NLC NATIONAL LEAGUE OF CITIES

CITIES STRONG TOGETHER

CAPSTONE CHALLENGE SERIES 2023

Public-Private Partnerships Powering Cities

NATIONAL LEAGUE OF CITIES

CITIES STRONG TOGETHER

About the National League of Cities

The National League of Cities (NLC) is an organization comprised of city, town and village leaders who are focused on improving the quality of life for their current and future constituents.

With 100 years of dedication to the strength and advancement of local governments, NLC has gained the trust and support of more than 2,700 cities across the nation. Our mission is to relentlessly advocate for, and protect the interests of, cities, towns and villages by influencing federal policy, strengthening local leadership and driving innovative solutions.

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Introduction

Recognizing that progress and effective problem-solving hinge on collaboration and modernization, local leaders are keenly aware of the pivotal role in harnessing expertise, resources, and innovation from both private and public sectors to shape a brighter future. The infusion of historic federal investments through the American Rescue Plan Act (ARPA), Bipartisan Infrastructure Law (BIL), and Inflation Reduction Act (IRA) highlights the opportunity to collaborate.

In response to this imperative, the National League of Cities (NLC) has spearheaded the Capstone Challenge Series. This groundbreaking program brings together NLC member cities and strategic partners to devise solutions addressing the urgent needs of municipalities. Over an eight-month duration, collaborative groups of cities and private sector partners engage in a diverse array of projects, cultivating a joint approach to urban challenges.

Entering its third year, the Capstone Challenge continues to build upon the successes and insights gained from the reports in 2021 and 2022. This report meticulously examines the intricacies of each project undertaken in the Capstone Challenge Series. NLC member cities are strongly encouraged to explore the case studies developed through the program, drawing inspiration from the opportunities and examples of successful public-private partnerships presented within this comprehensive document.

Program Goals

The primary objective of the Capstone Challenge Series is to bring together the expertise and resources of both the private and public sectors, fostering a collective effort to forge a brighter future for our cities, towns, and villages. This overarching goal is further delineated into three key sub-goals:

1. Cultivate meaningful dialogue and establish authentic, long-term engagement between partners and members, ensuring a reciprocal exchange of value for both entities.
2. Offer technical assistance and support to NLC members through pro bono services from partners. Extend this support beyond participants by disseminating resources, case studies, and best practices developed within the program.
3. Contribute to the existing body of knowledge on municipal cross-sector collaboration and disseminate acquired insights to a wider audience within the NLC community, thereby enriching the collective understanding of effective collaboration practices.

Project and Participant Snapshots

4 strategic partners

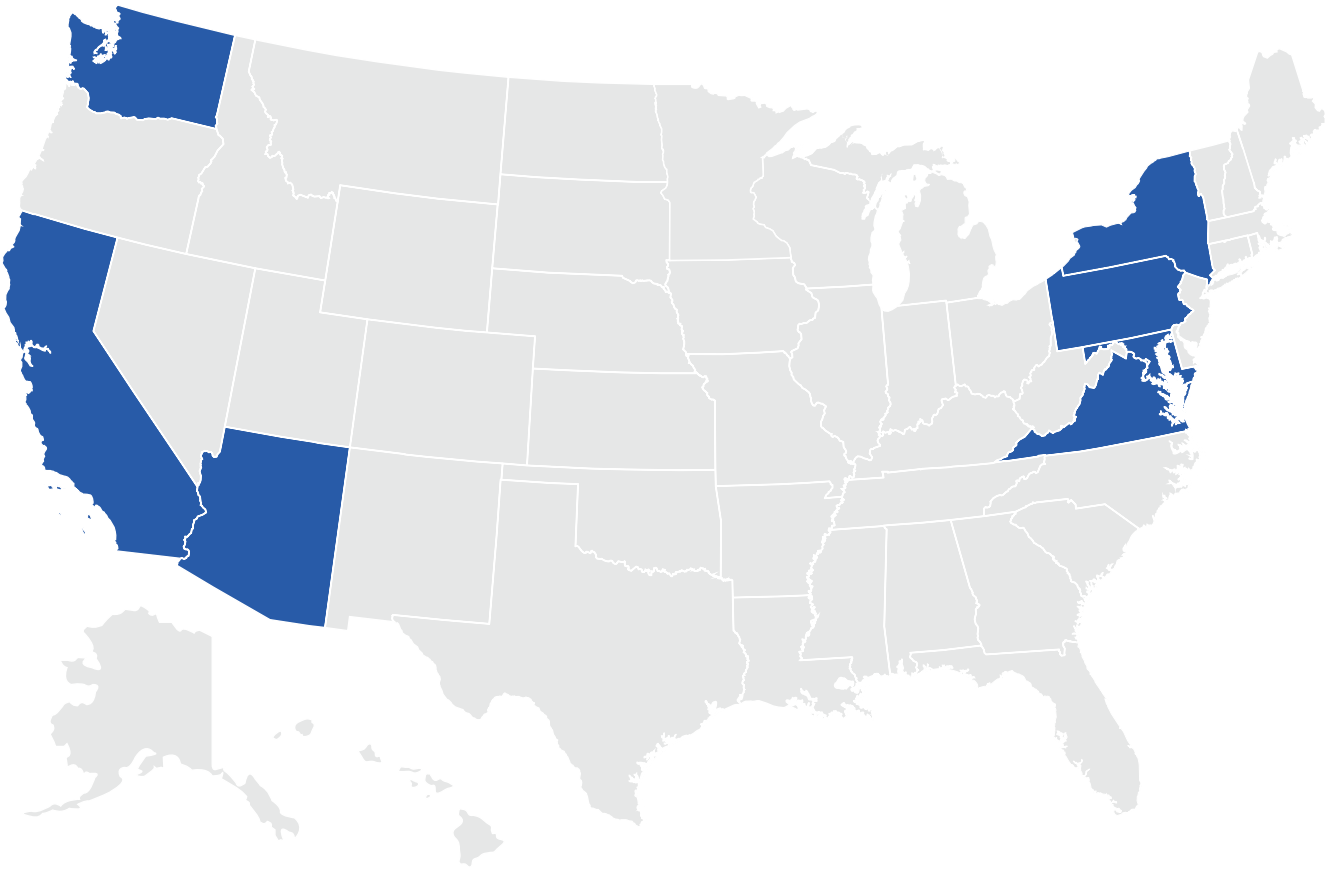
8 municipalities representing

7 states

1,268,308 residents

Among those 8 municipalities

3 are small cities, 4 are medium cities, 1 is a large city



Project snapshots

General Motors Future Roads, Easton, PA, and **Redmond, WA**, embarked on a project to advance road safety using the innovative Safety View tool. Developed jointly with INRIX, Safety View empowered cities to assess safety factors through contextual, layered data sets. The initiative addressed various road safety needs, such as Vision Zero planning, Complete Streets initiatives, Safe Streets planning, bicycle path safety, and identification of problematic intersections. GM Future Roads was actively engaged, providing cities like Easton and Redmond with valuable data, training, and analysis to facilitate the completion of road safety projects and achieve their specific goals.

City Health Dashboard teamed up with **Charlottesville, VA**, **Houston, TX,** and **Rochester, NY**, to comprehend and address the enduring impacts of historic redlining on modern health and economic disparities. Through a six-month collaborative effort, incorporating mapping and consultation discussions, this project aimed to integrate historic redlining maps into equity planning processes, fostering action plans for displaced populations and disinvested neighborhoods.

Chula Vista, CA, **Takoma Park, MD**, and **Tucson, AZ**, partnered with **Esri** to craft strategic equity plans. This initiative focused on understanding community equity needs, incorporating location into equity strategies, operationalizing findings, and measuring real-time impact. The resulting strategic equity plans, developed with GIS, guided cities in achieving comprehensive equity goals, promoting community involvement, and better understanding community needs.

Meanwhile, **Walnut Creek, CA**, collaborated with **Accela** to build dashboards informing Affordable Housing policies. Tailored to cities using Accela software in a Software as a Service (SaaS) configuration, this project visualized key data, identified trends, validated resource allocations, and pinpointed areas needing additional attention to achieve strategic goals on affordable housing.

Project Highlights

The following section details the goals, processes, and outcomes for the projects that were part of the 2023 Capstone Challenge Series.

Affordable Housing: Artificial Intelligence and Public Portals Bring Focus

City:
Walnut Creek, California

Partner:
Accela

Introduction

The California City of Walnut Creek is committed to building housing capacity for all its residents. The city's General Plan features a compulsory Housing Element, establishing an ambitious eight-year plan with oversight of 1) construction; and 2) the preservation of existing affordable housing. Housing is a challenge in every community, but poses a significant challenge in the San Francisco Bay Area.

This project advanced the city's Housing Element by quantifying and visualizing approved housing projects. First, the team applied Generative Artificial Intelligence (AI), extracting data from Council and Planning Commission archives. Then, the team consolidated the data in Accela along with other sources, producing a Microsoft Power BI dashboard for policymakers and stakeholders to monitor and celebrate the programs' successes.

Part 1: Artificial Intelligence Examines Historical Records

Like all cities, Walnut Creek maintains an archive of Planning Commission and City Council resolutions, staff reports, letters, etc. Among those countless pages and paragraphs are the details of approved building projects going back ten years and more. These are the details that bring the city's affordable housing efforts into focus.

Nested in these documents are legally defined specifics such as:

- Total Housing Units
- Affordable Housing Units
- Density Bonus
- Numbers of Units Dedicated to Extremely Low, Very Low, Low, and Moderately Low-income residents

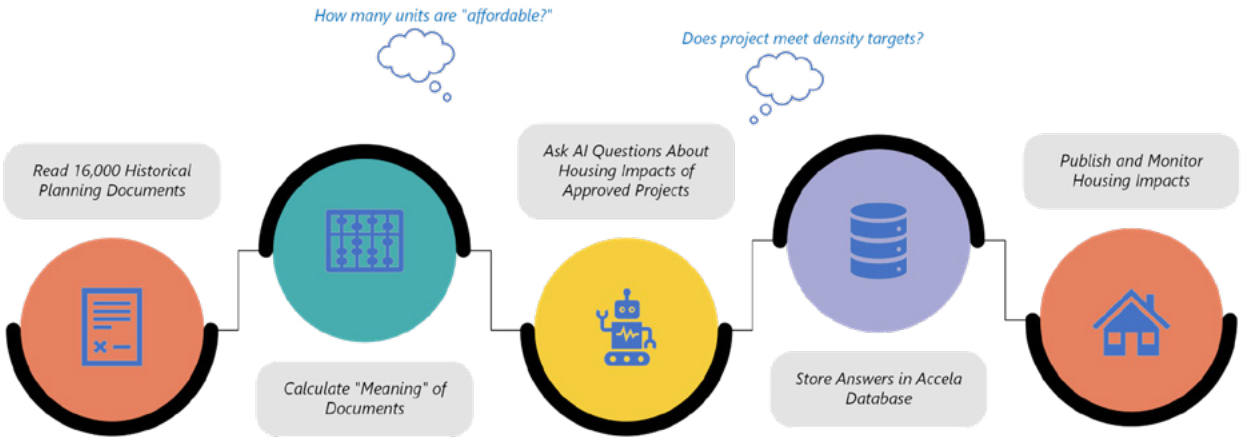
To achieve its reporting requirements, the city dutifully added data fields to Accela forms, its system of record. For previously approved building projects, however, the new fields could only be populated by reading through the archives going back more than a decade. As with many understaffed city departments, prioritizing this laborious work was not practical.

Instead, the team enabled Artificial Intelligence to read the documents, extracting the important data points from the long and tedious narrative.

Generative Artificial Intelligence, of the type made popular by companies like OpenAI, Microsoft, Google, Anthropic, and others, became generally available in 2023. These services, trained on billions of data points exhibit the extraordinary capability to ingest and to generate text reflecting complex concepts and even novel insight.

The process to read 15,697 project documents approved between 2014 and 2023 using Accela and Microsoft Azure AI Service proceeded as follows:

1. Converted scanned documents to text using Microsoft AI Computer Vision.
2. Converted text to its unique numerical representation (calculated embeddings), a process which points the AI to relevant sections of text quickly.
3. Applied prompts, carefully crafted instructions to the AI, and allowed the Large Language Model (LLM) to extract just the discrete field values.
4. Loaded the extracted data in Accela, the city's data system of record.



This project demonstrated that generally available AI tools can examine complex documents and extract the necessary data to develop a valuable dataset to analyze. Compared to asking highly skilled planners to read and interpret documents, the AI examination required just pennies per document which presented an economical and inventive solution to a common problem.

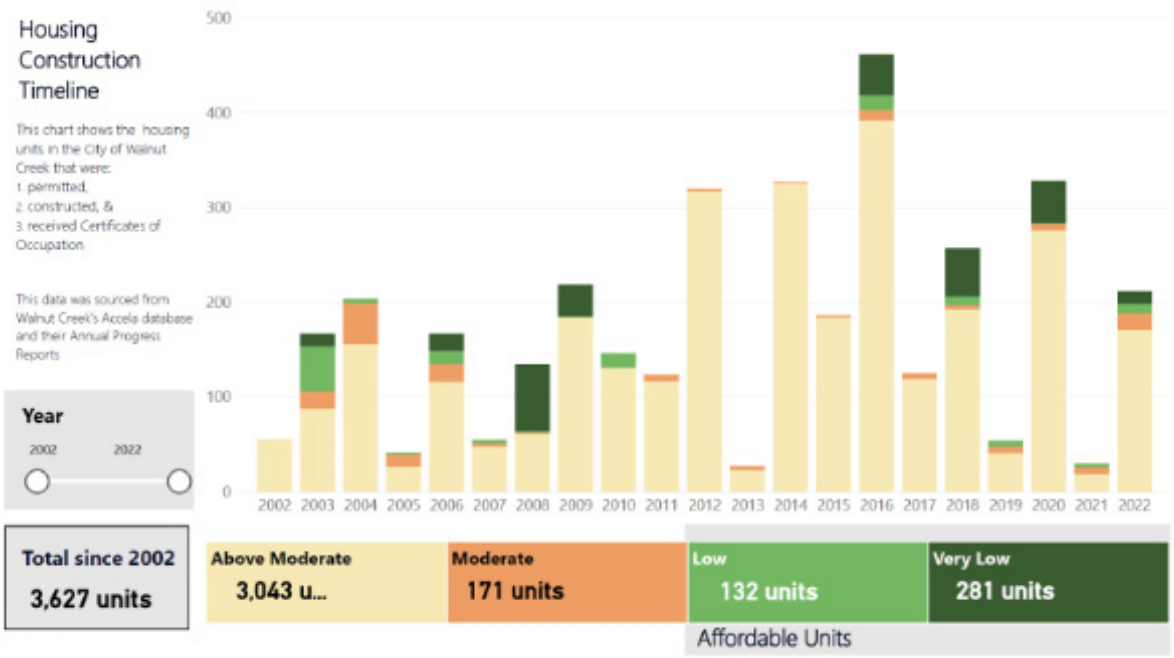
Part 2: Beautiful Public-Facing Dashboards for Policymakers and Community Stakeholders

Once the historical data was captured in Accela, the team turned its attention to making the data available in digestible, meaningful ways.

The city is standardized on Microsoft Power BI, a popular business analytics tool. The team carefully integrated Accela data and other data into a central database. External data included the city's historical status reporting consolidated by the State of California and regional (e.g., county) reports (for benchmarking). The procedure is designed for long-term utilization that is self-sustaining.

The visuals and calculations were complex yet had to be accurate, consistent, and readily understood. Over several weeks, the designers built, reviewed, and refreshed various models.

Affordable Housing Dashboard



At each stage, meaningful suggestions prompted minor and major changes to each data model. For example, early iterations reflected too much specialized language. Since the intended audience included both seasoned and novice stakeholders, the team continued to fine tune the visuals.

In its approved state, multiple Power BI dashboards will be added to the city's web site and soft-launched to both internal and external participants. These will serve as the city's authoritative "report card" for housing programs.

Outcomes

The project pursued an overlooked feature of Generative AI services, reading and extracting needed data elements from large document archives. The city's Accela database now reflects key housing data dating back to 2014. The success benefits future reporting, but also makes clear that cities should explore other ways in which AI can save money and serve the community.

The project doubled-down on effective communication and public transparency. The careful design iterations, another best practice, made noticeable improvements to readability, making the dashboards accessible to various users now and in the future.

Capacity Building

The project emphasized a new and exciting technology, Generative AI, to augment and upscale existing data. The methods and results preserved staff time for more meaningful efforts now and in the future.

Public-Facing Dashboard

The published dashboards will increase transparency and public engagement, becoming a valuable tool for stakeholders to comprehend the dynamics of the city's Housing Element and other complex programs.

Model for Collaboration

The partnership between the National League of Cities, Accela, and City of Walnut Creek's Community Development Department exemplify excellence in public-private partnership, propelling all three organizations forward in their respective goals.

Policy Implications

The project's methodologies and technologies continue to transform data-driven affordable housing decision-making across the region.

Conclusion

The Walnut Creek and Accela partnership, under the NLC's guidance, set a new standard merging long-standing and new techniques to address real-world problems. The collaboration was innovative and rewarding and sets a framework of best practices for similar projects in the new year.

Empowering Communities through Democratized Health Data

City:
Charlottesville, VA; Houston, TX; and Rochester, NY

Partner:
City Health Dashboard (CHDB)

Background

Public attention has been increasingly focused on the far-reaching impacts of structural racism on health, wellbeing, and opportunity in communities across the United States. Redlining, racial covenants, and community disinvestment have emerged as key historic drivers of present-day health and socioeconomic disparities and neighborhood residential segregation. Redlining refers to a practice, widely used by the Federal Housing Administration (FHA) and Home Owners' Loan Corporation (HOLC) in the 1930s, of grading the financial risk of loans for buying homes according to the characteristics of the neighborhood in which the property was situated. Neighborhood racial/ethnic composition

played a marked role in this process, with worse grades assigned as the proportion of Black residents increased. Neighborhoods were ranked from "A" to "D," from those deemed least- to most-risky for loan-making. Maps depicting these grades were created for more than 250 US cities, with "D"-rated areas marked in red (i.e., "redlined"). A result of redlining, which was not outlawed until 1968, was the systematic and disproportionate exclusion of Black and other non-White residents from borrowing and homeownership. Redlined maps existed for two of the cities participating in the Capstone Challenge, Rochester, NY and Houston, TX, and Charlottesville, VA had a longstanding history of racial segregation despite not being formally redlined. In the decades since, many redlined neighborhoods continued to suffer from systemic disinvestment, neighborhood racial residential segregation, income and wealth gaps, and poor housing quality.

Problem

Redlining and other discriminatory housing practices have left an indelible mark on communities across the country, consequentially creating long-term barriers to wealth-building for Black households. Cities and communities are seeking approaches to reverse the long-lasting negative impact of redlining by using policymaking, program design and implementation, or community engagement to create equitable opportunities for health and well-being for all residents. However, city leaders often lack the local-level data necessary to illuminate local needs, set priorities, target resources, advocate for funding, and take collective action across sectors to drive measurable improvement in disinvested neighborhoods.

Solution

The City Health Dashboard team worked with representatives from three city governments – Charlottesville, VA; Houston, TX; and Rochester, NY for the 2023 Capstone Challenge. The goal of the project was threefold:

1. Understand the city-level perspective on historical discriminatory housing policy.
2. Leverage CHDB data and geospatial mapping expertise to visualize redlining and present-day health and socioeconomic disparities in an accessible and approachable report.
3. Improve data capacity for cities, specific to their needs and priorities to spromote health equity and data-driven decision making.

The team partnered with three cities on a tailored approach to represent the impact of historic redlining and community disinvestment, aligning closely with each city's strategic priorities:

In response to rising rental costs, the City of Charlottesville, VA City Council recently approved a large investment to improve housing affordability. The interdisciplinary Capstone team, led by the Deputy City Manager for Racial, Equity, Diversity, and Inclusion, wanted CHDB support to make the connection between housing and health more tangible to the City Council, in order to guide them as they seek to allocate this funding across the community in a holistic, but data-driven, manner.

The City of Houston, TX Mayor's Office of Education wanted to investigate whether or not their "Hire Houston Youth" initiative, a youth workforce development program, was recruiting young adults from higher-need, formerly redlined areas, a stated program objective. They also wanted to better understand the other challenges potentially facing previously redlined communities in order to inform future recruitment strategy.

The Office of the Chief of Staff for the Mayor of Rochester, NY is focused on improving healthy food access across the city. They wanted to know if the current food environment supported nutritious eating and better health outcomes, particularly in formerly redlined neighborhoods and for residents struggling with poverty.

Through a series of collaborative discussions, the teams developed achievable Capstone Challenge goals, pinpointed CHDB metrics that established baseline data on city priorities, identified local data sources to add community-level nuance, and workshopped the resulting data visualizations and presentations. Each city had a different context and presented unique challenges. For example, Charlottesville was not a city that was formerly redlined, so the Dashboard team needed to identify other metrics to illustrate community disinvestment in the absence of HOLC maps. Houston is a very large, dense city which made data presentation more complex, especially when comparing multiple data elements at once. Rochester welcomed the data expertise of the Dashboard team, having historically relied on interns and part-time employees to piece together local data related to such projects.

Outcome

Integrating the HOLC maps (where available), CHDB's geographically specific data on health, health determinant metrics, and locally-collected data from all three cities, the team developed comprehensive, user-friendly reports that visualize community needs, identify potential disparities, and pinpoint areas for future exploration and growth. The team provided each city with a customized set of recommendations on how to communicate the data to diverse audiences, including council members and other elected officials, school boards, and community residents. In conjunction with a communication plan for community stakeholders, the CHDB team developed a set of best practices on applying the data in program implementation, service delivery, community outreach, policymaking, and resource allocation. Specific use cases will be available for the Final Capstone Presentation, although actual implementation will begin after that date. The City Health Dashboard plans to apply the learnings from the Capstone Challenge when it expands its functionality to allow its users to overlay HOLC maps onto present-day city boundaries, framing historic redlining for stakeholders from the 250+ cities for which HOLC maps are available.

Related Content

How Data Access Can Impact Health and Well-Being in Your Small City
https://www.nlc.org/article/2023/02/21/how-data-access-can-impact-health-and-well-being-in-your-small-city/

Measurement Tools Help Cities Develop Better and Healthier Infrastructure
https://www.nlc.org/article/2023/02/08/measurement-tools-help-cities-develop-better-and-healthier-infrastructure/

Operationalizing Equity with GIS-Based Strategic Equity Plans

City:
Tucson, AZ; Chula Vista, CA; and Takoma-Park, MD

Partner:
Esri

Overview

We all want to live in a more equitable world. But what does that mean in practice with budgets to abide by, constituents to listen to, and limited time and resources? Esri worked with Tucson, AZ; Chula Vista, CA; and Takoma-Park, MD to assist in creating equity-based indices. An equity index helps establish a city-wide strategy for achieving Equity rather than relying on ad hoc, project-by-project, or department-by-department results. An equity index allows cities to better understand their community's needs, identify opportunities to intervene, develop solutions that enact real change, and foster community involvement.

Problem

Equity looks different in every community. A community's makeup, size, and historical policies contribute to systemic inequities. Local governments are now expected to review current programs and find areas where they can effectively improve the quality of living for all. These actions need data to support, justify, and defend a city's actions.

Solution

Our work with these cities has aided our effort to rebuild and update Esri's complimentary Social Equity Analysis solution, a solution for addressing the many aspects of social injustices, including both climate change and environmental injustices. As a result, the participating cities learned about building an equity index for their cities to develop future programs and policies.

Outcome

Create and validate a no-cost solution available to all local governments wishing to include data in support of Equity Strategic Plans and the development of long-term measures. Training content and "How To…" guides are forthcoming.

In-depth Discussion

Background

Our goal in suggesting this effort was to identify the essential building blocks that cities require to move the development of equity strategic plans forward and make them actionable and operational. Local governments intend to address inequities in their communities, operations, and workflows, but this can be difficult to achieve without data and measurable outcomes. More importantly, how does city leadership make this data part of the daily workflows? When cities create a GIS-based equity strategy plan, they set the foundation for all departments, empowering everyone in the organization to incorporate Equity into their existing work and, in short, making equity part of the enterprise.

Problem

Through our research and collecting a sample of hundreds of equity plans from cities across the U.S., we identified that there was no standard method to develop equity strategic plans or advance its goals. In addition, we found a disconnect between Equity Officers and the City's IT and Data efforts. This meant that equity efforts were not grounded in data and systems to measure and support equity efforts in the long term. More importantly, they were not included in daily workflows within the operational departments and agencies. They often left it up to each organization to define and develop programs and policies that promote equitable decision-making. Without a standardized approach to developing strategic equity plans or the data to make them actionable, these plans lacked scalability or focus. Individual departments allocated resources to communities without direction and implemented programs that do not necessarily benefit marginalized communities first or omitted community input.

Solution

Esri worked with each City to develop a composite index that guided them in creating a strategic equity plan. With a geographic approach, Tucson, Arizona; Chula Vista, California; and Takoma-Park, Maryland, can understand where to allocate resources, how to address equity and social justice issues, and how to make informed decisions.

The City of Tucson, Arizona (Pop. 1,014,000) was already leveraging GIS tools to collect, track, and analyze data to advance equitable outcomes through the Tucson Equity Data Strategy (TEDS). The City of Tucson developed their equity priority index, demographic collection standards, open data hub, and the demographic lookup and infographic app through TEDS. These tools are helping the city departments and community partners make location-based decisions to support regional equity efforts. Data such as vehicle access, health insurance, income, unemployment, disability, and age were but a few of the factors the City of Tucson layered in their equity priority index to find areas of prioritization in their communities. This information is used to enhance programs within individual departments, such as equitable public safety, tree equity, climate mitigation, transportation equity, digital equity, water utility equity, and housing equity.

The City of Chula Vista, California (Pop. 283,438) also looked to GIS to enhance alignment within each department and to develop a local needs analysis. They found that public state tools excluded many of their smaller

disadvantaged communities and did not allow them to analyze the entire City. Building off this location-based effort, the City of Chula Vista developed its Climate Equity Index, providing localized information on the impacts of historic economic and environmental decisions on city residents today.

The City of Takoma Park, Maryland (Pop. 17,183) had previously worked with the NLC and GARE to define an Equity and Social Justice plan. While some IT and GIS Staff were available to assist, they had not yet hired an Equity Officer. They described it as; "we are stuck in the operationalize part." Much of their work, to date, has been community meetings, workshops, and focus groups. The city has participated in the cohort sessions and training but has been hampered by limited staffing resources. Esri software has been provided and installed in the city and will provide technical support when staffing resources become available. The experience has provided Esri with valuable perspective about working with small jurisdictions. While the desire is there, staff availability represents the critical path forward.

Outcome

Participating cities helped guide the update of Esri's complementary Social Equity Analysis solution. The solution that evolved from this collaboration is meant to ensure that city resources, staff, and services are allocated effectively to locations, the City's neighborhoods, and communities that are most needed while providing a common dataset for city departments to use operationally. The free solution and training content provides cities with the base foundation needed to effectively enhance Equity and social justice locally—more detail regarding the solution in the Related Content section.

- **The City of Tucson** started this work before the cohort assembled. They were in the process of collecting data and developing ideas about building a data-centric approach but were hindered in identifying the 'right data' to build a scalable model. We'll call that the "Boiling the Ocean problem." Esri provided additional software, and subject matter expertise related to data and statistical modeling to validate historical findings and provide best practices on building demographic indices.
- **The City of Chula Vista** also started building data layers before joining this cohort but were still in the early stages of their analysis. Again, Esri provided additional software, and subject matter expertise related to data and statistical modeling to validate the previous work and provide knowledge transfer on building demographic indices.

- **The City of Takoma Park** had built a traditional strategic plan that was in place and had recognized the City's policy goals. Current staff capacity to continue this work is limiting the growth of the project. Working with the City, Esri gathered some valuable lessons and ideas about how we can support small communities. Esri has made inquiries into Prince George's County to see if they can assist the smaller municipalities within the county in building the data indices.

Supporting Materials

Chula Vista Climate Equity Index
https://www.chulavistaca.gov/home/showpublisheddocument/22779/637582410674500000

Tucson Equity Data Strategy (TEDS)
https://storymaps.arcgis.com/stories/35e34d52c0034af5afe9ed243b903587

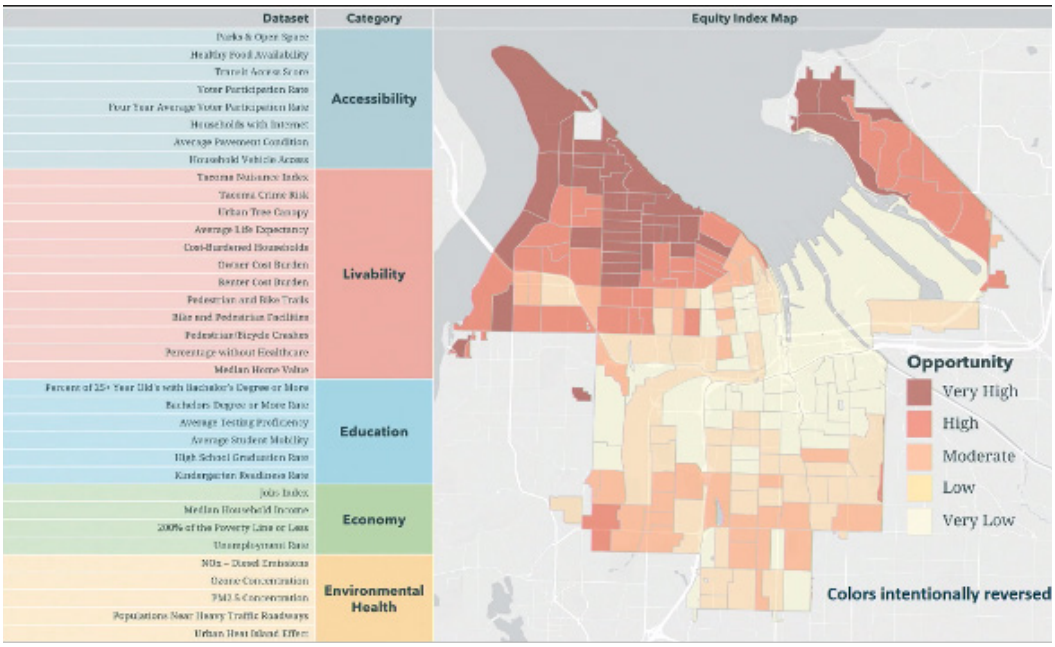
Takoma Park Racial Equity Initiative Goals
https://takomaparkmd.gov/government/city-manager/racial-equity/

Chula Vista, California

Related Content

- City of Tacoma Equity StoryMap Equity in Action (arcgis.com)
- City presentation at 2023 Esri UC Senior Executive Summit City of Tacoma, WA - Esri Videos: GIS, Events, ArcGIS Products & Industries (https://mediaspace.esri.com/media/t/1_sbecmz6l/308346992)

The City of Tacoma, Washington, under the leadership of NLC President Victoria Woodard, created an equity index. The City of Tacoma received the Special Achievements in GIS award at the Esri UC in 2023. They were recognized for their work as innovators in advancing Equity with GIS technology and data. The Tacoma equity index guides all policies and programs and ensures that the City invests in areas of their community where neighborhoods have historically been excluded from opportunity.



Create your equity index by using the Calculate Composite Index tool.

Equity. Vulnerability. Sustainability. Risk. Essential metrics help our organizations evaluate needs, measure progress, and allocate resources. We can create these metrics by combining variables into a composite index. But this simple workflow is not without challenges. Esri has free online workshops, tutorials, and materials to teach you how to use the Calculate Composite Index tool and Data Engineering in ArcGIS Pro to create effective indices. We will guide you through each stage of the workflow in detail, leaving you equipped with the skills to develop powerful indices to help you make better decisions.

- Creating Composite Indices Using ArcGIS: Best Practices (esri.com)
- Watch the Creating Indices in ArcGIS Webinar and Read the FAQ! (esri.com)
- Creating Indices: Combining Variables to Make Better Decisions - Esri Videos: GIS, Events, ArcGIS Products & Industries (esri.com)

Advancing Road Safety Through Data Analysis

City:
Easton, PA; Redmond, WA

Partner:
GM Future Roads

Overview

Road traffic fatalities have reached 43,000 yearly including 7,500 pedestrian fatalities across the U.S. This has resulted in cities with rapid population growth to enhance safety on their roads with preventative data.

Solution

GM Future Roads worked with two different cities who share similar problems by providing a data platform, Safety View, for safety analysis across their communities.

Outcome

Both Easton, PA and Redmond, WA used Safety View to achieve their objectives in prioritizing the implementation of improvement projects.

In-depth Discussion

Background

Redmond, WA and Easton, PA are experiencing rapid population growth prompting the need for enhanced safety. Redmond is undergoing a suburban to urban transition and anticipates significant growth with the introduction of four new light rail stations by 2026. Easton, PA, has projected population growth that necessitates ongoing measures to address dangerous intersections and enhance pedestrian safety. Both cities needed data to provide powerful insights to guide and validate their safety efforts.

Problem

In Redmond, Washington, the Local Road Safety Plan (LRSP) identified risk factors and corresponding countermeasures based on historical collision data. This led to the identification of nine safety improvement projects, ranging from High Visibility Crosswalk Markings to a Citywide Speed Limit Study. The city is developing a data-driven prioritization program for implementation, emphasizing areas near future light rail stations and locations connecting diverse demographics through nonmotorized activity.

In Easton, PA, data from the Pennsylvania Department of Transportation showed that 17 streets accounted for over 70% of accidents from 2017-2021, with 86% experiencing multiple crashes. Particularly impacting underserved neighborhoods, 11 of these roads represent 70% of locations with multiple accidents. Easton's focus is to reduce overall speed through various tools, including curb bump outs and roadway narrowing. The lack of comprehensive tools for data integration has hindered the ability to measure past efforts thoroughly, emphasizing the need for enhanced safety planning.

Solution

Easton and Redmond leveraged Safety View, a SaaS tool with nine data sets, for six months to analyze their use cases to enhance safety. The platform's data insights include driver behavior patterns, True Near-Miss events for pedestrians and vehicles, as well as historical data. Both cities were able to upload their local crash data to analyze specific roadways and corridors at higher risk.

In Redmond, WA, Safety View's Vulnerable Road User filter showed areas with high multimodal activity near future light rail stations. The tool prioritized three safety programs: the High Friction Surface Treatment Program, High Visibility Crosswalk Marking Program, and Citywide Speed Limit Study. The Risky Maneuvers filter identified locations needing friction treatment by highlighting hard braking, hard acceleration, or hard cornering. Near-miss detection in the Crosswalk Marking Program determined additional locations for high visibility markings, emphasizing pedestrian safety by showing where pedestrian-vehicle collisions were avoided to identify crossing locations that need enhanced driver awareness. The Citywide Speed Limit study utilized the 85th percentile speed viewer and Risky Maneuvers filter to identify high-speed areas, supporting evidence-based decisions.

In Easton, the team used Safety View to analyze traffic conditions in five areas, including four neighborhoods and the "Third Street Corridor" which contains known "issue streets" spanning three neighborhoods prompting an examination of pedestrian safety. Criteria such as Speed at 85th Percentile, recorded crashes, hard braking, and hard cornering were examined quarterly or annually. Safety View provided data, allowing inferences from a determined sample size. Safety View also assessed Speed Risk on 15 recognized "issue roadways" with calming initiatives, notably the 2022 projects in Downtown and College Hill. Data-driven insights extended to unrecognized "issue roadways", guiding internal road reconstruction projects and potential policy decisions based on risk scores and increased volume levels. The comprehensive analysis facilitated evidence-backed measures to enhance traffic safety in Easton.

Outcome

While using Safety View, the Redmond staff identified key project locations along their arterials and prioritized them within the scope of the Local Road Safety Plan. By leveraging Safety View the team had access to a unique look at their identified arterials with the combination of historical collision data, roadway characteristics and driver behavior, to effectively prioritize the implementation of improvement projects. These data sets helped not only shape the future for the light rail stations, but to plan for the multi-modal future as the city population continues to increase

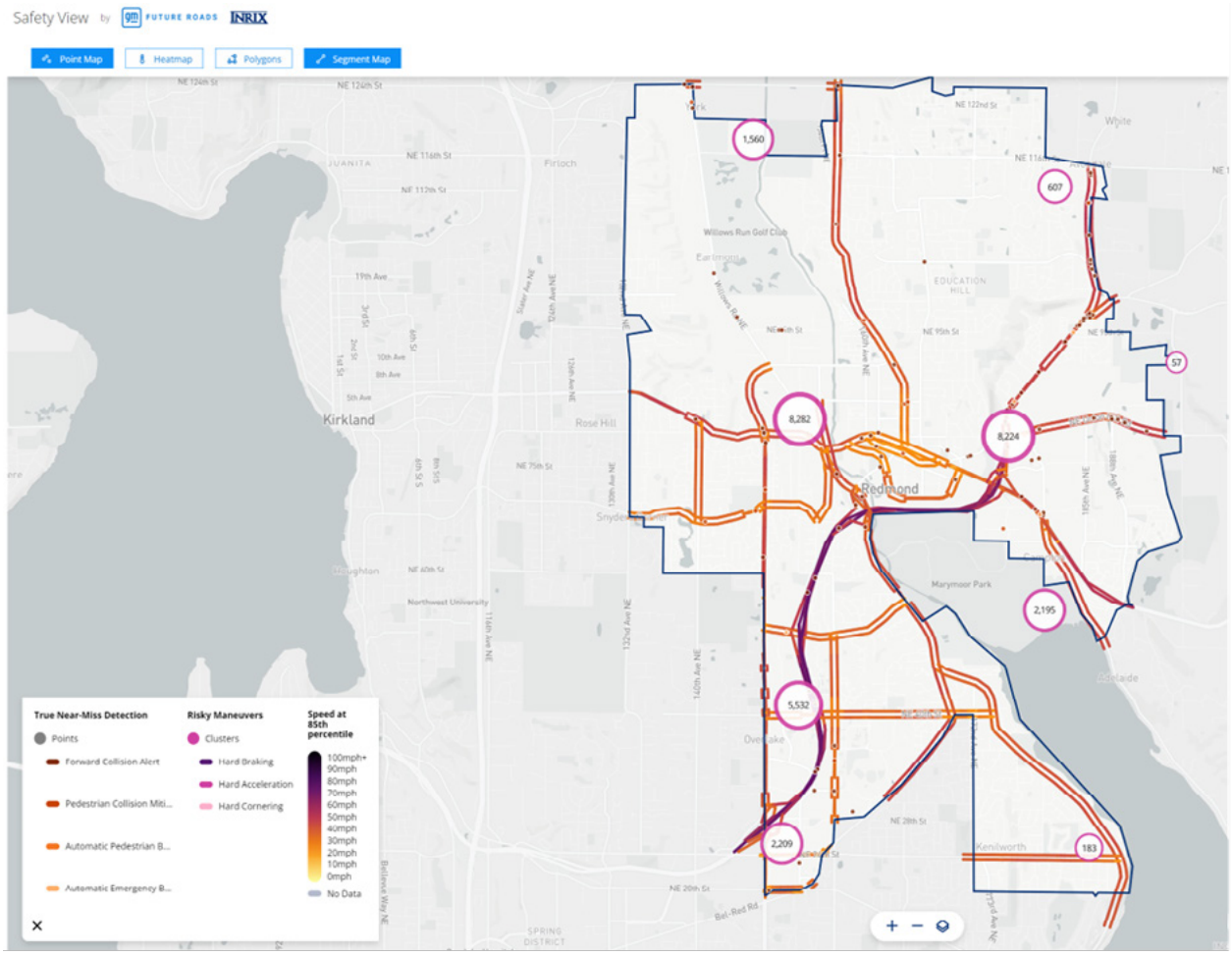
The Collaboration between the City of Easton and General Motors helped the city to align on roadway transformations with the recommendations of the Easton Comprehensive Plan 2035. Emphasizing traffic safety, the plan encourages creating pedestrian and cyclist-friendly environments and reducing traffic speed in residential neighborhoods. Analysis of data confirmed positive outcomes, revealing a reduction in speed risk on known issue roadways following recent traffic calming initiatives in 2022. While projects implemented in 2023 require further trend analysis, the data underscores the justification for current and future traffic calming objectives. Correlations between high-speed roadways at the 85th Percentile and risky maneuvers were identified with increased instances of Hard Cornering and Hard Breaking in areas with significant Vulnerable Road Users. Safety View also identified unrecognized issue roadways, necessitating additional analysis through strategic traffic studies, particularly in Easton's West Ward neighborhood.

Supporting Materials:

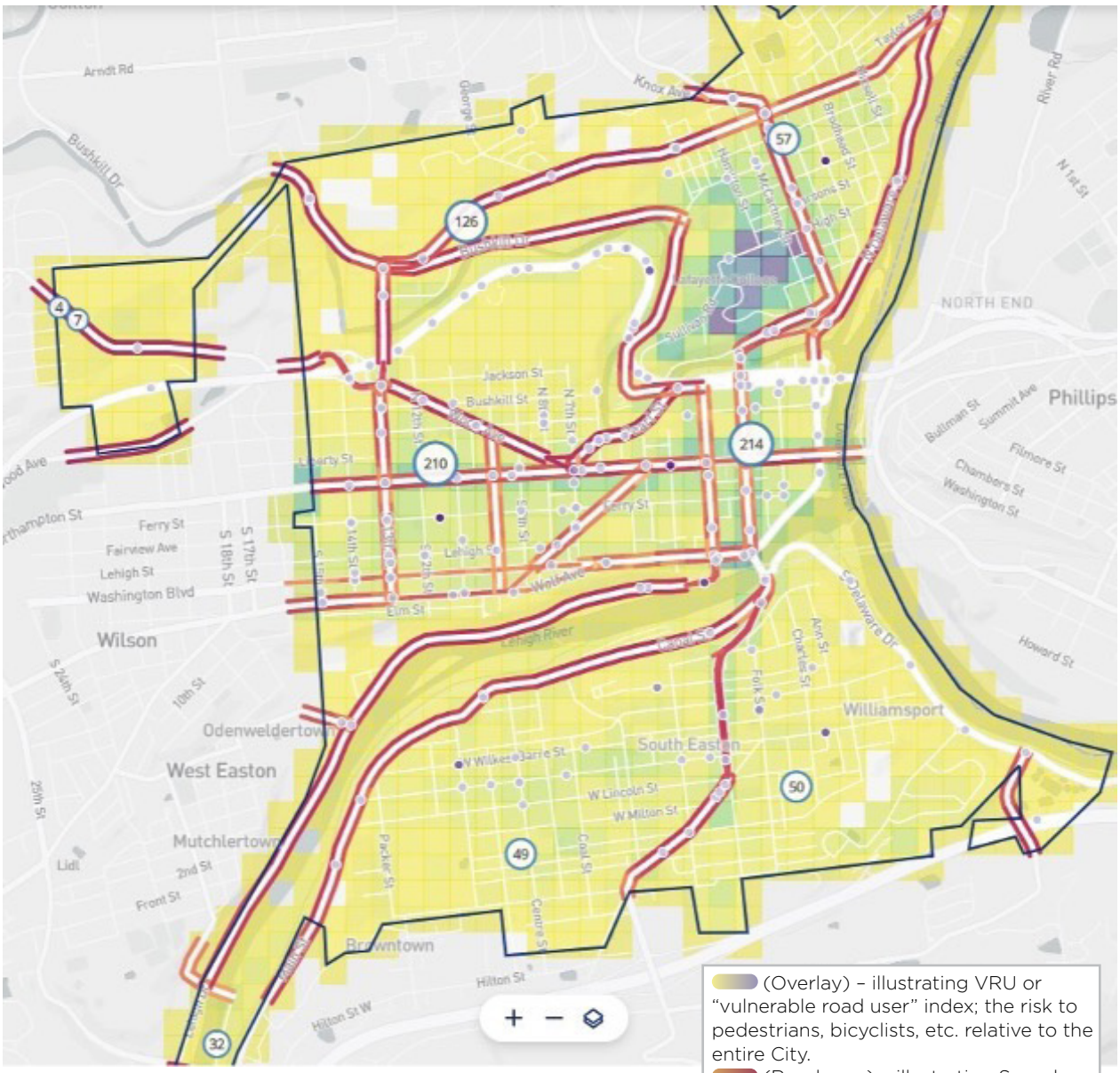
Redmond Capstone Findings Presentation: NLC Capstone Case Study Findings https://www.redmond.gov/DocumentCenter/View/31244/NCL-Capstone-Case-Study-Findings?bidId=

Easton Comprehensive Plan 2035: https://www.easton-pa.com/DocumentCenter/View/117/Comprehensive-Plan---Adopted-PDF?bidId=

Validating Traffic Calming Efforts Implemented to Advance Pedestrian Safety Presentation: https://docs.google.com/presentation/d/1hHWNHOIBaKF9kQC8uDi7siUqaqkTRW8JfGv8TBJfloE/edit?usp=sharing



Redmond, WA city limits displayed in GM Future Roads Safety View, with 85th percentile speed, near-miss collision, and risky driving maneuvers datasets.



An overhead view of the City of Easton, with crash data for 2022 and "Risky Maneuver" data for Q3 2023 indicated.

(Overlay) – illustrating VRU or "vulnerable road user" index; the risk to pedestrians, bicyclists, etc. relative to the entire City.

(Roadways) – illustrating Speed at 85th Percentile, or the speed at our below which 85% of the drivers travel on a road segment and what is used to determine the speed limit of a road.

(Numbered) Clustering – illustrating the capture of "Risky Maneuver" events; the amount of vehicular hard braking and hard cornering occurring within a particular area.

Crash data from the Commonwealth of PA mapped, relative to the city, according to crash mode (involving vehicle, bicycle, etc.)

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ADVANCING ROAD SAFETY THROUGH DATA ANALYSIS

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EMPOWERING COMMUNITIES THROUGH DEMOCRATIZED HEALTH DATA

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OPERATIONALIZING EQUITY WITH GIS-BASED STRATEGIC EQUITY PLANS

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Affordable Housing: Artificial Intelligence and Public Portals Bring Focus

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