

DRAFT A2ZERO INVESTMENT PLAN

This document outlines one possible scenario, amongst many, of potential investment amounts, sources, and funds between 2020 and 2030 in order to achieve the goals as outlined in the living A2Zero Carbon Neutrality Plan. The near years have more certainty than later years. As such, staff recommend that this document be considered a 3-year investment plan, which can provide greater direction and clarity regarding investment opportunities and needs in years 1-3 and serve as guidance for future years. This is similar to how the City budgets. If done this way, this investment plan would be reviewed every 2-years to make refinements and provide a revised, rolling 3 year investment plan that could guide the A2Zero work.

The remainder of the A2Zero Investment Plan is organized as follows:

Column A provides the name of a given action. Underneath is an *estimate* of how much funding is already available or is likely to be available within the existing City budget. For example, this may include existing staff or some alignment with existing actions/priorities meaning that some resources are already available to support a given action.

Column B provides information on investment source. This includes operating costs, operating credits (savings accrued to the City from the given action; not to residents), any debt service payments the City may have to make (based on estimates in the "city capital row"), the net budget impact to the City, and external sources of investment, including philanthropic, grants, pro-bono assistance, public-private partnerships, etc. The values in these rows will change over time as new sources of investment become available.

Column C shows the total *estimated* cost for a given action, over the full 10-years.

Columns D - N show annual *estimates*, by investment source, for each action.

Column O identifies the party primarily responsible for implementation.

Column P provides notes about the investment estimates provided for each action.

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES		
COMMUNITY CHOICE AGGREGATION	\$1,645,000	\$49,000	\$49,000	\$49,000	\$49,000	\$799,000	\$300,000	\$200,000	\$150,000	\$0	\$0	\$0	City of Ann Arbor	Nationally, CCA's are at cost parity if not cheaper than existing, utility energy pricing meaning that this action will most likely save our residents (and the City) money. The "City Operating Credits / Savings" estimates only look at energy savings related to City operations. It is anticipated that residents will save approximately 3-5% on their electricity costs by enrolling in a CCA.		
EST: \$392,000 Already in City Budget		\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$50,000	\$50,000	\$50,000	-						
City Operating Costs		\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$50,000	\$50,000	\$50,000	-						
City Operating Credits / Savings										-\$81,000	-\$81,000	-\$81,000				
City Debt Service																
Net City Impact		\$49,000	\$49,000	\$49,000	\$49,000	\$49,000	\$50,000	\$50,000	(\$31,000)	(\$81,000)	(\$81,000)	(\$81,000)				
City Capital																
City Funding Source		GF	GF	GF	GF	GF	GF	GF	GF	GF	GF	GF				
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)							\$750,000	\$250,000	\$150,000	\$100,000						

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES		
BULK PURCHASE OF RENEWABLES	\$605,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	City of Ann Arbor and \$66k for community liaison stipends	Onsite renewables have a 10-12 year payback but are warranted for 25 years, meaning the community and the City will see savings in the future. Additionally, the pilot bulk buy programs are saving residents anywhere from 5%-15% additional off the cost of solar. We anticipate achieving savings on City properties electrical bills 12 years after the installation is complete - which is not calculated in this matrix.		
EST: 100% Already in City Budget		\$55,000	\$49,000	\$55,000	\$55,000	\$49,000	\$55,000	\$55,000	\$49,000	\$55,000	\$49,000	\$55,000				
City Operating Costs		\$55,000	\$49,000	\$55,000	\$55,000	\$49,000	\$55,000	\$55,000	\$49,000	\$55,000	\$49,000	\$55,000				
City Operating Credits																
City Debt Service																
Net City Impact		\$55,000	\$49,000	\$55,000	\$55,000	\$49,000	\$55,000	\$55,000	\$49,000	\$55,000	\$49,000	\$55,000				
City Capital																
City Funding Source		MIL	MIL	MIL	MIL	MIL	MIL	MIL	MIL	MIL	MIL	MIL				
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)			\$6,000	\$0	\$0	\$6,000			\$6,000		\$6,000					

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
COMMUNITY SOLAR PROGRAM	\$205,000	\$18,636	\$18,640	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636	City of Ann Arbor	Nationally, community solar initiatives are at cost parity if not cheaper than existing, utility energy pricing. In many states, consumers make money on these programs. Since the cost estimates for this are for City staff to help create a community solar program, the City will not receive savings but our residents and businesses will.
EST: 100% Already in City Budget		\$18,636	\$18,640	\$8,636	\$18,636	\$8,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636		
City Operating Costs		\$18,636	\$18,640	\$8,636	\$18,636	\$8,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636		
City Operating Credits														
City Debt Service														
Net City Impact		\$18,636	\$18,640	\$8,636	\$18,636	\$8,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636	\$18,636		
City Capital														
City Funding Source		GF	GF	GF	GF	GF	GF	GF	GF	GF	GF	GF		
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)				\$10,000		\$10,000								

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
LANDFILL SOLAR PROJECT	\$80,000	\$26,500	\$27,000	\$26,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	City of Ann Arbor	Assumes the City pays a .2 cent premium, per kilowatt hour, for electricity generated through the landfill solar site.
EST: 100% Oper. Costs Already in City Budget		\$26,500	\$27,000	\$26,500										
City Operating Costs		\$26,500	\$27,000	\$26,500										
City Operating Credits					\$572,880	\$572,880	\$572,880	\$572,880	\$572,880	\$572,880	\$572,880	\$572,880		
City Debt Service														
Net City Impact		\$26,500	\$27,000	\$26,500	\$572,880	\$572,880	\$572,880	\$572,880	\$572,880	\$572,880	\$572,880	\$572,880		
City Capital														
City Funding Source		GF	GF	GF	GF	GF	GF	GF	GF	GF	GF	GF		
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)														

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
ELECTRIFICATION OF CITY FACILITIES	\$7,100,000	\$114,000	\$1,254,000	\$1,254,000	\$1,315,000	\$1,265,000	\$1,265,000	\$130,000	\$128,000	\$125,000	\$125,000	\$125,000	City of Ann Arbor with outside legal support	Additional operating costs are estimated for city facilities only. Note, this estimated increase in operating costs is offset in the efficiency section. Also assumes that these projects are placed in the CIP but not funded through that mechanism. Assumes a 15 year term with 4% interest
EST: \$550,000 Already in City Budget		\$114,000	\$114,000	\$102,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000		
City Operating Costs		\$114,000	\$114,000	\$102,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000		
City Operating Credits			\$33,252	\$66,504	\$133,008	\$199,512	\$266,016	\$332,520	\$332,520	\$332,520	\$332,520	\$332,520		
City Debt Service			\$1,215,500	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000		
Net City Impact		\$114,000	\$1,362,752	\$508,504	\$573,008	\$639,512	\$706,016	\$772,520	\$772,520	\$772,520	\$772,520	\$772,520		
City Capital			\$4,904,500											
City Funding Source		All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds		
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)			\$50,000	\$50,000	\$25,000	\$25,000	\$25,000	\$25,000						

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
ELECTRIFY ALL BUSES	\$86,000,000	\$0	\$6,890,000	\$5,690,000	\$6,490,000	\$7,290,000	\$8,070,000	\$8,870,000	\$9,400,000	\$10,200,000	\$11,000,000	\$12,100,000	TheRide	Not calculated
Not														
City Operating Costs														
City Operating Credits														
City Debt Service														
City Capital														
						This action intentionally omitted								

Calculated	City Funding Source	
	Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)	

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
BULK PURCHASE EVs (COMMUNITY)	\$700,000	\$0	\$153,000	\$100,000	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	City of Ann Arbor	A 2018 study from the University of Michigan's Transportation Research Institute found that electric vehicles cost less than half as much to operate as gas-powered cars. The average cost to operate an EV in the United States is \$485 per year, while the average for a gasoline-powered vehicle is \$1,117. Since these savings go to residents, they are not factored into this action.
EST: \$558,750 Already in City Budget			\$138,000	\$90,000	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875		
City Operating Costs			\$138,000	\$90,000	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875		
City Operating Credits														
City Debt Service														
Net City Impact		\$0	\$138,000	\$90,000	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875	\$55,875		
City Capital														
City Funding Source			GF	GF	GF	GF	GF	GF	GF	GF	GF	GF		
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)			\$15,000	\$10,000										

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
PRIVATE EV FLEETS	\$123,000	\$0	\$24,500	\$24,500	\$24,500	\$24,500	\$24,500	\$500	\$0	\$0	\$0	\$0	City of Ann Arbor	A 2018 study from the University of Michigan's Transportation Research Institute found that electric vehicles cost less than half as much to operate as gas-powered cars. The average cost to operate an EV in the United States is \$485 per year, while the average for a gasoline-powered vehicle is \$1,117. Since these savings go to residents, they are not factored into this action.
EST: \$98,000 Already in City Budget			\$19,500	\$19,500	\$19,500	\$19,500	\$19,500	\$500						
City Operating Costs			\$19,500	\$19,500	\$19,500	\$19,500	\$19,500	\$500						
City Operating Credits														
City Debt Service														
Net City Impact		\$0	\$19,500	\$19,500	\$19,500	\$19,500	\$19,500	\$500	\$0	\$0	\$0	\$0		
City Capital														
City Funding Source			GF	GF	GF	GF	GF	GF						
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)			\$5,000	\$5,000	\$5,000	\$5,000	\$5,000							

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
CITY EV FLEET TRANSITION	\$4,000,000	\$50,000	\$660,000	\$560,000	\$465,000	\$360,000	\$355,000	\$340,000	\$320,000	\$310,000	\$295,000	\$285,000	City of Ann Arbor	A 2018 study from the University of Michigan's Transportation Research Institute found that electric vehicles cost less than half as much to operate as gas-powered cars. The average cost to operate an EV in the United States is \$485 per year, while the average for a gasoline-powered vehicle is \$1,117. Operational savings are only calculated for City of Ann Arbor fleet vehicles.
EST: \$1.5 Mil in City Budget		\$50,000	\$610,000	\$510,000	\$440,000	\$360,000	\$305,000	\$315,000	\$295,000	\$310,000	\$295,000	\$285,000		
City Operating Costs		\$50,000	\$610,000	\$510,000	\$440,000	\$360,000	\$305,000	\$315,000	\$295,000	\$310,000	\$295,000	\$285,000		
City Operating Credits		-\$7,500	-\$12,400	-\$24,800	-\$37,200	-\$49,600	-\$62,000	-\$74,400	-\$86,800	-\$99,200	-\$111,600	-\$124,000		
City Debt Service														
Net City Impact		\$42,500	\$597,600	\$485,200	\$402,800	\$310,400	\$243,000	\$240,600	\$208,200	\$210,800	\$183,400	\$161,000		
City Capital														
City Funding Source		All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds	All Funds		
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)			\$50,000	\$50,000	\$25,000		\$50,000	\$25,000	\$25,000					

	Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)		additional health benefits from walking and biking, etc
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ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
PARK AND RIDE	\$170,000,000		\$200,000	\$300,000	\$21,500,000	\$21,500,000	\$21,500,000	\$21,000,000	\$21,000,000	\$21,000,000	\$21,000,000	\$21,000,000	City of Ann Arbor, TheRide, and MDOT	Per a Council request, assumes the City takes on 100% of the cost. This is highly unlikely.
EST: \$500,000 in City budgets			\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000		
City Operating Costs			\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000		
City Operating Credits														
City Debt Service														
Net City Impact			\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000		
City Capital														
City Funding Source			GF and DDA	GF and DDA	GF and DDA	GF and DDA	GF and DDA	GF and DDA	GF and DDA	GF and DDA	GF and DDA	GF and DDA		
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)														
				\$84,750,000		\$40,000,000		\$44,750,000						

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
DUPLEX / TRIPLEX / ADU'S	\$250,000	\$72,100	\$72,100	\$72,100	\$20,000	\$13,700	\$0	\$0	\$0	\$0	\$0	\$0	City of Ann Arbor	Assumes this is part of existing staff's job.
EST: \$250,000 in City budgets		\$72,100	\$72,100	\$72,100	\$20,000	\$13,700								
City Operating Costs		\$72,100	\$72,100	\$72,100	\$20,000	\$13,700								
City Operating Credits														
City Debt Service														
Net City Impact		\$72,100	\$72,100	\$72,100	\$20,000	\$13,700	\$0	\$0	\$0	\$0	\$0	\$0		
City Capital														
City Funding Source		GF	GF	GF	GF	GF								
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)														

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
MIXED-USE ZONING	\$365,000		\$50,000	\$75,000	\$55,000	\$35,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	City of Ann Arbor	Assumes this is part of existing staff's job or it fits into the Master Plan initiative and is mostly covered through that work.
EST: \$300,000 in City budgets			\$50,000	\$75,000	\$35,000	\$35,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000		
City Operating Costs			\$50,000	\$75,000	\$35,000	\$35,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000		
City Operating Credits														
City Debt Service														
Net City Impact		\$0	\$50,000	\$75,000	\$35,000	\$35,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000		
City Capital														
City Funding Source			GF	GF	GF	GF	GF	GF	GF	GF	GF	GF		
Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)												\$20,000		

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
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ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
SA2T GRANT PROGRAM	\$1,000,000		\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000		
EST: \$1 MIL in City budgets	City Operating Costs		\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	Pass through to community	Each application is unique but to-date, most awarded grants have at least a 50% match meaning we are leveraging a lot of external funding through this program.
	City Operating Credits													
	City Debt Service													
	Net City Operating Costs	\$0	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000		
	City Capital													
	City Funding Source		MIL	MIL	MIL	MIL	MIL	MIL	MIL	MIL	MIL	MIL		
	Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)													

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
INTERNAL CARBON TAX	\$75,000		\$52,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500		
EST: \$0 estimated in City budgets	City Operating Costs		\$52,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	City of Ann Arbor	Revenue generated through this program is immediately reinvested back into energy efficiency or renewable energy projects at City facilities.
	City Operating Credits		-\$2,500	-\$52,500	-\$2,500	-\$2,500	-\$2,500	-\$2,500	-\$2,500	-\$2,500	-\$2,500	-\$2,500		
	City Debt Service													
	Net City Impact	\$0	\$50,000	-\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	City Capital													
	City Funding Source		GF	GF	GF	GF	GF	GF	GF	GF	GF	GF		
	Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)													

ACTION	TOTAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Implem. Respon.	NOTES
OFFSETS	\$9,440,000		\$12,000	\$22,100	\$22,100	\$22,100	\$22,100	\$22,100	\$22,100	\$22,100	\$4,636,650	\$4,636,650		
EST: \$233,000 in city budget	City Operating Costs		\$12,000	\$22,100	\$22,100	\$22,100	\$22,100	\$22,100	\$22,100	\$22,100	\$4,636,650	\$4,636,650	City of Ann Arbor and Offset Organization	Estimated cost for carbon offsets
	City Operating Credits	\$9,207,000												
	City Debt Service													
	Net City Impact	\$0	\$12,000	\$22,100	\$22,100	\$22,100	\$22,100	\$22,100	\$22,100	\$22,100	\$4,636,650	\$4,636,650		
	City Capital													
	City Funding Source		GF	GF	GF	GF	GF	GF	GF	GF	GF	GF		
	Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)													

SUMMARY

		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
A	TOTAL City Operating Costs	\$793,281	\$8,491,870	\$7,119,461	\$6,847,486	\$6,791,186	\$6,719,486	\$6,585,486	\$6,558,986	\$6,529,986	\$11,099,036	\$11,162,036
B	TOTAL City Operating Credits	-\$17,500	-\$1,305,748	-\$1,078,896	-\$686,682	-\$737,578	-\$788,474	-\$834,370	-\$1,002,770	-\$1,075,170	-\$1,087,570	-\$1,099,970
C	TOTAL City Debt Service	\$0	\$10,656,425	\$3,909,500	\$3,272,000	\$3,272,000	\$3,272,000	\$3,272,000	\$3,272,000	\$3,272,000	\$3,272,000	\$3,272,000
D	TOTAL Net City Impact	\$775,781	\$17,842,547	\$9,950,065	\$9,432,804	\$9,325,608	\$9,203,012	\$9,023,116	\$8,828,216	\$8,726,816	\$13,283,466	\$13,334,066

E	TOTAL City Capital		\$0	\$42,875,075	\$3,612,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
F	TOTAL Other (i.e., philanthropic, state, federal, pro bono, public-private partnership)		\$150,000	\$3,259,500	\$87,588,500	\$455,000	\$41,071,000	\$480,000	\$45,100,000	\$281,000	\$150,000	\$156,000	\$150,000

\$0.00