CITY OF HART
407 S. STATE ST.
HART, MI 49420
COUNCIL PROCEEDINGS
April 11th, 2023
MINUTES – Approved

PRESENT: Councilors: Mayor Vicki Platt Justin Adams, Catalina Burillo (Late), Dean Hodges, and Amanda Klotz
ABSENT: Jim Evans and Kris Trygstad
OTHERS PRESENT: City Manager – Rob Splane, City Clerk – Karla Swihart, BioPure Superintendent – Paul Cutter Energy Superintendent – Michael Schiller, Hart PD Chief – Juan Salazar, H.E.A.R.T Economic Director – Nichole Kleiner, Jim Cunningham, Mike Powers, and Sharon Hallack
Large crowd gathered in support of Drive Safe Bill.

Mayor Platt called the meeting to order; following the roll call, then led the Council in the pledge of allegiance.

APPROVAL OF AGENDA:

- A. Klotz motioned to approve the agenda and was supported by J. Adams
  - Ayes: 4 Nays: 0 Absent: 3

PUBLIC COMMENTS:

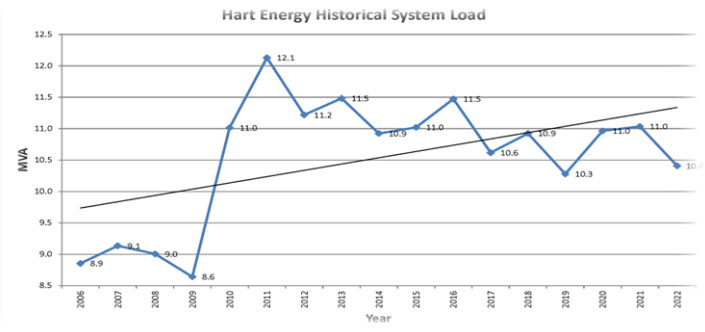
- Jim Cunningham 1117 Mason Ave, Speaking regards to article in the paper regarding additional City property off of hill top drive, I talked with the City Manager on Monday and the paper did make an error as it is not additional property to the City but the question is what to do with this City owned property: 1) Turn it into a residential area, 2) Make it into a park, or 3) Leave it as it is. I have talked with several people in the neighborhood the unanimously said leave it as it is. It is undeveloped and if you put in a residential area there are septic tanks running within 50 ft of the lake, the whole road would have to be redone leading down to that location and so on. Speaking on behalf of the residents in that subdivision, the City should leave that undeveloped.

CORRESPONDENCE, EVENTS, PRESENTATIONS:

- Hart Energy System Study – Mike McGeehan GRP Engineering

SYSTEM LOAD STUDY

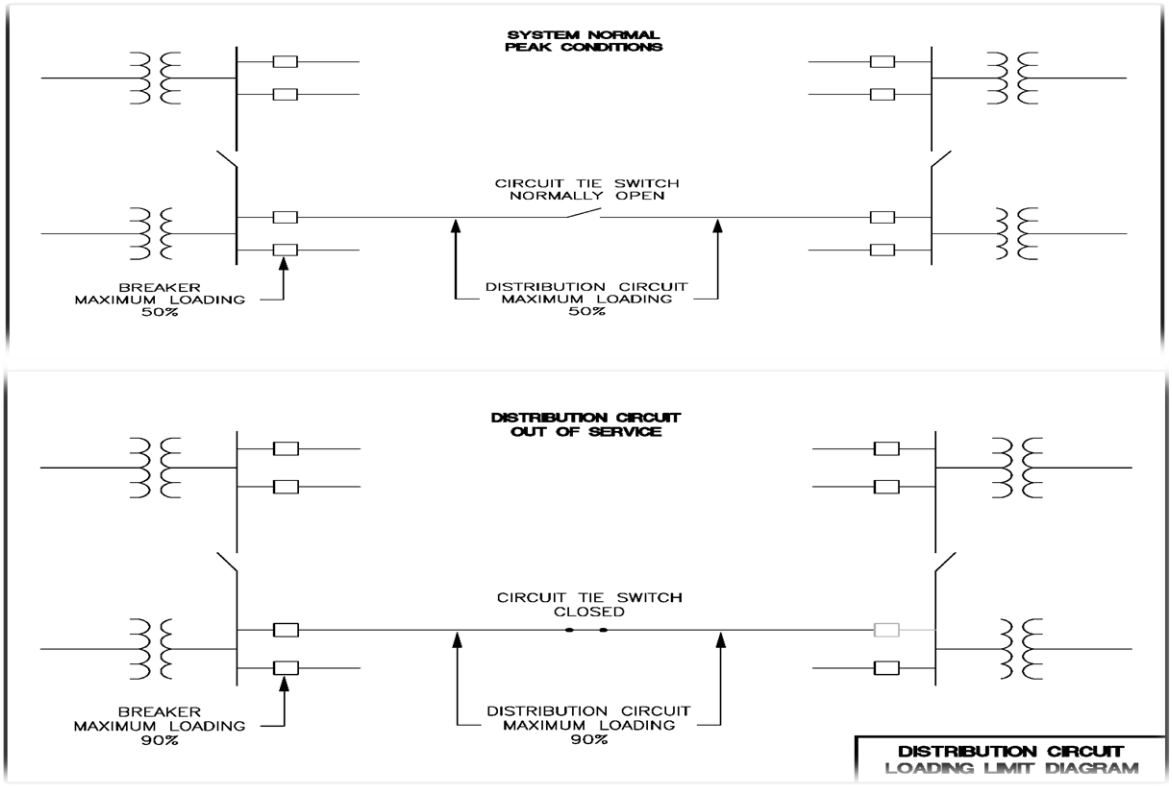
- Capacity Study
- Peak Conditions (Summer)
- Historical & Projected Load
- Operating Philosophy
- Substation Equipment
- Distribution System (Primary Only)
- System Assessment



OPERATING PHILOSOPHY

	Normal	1st Contingency
Substation Transformers	**40%**	**80%**
Distribution Conductors	**50%**	**90%**

- 1st Contingency – No Customer Outages
- System Goals



Hart Energy
Electrical System Study
Substation Loading Peak Conditions

88th Avenue Substation

Item	Device	Rating[1]	2022 Amps	2022 Capacity	2023 Amps	2023 Capacity	2027 Amps	2027 Capacity	2032 Amps	2032 Capacity	Notes
88_191	600A V-Switch	600	15	3%	15	3%	15	3%	16	3%	
88_291	600A V-Switch	600	0	0%	0	0%	0	0%	0	0%	
88_199	1200A Circuit Switcher	1,200	15	1%	15	1%	15	1%	16	1%	
88_299	1200A Circuit Switcher	1,200		0%		0%		0%		0%	
88_T1	10/12.5 MVA Xfmr	579	169	29%	169	29%	171	30%	174	30%	
88_T2	10/12.5/16 MVA Xfmr	695	0	0%	0	0%	0	0%	0	0%	
88_422	900A GOAB	900	169	19%	169	19%	171	19%	174	19%	
88_622	900A GOAB	900		0%		0%		0%		0%	
88_VR1	416kVA V_Regulator	578	169	29%	169	29%	171	30%	174	30%	
South (88th)	630A NOVA Recloser	630	109	17%	109	17%	111	18%	112	18%	
North (88th)	630A NOVA Recloser	630	40	6%	40	6%	41	6%	41	7%	
Bio Pure (88th)	630A NOVA Recloser	630	20	3%	20	3%	20	3%	21	3%	

Lambrix Substation

Item	Device	Rating[1]	2022 Amps	2022 Capacity	2023 Amps	2023 Capacity	2027 Amps	2027 Capacity	2032 Amps	2032 Capacity	Notes
LB_199	600A V-Switch	600	18	3%	18	3%	18	3%	18	3%	
LB_T1	10/12/16 MVA Xfmr	742	196	26%	197	27%	199	27%	202	27%	
LB_VR1	416kVA V_Regulator	578	196	34%	197	34%	199	34%	202	35%	
East (LB)	800A Viper Recloser	630	108	17%	108	17%	110	17%	111	18%	
Center (LB)	630A NOVA Recloser	630	0	0%	0	0%	0	0%	0	0%	
West/Rail Trail (LB)	630A NOVA Recloser	630	64	10%	64	10%	65	10%	66	10%	
Industrial (LB)	630A NOVA Recloser	630	24	4%	24	4%	24	4%	25	4%	

Hart Energy
Electrical System Study
Substation Loading Peak Conditions

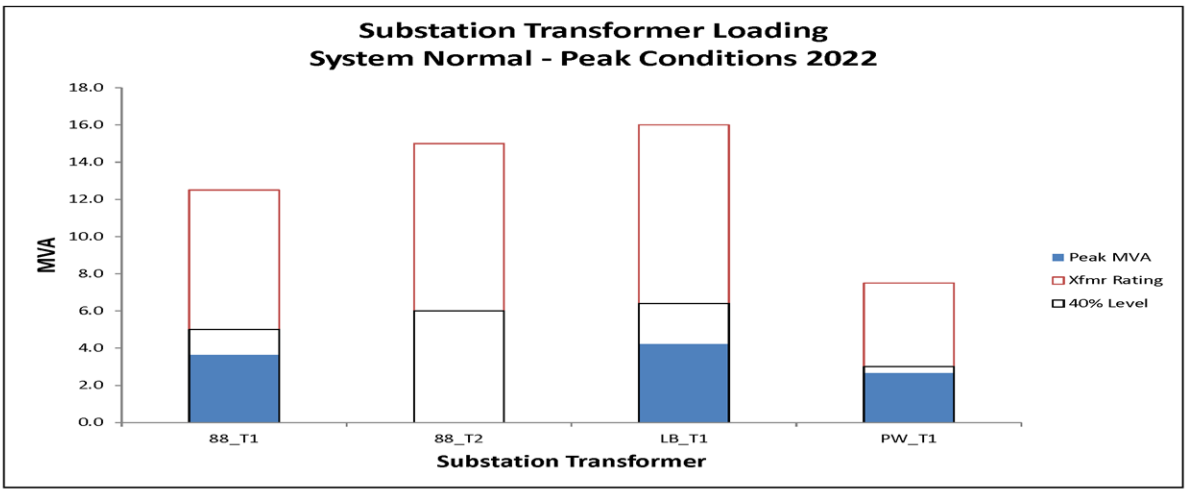
Powers Substation

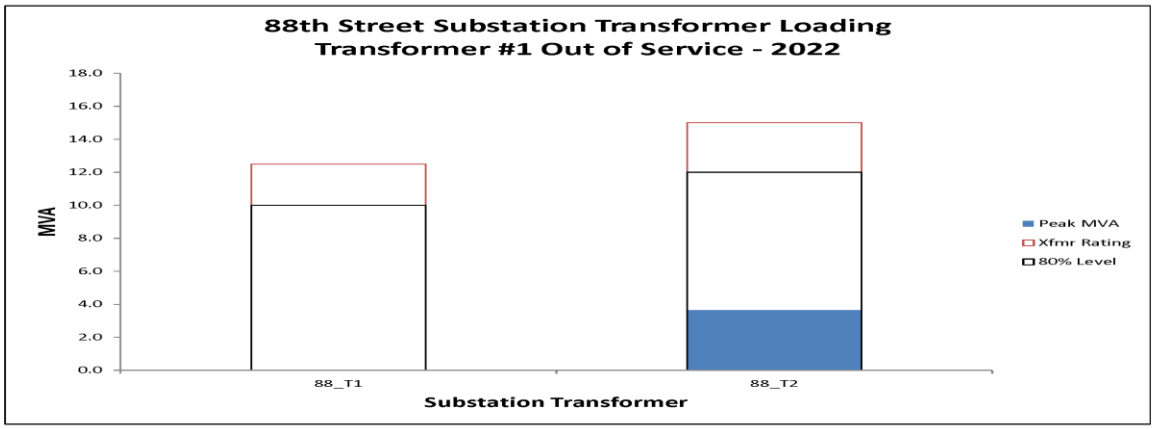
Item	Device	Rating[1]	2022 Amps	2022 Capacity	2023 Amps	2023 Capacity	2027 Amps	2027 Capacity	2032 Amps	2032 Capacity	Notes
PW-199	1200A V-Switch	1,200	33	3%	33	3%	34	3%	34	3%	
PW_T1	7.5 MVA Xfmr	1,042	369	35%	370	36%	374	36%	380	36%	
PW_VR1	250kVA V_Regulator	1,000	369	37%	370	37%	374	37%	380	38%	
South/School (PW)	800A NOVA Recloser	800	112	14%	112	14%	114	14%	115	14%	
North (PW)	800A NOVA Recloser	800	58	7%	58	7%	59	7%	60	7%	
Diesel (PW)	800A NOVA Recloser	800	199	25%	200	25%	202	25%	205	26%	
Spare (PW)	800A NOVA Recloser	800	0		0	0%	0	0%	0	0%	

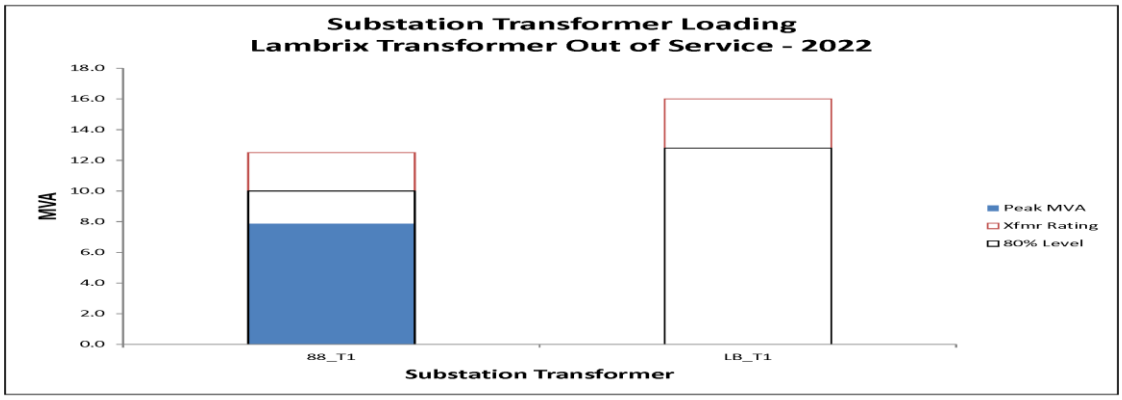
Diesel Plant

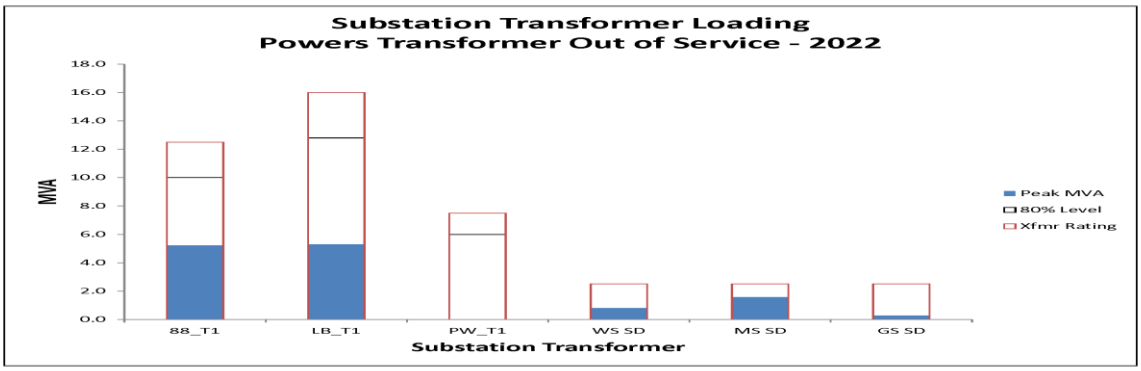
Item	Device	Rating[1]	2022 Amps	2022 Capacity	2023 Amps	2023 Capacity	2027 Amps	2027 Capacity	2032 Amps	2032 Capacity	Notes
Hydro (DP)	1200A Breaker	1,200	0	0%	0	0%	0	0%	0	0%	
Diesel (DP)	1200A Breaker	1,200	38	3%	38	3%	39	3%	39	3%	
South (DP)	1200A Breaker	1,200	161	13%	161	13%	163	14%	166	14%	
North (DP)	1200A Breaker	1,200	0	0%	0	0%	0	0%	0	0%	

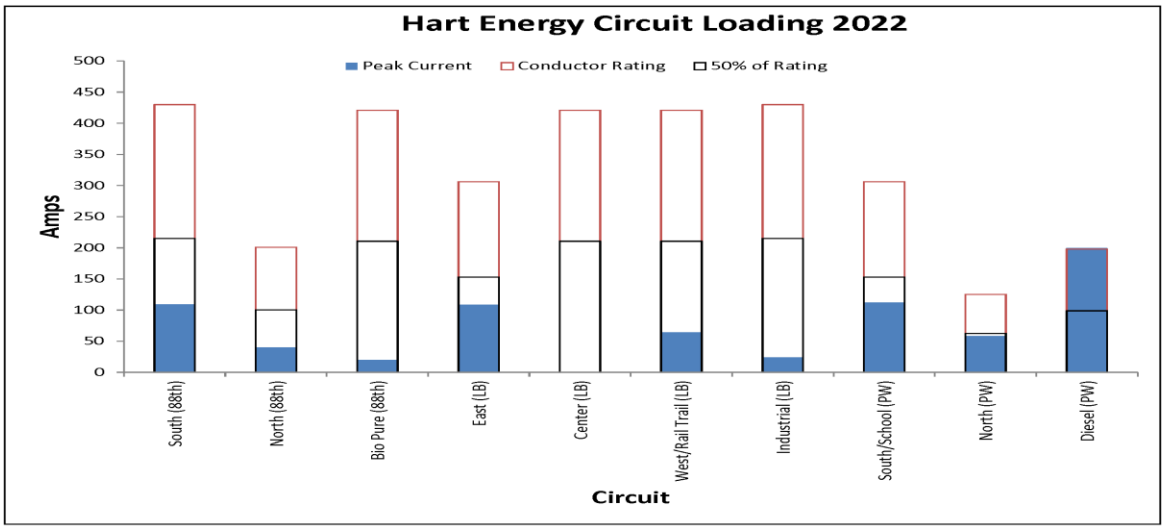
[1] Transformer ratings are given for FFA rating on the secondary side of the transformers. Secondary voltage is either 12.5kV or 4.16kV.
[2] Bus tie breaker/switch amps are calculated from the sum of adjacent bus breakers/switches.
[3] Cells highlighted in red represent transformers and their primary side equipment which are operating at or above 40% of nameplate rating OR secondary side (4.16/12.5kV) equipment which is operating at or above 50% of nameplate rating under normal peak load conditions.






Substation Transformer Loading
Lambrix Transformer Out of Service – 2022
MVA
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
88_T1
LB_T1
Substation Transformer
Peak MVA
Xfmr Rating
80% Level


Substation Transformer Loading
Powers Transformer Out of Service – 2022
MVA
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
88_T1
LB_T1
PW_T1
WS SD
MS SD
GS SD
Substation Transformer
Peak MVA
80% Level
Xfmr Rating


Hart Energy Circuit Loading 2022
Peak Current
Conductor Rating
50% of Rating
Amps
500
450
400
350
300
250
200
150
100
50
0
South (88th)
North (88th)
Bio Pure (88th)
East (LB)
Center (LB)
West/Rail Trail (LB)
Industrial (LB)
South/School (PW)
North (PW)
Diesel (PW)
Circuit

Hart Energy
Electrical System Study
Circuit Backup Review

Circuit Out-of-Service	Backup Circuit	Load Year 2022 Total Load	Recloser/ Breaker Capacity	Backup Circuit Conductor Capacity	Backup Circuit Sub Xfmr Capacity	Tie Point
Bio Pure (88th)	North (88th)	60	10%	30%	29%	88th & BioPure, 300A Solid Blades
South (88th)	North (88th)	149	24%	74%	29%	88th Sub Riser Poles, 300A Solid Blades
South (88th)	East (LB)	217	34%	71%	41%	Polk Rd east of State St, 600A Switch
North (88th)	Bio Pure (88th)	60	10%	14%	29%	88th & BioPure, 300A Solid Blades
North (88th)	South (88th)	149	24%	35%	29%	88th Sub Riser Poles, 300A Solid Blades
North (88th)	Diesel (PW)	319	40%	161%	47%	Main & Woodlawn, 600A Switch *(Step-Down)*
East (LB)	Center (LB)	108	17%	26%	26%	Polk Rd west of State St, 600A Switch
East (LB)	South (88th)	217	34%	50%	48%	Polk Rd east of State St, 600A Switch
East (LB)	Diesel (PW)	269	34%	136%	42%	Wood St W. of Union St, 600A Sw. *(4160V Load Only)*
East (LB)	Diesel (PW)	269	34%	136%	42%	Diesel Plant, 300A Solid Blades *(4160V Load Only)*
Center (LB)	West/Rail Trail (LB)	64	10%	15%	26%	Industrial Park Dr, 600A Disconnects
Center (LB)	East (LB)	108	17%	35%	26%	Polk Rd west of State St, 600A Switch
West/Rail Trail (LB)	Center (LB)	64	10%	15%	26%	Industrial Park Dr, 600A Disconnects
West/Rail Trail (LB)	Industrial (LB)	88	14%	20%	26%	GHSP Switchgear, 600A Switch (#101)
Industrial (LB)	West/Rail Trail (LB)	88	14%	21%	26%	GHSP Switchgear, 600A Switch (#101)
South/School (PW)	West/Rail Trail (LB)	101	16%	24%	31%	Water St & Wood St, 600A Switch
North (PW)	Diesel (PW)	257	32%	130%	35%	Main St & Water St, 300A Solid Blades
South (DP)	North (88th)	94	15%	47%	38%	Main & Woodlawn, 600A Switch *(Step-Down)*
South (DP)	East (LB)	162	26%	53%	34%	Wood St W. of Union St, 600A Sw.

[1] Ratings for transformers are given as FFA rating on the secondary side of the transformers. Breaker & recloser ratings are nameplate. Conductor ratings are based on maximum thermal conductor operating temperature.

[2] Cells highlighted in red represent high-side (138kV & 46kV) equipment and transformers which would be operating at or above 80% of nameplate rating OR low-side (4.16 & 12.5kV) equipment and conductors which would be operating at or above 90% of nameplate rating for these 1st contigency conditions.

Hart Energy
Electrical System Study
Circuit Backup Review

Circuit Out-of-Service	Backup Circuit	Load Year 2027 Total Load	Recloser/ Breaker Capacity	Backup Circuit Conductor Capacity	Backup Circuit Sub Xfmr Capacity	Tie Point
Bio Pure (88th)	North (88th)	61	10%	30%	30%	88th & BioPure, 300A Solid Blades
South (88th)	North (88th)	151	24%	75%	30%	88th Sub Riser Poles, 300A Solid Blades
South (88th)	East (LB)	220	35%	72%	42%	Polk Rd east of State St, 600A Switch
North (88th)	Bio Pure (88th)	61	10%	14%	30%	88th & BioPure, 300A Solid Blades
North (88th)	South (88th)	151	24%	35%	30%	88th Sub Riser Poles, 300A Solid Blades
North (88th)	Diesel (PW)	324	40%	163%	48%	Main & Woodlawn, 600A Switch *(Step-Down)*
East (LB)	Center (LB)	110	17%	26%	27%	Polk Rd west of State St, 600A Switch
East (LB)	South (88th)	220	35%	51%	49%	Polk Rd east of State St, 600A Switch
East (LB)	Diesel (PW)	272	34%	137%	43%	Wood St W. of Union St, 600A Sw. *(4160V Load Only)*
East (LB)	Diesel (PW)	272	34%	137%	43%	Diesel Plant, 300A Solid Blades *(4160V Load Only)*
Center (LB)	West/Rail Trail (LB)	65	10%	15%	27%	Industrial Park Dr, 600A Disconnects
Center (LB)	East (LB)	110	17%	36%	27%	Polk Rd west of State St, 600A Switch
West/Rail Trail (LB)	Center (LB)	65	10%	15%	27%	Industrial Park Dr, 600A Disconnects
West/Rail Trail (LB)	Industrial (LB)	89	14%	21%	27%	GHSP Switchgear, 600A Switch (#101)
Industrial (LB)	West/Rail Trail (LB)	89	14%	21%	27%	GHSP Switchgear, 600A Switch (#101)
South/School (PW)	West/Rail Trail (LB)	103	16%	24%	32%	Water St & Wood St, 600A Switch
North (PW)	Diesel (PW)	261	33%	132%	36%	Main St & Water St, 300A Solid Blades
South (DP)	North (88th)	95	15%	47%	39%	Main & Woodlawn, 600A Switch *(Step-Down)*
South (DP)	East (LB)	164	26%	54%	34%	Wood St W. of Union St, 600A Sw.

[1] Ratings for transformers are given as FFA rating on the secondary side of the transformers. Breaker & recloser ratings are nameplate. Conductor ratings are based on maximum thermal conductor operating temperature.

[2] Cells highlighted in red represent high-side (138kV & 46kV) equipment and transformers which would be operating at or above 80% of nameplate rating OR low-side (4.16 & 12.5kV) equipment and conductors which would be operating at or above 90% of nameplate rating for these 1st contigency conditions.

Hart Energy
Electrical System Study
Circuit Backup Review

Circuit Out-of-Service	Backup Circuit	Load Year 2032 Total Load	Recloser/ Breaker Capacity	Backup Circuit Conductor Capacity	Backup Circuit Sub Xfmr Capacity	Tie Point
Bio Pure (88th)	North (88th)	62	10%	31%	30%	88th & BioPure, 300A Solid Blades
South (88th)	North (88th)	153	24%	76%	30%	88th Sub Riser Poles, 300A Solid Blades
South (88th)	East (LB)	223	35%	73%	42%	Polk Rd east of State St, 600A Switch
North (88th)	Bio Pure (88th)	62	10%	15%	30%	88th & BioPure, 300A Solid Blades
North (88th)	South (88th)	153	24%	36%	30%	88th Sub Riser Poles, 300A Solid Blades
North (88th)	Diesel (PW)	328	41%	166%	48%	Main & Woodlawn, 600A Switch *(Step-Down)*
East (LB)	Center (LB)	111	18%	26%	27%	Polk Rd west of State St, 600A Switch
East (LB)	South (88th)	223	35%	52%	49%	Polk Rd east of State St, 600A Switch
East (LB)	Diesel (PW)	275	34%	139%	43%	Wood St W. of Union St, 600A Sw. *(4160V Load Only)*
East (LB)	Diesel (PW)	275	34%	139%	43%	Diesel Plant, 300A Solid Blades *(4160V Load Only)*
Center (LB)	West/Rail Trail (LB)	66	10%	16%	27%	Industrial Park Dr, 600A Disconnects
Center (LB)	East (LB)	111	18%	36%	27%	Polk Rd west of State St, 600A Switch
West/Rail Trail (LB)	Center (LB)	66	10%	16%	27%	Industrial Park Dr, 600A Disconnects
West/Rail Trail (LB)	Industrial (LB)	91	14%	21%	27%	GHSP Switchgear, 600A Switch (#101)
Industrial (LB)	West/Rail Trail (LB)	91	14%	22%	27%	GHSP Switchgear, 600A Switch (#101)
South/School (PW)	West/Rail Trail (LB)	104	17%	25%	32%	Water St & Wood St, 600A Switch
North (PW)	Diesel (PW)	265	33%	134%	36%	Main St & Water St, 300A Solid Blades
South (DP)	North (88th)	96	15%	48%	40%	Main & Woodlawn, 600A Switch *(Step-Down)*
South (DP)	East (LB)	166	26%	54%	35%	Wood St W. of Union St, 600A Sw.

[1] Ratings for transformers are given as FFA rating on the secondary side of the transformers. Breaker & recloser ratings are nameplate. Conductor ratings are based on maximum thermal conductor operating temperature.

[2] Cells highlighted in red represent high-side (138kV & 46kV) equipment and transformers which would be operating at or above 80% of nameplate rating OR low-side (4.16 & 12.5kV) equipment and conductors which would be operating at or above 90% of nameplate rating for these 1st contigency conditions.

SYSTEM ASSESSMENT – SUBSTATIONS

- **Lambrix Substation**
  Recloser Controllers
  Rusting & Equipment
  Energized Parts / Contact Points
- **88th Substation**
  Rusting & Equipment
  Energized Parts / Contact Points
- **Powers Substation**
  Recloser Controllers
  Rusting Equipment

SYSTEM ASSESSMENT – DISTRIBUTION CIRCUITS

- Aged Construction / Copper Conductors (4.1 6kV)
- Underrated Equipment on Mainlines
- Pole Height & Accessibility (Diesel Tie Line)
- Direct Buried Underground Cable

ANALYSIS SUMMARY

- Substation Transformer Loading
- Distribution Circuit Loading
- Voltage Drop
- Circuit Ties – Loading & Voltage Drops
- Loss of Transmission Source
- Electrification

RECOMMENDATIONS

- Substation Recloser Controller Replacement
- Substation Aged Equipment
- Circuit Tie Switches

- Distribution Circuit Voltage Conversions
- Distribution Circuit Rebuilds
- Powers Substation Transformer Replacement
- Circuit Reclosers
- GIS & SCADA

2023 PROJECT LIST

Year	Project #	Priority	Ranking	Project Description	Risks If Delayed / Not Completed	Estimated Cost
2023	201	High		**Lambrix Substation Recloser Controller Replacement** Replacement of three Cooper Form-6 recloser controllers at Lambrix Substation with three new SEL-651RA controllers, power & control cables, conduit modifications, wire jumpers, and wildlife guards.	Loss of service to all Lambrix Substation customers for a downline distribution circuit fault. The existing controllers have a history of locking up and needing to be powered down to fix the issue. The reclosers do not operate when the controllers are locked up, therefore the substation transformer fuse(s) will operate.	$80,000
2023	202	High		**Powers Substation Recloser Controller Replacement** Replacement of four Cooper Form-6 recloser controllers at Powers Substation with four new SEL-651RA controllers, power & control cables, conduit modifications, wire jumpers, and wildlife guards.	Loss of service to all Powers Substation customers for a downline distribution circuit fault. The existing controllers have a history of locking up and needing to be powered down to fix the issue. The reclosers do not operate when the controllers are locked up, therefore the substation transformer fuse(s) will operate.	$60,000
2023	209	Medium		**88th Avenue Substation HVAC Installation** Installation of new HVAC system in the control house at 88th Avenue Substation.	Premature failure of electronic relays and control devices within the control house due to inability to regulate temperature and prevent condensation.	$77,000
2023	301	High		**South (DP) Circuit 15kV Switch Installation** Installation of one 3-phase, 15kV, 600A gang operated switch at the corner of Washington Street and S. State Street. This switch will be used as a sectionalizing switch to split the load on the South (DP) Circuit for the Diesel Tie Line Contingency Switching.	During peak load conditions, the Diesel Plant circuits cannot be backed up should the Diesel Tie Circuit from Powers Substation become unavailable.	$10,000
2023	302	Medium		**South (DP) & Lambrix East 15kV Switch Installation** Installation of one 3-phase, 15kV, 600A gang operated switch at corner of Hart Street and E. Main Street. This switch will be used as a tie switch for connection between the East (LB) and South (DP) circuits along with North (88th) at 4160V.	During peak load conditions and first contingency loss of equipment will have less available tie points.	$10,000
2023	303	High		**South (PW) 3-Phase Voltage Conversion** Conversion of the entire Powers South Circuit from 2.4/4.16kV to 7.2/12.5kV. Utilize Lambrix West Circuit as 12.5kV source.	Initial step in the distribution circuit voltage conversion process. This is step 1 of 4 of voltage conversion on the system. Without completion of this project, there is not a way to currently support all of the Powers Substation load on the peak loading day.	$25,000
2023	304	Medium		**East (LB) 3-Phase Capacitor Bank Upgrade** Upgrading of the 300kVAR capacitor bank on South (DP) along State Street to a switched 450kVAR.	Once the load from South (DP) is transferred to East (LB) Circuit, low voltage conditions on South (DP) Circuit along Johnson Street develop. Increasing the size of the existing capacitor bank will correct the low voltage condition on the peak loading day.	$15,000
2023	305	High		**Lake Road Overhead Rebuild** Reconstruction of 1.2 miles of two-phase #6 HDCU with three-phase #1/0 ACSR & 1.7 miles of single-phase #6 HDCU with #2 ACSR all insulated for 15kV operation including dual-voltage transformers.	Risk of continued failures causing customer outages due to aged poles, line hardware, insulators and conductor.	$450,000
						$727,000

2024 PROJECT LIST

Year	Project #	Priority	Ranking	Project Description	Risks If Delayed / Not Completed	Estimated Cost
2024	203	Medium		**Lambrix Substation Aged Equipment Replacement** Replacement of Main Bus PT fuse box, station service fuse holder, and jumpers to/from the station service fuse at Lambrix Substation. Includes one new fuse box with terminal blocks, fuses, and test switches mounted to bus structure and connected to existing conduit system. Also includes new secondary control cable between the fuse box and the potential transformers plus between the fuse box and the recloser controllers.	Possible catastrophic failure of the fuse and holder should a fault occur at the station service transformer as the fuse is not rated for the available fault current at the 12.47kV bus.	$35,000
2024	204	Medium		**Powers Substation Aged Equipment Replacement** Replacement of station service fuse holder and jumpers to/from the station service fuse at Powers Substation. Includes new substation rated fuse holder, coated jumpers, and wildlife guards.	Possible catastrophic failure of the fuse and holder should a fault occur at the station service transformer as the fuse is not rated for the available fault current at the 12.47kV bus.	$25,000
2024	306	High		**Diesel Tie Line (PW) Rebuild** Reconstruction of 0.65 miles of three-phase #1/0 ACSR with new three-phase #366.4 ACSR as an express feeder insulated for 15kV and at standard distribution height. Rebuild on new centerline along Main Street and Water Street to the existing switchgear. Complete project in conjunction with Powers North Circuit rebuild as a double-circuit line.	Inability to repair poles, hardware, and conductor that are beyond the reach of Hart Energy owned equipment. Voltage issues downline of the Diesel Plant switchgear due to existing conductor size.	$250,000
2024	307	High		**North (PW) 3-Phase Voltage Conversion & Rebuild** Reconstruction of 0.6 miles of three-phase #6 HDCU with new three-phase #366.4 ACSR from Powers Substation to Water Street, 0.2 miles of V-phase #6 HDCU with #2 ACSR, plus 0.2 miles of three-phase #6 HDCU and 0.6 miles of single-phase #6 HDCU with #2 ACSR, along the overhead sections of the Diesel Tie line. Complete project in conjunction with Diesel Plant Tie Line rebuild as a double-circuit line.	Step 2 in the distribution circuit voltage conversion process. This project is being done in conjunction with the Diesel Tie Line Rebuild that will correct the low voltage caused by the Diesel Tie. Completion of this project will reduce the loading on Powers Substation, reduce voltage drop of the North (PW) Circuit, and create a stronger system tie point.	$475,000
2024	308	Low		**Electric System GIS Phase 1** Implementation of the initial phase of a GIS database and mapping for the electric system. Completion of this first phase will create the main GIS database for the electric system including primary features (i.e. poles, transformers, capacitor banks, cabinets, switches, and conductors) plus customer meters geolocated. Data and maps to be available on desktop and mobile devices.	Continued use of paper maps, lengthier time completing underground system locates, manual updates to historical paper files, difficulty in sharing system information with staff.	$165,000
						$950,000

2025 PROJECT LIST

Year	Project #	Priority	Ranking	Project Description	Risks If Delayed / Not Completed	Estimated Cost
2025	205	Medium		**Substation Regulator Controller Replacement** Replacement of three existing Siemens MJ-3A voltage regulator controllers and cabinets at Powers Substation with new SEL-2431 regulator controllers and cabinets.	Cabinets will eventually rust through exposing the controllers to the outside elements. Controllers are digital devices and more than 20 years old, if not replaced they could fail while in service.	$25,000
2025	206	Low		**88th Avenue Substation Transformer #1 Painting** Cleaning, preparation and painting of Transformer #1 at 88th Avenue Substation due to rusting on the top plate. Transformer will be cleaned in accordance with SSPC-SP3 and sealed with an epoxy mastic primer and will have a polyurethane finish. Radiators and inside of control cabinet will not be cleaned or painted.	Although rust is currently at the surface level, allowing rust to penetrate steel plate could result in future failure of the transformer. The power transformer is the most critical piece of equipment in any substation. Due to the cost and long lead times, this critical piece of equipment must be kept in excellent condition.	$15,000
2025	312	Low		**Electric System GIS Phase 2** Completion of the second phase of GIS database and mapping for the electric system. Second phase will include secondaries, services, and street lights.	GIS mapping will be limited to primary lines and equipment including distribution transformers.	$150,000
2025	309	High		**South (DP) 3Ø Rebuild & Voltage Conversion (Phase 1)** Conversion of the Diesel Plant South Circuit from the Diesel Plant switchgear to the corner of State Street & Washington Street from 4.16kV to 12.5kV. This section of the circuit will initially be fed from Lambrix Center Circuit through a step-down transformer, then moved to Lambrix West Circuit once the voltage is converted to 12.5kV.	Third step in the distribution circuit voltage conversion process. This project will reduce the loading on the Lambrix Substation and unload the Center (LB) Circuit as a backup or spare feeder.	$22,000
2025	310	High		**Plum Street & 72nd Street 1-phase Underground Tie** Replacement of 0.4 miles of single-phase underground cable plus associated cabinets and transformers on Plum Street from East Main Street north to the end of the line, construction of 0.3 miles of new single-phase underground cable from Plum Street to the existing underground on 72nd Street, plus reinsulation and voltage conversion on the single-phase overhead west of the dam.	Potential customer outages due to aged underground cable and padmount equipment including the dam crossing that has already experienced two failed cables. Cable repairs would require excavations and splices added at failure points.	$225,000
2025	311	Medium		**North (88th) Upgrade 1-Phase Switches to 3-Phase** Replacement of single-phase 300A solid blade disconnects with 600A three-phase gang switches on 88th Avenue North Circuit including full capacity jumpers.	Disruptions in service due to ferroresonance caused by single-phase switching operations. Inability to carry full circuit or backup loads due to limited jumper ampacity.	$25,000
2025	312	Low		**Electric System GIS Phase 2** Implementation of the initial phase of a GIS database and mapping for the electric system. Completion of this first phase will create the main GIS database for the electric system including primary features (i.e. poles, transformers, capacitor banks, cabinets, switches, and conductors) plus customer meters geolocated. Data and maps to be available on desktop and mobile devices.	Continued use of paper maps, lengthier time completing underground system locates, manual updates to historical paper files, difficulty in sharing system information with staff.	$165,000
						$837,000

2026 – 2027 PROJECT LIST

Year	Project #	Priority	Ranking	Project Description	Risks If Delayed / Not Completed	Estimated Cost
2026	313	High		**Harrison Road & Lever Road Rebuild** Reconstruction of 0.60 miles of three-phase #6 HDCC with three-phase #2 ACSR through the orchard south of Lever Road and east on Lever Drive to Oceana Drive, plus reconstruction of 0.55 miles of single-phase #6 HDCU with single-phase #2 ACSR on Lever Road east of Oceana Drive.	Risk of failures causing customer outages due to aged poles, line hardware, insulators and conductor, plus higher system losses.	$330,000
2026	314	High		**Diesel (DP) & East (LB) Circle Drive Underground Tie** Upgrade of single-phase underground tie to three-phase between Diesel (DP) and East (LB) along Circle Drive / Hill-n-Dale including installation of normally open padmount switch.	Inability to replace Powers Substation transformer and complete voltage conversion to 12.5kV.	$110,000
2026	315	Low		**Electric System GIS Phase 3** Completion of the third phase of GIS mapping for the electric system including poles, construction assemblies, and joint-use attachments.	Pole, construction, and joint-use data will not be documented and GIS mapping will be limited to primary, secondary, and service lines.	$80,000
						$520,000
2027	207	Low		**SCADA System** Installation of a SCADA system at all three substations including connections to substation reclosers and meters, plus communications back to and computer hardware installation at the Hart Energy building.	Need to travel to the substations to obtain system status which is especially critical during outage conditions. Less accurate system analysis due to lack of historical circuit load data.	$160,000
2027	316	High		**South (DP) 3Ø Rebuild & Voltage Conversion (Phase 2)** Reconstruction of 1.65 miles of single-phase overhead #4/0 HDCU to #336 ACSR and 0.4 miles of single-phase #6 HDCU plus voltage conversion from 4.16kV to 12.5kV along State Street from Washington Street to the south end of the circuit. This circuit will remain fed from Lambrix Center Circuit until Powers Substation is converted to 12.5kV.	Fourth step in the distribution circuit voltage conversion process. Completion of this project will reduce the loading on North (88) Circuit and create a 600A tie to the North (88) from West (LB).	$725,000
2027	317	Medium		**Hydro Generator Tie Line Voltage Conversion** Reconstruction of the Hydro pole-mount transformer structure, unjacketed underground cables, and replacement of the Hydro transformer. Conversion of the Hydro Tie Line to 12.5kV temporarily utilizing Lambrix West as the source.	Risk of failures causing outages at the Hydro due to aged poles, hardware, unjacketed underground cable.	$60,000
						$945,000

2028 PROJECT LIST

Year	Project #	Priority	Ranking	Project Description	Risks If Delayed / Not Completed	Estimated Cost
2028	208	High		**Powers Substation Transformer Replacement** Replacement of the 7.5MVA power transformer and set of voltage regulators at Powers Substation with one new 10/12/16MVA LTC transformer, foundation, secondary oil-containment system, and 15kV bus modifications.	The Powers Substation 7.5MVA transformer and voltage regulators are currently loaded to 35% and 37% respectively. The voltage regulators will be at 38% by 2032, this is approaching the 40% loading criteria for upgrades. All load the North (PW) and South (PW) Circuits currently serve has been converted to 12.5kV. A step-down should be installed to supply the Diesel Tie Line and a new transformer with 12.5kV secondary voltage.	$2,400,000
2028	318	Medium		**W. Harrison Road Line Recloser** Installation of a three-phase line recloser on W. Harrison Road at the riser pole east of the Dam.	Longer outage durations caused by fuse operations for temporary faults on this lengthy rural section of line.	$30,000
2028	319	Medium		**N. State Street & Lake Road Line Recloser** Installation of a three-phase line recloser at the North State Street & Hill-n-Dale riser watching State St & Lake Road.	Longer outage durations caused by fuse operations for temporary faults on this lengthy rural section of line.	$30,000
						$2,460,000

Substation Abbreviations	
LB	Lambrix Substation
88th	88th Avenue Substation
PW	Powers Substation
DP	Diesel Plant

2023 - 2028 Total $6,229,000

CONCLUSIONS

- Substation Transformer & Equipment Capacity
- Distribution Circuit Capacity Issues

- Circuit Backup Needed (Diesel Circuit)
- Distribution Circuit Voltage Issues
- Reliability
- Phased Projects – Maintain Operational Goals

- 2023 Chamber of Commerce Calendar of Events



CONSENT AGENDA:

- Approval of minutes from April 11th, 2023.
- Bills, Claims, Payroll
- Reports of Boards, Commissions, and Committees
- Department Reports – Police/BioPure/Public Works/Energy/C&E Dvlp
    - A. Klotz motioned to approve Consent Agenda and supported by J. Adams
        - Ayes: 4 Nays: 0 Absent: 3

ACTION ITEMS:

- Resolution 2023-14 Authorize purchase of replacement BioPure Channel Grinder

  WHEREAS, The City of Hart owns, operates, and maintains a BioPure wastewater treatment facility that requires continual maintenance to meet system demands, and;

  WHEREAS, The Hart BioPure plant regularly receives many foreign and hard to break down items of plastic or cloth origin that are introduced to our wastewater sewer system, and;

WHEREAS, A channel grinder that reduces the ability for these foreign materials to pass through the BioPure plant has failed and requires replacement, and;
WHEREAS, The City has sought competitive quotes to replace the failed grinder, and;
WHEREAS, in order to secure the benefits of efficient self-government and to promote and protect our common interests and welfare, the City Council hereby declares:
NOW THEREFORE BE IT RESOLVED THAT THE CITY COUNCIL

Accepts quotes from JWC Environmental in the amount of $45,717 and Hamlett Environmental in the amount of $35,025.36. To replace the existing faulty device and;
Authorizes the purchase of the lower quoted Vogelsang XRipper Channel Grinder from Hamlett Environmental

- J. Adams Motioned to approve Resolution 2023-14 and supported by D. Hodges
  - Ayes: 4 Nays: 0 Absent: 3

- Resolution 2023-15 Declare Surplus property and authorize sale of City Hall Safe

WHEREAS, Hart City Hall continues to consolidate office space in an effort to improve efficiency in daily operations and provide the highest use case for existing City Hall space, and;
WHEREAS, in a recent effort to move the City Assessor closer to other City staff, freeing up an office to be repurposed into a more usable space, the need for the long serving floor safe is no longer required, and;
WHEREAS, it is in the best interest of the City to designate the sage as obsolete, surplus material and to allow the City to attempt to recoup a portion of the original investment through a sale of the safe, and;
WHEREAS, in order to secure the benefits of efficient self-government and to promote and protect our common interests and welfare, the City Council hereby declares:
NOW THEREFORE BE IT RESOLVED THAT THE CITY COUNCIL

Designates the City Hall Floor Safe as obsolete and/or surplus materials; and
Authorize the sale of the surplus materials through a public bid process.

- A. Klotz Motioned to approve Resolution 2023-15 and supported by J. Adams
  - Ayes: 4 Nays: 0 Absent: 3

- Resolution 2023-16 Resolve the City of Hart as a Welcoming City of Hart

WHEREAS, The City Of Hart is a community of diversity with a long standing history of interaction with community members of various heritage and backgrounds being pivotal in the City's continued growth, and;
WHEREAS, all people, including immigrants, are respected, valued and are vital to our shared prosperity, and;
WHEREAS, fostering a welcoming environment for all people, regardless of race, religion, ethnicity, or place of origin enhances Hart's cultural fabric, economic growth, and overall wellbeing for current and future generations, and;
WHEREAS, Hart has long been recognized as a hospitable and welcoming community where diverse people, families, and institutions thrive and the contributions of all are celebrated and valued, and;
WHEREAS, Hart is committed to continuing to build a welcoming and neighborly atmosphere in our community, where all are welcomed accepted and fully integrated, and;
WHEREAS, Community efforts that promote understanding and collaboration between out native-born and foreign-born community members are crucial in encouraging and preserving Hart's welcoming environment, and;
WHEREAS, Hart encourages our businesses, civic groups, schools, government agencies, and other community institutions to undertake their own initiatives, beyond this resolution, to make Hart a welcoming place for new residents regardless of their origin;
NOW THEREFORE BE IT RESOLVED THAT THE CITY COUNCIL

Declares the City of Hart a Welcoming City that embraces all residents and visitors regardless of race, creed, or national origin; strives for unity and harmony in our community; and respects the essential human dignity of all people.

- J. Adams Motioned to approve Resolution 2023-16 and supported by D. Hodges
  - Ayes: 4 Nays: 0 Absent: 3

- Proclamation to Support Drive Safe Bills
  CITY OF HART – OFFICIAL PROCLAMATION
  CITY OF HART CITY COUNCIL HEREBY PROCLAMS IN SUPPORT OF THE DRIVE SAFE BILLS
  April 11, 2023
  WHEREAS, Michigan extended a universal right to a driver's license to all Michigan residents who were capable and qualified to pass a knowledgeable and practical driving test until 2008 when the rights of some Michiganders, who were unable to provide proof of legal presence, were revoked, and;
  WHEREAS, current immigration law systematically excludes many members of our immigrant communities from a path to permanent status or even temporary legal presence and therefore rendered those residents unable to obtain a Michigan driver's license since 2008, and;
  WHEREAS, all persons (including immigrants) without a driver's license experience a diminished quality of life effecting their ability to take care of themselves and their families, work and attend schools, and fully participate in the community they call home, and;
  WHEREAS, this nation has a strong tradition and heritage in welcoming immigrants, it too, has an unfortunate history of xenophobic, segregationist, and unequal policies that discriminate against and disproportionately affect immigrants, and;
  WHEREAS, immigrants who are prevented access to a driver's license continue to experience daily anxiety, toxic stress, and perpetual worry that if they drive without a license, they are likely to be targeted and/or detained by federal immigration officials, and;
  WHEREAS, undocumented immigrants have the same hopes, fears, and dreams as every other member of our community. We acknowledge their humanity and support them in their struggle for permanent protection, dignity, and respect, and;
  WHEREAS, in recent years, new laws have been passed that now offer driver's licenses to immigrants residing in the following statement and territories: California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Maryland, Nevada, New Mexico, New York, Oregon, Puerto Rico, Utah, Vermont, Washington, and Washington D.C, and;
  WHEREAS, The City of Hart is a welcoming City and in pursuit of securing the benefits of efficient self-government and to promote and protect our common interest and welfare, the City Council makes the flowing proclamation;
  NOW THEREFORE BE IT PROCLAMED, that the Hart City Council calls on the State of Michigan and its leaders to support the restoration of driving rights of Michiganders by passing the Drive Safe bills speedily.
  - **After lots of discussion and comments from the City Council and attendees in the audience, A. Klotz motioned to table the proclamation due to council members wanting to do more research/review on the Drive Safe Bill and supported by D. Hodges**
    - Ayes: 4 Nays: 1 Absent: 2

DISCUSSION ITEMS:

- Special Event Permit – Hart Hills Bike Race

CITY MANAGER'S REPORT:

UPDATES:

- Due to some engineering and easement delays, the Safe Routes to School project will be delayed until Spring of 2024. This may be a good thing as the current schedule was very tight between April bid letting for a June construction start. A more methodical plan will be assembled over the summer in anticipation of a smooth project deployment early next year.
- Several local community stakeholders and local leadership have reached out to City staff & the Mayor. The recurring sentiment is that our neighboring communities & special interest groups are encouraged with some of the efforts being made in Hart to strengthen our community & engage in new business development. There will be opportunities for the City to work with our neighbors more in the coming months / years, and Hart is in a good position to help champion various upcoming efforts.

- As budgeted in the 2023 fiscal budget, the City will be moving forward on security camera installation. Chief Salazar and the City manager have sought quotes from qualified vendors and are comfortable moving forward with the most qualified vendor to provide this added security to our City hall campus.
- Bill Secunda, the artist commissioned to create our Tin Man has indicated that he should be ready early June in anticipation of an unveiling the day of the 50th Annual National Asparagus Festival.
- The City Treasurer is enrolled to attend the Michigan Municipal Treasurer Association Institute this month. This is year two of a three-year path to become a Michigan Certified Professional Treasurer. The Michigan Municipal Risk Management Authority will be covering some of the costs of this program upon completion.
- Earth Day celebration at the Oceana County Fairgrounds April 22nd.
- Hart Hill gravel bike race April 22nd.

Legacy Topics:

- The Charter review committee has finished its assessment for phase one City Charter amendments. The committee will continue its review to identify additional changes for review by the council. The amendments will be processed for ballot approval at the next general election.

Upcoming Topics:

- Adoption of 2022-2026 Park and Rec Master Plan
- Veteran's Memorial Park final design approval
- Water, Wastewater, and Energy rate studies = 2024 Utility Rate recommendations.
- Council adoption of code enforcement policies, procedures, and implementation

COMMUNICATIONS FROM THE MAYOR AND COUNCIL:

- None

ADJOURN:

- There being no further business to come before the Council, the meeting adjourned upon a motion by C. Burillo and supported by J. Adams. The next regularly scheduled meeting will be on April 28th, 2023, at 7:30 pm.

Respectfully Submitted

Karla Swihart

Karla Swihart, City Clerk