COMMUNITY BASED DESIGN FOR GREEN INFRASTRUCTURE: AN INVESTIGATION INTO LOCAL PERCEPTION OF JOHNSON CREEK FLOODPLAIN MITIGATION

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ABSTRACT
Johnson Creek, a major waterway in Arlington, Texas, faces ongoing challenges from urbanization driven by nearby entertainment centers, a university, and residential growth. As the City's second-largest watershed, it is flood-prone—an issue worsened by post-1950s development that increased impervious surfaces like pavement and rooftops (Jacobs et al., 2017). These changes have disrupted the creek's natural flow, leading to faster water velocity, erosion, sediment buildup, and flooding. Low-income neighborhoods are particularly vulnerable, as properties often sit close to the creek without adequate protection. According to the EPA, residents face greater financial risk from flood damage.

This research explores how green infrastructure can improve Johnson Creek's water quality, stormwater control, and public use based on resident perspectives. Key goals include understanding how the creek affects daily life, identifying the most beneficial green infrastructure strategies, and using these insights to guide sustainable land use for restoration.

To achieve this, the team developed a survey-based needs assessment informed by historical data, relevant literature, and student site analysis coursework. The survey targets people who live or work near Johnson Creek and includes two sections: (1) Community Impact: Collects insights on flood history, resident tenure, and government response; (2) Green Infrastructure Education: Uses Likert scales to gauge support for solutions like rain gardens and bioswales.

Findings reflect community preferences and priorities, highlighting landscape scenarios. Respondents emphasized flood-mitigating features such as tree preservation, bioswales, and rain gardens. These insights inform the next phase: a pilot green infrastructure project aligned with UT Arlington's Sustainability and Climate Action Plan and the American Society of Landscape Architecture's Climate Action Plan. Through partnerships with the Army Corps of Engineers and the City of Arlington, the university will use the findings to seek funding and support for a pilot project focused on ecological restoration, wildlife habitat, and public recreation along Johnson Creek.

Keywords
Green Infrastructure, Urban Watershed, Stormwater Management, Community Engagement, Environmental Justice

1 INTRODUCTION

Urban streams like Johnson Creek in Arlington, Texas, face significant environmental challenges due to increased urbanization and infrastructure development. Johnson Creek, the City's second-largest watershed, is increasingly vulnerable to flooding, erosion, and ecological degradation, largely due to the cumulative impact of impermeable surfaces and altered stormwater patterns. This research focuses on understanding the lived experiences and perspectives of residents living within the Johnson Creek watershed, particularly those in neighborhoods most affected by environmental justice concerns. By examining how residents perceive the current conditions of the creek and identifying their priorities for stormwater mitigation, the study seeks to inform equitable, community-centered solutions rooted in green infrastructure design. The research also explores how GIS, combined with community-based surveys and participatory design approaches, can support environmentally sustainable planning while strengthening the connection between residents and their local natural environment.

1.1 Johnson Creek Background

Urban streams are potentially the most disturbed hydrological systems due to increased urbanization of undeveloped land, which impacts streambank riparian health, water quality, and natural water flow (Hession, et al., 2000). Riparian health is vital as it provides an ecological zone that transitions from the center of the creek to upland areas (Watson & Adams, 2010). This zone is crucial for plant diversity, streambank stabilization, and animal and aquatic habitats (Austin, 2014).

In the case of Johnson Creek, an essential waterway within Arlington, Texas, the seventh largest populated city in Texas, this waterway is strained by regional entertainment centers, a local university, and various residential communities. Johnson Creek's watershed is the second largest within the City of Arlington and one of two watersheds most prone to flooding due to increased development since the 1950s, which has altered the creek's flow for decades (Jacobs et al., 2017). Urbanization has increased the amount of pavement and rooftops, reducing the amount of rainwater absorbed into the soil. The reduction in stormwater absorption has led to an increase in rainwater diverted into Johnson Creek, posing a threat to nearby residents as increased rainwater leads to increased water velocity within the creek, erosion, sedimentation, and flooding (Jacobs et al., 2017).

Areas with extreme environmental issues of erosion and flooding are located in census tracts with a higher percentage of low-income residents. The properties along the creek within these districts have no separation from the creek. The creek is their backyard, and they are experiencing land loss over time. Some of these properties are also located within the floodplain and census tract areas where at least 25% to 40% of residents live below the poverty line (Census,2021). According to the EPA, homes in areas such as this are at the greatest risk of potential property damage and financial consequences (EPA, 2021). This research investigates residents' perceptions of strategies to improve Johnson Creek's water quality, stormwater management, and community connections to nature within the Johnson Creek watershed.

1.2 Social Dimensions of Urban Stream Restoration

Urban waterways, particularly in highly developed regions like Johnson Creek, face ecological degradation due to impervious surface expansion, altered hydrology, and rapid urbanization. While technical solutions aid in the stream restoration field, recent research emphasizes the importance of integrating community perceptions and values into restoration strategies. Urban stream restoration is not only a technical or ecological endeavor, but it is inherently a social process that must account for residents' lived experiences and priorities (Scoggins, et al., 2022).

Historically, institutional approaches to restoration have underrepresented community voices, especially those from marginalized groups. This exclusion leads to project outcomes that fail to meet community needs due to the prevalence of regulatory constraints, power imbalances, and a lack of public involvement (Scoggins, et al., 2022). These barriers result in missed opportunities for community-led innovation and can reinforce historical patterns of environmental injustice. Research shows that public involvement can improve both ecological and social outcomes (Scoggins et al., 2022).

1.3 Survey-Based Approaches to Understanding Flood Risk Perception

For projects that involve neighborhoods or community groups, structured community engagement through surveys can provide insights into both social vulnerability and institutional readiness, informing more

inclusive and sustainable flood risk mitigation strategies (Alves, Djordjević, & Javadi, 2002). A study conducted in Campina Grande, Brazil, through the PLANEJEEE Project used a series of quantitative and qualitative survey instruments to gather data from 199 participants, including residents and key stakeholders (Alves, Djordjević, & Javadi, 2002). The survey focused on two main dimensions: risk perception and coping capacity. Risk perception was measured through indicators such as awareness of flood risks, personal worry, knowledge of past events, and preparedness for future flooding. Coping capacity assessed the community's responsiveness to flood events, willingness to invest in adaptation measures, and openness to relocation if needed.

The outcomes of the survey revealed significant gaps between community awareness and preparedness. While many residents expressed high levels of concern about future flooding, few had taken concrete actions to prepare, often due to financial constraints or lack of early warning systems (Alves, Djordjević, & Javadi, 2002). This disconnect emphasized the importance of understanding not just attitudes toward risk but the social and economic barriers that shape residents' ability to respond. The findings also indicated that public perception of flood mitigation strategies, particularly green infrastructure, was mixed (Alves, Djordjević, & Javadi, 2002). Although residents were interested in nature-based solutions, there was skepticism about their effectiveness, pointing to a need for greater public education and demonstration projects (Alves, Djordjević, & Javadi, 2002).

From an institutional perspective, survey data also revealed weak inter-agency coordination, lack of clear communication, and limited trust between residents and local government. These insights supported the conclusion that both community-level engagement and institutional reform are essential to successful flood risk reduction (Alves, Djordjević, & Javadi, 2002). Surveys provide not only for data collection but also for community empowerment (Huppert, Johnson, Leahy, & Bell, 2003). Local knowledge shaped by place-based experiences with flooding, land use, and ecological degradation plays a role in shaping effective environmental policy (Huppert, Johnson, Leahy, & Bell, 2003).

1.4 Research Objective

This project seeks to garner Arlington's Johnson Creek residents' understanding of the environmental conditions affecting their community, the environmental impacts their households have experienced due to the degradation of this waterway, and their expectations for change once a mitigation strategy is implemented. Based on the perspectives of local residents, this research considers two central research questions:(1) How does the creek condition impact residents? (2) What type of green infrastructure projects would best meet the desired needs of the community? The survey also provided insight into the risk perception and coping capacity of respondents.

Residents of interest to this study are those in Arlington, Texas, who reside in three census tracts within the Johnson Creek watershed. Engagement with these residents through surveys and other participatory methods provides critical insight into the community's preferred mitigation solutions for the creek. These findings will directly guide the design and scope of a proposed pilot green infrastructure project focused on ecological restoration, wildlife habitat, and public recreation. At the conclusion of the community engagement process, the research team (alongside the City of Arlington and the U.S. Army Corps of Engineers) will seek funding to implement this pilot project, using the community-defined priorities as a foundation for design and decision-making.

2 METHODS

The primary goal of this research was to conduct a needs assessment to understand the creek's impact on residents and identify green infrastructure projects that best address community needs for a pilot implementation. Community survey based on student site analysis and design coursework, identified and targeted the most vulnerable communities. The research questions were addressed in three phases.

2.1 Site Analysis and Conceptual Design

Phase One of the Johnson Creek project centered on site visits, analysis, and the development of conceptual designs through a sequence of three landscape architecture courses. These courses, Design Studio IV: Environmental Planning (Spring 2023), Design Studio III: Site Planning (Fall 2023), and Landscape Technology II (Spring 2024), allowed students to assess existing environmental conditions,

explore recreational opportunities, and propose green infrastructure strategies for stormwater mitigation (Figure 1).

Studio III emphasized solving complex site planning challenges by analyzing site conditions, developing programs that meet community needs, and creating conceptual site plans. Studio IV introduced students to environmental planning and design through a sustainability lens, focusing on ecological systems, GIS tools, and community engagement. Landscape Technology II focused on technical skills, guiding students in producing professional-level construction documents and gaining practical experience through readings, exercises, and site tours with industry professionals. Together, these courses provided a foundation for understanding and designing within the Johnson Creek watershed.

Two students from the Design Studio IV course and three students from the Design Studio III course also enrolled in Landscape Technology II during the spring of 2024, allowing them to deepen their engagement with the Johnson Creek site. These students designed for Johnson Creek in both studio and technical contexts. They conducted site analysis, developed conceptual designs in studio courses, and translated those ideas into detailed construction documents in Landscape Technology II. Together, these courses directly contributed to the survey developed in later phases of the project.

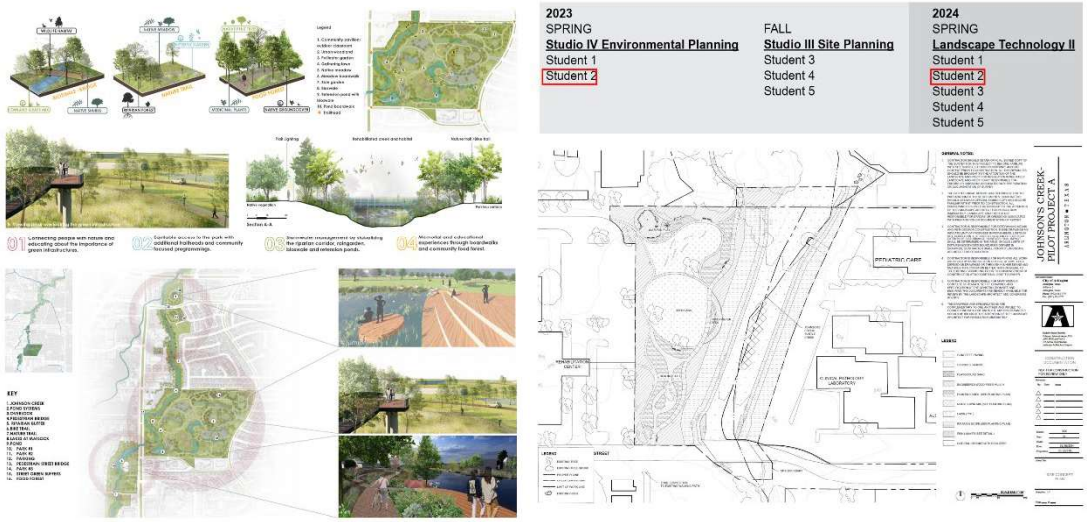

Figure 1. Example of student work (Student 1) in sequential courses (Studio IV and Land Tech II) researching Johnson Creek

2.2 Survey Design and Validation

Phase Two involved designing and validating a survey-based needs assessment. The research team's process to answer research questions one and two was to design a survey-based needs assessment based on a synthesis of survey questions from previous projects gauging the perceptions of residents experiencing flooding, site analysis, and insights from student coursework. The survey featured three segments to address the research questions. Closed and open-ended questions captured the length of time community members have resided resided near Johnson Creek, their historical perspectives of flood-related problems in their community broadly, and their personal experiences and knowledge of natural disasters caused by the creek flooding. By asking residents not only how they perceive flood risks but also what solutions they understand and support, surveys serve as both a diagnostic and educational tool.

The second segment of the needs assessment asked residents about green infrastructure designs and the types of projects available to meet community needs. The design and wording of several survey questions, particularly those related to infrastructure preferences and visual scenarios, were directly informed by student site analysis and design proposals developed during the semester. Additional survey questions were created following the conclusion of the course, drawing from final student projects and

end-of-semester analysis to ensure alignment with emerging themes and concepts from the design studio work. Final survey questions were then submitted and granted IRB approval.

2.3 GIS Analysis and Community Engagement

The focus of Phase Three was the dissemination of the needs assessment to Johnson Creek community members. The research team leveraged geographic information system (GIS) mapping to identify Johnson Creek residents in census tracts 1224.01, 1228.01, and 1228.02. GIS mapping identified residents' addresses using shapefile data from the City of Arlington's GIS database. Concurrently, to ensure a comprehensive outreach to Johnson Creek residents, the research team contacted and partnered with community organizations that target Johnson Creek residents and surrounding communities in their membership. Local Arlington community members subscribe to these organizations for community- and environmentally-based information. The study included one $250 lottery to incentivize community participation.

In Phase Three, a research assistant conducted a GIS analysis to identify resident demographics and environmental trends in the area. Community outreach efforts began with the Heart of Arlington Neighborhood Association (HANA). Councilwoman Rebecca Boxall distributed the online survey link through email to HANA to gather feedback and assess user retention.

3 RESULTS

Administering the survey has provided preliminary insights into residents' experiences. The surveying phase focused on members of the Heart of Arlington Neighborhood Association (HANA), primarily consisting of seniors and young families. A total of 20 members of HANA participated in the survey. While this group does not fully represent the target population, their feedback offers valuable information about the creek's conditions. Future engagement of the most vulnerable individuals will require time to build trust, establish relationships with community leaders, and identify organizations that can help foster momentum for community engagement.

Survey respondents shared concerns about significant property loss and damage caused by flooding and erosion along Johnson Creek. Residents reported losing backyards, pools, ponds, sheds, and patios as the creek encroaches on their properties. In some areas, particularly where the creek runs along property lines, erosion and flooding have caused severe damage. Notably, five homes on Meadow Oaks Drive were demolished after the 2018 flood following city buyouts. Residents believe the increased flooding is linked to a new downtown drainage system that discharges into the creek at their location. Some have gone through the City’s challenging buyout process, while others have sold their homes or relocated nearby but away from the creek.

3.1 Population Information: Survey Participants

The majority of survey respondents who provided their age were born in the 1960s or earlier, indicating an older population. In terms of residency of the 20 respondents, 40% (*n*=8) all respondents have lived near Johnson Creek for 10 to 39 years, while another 50% (*n*=10) have lived in the area for 40 to over 60 years. This suggests that many residents have long-standing ties to the community and may have witnessed the creek’s environmental changes over several decades.

3.2 Perception of the Creek’s Existing Conditions

All respondents reported that they live near Johnson Creek, making residential proximity the most common relationship to the creek. Additionally, 50% (*n*=10) engage in recreational activities near the creek, while smaller percentages indicated connections through work 20% (*n*=4), school 0.5% (*n*=1), or church 0.5% (*n*=1). Others selected “Other” 15% (*n*=3) and shared specific experiences, such as living on properties directly adjacent to the creek that experience flooding, and having tributaries of the creek run through their front yards. These responses reflect the daily impact of the creek on residents’ lives. Table 1 shows the overall perceptions and use of the creek’s natural assets, amenities, and safety.

Table 1. Johnson Creek's existing natural assets and amenities

What is your overall perception of Johnson Creek as a natural asset to the community?					
		Negative	Positive	Count (n)	
Water quality		76%	24%	17	
Visual appeal		90%	10%	20	
Surrounding open space		47%	53%	17	
Trails and walkways		56%	43%	16	
Recreational spaces		75%	25%	12	
Do you currently partake in any of the following creek amenities?					
		Never	Sometimes	Always	Count (n)
Parks		25%	60%	15%	20
Biking		75%	20%	5%	20
Walking		25%	55%	20%	20
Nature Walk		35%	50%	15%	20
Sports		70%	25%	5%	20
Socializing		40%	50%	10%	20
Playground		80%	20%	0%	20
How do feel about the safety of Johnson creek?					
	Unsafe	Moderately safe	Safe	Very Safe	Count (n)
Answer	45%	40%	15%	0%	20

3.3 Contributing factors to Issues Along the Creek

Nearly all respondents reported being directly or indirectly affected by issues related to Johnson Creek, particularly flooding and erosion. Many described significant personal losses, including the erosion of backyards, destruction of outdoor structures like fish ponds, sheds, patios, and even the loss of mature trees. Some have experienced severe flooding that reached their homes, leading to property buyouts and relocations. In one neighborhood, five homes were demolished after a major 2018 flood, which residents attribute to a new downtown drainage system. Residents also highlighted concerns about the accumulation of debris under bridges, encampments contributing to pollution, and the need for better stormwater management.

In addition, the majority of respondents 85% (n=17) indicated that the condition of Johnson Creek has worsened or slightly worsened over the past 5 to 10 years. Only a small percentage observed any improvement, with just 5% (n=1) reporting that the creek has improved and another 5% (n=1) noting slight improvement. Additionally, 5% (n=1) believed the creek's condition has remained the same. These responses suggest a strong perception among residents that the environmental health and stability of the creek are declining. Table 2 reflects the most harmful land uses, environmental risks, and safety hazards negatively impacting Johnson Creek.

Table 2. Land use, environmental risks, and safety hazards

Which conditions as a result of land use do you find to be the most harmful to Johnson Creek?		
	Percentage	Count (n)
Industrial pollution	35%	7
Water management	55%	11
Impervious pavement from parking lots and roadways	70%	14
Overpopulation	30%	6
Increase in trash build up	90%	18
Development practice	50%	10
I don't see any problems	0%	0
Other	25%	5
To your knowledge, which environmental risks and safety hazards are the most threatening to the Johnson Creek area?		
	Percentage	Count (n)
Degradation of vegetation	60%	12
Erosion	95%	19
Pollution	75%	15
Poor lighting	45%	9
Unhoused population	75%	15
I don't see any problems	0%	0
Flooding	19%	16
Other	.5%	1

3.4 Investments and Financial Barriers to Flood and Erosion Mitigation

A majority of respondents 60% (*n*=12) indicated they are willing or planning to make changes to their property to reduce the risk of erosion and flooding, while 40% (*n*=8) of all respondents are not. However, actual investments in flood and erosion mitigation vary widely, with many residents reporting no spending at all, while others have spent several thousand dollars on measures such as retaining walls, railroad ties, or concrete bag walls. Despite some efforts, the financial burden remains a significant barrier for many. Several respondents emphasized that the scale of the problem, caused by upstream development, aging infrastructure, and the City's drainage practices, goes beyond what private citizens can realistically manage or afford. While some mentioned they are retired or on fixed incomes, others noted that even with financial capacity, the lack of City action discourages further personal investment. Overall, there's a strong sentiment that systemic solutions are needed to address the root causes of erosion and flooding along Johnson Creek.

3.5 Needs Assessment

All respondents expressed aspirations for a range of community improvements, with top priorities including enhanced walkability and connectivity 75% (*n*=15), better flood and drainage management 70% (*n*=14), increased park access and green space 60% (*n*=12), and general infrastructure improvements 60% (*n*=12). Additional feedback highlighted the need for pollution cleanup and improved water quality in Johnson Creek, as well as preservation of existing green spaces and mature trees. Some residents emphasized the importance of addressing litter and debris, especially from homeless encampments, and suggested utilizing the creek area as a safe, non-motorized corridor for biking and walking. Concerns about public safety and homelessness near the creek were also noted as key areas needing attention. Table 3 is a summary of desired green infrastructure and creek amenities.

Table 3. Desired green infrastructure and creek amenities

Which of these green infrastructure features would you like to see implemented? (Select all that apply)	Percentage	Count (n)
Butterfly rain garden	65%	13
Bioswale/rainwater harvesting	70%	14
Green network	55%	11
Tree preservation	80%	16
Disaster prevention/mitigation elements	70%	14
Green belt/green buffer	55%	11

Which of these amenities would you like to see implemented? (Select all that apply)	Percentage	Count (n)
Trail outlook	40%	8
Community gardens	50%	10
Desnsly wooded trail	55%	11
Pedestrian creek crossing	70%	14
Shade structure	35%	7
Amphitheater	10%	2
Trail/biking trail	80%	16
Open space	40%	8

4 DISCUSSION

4.1 Site Visits

Site visits were key in understanding the existing conditions of Johnson Creek in relation to residents' survey feedback. Site visits conducted as part of the coursework helped identify areas where residents are most vulnerable to creek conditions, many of which are predominantly populated by seniors and minority communities (Figure 2). With the support of local residents who welcomed students into their backyards, students were able to observe a range of creek conditions firsthand.

In some cases, there was no physical barrier between private property and the creek, with property lines extending directly to the creek’s center. Significant erosion was visible in many backyards, along with evidence of repeated fence reconstruction efforts. In areas where the creek had been channelized, some

residents were experiencing ground subsidence. Students also observed debris left by past rain events, as well as litter originating from nearby roadways and adjacent land uses. Additionally, various stormwater discharge points, such as runoff from streets and parking lots, were identified as contributing to the creek's condition (see Figures 3–6).

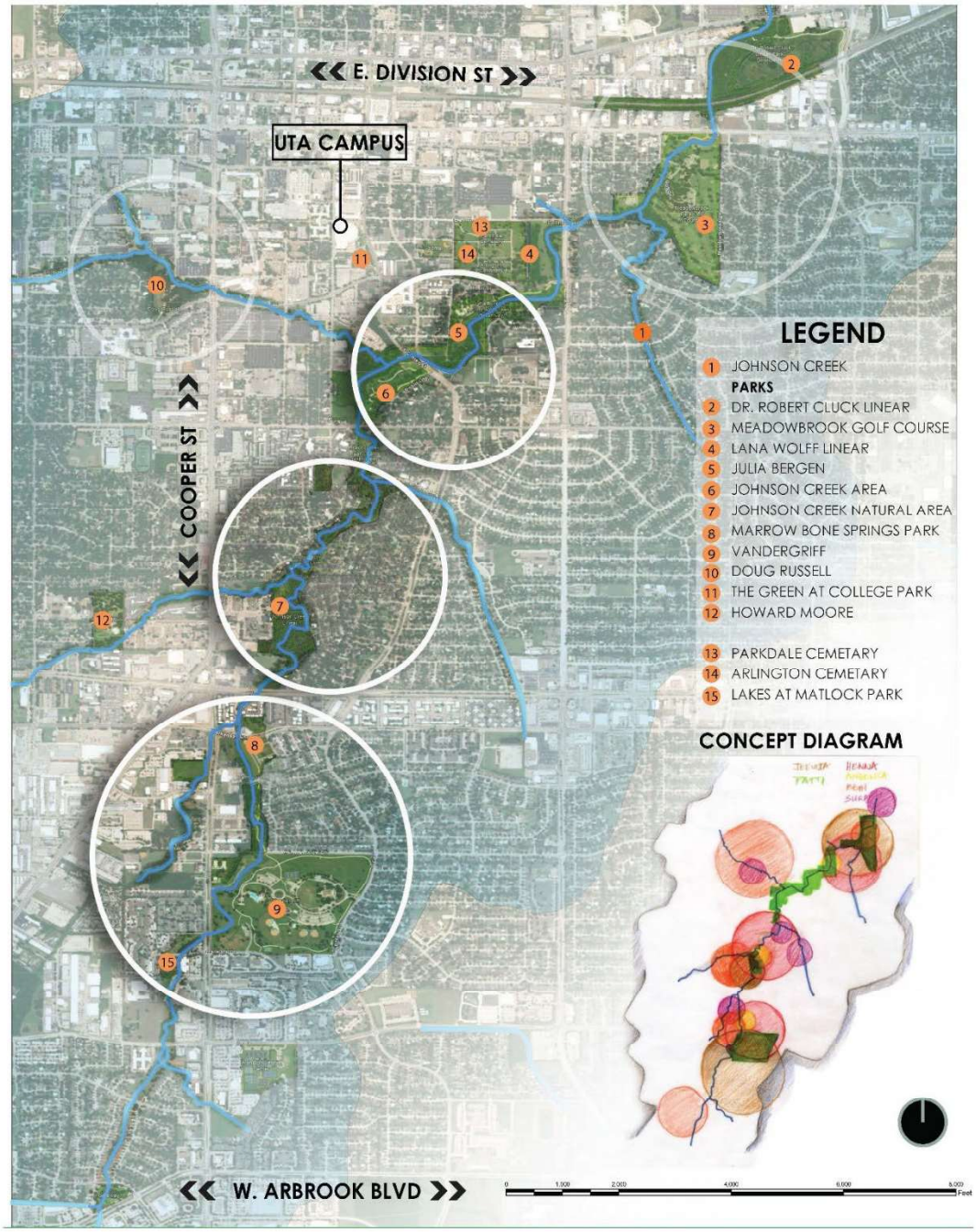

Figure 2. Graphic showing the areas students conducted site visits, highlighting three focus areas.

Figure 3. Site photos of drainage into the creek from adjacent roadways and neighborhoods.

Figure 4. Site photos of erosion along the creek from adjacent neighborhoods.

Figure 5. Site photos of channelized area in residential backyards.

Figure 6. Site photos of natural areas in residential backyards.

4.2 Survey Results

The findings from the Johnson Creek community survey provide an understanding of residents' experiences and what kinds of interventions they value most. The results reflect a community that is both highly vulnerable to flood-related risks and actively invested in long-term, sustainable solutions. The responses show that Johnson Creek's current condition has had a substantial effect on residents' lives. Approximately 60% (*n*=12) of participants reported being directly or indirectly affected by flooding or erosion. These impacts range from structural damage and property loss to emotional distress and reduced

quality of life. Many residents described how erosion has washed away portions of their land, destroyed backyard amenities, and, in some cases, prompted city buyouts and home demolitions. These firsthand accounts were supported by broader sentiment in the survey: 85% (*n*=17) of respondents felt that the creek's condition had worsened over the past five to ten years, and 90% (*n*=18) rated its visual appeal negatively. Concerns about water quality, safety, and limited recreational access were also prevalent, with nearly half of respondents reporting that they feel unsafe near the creek.

Despite these challenges, residents also expressed clear preferences for the types of green infrastructure projects that would best serve the community. Tree preservation 80% (*n*=16), bioswales and rainwater harvesting systems 70% (*n*=14), and disaster prevention or mitigation features 70% (*n*=14) were among the most supported strategies. These choices reflect a desire for flood management solutions that also support ecological restoration. Additionally, residents showed interest in infrastructure that improves public access and recreation such as pedestrian creek crossings, biking and walking trails, and community gardens.

The survey also provides insights into the community's risk perception and coping capacity, both of which have implications for planning and policy. Residents demonstrate a high level of risk perception, marked by their awareness of environmental decline, personal experiences with flooding and erosion, and general dissatisfaction with creek conditions. This perception is accompanied by strong emotional and financial stakes, as evidenced by residents' reluctance to relocate and their frustration over repeated losses and insufficient upstream management.

In terms of coping capacity, the results are more mixed. On one hand, 60% (*n*=12) of respondents indicated a willingness to invest in property-level improvements to mitigate flood risks. On the other hand, many cited financial barriers, aging infrastructure, and City inaction as limiting their ability to respond effectively. Several residents reported spending thousands of dollars on erosion control and landscaping, while others explained that the scale of intervention needed was beyond their personal capacity. Still, community engagement was relatively strong: nearly half of participants had taken part in community groups, and the vast majority had contacted local representatives about issues related to Johnson Creek.

Overall, the data suggest that HANA residents of the Johnson Creek watershed are acutely aware of the environmental and infrastructural challenges they face. They are motivated to see improvements, provided that solutions are accessible, inclusive, and aligned with their lived experiences. These insights can guide the development of a resident-informed pilot project that prioritizes both ecological restoration and community well-being. By integrating the community's feedback into the planning process, UTA and its partners have an opportunity to design a green infrastructure initiative that is both environmentally effective and socially grounded.

This research project builds on the mission and outreach principles of UTA's Office of Sustainability. Johnson Creek is located east of the University of Texas at Arlington (UTA), with one of its tributaries flowing along the southern edge of campus. UTA's Office of Sustainability engages both UTA students through service-learning projects and the broader Dallas–Fort Worth metropolitan area. As part of its initiatives, the office also oversees a Bicycle Coordinating Committee focused on improving walkability and bike access to campus. Student design strategies and survey questions developed through this research further explore opportunities to enhance walkability and foster human connections to nature along Johnson Creek. The project also aligns with the American Society of Landscape Architecture (ASLA) Climate Action Plan's climate resilience goals, including ecosystem restoration and the protection, conservation, and enhancement of biodiversity (ASLA, 2022).

Additionally, this research will also help to inform the selection of a pilot project for green infrastructure improvements along Johnson Creek. The Army Corps of Engineers and the City of Arlington have agreed to partner with UTA to develop a project to employ strategies to reduce sedimentation, increase stream bank stabilization, improve ecological and wildlife habitat restoration, increase recreational activities, and understand community aspirations for Johnson Creek.

5 CONCLUSION

This research underscores the critical intersection between environmental degradation and social vulnerability in the Johnson Creek watershed. Through a phased approach combining education, analysis, and community input, the project has revealed both the environmental challenges faced by residents and their interest in nature-based solutions. Residents directly affected by creek conditions are seeking clarity, support, and long-term solutions that not only protect their homes but also restore ecological health and community connection to the creek. Sustained community engagement, especially with the most vulnerable residents, is essential to ensuring that proposed interventions are equitable, effective, and aligned with residents' lived experiences. Going forward, deeper partnerships with community organizations and continued refinement of participatory tools will be crucial for building a resilient and inclusive vision for Johnson Creek's future.

This study highlights residents' lived experiences with erosion, flooding, and the loss of natural space, as well as their aspirations for a safer environment and accessible green infrastructure. Residents' feedback underscores a clear desire for systemic change, not only in terms of flood and erosion control, but also in the creation of walkable, connected, and resilient public spaces. The implementation of green infrastructure such as rain gardens, bioswales, tree preservation, and trails can serve both environmental and social goals, enhancing the creek's function as a community asset rather than a liability.

This research lays the groundwork for a pilot green infrastructure project that aligns with UTA's Sustainability and Climate Action Plan, the ASLA Climate Action Plan, and collaborative efforts with the City of Arlington and the Army Corps of Engineers. By integrating resident input with technical strategies, the project aims to advance climate resilience, environmental justice, and long-term stewardship of Johnson Creek for generations to come

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