Introduction and Purpose

For four years West Street Recovery and the Northeast Action Collective have been advocating for improved drainage in NE Houston. In 2022, the two groups and Texas Housers, who have been advocating for infrastructure and housing equity for decades, began collaborating on a community research project intended to compare drainage provision in wealthy and low income neighborhoods in Houston. The purpose of this study is to build the capacity of residents to understand drainage systems and develop the vocabulary to advocate for improvements in their community. Another objective is to provide a comparison between levels of drainage protection in different neighborhoods, calling into question the City of Houston’s assertion that Public Works invests in drainage on a “worst first basis” (Video title “Taking care of the worst first”). This on-the-ground approach is complemented by separate investigations into how drainage is financed, how spending is spread across the city, and how Public Works makes decisions.

The purpose of this mid term report is to record what has been learned by the study group, what challenges we have identified in our approach, and what new questions have emerged about how the City operates and how Houston’s drainage infrastructure is developed, assessed, and maintained.

Study Group Composition

This study is being carried out by a subcommittee of community members who are part of the Northeast Action Collective. The group has 17 members. The study group is bilingual with both monolingual Spanish and English speakers, and has two blind participants. The group has four professionals, two from WSR, one from Texas Housers, and one from Bayou City Water Keeper. In addition the group has one PHD student, and one blind member.

Most consistent participants:
- 2 WSR staff
- 1 BCWK staff
- 1 monolingual spanish speaker
- 1 blind member
- 4 to 7 other NAC members
Inclusion, Accessibility and Community Research

Creating an inclusive community study environment requires skills that many government and research agencies do not possess or practice. One major challenge is to set up a meeting that a wide diversity of community members can attend and participate in.

For example, consider necessary steps to create a high quality environment for this project’s meetings. For each date blind participants have to schedule a Metro Lift, which is unreliable, days in advance, or the staff coordinators have to arrange rides and provide gas reimbursements. Elderly members cannot easily step down into drainage ditches or walk long distances which are both useful capabilities in a visual and tactile drainage study. To accommodate different abilities staff have to either physically assist them or have enough able bodied participants to provide hands-on help. Familiarity between community and professional participants is critical because trusting and supportive relationships make expressing needs easier and allows many needs to be anticipated. To include people who do not speak or read English, all materials have to be translated in advance of meetings and finding interpreters with vocabulary to describe infrastructure is not easy. It is important to note that the work of care and inclusion is deeply gendered. It is often assumed that family members, women and femme people will take this work on, but the skill that inclusion requires is assumed to be “natural” in ways that devalues it and often leaves it omitted from budgets, timelines and work plans.

Northeast Action Collective members, who make up most of the group, have previous knowledge of this issue and field of study through their advocacy for drainage improvements at Houston City Council meetings and in meetings with Houston Public Works. (No members are urban planners or civil engineers.) This non-professional make up is critical because most drainage infrastructure debates are conducted with a vocabulary that is impenetrable to non-professionals. However, the participants’ efforts so far show that groups like this can be included in decision making and public input when Public Works departments make drainage decisions. Members of the study are well equipped to rate the functionality of infrastructure, and their effort to do so has the potential to lead to much more accurate understanding as they can assess at various points after rains. The City of Houston has so many linear miles of drainage that wider participation in assessment, and an effort to take community evaluation seriously, will deepen and broaden official understandings of the system.

The study group is supported by a working group made up of West Street Recovery and Texas Houser staff members. This working group meets biweekly to provide support to the study group in the form of framing, data analysis and mapping, policy and planning document analysis, and feedback.

Inclusion, Accessibility and Community Research

Creating an inclusive community study environment requires skills that many government and research agencies do not possess or practice. One major challenge is to set up a meeting that a wide diversity of community members can attend and participate in.

For example, consider necessary steps to create a high quality environment for this project’s meetings. For each date blind participants have to schedule a Metro Lift, which is unreliable, days in advance, or the staff coordinators have to arrange rides and provide gas reimbursements. Elderly members cannot easily step down into drainage ditches or walk long distances which are both useful capabilities in a visual and tactile drainage study. To accommodate different abilities staff have to either physically assist them or have enough able bodied participants to provide hands-on help. Familiarity between community and professional participants is critical because trusting and supportive relationships make expressing needs easier and allows many needs to be anticipated. To include people who do not speak or read English, all materials have to be translated in advance of meetings and finding interpreters with vocabulary to describe infrastructure is not easy. It is important to note that the work of care and inclusion is deeply gendered. It is often assumed that family members, women and femme people will take this work on, but the skill that inclusion requires is assumed to be “natural” in ways that devalues it and often leaves it omitted from budgets, timelines and work plans.

1 Translators convert written work between languages while interpreters are used during events to interpret speech.
Another challenge is setting up a study process that is inclusive of people with a wide range of familiarity with experimental design, the research process, or what constitutes “evidence.” Knowledge that is considered meaningful or legitimate is formulated and packaged in specific ways, but these norms are not well known to people who don’t spend their lives in “knowledge production” or academic spaces. We have learned that a big part of inclusion is setting up experiential learning to help reveal these processes (see text box) which make a finding “legitimate” to people external to the study group. To do this we aim to set up a mode of inquiry that helps demonstrate the answer to the one question at hand and which helps illuminate the fundamentals of setting up a hypothesis and designing a process to confirm or contradict it. Designing a study plan that achieves both of these goals is a big puzzle!

- What is the question that you want to answer?
- What evidence do you need to answer it?
- How will you collect that evidence?
- How will you present this evidence?

Approach and Initial Findings

Despite the accessibility and inclusion challenges we have already arrived at some very important conclusions on how drainage systems are managed and what is needed to improve the process. Our group began the study by attempting to use the evaluation systems that the city of Houston already has. We did this so that we could collect evidence in a way that would be useful in advocating to the City. Learning about how the city assesses drainage has led us to identify several shortcomings with the current system.

Assessing “Worst First”

The City of Houston claims, in written statements (see p.8 in link) and during meetings, that Public Works addresses the worst drainage problems first. The city of Houston however has two distinct types of drainage: open-ditch drainage and curb and gutter drainage. The study group wanted to compare systems but found that the City itself has no coherent or comprehensive system to compare across system types. This calls into question the validity of the City’s “worst first” claim. Maybe even more troubling is our finding that some parts of subdivisions have no open ditches or inlets at all. Examples of streets like this are Kellett St, Talton St, Woodlyn Rd, and Las Cruces Ave. In these areas, it is impossible to analyze drainage, but it is clearly deficient.

Inadequate Ditch Evaluation Standards

Another finding is that the city of Houston does not have a system of evaluating the significance of each open ditch segment. Not every ditch has equal importance in moving water away from homes and protecting communities. For instance, ditches at local low-elevation points have a much more important role to play in diverting flood water away from homes. Further, some ditches are nearer to toxic sites, sewage leaks or other facilities that mean their effectiveness has a greater impact on community health. The City’s evaluation system has no means to account for these differences. In contrast to any formal system used by the city, the study group created a list of factors that make a ditch more important to community health (see below). As far as we can tell the city also has no systematic way of comparing the effectiveness between underground and ditch drainage in different neighborhoods. This makes identifying the areas most in need impossible.
While we are unaware of any system for comparing effectiveness between drainage types we have found a system for evaluating ditch significance created by King County in Washington and Herrera Environmental Consultants. Excitingly, the list developed by the drainage study group was incredibly similar to the King County system. The similarity between the list produced by engineers and professionals and the one created with our community groups shows that residents do have the knowledge and skills to know what matters in protecting their neighborhoods. This congruence puts into question the City of Houston’s lack of meaningful community engagement in the drainage governance system.

We also noted that the City’s evaluation rubric is a bit ambiguous and could lead to different neighborhoods being evaluated in different ways. The first reason for this is that there are different types of drainage in different areas and no method to compare across them. However The city rubric also does not include questions on when it last rained, and does not provide objective guidance on what length of grass is “too long” or what standard should be used for “eroded.” Beyond ambiguity the width of different factors is questionable. The city seems to give more width to erosion than trash, and doesn’t seem to give enough weight to signs of actual flooding. Another confusing factor is that if some ditches have major deficiencies it is impossible to assess the wellness of other neighboring ditches. Further key factors were also omitted from the City’s rubric, such as the proximity of the ditch to the driving surface, whether there is a sidewalk, or if the ditch is used as a dumping site. Finally, through conversations with residents we have learned that many of them pay private contractors for maintenance themselves. This adds to the challenge of assessing whether the City is doing a good job of maintaining ditches as they should, and could be a major equity issue.
**Continuing our Study Plan**

At the midpoint of our study we are ready to clarify our study plan and implement a community survey using a mobile app that will allow us to accurately assess the effectiveness of drainage in neighborhoods where study participants live. With reflection and experience we now see that the initial goals of this project are not feasible and may not even be possible. Instead, the discoveries the team is making are revealing profound deficiencies about how the City of Houston manages, assesses, and prioritizes drainage infrastructure quality.

One choice and tension that we are considering is comparison and scale. Because assessing drainage across communities requires simultaneous study in two different areas to create similar rain impacts we are no longer sure that is achievable. It is not possible with our current study team primarily due to time and travel constraints, but perhaps we could use two different groups to achieve it. It is also made much more difficult because there is no method for comparing the effectiveness of drainage types that we think the city will accept as valid (and successful advocacy is one of our end goals). Another Decision we have made as we develop our plan is to use a fairly condensed study area. Too broad a study area would cause us to omit critical questions. For example we can tell a ditch is well mowed, but a smaller study scale may allow us to ask questions of the property owner revealing that the ditch is actually mowed by a contractor hired by the resident. This use of income is a potential source of inequity, if residents in one neighborhood with open ditch drainage are using their own money to maintain drainage infrastructure but residents in another neighborhood who have enclosed drainage do not (and don’t have to). There is no perfect study scale, it seems that for our group a smaller analysis that is more of a case study will be more productive.

As this study concludes we will need to produce an output that is meaningful to the participants and an outside audience. We know that this will be a final challenge very connected to the accessibility questions described above.

**Survey and Advocacy Process**

The next step in our study is to systematically and inclusively assess drainage in our community ourselves through the use of a survey. Using a mobile app, Survey123, we developed a 15 questionnaire that will be geographically linked to the location it was taken. This current version is the third draft developed after a series of conversations and practice rounds with the drainage team. The survey tool will be shared with all members (30-45 people) of the Northeast Action Collective. Members and friends they share it with will use the survey app over a period of time and WSR and TX Housers staff will organize and analyze the results in dialog with the study participants. This data will demonstrate the level of service provided to neighborhoods and will illuminate deficiencies in the drainage system. Our end goal remains to improve drainage by using what we learn in advocacy efforts. The survey results will aid detail and granularity to what we already know, that the system for moving water away from people’s homes and families in Northeast Houston is inadequate. We will use what we learn to advocate for more regular maintenance, improved infrastructure evaluation and long term investment.

As we try out and improve our survey we may also work with other communities to gather further data. One goal would be to get other BIPOC LIMI communities to survey their own neighborhoods to see how marginalized people are underserved across the city. Another aim would be to work with more privileged populations to understand how systems are different in affluent communities. The way we make these comparisons and draw these contrasts is not yet determined. Finally we intend to share our approach and the survey tool with communities experiencing flooding and disinvestment across the country.
Conclusions

At the midway point of our intended study plan, our study has produced key lessons about how drainage is assessed, cast doubts on the truth of the City’s worst first claims, and created learning opportunities for improving inclusion and accessibility. We believe that so far it is succeeding to build the capacity of NAC members to advocate for investment, build knowledge, and strengthen understanding of the research process. The project so far shows that community members can and should be included in drainage governance, especially in municipalities where geographic area makes government only appraisal of the current system unreliable. Similarly our work shows that academics and researchers should use the expertise and capacity of community members, but that doing so requires care, communication and labor that must be incorporated into budgets and work flows. And finally, to fulfill the broad goals of this project we must make slight changes to the study design.

The next step in our project is to work with community members to assess conditions in their communities and use this systematized, local knowledge to advocate for infrastructure justice. We hope that our effort can change the material reality on the ground and that communities in other parts of Houston and the country can use and improve our approach.