopolistic practices and price setting as they hold the seed patents. Seeds, which only ever cost time and labor at the start of the century, are a novel and expensive line item by the end of it in Williamson County.

Heavy Machinery

These inputs are interlinked and based on a production mode that necessitates increasing advancements in mechanization. For example, many commodity seeds are genetically modified to resist a certain brand of chemical herbicide and to grow at a standardized height to match combine specifications. Kloppenburg (2006) emphasizes the role of mechanization and biotechnology developments on the changing organizational structure of a farm that over time requires less labor. Likewise, heavy machinery in Williamson County agriculture has seen a lot of change over the last century (Templin, 1938). Many of the farmers I interviewed described the transition from two to four row tractors, and on bigger and bigger, as they could afford upgrades over the course of a couple generations.

At the turn of the 20th century, labor was highly manual and required in a much greater volume, becoming a family affair and often involving migrant farm labor or other hired labor for acute periods, such as harvest. Folks in their seventies and eighties recalled chopping weeds in the fields of their parents' farms, just as those who were growing up in the late 1970s did. There was always an after-school job, always a farmer looking for hands. Nowadays, interviews explain that tractors have been modernized, often with closed cabs, protected from the elements. They are also increasingly computerized, even equipped with GPS guidance systems to ensure straight rows. As one participant shared, being a farmer means being a mechanic too, and now, that's come to include being somewhat of your own IT person.

These advancements from farming technology companies bring increased reliance on the dealer and decreased autonomy for the farmer over their own equipment. Therefore, tractors and other farm implements have long been a fixture of the "right to repair" battle, which is the justification for the latest lawsuit against John Deere by the Federal Trade Commission in January of 2025 (Rimmer, 2025). The need for farmers like those in Williamson County to halt operations and bring a tractor back to the dealer is a new expense— both for the cost of the repair, traditionally handled on-farm, and for the time lost in the field.

Beyond the cost of maintenance, mechanization has made farming at scale increasingly cost prohibitive. Well into the 1960s, young men and their young families routinely bought small tractors and started successful careers as farmers. However, nowadays, as multiple participants explained, when a combine costs almost a half-million dollars, you'd just as soon be born into a family that already has one if you are intent on a career in farming.

Irrigation technology

Perhaps the only novel input of the second agri-food regime to skip Willaimson County is that of irrigation technologies which freed food production from precipitation limitations, making dryland farming a less productive alternative (Davis et al., 2018; Jägermeyr et al., 2016). Although a few small pecan orchards in the county are irrigated, there was never a need to irrigate row crop farms as water was abundant. However, the proliferation of the technology elsewhere did have indirect impact by making production

comparatively less high than in water-stressed regions and chipping away at the uniqueness of the county's production capacity.

More inputs, more expense

As many farmers explained to me and as is evident in the literature on the subject, growing subsidized crops is the only economically feasible mode of production in Williamson County. Growing subsidized crops necessitates the purchase and use of the industrially produced inputs described above. The addition of the "off-farm" descriptor is quite intentional as it connotates financial cost. Anything not produced on farm must be purchased, and as Darwin Machu, who grew up farming in eastern Willaimson County humorously describes in his autobiography, agriculture has become a much more expensive endeavor since the 1950s:

> *"When Daddy planted, using mules and a horse, it didn't cost any money at all to plant the crop. The mules and horses ate feed right out of the barn, so we had no fuel cost; the seed was used right out of the barn [where it was saved from the previous year], so we didn't have to buy seed; fertilizer was cow manure and chicken manure, of which we had an unlimited supply, from our chicken house and barn, so there was no cost for fertilizer. Cultivating crops three times [per season] cost nothing, other than putting in a lot of hours of hard work.* ***Income off the crop was pure profit***. Times have changed," (Machu, 2012, 33; Emphasis added)

Machu is right that times have changed and so has the farmer's bottom-line since he wrote his book. The last Agricultural Census reports that since 2017, production expenses rose seven percent resulting in a decrease of net farm income by two hundred and eighty-one percent in Williamson County (USDA, 2022). In the same period government payments in

the form of subsidies fell by thirty-five percent, illustrating the power of the other structural force at play in the county— state intervention.

Stats:	2002	2007	2012	2017	2022
Total across the county					
Market value of products sold	48,396,000	190,391,000	129,648,000	114,923,000	95,687,000
Government payments	3,057,000	5,108,000	3,659,000	6,359,000	2,521,000
Farm production expenses	60,933,000	160,020,000	124,135,000	123,085,000	118,108,000
Net cash farm income	-11,366,000	39,298,000	16,783,000	7,583,000	-12,273,000
Per farm average					
Market value of products sold	18,484	69,792	51,002	43,631	40,683
Government payments		7,276	5,485	13,387	8,754
Farm production expenses	24,209	58,658	48,834	46,729	50,216
Net cash farm income	-4,156	14,405	6,602	2,879	-5,218

Figure 6. Williamson County Agricultural Summaries: Data compiled from USDA Agricultural Census reports showing the per farm average and county total accounting of farm expenses, subsidies, and income for the last 20 years of available data.

2.2.2 State interventions

New Deal Era

In 1930, ninety percent of Williamson County farms predominately produced cotton (Templin, 1938). Cotton peaked nationally in 1929 as the Great Depression struck, the boll weevil wreaked havoc, and the Great Migration unfolded across the American South (Hart,

1977). However, at that time, Williamson County cotton remained productive, and corn was an implausible alternative as it was well understood that the county was too hot and too dry during critical growth phases (Templin, 1938).

Everything began to change for cotton in Williamson County when a group of businessmen and politicians conspired to "make corn happen" in the American South. This effort culminated with the Texas governor declaring corn a "national defense requirement," and calling on, "the citizens of Texas to join [him] in proper observance of this [his newly declared 'Corn Week'] by using corn products and attending, if possible, the Texas State Corn Carnival in Granger," (Stevenson, 1938). Over four annual carnivals, the population of Granger, Texas would periodically increase tenfold when over 20,000 people showed up to do just that. The first such event south of the Mason-Dixon Line, the idea was to simultaneously sell the cotton farmers in one of the South's most productive regions on changing their crop and to sell the close by central Texas cattle ranchers on the notion that they should be the market for that crop. It was all about trend setting to entice somewhat of an ideological shift-- to build a corn-growing culture where none had existed before.

Details of the carnivals are preserved in Jno Trlica's collection at the University of Texas at Austin[3]. Corn Carnival featured corn in every conceivable way. Visitors participated

[3] Himself occupying space on the margins of society as a second-generation Czech, Trlica's work is quite renowned by historians for capturing the diversity of people and activities in Williamson County. In what was surely a radical act, he photographed any paying customer providing an extensive archive of portraits that document working class Black, Latino, and immigrant communities in early 1900's. His studio portraits, which he is best known for, make up most of his collection, featuring community organizations, couples, weddings, families, and confirmation classes of every race. He was also a photographer about town, documenting all major happenings- festivals, disasters, harvest days, and even a

in a variety of corn-promoting activities including a corn picking contest, corn shucking contest, tours through a corn demonstration garden, a corn parade, and even the crowning of a corn queen. Cotton was portrayed as a thing of the past and corn was declared the new king. All the while, educational programs and written materials circulated informing mostly newly arrived immigrant farmers on how to grow corn and about their obligation to do so as a matter of national identity and defense.

Figure 7. Corn Carnival Collage: Images from the Second Annual Texas Corn Carnival program in 1939. On the left is the cover of the 36-page program. Center is Viola Peshcel, a young woman crowned "Corn Queen" in the beauty pageant. Upper right is the symbol of the carnival featuring its slogan, "Make corn first in Texas." To the lower left, a band is pictured performing in the Corn Parade. (John Paul Trlica Papers and Photography Collection, "Studio Ephemera", Harry Ransom Center, The University of Texas at Austin).

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miraculous ear of corn said to display a sacred cross. As interesting as his photography was, I found his "studio ephemera" just as informative as he'd saved many pamphlets and bulletins from events that tell the discursive history of agriculture in the county. Trlica's "studio ephemera" includes dutifully collected pamphlets from each of the corn carnivals and extensive documents from Czech mutual aid societies around the time they were founded which I draw on extensively in this chapter.

New Deal era state interventions are well exemplified by events surrounding the dethroning of cotton in Williamson County where a massive investment was made to coerce change in agricultural production. Maybe less exciting, but more influential was the rise of agricultural extension offices, crop insurance, farm loans, and subsidies (Bruckner, 2016). As Friedmann (1982) writes, these extensive policies kicked off the second food regime following the Great Depression with the original intent to promote soil conservation practices by financially incentivizing farmers to rest fields and avoid another Dust Bowl. However, the political apparatus created in the New Deal persisted to modern day, codified in the farm bill. Whatmore (2002), instructs that states, often prompted by and in concert with lobbyists representing the agri-food industry have shaped what is grown, where, and in what quantities through such interventions. In the US, the state is positioned as the key arbiter of American grown commodity crops on the world stage as the setter of minimum prices, the buyer of surplus production, and the negotiator of international trade policy that controls the only markets commodity producers can participate in. State intervention in agriculture has shifted over the course of the last century in line with Friedmann (1982; 1989) and McMichael's (1989; 2009) three agri-food regimes from soft power in the Corn Carnival days, to substantial financial incentives in the midcentury, to disinvestment by the end of it.

The Farm Bill

American government interventions in agriculture are articulated every five years in the Farm Bill which is passed by congress and handles the continuity of all national agricultural policy (Johnson and Monke, 2024). This omnibus bill is highly contested and

subject to the swinging pendulum of politics, often containing measures equally disputed and despised by both political parties with farmers caught in the middle.

For the average farmer in Williamson County growing subsidized crops[4], the Farm Bill and the state interventions it enshrines have structured their livelihoods, viability, and continuity since its advent. If the Almanac is the Old Testament, outlining the laws of nature that direct the process of farming, the Farm Bill is the New Testament, where the wrath of nature and market failure may be forgiven financially by the state so long as man keeps their covenant to practice farming in the prescribed ways. Therefore, as interview participants indicate, farming has meant being adaptable and finding continuity on shifting ground, even if little has changed in terms of productivity on their own farm. Growing a successful crop is one thing but selling it at a good price is another. As one third generation farmer testified to the House Agriculture Committee earlier this year, "…farmers are 'price takers', not 'price makers,'" (Schwertner, 2025). They find themselves in a system that promotes certain modes of production all the while threatening to at any time withdraw that support. A farmer, in Williamson County or elsewhere, over the course of the twentieth century has not been able to control the cost of off-farm inputs (Kloppenburg, 2005) or the price they receive for their product, which has been decreasing or stable (not accounting for inflation) since the 1980s (Weiss, 2007). As such, the success of their endeavors

[4] Today, there are five main subsidized crops: corn, cotton, wheat, soybeans, and rice which take up the majority of America's cropland (Bruckner, 2016). The three major crops in Williamson County are corn, cotton, and milo in order of decreasing volume (USDA, 2022).

relative to their peers is determined entirely by what they can control— their agency to adapt creatively to retain their bottom-lines.

2.2.3 Individual Agency: Mitigating precarity of agricultural livelihoods

While the options available to farmers are limited by the structures laid out in the previous section, a farmer still exercises a great deal of agency in mitigating those structural limitations in order to continue from year to year. Farmers and landowners of all scales articulated examples of this best summarized by making the most of the choices you do have (timing of a sale, crop, crop variety, etc.), scaling up the size of the farming operation (taking on more leases), maintaining a family labor structure (both for owners and operators), and diversifying operations (adding grain storage, trucking, etc. on-farm). In these ways, farmers and landowners have adapted to the economic restructuring of their livelihoods to continue running profitable operations.

Maximizing Available Choices

While the farmer cannot determine the price of their goods or what it costs to produce them, they can choose *when* to sell. In fact, as farmers and landowners indicated, this is a learned skill. For example, in family letters shared with me by a participant from a mother to her son, away at college in the 1970s, nearly every weekly letter begins with the latest accounting of the commodities market, the opinions of every respected member of the extended family on whether it was time to sell, and a solicitation for advice on the subject. As if gambling on the growth of crops itself was not fun enough, farmers and landowners really have a hay day playing the market.

A farmer's ability to play the game, which is composed of essentially one move, selling at the time of their choosing, is determined by their financial reserves— how long can they wait before getting paid? After all, as Rebecca, a farmer's wife, emphasized, farming is a job with only one paycheck a year. A farmer must be able to sell their crop prior to the start of the next growing season in order to finance it, not to mention budgeting all personal expenditures for the next year. Within that time between harvest and next season there exists a window of opportunity to get the best price for their crop by choosing the exact right day to sell while tomorrow teases with the possibility of a better price. Keep in mind, all the time a farmer waits also chips away at their earnings as they may be paying storage fees at a local granary and shrinkage of the crop due to moisture loss is a product of time. You might be surprised at just how plugged in some farmers are to media and politics—they understand their window for a good deal is a consequence of international markets and all the sociopolitical factors influencing them.

In addition to controlling the timetable of a sale, a farmer exercises a great deal of agency in the choice both of crops and of variety. Careful examination of weather and climate patterns informs whether it could be a year to supplement their corn with wheat or milo. And, amongst corn varieties, each year brings new GMOs promising innovative levels of adaptation to the environment. Interviewees explained that a monocultured corn field may look identical to the next one, when in reality, it may well be an entirely different variety. Being well-studied and well-tutored by their forebearers on how to navigate these complicated decisions is key to success and beneficial risk taking on the farm.

Expanding operator corridors

However, farmers interviewed explained that the greatest determining factor in maintaining profitability and ensuring they have enough income for the year is simply increasing the amount of land they farm. While median the parcel size of Williamson County farms has remained relatively stable over the last half of the twentieth century at about 85 acres and family ownership has largely been retained (USDA, 2002; 2012; 2022), the *act* of farming those parcels is perpetuated by fewer and fewer families. Where participants agreed that for the first half of the twentieth century, a large family could make a living farming just their own 80–100-acre parcels, they say that by the end, a full-time farmer may need to farm thousands of acres to support a family with two or three kids.

Today, eastern Williamson County farming operations are organized in tracts which contain many family-owned parcels. Owners and operators typically employ the system of thirds (or sometimes fourths), where a farmer and landowner split the cost of inputs and share portions of the crop. Many of these agreements go back several generations between families of owners and families of operators. Less commonly, operators engage in a cash lease where a farmer pays the landowner a fee up front, taking on the entire cost of inputs, taking home the entire crop, and bearing the entire operational risk.

While the size of farm parcels has not changed much, the number of farmers, those actively doing the labor of production, has decreased. Yet, the size of farming operations remains diverse and includes many smaller ones where the farmer likely works another day job and farms at night or on weekends. In larger operations, the farming family works full

time in agriculture and has a major investment in equipment. Two farmers interviewed in a local newsmagazine in the 2010's after the completion of the 130 Tollway corroborated these trends observed by participants:

> "*Now you need to farm 2,000 or 3,000 acres to make the same living as someone who was farming 500 acres. The tractors are so much bigger and pretty expensive,' Kuempel said. 'Forty years ago, we had a four-row planter; now there's a guy who has a 26-row planter'"* (Hal Kuempel, 2011).

> *"In his 40 years of work, Fritz said he has seen a decline in the number of farmers and ranchers in the area. 'There certainly aren't as many [people] as there used to be making a living off farming and ranching,' he said. '[I think the cause is] urban sprawl, and farmers nowadays have to farm 1,000 acres instead of 100 [to make a profit].'"* (Jonathon Fritz, 2014)

Maintaining the Family Enterprise

As Weiss (2007) explains, the third food regime can be described for farmers as "get big or get out," which has led to the conception that corporate farming has become dominant in the United States. However, in much of the US, family farms remain an institution, accounting for 98% of all farms and 88% of all production (USDA, 2019), including in Williamson County where 96% of farms are family owned and even the largest farming operations are family run (USDA, 2022). Mann (1990) theorizes the persistence of the family farm could come down to natural variation that presents unacceptable risk, natural properties that can make family farm yields competitive with corporate ones, and a set-priced system that does not present an enticing return for corporate ventures. In Williamson County, farming operations remain a family affair scarcely hiring farm labor (USDA; 2022). Therefore, family operations have shown incredible adaptation to systemic

changes, finding ways to scale up over such a short period-- producing greater yields with less labor in exponentially larger farming corridors with the same amount of time in the growing season.

Much agrifood industry literature in the United States points to the evolution of farm machinery as the impetus for a decrease in demand for farm labor. A number of participants challenged this notion, expressing just the reverse. “As you have less manpower, you have to have bigger equipment,” (Rebecca, 2024). Labor availability directly influenced the decision to upgrade to bigger equipment. As they conceptualize it, smaller family size over the course of the century and the related decrease in dependable labor from outside the family combined with increasing size in farm operations is often what precedes upgrades. As a farmer gets older, and as their principal employees (their children) may move on, they have less and less connections in the community to reliable labor; for instance, they may have used to hire their kids’ friends from the local high school. As a farmer takes on more land to make the bottom-line, but their labor inputs do not change, they need larger equipment to get a bigger job done in the same amount of time. Therefore, changing structures of rural community play an active role in accelerating mechanization of farms in Williamson County.

The tight-knit bonds that characterized farming in the early 1900s are still evident today in operations where everyone from the smallest child participates in some way. Even today, it’s not at all uncommon to find kids ten years old or younger operating heavy machinery during harvest. Throughout the twentieth century, women have had far greater roles in family operations than just bringing meals to the fields. Bell recalled riding the

cotton stripper with her husband to remove the stalks when they farmed in the 1970's. Others described contemporary experiences of alternately providing meals or being called out to move equipment after their day jobs (which provide the family's health insurance), and still others operate solo in the fields today.

During planting time, farmers work against the clock to get their seeds started as soon as possible, but they are also working against the weather. A big rain could wash out what they just planted or could prevent them from moving equipment for the mud. Therefore, when conditions are right, they need to get as much done as possible. It is very common during planting or harvest to see equipment going into the wee morning hours and all members of the family out there working. Czech farms as described by Skrabanek's in 1951 were considered unusual for the shared manual labor by all family members across gender and age, but it seems this tradition has become an advantageous feature for family operations into the twenty-first century as more and more acreage is required to make a living. Therefore, labor inputs from all members of farming families have contributed to the continuity of operations into the twenty-first century.

Diversifying Operations

Another commonality across larger-scale farmers who participated in this study was a shift in the late 1990s and early 2000s to diversify the scope of farming operations by moving stops on the commodity chain, such as grain storage and trucking of products on-farm. Many of the granaries and cooperatives, once plentiful in the county have followed the national trend of consolidation or shuttering (USDA, 2002). With increased yields

Figure 8. Diversifying on-farm operations: Newly erected grain Silos added to a family farm operation in eastern Williamson County. Two were added in 1998 and the second two in 2000. Photo courtesy C. Cervenka.

brought on by GMO seeds and chemical inputs, Williamson County farmers have more grain or cotton than ever before and less options for where to store or process it. Therefore, small granaries like the one pictured have begun to dot the landscape as more and more operations have brought storage on-farm. So long as they farm enough land to justify the investment, farmers save the cost of grain storage and the time they might lose driving to town and waiting in long lines at remaining granaries during peak harvest time, when every minute counts. In addition, these farmers might accept grain from neighbors themselves lacking storage. As on-farm operations are diversifying, Williamson County farming is becoming at once less collectivized and more decentralized.

2.3 Restructured Farm, Restructured Community

Between the 2017 and 2022 agricultural census, 179,077 acres of farmland in the county were lost, which accounts for 32% of total farmland and 25% of all land in the county (USDA, 2022; USDA, 2017; Williamson County, 2024). We know that Samsung's arrival accelerated the rate of land acquisitions after 2021, but these statistics demonstrate that agricultural land in Williamson County was already vulnerable to land use change before Samsung arrived. Explanations from county and local officials on the topic lean into

declinist narratives about farming, suggesting that rural folks are being cashed out of a failing system. However, in the previous two sections, I've demonstrated that while farming is made precarious by state interventions and changing inputs, farmers have adapted by taking additional jobs, scaling up, and diversifying to continue making a profit. What's more, they, and many of their children, are committed to continuing, investing hundreds of thousands of dollars in building their own farming infrastructure when collectivized granaries and co-ops failed in town. Furthermore, precarity, although it's come in different forms over the last century, is not something new for farmers. As any of the participants would tell you, farming is tough. There are ups and downs; there are cycles. There are good years, bad years, and extreme years. Facing pressures and overcoming them is just doing business as usual. Therefore, the continuity of family farming in Williamson County defies reductionist pronouncements that "farming is dead". I maintain that the story is more nuanced, and that in those nuances lie lessons to constructing more resilient rural landscapes.

That being said, I argue that restructuring of the agri-food system has restructured rural communities, compromising critical redundancies in land ownership and agricultural knowledge that once made farmlands more resistant to land use change at landscape scale. I evidence this argument below by outlining the decoupling of the local food systems and commodity agriculture, once co-located on-farm and a decline in collective practices as described to me by life history interview participants. The story of the loss in redundancy and continuity in the rural landscape is the story of declining rural communities and the

local food systems they supported which complement the shifting position of agriculture in the county's identity.

2.3.1 Decoupling of agri-food systems

For the majority of the twentieth century, prior to the proliferation of supermarkets during McMichael's (1989) third food regime, farms in Williamson County were the site of production both for commodity crops and for food consumed locally. During the first half of the twentieth century, eastern Williamson County farms were far more diverse than the monocultures that dominated them at the end, including great acreages dedicated to watermelons, pecan orchards, peaches, and grains for people and livestock (Templin, 1938). These food crops were not grown solely for subsistence of farming families but were sold and traded in town at local grocers or country stores (Machu, 2012; Scarbrough, 2005). Many participants recall robust gardens their families maintained on the farm to keep them well fed year-round:

> "*Huge garden… and then we just needed basics like sugar or flour or something. And that's what we went to town for, you know. But basically, we had everything canned, you know, in the jars. And dad would put them under the house to keep them cool. Potatoes under the house, you know. I mean, we never went hungry, that's for sure"* (Jane, 2024)

Darwin Machu confirms vibrant and innovative gardening to keep a family fed, to keep the farm functioning by provisioning for animals, and to afford off-farm products:

> *"Food for the family was raised right there on the farm…Chickens, cattle, hogs were all fed hay and grain, such as corn, maize, and oats, which were raised right there on the farm…Mother was a good gardener and she always had a big garden in the spring and also in the fall, and everything that we didn't eat right away was canned.*

In the winter she grew certain vegetables in a hot house. The hot house was a box made out of wood, which had glass windows in it to keep the vegetables from freezing. When the weather was warm, she opened the windows. We had lettuce and radishes all winter long … Every Saturday morning, Daddy loaded up the eggs, cream, and butter and took them to sell at the Humpty Dumpty Store. The money from the cream, butter and eggs was usually enough to buy the staples and the chicken feed for the coming week." (Machu, 2012, 111)

Participants who grew up in the county throughout the twentieth century or even who moved there as young adults could name off a handful of grocers, butchers, and country stores in and surrounding small towns which today are food deserts. Dotting the landscape at one time, these small local stores were exchange points for farmers to trade news or advice and also provided fresh local products for municipal consumption, characterizing a pre-supermarket rural food system. In fact, Texan's favorite grocery store chain, H-E-B, got its start as one of these small family-run outlets in Kerr County to the southwest (Taylor Daily Press, 1985a). Bell, who gave a life history interview for this study, brings the image to life of a rural landscape with plentiful country stores and grocers, that make contemporary weekly farmer's markets look pretty sad:

"*And what was neat back then too, we had little communities. There was the Friendship store, and they had a gin, a store, and a beer joint. Everybody had their little beer joints. Waterloo had the same thing across the river from us. And there was Hare and Laneport. Back then, you didn't always come to Granger. Like on a Sunday afternoon, if some of the relatives came over, and the moms wanted to make ice cream or something, dad would go across the river to Waterloo to get ice or go to Friendship, to get ice, to make ice cream—homemade ice cream, you know? And yeah, the little stores were neat."* (Bell, 2024)

Granger, from Bell's description might seem like an urban center far away. In reality, it was and is a town of less than two-thousand people, with one blinking traffic light, and the "little communities" she describes are miniscule by comparison, today unincorporated and not appearing on most maps. Like Bell, many of the other participants who grew up in eastern Williamson County could easily name off three or four grocers or country stores, comfortably co-existing in towns of less than a couple hundred people. Beyond being critical sites in the local food system, these stores were gathering places for rural life. Wynette describes a store run by her aunt and uncle pictured below, complete with a gas pump and a line of mailboxes used by locals. Her relative's store was a meeting and gathering place, well known for domino games.

Figure 9. Norman's Crossing Store: a community gathering place. Courtesy Wynette Lessner, circa 1955.

Participants describe a food system that was robust, redundant, and local, defying McMichael's "food from nowhere" which characterizes what we have access to today (McMichael, 2002). In family letters shared with me, Helen, a Czech woman in the 1970s

recounts gardening heavily even after she'd moved away from the county and lived in a Dallas suburb. Replicating her growing up experience in a new context, she grew an impressive backyard garden. In her letter, she describes being shocked at the summer squash offered by the local chain store, shipped in from somewhere else. She informed the store manager that she grew better squash and in fact had been giving away the excess she'd produced in her garden and proposed that he buy her produce. Food from *nowhere* made no sense to Helen. Even removed from her family's land, she knew food from *somewhere*.

Almost fifty years later, I noticed a continued resistance and reluctance to participate fully in a corporate food regime, especially by participants in rural Czech-dominated areas. Many shared that they do not shop at Walmart or will only do portions of their shopping at any nearby grocery giant. Whenever possible, they still go to local butchers for meat and other grocery items supplied there, despite higher costs. In listening to their stories, I am struck by just how quickly things have changed, and how recently farmers in the county reproduced a locally sustaining food system at the same time alongside production for national and global markets.

2.3.2 Decline of Collective Practices

Food produced on-farm, prior to the restructuring of the third food regime, was the backbone of the rural economy, representing not just crucial surplus cash for farmers, but a connection point to populations who lived in town. The *robustness* of the agricultural landscape in which these food systems were embedded comes down to the degree of

collectivism and community support ensuring the continuity of farming through generations and changes in ownership.

The community orientation towards collective agricultural landscapes prior to the start of the third food regime in the 1980s is well evidenced by the proliferation of mutual aid. Mutual aid was both organized and informal, often administered within ethnic communities (Scarbrough, 2005). While many ethnic groups of Williamson County demonstrated collective practices including mutual aid, the Czech's were highly organized in their pursuits (McCandles, 1992). If you drive through rural central Texas today from Houston to Temple, you will find a red, white, and blue sign reading "SPJST" in front of buildings of various condition in every couple of towns. The Slovanska Podporujici Jednota Statu Texas or Slavonic Benevolent Order of the State of Texas is one of the more popular and longer lasting Czech mutual aid organizations, still active today[5].

There's a saying that where three Czechs might be, four clubs might be—and the Czechs of Williamson County had organizations for everything from social events to financial assistance and life insurance. Where very little social safety net existed in the early 1900s, especially for immigrant and non-white communities, the Czech's made their own. In the early days of the twentieth century, a Czech farmer could easily acquire fire insurance from the Slavonic Mutual Fire Insurance Association, life insurance from the Mutual Aid Society of the Czech-Moravian Brethren, and loans from Granger National, the "Czech Bank". Should a home burn, a parent pass away, or a crop fail, such robust

[5] Although membership has been steadily declining, and many lodges have closed in recent years, including Granger, the Czech stronghold of the county.

community organizations meant that these events did not have to mean ruin. This is well exemplified in a story printed in 1930 for a mutual aid meeting. A long-distance member had died, and the funeral director called Czech-Moravian Brethren from Chicago, confused, explaining he'd been given this membership card, but the family had no means to pay for anything. The receptionist in Texas responded, saying, "you go ahead with the funeral…that is the purpose for which we are organized," (MUSCMB, 1930).

Sociologist Robert Skrabanek (1949; 1951) explains that collective practices in organized aid were also reflected informally on the farm. In Czech communities, farmers might jointly own pieces of equipment between three or more families and often engaged in a practice he calls "work sharing" (Skrabanek, 1949). Farmers and their families would routinely share or swap labor, so that if someone became ill, others would complete their pending tasks at no expense, besides that of reciprocity [6]. Skrabanek (1949) also documented the practice of group butchering or "beef club" as some call it between rural neighbors which was a necessarily mutual endeavor that supplied the entire club with fresh and abundant meat year-round. Skrabanek's description took place in another county, but interviewees confirm it was popular in Williamson County as well:

> *"We actually butchered animals at home back then for meat. You know, my dad had a bunch of brothers, and so they would get together and butcher, and then they would split it, you know, and then the next few weeks, well, then the other side would butcher, you know, and so we'd split it up,"* (Jane, 2024).

[6] Skrabanek describes how this was no small favor, often involving spending days or weeks working the farms of others during critical times of the growth period and with no sharing of the crop.

Darwin Machu elaborates on the rules of one Williamson County beef club in his autobiography:

> "*A beef club consisted of a group of farmers who formed a club to ensure that beef would be provided to all participating families on a regular basis. Beef clubs existed throughout the county…there was enough so that a calf was butchered every week during the spring and summer…The farmers always did their best to make sure that they would have the best tasting beef that they could produce…the farmer who furnished the yearling in a particular week got the prime cuts of beef that week,*" (Machu, 2012, 113).

Whether through beef club, organized mutual aid, or informal collective practices, the farmers who were apart of the rural landscape of Williamson County at the start of the twentieth century enjoyed a great deal of support defined by *community* intervention. Through the state interventions in subsidies and insurance requirements, the increasing volume of off-farm inputs, and the falling prices of commodities, the amount of land that could support one farming family decreased dramatically over the course of the century. Rebecca explained that as costs of inputs increased and price of products decreased, the relevance of community financial institutions has declined as many supplies companies offer financing that undercuts banks. Likewise, the last century has witnessed the decline of collective agricultural infrastructure including gins, granaries and co-ops (Gray and Kraenzle, 2002).

While rural depopulation and decline of community support institutions is predicted in the agri-food literature (Trauger, 2014), a specific event in eastern Williamson County's history is to blame for the acceleration of that process and the decline of mutual aid according to interviewees. Scarbrough (2005) describes a sort of ethnic diaspora taking place in the late 1970s and early 1980s when one of the last Army Corp Dam projects was

built in the rural area between Laneport and Granger[7]. With wealth built over time and invested into collective community building projects, there were three distinct Czech farming towns by the start of the twentieth century, complete with gins, utilities, grocers, churches, and even schools. Czech was the first language there right up until the 1950s (Machu, 2012). The more than six square-mile reservoir flooded out the heart of Czech life destroying the towns as well as what were widely considered the very most productive farms and pecan orchards within the county's Blackland Prairie land (Scarbrough, 2005). Properties were condemned through eminent domain and pay outs were highly uneven particularly for widows and those with little English language proficiency (Scarbrough, 2005).

This event still triggers a lot of emotional distress in people who lived through it, including a few interviewees. More than one recalled the stress induced deaths of loved ones during this time that they attribute to heartbreak. After fleeing a homeland where they'd never been allowed to own land but forced to work it, they'd saved most of the rest of their lives to buy and operate their own modest properties in America only to have it too seized by the state. Scarbough (2005) writes that Czech community, and their collective practices and organizations, never really recovered as individuals intent on staying in

[7] The Granger Dam was originally proposed in the 1940s among many other massive infrastructure public works projects of the New Deal Era. The purpose was to mitigate flooding, provide drinking water storage, and to create a tourism opportunity. The dam was protested heavily by the Czech communities where it was cited and faded into obscurity only to be resurrected every so often by local politicians with national ambitions that a local multi-million-dollar project might serve. As a result, the Granger Dam, when it was finally approved, was highly unpopular locally and was one of the last major dams built by the Army Corp of Engineers.

farming scattered into other parts of the county since no comparable or contiguous properties existed any longer. Separated from their neighbors, collective cultural practices declined, and a large portion of the more than 200 families displaced never again farmed (Scarbrough, 2005).

2.3.3 Summary

The restructuring of the agricultural economy in Williamson County is reflected in a simultaneous restructuring of community. A rise in industrially produced farming inputs, decrease in labor requirements, and fluctuation in state intervention has decreased the number of farming operators and the degree of community support and collectivism practiced. Yet, remaining operators have exercised their agency to diversify, scale-up, make the most of available decisions, and retain family labor structures in order to keep the land and livelihoods agricultural. Therefore, we cannot attribute contemporary land use change to an insolvency of family farming operations, which though restructured, remain very much alive in the county surviving the 1980s agricultural economic collapse and national corporatization trends. Therefore, I look to the restructured organization of the agricultural landscape in the county at large—that is a less collective landscape-- to discuss vulnerabilities to destabilization and land use change.

2.4 Discussion: Positioning agricultural land in the lead up to 2021

Returning to the research question posed at the beginning of the chapter, I find that loss in redundancy of operators and the multi-dimensional devaluation of agricultural land are the

historical processes that organize the agricultural landscape of Williamson County in a way that is prone rapid change in the case of destabilization.

2.4.1 Organization of the rural landscape: Potential brinks of change

It's clear that while Williamson County farmers have adapted to the restructuring of agricultural economies and rural communities, the agricultural landscape in the lead up to 2021 was lacking the same degree of redundancy it enjoyed in earlier periods. As participants described, over the last century, the amount of land required to make a farming operation viable, where farming is the sole source of the operator's income, has increased at least tenfold. The relatively stable size of farm parcels on paper prior to 2021 belied the truth of expanding farming corridors operated by fewer and fewer hands. While a great number of smaller operators exist, the majority of land in the county is under the purview of these larger farmers. Where more land is required to sustain one farmer, there must be less farmers in total. With less farmers, there is less redundancy in experience and knowledge required to run a farm. And, as participants explained in the previous section, where young folks routinely tried their hand at farming up through the 1970's, entering the profession has become prohibitively expense unless you are born into it and stand to inherent a great deal of equipment. Where farmers routinely entered and exited the profession at the beginning of the century, due to declining redundancy, large farmers of twenty-first century Williamson county do so at the risk of compromising the entire agricultural future of the landscape; let me explain.

Interviewees identified two brinks in the contemporary organization of agriculture in the county—inflection points which exhibit the very low thresholds for a destabilizing force to disrupt agricultural continuity and cause landscape-scale change. First is a landowner driven brink. If a landowner decides for any reason to sell their farm, that sale is an opening for the land use to change depending on the buyer. If the amount of agricultural land in the county is set, which means the carrying capacity of large farmers is somewhat set as well, the loss of 100-200 acres here and there, where a farmer cannot pursue other leases to make up the difference, will impact the bottom line. Lose enough leases, and under the myriad pressures laid out in the first part of the chapter, a farmer's operation may become financially insolvent. Ordinarily, this brink is managed by farmers themselves buying land when they are resourced to do so, which maintains agricultural land use and landscape stability. However, if farmers' ability to be land buyers is compromised, this brink might be realized.

The second brink is related and operator driven. If a large farmer gets out of the business without leaving a relative to inherit the operation, suddenly, thousands of acres do not have an operator, and another opening appears for land use change. Three things can happen, and each must happen incredibly fast since a season without a harvest puts the agricultural tax exemption, which makes owning large acreages feasible, in jeopardy. Option one, the landowner needs to find a new farmer. The success of this endeavor really depends on the landowner's local connections and commitment to keeping the land. Often, current landowners have been grandfathered into agreements about their family's land with operators going back several generations. On top of that, we've established that

there are far fewer farmers than there used to be. Therefore, the task of replacing such an agreement is not easy and relies entirely on the landowner. Option two, the landowner pays the real cost of taxes on the land, takes some time to find a farmer, and works out what to do next. Of course, this is the privileged position for which one needs financial reserves. Lastly, they can sell the land. These two brinks are interrelated and mutually exacerbating. Therefore, an inciting incident, say a giant tech company dropped in the middle of east Williamson County farmlands, would have the destabilizing potential to set off a domino effect of land use change, spiraling far beyond the factory's footprint.

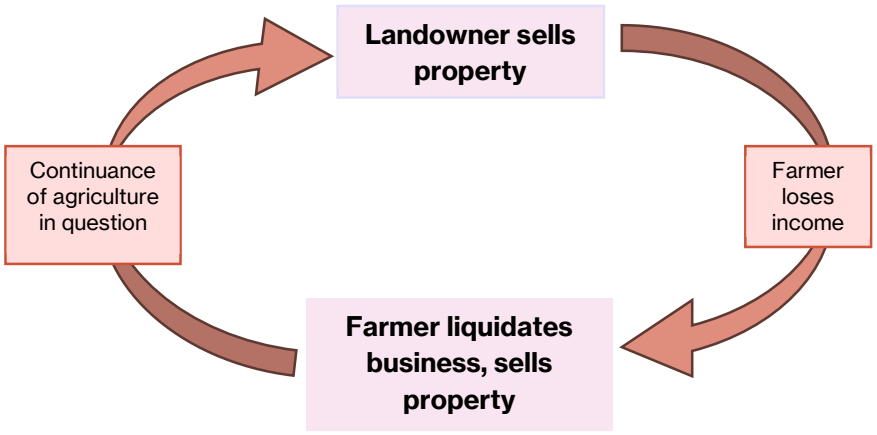

Figure 10. Conceptual illustration of land use change brinks: This figure demonstrates the potential for a self-accelerating cycle of loss of farmland in east Williamson County should a destabilizing factor come into play. Farmer liquidation or landowners selling their property could be taken as the starting point depending on the situation. This cycle is premised on the fact that the amount of farming operations and the amount of farmable land are both finite.

2.4.2 Structural, physical, and discursive devaluation of agricultural land

Following this accounting of the potential for land use precarity in the lead up to 2021, I'd like to revisit the soil by discussing the multi-dimensional ways in which agricultural land has been devalued over the same period. This devaluation reflects the

increasingly marginal positioning of rural livelihoods in the county's identity and thus, its future planning.

Structural devaluation of agriculture livelihoods

The changing size, organization, and labor requirements of a farm means that the vast majority of people in Williamson County have experienced increasing separation from the land and agriculture since the 1980s. As Mary describes, when she was going to high school in 1970s east Williamson County, "my dad was the only one in my class that didn't farm. We lived on a farm, but we just had cows. Everyone else was associated with agriculture in some way…but by the time my children got to high school, they were both one of a handful of people whose parents were still in agriculture," (Mary, 2024). From Part One and Mary's description, we know that most people living in eastern Williamson County belonged to farming families well into the 1970's. Even for those who lived in town, they were still living in connection to agriculture—enjoying public services paid by taxes on agricultural land, buying produce and meat grown and reared on local farms, living in a town where agricultural infrastructure was embedded and centered (granaries, co-ops, banks), and surrounded by friends, neighbors, and partners who relied on an agricultural livelihood. This connection was severed by the restructuring of farm labor requirements, the collapse of farm financing in the 1980's and the proliferation of supermarkets, so that now, the majority of eastern Williamson County's populations live within city limits and have no personal connection to the farms or people just outside of them.

Physical devaluation of soil health

The restructuring of Williamson County agriculture described in detail in Part One means that natural soil fertility was no longer a metric for land value by the end of the 20th century. As the financial farming collapse of the 1980's illustrated, the value of a piece of farmland is practically dictated by what markets will pay for the commodity it produces. The US government incentivized surplus grain production after the Soviet Union opened as trading partner, and just a few years later, the government placed an embargo on that market to punish activities in Afghanistan (Barnett, 2000). The result was that thousands of farms across the US were foreclosed in spite of their *over*production as the surplus prompted farmland values to plummet and farmers lost their equity and borrowing capacity (Taylor Daily Press, 1985b).

The price of commodity crops and receding financial state interventions since the 1980's has made the profits per area stable or declining relative to inflation. Therefore, in addition to the financial devaluation of farmland, the necessity of a farmer to expand operations has caused the physical value of soil, in so much as its capable of supporting life without synthetic inputs, to decline. Scholars describe farmer's relationship to the soil in the middle of the 20th century as something enshrined in social practice, as "land worship." In describing such farmlands around Williamson County, Skrabanek notes in 1951 that even though, "…the average farm is not large, it is worked intensively, and the soil is kept in excellent condition. To a certain extent, one's social status is partially determined by the way he treats his soil," (Skrabanek, 1951). In the early twenty-first century, however, even basic soil conservation practices like crop rotation have become increasingly

challenging. Mary remembers that farmers would plant, “Cotton, corn, wheat, lots of maize, and they would rotate those.” Yet, she also explains that the price her farmer is getting on cotton for the last few years is less than what his grandfather got for it in the 1960’s. Scarcely one gin operates in Williamson County anymore, Rebecca reports that a lot folks have had to sell their cotton equipment altogether to supplement lost income making the future growth of it unlikely. Rebecca says that many have stopped planting milo too because of intensifying dry periods. With little more than wheat to supplement the county’s growing reliance on corn, the farming landscape loses the small variety it had in the 1980s. Where soil health was enshrined as a social practice at the beginning of the century, degradation of it becomes an economic necessity by the end of it.

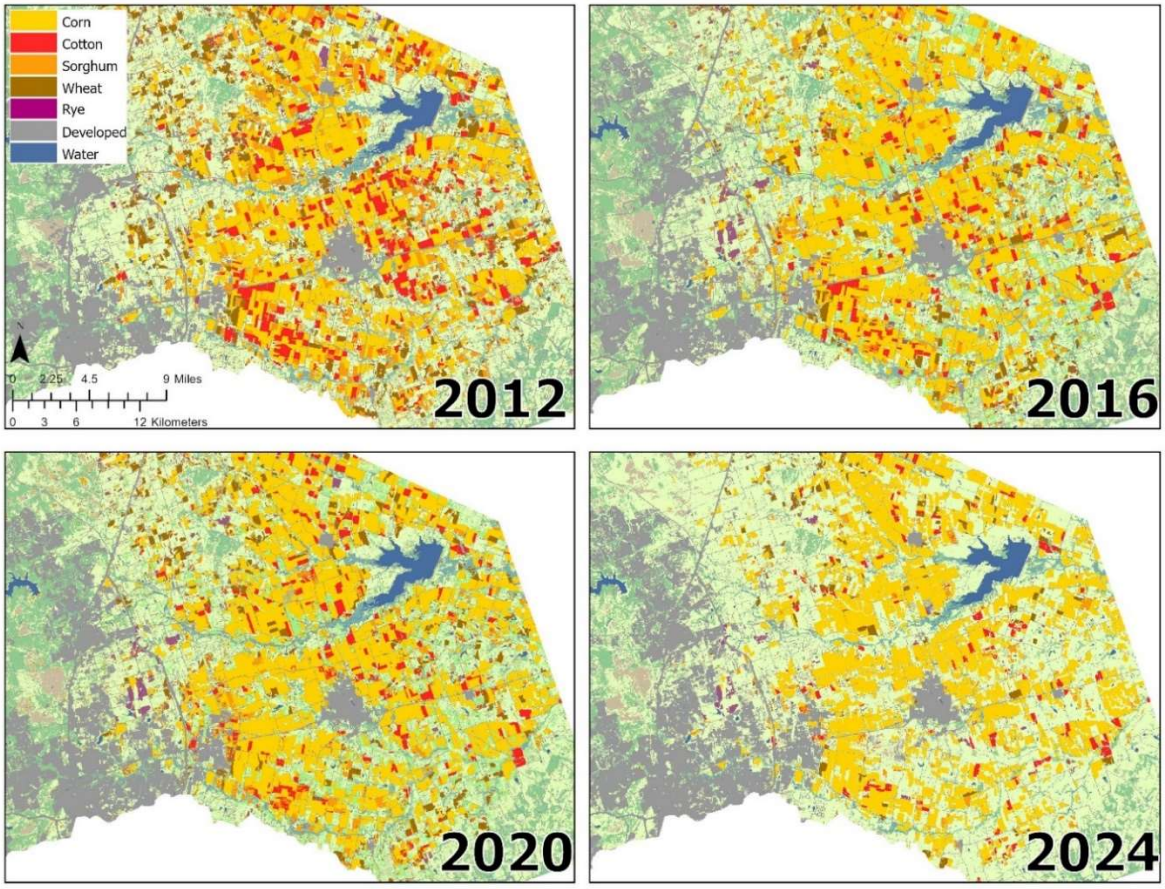

Figure 11. Time series of Williamson County Cropland Data layer (CDL) crop types: These maps show a time series of the CDL crop types grown in eastern Williamson County every four years from 2012 to 2024. These snapshots in time demonstrate a decline in crop rotating practices, a loss in diversity of crop types overall, and the growing reliance on feed corn. Maps were prepared by the author using freely available downloads of the USDA's Cropland Data Layers. This map was created by the author with data layers from USDA and the Texas Department of Transportation. For more details on this map, see Appendix D.

Discursive devaluation of agricultural identities

Where agriculture was central to Williamson County's identity since its founding, through the devaluation and restructuring of farmlands, it has been made marginal discursively. For municipalities, once reliant on local farmers for food supplies and taxes to run schools and county services, the presence of local farming was far less consequential

by the end of the century. This marginalization of agricultural identity is reflected in official discourse which consigns agriculture to heritage despite its continuity. In Hutto, the decommissioned co-op is repurposed into a live-work-play district where important infrastructure becomes little more than an aesthetic theme. Municipal festivals feature reenactments of early "pioneer days" but limit portrayal of agricultural activity to that time period. Where county officials declare that, "the next generation doesn't want to farm", as they did to two interview participants, farmers lack representation to argue this point. With properties outside city limits, the only political representative for rural people in east Williamson County is a commissioner, who for the last two terms has been a property developer.

Young farmers' existence problematizes discursive devaluations of farmland. In 2022, over 1,000 new and beginning farmers were recorded in the agricultural census as well as 176 farmers younger than 35 and over 2,000 between 35-64 (USDA, 2022). Furthermore, especially in Czech strongholds around Granger, participants could name many young farmers off the top of their heads living right around them. They describe active operations and farming communities functionally standing in opposition to any discursive declaration that farming is "dead" or "dying".

2.4.3 Commitment to Continuity

Considering the marginality of agricultural identities within the county and the structural devaluation of agricultural livelihoods in the lead up to 2021, the continuity of farming is based on the desire of farmers and owners to continue and the creative ways

they manage to keep their operations financially solvent, successfully resisting the brinks of change identified in the chapter. In essence, what kept land agricultural prior to the arrival of Samsung is the persistence and commitment of the farming community. That persistence is reflected in respondents' strong relationship to the land they live on and farm. In characterizing her relationship to her farm, Carol said, "it's like an umbilical cord ties me to that land." For Jane, the land is like a cherished relative. For Mary, it's a responsibility to care, maintain, and steward that she feels lucky to have, despite the stress it entails. Therefore, for the people still involved in agriculture, continuing is more than a financial pursuit or job, it is a cultural commitment. Therefore, Robert Skrabanek's description of the Czech farmer still characterizes the farmers of east Williamson County today, Czech or not: "...farming with its cares, anxieties, and pleasures is so congenial to the Czech that it fills his life so completely as to practically exclude the idea that farming might be exchanged for another and more profitable employment," (1951, 266).

2.5 Conclusion

This chapter argues that the restructuring of agriculture over the twentieth century has made farming in eastern Williamson County at once more and less stable. Increased synthetic inputs bring in assured yields but have destabilized local ecosystems, threaten soil health, and dramatically raise the costs of production. Minimum grain prices are set, but do not guarantee a farmer has enough to make a profit. Government interventions have standardized products all the while chipping away at choice of the individual farmer.

While farming continues to be a family-run operation, it has been reorganized on the landscape—held in fewer hands and supported far less by collective infrastructures and community intervention. Therefore, despite yields being greater today than at any point in history, the centrality of farming to the county's identity is marginalized as agricultural livelihoods and the lands that support them are financially and physically devalued. And yet, farmers and landowners find creative solutions to maintain financial solvency and continuity on shifting ground by diversifying operations, maintaining family labor structures, and maximizing available choices. Therefore, the restructuring of farming and rural community alone is not enough to explain how productive farmlands are so easily supplanted contemporarily. The following chapter explores how public governmental mechanisms capitalize on the marginalization of agricultural livelihoods in the county's identity and exploits thresholds in farmland redundancy to quickly supply Silicon Fields with the land.

CHAPTER THREE | Mechanisms of Displacement

"*We will never forget in Williamson County that it's our farmers and ranchers who are the backbone of what we do*"

-Bill Gravell, County Judge, July 2019

"*If tiny Taylor, Texas, is selected to be the next major semiconductor manufacturing facility, it would truly be a Christmas miracle.*"

-Bill Gravell, County Judge, October 2021

"To our friends at Samsung, I want to say, 'Welcome home!'"

-Bill Gravell, County Judge, November 2021

3.1 Introduction

Figure 12. New traffic patterns in construction: This photo was taken at the intersection of a four-lane State Highway 79 and a farm-to-market road. Prior to Samsung and the construction of a rail depot directly to the right of the photo's view, this was a backroads connection for farmers to travel N-S in between the two major E-W routes in the area. At one time, farmers and residents could turn right or left or drive straight at the intersection. Now, a cloverleaf fly over is being developed to accommodate truck traffic into the railyard and commuter traffic into Samsung (Maness, 2025a). Photo taken by author in March of 2024.

Hop in the car, and let's take a drive. We'll get off Interstate 35 in Round Rock and head east to the edge of Williamson County. We see a landscape in transition. Navigating dozens of road construction projects, we are constantly directed and redirected down Highway 79.

When we take the wrong turn, we have to drive a mile or so before we have the chance to get going in the right direction again on account of concrete barriers dividing the highway and blocking turnarounds. We cross every conceivable form of traffic pattern being assembled, from traffic lights to roundabouts and even the beginnings of a clover leaf interchange—great stair-step concrete pylons rising out of the crop fields parallel to a two-lane farm-to-market road.

As we turn off the highway onto a FM road, we soon pass a break in the treeline where it looks like a stampede has come through and flattened everything, making room for a brand-new road to cut through and connect. Alongside these road realignments and expansions, we pass discarded piles of Blackland topsoil fifteen feet high. In the space between towns, we lose count of the "for-sale" signs on farms, mostly detailing commercial and industrial development opportunities. New pipes and utility poles line the roads, waiting for the crews to come back and set them into the ground. And where crews have passed through already, concrete curbs and sewer drains seem entirely incongruent on FM roadsides, flanked in either direction by fields. Flagging and spray paint is maybe the most abundant thing we notice, the rainbow-colored language telling crews where not to dig. It sort of leaves us with the impression that a great big seamstress has just decided she is tired of the landscape's old design and is ready to cut a pattern for something new off the same fabric.

Taking a bird's eye view, satellite imagery confirms a lot of the observations we made on the drive. Remote sensing shows us that the rural landscape is in transition, that Williamson County is losing its farmland, and that it's happening fast. What it cannot tell us

is *how*. The focus of this chapter is making visible the "how"—the public mechanisms used to open east Williamson County farmlands for techno-industrial development.

Chapter Two demonstrated that though the rural landscape has been restructured socially and economically, farmers have adapted to persist and are largely committed to continuity. However, our drive demonstrates that the agricultural landscape has been destabilized. When we look for a cause, we lack explanatory caricatures of a monolithic class of land rich, cash poor farmers awaiting a buyout or a single, conveniently despotic politician who we can fault. The true factors destabilizing the agricultural landscape, promoting land acquisitions, and attracting techno-industrial development are more complex and obscured. Therefore, I pose the guiding research question in this chapter:

(1) How are local public mechanisms used to accelerate the conversion of prime agricultural lands into other uses?

Chapter three is structured in two parts to accomplish the objectives of identifying the public mechanisms utilized to accelerate change across east Williamson County and contradictions in official justifications given by county officials. Therefore, Part One deals with the most visible mechanism, the incentives package assembled to lure Samsung to Taylor. This section examines the major players in striking the deal, the terms of the agreement, and the local groundwork that was laid years in advance. Once the deal was publicized, however, the process of organizing pieces of the rural landscape in necessary configurations to bring the vision of Silicon Fields to fruition happened largely out of sight. Therefore, the bulk of this chapter in Part Two details participant narratives to grant us a

window into this “Black Box”. Nearly all of the conversations and stories I highlight in this section come from people involved in agricultural livelihoods who have been, currently are, or will likely be grappling with eminent domain cases. Their stories fill in the gaps, telling us what we cannot always see from a map, from the side of the road, or from the local news.

The narrative that emerges from the rural perspective of those proximate to techno-industrial development projects is a picture of chaotic, rushed, political, and opportunistic planning. Interviewee stories complicate the county’s objective narrative of “progress”. They highlight how the process of creating something new and exciting for some is one premised on destruction of the livelihoods of others.

3.2 Visible articulation of Public Private Partnership

3.2.1 Brokering the deal

On January 27th, 2021, the Dell Diamond, homefield for Texas Ranger’s Triple-A team, hosted something other than a baseball game. On their first visit to the county to review prospective sites for their new factory, Samsung executives had their meeting with Williamson County officials standing at the pitcher’s mound. Playing on a shared national pastime, they were greeted by none other than Nolan Ryan and the Ranger’s former outfielder, Shin-Soo Choo. Rather than a power point, the stadium’s jumbotron laid out the case for Samsung to choose Williamson County. A video on the big screen featured custom messages from a variety of celebrities and politicians including Texas senator John Cornyn, co-sponsor of the federal CHIPs Act. The night culminated in fireworks and the gifting of

custom uniforms reading “Samsung ‘21” on the back. Summed up by the County Judge, “We really hit a grand slam that day,” (Gravell, 2021b).

This event was just the start of attempts by Williamson County officials over the course of the year to tempt Samsung. Efforts driving the courtship on Williamson County’s side are best articulated in a quote from the County Judge, who said to reporters, “we told them from Day 1, ‘We will not say no. We will figure out how to make your requests work,’” (Gravell, 2021a). As Samsung circled in on final candidates, the judge’s sentiments were reflected in the outcome of an executive’s tour of the prospective factory site. Seeing the state of the two-lane county road where Samsung would have its address, the executive remarked that it would never work. Immediately, the Judge had county road crews out to patch, widen, and resurface the road so that Samsung would “know we meant business,” (Sunday Sun, 2021).

The fanfare assembled by Williamson County officials to impress Samsung executives is nothing compared to the documents that wooed them. Special treatment for Samsung was articulated in a local incentives package worth more than one billion dollars and representing the abatement of most of the firm’s ad valorem property taxes over the next thirty years (Warner, 2021). While local levels of government would take other official actions to promote and resource Samsung, the incentives package was the first and most visible manifestation of the public-private partnership between Williamson County and the firm. Therefore, using the incentives package as a jumping off point, Part One breaks down the governmental players at work in securing the deal and what they offered to illustrate the

most visible public mechanism used to initially attract and secure techno-industrial development.

Samsung Incentives Package	
Samsung Promises:	
Initial capital investment	
buildings and property improvements	$6 billion
machinery and equipment	$11 billion
6 million ft^2 facility	by 2026, completed in phases
Job Creation	
Construction	6500-10,000 jobs
Samsung Plant	2000 jobs
TISD interns (for first 30 years)	24 interns/year
Philanthropic donations in Taylor (annual)	
civic/charitable organizations	$300,000
City Charitable Trust	$150,000
In exchange for:	
TISD (maintenance and operations ad valorem taxable value cap)	
first 10-year period	$80 million/ year
savings worth	$314 million
Williamson County (ad valorem property tax abatement)	
first 10-year period	90%
10-year extension	85%
City of Taylor (property tax abatements through TIRZ designation)	
first 10-year period	92.5%
second 10-year period	90%
third 10-year period	85%
Estimated incentives value in first decade	**$644 million**
Total incentives value from Taylor-TISD-Wilco over 30 years	**> $1 billion**

Figure 13. Summary of the local incentives package offered to Samsung: Three entities with the authority to levy taxes, the Taylor Independent School District, Williamson County Commissioner's Court, and City of Taylor, each signed a performance agreement with Samsung Semiconductor LLC detailing what expectations should be met for the firm to receive tax abatements. In combination, the package essentially abates Samsung's ad valorem property taxes for the entire life of the plant (Adapted from: Warner, 2021; De Los Santos, 2021)

3.2.2 Parties to the deal

Texas is a state full of government structures and public operations that are unique to the rest of the country, from its isolated power grid (Flores et al., 2023) to its prohibition

of income tax (Texas Const. art. 8, § 24-a.). Moreover, Texas is known for its business-friendly climate including low minimum wage, low environmental standards and enforcement, and lack of unions (Park and Lee, 2022). Some of Texas's unique "laws of the land" are at least partially explanatory of its recent techno-industrial boom, within Williamson County and elsewhere[8]. To understand how such incentives came to be offered, context about governmental organization is necessary. So, before getting too deep into the terms of the deal, I position the players who brokered it.

The local incentive package (complemented by state and federal grants) is largely comprised of three performance agreements that grant property tax abatements from the public entities with the authority to levy them: the City of Taylor, the Taylor Independent School District (TISD), and Williamson County. Ultimately it was the organizing and effective marketing to Samsung of this three-pronged incentives package that resulted in the deal. Although hundreds of people at the municipal and county level were involved (The Sunday Sun, 2021b), it's hard to overstate the crucial role played by Taylor's quasi-governmental Economic Development (TEDC) who was responsible for siting the project and negotiating the agreements. The relevant structures and functions of each of these key players are laid out below:

[8] Additional new tech clusters can be found in Bastrop County and Starbase, Texas Elon Musk's newly incorporated company town just outside of Brownsville (Raulston, 2024).

Commissioner's Court

Like all Texas counties, Williamson County's government is composed of five elected officials-- commissioners from each of four precincts and one county judge who heads the court. Within the purview of county level government are ad valorem property taxes, elections administration, approval of annual county budgets, and service to rural and unincorporated areas such as emergency response and maintenance of county roads. For anyone living outside of city limits in the county, a commissioner is their only local political representative, as they cannot vote in town. Of the court, the county judge and the precinct 4 commissioner played active roles in landing Samsung by leading the marketing campaign and offering property tax reimbursements for up to twenty years in their performance agreement with Samsung in exchange for job creation and capital investment.

County government has also played a role in shaping development by provisioning transportation infrastructure. The Williamson County Long Range Transportation Plan (LRTP) is the central planning document for the expansion and creation of new county roads to add both east-west and north-south options (Williamson County, 2016). While this document has existed since 2009, substantial additions in the eastern half of the county were added in 2016. That same year, the LRTP came to the attention of many residents for the first time when they received letters about a series of "county corridors" or county highways being planned near them. At the time, many rural residents were skeptical, unable to see any purpose that was not being met by existing state and highway roads. These corridors were very controversial at their outset and would incite public attention at each stage of their approval punctuated by long periods of silence from county government

leading up to the Samsung announcement, after which the corridors began to materialize (Osborn, 2024). The key official overseeing these plans is the County Director of Infrastructure, a position created in 2009 and filled by a former Texas Department of Transportation (TxDOT) district director. According to a key informant in local media, the creation of this position represented a larger shift in county government from independent precincts to planning and coordination of infrastructure and development following the completion Tollway 130, of one of the Texas turnpike projects, built as an eastern bypass to I-35.

Key Municipal figures

The other two entities to grant tax abatements to Samsung in 2021 were the City of Taylor and TISD. Most municipalities in Williamson County have elected city councils where each member represents a district and each council is headed by the mayor. One exception is Taylor who elects district representatives and an at-large city councilor. The city council then selects a mayor from amongst themselves. It was this six-member council that voted to approve the tax abatements with Samsung which were negotiated by the mayor at that time.

Texas public school districts can issue bonds and acquire maintenance and operation funding through ad valorem property taxes across their entire service area, even outside of city limits. The Taylor Independent School District's leadership is composed of an elected seven-member school board and operations are led by a superintendent hired by that board. It was the then superintendent of TISD who was said to have played the

biggest role in negotiating the terms of the TISD performance agreement with Samsung (Sunday Sun, 2021).

The Silent Partner: TEDC

In October of 2019, a full two years before Samsung was announced, many landowners in the extra territorial jurisdiction of the city of Taylor began receiving letters about their land. The sender was not a realtor or property investor. They were from "TEDC", reading:

> *"The Taylor Economic Development Corporation (TEDC) is reaching out to landowners in the Taylor area. The reason is to provide specific information to landowners like you about current new projects in Taylor, where they are locating and how these projects may affect your property. The second goal is to better understand what you want to do with your property. Are you ready to receive offers, or do you plan to hold your land long term? There is no wrong answer, but it would be very helpful to know. There is growing activity in Taylor and the TEDC is constantly working to better understand what land may be available,"* (Mark Thomas, President/ CEO TEDC, personal letter, October 16, 2019).

For many in the outlying areas of Taylor, this letter was their first introduction to this quasi-governmental body that would be instrumental to landing the Samsung deal.

Economic Development Corporations (EDCs) in Texas date back to the Development Corporation Act of 1979 (Texas Revised Civil Statutes Article 5190.6). Passed by the state legislature, the act, "allowed a municipality to create nonprofit development corporations that could promote the creation of new and expanded industry and manufacturing activity within the municipality," (Texas Municipal League, 2015, 1). Taylor EDC was voted into existence in 1994 under the vision of local businessman John Nelson

with the goals to create new jobs, increase the tax base to eventually lower property taxes, and to attract industry and manufacturing. Like all EDCs in Texas, Taylor EDC operates separately from the municipal government structure and is overseen by a five-member board of directors, many of whom are also public and civic city leaders. By its own characterization, the Taylor EDC is "quasi-governmental…treated by the State of Texas as a private, non-profit entity." (TEDC, 2025). As of this writing, it's composed of two full-time employees and is funded through one quarter of the City of Taylor's sales tax, or 0.5% of the total 2% tax. Taylor EDC has the authority to provide land grants, forgivable loans, and infrastructure grants as well as the mandate to act as negotiators with governments to secure permitting and favorable incentives packages. Due to its "4A" classification, the Taylor EDC can *only* work on projects to bring primary industrial or manufacturing jobs to the city. This means they are legally not allowed to work on any retail or commercial projects.

Projects come across the desk of EDCs in the form of anonymous requests for information or RFI's in which a firm details their needs. If the EDC can provide favorable options to the firm through an internal site review, a visit may be scheduled, an environmental impact study undertaken, and negotiations of a performance agreement initiated. EDCs like Taylor's anticipate RFI's by utilizing their funds to purchase and prepare turnkey sites for industry. According to a key informant in the organization, prior to landing Samsung in 2021, TEDC had already purchased and developed two such properties on the city's periphery. The letters received in 2019 by residents of Taylor's extraterritorial jurisdiction (ETJ) were a part of business as usual for TEDC and would not have been

written with Samsung in mind. Nevertheless, according to key informants and media coverage, it was the efforts of Taylor EDC to maintain a database of properties outside of the city limits that landowners might be convinced to sell which provided Samsung with the site that the incentives package was structured around.

3.3 Emptying Silicon Fields: Views from inside the Black Box

In the months following the announcement of the deal, Samsung became the owner of over 1,200 acres of farmland southeast of Taylor, which was subsequently annexed into city limits. As the months ticked by and construction began on the fabrication facility, the rural landscape far beyond the Samsung site was disrupted as other development projects, both public and private kicked off. Where the incentives package was a highly visible public mechanism utilized to attract a single high value anchor tenant, a series of less visible public mechanisms were utilized to open agricultural land in Williamson County for development beyond the factory footprint. These mechanisms, obscured temporally and procedurally, resulted in the destabilization and displacement of agricultural livelihoods across the urban periphery.

In the sections to follow, study participants detail the “black box” in which land acquisitions occur in Silicon Fields by telling what it is like to live in proximity to such breakneck change and the pressures it puts on their livelihoods. As they reveal, pressures to sell and get out of the way come from many different directions and often exacerbate one another. I term these many different pressures “mechanisms of displacement”, and I organize them into two categories: direct and indirect. In my conception, a mechanism of

displacement is a process that results in the selling (willing or unwilling) of agricultural properties and a change in land use there. The single direct mechanism is that of legal seizure of land by local government through eminent domain. Indirect mechanisms may be the combination of multiple factors that influence someone's decision to sell or leaves them in a financial position where that is their only option. "Displacement" is a term I take from the people who participated in life history interviews, many of whom also used words like "theft", "removal", and "dispossession" to describe their situations. I've settled on "displacement" as a common refrain from participants which can describe the offsetting of people, communities, and/or economic sectors.

3.3.1 Direct Displacement: Eminent domain

Road to nowhere

In the Summer of 2017, more than four years prior to the Samsung announcement, landowners flocked to the Taylor Public Library for the first in a series of public information meetings on the proposed E-1 corridor, a new road being added to the Williamson County Long Range Transportation Plan (Williamson County, 2016; Osborn, 2017). They were met by a few county officials and a team from a public relations company, hired just for the night to handle the confused crowd. There was no formal presentation, just a design charade. Two tables had huge maps taped to them with a wide north- south swath highlighted. The task for landowners? Take one of the sharpies provided and draw the ideal alignment within that swath for a new county highway six hundred feet wide. I was there, and I can say that chaos ensued.

Tensions rose as some good-natured folks did their best to follow the rules and draw a line while surrounded by the people who owned the land they were marking through the middle of. Most landowners refused to draw lines, instead marking features that a road should not be near- family cemeteries, a flood-prone creek, and the like. Some folks came extremely prepared, bringing family photos of new and old generations which they taped to the outlines of their farms. Things got really tense when it became clear that farmers and landowners were not the only interested parties in the room. From out of the crowd, a man with a ball cap pulled low walked up with business cards for his property development company and taped them to the map, writing, “call me” with a fat sharpie. Frustrations were high as folks realized the poor twenty-somethings from the PR firm had very limited knowledge of the project and could only repeat a few scripted talking points. The county’s Director of Infrastructure was one of only a handful of people who actually worked for the government present in the room. He spent much of the night with his back (literally) against a wall as groups of farmers cornered him for explanation.

And the cause of such a chaotic scene? Landowners were not being asked if they wanted or needed a new 600-foot road. The commissioner’s court had already approved it. They were being asked *where*-- whether it should go on your property or your neighbor’s, through the middle of your farm or through the middle of theirs. For roads and other infrastructure projects, there is no need to reach a consensus among citizens or to find willing sellers, and the people in the room knew that all too well. Many of them had been displaced before from family farms along the 130 Tollway, completed in 2006 or even earlier from Czech communities now under Granger Lake (Scarbrough, 2005). Once the

alignment was set, and the bonds issued, the next step would be seizure of properties through eminent domain, and they knew that was a battle they were not going to win.

While it did not directly provide the land for the Samsung site, eminent domain has been used over and over again across Williamson County to advance a mode of development that prioritizes industry. Additionally, many allege the looming threat of eminent domain is enough to cause a private landowner to sell, as it's generally understood you will not get a good price from the county and are better off negotiating with an interested investor or developer. Participants characterize the application of eminent domain in Williamson County as careless, speculative, and obscured. I explore these characterizations through participant which center on seizure for the purpose of road construction. Their accounts cast doubt on the county's interpretation of public use, a doctrine made malleable for projects that will certainly support private economic development ventures.

Defining Eminent Domain

Eminent domain is the power of governments at the federal, state, and local levels to seize private property for public use so long as fair market value is compensated to the owner as stipulated by the "takings clause" in the fifth amendment (U.S. Const. amend. V). "Public use" or sometimes "public benefit" is where eminent domain often gets controversial. While crucial to the completion of public infrastructure like roads, dams, and utility lines, it is continually problematized by legal scholarship and infamous case studies that highlight the ability of private interests to profit off of takings (Main, 2007). Local

discretion on what counts as public use and the seizures therefore justified are known to vary widely across states, as well as the cities and jurisdictions within (Miceli and Sergerson, 2021). Public use has been continually defined and redefined, culminating in 2005, when the US supreme court ruled that private economic development was of public benefit, authorizing the seizure and transfer of land between private entities to this end (Main, 2007). This decision prompted eminent domain reform in nearly every state in the years to follow (Bassett et al., 2011). Proposition 11 created a new amendment to the Texas State constitution in 2009, which prohibited *Kelo* style takings where the "primary purpose" of property seizure was not for "ownership, use, or enjoyment" of the public, in other words, for the purpose of increasing tax revenues or creating jobs (Lashmet, 2020). However, "primary purpose" has come to be a newly debated grey area for Texas, wherein a government can claim a public purpose in name only. Furthermore, the amendment opened an option by private entities to utilize eminent domain if approved by a two-thirds majority vote in the Texas legislature.

In 2022, the Texas legislature signed a new eminent domain reform into law. House Bill 2730 required landowners facing proceedings to be furnished with a written appraisal of their property and a copy of the Texas Landowner's Bill of Rights (Hernandez, 2024). As it stands in Williamson County, from the time a landowner receives initial notice of the government's intent, no more than thirty days can pass before they are made a final offer in writing. At the receipt of the final offer, a landowner has just fourteen days to respond before the government can move forward with condemnation. Eminent domain cases are on the rise in Williamson County from 2023 to 2024 (Hernandez, 2024). And, if a landowner

questions the merit of a public project utilizing eminent domain or the justness of compensation for their land, they have just forty-four days to do something about it. According to one local eminent domain lawyer, cases that make it to court are typically disagreements on monetary compensation for the land seized, and practically, the opinion of the landowner about the merit of a project is irrelevant (Gattis, 2024).

Careless of Context

Several study participants facing eminent domain cases due to the county corridor projects point to the logical inconsistencies inherent in the process. Besides the emotion involved in losing a piece of their land and a part of their livelihood is the overwhelming sense of injustice they feel when it might be happening for nothing. The most repeated refrain from participants involved in seizure proceedings was the redundancy of the road projects for which their land was being confiscated. The county's justification for the corridors added to the 2009 LRTP has always been to move goods and people from one side of the county to another (Williamson County, 2016).

While participants agreed that traffic on main roads was a problem, they did not see the logic in not utilizing rights-of-ways to widen existing roads. For example, Angela, whose family land abuts the proposed route of "Corridor K" explained that she's very close to two TxDOT administered roads in each direction, one of which connects directly to Interstate 35 (the key North-South connector in Texas), and both of which are scheduled to be widened and expanded in the next four years. She poses a simple question, why would you spend the money to condemn land and to build a new, superhighway from scratch when you

could just add to what's already there? When her parents put that query to county officials, they were told, "it's just easier to go through fields than it is through trees or to work with the state," (Angela, 2024). In other words, the county is more willing to spend taxpayer money to build redundant roads than to coordinate with the state to use existing ones. This perspective sets the bar for justifying expansive public infrastructure projects in rural areas extremely low.

Beyond creating redundant outcomes, interviewees assert that county plans make little account for conditions on the ground (other than trees, apparently) and endorse the discursive devaluation of agricultural land by failing to account for continuance of agricultural operations. It was a common refrain from interviewees that when farm properties were targeted, the road would always seem to go in the worst spot- straight through a barn, on top of a livestock watering source, or neatly dividing operations in half. Say the county builds a new road between a famer's barn and their stock tank or dividing their fields. The county is obligated to pay for the strip of land taken right out the middle, but they don't build a bridge over the new road to get the cows between the barn and their water source. They will not dig the farmer a tunnel to get their tractor to the other side of the field or even make an access point for them to cross. Furthermore, the county also won't compensate the farmers to dig a new stock tank or build a new barn. For farmers, property value is not the same as use value, and the taking of certain critical pieces puts the whole operation in jeopardy. For the county, land is valued by the tax appraiser's estimates and prices for agricultural land are very low.

In these interviews, I came across just one participant who described a corridor alignment routed on the *edge* of her property. From a legal perspective, Lisa says she might actually be worse off than if the corridor was going through her property. This way, she explained, she would no longer be compensated financially and would have no grounds to legally contest it but would live next to a 450-foot-wide road all the same. If she decided she didn't want to live right next to a highway, she'd have to sell to a developer because no one would choose to live so close to a road.

There was a view among many interviewees that the county might not be so careless as it seemed, and that cutting a new road through farmland is actually a strategy to promote development. This position is hard to substantiate in official discourse from the county, but it aligns with scholarship that suggests private development interests often influence and benefit from application of eminent domain. To investigate these claims, I turned to GIS analysis using land parcel ownership. Whether or not the county is intentionally leveraging eminent domain to open up farmlands for the purposes of economic development, that's certainly the outcome of their actions. The map below details how land changes hands following the routing of a corridor. The East Wilco Highway is one of the first to be completed, taking shape across seventy parcels of land. Construction on this corridor was completed in phases over a number of years relying on county bonds and then state funds to build out uncompleted sections when the projects exceeded county bonds; this is the second most expensive transportation project in the county's history (Maness, 2025a). By reviewing parcel ownership throughout the construction of the project, I found that the majority of parcels touching or being

intersected by the road were acquired by a developer or land investor very soon after the eminent domain cases. Only forty-five parcels were unaffected, and many of those affected were subdivided.

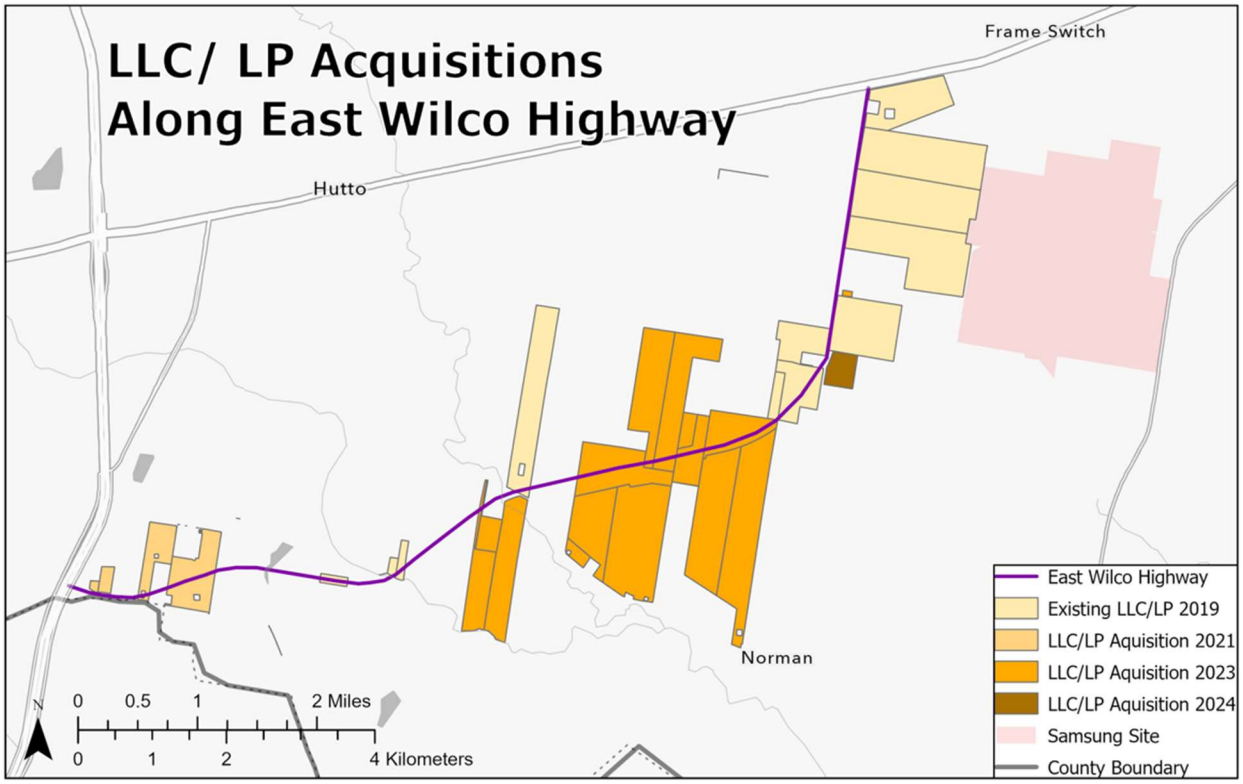

Figure 14. Map of Investor acquisitions along East Wilco Highway. Connecting 1-35 to Highway 79 in a loop that serves Samsung, the stretch of the county corridor highlighted in purple was completed in 2025. This map was created by the author with data layers from Williamson County Appraisal District and the Texas Department of Transportation. For more details on this map, see Appendix D.

Speculative in Purpose

The questioning by many of whether the adequate need for the county corridors at the time of their approval and construction speaks to a larger chicken and egg sort of debate. Do new county roads bring development or does development bring county roads? As described above, a government is not meant to use eminent domain for a project whose

primary purpose is economic development. When Lisa pushed a county official for justification on a road project, he simply told her, “we're not going to be another Austin. We're going to put these roads in first.” Does building roads in anticipation of development fit the bill? By the time you interrogate this question, the road may have already been approved and construction started. However, there’s evidence to suggest that roads are opening agricultural land to development based on anecdotal reports of excess land seizures and a highly speculative land trade emerging.

While it would be impossible to verify this, a number of participants independently remarked that some eminent domain proceedings have entailed seizing excess land—that is more land than is explicitly required by the project. When the project is underway, should the county decide they don’t need all the land that is taken, they are legally allowed to keep the land or to sell it to the highest bidder for a profit. Due to the private nature of eminent domain proceedings, this was a claim I was unable to confirm, however, I include it here because of the frequency it was brought up across interviews and the fact that there is a provision in the law allowing governments to take such action.

Speculative use of eminent domain has also fostered extensive speculative private land trade emanating from the Samsung site. Land investment seems to be less of a cottage industry and more of an economic sector emerging in the county. All respondents, landowning or not, reported a large volume of calls and mail received inquiring about their properties—as much a phone call every day and three or four pieces of mail a week ranging from handwritten notes tucked in the mailbox, to comparable property listings in the area, to contracts already filled in with the landowner’s private information, just awaiting a

signature. As Jane describes, “people come along and, well, commercial offer, you know, want to buy it, but they say they want to buy it, but really all they want to do is tie it up and keep it for themselves so nobody else can buy it until they want to resell.” (2024). Carol is a bit more explicit in her take: “Speculators and developers come in making a quick buck and leave the ruins behind. These subdivisions are sprouting up like mushrooms-- like toadstools,” (2024).

However, Jane goes on to detail what makes the ventures speculative. In her telling, a multi-tenant industrial pad site was developed near her home and has been on lease for almost two years with no tenant. The massive building stands empty each day and night, fully alight with exterior fixtures bright enough light to diminish the stars all without a tenant one. In the words of her husband John, “They shouldn’t take land in the first place if they ain’t going to use it.” Likewise, Rebecca describes how land sales are playing out in another small town’s urban periphery as investors speculate on the ripple effects of Samsung and compromise agricultural leases in the process:

> *“The only farms that I guess they've lost recently are because of them being sold. And, some of them are still just sitting there. They've sold to investors. And it's been five years, and nothing has happened with them. Such a waste.”* (Rebecca, 2024)

To triangulate what participants were saying about the emerging land trade, I employed the same methods I used to track investor acquisitions along the East Wilco Highway in the area surrounding the Samsung site. My findings are illustrated in the maps below which suggest explosion in private land acquisitions of family farms in 2023.

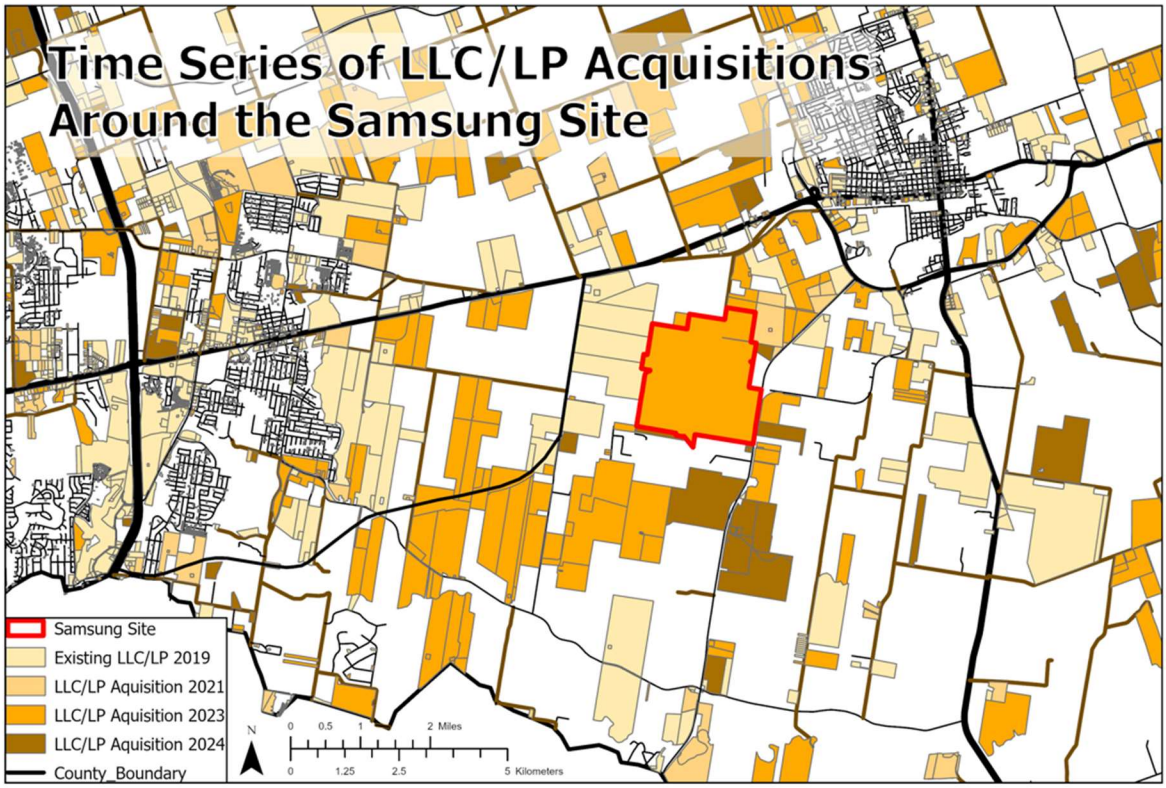

Figure 15. Time Series Map of LLC/LP Acquisitions around Samsung: Using property owner names in Williamson County Appraisal District Parcel Data, I tracked the change in owner name where LLC or LP was included. The larger parcels featured are agricultural parcels outlying the two municipalities of Hutto and Taylor. This map provides visual estimation of investor acquisition of family-owned agricultural land in the years following the Samsung announcement. This map was created by the author with data layers from Williamson County Appraisal District and the Texas Department of Transportation. For more details on this map, see Appendix D.

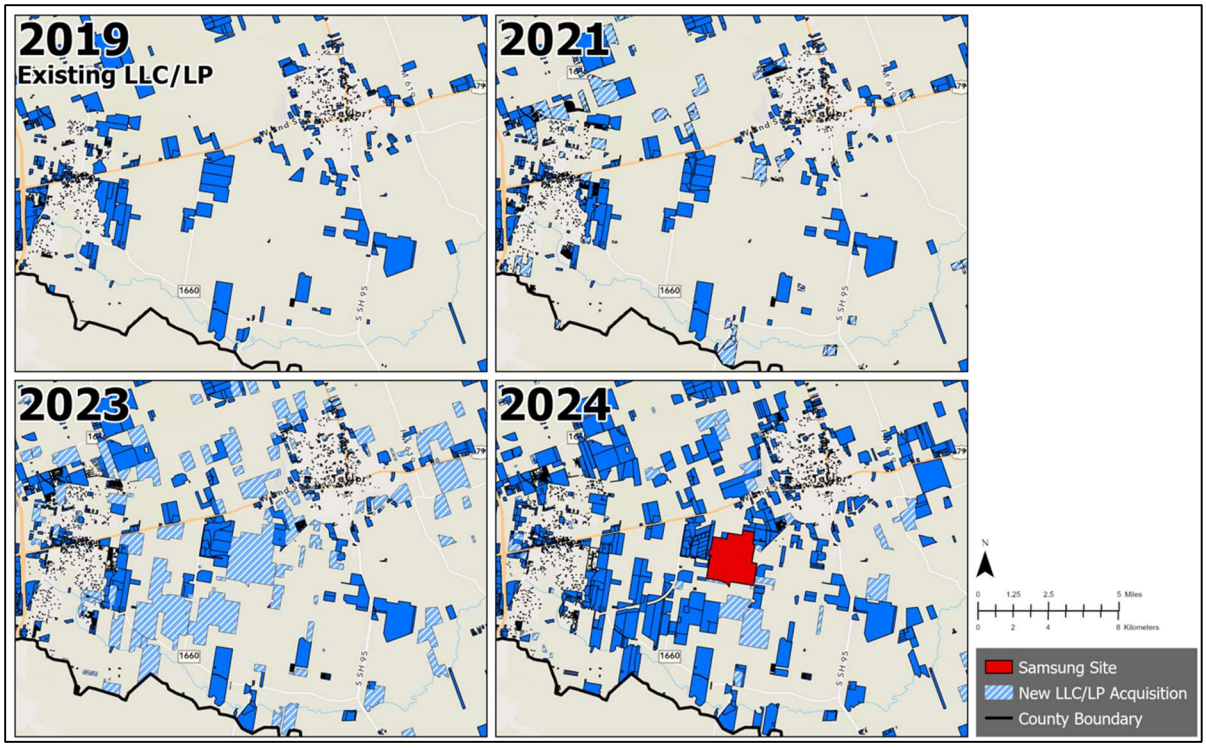

Figure 16. Map of New LLC/LP Acquisitions by year around Samsung: This map is another visual representation of the data presented in Map 4 with new acquisitions separated out by year. This map was created by the author with data layers from Williamson County Appraisal District and the Texas Department of Transportation. For more details on this map, see Appendix D.

Obscured in Process

Eminent domain proceedings can afford to be speculative and careless due to the highly obscured nature of the process. Beyond investigative reporting and going down to the courthouse to sift through every property you expected was taken as a result of eminent domain, there's no available data on where, when, and how often it is used. There are not publicly available local, state, or national statistics kept on the phenomenon. Furthermore, most eminent domain cases never even make it to a court room, and when they do, it's almost always to negotiate just compensation. For those who cannot afford the legal fees

or time to take the issue further, knowledge of what transpired stays between them and the county. And, if the proceedings lead to the displacement of that person from the county, the story goes with them.

With infrastructure projects that will involve eminent domain, there's no impetus in the law to be transparent about a timeline other than the forty-four-day pre-condemnation procedure. The only people who are explicitly going to receive notices about the project are the ones impacted directly. As Mary says, "if you are one property over, they don't have to tell you anything." But even being aware doesn't necessarily prepare a landowner as the timelines for these projects are highly variable based on funding and county priorities.

Each of the interviewees being impacted by corridors were told they would never see the projects in their lifetimes. They were told seizures would be something that their kids might deal with, or that might never materialize at all. Inevitably two years later or so, condemnation would proceed. This tact has left landowners to analyze and obsess over proposed routes of corridors and arterials as well as newly platted developments and subdivisions, doing their best to anticipate what the county's plans could require from their property in the future. For example, one interviewee, whose property backs up to one recently purchased by a housing developer, thinks that in coming years, her property could be targeted for proceedings for a second exit for the housing development. With current roads, they'd just have one exit for all those people, so she thinks it would not be much of a stretch for the county to justify public use once people start moving in.

Without knowing the timeline of a project but understanding that a clock starts the moment you receive a letter, many rural landowners have sought expensive legal services pre-emptively. Another strategy, to prevent the county from lowballing when the letter inevitably comes is to have your own appraisal in your back pocket. SB 2730 allows a landowner to submit their own appraisals, so many landowners with no intent to sell or move have begun listing their properties on the market for far above a reasonable price.

3.3.2 Indirect displacement: A thousand last straws

Where eminent domain represents a direct use of public power to open rural agricultural land to development, participants described a myriad of other pressures that, taken in some combination, might make someone's decision to sell a piece of land. In the background of each of these pressures that make daily life increasingly difficult, landowners are bombarded with unsolicited offers to buy or sell their property. As farming is rendered difficult or impossible as developmental frontlines unfold, selling is less of a choice than your only option for someone who cannot keep their land without an agricultural exemption, which is nearly everyone in this study area.

Figure 17. Compilation of unsolicited offers: A stack of unsolicited mail received by one interview participant over the course of a few months related to the buying or selling of her agricultural property a few miles away from the Samsung site. The interviewee solicitation ranging from handwritten notes tucked in her mailbox to informational flyers, to prefilled offers, just awaiting her signature. The solicitors appeared to be a mixture of local, regional, and global interested parties. The interviewee, and many others, confirmed a volume of unsolicited weekly calls from a similar mix of local and non-local real estate firms, investment companies, and property developers to complement full mailboxes.

Diminishing Farming feasibility

As demonstrated by figures 14-16, speculative land markets have resulted in a lot of land being held by investor companies. These companies may decide to terminate agricultural activity on newly acquired land. Should they elect to continue though, previous agreements will have been voided in the sale, and Rebecca says that these companies tend to prefer cash leasing which evokes competition between farmers and represents a riskier endeavor for them than the system of thirds. She says that it is very easy to get in over your head with cash leases especially when you are bid up by others gambling on a good corn year to pay off the lease later.

An additional obstacle for farmers is equipment mobility. The average tractor's maximum speed is somewhere around 20 miles per hour. When a farm to market road becomes a thoroughfare for construction traffic or Samsung shifts, it's no longer compatible with farming. As John puts it, "we used to have more tractors going down the road here than we had vehicles. People farming. And, uh, now you can't hardly drive a tractor out there anymore without getting run over," (John, 2024). More than one respondent told me they don't bother moving tractors from field to field any time before 11pm at night anymore, it's just too dangerous otherwise. Fragmentation of operator corridors also presents diminishing returns for farmers who have to travel farther distances between fields under their care. Lastly, new infrastructure added to roads is simply not compatible with farming equipment. Curbs and paved stormwater channels being added on the side of FM roads are tricky for tractors that could previously pull to the shoulder to let traffic pass. Accessing fields is another issue altogether as the county refuses to replace driveway access points that tractors once utilized (John, 2024).

Figure 18. Image of FM 3349 Traffic: This image taken by the author on FM road illustrates the new intensity of traffic moving construction equipment or goods across the county. As main roads become disrupted by construction, truck drivers find alternate routes on smaller roads more utilized by tractors. Pictured here are three semi-trucks coming to and from the rail depot to ship out Tesla's.

Quality of life

Participants who lived closest to ongoing construction, either for Samsung or new roadways describe construction shenanigans. For some, dealing with these practically amounts to another full-time job. Several participants agreed that surveyors, from the county or otherwise, will come onto the property with no notice. What's more, fields are treated as vacant land as heavy equipment is driven across and occasionally parked on them, amounting to costly soil compaction and loss of large sections of planted fields. Mary noted an incident where work on a water line being rerouted for Samsung resulted in a loss of at least one acre of her corn. Likewise, John described a time when road crews pumped water from a ditch on to a hayfield he'd just disced the day prior, amounting to a loss of quite a few round bales. Neither of these participant's complaints went very far and they certainly were never compensated for their lost crops. Following the work on the water

line, Mary walked down to take pictures of the damage, and she actually found the survey pin, used to mark the edge of her property, dug up and discarded in a ditch.

Construction accidents were a common note as well. Participants explained that traffic patterns were changing often around Samsung and that without proper signage, there had been a number of fatalities. This is confirmed in local press coverage including a report where a semi-truck driver shares truckers nickname for the section of Highway 79 closest to Samsung, “the Stretch of Death,” (Huey, 2023). All described close calls with semi-trucks hauling heavy supplies and unable to slow down. Wynette even detailed one incident of a gravel truck overturning just feet from her front door. There was no question amongst the respondents that this increase in traffic is dangerous and that it’s brought on by construction.

Health is also a growing concern among respondents. The stress of dealing with the situation at hand is enough to take a few years off anyone’s life. In top of that, pollution from techno-industry is a matter of great speculation in these years leading up the Samsung factory coming online. Participants have skillfully researched the history of semiconductor manufacturing including its public health and environment track record. For now, the biggest concern is air and light pollution from new roads and new buildings. John emphasized the experience of light pollution on his farm: “we was trying to look for the comet. We never could see it on account of all the lights all around.”

Patterns of Pressure

One of the most devastating mechanisms of displacement is that it's a self-accelerating process. With a few direct actions from the growth-minded private-public axis such as the construction of a new corridor or the buying of land for a factory, proximate agricultural activities are destabilized. Due to the organizational structure of farming and the brinks laid out in chapter two, there is a ripple effect across the landscape. All direct and indirect pressures contribute to a loss of income for farmers already on tight margins. In this system, landowners are only allowed to keep land that is economically productive year to year. Particularly if one of the larger farming families had to liquidate for any reason, the potential for all land in their purview to be sold is opened. Several interviewees share that landowners have had conversations with their farmers, explaining that they will only keep the land so long as the farmer is willing to keep going. The position of farmers and landowners is well articulated by Carol.

> *"Think of it this way. You're a farmer. You're getting old. Your neighbor on this side and your neighbor on this side have just sold to developers. And you're going to be ringed by subdivisions, and they're going to pay you a really good price, and you're going to take it*" (Carol, 2024).

Already, participants identify a trend of some farmers and landowners getting out so they can set up shop close by and continue farming. This phenomenon is also documented in local media coverage:

> *"Farming is a business that naturally goes up and down, Mr. Pastushok said. With land prices rising from the growing demand for land in Williamson County, he said*

large farmers are selling their land and buying land in less expensive neighboring counties," (Williamson County Sun, 2023).

3.4 Discussion: Justifying farmland loss

Semiconductors and other technologies set to be produced in "Silicon Fields" can be characterized as "green technologies" endorsed under neoliberal nature's green capitalism framework. Contemporarily, semiconductors are considered to be the building block of technological fixes associated with green capitalism, powering everything from electric vehicles to renewable energy technologies (Favino, 2024). For Texas and Williamson County, semiconductors represent a novel advanced manufacturing sector, a chance to produce something lucrative, of national importance, and of future significance. Therefore, county officials discursively identify semiconductor manufacturing and Silicon Fields more broadly as progress.

This stands in stark contrast to the portrayal of farming businesses in the county. When landowners like Mary went to public meetings to seek answers about the corridors set to affect her livelihood, she was told that the county planning officials were taking special care not to disrupt anyone's business. She says, "I thought, 'oh, we're safe,' and then the next thing they said was, 'Oh, well we don't consider *farming* a business.' Can you believe that? We are the tax base and 'farms weren't a business.'" When she pressed them further, the county's position seemed to be that eminent domain was saving farmers:

"We said, 'what about the people who won't be able to carry on farming once the road goes in?'

> *They said, 'Well, you know people get older or they get sick and then they can't keep up with it [the farm]. We are there to help them, because they can just sell to us.'*
>
> *When we asked what about the young farmers and the next generation, the next breath was always, 'There's no one. There's not any kids coming up that want to farm,'"* (Mary, 2025).

Here, the county's vision of farming is portrayed as an antithesis to their progressive visions of semiconductor manufacturing. In Mary's one interaction farmers are portrayed as aging, sick, and in need of a bailout while the existence of agricultural businesses and the livelihoods they provide are simultaneously brought into question.

The discursive discrediting and emptying of prime agricultural land in Williamson County combined with a high-tech vision of progress justifies the lengths to which public private partnerships are articulated in the county. The reader might wonder what would cause a city like Taylor or a county like Williamson to go to such lengths to cater to a private corporation, why they might give up their most direct revenue stream in the form of property taxes. The actions of county and municipal government and the very existence of economic development corporations are manifestations of urban entrepreneurialism. Coined by Harvey (1989), urban entrepreneurialism marks a shift in orientation of local governance from providing public services to attracting private investment. This neoliberal shift has proliferated globally and is articulated differently by local social, political, and economic contexts (Peck and Theodore, 2010). For Taylor, the official motivation for engaging in such extravagant courtship comes down to a self-image of stagnation and decline. To hear city officials describe it, Taylor was stuck in time, unable to grow and achieve progress (Gravell, 2021a). When a city cannot be run effectively with the taxes it

has, it can either increase the tax rate or increase its footprint to include new taxable properties. However, as explained to me by key informants, without an increase in population size, the city cannot expand its limits. So, the rationale to break out of this stalemate is to use the funds you have to attract a business in the hope that by its mere presence, it will increase population and economic development so that the city can pay for the services of the residents it already had. In this proliferating rationale, if a city wants to build anything, they must attract private partners, the purpose for which EDCs are organized and funded. By this logic, Samsung is the ultimate big fish—a relatively clean and futuristic industry, just as it was seen in the 1950's (Lecuyer, 2017), something that could really put Taylor on the map so to speak.

Zero-sum narratives about progress and decline, steeped in neoliberal logics both justify the huge contemporary swings of public-private partnerships as represented in Silicon Fields. The normalizing discourse around this development is disrupted simply by looking to earlier development booms in the county, when it was not assumed that the discontinuation of farming was a necessary and normal byproduct of development. In 2011, as the Toll Road 130 project neared completion near Pflugerville, their EDC director publicly articulated the social and economic place of farming:

> *"Farmers are a large part of our economy. They sell ethanol, food for deer hunters and cattle production. Those dollars go all over the state, country and even the world, and float back into the community. They buy their gas, wash their machines and eat in Pflugerville,"* (Akers, 2011)

This articulation came in a comment about the city's non-annexation agreements, a mechanism utilized to limit the development of farmlands. In exchange for farmers agreeing not to develop their land for the next 45 years, the city agreed not to annex it (Bolaños, 2011). Just ten years later, farmers to the east are ignored in novel development paradigms from the planning process to construction.

Finally, official narratives of progress also serve to speed uncritical endorsement of techno-industrial development by obscuring its potential impacts. The semiconductor fabrication's reputation as "the clean industry" has belied its impacts since the advent of production in the 1950s. Science and Technology Studies scholar Lecuyer (2017) describes how the lack of smokestacks and visual of the clean room gave semiconductors a futuristic and uncritical endorsement. However, the industry is responsible for groundwater contamination so extensive that Silicon Valley at one point had the highest density of federally classified superfund sites in the nation (Olivieri et al., 1985). Poor environmental and labor records followed the manufacturing sector of the industry when it offshored to Taiwan and China, leaving high rates of worker illness and chemical environmental spills in every major semiconductor manufacturing hub (Lecuyer, 2017; Chiu, 2011; Pellow, 2007). This track record, combined with Texas' low standards for environmental regulations and labor protections certainly prompt a number of questions about the potential socio-environmental impacts of Silicon Fields as it's constructed and begins to come online.

3.5 Conclusion

As demonstrated in part two of this chapter, farmers are not so much saved by Samsung as they are forced out by its consequences. Participants like Mary offer a window into the black box in which these transitions occur, and the devil is really in the details they provide. Public mechanisms utilized to accelerate techno-industrial growth can be characterized by the discouraging of rural participation and representation as evidenced in the PR firms hired to "handle" farmers, the use of the COVID-19 pandemic to circumvent requirements for public meetings on development projects, and an overall lack of transparency from public officials.

This chapter demonstrates that neoliberal public-private partnerships go far beyond incentives packages by using eminent domain and the authority to build roads to open agricultural land for the expansion of techno-industrial development. This opening is premised on the discursive devaluing and emptying of the rural land where pad sites, housing developments, and highway corridors are sited. From the operation of TEDC which uses a quarter of all taxes raised in Taylor to buy land and build infrastructure for industry to eminent domain wielded to build roads fit to the needs of firms, public funds are utilized for the explicit benefit of private corporations across east Williamson County. In Taylor and Williamson County's quest to develop a technological corridor, step one is the removal of what stood in the way across rural interspace, as articulated in this chapter. The next step is the provisioning of resources for corporate reproduction including utility connections, housing, and water. The impacts of these steps are explored in the final chapter of this thesis.

CHAPTER FOUR | Emerging impacts: Scarcity in the Land of Good Water

"As a developer, when I'm at my best, all I need is water. I can't make water. That's something that's got to be there,"

-Gary Bradley, embattled developer of Austin's "Circle C Ranch", *The Unforeseen*, 2007

In September of 2024, I was staying at my family's farm while I was doing interviews. One night, I'd gone outside to call in the dogs. I was calling but no one was coming, and I couldn't hear them-- there was another sound, and it was loud. Even in September the temperature was in the 80s after dark and winter storm Uri had been the last straw for my mom's HVAC system. She was using window units to cool the house now. And I was pretty sure that noise was coming from one. There must have been a piece of plastic that had come off and was rattling around in the air pumping out. *Rattling*. My heart seized up as my body figured it out about 10 seconds before my eyes or brain. Before I knew what I was doing I'd lunged into the dark, grabbed a collar in each hand and hauled the dogs inside away from the rattlesnake they had cornered. When I went back for the third dog, I got a better look at their quarry who was in an upright "S" shape that I'd only seen before in taxidermy. Adrenaline was pumping as I yelled for my mom and checked the dogs for bites.

Rattlesnakes are common symbols of Texas, a classic feature of the Western. Despite their prominence in popular culture though, they are not something I grew up with. Snakes, yes-- hognose, rat snakes, garter, even the occasional coral. But rattlesnakes had never made an appearance on our place; so, you can imagine my surprise when I laid eyes

on the third one in two weeks on our farm. So many snakes, in so little time, and never before? I didn't connect the dots then, but increasing encounters with wildlife like rattlesnakes would later come up in interviews. Apparently, other folks were under a similar onslaught. One interviewee confirmed her father, just shy of 100 years old, who'd lived in the area all his life had never in that time seen rattlesnakes on his land. His granddaughter, who lives there now, had just shot her 4th of the year. Another neighbor I spoke with recently said she saw three in three weeks during cool days of February. Someone else likened it to a plague right of out Exodus.

Turns out, there is reason to believe the recent abundance in rattlesnake encounters is linked to proximate construction. Today, less than 1% of Blackland Prairie ecosystems remain intact and unploughed, occurring along fence lines and in pastures, (White, 2006). Riparian areas along creeks and tree lined buffers between fields are other critical habitat for wildlife contained on a farm. In fact, "fragmentation of family-owned farms and ranches has been identified as the greatest single threat to wildlife habitat in Texas." (Kjelland et al., 2007, 231)

Rattlesnakes are far from the only critters that utilize the marginal habitats on cropland and in pastures. The great diversity of native central Texas wildlife from coyotes to red tailed hawks relies on riparian corridors and the unfarmable rural land to live. I don't know if you've ever seen a construction crew clear land for a project. Whether its housing or a factory, the vegetation is the first thing to go. They must level out the site, hauling off the topsoil and bringing in their own that's more suitable for construction. Nothing recognizable is left-- not a farmhouse, not a field, and not wildlife habitat. It's barren and

flat; any trees or landscaping in development blueprints that marketed a project are only added in at its conclusion.

With the presence of humans and movement, loud noises, and pollution, it's no wonder that any wildlife who have the means to get up and move will do just that. A rattlesnake isn't the most charismatic of creatures, and no matter how much Steve Irwin you grew up watching, an encounter with one will set you off if you're not expecting it. Like most wild animals, these guys certainly would prefer not to be in proximity to people, but habitat destruction and fragmentation is driving them to that, and, unfortunately, their ends. Rare is the rattlesnake that survives an encounter with a rural Texan.

Without systematic biological assessment, it's hard to say exactly which species are being most impacted by the development and how. Nevertheless, local news outlets report increased incidences of people encountering the county's rarest wildlife in proximity to development projects, from mountain lions to ring-tailed cats (East Wilco Insider, 2023). This media coverage was reflected in participant narratives, some speaking to the decline of bird populations and varieties present on their properties, others seeing things they've never seen before, like the rattlesnakes. Even talking to people, the loss is evident the abundance of roadkill victims on my drives to and from interviews. As rural roads are more and more travelled, the incidence of roadkill is on the rise (Goldfarb, 2023).

Figure 19. "Where Wilco's Wild Things Are": Headline from the East Wilco Insider in a story about a recent uptick in rare wildlife encounters in November of 2023. (Yerkes, 2023)

My encounter with the rattlesnake may not have been a pleasant one, but it's a good reminder that the people of rural Williamson County are not the only lives being impacted by techno-industrial development. As one participant put it, "I don't think God intended for us to grow up in the land of concrete and not to have all of his creatures. The more land that sells and gets developed we're losing that," (Rebecca, 2025). As chapter four details, as the pace and scope of development increased after 2021, snakes weren't the only things appearing in the wrong quantity and place.

4.1 Introduction

Where we left off in chapter three, a variety of public mechanisms were being used to provision the emerging techno-industrial corridor of east Williamson County with the land needed for its factory footprint and shipping routes. These measures effectively opened the floodgates for landownership changes far beyond the address of Samsung's original site, making plenty of potential for other development to follow including other techno-industrial companies (especially Samsung suppliers), data centers, and residential developments. Samsung itself is already set for local expansions incentivized by a $6.4

billion dollar grant from the CHIPs Act stipulated on the initialized construction of a new Samsung fabrication plant in Williamson or Travis counties every year for ten years starting in 2035 (McCleod, 2024). With such a high volume of development projects underway and so many more on the horizon, an accounting of resource conflicts and socio-environmental impacts in these first years of high intensity techno-industrial development will be crucial to predicting incidence of externalities unevenly distributed along the life of Silicon Fields developments.

With an expanding volume of emerging concerns identified by interview participants including strains on the power grid, mobility, public health impacts of industry, and the shifting distribution of wildlife as detailed above, I decided to focus this chapter on one such emerging area of concern, that of water resources. In the 2000s, Gary Bradley, the infamous Austin housing developer[9], identified the natural occurrence of water in an area as the limiting factor for what he could accomplish as a developer. Whether that remain the case in Williamson County, come 2021 is a question with implications for water users locally and across the region. In a moment when each of the key figures in securing the Samsung deal have moved on to other employment[10], the

[9] Bradley was interviewed in a documentary about his central role in compromising Austin's most iconic water attraction, Barton Springs. Bradley's company was planning an upper-class development just upstream from Barton Springs promoted protest and a movement to protect the Springs. Not the most scrupulous of developers to say the least, even Bradley identifies the natural presence of water supplies as a limitation on development.
[10] In 2023, the TISD superintendent was hired by a larger and more prestigious (Hennington, 2023). The Taylor Mayor responsible for the Samsung deal elected not to run for re-election, returning to employment at ERCOT (The Electric Reliability Council of Texas) (Dworaczyk, 2024). Many participants who follow Taylor politics believe this decision was motivated by fallout after a natural gas pipeline, originally routed through his family's land (where he's just proposed a subdivision development) mysteriously changed course

consequences of their promises are experienced in part on the frontier of water requisition as firms, towns, cities, and developers scramble to acquire what they need. While flooding from stormwater management issues emerges in municipalities, the potential for induced water scarcity in Williamson County is also high considering novel demand from industrial users (Stevens, 2024), increasing population (Cruz and Plotter, 2024), intensifying drought periods (Niraula et al., 2017), and the displacement of low water intensity land use (dryland agriculture). In interviews, the socio-environmental conflicts identified by participants clearly have the potential to worsen.

In addition to the magnitude of Williamson County's targeting by technology firms, it is a relevant case study for induced water scarcity due to its historically high-water availability (Scarbrough, 2005). In her seminal history of the county, Clara Stearns Scarbrough describes a landscape where water was so plentiful as to earn the name "takachue pouetsu" or "Land of Good Water," from the local Tonkawa people. She describes how abundant water has attracted and supported settlement throughout history— rivers and creeks braided across the land, complemented by a high-water table to the east and karst geography to the west which produced thousands of small springs (Stearns-Scarbrough, 1998). Abundant water and flood cycling have crafted the extremely fertile soils of the area (Dowhoser, 2021; White, 2006; Samson and Knopf, 1996). Where irrigated agriculture makes up 72% of humanity's total freshwater usage (Foley et al., 2011) and global agricultural production is expected to shift increasingly into water

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resulting in accusations that he'd used his position to move the pipeline onto others. Lastly, the County Judge recently resigned to accept a position in the Trump administration as the Region 6 advocate for the US Small Business Administration (Maness, 2025b).

stressed regions with weak water-use regulations (Rosa et al., 2019), the displacement of such productive dryland farming to produce green technology is logically paradoxical and makes evident the contradictions of the technological fix being deployed in Williamson County.

Therefore, in this Chapter, I carried out a thematic analysis of participant interviews identify what specific water related concerns are emerging in the few short years since Samsung was sited to answer my final research question:

> (3) When prime farmlands are lost and replaced with other land uses, what are the local and regional socio-ecological impacts; furthermore, what implications do these impacts carry for local sustainability?

By investigating the water conflicts emerging during land use change from dryland agriculture to techno-industrial development in eastern Williamson County, I address how the water is provisioned differently for different end users, how proximity to power and capital subverts water scarcity, and how water related concerns add to the vulnerability of agricultural lands. Therefore, chapter four is structured into four thematic areas of water related concerns emerging from interviews: water availability, water accessibility, water quality, and flooding. For each theme, some historical context is provided followed by emerging contemporary concerns associated with new modes of development. An analysis of water related concerns in this case study provides relevant insights to induced scarcity in the wild west of Texas water governance, regionally as more technology firms move to the American South, and to a global debate on the role of green technology in just transitions.

Themes	Codes
Availability	Aquifer depletion (Landscape scale)
	Special district capacity
	Novel demand by industrial users
	Decreased reservoir storage
Access	Municipal access
	Groundwater depletion (household scale)
Quality	Industrial Pollution (point source)
	Polluted Runoff (non-point source)
	Water service infrastructure
Flooding	Package Plant Discharge
	Increased impervious surfaces
	Changing floodplains

Figure 20. Water related codes and themes: Each recurring code from life history interviews is listed here, organized into themes of emerging water-related concerns.

4.2 Emerging Water Concerns

4.2.1 Availability

As discussed in the introduction, both ground and surface water in Williamson County have been historically abundant, especially in the eastern half, so that even during periodic droughts, a variety of locally available freshwater sources are stable. Abundance, however, does not necessarily equate to *availability* which is a measure of the *quantity* of water available in suitable *quality* for use (USGS, 2023). Historically, abundant water naturally occurring in Williamson County was transformed into *available* water through reservoir construction. The Army Corp of Engineers built two key reservoirs in the county in the late 20th Century to promote the growth of cities by mitigating flood risk and providing surface water storage for reliable drinking water sources (Scarbrough, 2005). In addition to reservoirs and contracts with the river authorities who oversee them, groundwater is available in Williamson County through wells used by municipal utilities, special utility districts, and many rural households.

Aquifer depletion (landscape scale)

Interviewee concerns about water availability in Williamson County are more related to scarcity that's induced by competition rather than by natural variation in abundance. The most common code relating to availability was that of aquifer depletion, which I derived from participant's concerns about firms and municipalities being allowed to withdraw groundwater with little oversight or regulation. Groundwater governance in Texas is a fraught as surface waters across the state are becoming fully allocated and users (public and private) increasingly turn to the groundwater stored in aquifers (Wurbs, 2014). Texas groundwater is governed under the "Capture Rule", which allows private entities to buy and sell groundwater rights and to extract at desired volumes with little oversight, giving rise to the notion that "the largest pump wins" (Kaiser, 2010). Additionally, there are few regulations on interbasin transfers, emerging at scale in the region as major metropolitan areas including San Antonio and Austin are quickly entering into contracts with private utilities like EPCOR to secure the sale and transfer of non-local groundwater contracts of unprecedented scale (Young et al., 2024). The increasing prevalence of interbasin transfers, frontierism of the Capture Rule, and the inherent difficulty of groundwater monitoring make all aquifers in Texas vulnerable to depletion, especially those close to growing urban areas, including the Carrizo-Wilcox aquifer in Williamson County's far eastern corner.

Novel demand by industrial users

Novel demand by techno-industrial water users adds competition to an already dwindling resource. While interviewees did not know the specific amount of water required

for Samsung, considering the scale of the factory, they all believed it could be one of the largest users in the area, consuming an outsized amount of water compared to its footprint. While Samsung has yet to initiate mass production, it currently gets 4.63 million gallons of water daily from the City of Taylor and is expected to require at least 15 million gallons daily by 2026 (Stevens, 2024). Currently consuming over one-third of Taylor's drinking water, the Samsung plant will soon be the beneficiary of an interbasin transfer from the Carrizo-Wilcox administered by Canadian Utility EPCOR (Baddour, 2025). Samsung represents just one firm in an emerging techno-industrial corridor that will contain water intensive chemical companies and datacenters, not only eliminating the natural abundance of water in the county but drawing down on regional availability as well.

Special District Capacity

Amidst novel drawdown on limited water resources by industrial users and expanding municipal footprints, rural residents interviewed felt that their water availability was unlikely to be prioritized in the future. Interviewees living outside of city limits rely on service either from private wells or from special utility districts (SUDs) which are collectivized utilities that provision rural areas in the county. These SUDs have historically provided pivotal rural infrastructure beyond the reach of cities and often work with cities when municipalities are low on water. However, their capacity is in question as rural service areas densify in the coming years. Multiple interviewees served by SUDs recalled conversations with their water managers about the tough position they are in, and one member of the Jonah SUD board interviewed was clear on the topic, telling me, "I can assure you; we will run out of water. We cannot support the development that is coming. I

mean, we know that on the Jonah Water Board. We know that." (Carol, 2024). Therefore, population growth and densification in Williamson County also presents the potential for declining water availability for incoming residents.

Decreased reservoir storage

While Williamson County's groundwater is facing contested outcomes, the continued availability of surface water stored in the primary reservoir, already fully allocated, is in question as well. During questions about water in the county, many interviewees brought up the silting of Lake Granger as a major concern. The over 6 square mile reservoir has been losing capacity since its creation from erosion (TWDB, 2013). In fact, this key water source for most of the municipalities and SUD's in Williamson County's eastern half is currently estimated to lose 421 ac-ft per year to silting (BRA, 2011), which many believe will worsen with so much construction in the coming years. Therefore, availability of surface water storage reemerges as an issue just forty years after the Granger reservoir was completed.

4.2.2. Access

As discussed in the previous section, water in abundance does not equate to *accessible* water available for human consumption (Damkjaer and Taylor, 2017). Access to water is mitigated by infrastructure, governance, and management. In Williamson County, access to water is managed by municipal utilities, SUDs, and municipal utility districts (MUDs) and depends on rainfall, reliability of infrastructure, inter-municipal agreements, and surface water contracts with the Brazos River Authority (BRA) and the Lower Colorado

River Authority (LCRA) (TWDB, 2024). Additionally, many rural residents rely on hand dug wells to make their water accessible (McCleod, 2024a).

Municipal Competition

Competition accelerated by novel industrial demand and population growth presents an outsized concern when it comes to accessibility of water for rural communities and small municipalities of Williamson County under the doctrine of prior appropriation, which gives priority to the first users of a water source (Kaiser, 2010). Interviewees who were long term residents recalled larger and wealthier municipalities securing water contracts long into the future during periods of growth when smaller, less affluent communities could not afford to do the same. For example, when Toll Road 130 was built, a period of growth in Pflugerville and Round Rock triggered new water contracts and new infrastructure planned to accommodate current rises in population as well as projected future growth to 2030. Likewise, amidst current growth, Georgetown, the prosperous county seat has acquired a costly contract with EPCOR for water from the Carrizo-Wilcox (Baddour, 2025).

Furthermore, population growth in municipalities with the infrastructure to support it results in the loss of inter-municipal agreements where municipalities can purchase surplus water supplies from each other. Clearly, wealth and foresight determine accessibility and diversity of water sources available to a community. Already, the effects have been demonstrated in two instances recounted in interviews. First, a new high school being built in the small town of Granger was delayed in opening for the lack of water provisions, ironic considering the abundance of water stored in the nearby reservoir

bearing the town's name but allocated to others. Second, winter storm Uri crippled the Texas power grid in 2021 and rendered Taylor without drinking water of acceptable quality for weeks due to the compromising of pumps to extract from its single source (Shoop, 2021).

Critical redundancy is unlikely to be easier to acquire in coming years considering the costly nature of groundwater supplied by private utilities, as demonstrated in the previous section. Therefore, prices for water paid by customers are on the rise across municipalities as they rush to acquire new contracts and build new water service infrastructure. Municipal headlines have been dominated recently by the increase in base prices for all municipal users to fund new water for new growth (Warhurst, 2025; Lessen, 2024).

Groundwater Depletion (household scale)

Those who do not use a water service, relying instead on wells, reported levels dropping or wells drying altogether. One farmer, John, described his hand dug well, which never went dry in forty years, becoming unusable as well as his spring-fed pond that he used for livestock watering. What's more is that people like John have struggled to get service from water providers in their area following well-drying because SUD's are hesitant to invest in infrastructure to addresses where they expect the farmers to be displaced soon. Likewise, municipalities are unwilling to allow ETJ households to tap into lines being built through their properties to service industrial users.

In other parts of Texas, well-drying from groundwater depletion has been followed by programs to aid rural users by deepening their wells like the Groundwater Assistance

Program (Young et al., 2024). However, that's not the case in Williamson County, where officials maintain there will be a total build out of the county, and household wells will cease to exist. When John went to the County about the drying of his wells, they told him, "we don't furnish water to nobody." (John, 2024).

4.2.3 Quality

The corresponding aspect of availability, quality, is the final theme related to scarcity that emerges from the Williamson County interview dataset. Quality of drinking water is measured and managed by the various utilities that make it accessible for human consumption in compliance with standards set by the Safe Drinking Water Act and the Texas Commission on Environmental Quality (TCEQ, u.d.). Aging infrastructure and pollution make up emerging water related concerns in this theme.

Industrial Pollution (point source)

The most recurring code in this theme is that of new sources of industrial pollution coming from Samsung and other techno-industrial firms coming to the area, especially chemical suppliers. For interviewees who had done a lot of research into Samsung, they believe that the siting in Taylor is specifically related to several instances of chemical spills at its Austin plant which soured the capital city on expanding its campus there (Gold, 2022). In a more remote setting, they believe Samsung's environmental track record will be less visible.

Less is known about the chemical suppliers following Samsung such as phosphoric acid manufacturer Soulbrain (Poling, 2024). One interviewee's remarks capture concern among residents, "We was reading an article one time, and it said that you don't want to be

within five miles upwind and downwind of this plant over here," (John, farmer, 2024). Furthermore, the literature tells us that regulation against emerging contaminants is always reactionary (Morin-Crini et al., 2022), such as those which could be present in wastewater coming from the techno-industrial corridor. This means monitoring for such harmful pollutants will be totally self-regulated by Samsung and their onsite wastewater reclamation facilities operated by EPCOR.

Figure 21. Samsung water reclamation facility under construction: This water treatment plant is just one part of the massive infrastructure that been added at the Samsung site. Photo taken by author.

Polluted Runoff (non-point source)

Figure 22. Historic photos of the San Gabriel River as a community gathering place: (Left) Two men pull a monster catfish from the San Gabriel River, circa 1925. From "Miscellaneous Portraits", Jno Trlica Collection, Harry Ransom Center at the University of Texas at Austin. (Right) A Czech family gathers on the riverbank on a Sunday afternoon, circa 1950. Photo courtesy H.J. Leshikar.

Likewise, from roads, construction sites, and factories, non-point source pollution affecting surface water is of great concern to interviewees. Beyond quality for the purposes of drinking water, polluted and degraded waterways threaten the centrality of surface water in life for recreation. For farming communities, the San Gabriel River continues to be key site for recreation, community gathering, and fishing. Obvious degradation of the San Gabriel and its tributaries is deeply concerning for respondents, many of whom no longer feel that a number of socially important sites in the water way are safe for recreation any longer.

Water service infrastructure

In addition to quality concerns related to pollution, interviewees site infrastructure failures as major concerns for municipal customers. One key informant from the City of Taylor's government explained that wastewater infrastructure simply fails to be maintained

as the city can only afford one full time employee to operate the treatment plant. Furthermore, that same employee says that boil water notices and line breaks are frequent, due to aging lines in desperate need of replacement across the city. This is ironic, considering that the city is footing the bill for a trunkline being built into the extraterritorial jurisdiction to serve industrial users including Samsung.

4.2.4 Flooding

Historically, the biggest water issue in eastern Williamson County was the occasional overabundance of it. Periodic and devasting floods struck the county in 1921 and 1957, eventually resulting in the creation of a controversial 6 square-mile Army Corp Dam in 1980 that produced Granger Lake and displaced more than 200 Czech farms and three Czech towns (TWDB, u.d.; Scarbrough 2005). Flooding reemerges as a theme in Williamson County, just forty years after the creation of Granger Lake to address that concern. This theme includes localized induced flooding as well as regional changes in the flood plain.

Package Plant Discharge

Hyper-localized flooding is a concern for rural landowners who live near package plants which are prefabricated wastewater processing facilities that have become a trend in ETJ housing developments (McCleod, 2024c). Developers can purchase these facilities and organize a MUD rather than pay to build sewer lines that connect to municipal infrastructure (Zuvanich, 2024). However, oversite and permitting for these plants is minimal and city and county governments have no jurisdiction over their approval, which happens through the Texas Department of Environmental Quality. The main point of

interest for interviewees is the discharge points for such plants. Interviewees say that a lack of oversight has and will continue to result in millions of gallons of water daily being introduced into tiny streams and field roads which do not have the capacity to handle them. Recently, a package plant was contested for its intent to discharge wastewater into a ditch directly in front of an elementary school (Zuvanich, 2024). One farmer interviewed remarked that her property will be flooded out by package plant discharge long before the county decides they want to build a road through it (Wynette, 2025).

Increased impervious surfaces

The most common recurring across participants relating to flooding was the impact of impervious surfaces on runoff. They fear what will come when millions of gallons of water that used to soak into soil during the annual rainy season meet concrete instead and rush downhill. This concern was especially pronounced for older participants who remember some of the more notable flooding events in the county prior to the creation of Granger Lake. The effects of impervious surface on flooding in storms are well supported in the academic literature (Sohn et al., 2020) and interviewees insisted that they already see the impacts just a few years into the construction boom.

Changing floodplain

The impact of increased impervious surfaces in Williamson County is evidenced by the changing floodplains documented by the county in the recently commissioned Atlas 14 study as well as interviewee accounts. The Atlas 14 Study was ordered by the county to update FEMA maps starting in 2021 using the Altas 14 precipitation data from NOAA. It

found that more than 12,000 structures were in the newly assessed floodplain which is far more extensive than FEMA's (Nuylan, 2024).

Interviewee accounts corroborate Atlas, including several respondents living along a flood-prone creek. They explained that flooding is typical, but water is reaching farther than ever before during flooding events just in the last couple of years. Living on the same property as their grandparents, they could assure me that this extent of flooding has never happened there before. One historic church cemetery in the shadow of Samsung also reports historic flooding which church officials believe may eventually erode the cemetery altogether (Zuvanich, 2025). Caused by adding impervious surfaces, intensifying rain cycles driven by climate change, and increasingly channelized municipal waterways, flooding reemerges in Williamson County alongside scarcity-related themes.

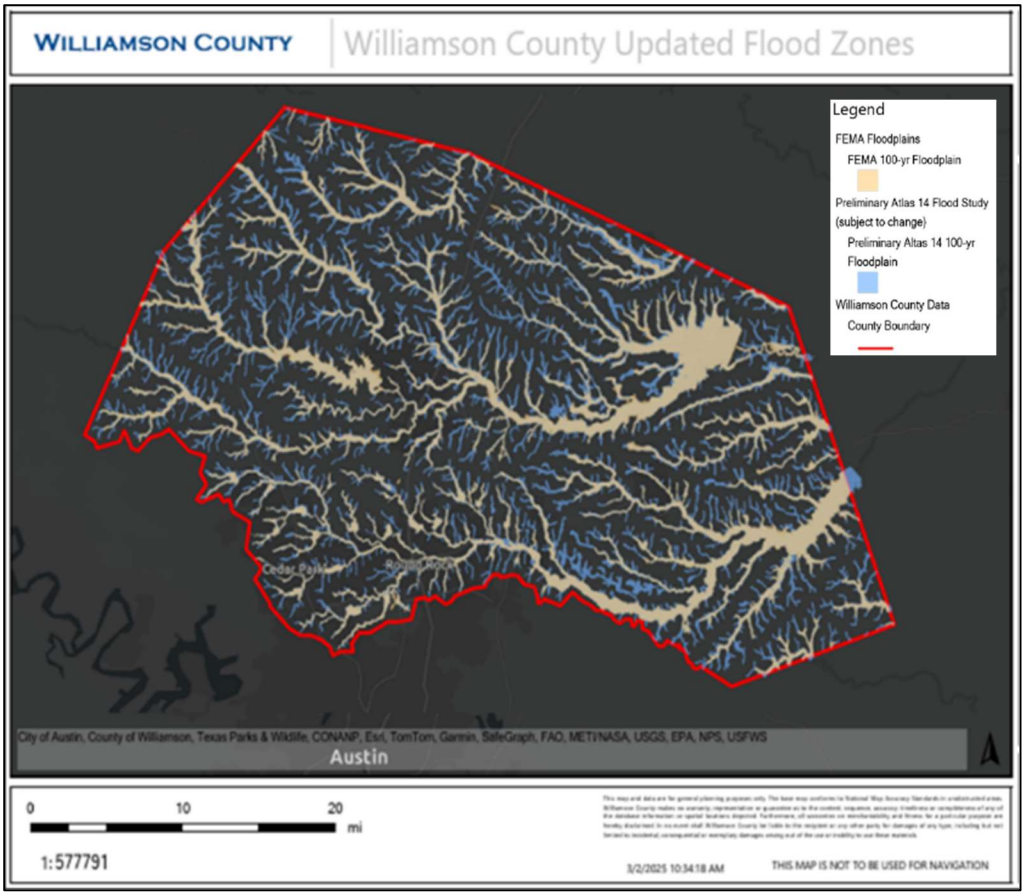

Figure 23. Results of the Atlas 14 floodplain study: FEMA floodplains are displayed in beige and Atlas 14 appear in blue. (Williamson County, 2025)

4.3 Discussion

Eastern Williamson County, where water has historically been abundant, is a compelling case to study the tensions between water sustainability, farmland loss, and economic development related to technological production. While water scarcity experienced by individuals is compounded by environmental factors, it is also socially induced through competition, pollution, and structures in the built environment (Agnew, 2017). Water scarcity is not apolitical. Power dynamics between end users shapes where, in what quantities, and in what quality water manifests on the landscape and is available for use

(Kaika, 2003), and in the case of Williamson County contributes to the simultaneous experience of overabundant and underabundant water.

4.3.1 Uneven benefits

As Marc Reisner (1986) writes on water stress in the American west, “water flows uphill, toward money.” This phenomenon is reflected in Williamson County where there emerges a gradient of accessibility, where empowered water users have access to water in the quantities they require, and disempowered water users do not. Increased demand on finite, albeit comparatively abundant water resources induce competition and firms and large municipalities are the winners. Rural well users have the most grim outcomes when it comes to water access, and small municipalities find themselves also struggling to acquire services for their citizens.

Under the prior appropriation doctrine, the surface water in the county is almost totally allocated, which happened decades ago as urbanizing municipalities in the western half of the county claimed water contracts for current and future use of surface waters. In the past, larger municipalities sold their excess to smaller ones, but as demand increases, those arrangements will come to an end, and there will be nothing left to claim for smaller municipalities. Already, many have no redundancy in provisions, relying on single sources for their water supply, which in emergency scenarios has already proved disastrous. This city versus city conflict over water is ironic demonstrates the uneven distribution of benefits and burdens with the siting of reservoirs as the small municipalities closest to Lake Granger, containing the farmers displaced by its creation must compete with large and affluent municipalities to the west who received water allocations from the Lake right

after it was built (Scarbrough, 2005). Groundwater in the county and beyond emerges as the last frontier in water resource provisions for all users.

Firms benefit from Texas water governance and local public-private partnerships when it comes to water provisioning. Firms establish redundant and abundant water supplies by participating in a water trade that exercises the legal doctrine of the Capture Rule. Furthermore, they leverage public-private partnerships to access public funds for the purpose of private accumulation including for water lines and well studies. The neoliberal nature of these dynamics between competing water users yields uneven burdens associated with water provision to firms within municipalities, their outlying rural areas, and even beyond the county boundaries. Such distribution of burdens and benefits are well documented by scholars of neoliberal governance and neoliberal water governance (Kaika, 2003; Savelli et al., 2023).

Furthermore, water availability is in question, strategies to get around scarcity are emerging for those end users with relationships to power and capital. According to a key informant from the Taylor Economic Development Corporation, development will only continue so long as the resources are there to support it. However, this simplified and rational logic is not represented in practice, nor in their additional contention that water would not be a problem so long as the city could keep on buying it from somewhere else.

It seems that relationship to capital and public-private partnerships are the limiting factor for growth in Williamson County. As previously discussed, interbasin transfers are available for those cities and firms with deep enough pocketbooks to secure the contracts. Furthermore public-private partnerships, special relationships between different levels of

government and firms, result in creative solutions to the water supply which are not granted to less empowered users like private rural citizens or rural municipalities as evidenced in the discussions on municipal access and groundwater depletion at the household scale. The irony of Taylor, a municipality with single source drinking water and severe infrastructural quality issues building a trunkline for industrial users and funding inspections and well studies on behalf of Samsung is a feature of neoliberal governance (Peck, 2013) which defines the city's relationship with Samsung.

Additionally, housing developers are able to capitalize on the current pace of development which is freeing up great portions of land as agricultural livelihoods become less feasible. In the jurisdictional confusion of rural ETJ's, housing developers find opportunities to fast-track developments without needing to abide by city building regulations and package plants to handle wastewater capacity are key to their ability to do so.

4.3.2 Uneven Burdens

The body of literature on green capitalism and the technological fix cited in the introduction of this thesis tells us to expect uneven distribution of socio-environmental externalities around production sites. In reviewing participant responses, it's clear that the burden of water related concerns are experienced unevenly, even among rural residents.

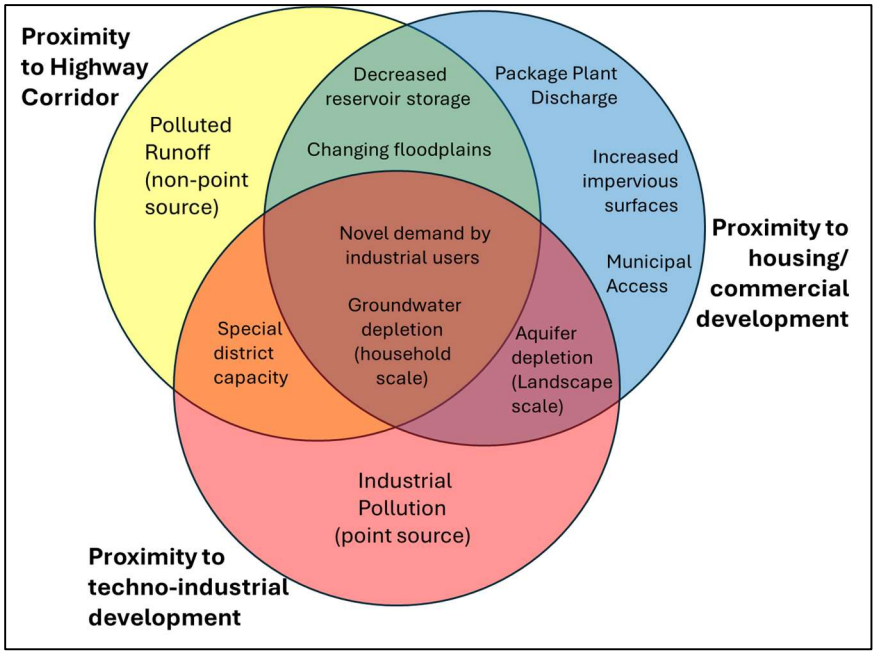

Figure 24. Rural water concerns by proximity to development project: Codes appearing in rural participant's interviews were organized by their proximity to different modes of development. "Proximity" denotes properties one mile or less away from the type of development.

Figure 3 shows that effects of development on water are experienced unevenly within rural communities. Although many concerns were held in common by nearly all respondents, some were unique to the mode of development closest to the respondent. For example, all rural residents were concerned about Samsung's impact on regional groundwater depletion, but only those residents living within one mile of its factory or of one of its chemical suppliers addressed concerns about chemical pollution impacting water quality. Altogether the spatial distribution of water related concerns in eastern Williamson County suggests that knowledge about specific and emerging issues is contained close to the site of development. Only concerns that are broadly applicable across space (such as aquifer depletion) are perceived by all as pressing concerns.

Furthermore, while cropping is non-irrigated in Williamson County, water concerns do add pressure to landowners to relocate. This is especially true of landowners with a homestead or with livestock, that is those who live on their farm or have animals

that require access to freshwater. Furthermore, the expansion of floodplains and intensifying precipitation events in the rainy season induce flooding in formerly agricultural areas. While special attention is paid to structures implicated in the Atlas 14 flood study, less remarked on are the crop fields which encompass most of the new floodplain. For farmers who operate on tight margins in the county, a single flood event impacting planted fields could ruin someone, even with crop insurance. In both the case of depleted groundwater and of flooding, the decreased feasibility of agricultural activities and loss of income associated can contribute to a farmer's decision to sell their property and business.

Lastly, the potential impacts of techno-industrial manufacturing on water quality are unevenly anticipated by interviewees. Already, other techno-industrial clusters in Texas have received much attention for their exploitation of weak water and environmental regulations in Texas. Brownsville and the newly incorporated company town of Starbase in south Texas are now home to the SpaceX launch site where several lawsuits involving dumping and water contamination have emerged and environmental justice concerns abound (Raulston, 2024; McGaughy, 2025; Brumfiel, 2024; Clua-Losada, 2024; Garcia et al., 2025). Additionally, Bastrop County has become the site of many of Elon Musk's ventures including an additional company town. Like Williamson County, these techno-industrial developments take place primarily over rural farmlands, and the firms have been charged with a number of water related violations from TCEQ including pollution discharge into ditches and creeks (Tremayne-Pengelly, 2023).

While Silicon Fields has yet to receive similar violations, it is known that the industries its housing may not have the best track record in that area. Semiconductors in particular are associated with groundwater contamination in Silicon Valley and overseas manufacturing sites. The semiconductor manufacturing set to take place in Williamson County is part of a movement to reshore chip manufacturing as incentivized by the CHIPs Act and motivated by domestic supply chain shortages of semiconductors made obvious during the COVID-19 pandemic (Zhou et al., 2022). This policy intervention represents a shift in the industry which, since environmental impacts of the 1980's came to light had been organized by the foundry model, where research and development of novel technology occurred in Silicon Valley and the manufacturing of chips happened abroad (Rinehart and Kirchhoff, 2023). Therefore, the history of the industry merits critical questions about the potential impacts of reshoring semiconductor production exemplified in Williamson County in the state with some of the poorest environmental regulations and monitoring in the nation.

Likewise, the datacenters flocking to Silicon Fields prompt a number of concerns about uneven resource demand. As artificial intelligence proliferates, Hagendorff (2022) are urging for an AI ethics that gets beyond fair use and into the environmental impacts of the computing that supports this industry. The contribution of datacenters to the climate crisis is substantial but hard to quantify and scholars like Dhar (2020) call for further study into the demands of physical locations of computing. However, we do know that the number of datacenters across the US are on the rise and that each requires substantial volumes of electricity for operating and water for system

cooling (Siddik et al., 2021). Therefore, studying the explosion of datacenters locating in east Williamson County after the Samsung announcement also address critical blind spots about their local footprints.

4.4 Conclusion

In this chapter, qualitative methods were used to (1) identify emerging water-related issues in eastern Williamson County amidst a new boom of techno-industrial development and (2) answer research questions about how water related concerns are experienced across space and by different user groups with particular focus on rural residents who live closest to the sites of novel techno-industrial developments. In this context, four emerging themes of water-related issues were identified: availability, access, quality, and flooding. These themes are highly tied to neoliberalism that shapes both Texas water governance and the public-private partnerships that attract techno-industrial firms. Furthermore, these emerging concerns are highly interrelated; for example, decreased surface water capacity through silting is made worse by construction. Construction is also increasing impervious surfaces. Decreased storage capacity at the lake and less pervious surface will induce worse flood outcomes from stormwater. Therefore, further inquiry into the interconnection, thresholds, and positive feedback loops present in these themes is urgent.

Clearly, many of the water concerns laid out in this paper are still emerging. Between the expected effects of climate change on the region and the expanding footprint of the techno-industrial corridor, scarcity and flooding both have the potential to worsen. With so many concerns arising from a single fabrication plant that is not yet even

operational, repeated inquiries five, ten, and twenty years from now would be merited. Eastern Williamson County would be an excellent longitudinal study on emerging chemical contaminants, the effects on water quality from urbanization, and the impact of induced flood risk on growth projections. Future inquiries could also use the index of water-related concerns compiled in this chapter to structure more systematic sampling about the distribution and experience of water issues.

5 CONCLUSION | Speculating on Futures

5.1 Summary

In three main chapters, this thesis explores the emergence of a techno-industrial corridor taking shape over prime farmlands in Central Texas. In chapter two, I look to the historical restructuring of the agricultural economy for explanations of how productive farmlands are so easily supplanted contemporarily despite their resilience to climate stress and importance for global food security. I demonstrate that the global restructuring of the agri-food system, experienced in Williamson County as the proliferation of synthetically produced inputs and an ever-shifting apparatus of state intervention has been reflected in the restructuring of rural community as evidenced by the decline in collective practices and the splintering of local food systems. Yet, farmers have adapted to these restructurings and the increasing cost of operations to ensure the continuity of farming into present times. Therefore, I argue that the rise of techno-industrial development in Williamson County is premised on a multi-dimensional devaluation of agriculture livelihoods.

In chapter three, I examine the ways in which public mechanisms are utilized to open agricultural land for techno-industrial development. I account for both the highly visible public incentives packages that initially attract firms as well as the more obscured mechanisms such as eminent domain and other, more indirect factors that lead to diminished agricultural feasibility. Chapter four extends this discussion by highlighting the conflict-ridden socio-natures that emerge from the publicly assisted techno-industrial supplantation of prime farmlands. Drawing on participant narrative and contemporary media archives, I find that water scarcity and flooding are both emergent conditions. I

argue that manifestations of water over and underabundance are induced and worsened by current modes development as exemplified by gradients of water accessibility and uneven distribution of water quality concerns.

5.2 Opportunities for responsible planning

While this thesis focused a great deal of attention on the performance agreement signed by the City of Taylor in 2021, another important document preceded just the week before. The Envision Taylor Comprehensive Plan was adopted by the city on November 18, 2021. This plan, in contrast to other municipalities around the area, sets clear and high standards that mitigate sprawling development at the urban periphery, embodying Hunter et al. (2022) suggestion that loss of prime farmlands can be mitigated by smart urban growth. This may seem ironic, given what we know about Samsung, but a key informant who helped author the plan was clear that they had no knowledge of Samsung's coming when it was being written. In fact, though the plan has not mitigated industrial development, it has set the bar high for the standards and diversity of housing options that are able to be pursued. What's more, it incentivizes infill development and the redevelopment of existing buildings (Lionheart, 2021). With these regulations in place, developers in Taylor have turned their focus to successful projects on redeveloping historical buildings and constructing affordable apartment complexes in the space between lots at the heart of the city (Moss, 2025).

The Old Taylor High, a vacant school building, is one such redevelopment project. It is now set up like a small business mall with the classrooms each supporting restaurants, bars, shops, and studios. Likewise, a vacant church building has recently been converted into a micro hotel and coffee shop that supports a local coffee roaster. These new developments and the masterplan that support them demonstrate that Taylor and Williamson County are not incapable of responsible planning and growth, and that alternatives to the fast-paced and uncritical development typologies in the urban periphery are not hegemonic across the county.

Figure 25. Examples of redevelopment projects in Taylor: (Left) A vacant church building bought by redevelopment investors advertises possible futures for tenants including a bar at the altar. (Right)Visitors to the Old Taylor High Small Business Mall check out puzzles from the puzzle exchange in the hallway.

5.3 Futuring for farm and city

I want to close this thesis with hopeful practice in futuring that challenges the zero-sum game of rural vs urban so apparent in developmental paradigms of this case study. Indigenous environmental studies philosopher, Kyle Whyte (2021) has coined the term "crisis epistemology" to describe ways of thinking and operating which justify actions that

will have negative impacts through asserting the urgency and unprecedentedness of an impending "crisis." The case of Williamson County abounds with such "crises" from global food scarcity which has justified the structuring and restructuring of the agri-food system, to the crisis of rural decline which justifies uncritical economic development, to climate change that justifies the production and consumption of green technologies. Whyte does not argue that these crises are not real. However, he asserts that change—that crises—are constant and that by responding uncritically to them, we endorse the temporary suspension of ethical considerations such as justice and are likely to produce other unintended consequences (more crises). While a different context than the one from which Whyte writes, this thesis demonstrates many such unintended consequences stemming from "solving" the crises outlined above.

Whyte offers a framework for a different kind of thinking, an epistemology of coordination. In this framework, it is understood that no crisis is unprecedented, and threats to the future rather than threats to the present are centered. Furthermore, acting on an epistemology of coordination is rooted in reciprocity and responsibility to others and to the environment. If Whyte's future oriented alternative framework was the guide for more people, I would imagine futures in Williamson County to look quite different. Therefore, I close with two vignettes from interviewees who described the futures they hope for on their land which align more closely with Whyte's emphasis on future sustainability and the importance of responsible moral bonds.

Luke

Luke is a young farmer who has no intention of continuing with conventional agriculture. He grows fields of hemp, a crop that's extremely tolerant of the intensifying drought periods in the county. Luke's hemp is not for smoking, it's for building. The material he produces is being used as an affordable and environmentally friendly alternative to replace synthetic construction materials like insulation, flooring, and siding. Luke sees a place for farms and for the municipalities, which his products are actively helping to build. To that end, he gives talks around the area about the importance of farming, how it can become future oriented, and the essential relationship between municipalities and the farms on their peripheries.

Angela

Like Luke, Angela hopes for a future where the relationship between farms and municipalities is more localized and direct. While her land has been a conventional grazing operation, approaching development has prompted her to want to change course. She sees a need emerging in the sprawling housing developments being built around her. Motivated by care for those moving to the county and occupying new development, Angela wants to convert her family's land into a community supported agricultural cooperative. She envisions a place where people living in the high-density development can find opportunities to connect with their food and the environment on her farm. She pictures a future where the urban is entangled with the rural to everyone's benefit.

If more people had the opportunity and space to think like Angela and Luke, to consider the benefits of coordination and reciprocity, developments, techno-industrial or otherwise, might proceed more thoughtfully. So, in a time when everyone is speculating on Williamson County's future, why should their visions be any less likely?

APPENDICIES

Appendix A. Williamson County Agricultural Demographics

Stats:	2002	2007	2012	2017	2022
Number of farms	2,510	2,728	2,542	2,634	2,352
Total acrage in farms	583,099	558,622	541,618	559,261	380,184
Family farms (%)		98%	99%	98%	96%
Farms by size					
1-9 acres	184	312	241	336	291
10-49 acres	946	1,090	987	1,173	1110
50-179 acres	732	744	729	660	629
180-499 acres	368	349	348	236	181
500-999 acres	148	115	130	107	81
1,000 + acres	132	118	107	122	60
Median farm size (acres)	83				
Average farm size (acres)	232	199	220	212	162
Total across the county					
Market value of products sold	48,396,000	190,391,000	129,648,000	114,923,000	95,687,000
Government payments	3,057,000	5,108,000	3,659,000	6,359,000	2,521,000
Farm production expenses	60,933,000	160,020,000	124,135,000	123,085,000	118,108,000
Net cash farm income	-11,366,000	39,298,000	16,783,000	7,583,000	-12,273,000
Per farm average					
Market value of products sold	18,484	69,792	51,002	43,631	40,683
Government payments		7,276	5,485	13,387	8,754
Farm production expenses	24,209	58,658	48,834	46,729	50,216
Net cash farm income	-4,156	14,405	6,602	2,879	-5,218
Producer demographics					
Total producers	3,692	4,153	3,886	4,404	4,089
Women producers (%)	30%	33%	35%	41%	41%
New and beginning farmers				1,273	1,322
age (years)					
<35	126	138	88	218	176
35-64	1,697	1,768	1,513	2,711	2,296
>65	697	822	941	1,475	1,617
Race					
American Indian/Alaska Native	7	34	28	28	20
Asian	1	0	11	6	28
Black or African American	14	19	44	29	28
Native Hawaiian/Pacific Islander	3	0	0	0	2
White	3,606	4,011	3,742	4,299	3,979
More than one race	6	31	19	42	32
LatinX	137	221	243	376	298

Appendix B. Life History Interview Guide

	Life History
1	How did you come to live here in the area?
2	What roles does agriculture play in your life?
3	Tell me about you and your family's relationship to that land you live on.
4	How have you seen the area change over the years?
5	How has the way agriculture is done in this part of the county changed since you were young?
6	How has the way you get your food changed since you were young?
7	Have you had the same neighbors over the years?
8	What town do you identify with the most?
	For running errands?
	For sending your kids to school?
	For church?
	Characterizing Contemporary Development
9	Which development projects in the last 5-10 years have most affected the area around you?
10	Who or what do you see as the major forces driving development in Eastern Williamson County?
	For housing development?
	For the expansion of towns?
	For commercial development?
	For industrial development?
11	When did you first start to hear about…
	Samsung?
	Tesla?
12	From what you know, how did Samsung end up in Taylor?
13	What do Samsung and other incoming tech firms do for the area
14	What does local government do for Samsung and other incoming tech firms?
	Municipal level government?
	County level government?
	State level government?
15	Some people make the case that the county's growth is a natural part of developing into a better, more advanced, and respectable society. How would you respond to that sentiment?
16	Many parts of the country are experiencing rapid growth and development of different kinds; do you think anything sets Williamson County transition apart?
17	Do you think you and your neighbor's interests are being represented in processes reshaping the county?

	How not or how so?
Roads and Mobility	
18	When did you first start hearing about new road projects like the county corridors?
19	What do you know about the Williamson County Long Range Transportation Plan?
20	Has living near new development affected your mobility in terms of…
	Commuting?
	Going to town?
	other normal driving routines?
Land sales/acquisitions	
21	Who is in the business of buying land in Williamson County?
22	What is your conception of eminent domain?
23	Has there been any eminent domain proceedings started in the area that you know of?
24	Have people in your area started selling willingly?
25	Do you have any sense of what that process has been like for…
	farmers?
	landowners?
26	Has zoning around you changed recently?
	What is that process like?
27	Have you ever been contacted for voluntary annexation into a city limits?
28	Has your property's extra territorial jurisdiction ever changed? What were the circumstances?
29	Do you ever get contacted by real estate agents?
	How often?
	How does that make you feel?
30	Have your property taxes changed in recent years?
	Any idea what prompted those changes?
Infrastructure/ Utilities	
31	What utilities do you have?
32	Do you have a lot of choices in service providers?
33	Have you experienced changes in service in recent years in terms of…
	cost?
	being removed from the service area?
	utility service being added by a municipality?
	Choice of service providers?
Future Oriented Questions	

34	Has recent development around you affected your or your farmer's ability to farm in terms of…
	Equipment mobility?
	Loss of leases?
	Direct loss of agricultural income?
35	Do your kids what to continue farming/ keep the land agricultural?
36	Do you think there's a future for agriculture in Williamson County?
37	For landowners: Do you have a contingency plan if your farmer gets out of the business?
38	Do you think an individual such as yourself can make their voices heard in terms of…
	engaging with local officials and governmental offices?
	lawsuits?
	community organizing efforts?
39	What has been your experiences with either of these avenues for public engagement?
40	What, if anything, might cause you to…
	for farmers: get out of farming?
	for landowners: to sell your land?
41	If you had to sell, where would you go?
42	Do you think there's anywhere in this part of the country that is immune to the issues we are facing?
43	If you were not facing all of the external pressures to sell, what would your hope be for the future of your land?
44	For a person who lives in town and doesn't interact with farming, how would you explain what's happening around our homes and why it matters?

Appendix C. Interview Themes

Categories of Questions	Emergent Themes	Emergent Codes
Life History	historically local food systems	local grocers/country stores
		robust home gardens
		trading produce for commodities
	Farming in younger years	everyone in the family had a role
		worked other jobs in addition to farming
		farms were smaller
		most people farmed
	Changes in farming	more chemicals
		less labor available
		larger/more advanced machines
		buying seed
		more land needed to make profit
		less people sell produce local
		less involved in the community
	Changes in neighbors	more hobby farmers
		stability in neighbors
		neighbors that have sold to get away from development
		People moving out of Austin
Characterizing Contemporary Development	Most impactful developments in recent years	Samsung
		Tesla
		Hutto megasite
		county corridors
	Drivers of development	county commissioners
		Taylor Mayor
		County Judge
		governor's office
		Corruption
		the need to increase the county's budget

Roads and Mobility	Mobility Impacts	new routes for daily routines
		intense heavy truck traffic
		increase in traffic fatalities
		Dangers of construction debris
		personal experience of accident or close call with construction vehicles
		field or pasture access disruptions
		difficulty accessing other important locations (school, church, etc.)
Land sales/acquisitions	eminent domain	excess number of proceedings
		failure to show public purpose of projects
		taking of excess acreage
		use before payment
	Zoning for development	ETJ exchanges between municipalities
		city limit annexations for developments
		Increase in property taxes
		Land subject to future zoning plans without consultation
	Unsolicited offers	offers to buy
		offers to sell
Infrastructure/ Utilities	water availability	aquifer depletion
		special districts out of capacity
		new demand from industrial users
		decreased reservoir storage at Granger Lake
	water access	municipal access
		drying of household wells
	water quality	industrial pollution
		pollution from runoff
		failing municipal water infrastructure
	flooding	package plant discharge
		increased impervious surfaces
		changing floodplains
	Electricity	competition with datacenters
		suspicions about ERCOT
Future Oriented Questions	Resistance	futility of legal cases
		ignored by county officials
		grassroots organizing
	Agricultural futures	Contingency plans

	Identity	Depression
		Grief
		loss of community
		loss of home
		loss of livelihood
		loss of culture

Appendix D. Mapping Information

Figure 1. Reference Map of Williamson County, Texas

1. County Boundary Layer: Texas Department of Transportation, retrieved from Texas Geographic Information Office Datahub. https://data.geographic.texas.gov/?_gl=1*4r1b53*_ga*MjAwMTAxNTgzNi4xNzUzNDc5OTk2*_ga_CGH7RBEG6M*czE3NTM0Nzk5OTYkbzEkZzAkdDE3NTM0Nzk5OTYkajYwJGwwJGgw
2. City Limits Layer: City of Round Rock GEOhub. https://geohub.roundrocktexas.gov/
3. ETJ Layer: City of Round Rock GEOhub. https://geohub.roundrocktexas.gov/
4. Samsung Layer: derived from Land Parcels 2023 for Williamson County from the Williamson County Appraisal District, retrieved through the Texas Geographic Information Office Datahub https://data.geographic.texas.gov/collection/?c=d0f7da13-ab09-4994-a16f-d52589e2476e

Notes: This map was created by the author using the shapefiles above.

Figure 11. Time series of Williamson County Cropland Data layer (CDL) crop types

1. County Boundary Layer: Texas Department of Transportation, retrieved from Texas Geographic Information Office Datahub. https://data.geographic.texas.gov/?_gl=1*4r1b53*_ga*MjAwMTAxNTgzNi4xNzUzNDc5OTk2*_ga_CGH7RBEG6M*czE3NTM0Nzk5OTYkbzEkZzAkdDE3NTM0Nzk5OTYkajYwJGwwJGgw
2. CDL Layers: United States Department of Agriculture National Agricultural Statistics Service. https://www.nass.usda.gov/Research_and_Science/Cropland/Release/

Notes: Map prepared by the author by clipping CDL for each year to the county boundary.

Figure 14. Map of Investor acquisitions along East Wilco Highway

1. County Boundary Layer: Texas Department of Transportation, retrieved from Texas Geographic Information Office Datahub. https://data.geographic.texas.gov/?_gl=1*4r1b53*_ga*MjAwMTAxNTgzNi4xNzUzNDc5OTk2*_ga_CGH7RBEG6M*czE3NTM0Nzk5OTYkbzEkZzAkdDE3NTM0Nzk5OTYkajYwJGwwJGgw
2. Land Parcels Layers: Williamson County Appraisal District, retrieved through the Texas Geographic Information Office Datahub.

https://data.geographic.texas.gov/collection/?c=d0f7da13-ab09-4994-a16f-d52589e2476e

3. East Wilco Highway: Georeferenced by author using the Williamson County Long Range Transportation Plan (Williamson County, 2016)

Notes: The author created this map using the layers above. This map was created by extracting from each layer year all parcels that had a change in "OWNER ID" to include LLC or LP (excluding from this extraction all parcels that changed ownership into an agricultural business), taking this extraction to represent all new LLC or LP acquisitions from one year to the next. By georeferencing the East Wilco Highway, and further extracting a layer of parcels touching the road that also were newly acquired LLC/LP, the map displays all properties proximate to the new highway (bordering or bisected by) that changed ownership each year the highway was being constructed.

Figure 15. Time Series Map of LLC/LP Acquisitions around Samsung

1. County Boundary Layer: Texas Department of Transportation, retrieved from Texas Geographic Information Office Datahub. https://data.geographic.texas.gov/?_gl=1*4r1b53*_ga*MjAwMTAxNTgzNi4xNzUzNDc5OTk2*_ga_CGH7RBEG6M*czE3NTM0Nzk5OTYkbzEkZzAkdDE3NTM0Nzk5OTYkajYwJGwwJGgw
2. Land Parcels Layers: Williamson County Appraisal District, retrieved through the Texas Geographic Information Office Datahub. https://data.geographic.texas.gov/collection/?c=d0f7da13-ab09-4994-a16f-d52589e2476e

Notes: The author created this map using the layers above. This map was created by extracting from each layer year all parcels that had a change in "OWNER ID" to include LLC or LP (excluding from this extraction all parcels that changed ownership into an agricultural business), taking this extraction to represent all new LLC or LP acquisitions from one year to the next. By combing all years on one map frame, the map exhibits the scale and concentration of ownership change and speculative markets.

Figure 16. Map of New LLC/LP Acquisitions by year around Samsung

1. County Boundary Layer: Texas Department of Transportation, retrieved from Texas Geographic Information Office Datahub. https://data.geographic.texas.gov/?_gl=1*4r1b53*_ga*MjAwMTAxNTgzNi4xNzUzNDc5OTk2*_ga_CGH7RBEG6M*czE3NTM0Nzk5OTYkbzEkZzAkdDE3NTM0Nzk5OTYkajYwJGwwJGgw

2. Land Parcels Layers: Williamson County Appraisal District, retrieved through the Texas Geographic Information Office Datahub. https://data.geographic.texas.gov/collection/?c=d0f7da13-ab09-4994-a16f-d52589e2476

Notes: The author created this map using the layers above. This map was created by extracting from each layer year all parcels that had a change in "OWNER ID" to include LLC or LP (excluding from this extraction all parcels that changed ownership into an agricultural business), taking this extraction to represent all new LLC or LP acquisitions from one year to the next. This iteration of the map shows acquisitions in a time series displayed by year.

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