Exploring the concept of "resilience" for students and their communities through the Y-PLAN Resilient by Design Youth Challenge

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1. Introduction: Initiating a Y-PLAN resilience framework through the Y-PLAN Resilient by Design Youth Challenge

In response to rapidly changing environmental and political climates around the world, governing agencies are grappling with the notion of resilience. How can communities continue to thrive with chronic and acute threats such as sea level rise, drought, fire, growing inequality, and unaffordable housing? Community engagement is often sought by governing agencies in determining answers to this question, but an underappreciated component of this engagement is the contribution and investment for and from youth. As youth are profoundly impacted by chronic threats such as poverty and housing insecurity, and are at the same time critical to the innovation and human capital of cities' futures, it is detrimental to bypass youth in the discussion of urban resilience.

The Center for Cities and Schools (CC+S) is an organization that aims to elevate youth voice and work within civic space through research and its Y-PLAN (Youth, Plan, Learn, Act, Now!) program. Specifically, the Y-PLAN program brings civic agencies and school classrooms together, so that students and civic leaders may co-create innovative solutions to authentic community challenges. Through Y-PLAN, students act as consultants to a civic agency and use the Y-PLAN curriculum to support their research and presentation process. The Y-PLAN program has a "double bottom line"-- two goals that it seeks to promote: (1) **college, career, and community readiness** through five student outcomes (5 C's--Collaboration, Critical Thinking, Creation and Innovation, Communication, and Community Contribution), and (2) the planning of **healthy, equitable, joyful cities** through four community outcomes (Participants, Process, Policy, and Place).[1]

Fig. 1: Y-PLAN Curriculum Road Map[2]

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[1] See Exhibit A in the appendix for more a more detailed description
[2] "Y-PLAN." Y-PLAN (Youth - Plan, Learn, Act, Now!) https://y-plan.berkeley.edu/diy.

The Y-PLAN program has been in place since 1999, running programs in hundreds of classrooms across the globe and creating permanent hubs in the Bay Area, New York City, and Japan. As a result of this success, the Resilient by Design Bay Area Challenge (RbD)[3] asked Y-PLAN to administer a parallel RbD Youth Challenge, where classrooms collaborate with RbD design teams to tackle questions specific to urban resilience in their Bay Area communities. The culmination of these partnerships occured at the Y-PLAN Resilient by Design Youth Challenge Summit, where selected students from participating classrooms across the Bay Area came together at University of California Berkeley (UC Berkeley) to present their resilience strategy proposals to civic agencies such as Oakland Promise, City of San Francisco Planning Department, and City of Richmond's Office of the Mayor.

The Y-PLAN Resilient by Design Youth Challenge prompted Y-PLAN staff to explore how the program and its objectives fit into a framework of student and community resilience. A unified resilience framework can be used to strengthen the Y-PLAN theory of change and to develop a mechanism that materially measures Y-PLAN's impact on student and community resilience. In this exploration, Y-PLAN hopes to be a leader in the conversation about urban resilience, specifically in advocating for youth participation and investment.

This report is the result of this exploration from the author, a graduate researcher who worked with Y-PLAN during spring semester of 2018. It includes:

1. a **literature review** on the definition of resilience,
2. a **proposed framework** for student and community resilience,
3. **Case studies** exploring the framework through evidence from four school sites that participated in the Y-PLAN RbD Youth Challenge, and
4. a **discussion of next steps** for measuring impact on resilience.

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[3] Resilient by Design is an urban design challenge between ten architecture/planning teams, which focus on creating innovative sea level rise adaptation plans for specific Bay Area locations. The challenge is inspired by New York City's Rebuild by Design challenge, responding the the aftermath of hurricane Sandy. It is supported through the Rockefeller Foundation's 100 Resilient Cities program.

2. Defining Resilience: a Literature Review

From the Merriam-Webster *Editor's Note* on the word 'resilience':

> In physics, resilience is the ability of an elastic material (such as rubber or animal tissue) to absorb energy (such as from a blow) and release that energy as it springs back to its original shape...The recovery that occurs in this phenomenon can be viewed as analogous to a person's ability to bounce back after a jarring setback...The word resilience derives from … the Latin verb resilire, meaning "to jump back" or "to recoil."[4]

From The Guardian, 2013:

> Resilience also poses a challenge as a term in its own right. Instead of bringing clarity to the table as envisaged, it has brought utter confusion. **Firstly, nobody really knows what resilience means**, or perhaps more accurately, everybody has a different understanding of it. **Second, without an agreed working definition, resilience as an output cannot be measured** and that brings lexical heavy weights, such as accountability, into the ring. [5]

This last quote, published in the article titled "Resilience: meaningless jargon or development solution?", succinctly states the primary challenges with the concept of "resilience." By the time this article was published five years ago, the term had gained a kind of status among funders and governing agencies similar to that earned by the concept of "sustainability." This status was cemented with the initiation of the Rockefeller Foundation's high profile 100 Resilient Cities project in 2013, which propelled the development of government resilience officers positions and the creation of resilience strategies.[6] But despite this notoriety, the questions of what resilience means and how it is measured remains stubbornly unclear.

A New York Times Magazine article entitled "The Profound Emptiness of Resilience" also points out that beyond the challenge of clarity, the term "resilience" can lead to the same well intended harm created by the term "grit." The author explains that these terms support the American mythology of individual success despite all else, "placing all the burdens of success or failure on a person's character."[7] This allows society to place blame

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[4] "Resilience." Merriam-Webster.

[5] Hussain, Misha. "Resilience: Meaningless Jargon or Development Solution?" The Guardian. March 05, 2013.

[6] "100 Resilient Cities: About Us." 100 Resilient Cities.

[7] Sehgal, Parul. "The Profound Emptiness of 'Resilience'." The New York Times. December 01, 2015.

for failure on individuals, rather than critically questioning larger systemic issues with policy or culture.

Fig. 2: Number of peer-review articles published on urban resilience from 2003-2013[8]
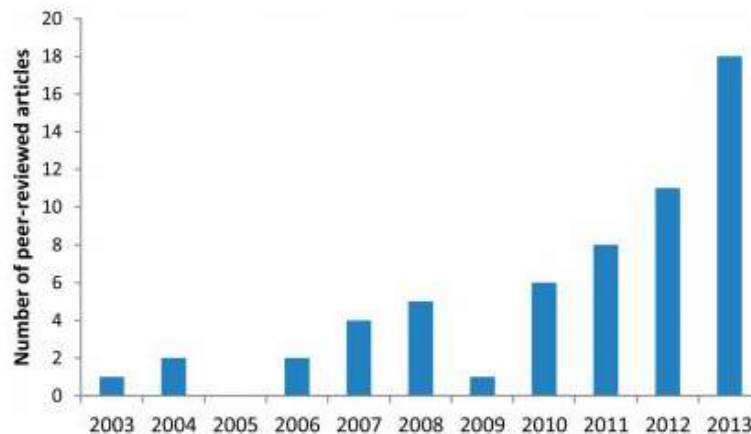
These criticisms are well deserved, which begs the question: why should Y-PLAN dive into this murky territory? However, the development of the following literature review section brought a couple revelations that may serve to sufficiently respond.

First, it is true that "resilience" does not have a single definition, especially between academic disciplines, but this is simply because the term *does* function differently in different contexts, and therefore requires specific, adapted definitions to be formed in a way that best optimizes its meaning within that context. For example, resilience within the context of engineering an airplane wing requires a definition whereby the optimal outcome is the *persistence* of the wing staying bolted on the plane when it comes into contact with severe weather/turbulence. Resilience within the context of a population of mountain lions requires a definition that reflects the fact that ecological systems can shift into multiple equilibrium states (abundance vs threatened status), depending on the type, frequency, and magnitude of the stressors.

The literature review on resilience definitions across disciplines therefore enables an understanding of how to define resilience in a way that is specific to the systems in which Y-PLAN operates. This definition can then be more functional as a foundation for measuring outcomes that are meaningful to Y-PLAN's mission.

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[8] Béné, C. et al. "Resilience as a policy narrative: potentials and limits in the context of urban planning," *Climate & Development,* 10, no. 2 (2018): 119. doi:10.1080/17565529.2017.1301868

Second, the literature review directly speaks to the question of how resilience may be used to perpetuate blame on individuals. The psychological definitions of resilience often do center on how individuals might succeed when others don't in the same situations. However, a subsection of the literature specifically critiques this method, and focuses instead on how resilience (positive adaptation to adversity) is in fact a function of environmental vulnerability, support, and stress. In other words, resilience does not occur because individuals embody a magic combination of intrinsic traits, but because individuals are a part of complex social systems that provide or block opportunities for individuals to enact resilient behaviors and thrive. This report chose to focus on these latter studies in recognition of the fact that most of Y-PLAN's participants come from marginalized communities-- those that are most harmed by the "pull yourself up by your bootstraps" mythology. By choosing to utilize definitions that highlight the importance of systems in enabling resilience, Y-PLAN may in fact not just avoid, but actively counter this mythology.

Defining resilience is inherently a process of reflection-- who or what is the population in question? What is the source of adversity? What is the desired outcome? It cannot be a silver bullet metric across all agencies because each agency operates within a different set of political and disciplinary realities. However, this diversity of definitions requires that agencies be clear about how it operationalizes the term. The goal of this literature review, therefore, is to enable the creation of a clear definition of "resilience" that reflects the mission and values of Y-PLAN, and that may be operationalized into a framework that allows for the evaluation of specific resilience metrics.

a. Engineering, ecological, and socio-ecological definitions of resilience

The word "resilience" was coined relatively recently, with the first evidence of its use in 1807.[9] Cristophe Béné et al produced a systematic literature review on the concept of urban resilience that included a nice graphic that shows how resilience has branched out into use for different disciplines since that time (see Figure 3). The earliest scientific use was in the context of civil engineering, most famously with Robert Mallet utilizing the concept with warships in the 1800s to measure how much stress the ship materials could take in severe weather. The **engineering concept of resilience** fully came into form in the mid century, with a positive definition: the capacity of a material to absorb energy, deform, and then return to its original state.[10]

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[9] "Resilience." Merriam-Webster.
[10] Béné, C. et al. "Resilience as a policy narrative: potentials and limits in the context of urban planning," 118
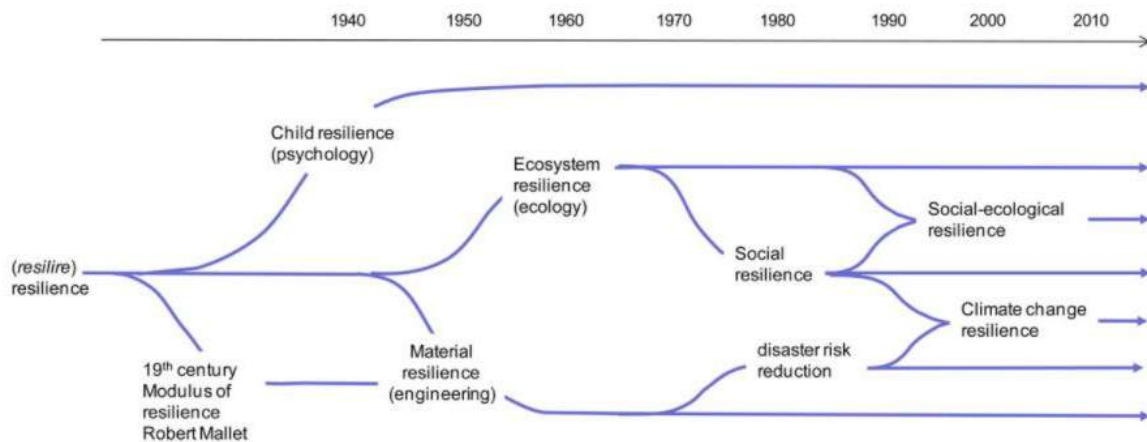
The **ecological branch of resilience** became popularized in 1973 with C. S. Hollings' paper titled "Resilience and the stability of ecological systems." This paper is one of the largest "nodes" of citation in the resilience literature.[12] Hollings maintains an empirical positive perspective, but in using resilience to describe ecological systems, he defines the term to describe the capacity of a system to continue *functioning* under stress, though without necessarily returning to an "original" state. In other words, ecological resilience acknowledges the existence of multiple equilibrium states.[13][14]

Hollings' work on resilience evolved into the more normative and complex **socio-ecological resilience** framework. Socio-ecological resilience moves away from the concept of equilibriums altogether, as it acknowledges how systems are nested and influence each other, which therefore means that these systems are constantly evolving and changing.[15][16]

Béné et al explains:

> Under this social–ecological thinking 'resilience (…) is [no longer] simply about resistance to change and conservation of existing structures' (that is the engineering definition) (Folke, 2006, p. 7) or even about 'buffer capacity and persistence to change while maintaining the

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[11] Béné, C. et al. "Resilience as a policy narrative: potentials and limits in the context of urban planning," 119

[12] Meerow, S., Newell, J. P., & Stults, M. (2016). Review: Defining urban resilience: A review. Landscape And Urban Planning, 147 p. 40.

[13] Davoudi, S., et al (2012). Resilience: A Bridging Concept or a Dead End?, 13(2), 300-301.

[14] Walker, B., C. S. Holling, S. R. Carpenter, and A. Kinzig. 2004. Resilience, adaptability and transformability in social–ecological systems. Ecology and Society 9(2): 5.

[15] Ibid

[16] Meerow, S., Newell, J. P., & Stults, M. "Review: Defining urban resilience: A review. Landscape And Urban Planning," 40

same function'(the ecological definition) but instead an emergent property that includes also two other dimensions: the adaptive capacity, that is, 'the capacity to learn, combine experience and knowledge, adjust responses to changing external drivers and internal processes, and continue operating' (Berkes, Colding, & Folke, 2003); and the transformative capacity, that is, the 'capacity to create a fundamentally new system when ecological, economic, or social structures make the existing system untenable' (Walker, Holling, Carpenter, & Kinzig, 2004, p. 5).[17]

Hollings' work has inspired the development of resilience definitions in many other disciplines beyond ecology, with the word "socio-ecological" and concepts associated with nested systems and maintaining functionality appearing regularly in the psychological and urban planning resilience literature discussed in the next sections.

Fig. 4: Engineering vs. ecological resilience: cup and ball metaphor [18]

Engineering resilience concept   Ecological resilience concept
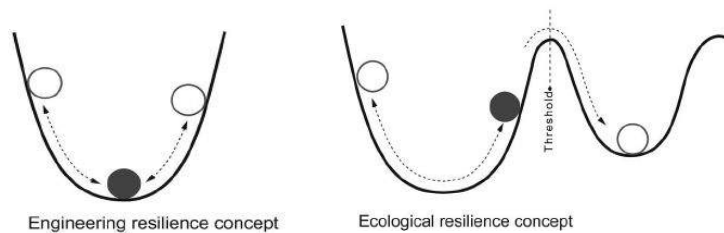
b. Psychological resilience

Psychology is one of the earliest academic disciplines to adopt the term "resilience," especially with respect to how young people endure trauma. Specifically, "researchers focused on identifying the characteristics of individuals, particularly young people, who thrived while living in difficult circumstances, such as poverty and parental mental illness."[19] Psychological resilience definitions contain two core components: (1) **adversity--** positive or negative stressors that may be be diverse in magnitude and frequency (chronic vs acute, hassles vs traumas), and (2) **positive adaptation**-- behavior that indicates wellbeing or social competence.[20]

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[17] Béné, C. et al. "Resilience as a policy narrative: potentials and limits in the context of urban planning," 118

[18] Desjardins, Eric & Barker, Gillian & Lindo, Zoë & Dieleman, Catherine & C. Dussault, Antoine. (2015). Promoting Resilience. The Quarterly Review of Biology. 90. 147-165.

[19] Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts, and theory. European Psychologist, 18(1), 12. doi:10.1027/1016-9040/a000124

[20] Ibid 13

As mentioned previously, the extent to which the psychological research is focused on individual traits that promote resilience is discomfiting. How mainstream this mode of thinking is is indicated by the American Psychological Association's website on "The Road to Resilience." The APA guide is very individual centric, with only one of ten ways to build resilience related to interpersonal relationships.[21]

However, within the past few decades there has emerged a socioecological strain of psychological resilience study that moves away from individualistic evaluations of resilience, and instead focuses on how resilience is informed by the social and physical systems in which a person lives. Two of the major scholars in this arena are M. Ungar and M. B. Spencer.

Ungar's paper, "Resilience, Trauma, Context, and Culture," seeks to redefine resilience as a function *primarily* of environmental quality. He posits this specifically as a "socio-ecological definition of resilience...as the capacity of both individuals and their environments to interact in ways that optimize developmental processes."[22] Ungar explains that research shows that resilience is shown when individuals navigate to resources that enable them to thrive, but this may only occur in situations where individuals have social ecologies that provide access to these resources in a way that is culturally meaningful.[23] Additionally, Ungar explains that mechanisms that might predict resilience are contextually dependent. For example, social ecologies that promote cultural identity may be especially important to resilience outcomes for African American youth, but may not be as impactful for white youth. In other words: there are no silver bullets.[24] Finally, Ungar cautions that much of the psychological literature on resilience reflects the dominant western culture and focuses on individual resilience. He emphasizes that resilience measures must be culturally appropriate and context specific.[25]

M. B. Spencer takes these concepts further, and contributes to the literature in her development of a theoretical framework, the Phenomenological Variant of Ecological Systems Theory (PVEST), through which a researcher can evaluate resilience within a socioecological context. This framework was hailed by the American Psychological Association Task Force on Resilience and Strength in Black Children and Adolescents as being "particularly relevant because it is one if the only—if not the only—theoretical paradigms that addresses the ecological contextual circumstances (e.g., racism) unique to youths of color in the United States."[26]

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[21] The Road to Resilience. (2018). American Psychological Association.
[22] Ungar, M. (2013). Resilience, Trauma, Context, and Culture. Trauma, Violence, & Abuse, 14(3), 256.
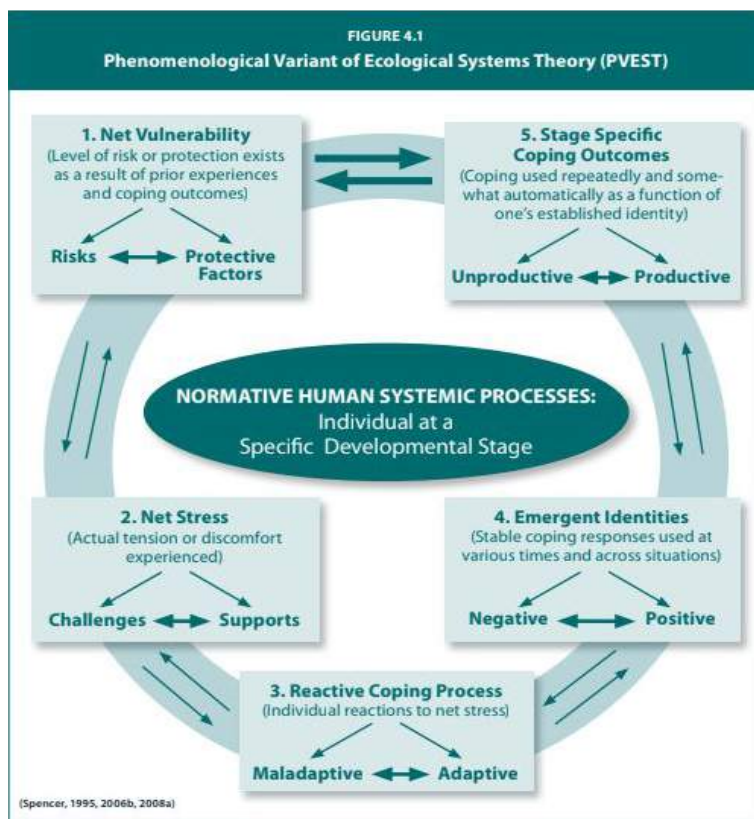[23] Ibid 258
[24] Ibid 259
[25] Ibid 260
[26] American Psychological Association, Task Force on Resilience and Strength in Black Children and Adolescents. (2008). Resilience in African American children and adolescents: A vision for optimal development. Washington, DC: Author. 23.

PVEST contains five components that act as a reinforcing loop (see Figure 5). The first is *Net Vulnerability*, or the combinations of risks and protective factors that a young person has as a result of biology and previous experiences. This impacts, prevents, or promotes a person's *Net Stress* (combination of challenges and supports) that s/he experiences on a day to day basis. A young person will then behave with a *reactive coping process* that consists of maladaptive and/or adaptive behavior. These behaviors then receive positive or negative feedback, resulting in repeated behaviors that begin to form *emergent identities*. These identities then result in regular, automatic behaviors, stage specific coping outcomes, that promote productive or unproductive life outcomes. These life outcomes contribute to a person's net vulnerability factors, hence creating a self-perpetuating feedback system.

Fig. 5: PVEST Psychological Resilience Theoretical Framework[27]

FIGURE 4.1
Phenomenological Variant of Ecological Systems Theory (PVEST)

1. Net Vulnerability
(Level of risk or protection exists as a result of prior experiences and coping outcomes)

Risks ◄► Protective Factors

5. Stage Specific Coping Outcomes
(Coping used repeatedly and somewhat automatically as a function of one's established identity)

Unproductive ◄► Productive

NORMATIVE HUMAN SYSTEMIC PROCESSES:
Individual at a
Specific Developmental Stage

2. Net Stress
(Actual tension or discomfort experienced)

Challenges ◄► Supports

4. Emergent Identities
(Stable coping responses used at various times and across situations)

Negative ◄► Positive

3. Reactive Coping Process
(Individual reactions to net stress)

Maladaptive ◄► Adaptive

(Spencer, 1995, 2006b, 2008a)

Spencer's PVEST system neatly incorporates the critiques that Ungar makes with resilience research. By focusing on the unique systems by which young people interact with their social ecology, the PVEST system allows resilience to be defined in a way that is a) environmentally focused, with special attention focused on how a person's privilege (net vulnerability and net stress) plays an enduring role in resilience, b) inherently requires an acknowledgement that each person will have unique responses to resilience promoting mechanisms (due to interactions with other PVEST factors), and c) demands examination of resilience in an empathetic way, which includes evaluation of resilience that is culturally specific and context driven.

c. Urban system resilience

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[27] Spencer, MB, and B Tinsley. 2008. "Identity as coping: assessing youths' challenges and opportunities for success." Prevention Researcher 15, no. 4:19.

While resilience within the ecological, engineering, and psychological disciplines have developed into fairly structured and fleshed out theories, within the urban-social realm resilience has been described as "more than a metaphor but less than a theory. At best it is a conceptual framework."[28] The following section overviews the landscape of urban resilience, and describes a couple of these frameworks.

The literature on urban resilience has three major branches that are influenced by other resilience discipline definitions: urban hazard resilience, urban ecological resilience, and resilience through governance (see Figure 6). The urban hazard resilience branch is largely influenced by engineering definitions of resilience, with emphasis on the preservation of physical infrastructure under the threat of climate change forces. This narrative is moving from one of how structures can resist shocks and return to pre-shock levels of functioning quickly, to that of how structures and urban processes can function *alongside* developing regularity of shocks (such as flood and storms).[29]

In a related manner, urban resilience through governance explores how in times of increased uncertainty (especially related to climate change, and even terrorism), institutions must adopt processes that allow for adaptive management. Some methods for doing so include: increased citizen participation in governance, learning via experiment and creativity, integrated knowledge systems, and multilevel/polycentric governance.[30]

Urban ecological literature comes from the ecological resilience realm, and takes a stance that urban environments are not built in a fashion that is ecologically resilient (able to absorb shocks and maintain functionality). Largely, the literature focuses on the degradation of ecosystem services and uncurbed use of natural resources.[31]

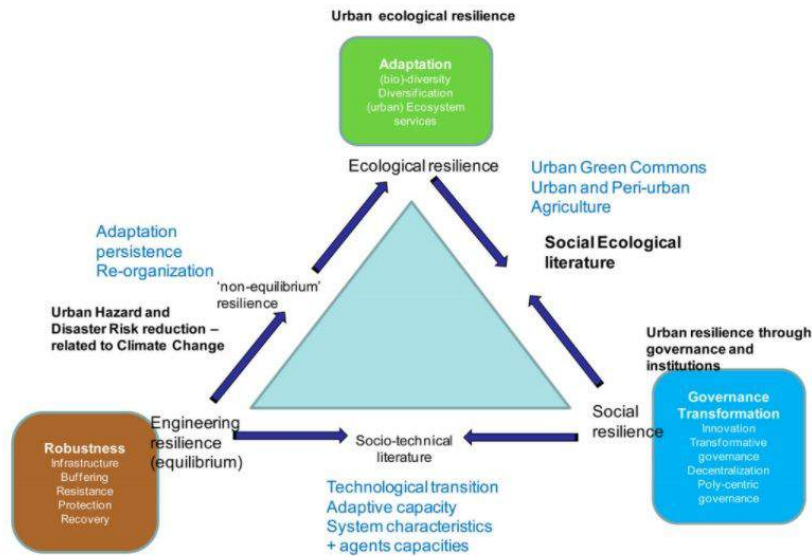[28] Davoudi, S., Zaucha, J., & Brooks, E. (2016). Evolutionary resilience and complex lagoon systems. Integrated Environmental Assessment & Management, 12(4), 712.
[29] Béné, C. et al. "Resilience as a policy narrative: potentials and limits in the context of urban planning," 123-124
[30] Ibid 127
[31] Ibid 125

Fig. 6: Urban Resilience Narratives[32]

The socio-ecological urban resilience literature provides a more global perspective, focusing on positive development ("thriving") despite adverse conditions, within the context of nested environmental, social, and institutional systems. Scholars in this branch of urban resilience in particular have developed frameworks to help a) define the bounds of resilience, and b) analyze the process of resilience.

Scholars address the contested nature of what is considered "positive development," as systems often have a diverse set of impacts on different demographic groups and/or non-human entities (such as wildlife). As Meerow et al express in their review of urban resilience literature, "Not all stakeholders will benefit equally from resilience-based actions, and the concept may be used to promote a neoliberal agenda or retain systemic inequality...Thus, social theorists are asking "resilience for whom?" and of "what to what?""[33] This question of "for whom" and "of what to what," the bounding of the resilience term, is a critical piece of resilience definition for any entity that seeks to employ the term in a meaningful, targeted manner. Meerow et al puts forth the "5 W's" for examining this question (see Figure 7).

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[32] Béné, C. et al. "Resilience as a policy narrative: potentials and limits in the context of urban planning," 125

[33] Meerow, S., Newell, J. P., & Stults, M. (2016). Review: Defining urban resilience: A review. Landscape And Urban Planning, 147 44.

Fig. 7: The 5 W's, Fundamental Resilience Questions[34]

		Questions to Consider
Who?		Who determines what is desirable for an urban system?
		Whose resilience is prioritized?
		Who is included (and excluded) from the urban system?
What?	T	What perturbations should the urban system be resilient to?
	R	What networks and sectors are included in the urban system?
	A	Is the focus on generic or specific resilience?
When?	D	Is the focus on rapid-onset disturbances or slow-onset changes?
	E	Is the focus on short-term resilience or long-term resilience?
	O	Is the focus on the resilience of present or future generations?
Where?	F	Where are the spatial boundaries of the urban system?
	F	Is the resilience of some areas prioritized over others?
	S	Does building resilience in some areas affect resilience elsewhere?
Why?	?	What is the goal of building urban resilience?
		What are the underlying motivations for building urban resilience?
		Is the focus on process or outcome?

As stated previously, the socio-ecological resilience perspective moves beyond preservation of infrastructure and function, and moves into a more normative space where there is learning, adaptation, and even transformation that occurs in the pursuit of desired function. S. Davoudi created a framework for analyzing these processes, called TAPP: Transformability, Adaptability, Persistence, and Preparedness.

Persistence describes processes for maintaining existing functions in the event of adversity, such as preventing flooding in the face of climate change forces. Adaptability describes flexibility in determining alternative paths and resourcefulness in ensuring efficiency and effectiveness when utilizing capital. Transformability refers to the ability to redesign a system to better attain desired functionality. Finally, preparedness acts as a unifier for the former three processes. Preparedness requires feedback, learning, and planning processes that allow persistence, adaptability, and transformability to be enacted.[35]

d. Case studies: how youth focused policy can enable community resilience

In determining a definition of resilience that is relevant to the work of Y-PLAN, it is also important to draw in research that analyzes the interaction and relationship between the wellbeing of young people and their communities as it relates to the core function of Y-PLAN: amplifying youth voice in civic spaces. If urban resilience, in a socio-ecological sense, is in part defined by the outcome of positive development, or desired function, is there evidence that towns that provide more of a civic role for young people have better development outcomes?

Unfortunately, I was unable to discover concrete, experimental (or quasi-experimental) evidence to support this claim, revealing an area of opportunity for future research. However, here I provide two case studies that illustrate how investment in youth voice may indeed contribute to greater community resilience.

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[34] Ibid 46
[35] Davoudi, S., Zaucha, J., & Brooks, E. (2016). Evolutionary resilience and complex lagoon systems. Integrated Environmental Assessment & Management, 713-716

Tokyo Earthquake, 1923

Tokyo endured a terrible earthquake in 1923 that killed more than 100,000 people. In the aftermath, the government of Tokyo had two major campaigns for reconstruction, one for physical rebuilding, and one for spiritual. Janet Borland wrote a case study on this reconstruction period specifically because of an unlikely component of the spiritual rebuilding of the Tokyo communities: stories, pieces of art, and models about the earthquake, crafted by young people, that captivated the nation.

Borland explains that having such a volume of work written directly by children, and not about children, is extremely unusual, especially in relationship to a natural disaster.[36] It allows us to see a primary account of how young people responded to the earthquake, and additionally, through written reactions from the public and government, allows us to view the impact of this voice on the greater resilience of the community.

The children's works revolve around themes of vulnerability and resilience. The horrific accounts of the earthquake revealed how unprepared citizens were to survive an earthquake. Racism from children towards foreigners, especially Koreans, in these writings also uncovered a shameful current of Japanese society. These writings held a mirror to Japanese government and society. The response from government was not to censor these facts, but to lift them up, share them as opportunities to learn, and distribute materials to citizens urging them to do such things as: "'When running out of doors during an earthquake, cover your head with a wadded kimono', and...'Be as kind as possible to Koreans and foreigners, who are unfamiliar with the city, and avoid any collision with them.'"[37]

The Tokyo government recognized that by lifting young people's voices, they were able to break through a spiritual wall. After a year of reconstruction, citizens were becoming less inclined to pay attention to government overtures. The distribution of young people's work made the importance of rebuilding salient again. Child voice was an important metaphorical symbol to the nation in times of reconstruction. "The resilient child" represented a resilient future, and reminded citizens for whom they were rebuilding.[38]

Borland further discusses how the government found youth voice to be a powerful tool:
> "[T]he municipal government valued the child's voice beyond the classroom and identified a broad readership for the essays. Education psychologists could research how the earthquake affected children

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[36] Ibid 300
[37] Ibid 310
[38] Ibid 313

psychologically. Teachers could evaluate children's academic development and writing skills. Parents could learn about the thoughts and feelings of their son or daughter, or their classmates. Finally, these materials would benefit children. When the young authors saw their essays printed in a book for 'tens of thousands of people to read', the municipal government believed it would motivate them to study hard. In addition, the essays could be used to inspire children nationwide. 'For these reasons', the article concluded, 'we want to distribute the books as widely as possible.'[39]

In response to terrible disaster, young people's voices were critical for a) enabling the government to improve their processes of disaster response and preparedness, b) reach a broader audience for important communications, c) address social injustice, d) enhance community social bonds, and e) encourage young people to be hard working. It is important to note that the lynchpin of this program's success was that those in government felt young people's stories were important and decided there was material value in providing a space for this work.

Rural Alaskan Youth 2011-2012

In her article titled "Leaving, staying or belonging: exploring the relationship between formal education, youth mobility and community resilience in rural Alaska," Gram-Hanssen explores community resilience in rural Alaska through interviews with members of different communities. She explains that rural Alaska leaves few options for young people. Housing is expensive, cost of living is high, and higher education opportunities have to be found elsewhere. This is compounded by shifting demographics, climate change impacts to subsistence activities, and high rates of disease, suicide, alcoholism, and drug use.[40] One of the primary contributors to these ills is the outmigration of young people.

The village studied, Igiugig, was focused on for this research because of its success in comparison to other small, rural, majority-Native villages. It has a low unemployment rate, high youth retention rate, and high education rate. Gram-Hanssen discusses that Igiugig has a particularly youth-centric model for development and many who are interviewed perceive this to be a major contributor to its resilience. An administrator in the community explains,"The kind of mentality we need to keep is 'what do we need for the young people to want to come back?' Maybe they won't want to and that's something we have no control over and we're not gonna try to even control, but we can try to make their experience here the best one possible."[41]

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[39] Ibid 313
[40] Gram-Hanssen, I. (2018). Leaving, staying or belonging: exploring the relationship between formal education, youth mobility and community resilience in rural Alaska. Polar Geography, 41(1), 2.
[41] Ibid 9

In this village, and in contrast to others, youth are recognized as valuable to the society, they are provided voice in government, they are provided ownership of land, and they are provided resources for jobs and housing should they decide to return after obtaining a college education. Most importantly, youth are provided a sense of belonging in the community and discuss a sense of responsibility to their communities as a reason for returning. Many of those interviewed expressed how being given responsibility as children and youth had a profound impact on their relationship with their community. One young person discusses being involved with the development of the community's strategic plan:

> It was our opportunity to let our Elders and our parents and whom ever know what we wanted in the community: 'This is what we want to see, so maybe you should be working towards that, and we'll come back and take over!' So, we're all involved in the planning and that's what needs to happen in other communities. I would not be putting forward all this effort and passion and love for my village if they never focused on youth to begin with. Because, you keep that in your mind the whole time you're at school or where ever, thinking: 'They're counting on me! They're waiting on it.' And in other communities its like you come home and you better prove yourself and you better stick it out: 'show us, and maybe someday you'll sit on a board, or maybe you'll become the administrator.' It's frustrating.[42]

In her work, Gram-Hanssen underlines the importance of belonging, fostered by the acceptance of responsibility throughout childhood, as a critical driver of community resilience. Once again, it is the active institutional acknowledgement of the value of young people that drives youth-oriented processes. In this case, this value moves beyond providing spiritual resilience in the aftermath of a single disturbance. The value of young people is embedded in the culture of the community and creates a reinforcing virtuous cycle, where young people feel belonging, feel responsibility, are encouraged to excel, and stay in their community in order to maintain and improve it.

Through this research, I aimed to provide a thorough landscape of the history, breadth, and development of the resilience term, particularly as it relates to the disciplines that inform Y-PLAN, such as childhood development and urban planning. Among the definitions of resilience explored here, those informed by socio-ecological perspectives contributed most to the literature in examining the socially constructed nature of the "resilience" term. In the psychology literature, this enabled definitions to come through that force a programmer (such as

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[42] Ibid 11

Y-PLAN) to recognize its own responsibility to ensure it is providing opportunities to enable individual resilience in a culturally relevant way. In the urban/planning literature, the socio-ecological perspective demands that programmers/planners bound what is meant by resilience, in order to specifically identify resilience for whom, from what, and to what. In addition to the exploration of definitions, I offered two case studies that provide excellent examples of how the work that Y-PLAN does, enabling greater youth efficacy within civic spaces, can contribute to individual and community thriving despite serious acute and chronic adverse circumstances. The following section will distill this literature in order to (a) construct a definition for student and community resilience that is relevant to Y-PLAN's work, and (b) create a framework that illuminates how Y-PLAN materially contributes to these definitions of resilience.

3. Resilience Definition and Framework Proposal

a. A definition of student and community level resilience for Y-PLAN

Y-PLAN's double bottom line of student and community outcomes is the driver of its curriculum and program activities. As such, it is a natural step to draw a definition of resilience as it relates to the individual student, as well as one as it relates to the students' communities.

The definition for **student resilience** came out of the psychological resilience literature. I drew particularly from the socio-ecological psychological research of Ungar and Spencer. The emphasis on environment, especially community ties, policy, and place, is core to the Y-PLAN program. Y-PLAN was developed on the premise of Etienne Wenger's "community of practice," where learning is not an individual activity, but is a result of lived participation within a community.[43] His social learning framework posits that learning happens when we interface with complex social scenarios, derive meaning from them, and develop identities/perspectives within these environments. Similarly, PVEST observes resilience as a function of how individuals positively navigate challenges within their social, political, and physical environments. A key contributor to long term resilience is the development of positive identities that are products of and reflective of their membership within social groups. To incorporate this emphasis on community and environment as critical to learning and identity formation for young people, I slightly adapted Ungar's definition of resilience for use by Y-PLAN: ***the capacity of students and environments to interact and interface with adversity in a way that optimizes personal development.***

For the purposes of this definition, "positive development" refers to the development of the positive components of Spencer's PVEST: Protective Factors, Supports, Adaptive Coping, Positive Identity Formation, and Productive Coping Outcomes. As Ungar and Spencer both emphasize, these components will look different depending on the student, as a result of the heterogeneity of their experiences and social ecologies. Y-PLAN's ability to provide a program that is context driven, flexible, and culturally relevant allows for impact to occur within this shifting landscape of resilience.

The definition of community resilience was more challenging to construct in a way that would contribute to frequent, specific, and measurable Y-PLAN outcomes. Y-PLAN facilitates projects that are highly diverse and contribute to community thriving in countless ways. Even just within the Resilient by Design Youth Challenge, students submitted proposals for abating homelessness, dealing with sea level rise, and improving school nutrition. The variation across

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[43] Wenger, Etienne. 1998. Communities of practice: learning, meaning, and identity. Cambridge, U.K.: Cambridge University Press, 5

schools and year to year on the focus of these projects makes it difficult to define resilience to broadly incorporate community thriving, while also being able to collect meaningful data. Figure 8 shows an example of networked systems within an urban community. Mapping and measuring how Y-PLAN contributes to the thriving of these systems would be unwieldy.

Fig. 8: Urban Systems Schematic[44]
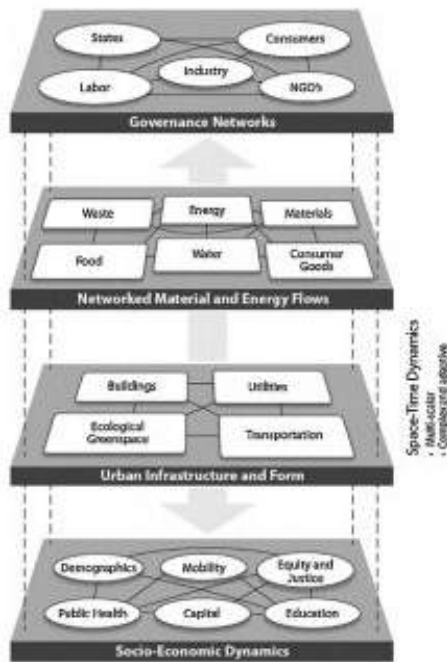
I therefore decided to use Y-PLAN's mission, to lift youth voice and increase their impact on their communities, as a focusing perspective and boundary. Y-PLAN operates in part on the theory that a city that values its young people, and plans with and for them, will be a city that thrives better than otherwise similar places.

While research on this theory is scarce, there are some preliminary studies that point to the fact that investing in youth-centered urban planning and design will pay dividends. The Arupa *Designing Urban Childhoods* report provides a wealth of studies that highlights these statistics and case studies. The report explains, "The amount of time children spend playing outdoors, their ability to get around independently, and their level of contact with nature are strong indicators of how a city is performing, and not just for children but for all city dwellers."[45]

One notable project included in the report is described as a pop-up park that was initiated in Leeds to increase family friendly spaces in the city. As a result, "85% of families using the park spent more time in the city centre as a result of the park and 94% said they would be more likely to visit the city centre if there were more, similar spaces."[46] The Arupa report also provides evidence that connecting young people with nature can promote adult environmentalism, and that adults spend more time outdoors where there are also children outdoors.[47] Further evidence of young people contributing to urban resilience can be illustrated in the case studies from the previous section.

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[44] Meerow, S., Newell, J. P., & Stults, M. "Review: Defining urban resilience: A review. Landscape And Urban Planning," 45

[45] "Cities Alive: Designing for Urban Childhoods." Arup. December 2017. 7.

[46] Ibid 46

[47] Ibid 41, 35

Enrique Penalosa, mayor of Bogota, Colombia, neatly expressed the theory described above when he described children as an "indicator species" for the wellbeing of their communities.[48] This sentiment is the driving force for the decision here to narrow the definition of community resilience to become ***resilient communities for young people***, acknowledging that Y-PLAN's work to promote city planning with and for young people is an important factor of larger community wellbeing. This narrowing of scope allows a more targeted analysis that focuses on Y-PLAN's community contributions on the first order: its promotion of relationships, processes, policies, and planning that integrate and reflect young people's voices and work within their communities. To this end, I constructed a definition of resilient communities for young people as ***the ability of urban systems to learn, preserve, adapt, and/or transform in the face of adversity in a manner so that young people who live, work, and play within it, especially those who are most vulnerable, continue to survive and thrive.***

This definition includes Davoudi's four processes of resilience (TAPP) in order to emphasize the importance of learning and transformation that must take place in many communities in order to meet a future state where all young people thrive. It also specifically calls out *for whom*: in this definition, Y-PLAN aims to promote the resilience of young people, especially those most marginalized, where young people themselves contribute to determining what is desirable in an urban system alongside civic leaders in their communities. Adversity includes anything within a community's socio-ecological system that may work to silence or harm young people. The geographical bounds of this definition will work to include the municipal boundaries of Y-PLAN students. A longer term definition may include whole regions in which Y-PLAN operates extensively, such as the Bay Area and New York City.

b. Framework for Resilient Students and Resilient Communities for Young People

Building further upon the resilience literature and on the definitions determined in the previous section, I developed a framework that draws a connection from Y-PLAN's activities and outputs to the system of student resilience and to the system of resilient communities for young people. This framework seeks to show how the foundational elements of the Y-PLAN program interact to directly and indirectly contribute to components of the resilience systems. I also included a section to represent components of community in general, in order to represent that these focused resilience systems interact with and are part of larger systems. This context is critical as the community components (such as equity and living conditions) directly impact the student and communities for young people resilience systems. The condition of these community components may work alongside or counter to the aims of Y-PLAN, and this is important to acknowledge when determining a resilience strategy and/or evaluating impact effects within unique communities/regions. The following section will outline and discuss the four main

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[48] McLennan, Jason F. "To Save Our Cities, Put Children First." YES! Magazine. January 19, 2015.
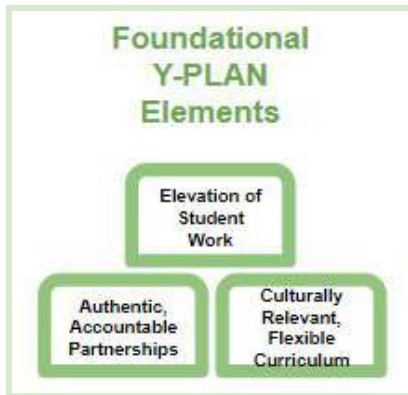
sections of this framework-- *Foundational Y-PLAN Elements, Resilient Communities for Young People, Resilient Students,* and *Community Components*-- and how they interact.

Fig. 9: Y-PLAN Framework for Resilient Students and Resilient Communities for Young People
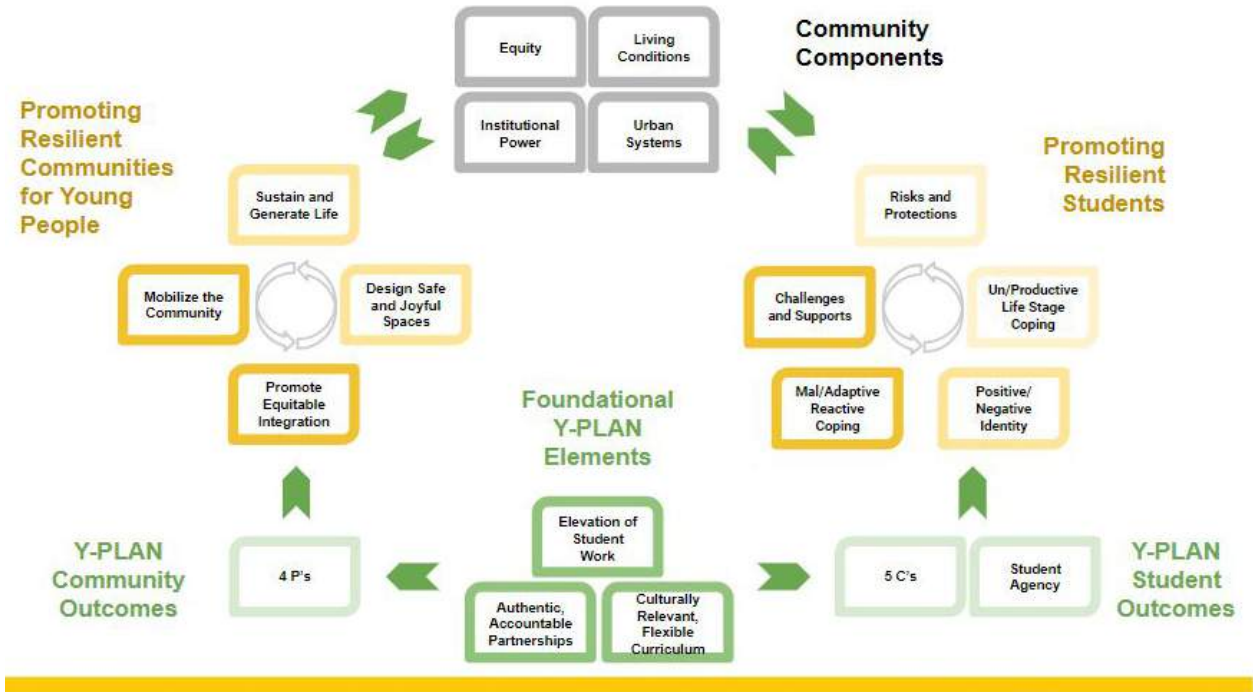
I. Foundational Y-PLAN Elements

I called this framework section the *Foundational Y-PLAN Elements* (Figure 10) because in my time spent with Y-PLAN administrators, in classrooms, and in interviews with those participating in Y-PLAN, I was able to uncover many leverage points that made Y-PLAN "work" for its stakeholders. These leverage points I categorized into three elements that I believe are foundational for the ongoing success of Y-PLAN:

1. **Authentic, Accountable Partnerships**
   a. **Civic Partnerships:** Y-PLAN ensures that any civic agency that wishes to be a client for a classroom is doing so in an authentic manner. In other words, Y-PLAN administrators ensure that civic partners have a real project (not hypothetical) for the students to work on, and vets projects to ensure that student work will have meaningful value to the client partners. Y-PLAN also often ensures that civic partners regularly interface with the students. This prevents student work from being tokenized, shows students they are respected, and provides the opportunity to show civic agencies that student work is valuable to them. This accountability for the relationship means that expectations are clear and salient to all parties, and ultimately allows for long term relationships to take root.
   b. **Teacher and School Partnerships:** It is important to Y-PLAN administrators that teachers utilize Y-PLAN in a manner that is authentic to its mission. In other words, Y-PLAN will not pursue partnerships with teachers who intend to water down the curriculum. As a result, the Y-PLAN curriculum is implemented by teachers who truly believe in its mission, and who are committed to teaching the material. This accountability often leads to positive long term relationships between a teacher and the Y-PLAN program, and creates champions for the program within a school, embedding the program into the culture of the school.

c. **Mentor Partnerships:** Undergraduate and graduate students act as mentors for the Y-PLAN students. These mentors come into the classes regularly (often weekly) to provide help and act as editors and sounding boards for ideas. They even often will teach the Y-PLAN lessons. These mentorships mean a lot to the students, who feel that having the same person come in every week really means the Y-PLAN program cares about them and is committed to them. These mentors often end up moving into public positions, or even become teachers themselves, and become Y-PLAN champions on their work.

d. **Building of Time and Trust:** Y-PLAN has been in place for about 20 years, and in that time the program developed long lasting partnerships with teachers, schools, civic agencies, and previous mentors that developed to create a rich ecosystem of political and cultural program support. This political and cultural capital allows Y-PLAN to be in an even more powerful position to promote an agenda of student and community resilience.

2. **Culturally Relevant, Flexible Curriculum**
   a. **Relevance to Students:** The Y-PLAN curriculum is set up for students to connect their projects to their lived experiences. How the project is meaningful to the individual student is a driving force for the curriculum. "Where I'm From" poems ask students to personally engage their feelings about their community in a way that is creative and often might be more salient to how they express their feelings than a typical essay. The curriculum is also set up to be flexible, so that teachers, mentors, and clients can provide context that is culturally relevant to the students.

   b. **Relevance to Teachers:** It is also essential that the curriculum that Y-PLAN provides is relevant to the culture and constraints that teachers face. Today, teachers must comply with state and federal guidelines, specifically the Common Core State Standards, which are adopted in states across the nation, including in Y-PLAN's hub regions, New York City and the Bay Area. Y-PLAN's curriculum is crafted to "plug and play." It is in compliance with common core standards, it is flexible in its ability to be utilized across academic disciplines, and it is flexible in its ability to be utilized within a teacher's class schedule.

   c. **Relevance to Civic Clients:** More and more credence is paid to community driven development and community participation within the civic sector. Y-PLAN allows these agencies to comply with this growing push with a reputable organization and with tangible results in the form of proposal presentations. The curriculum also is developed around the needs of the client. All projects have direct salience to issues the client is working on.

3. **Elevation of Student Work**
   a. **Provision of vocabulary and tools:** Elevation of student work has a dual meaning here. The first meaning is that Y-PLAN curriculum provides language and tools so that students are able to elevate their work to a level where professionals will treat it with respect, as opposed to seeing it as a "cute," but illegitimate project. Y-PLAN integrates planning terminology, data collection and analysis, and cost-benefit analysis in order to enable students to bring their work to a professional, credible level.
   b. **Provision of venues to showcase student work:** The second meaning of "elevation" comes through when Y-PLAN provides arenas for students to be respected and heard in front of civic leaders. When Y-PLAN brings civic leaders to the classroom to help students with their ideas, when Y-PLAN brings students into the field alongside civic leaders to observe their communities, and when Y-PLAN provides a venue for students to present their findings to their clients, Y-PLAN is elevating student work so that it is seen by folks in power, and so it is appreciated and respected by those individuals.
   c. **Provision of pathways to larger impact and tangible outcomes:** Finally, Y-PLAN brings students and civic leaders together in the aforementioned ways, which provides opportunities for civic leaders and students to take their partnership to the next level via project implementation and/or internship. These cases where students create tangible impact, or go on to participate in civic processes, are highly powerful for all stakeholders. For students, it gives them a rare opportunity to make an impact on their community, which can ferment positive identity formation. For civic leaders, this deepens their connection with community members, builds trust, and provides cultural capital for future projects.

These elements work together to propel Y-PLAN forward as a highly reputable program that finds incredible support from its stakeholders. As Ungar and Spencer discuss in their research on resilience, if a program has all the content and makings of a supportive activity, but it is not *perceive or experienced* as supportive, then a program will not have the intended impact, and in fact can be experienced as harmful.[49] These three elements create the buy-in necessary from stakeholders to allow the program to deliver on its community and student outcomes, which in turn contribute to resilient student behaviors and resilient communities for youth.

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[49] Ungar, M. (2013). Resilience, Trauma, Context, and Culture. Trauma, Violence, & Abuse, 14(3), 255-266.

II. Promoting Resilient Students

The Resilient Students framework section is taken from Spencer's PVEST framework. PVEST is an excellent tool as it is designed to be used in a manner that incorporates socio-ecological context, and neatly displays how socio-environmental impacts can promote positive or negative resilience feedback loops. It acknowledges Ungar's three main resilience findings[50]: (1) that nurture trumps nature, or in other words, that environmental supports and protections are critical for individual resilience; (2) that individuals (Y-PLAN students) are diverse and have different experiences, identities, and traits that make programming (like Y-PLAN) more or less salient to each student, classroom, and school; and (3) that viewing resilience through a culturally relevant lens is critical-- Y-PLAN must recognize that resilient behavior often seems pathological or illegitimate when viewed through a hegemonic lens, and Y-PLAN must recognize that cultural relevance is necessary for delivering a program that aims to promote student resilience.

Fig. 11: Resilient Students
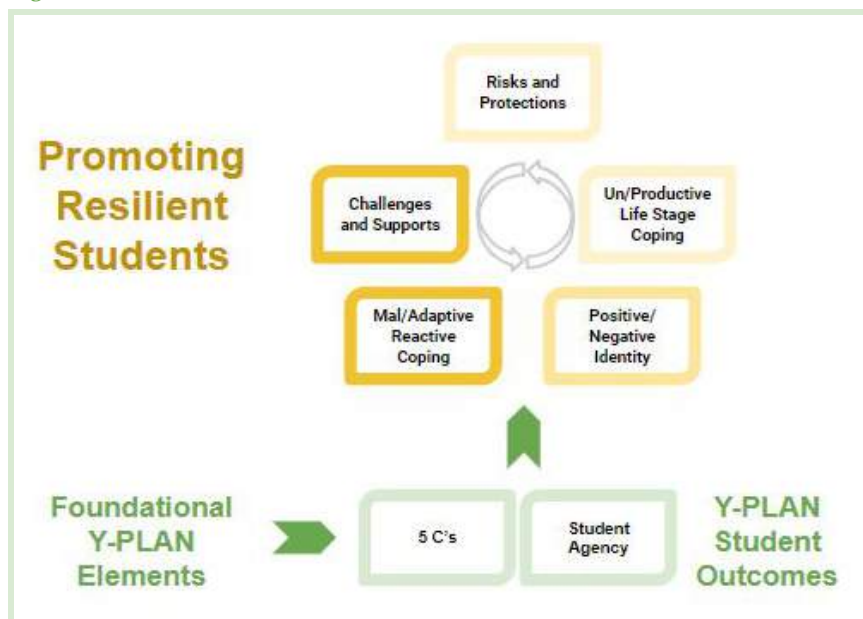
PVEST also nicely incorporates a framework for development of civic engagement behavior by Watts and Flanagan, academics from the liberation psychology discipline. This framework (Figure 12) provides a theory for how programs like Y-PLAN may play a role in promoting student civic engagement by (A) providing the tools needed for students to feel as though they

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[50] Ibid

are meaningfully participating in making positive change, and (B) providing the opportunity for students to engage with those tools, connect with civic leaders, and present their ideas.[51]

The PVEST framework contributes to the Watts and Flanagan framework by providing more context and nuance to its linear form. "Worldview and Social Analysis" occurs throughout the PVEST framework as a constantly evolving context that is shaped by the steps in the framework. "Sense of Agency" is a positive identity trait that doesn't just occur in a vacuum as the Watts and Flanagan framework implies, but is developed through experiences from net vulnerability, net stress, and repeated reactive coping behaviors. "Opportunity Structure" is the environmental component of resilience: resilient behavior in the form of positive civic engagement behavior and identity can only occur if there is sufficient environmental support for these behaviors, and venues in which these behaviors may exist. This is found in the net vulnerability, net stress, and reactive coping behavior stages, where a program like Y-PLAN can particularly provide support for dealing with environmental/community problems (net stress), and can provide positive feedback for adaptive coping behaviors, like working in teams, conducting research, and putting together a presentation for civic leaders. These coping behaviors, when supported and repeated, turn into positive identities of self agency. Eventually, if this identity produces more automatic civic engagement behavior, this identity produces productive life outcomes, which in turn contributes to the individual's net vulnerability and stress, as well as worldview.

Fig. 12: Watts and Flanagan framework for student civic engagement[52]
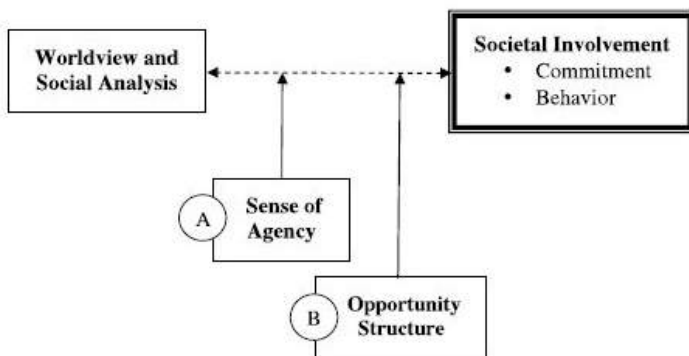
Figure 1. Potential moderators in a theory of sociopolitical development.

The Watts and Flanagan framework, while too simplistic on its own as a resilience framework, helps to illustrate how a program like Y-PLAN, with its emphasis on civic engagement, ties into the more holistic and systems based PVEST resilience framework. The Watts and Flanagan

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[51] Watts, Roderick J., and Constance Flanagan. 2007. "Pushing the envelope on youth civic engagement: A developmental and liberation psychology perspective." Journal Of Community Psychology 35, no. 6: 779.

[52] Watts & Flanagan CITE

framework, as well as the Ungar research, also helped to "stress test" the PVEST framework. PVEST successfully encapsulates both Ungar and Watts & Flanagan's contributions to resilience and civic engagement development.

Within the PVEST framework, I've highlighted the stages to which I believe Y-PLAN contributes most directly, with dark yellow being stages with most direct impact, and light yellow being stages with least direct impact. I address these stages below:

1. **Net Stress-- Supports and Challenges**
   a. **Providing attainable challenges:** While Y-PLAN admittedly provides challenges to students by confronting them with issues in their community, and/or asking them to grapple with these issues, Y-PLAN provides challenges that the students are able to deal with successfully through the program's curriculum. These kinds of challenges actually contribute to student resilience. Spencer explains, "when people cope successfully despite significant risk their resiliency is promoted. This ability to cope successfully in spite of past and/or present burdensome situations increases the probability of future success when confronted by progressively complex challenges."[53] This is also known as an inoculation effect, where "exposure to adversity in moderation can mobilize previously untapped resources, help engage social support networks, and create a sense of mastery for future adversities."[54]
   b. **Providing supports for students through the foundational Y-PLAN elements:** The provision of accountable and authentic partnerships ensures that the adults engaged in the projects are excited about the project, are consistently engaged with the project, provide needed help and guidance, and give students respect for their work. The culturally relevant curriculum ensures that content is delivered in a way that is salient for the students. It also provides a structured learning process to ensure that students are able to confidently navigate the planning/proposal process, and meet their challenge objectives. Finally, the elevation of student work element supports students by elevating their work quality through the curriculum to ensure it is respected by professionals. It also provides venues in which students can present their ideas and receive constructive feedback and praise from supportive adults, including mentors, teachers, and civic leaders.

2. **Adaptive Reaction to Stress-- 21st Century Learning Skills:** The supports outlined above (partnerships, curriculum, and elevation of student work) aim to encourage growth within Y-PLAN's 5 C's-- Collaboration, Critical Thinking, Creation and Innovation,

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[53] Spencer 18
[54] Fletcher 20

Communication, and Community Contribution. These skills (outlined in more detail in Exhibit A of the Appendix) are developed through the curriculum and are supported by staff, teachers, civic leaders, and mentors through their interactions with students during the Y-PLAN project. They are in fact a kind learned reaction to certain kinds of stress: professional client based projects, and systemic community issues. By practicing these skills in response to Y-PLAN's constructed challenge through a program that supports student success, the students are learning how to respond to these kinds of stressors in the future in a positive, adaptive manner.

3. **Positive Emergent Identity-- Sense of Agency:** Sense of agency is defined in Watts and Flanagan's civic engagement research as the coalescence of three states: (1) self acceptance and confidence, (2) social and political understanding, and (3) the ability to play an active, effective role in community decision making.[55] Within the PVEST framework, this sense of agency would be categorized as an emergent identity that comes from practicing related adaptive coping behaviors. Y-PLAN's supports, focused on civic engagement and social justice, aim to cultivate those adaptive behaviors in young people that support the identity of having a sense of agency their communities. This stage I colored in a medium shade of yellow to show that I believe Y-PLAN doesn't directly provide this, but it supports the development of this identity. While not all students will come out of a Y-PLAN program with a changed feeling of self efficacy, there is evidence (outlined further in the case studies) that many do find Y-PLAN as a transformative experience in this manner.

4. **Life Stage Coping and Net Vulnerability:** These stages are least directly impacted by Y-PLAN, but this is not to say that Y-PLAN doesn't contribute to them. Life stage coping comes from regular, automatic behaviors that come out of student identity. These can be productive or unproductive. If Y-PLAN contributes to a student's sense of self efficacy, it is possible that this student will continue to exhibit behaviors that build on this identity, such as joining or becoming more engaged with local social justice organizations, or taking on more leadership roles. These life stage behaviors contribute to a student's evolving net vulnerability. Being more involved with local organizations and taking on more leadership roles, for example, can contribute to a greater likelihood of getting a good job or going to college, and thereby improve protections (and diminish net vulnerability) through increased social mobility. These are more challenging to tie directly to Y-PLAN, as these life stage coping behaviors and vulnerabilities are impacted by so many variables, of which a small part might have been the Y-PLAN experience. It is important to note that Y-PLAN does fit in as a part of positive supports within the

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[55] Watts and Flanagan 786

PVEST student resilience framework, and as such it is certainly plays a role within the ecosystem of student experience that contributes to these long term resilient behaviors and outcomes.

III. Promoting Resilient Communities for Young People

The research behind resilient communities within social science is the least unified of the resilience research disciplines. This is a consequence of the political and normative nature of social sciences. A research article on resilience within social science explains, "In ecological resilience, the undulating surface [of system resilience, a la the ball and cup metaphor] reflects the current scientific understanding, whereas in the social sciences there may be no consensus on the "shape" of that "surface.""[56] Therefore, this report is required to bound and define the resilience term within a context that makes sense for Y-PLAN's mission. As such, the definition created in this report focuses on the resilience of communities *for young people*. The creation of the framework for this concept requires developing a system that contributes to *nurturing communities that allow young people to thrive in the presence of adversity*.

Unfortunately, there is a dearth of academic research in this arena. I did find, however, white paper reports that speak to this issue. One of these is a report sponsored by Plan International, a development agency with a mission based on a "just world for children," and developed with support from the consulting company Arup, the NGO Australian Aid, and the Swedish government. The report, entitled "Child-Centered Urban Resilience Framework," details a framework for youth centered community resilience that I've adapted for use here.[57] The four sections of the framework, *Mobilize the Community, Promote Integration, Design Safe Spaces,* and *Sustain Life*, broadly correspond with the four P's of Y-PLAN's community outcomes, *Participants, Process, Place,* and *Policy* (more detail in Exhibit A of the Appendix). I describe these connections in the outline below, and in Figure 13 I've highlighted in darker yellow those components of the framework to which Y-PLAN most directly contributes, as I did in the PVEST student resilience framework.

The adaptations were incorporated to place higher emphasis on (a) **equity and justice**, as young people are not a monolithic demographic and inequities must be acknowledged, (b) **joy and thriving**, as Y-PLAN places an emphasis on these attributes-- survival and adequate distribution of goods and services does not go far enough.

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[56] Olssen et al 4
[57] Arup Child Centered Resilience CITE
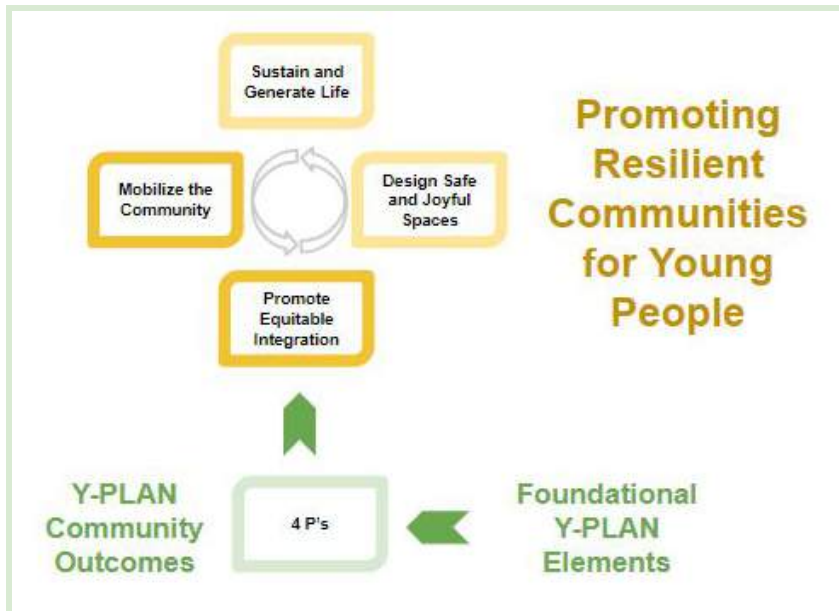
1. **Mobilize the Community:** This section highlights the need for communities to have a strong champions of youth issues and to increase community involvement in the welfare of young people. Young people are disenfranchised and underappreciated within the context of community decision making. If there are not adults in the community advocating to bring youth voices and issues to the table, communities will be less likely to have the kinds of policies and planning that protect the interests of young people. Within the Y-PLAN outcomes, this corresponds with the **Participants** outcome, in which Y-PLAN directly contributes to the following:
    a. **(1) Growth in respect for youth voice, work, and leadership, (2) growth in appreciation for the complexity of young people's lived experience, and (3) the development of champions for young people:** Elevation of student work through the Y-PLAN curriculum and development of authentic partnerships enables civic leaders in agencies and organizations within student communities to develop a respect for student work and leadership, and to develop a more complex understanding of student's lives, values, and attitudes. This allows civic leaders to not only become champions of youth issues and youth voice, but it allows them to be better informed in their plans, strategies, and actions to better meet the needs and desires of young people. The Y-PLAN program also sees mentors who participate in the Y-PLAN process go on to become youth advocates in their workplaces.

2. **Promote Equitable Integration:** This section refers to integrating young people, and especially those most vulnerable, into the process of community decision making. When

young people are authentically included and given responsibility within a community, the community may become more attuned and responsive to the needs of young people. As exemplified in the Alaska Rural Youth case study, this can contribute to feelings of belonging, with young people able to better thrive and ultimately remain in the community, helping it to retain its culture and contribute to its broader resilience. In Y-PLAN, the **Process** community outcome contributes to equitable integration in the following ways:

    a. **Improve Community Engagement:** Y-PLAN diversifies traditional community engagement by bringing young people and the voices of their families to the table, usually from underrepresented communities.

    b. **Embed Y-PLAN techniques within planning process through (1) long term partnerships and (2) catalyzing of school-civic partnerships:** Y-PLAN is a program that allows governing agencies and NGOs to "plug in" the Y-PLAN program as a reputable way to collect high quality feedback from young people. This allows organizations to use Y-PLAN as a form of embedded youth driven participatory action research. Y-PLAN's core capability of developing long term partnerships in this capacity is a form of "embedding" youth participation within the process for civic agencies. Y-PLAN can also act as the catalyst for school-civic partnerships. Civic organizations may choose to work through Y-PLAN in order to build relationships with schools and learn for themselves how to better conduct and integrate youth driven research.

    c. **Build trust between institutions and communities:** Young people and their communities often have little trust in government. Through the Y-PLAN program, young people and civic agencies engage in authentic conversations, moving the needle on building this trust that is so important for community members, and especially young people, to want to participate in civic engagement.

3. **Design Safe and Joyful Spaces:** Designing space in a way that is safe and joyful is important for youth development. Research shows that the physical environment influences physical activity and health, mental health, and isolation.[58] This section is colored in a lighter yellow because Y-PLAN does impact this category, but more often in an indirect manner. Y-PLAN helps youth craft their ideas into professional proposals, and then it is the civic leaders' decision to take these proposals into an implementation phase. The Y-PLAN program expresses its impact through the **Place** community outcome, through which Y-PLAN promotes safe and joyful space in the following ways:

    a. **The built environment incorporates youth proposals from Y-PLAN:** There are many examples of agencies bringing Y-PLAN youth proposals into an

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[58] "Cities Alive: Designing for Urban Childhoods." Arup. December 2017. 13.

implementation phase. For example, a Y-PLAN project with the BART transportation agency led to a group of students from Oakland Tech High School becoming summer interns to implement their mural project proposal for the O.Co BART station in Oakland.

b. **The built environment develops with greater consideration for and contributions from young people as Y-PLAN increases influence among participants, and within process and policy:** While not all student proposals are implemented, Y-PLAN likely has an indirect impact on urban form through the development of the "Mobilize the Community: Participants" framework section. Through the interactions between youth, civic leaders, teachers, and mentors that Y-PLAN fosters, more professionals have a better understanding of youth issues, and become advocates for them. This advocacy and understanding leads to decision making in planning and design that incorporates, albeit indirectly, youth perspective and consideration.

4. **Sustain and Generate Life:** The Plan International report framed this section to support policies that ensure basic needs are met for children. I've expanded on this to include basic needs as a bottom line, and thriving as the goal. This section underlines the importance of policies that ensure urban systems provide basic needs *and* meaningfully contribute to the wellbeing of young people. Do young people have access to not only basic nutrition requirements, but healthy whole food options? Do young people not only have access to jobs, but to employment that is enriching and promotes fulfilling career opportunities? Similar to the *Joyful and Safe Spaces: Place* section, this section has less direct impact from Y-PLAN, as expressed in the light yellow color of the section in the framework schematic. Bringing Y-PLAN proposals into an implementation phase in policy and programming is once again a decision made by the civic clients. Y-PLAN's contribution to sustaining and generating life is discussed in its **Policy** community outcome:

a. **Y-PLAN work contributes to policies and plans for systems that impact the wellbeing of young people (such as education, healthcare, nutrition, and employment):** Y-PLAN projects do often contribute materially to city policies, with student projects impacting city plans and programs. For example, Richmond High School has a page dedicated to their proposed personal actions for combating climate change in the city's Climate Action Plan. The Skyline High School AAMA case study in the next report section is an example of the city of Oakland working to incorporate student input for its Oakland Unified School District Futures Centers plan, which aims to promote college going cultures on high school campuses. Building authentic, accountable relationships (where civic leaders are expected to bring authentic issues and genuinely buy in to the

Y-PLAN process) and elevating student work through the curriculum (for example, in developing communication skills, and developing planning language) is critical for these material contributions to occur.

b. **Interactions with youth and youth work drives and supports community action to plan urban systems for residents of all ages:** As in the *Joyful and Safe Spaces: Place* section, indirect effects may also occur through the influence of the "Mobilize the Community: Participants" framework section, where interaction with youth and their work allows adults to better understand and better support policies to consider the needs of young people.

IV. Community Components (Socio-ecological Context)

Included in the resilience framework are four "Community Components" to represent the socio-ecological systems that are not explicitly referenced, but heavily impact, the resilient student system and the resilient communities for youth system. Including these components is important to express that Y-PLAN does not act within a vacuum, far from it, and the program's intended outcomes may be helped or hindered by the larger urban systems at play.

Fig. 14: Community Components-- Socio-ecological Context
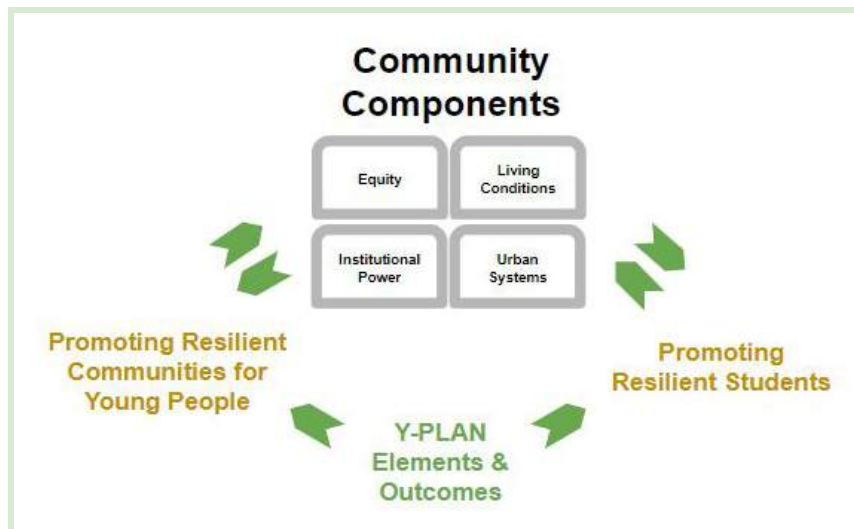
The systems included here are taken from public health frameworks (out of the RbD Briefing Book) that outline how urban systems impact individual health.[59] I felt these well expressed the major components of urban environments that have impact on student and communities for youth resilience. For example, issues with **Equity** means that students who are people of color are born into a society that increases their vulnerability to the experiences of discrimination,

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[59] "Briefing Book." Bay Area: Resilient By Design Challenge. 75.

which can diminish student resilience. **Institutional Power** has huge impact on whether and how policies are made that include youth voice. Do those in power value and respect young people, or do they tend to support policies that further marginalize and criminalize them? **Living Conditions** are the physical and social environs that individuals and groups of people live within. This may be different for groups based on their identity and geographical location, even if they live in the same political boundary. These conditions impact individuals' worldview, their net vulnerability, and their net stress. Social conditions impact the ease with which communities can be mobilized, and physical conditions bound how places may be designed moving forward. **Urban Systems** consist of economic, environmental, educational, infrastructural, etc. systems that perpetuate existing power structures, equality, and living conditions.

Fig. 15: Inspiration for the Community Components, from the Public Health Institute[60]
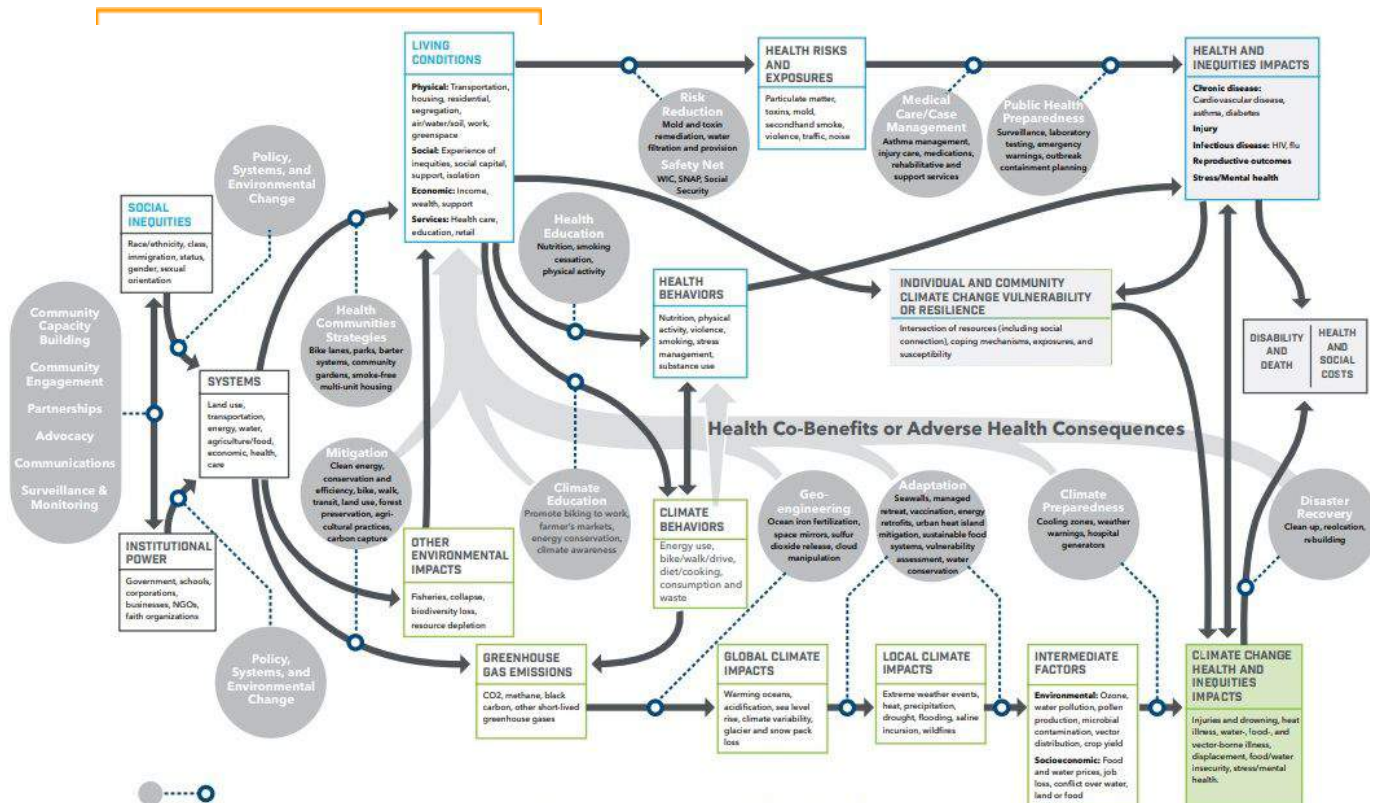
The development of this framework is informed by the socio-ecological resilience literature, and is shaped by the Y-PLAN program mission and outcomes. The Y-PLAN Foundational Elements and the theory for how Y-PLAN contributes to the framework were also informed by the observations and interviews I conducted from December 2017 through May 2018. The aim of this framework is to provide a hypothetical structure to show how Y-PLAN materially

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[60] "Briefing Book." Bay Area: Resilient By Design Challenge 75

contributes to student and community resilience that may be used to (a) evaluate how well Y-PLAN is contributing to resilience (are there areas where Y-PLAN hypothesizes impact, but for which evidence is scant?), (b) focus future strategies to target particular areas of resilience, and (c) evaluate how contextual factors may be contributing to the success or hinderance of Y-PLAN resilience objectives.

The following section analyzes four Y-PLAN school site case studies from the RbD Youth Challenge through this resilience framework. It seeks to build evidence for how Y-PLAN contributes to promoting both resilient students and resilient communities for young people. It also seeks to underline potential areas for improvement.

Fig. 16: "Flattened" Linear Framework
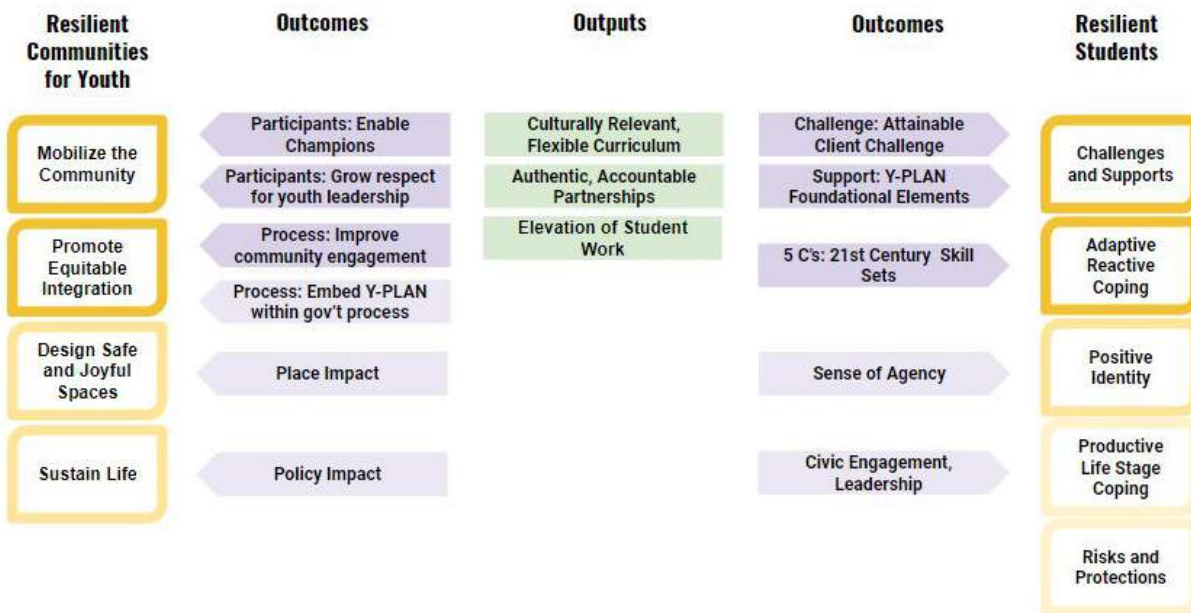
4. Exploring Y-PLAN Resilience Framework via Evidence from Kennedy, Skyline, EPAPA, and MXA School Case Studies

The Y-PLAN Resilient by Design Youth Challenge was an ambitious regional project that engaged more than 800 students at 12 schools in five cities across the Bay Area. Students in participating classrooms were paired with a RbD design partner (one of the RbD teams of planners, architects, and engineers), and/or a client partner (a local civic agency). Each classroom was given a research question related to resilience and pertaining to their community. While "resilience" was defined more in terms of sea level rise for the professionals engaged in the RbD Bay Area Challenge, for the Youth Challenge, "resilience" was defined more loosely to mean general community thriving in the face of adversity. The Youth Challenge opened in the fall semester as a pilot with Kennedy High School. The rest of the classrooms began their projects during the spring semester.

Fig. 17: Y-PLAN RbD Youth Challenge map of participating schools[61]

Data & Methodology

Four schools were selected to be used as case studies for analyzing Y-PLAN's contribution to resilience. These schools were selected by the Y-PLAN executive director, Deborah McKoy. **Kennedy High School**, in City of Richmond, was selected as it was a completed project, and therefore had the most data available. **Skyline High School** was selected to represent Oakland,

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[61] Designed by author

as it has a long history with Y-PLAN and had three classrooms engaged in the RbD Youth Challenge, including representation from Oakland Unified School District's African American Male Achievement program (OUSD AAMA). **East Palo Alto Phoenix Academy** was selected to represent East Palo Alto, as well as to represent a new school partnership (RbD was its first Y-PLAN project). **Malcolm X Academy Elementary School** was selected to represent the City of San Francisco, and also to represent work with elementary school participants.

Data is already collected by Y-PLAN, so I utilized these artifacts and supplemented them with interviews, focus groups, and observations. Each school and stakeholder group had a different set of data, represented in the following tables:

Table 1: Data for stakeholder type

Stakeholders	Interviews	Observations	Field Notes	Posters	Poems	Survey
Teachers	x	x				
Clients	x	x				
Mentors	x	x	x	x		
Staff		x	x			
Students	x	x		x	x	x

Table 2: Data for each school

Schools	Interviews	Observations	Field Notes	Posters	Poems	Survey
MXA	x	x		x		
Skyline	x	x	x	x		
EPAPA	x	x	x	x		
Richmond	x	x	x	x	x	X

Table 2: Data Type

Interviews:	One on one with adults (I), focus group with students (IF)
Observations:	Notes from in class , in meetings, in events (including the summit) (O)
Field Notes:	From mentors and staff from in classroom experience (F)
Posters:	From student projects (PS), mentor experience (PM), and poster feedback (PF)
Poems:	Where I'm From poems by students (Po)
Survey:	Pre-Post survey for students (S)

I conducted eight semi-structured in depth interviews with clients, teachers, and mentors (Table 3).[62] I also conducted one focus group with students in one of Dr. Moore's classes.[63] This focus

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[62] Link to Interview Guide
[63] Link to Fishbowl Discussion Guide

group was conducted in a "fishbowl" style, where students were divided into two groups, with one group in a circle in the middle discussing the interview questions, and the group in the outside circle writing notes on the answers. The two groups switched half way through the question sheet, with each group getting 15 minutes to discuss. The interviews were recorded and transcribed, the focus group's handwritten notes were collected.

Table 3: Interview Stakeholders

Interviews:	Teacher 1	Teacher 2	Client	Mentor	Student
MXA	Chris Moore		Diana Sokolove		
Skyline	Conor Carol	Meghan Johnston	AyAnna Moody		
EPAPA	Hannah				
Richmond	La Rue Moore			Vanessa Vasquez	Student Focus Group

The interviews and focus group answers were put into a master spreadsheet with descriptive information, then excerpts were coded according to their relevance to the framework sections (Figure 17). I applied this same coding treatment to available mentor and staff field notes copied from Y-PLAN's Air Table, as well as to the presentation feedback slips collected from Kennedy High School's presentation day. Available poster images from Y-PLAN, Dr. Moore, and my own camera were uploaded and entered into the master spreadsheet as summary descriptions. Finally, notes and recordings from Y-PLAN events were transcribed and entered. In total, I entered 340 rows of evidence: 120 for Kennedy, 140 for Skyline, 39 for EPAPA, and 41 for MXA.

Fig. 17: Coding spreadsheet image[64]

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[64] Link to spreadsheet

Quote/Summary	Note	Comments	Stakeholder	Media	School	Classroom	3 Elements			Student Res.		Res. Comm. for Youth		Community Components	
Immediate lives: gangs, drugs, violence resonate more immediately than SLR. Within this school, dont feel gang presence, but within EPA does exist. With recent gun violence discussion, this is hitting home for students and becoming more concerned with.	Q18		Teacher	I	EPAPA									X	X
Santi told us about how he uses the trail. He runs on it almost every day. It goes "really far", crosses a bridge, etc. He explained that the wetlands we saw between us and the bay were sometimes underwater. "So they're tidal." His teacher stated. "Yeah, they're tidal," Santi answered. "And there's a lot of life there, birds, squirrels, I watch them as I run." He described the tall white birds, and big black flying ones, that we jointly identified as egrets and hawks. "At the trail, Veronica brought back the activity from the workshop. She asked if they'd want development along the tidal flats. Jacob said he'd like a better soccer field, and Santi objected vehemently. "What you got against a soccer field?" Jacob pressed. "Bro, so much already lives there. We can't steal that. They were there first." Was the response. "	3/1 Mandy		Staff	F	EPAPA	-	X					X			X
I think one thing we do here at EPA that's awesome is that were pretty politically active and we don't shy away from these conversations with our students. When trump was elected we had a march, our students participated in the national school walk out. As young people here, they are literate english speaking students, and they want their voices heard. I think that this communities are changing so quickly because their families and parents haven't had the education and opportunities that their students now have. So I'm hoping they're able to make sure their voices are now heard, and they are actually able to stand up to their community in a way that hasn't been done before.	Q12	Belonging, Identity	Teacher	I	EPAPA			X		X					X
Critical thinking. I noticed that the students draw heavily on their own experiences for their proposals. Two of the groups had designed apartment layouts with different bedroom counts, and had calculated the cost for each type based on the data they had about EPA incomes. They had thought through the arrangement of each housing unit and each building based on what they had observed about			Staff	F	EPAPA		X		X		X				X

In addition to this coding work, I utilized the Dedoose qualitative software to code and analyze 14 student written poems from Kennedy High School. These poems were coded, and themes were analyzed. I also conducted a mixed method analysis of Pre-Post surveys from the Kennedy High School classrooms. I cleaned the data in excel, and created two dashboards to analyze the qualitative and quantitative data. For the qualitative data, I conducted a similar coding exercise. I then used these codes to analyze increases or decreases in use over time. For the qualitative data, I converted the descriptive likert scale to numbers and ran a paired t-test to analyze statistically significant variance from the Pre surveys (See Appendix Exhibit D).

The data collection and analysis is kind of "forensic" in nature. The data was largely not collected for the purpose of this research, but was gathered after the fact as available. Much of the data is incomplete and widely variable in quality and content, underlining the explorative nature of this study.

Because Kennedy High School had already completed their Y-PLAN project before the start of this study, it was chosen to be used as a case study, with an expansive exploration of the resilience framework. The other three sites, Malcolm X, EPAPA, and Skyline, are to be treated as "profiles" with a more scaled down, outlined analysis.

I. Kennedy High School: Case Study

A. School and Classroom Description

Kennedy High School is located in Richmond, CA in the West Contra Costa Unified school district. The school is set within a residential neighborhood, with small bungalow style single family homes. The El Cerrito BART station, set next to a shopping development discount stores like a Sketchers Outlet and a Dollar Tree, is about a 15 minute walk away; the 80 highway slices between the school and the station. The school itself feels like a large gated fortress, stone and concrete with red trim and no windows. The interior has breezeways and a courtyard.

Where the exterior of Kennedy High may be intimidating, Dr. Moore's classroom, by contrast, feels like a creative mad laboratory, filled with fascinating technical gadgets like a 3D printer, soldering irons, and virtual reality headsets. It also serves as a kind of refuge and hang out-- when I arrived for an interview with Dr. Moore after school, he had board and video games set up with a spread of snacks and sandwich making materials for students who want to stay after school. It is here in this warm environment of controlled chaos where Y-PLAN conducted its RbD Youth Challenge pilot.

Dr. Moore is the lead teacher for the Information Technology Academy, a collective of students at Kennedy who focus their schoolwork on the information technology field, and have opportunities to network with tech professionals. Dr. Moore is a tall, African American man with a stern, but caring grandfatherly attitude. He opens each class with a mantra, where students repeat every line after him, "I am good at what I do. *I am good at what I do.* I learn something everyday. *I learn something everyday.* I am a professional. *I am a professional.*"

B. Y-PLAN Project Description and Summary

Y-PLAN has a long history with Kennedy High, both collaborating on nine projects since 2006. Dr. Moore's classrooms participated in three of those projects. For the RbD Youth Challenge, Dr. Moore's three classes acted as consultants for their client, the HOME Team, a RbD design team based in Richmond. Their task was to come up with proposals for improving the resilience of the Pt. Molate site utilizing technology.

Project details:
1. *Project Question:* How can technology be used to make Richmond a more resilient city?
2. *Project Study Site:* Point Molate, a vacant beachfront property owned by City of Richmond, just north of the Richmond bridge, and surrounded by Chevron property. The

property once was the site for a Naval Fuel Depot and winery, and still retains many of these abandoned buildings.

3. *Client:* Resilient by Design organization, and The HOME Team (RbD Design Team for Richmond)
4. *Duration:* September - December 2017

Y-PLAN and Dr. Moore decided to structure the challenge so that students had the option of joining one of five teams focused on building their proposal around a particular tool or task: (1) utilizing a website, (2) utilizing social media, (3) implementing a survey, (4) development of design proposals, and (5) tracking sea level rise with sensors.

In the *Start Up* phase (module 1), the students were introduced to their client, with a representative from RbD come in to talk about the challenge. The students also had a visit from Washington State University's Adaptive Water Urbanism Initiative, which introduced the students to ideas for sea level rise adaptation. Finally, students crafted "Where I'm From" poems, as a way of self reflecting and situating themselves within their communities. In the next stage, *Making Sense of the City* (module 2), students conducted a survey to collect information on their community's understanding of sea level rise, and to assess how their community would want to utilize a space like Pt. Molate. They also received a visit from the Communities for Better Environments organization to talk about environmental justice impacts on Richmond residents. The main event, however, was a field trip to Pt. Molate and to the HOME team offices in San Francisco, to better understand their project site and client.

For the third and fourth modules, *Into Action* and *Going Public,* the students collected their survey data, conducted research, and brainstormed proposal ideas. These were then turned into posters and models, and were presented at the school library to more than fifty professional stakeholders from across the region. Finally, in *Looking Forward and Going Back* (module 5)*,* students reflected on their experience and practiced incorporating this experience into their college essays.

While this project's client was less involved than most Y-PLAN clients are, the HOME team did act on the student's proposals by adding two youth seats to the Richmond community outreach council for their team. Many students also had further opportunities to engage with the project, through presentation opportunities at the RbD Youth Challenge Kick Off event, at the Youth for Environment and Sustainability annual conference, and at the Y-PLAN Regional Summit.

In the following analysis, data from Kennedy High's RbD project will be analyzed within the Y-PLAN resilience framework, in order to exhibit material evidence of Y-PLAN's resilience contributions, as well as to show what further opportunities there are to improve.

C. Resilience Framework: Socio-ecological Context, Community Components

In my interview with Dr. Moore, he repeatedly discussed the individuality of his students, and how every lesson and interaction will not reach every student every time. He impresses on the importance of understanding that students are unique in their experience, and as such they need for programs like Y-PLAN to understand these individualities and meet them where they are in those experiences and perspectives. Dr. Moore explains, "Some students feel totally empowered. Some students have life circumstances where it's hard for them to even get to school. We have to make them empowered to solve their circumstance."

In the Y-PLAN resilience framework outlined in this report, the importance of understanding students' heterogeneity in experience and socio-ecological context is underlined in the provision of the Community Components section. The PVEST resilience framework may also be used to visualize how these contextual components interact with student behavior and identity.

I utilized data from 15 of the students' "Where I'm From" poems, which they are asked to complete in Module 1, to develop a preliminary PVEST outline that shows the risks, supports, challenges, behaviors, and identities the students explore in these personal narratives (Figure 18). The poems reveal that these students deal with very heavy issues, despite their youth. Many students talked about immigration, and about homes, families, countries left behind. Others talk about inescapable violence, with the futility of family members' calls to 'be safe.' The following poem succinctly describes this state, and puts the word *home* in quotations, as if to put the term and what it implies- warmth, happiness, safety, belonging- into question.

> *I am from Richmond,*
> *A place with nothing but memories,*
> *A place where you had to be safe every minute,*
> *A place where all I heard was "be safe" every day,*
> *A place where I would sleep beyond the sound of sirens,*
> *A place where the sound of gunshots became music to my ear,*
> *A place where all you hear is people yelling out "R.I.P."*
> *A place where everyone looks down on you,*
> *A very tiny city in the state of California,*
> *A place where I call "Home".*

Many students also talk about the role that blackness has to play in their lives. One student writes, "As I walk on this earth the skin color that I have is one of the hated skin color. Just cause I am black does not mean I am dangerous. Just cause I am black does not mean I am a gang member. Just cause I am black does not mean I carry a gun with me. I learned that God doesn't make mistakes. People call me a mistake. But I call it diversity. I want to Free our dreams." He

begins with a callout of the negative stereotypes that are put on him because of his blackness, and he moves into a place of self acceptance and love (potentially as a result of the support of spiritual social bonds), and ends in a place of action, a will to act to enable freedom. As this poem demonstrates, while some students' poems indicate a feeling of futility or disengagement, many of the students show passion, a willingness to engage with challenges, and a hope for a better future.

Culture and family ties are also clear themes. They seem to show positive impacts on students' live, providing belonging, positive identity, and joy:

> *I am from the kitchen where my mom makes Pupusas, I am from the living room where my*
> *family sits down and talks about the past, I am from the cultural music me and my family dance to at*
> *parties, I am from the airplane going to my hometown Honduras, I am from John F Kennedy where I have*
> *gotten my education from, I am from the trust of my mom that will always make her my best friend.*

Poems also utilize these themes in a way that often indicates a sense of sadness for something lost, especially when referencing immigration:

> *I am from frijoles fritos and chile de arbol asado*
> *From the loud ambulance sirens and uncontrolled kids*
> *I am from Richmond, Ca but originated in Michoacán, Mex.*
> *From a place where there's not a lot of opportunities but everything good is appreciated,*
> *To a place where nobody cares about one else and are ungrateful.*

Other times, students with immigrant stories discuss what they've had to overcome. These talk about government corruption, violence, and poverty. One talks about "success in the end," navigating a new life and learning a new language.

These poems illuminate the diversity of student experiences. Some students write describing resilient, positive behavior, and others write about the experience of exhaustion and discontented acceptance. The poems provide important context to the experiences of students. The incorporation of this assignment not only may help to provide cultural relevance to the projects (discussed in a Culturally Relevant Curriculum section), but they also provide Y-PLAN with a way to better understand the dynamics that interplay in these students' lives. Understanding the challenges, identities, and behaviors of students helps Y-PLAN cater flexible curriculum content (like field trips and lecture topics) to better match to students' interests and lived experiences. Understanding student diversity will also help Y-PLAN staff recognize more tangibly the fact that the program will have differential impacts to different students, with some ready to fully engage in tackling urban challenges, while others' actions to simply be in class, listen, and go to events/field trips is a huge accomplishment. The following PVEST chart outlines the themes

found in Dr. Moore's students' poems, connecting them to their appropriate categories of vulnerability, stress, short term behavior, identity, and long term outcomes.

Fig. 18: Utilizing the PVEST framework to analyze "Where I'm From" poems
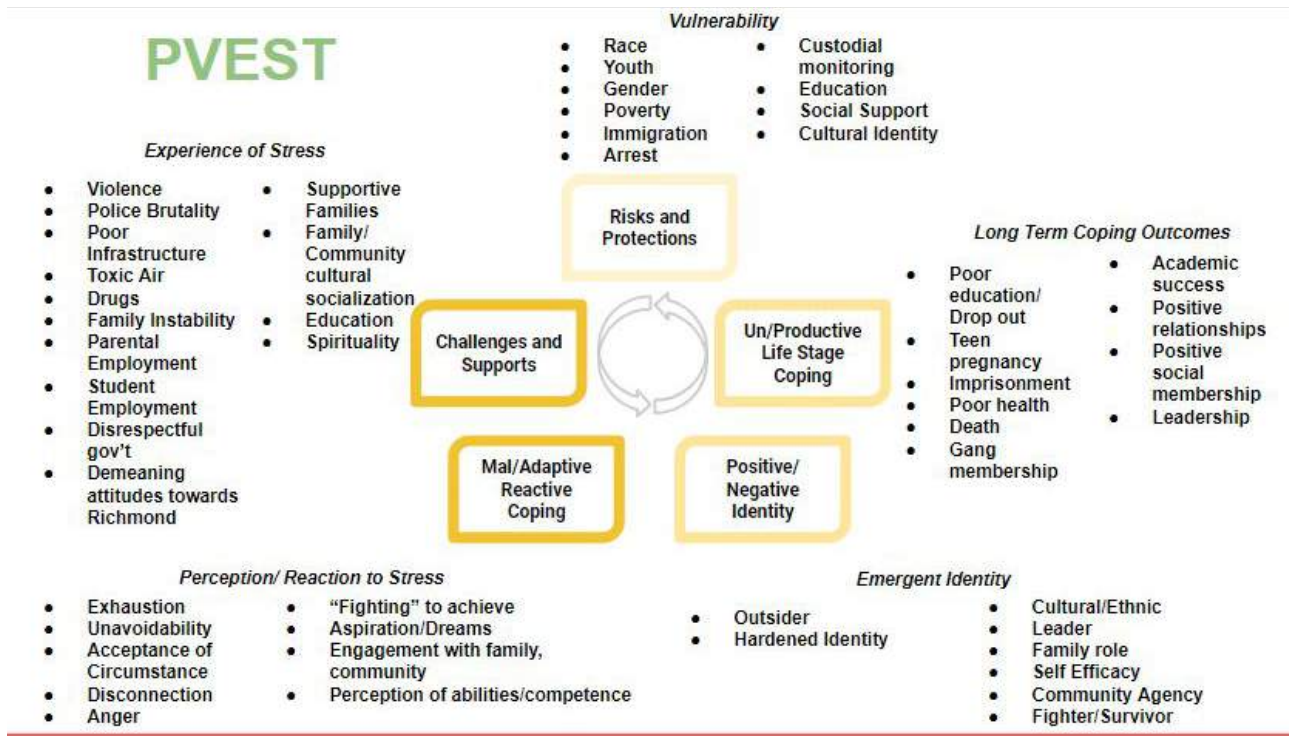
The themes in the poems, along with data from interviews and field notes, also can be categorized more simply in the Community Components framework, which provides insight into students' living conditions, equity issues they experience, within which urban systems, and under which institutions. PVEST captures these themes related to individual behavior, Community Components ties these themes back to the broader community system.

Within the focus group, students alluded to their living conditions when they talked about whether they wanted to stay or leave their community. Those who wanted to stay mentioned their social ties to family, friends, and school. One student mentioned that "most people don't want to stay in Richmond" and another said she would want to stay, but would want to live in "the parts that aren't ghetto." One student identified himself as more accustomed to the "hardness" of Richmond, stating that other communities are "too soft." Dr. Moore succinctly summarized the visceral feeling of these comments when he describes Richmond in his interview: "We live in the shadow of Standard Oil and some of the best universities in the country, and we are some of the poorest highest crime areas that exist. This is the ghetto. And we are trying to survive."

Within their home lives, Dr. Moore explains that many students are raised by extended family, experience homelessness, and fear deportation of family members. He also talks about how rife violence is, and how it impacts the school, with eight students killed this past year. Dr. Moore also discusses the connection of this violence to the lack of opportunities within the urban economic system of Richmond: "Richmond doesn't offer them much. Jobs, careers...It's not here in Richmond...We have people who are protecting their block. They don't know nothing in their block but they're shooting each other down because they walked on that block...That's the mentality. If they don't feel empowered to have something, they empower themselves over a block."

The following chart (Figure 19) outlines the major themes uncovered in the data collected during the RbD Youth Challenge at Kennedy High School. These components form the ecological environment in which Y-PLAN operates. They provide insight into what topics might be culturally relevant for students, and they also provide insight into the forces that may enhance (such as social supports from local organizations) or dampen (such as adultism, or resistance to accepting student work as valid) Y-PLAN's impact on student and community resilience outcomes.

Fig. 19: Community Components framework for Kennedy High School students

- ADA accessibility
- Transportation accessibility
- Environmental justice
- Gentrification
- Adultism

Community Components

Equity | Living Conditions

Institutional Power | Urban Systems

- ICE
- Chevron
- Elite nearby universities (Berkeley, Stanford)

- **Positive**: culture, social bonds
- **Negative**: air quality, lack of transportation accessibility, violence, gangs, drugs, homelessness, unsafe infrastructure, gentrification, few jobs
- **Home and social life**: Raised by extended family, foster care, deportation, homeless, friends die in violence.

- Economic/Employment
- Environmental
- Safety/Justice
- Transportation

D. Resilience Framework: Y-PLAN Foundational Elements

Where the Community Components represent broader socio-ecological forces that interact with student and community resilience outcomes, Y-PLAN Foundational Elements (Figure 20) represent the core competencies of Y-PLAN that enable its own specific programmatic impact on resilience outcomes. These elements are Authentic Accountable Partnerships, Culturally Relevant Curriculum, and Elevation of Student Work. Together, these elements enable the buy in

necessary to increase exposure to the Y-PLAN program, they allow stakeholders to feel that the program respects and is relevant to their experience, and they promote the experiences, values, and work of young people to civic leaders.

Y-PLAN's curriculum is a feat of coordination efforts, with partnerships constantly being developed between Y-PLAN staff, teachers, mentors, students, and clients. All of these stakeholders are critical pieces of the Y-PLAN program, and its success depends on (a) stakeholders believing in the integrity of these partnerships, and (b) the stakeholders being accountable to upholding their commitments to Y-PLAN and the students' work (encompassed in the **Authentic, Accountable Partnerships** element). As a result, many of the agencies and schools Y-PLAN works with have built trusting, long term relationships. Kennedy High School is one of these stakeholders, with classrooms hosting Y-PLAN projects since 2006.

Mentorship was an important part of making the project more credible to the students. During the RbD project, the students found Vanessa's constant, devoted presence to be important and inspiring to the development of their work. Vanessa's experience as an architecture student helped the students with their models, but in discussions during the student focus group, what seemed most important to students was the fact that Vanessa was sacrificing her time to be there every week. The students recognized this effort and felt inspired by it: "Times when I felt most motivated were with volunteers who come from colleges, specifically working with Vanessa. Seeing her donate her time and work with us was inspiring.".

The presence of professionals during the development of the work and during the presentations also developed student buy-in and generated interest. In the focus group, a student talked about how visiting the HOME Team during their field trip was really inspirational to him, as he had the opportunity to see the work and office of professional architects and designers. Another student added, "When we saw their ideas [working with outside mentors/professionals] we connected our ideas with theirs." The HOME Team seemed to want to further validate the youth in their relationship by adding two youth seats on their community advisory committee. However, because the meetings were not in a convenient location or time of day, students apparently had a hard time going. Making an effort on the part of the HOME Team to do more than simply invite young people, and take steps to ensure they can go would have been more powerful in strengthening their relationship and partnership with the young people.

The RbD organization acted as the client, but it seemed as though this partnership was weaker than those with Y-PLAN's more typical public civic clients. RbD wanted a relationship with Y-PLAN, but seemed to be unclear about how they wanted to use Y-PLAN, creating a more ambiguous experience, with teachers and mentors unclear about how RbD and design teams will

utilize their students' work. Speaking about her time mentoring the Kennedy classrooms, Vanessa explained:

> "HOME Team did not interact much with the classroom. I don't think the students understood that RbD was the program they were working for, or what it was doing. It would have been better if they were more involved...One student asked 'Are we actually going to do this, or are we just writing on paper.' I didn't know how to answer that because I didn't know how the implementation part goes... A lot of the students are told what to do, but don't have a bigger picture of what's going to happen and I think that's important to them...It's important to anyone. You're working towards a goal, but you don't know what the goal is, and what's the point?"

While in the end it seemed as though the project still promoted student voices and inspired quality student work and participation, this may have largely been through the added efforts of Y-PLAN to provide multiple opportunities for the students to speak and represent their school and work.

The Y-PLAN curriculum is the keystone of the program, and large part of its success is its **cultural relevance** to stakeholders. Ungar and Spencer discuss the importance of considering cultural relevance because without it, the most well intended program will not reach its audience, and will not be impactful. For Dr. Moore, the Y-PLAN program was perfectly relevant to the needs of a teacher for a curriculum to be organized and to fit within the constraints of school charter requirements. He explained that Y-PLAN prevented him from having to "rediscover the wheel" and included "a real world situation, and that's what our integrated projects needed."

Dr. Moore also explained how Y-PLAN considers cultural relevance for the students. He discusses how in the first module "those assignments are extremely important where you're asking 'who are you?,' 'what do you bring to this?,' 'how do you fit?' This amplifies the students' idea of themselves and that gives them something you can literally go into." It is in this module that the students write their "Where I'm From" poems, which allowed students to write in a way that is personal, colloquial, and indigenous to their culture. In her field notes, Vanessa describes an interaction where she tells a student working on his poem that his use of slang gives the poem a different personality. His response was that "I think it's necessary if I am going to to portray the community I live in."

In the second module, students are also asked to go directly into their community to gather evidence, which further amplifies the relevance of the program to their lives by providing students an opportunity to feel like they've contributed something to their community in a tangible manner. Vanessa explained in her interview that when the students created surveys, at first they weren't excited about the experience, but when they started seeing people responding to their survey, and when they began looking at the data, they were excited and felt like they

were making a difference, at least on their campus. She says "a little difference is a huge accomplishment."

In addition to allowing students to navigate their experiences in a way that is personal to them, Y-PLAN also provides relevance to students by allowing Y-PLAN to be an experience that highlights their individual accomplishments. In our interview, Dr. Moore explained that the Y-PLAN experience is something that students can put on their resumes and include in their college essays, and "you should see how they feel when they get their Y-PLAN certificate. Those certificates are something that's got their name on it. They did this." Having a sense of personal pride and ownership, in addition to feeling that the curriculum is relevant to the students' lives and culture, is important to ensure that the students don't participate just for the sake of points, but truly engage with the program and receive more long term benefits from the experience.

Fig. 20: Foundational Y-PLAN Elements for Y-PLAN RbD Project at Kennedy High School

- Vocab and Tools: Students developed a vocabulary to express ideas and improve communication
- Venues: Student posters and speeches at Kennedy High Library, RbD kick off events, YES student conference, and Y-PLAN summit
- Pathways to larger impact: Enabled HOME team to create youth seats in community advisory committee. Teacher and mentor felt more could have been done to connect Kennedy experiences to other classrooms.

- Mentorship with Vanessa is genuine, frequent, and regular
- Professionals, like CBE and the HOME team, come into the classroom, meet students in field trips, and treat their ideas with respect
- Y-PLAN staff caters the program to teacher's needs
- HOME Team created seats for youth on community advisory committee
- RbD was a particularly weak civic client.
- More work can be done on "what's next" with student projects

Elevation of Student Work

Authentic, Accountable Partnerships

Culturally Relevant, Flexible Curriculum

Foundational Y-PLAN Elements

- Relevance to teachers: organized, flexible, and complies with school charter
- Raises up individuality of students via certificates and the ability to use Y-PLAN in resumes and college essays
- Importance of first module in connecting students with community in engaging, creative way.
- Relevance of topics to young people: impact to their communities, bringing in speakers to speak to their lived experience (CBE)
- Objectives sometimes unclear to students (and mentor)
- Students aren't involved in picking the project, so it may not seem as relevant

Elevation of student work is Y-PLAN's the most important activity. Within the classroom, Y-PLAN's partners and curriculum work together to elevate the quality of student work by providing students with a professional planning language alongside a tool-kit for community outreach, data analysis, and plan crafting. The provision of a language is particularly powerful in enabling students to analyze their environments as planning professionals would. Vanessa observed in her interview and field notes that "Once [the students] were in Pt. Molate, they

immediately remembered terms we talked about." In class, the students didn't seem to understand or care, but "once they're there, they totally understand...It was inspiring to see them being able to communicate with professionals...about what they see or notice. It's not that we change their lens, but they're able to use the lenses they have and see a perspective we might not see." Student posters showed these elements, and explicitly discussed terminology such as accessibility, connectivity, environmental justice, the creation of vibrant space, and citizen engagement.

Y-PLAN also provides the opportunity and venue for students to present their ideas to community civic leaders within a professional environment. Within the classroom, Y-PLAN offers many opportunities to engage with college students, and invites in guest speakers to speak to the class about their work, as well as to provide productive criticism. The field trip is another area where students interface with professionals. These opportunities allow students to practice engaging professionals leading up to their poster presentations, which occurred in Kennedy High's library. The event brought in civic leaders from all over the region, including City of Richmond and RbD. The atmosphere was exciting, with excellent speakers discussing the importance of student work. One student prepared a beautiful, impressive speech about the role of resilience in his life, and another recited one of the particularly powerful "Where I'm From" poems. These venues bring gravity and credibility to the students' work. It impresses adults to pay attention, and it increases students' feelings of pride, that they have an important voice, and that people will listen.

Finally, these civic-school partnerships provide pathways to larger impact. Here, Y-PLAN often will not have a direct role, but in providing an experience where civic organizations are able to experience the quality and value of student work, Y-PLAN leaves the door open and encourages civic organizations to take steps to take the students' work further through internships, memorialization, or implementation. The RbD project at Kennedy saw an example of this through the HOME Team's creation of youth seats in their community advisory committee. Though in most other cases, this tangible outcome is one of the most powerful components of the Y-PLAN experience, in this case because The HOME team did not act further to ensure students would be able to attend, so the impact was muted.

E. Resilience Framework: Student Resilience

The framework for student resilience once again utilizes PVEST, and especially concentrates on three sections: (1) stress experience, (2) perception and reaction to stress, and (3) emergent identity. In these sections, Y-PLAN has the most direct impact, and is able to measure outcomes.

Stress Experience is the culmination of supports and challenges that students experience. Each student comes in with a unique set of pre-existing supports and challenges influenced by their social ecologies (represented in Community Components). The Y-PLAN project aims to provide a challenge that is difficult, but very much attainable through its curriculum and partnership supports. In the RbD project, the challenge was to develop proposals for the research question, "How can technology be used to make Richmond a more resilient city?" and specifically for the Pt. Molate site. The project was particularly challenging because the students were expected to conduct site visits, conduct data collection and analysis, research proposals, and create models and posters within a very limited time frame. However, the students were given many supports, through partnerships, curriculum, and venues to showcase their work, which were largely described through the Foundational Y-PLAN Elements section. In providing these elements, the most important support Y-PLAN provides is simply the *opportunity* for students to engage in real world issues alongside professionals, a situation that is hard to find in most classrooms. Dr. Moore described this with a banquet metaphor:

> Y PLAN offers the opportunity. As long as they've had the opportunity, then they can even reflect back and say "oh, I should have done more," or "I did the best I could"...We have some students who went through Y-PLAN and who are all into going to city hall, but they were going to do that anyway...we have some students who are really shy and standing up and presenting, and people were applauding. We have a special-ed girl, her case manager came up to me and said 'did she really talk? Because we didn't think she would talk'--she presented with the rest of them!...Y-PLAN allows a person to go beyond themselves. Put the banquet in front of everyone and everyone tries. Some nibble, some eat, some taste, but they all have it.

Dr. Moore emphasizes that for each student, the outcome might look different, but what is underlying their differences is the fact that they all had the opportunity to "taste" this experience, allowing all students the opportunity to at least interact with these concepts and become familiar with them, and at most to embrace the leadership opportunities and continue to be involved in community projects and development.

Within the **perception and reaction to stress** section is where Y-PLAN supports students to recognize a challenge, explore it, understand it, research it, and act to find solutions. Y-PLAN aims to prevent students from feeling helpless when faced with community challenges by (a) helping students to develop a toolkit of skills to face these challenges, and (b) providing students with a low stakes opportunity to practice these skills. The primary skills developed are outlined in Y-PLAN's student outcomes, also known as the 5 C's-- Collaboration, Critical Thinking, Creation and Innovation, Communication, and Community Contribution.

1. **Collaboration:** Students worked together in groups on project "teams" focusing on different components of the research question. The students also collaborated effectively

with mentors and professional visitors. One student said he felt most motivated when he was working with volunteers. During student presentations, students worked as a team to present information. This was evident in the adult's poster feedback responses, where 'Group Collaboration' was the third most cited skill adults identified in student presentations (Appendix B). The students also showed collaboration in their ability to link their work with other team's proposals. For example, during the Y-PLAN summit, two students represented Kennedy High and discussed their team's projects as integrated pieces: a bike path development, and a website outreach program.

2. **Critical Thinking:** Students were regularly pushed in class to develop observation skills, to create surveys, to analyze the survey data, and to research the costs and benefits of different proposals. This was evident in the posters, where entire teams presented on the survey they created and the results they garnered. This was also evident in the way that students often contextualized their proposals within existing realities, such as transportation accessibility, gentrification, homelessness, and violence.

3. **Creation and Innovation:** Creativity was highly evident in student's proposals, as it was the 2nd most cited skill adults identified in student presentations (Appendix B). One project that really stood out was a proposal to build a floodable park and repurpose an existing building as a museum to showcase the work that young people in Richmond do. Another young person wanted to improve the dispersal of information about sea level rise with the development of a computer game. This creative thinking was only heightened by the addition of models created with the help of Shirl Buss, an architect and Y-PLAN staff member, and Vanessa, the students' mentor and UC Berkeley architecture student. Embracing the creativity through models is part of what made this project salient to the students. Vanessa describes that, "In the beginning, students were doing the project just for points. But when they started making models and working with each other...they began exploring possibilities. Tangibility helps: being able to see what they're thinking expanded their mind." In the pre-post survey that students conducted, a significant increase was found in students who felt they have "creative, unique ideas that could help improve the quality of life for people in our community" (change of .21 leichert points out of 4, $p < .05$; Exhibit D).

4. **Communication:** Communication is where students excelled, with group presentation being the most cited skill adults identified in their poster presentation feedback (Appendix B). This skill was shown at every presentation opportunity the Kennedy students took advantage of, and this was especially evident during the Y-PLAN Youth Challenge kick off. Kennedy students, having already completed their projects, created a fabulous powerpoint that they confidently presented to the many civic leaders in the

room. During introductions, the Kennedy students showed no fear and looked calm and professional, whereas the East Palo Alto students, who had not yet conducted their projects, were extremely shy, giggly, and immature. By the Y-PLAN summit presentation, the EPA students had gained tremendous confidence and matched the professional conduct that the Kennedy students emulated only months prior. An important part of this professional demeanor is the development of planning vocabulary. Vanessa expressed that the students picked up this terminology quickly: "Once the students learned the terminology they used it naturally, especially when presenting and talking to professionals. They gained confidence. That's the goal of Y-PLAN to give confidence to young people to think their voice matters. Some more than others, but that little bit matters." The generation of communication skills was the largest improvement seen in the pre-post survey, with a .32 leichert point increase at $p < .01$ for the statement "I am comfortable presenting my work in public and in front of others " (Exhibit D).

5. **Community Contribution:** Throughout the project, students were learning new ideas from their own communities and from the professional world. In the focus group, students talked about learning about environmental issues and how the experience opened their eyes to "see things differently." One stated that the experience "opened my eyes towards global warming. Fifty years from now can be ugly." They also talked about realizing how other people in their communities are "blind to environmental issues." In the RbD project, the students did well at integrating their ideas within urban systems. According to the adult presentation feedback, their presentations discussed incorporating the local community (businesses, employment, youth museum) and students showed ability to link systems and build on other teams' work (Exhibit B).

Within the PVEST student resilience framework, developing the above behaviors can lead to positive **emergent identities**, where these behaviors become almost automatic as they are a part of the way a young person sees herself. In this vein, Y-PLAN seeks to encourage the development of a student's **sense of agency**. Evidence was gathered to determine how Kennedy students came to develop this identity through the three components of agency: self acceptance and confidence, social and political understanding, and the ability to play an active, effective role in community decision making.

1. **Self acceptance and confidence:** Dr. Moore provided a story of a special needs student who would barely speak, but then surprised her social worker with her presentation skills at the end of Y-PLAN. This increase in confidence is well documented, and is evident in the above discussion of improved confidence in public speaking skills. This was also reflected in the focus group, with a student

expressing that he felt "very confident" in his presentation, and many others talking about how they felt empowered through the presentation process.
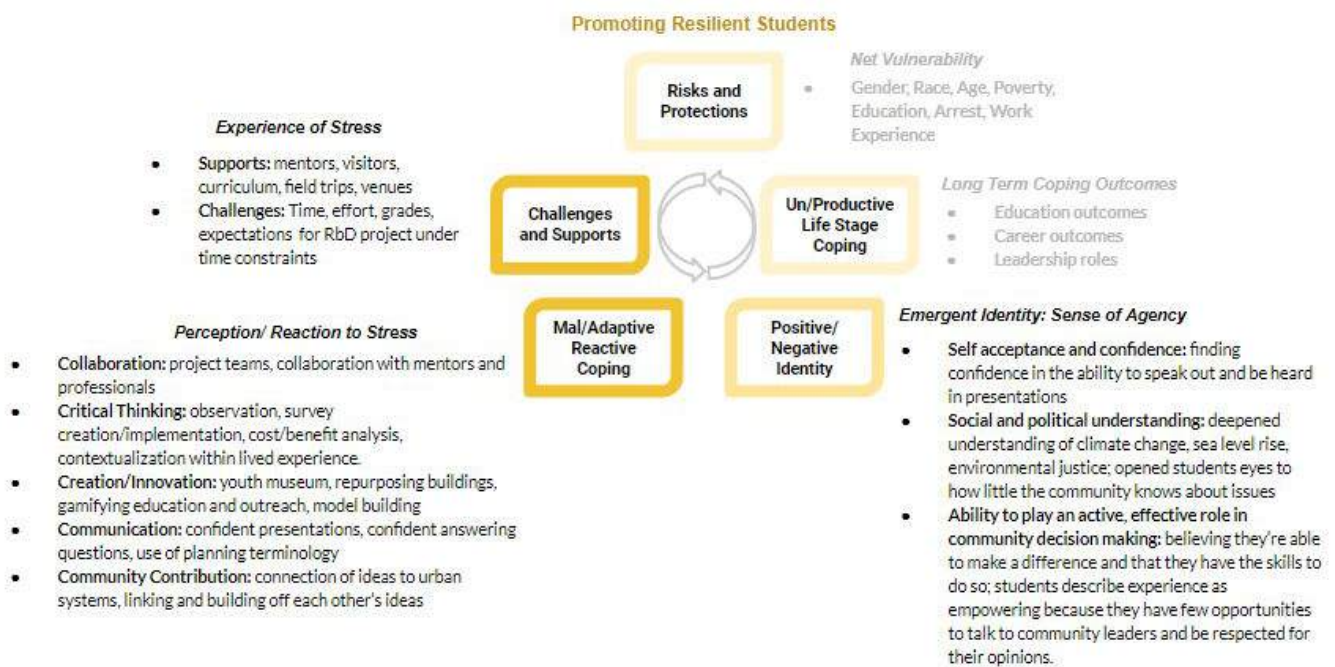
2. **Social and political understanding:** As discussed in the community contribution section above, students volunteered that they learned a lot about the environment and their local challenges (like with environmental justice) through this project. This was evident in their posters and speeches, where they often alluded to Chevron's impact on air quality, and discuss the history of Pt. Molate. The students also learned planning terminology, which Vanessa explained as critical for civic engagement: "students [should be able to] have information where you learn so much terminology and are able to engage... I don't see a lot of people going to city meetings about a problem they don't even seem to understand."

3. **The ability to play an active, effective role in community decision making:** Being able to play an effective role in the community is two fold: believing you're able to take on this role, and structurally being able to take on a role. The students clearly have made gains in their beliefs that they are able to take on a role, with the pre-post survey showing that students exhibited statistically significant gains in three related statements: "People like me can make a difference in my community" ($p < .09$), "I have the skills and knowledge to make a difference in my community" ($p < .01$), and "I know how to get involved in solving challenges in my school and neighborhood" ($p < .05$). In the focus group, students said the Y-PLAN experience impacted their ability or drive to make change in their community because they were able to speak and able participate in environments where they could listen to community members. Multiple students affirmed that they believed students can make a change, with one student explaining that the experience was "empowering because we don't always get that opportunity. It was great getting to talk to people." Another student stated that "people listened to the kids and were very interested. We made a big impact and it was very empowering." Dr. Moore talked about students taking on leadership roles and representing Kennedy High and Y-PLAN at other events where Dr. Moore wasn't even present: "Having the kids invited back to present again...last time I wasn't even there...They were like 'yeah it was really good and we get to do it again later.'"

Y-PLAN's provided Kennedy students the supports they needed to develop the tools and confidence necessary to tackle community challenges. The curriculum and partnership supports were well received by the students, especially in the form of their college mentor, Vanessa. Though in the beginning of the project students may have just been going through the motions,

thanks to a hands-on, supportive, and well structured curriculum, by the end of the program many students were really excited about the opportunity to speak about their communities and present their ideas for civic leaders. Being able to recognize social issues, to develop the tools to analyze and address an issue, and to be given the political context for how to propose change has the potential to at least make students more aware and informed of community issues, and at best contributes to students' development of an identity of self efficacy and agency, and prepares students for college and career. The evidence collected here provides a more in depth sketch of whether these are developed, why, when, and how.

Fig. 21: Student Resilience for Y-PLAN RbD Project at Kennedy High School

Promoting Resilient Students

Experience of Stress
- Supports: mentors, visitors, curriculum, field trips, venues
- Challenges: Time, effort, grades, expectations for RbD project under time constraints

Risks and Protections

Net Vulnerability
Gender, Race, Age, Poverty, Education, Arrest, Work Experience

Challenges and Supports

Un/Productive Life Stage Coping

Long Term Coping Outcomes
- Education outcomes
- Career outcomes
- Leadership roles

Perception/ Reaction to Stress
- Collaboration: project teams, collaboration with mentors and professionals
- Critical Thinking: observation, survey creation/implementation, cost/benefit analysis, contextualization within lived experience
- Creation/Innovation: youth museum, repurposing buildings, gamifying education and outreach, model building
- Communication: confident presentations, confident answering questions, use of planning terminology
- Community Contribution: connection of ideas to urban systems, linking and building off each other's ideas

Mal/Adaptive Reactive Coping

Positive/ Negative Identity

Emergent Identity: Sense of Agency
- Self acceptance and confidence: finding confidence in the ability to speak out and be heard in presentations
- Social and political understanding: deepened understanding of climate change, sea level rise, environmental justice; opened students eyes to how little the community knows about issues
- Ability to play an active, effective role in community decision making: believing they're able to make a difference and that they have the skills to do so; students describe experience as empowering because they have few opportunities to talk to community leaders and be respected for their opinions.

F. *Resilience Framework: Resilient Communities for Young People*

In utilizing the 'resilient communities for young people framework,' this section aims to build a body of evidence to show how Y-PLAN contributes to structurally enable a society where youth voice is valued, where young people are regularly considered as a part of decision making processes, and where there exists explicitly pro-youth policies and urban design. This kind of community would allow young people to be less disenfranchised, to feel more belonging, and to be better taken care of-- promoting the resiliency of the community for the young people who live in it.

The following section first outlines how young people have defined and operationalized resilience, in order to illustrate the kinds of societies that young people are seeking. The next four bullet points provides evidence for how Y-PLAN contributes to community resilience for youth through its community outcomes, or four P's: Participants, Process, Place, and Policy. Unfortunately, I was unable to get an interview with any clients for this project, so this section will be relatively light compared to the previous one on student resilience. The RbD clients were less engaged compared to most Y-PLAN clients, so this highlights an opportunity in the future to better capture this evidence (perhaps through a survey) in a future project.

a. **How young people define and operationalize resilience in their projects:**
    i. *Definition*: In the pre-post survey, students were asked if there were changes in how they defined resilience since they started the RbD project. Indeed, the survey shows that there was a movement away from definitions describing resilience as being tough, strong, and staying the same in spite of adversity, and a movement towards definitions describing recovery (being flexible, allowing for setbacks) and community improvement (9% point and 7% point increase, respectively) (Exhibit F).

    ii. *Operationalize*: The students' posters illuminate how students operationalize resilience in the physical environment. Their projects emphasize **repurposing** existing buildings and developing homes, hotels, museums, cafes. They also focus on creating a **vibrant space** that includes educational elements about Richmond's history and sea level rise/climate change. **Public spaces** are also emphasized, and include elements that improve accessibility and social interaction, such as plazas, pedestrian walkways, bike paths. Even sea level rise adaptations go beyond technology to include **social elements**, for example a sea wall with a fishing platform and park. Additionally, students emphasize **equity**, and consistently discuss challenges with environmental justice. Equity also includes prioritizing the local community, with proposals emphasizing accessibility for those who don't own cars, vendors from local businesses, museum bringing in youth projects from Richmond. Finally, students in Dr. Moore's class injected a **young perspective** into their proposals, with proposals for celebrity influencers on social media, and the use of a computer game on a website.

b. **Mobilize the Community (Participants):** Many civic leaders came to the myriad of events that Y-PLAN put on during the Y-PLAN RbD Youth Challenge.

Y-PLAN's most direct impact on community resilience for young people is the ability to bring young people and these civic leaders together to show professionals how important and valuable youth voice is, and therefore contribute to a growth in respect for young people's values, ideas, and work. In this way, Y-PLAN hopes to also develop champions of young people and their work. One of these champions is Sequoia Erasmus, a staff member for the City of Richmond's mayor's office. Sequoia actually served as a mentor for students at Kennedy High, and is now a champion for Y-PLAN and student input at City of Richmond. She says in a speech at the Y-PLAN RbD Youth Summit: "I worked with the high schoolers at Kennedy High School and we got to go through it together...and I learned a lot, and it prepared me for my position to work with the city...I would say that having youth, your perspectives, and also the perspectives of the community members that you bring to the table...there are a lot of projects that happen where they do really lame community engagement..YPLAN takes the community engagement piece and turns it upside down, where we say 'look, actually we're coming to the table, city officials. we have this plans extraordinarily thought out, we polled our high school, plus the other three high schools in our area, and the youth say we want this, and now you have to listen to us because we are presenting you with something you cannot do without."

c. **Promote Equitable Integration (Process):** The second area where Y-PLAN excels is in acting as a conduit to improve community engagement process. The Y-PLAN curriculum creates extraordinarily well developed community feedback that is challenging to attain as a city planner, especially from a demographic that is generally overlooked. The RbD staff member at the Y-PLAN summit expressed the danger of not having this representation. She explains that while RbD has a diverse and large group of designers on their projects, "the people on those design teams don't look like you. They don't come from all the different types of backgrounds that you guys come from... and that's a problem. It's a problem for the solutions the design teams come up with, it's a problem for the leaders who are listening to those ideas. Because we don't have the range of ideas and energy and ways to talk about things that we could." This seems to move in a direction for discussing how RbD will incorporate the youth proposals, but she doesn't seem to linger there: "When people ask what comes out of this partnership, I think one of those things are the specific things that students come up with. But another thing, really a request I have of you guys, as you think about college and think about what kinds of work you want to do, think about how you can be standing here in 10 years or 20 years presenting to those leaders... how can you be the architects and engineers." The request for students to go on into leadership is
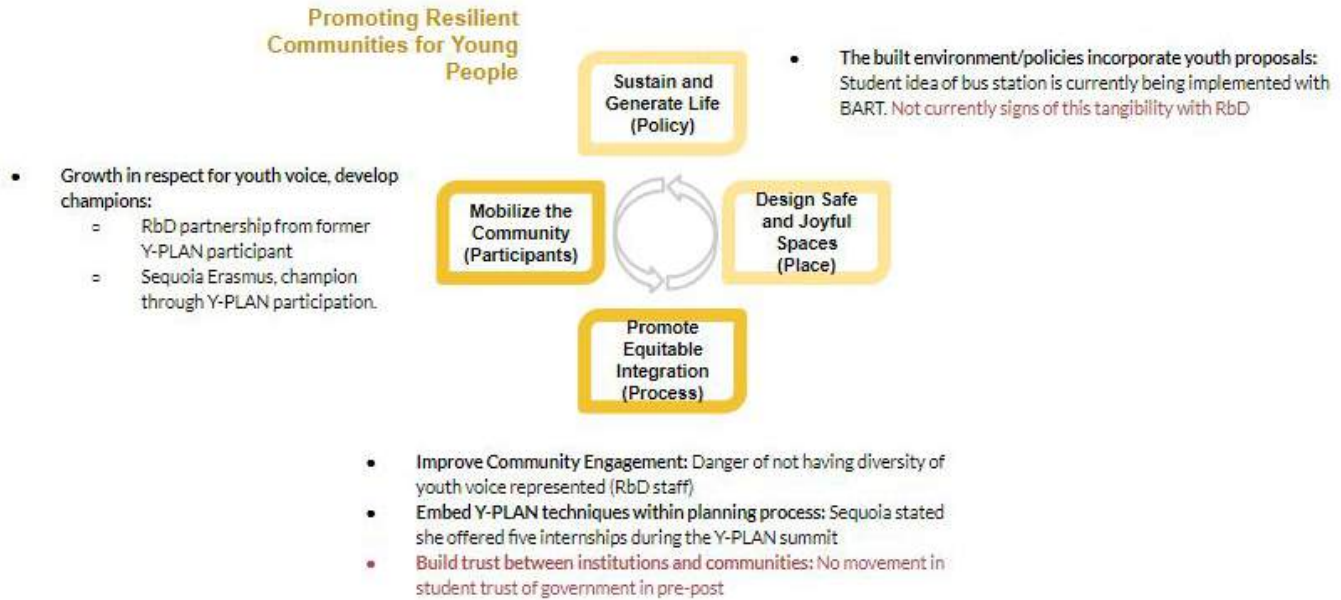
good, but she seems to slide over the power she has to really take the ideas that youth have *right now* and act on them. This could be an opportunity for Y-PLAN to really push more on civic partners to be accountable to young people and take concrete actions to incorporate and memorialize their work. Sequoia, however, does seem to take this call seriously. She announces in the same meeting that she offered four students internships with the Mayor's office that summer for students to become more involved in the city's decision making process.

A part of Y-PLAN's goals within the Process outcome is to build trust between communities and government. This is a huge challenge, and it is hard to say if Y-PLAN succeeds in this goal. In the Pre-Post survey, trust in government had the lowest score, and showed no movement after the completion of the RbD project. Though, one student in the focus group offered tentatively, "I think they are willing to support us."

d. **Design Safe and Joyful Spaces (Place), & Sustain and Generate Life (Policy):**
These two sections are discussed together because they each are not direct impacts of Y-PLAN, but occur when client partners take an extra step to memorialize and lift up student work. They are both essentially the final tangible outcomes of youth projects, whether that be a physical implementation of a project, or the memorialization of student work within government policy. These tangible outcomes tend to be extraordinarily powerful in the memory of stakeholders, and allow the creation of "success stories" that enable Y-PLAN to grow in size and reputation via word of mouth. Though RbD is not showing signs of moving its partnership with Y-PLAN to this level, Dr. Moore did offer a story of this happening in a previous year, when students' idea of a bus station with wifi chargers was accepted and is currently being implemented. Apart from direct impact on place and policy, Y-PLAN may put youth "on the radar," and enable more civic leaders to think about youth as important stakeholders, and be empathetic to their experience when making design and policy decisions. In this way, Y-PLAN may also have an impact on place and policy, though this is not outrightly evident in the Kennedy data.

Promoting Resilient Communities for Young People

- The built environment/policies incorporate youth proposals: Student idea of bus station is currently being implemented with BART. Not currently signs of this tangibility with RbD

Sustain and Generate Life (Policy)

- Growth in respect for youth voice, develop champions:
  - RbD partnership from former Y-PLAN participant
  - Sequoia Erasmus, champion through Y-PLAN participation.

Mobilize the Community (Participants)

Design Safe and Joyful Spaces (Place)

Promote Equitable Integration (Process)

- Improve Community Engagement: Danger of not having diversity of youth voice represented (RbD staff)
- Embed Y-PLAN techniques within planning process: Sequoia stated she offered five internships during the Y-PLAN summit
- Build trust between institutions and communities: No movement in student trust of government in pre-post

Y-PLAN's community outcomes has the potential to provide serious dividends to the resilience of communities for youth, but for now the evidence is not tracked to a degree where impact can be determined with certainty. It is clear that Y-PLAN is developing youth champions and bringing awareness to youth issues and work, but if that is having significant impact at magnitude needs to be determined and better measured. It may also indicate an opportunity for Y-PLAN to push its civic clients more in this regard, or to do more education for clients on the value of the youth work and voice. Having great inspiring events where professionals and youth come together is amazing, but professionals and youth may be coming to different conclusions, where youth are asking for action *now*, and professionals see themselves as being a part of developing *future* leaders, as the RbD representative implied.

II. Skyline High School: Profile

A. Project and Community Descriptions

Skyline High School is an airy, landscaped, and muraled campus in the foothills of Oakland. Students come from all over the city of Oakland, and each student belongs to one of Skyline's academies. Y-PLAN partnered with three classrooms in Skyline, a biology and physics classroom from the Green Academy (taught by Ms. Johnston and Mr. Carroll respectively), and one classroom that is part of the African American Male Achievement (AAMA) program of OUSD (taught by Mr. Muhammad).

AAMA civic client Ay'Anna Moody from Oakland Promise, with the Oakland Mayor's Office, on describing Oakland:

> If I would describe Oakland right now in one word, it'd be evolving. The Oakland I grew up in is different from the oakland that these young people are seeing. For example I used to go to West Oakland, I'd never seen a white person in West Oakland until now since I've been an adult. All these different things enable that to be so. Oakland is changing demographically, but also with the integration of technology, and how advanced we are with cell phones and all these other things, I think young people have access to different things in Oakland that they didn't have before. If you didn't have a ride...you just weren't going. Now you have all these ride share services, so it's just a different Oakland. It's definitely evolving, and who is it evolving or benefiting for and to whom, that's the harder question. It's really evolving for folks who have money, who can flourish and thrive here. For communities of color, they're not able to see the fruits of those labors, and have a digital divide.

Green Academy Project details:
1. *Project Question:* "How do we mitigate the effects of climate change in Oakland, while preserving and preparing current communities?"
2. *Project Study Site:* Bay Bridge Landing and San Leandro Bay
3. *Teacher:* Ms. Johnston
4. *Client:* ABC RbD Design Team, Unity Council, City of Oak Pub Works- Sustainable Oakland
5. *Duration:* January - May 2018

Physics Project details:
1. *Project Question:* "How can the City of Oakland help California reach its carbon footprint reduction goals through the use of renewable energy systems for transportation and urban planning strategies?"

2. *Project Study Site:* Bay Bridge Landing and San Leandro Bay
3. *Teacher:* Mr. Carroll
4. *Client:* ABC RbD Design Team, Unity Council, City of Oak Pub Works- Sustainable Oakland
5. *Duration:* January - May 2018

AAMA Project details:
1. *Project Question:* "How should College and Career supports, as an example Oakland Promise, design Futures Centers to foster a college-going culture bridging school and community that is inclusive to all students in the Oakland Unified School District?"
2. *Project Study Site:*
3. *Teacher:* Mr. Muhammad
4. *Client:* Oakland Mayor's Office: Oakland Promise
5. *Duration:* January - May 2018

B. Resilience Framework: Socio-ecological Context, Community Components

Living Conditions	**Oakland**: *Negative*: gentrification, bad reputation, racism, violence, lack of spaces for teens *Positive*: community pride, **"Already as teens, there's a lot of apathy. They'll say 'this has been happening my whole life, how's it going to stop? What can I do that will even have an impact?' Everyday it's whittling at that cynicism." -Mr. Carroll** **School**: *Negative:* bad food options, no wellness center, no place where students feel free to get help in health, life, and school, perception of inaction by administration, unequal distribution of resources *Positive:* Sense of community, kind teachers, helpful guidance counselers **"[a student] explained that year after year a new principal comes in and asks the student population what they need and want, but nothing the students present is every implemented." -Ramiro, Mentor (F 3/9)** **Home**: homelessness, food security, immigration status
Equity	- Income inequality, racism, gentrification, transportation inaccess **"Gentrification is a really big one, racism is a really big one, some of them environmental effects...Maslow's hierarchy of needs comes into play. If they're worried about getting shot at, they're probably no worrying about this." -Ms. Johnston**
Systems and Institutions	- Educational system, food system, economic system - School administration, Silicon Valley, local government and authorities

C. Resilience Framework: Y-PLAN Foundational Elements

Authentic, Accountable Partnerships	**Mentor:** - Mentor relationships are important to students, but the relationship takes time to build, especially when mentors are outsiders to the community **"I didn't have an idea until you [mentors] came." -quote from student in mentor field notes** **"One student asked how three mentors who are not from Oakland are able to help improve Oakland?" -Julia (F 2/1)** **Teacher:** - Ms. Johnston student taught with a teacher who was the previous Y-PLAN teacher, and she was expected to take it over. Y-PLAN is the 10th grade career focused project. It is a part of the culture and expectation of the school. - Mr. Carroll previously was a mentor with Y-PLAN in undergrad. He continued this partnership into his professional career as a teacher **Civic Client:** - When clients aren't folks in power (industry), or don't seem to be invested, this is "when it runs into trouble." **"It's nice to have industry partners, but it's less effective...I'm a little worried about this year...I'm really hoping there will be some people there [at the summit] who actually have power, so my students will feel like they're actually enacting something." -Mr. Carroll** - Y-PLAN is reaching out to clients to write letters to students highlighting three things they've learned from student projects. - Ay'Anna heard about Y-PLAN through the mayor, who was so impressed with Y-PLAN's project with BART last year. The Mayor's Office decided to incorporate Y-PLAN into its program development process. **"The Mayor's Office and Oakland Promise talked about how astounded they were with the presentations. The mayor was like 'We need to find a way to integrate this with the work we do and get student voice in this kind of research driven purpose way' and that's how we got plugged in." -Ay'Anna Moody**
Culturally Relevant Curriculum	**Relevance to Students** - Field trips are an opportunity to build credibility with students. The AAMA students took a field trip to Berkeley that was given by the African American Development Office, and spoke with the Black Student Union. This experience informed their research, and was featured on their poster boards. However, field trips can also be exhausting, with students feeling more tired and hungry than inspired. **"Throughout the field trip students were greeted by other black students walking around, and all made the same remark - 'it's good to see so many black faces on campus.'...At the end of the field trip, I asked one student, Marco, what he walked away from the experience with, and he said "I learned that I shouldn't be afraid to apply to a school like this".** - Engagement with flexible curriculum allows students to follow a research

	topic that speaks to them. However, the team nature of these projects sometimes means that some voices are louder and take over.
	
	● **Relevance to Teachers**
	  ○ Curriculum is organized and fulfills school requirements. It's also flexible and allows teachers to adapt it to their needs.
	
	● **Relevance to Civic Clients**
	  ○ Allows civic clients to accomplish goals
	    ■ **"When talking with young people, there are things Oakland Promise had been thinking about, and then the students talk about them, so its like 'check, we've got a young person saying this.'" -Ay'Anna Moody**

Elevation of Student Work	● **Provision of vocabulary and tools**
	  ○ Mentors saw a shift in how students use planning language to express their ideas and values. The development of this language enhanced the power of student work.
	    ■ **"First, allowing them to have their language period, and letting that be sufficient. But also letting them know, we meet people where they are...have to do that when you expect people to listen to you on different levels…Allowing yourself to explore that feeling, and boiling it down to say it to someone who doesn't have your experience." -Ashea, mentor for AAMA**
	
	● **Provision of venues to showcase student work**
	  ○ AAMA students have a number of presentations in front of lawmakers and industry professionals
	  ○ Youth Summit provided select students the opportunity to showcase their work.
	
	● **Provision of pathways to larger impact and tangible outcomes**
	  ○ Ay'Anna working creating summer internship opportunities for AAMA students
	  ○ Oakland Promise aims to fund student ideas
	    ■ **"We definitely want to use the student voices and get funding behind it, to figure out what's sustainable. We want to get to a point where we can say "hey, this is a great idea we can do this in two years." We want to be pragmatic and stick with some of these young folks. I'm hoping to bring some of them on for the Mayor's summer job and to help with the mayor's office... We want to put these ideas into practice." -Ay'Anna Moody**
	  ○ Sustainable Oakland is working on memorializing student work in the Climate Action Plan for Oakland.

D. Resilience Framework: Student Resilience

Supports and	● **Supports:** ○ Second year Y-PLAN students coaching younger students

Challenges	○ Adults providing encouragement and affirmation (AAMA) ■ **"Students have knowledge and just need support to harness and nurture that. To let them know that they're enough, and that they're loved and we support you. That's what we gotta get back to doing, showing love and compassion for young people." -Ay'Anna Moody** ○ Y-PLAN curriculum ● **Challenges:** ○ Research question, cynicism, administrative resistance, ambiguity about purpose of research in beginning of project
5 C's	● **Collaboration**: ○ Students collaborated especially in the creation/implementation of the survey, in ideation, and in presenting. ● **Critical Thinking:** ○ Students are challenged and stretched by the project ■ **In speaking with seniors, Ms. Johnston asked, "'What project do you remember the most?' 'Oh my gosh. YPLAN was the hardest, that was the worst, but when we got that done it felt so good!' when they say it's the worst, I assume they mean it's the best." -Ms. Johnston** ○ Students showed critical thinking in their development of survey questions that would inform the research question ○ Detailed reflections on field trip interviews with community members ○ Often this critical thinking isn't observed in class, but becomes apparent when students are presented the opportunity to present. ■ **Students were learning throughout the process, but "what and how much...wasn't apparent until their presentations." -"Y-PLAN at Skyline Green Academy" mentor poster (PM)** ● **Creation and Innovation** ○ Survey questions directed at youth showed cultural literacy and ingenuity. ■ **"The students were thinking outside the box, where one group thought of asking what shoes they prefer or wear, as this would yield to the average income of that student and their family as opposed to directly asking in the survey about their income level." -Sidney, mentor (F 3/2)** ● **Communication:** ○ Students make eye contact, speak clearly and with energy, and present clearly articulated ideas. ○ Student posters are effective at communicating ideas. ■ **"[A student who avoided communication in class] was very active and responsive...He would never answer my comments or questions in the classroom but during his presentation, he answered me all my questions and was very fluent in his presentation addressing terms like resilience, sea level rise, adaptability, and benefits." -Susan, mentor (F 4/25)** ● **Community Contribution:** ○ Projects seriously consider the people they impact and the systems in which

	they exist

Sense of Agency	● **Impacts**
	    ○ The culminating event gives students confidence in their ideas and provides them a sense of accomplishment. It also shows the students that many adults in power do care about their work.
	    ○ Mr. Carroll expresses that the projects that have the most impact are those with tangible outcomes- like internships, implementation, and integration of ideas. (Carroll Q16)
	    ○ Module 5 is an important step in asking students to reflect back and think about how to take their work further. (Carroll Q16)
	    ○ Some students really latch on to these projects.
	        ■ **"One of my students went to the opening ceremony for RbD last year. She got really really into it, she brought her poster, her model that she made, and she was up there and got interviewed. So she really latched on to it, and was talking about how impactful it was for her in terms of making her consider being an architect or a designer. So that's great." -Mr. Carroll**
	
	● **Challenges**
	    ○ Y-PLAN is only one program that students interact with for half the year. It doesn't provide the same repetitive action that may be required to have a deeper impact (like students who participate in afterschool programs). (Johnston Q16)
	    ○ Students often have challenging social ecologies that prevent the from participating, even when they want to.
	        ■ **Previously homeless students' reaction to gardening:"'I didn't know it was so easy to grow your own food! That's all we need? This is nothing!' and I know they have shown me pictures of food they've grown at home, and they've expressed interest in continuing with community gardening. So whenever I come across something I try to email it to them, but I think they have circumstances where it's hard for them to do after school activities, or transportation is a big problem because they rely on the bus...so they're not going to go to a farm in west oakland because they don't have time." -Ms. Johnston**
	    ○ Students don't trust government to respect them
	        ■ **Student response: "[Government leaders] don't think kids can do anything and don't respect kids." Deb agrees, asks if we can change that. Student responds that the recent March for our Lives and related protests showed "speeches on gun control [which] empowers me to show other people".**

E. Resilience Framework: Resilient Communities for Young People

Fig.xx: Resilient Communities framework for Skyline High

Student	● **Healthy lifestyles:** AAMA group focused on reducing truancy and improving wellness through healthy food program and cooking class. Other groups in the Green

Vision of Resilience	Academy promote areas for active living, like skateboard parks and soccer fields, in addition to healthy food options (forest themed restaurant). ● **Adults who care:** 　○ **AAMA proposal for teachers and staff to have a "general sense of caring on campus...and if you don't reach out, someone will reach out to you cause some people don't want to or are scared to." -Oaklandish Future Center poster** ● **Places for teens:** Skatepark, places to shop and eat, pools, courts, and fields for sports. Access without a car. 　○ **"They told me that most of them never got to the park because there's nothing to do there and they're mostly aimed towards young children. They suggested that in order to make it more friendly for them (high school students), they wanted basketball courts, soccer fields, and maybe even a pool to swim in." -Heather, mentor (F 3/2)** ● **Interactive, beautiful green spaces:** One group put forth a forested restaurant with plants that absorb water. Another wanted to install public art made by local youth. Telescopes were an addition in another team's proposal for visitors to see the "beautiful views of Oakland and the ocean." ● **Access for all, but with a focus on indigenous community:** One proposal included a playground for younger children. Other proposals reference accessibility for those who don't have cars, with an emphasis on bike lanes. Teams also emphasized including the voices of the people who already live there. 　○ **"Students are members of this community, they see Oakland changing, they're living through it. So, it's been a huge thing with them, 'well we don't want to kick the people who've been living there out, we want them to be a part of it, we want them to have priority access to these floating homes, and we want them to be the ones who own these spaces.' The students are well aware of the issues. It's something that could be taken back. If we have these projects with Y-PLAN, are we really truly engaging the communities that the projects are about." -Mr. Carroll** ● **Improve the reputation of the city** ● **Worry about catch 22 of gentrification** 　○ **"With one student, I had an in depth conversation at the bay field trip. 'Yeah this is a really nice park, but its cut off by the freeway, and the people who live here can't access it because you have to go across this freeway, but if you make it nicer and increase access, then maybe people who here will be priced out'... Students are well aware with issues of making a place better, but they know they have a right to want better things." -Mr. Carroll**
People	● **Growth in respect for youth voice, work, and leadership; Developing champions** 　○ **Parents:** Though parents aren't direct stakeholders in Y-PLAN, they are a group that can become youth champions and grow in their respect for youth abilities. 　　■ **After witnessing presentations at city hall in previous years parents would say "Woah they were talking about real things. I didn't know my kid was capable of thinking about those kinds of things. I was expecting something that was pie in the sky but that was tangible." -Ms. Johnston** 　○ **Teachers:** Y-PLAN helped Ms. Johnston think of youth's role in communities. This is something that Mr. Carroll says most teachers don't think of, and it should be a more common frame of mind. Mr. Carroll says the Y-PLAN class helped him come into his teaching position understanding

	that youth should be a part of decisions making. ○ **Ay'Anna and Tech Companies:** Since becoming involved with Y-PLAN Ay'Anna is a full champion of youth voices and of the Y-PLAN program. She wants to use her connections to bring Y-PLAN into tech companies. ■ **"A lot of tech applications are targeted to young people, and how often do these companies bring in young voices, like getting high school interns. How do we get the students to feel like they can also do this. How can we make Silicon Valley seem closer. The Director of Diversity at Airbnb is trying to figure this out, and partner with Oak Promise, for example. Many companies want it, but need infrastructure, which is what YPLAN can do…[A hiring director may say] 'I have a thousand things to do, and don't have time to make a work plan for high schools.' But if there's an org to do that… [Y-PLAN can serve a need." -Ay'Anna Moody**
Process	● **Improve Community Engagement:** Mayor's Office intends to bring in interns and use Y-PLAN as a student listening campaign. ● **Embed Y-PLAN techniques within planning process:** Ay'Anna expresses that what makes Y-PLAN great is that it's "not about telling students you do what you do and put them on stage. It's about making sure there are opportunities for these young people after Y-PLAN is over to actually intern...It becomes a community approach that I love about Y-PLAN." ○ **"The Mayor's Office and Oakland Promise talked about how astounded they were with the presentations. The mayor was like 'We need to find a way to integrate this with the work we do and get student voice in this kind of research driven purpose way' and that's how we got plugged in." -Ay'Anna Moody**
Place and Policy	● **The built environment/policies incorporate youth proposals:** Oakland Promise wants to put funding behind student proposals. Sustainable Oakland wants to memorialize student contributions within Oakland's Climate Action Plan. ● **The built environment/policies develop with greater consideration for and contributions from young people as Y-PLAN increases influence among participants, and within process and policy:** Mayor's Office listening campaign

III. East Palo Alto Phoenix Academy: Profile

A. Project Descriptions

East Palo Alto Phoenix Academy is an Aspire charter middle and high school within a residential area of East Palo Alto, not too far from the Bay, where the coastline is a mudflat. The school has seen some volatility in leadership, and is losing students every year. This past semester, the students found out that the school is closing for the high schoolers. Y-PLAN partnered with science teacher Hanna Kurowski for the first time this year.

EPAPA Project details:

1. *Project Question:* "What is the role of the school and young people in a resilient community? What are the conditions of, access to, and connectedness between housing, education, transportation, and public space in East Palo Alto? How can improving these sectors work together to improve the quality of life for all young people and families?"
2. *Project Study Site:* City of East Palo Alto
3. *Teacher:* Ms. Kurowski
4. *Client:* Field Operations RbD Design Team, Facebook, San Mateo Office of Sustainability
5. *Duration:* January - May 2018

B. Resilience Framework: Socio-ecological Context, Community Components

Fig.xx: Community Components (socio-ecological context) for Skyline High

Living Conditions	● **Housing crisis, outmigration, and gentrification:** Students tell stories of having to live in small apartments with huge extended families (15 in one apartment). They talk about family that had to move because they couldn't afford the rent. 　○ **"'It's really hard,' Elizabeth explained. 'Living here.' She told a story of having to move out of an apartment because the rent for the 3 br went to $6,000. Christian, who was incredibly quiet, and Hanna told me later she was so surprised he wanted to come and be interviewed because he almost never talks, told me: His aunt and 2 cousins used to live with them. The three of them shared the garage as their living space. But they moved out because it was too expensive...He now lives in a space with 3 brs that have been partitioned into smaller rooms. There is no kitchen or living room, just a hall way as common space. He lives with 15 people there right now." -Mandy, staff (F 3/1)** ● **Providing for their families:** One boy talked about spending all his money on McDonald's to feed children in his home, where there is no kitchen, just a hotplate. ● **Community Activism:** The community has a lot of pride and a strong sense of identity. It regularly is involved in political activism. 　○ **"Most people think its a bad city because the people who live within the area might have been in jail. EPA might seem like a bad city from the**

	outside, but once you get to know the people and their stories you will be moved." -Revolution Housing poster ● **Gang violence** is another issue that students bring up. ● **Beautiful trail and natural environment.** ○ **"Santi told us about how he uses the trail. He runs on it almost every day. It goes 'really far,' crosses a bridge, etc. He explained that the wetlands we saw between us and the bay were sometimes underwater. 'So they're tidal.' His teacher stated. 'Yeah, they're tidal,' Santi answered. 'And there's a lot of life there: birds, squirrels, I watch them as I run.' He described the tall white birds, and big black flying ones, that we jointly identified as egrets and hawks." -Mandy, staff (F, 3/1)**
Equity	● Gentrification, displacement, income inequity, imbalance of power of tech companies
Urban Systems and Institutions	● **Systems**: economic, housing, education, environmental ● **Institutions**: Facebook, other tech companies, Aspire company

C. Resilience Framework: Y-PLAN Foundational Elements

Fig.xx: Y-PLAN Foundational Elements for Skyline High

Authentic, Accountable Partnerships	● **Teacher:** Critical ally for connecting students to project.
	    ○ **"[A student] was saying, 'why would I want to give my ideas to this company that's trying to build something for their people and they're not actually thinking about my community and my people. Why would I support them in any way.' I had a conversation that gentrification is happening. I extended the invite that your voice can be heard or it cannot. In this project your voice will hopefully be heard, even if it's with someone we don't agree with. It allows our voices to be put out there, and that's as much as we can do, I guess, at this point. I think he took that call to action to heart, and has since worked a little harder on his project. But now it doesn't even seem that facebook it willing to hear from us, so that's a bummer." -Ms. Kurowski**
	● **Mentor:** The consistent mentor connection with the students is important.
	    ○ **"What made me really appreciates this experiences is that students are becoming more trusted with me working them, two girls came up and said: 'thank you', I had such a heartwarming and wonderful class today!" -Zhiqing (F, 3/13)**
	● **Civic Client:** The Facebook relationships become contentious, and the Facebook representatives became less engaged throughout the project.
	    ○ **"I had a student who wanted to back out of the project completely because of the partnership with facebook, as he was starting to be very overwhelmed. He was not excited about that relationship at all. Though his eyes and his explanation, I really understood more about the detrimental effects that facebook has had on this community. So that relationship and my attitude towards it definitely changed over time. I am feeling less confident in their part in this, and I'm feeling they never**

	actually did get in on it. That's positive and negative because I still want the to hear our students voices, about I also don't want them to disappoint us, so that's a hard relationship to navigate." -Ms. Kurowski
Culturally Relevant Curriculum	● **Relevance to Students:** students were encouraged to connect sea level rise to gentrification and community identity-- issues that are extremely important to their lived experience. ○ **Y-PLAN is "such a great curriculum...Doing community engagement with surveys, site mapping gives students a new perspective on their actual day to day life that will hopefully encourage them to continue this work outside and continue spreading the word about their community. YPLAN gave them the opportunity to finally tackle these issues that they are facing right now and I think thats so important, and that's what so many students lack in school." -Ms. Kurowski** ● **Relevance to Teachers:** This year, Ms. Kurowski was asked to teach a stem course without curriculum. She was excited, but it was intimidating. She was burnt out from starting from scratch. The main focus of the STEM class is the design process. "YPLAN incorporates this, so matched with what I was doing."

Elevation of Student Work	● **Vocabulary and tools, Provision of venues to showcase student work, Provision of pathways to larger impact and tangible outcomes**
	  ○ Student work is elevated by planning terminology. Posters and presentations discuss connectivity, accessibility, housing affordability, cost benefit analysis.
	  ○ Students were provided the opportunity to engage those in power with difficult questions.
	    ■ **"Students engaged with Juan from FB in a respectful and strong way. They pressed for information, and pressed him to respond to their concerns about gentrification and the impact of FB on the existing community, but they did so in a respectful way, listened to his responses, and expressed their feelings both positively and negatively. One group is proposing affordable housing, and has selected a site and proposed a design. Juan directed them to LISC and mentioned FB's affordable housing catalyst fund. Students pressed him: 'What percent AMI are you planning to help with your affordable housing projects, because if it's 75% or 80%, that's not enough to help EPA families.' Juan replied that it's targeting 'extremely low income' categories, with incomes up to $25K, and with another set for incomes around $50k. Students nodded approvingly, and said they could work with that." -Mandy, staff (F, 3/23)**
	  ○ Students were provided an opportunity to continue work on a housing affordability study with Y-PLAN.

D. Resilience Framework: Student Resilience

Fig.xx: Student Resilience framework (PVEST) for Skyline High

Supports	● **Supports:** Provided opportunities to raise their voices and become "experts of their

and Challenges	community," provided a curriculum that engages them and their interests, provides supports through mentorship, field trips, and professional visitors. Provides a venue for venting frustration and exploring solutions. ● **Challenges:** Youth deal with very challenging issues at home that risk stunting their ability to engage in the classroom. The civic client's contentious place in the community nearly caused one student to disengage from the program.
5 C's	● **Collaboration**: Students worked together in teams and incorporated each other's ideas. ● **Critical Thinking:** Engaged professionals with hard questions, and draw from their lived experiences to connect with projects. ○ **"I noticed that the students draw heavily on their own experiences for their proposals. Two of the groups had designed apartment layouts with different bedroom counts, and had calculated the cost for each type based on the data they had about EPA incomes. They had thought through the arrangement of each housing unit and each building based on what they had observed about overcrowding and family structures in their own community." -Sonrisa, staff (F, 3/20)** ● **Creation and Innovation:** Students really utilized their experience with large family households to design innovative multi-family housing concepts, such as shared backyards and modular living spaces. ○ **"One of the groups proposed a housing development that had connected one-story houses to make it more accessible for older residents and children. They were also talking about connecting them to a shared backyard to build a better sense of community among the residents." -Sonrisa, staff (F, 3/20)** ● **Communication:** Students learned new language that elevated their ideas, and students regularly, and politely challenged professionals in the classroom and in presentations. ● **Community Contribution:** Students connected all of their ideas to greater community systems, including systems of youth violence, systems of gentrification, and systems of community identity and cohesion.
Sense of Agency	● **Self acceptance and confidence, social and political understanding, the ability to play an active, effective role in community decision making** ○ Through Y-PLAN students are learning more about and deepen their understanding of the political issues that drive the problems they see in their community. ○ Students are spotlighted for their incisive questioning and passionate feelings. The student who nearly dropped out was asked to speak at the Y-PLAN summit, and he really spoke eloquently about his experience and how Y-PLAN helped make him believe he can make a difference. ○ Ms. Kurowski describes how the curriculum helped the students become "experts of their communities" ■ **"YPLAN contributed to their pride in their community and being able to stand up and talk to all these people who are coming into the classroom about what they love about their community and what they want to change about their**

	community. YPLAN has definitely empowered them to feel like they are real experts on their community and themselves. And I think that's been really great." -Ms. Kurowski
	○ The experience of surveying the community helped the students feel like they were doing a service and felt empowered by informing the community about climate change and the dangers it poses to the community.

E. Resilience Framework: Resilient Communities for Young People

Fig.xx: Resilient Communities framework for Skyline High

Student Vision of Resilience	● **Proposals to reflect the culture and circumstances of those who have lived in the community for a long time:** Proposals for multi-family housing, mexican inspired plazas, discounts and preferred access to parks and housing for those who have been residents for a long time.
	● **Prevention of violence:** One group's proposal focuses on creating after school programs in order to prevent students from getting involved in gangs and gang violence.
	● **Retaining community identity:** Many groups talked about losing a sense of identity as families moved away. Students wanted to create affordable housing in order to prevent this. They also wanted to create a Mexican-inspired plaza with local vendors to celebrate the identity of the community.
	● **Preventing negative impacts of tech industry:** Many groups discussed the negative traffic and air quality impacts that the community experiences because EPA is used as a commute through way for tech employees. One group sought to take one of these corridors and slow it down through the use of traffic circles and art.
	    ○ **"The students' proposal would add traffic circles, bike/ped access, and improve the aesthetics of the streetscape with murals, parklets, installations, etc. The goal is to improve the transportation issues by creating a community-friendly corridor. By contrast, the city plans involve widening the street, adding pavement, and turning the corridor into more of a highway, thereby cutting the bay side of EPA off from the rest. By the time I got to their group, they were discussing the implications for the loss of community identity, and the costs to the current residents of EPA, of bisecting their city with a highway and adding more pavement, all to speed up the commute to the tech companies." -Mandy, Staff (F, 4/10)**
	● **Protecting the natural environment:** A student was adamant about protecting the coastline and preventing development.
	    ○ **"At the trail, Veronica brought back the activity from the workshop. She asked if they'd want development along the tidal flats. Jacob said he'd like a better soccer field, and Santi objected vehemently. 'What you got against a soccer field?' Jacob pressed. 'Bro, so much already lives there. We can't steal that. They were there first.' Was the response." -Mandy, staff (F 3/1)**

People	● **Growth in respect for youth voice, work, and leadership; Developing champions** ○ Y-PLAN brought in professionals from Facebook and RbD to interact with the students. The students had a lot of impressive things to say.

	■ **When asked if Y-PLAN has the power to change the perspective of adults: "100%. When you ask students questions and show them how much you want to learn from them, and show them that they are the experts in something, then they in turn will feel that responsibility and that power and I think feel more invested in sharing it, and telling other experts what they think." -Ms. Kurowski**
Process	● **Improve Community Engagement:** Y-PLAN invited Facebook to hear student ideas ● **Embed Y-PLAN techniques within planning process:** Facebook has unfortunately been an unreliable partner, and so it is unclear how much they are embracing the Y-PLAN process. ○ **Talking about the upcoming Youth Summit: "I hope facebook hears us, and I hope with presentations students feel like experts and feel good about what they share. I hope moving forward they continue to advocate for their communities and feel that their voices should be heard. And if anything was actually put into action, I would love to see that." -Ms. Kurowski** ● **Build trust between institutions and communities:** There is a huge amount of distrust of the EPA community towards the local government and Facebook. This experience may have confirmed students' distrust.
Place and Policy	● **The built environment/policies incorporate youth proposals:** Y-PLAN is engaging with a grant to perform a housing study in EPA using students from Ms. Kurowski's class.

IV. Malcolm X Academy Elementary: Profile

A. Project Description

Malcolm X Academy is an elementary school within the Hunter's Point neighborhood of San Francisco. The school is within a residential neighborhood that is undergoing significant development, with the razing of public housing ("temporary" housing in the 1940s) and the construction of mixed use, mixed income housing and commercial space. The building of the school is a small one story rectangular edifice, with many murals depicting leaders of color. A playground connects the school to the new development. A pathway painted in colorful chalk connects the school to the playground-- a remnant from a previous Y-PLAN project.

Mr. Moore has worked with Shirl Buss, a Y-PLAN staff member, for 12 years. He describes the MXA community:

> A neighborhood in transition. Traditionally, it's a classic kind of poor, ghetto neighborhood where a lot of industrial waste was left behind from different things, shipyards, power plants. Residents are mostly African American and Samoan. It's kind of cut off from the city although in the last 8 years with the new development, I don't know if it's good or bad for the community, but there's changes that are happening, and some are positive. Even with the gridding of the streets. The neighborhood's in a part of the city where when I first started there it was like a ghetto island- off the grid. And you get in there and you can get lost. It's how the neighborhood felt to me at first. I lived in the city about 25-26 years and haven't spent much time there. I was a little nervous about working there, and then commuting in, and walking in.

This is a stark contrast to City of San Francisco principal planner Diana Sokolove's description of the City as a whole:

> I would say, eclectic, beautiful, inviting, cultural fun, expensive, and playful. I think SF is very open to very different kinds of interests and groups. Whatever suits you you can probably find that here. And there's an openness to that. And there are folks who come here who are adult children, still have a lot of fun play in their system, and anything from the festivals, the street fairs, nightlife, all our beautiful parks and waterfront lands- there's an opportunity and energy and vibrancy that allows people to have a good time.

MXA Project details:
1. *Project Question:* "What will keep my family, friends, and me safe, strong, and prepared for floods, earthquakes, and other environmental challenges?
2. *Project Study Site:* Islais Creek
3. *Teacher:* Mr. Moore
4. *Client:* BIG + ONE + Sherwood RbD Design Team
5. *Duration:* February - May 2018

B. Resilience Framework: Socio-ecological Context, Community Components

Living Conditions, Urban Systems, Institutions	**Living Conditions:** School in the middle of the projects, known as a "fighting school," many students in foster care or with parents who don't value education, food desert, consistent reductions in student body, changing demographic from African American to Asian **Urban Systems:** education, housing, planning, poverty **Institutions:** School district, developers **Equity:** Isolation of poverty, gentrification

C. Resilience Framework: Y-PLAN Foundational Elements

Authentic, Accountable Partnerships	**Teacher:** Mr. Moore has been working with Y-PLAN for 12 years and remains reliable partner for MXA. **Y-PLAN staff:** Mr. Moore brought in Shirl in order to allow his students to see professional architects and designers that look like them. Every week, Shirl, Prescott, and D'Sjon (a white woman and two black men, all architects) come into the classroom as a team to meet that need. Mr. Moore is excited to bring students to the Berkeley campus- they've never had that opportunity before. Mr. Moore really liked a fall event for RbD was put together by Y-PLAN. Parents, professionals, and students were all able to come, and the students were able to walk there. "It wouldn't have happened without Y-PLAN." **Civic Client:** Lack of visible client in this case. Mr. Moore explains that having a partner that enable tangible outcomes is most powerful for his students.
Culturally Relevant Curriculum	**Relevance to Students:** The staff represent the student body demographics, and the projects highlight student individuality and identity. The students' final projects featured their pictures and affirmative words. **"That's what I'm excited about, that they worked with people of color on this, that some of them will be presenting, others supporting them. We're a community. I want them to see opportunities." -Mr. Moore** **Relevance to Teachers:** Mr. Moore discussed that ass a teacher he needs to bring in partners who can fill in the gaps and provide opportunities he isn't able to provide. Y-PLAN fulfills this need.

Elevation of Student Work	● **Provision of vocabulary and tools:** Through the curriculum, students learn about creating pathways and working in teams. Their posters illuminated their descriptions of sea level rise, their knowledge of indigenous history, and their understanding of environmental conservation. They also discuss concepts such as floodable parks and buffers. ● **Provision of venues to showcase student work:** Students came to the Berkeley Youth Summit and wowed the adults and other young people with their large interconnected Islais Creek pathway model. It was heavily featured in news coverage. ● **Provision of pathways to larger impact and tangible outcomes:** Unfortunately, this project did not seem to lead to a tangible outcome.

D. Resilience Framework: Student Resilience

Supports and Challenges	● **Supports:** Y-PLAN staff provides consistency, African American representation, and high quality projects. Y-PLAN provides venues for students to showcase their work. There are frequently days when there is one adult for every 2-3 children. This allows very individualized support. Many students brought their parents to the Y-PLAN event. ● **Challenges:** Many students deal with poor home lives, which may make it difficult for them to engage. The Y-PLAN curriculum sometimes causes group tensions, but these are learning opportunities for students to practice team membership skills. The subject matter is technical. However, Shirl and the team are great at communicating these ideas to young people. 　○ **"I was definitely blown away by it. I was impressed with the way that the children could articulate and understand what these challenges are at a level that was beyond their years. You're asking kids to think about tricky topics: resilience, climate change, SLR, and they were able to understand those terms, and articulate it, and that is a big challenge in itself. I credit yplan and their teachers in helping them to understand that, meeting them at their level, and bringing them to a different place where one wouldn't think they'd be able to do, but maybe we should just have more credit to our young people, that they actually probably understand more than you think they do." -Diana, client, on visiting another elementary location**
5 C's	● **Collaboration**: Students developed team building activities in the beginning of the sessions by building individual "Towers of Power" and working together in teams of two to connect them with bridges. Their final project was a result of negotiating within their teams on design and ideas. 　○ **"I liked how they worked in groups, it was like a mini collaborative community effort that we do all the time with people. They were taught to do that with the challenge of resilience. And they're cute and endearing. All that said, it was a joy to listen to them and see their leadership abilities." -Diana, client, on visiting another elementary location** ● **Critical Thinking:** Students learned about complex topics and then connected them

	to their local creek. The students put thought into how they would connect these concepts to their site in a creative, fun, and interactive way. They also thought about why learning these things is important to them and to society. ○ **"An Art Walk is important. It helps us see different types of sculptures and colors....Art allows people to view the world in different ways. It encourages them to be creative...This is important to us because teamwork makes the dream work" -Art Walk Team poster** ● **Creation and Innovation:** Students were extraordinarily creative throughout the entire curriculum. In every class they used art and building materials to craft unique models that represent their ideas and personalities. Their final project was a beautiful interconnected pathway with zoos, art walks, history exhibits, and gardens. ● **Communication:** Students practiced public speaking in each class, with a few students presenting their work at the end of the class. Some of these students made speeches at the Y-PLAN summit that were very clear and powerful. ● **Community Contribution:** The psters the students presented represented their vision for a creek pathway that would adapt to sea level rise, that would encourage their community to visit, and that highlights local identity, such as Ohlone history, native plants, and native animal species.

Sense of Agency	● **Self acceptance and confidence, social and political understanding, and the ability to play an active, effective role in community decision making**
	   ○ When Y-PLAN brings in stakeholders to listen to the students' ideas, it gives students the idea that they are being taken seriously.
	      ■ **"Who knows if it's just a photo op, but what's great is the kids feel they are listening and it teaches them 'wow I can work on this project, and put sustained energy into something and talk to people about my ideas.' Adults might be listening, but what's really powerful is if they're able to walk around and see their ideas being implemented." -Mr. Moore**
	   ○ Tangible outcomes bring more power to student sense of agency:
	      ■ **"The outdoor classroom [project] was implemented, and this was very powerful because kids got to have tools in their hands. We had a building day on saturday when families could come in, and they loved it. They had saws, and goggles, and sanders. They came up with the design, and there was a budget team. It was super powerful....[because the students are] designing something and then you build it, and you get to see an experience of the process of taking plan and having something made from them, and realizing it's not going to be exactly like your design, and you need to adjust with bumps along the way. It's a great process, and its powerful that they are doing something in their head and on paper and then taking it to a place where its implemented." -Mr. Moore**

E. Resilience Framework: Resilient Communities for Young People

Students Vision of Resilience	**Access for young and old**: **"We put rocks in the water to teach about sea level rise and learn new things about plants in a fun way for young and old people" -Fun Team poster** **Natural, green, landscaped environments** **Educational:** Many projects included signage or exhibits to teach visitors about sea level rise, local plants and animals, and indigenous history **Authentic to local history and culture:** **"We think the history of Islais Creek is a good thing to know about. We believe this history can teach people about how the creek was. Hopefully they will take care of this creek." -History Team poster** **Artistic, fun, and interactive:** The project was awash in colors, rhinestones, tree and animal models, and fun shapes. The students included an art walk to feature their own creations, and they included a varied tapestry of interactive gardens, zoos, and exhibits to keep visitors engaged. This pathway become a vibrant visitor experience.
People	**Growth in respect for youth voice, work, and leadership; Developing champions** - The spread of reputation and influence of Y-PLAN leads to more people becoming aware of youth voice. **"When people come to hear us present...There is good intention there, but I can't say I strongly feel that something that was done in my class has changed their mind, but maybe, too….They (Shirl) were doing the program in schools similar to ours in elementary schools. Other schools heard about what we were doing and then they were having it done at their school. YPLAN growing itself in size and reputation could have that impact on community because people are hearing about it, so it's more powerful. People who come in have good intentions, but I don't know what barriers they have to break to make things happen. There's a long term process of building relationships and allies." -Mr. Moore** - In City of San Francisco, Sue Exline heard about and engaged with Y-PLAN through her networks and became a champion of youth voice in the Planning Department. This is how Diana became aware of Y-PLAN and became engaged with the Y-PLAN RbD effort. - When asked if she will be an advocate for youth in the future, Diana said yes, and that this experience was something she never engaged with before. **"I was exposed to something I didn't even know existed, and I see the value in it. I believe in the methodology, I've seen it can work, and I'd love to play with it to see what we'd be able to achieve." -Diana, Client**
Process	**Improve Community Engagement** - Diana explains that out of the Y-PLAN Youth Challenge experience she wanted more members of the community to understand and apply sea level rise concepts to their lives and work. **"Through RBD, I'd say yes I was surprised that 1st graders could be so articulate, but when I went to the presentations, I think my expectations were met. The way the young people approached the problem and came up with solutions, that is showing their own resilience...That is what I wanted to see coming out of this program, that people become more familiar with the term resilience, and climate change, and sea level rise,**

	and then are able to talk about solving those problems in their own backyard.” -Diana, client ○ Diana did not have specific plans in mind for the information she obtained from the Y-PLAN summit. ■ **“Not intentionally anything the city wanted to take away from student projects. When I look at what was produced, the kids values popped out at me. Community, collaboration, protection, environmental health, health in general. Those are the things that I took back. I didn’t know what to expect necessarily. I didn't know how much they would embrace the project. They clearly did, and expressed their values through it, and that is really interesting to hear, because those are the values that we want to reflect in our work for the city.” -Diana, client** ● **Embed Y-PLAN techniques within planning process** ○ Currently, the city does not have a youth engagement program outside of Y-PLAN. Diana cites challenges with funding and logistics, but says these are not insurmountable problems. ■ **“In the future, there should be a youth component in everything we do, especially large projects...YPLAN has a model that works really well, and I don’t know another org out there that is like that and has same success.” -Diana, client** ○ Sue Exline is working to create a Y-PLAN-like program that is run by the City. She is utilizing the Y-PLAN Balboa Creek project as a way to learn about this kind of engagement.
Place and Policy	● **The built environment/policies develop with greater consideration for and contributions from young people as Y-PLAN increases influence among participants, and within process and policy.** ○ There is great potential for this in the future, as City of SF is making large steps to integrate youth voice into their community outreach strategy.

5. Looking Forward

This report sought to develop (1) a literature review on the definition and critiques of resilience, (2) a framework for understanding and evaluating Y-PLAN's impact on resilience, and (3) a case study and profiles that explore the resilience framework and begins to evaluate Y-PLAN's impact on student and community resilience. Another unintended outcome was the (4) development of a master spreadsheet database of evidence for these four schools that can be further analyzed, and can easily be amended or expanded. These are simply very preliminary steps in the creation of a resilience evaluation tool that is simple to use and effective at measuring key outcomes. Hopefully this report serves to "open pandora's box" to Y-PLAN's potential impacts on resilience, where these impacts are more or less seen, what the critical components are that deliver these outcomes, and where we still need more data. Further analysis needs to be conducted to summarize these impact patterns, and build a resilience driven strategy moving forward.

At this point, this report may be used to do a broad systems analysis of the resilience impacts for school and project sites. The structure as it stands is rather expansive and dependent on qualitative analysis, making this kind of analysis long and tedious. Discussion of what are the "keystones" of resilience outcomes within the framework, and how to efficiently (and preferably quantitatively) measure these are critical to create a more streamlined resilience analysis process. The long form qualitative evaluation may be used every once in a while to refine objectives and strategy, but a short form largely quantitative evaluation can enable quick, regular reports.

The Y-PLAN resilience framework developed in this report aims to add four important perspectives to how Y-PLAN already evaluates its work. First, it seeks to **add the socio-ecological context**. This provides a context for how Y-PLAN's outcomes may be enhanced or stunted by forces beyond Y-PLAN's immediate influence. It also provides an empathetic perspective for the student experience, in which each student brings a very unique set of experiences that will shape how she interacts with the program. For some students, small gains are huge. Second, this framework **adds the component of identity development, specific to agency and efficacy**. This is a component that goes beyond skill development and moves into the "community of practice" ethos that is embedded in Y-PLAN- that learning is tied to identity formation, and identity formation is tied to long term resilience outcomes. Therefore, this should be a critical component that is measured with more precision.[65] Third, **the development of fundamental Y-PLAN elements--**

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[65] A possible addition to the identity formation category could be the sense of belonging, a theme that has regularly come up throughout this study.

authentic, accountable partnerships, culturally relevant curriculum, and elevation of student work-- is helpful to magnify the core capabilities of Y-PLAN. Without these elements, Y-PLAN would not be the amazing program it is, and their maintenance is critical to recognize as the keystone to Y-PLAN's resilience outcomes. Finally, the **creation of a resilience framework specific to the resilience of communities *for youth*** is really important to clarify how Y-PLAN actionably contributes most to the resilience of the community: through advocacy of young voices. A larger community resilience net would muddle and scatter Y-PLAN's impact. Like a beam of light into a magnifying glass, I believe this framework focuses how Y-PLAN views its community outcomes, and therefore can bring its community outcomes into a more measurable, practical place that adds power and credibility to the community outcome side of Y-PLAN's objectives.

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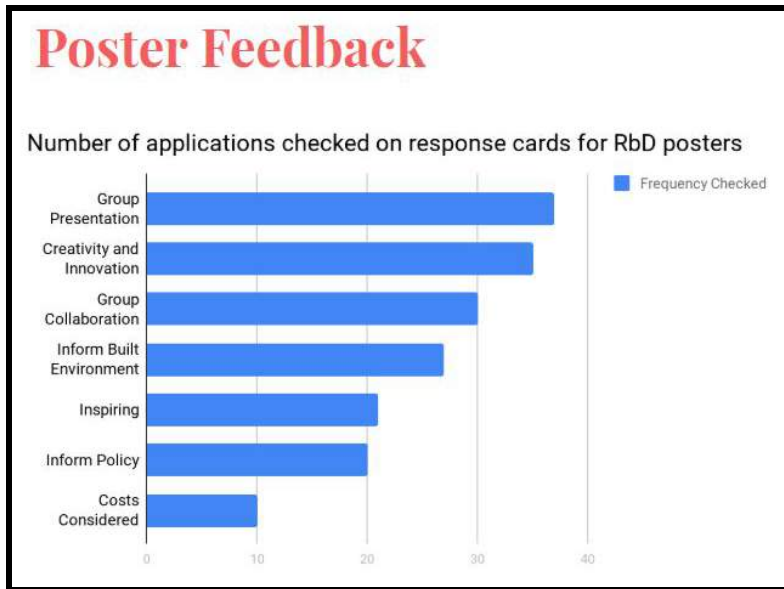"Y-PLAN." Y-PLAN (Youth - Plan, Learn, Act, Now!) https://y-plan.berkeley.edu/diy.

Appendix

Exhibit A: Y-PLAN Student and Community Outcomes[66]

5 C's (21st Century Learning); *Student Outcomes*	*Description*	4 P's *Community Outcomes*	*Description*
Collaboration	**Prepare for, initiate, and participate effectively in a range of collaborations with diverse partners and issues**	**Participants**	**Authentic civic problem posed to students.** 1. Change in attitudes and perceptions of young people as legitimate community contributors 2. Challenges assumptions, and disrupts negative stereotypes of marginalized young people 3. Develop an appreciation and ability to use youth insight as important "local knowledge" to inform decisions
Critical Thinking	**1. Evaluate Evidence:** Evaluate evidence/data from a variety of sources and presented in diverse formats to support arguments and solutions **2. Incorporate Evidence:** Incorporate and use evidence from a variety of sources to support arguments and solutions **3. Research Methodology:** Follow a multi-step process for completing a technical task **4. Systems Thinking:** Demonstrate understanding of interrelationships among system components and how interactions among components lead to emergent system behaviors	**Place**	**Project connected to Current City Priorities** 1. Plans and design of the built environment incorporate youth insight, considering diverse users of space 2. Planning with and designing space for young people inculcates sense of ownership & stewardship 3. "Simple yet powerful" insight results in "good to great" improvements in the built environment.
Creation/ Innovation	**1. Visual/Multi-Media Literacy:** Make strategic use of multi-media to convey knowledge and produce creative projects **2. Build on the ideas of others** and integrate knowledge across disciplines to propose solutions to problems	**Policy**	**Policies incorporate proposals with funding in realistic timeframe** 1. Youth data and insight highlights critical community issues and moves the needle on policy discussion 2. Policy changes lead to sustainable actions by city and school systems supporting all residents/all ages.
Communication	**1. Writing:** Present data and conclusions in clear and coherent writing appropriate to project related tasks, purposes, and multiple audiences **2. Oral + Visual:** Present data and conclusions orally to appropriate project related tasks, purposes, and to multiple audiences **3. Discussion + Debate:** Express own ideas clearly while recognizing and building on others' ideas	**Process**	**New strategy for sustained, informed, solution-oriented community engagement** 1. Youth participation diversifies community engagement process, bringing low-income parents and community members of color to the planning/policy making table 2. Catalyst for cross-sector collaboration. Mutually beneficial partnerships developed as cities and schools recognize their "shared clients" 3. Trust is built between traditionally disenfranchised or marginalized communities and civic institution
Community Contributions	**1. Global Awareness:** Demonstrate awareness of other cultures and critically relate ideas and projects to systems of power in local community and larger world **2. Diversity + Democratic Decision-making:** Work with peers to promote civil, democratic discussions and decision-making **3. Reflection + Application:** Reflect and apply Y-PLAN skills, content, and methodology to effect		

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[66] https://y-plan.berkeley.edu/what-is-y-plan

community and school change		

Exhibit B: Adult Presentation Feedback Results

Strengths Summary: Teams "understood their audience;" bringing in local community (businesses, employment. youth museum); talking about financials; use of maps or other data vis; speaking skills and enthusiasm; ability to link systems and build on other teams' work; use of models

Constraints Summary: Expense & feasibility; Accessibility and community impact; lack of focus, strategy, or content; lack of integration of ideas among students or within community context

Assessment Summary: Creative- 35; Inform built environment: 27; Group collaboration: 30; Group presentation: 37; Costs considered: 10; Inform policy: 20; Inspiring: 21

Exhibit C: Where I'm From Poem Themes (Kennedy)

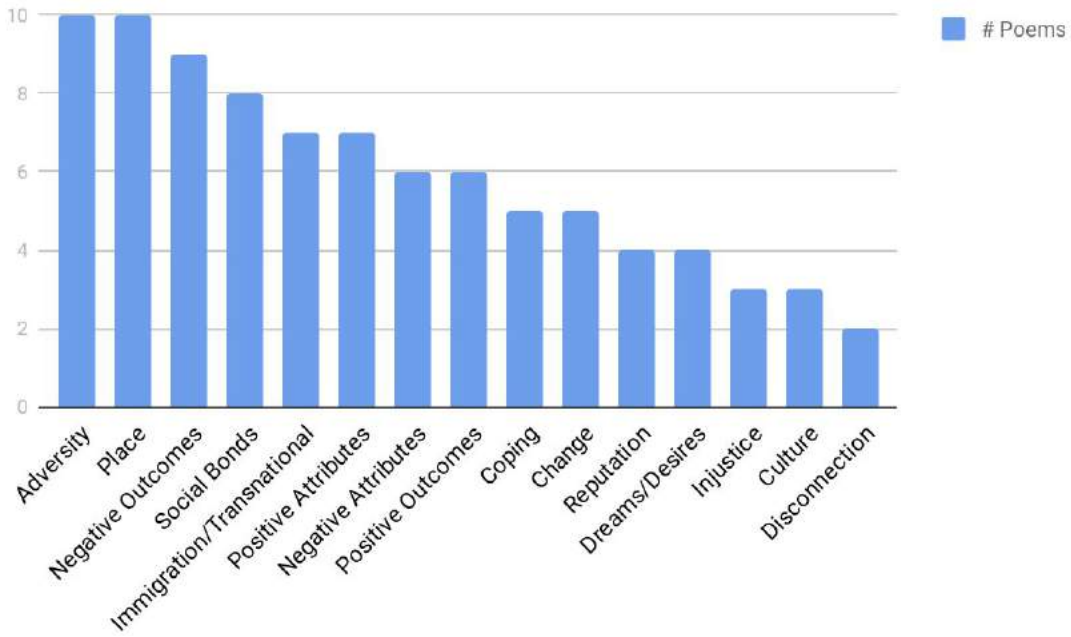Where I'm From Poems: Frequency of Themes

Exhibit D: Pre-Post Survey Responses (Kennedy)

DEMOGRAPHIC RESPONSES

	n	%	M	F	ELL	Lat	AA	Mix	Asi	PI	Whi
Total Responses	69		55%	45%	45%	75%	12%	7%	4%	1%	0%
Total Paired	57	83%	60%	40%	44%	72%	12%	9%	5%	2%	0%

PARTICIPTION RESPONSES

Question	No.	"Yes"
Attended Intro	Q30_1	97%
Final Presentation	Q30_4	90%
Community Research	Q30_3	67%
Discuss at Home	Q30_7	67%
Site Tour	Q30_2	63%
Social Network Attend	Q30_6	33%
n =	63	

BENCHMARKS PRE-POST

Question	No.	Pre	Post	Δ	ttest	***
I can learn a lot from people with different backgroun	Q6	3.39	3.39	0.00	1.000	
I know how to work with others as a team to make de	Q5	3.21	3.33	0.12	0.146	
What I do in school is relevant to my life and my futur	Q9	3.21	3.33	0.12	0.311	
It's important to take information from different sour	Q7	3.40	3.33	-0.07	0.289	
I can use my talents and creativity to come up with so	Q10	3.05	3.21	0.16	0.151	
People like me can make a difference in my communi	Q15	2.98	3.18	0.19	0.07	*
I have the skills and knowledge to make a difference i	Q17	2.84	3.14	0.30	0.002	***
I have creative, unique ideas that could help improve	Q11	2.84	3.05	0.21	0.038	**
There are issues in my community and broader societ	Q16	2.86	3.02	0.16	0.192	
I have a desire to participate in improving my commu	Q14	2.98	2.96	-0.02	0.859	
I am comfortable expressing my views to a group of p	Q12	2.88	2.95	0.07	0.498	
I know how to get involved in solving challenges in m	Q8	2.70	2.93	0.23	0.041	**
I am comfortable presenting my work in public and in	Q13	2.46	2.77	0.32	0.006	***
People in government care about what people like m	Q18	2.19	2.23	0.04	0.749	
n=		57				

Exhibit E: Pre-Post Survey Responses, Pt. Molate Development (Kennedy)

	n	Need	Need	19 Δ	% 19Pre	% 19Post	19 % Δ	How	How	20 Δ	% 20Pre	% 20Post	20 % Δ
	n	69	60	-9				64	56	-8			
Problem ID													
Empty, unproductive		31	28	-3	45%	47%	2%						
Dirty		32	18	-14	46%	30%	-16%						
Unattractive		9	9	0	13%	15%	2%						
Not safe and/or healthy		3	7	4	4%	12%	7%						
Community perception/reputation		6	1	-5	9%	2%	-7%						
Desired Outcome													
Clean								29	24	-5	45%	43%	-2%
Public/community space/services		14	9	-5	20%	15%	-5%	15	16	1	23%	29%	5%
Commercial space		5	11	6	7%	18%	11%	10	6	-4	16%	11%	-5%
Improve and/or help community		10	8	-2	14%	13%	-1%	7	2	-5	11%	4%	-7%
Landscape								4	5	1	6%	9%	3%
Process for Change													
Community participation and/or help								15	14	-1	23%	25%	2%
Convince those in power								7	10	3	11%	18%	7%
Develop plan								11	9	-2	17%	16%	-1%
Find funding								6	6	0	9%	11%	1%
Team								2	4	2	3%	7%	4%
Ideate								4	1	-3	6%	2%	-4%

Exhibit F: Pre-Post Survey Responses, Definition of Resilience (Kennedy)

	Pre Defini	Post Defir	Δ		% Pre	% Post	Point Δ
n (no. responses)	57	56	-1				
Y/N							
Yes		42					
No		10					
None	18						
Adversity							
Adversity	8	8	0		14%	14%	0%
Natural Disasters	2	5	3		4%	9%	5%
Preparation							
Being informed of adversity/context	4	6	2		7%	11%	4%
Preparation	4	2	-2		7%	4%	-3%
Response							
Bounce back/ recovery	5	10	5		9%	18%	9%
Change, adaptation	3	4	1		5%	7%	2%
Tough, strong	4	2	-2		7%	4%	-3%
Persistence	6		-6		11%	0%	-11%
Outcome							
Improve and/or help community	5	8	3		9%	14%	6%
Improve and/or help self/others/something	6	6	0		11%	11%	0%
Other							
Expansion to community		4	4		0%	7%	7%

Defining resilience (Pre-Post Survey)
- Movement away from being tough, strong, and staying the same in spite of adversity, movement towards recovery (being flexible, allowing for setbacks) and community improvement.
- 9% point increase: utilization of bounce-back and recovery terms in definition
- 7% of post surveys: change in definition from beginning to end of project included expanding definition to include community
- 6% point increase: those who include definitions related to improving or helping their communities
- 5% point increase: utilization of natural disaster terms in definition
- 11% point reduction: utilization of persistence terms in definition
- Richmond is resilient because "despite our reputation, we are producing scholars and the community is supportive" -Student Focus Group