Incorporating Equity into Active Commuting to School Infrastructure Projects: A Case Study

Sarah S. Bentley, MPH

Leigh Ann Ganzar, DrPH, MPH; Deborah Salvo, PhD; Casey P. Durand, PhD; Alia Anderson, AICP; Amir Emamian, MPA; Deanna Hoelscher, PhD

> **#UTHealth Houston** School of Public Health







Background





Austin, Texas – \$27.5M for Safe Routes to School (SRTS) infrastructure projects – split equally among council districts.

Evidence for the effects of infrastructure changes on active transportation in children – more physical activity

Need for assessing equity impacts of SRTS and infrastructure projects for walking and biking

K. Manaugh, M.G. Badami, A.M. El-Geneidy. Integrating social equity into urban transportation planning: a critical evaluation of equity objectives and measures in transportation plans in North America. Transp. Policy, 37 (2015).

A.N. Buttazzoni, E.S. Van Kesteren, T.I. Shah, J.A. Gilliland. Active school travel intervention methodologies in north america: a systematic review. Am. J. Prev. Med., 55 (2018). K. Kornas, C. Bornbaum, C. Bushey, L. Rosella. Exploring active transportation investments and associated benefits for municipal budgets: a scoping review. Transp. Rev., 37 (4) (2017), pp. 465-487





Study Aims





To describe the City of Austin Safe Routes to School project prioritization process.



To describe community equity measures of identified SRTS infrastructure projects by council fund distribution.

To provide community perspectives on barriers and facilitators for implementation



Methods

- Data from City of Austin reports combined with school-level demographic data to determine equity of need distribution
- Interviews were conducted with community partners.

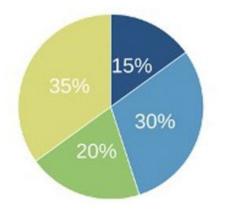




Austin SRTS Infrastructure Plan







Benefit Score Factor

Demand - Schools within ¼ miles, students served Equity - Free and reduced lunch rate, poverty rate Safety - Crash data, street type, engineering judgment Stakeholders - In-person and online engagement

Lagerwey, P.A., Hintze, M.J., Elliott, J.B., Toole, J.L., Schneider, R.J. 2015. Pedestrian And Bicycle Transportation Along Existing Roads—Activetrans Priority Tool Guidebook, National Cooperative Highway Research Program. City of Austin. 2021a. City Of Austin Capital Projects Explorer [Online]. Available: Https://Capitalprojects.Austintexas.Gov/Projects [Accessed October 21 2021].



Prioritization Process

Project w/in 1/2 mi (ped) or 2 mi

(bike) and attendance

boundary of:

GARCIA, BARBARA JORDAN,

BERTHA SADLER MEANS

Project

ID

1G - 002

	oce	SS			
ni	Location	Issue	Recommendation + = parking removal required ~ = private property acquisition required	Overall Benefit Category	Estimated Cost:Benefit Category
			Add speed cushions - CRYSTALBROOK DR from		
		Excessive vehicle	LOYOLA LN to SILVERBROOK LOOP, Protected Bike		
	CRYSTALBR	speeds, No bike	Lane - CRYSTALBROOK DR from LOYOLA LN to		
	OOK DR	facility, Wide ROW	SILVERBROOK LOOP ~	1 - Very High	1 - Very High
			Add chicanes - CRYSTALBROOK DR from		
		Excessive vehicle	SILVERBROOK LOOP to PECAN BROOK DR, Protected		
	CRYSTALBR	speeds, No bike	Bike Lane - CRYSTALBROOK DR from SILVERBROOK		
	OOK DR	facility, Wide ROW	LOOP to PECAN BROOK DR ~	1 - Very High	3 - Medium
	PECAN	Desired bike route,	Protected Bike Lane - PECAN BROOK DR from		
	BROOK DR	No bike facility	SPRINGDALE RD to CRYSTALBROOK DR ~	1 - Very High	3 - Medium
			Add Dynamic Speed Display Device - LOYOLA LN		
		Desired bike route	from CRYSTAL BROOK DR to SANDSHOE DR		

1			1			
			Excessive vehicle	SILVERBROOK LOOP to PECAN BROOK DR, Protected		
	BARBARA JORDAN, GARCIA,	CRYSTALBR	speeds, No bike	Bike Lane - CRYSTALBROOK DR from SILVERBROOK		
1G - 004	BERTHA SADLER MEANS	OOK DR	facility, Wide ROW	LOOP to PECAN BROOK DR ~	1 - Very High	3 - Medium
	BARBARA JORDAN, GARCIA,	PECAN	Desired bike route,	Protected Bike Lane - PECAN BROOK DR from		
1G - 005*	BERTHA SADLER MEANS	BROOK DR	No bike facility	SPRINGDALE RD to CRYSTALBROOK DR ~	1 - Very High	3 - Medium
				Add Dynamic Speed Display Device - LOYOLA LN		
	OAK MEADOWS, GARCIA,		Desired bike route,	from CRYSTALBROOK DR to SANDSHOF DR,		
	OVERTON, BARBARA JORDAN,		Excessive vehicle	Protected Bike Lane - LOYOLA LN from WENTWORTH		
1G - 006	BERTHA SADLER MEANS	LOYOLA LN	speeds	DR to MILLRACE DR	1 - Very High	5 - Very Low
		JOHNNY	Desired bike route,	Sidepath - JOHNNY MORRIS RD from FM 969 RD to		
1G - 007*	BARBARA JORDAN, GARCIA	MORRIS RD	No bike facility	Manor EXPRY ~	1 - Very High	5 - Very Low





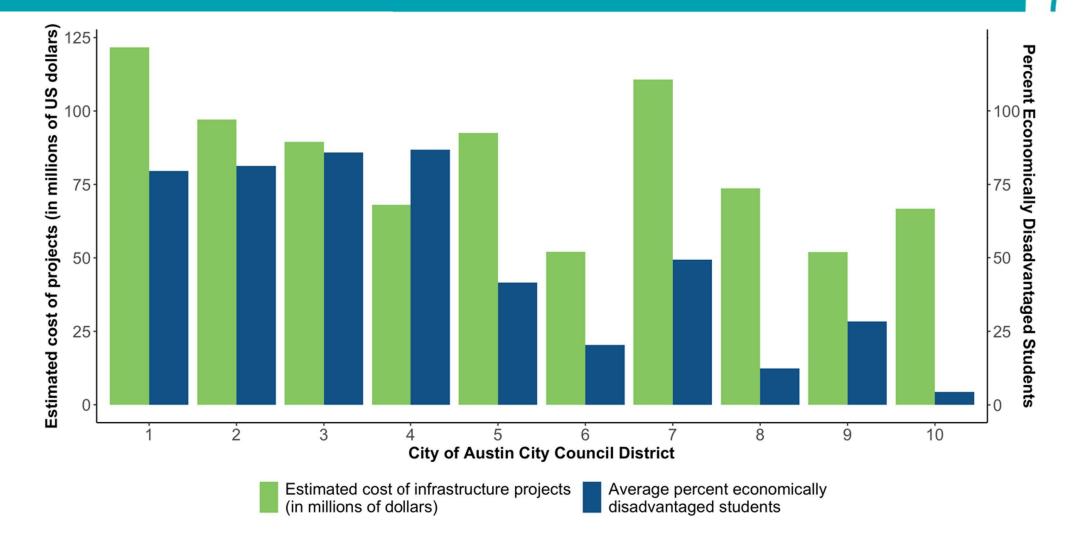
City of Austin infrastructure projects







City of Austin infrastructure projects





Qualitative Interviews



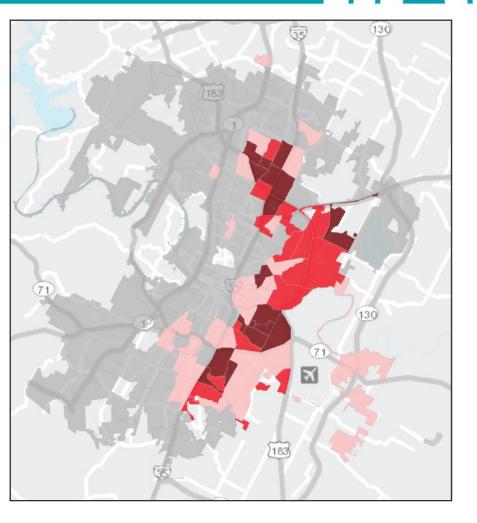
"If you just look at the number of schools in different districts one has five anoth" "Are you achieving the goals of safe routes by spending money on something that didn't really need to happen?" "At some schools were looking at putting in protected bike lanes and others we're like, 'Can we st get some sidewalks ing up to the school?'."





Discussion





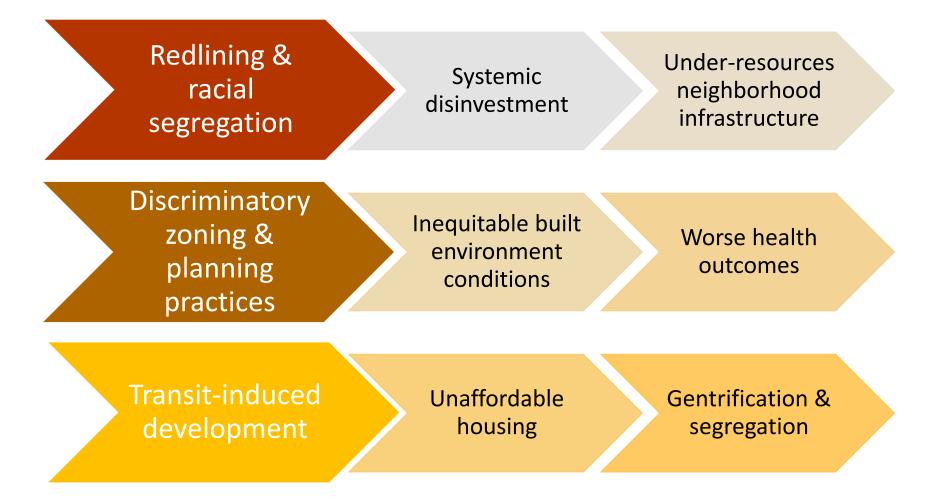
Building "A City Of Upper-Middle-Class Citizens" Labor Markets, Segregation, And Growth In Austin, Texas, 1950–1973
J. Urban History, 39 (2013), pp. 975-996 C. Hedman, D. Elliott, T. Srini, S. Kooragayala, Austin And The State Of Low-And Middle-Income Housing Urban Institute. (2017)
X. Zhu, C. Lee. Walkability and safety around elementary schools: economic and ethnic disparities. Am. J. Prev. Med., 34 (2008), pp. 282-290
Handy, S. 2009. Walking, Bicycling, And Health. In: MALEKAFZALI, S. (Ed.) Healthy, Equitable Transportation Policy: Recommendations And Research.
A. Ryan, C. Barchers, E. Christofa, M. Knodler. Equitable resource allocation for municipal safety: a data envelopment analysis. Transport. Res. Part D: Transport Environ., 97 (2021), Article 102926
Dupuis, N., Stahl, E. & Rainwater, B. 2017. The Future Of Equity In Cities. Washington, DC United States.
U.S. Census Bureau 2020. Release Number CB20-78: Southern And Western Regions Experienced Rapid Growth This Decade.





Discussion





E.E. Lynch, L.H. Malcoe, S.E. Laurent, J. Richardson, B.C. Mitchell, H.C.S. Meier. The legacy of structural racism: associations between historic redlining, current mortgage lending, and health. SSM - Population Health, 14 (2021)

Williams, D.R., Collins, C. 2001. Racial Residential Segregation: A Fundamental Cause Of Racial Disparities. In: Health. Public Health Reports (Washington, D.C.: 1974), 116, 404-416. G. Lipsitz. How Racism Takes Place. Temple University Press (2011)

S. Wilson, M. Hutson, M. Mujahid. How planning and zoning contribute to inequitable development, neighborhood health, and environmental injustice. Environ. Justice, 1 (2008), pp. 211-216 M. Padeiro, A. Louro, N.M. Da Costa. Transit-Oriented Development And Gentrification: A Systematic Review. Transport Reviews, 39 (2019), pp. 733-754





Implications for practice and policy



EQUITY **MOVING TOWARDS**

• 2020 Mobility Bond \$20M for high and very high priority SRTS projects - not dependent on equal distribution

• Equitable Transit-Oriented **Development Policy Plan**

• Presidential Executive Order: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government

CALL TO ACTION

- Emphasize spatial and social equity principles
- More financial and infrastructural support in lower-income communities
- Engage underrepresented communities
- Need systematic approach to address equity
- Put people of color in leadership roles

City of Austin 2021b. Equitable Transit Resolution. Austin, Texas.

R.J. Lee, I.N. Sener, S.N. Jones. Understanding the role of equity in active transportation planning in the United States. Transport Rev., 37 (2017), pp. 211-226

THealth Houston L.M. Braun, D.A. Rodriguez, P. Gordon-Larsen. Social (In) equity in access to cycling infrastructure: cross-sectional associations between bike lanes and area-level sociodemographic characteristics In 22 large cities. J. Transp. Geogr., 80 (2019), Article 102544 School of Public Health

M. Solis. Racial equity in planning organizations. J. Am. Plann. Associat., 86 (2020), pp. 297-303



Biden Jr, J. 2021. Executive order on advancing racial equity and support for underserved communities through the federal government. In: AMERICAN, U. S. O. (Ed.). Washington, DC: White House Press Office.

Acknowledgements

- Coauthors
 - Dr. Leigh Ann Ganzar
 - Dr. Deborah Salvo
 - Dr. Casey Durand
 - Alia Anderson
 - Amir Emamian
 - Dr. Deanna Hoelscher



Transportation Research Part D: Transport and



Volume 112, November 2022, 103493

Environment

Incorporating equity into active commuting to school infrastructure projects: A case study

Leigh Ann Ganzar^a 🝳 🖂 , Sarah S. Bentley^a 🖂 , Deborah Salvo^b 🖂 , Casey P. Durand^a 🖂 , Alia Anderson ^c 🖂 , Amir Emamian ^d 🖂 , Deanna M. Hoelscher ^a 🖂

- City of Austin SRTS department and study participants
- This research was funded by the Eunice Kennedy Shriver National Institute of Child Health & Human Development, grant number R01 HD097669, and support was provided by the Michael and Susan Dell Foundation through the Michael & Susan Dell Center for Healthy Living.



School of Public Health







Sarah S. Bentley, MPH

Sarah.S.Bentley@uth.tmc.edu

UTHealth | The University of Texas Health Science Center at Houston School of Public Health in Austin

Michael & Susan Dell Center for Healthy Living

1616 Guadalupe | Suite 6.300 | Austin, TX 78701

512.482.6152 tel









/msdcenter

msdcenter.org

