A Framework For Effectively Engaging Youth and Schools in Inclusive Resilience Planning

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EXECUTIVE SUMMARY

Many low-income young people of color living in our cities today face great adversity and the resiliency of the cities they live in is being challenged on many fronts: violence, poverty, gentrification, and homelessness as well as the threat of global climate change. The predicament is that, despite their enthusiasm and innate intelligence on the matter, the youth of today are rarely invited into the city planning process. Even when policymakers and planners seek to engage young people on one project or another, there is very little knowledge about how to do this. **The purpose of this paper is to introduce an equity-driven framework to guide and assess the quality of young people's engagement in city planning — using resilience as a case study — for our cities now and in the future.**

The first part of this paper examines the experiences of young people involved in Y-PLAN, a civic learning and engagement initiative centered on the belief that fostering relationships between civic leaders and young people around meaningful action creates more resilient cities that work for all residents. The specific focus centers on a recent regional collaboration and case study with the Resilient by Design | Bay Area Challenge (RbD). This initiative brought together local residents, public officials and local, national, and international experts to develop innovative, community-based solutions to strengthen the San Francisco Bay Area's resilience to climate change.

The second part of this paper examines the importance of students' lived experience and the value of the tools of professional practice in relation to the effectiveness of their proposals for how to respond to climate change and enhance resiliency in their communities. Four case studies from the Y-PLAN RbD Youth Challenge illustrate how knowledge from young people's lived experiences and exposure to and engagement with professional urban planning practices must be balanced in order for students' proposals to be most impactful.

This paper concludes that then both young people's lived experiences and adult professional practices are equally privileged, the results can be formidable. Together these efforts can lead to the development and adoption of innovative, inclusive, and equitable new approaches to city planning.

TABLE OF CONTENTS

INTRODUCTION

"Children are a kind of indicator species. If we can build a successful city for children, we will have a successful city for all people."
— Enrique Peñalosa, Mayor of Bogata

"The students are resilient to the point that they didn't initially realize what the word meant. Imagine attempting to tell a tribe of interdependent villages that you want to create community. They'd likely be confused, seeing as that is their life, and there isn't a space they know where it has to be created. That's resilience for these students."
— UC Berkeley Student Mentor, Field Notes, 05/2018

"I am from East Palo Alto.
From the backyard wilderness and beautiful blue bay.
I am from the closet that is my room. And the fake walls that are my surroundings.
From the anime posters on my wall and the half window that I got.
I am from the stories that I write and from the stories that I read.
I am from those moments. Those moments that a picture can capture.
But I hate pictures."
— Y-PLAN High School Student, East Palo Alto Phoenix Academy, 01/2018

Many low-income young people of color living in our cities face adversity beyond that of many adults. They demonstrate an innate desire to push past that adversity from accessing health care to a quality education. When students engage in planning our cities, the trust, relationships, and responsibility they cultivate increases their capacity to interact with adversity in a way that encourages growth and development. By nature, when an urban system encourages its most vulnerable young people to thrive, its resilience, in turn, increases. As such, planning with young people builds their resilience, and they, in turn, drive the resilience of the community.

Resilience within a community can be tested by a variety of stressors. Climate change is one of the most existential and global we face today. While individuals are beginning to take action to understand resilience and improve livelihoods, regional and global efforts still fall short of addressing the intersections of climate change and existing vulnerabilities within a community. Climate risks vary; social, economic, and geographic factors shape not only the exposure of people and communities to climate-related impacts, but also their capacity to respond. Risks are often highest for those already most vulnerable, including low-income communities of color, and children (USGCRP, 2018).

The importance of including young people in resiliency planning is imperative, as demographers predict that by 2030 more than 60% of urban residents will be under 18 years old (Wright et al., 2017, p. 7). Despite this, children and youth are rarely incorporated into

formal, meaningful planning and policymaking conversations and processes. Young people are not typically invited to most city planning policy-making tables, nor are they incorporated into professional design processes. They don't seem to "fit" despite the fact that they have the most at stake. They are growing up in the unsustainable world adults have built, and they face the prospect of living in an uncertain and unstable world in the future.

This omission comes with high costs. When young people are invited to the table, they have powerful insights to share. Their ability to speak to their lived experience and to design a more equitable world is invaluable. Not only is their creativity and unique input often overlooked, but this exclusion exacerbates existing inequalities due to race, educational attainment, and socioeconomic status.

By contrast, bringing low-income youth of color into current planning processes yields fresh ideas and insights. When done well, it can also allow civic leaders to hear directly about young people's life challenges and to gain access to the insights of their lived experiences. Coupling this lived experience with professional practices of city planning empowers students to give voice to the challenges and assets of their communities. Equally importantly, young people provide perspectives on global best practices alongside planners, engineers, architects, and policy makers – lending their fresh, unique ideas and real, actionable proposals for change.

Authentically engaging young people in this way develops trust and builds enduring relationships across generational and socio-economic divides, elevating their voices within our cities today, while preparing and inspiring the leaders of tomorrow. Today's young people will live in the future now being planned. They need to have a hand in shaping it.

The purpose of this paper is to offer an equity-driven framework to guide and assess the quality of young people's engagement in city planning for our cities now and in the future.

In order for our young people's input to be actionable - for their unique insights to result in impactful change - there must be authentic, effective, meaningful engagement between youth and city planning professionals. We must take into account young people's personal experience while simultaneously equipping them with a certain level of technical expertise, empowering them to develop informed decisions, making their proposals innovative and feasible.

We have seen the importance of building the capacity of both students and adults to work together on planning for a shared future. Indeed, adaptation to climate change and our uncertain future cannot happen without it -- especially if we are to respect and protect the most vulnerable among us.

PART I

YOUTH PLANNERS IN ACTION: Y-PLAN RESILIENT BY DESIGN | BAY AREA YOUTH CHALLENGE

The San Francisco Bay Area is "an amazing place — in uncertain times."
— San Francisco Bay Area Planning and Urban Research Association (SPUR), 2018

"Gentrification is a really big issue, racism is a really big one. If they're worried about getting shot at today, they're probably not worrying about sea levels rising tomorrow."
— Oakland Y-PLAN Teacher, 2018

Project Background

In response to Hurricane Sandy in 2012, as part of President Obama's Hurricane Sandy Task Force, a new innovative resilience design challenge, Rebuild by Design, was initiated to activate communities in the New York/New Jersey area to collaboratively rebuild and adapt to future challenges. The challenge was launched by the U.S. Department of Housing and Urban Development and many partners, including the Rockefeller Foundation.

In 2013, the Rockefeller Foundation created "100 Resilient Cities" (100RC), a global initiative committed to helping cities around the world become more resilient to the physical, social, and economic challenges recognized as a growing part of the 21st century. They defined resilience as "the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience." Building upon the success of Rebuild by Design in New York as well as 100RC's growing network of cities tackling current and future challenges, the Resilient by Design | Bay Area Challenge (RbD) was launched in 2017. This initiative brought together local residents, public officials, and local, national, and international experts to develop innovative community-based solutions to strengthen the Bay Area's resilience to sea level rise, severe storms, flooding, and earthquakes.

Recognizing the importance of young people in our cities, RbD invited UC Berkeley's Center for Cities + Schools (CC+S) to design a strategy to bring young people into this year-long collaborative design challenge through their Youth - Plan, Learn, Act, Now! (Y-PLAN) Initiative. Y-PLAN offers a civic learning strategy to ensure the perspectives of young people are included in city planning conversations. For the last two decades, Y-PLAN projects have culminated in proposals of recommendations to civic leaders across the sectors of transportation, housing, public space, and schools, services, and amenities.

CC+S then launched the T in five San Francisco Bay Area cities. Working with 830 elementary and high school students, in 32 classrooms, and over 150 professionals and civic leaders, UC Berkeley utilized Y-PLAN, a pedagogical strategy and planning studio course to address specific issues in local communities. By cultivating an intergenerational community of practice, Y-PLAN paired two groups that are equally valuable to the process: low-income young people of color and adults (i.e. educators, city planners, designers, civic and community leaders, and academics from UC Berkeley).

An innovative, thriving, and progressive metropolitan region, the Bay Area is world renowned for its diversity, culture, access to opportunity, and overall quality of life. As a result, it draws people and companies from across the United States and around the globe. Despite this prosperity, the Bay Area faces challenges of its own. While the Bay Area offers a wealth of opportunity to some of its residents, these opportunities are not available to everyone. Tech workers drive Teslas on dilapidated streets where people without homes also live. Many low-income young people of color grow up in overcrowded housing conditions not far from fancy loft studios others learn to call home. Large socio-economic inequality taints life in this otherwise idealistic region.

As in typical Y-PLAN projects, the Youth Challenge worked directly with students in public school classrooms during the school day. This approach provided an equitable sampling of the community, as it is the only remaining system that is publicly charged to reach all young people. In the Y-PLAN Resilient by Design | Bay Area Youth Challenge, 84% of Y-PLAN students identified as students of color, and they attended schools where on average more than 80% of students were considered "socioeconomically disadvantaged" by the state of California [1].

These young people brought unique expertise to the Youth Challenge. Although the Youth Challenge participants were charged with developing proposals for climate change solutions in their communities, it quickly became clear that the issues of climate change and sea level rise could not be addressed without recognizing and engaging with a more immediate challenge: the daily reality of the participants. One of the most painful realities of our young people's everyday lives in far too many of our cities is the normalization of violence, poverty, gentrification, and homelessness. Over the course of the Youth Challenge, students from Oakland to East Palo Alto could be heard casually discussing the timeline of student deaths from the prior year, as if it were a normal, everyday occurrence to lose one's peers at sixteen years old. These students are not only living adult lives, but they are also burdened with realities that many of the adults planning their cities have never or will never face.

[1] See http://dq.cde.ca.gov/dataquest/

Looking to the future through the lens of their everyday lives allowed students to avoid the professional distance that often overlooks the most pressing and painful challenges facing marginalized communities. At the same time, students sought out and benefited greatly from engaging with professional experts and exposure to technical practices. These two dimensions worked in tandem to deepen the mutual learning, analysis, and final proposal development. In fact, when knowledge from both lived experiences and professional practice were not balanced, students' proposals were not as impactful.

Building on their own experience with inspiration and best practices shared by over 100 professionals from their cities, young people identified a wide range of proposals for a resilient and inclusive Bay Area. Above all else, this paper is informed by the young people in Y-PLAN, through their specific recommendations, proposal presentations, and critical interactions with civic leaders, professionals, and academics throughout the process.

Y-PLAN: A Roadmap for Change

Cultivating an Intergenerational Community of Practice

Resilience is at the core of the Y-PLAN method, especially as it relates to community, policy, and place, and the way its impact varies across lines of relative vulnerability. Y-PLAN was developed over twenty years on the premise that learning is not an individual activity but rather a result of everyone's participation within an intergenerational community of practice. Fostering relationships between civic leaders and young people around meaningful activities creates a more resilient city that works for all of its residents. All participants learn from each other's expertise and experience to create collective knowledge for the entire community's benefit (McKoy, Eppley, & Buss, 2019).

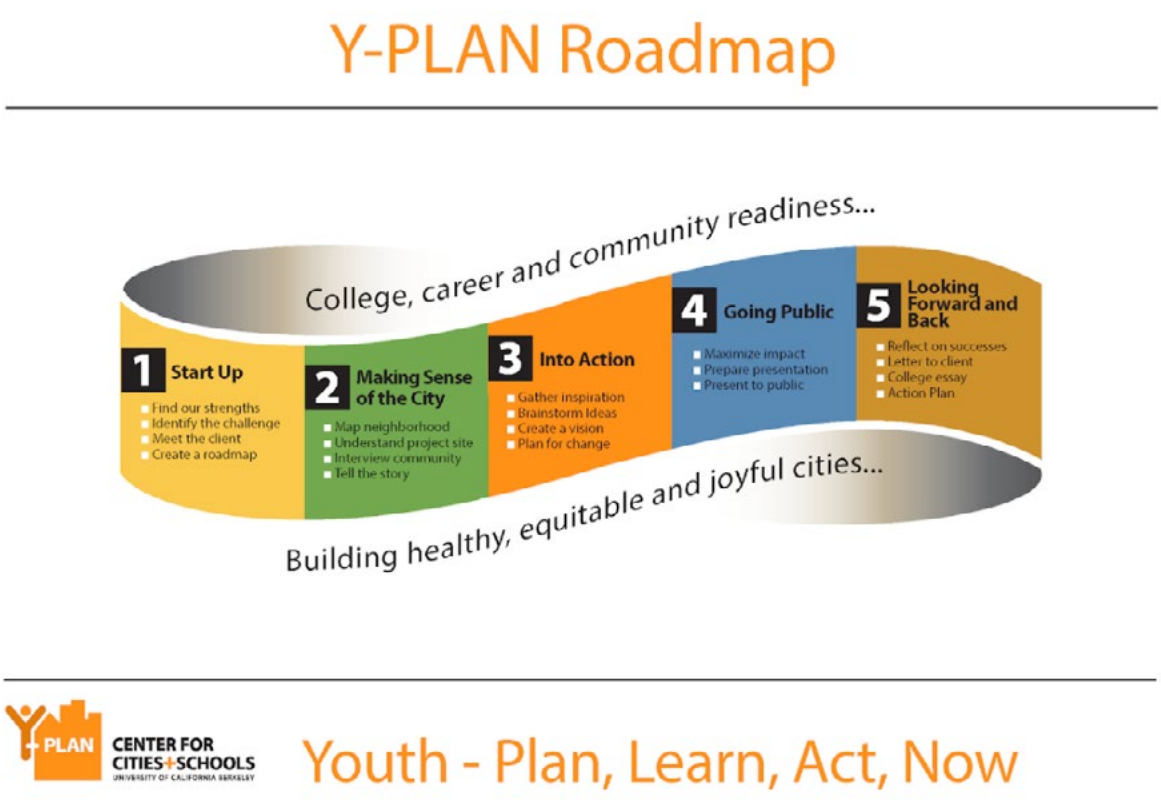
The Y-PLAN method prepares young people to participate alongside city leaders to build more resilient communities -- thus making urban planning transparent and accessible to all. The process invites everyone involved - especially our children and youth - to ask the critical question: WHY?!

Y-PLAN's rigorous critical inquiry process encourages everyone to step back and ask why things are the way they are. Why are conditions the way they are in one part of a city - or city block - and not another? Why can some families afford to live in cities that increasingly become more resilient to climate change impacts, while others must often move hundreds of miles to be able to afford that type of protection?

The Y-PLAN Method

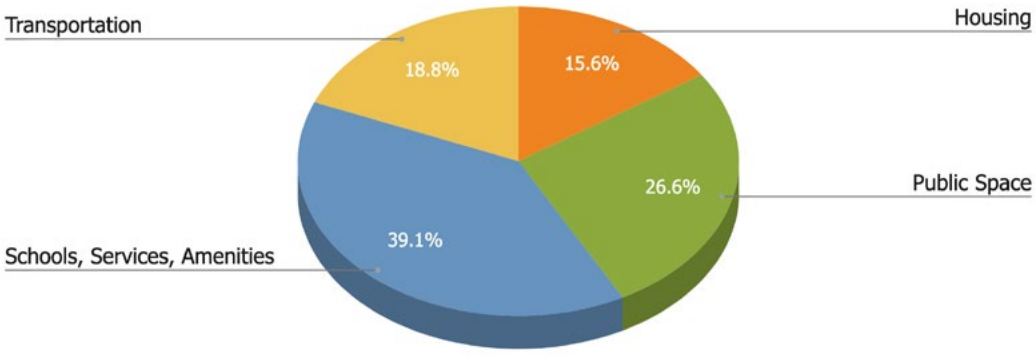
Y-PLAN participants work in small teams, building and depending on the strengths and ideas of both youth and urban planning professionals to implement an actionable project. First, the process **"Starts Up"** with students examining their own strengths and learning about the real-life challenges being posed by authentic civic leaders (e.g. "clients"). Second, students leave the classroom and conduct site visits and map the local community to **"Make Sense of the City"** and collect qualitative and quantitative data to better understand and analyze their project question. Third, they head **"Into Action"** by gathering inspiration from local and global best practices, brainstorming possible solutions and working with their peers to identify solutions for their client. Next is to **"Go Public"** - with students sharing their vision for change with their clients, community members and the broader community.

The final step **"Looking Forward - Looking Back"** is in many ways a return to the beginning – providing the students with an opportunity to explore how this process impacted their individual college, career, and civic readiness as well as to assess the collective impact on civic leaders and adult allies. This includes how adults might think differently about the role, power, and importance of young people in resilient city planning, and how together, both young and old can influence and impact their cities.



Young Planners Proposals for a Resilient City

As the Y-PLAN RbD Youth Challenge students explored themes of resilience, they proposed more than 70 different recommendations to city leaders around the region. Of those, over a third focused on schools, services, and amenities, with another quarter informing public space, with housing and the remaining 30% concentrated upon transportation. Selected student proposals appear in Appendix II.



Analyzing the proposals as a whole, we found that they offered general policy recommendations per thematic area, as summarized below. The following section will outline themes that emerged from students and a few examples illustrating how young people who participated in the Youth Challenge operationalize resilience.

Housing

Students expressed key concerns about addressing issues of climate change and sea level rise while also addressing immediate issues of housing and homelessness prevention. They were especially inspired by innovative adaptation strategies they learned from many of the RbD professional teams who worked with them. One of the things that resonated most with adults was the young people's emphasis on access to basic, accurate, and current information about available housing opportunities for themselves and their families in low-income communities. Student housing proposals included:

1. **Create affordable condos for low-income locals** *(East Palo Alto).* In order to maintain the identity of East Palo Alto (EPA), students proposed providing a path to home ownership for low-income long-term residents. Recognizing the threats to the identity of East Palo Alto due to the converging factors of rising sea levels, gentrification, and displacement, this proposal aimed to preserve the identity of EPA by protecting its greatest asset: the people. Additionally, they proposed the development of more affordable apartments, concurrently.

2. **Build "tiny homes" for homeless people** *(Richmond)*. Inspired by Seattle's community of tiny houses for homeless people, students proposed providing tiny houses as part of a "housing first" approach to provide stable housing. This would allow them to have a safe and stable place to live so they can focus on other needs. In order to make the houses sustainable and more financially feasible, they proposed building houses from leftover shipping containers, resulting in cheaper building costs and reducing waste.

3. **Elevate existing houses to make them more resilient to climate change** *(East Palo Alto)*. Because East Palo Alto is below sea level and at risk from flooding, students proposed protecting new and existing homes from rising sea levels by building homes on stilts. They recognized the need to drive these stilts far into the earth in an earthquake zone and suggested that building codes be changed to require stilts for new construction along the shoreline and provide incentives for current homeowners to raise their existing homes as well.

4. **Refurbish and rebuild abandoned buildings for and with homeless people** *(Richmond)*. Students proposed locating abandoned buildings and transforming them into transitional housing. Construction crews would be hired to demolish the buildings, and then homeless youth would rebuild them, giving them a sense of ownership over a home that would be theirs while they continued their education or sought work. The hope of the students is to create a more beautiful and resilient community where abandoned buildings can be used for the public good.

Schools, Services, Amenities

Students tackled questions related to needed services and amenities by calling for their school to be far more central to overall planning processes. They proposed "resilience incubators" to experience and innovate energy saving and environmental strategies for the whole city. Breaking down barriers between schools and their communities - and vice versa - was also important and present across their proposals. Across sites, young people called out the need for access to information to prepare them for college, career, and civic participation. Schools, service, and amenities proposals included:

1. **Expand the food options at the Student Store** *(Oakland)*. Add healthy snacks to vending machines for quick, accessible alternatives to waiting in line at the cafeteria or leaving campus to buy food elsewhere. Their school used to deliver fruit to classes, and students recommended reintroducing this option for students who missed breakfast so they have access to healthy options, without breaking school rules.

2. **Create a community kitchen with cooking classes** *(Richmond)*. Provide cooking classes for the entire community as well as a fully equipped cooking facility for residents to use, together. Even when people get healthy ingredients, not everyone has access to a fully stocked kitchen to cook in and provide themselves with home cooked, healthy meals. This also has the added benefit of bringing the community together, and allows for the sharing of family recipes across cultures.

3. **Create social media and a website to be used in times of emergency to share information quickly** *(Richmond)*. The website can be used and expanded upon by members of the community. Due to safety concerns in our cities, many of the fibers that often hold a community together in a crisis are unavailable in some of the places that need it the most. If folks don't feel safe knocking on someone's door to warn them of a need for evacuation or lockdown, social media can provide this connection in a safer way.

4. **Train teachers and staff to engage carefully and positively with students** *(Oakland)*. In the absence of mental health staff, one student advocated that "the solution isn't just to hire more counselors but [to] actually have people engage with students, like asking 'What's going on?,' having a general sense of caring on campus, like there's a place for you all to talk, and if you don't reach out, someone will reach out to you cause some people don't want to or are scared to. It would help the counselors too."

Transportation

Students tackled questions related to needed services and amenities by calling for their school to be far more central to overall planning processes. They proposed "resilience incubators" to experience and innovate energy saving and environmental strategies for the whole city. Breaking down barriers between schools and their communities - and vice versa - was also important and present across their proposals. Across sites, young people called out the need for access to information to prepare them for college, career, and civic participation. Schools, service, and amenities proposals included:

1. **Change the traffic corridor to clear congestion, highlight culture, and build community** *(East Palo Alto)*. The influx of people as well as jobs and shopping centers have exacerbated the traffic congestion in recent years, and now University Ave. feels both inefficient and unsafe. Students examined a current city project to widen University Ave and considered best practices for traffic improvements around the world. They concluded that widening the streets rarely solves the problem and instead proposed several alternatives aimed at creating a vibrant, pedestrian corridor.

2. **Create art on BART and remodel bus stops** *(San Francisco)*. Students proposed community beautification projects through the creation of murals to create more inviting spaces for the community and passersby. Students also rethought the current bus stops and developed new methods to create a safer environment while waiting for the bus, including safety blue lights for emergencies, camera surveillance, and more protective shelters.

3. **Save Middle Harbor Shoreline Park** *(Oakland)*. Students proposed limiting the use of motor transportation and fossil fuels to reduce greenhouse gases, and increasing pedestrian access with better walkways and pedestrian-only bridges to access San Leandro Bay. They also proposed adding play elements, a pop-up library, telescopes, a solar powered picnic area, and an education booth to "inform civilians about habitats and explain how to take care of Middle Harbor Shoreline Park."

4. **Increase connectivity at the Bay Bridge landing** *(Oakland)*. Students advocated for the need to create community ties through recreation and natural beauty while mitigating climate change and restoring the natural shoreline. They proposed taking advantage of the fragmented yet large Bay Bridge landing area by building a pedestrian bridge and activating the space. This would bring people out to explore in comfort and safety while reducing pollution and greenhouse gases from businesses and services. Adding walking and biking trails and overpasses for exercise, along with signage on the trails to learn about the site and the history of Oakland, a park for kids to play, and an underground parking lot, rounded out their proposal.

Public Space

One key theme important to young people is being visible in public spaces. Many students shared the desire for public spaces to break down stereotypes of who they are and build physical and social bridges between young and old, black or brown, etc. Proposals for public space included:

1. **Host a planting event for native plants used by indigenous people** *(Oakland)*. Trees and plants play an essential role in the fight against climate change, and they also impact people's happiness. Native species are especially important for the local ecosystem. Students proposed turning the lawn around the school into beds with native trees and plants and providing educational information about their role in creating a more sustainable and resilient neighborhood.

2. **Install interpretive walking trail along the waterfront from Heron's Head Park to Islais Creek** *(San Francisco)*. The trail would improve community access to the San Francisco Bay and teach children, teens, and adults about climate change, the ecology of the Bay, and the history of Islais Creek. The trail would feature pop-up education stations with sculptures, signs, gardens, native animal and plant habitat, view-framing devices, and other outdoor interpretive features. It would also be designed to protect the community from some of the impacts of sea level rise using these strategies: living shoreline, raised boardwalks, and coastal armor using natural elements.

3. **Build a Mexican-style plazita in the heart of the community** *(East Palo Alto)*. The majority of the residents of East Palo Alto are Latino, many with roots from Mexico. The students proposed a Plazita at a vacant lot at the intersection of Bay and University to build bridges between new and long-term residents, improve the local economy, and highlight the culture of the area.

4. **Create incentivizing programs allowing student access to sidewalks and shifting perceptions of youth** *(Oakland)*. In light of recent gentrification, there is an increasing need for positive, healthy interactions between local businesses, newer community members, and teenagers. This proposal looked to shift the community perceptions of black male youth on sidewalks. These young men proposed granting off-campus access as a reward for good behavior at school, with the expectation that as those young people leave campus, the community would know they are there as a reward, not because they "skipped class," and the neighbors would start to see them in a more positive light.

PART II

EQUITY-DRIVEN COMMUNITY ENGAGEMENT QUALITY FRAMEWORK

"The students are resilient to the point that they didn't initially realize what the word meant…"
—UC Berkeley Student Mentor, Field Notes, 5/2018.

As discussed in Part I, Bay Area student scholars participating in the Y-PLAN RbD Youth Challenge generated a wide range of innovative proposals drawing from both their lived experience and newly acquired knowledge and understanding of city planning professional practices. In doing so, they disrupted stereotypes and assumptions about how young people learn, how they perceive their city, and how they understand resilience itself. Often, well-meaning adults, including professional city planners who engage with marginalized young people, assume their input is nice, but rarely necessary.

Y-PLAN students have shown over two decades that their insight is essential. Their ideas lift up how they, their families, and their ideas for change are critical, and are too often overlooked as assets in their neighborhoods. The following section dives deeper into analysis and conclusions drawn from the Y-PLAN RbD Youth Challenge and offers four case studies from the Youth Challenge to articulate the necessity for equity-driven community engagement within resilience planning.

Integration of Personal, Lived Experience and Professional Expertise

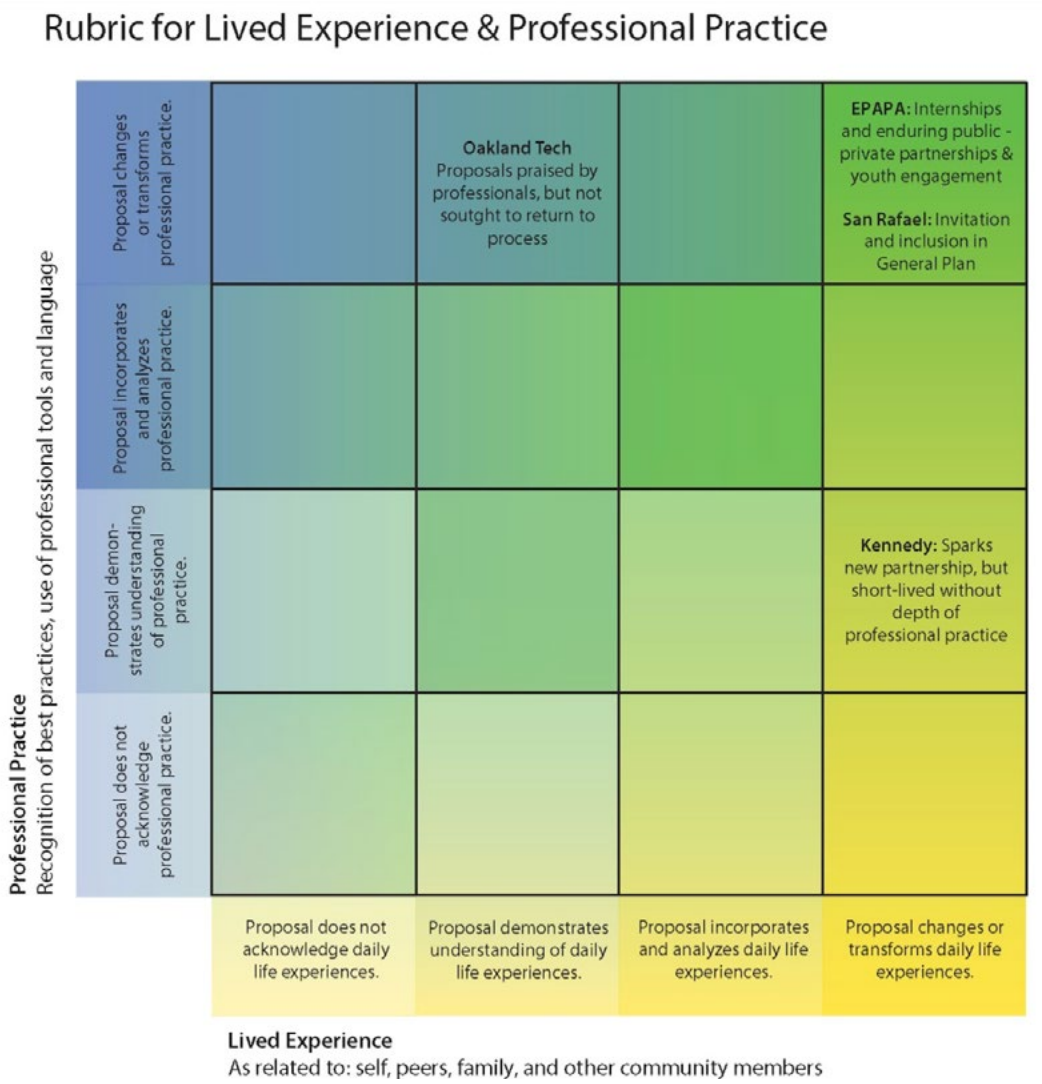
A Rubric for Quality Analysis of Proposals

The following chart served as a tool for analysis of the extent to which each of the 72 Y-PLAN RbD Youth Challenge proposals drew from both community members' lived experiences and city planning professional practices and tools. Each factor - lived experience and professional practice - was analyzed on a scale of 1-4, with 1 being the least impactful and 4 the most impactful.

From this analysis, it emerged with clarity that a quality Y-PLAN proposal demands strength in both dimensions. Lived experience includes first-hand knowledge of how the youth, their families and neighbors are being personally impacted by issues ranging from safety to displacement. Through the Y-PLAN methodology, students tap into their lived experiences of living, working, being, and moving within their cities to develop proposals rooted in their identities as young people in their communities. Meanwhile, the sharing of professional practice equips youth with knowledge of the cutting edge practices and tools of the planners,

so they can collect data and make informed decisions. The Y-PLAN methodology facilitates specific moments of collaboration and knowledge sharing between young people and adults, which helps foster inspiration and critical thinking as young people develop their proposals.

As the case studies below illustrate, when a proposal did not acknowledge lived experience, the engagement was less impactful. Similarly, when a proposal did not incorporate best practices and tools shared by planning professionals, the youth's recommendations were not able to be actualized. Conversely, when both lived experience and professional practice were emphasized in balance, the results were tremendous. In the cases of both Laurel Dell Elementary School and East Palo Alto Phoenix Academy, facilitators actively engaged the students by both encouraging them to consider their lived experiences and equipping them with inspiring best practice knowledge. Both of these engagements led to deep and balanced youth proposals that were lauded, acted upon by professionals and civic leaders, and enjoyed enduring results.



Case Study #1: Kennedy High School, Richmond, California

Deep Lived Experience Draws Civic Partners to the Table

Project Question: How can we use technology to improve resilience for young people and communities across the Bay Area?

Community of Practice: Kennedy High School Information Technology Academy, Mithun, RbD HOME Team, 80 12th graders in 3 technology classes

Analysis: Lived Experience: 4, Professional Practice: 2

Driven largely from previous involvement with Y-PLAN and understanding of the importance of meaningful connection, this project succeeded in engaging with the students' personal and lived experience and tapped into their insights from their technology classroom. However, due to inadequate access to best practice knowledge in resilience planning, the students' recommendations, while helpful and well received, were technically limited.

Context:

The Resilient by Design | Bay Area Challenge worked on short timelines and urgent demands. In order for the Youth Challenge to align with their schedules and be meaningful, authentic, and timely, experienced school partners with established trust in the process needed to be engaged right from the start. Having an established relationship with local schools is often one of the greatest challenges facing urban planners who seek youth input. Schools are often risk averse by nature, and it is challenging to start a new program on short notice. Fortunately, after more than a decade of partnership with UC Berkeley's Center for Cities + Schools, Kennedy High School's Information Technology Academy has embedded Y-PLAN directly in their required curriculum for all seniors to graduate. As a result, CC+S was able to build on that partnership and quickly launch the Y-PLAN RbD Youth Challenge pilot with Kennedy High School, preparing students to speak at the official RbD launch less than a week after they were first introduced to the project.

Recommendations:

The Kennedy students' recommendations drew largely from their own personal experiences with climate events and access to information within their technology classroom and social groups. Their proposals thoroughly analyzed the daily lives of people in their community and the environmental dynamics impacting them. Their proposals focused on how to respond to

climate change and sea level rise within that context. The students had limited exposure to professional planners and climate science experts within the short RbD timeframe. A more intensive collaboration with adult practitioners would have augmented the students' powerful local knowledge and amplified their basic understanding of the environmental planning field.

Recommendations included:

1. **Just take the salt out of the water! Use desalination to repurpose water** from the sea during flooding, to simultaneously address rising seas and drought events.
2. **Install sensors to detect any flood and air quality threats** in the Bay to provide live feedback of the water's effects on the city.
3. **Leverage social media to build a sense of connection and community** in neighborhoods that might be divided because of fears of violence.

Outcomes:

Students became climate stewards and inspired regional civic leaders to change engagement practices!

Students became regional leaders and rose to the challenge, as they were called upon four separate times to present in and outside school to professional architects, planners, and policy makers focused on making Richmond a more resilient city - including the Mayor of Richmond Tom Butt, a key regional leader of the RbD Challenge and a national leader in resilience planning. After presenting at their school in December, they again served as leaders when they presented their proposals at the Bay Area Metro Center in January, setting the tone for adults and other students alike. From that presentation, they were invited to present at the Metropolitan Transportation Commission (MTC) / Association of Bay Area Governments (ABAG) Youth for the Environment and Sustainability Conference in February 2018, and by the time they arrived at the Y-PLAN RbD Summit at UC Berkeley, they presented as seasoned professionals.

These students elevated their knowledge of technology and their lived experiences, as well as those of their peers, families, and neighbors with aplomb. Their passion and eloquence prompted the RbD HOME Team to invite Kennedy Y-PLAN scholars to serve on the North Richmond Community Advisory Board to share their personal experiences with local leaders on a more regular basis. One of the most exciting outcomes was that while their technical knowledge may have been limited, their passion and commitment to be engaged and involved in resilience planning as critical actors and participants was contagious. They inspired a powerful regional entity, MTC/ABAG, to bring over 300 K-12 students across all 9 counties in the Bay Area into their Horizon long range planning efforts the following year.

Case Study #2: Oakland Technical High School, Oakland, California

Deep Professional Practice Bolsters Adults' Plans & Recommendations

Project Questions: How can the City of Oakland reduce its carbon footprint through the use of renewable energy systems for transportation and urban planning strategies? How do we mitigate the effects of climate change in Oakland while preserving and preparing current urban communities?

Community of Practice: Oakland Technical High School, City of Oakland Public Works Department, RbD All Bay Collective Team, 10 UCB Mentors, 80 students in 3 Advanced Placement Environmental Science classes

Analysis: Lived Experience: 2, Professional Practice: 4

Because of this school's strong Advanced Placement (AP) curriculum, these students focused primarily on their technical knowledge of the subject matter concerning climate change. While critically important, this concentration overshadowed their more personal lived experiences as students in Oakland from being adequately explored or integrated into the final proposals.

Context:

Oakland Technical High School is the largest comprehensive high school in Oakland and a microcosm of the city it calls home. The community is vibrant, multicultural and multilingual with more than 2,000 students, and many career pathways from engineering to health science. Y-PLAN has worked in a range of classes at "Tech" and was invited by the AP Environmental Science teacher to bring Y-PLAN into the spring course. Unlike many other classrooms partnering with the Youth Challenge, the issues of climate resilience were not new to these students -- they were already versed about the challenges and looming crisis facing Oakland, the San Francisco Bay Area, and the globe due to climate change. They were also supported by "mentors," UC Berkeley undergraduate students studying urban planning, throughout the course. Like most high schools in Oakland, Tech draws students from across the city, and only a few AP Y-PLAN students lived within walking distance of the school. While students did engage in community mapping as did other school partners, they were more focused on the technical aspects of the project and less on capturing the everyday challenges of the broader community.

Recommendations:

The recommendations of Oakland Tech AP Environmental Science students relied primarily on their newly acquired understanding of professional practices, tools, and vocabulary. Students readily absorbed and analyzed best practices, and as a result, their proposals bolstered those of local experts. However, their proposals did not demonstrate analysis of the lived experiences of community members beyond a basic understanding.

Recommendations included:

1. After learning about the RbD All Bay Collective Team's proposals, many students agreed that **floating houses** could help mitigate the impacts of rising sea levels by ensuring the housing inventory persists.
2. **Install solar panels** on and around the school, including businesses and homes in a five block radius; provide free solar panel installation; and resell excess energy back to the utility company to pay for the program.
3. **Install a rainwater collection system** at the school for watering plants or flushing toilets.

Outcomes:

Because the Oakland Tech students were already in an academically rigorous class designed to study environmental resilience, their knowledge of the subject matter proved quite impressive. However, their technical expertise eclipsed the integration of reflective personal experience, leading to proposals less rooted in a sense of place. When they presented to the city, their recommendations were viewed as interesting and reflective of professional practices but not as connected to personal experience and, ultimately, not actionable. The planners already had a high level of technical expertise, so the scholarly predisposition of the Oakland Technical Advanced Placement students' recommendations fell short.

In contrast to the Kennedy case study, the Y-PLAN process at Oakland Tech emphasized technical expertise but did not place as much value on engaging the students within the context of their lived experiences. Therefore, the outcomes reflected that imbalance.

Case Study #3: Laurel Dell Elementary School, San Rafael, California

A Deep, Balanced Approach Results in Youth Voice in 2040 General Plan

Project Question: What will keep my family, friends, and me safe, strong, and prepared for floods, earthquakes, and other environmental challenges?

Community of Practice: Laurel Dell Elementary School, RbD Bionic Team, Canal Welcome Center, Youth in Arts, 40 4th grade students in 2 classes

Analysis: Lived Experience: 4, Professional Practice: 4

These young planners received the highest marks possible for both lived experience and professional practice because the students effectively balanced the professional tools and practices they learned throughout the project with their own personal experiences and knowledge of the contours of the city.

Context:

Fourth-grade students at Laurel Dell Elementary School tackled the challenges posed by rising sea levels in the bayside community of San Rafael. They worked in collaboration with architects, planners, and artists from Y-PLAN, Youth in Arts, and the RbD Bionic team. The cohort of forty-six students, 95% of whom were from Latino families living in working class neighborhoods in the city, represented a unique stakeholder group in a city and county with stark racial and economic divides. When presented with the Resilient by Design | Bay Area Challenge, many adults in the San Rafael community said climate change and sea level rise are too overwhelming, too complicated, or too far in the future to be a priority. Additionally, the professionals working with the students feared that the topic might be too abstract, complex, or depressing for young children to engage with in a meaningful way.

However, the fourth-graders enlisted in the challenge with vigor. They wanted to be engaged in authentic issues and were not daunted by real, thorny problems. Students used real tools to analyze data, create models, and generate imaginative, insightful, and humane solutions. Engaging with real challenges activated their sense of purpose, imbuing them with a sense of pride and an investment in their community. They eagerly studied inspiring best practices from around the world and analyzed the predictions for their own city, translating their research into models and posters featuring vibrant strategies to protect the low-lying areas of San Rafael from flooding while increasing accessibility, livability, and fun. Solutions included lush living shorelines by the San Francisco Bay, delightful protective boardwalks along San Rafael Creek, pop-up education stations on the Bay Trail, and floodable parklands in threatened areas.

Recommendations:

The recommendations of the Laurel Dell fourth graders balanced knowledge they gained from exposure to professional design and planning tools and practices with their own experiences living and going to school in San Rafael. By effectively balancing the two, these young people proposed sophisticated design and policy interventions far beyond their years, spoke confidently with adults at public forums, and crafted elaborate models to represent their ideas and visions for the future.

Recommendations included:

1. **Design a re-imagined Creek and Canal.** A network of pedestrian and bicycle pathways along the San Rafael Creek and Canal would improve transportation routes for students walking and biking from the Canal District to school and adults accessing resources downtown. This transportation network would serve multiple purposes: an accessible, sustainable mobility corridor, a way to protect homes and businesses from the impacts of sea level rise, and an educational experience about conserving natural resources.
2. **Implement multiple strategies for protecting homes now threatened with flooding during storm events and extremely vulnerable in the future due to sea level rise.** These strategies are intended for the low-income community abutting the San Rafael Creek and Canal and include a combination of elevated structures, floating buildings, and docks modeled on mixed income housing developments in Amsterdam. Students considered using movable dams and protective barriers as well as allowing waterways into target areas such as floodable parklands and living shorelines.

Outcomes:

At the end of the school year, the Y-PLAN team received a letter from five scientists from the Union of Concerned Scientists commenting upon the Laurel Dell students' engagement.

"We were delighted to learn about these students engaging, so fearlessly and creatively, with the problems posed by sea level rise. Several of us are mothers of children in that age group, and we worry about the world we're leaving them, not to mention the strains our jobs put on them. As our lead author Kristy Dahl put it, 'Sometimes when we think we need to shelter them from the enormity of this, we forget that they can give us a fresh, much-needed perspective.' Reading about your work lifted our spirits."

Building upon the work the fourth grade students conducted on the RbD Youth Design Challenge in 2017-18, representatives from the City of San Rafael 2040 General Plan Steering Committee enlisted their participation in formulating key elements in the General Plan proposal and adopted some of their design and policy recommendations. This project has led to sustained involvement of elementary school children in San Rafael's ongoing community development projects.

Case Study #4: East Palo Alto Phoenix Academy (EPAPA), East Palo Alto, California

A Deep, Balanced Approach Results in Sustained Public-Private Partnerships & Youth Engagement

Project Question: What is the role of the school and young people in a resilient community?

Community of Practice: EPAPA, San Mateo County Office of Sustainability, RbD Field Operations Team, Facebook, Center for Community Innovation at UC Berkeley, Urban Displacement Project, 25 9-12th grade students in 1 science class, 1 UCB Mentor

Analysis: Lived Experience: 4, Professional Practice: 4

As these high school students also balanced deep analysis of their lived experiences with the professional tools and practices they developed throughout the project, this project received the highest scores possible for both lived experience and professional practice.

Context:

Two weeks after launching Y-PLAN at EPAPA, a charter school that fills the void of a local comprehensive public high school for East Palo Alto students, the school administration announced that the high school would be closing permanently at the end of the year. While the school and students were performing well, displacement of families led to a decline in student population, and the ensuing low enrollment precipitated the closure of the high school. Rather than avoiding the challenge, CC+S charged forward, shifting the project to consider the role of schools in the resilience equation: *What is the role of the school and young people in a resilient community?*

Recommendations:

The recommendations of EPAPA students balanced deep analysis of the experiences of their families, neighbors, and peers, with robust professional tools and practices they developed throughout the project. This balance was displayed when the students were pressed by the East Palo Alto City Council to prioritize their recommendations. One student eloquently explained to the city council that while the students' hearts lie with their Plazita, affordable housing for local residents must be prioritized first.

Recommendations included:

1. **Create affordable condos and support low-income locals in purchasing them** in order to maintain the identity of EPA and allow low-income residents and communities to enjoy the individual and community benefits of home ownership.

Recognizing the converging threats of rising sea levels and gentrification in East Palo Alto, this proposal aims to preserve the identity of EPA by making sure to protect its greatest asset: the people.

2. **Redesign the traffic corridor on University Ave** to help clear congestion caused by the rapid influx of people and use it to highlight culture and build community. The influx of people, jobs, and shopping centers has exacerbated traffic congestion, and now University feels both inefficient and unsafe. Students proposed several improvements to make University safe and vibrant for everyone.
3. **Build a Mexican-style Plazita in East Palo Alto.** The majority of the residents of East Palo Alto are Latino; many are recent immigrants from Mexico. The Plazita, at a vacant lot at the intersection of Bay and University, would build bridges between new and long-term residents, spark the local economy, and highlight cultural heritage and pride.

Outcomes:

Housing researchers from the UC Berkeley Center for Community Innovation's Urban Displacement Project and Facebook hired these students and trained a second cohort of Y-PLAN scholars as paid interns to research local housing conditions and provide their recommendations for preserving the local character of the community. Through this partnership, students shared experiences, research, and recommendations on panels at Facebook for hundreds of employees and community members, at city council meetings in East Palo Alto and Menlo Park, and at UC Berkeley. They helped secure a million dollars in funding to implement their recommendations and were featured on several local news venues - print, radio, and television. They accompanied a housing commissioner to local events and to meet a US Congresswoman, and they joined local professionals for San Mateo County's Housing Leadership Day. They formed a youth leadership council to monitor the implementation of their proposals and stayed involved even after leaving for college. In all, this project has led to sustained investment in young people's vision for their community from civic leaders, from Facebook, and from the young people themselves.

As these case studies demonstrate, when students are encouraged to focus on both their lived experience and professional tools and practices, their recommendations hold significant weight. It is the sharing of personal experience and the integration of technical expertise that resulted in student proposals that were heartfelt, sound and actionable.

CONCLUSION

Integrating the lived experiences of young people and collaborating with local schools are two critical missing pieces within most resilient city planning efforts. As described above, the Y-PLAN Resilient by Design Youth Challenge revealed the much-needed ingenuity, out-of-the-box thinking, and hope our youth bring to the table. The engagement of young people across cities and ages is absolutely vital for future generations - and cities themselves - to survive and prosper, and this paper offers a guide to frame and analyze the quality of that engagement.

Meanwhile, this work has revealed many of the challenges of working within the confines of the public school day - from ever-changing class schedules to student absences, from high teacher turnover to school closures. Despite these and other obstacles, engaging with students during the public school day might well be the only remaining opportunity to equitably access all young people. Here they have the time and guidance to both draw upon their lived experience and develop the professional tools, vocabulary, and knowledge to contribute their full potential to our cities' present and future.

Young people are hungry to be part of the solution. They know that they have the most to lose and gain, as they will be the ones to navigate the future - be it environmental challenges or deteriorating cities. Low-income young people of color in particular often live on the frontlines of displacement due to both natural and human-made factors. Through their honesty and vulnerability, our youth have the capacity to bring people together, building bridges across differences in socioeconomic status, race, age, and more.

The Y-PLAN RbD Youth Challenge illuminates the potential for truly equitable climate adaptation planning. When we witness the power of engaging our youth, and unearthing their creative power and passion - it is painful to envision the costs of not bringing these insightful voices to the table NOW to plan for their uncertain future.

These insights lead naturally to a much needed set of recommendations with clear steps forward for planners to equitably and meaningfully engage our young people in planning our cities, together. Just imagine what could happen if planners were better prepared to tap into the millions of young people across the country and across the globe. What could be possible if planners learned how to more deeply listen to young people's lived experience, ideas, and inspiration for our quickly urbanizing city centers?

We might just have more to look forward to than to fear.

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