**CONSTRUCTION DOCUMENTS FOR CLIMATE JUSTICE: DEMOCRATIC DESIGN METHODS FOR CLIMATE RESILIENT COMMUNITIES**

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**SIGNATURE PAGE**


PROJECT: CONSTRUCTION DOCUMENTS FOR CLIMATE JUSTICE:
DEMOCRATIC DESIGN METHODS FOR CLIMATE
RESILIENT COMMUNITIES


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**ABSTRACT**

Climate change disproportionately impacts communities already challenged by structural oppression (David and Enerson, 2012; Wilson, 2018). Many mainstream resilience planning efforts focus on physical infrastructure (Rockefeller Foundation, 2019). These efforts have, in many cases led to displacement through the phenomenon of Green Gentrification (Gould, 2016). An alternative framework of climate resilient design and planning considers the role of place attachment, social capital, and local knowledge in disaster resilience, here referred to as relational infrastructure. A substantial body of knowledge confirms the importance of these three indicators, collectively relational infrastructure, for climate resilience (Coaffee, 2013; Houston, 2018; Hovelstrud, Karlsson and Olsen, 2018; McGee and Russell, 2003; Mcguire and Hagan, 2007) particularly for low-income communities (Wilson, 2018) often overlooked and under-served by aid organizations and government recovery efforts (Bullard, 2009; White, 2012). Through a case study of community-driven and community-controlled neighborhood landscape analysis regarding climate change vulnerability in Northeast Houston, it is clear that design process, not just product, can influence resilience outcomes.

Semi structured interviews were used to assess the impacts of a year-long community controlled and community driven neighborhood landscape assessment process on relational infrastructure, consisting of social capital, place attachment, and local knowledge. A second round of interviews were conducted with facilitators of this organization, seeking to understand what engagement practices may be tied to positive resilience outcomes among community members. Interviewees shared insights into the

ways that increased social capital in many forms has increased neighborhood resilience, impacted mental health, and brought resources into the neighborhood through strategic relationships with both group facilitators and elected officials.  As an explicitly bilingual group, the organization has also impacted social capital across racial lines in the neighborhood. As a result of an increase in community efficacy, several community members reported an increase in place attachment; they had hope that their neighborhood would remain a good place to live because of the efforts their group were making. Finally, the organization has both resulted in a clearer and more explicit understanding of neighborhood problems and achieved initial success integrating this local knowledge into local county bureaucracy through community action and strategic relationships building.

Facilitators credited relationship building and community control of meetings and group decisions with strong recruitment and retention. Many facilitators emphasized the importance of local knowledge for climate resilience planning, and expressed a desire for resilience planners to more fully and honestly engage with frontline communities.

Analysis of interview data points to potential implications for not just climate resilience, but public health. Many community members and facilitators cited the organizations positive impact on social isolation, disaster-related trauma, and depression. Major barriers to implementation of these methods currently exist, including gaps in design education, epistomological insecurities on the part of technical and design experts, and funding gaps for such processes.

**TABLE OF CONTENTS**

## LIST OF FIGURES

**LITERATURE REVIEW**

Climate change promises to increase the frequency and intensity of disasters across the globe, with the most intense impacts disproportionately affecting those with the fewest resources (David and Enerson, 2012; Wilson, 2018). How can professional environmental planners and designers tasked with climate change adaptation and mitigation best support communities in weathering these storms?  What infrastructure investments best support climate resilience?

Social science and disaster recover researchers confirm what many flood, hurricane, and fire survivors echo; good neighbors are everything (Hovelstrud, Mcguire and Hagan, 2007; Karlsson and Olsen, 2018; McGee and Russell, 2003). When disasters happen, documented cases show that many respond with their best, most generous selves, acting in a spirit of care and cooperation (Solnit, 2010). The effectiveness of that response, however, depends largely on the quality of their relationships to community and place.  Social relationship networks play a major role in supporting disaster preparedness and resilience (Hovelstrud, Karlsson and Olsen, 2018; McGee and Russell, 2003; Mcguire and Hagan, 2007), as do relationships to place in the form of place attachment and local knowledge (Hovelstrud, Karlsson and Olsen, 2018).

Collective emergency action, especially when rooted in deep knowledge of and attachment to place, enables powerful resilience, potentially surpassing the effectiveness of state and other large aid organizations in disasters (Hovelstrud, Karlsson and Olsen, 2018). This relationship-based scaffolding of resilience, termed here relational infrastructure, can be understood as a dense network of mutualistic

1

relationships among individuals and groups, as well as relationship to place in the form

of emotional bonds, or place attachment, and local knowledge. This lay knowledge is

often informally developed through observation, lived experience, and oral history and

its development and integration into planning processes is understood as integral to

both environmental justice and achieving resilient outcomes (Innes and Booher, 2010).


**1. The means and the ends of resilience planning: displacement disasters**

While the critical nature relational infrastructure, in particular social capital, for

disaster resilience is becoming better understood, ( Coaffee, 2013; Houston, 2018;

Maguire and Hagan, 2007) these ideas have yet to be mainstreamed in practice. The 100

Resilient Cities project is among the first major efforts to operationalize resilience

planning. A review of the Rockefeller Foundation's report on the project, which details

100 case studies of resilience planning supported at least in part by the organization,

social cohesion is mentioned as a resilience goal or value in only three projects. It is the

main focus of only one project – an effort to memorialize the bombings on Tulsa

Oklahoma's "Black Wall-Street" neighborhood (Rockefeller Foundation, 2019).  Far more

prolific throughout the report are case studies that explore the built environment,

physical infrastructure, coordination of municipal resources, and case studies focused

on economic development and so called "urban revitalization."  The latter theme

demonstrates the way in which resilience planning has been used to fuel the "green

growth machine," (Gould, 2016) providing real estate profits rather than equitable

protection from climate change impacts. Green gentrification, a perennial result of

many such economic revitalization strategies (Goodling and Harrington, 2015; Gould, 2019; Wilson, 2018; Wolch, Byrne and Newell, 2014), deepens the economic inequalities that the last segment of the report, titled "social equity," focuses on redressing.

Within a resilience framework focused on physical infrastructure, the case study of Portland Oregon stands out as a beacon of successful resilient planning and design efforts. The city is well known for its green infrastructure and sustainability focus. It is the only US city to be given a platinum designation by the League of American Bicyclists, and has been named as the #1 bike friendly US city by Bicycling magazine several years running (Portland Bureau of Transportation, 2019). The city's stormwater management program, relying largely on green infrastructure strategies, has been the source of several awards. However, one of the main drivers of these green infrastructure improvements, as explicitly named by Susan Anderson, Portland Planning Director, (Minow-Smith, 2012) is to increase property values, expand the tax base of the city by attracting new businesses and more affluent demographics;

> We're not doing [sustainability] just to be altruistic. Part of the reason we're doing a lot of this: there's money to be made, to be crass . . . And most of these things are things we want to do to create better, healthier places anyway – but by doing that, you create a place where people want to live and have businesses. (p. 179)

This capital-driven strategy of Portland's legendary green infrastructure efforts, termed the "green growth machine" by Gould et al (2016), has not only failed to address social inequalities, but has actually deepened them. "Gaps in income, home-ownership, education, and employment between whites and Portlanders of color are growing; by

almost any measure" (Goodling and Harrington, 2015, p. 180). Black, Latino, and immigrant Portlanders are also less likely to have access to the bike lanes, street trees, streetside bioswales and their native plant gardens, and pedestrian infrastructure than their white counterparts, and further, when such infrastructure is deployed in these neighborhoods redevelopment capital begins to flow alongside, pushing out low-income residents as rent, property taxes, and cost of living rise (Goodling and Harrington, 2015). This pattern of green gentrification has been well-documented (Gould 2019; Siriwardena, Boyle, Holmes and Wiseman, 2016) and even celebrated as city officials point to rises in property value resulting from green infrastructure as a positive outcome (Goodling and Harrington, 2015).

For displaced residents, however, green infrastructure and subsequent displacement often constitutes a different kind of disaster. As real estate speculation twists through a neighborhood, knocking down or "flipping" homes, a flood of cataclysmic money (Jacobs, 1961) rips through the relational infrastructure that the community has developed over time. For physical infrastructural changes to support climate resilience within marginalized communities, it must be done in a way that honors a community's right to the city (Harvey, 2008), and the site-specificity of relational infrastructure.

## 2. Alternative Models of Resilience Planning

Another story is possible, and in fact exists in parallel to the story of displacement in Portland. Barbara Brown Wilson (2018) highlights the case study of Living Cully, a green infrastructure project in a neighborhood with major displacement risk. The program

4

includes explicit anti-displacement and wealth building goals, and starts from a place of deep community engagement. Projects such those that emerge from the work of Living Cully require a re-conceptualization of resilience rooted in an epistemological framework that values relational infrastructure – especially local knowledge of place and the wisdom of lived experience. This framework must critically reflect on the role power plays in shaping relationships and make every effort to structure all forms of power towards its greatest emancipatory potential, as defined by marginalized groups.

Gould and Lewis's (2016) exploration of green gentrification case studies in Brooklyn, New York, suggest that if green infrastructural improvements are desired without displacement of existing low-income residents, equity measures must be made explicit and communities organized to advocate for them early.  Green gentrification, they argue, is not inevitable, but strong social organization and a clear focus on equity as the core of environmental revitalization is crucial to enabling low income communities and communities of color to reap any subsequent environmental benefits. (Gould et al, 2016)

Much like the connected rhizomatic networks well-adapted trees in a hurricane, social capital, place attachment, and local knowledge combine as relational infrastructure to root communities together, forming a complex web of emotional bonds, stories, and human connection that enables the flow of resources, information, and care in the wake of disaster.  Strong relational infrastructure enables bottom-up planning (Mortner and Moote, 1999; Payton Fulton and Anderson, 2005; Wondolleck and Yaffee, 2000), and it follows that well-facilitated bottom-up planning processes,

such as some place-making efforts, develop relational infrastructure (Coaffee, 2016).

These ties, embodied in strong community groups, are critical to the success of greening

projects that hope to avoid displacement (Gould, 2016). Further, "an environmental

justice frame applied to urban-greening initiatives places the equity pillar of

sustainability in the center of development conflicts" (Gould, 2016, p. 16).

Relational infrastructure proves more critical when examined through the lens of

inequality and climate justice. Scholars and activists alike have pointed to the unequal

distribution of harm from climate change based on race, class, gender, and residence in

the global South (Enerson and David, 2012; Wilson, 2018). Disasters often widen the

divide between the haves and have-nots (Enerson et al 2012; Wilson, 2018), pushing

already marginalized communities further from the stability and resources necessary to

achieve some measure of quality of life.  The cruelty of this pattern is more glaring in the

context of global greenhouse gas production, which has come from and led to profits

for, by and large, powerful, wealthy, white residents of the global north (Wilson, 2018).

Further, disaster response often leaves behind or further traumatizes working

class communities of color (Fithian, 2019; Wilson, 2018;; White, 2012). For many

marginalized communities, indifference or active aggression from power-holders and

decision makers is not news, it is business as usual. The adaptive capacity and resilience

of such communities draws on generations of direct experience in the art of survival and

reclaiming dignity. In this way, leaders in communities shaped by both trauma, and

resilience are truly experts in resilience planning and adaptation, with important lessons

for environmental designers.

In the wake of flooding, fire, and other major disasters, social disparities are exacerbated by lack of comprehensive insurance, bureaucratic barriers to emergency relief funds, and a lack of savings that can be used to rebuild while awaiting any insurance money or FEMA financing in low-income communities (Bullard, 2009; Wilson, 2018). In this context, neighbors helping neighbors becomes a primary recovery strategy. Although it is does not excuse institutions of power for an often sharp contrast in governmental recovery support along race, class, and gender lines, when well executed, this mutual aid approach not only speeds recovery time but also reduces the psychological trauma of disaster (Wind and Comproe, 2012). The might of decentralized, relational organizing should not be underestimated. This pattern of small well-networked groups working towards a common goal, be it massive social change or community disaster recovery is clear pattern that has been critical for social movements that continually re-shape the world (Brown, 2017; Fithian, 2019).

## 3. Defining and Measuring Relational Infrastructure

Significant guidance regarding the social factors that undergird resilience can be found across the social sciences, specifically in relation to disaster recovery (Amundsen, 2013; Hovelstrud, Karlsson and Olsen, 2018; Koh and Cadigan, 2008; Mimaki and Shaw, 2007; Wind and Comproe, 2012). While the three factors discussed below, social capital, place attachment, and local knowledge, are not the only variables that contribute to a community's adaptive capacity, they are all potentially influenced through community-based planning and design processes, and thus, can be actively constructed in the

environmental design process. In this way, these relationships can be considered a form

of infrastructure that potentially emerges from environmental design processes.

A robust body of literature supports mutually reinforcing connections between

social capital, place attachment, and local knowledge (Beckley Stedman Wallace and

Ambard, 2007; Bow and Buys, 2003; Coleman, 1988; Droseltis and Vignoles, 2010;

Eisenhauer, Krannich and Blahna, 2000; Houston,2018; Kasarda and Janowitz, 1974;

Lewicka, 2008; Lewicka, 2005; Payton, Fulton, and Anderson, 2005; Payton, 2003;

Scannell and Gifford, 2010;  Wondolleck and Yaffee, 2000). These three indicators have

been tied through several studies to disaster resilience, suggesting community resilience

to climate change is as much about relationships to community and place as it is about

municipal responses and the built environment (Amundsen, 2013; Houston, 2018;

Hovelstrud, Karlsson and Olsen, 2018; Koh and Cadigan, 2008; Mimaki and Shaw, 2007;

Wind and Comproe, 2012). In understanding the role that relational infrastructure plays

in disaster resilience, each of these three indicators reveals nuance and instructive

detail.

*Social capital*

Social capital is often described in terms of "weak," or bridging ties among

acquaintances, and "strong" bonding ties among tight-knit groups.  When a community

has many bridging ties, they tend enable resilience and resistance of a community
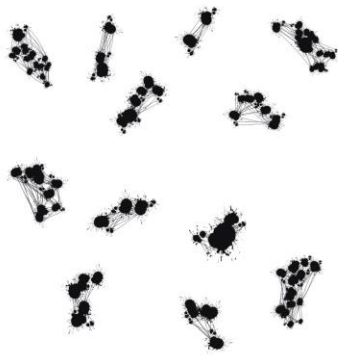
*Figure 1: Bonding ties*  *Figure 3: Bonding and bridging ties*  *Figure 2: Prominant social structure of mass movements (Fithian, 2019)*
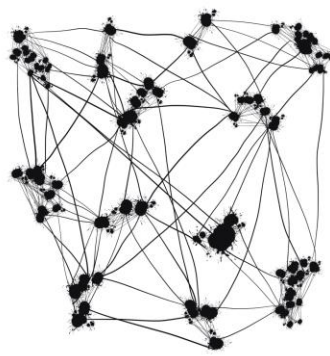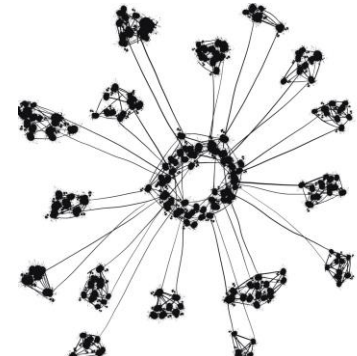
(Granovetter, 1973). These relationships are casual and "weak", but their role in

bridging tightly associated groups is critical. A group with only strong, closely knit ties is

unlikely to be effective at transmitting messages or making change (Granovetter, 1973).

However bridging ties have been shown to be positively correlated with bonding ties, or

those that form amongst tight-knit groups. An increase in one leads to an increase in the

other (Putnam, 2007). These loose bridging ties were found to be particularly critical to

providing adaptability and resilience in an avalanche prone area of Norway (Hovelstrud,

Karlsson and Olsen, 2018).

When these community linkages are perceived to be consistent in terms of trust

and mutual support (Harpham, 2002) they become linked to strong mental health in

post disaster situations (Wind and Comproe, 2012), which disproportionately impacts

low-income communities and communities of color (Wilson, 2018). These strong

bridging ties contribute to overall perceived social capital, which has been shown to

correlate with a higher rate of engagement with disaster preparation activities (Bihari

and Ryan, 2012; Houston, 2018; Koh and Cadigan, 2008; Mimaki and Shaw, 2007).

The role of women in building and maintaining these ties, as the social group traditionally expected to engage in social and emotional labor, as well as the labor of caretaking, is an important factor (Willinger and Knight, 2012). Black women used these networks to collectivize "mother-work" in post-Katrina New Orleans, improving recovery success (Jenkins, 2012) and strong kinfolk relationships maintained by older women in Black communities of New Orleans supported critical resource collectivization (Litt, Skinner, and Robinson, 2012).

These linkages are developed through relational means – trust, reciprocity and social norms (Coleman, 1988; Onyx and Bullen, 2000), and result in more robust community participation, defined as participation in public life and activities related to the greater good (Jorgeneel, Polman and Slangen, 2008), increased willingness to problem solve with others, (Agrawal and Monroe, 2006) as well as stronger collaborative ties, (Putnam, 2000). In other words, high rates of social capital make it more likely that individuals will engage in collaborative community efforts as well as problem solve to find mutually agreeable solutions to shared community problems.

*Place attachment*

Strong place attachment, defined as unwillingness to move homes, was a strong factor driving resilience to environmental hazards in Norway (Admunssen, 2013), and a strong correlation exists between this deep relationship to place and relationship to community;  bridging and bonding ties have both been consistently shown to be major indicators of place attachment (Goudy, 1990; Goudy, 1982; Kasarda and Janowits, 1974;

Sampson, 1988). While social and physical elements of place attachment are somewhat separable and play a different role, mixed social and environmental meaning accounted for the majority of place attachment in a study of Mormon communities in Utah (Brehm, 2007). This finding is corroborated by Beckley et al. (2007) and Bow and Buys (2003). Many studies have also found a correlation between residence length and place attachment (Kasarda and Janowitz, 1974), however that has been called into question by other research that shows rapid place attachment for recently relocated residents (Bolan, 1997; Cuba and Hummon, 1993; Elder, King and Conger, 1996; Scannell and Gifford, 2010b; Stokels and Shumaker, 1982), perhaps related to rapid accumulation of social capital.

When considered through a critical race and class lens, the interplay between physical and social indicators of place attachment brings up questions about how design may enable robust social attachment that serves as an "anchor" (Lewicka, 2010, 215) improving quality of life without creating a showy form-focused landscape product, or even distributed but highly visible changes like Portland's green infrastructure, that may function as a "magnet" (Lewicka, 2010 p215) leading to displacement and gentrification (Minow-Smith, 2012). It's notable that within lower-income communities, place attachment is more likely to be associated with the number and quality of social connections within a neighborhood (Fried, 1984). This may be due to the fact that property with highly desirable physical features like mountain, beach, or riverfronts are often prohibitively expensive for lower income people, or related to mutualistic survival strategies employed in these communities. These social ties are more likely to mediate

community involvement, compared with attachment to physical site (Payton, 2003, Luckwicka, 2005).

*Local knowledge*

Anthropologist Clifford Geertz defines local knowledge as, "practical, collective, and strongly rooted in a particular place' and contends local knowledge forms an, 'organized body of thought based on immediacy of experience" (Geertz 1983, p. 172). It often is intimately tied to human experience, and strong emotion (Innes and Booher, 2010) – it is a full bodied and holistic form of knowing that does not separate head from heart. The emotion embedded in this knowledge can make professionals and technical planners uncomfortable (Innes and Booher, 2010). Which can, in some cases, be tied to dynamics of what Innes and Booher call "epistemological anxiety" (2010, p. 174). Given the racial and socio-economic differences between technical experts and local knowledge holders in marginalized communities, this discomfort has also been tied to dynamics of white fragility (Walsh, 2016).

The question of how and when to incorporate local knowledge remains an active one. Groups like the Center for Collaborative Policy have undertaken local knowledge efforts that groomed and coached community collaborators to assimilate to the framework and lexicon of professional planners. This Eliza Doolittle-reminiscent approach to inclusion was understandably critiqued by community members who wanted to speak in their own voice, and argued that the professionals with all their training should be trained to understand them, not the other way around (Innes and

Booher, 2010). Tension between speaking authentically and being heard by policy holders is the crux of much scholarship within environmental design, (Arnstein, 1969; Davidoff, 1965) and the question remains an important one today.

Three models of local knowledge are presented by Coburn (2003). The first posits that locals lack the technical know-how to develop accurate and effective knowledge, the second acknowledges that it can supplement technical knowledge, but not supplant it, and the third suggests that lay and technical knowledge creators can collaborate, each needing the other to achieve accuracy and legitimacy. This later framework is supported by Aswani and Lauer, (2014) who found that local knowledge in the form of traditional ecological knowledge (TEK) among Indigenous fishing communities in the Solomon Islands approximated that of local biology researchers.

Another case study discussed by Coburn and Gottlieb (2005) involving air monitoring in New York. EPA experts had modeled air polluters in a Brooklyn neighborhood. When community members examined their model, they found that it was fundamentally flawed, leaving out a significant number of major polluters. When the community became meaningfully involved in developing the model the entire framework of the study shifted to reveal the impact of dry-cleaning facilities in residential buildings, where chemical concentrations were many times beyond the legal limit, exposing families in these buildings to dangerous indoor air quality. In this case, local knowledge was critical to incorporate at every part of the project, not simply at the end. When landscape architect Randy Hester failed to create a power structure that weighted local knowledge above his own, he found that his designs were less successful,

as they were less responsive to use patterns and needs that community members knew well (Hester, 1984).

Regardless of how well professionals listen to it, local knowledge can support survival in disaster situations and inform disaster response, particularly in marginalized communities that rarely receive equitable or adequate support from large organizations and agencies with access to more traditional empirical data sets. Hovestrud et al (2018) reinforce the importance of local knowledge for disaster survival, particularly the role it plays in risk assessment and evaluation during and in the aftermath of avalanches. It is a critical part of community resilience.

**4. Rethinking resilience planning: the theoretical underpinnings of relational infrastructure**

Given the paradoxical outcomes of mainstream resilience efforts that often end in displacement (Gould, 2016), and the epistemological challenges professionals have incorporating and supporting development of local knowledge (Innes et al, 2010), it's necessary to reassess the framework used to plan for climate change adaptation. This reassessment is a fruitful opportunity to dig deep into the ontological and epistemological frameworks of resilience planning and design.

The physical results of resilience planning efforts reflect the assumptions and worldviews that undergird them. If relationships, both to place and to community, have such primacy in the context of community disaster resilience, where is their place in professional frameworks for resilience planning and design? What value do

14

environmental designers place on relationships between client communities and the places they live, between members of these communities, and between themselves and the populations they serve in a professional capacity? What sources of knowledge and wealth are honored and called upon? What power relationships are embodied in these relationships, and how do they support or erode the likelihood of equitable outcomes?

If climate change adaptation and mitigation is to be addressed through a framework that is just and equitable, a more holistic model of how neighborhoods and cities are re-designed must be developed. This model must achieve several intersecting and interconnected goals: 1) support the development of relational infrastructure, 2) honor the right for most impacted communities to reap the benefits of green infrastructure, which requires anti-displacement efforts, and 3) execute appropriate physical infrastructure design interventions in an effort to mitigate climate change impacts and improve quality of life.

Currently many resilience and climate change adaptation efforts are framed through a scientific, objectivist lens. This approach results in an expert-driven and technical focused design paradigm that exerts change from the top down (Coaffee, 2016; Harrington 2010; Lurie and Coaffee, 2016; Wilson, 2018). As professionals navigate the complexity of interconnected technical systems, this normative paradigm lends a sense of validity that "fuzzier" epistemologies are not perceived to contain. This framework often dominates to the exclusion of all other theoretical foundations (Escobar, 2018; Finn, Herne and Castille, 2017), excluding valuable ways of knowing and relating rooted in intuition, emotion, and human connection (Finn, Herne and Castille,

2017) that support the relational infrastructure and justice-oriented outcomes necessary for more comprehensive climate resilience, particularly for marginalized communities who rarely have access to robust technical data but may have robust data in the form of oral history, cultural practices, and generational wisdom.

While critical theory offers valuable insight into aspects of power and justice that shape and are shaped by design and planning efforts, the relational nature of resilience resonates with the design framework that Arturo Escobar (2018) describes as non-duelist, relational and horizontal in power structure. This design framework that aims to open opportunities to create "worlds within worlds" - a concept borrowed from the Zapatistas – allows for multiple ways of knowing to sit alongside and in relationship to each other rather than be dominated or excluded by the hegemonic, objectivist, positivistic framework. Escobar traces this theme of relation-centered design through Indigenous ways of knowing and being, revolutionary struggle in the global south, and community-based design, suggesting that environmental design that builds relational infrastructure is a world that sits comfortably within this epistomological constellation that Escobar terms the "pluriverse".

Reflective practice and the resulting knowledge of lived experience enables powerful truth that support communities as they define for themselves what justice looks and feels like (Friere, 1972).  The tradition of critical pedagogy is reflected in tools that are often used in community-based design to validate the central role of this knowledge in planning processes (De la Pena, 2017). Innes et al (2010) echo the value of

epistemological frameworks that embrace ambiguity in their conversation regarding

local knowledge;

> The world is constantly evolving, and its complex interactions mean that there
> can be no certainty. What is needed to make such a world resilient is not efforts
> to create false certainties and precise predictions, but a mindset that embraces
> ambiguity and change and that allows experts, professionals and citizens to live
> with multiple, shifting knowledges and realities and to adapt as needed. (P. 175)

If local knowledge is to be incorporated and community decision making made central

to planning and design process, highly trained professionals must re-calibrate their own

understanding of knowledge itself. In that recalibration, local knowledge provides an

epistemic platform upon which designers and planners might build with communities,

rather than for them, towards resilience. It also aligns with explicit, repeated requests of

the Environmental Justice movement.

The Environmental Justice (EJ) movement, arising out of Black and Latino

communities fighting against environmental racism (Bullard, 1983), is an example of a

grassroots effort to reshape worlds that has led to changes in the physical environment.

Environmental Justice work frames issues in the context of social power and hegemonic

structures – reminding the world that no relationship or decision is neutral (Schwitzer,

1999). Within EJ communities, the maxim, "nothing about us without us is for us" is

embraced and embodied by communities of color seeking a shift in the power dynamics

that shape the built environment (Schwitzer, 1999; NRDC). The EJ movement, as a

whole, centers around lived experiences of marginalized race and ethnicity, local

knowledge, as a critical way of knowing. It is explicitly political in a way that most

planning and design processes avoid, and although EJ efforts often have far fewer

resources than community-based design projects, they have a rich history of garnering

widespread participation and support within communities of color – the communities by

which they are led (Bullard, 1983).

This avowed collective distrust of neutrality within EJ movements echos through

Arnstein's Ladder of Citizen Participation (1969). Arnstein writes, "participation without

redistribution of power is an empty and frustrating process for the powerless. It allows

the power holders to claim that all sides were considered, but makes it possible for only

some of those sides to benefit" (p. 359). The theme of local leadership and shared local

power is a theme of significance for professionals who intend meaningful community-

based work. Building on an epistemic foundation that honors multiple forms and

sources of knowledge, critically examines power and hegemony, and places value on

relationships between people and place, a toolbox begins to form that can hold wisdom

gathered from environmental design professionals and social movement leaders alike.


**5. Gathering guidance for effective practice**

Planners and to a lesser degree architects and landscape architects have engaged in

design practices that hold promise as building blocks for a relational model of climate

resilient design. However, these practices and the conversation that surrounds them, it

should be noted, has moved forward largely due to demand and efforts from Black civil

rights advocates and design professionals (Wilson, 2018). While the mandate for more

inclusive, justice-framed design methods has been sporadically engaged, it has not been

fully embraced by a majority white professional class. Even when this paradigm of

community based environmental planning and design is embraced, the impact of racial

dynamics, especially white fragility, between professionals and communities they serve

should not be underestimated as a hurdle to effective, justice-oriented climate resilient

design work (Walsh, 2018). In the spirit of relationality, the following discussion borrows

not just from literature within the academic fields of environmental design, but from

activists and social movements rooted in values of justice and relationship-building.

The issue of whiteness:

Much of the guidance and reflection that community-based planning and design

professionals have shared regarding community-based design has to do with the

challenges of navigating whiteness, privilege, and their own social conditioning. While

relationships building between community members is central to efforts to support

relational infrastructure, relationships between professionals and the communities they

serve is also critical to project success. Community-based landscape architect Randy

Hester alludes to challenges navigating racial conflict within the profession, invoking

King's (1963) "letter from a Birmingham Jail" in an afterword to a collection of essays in

Landscape Journal (2011):

> Participation must make a place for conflict where different views can be safely
> contested. We should not be too quick to make peace.  Forcing agreement
> before its time undermines democratic action.  Better solutions evolve from the
> tension of conflict as well as an understanding that some values are not to be
> compromised. Did we forget about civil disobedience and a letter from a
> Birmingham Jail? (p. 150)

Hester references King's well-known critique of the "white moderate" who prefers a

false peace to justice, insisting that the oppressed be patient and unendingly kind in

their movements for equality. In doing so, Hester's allusion equates conflict-averse

designers and planners to the "white moderate" with whom MLK expresses such

profound frustration. This reluctance to have hard conversations regarding race persists

today and is alive in conversations around White fragility (DiAngelo, 2011).

Walsh (2018) presents analysis of the role that the dynamics of white fragility

play between design practitioners, and communities of color. White fragility is a lack of

both racial self-awareness and the emotional resilience necessary to withstand

discussion and critique regarding race among white people (DiAngelo, 2011). The impact

of this dynamic among white professionals in particular is a major impediment to

achieving socially just outcomes. Dr. Elizabeth Walsh (2018) discusses the implications

saying;

> a lack of emotional resilience on the part of a white researcher is likely to
> contribute to the structural resilience of racism, by 1) exhausting (and then
> abandoning) community partners working for liberation, 2) failing to challenge
> structural racism for fear of confronting white fragility in white communities, and
> 3) implicitly accepting the status quo and denying root causes (P4).

Inability on the part of white designers to constructively engage with conversations

regarding race and power may inhibit their ability to connect with client communities of

color that may need to include racial discrimination as one of if not the defining dynamic

that shapes their life experiences and the physical form of their neighborhoods. The

powerful role that white practitioners are placed in is inherently furthest from the lived

experience and knowledge of neighborhood residents of color which leads outsiders to

present solutions that reflect their shallow understanding of the challenges and lack

self-reflexivity (Brown, 2017; Healey, 2003). Cultivating social emotional resilience

through protracted practice (De la Pena, 2018; Healey, 2003; Walsh, 2018) as well as

recruiting a more diverse pool of professional collaborators to the field (Boone, n.d.) are

both strategies to mitigate some of the most harmful impacts of white fragility, as is

sharing real decision making power with communities as a check on the practitioner

themselves (Hester, 2010).

*Recruitment:*

      Recruitment for participatory planning and design processes in low-income

communities is often noted as a significant challenge. The apolitical and emotionally

fragile tendencies of white professionals may account for many of the challenges

involved in participant recruitment. However, the logistical, cultural, and social hurdles

to effective recruitment are major obstacles as well (Juarez and Brown 2008, Melcher

2013, Wilson, 2018). When participants are compensated for their time and local

expertise (Cary, 2017; Wilson, 2018), when designers engage communities on their own

turf (Juarez and Brown 2008; Wilson, 2018)  and when food and childcare are provided

at input sessions (Wilson, 2018), barriers to participation are greatly reduced.

      Juarez and Brown emphasize the difference in character between field

interviews and large formal meetings as a method of bridging the participation gap.

Other interactive, hands on, and participatory methods that work towards this bridging

are increasingly documented and widely available (Derr, Chawla and Mintzer, 2018; De

La Peña et al., 2017).

      Melcher (2013) as well as Juarez and Brown (2008) identify the challenge the

time commitment involved in planning and running a project as a limiting factor for the

community building model's success in low-income communities.  Melcher proposes

that a balance must be struck between strictly bottom-up, local and relational design

work and advocacy work that may not be as engaging for community members, but

which may lead to longer term goals that require state funding and other resources that

the professional class has far greater ability to influence. This echoes Paul Davidoff

(1965) and his model of advocacy planning, which inserts the environmental designer

into the process as an explicitly political technical consultant rather than neutral

community facilitator.

*Power Relationships:*

Many experienced researchers suggest that for bottom up processes to be truly

beneficial for a community, not only must the design process stem from the community

itself, but that the community must have real decision-making power (Arnstein, 1969;

Davidoff, 1965; Hester, 2010; Hester 1984). However, without explicit frameworks,

bottom-up design, even with distributed decision-making power, is easily manipulated

by the designer and other power-holders (Cox et al, 2014; Juarez and Brown, 2008,

Melcher,2013). Bottom-up methods applied with a broad, apolitical framework serve to

reinforce existing hierarchies of power along race class and gender lines, especially

when NIMBY (not in my backyard) groups with significantly more time, and political,

cultural and financial capital exert their impact on such processes (Arnstein, 1969;

Healey 2003, Hester, 2010; Hester 1984). Relational, bottom-up design work concerned

with addressing issues of injustice and inequality that have been baked into the built

environment must also engage an explicitly liberatory, anti-oppressive framework

(Boone, n.d.; Hester, 2010; Hester 1984; Walsh, 2018; Wilson, 2018).


**7.Towards liberatory practitioner-community relationships**

Guidance regarding rooting relationships in liberation rather than the status quo

of internalized superiority and oppression comes from far too many sources to explore

here – some version of guiding principles for anti-oppression exist for almost every

group engaged in political work, and while they often overlap, they differ based on the

group, their history, and their specific organizing culture. Principles that guide towards

more liberated relationship are often one of the first, and most important,

conversations in social movement spaces. The iterative process of social learning and

reflection involved is far more than a set of rules, a checklist, or even a destination.

Instead, professionals working towards justice-oriented resilience work that supports

relational infrastructure can understand such frameworks as part of an ongoing effort to

articulate and bring into existence better ways of relating. It is a journey, not a

destination. That said, two sources of guidance are briefly discussed below, one from

within the field of environmental design and another widely used in relational social

movement spaces.

Kofi Boone, an African American Landscape Architect and Environmental Justice

proponent, presents a critique of his professional field and lays out recommendations in

his piece, "Black Landscapes Matter". Boone critiques the profession at large for its lack

of critical awareness of Black landscapes, and ongoing legacy of Eurocentricity (Boone,

n.d.). He troubles the definition of environmental designer, specifically that of

Landscape Architect, citing the extensive and local knowledge-heavy design and planning performed by enslaved Africans and their decedents across the South.  Boone brings this and other landscape histories into conversation with mid-century civil rights struggle, as well the current movement for Black Lives. Boone invokes Alicia Garza, co-founder of Black Lives Matter, creating a multi-point platform that he proposes the profession incorporate to infuse design and planning work with anti-racist efforts. This platform includes several points that may align well with efforts to increases community social capital, boost local knowledge, and increase place attachment.

Specifically, Boone's request that professionals honor the design and planning skills of enslaved Africans, supports a reconceptualization of design that incorporates and elevates forms of local knowledge. Additionally, he calls for professionals to collaborate and build relationships – social capital – with Black artists and designers. Boone also asks environmental designers to refuse to participate in "blackwashing" – which he describes as placemaking based on Black history and culture that subsequently displaces the Black community. This compliments resilience in a way that aims to, at minimum, do no harm to the relational infrastructure of Black neighborhoods through displacement. Finally, Boone's call to incorporate an equity analysis into environmental design work, but especially efforts located in Black communities, reinforces a call to incorporate a critical lens that examines power.  Multiple points of Boone's platform support a shift in the epistemic framework of design projects to one that takes a critical lens on power and builds relational infrastructure.

Other guidelines that support more liberatory, anti-oppressive relationship-building and group dynamics come from social movement spaces. The Jemez principles are one such framework that is widely used in Environmental Justice work. They arose out of the context of the anti-globalization and EJ movements at a 1996 conference in Jemez, New Mexico, with the intent of enabling conversation and collaboration across multiple cultural groups with common goals (Brown, 2017). The principles, which readers are encouraged to explore further, are: 1) be inclusive, 2) emphasis on bottom-up organizing, 3) let people speak for themselves, 4) work together in solidarity and mutuality, 5) build just relationships among ourselves, and 6) commitment to self-transformation (Brown, 2017).

The Jemez principles are among many core agreements frequently used to ground groups working together and establishing relational infrastructure. Bottom-up organizing, rooted in relationship building as well as inclusivity and a focus on building the bridging ties implicit in solidarity and mutuality all support the development of organized and networked social capital. Further, the Jemez principles emphasize not just that individuals build relationships, but that they focus on the justice embodied in these relationships as they seek greater self-awareness. For professionals in facilitation roles seeking to address their own internalized socialization and/or white fragility, exploring methods of building just relationships between themselves and client communities, and committing to self-transformation may be particularly useful.

**8. Houston: A Racialized Geography**

The case study explored in this research project is located in Northeast Houston TX. Southeast Texas, where the city of Houston sits, has shaped and been shaped by racial hierarchies, power and oppression in unique ways that inform how Black and Latino residents relate to each other as well as how they relate to the landscape and local elected power structures. Layers of conquest, resistance, opportunity seeking, and emancipatory struggle are part of the collective memory of Houston's communities of color, and inform the conversations held with residents of Northeast Houston in this case study.

*Early Colonization, Slavery, and the Republic of Texas*

Spanish and Anglo regimes differed greatly when it came to the issue of slavery. Texas was initially colonized by the Spanish in the 17th century. Under Spanish conquest, Blacks were frequently free, though the institution of Slavery existed legally in modern day Texas, then Spanish, and later, for four years following 1824 independence, Mexican territory, until it was outlawed by Mexico in 1829. Composing between 15 and 25 percent of the population of Spanish Texas, free Blacks faced, "few, if any, restrictions on their freedom" (Beeth and Wintz, 1992, p. 13). The more favorable conditions for Black people led to a migration pattern of self-liberated former slaves crossing into Texas from the US South seeking safety from slavecatchers and the racial oppression of the US Antebellum south (Beeth et al, 1992).

Texas became a less desirable destination for Black freedom-seekers as Anglos moved into the territory, importing chattel slavery with them. Houston and its

surrounding river-bottoms, being well suited to plantation agriculture, saw a major

influx of Anglo immigrants from the US south starting in the early 1800's. They brought

with them a strict, brutally enforced racial hierarchy (Beeth et al, 1992). Slavery became

increasingly entrenched as the main labor system in Texas, particularly the area

southwest of modern-day Houston known as the Sugar Bowl, with enslaved Black

residents outnumbering free Black residents by 1820 (Steptoe, 2016).

Slavery was legally outlawed in 1829, but the policy was unenforceable by the

Mexican government and the practice continued unabated (Beeth et al., 1992). In

response to the abolition of Slavery in Mexican controlled Texas, at least on paper,

proponents of slavery waged an 1835 rebellion, forming the short-lived Republic of

Texas that continued to battle with Mexico until the 1840s. In 1845, the US annexed

Texas in what was now the 28th state of the union, sparking a war with Mexico as they

still claimed Texas as their own territory. The Mexico-American war from 1886 to 1888,

ending with the treaty of Guadalupe Hidalgo which transferred control of Texas as well

as land that became the states of California, New Mexico, Arizona, Nevada, Utah and

most of the state of Colorado to US control. (Calvert, De León and Cantrell, 2014). As the

US began to feel increasing tension regarding the practice of slavery, the state of Texas

had waged several years of ongoing battles over the issue, 26 years prior to the

outbreak of the US Civil War.

The plantation system remained firmly established, particularly in the

"Sugarbowl" Southeast Texas from the moment of Anglo migration in the early 1800s

until the conclusion of the civil war, only 65 years later. "The Sugar Bowl had a dense

concentration of large-scale slave plantations between the 1830's and the Civil War, and in 1850, each Sugar Bowl county had a slave majority. By 1860, slaves made up 72% of Brazoria County's population" (Steptoe, 2016, p. 24). As economic strain of increased wages impacted labor markets in the 1850's the practice of "hiring out" became more common, and enslaved people were increasingly loaned on contract.

This practice was revived shortly after the Civil War in the form of convict leasing, the legal loophole to the 14th amendment that continues to enable unpaid, defacto forced labor arrangements from a disproportionately Black and Latino prison population (Alexander, 2010). The Sugarland prison, later renamed the Texas Central Prison Unit, was established during the Jim Crow era and used convict labor, disproportionately that of Black men arrested for crimes like loitering. The massive state-owned plantation produced sugar and other agricultural products, generating revenue for the state of Texas until 2011 when it closed (KHOU, 2011). This prison was located on former plantation land, cultivating the same crops grown under chattel slavery, with a similarly shackled Black labor force (Flynn, 2018). Violently enforced white supremacy, and until 2011, forced, racialized agricultural labor, has been an integral part of the socio-economic fabric of these four counties in Southeast Texas. Houston's proud Black communities present a stark juxtaposition.

*Emancipation and the "new Negro"*

Though the emancipation proclamation, ending slavery in the US was delivered on January 1, 1863, news of the confederacy's defeat and emancipation did not reach

enslaved Texans until two and a half years later when general Gordon Granger landed in

Galveston Bay with 2,000 troops intent on enforcing  anti-slavery laws on June 19, 1865

(Steptoe, 2016). This day, known as Juneteenth, is celebrated as Independence Day in

Black Texan communities, as well as the communities of their descendants that

relocated during the Great Migration.

Upon Granger's arrival, many of the 250,000 newly freed slaves left, spreading

the word of emancipation as they went. The Santa Fe trail, a route constructed to bring

plantation goods to Houston for export from Buffalo Bayou, led thousands nearly 51

miles from Galveston (US House of Representatives Committee on Natural Resources,

2019) to Houston starting in June of 1865, ending in what is now the fourth ward. A

Black community known as Freedman's town developed in the fourth ward along

Buffalo Bayou near the end of the Santa Fe trail. However, In the years directly after

Emancipation, Houston's Black population was largely integrated with white residents,

and dispersed throughout the city. A census from 1870 shows a general distribution of

Black residents across the wards, or neighborhoods, of Houston, with 57% of fourth

ward Black families living next door to white households (Beeth and Wintz, 1992). By

1890, the first and second wards, which would become white and Latino respectively,

had higher Black populations by percentage than the third, fourth, or fifth wards where

intergenerational Black communities would eventually establish.

While Black residents were pushed out of the first and second wards because

they lacked schools, parks, and other social services that were accessible under

segregation, they were also drawn by strong community institutions and city services,

29

however meager, in these areas. These neighborhoods became havens of relative safety for Black Houstonites, a social, psychological, and physical bulwark against the dehumanization of Jim Crow in the wider city (Steptoe, 2016). Strong civic institutions as well as several Black Churches, particularly in the 4th ward, leveraged their power to support Black homeownership and advocated for city services like schools, libraries, and parks.  Freed people built the neighborhood, literally hand-forming the bricks used to pave the roads (Steptoe, 2016). In 1872, only seven years after emancipation, Antioch Baptist Church and Trinity Methodist Church, pillars of the fourth ward Black Community that remain active to this day, raised the funds to purchase Emancipation Park in the third ward, striking an agreement with the City Parks department that it was to be maintained as a park for Black Houstonites. This, at the time, was the only recreational space for Black residents in the entire city.

Home ownership in the fourth ward was also quickly established. "Black settlers of Freedmen's Town, former slaves and their descendants, had acquired ownership of most of the land in the community by the 1880's; this amazing feat was accomplished by a poor and illiterate group less than one generation removed from slavery" (Bullard 1987, p. 15). Other hard-fought battles gained the Fourth ward the Gregory School in 1872, and Carnegie Colored library in 1911. The spirit of Black pride and independence led a group of Black residents north of the city where they established Independence Heights in 1915, the first all-Black city. Black owned businesses thrived in this area, designed and built by Black builders that lived within the community (Steptoe, 2016).

The population of Black Houston swelled to more than two and a half times its

size in the decade between 1920 and 1930, faster than other cities in the former

Confederacy. In the third ward, Texas Southern University, the third largest historically

Black university in the nation was established in 1927, just one mile away from

Emancipation Park.  In 1920 the number of Black residents in Houston was 24.000, by

1930 it had grown to 63,000. In comparison, on Juneteenth, Emancipation Day, the

Black population of Houston was roughly 1,000 (Bullard 1987). This booming community

was in many ways proudly self-sufficient, embodying the ethos of what writer and

"dean" of the Harlem Renaissance called the "new Negro" (Steptoe, 2016).  Lorenzo

Greene, a traveling scholar and Black History Bookseller noted that Houston's Black

community had;

> about eight colored gasoline filling stations, one finance company, several chain
> drug stores and independent drug stores, several insurance companies, beauty
> shops, two hat shops, one dry goods store, ten or more groceries, one soda
> water manufacturer, several ice men, several fruit dealers, and a theater.' He
> added that about eighty black physicians and fifteen black dentists worked in the
> city, and that Houston's three black high schools made it unique among southern
> cities.  (Steptoe, 2016 p.55)

Beyond the thriving business and professional community, Houston was also home to

musical innovators of the Jazz age. While many Black musicians were struggled to find

venues, a particular Blues-infused genre of Ragtime was birthed out of the roadhouses

along the Santa Fe railroad in the 1920's, and several ornate jazz clubs thrived in the

fourth ward. One, was inside the, "Black-owned Pilgrim Building [which] boasted gold-

colored bricks, marble and granite walls, elevators, and a garden roof" (Steptoe, 2016, P. 52).

The fifth ward, north of Buffalo Bayou, became a melting pot of French Louisiana creole migrants who settled in the northern section of the ward during this boom-time from 1920-1930. What became Frenchtown was a creole ethnic enclave that existed alongside the English-speaking Black population of 5th ward. The nearby Union Pacific rail yard provided employment for many of these mixed-race Francophone migrants, and Frenchtown became known for Louisiana Creole music, and well attended Cajun house parties (Steptoe, 2016).

The 1920's also brought the first wave of Mexican migrants, who established communities in the second ward and strategically near employment opportunities. A suburb east of town near the Port of Houston called Magnolia Park, Denver harbor near the Southern Pacific rail yards, as well as a community near the rail yards in the sixth ward were home to Houston's Latino population (Steptoe, 2016). Even with the massive influx of migrants from Mexico, their population was still only one fifth the size of Houston's Black population in 1920 (Steptoe, 2016).

By 1940, Latinos were still only five percent of Houston's population. Legally, Latino residents were considered "white" for the purposes of segregation, though especially in South and West Texas, at the time they were segregated and treated as second class citizens. In Mexico at this time, 60% of the population considered themselves mixed race (Steptoe, 2016). But only by emphasizing their Spanish ancestry could they gain access to whiteness and its privileges. (Steptoe, 2016) The Latino

population emphasized whiteness as a civil rights strategy by and large until the 1960's when school integration plans used them as the first wave of white residents to be bussed. In an ironic twist of anti-blackness, Houston's Latino community leaders argued that they weren't white, so should not be forced to integrate with Black schools. Instead, they argued, they were Brown, and should be left out of the integration conversation entirely as it had already been framed in Black/White terms. (Steptoe, 2016)

Over time, parts of the emancipatory spaces, carved out by determined Black Houstonians, have been erased, removed, co-opted and whitewashed by the white power structure of Southeast Texas.  The Historic freedman's town established in the fourth ward at the end of the Santa Fe trail was razed and replaced in 1951 with a whites-only housing project called Allen Parkway Village (Bullard, 1987).  The historic Carnegie Colored Library was bulldozed in 1965 during the construction of highway 45, the library relocated far outside of the historic fourth ward. The fourth ward itself has undergone extreme gentrification, with homeownership slipping out of the Black community's hands starting with the economic strain of the 30's, and never recovering. It is worth noting that the fourth ward is the only historically Black or Latino neighborhoods that was not prone to flooding, as it sits on a ridge very near Houston's central business district. Currently the neighborhood is a majority white community. Independence Heights, the first independent all Black city, currently faces similar redevelopment pressures.

A 2019 US House of Representatives report suggested a feasibility study be funded regarding turning the Santa Fe trail into a national park historic trail, honoring the route's role in emancipation. It is unclear if the project will come to fruition. However, a cursory internet search shows that the route, which is unmarked and covered by major highways, is referenced largely as trade route used by white settlers by historical groups including the Rails to Trails Conservancy (Rails to Trails Conservancy.) Others might call these settlers slaveholding plantation owners, however these few references to the trail leave out any mention of slavery, emancipation, Juneteenth, or its end point in the historic freedmen's town of the fourth ward. The renowned Sugarland prison's history of convict leasing stymied development in 2018 as the unmarked mass graves of Black, formerly incarcerated and leased laborers were found during construction (Flynn, 2018). The site is planned as a school for Fort Bend County School district. One wonders if and how the history of the site will be shared with students.

Throughout Houston's history, police brutality against the Black community has been a constant. Collaboration and in some cases overlap between white supremacist vigilantes like the Ku Klux Klan and police forces in Houston and the surrounding counties were well known in the Jim Crow era (Steptoe, 2016). Police brutality and disproportionate policing continues to plague Houston (Deprang, 2013).

Nevertheless, Black Houston's proud legacy live on in Black-led civic organizations, civil rights organizations like Black Lives Matter Houston, and surviving historic sites including Antioch Baptist Church, Trinity Methodist Church, Emancipation

Park, Texas Southern University, and others.  The community economic strategy

popularized during the Harlem Renaissance - supporting Black-owned businesses -

continues on to gain attention in pop culture today, (Gandhi, 2019) and echoes a theme

of Black community autonomy that was central to the formation of Independence

Heights and Freedman's Town, and the deep community pride felt by Black residents

from Emancipation onward.

*The New South – Houston's Boomtown Era*

Though the 1970's brought economic boom to Houston, Dr. Robert Bullard,

sociologist and respected environmental justice scholar at Houston's own Texas

Southern University, reminds his readers that the spoils of this boom-era were not

evenly distributed, nor was the re-branding of the "new South" during the sunbelt boom

of the 70's the end of racial discrimination;

> Institutionalized racism continues to define the existence of thousands of Black
> Houstonians in Employment, education, home and business ownership, health
> care, the judicial system, the social welfare structures, politics, and the spatial
> environment. Houston had developed a growth pattern that is economically and
> racially segmented. (Bullard 1987, p10)

The 1970's "boomtown" phenomenon brought massive expansion of the city's

boundaries, as it annexed surrounding towns and developers rapidly expanded the city's

housing stock, creating sprawling suburbs on the outskirts of existing areas (Bullard,

1987). The black/white dichotomy of Houston's population shifted during this period, as

both Tejanos from the US side of the borderlands and Mexican migrants moved to

Houston seeking economic opportunities (Steptoe, 2016).  By 1980, the number of

Latinos in Houston was equal to the Black population. 40% of that population growth

had happened between 1975 and 1980 (Steptoe, 2016).

At the same time, inspired by the Black Power movement, Latino's began to

identify with their Indigenous roots through the Chicano movement. This shift in Latino

racial subjectivity opened up possibilities for Black-Brown inter-racial solidarity that is

evidenced in Houston's music culture, food, and neighborhood character. Many of the

new migrants moved into not only existing Latino communities, but also into Black

communities whose population had dropped as Black suburbs developed in the former

Sugar Bowl at the turn of the century (Steptoe, 2016).


*Northeast Houston*

The area referred to by Houston residents as Northeast or the Northeast side

was developed during Houston's boom years in the 1970's and 80's. As an outgrowth of

the adjacent fifth ward, the neighborhood was primarily African American until at least

the mid 80's, when large populations of Latino migrants began to move into the area.

The area, like much of Houston, is characterized by rich clay soils, abundant water in

local creeks and bayous, and a robust tree canopy.

Robert Bullard describes these areas as ones that, "share a history of municipal

neglect, but residents have developed strong loyalties to these areas" (1987, p. 36).

Despite strong place attachment, neighborhood leaders in the Northeast section of

Houston rate almost every environmental quality concern as more dire than leaders in

other sectors of the city, in a 1983 survey. (Bullard, 1987 p. 67.) Landfills, in particular,

have played a role in the disproportionate environmental burden felt by Northeast

communities. The Whispering Pines landfill is one of the many landfills Bullard describes

as having been sited using the "PIBBY principle" – Put in Black peoples' backyards – in

the 1970 (1987 p. 70). Of Houston's nine landfills at the end of the 1980's, seven were

located in predominately Black communities, with one each in white and Latino

neighborhoods. The Whispering Pines landfill, located in Northeast Houston, was

subject to a discrimination lawsuit in which the residents of the surrounding Black

community sued the Texas Department of Health in federal court to stop construction.

They lost the case, and today the Whispering Pines landfill dominates the otherwise flat

landscape of the neighborhood. An outgrowth of landfill presence, Illegal dumping has

long been a problem in low-income neighborhoods with such facilities. So-called

"midnight dumpers" (P. 73) off-load debris in these areas to avoid dumping fees.

(Bullard, 1987)

Without zoning laws to regulate land use, Houston's neighborhood organizations

have long relied of restrictive covenants, or deed restrictions, which must be renewed

every few years, to restrict unwanted land uses. For neighborhoods with lower-income

residents who may have more pressing day to day survival priorities, large renter

populations, and low levels of political engagement, gathering the requisite support to

renew these covenants can be overly onerous. This creates a disproportionate pattern

of neighborhood protection from undesirable land use, and minimizes self-

determination of low-income communities and communities of color. (Bullard, 1987)

By the early 2000's, unplanned and unzoned growth across Houston's watersheds had become a significant issue. The percentage of land covered by roads, parking lots, roofs, and other impervious surfaces grew from three percent in 1948 to thirty one percent in 2000, causing flooding in some areas during even normal rainfall events (Rogers and Defee, 2004). The subsequent flooding, examined after Hurricane Harvey through GIS analysis, was shown to have a strong correlation with Black and Latino neighborhoods, which largely overlapped with socio-economic indicators (Chakraborty, Collins and Grineski, 2019). The combined impact of what could arguably be described as municipal negligence in terms of flood control, layered on top of centuries of oppression, decades of disproportionate toxic exposure (Parras and Gustafson, 2017) and the trauma that accompanies major disasters (Chakraborty Collins and Grineski, 2019) makes finding justice and resilience for residents of Northeast Houston a complex task.

**METHODS**

*Overview*

Two sets of semi-structured interviews were used to assess 1) the impact of community-based landscape analysis and design methods on social capital, place attachment, and local knowledge, as well as 2) identify facilitation strategies associated with changes in these resilience indicators.  The interview guides developed for each set of interviews can be found in appendix A and B of this document.  Names have been removed from interview transcripts and numbers relating to an interview analysis spreadsheet have been used to identify each participant or facilitator.  To protect sensitive information revealed during the course of interviews, interview transcripts have been omitted from this document.

*Positionality*

As the primary investigator, my voice and lens on this case study, issues of climate justice, community organizing, and environmental design are not neutral. While I have tried to represent the limitations of the practices used in this case study, I am openly subjective, and aligned with the organization examined in this case study.

As a former community organizer for racial and environmental justice, much of my life has been devoted to work within the framework employed by the organization in this study. Several of the founding members of the parent organization are personal acquaintances, who I, in fact, introduced to each other.

The organization has been explicit in naming my personal relationship, my positionality, and my commitment to reciprocity with the group, as the reason for granting me the access necessary to complete this investigation. Many social justice groups are weary of academic research, as researcher have a reputation as extractive and exploitative of grassroots organizations. This suggests that for researchers to meaningfully engage with grassroots community groups seeking to achieve social equity goals, a research paradigm outside of an objectivist and positivistic approach are most appropriate.

In my interactions with community members and facilitators alike I have represented this project as an attempt to shine a light on these practices from my current place in an academic institution. I do this in an effort to highlight their benefit, and support more work of this nature.  I have also offered my skillset as a graphic designer, researcher, writer, and mapmaker to the group as an act of gratitude and reciprocity for their collaboration in this investigation.  To date the group has asked about supporting with neighborhood mapping projects, but has not responded to requests for more information or direction about the nature of that project.

*Semi-Structured Interviews*

The method chosen to assess the impacts of grassroots participatory landscape analysis on social capital, place attachment and local knowledge was semi-structured interviews. Inquiries into these three indicators by social scientists have been largely qualitative, in the form of surveys, interviews, ethnographies, and case studies

(Lewicka, 2011). A semi-structured interview format allowed the research project to align with established practices and precedents within social sciences. For example, questions regarding length of stay and willingness to move are standard ways of assessing place attachment in community members (Lewicka, 2011). Social capital was assessed through questions about the quantity and quality of social connections, and how those social connections have changed over time. Finally, local knowledge was assessed more informally – while one question in the interview guide asked about increased knowledge of the neighborhood, the major finding regarding local knowledge pertained more to a theme that emerged from the data regarding relationships with local government, rather than direct answers to the question.

Semi-structured interviews were an appropriate vehicle to gather these data, while also enabling interviewees to direct the interview to some extent, providing a rich, contextualized description of their community and their organizational efforts. These interviews enabled important themes and linkages to emerge from the data, particularly for facilitators.

Facilitator interviews, conducted after community member interviews were completed and transcribed, were guided both by literature and by themes that emerged from conversations with community members. This process, rooted in grounded theory (Gilgun, 2009), enabled me to work backwards from the group's impact to outreach and engagement practices that may be implicated in those outcomes. Questions arose from the literature regarding recruitment and retention of members, decision making structure, group guidelines and facilitator biases. Other more open-ended questions

about their experience, where they are from, their relationship to the group and lessons

they would like to share with public officials and professional planners provided an entry

point for facilitators to steer the data towards what they felt was critical to capture.

*Recruitment and Consent*

Participants were recruited as part of a case study after securing IRB approval.

The primary investigator proposed the research project to one of the facilitators, a

personal acquaintance, that was later interviewed. This facilitator presented the

research proposal to the community group participants and after some discussion the

group reached consensus and agreed to participate. This decision was relayed back to

the primary investigator.

Participants in the group volunteered to meet with the primary researcher for a

30 minute to 1 hour long semi-structured interview during a specific weekend-long time

frame in October, 2019. A group facilitator assisted with scheduling and coordinating

interviews. The primary researcher traveled to Houston, TX to conduct interviews in

person with participants.  Seven interviews were conducted in the residents' homes,

two interviews were conducted in the primary investigators' rental car to enable a quiet

and private environment, and a final interview was conducted at the interviewee's

chosen location which was a sandwich shop within the community. The interviewee and

primary investigator were the only occupants of this establishment other than one staff

member, who was far out of earshot.

Participant interviewees who were Spanish speaking were scheduled on the same day, and simultaneous interpretation was provided through a third party. This interpreter, who works with the community group regularly, signed a non-disclosure agreement. All participants were informed of their rights as research subjects, and signed informed consent forms. Each participant was given a copy of their informed consent information in either English or Spanish, depending on the language the interview was conducted in.

*Language*

Nine community members were interviewed. Six interviews were conducted in English and three interviews were conducted in Spanish through an interpreter. The interpretation was recorded, and later transcribed in English. All interview analysis was conducted in English.

*Facilitator Interviews*

All four active facilitators of the group were interviewed after participant interviews had been completed, transcribed, and analyzed. Interview questions for facilitators emerged from the analysis of participant interviews as well as from a previously completed review of background literature.  Facilitators were interviewed remotely using video conference and phone conference software, Zoom from late November 2019 to December 2019. These interviews took 45 minutes to 1 hour, and were audio recorded and then transcribed by the primary investigator.

*Analysis*

Analysis was completed using grounded theory techniques (Gilgun 2009). Interview transcripts were analyzed for themes that related to social capital, place attachment, and local knowledge. This analysis was organized using the meta-matrix analysis process (Huberman and Miles, 1984). Several themes discussed related directly to questions asked in the interview guide, and other themes emerged from the data during analysis.

In interviews with community members, direct answers to targeted questions regarding place attachment and social capital provided a clear starting place for analysis of these themes. Other themes, like mental health impacts, inter-racial and bilingual neighborhood social capital, and integration of local knowledge with local government agencies emerged unprompted. As interviews progressed, these emergent themes were occasionally asked about in follow up probes when it was thought that interviewees may be alluding to them – for example conversations about improved mental health, social isolation and developing inter-racial friendships. In this way, these themes became more explicit in later interviews.

The second round of interviews, with facilitators, reflected emergent themes from the first round of interviews. In this way, grounded theory was engaged to allow the research design to follow emerging data. The interview guide used for facilitator interviews can be found in the Appendix.

*Limitations*

The participant sample contained nine community member group participants. Six of these participants identify as Latino or Hispanic, and three identify as African American. Only three of the nine participants were interviewed in Spanish.  The relatively low number of African American participant interviewees may be due to scheduling conflicts. Concerns regarding coordinating interpretation meant that Spanish speakers were given the generally more flexible time frame of Saturday, while non-Spanish speakers were asked to schedule interviews on Sunday, competing with Church activities for many members.  Remote interviews, requiring a certain level of computer literacy among the largely older interviewee pool was not deemed an appropriate substitute. Future research of this nature, in the opinion of the primary investigator, should include a wider range of scheduling opportunities.

Almost every interviewee had been involved from the first meeting of the group. Two out of three Black interviewees were relatively recent members of the group. This is reflective of the organization overall, however, as facilitators worked to recruit more Black members in the months directly before interviews occurred.  Only two community member interviewees were men, and this too is representative of the group which is overwhelmingly comprised of older Black and Latina women.  All four current facilitators, including facilitator one who identifies himself as a supplementary facilitator, were interviewed.

As the first round of interviews with participants progressed, a question asking residents to informally quantify the number of people they'd met through their

participation emerged. This was not included as a question on interview guides, nor was it asked of the first two interviewees. While the data collected from the inclusion of this question from the last seven interviews is instructive, it is not representative of all participant interviewees.

Similarly, several emergent themes became clear as interviews progressed. If time or scope had allowed, a set of follow up interviews investigating these emergent themes more explicitly would have provided a richer description of this case study. Instead it is suggested that these emergent themes inform future research.

Facilitator interviews occurred roughly a month to six weeks after community member interviews. In that period of time, the group had visited a country commissioners court. This experience was discussed by every facilitator to varying extents but was not discussed by community members who had not yet had the experience when they were interviewed.

**RESULTS**

**Section 1. Introduction**

The following section presents findings from semi-structured interviews with facilitators of and participants in a grassroots neighborhood organization focused on neighborhood scale landscape analysis and environmental justice action. The organization that is the subject of this case study emerged out of the context of another environmental justice organization, referred to throughout this and subsequent chapters as "parent organization". In the wake of Hurricane Harvey, this parent organization came together through a coalition of young Houston civil rights and environmental justice organizers. This group of experienced community leaders established the Jemez principles of environmental justice as a set of core organizing principles.

They also conceptualized hurricane recovery as a potential leverage point for social equity. This was embodied in their ethos of "buying Black" with recovery money they were able to access, as well as hiring and training young Black and Latino residents from the neighborhoods they worked within during the recovery effort. Additionally, this parent organization specialized in challenging cases, especially common in low-income communities, where there was no clear deed to the house, where residents, perhaps due to immigration status, were afraid to ask for aid from large organizations, or where other bureaucratic hurdles impacted residents with few resources to overcome them. This aid was given with no expectation of repayment, and few if any strings attached. This policy stems from the parent organization's understanding of the

ways that institutional racism in Houston has created significant racial wealth and resource gaps, as well as the acknowledgment that housing is a basic human right.

After a year of rebuilding and relationship building with residents, members of the parent organization initiated the organization discussed in this case study in an effort to address the underlying vulnerabilities of the neighborhood to future flooding and climate change impacts.

All of the facilitators, in their mid-twenties to mid-thirties, fall into the generational category of "millennial". Two of the facilitators are men, and two are women. One facilitator is a Latina immigrant who is also involved in immigrant's rights organizing. Another facilitator, self-described as someone in more of a support role among the facilitation team, is of south-east Asian descent. The remaining two facilitators are white. One of the facilitators identifies as LGBTQ.

None of the facilitators are Black, and the majority of them are from middle-class socio-economic backgrounds. There are many differences in age, race, class, and culture between the majority of the facilitators of the organization and the community participants. Both parties, however, described strong relationships and trust between them.

The facilitation team was explicit in naming the framework and theory of change they work within. Their efforts have been aimed at community capacity building through the method of popular education (Freire, 1970). The Jemez principles of Environmental Justice were also named as part of the facilitation teams baseline

understanding of effective grassroots community engagement.  Facilitator one named

these frameworks saying:

> (Facilitator one) We sort of operate by the Jemez principles – which I'm sure
> your intimately aware of – but I don't think we've set any formal rules, which is
> really good because we're on the same page – like, no one wants to shine
> brighter, everyone just wants to service the community and build capacity within
> the community.

He reiterated this later expanding on the concept of capacity building:

> (Facilitator one) The Jemez principles were something we talked a lot about in
> the infancy stages of [parent organization] a lot of those principles go into what
> we do, but we haven't formally recognized the Jemez principles or we haven't
> said hey this is what we follow. It's more unwritten rules, or like I guess were
> facilitating through public education, were facilitating through capacity building
> – which can be a lengthier process, we need the group to land to answers on
> their own, and we need to help them get to the answer on their own so that
> they're able to be self-sustaining That's just been a mutual understanding
> between facilitators that this is our eventual goal.

Facilitator three also named the Jemez principles and capacity building framework:

> (Facilitator three) So I think that – I'm sure that you know a little bit about
> [parent organization] and the Jemez principles that we have. Our goal was
> always to help the neighborhood be able to be prepared themselves for future
> disasters and not have us come in and do all that.

These frameworks have shaped decision-making structure, facilitation style, and

relationship building strategies. In turn, these facets of the organization have impacted

social capital, local knowledge, and place attachment for community members,

maintaining and building upon pre-existing relational infrastructure for resilience. These

three indicators, however, are more than the sum of their parts, and in combination

have also impacted members' mental health.


**Section 2: Social capital**

**Section 2A: Solidarity relationships: social capital, recruitment and retention**

Relationship building was described as the basis for participant recruitment.

Nearly every participant interviewed had been materially supported by the parent

organization. Facilitators described this relationship building, which constitutes an

extension of social capital as well as financial capital in the form of home repairs, as one

of the most important parts of their efforts:

> (Facilitator two) Unlike most organizing I've done, the relationships were
> founded, or initiated, through a service element. That changes the trust level.
> And the way we in which we deliver the service is not typical– right? At the end
> of the day there's already some material, people have already seen that they can
> get something material out of being in relationship with me by the time I'm
> working with them in a facilitation role. So, while I think that - So that's really
> different. So, while I think that is very different, and that's what the relationship
> was before I was doing this work – I was going there to do work that was
> relieving people's pain. That made it so that I came into the space with both a
> deeper understanding of the conditions that people were living in - that for sure,
> because I had spent a lot of time in people's living rooms. But also, that there
> was that trust there.


Facilitators developed relationships rooted not only in empathy, understanding their

pain, but in real attempts to relieve that pain, extending resources and building real

friendships with strong trust:

> (Facilitator four) I guess we were planting the seeds for doing that over the first
> year of [parent organization] – by everyone we met or worked with whether it
> was mucking or case management. Getting to know people pretty well and

becoming friends with a lot of people. While we were doing mucking, talking about other stuff that was going on, things that were going on, ideas we had, things we were angry about - that formed this community.

Facilitator three expanded on the character of the relationship between facilitators from the parent organization and participants:

(Facilitator three) We learned that along the way, because I think most of us had not experienced anything like this. So, we were all brand new and learning along with the families. Which is, I think, what really helped [organization] to be more successful. Because we were honest – we weren't just coming in, doing something for everybody, and then leaving. Right? (mumble) Yeah, we were learning with them, we were trying to figure things out with them, and we built a lot of trust through that.

In the view of facilitator three it was collaboration, not just resource-sharing, between facilitators and flood-impacted residents that resulted in strong trust and a firm relational foundation for further community work.  Facilitator four describes the way that the simplicity of meeting basic needs with and for residents provided a safe way to establish relationships:

(Facilitator four) We were able to connect over the shared anger of this situation that Harvey put people in and everything that built up to that –and  being able to connect to people through like just hanging a wall in their house and hanging out at that same time,  it gives a ground - It's pretty safe work, I guess. Somebody is like, "I don't have a wall right now. Having a wall would make a big difference, you're able to give me a wall," and we do it and hang out at the same time and get to know each other.  It's an easy way to come into a space and connect over. We had that grounding before we came into [organization].

She continued, acknowledging that the social networks established between the facilitators and community members, who are overwhelmingly low-income Black and Latina women over the age of 55, are not typical:

(Facilitator four) Everyone knows what happening – its super odd. A bunch of middle-class kids hanging out with these older poor grandmas – who are all friends with each other – it's super weird! Yeah, and just being honest about it - that it's a little odd.

Facilitator three, who is a first-generation Mexican immigrant, as are many of the community members, reflected on the "unspoken" ease of these relationships. While employed as a Spanish/English bilingual case worker in the year leading up to the formation of the organization, facilitator three reflected that they would:

(Facilitator three) call to see what you needed, but along the way I would hear about an uncle or a cousin and whatever else is going on, and we were able to conversate, and then I would bring in [immigrant right organization] which is mostly around immigration issues, and that also opened up even more trust because almost every Latin family in this country has some sort of ties to immigration or a person,  a family member or somebody who's affected. It adds a layer of trust when I say this is what I do also. If you have any questions this is my phone number. It opens up another layer, you know.

Relationships between facilitators and participants were not rooted in a traditional vertical resource provider- resource recipient power structure, but instead accompanied by what facilitator four described as "real" friendships.  Facilitator two emphasized the impact of sitting with community members in their homes as an important part of relationship building. Facilitator three reflected on the unspoken understanding and additional layer of trust that came from having a shared background with many of the Latino members of the organization. These relationships could also be described as solidarity relationships, friendships rooted in acknowledgment of power and oppression, with action taken to redress power imbalances as a community:

(Facilitator four) [about recruitment success] Consistency – asking people over and over again if they want to join. If a bunch of people that are really busy or are like that doesn't sound interesting to me – whatever and asking. Like If I stop by somebody's house to drop off some cleaning supplies – reaching out and letting them know that were having this meeting  again tonight – or actually going and visiting in person, or calling on the phone and maintaining a relationship beyond I just want you to show up to this group.

(Primary Investigator) What does that look like to you, how do you maintain that relationship?

(Facilitator four) So there's quite a few people that at different time periods we interacted a lot more intensely with. Maybe we were working on their house, or the main issue they were facing has been resolved so there's not something drawing me to go see them all the time – but even once every other month calling and checking in or stopping by. Like the same way you'd treat a friend that lives in a different city that you used to live in that you can't be in a relationship with – like you find a way to check in and show you care - and you have some sort of strong shared thing you've already done together. It probably helps that I genuinely think of them as friends – like people I care to check in on.

This early grounding in trusting solidarity relationships, in the view of facilitator two,

helped to recruit members without direct experience with the parent organization:

(Facilitator two) So, your bringing people in that you're already in relationship with, and then sort of the snowball. there are people at [organization] that we've never spent a dollar on their house, but they're all the best friend or the sister of someone who's house we worked on, or the neighbor of somebody - so they see that we have some skin in the game.

All facilitators named relationship building as a critical component of member

recruitment. These relationships were described by the facilitation team in terms of the

material and emotional support they offered to participants, their horizontality, and

their authenticity as friendships. There was no mention of professional distance

between facilitators and community members. Instead facilitators emphasized empathy

and trust building.


*Retention*

Facilitators also credited their focus on relationships building between members

in meetings and community events as a major part of retention success. Facilitator

three, who led the first meeting, described the character of the first meeting and the

emotional catharsis of community members as they met and connected over shared

experiences:

> (Facilitator three) It was something so new to everybody, but fun. Right- that
> was the idea. We ate, we talked, there was a lot of emotional, "oh we went
> through this," and everybody has gone through it so there was a lot of
> connection through that. And it took a while.


Facilitator four reinforced this observation, describing the elements of relationship

building the group has experienced in their time together:

> (Facilitator four) Creating a space that is a low-pressure environment, focused on
> relationships between all of us. Balancing that with actually evolving as a group
> and working towards something. The events we've held and the things we've
> accomplished have been really big for creating shared identity or like, love and
> commitment to the group.


Finally, facilitator four suggests that this service and relationship, or solidarity

relationship model, may be transferable to situations that are less acute in other

neighborhoods:

> (Facilitator four) Harvey was this easy way to come in. But now I really think we
> could go into any poor area and do the exact same thing at any time. There
> doesn't need to be – like there's gazillion slow disasters happening right now

that aren't that isolated moment – but I think you can use the same model with a service that people are in really big need of, combined with real relationships.

**Section 2B: Facilitation methods for developing social capital:**

Facilitators embodied the first Jemez Principle "be inclusive" from the first

meeting of the organization. The Jemez principles state the first principal saying:

> If we hope to achieve just societies that include all people in decision-making and assure that all people have an equitable share of the wealth and the work of this world, then we must work to build that kind of inclusiveness into our own movement in order to develop alternative policies and institutions to the treaties policies under neo-liberalism.
>
> This requires more than tokenism, it cannot be achieved without diversity at the planning table, in staffing, and in coordination. It may delay achievement of other important goals, it will require discussion, hard work, patience, and advance planning. It may involve conflict, but through this conflict, we can learn better ways of working together. It's about building alternative institutions, movement building, and not compromising out in order to be accepted into the anti-globalization club. (Jemez, 1996)

Diversity in membership was actively cultivated, and an inclusive environment

purposefully curated to foster relationship building between Latino and Black residents.

Even the group chat used by members and facilitators is bilingual, with members

translating back and forth to ensure each message in the thread is understood by all

group members.

The impact of the group's bilingual structure, in particular was pointed out by

several interviewees. Establishing this inclusive norm took time and intention:

> (Facilitator three) A lot of Latin folks are comfortable in Spanish and that's what they want to speak, or that's what they're fluent and they can actually participate rather than struggling to understand what the English – what is being said in English and trying to contribute in a language that is – that they don't use at home. So that's been a challenge. So we actually started, fully bilingual from

the get go. We had interpreters from day one. And now there's this beautiful connection.

(Facilitator four) As facilitators we forced it for a while – not forced it – people weren't fighting against it in any way – people wanted to understand themselves – but they weren't aware that there were issues so much at first. It was hard at first for English and Spanish speakers to talk to each other with the interpretation. It just became a norm, and we just saw how everyone is experiencing everything overtime.  It's just become a norm, and a prideful thing about the group.

When the group visited county court, it became clear how important their inclusive

linguistic environment had become to members:

(Facilitator three) We had an action two weeks ago, three weeks ago, at the county commissioners court. It was such a challenge to get interpretation. Such a challenge. And I'm an English speaker and it took me a couple weeks to get somebody to actually call and say they were going to have it – through the ADA coordinator –

(Primary Investigator) Wow.

(Facilitator three) Yeah, I don't know – I was like, what? So anyways, when we got there, we were told that the Spanish speakers had to be in the overflow room.

(Primary Investigator) Wow.

(Facilitator three) Yeah, they couldn't have simultaneous interpretation in the actual court, because the acoustics are bad, and it's too disruptive, and so our group was like, NO! screw this. Thank god for [name], hopefully you get to interview her. She was like, "no fuck that, were not, going to be divided, over language. Language is not going to be a divider. We came here together we're going to stay together."

Another facilitator reflected on the same event, saying:

(Facilitator four) The bilingual space is really important to everyone. Like at the county commissioners' court it was English and Spanish speakers fighting over the interpreter – like how to make the interpretation fair for everyone – like yelling in two different languages and trying to understand each other.

One community member noted, enthusiastically, that she has expanded her social

network through the bilingual space:

> (Primary Investigator) Do you feel like you've made relationships across racial
> boundaries through the group?

> (Community member eight) Yeah, very much so. and I love it. Because we get to
> trade cultures. And I'm learning Spanish – I got a Spanish app on my phone.
> Yeah, I am teaching myself Spanish, it's good.

This type of cross racial network is not common, and is something noted by community

members as well:

> (Community member two) You have for the first time, a Hispanic group and an
> African American group coming together, it has been a very very fascinating
> process, you don't see that in the city of Houston, I can attest to this, because,
> like I mentioned to you, I am involved in a lot of different parts of the Houston
> community, not just here, I have never seen a meeting where you go, and the
> people putting it together are going out of their way to accommodate both
> groups together. Normally the people who go are just sitting in the back, who
> are Hispanics.

> (Primary Investigator) And they can't necessarily understand. . .

> (Community member two) Exactly, exactly. But this one right here, I tell you this
> from the bottom of my heart, there is no other one like it in Houston.

The impact of this inter-racial bilingual network has shifted perspectives of community

members that had not previously connected much with neighbors of a different racial

group. One Latino member of the organization said:

> (Community member two) It has definitely allowed me to see a group in a
> different perspective, especially when this entire time, both nationalities, the
> Hispanics or Latinos and the African Americans have been fighting for the same
> thing, or arguing for the same thing, but you've never seen that relationship

come together… When it comes down to neighborhood and community development, I feel that if you're an Asian, if you're Hispanic, if you're whatever culture, the chances are your priorities may be in line with what the average person in that neighborhood may be experiencing. The problem is that we haven't been able to bring all these different cultures together, for whatever reason – nationality or whatever.

A Black woman member of the group also commented about her newfound connection with her Latino neighbors:

(Community member eight) But those people back there [different part of neighborhood] are hurting, they're hurting worse than we are. Even though we different races, creeds, colors, and everything, were all having the same problem. We don't even let language be a barrier to us anymore. We can just hug each other, and we get it done.

She alludes to some neighbors' potential concerns regarding immigration status and the ramifications of political organizing, saying that:

(Community member eight) I have neighbors that, want to, but really don't, they're afraid, because a lot of my neighbors, and I'm talking about the whole Northeast side, a lot of them do not speak English, you know? We have a very diverse neighborhood but a lot of them, you know . . . I want to help my neighbors.  If I help my neighbors we all help each other – we all have to fight for one common good and that's the preservation of our way of life, you know, cause they [real estate developers] are not going to do it, they're looking to make a fast buck!

Facilitators not only embodied inclusivity in creating bilingual space, but also in active recruitment and outreach to Black community members. Facilitator three reflected on efforts to specifically engage Black residents in an effort to bridge the two main racial groups in the neighborhood:

(Facilitator three) I remember some of the early conversations with the group were like, well we definitely want Black folks to be involved, right? That was important. We want it to be - I think all organizers dream of like these two – like

getting Black and Brown folks to work together on stuff. But it was a little bit challenging to get the same amount of folks. Now we have a better mix of folks, but at the beginning it was mostly Latin. And it was like, why can't we get more Black women? . . . It was a little bit of a challenge and we talked about it. And eventually more folks would come and go. We would really purposely try to reach out to Black families that weren't coming to the meeting as much. So now there's more of a mix of folks. But I remember that being a thing in the beginning. In general, I've heard that a lot since coming into social justice work, that bridging these communities to work together on things is really important, and also challenging.

The inclusivity of facilitators is demonstrated in multiple ways. Not only has the group fostered bilingual space from day one, they have done intentional outreach to Black community members who were under-represented in the group. Their inclusivity is rooted not in tokenism, as the Jemez principles warn of, but in real relationships with community members. Together, these facilitation strategies have shaped the organization in ways that greatly increase social capital among members.

**Section 2C: Impacts on social capital for community members**

The recruitment and facilitation methods of the organization have resulted in clear impacts on community members' social capital. There has been an increase in social connections with neighbors within the group, even among shy and more recent members. This includes both bridging and bonding ties, extending amplified social capital into the wider community beyond just members themselves.

The primary investigator incorporated an informal follow up question in several interviews asking community members to informally quantify changes in their social capital. Five of nine community members were asked and responded to the questions,

"How many more people would you say you've become connected to through the

group? Has it Doubled? Tripled? Stayed the same?"  There answers were as follows:

> (Community member three) It may have like, tripled, beginning with the
> members of [parent organization].

> (Community member six) I would say it's like, it's doubled

> (Community member seven) Yeah, I feel like several times, several times over.

> (Community member nine) Yes, my communication with the neighbors now it
> has doubled, because like I said, I didn't really talk to no one. I didn't speak, and
> now I communicate with them.

> (Community member Ten) Tripled.
> (Primary Investigator) Tripled! Yeah? More?
> (Community member Ten) More!


Other members offered insight into the nature of their new social connections:

> (Community member six) I'm always like, I can't really talk in the big group, you
> know? But I'm starting to, I'm barely starting to learn a little bit.


Another community member described getting to know neighbors better in the context

of local landmarks and prior social connections:

> (Primary Investigator) After joining this group, do you feel like you've gotten to
> know people differently or better?

> (Community member four): Better. More better.

> (Primary Investigator) What's a typical interaction with one of your neighbors
> now?

> (Community member four) Oh they're like I live across [street], or I live on
> [street], and I'll ask where'd you go to high school and we start "oh you've been
> here since X," or "I have my mother's house now," or "I took over my mother's
> house when she passed away" things like that.

60

Community member five reflected on her ability to reach out and connect with neighbors about the community group, expanding her social network and recruiting more members to the organization:

> (Community member five) I definitely feel that I've been able to have more conversations with my neighbors, yes. Yes, yes. I might have seen them from afar, now we can have a conversation with them.

She continued, describing how she has initiated new connections saying:

> I go to a store, and I talk to someone, not necessarily my front door neighbor or my next door neighbors, but folks  that who live a few blocks away, and I talk to them and  there are people I meet in the park and I talk to them and they show up at our meetings.

Clearly, the relational focus of the group has resulted in an overall increase in social connections and social capital for community members. This increase is not just in terms of quantity, but also an increase in depth of connections.

**Section 2D: Strong bonding ties among many members**

Many group members described strong bonding ties that have developed among group members. Several members and facilitators reflected on the sense of mutual support and camaraderie exhibited by the group. In particular, several interviewees reflected on the way strong social ties were evident during tropical storm Imelda. Facilitator four summarized the dynamic saying:

> (Facilitator four) At least fifty percent of what [organization] is like - a friend group – like a social network basically – a support group almost. That piece I guess came more naturally.

Community member seven shared a sense of connection and love between group

members:

> (Community member seven) It's definitely changed, and I'd say it's improved a
> lot. We have a deeper connection on their problems, not just our problems but
> their probs as well. We also feel like a deep connection/attraction. Like when I
> am sick, they worry about me, and are like where is she, what's going on?"

Community member five described how she uses the WhatApp group chat to interact

with other members saying:

> (Community member five) I can talk better with them. We have a WhatsApp
> group - I love them. They're like part of my family. I say "hi," "good morning,
> how did you wake up? How was your day?" Sometimes "please reply," when
> we're trying to organize meetings! (laughs) because we have to be really active,
> right?

This app-based conversation became a source of social support during tropical storm

Imelda. Facilitator four explained:

> (Facilitator four) During the Imelda response – we have this WhatsApp group we
> all communicate on - it was so amazing – everyone was sending photos, giving
> updates, offering their houses to other people, finding shelters for each other,
> everyone just coordinating response and checking in on each other.

Community member three reflected on her experience during Imelda, when another

community member in the organization's home was flooded:

> (Community member three) And one of our neighbors, I don't know where she
> lives, across [street] , and [facilitator two] asked me if I would mind keeping her
> in your house and I said no! I said bring her.  I mean, her house was flooded, I
> couldn't say no. She didn't stay, they found a shelter.
>
> (Primary Investigator) But that was an option.

(Community member three) Right, I would have had a place for her to stay to sleep in and everything, yeah. So, you know when something like that happens you hate to say no because you know what you've been through.

Facilitator three summarized how this shift in social network has impacted one particular street in the neighborhood:

(Facilitator three) There's a street named [street] and we have four houses on that street – and they've been living there for years and they didn't know each other before this. And now, there's community there – they were all at [a member's] house during the Imelda storm. That's different – that's hugely different – in the way that you look out for each other and help each other. That's so different - to actually have a relationship with the people around you. Versus just being a neighbor.

Not only have community members developed strong bonding ties between each other, they have also developed strong bridging ties to other neighbors, as well as bridging ties as an organization to other groups within the city.

**Section 2E: An increase in bridging ties with neighbors**

Community members described an increase in bridging ties through the organization as well. One interviewee reflected on this in terms of "networking" saying, "I've learned a whole lot of better networking skills than I had before."  When asked about changes in her neighborhood social network, she elaborated:

(Primary Investigator) Do you feel that you've met more neighbors that you previously had?

(Community member eight) Yeah, yeah. Because I've met people from other neighborhoods, I found out that there's so many of us that been members from other civic clubs. We go out to their meetings.

Community member eight also emphasized her role connecting neighbors to the

organization. (Community member eight) "I met people who want to help but didn't

know how, so I explain to them how to connect." Community member seven reflected

on how her relationship with her neighbors has changed, enabling better

communication:

> (Community member seven) [Before, I knew them] just by sight, but we didn't know them really deeply. We didn't know the needs of the neighborhood, it was just like, "hey, how are you?," but we didn't get to the needs of the neighborhood. . . I think that we have way more communication now. We're able to exchange ideas. Before we didn't know about, we just knew about the what was in the house, we didn't know about what we needed in terms of the streets, the stores, or anything.

Community member ten reflected on how her social ties have changed in the context of

her work as a case manager for the parent organization. Before she became involved,

she said of her neighbors, "I knew them – I didn't know them by name, but I knew

them." She reflected on how that has changed:

> (Community member ten) Oh, I have met a lot by phone because I'm a case manager for [parent org] now. I know a LOT of people now, because I call them to see what they need done and whatever help [parent org] or even myself can give them, so if that's what you're asking I know a lot of people now.

She elaborated, describing how she serves as an information hub to other neighbors

saying:

> (Community member ten) First of all I like to talk, and if I can help somebody, and then, what I'm finding out from the drainage group – I can tell them what's going on, a lot of them know on this street about the meeting  – they don't want

to go, you know, but they want to ask me. I'm going to tell them – but I still encourage them – y'all need to come.

**Section 2F: Intergroup Social Capital**

Finally, as a group, the organization has acquired some social capital among other Houston organizations. This once again reflects the Jemez principles, in particular number eight: work together in solidarity and mutuality. Two facilitators reflected on the way the organization has been able to connect with other groups, and work in ways that connect multiple issues and constituencies. (Facilitator four) "People know who [organization] is now, and they want people's opinions, our support or consultation, which is really cool." Facilitator three gave specific examples of potential coalitions saying:

> (Facilitator three) Right so I've now reached out to Black Lives Matter Houston, and were going to work on doing something together next year with the other group. There's also another group of Black migrants that are here, and they are very separate and so that's another thing.

The organization, having rooted itself in a relational recruitment and facilitation model, has had significant impact on both bridging ties and bonding ties among community members. The facilitators themselves are part of this increase in social capital, engaging in real friendships with members described here as solidarity relationships, where resources available to various facilitators with greater access due to class, race and gender privilege are made available to community members. These relationships have also led to stronger social capital as an organization, with networking and collaboration opportunities arising as the group gains strength and connections.

65

**Section 3: Local knowledge**
**Section 3A: Decision-making, retention and local knowledge**

The organization is an open membership group, meaning anyone can be a

member from day one. Decision-making authority rests with the group members

themselves, facilitators present opportunities and guide discussion about decisions. The

group uses consensus decision making, which means that rather than voting, which

often leads to debate between two factions, the group is encouraged to find solutions

and compromises that accommodate the concerns and needs of as many group

members as possible. This strategy again reflects back to the Jemez principles. Principle

two, three, and five all speak to bottom up decision making and accountability

structures:

> #2 Emphasis on Bottom-Up Organizing
> To succeed, it is important to reach out into new constituencies, and to reach
> within all levels of leadership and membership base of the organizations that are
> already involved in our networks. We must be continually building and
> strengthening a base which provides our credibility, our strategies, mobilizations,
> leadership development, and the energy for the work we must do daily.

> #3 Let People Speak for Themselves
> We must be sure that relevant voices of people directly affected are heard. Ways
> must be provided for spokespersons to represent and be responsible to the
> affected constituencies. It is important for organizations to clarify their roles, and
> who they represent, and to assure accountability within our structures.

> #5 Build Just Relationships Among Ourselves
> We need to treat each other with justice and respect, both on an individual and
> an organizational level, in this country and across borders. Defining and
> developing "just relationships" will be a process that won't happen overnight. It
> must include clarity about decision-making, sharing strategies, and resource
> distribution. There are clearly many skills necessary to succeed, and we need to
> determine the ways for those with different skills to coordinate and be
> accountable to one another.

The open membership and consensus decision-making structure of the organization

relates back to these guiding norms among facilitators.  Facilitator two reflected on the

relative benefits of this organizational structure not only as a more inclusive model, but

as a more efficient model:

> (Facilitator two) Non-conventional types of organizational structure are not just possible but hugely advantageous, on a number of - even by traditional metrics – economic efficiency, ability to keep existing - non-hierarchical and consensus based, and I also mean having an open membership, and an open space for decision making.  You could volunteer and have decision making potential almost immediately. Consensus and horizontality – they exist elsewhere but it's rare. And defending that there not just good if you measure their ability to include people or whatever. You can do more work for fewer dollars.

Several facilitators credited the open membership and consensus structure, where all

input on an issue is considered and attempts are made to address that input before final

decisions are reached, as important to recruitment and retention:

> (Facilitator four) Forming connections over all kinds of things – and having more and more conversations where it actually feels like were both shaping the conversation  a lot, like every little bit and all the variety of ways have shaped the community where everybody feels like an important member of it. That's been really big for both recruitment and retention.

Facilitator two echoed this idea, saying that not only has the focus on social connection

supported strong membership, but that the decision-making style of the group has

played an important role:

> (Facilitator two) The emphasis on social rewards, friendship, taking care of each other. The fact that there's always food, Its pretty casual and fun - yeah. I don't know if anyone talked about this but just the fact that there's not a lot of rules. It's not like you go to [organization] and you have to go to two meetings before

you get this privilege – you know it's like you know you're here, we appreciate that you're here, were going to keep working with you.  The group is really shaped by the members -that's been the most important part in retention – people go there and they see that they matter right away and they can change the group to be more how they want it – so more people stick around.

Community members confirmed what facilitators observed. They expressed

appreciation for the overall approach of inclusion, capacity building and horizontal

leadership, or leadership that comes from building consensus rather than a single

charismatic individual. Community member six reflected on the humility of the group, as

well as their friendliness as reasons for their continued involvement:

> (Community member six) I was invited. (Pause). And I liked how they are there, all the people who are there, they're all good people, very friendly, very humble. That's what I really liked, how they all are, right? And that's why I kept going back.

Community member four echoes appreciation for the friendly, welcoming nature of the

facilitation team, and their encouragement to take ownership and leadership of the

group. "They're very welcoming, they're very encouraging to speak up and make

yourself known and get involved." Community member seven also reflected on this

friendliness and capacity building approach saying:

> (Community member seven) I loved the way focus on the needs of not just one person, but everyone, and how they figure out what we needed.  And how they teach us, how we learn how we can defend ourselves and ourselves talk to the people we need to be talking to.

This member continues, reflecting on the impact that consensus facilitation, with its focus on finding unity had on the group's dynamics:

> (Community member seven) The group, even if they can't fix a problem that you're having, they really try to help you figure out how to go about it, how to go about talking about it, and getting the resources so you can fix it yourself. Maybe if you're in the neighborhood and you're like, "it's flooding, the drainage is clogged". So even if they can't fix the problem, they're helping us come together and become more united so that we can move forward because by ourselves we're not going to be able to get it - but were able to do it together. Thanks to them.

Another community member appreciated, "that all of us together, we came up with a priority list, and of course drainage was the top priority." Though community members expressed appreciation for the capacity building, collaborative approach of the facilitators, adjusting to group decision making was and continues to be a challenge:

> (Facilitator three) Some of them really want us to lead the group and we really want them to lead the group, so we're shifting and were trying to figure out what the best way to do that is.

She continued:

> It just makes more sense that we all have weight – all of our work – everything that we do is very important to the group. And it took me a while - And I think it's taking a while for [organization] to get that too. I think they get the idea, but they still see [the facilitators] as the guidance and the more knowledgeable folks. And we keep saying, "no no no– you're not understanding – we're in the same boat." I don't even understand so much who owns what drainage. I'm not an expert I just- because of [parent organization] happen to be in a room where all these conversations are had. So, we're the same. Yeah – it's still happening. I remember [name] saying, "no but you guys are the leaders you have to tell us what to do" – and we have to say, "no, but we don't want to be leaders we want all of us to walk together. That's not what we want."

Facilitator four reiterated the challenges of deferring leadership to community

members, reflecting on the way that ownership of the group shifted in several specific

collective experiences, the first one being a community led drainage clean-up day:

> (Facilitator four) The first one was this community clean-up day – on the day – so
> another thing is that we've been trying to shape the space where there's not a
> leader – or everyone is leading in different ways. That's been challenging to
> convince people of I guess. The default was to treat people like they're leaders
> and go to them with all the questions – There's been this constant fighting
> against that. During the community clean-up day it was so cool, because
> everyone was scattered over the neighborhood and really taking stuff into their
> own hands – answering questions, when people ask other people things they
> gave answers and came up with ideas, they weren't like oh I need to go talk to
> [facilitator's name] or whoever -  it was a crazy moment – it was just like, really
> energizing.

Over time, and with more experience community members have become more

comfortable with the leadership style of the group facilitators, which defers back to

them. Facilitator one reflected on the way that a shift emerged as the group prepared to

visit a county commissioner's court together. Facilitators were doubtful about how

prepared the group was to lobby their county officials, but the accountability structure

of consensus served to check their doubts:

> (Facilitator one) In terms of them as a group as a whole and your bias on what
> they're saying, I guess committing more so to the idea (of community control),
> especially later on. Like - this is their decision, and the protest was the biggest
> example. None of us [facilitators] agreed with going to commissioner's court – it
> was way too soon – but the group voted on that, so we had to honor that. We
> had to prepare, and I think we did a pretty decent job given our circumstances. It
> could have been a little bit better. But it could have been way worse. It could
> have been way worse than it could have been better if that makes sense. But
> that being said, yeah, I think committing to the idea that the group is making the
> decisions, we're not, we're just facilitating and guiding – we're like walking with
> them. And kind of like, showing a path, but we're not choosing which way to turn
> and stuff, as much. Or I think the goal is to slowly just get away from that. So,
> keeping that top of mind is important when it comes to the whole group.

Facilitator four reflected on the experience at commissioners court as well. They emphasized the way that community members embraced the collaborative consensus model, taking shared leadership of the group:

> (Facilitator four) We talked to the County Commissioners Court – it was really cool because it was much more shaped by everyone in the room. When we were making decisions there was a lot of debate and conversation.  It wasn't like somebody says something and everyone goes, "yeah that's a great idea." It was like, "oh what about this piece and what about that," and it was like eight people really actively participating in that conversation, some of whom basically didn't speak for the first four months that they were part of [organization].

Though challenging at first, the collaborative, consensus-based facilitation and decision-making structure of the group is both appreciated by group members and credited with strong retention and recruitment results by facilitators. Additionally, one facilitator credits the model as a method that successfully checks facilitator bias, maintaining their accountability to community members.

**Section 3B: Incorporating local knowledge**

The structure of consensus facilitation and open membership means that community members, rather than outside experts or facilitators, have defined the scope of neighborhood problems. It is unlikely that most technical drainage experts would have begun drainage improvements by addressing illegal dumping, or included sub-standard access to grocery stores and other retail within the scope of resilience needs.

The organization, however, was able to frame the neighborhood's drainage problems in terms of their knowledge of neighborhood issues.

When asked what they disliked about their neighborhood, community members pointed to illegal dumping and a lack of food access or nearby retail, something included in the list of priorities established by the group. Community member two referenced a much-disliked Fiesta grocery store in the neighborhood that remained closed for months after Hurricane Harvey:

> (Community member two) as far as what I dislike, I will say that it has nothing to do with the neighborhood per se, but it to do with the lack of resources that we have available… I have a car, but you have most of the people here who were devastated by hurricanes, or by the floods, or who live low-income, they may not have the vehicle to travel 15 minutes away, so they're dependent on this grocery store right here, so that's one thing I wish we had more of. Definitely health clinics, we don't have any health clinics around here, we don't – seven miles away is the nearest one.

Community member nine echoed concerns about the quality of food access:

> (Community member nine) Yeah that we don't have any stores out here, none whatsoever out here. None but Fiesta and I don't know, their stuff ain't alright. Because all they fruits ain't no good. But we need some stores, so we have someplace to go. We don't have no place to go. Family Dollar, General Dollar and Fiesta, that's about all we got over here.

She continued, comparing retail access in another part of Houston:

> (Community member nine) And then come out here and there's nothing. You want to go to a Kroger or something you got to go 30, 40 miles to get to one, HEB same thing.
>
> (Primary Investigator) Wow

(Community member nine) Lowe's, all of that, Home Depot, Walmart

(Primary investigator) you need a lot of that when your rebuilding

(Community member nine) Yeah, right. We don't have anything out here.

Community member three mentioned trash collection, echoing group concerns about

illegal dumping and clogged drains:

(Community member three) The other thing is that sometimes we take big trash out and it's not picked up. Like one time I had a pile of trash in my front yard. It was there for like I want to say about three months.

Finally, community member five included transportation to nearby shelters as part of

what they'd like to change about the neighborhood:

(Community member five) for example during the floods I want us to have a place, like shelters for example, so that we can be safe, have transport to be able to reach those shelters, and want them to also take care of roads, because I think that there's enough money to help us.

While technical planners and engineers may know how to calculate run-off volumes, the

wider context of how flooding impacts the neighborhood is lost without local

knowledge. Improved stormwater systems throughout the watershed likely would not

benefit this neighborhood without clear drainage, and a long-term solution to illegal

dumping that continues to impact the area.

*Facilitators' take on incorporating local knowledge*

Facilitators shared many reflections, some prolonged, about the way that professionals

and beaurocrats have approached communities' local knowledge. Facilitator four

emphasized the role that local knowledge can play in framing the context of disaster

recovery, especially for marginalized communities:

> (Facilitator four) One really big thing is that disaster recovery seems to be
> treated as this isolated incident and response, where most of the work were
> doing and things people are experiencing are shit that has been going on for, you
> know, decades – and obviously, if you treat it as isolated incident and you can do
> all these little fixes to get people back to where they – well there's this weird
> thing where they know that they can't put people back where they were before
> – if their houses were in this really dangerous environment -  but it's not
> addressed at all – that you need to do something to address the environment.

Facilitator two discussed a hypothetical outreach program and pointed out that many of

the processes that planners and designers use to engage local knowledge is done in a

counter-intuitive, backwards manner:

> (Facilitator two) I respect technical expertise. But what I would say in terms of
> resiliency planning the work needs to be done to cultivate social actors and
> social networks that are not designed to participate in some process. So what we
> normally see is the city is going to spend the home repair HUD money, and HUD
> requires them to do community engagement. So then they design a community
> engagement process. And then they've designed the process, and then they're
> like "shit we don't have the people."  And then, well first of all, most of the time
> they design the process, do the process and don't care that no one participates
> and then just do their thing.
>
> Assuming that they really, a good dept or agency whatever that actually
> wants people to engage in the process – the problem is that they create the
> process and then they go look for the people that can participate in the process
> that they've designed.  And maybe – maybe - if they're super good they're going
> to provide a little skill building so that people can do the process. As opposed to
> with [organization] you build relationships and skills with a group of people, and
> then like, you are like, "what is the process we want to participate in." Start with
> the people – you want to do disaster planning – start with a group of people that
> have been through disasters together and help them process and codify their
> own experiences, and then ask them questions about what they've learned that
> are future oriented. Right? So it's like – that's the way you're going to produce
> the most relevant pieces of knowledge. If you start with the people and the
> knowledge and not start with the process that you're inputting -

(Primary Investigator) Inputting people into – yeah

(Facilitator two) Right - I think what's weird – forgive this analogy because I used to do tons and tons of statistics in my life – people that are good at designing studies look at the dataset first, and they're like what's in the dataset – what are the things that we have that we can analyze. Then they design the regression to analyze the data. They don't start with the regression and just try to slam datasets into that – because nothing is going to work!

Facilitator two went on, passionately elaborating on the limits of local knowledge, and

the time and capacity building necessary to effectively integrate local knowledge into

effective solutions:

(Facilitator two) The other thing I would say would be poor people aren't magic! They don't have all the answers – because nobody has the answers! As an individual - right. It is definitely true that the voices of marginalized people have been marginalized in organizing and the NGO sector, that I agree with 100% of the time. But you can't get a group of people together in the same room and be like, "ok what's the answer?" That's not how it works.

Facilitator three, who works with an immigrant rights group, compared the issue of

incorporating lay knowledge in neighborhood resilience planning to the relationship she

has with lawyers when doing immigrant rights work:

(Facilitator three) I think this happens in so many spaces – like with immigration we come into a space and because we've seen so many cases and because we've ourselves had cases, or some people who are undocumented, right – they know right? – they are experts. I think that's a big thing –if there's a lawyer in the room – we've had this conversation with lawyers  - like you guys have to give us equal space. We are knowledgeable. Yeah, I don't have the title, yeah, I don't know all of what you do, but we both have knowledge that we can share with the room, and there has to be less to bridge there.

In summary, the organization has been effective at not only supporting a more cohesive

body of local knowledge, but also supporting community members in effectively

incorporating local knowledge into spaces where technical knowledge is prioritized.

Many facilitators' suggestions to professional planners and designers centered around

local knowledge. They suggested that for resilience efforts to be effective, they must

incorporate the context and awareness that comes from directly impacted communities.

Several strategies for more effective community engagement, and incorporation of local

knowledge were shared by facilitators.

**Section 4: Place attachment**

**Section 4A: Strong pre-existing place attachment**

Community members expressed strong place attachment on the neighborhood

level. The shortest length of residence in the neighborhood was seven years, and the

longest, 52 years. Most community members interviewed reported a length of

residence between 19 and 41 years.

Interviewees were asked if they would ever consider moving. Only two

community members said yes, and none were interested in moving more than a few

miles away. Three members expressed place attachment based on financial stability or

constraints, two members expressed strong emotional attachment rooted in memory,

and three expressed place attachment rooted in social capital and perceived social

capital. Two members expressed place attachment connected, in part, to the landscape,

but it was not the only or the primary reason for place attachment for any community

member.

Of the two who would consider moving a short distance, staying within the

greater Houston area, one interviewee responded, (Community member four) "Yes -

just to part of the area that floods less. If you go down [street], past [street], it doesn't

flood over there." Other members were adamant that they were not interested in

moving. Community member two shared a vision of his future children growing up in

the neighborhood:

> (Community member two) No. I definitely want to raise my kids when I do have them – I don't have any kids at the moment, I'm not married, but I do want them to have a future, but I do want them to have a future, at least in this community.

**Section 4B: Frustration and despair related to institutionalized neglect and discrimination**

Community members and facilitators alike expressed a sharp and clear

frustration with issues of inequality, institutional classism and racism, and municipal

neglect in their neighborhood as well as others. Community member four connected

this to flooding:

> (Community member four) This neighborhood has been totally ignored by the city and county for so long. It is an underserved community. It has been under-represented. The morale is low, people sometimes have a sense of despair, because it floods so many times here.

For community member two, however, this was exemplified in the lack of services in the

neighborhood:

> (Community member two) as far as what I dislike, I will say that it has nothing to do with the neighborhood per se, but it to do with the lack of resources that we have available. . . that I have a car, but you have most of the people here who were devastated by hurricanes, or by the floods, or who live low income, they may not have the vehicle to travel 15 minutes away, so they're dependent on this grocery store right here [subpar Fiesta market], so that's one thing I wish we

had more of.  Definitely health clinics, we don't have any health clinics around here, we don't – seven miles away is the nearest one.

For another member is was apparent in the waste pick up services:

(Community member three) The other thing is that sometimes we take big trash out and it's not picked up. Like one time I had a pile of trash in my front yard. It was there for like I want to say about three months.

Facilitator three tied her frustration with the flood recovery efforts across the city to

class and race discrimination:

(Facilitator three) I remember going to that neighborhood which is a lot wealthier than the northeast side right after the hurricane and everything was so organized. It was ridiculous how organized it was. The whole city was looking for masks and gloves and this neighborhood had barrels of shovels and a ton of masks. It was all at this one house with this huge wrap around porch, yeah and you'd just go there and there was a list – it was so efficient – you would go and there was a list, and a lot of them were students houses – and they would tell you where to go, just depending on if you had teenagers or how old you were or what you were willing to do or not do they would send you to some houses that still needed items taken out or some that needed sheet rock taken out. So anyways I saw that, and then somebody took me to another house, took me to the fifth ward, and it was night and day. People were cleaning out their own houses, without gloves without anything – which was disgusting, anyway that was kind of the start and there was just such a big difference in what the beginning of recovery was. And then I ended up at the actual [parent organization] house with a couple of members from [parent organization] and there was a big map, and there were a couple of pushpins that were in my neighborhood, on the southwest side, but not the rich neighborhood I'm telling you about, so we decided to go over there.

She continued:

(Facilitator three) Yeah ok so the idea  - I use the whenever I saw the difference in my neighborhood, and then other people like [parent organization founders], they saw the same thing – the differences between like, this poor neighborhood and then [wealthy neighborhood] where they have people in helicopters flying people out of their houses. And yet this other neighborhood we had to kind of

makeshift all of the boats and the trucks that were going to go pull people out of these neighborhoods.

Community member five reiterated this frustration with municipal neglect:

(Community member five) The other thing is that most of our neighborhood is low income, and they don't pay attention to us. Because, I'm one of the people who, I love to move forward, get ahead in life, I start talking because I feel like I have a right to, and yet the city doesn't pay attention to us.

Reflecting on what she has seen and heard from flood survivors in wealthier, whiter

areas of town, she said:

(Community member five) But some of those people have told me that FEMA helped them with 100,000 dollars, and their insurance gave them even more money. they lost cars, and FEMA was able to reimburse them their car money. And why wasn't that us? they're not even interested in knocking and asking what are our needs?

Community member ten related this neglect to the organizing efforts of the group.

"People are speaking up, simply because we were left behind." While interviewees

shared their understanding of the neighborhood as one characterized by neglect and

institutional oppression, many also expressed a sense of hope related to the

organization's efforts. One member said:

(Community member four) It gives us hope, me hope, my neighbors hope, that somebody actually gives a damn about us - and took initiative to have this grassroots effort and community organization.

Perceived collective efficacy was expressed as a sense of possibility and momentum. Members also described their determination to fight for their neighborhood:

79

(Community member five) Yeah, no I feel like I have the right, and I tell my husband that I am going to fight to have a better life in this neighborhood. Because I believe what I'm doing is right.

Community member eight relayed her sense of energy to "fight for" her neighborhood after the organization hosted a drainage clean-up day:

(Community member eight) My neighborhood is worth fighting for. Not just mine but all the rest of them. Because different communities, we just need to know who our friends are. If we don't get out and about and learn our neighborhood, we do ourselves an injustice. Yeah. There's a lot of people having these same thoughts, but they don't know the avenues. Once you start learning the avenues and everything, you'd be amazed at – what you can do. Like when we put on our shirts and went out and start cleaning, you know we all on the news and stuff – it was a good day, we accomplished a lot that day, Just like I told them, that was just our first event, I said we're going to do a lot of more events, they say calm down hold up hold up. I'm ready!

Community member five described this sense of possibility as the reason for her continued involvement:

(Community member five) I believe that right now with this organization, I have the opportunity to reach higher up in the city to make us help us so we can live better in our neighborhood. Because If I'm the only one speaking the city is not going to pay attention to me. I think that a group is much better.

Many expressed hope because of a sense of unity among group members. One related her activity with the group, trying to "unite these communities" to a sense of divine purpose following a traumatic car crash:

(Community member eight) So he (God) kept me here for something – and this is it. To spur my neighborhood, to spur these other neighborhoods. Unite these communities, we got to do something. We got children coming up, we got to do something about this quality of air, we got to do something about our neighborhood - If we don't do it, if we don't get down and dirty it's not going to

get done. If we don't push these people in office. If they think they just going to collect this money, uh nuh you got to work for this - this is what you said.

Another interviewee hoped that the group could achieve some unity of purpose neighborhood wide, emulating what she perceiving as the methods that wealthier neighborhoods used to effect change:

> (Community member five) I think there's enough money for the city to help us, but they don't because we're not speaking together in a group. I have seen that, right, I have seen that, the more united people are, like in the neighborhoods that are higher (wealthier) than us, I've seen the elderly go and pick up petition signatures and they're more united.

She continued naming unity as one of the positive outcomes of the capacity building efforts of the group:

> (Community member seven) Yeah, we've definitely learned a lot more – like you know, about the city, about asking for help, about how to come together to be more united, and we also have a better focus.

The same interviewee also expressed a sense of hope due to the capacity building and community building from the group itself, an outcome related to increased social capital:

> (Community member seven) I think the group can achieve a lot; we have a really good group. We've collaborated to learn, and learn about a lot of things that we didn't even know existed. And beyond just informing us, they're also teaching us how to survive, how to survive when we had these floods that we went through, and how to survive and support each other.

Community member ten expressed a sense of hope stemming from new membership, and momentum growing the number of neighbors who were involved:

> (Community member ten) It seems like every month we get different person to come into the group. So, it looks like its growing and we get to know more

people and what's going on, so more neighbors get to know what's going on in the neighborhood. Or what we got going on in the neighborhood.

She continued saying:

> (Community member ten) I was surprised at the meeting I went to a couple of weeks ago at all the people that came out - I don't even know that neighborhood – I wasn't even in my neighborhood, but it's more those grassroots meetings through this northeast side. Don't have to be just in this neighborhood or the one we went to the other night, but all of them eventually coming together to make one big meeting, you know, one big group.

Some just expressed optimism and a belief that change was possible:

> (Community member three) I learn from all the others, you know, I sit back and listen and then I'm like, Oh yeah, we can do this! So, I've been going to meetings and kind of trying to learn more of how were going to present this, to like I said, the city and county.

> (Community member three) They were talking about getting people's signatures in the neighborhood, as far out northeast as we can, we haven't done that yet – but and I don't know how many people, you know sometimes people say "you know I don't want to get involved" – well you don't have to get involved, just give me your signature! (laughs)

> (Primary Investigator) Yeah, just sign it! (laughs). Do you think there's a good chance of change from what you all are doing?

> (Community member three) Yes, I do, I do!

Another member said:

> (Community member six) And so, maybe we can, if we keep pushing, they can clean the drains, and hopefully they can hear us and pay attention to us.

While yet another member expressed her hope in a tempered, realistic way:

(Community member seven) I think thanks to the group that's bringing more collaboration and information, right? and were able to talk to the city about these neighborhoods that maybe aren't that high (wealthy), but to me they're good neighborhoods, right? We're trying to change a little bit, we might not be able to get a change overnight, but at least we want folks to be aware of the challenges in this area.

Every community member interviewed had a clear sense of possibility attached to the group's efforts. Two members mentioned their hope for change when asked if they would ever be willing to move, suggesting that their sense of collective efficacy positively impacted their place attachment. One insisted that their efforts to make the neighborhood better precluded any interest in moving:

(Community member eight) No! It's going to get better because we're going to fight for it. We're fighting for our neighborhood now, we want it back – well it's never going to get back like it was, but it will be an improvement on what it used to be.

Community member three shared a similar hope that their efforts would impact flooding and make it feasible to stay in her home:

(Community member three) I don't I don't, but if I had to. . . Hopefully we don't have another flood. I don't think I can take another flood. Maybe . . . then I would have to. But I'm hoping by the time another big storm comes where flooding has potential. Maybe, if I have to. Or maybe by then our drainage has improved!

Strong pre-organization place attachment, it is concluded, may have been supported by the efforts of the group indirectly through a sense of collective efficacy.

**Section 5: Combined Indicator Impacts**

**5A: Successful leverage of local knowledge and strategic relationships**

The organization has had some success in leveraging local knowledge through

strategic relationship building, connecting local knowledge back to themes of bridging

ties and social capital. The capacity building approach has also been an important part

of their success leveraging local knowledge. Facilitator four reflected on their successes

saying, "It's just turned into this really strong community, and also, we've been

surprisingly successful in making some stuff happen." That sense of success is echoed in

community members' reflections on their drainage cleanup event:

> (Community member five) We started working and we were so surprised, left
> our neighborhood so clean, there was so much trash. I told myself I feel like we
> deserve a round of applause. Because we worked so hard, right?
>
> (Community member three) Yeah and they took a lot trash out of out of some of
> the drainages. Especially this one on the corner, clothes and dirt and branches
> and leaves, yeah!
>
> (Primary Investigator) Do you feel like that helped during Imelda?
>
> (Community member three) I think so! Yeah, I think it did, yes.

Facilitator four reflected on the relationships that have been built with elected officials

and politicians:

> (Facilitator four) Individuals within [organization] have worked pretty closely
> with people running for city council right now. They originally were connected to
> those people through our community clean-up day, we invited a bunch of
> people, so there's some strong relationships with the city government now. At
> the county we had really real interactions and long conversation with the staff of
> a few commissioners and with flood control office and have a couple follow up
> meeting set up – they've already come out and cleaned one of the drains of one
> person.

Through relationship building with political figures – a more strategic form of social capital management – the group has been able to navigate incorporating their local knowledge into the management of their neighborhood's drainage, and have seen physically tangible results.

**5B: Mental health impacts related to social connection and collective efficacy**

Many interviewees without prompting from interview questions, brought up issues related to mental health impacts. Some of these impacts they related to a sense of collective efficacy, and some were perceived to be mostly related to increased social capital and decreased social isolation. Facilitator two summed this up saying:

> (Facilitator two) And social isolation is so real - and its real for elderly poor women of color and It's also real for white activist nerds and it's real for policy wonks. Isolation is really real. And when you're – the new thing people say now is when you're "in community" – right. When you're in community with people you feel less isolated. You feel both more powerful and happier, and so you're more likely to keep going.

One member reflected on how her involvement has energized her and lifted her spirits. "I'm having so much fun - Its kinds like a revitalization for me. I feel like I've been stagnant for a long time." The same community member discussed how the group has supported each other through the challenge of disaster related trauma:

> (Community member eight) Every time - We got people having that post traumatic stuff when it start raining real hard. They start calling, "Ok it be alright it be alright." And I say., "look here I"m going to go over there and sit with you a while." Shouldn't have to be that way.

Another member described the way the group supported each other through the

anxiety inducing experience of flooding during Imelda:

> (Community member two) With the last flooding that we had a month ago – Imelda – since Harvey, this was the first time that this community has been tested – and I felt that the creation of this group, even though we didn't get any assistance whatsoever from anybody, at least, we were texting each other, we were sending Whatsapp, we were using all these different social media outlets to kind of calm the nerves, ease the people that are part of our group concerns. That's the one thing that kind of what I knew was the resources, but what this group has done is really brought us together, is hey, we're going to be here, we are here for you guys, and that is something that you didn't have in Harvey, Harvey was just a complete disaster.

Finally, a community member who works with the parent organization as a case

manager connected social isolation among other elderly black women like herself to

mental health issues in the wake of the flooding:

> (Community member ten) It's been beneficial to me because it's been therapeutic in a lot of ways, because most of the people that I've met, are women my age, and you know, they're black women, and were talking about that feeling I was telling you about, what happened during the flood and after. A lot of them didn't need any help on their homes. It was more like they were glad to hear from me because there wasn't nobody call them to talk about it. See that's what I was telling [name] later, hopefully soon, it would be good to have like a mental help group – not necessarily – they're not asking for medicine – it's like - one lady said, "I'm glad you called me, I thought I was forgotten about". You know, so I know what she's saying.

She continued, pointing out taboos around mental health in the Black community:

> (Community member ten) In the Black community, I've been listening to Queen Latifa making these commercials about mental illness and all this - it's always been taboo. They say you crazy inf you're talking to a psychiatrist. No, it's not! The two times that I've been involved in it I'd have lost my mind. You got to stay grounded, you got to pray, some strong people in your life, and then your therapist.

Through increased social capital, members can find social and emotional support when struggling with both traumatic events related to flooding. They also are able to find support related to struggles with social isolation. Additionally, the sense of momentum and collective efficacy expressed by the group may impact members as well as facilitators mental health, giving them hope that their efforts will improve their community.

**DISCUSSION**

Interviews with community members and facilitators alike were compelling, not only because it became clear that all three indicators of resilience had been significantly impacted, but also because of the ways those impact had direct and immediate effects on their quality of life. The methods facilitators credited with these impacts and overall group success point to gaps in design education, as well as the way funding for planning and design works. There are several opportunities for further study; The findings of this investigation point to potential public health applications of these community engagement methods, particularly as relate to mental health and collective trauma.

*Social Capital*

Social capital, perhaps, had the most drastic change among interviewees. Several interviewees reported an increase in the quantity of social connections with their neighbors several times their previous level. More reserved or newer members mentioned that their social interactions had moved up from next to nothing with people outside their family to having some connection. Even though for these members social capital remains low, it has grown from a nearly non-existent baseline level.

This included bilingual multi-racial connections linking the two major demographic groups of the neighborhood. Black Houston has a proud history of civic involvement that traces back to Reconstruction. Relatively recently arrived Latin American and Tejano communities, however, have a history of civic involvement that is less pronounced. Only since the Chicano movement of the 1970's has there been any

88

alignment between these two demographic groups towards racial justice. Many participants commented on the novelty of this group as a bilingual, bicultural space that, because of its inclusivity, had a greater chance to make change.  This is supported by the changing demographics of Houston, which is increasingly a majority City of Color, with the two largest constituencies being Black and Latino.

Social capital in the form of solidarity relationships between facilitators, who bring grant money, institutional knowledge, and other material resources and community members who ground resilience efforts in local knowledge and love for their neighborhood was another major theme. These relationships were critical in recruitment, retention, and success on the part of facilitators who mostly come from very obviously different social and economic backgrounds.  Resources and skills shared by facilitators into the community helped to catalyze the group's organization. Simply improving inter-community ties does not address the lack of resources in the community; increased access to resources is a critical part of how improved relational infrastructure actually results in improved resilience.

Strategic relationship building with city and county officials also emerged as a theme. Integrating local knowledge with bureaucracies has involved strategic relationship building. This combination has been effective, and is leading to improved maintenance and promising opportunities for further collaboration and integration of local knowledge. This theme dovetails with the theme of solidarity relationships with facilitators. In both of these cases, improved bridging ties across class, race, and other dimensions of difference have served the community by bringing more resources into

89

the neighborhood, under the direction of a strong community group able to direct the effective use of those resources towards community well-being and resilience.

Finally, for many members the social connections made with each other and the facilitators have combined to provide improved mental health outcomes. Community members mentioned the group alleviating social isolation, giving them renewed hope, feeling revitalized, and feeling like they had support from each other. This was particularly evident when community members discussed the response to tropical storm Imelda, and demonstrated the importance of community social capital in mitigating storm-related psychological trauma. The organizations meetings often involve emotional storytelling between members and facilitators describe the organization functioning partially as a support group. While one facilitator alluded to the way this may alienate male community members who may be less comfortable with public displays of emotion, it may also serve as an important part of addressing shared trauma and transforming those experiences into action that is creative and future oriented.

*Place attachment*

Several members gave financial security – not having a mortgage for their current homes – as a main reason for place attachment. Given the barriers to home ownership for Black and Latino Houstonites, be it housing discrimination, needing creative financing because of immigration status or simply the realities of poverty, this reasoning should not be discounted as a valid and significant reason for place attachment. Homeownership and barriers to it are cited as a major contributor to the racial wealth gap (Herring & Henderson 2016).  Home ownership rates for the Black

community in Houston have been in decline since their height in the 1920's (Bullard,

1987) taking a particularly sharp hit after the Great recession of the early 2000s (Young,

2019). Homeownership has become an increasingly challenging feat for the Black

community, Black homeownership rates have not recovered since the recession. For

Latino families, the demographic hardest hit during the early 2000's recession (Young

2019), homeownership is on the rise, but remains at 47% nationwide compared to 72%

of white households (Prosperity Now Scorecard, 2019). For families fighting the odds of

the racial wealth gap, homeownership is an understandable driver of place attachment.

However, given the challenges to home ownership for Black, Latino and

undocumented communities, I suggest that home ownership is flawed as both a

goalpost and measuring stick of place attachment. The complex relationship between

class oppression, structural racism, and private property are beyond the scope of this

discussion. Nevertheless, in reflecting on the conundrum of this and countless other

neighborhoods it is clear that if place attachment is tied to climate change resilience,

home ownership, historical and current barriers to ownership, as well as private

property ownership and real estate speculation as a driver of land use decisions are

implicated.

Residents also named the sense of community, among other reasons, as a driver

of place attachment. This is consistent with literature on place attachment, particularly

for low income communities (Fried, 1984). The hope of improving the neighborhood,

engendered by the organization, as well as increased social capital among group

members, has built upon pre-existing place attachment. This combination of factors has

fortified an already strong indicator of resilience.  Increased community efficacy is a

91

logical outcome of capacity building approaches to facilitation. What was not anticipated was the way that community members would relate increased levels of hope and efficacy to place attachment.

*Local Knowledge*

Local knowledge was impacted in several ways for community members. Through networking with neighbors and community groups in adjacent neighborhoods across the Northeast side, they gained a better and more complete understanding of areas where flooding is worst, shared concerns across the community, and the specific needs that unite them. This cohesive understanding of each other's experiences has enabled the group members to speak with more authority about their neighborhood to local officials.

Community members not only identified themes of environmental concern already documented in literature – in particular illegal dumping – they related those issues to resilience in meaningful ways. Residents conveyed the way illegal dumping of trash, an issue Bullard (1987) mentions in relation to the nearby landfill, clogs storm drains, making them ineffective during major storm events. They effectively translated local knowledge about clogged drains, trash service, and illegal dumping into communication with municipal officials in a way that has pressured them to act, and allocate more resources to the neighborhood. Significantly, this has already led to improvements in the maintenance of their drainage infrastructure by the county. The interview data suggests that this is an ongoing process, and that their successes have led to increased dedication to the group and belief in the group's efficacy. This increase in

efficacy, it is believed, has impacted place attachment. Many residents expressed a sense of hope for the future of their neighborhood, and better odds that they would be able to stay in their homes because of the efforts of the group.

All three indicators have been positively impacted by the methods used to recruit and facilitate this group. Increased resilience outcomes have already impacted the lives of its members. Decreased social isolation has improved the mental health of several members, as has an increased sense of hope and collective power.  The response to tropical storm Imelda drove home the importance of the organization's role as a social support network. Residents gave each other moral support, mitigating anxiety and disaster related trauma. They also extended resources in the form of emergency housing, in one instance.

*Implications for application*

These outcomes point to the methods that facilitators used to engage community members as part of a toolkit for achieving climate justice. Particularly in communities that face risk of displacement through green gentrification, the equity first, capacity building approach enables a stronger community voice in the planning and development process, a necessary pre-requisite for environmental improvements that do not displace communities (Gould, 2016).

Displacement has still happened in Houston's historically Black neighborhoods, particularly in the fourth ward, where place attachment was and continues to be strong. Increased place attachment alone is not a match for the neoliberal real estate growth machine. However, concern with maintaining home ownership expressed by many

community members, combined with place attachment, increased social capital, and effective interjection of local knowledge into planning efforts may be a successful combination.

The results of this investigation also suggest that these methods may be particularly effective in areas where social isolation and a lack of community efficacy is a contributing factor to community mental health and public health challenges. In particular, the intersection of substance addiction, poverty, and depression with relationally focused, community-led design process is an opportunity for further study.

*Techniques for success*

Facilitators attributed their success in large part to the relationships that they built before the group was initiated. The trust level between community members and facilitators was high. For most members, there was a pre-existing relationship with the facilitation team that spanned more than a year. This relationship was rooted in support and solidarity. Many members had received services coordinated by the facilitators in their capacity as case workers. These services were offered without strings attached, and in a way that was not transactional. The parent organization's aid ethos is rooted in reparations, no recipient was charged for services or asked to re-pay the organization in any way.

Facilitators also attributed their success to a transparent and fully community-controlled consensus decision-making process. Most facilitators credited this structure with giving members a sense of efficacy, as well as helping focus the group on finding agreement towards consensus. In this way, the consensus process can support social

cohesion at best. The downfall of consensus is that is can draw out simple decisions, enable one person to derail an entire group, or alternatively discourage dissent as further discussion will result, potentially testing the patience of others. There are many ways to navigate these pitfalls of consensus process, however. Consensus minus one structure requires dissenters to convince at least one person to join them in blocking any decision they may not like.  Introducing the concept of "stand-aside" votes enables people to show their willingness to allow others to move forward at the same time as they express that the given proposal is a low-priority for them. Effective facilitation of group process is critical to effective consensus decision-making, and this can only be achieved with practice. These skills are often held within community organizing communities, and rarely within planning and design communities. Effective facilitation and consensus methods are outside of the mainstream, and not something that most design students or practitioners are exposed to, much less proficient in facilitating. Incorporating these methods into design education would support future community-engaged designers to either effectively incorporate this strategy or partner with community organizers to implement it.

Facilitators also credited the inclusivity of the space, in particular the bi-lingual character of the space, as a major contributor to their success.  The group hires interpreters for every meeting.  This is one of the only expenses the group incurs. It has however been extremely effective at connecting residents from two different communities that live in the same neighborhood. If the organization had opted to alternate meetings between English and Spanish facilitation, social capital would have been hampered and the facilitators would have been given far more decision-making

power as gatekeepers of information and ideas between the two groups. This strategy, which is common in community outreach strategies, would have undermined the robust social capital building and community controlled decision-making structure that facilitators also credited as important elements in their success.

*Design Justice Principles and Relational Infrastructure*

The Design Justice Network is a collective of design practitioners who view design process, not just product, as critical to achieving just and equitable outcomes. They operate within a set of design principles that are supported by the findings from this case study (Design Justice Network, 2018). These are:

1. We use design to sustain, heal, and empower our communities as well as to seek liberation from exploitative and oppressive systems.

2. We center the voices of those who are directly impacted by the outcomes of the design process.

3. We prioritize design's impact on the community over the intentions of the designer.

4. We view change as emergent from an accountable, accessible, and collaborative process rather than as a point at the end of a process.

5. We see the role of the designer as a facilitator rather than as an expert.

6. We believe that everyone is an expert based on their own lived experience, and that we all have unique and brilliant contributions to bring to a design process.

7. We share design knowledge and tools with our communities.

8. We work towards sustainable, community-led and controlled outcomes.

9.We work towards non-exploitative solutions that reconnect us to the earth and to each other.

10.Before seeking new design solutions, we look for what is already working at the community level. We honor and uplift traditional, indigenous, and local knowledge and practices.

The design justice principles name many of the practices that facilitators and community members attributed to organization's success. Specifically the principles identify community leadership and control of decision making, capacity building in the form of sharing "design knowledge and tools", the validation of lived experience and local knowledge in three of the ten principles and the value of social capital and place attachment in, "solutions that reconnect us to the earth and to each other," as central to design justice.  These principles embody guidance that points to best practices to support relational infrastructure and climate resilience.

*Challenges to implementation*

These strategies are challenging for even the most dedicated planning and design non-profits to implement under current conditions.  Few design firms or non-profits have been able to use a design approach that is similarly relationship and community centered. The Trust for Public Land's Green Alleyway project in Southeast Los Angeles County, however, is one. Trust for Public Land staff, however, face barriers to replicating this model despite believing in its benefits; Grant funding for such community-based design projects is almost unheard of (Marks, 2019). To fund open-ended relationship building, projects with open-ended community-driven objectives and scope, and projects that reject technocratic expertise in favor of local knowledge flies in

the face of almost every norm of not only design process, but grant-funded projects of all stripes.

For relationally-focused design and planning processes to receive the support they need for success, several changes must be made, not only to how we conceive of design and conceptualize resilience, but also how funding is allocated. Design and engagement processes that are "emergent" (Brown, 2016) may not have clear deliverables before they begin. Their scope may change as community members shape them. Finally, they "move at the speed of trust" (Brown 2016, p. 41), which means that grant timelines cannot necessarily align with these processes. In the case of the parent organization, more than a year of relationship building passed before facilitators believed that it was time to bring community members together for their first meeting. Funders must find alternative structures that enable more bottom-up community work. These structures must give space and time for the rich and complex dynamics of human relationships. If process, and not just product, are critical to positive community resilience outcomes, how can granting institutions best support efforts that achieve these goals? Certainly, input from organizations doing community-accountable relationship centered work should guide any attempts to re-structure funding processes.

It is the world of planning and design itself, not just the world of granting institutions, that must also understand the value of this shift in methods. Often, designers hold different skill sets than community organizers. Collaborating with organizers, hiring organizers as part of a firm's staff, or otherwise integrating their expertise into project development can and should be done to improve community

engagement and foster community-led design efforts. This presents a whole array of challenges. These processes proceed at a different, much slower pace than much design work. Perhaps most critically, they also require an epistemological shift that challenges the professional identity of the "expert" designer. This shift, however, is necessary for effective community-led, community-accountable design work that has perhaps the most realistic chance of constructively addressing environmental justice issues.

The implications of this study show that process and not just product impact resilience outcomes, especially for marginalized communities where environmental justice issues present complex challenges. Further research is needed to explore methods of integrating local knowledge and emergent, community-accountable, relationship-focused design into funding considerations and staffing structure.

Additionally, the mental health impacts reported by community members in this case study point to gaps in research around the impact of design process on community mental health. The link between the engagement process, community efficacy, and mental health may have important implications for communities challenged with addiction epidemics, social isolation and high rates of depression and suicide.

Finally, longitudinal data on this organization or other similar groups may show different impacts over time, or demonstrate that the efforts of this group were ineffective at building sufficient levels of community adaptive capacity to combat either future climate change impacts or neo-liberal growth and re-development pressures.

**CONCLUSION**

Climate change has already demonstrated its ability to magnify social inequality (David and Enerson, 2012; Wilson, 2018). While the growing fields of resilience planning and climate adapted design have responded with solutions for the physical form of cities, these responses have neglected to address social justice issues. Without placing equity at the center, environmental improvements targeted at climate change mitigation and adaptation often result in the displacement of marginalized communities (Gould, 2016) making them more, not less vulnerable.

By addressing process, not just product, designers and planners have an opportunity to build social capital, place attachment, and local knowledge – strengthening major indicators of resilience and enabling marginalized communities to more effectively combat not just climate change impacts, but the injustices and neglect that have put them in a more vulnerable position than their white and/or monied counterparts. In this case study, community members also reported significant impacts on their mental health as a result of their participation in this neighborhood organization. There are wider implications related to public health. The increased community efficacy and decreased social isolation felt by community members are both factors that exacerbate addiction, a problem that is and has been one of community-scale concern.

Major barriers exist to effective implementation of these design practices, however. Not only are there major gaps in design education, the value of relationships to community members and to place is not well-understood nor considered by most resilience planning efforts.  This is connected to what is perhaps the most challenging

aspect of implementing these design strategies: funding. Grant funding for relationships

building and community organizing, especially before the scope of a project has been

identified, is almost unheard of. To effectively incorporate resilience planning methods

that build capacity for marginalized communities into climate change adaptation, a

change in how granting institutions understand resilience and fund projects, especially

in marginalized communities, is critical.

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Community Member Interview Guide

**Background information**

Respondents Initials:_____

Gender:_____

Age:_____

**Place Attachment:**

1.How long have you lived in this neighborhood?

2.What do you like about your neighborhood?

a. [probe] do you like the scenery and the landscape, the people, both, or something else?

b. [probe if both] Is one more important than the other? Which one and why?

3.Are there any things you dislike about your neighborhood?

4.Would you ever want to move?

Why or why not?

If yes, how far away can you imagine wanting to move?

**Social Capital:**

5.How long have you been involved in this group?

a. [probe] What drew you to join this group?

b. [probe] What do you hope this group achieves?

6.Before joining this group, how well did you know your neighbors?

a. [probe] How close did you feel to your neighbors before joining this group? What would a typical interaction with a neighbor be like before?

b. [probe] What is a typical interaction with your neighbors now?

7.Have you met more neighbors than you knew before through this group?

a. [probe if yes] How many more? For example, has it doubled or have you met only a handful that you didn't know?

b. [probe] Has your relationship with your neighbors changed in any way since joining this group? How?

**Local Knowledge:**

8. Have you gotten a better sense of your neighborhood and how it is designed through this group? For example, have you learned about the stormwater infrastructure, topography, seasonal weather patterns, history, soil, impervious cover, or other topics related to how your neighborhood was designed and built?

a. [probe] If so, what have you learned about your neighborhood through this process?

b. [probe] What did you already know about your neighborhood, and what new knowledge have you learned?

9. Are there any other comments you'd like to add about your experience with the group?

**APPENDIX B**

Facilitator Interview Guide

1. How did you get involved with the [parent organization] and [the organization]?

How would you describe your experience so far?

2. Are you from Houston?
Probes:

> •If so, how long have you lived there?
>
> •Do you think that your relationship to the neighborhood you work in plays a
> part in your approach to facilitation? How so?

3. In your view, what has been important to recruitment and retention of members?
Probes:

> •How would you carry those recruitment and retention lessons forward with
> other situations?

4.Does the group use any grounding agreements that manage how members relate, or

how you relate to the group as facilitators?
Probes:

> •What are those agreements?
>
> •How were they generated?
>
> •How effective have they been?
>
> •What if anything would you do differently to manage group dynamics and
> relationships if you were to start over?

5. What practices and strategies do you use to address your own biases and

assumptions as a facilitator?
Probes:

> •How have those evolved over time?
>
> •What benefits have you seen from using those tools?
>
> •What remains challenging about these strategies?

6.How has your involvement in this group changed you? What insights have you gained

from your involvement?

7.Based on your experiences, what lessons do you wish public officials and professional

planners and designers understood about disaster recovery and resilience?

# *Jemez Principles* for Democratic Organizing
Meeting hosted by Southwest Network for Environmental and Economic Justice (SNEEJ), Jemez, New Mexico, Dec. 1996

### Activists meet on Globalization

On December 6-8, 1996, forty people of color and European-American representatives met in Jemez, New Mexico, for the "Working Group Meeting on Globalization and Trade." The Jemez meeting was hosted by the Southwest Network for Environmental and Economic Justice with the intention of hammering out common understandings between participants from different cultures, politics and organizations. The following **"Jemez Principles" for democratic organizing** were adopted by the participants.

### #1 Be Inclusive
If we hope to achieve just societies that include all people in decision-making and assure that all people have an equitable share of the wealth and the work of this world, then we must work to build that kind of inclusiveness into our own movement in order to develop alternative policies and institutions to the treaties policies under neo-liberalism.

This requires more than tokenism, it cannot be achieved without diversity at the planning table, in staffing, and in coordination. It may delay achievement of other important goals, it will require discussion, hard work, patience, and advance planning. It may involve conflict, but through this conflict, we can learn better ways of working together. It's about building alternative institutions, movement building, and not compromising out in order to be accepted into the anti-globalization club.

### #2 Emphasis on Bottom-Up Organizing
To succeed, it is important to reach out into new constituencies, and to reach within all levels of leadership and membership base of the organizations that are already involved in our networks. We must be continually building and strengthening a base which provides our credibility, our strategies, mobilizations, leadership development, and the energy for the work we must do daily.

### #3 Let People Speak for Themselves
We must be sure that relevant voices of people directly affected are heard. Ways must be provided for spokespersons to represent and be responsible to the affected constituencies. It is important for organizations to clarify their roles, and who they represent, and to assure accountability within our structures.

### #4 Work Together In Solidarity and Mutuality
Groups working on similar issues with compatible visions should consciously act in solidarity, mutuality and support each other's work. In the long run, a more significant step is to incorporate the goals and values of other groups with your own work, in order to build strong relationships. For instance, in the long run, it is more important that labor unions and community economic development projects include the issue of environmental sustainability in their own strategies, rather than just lending support to the environmental organizations. So communications, strategies and resource sharing is critical, to help us see our connections and build on these.

### #5 Build Just Relationships Among Ourselves
We need to treat each other with justice and respect, both on an individual and an organizational level, in this country and across borders. Defining and developing "just relationships" will be a process that won't happen overnight. It must include clarity about decision-making, sharing strategies, and resource distribution. There are clearly many skills necessary to succeed, and we need to determine the ways for those with different skills to coordinate and be accountable to one another.

### #6 Commitment to Self-Transformation
As we change societies, we must change from operating on the mode of individualism to community-centeredness. We must "walk our talk." We must be the values that we say we're struggling for and we must be justice, be peace, be community.

This and other environmental justice documents can be downloaded from: www.ejnet.org/ej/