

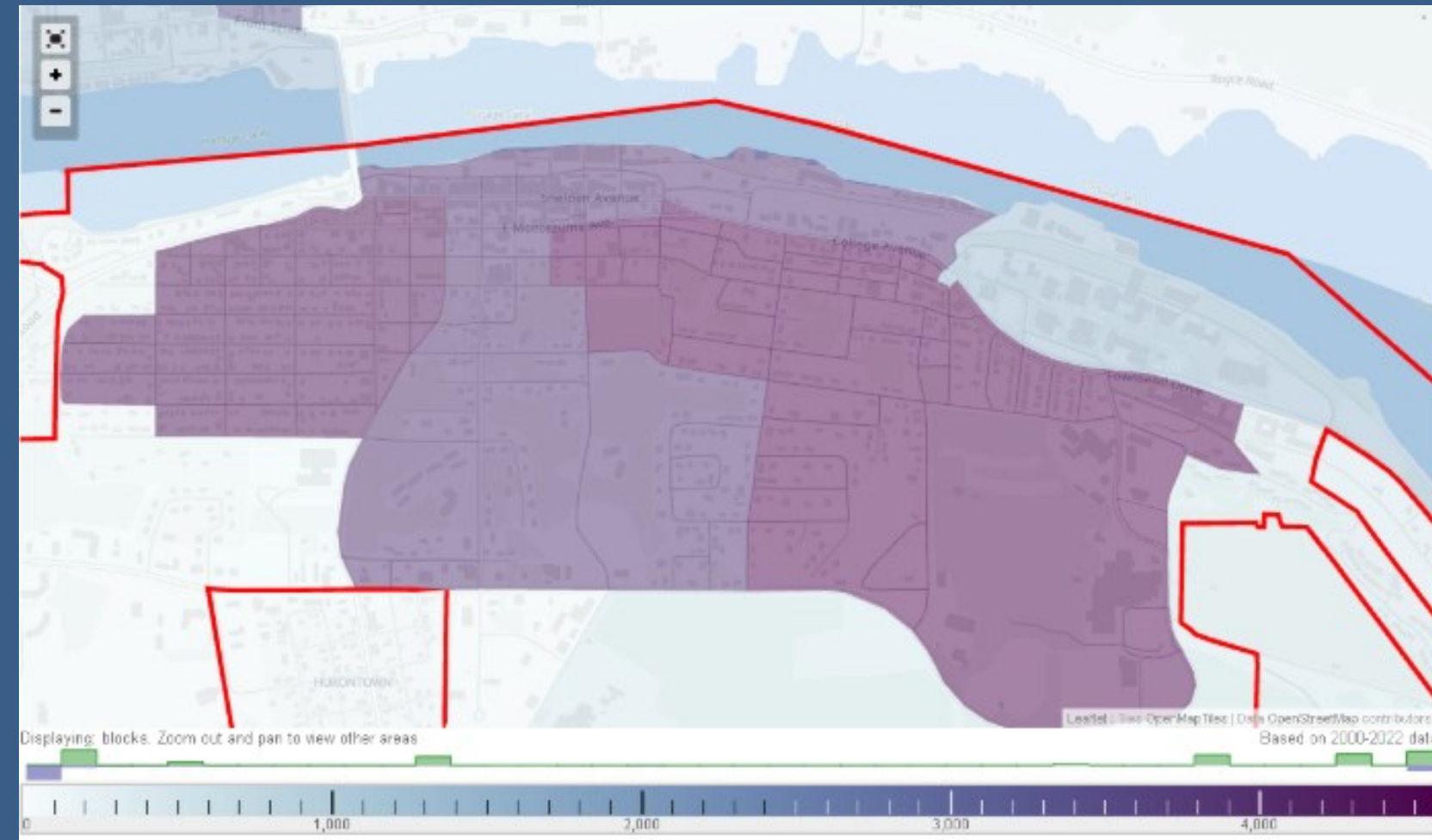


NEW BUS ROUTE FOR MICHIGAN TECH



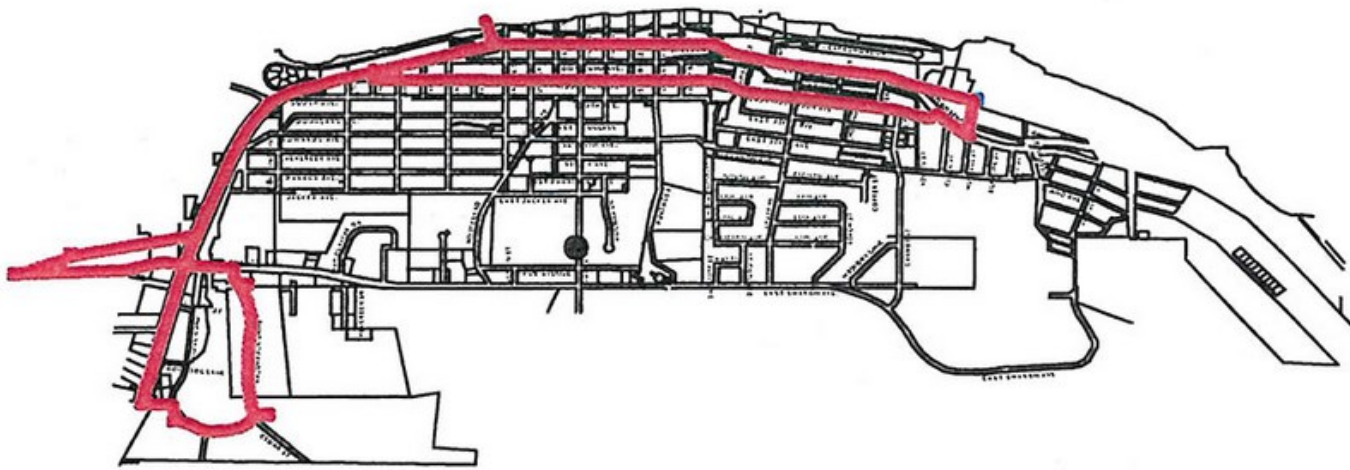
WHY?

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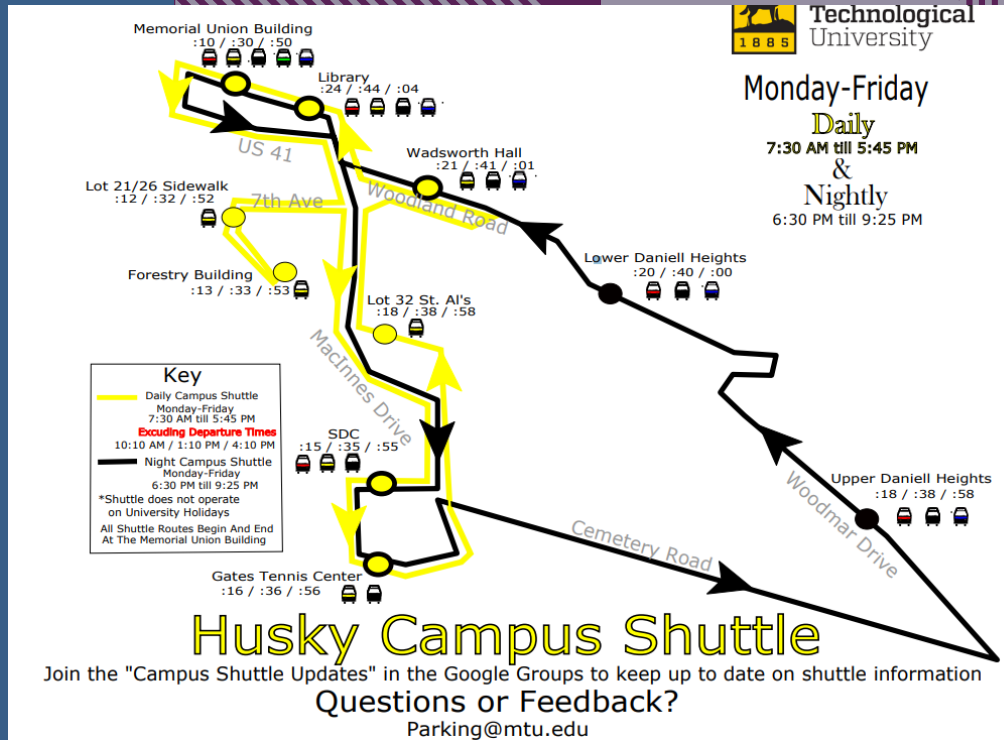


(FIG 1) Population Heat map of Houghton;
www.cityofhoughton.com/transportation/

WHY?

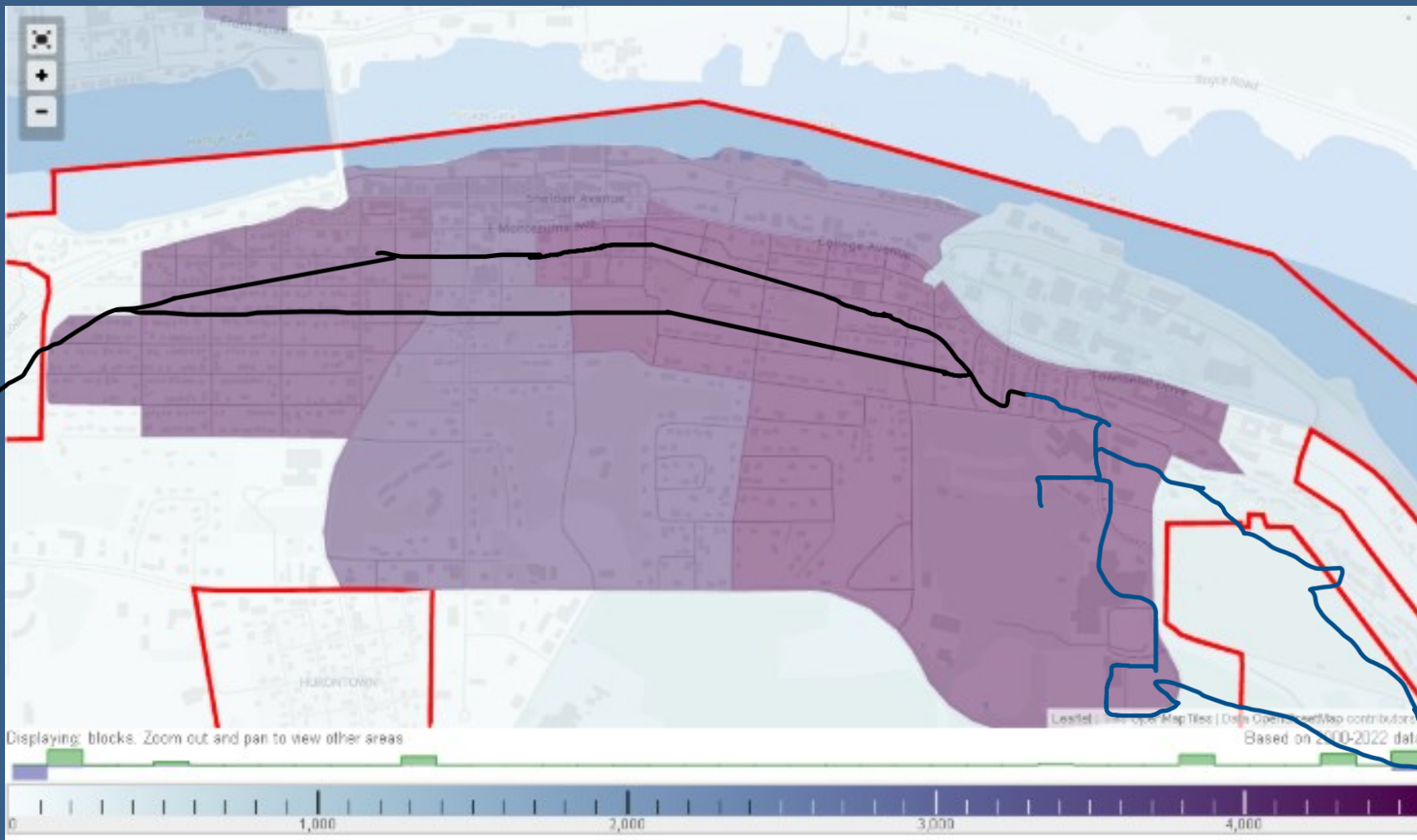


(FIG 1) Bus route map of Houghton;
www.cityofhoughton.com/transportation/



(FIG 2) Husky Campus shuttle;
<https://www.mtu.edu/transportation/pdfs/route-maps.pdf>

WHY?



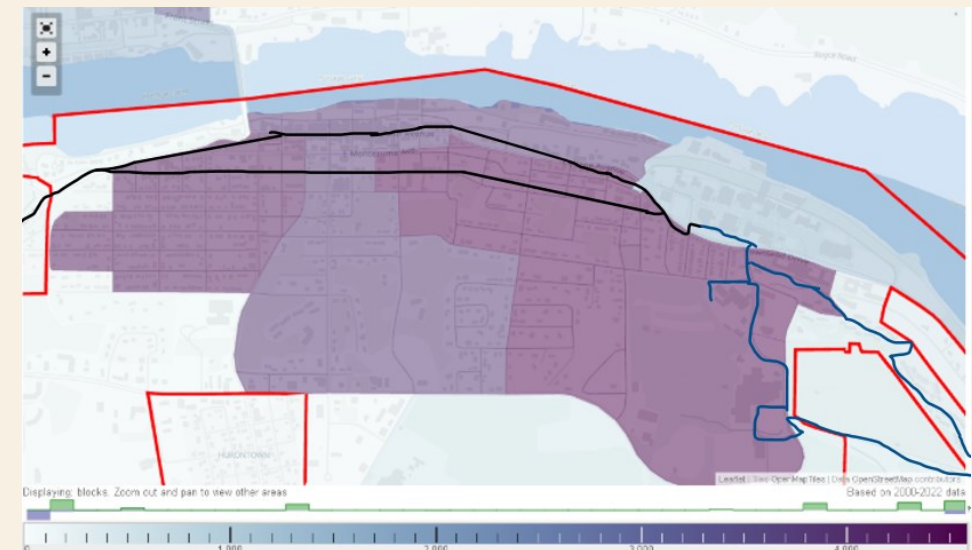
(FIG 1) Population Heat map of Houghton;
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ROUTE PLACEMENT?

BRING THE BUS TO YOU

- Accounting for population density this route serves the highest number of people who previously had little access to a route
- Allows Hurontown and multiple population centers to have public transportation

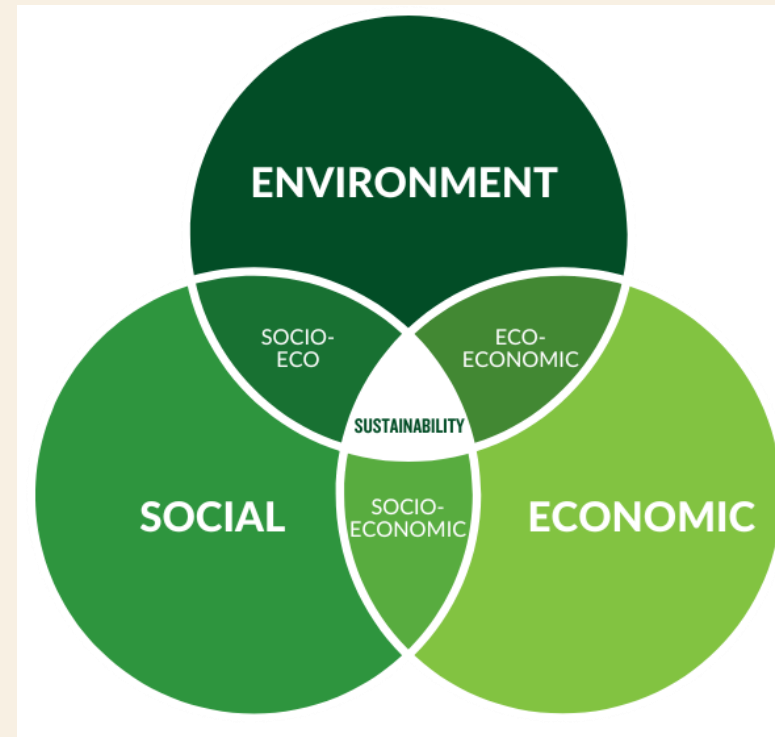




BENEFITS FOR SHAREHOLDERS?

BENEFITS

- Public perception
 - Increase in reach for prospective students
- Sustainability
 - Less cars on the road
- Equality for lower income students
 - Lower car dependency
- Opportunity to research
 - Collect route statistics





COSTS?

COSTS

- type A bus, which is a shorter frame vehicle for shorter trips with a cutaway front section (www.spiraldesign.com)
- An average driver's cost for employment is around \$17 per hour, equaling around \$35,360 a year to employ the driver (ziprecruiter)
- The reason only 6 hours a day was chosen is that for the first year a research study is highly recommended to be run to gauge effectiveness and use of the new route

Base calculation

3 runs per hour * 6 hours	18 runs/day
18 runs/day * 7 miles	126 miles/day
126 miles/day * 300 days	37,800 miles/year

New bus

(37,000 miles/year) / 12 mpg	3,150 gallons
3150 gallons * \$3.105	\$9,780

Used bus

(37,000 miles/year) / 8 mpg	4,725 gallons
4,725 gallons * \$3.105	\$14,671.13

COSTS

	New Bus	Used Bus
One time costs	\$55k	\$12.5k
Gas costs	\$9,780	\$14,671
Driver	\$35,360	\$35,360
Total first year	\$100,140	\$62,531
Total per following year	\$45,140	50,031

CITATIONS

- Mdi. "Transportation." *City of Houghton*, 28 Feb. 2025, www.cityofhoughton.com/transportation/
- Coordinator, Erica Giesenhagen Communication and Administrative, et al. "What Is Sustainability?: Agnext: Colorado State University." *AgNext*, 10 Jan. 2023, agnext.colostate.edu/2023/01/10/what-is-sustainability/.
- (www.spiraldesign.com), Spiral Design Studio. "Types of School Buses: A Comprehensive Guide - Tranfinder." *Tranfinder*, www.tranfinder.com/resources/types-of-school-buses
- Full Time Bus Driver Salary in Michigan: Hourly Rate (2025), www.ziprecruiter.com/Salaries/Full-Time-Bus-Driver-Salary--in-Michigan. Accessed 28 Mar. 2025



THANK YOU

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Software Engineering major

Senior Chief engineer SAE Aero Design | AERE

full-stack engineer, LBFE team | HIDE