



City of Mora  
Kanabec County, Minnesota  
Meeting Agenda  
Public Utilities Commission

Mora City Hall  
101 Lake St. S  
Mora, MN 55051

Tuesday, November 16, 2021

3:00 PM

Mora City Hall

1. **Call to Order**
2. **Roll Call**
3. **Adopt Agenda** *(No item of business shall be considered unless it appears on the agenda for the meeting. Council members may add items to the agenda prior to adoption of the agenda.)*
4. **Consent Agenda** *(Those items listed under Consent Agenda are considered to be routine by the City Council and will be acted upon by one motion under this agenda item. There will be no separate discussion of these items, unless a Council Member so requests, in which event, the item will be removed from the consent agenda and considered immediately after the adoption of the consent agenda.)*
  - a. Regular Meeting Minutes – October 25, 2021
  - b. Special Joint Council/PUC Meeting Minutes – November 1, 2021
  - c. October 2021 Claims
  - d. Approve Hire of Water/Wastewater Operator II
  - e. Items for Consideration to Write-Off
5. **Open Forum** *(Individuals may address the council about any item not contained on the regular agenda. There is a maximum of fifteen (15) minutes set aside for open forum. A maximum of three (3) minutes is allotted per person. The City Council will take no official action on items discussed at the forum, with the exception of referral to staff for future report.)*
6. **Special Business**
  - a. Electric System Study
7. **Public Hearings**
  - a. Proposed Assessment of Unpaid Utility Bills
8. **New Business**
  - a. 2021 PUC Meeting Schedule
9. **Old Business**

None
10. **Communications**
  - a. Quarterly Financial Reports
11. **Reports**
  - a. Public Utilities General Manager
  - b. Public Works Director
  - c. Commissioner Baldwin
  - d. Commissioner Christianson
  - e. Chair Ardner
12. **Adjournment**



Pursuant to due call and notice thereof, Commissioner Ardner called to order the regular meeting of the Mora Public Utilities Commission at 3:00 PM on Monday, October 25, 2021, in the city hall council chambers.

2. **Roll Call:** Present: Commissioners Greg Ardner and Brett Baldwin  
Absent: Ryan Christianson  
Staff Present: Utilities General Manager Lindy Crawford, Utility Billing Clerk Jessica Bliss, and Administrative Service Director Natasha Segelstrom.
3. **Adopt Agenda:** Utilities General Manager
4. **Consent Agenda:** MOTION made by Baldwin, seconded by Ardner, and unanimously carried to approve the consent agenda as presented.
  - a. Regular Meeting Minutes – September 20, 2021
  - b. September 2021 Claims
5. **Open Forum:** No one spoke at open forum.
6. **Special Business:** There were no special business items to discuss.
7. **New Business:**
  - a. **Proposed 2022 Budget and Utility Rate:** Crawford presented the proposed 2022 utility budgets and proposed rate increases of 0% for electric, 0% for water, and 0% for sewer. The 2022 budget included the hire of two electric line workers and also accounted for the electric plant/line supervisor. It was explained that a 2.5% COLA salary increase, 9% health insurance increase and an increase in electric engineering expenses and underground line maintenance, and a decrease in electrical professional services. The \$190,000 contribution to the City from the electric fund for the HRA had also been figured into the budget. Dividends and penalties continued to produce less revenue and a slight increase was projected due to electric property and WAC and SAC revenue.  
  
Prior to 2020, some capital assets and/or equipment had not been replaced to provide services and complete projects. Items included in the Capital Improvement Plan consisted of the North Grove Street reconstruction project, the electric feeder conversion, the electric pole replacement project, electric overhead tree maintenance, electric service truck replacement, WWTP aeration blower and the main lift station pump addition.  
  
Ardner stated that if the City were not going to merge with the HRA, the City would no longer need the \$190,000 from the PUC. Crawford added, less funds would need to be transferred and that in 2022, a disbursement from SMPPA would occur in February and in July to the electric fund. It was agreed that the PUC would approve the budget in the December meeting.
8. **Old Business:**
  - a. **Housing & Redevelopment Authority of Mora/City of Mora Update.** Crawford provided the PUC with an update on the City Council's decision not to merge with the HRA. The PUC had previously authorized a contribution to assist with staffing costs for the merger. Since the merger would no longer take place, Crawford provided the PUC with the option to rescind the contribution from the City Council, do nothing, or consider implementing a Payment-in-Lieu-of-Taxes (PILOT) program. Crawford noted historical PUC records discovered during Record Retention Day, displayed a PILOT program had once been in place and the PUC contributed annually to the City. The PUC discussed the

October 25, 2021

options presented and decided to rescind the \$190,000. MOTION made by Baldwin, seconded by Ardner and unanimously carried to rescind the \$190,000 contribution to the City via written letter by the PUC Chair.

**9. Communications:** The following communications were reviewed.

- a. Quarterly Sewer Report
- b. Quarterly Electric Vehicle Charging Report
- c. Quarterly Utility Billing and Adjustments Report- Jessica Bliss reported there were no new adjustments and fewer outstanding balances. She reported that City of Quamba's utilized their reimbursement fund to decrease the delinquent accounts balance. Bliss also stated that the Cold weather rule is now in effect.

**10. Reports:**

- a. Public Utilities General Manager: Crawford reported on the upcoming Special Joint PUC/City Council meeting on November 1, 2021 to formally accept Crawford's resignation. Crawford requested the PUC meeting to take place on Tuesday, November 16, 2021 at 3:00 PM followed by a Joint PUC/City Council meeting for the presentation of the North Grove Street Reconstruction project and receive the Class and Compensation Study. Next meeting DGR will be present the Electric Systems Study. Crawford also stated that November 30, 2021 would be the last day she would be providing services to the HRA and that the Board appointed Jakc L'Heureux as the HRA executive director.
- b. Public Works Director: Absent
- c. Commissioner Baldwin: Nothing new to report.
- d. Commissioner Christianson: Absent
- e. Chairperson Ardner: Nothing new to report.

**11. Adjournment:** MOTION made by Baldwin, seconded by Ardner, and unanimously carried by the PUC to adjourn at 3:20 PM.

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Chair

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Secretary



Pursuant to due call and notice thereof Mayor Alan Skramstad and PUC Chair Greg Ardner called to order the Special Joint meeting of the Mora City Council and Public Utilities Commission at 4:30 PM on Monday, November 01, 2021 in the city hall council room.

- 2. Roll Call:** City Council Present: Mayor Alan Skramstad, Councilmembers Jody Anderson, Sadie Broekemeier, Jake Mathison, and Kyle Shepard  
Absent: none  
Public Utilities Commission Present: Chair Greg Ardner and Ryan Christianson  
Absent: Brett Baldwin arrived at 4:31PM.  
Staff Present: City Administrator / General Manager Lindy Crawford, Administrative Services Director Natasha Segelstrom, Public Works Director Joe Kohlgraf, Administrative Assistant Mandi Yoder
- 3. Adopt Agenda:** Mayor Skramstad requested to amend the agenda and add item 4c. Wage Discussion. Council MOTION made by Shepard, seconded by Mathison, and unanimously carried to approve the agenda as amended.  
PUC MOTION made by Christianson, seconded by Baldwin, and unanimously carried to approve the agenda as amended.
- 4. Business Items:**
  - a. Accept Letter of Resignation – City Administrator/Public Utilities General Manager**  
Crawford presented her letter of resignation, Council MOTION made by Broekemeier, seconded by Anderson, and unanimously carried to accept the Crawford's letter of resignation as City Administrator. Ardner thanked Crawford for her work with Mora Municipal Utilities. PUC MOTION made by Christianson, seconded by Baldwin, and unanimously carried to accept Crawford's resignation as Public Utilities General Manager. Ardner thanked Crawford for her work with the Mora Municipal Utilities.
  - b. City Administrator/ Public Utilities General Manager Replacement Process:**  
Crawford discussed the replacement process timeline with the Council and PUC. She recommended they use an executive recruitment firm to assist filling the upcoming vacancy. Crawford provided a proposal which outlined the recruitment and selection process from DDA Human Resources, Inc. Crawford stated the firm specialized in local government recruitment and small, rural communities and believed DDA would be a good fit for the community. Based on the timeline presented, DDA projected the start date for the new City Administrator / Public Utilities General Manager would be March 2022. Crawford stated the timeline was realistic due to the extent of the search.  
  
Skramstad agreed the executive services eased the process. Shepard commended DDA's two-year guarantee for services. Council discussed that an executive recruitment firm was appropriate and aligned with other recruitment agencies for services. Council MOTION made by Shepard, and seconded by Broekemeier, and unanimously carried by

to move forward with DDA Human Resources Inc. for executive services recruitment for the position of City Administrator. PUC MOTION by Baldwin, seconded by Christianson, and unanimously carried by the PUC to move forward with DDA Human Resources Inc. for executive services recruitment for the position of Public Utilities General Manager.

Crawford further explained the City would have a vacant City Administrator position for approximately four months following her departure and recommended the Council and PUC establish an interim plan. Crawford stated that the Council and PUC should appoint an interim City Administrator / Public Utilities General Manager or begin the planning process if the Council and PUC chose to split responsibilities amongst City Staff. She stated some items would need higher level of oversight but most of daily duties other staff have knowledge of and could complete tasks. Crawford explained in the past, an interim was not appointed and there had been confusion amongst staff and duties would need to be clearly identified. Ardner believed that splitting the duties amongst staff and departments would be a practical approach and if signatures were needed on documents and contracts, Segelstrom could fulfill that role; Skramstad concurred. Upon further discussion, Ardner requested Crawford identify specific duties City Staff would undertake during the interim period, and to bring back a plan to the Special Joint meeting on November 16<sup>th</sup>.

- c. Wage Discussion:** Mayor Skramstad brought forward wage discussion for Crawford's time spent acting as the Executive Director of the HRA. Skramstad stated that Crawford stepped up to fill the vacant role with the HRA. He explained that Crawford had dedicated a significant amount of time and was unable to take time off work. Skramstad proposed that the City Council approve \$10,000 for compensation for the work completed for the HRA over the past ten months and through November 30<sup>th</sup>. Skramstad also requested the uncompensated time that Crawford was unable to use during this time be paid to her as severance. Shepard and Mathison agreed that the compensation was necessary. Anderson expressed her concern that this would set precedence for employees, and that could potentially pose as a risk for the City moving forward. Broekemeier stated she was grateful for Crawford's dedication but questioned the compensation since the merger did not take place. The Council acknowledged that payment of services had been tabled too many times at previous meetings, and that a decision should have been made ahead of time. Skramstad acknowledged that Crawford had sacrificed time away from the City and the Utility to assist with the HRA. MOTION made by Shepard, seconded by Mathison, opposed by Anderson and Broekemeier, motion carried 3 -2 to approve compensation of \$10,000 dollars for Crawford's work with the HRA.

Broekemeier requested discussions be had beforehand on calculating compensation if a similar situation were to arise in the future.

Skramstad brought forward Crawford's severance upon departure from the City and Utility. He explained Crawford would be entitled to accrued vacation leave, but the sick leave would not be paid out as she was not vested per the personnel policy. Skramstad

requested that the lost/unused vacation leave that Crawford was unable to use be paid out upon her departure and stated there could be an exception to the policy. Skramstad explained the city attorney stated this could be waived and requested that these hours be included in Crawford's severance package. Anderson and Broekemeier expressed concern deviating from the personnel policy and being faced with additional exceptions based on precedence. Ardner requested additional information on the conversation with the city attorney and Skramstad explained that the extraordinary circumstances warranted an exception to personnel policy for the lost vacation.

Council MOTION made by Shepard, seconded by Mathison, opposed by Anderson and Broekemeier, motion carried by Skramstad 3 – 2 by the Council to make an exception to the personnel policy and approve compensation to Crawford for lost/unused accrued leave due to extraordinary circumstances. PUC MOTION made by Baldwin, seconded by Ardner, opposed by Christianson, motion carried 2 -1 by the PUC to make an exception to the personnel policy and approve compensation to Crawford for lost/unused accrued leave due to extraordinary circumstances

- 5. Adjournment:** Council MOTION by Shepard, seconded by Broekemeier, and unanimously carried by the City Council to adjourn the meeting at 5:06PM.

PUC MOTION made by Baldwin, seconded by Christianson, and unanimously carried by the PUC to adjourn the meeting at 5:06PM.

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Mayor

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PUC Chair

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City Clerk



# CITY OF MORA CHECK LIST-PUC

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CHECK #	Search Name	Fund Descr	Dept Descr	Last Dim Descr	Comments	Amount
CHECK # 000871 COMPLETE MERCHANT SOLUTIONS						
000871	COMPLETE MERCHANT	ELECTRIC FUN	ELECTRIC ADMINIST	Payment Processing E	CREDIT CARD PYMT PROCESSI	\$359.00
000871	COMPLETE MERCHANT	WATER FUND	WATER ADMINISTR	Payment Processing E	CREDIT CARD PYMT PROCESSI	\$179.50
000871	COMPLETE MERCHANT	SEWER FUND	SEWER ADMINISTR	Payment Processing E	CREDIT CARD PYMT PROCESSI	\$179.50
CHECK # 000871 COMPLETE MERCHANT SOLUTIONS						\$718.00
CHECK # 000872 MORA MUNICIPAL UTILITIES						
000872	MORA MUNICIPAL UTILI	ELECTRIC FUN	GENERATION & PO	Storm Water	UTILITIES	\$18.35
000872	MORA MUNICIPAL UTILI	ELECTRIC FUN	GENERATION & PO	Sewer	UTILITIES	\$36.27
000872	MORA MUNICIPAL UTILI	ELECTRIC FUN	GENERATION & PO	Water	UTILITIES	\$116.86
000872	MORA MUNICIPAL UTILI	WATER FUND	WATER SUPPLY	Electricity	UTILITIES	\$945.37
000872	MORA MUNICIPAL UTILI	WATER FUND	WATER SUPPLY	Storm Water	UTILITIES	\$23.12
000872	MORA MUNICIPAL UTILI	WATER FUND	WATER TREATMENT	Electricity	UTILITIES	\$862.07
000872	MORA MUNICIPAL UTILI	WATER FUND	WATER TREATMENT	Storm Water	UTILITIES	\$11.56
000872	MORA MUNICIPAL UTILI	WATER FUND	WATER DISTRIBUTI	Electricity	UTILITIES	\$40.79
000872	MORA MUNICIPAL UTILI	WATER FUND	WATER DISTRIBUTI	Storm Water	UTILITIES	\$12.91
000872	MORA MUNICIPAL UTILI	SEWER FUND	SEWER LIFT STATIO	Electricity	UTILITIES	\$667.36
000872	MORA MUNICIPAL UTILI	SEWER FUND	SEWER LIFT STATIO	Storm Water	UTILITIES	\$11.56
000872	MORA MUNICIPAL UTILI	SEWER FUND	WASTEWATER TREA	Storm Water	UTILITIES	\$23.79
000872	MORA MUNICIPAL UTILI	SEWER FUND	WASTEWATER TREA	Electricity	UTILITIES	\$3,309.59
000872	MORA MUNICIPAL UTILI	SEWER FUND	WASTEWATER TREA	Water	UTILITIES	\$94.67
CHECK # 000872 MORA MUNICIPAL UTILITIES						\$6,174.27
CHECK # 000873 ONLINE COLLECTIONS						
000873	ONLINE COLLECTIONS	ELECTRIC FUN	ELECTRIC ADMINIST	Cust UB/Collection	NEW UB CUSTOMER CREDIT C	\$54.30
CHECK # 000873 ONLINE COLLECTIONS						\$54.30
CHECK # 000875 MN DEPT OF REVENUE						
000875	MN DEPT OF REVENUE	ELECTRIC FUN		Sales Tax Payable	SALES & USE TAX PYMT-SEPT	\$25,389.00
000875	MN DEPT OF REVENUE	ELECTRIC FUN	GENERATION & PO	Garbage Removal	SALES & USE TAX PYMT-SEPT	\$6.00
000875	MN DEPT OF REVENUE	ELECTRIC FUN	GENERATION & PO	Repair/Maint - Bldg &	SALES & USE TAX PYMT-SEPT	\$2.00
000875	MN DEPT OF REVENUE	ELECTRIC FUN	GENERATION & PO	Landfill Gen Exp	SALES & USE TAX PYMT-SEPT	\$1.00
000875	MN DEPT OF REVENUE	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Substation E	SALES & USE TAX PYMT-SEPT	\$4.00
000875	MN DEPT OF REVENUE	ELECTRIC FUN	ELECTRIC DISTRIBU	Line Transformer Exp	SALES & USE TAX PYMT-SEPT	\$41.00
000875	MN DEPT OF REVENUE	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Underground	SALES & USE TAX PYMT-SEPT	\$96.00
000875	MN DEPT OF REVENUE	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Overhead Lin	SALES & USE TAX PYMT-SEPT	\$84.00
000875	MN DEPT OF REVENUE	ELECTRIC FUN	ELECTRIC ADMINIST	Office Supplies	SALES & USE TAX PYMT-SEPT	\$21.00
000875	MN DEPT OF REVENUE	ELECTRIC FUN	ELECTRIC ADMINIST	Telephone	SALES & USE TAX PYMT-SEPT	\$24.00
000875	MN DEPT OF REVENUE	WATER FUND		Sales Tax Payable	SALES & USE TAX PYMT-SEPT	\$1,225.00
CHECK # 000875 MN DEPT OF REVENUE						\$26,893.00
CHECK # 000878 PAYLIANCE						
000878	PAYLIANCE	ELECTRIC FUN	ELECTRIC ADMINIST	Payment Processing E	E-CHECK PYMT PROCESSING F	\$40.10
000878	PAYLIANCE	WATER FUND	WATER ADMINISTR	Payment Processing E	E-CHECK PYMT PROCESSING F	\$20.05
000878	PAYLIANCE	SEWER FUND	SEWER ADMINISTR	Payment Processing E	E-CHECK PYMT PROCESSING F	\$20.05
CHECK # 000878 PAYLIANCE						\$80.20
CHECK # 000879 SMMPA						
000879	SMMPA	ELECTRIC FUN		Accounts Payable	POWER PURCHASED	\$347,563.75
CHECK # 000879 SMMPA						\$347,563.75
CHECK # 000881 NEIGHBORHOOD NATIONAL BANK						
000881	NEIGHBORHOOD NATIO	ELECTRIC FUN	ELECTRIC ADMINIST	Bad Debts/NSF Check	MONTHLY RETURNED CHECK	\$10.00
000881	NEIGHBORHOOD NATIO	ELECTRIC FUN	ELECTRIC ADMINIST	Payment Processing E	MONTHLY BUSINESS ONLINE	\$10.00
000881	NEIGHBORHOOD NATIO	ELECTRIC FUN	ELECTRIC ADMINIST	Payment Processing E	MONTHLY UB ACH FILE FEE	\$30.00

# CITY OF MORA

## CHECK LIST-PUC

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CHECK #	Search Name	Fund Descr	Dept Descr	Last Dim Descr	Comments	Amount
CHECK # 000881	NEIGHBORHOOD NATIONAL BANK					\$50.00
CHECK # 053186	ORTON, TYLER & ALEXIS DWINNELL					
053186	ORTON, TYLER & ALEXI	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT-310	-\$33.36
CHECK # 053186	ORTON, TYLER & ALEXIS DWINNELL					-\$33.36
CHECK # 053371	GIBSON, BRIAN & GENEVIVE					
053371	GIBSON, BRIAN & GENE	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT-230	-\$72.68
CHECK # 053371	GIBSON, BRIAN & GENEVIVE					-\$72.68
CHECK # 053372	HOSLER, CODY					
053372	HOSLER, CODY	ELECTRIC FUN		Undistributed Receipts	REFUND OVERPYMT-536 S WA	-\$277.96
CHECK # 053372	HOSLER, CODY					-\$277.96
CHECK # 053568	KIZZIRE, ANDREW & KAYLA					
053568	KIZZIRE, ANDREW & KA	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT=224	-\$184.06
CHECK # 053568	KIZZIRE, ANDREW & KAYLA					-\$184.06
CHECK # 053579	RICHARD, TAMARA					
053579	RICHARD, TAMARA	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT	-\$209.92
CHECK # 053579	RICHARD, TAMARA					-\$209.92
CHECK # 053711	MOSTAD, BRITTANY					
053711	MOSTAD, BRITTANY	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT-407	-\$15.99
CHECK # 053711	MOSTAD, BRITTANY					-\$15.99
CHECK # 053893	SHAFER, TONJIA&AMANDA DUCKSTAD					
053893	SHAFER, TONJIA&AMAN	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT-94	-\$226.69
CHECK # 053893	SHAFER, TONJIA&AMANDA DUCKSTAD					-\$226.69
CHECK # 054018	HUNTLEY, DAKOTA					
054018	HUNTLEY, DAKOTA	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT-537	-\$186.27
CHECK # 054018	HUNTLEY, DAKOTA					-\$186.27
CHECK # 054212	WHIM, SASHA & PULLEY, CARMELLO					
054212	WHIM, SASHA & PULLEY	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT-431	-\$7.67
CHECK # 054212	WHIM, SASHA & PULLEY, CARMELLO					-\$7.67
CHECK # 054518	BROBERG, LEO					
054518	BROBERG, LEO	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT	-\$85.96
CHECK # 054518	BROBERG, LEO					-\$85.96
CHECK # 054535	WHIM, SASHA & PULLEY, CARMELLO					
054535	WHIM, SASHA & PULLEY	ELECTRIC FUN		Undistributed Receipts	REFUND OVERPYMT	-\$8.00
CHECK # 054535	WHIM, SASHA & PULLEY, CARMELLO					-\$8.00
CHECK # 054692	PERRY, RHIANNON					
054692	PERRY, RHIANNON	ELECTRIC FUN		Undistributed Receipts	REFUND METER DEPOSIT	-\$9.15
CHECK # 054692	PERRY, RHIANNON					-\$9.15
CHECK # 057249	BLISS, JESSICA					
057249	BLISS, JESSICA	ELECTRIC FUN	ELECTRIC DISTRIBU	Meetings, Training, &	MILEAGE/HOTEL-MPOWER US	\$391.58
CHECK # 057249	BLISS, JESSICA					\$391.58
CHECK # 057252	CARDMEMBER SERVICE					
057252	CARDMEMBER SERVICE	ELECTRIC FUN		Fixed Assets	POSTAGE FOR POLE REPLACE	\$17.40
057252	CARDMEMBER SERVICE	ELECTRIC FUN	ELECTRIC DISTRIBU	Line Transformer Exp	TRANSFORMER SLABS-OLD CA	\$1,499.75

# CITY OF MORA

## CHECK LIST-PUC

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CHECK #	Search Name	Fund Descr	Dept Descr	Last Dim Descr	Comments	Amount
057252	CARDMEMBER SERVICE	ELECTRIC FUN	ELECTRIC DISTRIBU	Meetings, Training, &	OH SCHOOLING HOTEL-STULC	\$597.42
057252	CARDMEMBER SERVICE	WATER FUND	WATER DISTRIBUTI	Meetings, Training, &	MATTSON WATER TRNG-MN R	\$150.00
057252	CARDMEMBER SERVICE	SEWER FUND	SEWER ADMINISTR	Meetings, Training, &	MATTSON WW OPER CLASS-M	\$20.00
CHECK # 057252 CARDMEMBER SERVICE						\$2,284.57
CHECK # 057253 CITY OF QUAMBA						
057253	CITY OF QUAMBA	SEWER FUND		Quamba Payable-Rese	QUAMBA RESERVE-REIMBURS	\$7,627.92
CHECK # 057253 CITY OF QUAMBA						\$7,627.92
CHECK # 057256 HOSLER, CODY						
057256	HOSLER, CODY	ELECTRIC FUN		Undistributed Receipts	REISSUE UTILITY OVERPYMT-	\$277.96
CHECK # 057256 HOSLER, CODY						\$277.96
CHECK # 057257 HUNTLEY, DAKOTA						
057257	HUNTLEY, DAKOTA	ELECTRIC FUN		Undistributed Receipts	REISSUE 1/2 METER DEPOSIT-	\$93.14
CHECK # 057257 HUNTLEY, DAKOTA						\$93.14
CHECK # 057259 KIZZIRE, ANDREW & KAYLA						
057259	KIZZIRE, ANDREW & KA	ELECTRIC FUN		Undistributed Receipts	REISSUE METER DEPOSIT-224	\$184.06
CHECK # 057259 KIZZIRE, ANDREW & KAYLA						\$184.06
CHECK # 057261 MI DEPT OF TREASURY-UNCL PROP						
057261	MI DEPT OF TREASURY-	ELECTRIC FUN		Undistributed Receipts	2021 UNCLAIMED PROPERTY -	\$72.68
CHECK # 057261 MI DEPT OF TREASURY-UNCL PROP						\$72.68
CHECK # 057262 MN DEPT OF COMMERCE-UNCLM PROP						
057262	MN DEPT OF COMMERC	ELECTRIC FUN		Undistributed Receipts	2021 UNCLAIMED PROPERTY-P	\$9.15
057262	MN DEPT OF COMMERC	ELECTRIC FUN		Undistributed Receipts	2021 UNCLAIMED PROPERTY-	\$33.36
057262	MN DEPT OF COMMERC	ELECTRIC FUN		Undistributed Receipts	2021 UNCLAIMED PROPERTY-	\$209.92
057262	MN DEPT OF COMMERC	ELECTRIC FUN		Undistributed Receipts	2021 UNCLAIMED PROPERTY-	\$15.99
057262	MN DEPT OF COMMERC	ELECTRIC FUN		Undistributed Receipts	2021 UNCLAIMED PROPERTY-	\$85.96
057262	MN DEPT OF COMMERC	ELECTRIC FUN		Undistributed Receipts	2021 UNCLAIMED PROPERTY-S	\$226.69
057262	MN DEPT OF COMMERC	ELECTRIC FUN		Undistributed Receipts	2021 UNCLAIMED PROPERTY-	\$7.67
057262	MN DEPT OF COMMERC	ELECTRIC FUN		Undistributed Receipts	2021 UNCLAIMED PROPERTY-	\$8.00
CHECK # 057262 MN DEPT OF COMMERCE-UNCLM PROP						\$596.74
CHECK # 057263 MN MUNICIPAL UTILITIES ASSN						
057263	MN MUNICIPAL UTILITI	ELECTRIC FUN	ELECTRIC ADMINIST	Meetings, Training, &	2022 ELECT DISTR DESIGN W	\$850.00
CHECK # 057263 MN MUNICIPAL UTILITIES ASSN						\$850.00
CHECK # 057265 MORA MUNICIPAL UTILITIES						
057265	MORA MUNICIPAL UTILI	SEWER FUND		Quamba Payable-Rese	QUAMBA DEBT PAY OFF	\$6,391.08
CHECK # 057265 MORA MUNICIPAL UTILITIES						\$6,391.08
CHECK # 057266 MOTOR VEHICLE REGISTRATION						
057266	MOTOR VEHICLE REGIS	ELECTRIC FUN	ELECTRIC DISTRIBU	Miscellaneous	2015 BUCKET TRUCK TITLE XF	\$8,175.00
CHECK # 057266 MOTOR VEHICLE REGISTRATION						\$8,175.00
CHECK # 057267 NEONLINK LLC						
057267	NEONLINK LLC	ELECTRIC FUN	ELECTRIC ADMINIST	Payment Processing E	PAYMENT PROCESSING	\$132.60
057267	NEONLINK LLC	WATER FUND	WATER ADMINISTR	Payment Processing E	PAYMENT PROCESSING	\$66.30
057267	NEONLINK LLC	SEWER FUND	SEWER ADMINISTR	Payment Processing E	PAYMENT PROCESSING	\$66.30
CHECK # 057267 NEONLINK LLC						\$265.20
CHECK # 057272 SWANSON, JAMES						
057272	SWANSON, JAMES	ELECTRIC FUN		Undistributed Receipts	REISSUE 1/2 METER DEPOSIT-	\$93.13

**CITY OF MORA**  
**CHECK LIST-PUC**

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CHECK #	Search Name	Fund Descr	Dept Descr	Last Dim Descr	Comments	Amount
CHECK # 057272	SWANSON, JAMES					\$93.13
CHECK # 057281	BERGSTADT, GARY					
057281	BERGSTADT, GARY	ELECTRIC FUN	GENERATION & PO	Uniforms	WORK BOOTS-SUMMER	\$182.48
CHECK # 057281	BERGSTADT, GARY					\$182.48
CHECK # 057289	MAYRA					
057289	MAYRA	ELECTRIC FUN	ELECTRIC ADMINIST	Energy Conservation	WALL ADVERTISING RENEWAL	\$300.00
CHECK # 057289	MAYRA					\$300.00
CHECK # 057291	MORA MUNICIPAL UTILITIES					
057291	MORA MUNICIPAL UTILI	ELECTRIC FUN	ELECTRIC ADMINIST	Energy Conservation	PPW PRIZE-\$25 CREDIT ON JO	\$25.00
CHECK # 057291	MORA MUNICIPAL UTILITIES					\$25.00
CHECK # 057300	AAS, DANIELLE					
057300	AAS, DANIELLE	ELECTRIC FUN		Undistributed Receipts	REFUND DEPOSIT-511 9TH ST	\$200.50
CHECK # 057300	AAS, DANIELLE					\$200.50
CHECK # 057301	ANDERSON, JOSEPH & SHANNON NOR					
057301	ANDERSON, JOSEPH & S	ELECTRIC FUN		Undistributed Receipts	REFUND DEPOSIT-419 S GROV	\$83.08
CHECK # 057301	ANDERSON, JOSEPH & SHANNON NOR					\$83.08
CHECK # 057302	BARE, JUSTICE					
057302	BARE, JUSTICE	ELECTRIC FUN		Undistributed Receipts	SPLIT DEPOSIT REFUND-511 9	\$34.77
CHECK # 057302	BARE, JUSTICE					\$34.77
CHECK # 057305	BOURKE, KATHERINE & MELISSA AN					
057305	BOURKE, KATHERINE &	ELECTRIC FUN		Undistributed Receipts	REFUND OVERPYMT-536 CLAR	\$65.24
CHECK # 057305	BOURKE, KATHERINE & MELISSA AN					\$65.24
CHECK # 057308	CENTURYLINK					
057308	CENTURYLINK	SEWER FUND	SEWER ADMINISTR	Telephone	PHONE	\$240.74
CHECK # 057308	CENTURYLINK					\$240.74
CHECK # 057309	COUNTRY CONSTRUCTION LLC					
057309	COUNTRY CONSTRUCTI	WATER FUND	WATER TREATMENT	Repair/Maint - Bldg &	WTP CONCRETE	\$925.00
CHECK # 057309	COUNTRY CONSTRUCTION LLC					\$925.00
CHECK # 057311	DEWITT, MARY & MILAN					
057311	DEWITT, MARY & MILA	ELECTRIC FUN		Undistributed Receipts	REFUND DEPOSIT-200 S PARK	\$78.49
CHECK # 057311	DEWITT, MARY & MILAN					\$78.49
CHECK # 057312	FEDDER HOMES LLC					
057312	FEDDER HOMES LLC	ELECTRIC FUN		Undistributed Receipts	REFUND OVERPYMT-516 WOO	\$28.11
CHECK # 057312	FEDDER HOMES LLC					\$28.11
CHECK # 057315	HARP, LARRY					
057315	HARP, LARRY	ELECTRIC FUN		Undistributed Receipts	REFUND DEPOSIT-301 EVERG	\$190.85
CHECK # 057315	HARP, LARRY					\$190.85
CHECK # 057318	KEEHR, CHAD & ELAINE					
057318	KEEHR, CHAD & ELAINE	ELECTRIC FUN		Undistributed Receipts	REFUND OVERPYMT-442 W FO	\$23.25
CHECK # 057318	KEEHR, CHAD & ELAINE					\$23.25
CHECK # 057319	LIDSTROM, LORRAINE					
057319	LIDSTROM, LORRAINE	ELECTRIC FUN		Undistributed Receipts	REFUND DEPOSIT-200 S PARK	\$70.81
CHECK # 057319	LIDSTROM, LORRAINE					\$70.81



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CHECK #	Search Name	Fund Descr	Dept Descr	Last Dim Descr	Comments	Amount
CHECK # 057321 MORITZ, KAILA						
057321	MORITZ, KAILA	ELECTRIC FUN		Undistributed Receipts	SPLIT DEPOSIT REFUND-511 9	\$34.76
						\$34.76
CHECK # 057324 ROCON PAVING						
057324	ROCON PAVING	WATER FUND	WATER DISTRIBUTI	Repair/Maint - Bldg &	FAIR AVE DRIVEWAY APPROAC	\$4,860.00
						\$4,860.00
CHECK # 057327 STEARNS-WOLF, ANGELINA						
057327	STEARNS-WOLF, ANGEL	ELECTRIC FUN		Undistributed Receipts	REFUND DEPOSIT-501 9TH ST	\$231.91
						\$231.91
CHECK # 057328 TVEDT, RICHARD & ANGELA						
057328	TVEDT, RICHARD & AN	ELECTRIC FUN		Undistributed Receipts	REFUND OVERPYMT-724 HWY	\$61.14
						\$61.14
CHECK # 057333 CARDMEMBER SERVICE						
057333	CARDMEMBER SERVICE	ELECTRIC FUN	GENERATION & PO	Repair/Maint - Bldg &	BOILER RPR PARTS-STATE SU	\$204.63
057333	CARDMEMBER SERVICE	ELECTRIC FUN	GENERATION & PO	Repair/Maint - Bldg &	BOILER RPR PARTS-SUPPLY H	\$727.24
057333	CARDMEMBER SERVICE	ELECTRIC FUN	ELECTRIC DISTRIBU	Misc Distribution Exp	ELECTRIC TOOL CALIBRATION	\$147.22
057333	CARDMEMBER SERVICE	ELECTRIC FUN	ELECTRIC ADMINIST	Energy Conservation	PPW OPEN HOUSE WATER-CO	\$17.94
057333	CARDMEMBER SERVICE	ELECTRIC FUN	ELECTRIC ADMINIST	Meetings, Training, &	CRAWFORD ANNL SMMPA MTG	\$205.00
057333	CARDMEMBER SERVICE	ELECTRIC FUN	ELECTRIC ADMINIST	Miscellaneous	MISC CHARGES-CARDMEMBER	\$34.45
057333	CARDMEMBER SERVICE	WATER FUND	WATER ADMINISTR	Miscellaneous	MISC CHARGES-CARDMEMBER	\$34.45
057333	CARDMEMBER SERVICE	SEWER FUND	SEWER ADMINISTR	Miscellaneous	MISC CHARGES-CARDMEMBER	\$34.45
057333	CARDMEMBER SERVICE	SEWER FUND	SEWER ADMINISTR	Meetings, Training, &	MATTSON WW TRNG REGISTR	\$520.00
057333	CARDMEMBER SERVICE	SEWER FUND	SEWER ADMINISTR	Meetings, Training, &	MATTSON TRNG-MPCA	\$12.95
						\$1,938.33
CHECK # 057333 CARDMEMBER SERVICE						
CHECK # 057339 MIDCO						
057339	MIDCO	ELECTRIC FUN	ELECTRIC ADMINIST	Telephone	PHONE/INTERNET	\$127.44
057339	MIDCO	WATER FUND	WATER ADMINISTR	Telephone	PHONE/INTERNET	\$180.81
057339	MIDCO	SEWER FUND	SEWER ADMINISTR	Telephone	INTERNET	\$270.00
						\$578.25
CHECK # 057339 MIDCO						
CHECK # 057343 NEONLINK LLC						
057343	NEONLINK LLC	ELECTRIC FUN	ELECTRIC ADMINIST	Payment Processing E	PAYMENT PROCESSING	\$137.80
057343	NEONLINK LLC	WATER FUND	WATER ADMINISTR	Payment Processing E	PAYMENT PROCESSING	\$68.90
057343	NEONLINK LLC	SEWER FUND	SEWER ADMINISTR	Payment Processing E	PAYMENT PROCESSING	\$68.90
						\$275.60
CHECK # 057343 NEONLINK LLC						
CHECK # 057348 VERIZON WIRELESS						
057348	VERIZON WIRELESS	ELECTRIC FUN	ELECTRIC ADMINIST	Telephone	CELL/IPAD	\$161.03
057348	VERIZON WIRELESS	WATER FUND	WATER ADMINISTR	Telephone	CELL/IPAD	\$44.65
057348	VERIZON WIRELESS	SEWER FUND	SEWER ADMINISTR	Telephone	CELL/IPAD	\$66.98
						\$272.66
CHECK # 057348 VERIZON WIRELESS						
CHECK # 057349 ACE HARDWARE						
057349	ACE HARDWARE	ELECTRIC FUN	GENERATION & PO	Cleaning Supplies	AJAX CLEANER	\$3.99
057349	ACE HARDWARE	ELECTRIC FUN	GENERATION & PO	Other Operating Suppl	BATTERIES	\$7.99
057349	ACE HARDWARE	SEWER FUND	SEWER COLLECTION	Small Tools & Equipm	MAG LIGHT	\$25.00
057349	ACE HARDWARE	SEWER FUND	WASTEWATER TREA	Cleaning Supplies	TOILET BOWL CLEANER	\$17.16
						\$54.14
CHECK # 057349 ACE HARDWARE						
CHECK # 057352 ARAMARK						

# CITY OF MORA

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CHECK #	Search Name	Fund Descr	Dept Descr	Last Dim Descr	Comments	Amount
057352	ARAMARK	SEWER FUND	WASTEWATER TREA	Other Operating Suppl	WWTP RUGS	\$98.51
CHECK # 057352 ARAMARK						\$98.51
CHECK # 057354 AUTO VALUE MORA						
057354	AUTO VALUE MORA	ELECTRIC FUN	GENERATION & PO	Repair/Maint - Bldg &	MOWER PARTS	\$11.47
057354	AUTO VALUE MORA	ELECTRIC FUN	GENERATION & PO	Repair/Maint - Bldg &	MINI-REGULATOR FOR AIR CO	\$40.99
057354	AUTO VALUE MORA	ELECTRIC FUN	GENERATION & PO	Maint of Gen Equip	BRAKE PARTS CLEANER FOR E	\$35.88
057354	AUTO VALUE MORA	ELECTRIC FUN	ELECTRIC DISTRIBU	Truck Expense	TRUCK BATTERY	\$123.99
057354	AUTO VALUE MORA	ELECTRIC FUN	ELECTRIC DISTRIBU	Truck Expense	PATCH KIT	\$29.99
057354	AUTO VALUE MORA	SEWER FUND	SEWER COLLECTION	Repair/Maint - Bldg &	VACTOR RPR PARTS & TRUCK	\$314.57
CHECK # 057354 AUTO VALUE MORA						\$556.89
CHECK # 057355 B & B TRANSFORMER						
057355	B & B TRANSFORMER	ELECTRIC FUN		Distribution Inventory	POLEMOUNT TRANSFORMERS	\$2,519.04
057355	B & B TRANSFORMER	ELECTRIC FUN		Distribution Inventory	PADMOUNT TRANSFORMERS	\$8,015.63
CHECK # 057355 B & B TRANSFORMER						\$10,534.67
CHECK # 057358 CINTAS						
057358	CINTAS	ELECTRIC FUN	GENERATION & PO	Other Operating Suppl	MATS, MOPS, WIPES	\$253.01
CHECK # 057358 CINTAS						\$253.01
CHECK # 057360 DGR ENGINEERING						
057360	DGR ENGINEERING	ELECTRIC FUN	ELECTRIC DISTRIBU	Engineering	GIS, NW CIRCUIT, HIGH SCHO	\$1,187.00
057360	DGR ENGINEERING	ELECTRIC FUN	ELECTRIC DISTRIBU	Engineering	2021 POLE REPLACEMENT	\$442.00
057360	DGR ENGINEERING	ELECTRIC FUN	ELECTRIC ADMINIST	Professional Services -	ELECTRIC SYSTEM STUDY	\$2,604.80
CHECK # 057360 DGR ENGINEERING						\$4,233.80
CHECK # 057361 EAST CENTRAL ENERGY-ECE SERV						
057361	EAST CENTRAL ENERGY	ELECTRIC FUN	ELECTRIC DISTRIBU	ECE Services	OCT DISPATCH SERVICES	\$199.35
057361	EAST CENTRAL ENERGY	ELECTRIC FUN	ELECTRIC DISTRIBU	ECE Services	OCT LABOR & EQUIPMENT	\$4,204.53
057361	EAST CENTRAL ENERGY	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Overhead Lin	COMBINED DAMAGED POLE M	\$96.09
057361	EAST CENTRAL ENERGY	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Overhead Lin	COMBINED DAMAGED POLE M	\$172.84
CHECK # 057361 EAST CENTRAL ENERGY-ECE SERV						\$4,672.81
CHECK # 057362 EAST CENTRAL ENERGY-ELECT						
057362	EAST CENTRAL ENERGY	SEWER FUND	SEWER LIFT STATIO	Electricity	ELECTRICITY	\$107.42
CHECK # 057362 EAST CENTRAL ENERGY-ELECT						\$107.42
CHECK # 057363 EAST CENTRAL SOLID WASTE COMM						
057363	EAST CENTRAL SOLID	SEWER FUND	SEWER COLLECTION	Repair/Maint - Bldg &	SEWER CHEWER BLDG	\$303.44
CHECK # 057363 EAST CENTRAL SOLID WASTE COMM						\$303.44
CHECK # 057365 FERGUSON WATERWORKS						
057365	FERGUSON WATERWOR	WATER FUND	WATER DISTRIBUTI	Repair/Maint - Bldg &	HYDRANT PARTS	\$572.18
CHECK # 057365 FERGUSON WATERWORKS						\$572.18
CHECK # 057366 FISHER SCIENTIFIC LLC						
057366	FISHER SCIENTIFIC LLC	SEWER FUND	WASTEWATER TREA	Lab Supplies	LAB FILTERS	\$708.70
CHECK # 057366 FISHER SCIENTIFIC LLC						\$708.70
CHECK # 057367 FREEDOM MAILING SERVICES INC						
057367	FREEDOM MAILING SER	ELECTRIC FUN	ELECTRIC ADMINIST	Energy Conservation	HOLIDAY LIGHTING INSERTS	\$35.01
057367	FREEDOM MAILING SER	ELECTRIC FUN	ELECTRIC ADMINIST	Cust UB/Collection	BILL PROCESSING	\$470.92
057367	FREEDOM MAILING SER	WATER FUND	WATER ADMINISTR	Cust UB/Collection	BILL PROCESSING	\$235.46
057367	FREEDOM MAILING SER	SEWER FUND	SEWER ADMINISTR	Cust UB/Collection	BILL PROCESSING	\$235.47
CHECK # 057367 FREEDOM MAILING SERVICES INC						\$976.86

# CITY OF MORA CHECK LIST-PUC

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CHECK #	Search Name	Fund Descr	Dept Descr	Last Dim Descr	Comments	Amount
CHECK # 057369 GOPHER STATE ONE-CALL INC						
057369	GOPHER STATE ONE-CA	ELECTRIC FUN	ELECTRIC DISTRIBU	Professional Services -	OCT LOCATES	\$45.90
057369	GOPHER STATE ONE-CA	WATER FUND	WATER DISTRIBUTI	Professional Services -	OCT LOCATES	\$45.90
057369	GOPHER STATE ONE-CA	SEWER FUND	SEWER COLLECTION	Professional Services -	OCT LOCATES	\$45.90
CHECK # 057369 GOPHER STATE ONE-CALL INC						\$137.70
CHECK # 057370 GRAINGER, INC						
057370	GRAINGER, INC	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Meters	METERING ELECTRIC CONNEC	\$88.27
CHECK # 057370 GRAINGER, INC						\$88.27
CHECK # 057371 GRANITE CITY JOBBING						
057371	GRANITE CITY JOBBING	SEWER FUND	WASTEWATER TREA	Other Operating Suppl	HAND TOWELS & TISSUE	\$85.37
CHECK # 057371 GRANITE CITY JOBBING						\$85.37
CHECK # 057372 IRBY TOOL & SAFETY						
057372	IRBY TOOL & SAFETY	ELECTRIC FUN	ELECTRIC DISTRIBU	Small Tools & Equipm	MISC DISTR TOOLS	\$4,617.19
057372	IRBY TOOL & SAFETY	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Overhead Lin	OH WIRE CONNECTORS, WIRE	\$3,245.64
057372	IRBY TOOL & SAFETY	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Underground	URD SPLICES, CRIMPS, GROU	\$4,001.98
057372	IRBY TOOL & SAFETY	ELECTRIC FUN	ELECTRIC DISTRIBU	Small Tools & Equipm	CRIMPER DIE, ADAPTER, HEAD	\$928.41
CHECK # 057372 IRBY TOOL & SAFETY						\$12,793.22
CHECK # 057373 JOHNSONS HARDWARE & RENTAL						
057373	JOHNSONS HARDWARE	ELECTRIC FUN	ELECTRIC DISTRIBU	Rentals	MINI EXCAVATOR RENTAL	\$195.00
057373	JOHNSONS HARDWARE	SEWER FUND	SEWER COLLECTION	Repair/Maint - Bldg &	PIPE SEALER	\$44.94
CHECK # 057373 JOHNSONS HARDWARE & RENTAL						\$239.94
CHECK # 057374 KANABEC PUBLICATIONS, INC						
057374	KANABEC PUBLICATION	ELECTRIC FUN	ELECTRIC ADMINIST	Advertising	PUBLIC HEARING-PROPOSED A	\$30.66
057374	KANABEC PUBLICATION	WATER FUND	WATER ADMINISTR	Advertising	PUBLIC HEARING-PROPOSED A	\$15.34
057374	KANABEC PUBLICATION	SEWER FUND	SEWER ADMINISTR	Advertising	PUBLIC HEARING-PROPOSED A	\$15.34
CHECK # 057374 KANABEC PUBLICATIONS, INC						\$61.34
CHECK # 057376 KWIK TRIP - GAS PURCHASES						
057376	KWIK TRIP - GAS PURC	ELECTRIC FUN	ELECTRIC DISTRIBU	Truck Expense	FUEL	\$561.33
057376	KWIK TRIP - GAS PURC	WATER FUND	WATER DISTRIBUTI	Motor Fuels	FUEL	\$296.19
057376	KWIK TRIP - GAS PURC	SEWER FUND	SEWER COLLECTION	Motor Fuels	FUEL	\$285.92
CHECK # 057376 KWIK TRIP - GAS PURCHASES						\$1,143.44
CHECK # 057380 MINNESOTA PETROLEUM SERVICE						
057380	MINNESOTA PETROLEU	ELECTRIC FUN	GENERATION & PO	Repair/Maint - Bldg &	FUEL TANK TESTING	\$839.50
CHECK # 057380 MINNESOTA PETROLEUM SERVICE						\$839.50
CHECK # 057381 MN ENERGY RESOURCES CORP						
057381	MN ENERGY RESOURCE	ELECTRIC FUN	GENERATION & PO	Generation Exp	NATURAL GAS-GENERATION	\$91.75
057381	MN ENERGY RESOURCE	ELECTRIC FUN	GENERATION & PO	Natural Gas - Heat	NATURAL GAS-BOILER	\$751.35
057381	MN ENERGY RESOURCE	WATER FUND	WATER SUPPLY	Natural Gas - Heat	NATURAL GAS	\$22.09
057381	MN ENERGY RESOURCE	WATER FUND	WATER TREATMENT	Natural Gas - Heat	NATURAL GAS	\$37.98
057381	MN ENERGY RESOURCE	SEWER FUND	WASTEWATER TREA	Natural Gas - Heat	NATURAL GAS	\$87.55
CHECK # 057381 MN ENERGY RESOURCES CORP						\$990.72
CHECK # 057382 MORA CHEVROLET BUICK						
057382	MORA CHEVROLET BUIC	WATER FUND	WATER DISTRIBUTI	Repair/Maint - Bldg &	REPLACE TRUCK STARTER-201	\$708.43
CHECK # 057382 MORA CHEVROLET BUICK						\$708.43
CHECK # 057383 NORTHERN STATES SUPPLY						
057383	NORTHERN STATES SUP	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Underground	URD MARKING PAINT	\$118.54

**CITY OF MORA**  
**CHECK LIST-PUC**

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CHECK #	Search Name	Fund Descr	Dept Descr	Last Dim Descr	Comments	Amount
CHECK # 057383 NORTHERN STATES SUPPLY						\$118.54
CHECK # 057384 OAK GALLERY & FRAME SHOP						
057384	OAK GALLERY & FRAME	ELECTRIC FUN	ELECTRIC DISTRIBU	Postage	SHIPPED GLOVES FOR TESTIN	\$51.84
057384	OAK GALLERY & FRAME	WATER FUND	WATER TREATMENT	Postage	SHIPPED VALVE ACTUATOR FO	\$13.81
CHECK # 057384 OAK GALLERY & FRAME SHOP						\$65.65
CHECK # 057386 OXYGEN SERVICE CO, INC						
057386	OXYGEN SERVICE CO, I	ELECTRIC FUN	GENERATION & PO	Repair/Maint - Bldg &	OXYGEN CYLINDER RENTAL	\$28.52
057386	OXYGEN SERVICE CO, I	ELECTRIC FUN	GENERATION & PO	Landfill Gen Exp	LFG NITROGEN CYLINDER REN	\$12.22
057386	OXYGEN SERVICE CO, I	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Substation E	SUBST CYLINDER RENTAL	\$49.47
057386	OXYGEN SERVICE CO, I	WATER FUND	WATER DISTRIBUTI	Repair/Maint - Bldg &	CARB DIOX CYLINDER RENTAL	\$10.85
CHECK # 057386 OXYGEN SERVICE CO, INC						\$101.06
CHECK # 057388 QUALITY DISPOSAL						
057388	QUALITY DISPOSAL	ELECTRIC FUN	GENERATION & PO	Garbage Removal	GARBAGE	\$75.00
057388	QUALITY DISPOSAL	SEWER FUND	WASTEWATER TREA	Garbage Removal	GARBAGE	\$187.20
CHECK # 057388 QUALITY DISPOSAL						\$262.20
CHECK # 057389 R & G WALDHAM CONTRACTORS INC						
057389	R & G WALDHAM CONT	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Underground	PLOW/TRENCH-FOX RUN URD	\$408.78
057389	R & G WALDHAM CONT	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of St. Lights & S	PLOW/TRENCH-STREET LIGHT	\$810.48
CHECK # 057389 R & G WALDHAM CONTRACTORS INC						\$1,219.26
CHECK # 057391 RMB ENVIRONMENTAL LABS INC						
057391	RMB ENVIRONMENTAL	SEWER FUND	WASTEWATER TREA	Professional Services -	LAB TESTING	\$523.00
CHECK # 057391 RMB ENVIRONMENTAL LABS INC						\$523.00
CHECK # 057395 UPPER CASE PRINTING INK						
057395	UPPER CASE PRINTING	ELECTRIC FUN	ELECTRIC ADMINIST	Energy Conservation	HOLIDAY LED REBATE COUPO	\$47.56
CHECK # 057395 UPPER CASE PRINTING INK						\$47.56
CHECK # 057397 VIKING ELECTRIC SUPPLY						
057397	VIKING ELECTRIC SUPP	ELECTRIC FUN	ELECTRIC DISTRIBU	Maint of Meters	METER RPR PARTS	\$290.61
CHECK # 057397 VIKING ELECTRIC SUPPLY						\$290.61
CHECK # 057399 WINDSTREAM						
057399	WINDSTREAM	SEWER FUND	SEWER ADMINISTR	Telephone	TELEPHONE	\$127.33
CHECK # 057399 WINDSTREAM						\$127.33
						\$461,135.41



MORA MUNICIPAL UTILITIES  
PUBLIC UTILITIES COMMISSION CHECK LIST

THE OCTOBER/NOVEMBER 2021 CLAIMS HAVE BEEN APPROVED FOR PAYMENT BY:

\_\_\_\_\_  
CHAIRMAN

\_\_\_\_\_  
COMMISSION MEMBER

\_\_\_\_\_  
COMMISSION MEMBER

\_\_\_\_\_  
SECRETARY





# MEMORANDUM

Date: November 16, 2021  
To: Public Utilities Commission  
From: Natasha Segelstrom, Administrative Services Director  
RE: Approve Hire of Water/Wastewater Operator II

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## SUMMARY

A recent resignation of water/wastewater operator II position brought an opening in our water/wastewater department. The PUC will approve the hire of a candidate to fill that opening and meet the needs of the department.

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## BACKGROUND INFORMATION

Last month staff recruited applicants to fill the vacant water/wastewater operator II position, and five applications were received. Three candidates were interviewed for the position on Tuesday, October 26<sup>th</sup> by the hiring committee (Lindy Crawford, Joe Kohlgraf and Ken Mattson).

Based on the application, experience and interview, the committee has made an offer to Dylan Ramthun to fill the position under the terms of the attached offer letter. Ramthun's start date will be Wednesday, November 17, 2021. The wages and benefits offered fit into the 2021 budget.

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## RECOMMENDATIONS

Motion to approve the hire of Dylan Ramthun as recommended by the hiring committee and according to the terms of the employment offer letter.

## *Attachments*

Employment Offer Letter







# CITY OF MORA MORA MUNICIPAL UTILITIES

101 Lake Street South  
Mora, MN 55051-1588

[ci.mora.mn.us](http://ci.mora.mn.us)



320.679.1511

Fax 320.679.3862

320.679.1451

November 1, 2021

Dylan Ramthun  
400 5<sup>th</sup> St NE  
Braham, MN 55006

RE: Conditional Offer of Employment

Dear Dylan:

Congratulations! On behalf of the City of Mora and Mora Municipal Utilities, I am pleased to offer you the position of water/wastewater operator II, for which you applied. This offer is conditional upon a successful background investigation and formal approval by the Public Utilities Commission (PUC).

Below are some of the details of this conditional offer for your information:

- **Supervisor.** In this position you will report directly to Joe Kohlgraf, Public Works Director. His contact information is 612-390-8217 and [joe.kohlgraf@cityofmora.com](mailto:joe.kohlgraf@cityofmora.com).
- **Compensation and Benefits.** If accepted, your hourly wage will be \$24.71 which is Grade 8.5, Step A of the 2021 salary schedule for this position. You will be eligible for wage increases per the AFSCME collective bargaining agreement, generally upon completion of probation and then on your anniversary date. A copy of the City of Mora/ Mora Municipal Utilities personnel policy and AFSCME agreement will be provided to you. This position is eligible for the PERA retirement program and paid leave.
- **Status/Hours.** This position is classified as regular, full-time. It is a union, FLSA non-exempt position. Hours of work are based on employer needs and are generally Monday through Friday 7:00am to 3:30pm. You will be responsible for being on-call on a rotating basis with other water/wastewater employees. The ability to respond to call outs during your on-call weekend within thirty (30) minutes is a requirement of the job. If you cannot meet that requirement at this time you will have six (6) months from your start in which to do so.
- **Water/Wastewater Licensing.** Possessing and maintaining Class D water and Class C wastewater licenses is a requirement of the job. You will be given sixteen (16) months to obtain Class D water and Class D wastewater licenses. When eligible, and as soon as feasibly possible, you are required to obtain your Class C wastewater license and Type 4 biosolids license. Failure to comply with these requirements may be grounds for dismissal.

- **Driver's License.** Possessing and maintaining a Class B CDL and tanker endorsement is a requirement of the job. You will be given six (6) months to obtain a Class B CDL and tanker endorsement. Failure to comply with these requirements may be grounds for dismissal.
- **Probationary Period.** You will serve a six (6) month probationary period. During this period you will be evaluated as to your suitability for the position.
- **Start Date.** We will set a start date for Wednesday, November 17, 2021, at 7:00am. Please report directly to the Public Works Garage Facility. At 8:00am, please report to City Hall to complete onboarding paperwork.

Other benefits and conditions of employment are explained in the personnel policy and labor agreement.

Please acknowledge your acceptance of this conditional offer in writing by signing below and returning it to Lindy by Friday, November 5, 2021. If you have any questions, please contact me at (320) 515-0724 or by email at [l.crawford@cityofmora.com](mailto:l.crawford@cityofmora.com).

Sincerely,

Lindy Crawford  
City Administrator/Public Utilities General Manager

**The foregoing offer of promotion is hereby accepted.**

\_\_\_\_\_  
Name - PRINTED

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name - SIGNED

**RETURN SIGNED COPY TO: CITY OF MORA, HUMAN RESOURCES OFFICE, 101 LAKE STREET SOUTH,  
MORA, MN 55051**



# MEMORANDUM

Date: November 15, 2021  
 To: Public Utilities Commission  
 From: Jessica Bliss, Utility Billing Clerk  
 RE: Items for Consideration to Write-Off

## SUMMARY

There are six utility accounts staff has determined are uncollectible final balances. The PUC will consider writing-off these accounts.

## BACKGROUND INFORMATION

Unpaid final electric utility accounts are submitted for collection with two different agencies when staff has exhausted collection efforts. Revenue Recapture through the State of Minnesota accepts collection items over \$25.00 to withhold from state income tax refunds and does not charge a fee for this service. Online Utility Exchange Collection Services accepts items over \$50.00 with a 35% commission fee charged for items collected. The customer's social security number is required for both agencies to attempt to collect for us.

Move Out Date	Balance	Property Address	NOTES
9/1/2018	\$0.13	94 MALMGREN LN	LESS THAN AMOUNT ACCEPTED BY COLLECTIONS-UNPAID AFTER 6+ MONTHS
10/15/2020	\$5,519.80	313 1 <sup>ST</sup> ST	PROPERTY WAS TAX FORFEITED TO STATE OF MN; UNABLE TO CERTIFY CHARGES, NO SSN ON FILE
11/13/2020	\$0.05	702 SUNSET LN	LESS THAN AMOUNT ACCEPTED BY COLLECTIONS-UNPAID AFTER 6+ MONTHS
12/15/2020	\$101.50	700 KENWOOD LN LOT 21G	DECEASED
3/31/2021	\$277.82	1773 200 <sup>TH</sup> AVE #1	MOVED, NO FORWARDING ADDRESS. BILLS HAVE BEEN RETURNED FOR LAST 5 MONTHS, NO SSN ON FILE. UNPAID FOR 6+ MONTHS
5/4/2021	\$348.76	2 EDGEWOOD LN	DECEASED

TOTAL \$6,248.06

## OPTIONS & IMPACTS

1. Write Off unpaid final balances on utility accounts that staff has determined will not be collected and move the balances from Accounts Receivable to 2021 Expense.
2. Leave final unpaid balances on accounts and continue mailing bills to those with forwarding addresses.

## RECOMMENDATIONS

Motion to write off the above listed accounts as expenses for 2021.

## Attachments

None





# MEMORANDUM

Date: November 16, 2021  
To: Public Utilities Commission  
From: Lindy Crawford, Public Utilities General Manager  
RE: Electric System Study

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## ITEM SUMMARY

The PUC will receive a presentation from DGR regarding an electric system study.

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## BACKGROUND INFORMATION

In 2019, the PUC authorized DGR to conduct a study on MMU's electric system. The study is complete and attached. DGR will be at the meeting to present findings of the study and answer questions of the PUC.

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## OPTIONS & IMPACTS

1. Accept the study as presented and begin budgeting for the capital projects identified in the study.
  - a. Several critical projects have been identified in the study, completing these projects will drastically improve the electric system infrastructure. Some of the projects are listed as optional, and the PUC should consider whether or not those projects should be completed.
2. Reject the study, amend the study, and/or do not budget for the capital projects identified in the study.
  - a. Staff believes completing the majority of these projects is critical to the future of MMU's electric system, and therefore staff does not recommend this option.

---

## RECOMMENDATIONS

Motion to accept the electric system study as presented and direct staff to begin budgeting for the capital projects identified in the study.

### *Attachments*

Final Electric System Study





## **ELECTRIC SYSTEM STUDY**



## **MORA MUNICIPAL UTILITIES MORA, MINNESOTA**

**Prepared by  
DGR Engineering**

**October 2021**

**DGR Project No. 427802**

**ELECTRIC SYSTEM STUDY**  
**FOR**  
**MORA MUNICIPAL UTILITIES**  
**MORA, MINNESOTA**

**October 2021**

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature: Chad Rasmussen  
Chad A. Rasmussen, P.E.

Date: 10-25-2021 License No. 41434

**DGR Project No. 427802**

**DGR Engineering**

1302 South Union Street

Rock Rapids, IA

(712) 472-2531

dgr@dgr.com



Electric System Study. Mora, MN

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## Electric System Study

Mora Municipal Utilities, Mora, MN

### Executive Summary

**Tab 1** Introduction and Scope

**Tab 2** Load Growth Projections

**Tab 3** Existing System Analysis

**Tab 4** Design Criteria

**Tab 5** Capital Improvements Plan

**Tab 6** Recommendations and Conclusions

**Tab 7** Appendix A

Figure 3A – Existing Circuitry - Electric Distribution System Map

Figure 3B – Voltage Levels - Electric Distribution System Map

Figure 4 – Existing One-line Diagram

Figure 5 – Load Growth Areas - Electric Distribution System Map

Figure 6 – Phase 1 Improvements - Electric Distribution System Map

Figure 7 – Phase 1 Improvements - One-line Diagram

Figure 8 – Phase 2 Improvements - Electric Distribution System Map

Figure 9 – Phase 2 Improvements - One-line Diagram

**Tab 8** Appendix B

Analysis Case Run Summaries – Existing System, Existing Loads

Analysis Case Run Summaries – Proposed System, Projected 2031 Loads

## **EXECUTIVE SUMMARY**

Mora Municipal Utilities (MMU) of Mora, MN owns and operates an electric system that provides electric service to the citizens of Mora and nearby rural properties. DGR Engineering (DGR) was commissioned to perform a system evaluation and planning study for Mora Municipal Utilities.

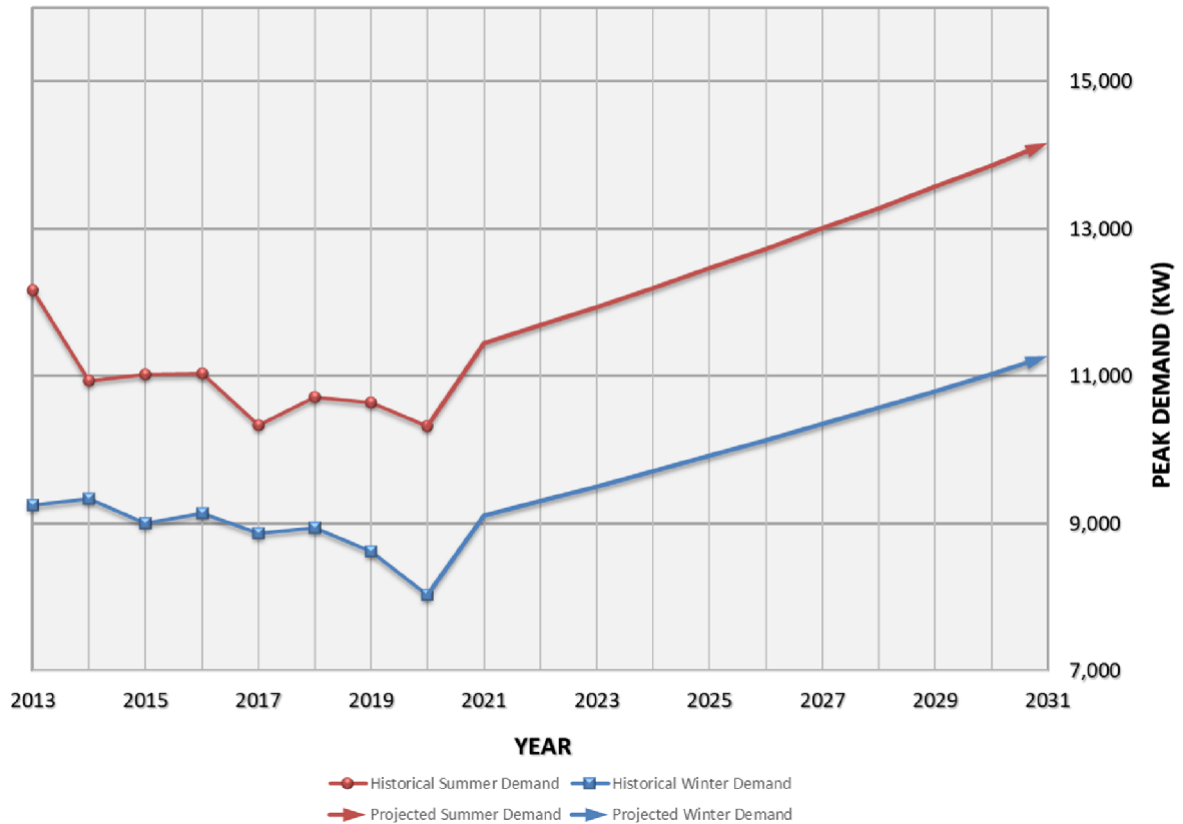
The study performed by DGR confined itself to the "internal" Mora Municipal Utilities system, defined as the electrical facilities within Mora and in the immediate adjacent areas and focused primarily on the distribution system. This report outlines an analysis of Mora Municipal Utilities' system and presents recommended capital improvements to eliminate deficiencies. The Capital Improvements Plan (CIP) recommended covers a ten (10) year period and provides cost estimates for fiscal planning.

## **LOAD GROWTH AND EXISTING SYSTEM**

Over the past eight (8) years, Mora Municipal Utilities system has generally experienced flat to slightly declining loading levels. The overall system peak of 12,163 kW was established in the summer of 2013. The summer peak and winter peak have generally followed a similar trend over the eight (8) years, as shown in Figure 1 on the next page. The summer peak has been running 2-3 MW higher than the winter peak.

The projections for 2021 to 2031 incorporate a step load addition for the new school in 2021 and are subsequently based on a 2.15% annual growth rate for both summer and winter. The growth rate was chosen based on possible future load additions which include service territory annexations along with some modest growth on MMU's existing system. Based on the load growth projections, the peak system demand would increase from a level of 10,324 kW in 2020 to near 14,159 kW by 2031, which can be seen in Figure 1.

**FIGURE 1  
SYSTEM DEMAND REQUIREMENTS  
MORA MUNICIPAL UTILITIES**



MMU's electric distribution system is sourced by two load-serving substations, the Power Plant Substation and the 65 Substation. The Power Plant Substation is comprised of one (1) 69 kV to 12.47 kV substation transformer and one (1) 12.47 kV to 4.16 kV substation transformer. The Power Plant Substation also contains connections to multiple generators at the power plant, which provide approximately 14 MW of operable local generation capacity. The 65 Substation is comprised of one (1) 69 kV to 12.47 kV substation transformer. MMU also has one (1) 12.47 kV to 4.16 kV step-down substation, the Industrial Substation, which is used to tie the two different distribution voltage levels together out on the system.

MMU's substations are fed externally via the area 69 kV transmission system through a single SMMPA-owned 69 kV line. The SMMPA-owned radial 69 kV line is sourced from an interconnection with Great River Energy (GRE) and extends 1.9 miles from the north into town where it terminates

just west of the 65 Substation. A short 0.07 mile tap connects to the 65 Substation. A 0.32 mile tap runs from the tee to the Power Plant Substation.

The existing distribution system provides electric service throughout the MMU's service territory at both 12.47 kV and 4.16 kV. The electric system is both overhead and underground in construction with approximately 70% of the circuitry being overhead. The current configuration of the system includes a total of three (3) 12.47 kV and six (6) 4.16 kV load serving circuits being fed throughout the system. There are also four (4) 12.47 kV to 4.16 kV transformers out on the distribution system which allow for tying certain 12.47 kV and 4.16 kV circuits together during emergency backfeeding scenarios.

### **DESIGN CRITERIA**

The following is a list of criteria used in evaluation of the performance of the electric system and the design of future improvements.

- Criterion #1** Provide "N-1" (single contingency) level of reliability for all transmission, substation, and distribution facilities.
- Criterion #2** Provide ANSI "Class A" voltage service to all customers, under normal or emergency conditions.
- Criterion #3** Do not exceed thermal limitations of facilities on the electric system, under normal or emergency conditions.
- Criterion #4** Design a system that is flexible in terms of operational characteristics.
- Criterion #5** Develop a system that is expandable, so that load growth can be accommodated in an orderly manner.

### **EXISTING SYSTEM DEFICIENCIES**

Due to system load growth and aging infrastructure, the following deficiencies have been identified:

- ◆ During peak load conditions and while the system is intact, multiple feeders exceed the ANSI voltage drop design criteria. These circuits include: Northwest, Northeast, West, Industrial and South Simplex.

- ◆ The Northwest and Northeast feeders experience slight overloading at 105% of the conductor capacity during peak load and system intact conditions.
- ◆ The loss of Power Plant T1 transformer results in slightly worse voltage drop conditions than the system intact voltage drops.
- ◆ During the loss of the Power Plant T2 12.47/4.16 kV transformer, the system experiences extreme voltage drop and the system load cannot be adequately served without generating.
- ◆ During the loss of either Power Plant bus (4.16 kV or 12.47 kV), the system experiences extreme voltage drop and the system load cannot be adequately served in these scenarios.
- ◆ The loss of individual distribution feeders (West, Southeast, Northwest, Northeast) results in increased voltage drop violations on the system. During loss of the Northeast feeder, the remaining circuitry cannot adequately serve loads due to voltage drop and capacity limitations.
- ◆ During projected 2031 peak loading conditions, similar voltage drop and overload violations occur during system intact and outage conditions except they get proportionally worse.
- ◆ The overhead distribution system has minimal gang-operated switching points.
- ◆ The physical condition of much of the overhead distribution system is poor due to its age.
- ◆ Much of the equipment at the Power Plant Substation and Industrial Substation is very old and approaching the end of its useful life.

## **CAPITAL IMPROVEMENTS PLAN SUMMARY**

The following table summarizes the recommended improvements and associated costs necessary to begin resolving the system deficiencies:

<b><u>CIP Component</u></b>	<b><u>Estimated Cost</u></b>
<b>Phase 1 (2022-2026)</b>	
<i><u>Distribution Improvements (2022-2026)</u></i>	
4.16 kV Northeast feeder conversion	190,000
4.16 kV Northwest feeder conversion	1,786,000
Contingencies & engineering	<u>494,000</u>
Subtotal:	\$ 2,470,000
 <i><u>65 Substation Improvements (2024)</u></i>	
Relay upgrades	76,000
Contingencies & engineering	<u>57,000</u>
Subtotal:	\$ 133,000
 <b>Total – Phase 1:</b>	 <b>\$ 2,603,000</b>

## Phase 2 (2027-2031)

### Power Plant Substation Improvements (2027)

15 kV switchgear	400,000
Construction materials	160,000
Contingencies & engineering	<u>140,000</u>
Subtotal:	\$ 700,000

### Miscellaneous Improvements (2030)

SCADA system	134,000
Contingencies & engineering	<u>68,000</u>
Subtotal:	\$ 202,000

### Distribution Improvements (2027-2031)

4.16 kV West feeder conversion	2,490,000
4.16 kV North Simplex feeder conversion	801,000
Contingencies & engineering	<u>823,000</u>
Subtotal:	\$ 4,114,000

**Total – Phase 2: \$ 5,016,000**

**Total – 10 Year – CIP: \$ 7,619,000**

## 1. INTRODUCTION AND SCOPE:

Mora Municipal Utilities (MMU) owns and operates an electric system that provides electric service to the citizens of Mora and the immediate adjacent areas. DGR Engineering (DGR) was commissioned to perform a system evaluation and planning study for Mora Municipal Utilities.

The study performed by DGR confined itself to the "internal" Mora Municipal Utilities system, defined as the electrical facilities within Mora and in the immediate adjacent areas and focused primarily on the distribution system. This study involved review and analysis of MMU's electric system, from the high-voltage 69 kV transmission system that brings power to the community, through the 12.47 kV and 4.16 kV distribution facilities that distribute the energy to consumers.

This report outlines an analysis of MMU's electric system and presents recommended capital improvements to eliminate deficiencies. The Capital Improvements Plan (CIP) is intended to assist MMU staff in proper planning and prioritization of capital improvements. The CIP recommended covers a ten (10)-year period and provides cost estimates for fiscal planning.

All the staff members at DGR who participated in this study wish to acknowledge the contributions and insight of Mora Municipal Utilities staff during the study. All MMU staff were more than willing to find necessary data, provide input, and be helpful throughout the study process.



## 2. LOAD GROWTH PROJECTIONS:

- 2.1. General:** The projected system load and the desired level of service dictate the level of capital expenditures required in order to provide adequate service to all customers. This section discusses the historical and projected system loading requirements.
- 2.2. System Demand Requirements:** Table 1 lists the historical and projected peak power demands for the Mora Municipal Utilities electric system. Over the past eight (8) years, the Mora Municipal Utilities system has generally experienced flat to slightly declining loading levels. The overall system peak of 12,163 kW was established in the summer of 2013. The summer peak and winter peak have generally followed a similar trend over the eight (8) years, as shown in Figure 1 on the next page. MMU's system demand is significantly higher during summer months than in winter months, with the summer peak running 2-3 MW higher than the winter peak. This historical load data was furnished by Mora Municipal Utilities and their power provider, Southern Minnesota Municipal Power Agency (SMMPA).

The projections for 2021 to 2031 incorporate a step load addition for the new school in 2021 and are subsequently based on a 2.15% annual growth rate for both summer and winter. The growth rate was chosen based on possible future load additions which include service territory annexations along with some modest growth on MMU's existing system. Based on the load growth projections, the peak system demand would increase from a level of 10,324 kW in 2020 to near 14,159 kW by 2031, which can be seen in Figure 1.

The load growth areas which were assigned for the projected future loading analysis are identified in Figure 5 in Appendix A. Mora Municipal Utilities staff should be aware that if the load were to grow at a rate substantially higher than this projection, certain improvements over and above those included in this study may be required.

# Load Growth Projections

**TABLE 1**  
**HISTORIC LOAD DATA AND PROJECTIONS**  
**MORA MUNICIPAL UTILITIES**

HISTORICAL

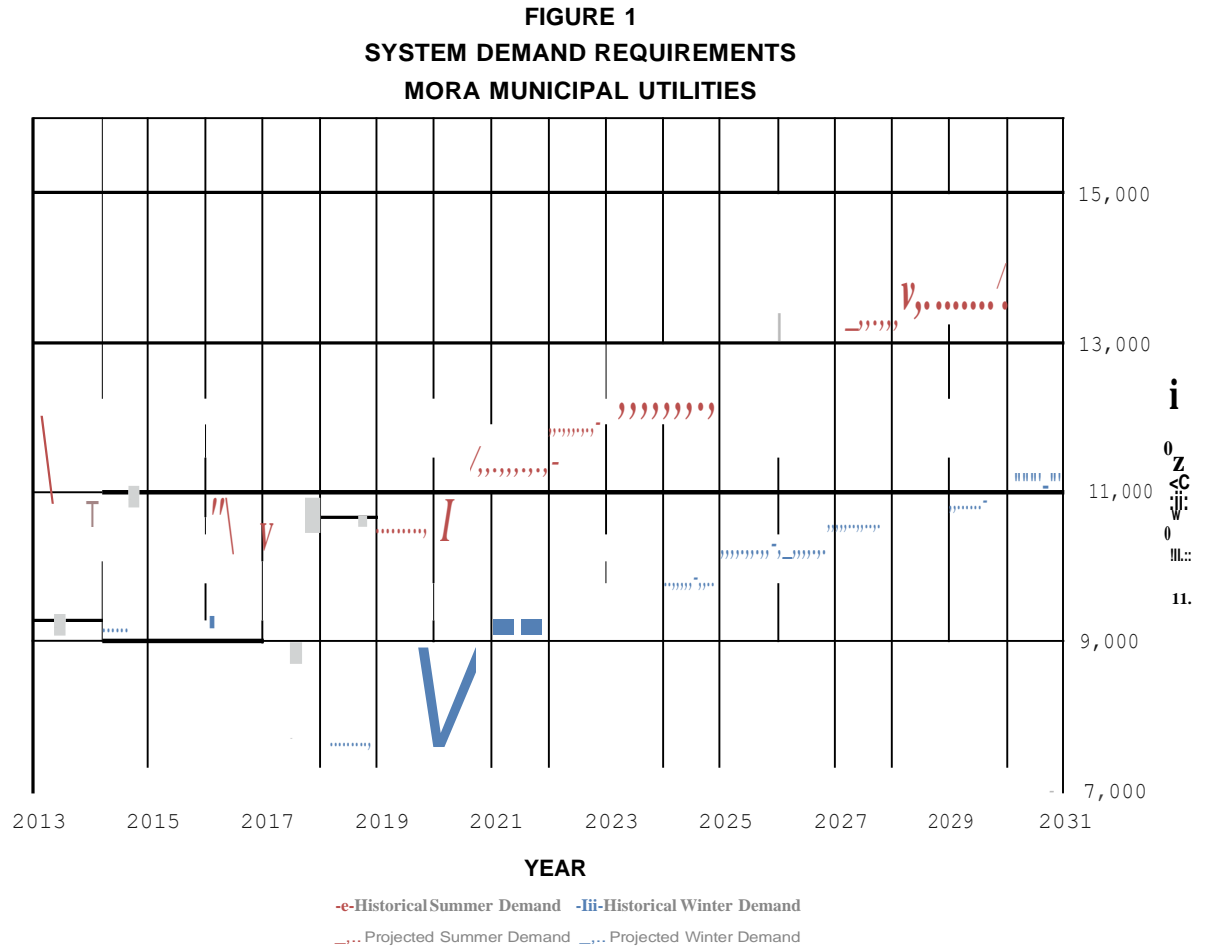
Year	Summer Peak Demand (kW)	Winter Peak Demand (kW)
2013	12,163	9,251
2014	10,929	9,342
2015	11,017	9,000
2016	11,035	9,137
2017	10,335	8,864
2018	10,715	8,945
2019	10,642	8,628
2020	10,324	8,037

PROJECTIONS:

Year	Summer Peak Demand (kW)	Winter Peak Demand (kW)
2021	11,446	9,110
2022	11,692	9,306
2023	11,943	9,506
2024	12,200	9,710
2025	12,463	9,919
2026	12,730	10,132
2027	13,004	10,350
2028	13,284	10,572
2029	13,569	10,800
2030	13,861	11,032
2031	14,159	11,269

# Load Growth Projections

Figure 1 shown below illustrates graphically the load projections shown in Table 1.



## 3. EXISTING SYSTEM ANALYSIS:

- 3.1. General:** The analysis of the existing system consisted of site visits, a review of historical information and records, and analysis in our office. Meetings were held with operating personnel to receive their input covering the electrical system. The study work included a review of the transmission, substation, and distribution components of the electric system. Each of these areas will be discussed in this section. Figures 3A, 3B, and 4 in Appendix A illustrates Mora Municipal Utilities existing electric system.
- 3.2. Transmission:** The MMU electric system is served externally via the area 69 kV transmission system through a single SMMPA-owned 69 kV line. The SMMPA-owned transmission line is sourced from an interconnection with Great River Energy (GRE) and extends 1.9 miles from the north into town where it dead ends just west of the 65 Substation. A short 0.07 mile tap connects to the 65 Substation. A 0.32 mile tap runs from the dead end tee to the Power Plant Substation. All these transmission facilities are radial (no backfeed or loop) in nature from the GRE tap point.
- 3.3. Substations:** MMU owns two (2) major load-serving substations, the Power Plant Substation and the 65 Substation. MMU also owns one (1) 12.47 kV to 4.16 kV step-down substation, the Industrial Substation. The existing system one-line diagram, shown in Figure 4 of Appendix A, illustrates the electrical configuration of the substations.

**Power Plant Substation:** The Power Plant Substation is located near downtown Mora in the central part of the City. As previously mentioned, this substation is fed via one 69 kV transmission line. The substation is comprised of one 12/22.4 MVA, 69 kV to 12.47 kV transformer, T1, equipped with a load tap changer (LTC) on the low side for voltage regulation. Transformer T1 was manufactured in 1975 and is 46 years old. The transformer is protected by a circuit interrupter on the high side, which provides for high speed fault clearing in the event of a fault in the transformer.

On the low side, the transformer feeds a 12.47 kV bus which is comprised of a lineup of metalclad switchgear housed inside a building. The 12.47 kV bus switchgear lineup includes a main breaker, three (3) feeder breakers, one (1) generator breaker, and a breaker to the 12.47 kV to 4.16 kV step-down transformer T4. Transformer T4 is a 7.5 MVA, 12.47 kV to 4.16 kV step-down unit which feeds the 4.16 kV bus. This transformer was manufactured in 1975 and is 46 years old.

The 4.16 kV switchgear lineup contains a main breaker, two (2) generator breakers, two (2) spare generator breakers, a station power breaker, and six (6) feeder breakers. The 4.16 kV switchgear is estimated to be approximately 60 years old.

**65 Substation:** The 65 Substation is located on the east side of the city adjacent to Highway 65 and was constructed new in the 1995 timeframe. This substation is served by a single 69 kV transmission line. The 65 Substation is comprised of one 12/22.4 MVA, 69 kV to 12.47 kV transformer, T4, which is outfitted with a load tap changer (LTC) on the low side for voltage regulation. The transformer is protected by a circuit interrupter on the high side, which provides for high speed fault clearing in the event of a fault in the transformer.

The substation is constructed with fully enclosed equipment on the 12.47 kV side, minimizing exposure for outages. The 12.47 kV bus is comprised of a lineup of 15 kV metalclad switchgear housed inside a substation control building. The metalclad switchgear lineup includes a main breaker and three (3) feeder breakers. The control building was designed for future expansion with space for additional breakers.

**Industrial Substation:** The Industrial Substation is located in the northeast portion of the city in the industrial park. This substation is connected to the Industrial and Amaco 12.47 kV feeders coming from the Power Plant and 65 substations. The substation is comprised of one 5 MVA, 12.47 kV to 4.16 kV transformer, T3, equipped with a load tap changer (LTC) on the low side for voltage regulation. The T3 transformer is estimated at approximately 46 years old. This unit is protected by high side fuses to isolate the transformer in the event of a fault in the transformer.

On the low side, the transformer feeds a 4.16 kV bus which is comprised of a lineup of metalclad switchgear housed inside the substation building. The 4.16 kV switchgear lineup includes three (3) feeder breakers. Two of the feeder breakers source 4.16 kV circuits which provide backfeed ties to the Power Plant Substation. One of the main reasons this substation is needed is in the event of losing the 12.47 kV to 4.16 kV transformer or 4.16 kV bus at the Power Plant substation, this substation has the capacity to pick up additional 4.16 kV load. However, in many of these backfeed scenarios unacceptable voltage levels would be provided according to our analysis. As the distribution system is eventually converted to 12.47 kV, the need for the Industrial Substation is eliminated and this facility can be decommissioned.

- 3.4. Generation:** MMU owns local generation capacity at its Power Plant which is located adjacent to the Power Plant Substation. The output capacity of the generators is leased to SMMPA, who is responsible for operations and maintenance on the units.

There are three diesel generators at the facility providing for approximately 14 MW of total output. Table 3 below lists the generator voltage, installation year, make and size for the three units.

**TABLE 3**  
**POWER PLANT GENERATION**  
**MORA MUNICIPAL UTILITIES**

Generator	Voltage (kV)	Year Installed	Make	Size (kW)
G2	4.16	1957	Fairbanks-Morse	1136
G5	4.16	1971	Enterprise	5775
G6	12.47	1974	Enterprise	7000

The generators are connected to respective switchgear busses via individual breakers. The 4.16 kV generators are connected into the 4.16 kV bus in the Power Plant Substation switchgear. The 12.47 kV generator is connected into the 12.47 kV bus in the Power Plant Substation switchgear.

This plant has the ability to provide the City with an excellent source of backup power. The plant can be brought online to serve the community in the event of a prolonged outage on the transmission system. The capacity of the plant is large enough to serve the entire City. While it has been well maintained, the power plant generators are quite old and parts are becoming more challenging to obtain for this vintage of equipment.

There is also one (1) 1200 kW landfill gas generator connected out on the distribution system. The landfill generator is owned and operated by SMMPA. The landfill generator generally runs year-round except during maintenance periods.

**3.5. Distribution:** The existing distribution system provides electric service throughout the City's service territory at both 4.16 kV and 12.47 kV. The distribution system has both overhead and underground sections. Approximately 70% of the distribution system is constructed in overhead fashion, with the underground construction located particularly in newer areas.

A circuit diagram of the existing electric distribution system is shown in Figure 3A of Appendix A. The current configuration of circuits includes a total of three (3) 12.47 kV load-serving circuits from the 65 Substation and four (4) 4.16 kV load-serving

circuits from the Power Plant Substation being fed throughout the system. The Industrial Substation is fed via one of the 12.47 kV load-serving circuits and feeds two (2) additional 4.16 kV load-serving circuits. There are also four (4) 12.47 kV to 4.16 kV transformers out on the distribution system which allow for tying certain 12.47 kV and 4.16 kV circuits together during emergency backfeeding scenarios. The three (3) 12.47 kV circuits serve approximately 68% of the load while the six (6) 4.16 kV circuits serve the remaining load. A circuit diagram of the existing electric distribution system voltage levels is shown in Figure 3B of Appendix A.

The 12.47 kV system is comprised of a mainline loop that is broken into two (2) circuits, along with a separated dedicated circuit to EPC. We recommend that additional 12.47 kV circuits be added to the system, which will allow for reducing the number of customers affected during the outage of a circuit, and for providing more backfeeding and switching capabilities during fault conditions or when maintenance activities need to be performed. There are some areas for improvement on the distribution system regarding loop and tie points to increase the reliability of the system.

The 4.16 kV system is the oldest part of the system and is in need of eventual replacement. Its physical condition is poor to average in general. In addition, having multiple different distribution system voltages (4.16 kV plus 12.47 kV) results in reduced reliability since the circuits cannot backfeed one another during an outage condition without the use of additional equipment. Due to its age and electrical limitations, rather than spending large amounts of money on repairs for the older 4.16 kV system, we recommend that MMU convert the 4.16 kV system to 12.47 kV.

- 3.6. Voltage and Capacity Analysis:** A load flow analysis of the distribution system was performed using the Milsoft WindMil® computer modeling program. This program is a commercial product that can perform load flow, short-circuit, and other analysis of a modeled electrical system. We wanted to analyze the voltage level and capacity constraints of the system under existing and projected peak loading conditions. This model was constructed based on the mapping information obtained from MMU's geographic information system (GIS) for their electric system. Load data by substation and circuits and for large power consumers was collected from Mora Municipal Utilities staff. We feel the model provides an accurate tool for analyzing various every-day scenarios such as the loss of specific pieces of equipment, different switching scenarios, effects of load growth on the system, and available fault currents to a particular site. The ability to integrate GIS mapping data also exists within this software platform. As such, we recommend that Mora Municipal Utilities make use of

this tool as the need arises, and that any significant future mapping updates be updated in the computer model as well.

Our computer analysis indicates low voltage conditions on the existing distribution system under normal system intact conditions. This result was generally expected on the 4.16 kV circuits due to the higher phase amps and size of the circuits.

Under emergency scenarios (such as the loss of a distribution feeder, switchgear bus, or substation transformer) and at existing peak loading levels, voltage conditions on a few areas of the 12.47 kV primary system exceed American National Standard Institute (ANSI) limits for Class A voltage service during more heavily loaded periods. The system is incapable of serving load under certain contingency conditions without poor voltage condition in some areas. This situation will further deteriorate as load grows, since voltage drop is directly proportional to load current. These deficiencies suggest the need for some additional circuits and circuit ties in the future, especially when considering anticipated load growth on the system.

Under normal peak operating conditions, the system transformation capacity and relative loading is shown in the following Table 4:

**TABLE 4**  
**SUBSTATION CAPACITIES**

<b>Substation Transformer</b>	<b>Maximum Transformer Capacity</b>	<b>2020 Loadings</b>	<b>Projected 2031 Loadings</b>
Power Plant Transformer T1	22,400 kVA	3,385 kVA	6,192 kVA
65 Transformer T4	22,400 kVA	6,799 kVA	7,235 kVA

Under normal operating conditions at both current and projected load levels, the substations have adequate transformer capacity. Under emergency conditions loss of the largest substation transformer) the following condition exists as shown in Table 5:

**TABLE 5**  
**AGGREGATE SUBSTATION CAPACITY**  
**LOSS OF ANY TRANSFORMER**

	<b>Aggregate Capacity</b>	<b>2020 Loadings</b>	<b>Projected 2031 Loadings</b>
All Substations (minus one transformer)	22,400 kVA	10,184 kVA	13,427 kVA



With the loss of any substation transformer, the total substation capacity is sufficient for the 2020 peak loading. With the projected 2031 system loading, the total transformer capacity is still adequate. However, an additional challenge is the delivery of the available capacity to the areas of the system that need additional capacity via the distribution system. MMU does have large tie circuitry between the two substations which helps with the delivery of available capacity in a loss of transformer event.

**3.7. System Deficiencies:** The following are deficiencies found in analysis of the existing system under existing and projected loading:

- 3.7.1.** During peak load conditions and while the system is intact, multiple feeders exceed the ANSI voltage drop design criteria. These circuits include: Northwest, Northeast, West, Industrial and South Simplex.
- 3.7.2.** The Northwest and Northeast feeders experience overloading at 105% of the conductor capacity during peak load and system intact conditions.
- 3.7.3.** The loss of Power Plant T1 results in slightly worse voltage drop conditions than the system intact voltage drops.
- 3.7.4.** During the loss of the Power Plant T2 12.47/4.16 kV transformer, the system experiences extreme voltage drop and the system load cannot be adequately served without generating.
- 3.7.5.** During the loss of the either Powerplant bus (4.16 kV or 12.47 kV), the system experiences extreme voltage drop and the system load cannot be adequately served in these scenarios.
- 3.7.6.** The loss of individual distribution feeders (West, Southeast, Northwest, Northeast) results in increased voltage drop violations on the system. During loss of the Northeast feeder, the remaining circuitry cannot adequately serve loads due to voltage drop and capacity limitations.
- 3.7.7.** During projected 2031 peak load conditions, similar voltage drop and overload violations occur during system intact and outage conditions except they get proportionally worse.

- 3.7.8.** The overhead distribution system has minimal gang-operated switching points.
- 3.7.9.** The physical condition of much of the overhead distribution system is poor due to its age.
- 3.7.10.** Much of the equipment at the Power Plant Substation and Industrial Substation is very old and approaching the end of its useful life, including the switchgear lineups and 12.47 kV to 4.16 kV step-down transformers.

The case study summaries, in Appendix B, depict the results of the detailed analysis of the system intact and the emergency/contingency scenarios for the existing system with existing loads and for the existing system with the projected 2031 loads.

## 4. DESIGN CRITERIA:

**4.1. General:** The criterion for proper design of electric utility systems is developed in the following paragraphs. All criteria are important and all efforts were made to satisfy them in the design of the system plan.

**4.2. System Reliability:** In general, Mora Municipal Utilities should adopt a policy to maintain "N-1" or "single contingency" design, on all transmission, substation, and distribution facilities when feasible. "Single contingency" design is defined as the ability to operate the system at peak load with the loss of any single major system component. The electric customers have undoubtedly come to expect that electric service be available at all times, except for minor weather-related outages. We feel that it is important that the electric system be able to survive the loss of any one piece of equipment or line section, and still be able to carry peak load while providing Class A service.

Our view is that the system be planned with adequate system capacity to serve all customers without taking into account the local generating capacity at the Power Plant. Certain events such as transformer failures, when they occur, can take a long period of time for equipment repair or replacement. Delivery timeframes for substation transformers are several months from the date of order, and can be over one year. It would not be economically practical except to be forced to use local generation during such events, and it is in the City's best interest to perform system planning ignoring the generation capacity, except for more short-term weather-related events.

**4.3. Voltage Levels:** Voltage levels at the consumer's premises should be maintained within ANSI limits for Class A service at all times. ANSI voltage limits are as follows:

Maximum Voltage	126 volts
Minimum Voltage	110 volts
Maximum Daily Voltage Swing	8 volts

The voltage limits given above are the maximum and minimum voltages that any customer could experience at utilization equipment, and still be in compliance with ANSI standards. In addition, no customer could experience a difference (swing) of more than 8 volts in any 24 hour period, without violating ANSI standards.

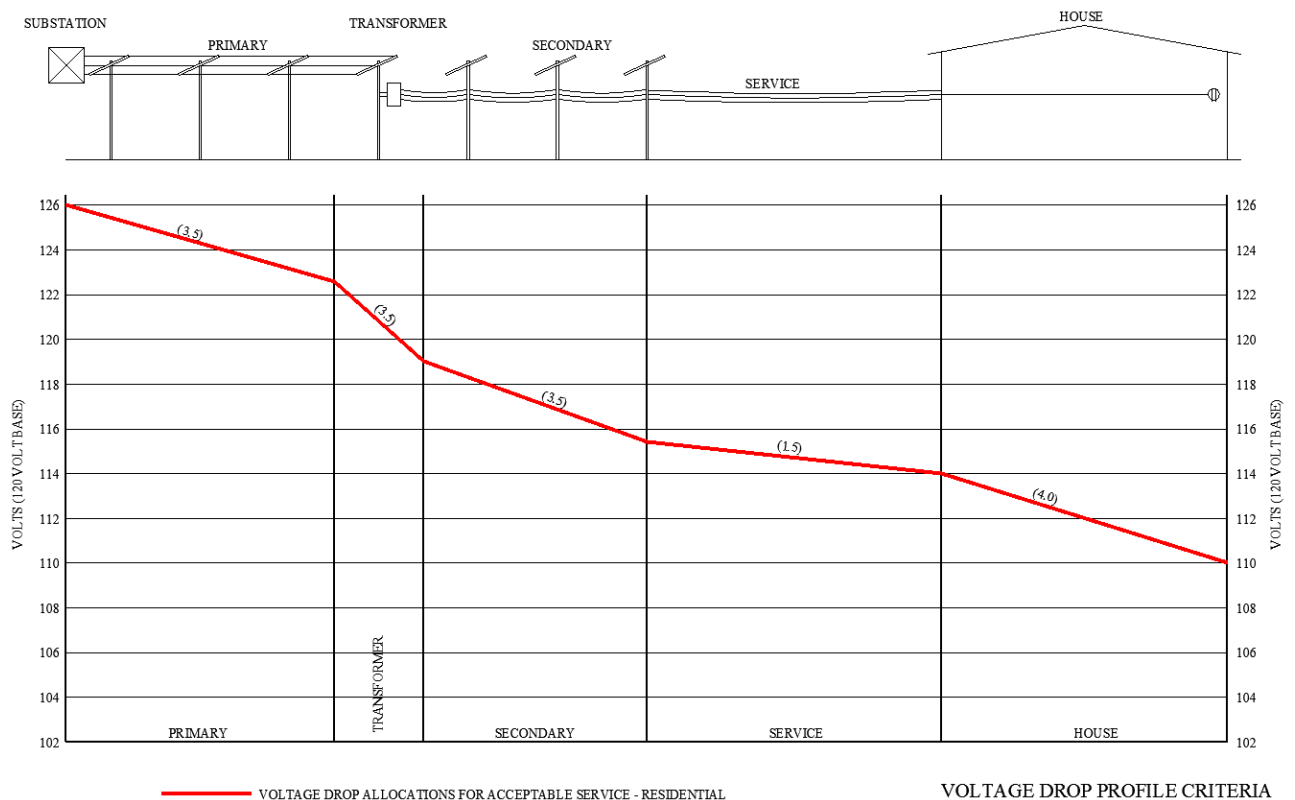
Voltage drop is a natural occurrence on an electric system. Voltage drop through the various pieces of electrical equipment must be accommodated and included in the planning process. In order for the voltage drop to not exceed that allowed by

standards, the following components of drop in the various portions of the system are assumed:

Primary Circuits	3.5 volts
Distribution Transformers	3.5 volts
Secondaries	3.5 volts
Services	1.5 volts
Customer Wiring	<u>4.0 volts</u>
	16.0 volts

The voltage drop profile in Figure 2 illustrates the allowable voltage drop components listed previously. The specific portion of the assigned voltage drop that is controllable directly by a utility is that portion assigned to primary circuits. Hence, planning is done to ensure that voltage drop on primary circuits does not exceed 3.5 volts, under the assumption that the other components of drop will be present.

**FIGURE 2**  
**VOLTAGE DROP PROFILE CRITERIA**



In addition to the voltage criteria developed above, consideration of equipment thermal capacity was used in evaluation of the system. This criterion requires that all equipment, including substation transformers and distribution lines be kept within published thermal limits at all times, during both normal and emergency operations, so as not to become overloaded.

- 4.4. Flexibility and Expandability:** Future system improvements should be designed to provide an optimum number of combinations of circuit configurations for serving existing loads as well as future system development. This optimization is accomplished by designing multiple tie and switching points between distribution circuits, as well as providing sufficient distribution circuits themselves. A flexible system will allow the ability to transfer loads from circuit to circuit.

The system should also be designed to be expandable, such that new loads can be added to it without major upheaval to the existing system. Sufficient capacity must be available in substations and lines to handle the addition of a reasonably large load without scrambling to provide facilities for it. However, the system should not be overbuilt to meet this criteria but reasonably sufficient capacity should exist to handle new loads.

## 5. CAPITAL IMPROVEMENTS PLAN:

**5.1. General:** The Capital Improvements Plan (CIP) describes in general the improvements to the system recommended over the next ten (10) years to eliminate or minimize the system deficiencies identified in the previous sections of this report and to satisfy the planning criteria listed in the foregoing section. The following sections detail the proposed capital improvements for MMU's electric system.

**5.2. Recommended Improvements – Phase 1:** The improvements recommended for Phase 1 are shown in Figures 6 and 7 in Appendix A, and are described in this section.

**5.2.1 Construction Description – Phase 1:** Construction in this Phase includes the following items:

### Distribution Improvements:

- ◆ Convert the 4.16 kV Northeast Circuit to 12.47 kV, including mainline circuit ties and a new underground feeder from the 65 Substation
- ◆ Convert the 4.16 kV Northwest Circuit to 12.47 kV underground, including a new underground feeder from the Power Plant Substation

### 65 Substation:

- ◆ Upgrade relays in 12.47 kV switchgear to new microprocessor-based relays

**5.2.2 Timing of Phase 1:** The improvements in Phase 1 have been assigned to be constructed in the 2022 to 2026 timeframe.

**Discussion of Phase 1:** The distribution work involved in Phase 1 consists of converting the 4.16 kV Northeast and Northwest feeders from overhead to 12.47 kV underground. Due to the construction of a new school, additional capacity is needed on the Northeast circuit to provide reliable power. We would recommend that all new distribution facilities be built in an underground fashion for improved reliability, improved aesthetics, and reduced ongoing maintenance.

The 4.16 kV Northwest feeder experiences the worst voltage drop on the system due to the heavy loading for a 4.16 kV feeder. By converting the feeder to 12.47 kV, the Northwest feeder serves as a backup for the school and also improves the power quality for the existing customers on the Northwest

feeder. We are recommending that the entire portion of the Northwest feeder located inside the city limits and before the step-up transformer be converted to new underground 12.47 kV circuitry.

Substation work involved in Phase 1 consists of upgrading the existing relays utilized in the switchgear at the 65 Substation. The relays should be replaced with new digital, microprocessor-based relays. The microprocessor-based relays provide more information during fault analysis, settings are more accurate, and less maintenance is required. The new relays will also be able to be easily integrated into a new Supervisory Control And Data Acquisition (SCADA) system during Phase 2.

**5.2.3 Cost of Phase 1:** The construction costs in this CIP are 3<sup>rd</sup> quarter 2021 estimates and include labor, materials, engineering, and contingencies, and assume Contractor-built facilities. Costs for any required land, right-of-way, and permitting is not included, and costs for future work are not escalated to include the effects of inflation. The cost estimates are intended for budgetary uses only. Phase 1 cost estimates are as follows:

<u>Construction Item</u>	<u>Estimated Cost</u>
<i>Distribution Improvements (2022-2026)</i>	
4.16 kV Northeast feeder conversion	\$ 190,000
4.16 kV Northwest feeder conversion	1,786,000
Contingencies & engineering	<u>494,000</u>
Subtotal:	\$ 2,470,000
<i>65 Substation Improvements (2024)</i>	
Relay upgrades	76,000
Contingencies & engineering	<u>57,000</u>
Subtotal:	\$ 133,000
<b>Total – Phase 1:</b>	<b>\$ 2,603,000</b>

**5.3. Recommended Improvements – Phase 2:** The improvements recommended for Phase 2 are shown in Figures 8 and 9 in Appendix A, and are described in this section.

**5.3.1 Construction Description – Phase 2:** Construction in this Phase includes the following items:

Power Plant Substation:

- ◆ New 12.47 kV switchgear lineup with one main, one tie breaker, one generator breaker, and five feeder breakers

Miscellaneous System Improvements:

- ◆ New SCADA system for the Power Plant Substation and 65 Substation

Distribution Improvements:

- ◆ Convert the 4.16 kV West Circuit to 12.47 kV underground, including a new underground feeder from the Power Plant Substation and provisions for annexation
- ◆ Convert a portion of the 4.16 kV North Simplex to 12.47 kV underground with mainline ties

**5.3.2 Timing of Phase 2:** The improvements in Phase 2 have been assigned to be constructed in the 2027 to 2031 timeframe. The progression of new loads on the system will dictate at what point within this timeframe these improvements are needed.

**5.3.3 Discussion of Phase 2:** The substation work proposed in Phase 2 involves replacing the existing 12.47 kV switchgear lineup at the Power Plant Substation. The existing switchgear is very old and near the end of its expected useful life. Another reason it should be replaced is to allow for additional 12.47 kV feeders to be added. Newer switchgear can fit more breakers in the same footprint compared to older switchgear. Due to additional 4.16 kV to 12.47 kV feeder conversion projects, additional breakers will be needed. When the switchgear is replaced, new digital, microprocessor-based relays will replace the old electromechanical relaying.

After the relay upgrade projects and switchgear replacement projects, the Power Plant Substation and 65 Substation will have the relaying and communications processors in place to allow for modern SCADA integration without needing significant additional equipment. We would recommend that



# Capital Improvements Plan

MMU give serious consideration to the installation of a SCADA system at that time which would provide the capability to remotely monitor, control, and record activities at the 65 Substation and the Power Plant Substation.

The Phase 2 distribution improvements include continuing the 4.16 kV to 12.47 kV conversion. As loads increase on the existing 4.16 kV West feeder, the voltage drop gets worse. Potential load additions on the south side of Mora would add additional loading to the West circuit. In order to adequately serve the additional loads, the circuitry would need to be operated at 12.47 kV. A portion of the 4.16 kV North Simplex feeder should also be converted to 12.47 kV as part of Phase 2 to eliminate voltage drop deficiencies.

**5.3.4 Cost of Phase 2:** The construction costs in this CIP are 3<sup>rd</sup> quarter 2021 estimates and include labor, materials, engineering, and contingencies, and assume Contractor-built facilities. Costs for any required land, right-of-way, and permitting is not included, and costs for future work are not escalated to include the effects of inflation. The cost estimates are intended for budgetary uses only. Phase 2 cost estimates are as follows:

<u>Construction Item</u>	<u>Estimated Cost</u>
<i>Power Plant Substation Improvements (2027)</i>	
15 kV switchgear	\$ 400,000
Construction materials	160,000
Contingencies & engineering	<u>140,000</u>
Subtotal:	\$ 700,000
<i>Miscellaneous Improvements (2030)</i>	
SCADA system	\$ 134,000
Contingencies & engineering	<u>68,000</u>
Subtotal:	\$ 202,000
<i>Distribution Improvements (2027-2031)</i>	
4.16 kV West feeder conversion	\$ 2,490,000
4.16 kV North Simplex feeder conversion	801,000
Contingencies & engineering	<u>823,000</u>
Subtotal:	\$ 4,114,000

**Total – Phase 2: \$ 5,016,000**

**5.4. Recommended Improvements – Optional:** The optional improvements are converting the remainder of the 4.16 kV overhead system to 12.47 kV underground.

**5.4.1 Construction Description – Optional:** Construction in this Phase would include the following items:

Distribution Improvements:

- ◆ Convert the 4.16 kV Southeast Circuit to 12.47 kV underground with mainline ties.
- ◆ Convert the remaining portion of the 4.16 kV North Simplex and South Simplex circuits to 12.47 kV underground with mainline ties.

Substation Improvements:

- ◆ Decommission the 12.47 kV to 4.16 kV Industrial Substation.

**5.4.2 Timing of Optional Improvements:** The optional improvements may occur after all the Phase 1 and Phase 2 improvements have been implemented. The progression of new loads on the system will also dictate which circuit is the highest priority for 4.16 kV overhead to 12.47 kV underground conversion.

**5.4.3 Discussion of Optional Improvements:** The optional distribution improvements include converting the remaining 4.16 kV feeders to 12.47 kV. These feeders include the remaining portions of the North Simplex and South Simplex circuits as well as the Southeast Circuit. When the remaining North Simplex and South Simplex circuits are converted to 12.47 kV, the Industrial Substation can be decommissioned. All of the circuits will be able to backfeed one another during an outage condition via padmount switches out on the system.

A couple other advantages for converting the remaining circuits include reducing inventory and reducing overall system losses. The amount of equipment needed in inventory can be reduced by removing all 4.16 kV rated equipment. By operating at a higher voltage, overall system losses throughout the system are reduced, resulting in operational cost savings for MMU.

**5.4.4 Cost of Optional Improvements:** The construction costs in this CIP are 3<sup>rd</sup> quarter 2021 estimates and include labor, materials, engineering, and contingencies, and assume Contractor-built facilities. Costs for any required

# Capital Improvements Plan

land, right-of-way, and permitting is not included, and costs for future work are not escalated to include the effects of inflation. The cost estimates are intended for budgetary uses only. Phase 2 cost estimates are as follows:

<u>Construction Item</u>	<u>Estimated Cost</u>
<i>Distribution Improvements (2027)</i>	
4.16 kV Southeast Conversion	1,113,000
4.16 kV North/South Simplex Conversion (Remaining)	\$ 689,000
Contingencies & engineering	<u>451,000</u>
Subtotal:	\$ 2,253,000

## 5.5 Cost Summary:

**5.5.1 Cost Summary – Total 10 – Year CIP:** Construction in this Phase includes Phase 1, Phase 2, and Optional Improvements:

<u>Phase</u>	<u>Estimated Cost</u>
Phase 1 Improvements (2022-2026)	\$ 2,603,000
Phase 2 Improvements (2027-2031)	<u>5,016,000</u>
<b>Total – 10 – Year CIP:</b>	<b>\$ 7,619,000</b>
Optional Improvements	<u>2,253,000</u>
<b>Total – Overall:</b>	<b>\$ 9,872,000</b>

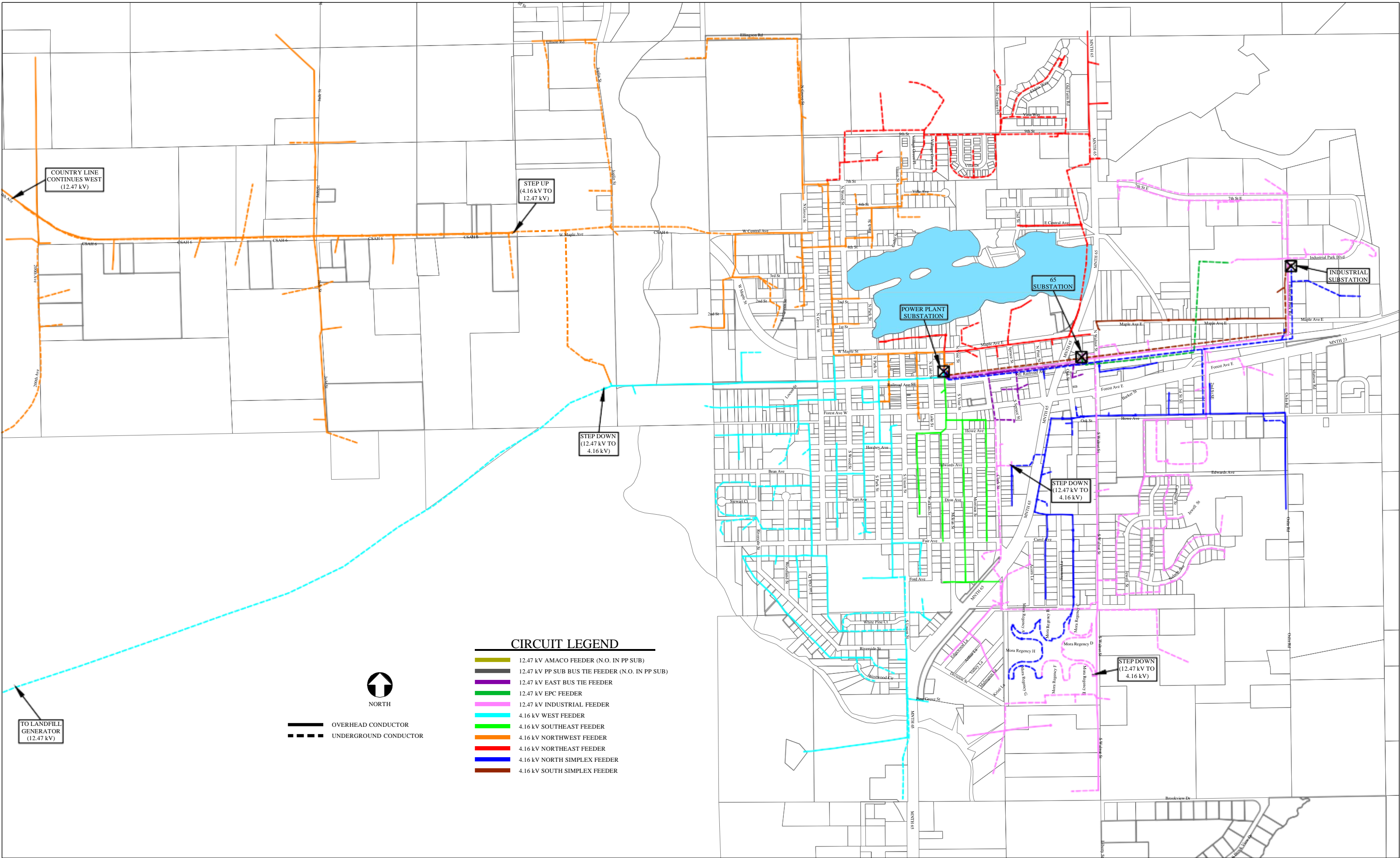
## 6 RECOMMENDATIONS AND CONCLUSIONS:

It is our opinion that continuous planning is important, and we believe that this plan should be formally reviewed, preferably every three (3) to five (5) years, but no more than seven (7) years, to ascertain its relevance and to make appropriate adjustments. A relatively minor amount of analysis and planning done on a frequent basis means that large scale comprehensive planning efforts based at lengthy intervals are not required. The frequent analysis allows the system to be flexible and to adjust to changing system conditions. The analysis also tends to provide the right amount of capacity at the right time as system loads change. We believe that MMU should commit to this planning method and make it a practice in their operation.

We recommend that Mora Municipal Utilities adopt this capital improvements plan as its basis for future system development. We further recommend that the system improvements be authorized, so they can be completed in the time frame proposed. We acknowledge the input of Mora Municipal Utilities staff in preparation of this study and look forward to implementation of the improvements contained herein.



## **APPENDIX A**



REV	DATE	DESCRIPTION



Project Manager: CAR  
Designer: GEM  
Project Number: 427802  
Phone: (712) 472-2531

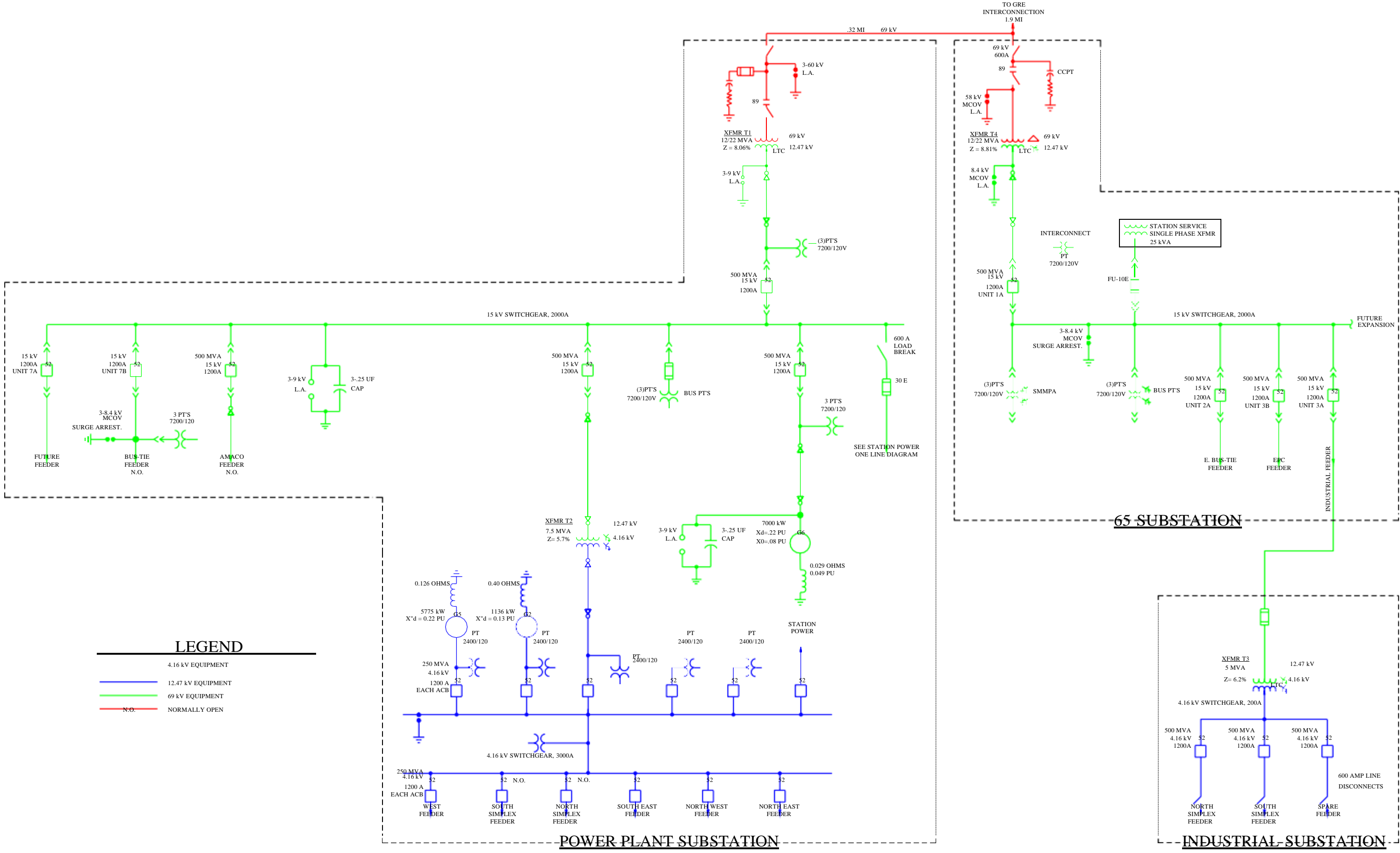
MORA MUNICIPAL UTILITIES  
MORA, MINNESOTA

EXISTING CIRCUITRY  
ELECTRIC DISTRIBUTION SYSTEM MAP

FIGURE 3A







REV	DATE	DESCRIPTION



Project Manager: CAR  
Designer: GEM  
Project Number: 427802  
Phone: (712) 472-2531

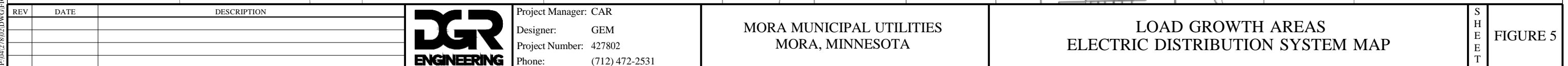
MUNICIPAL ELECTRIC UTILITY  
MORA, MINNESOTA

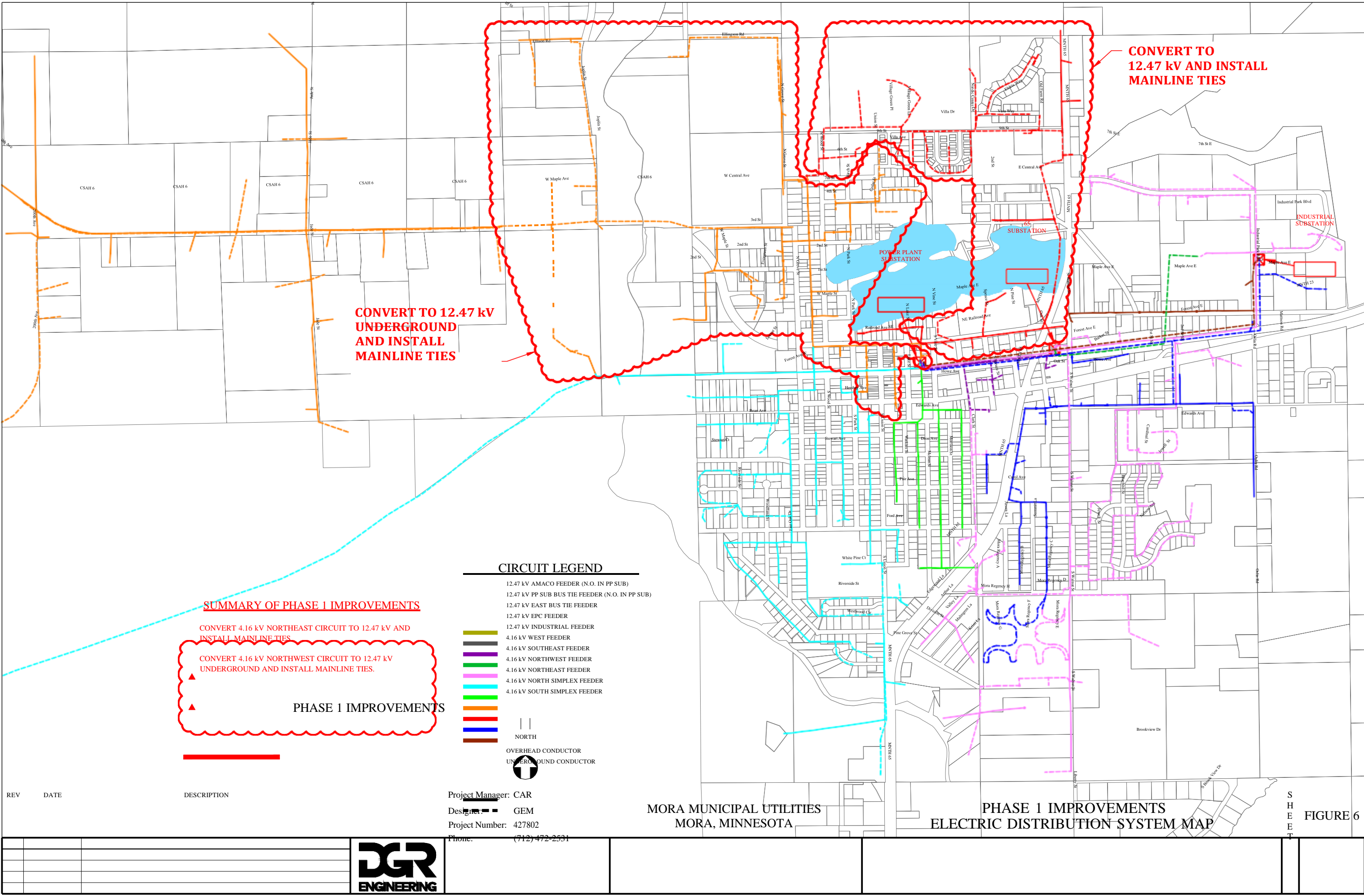
EXISTING ONE-LINE DIAGRAM

S  
H  
E  
E  
T

FIGURE 4



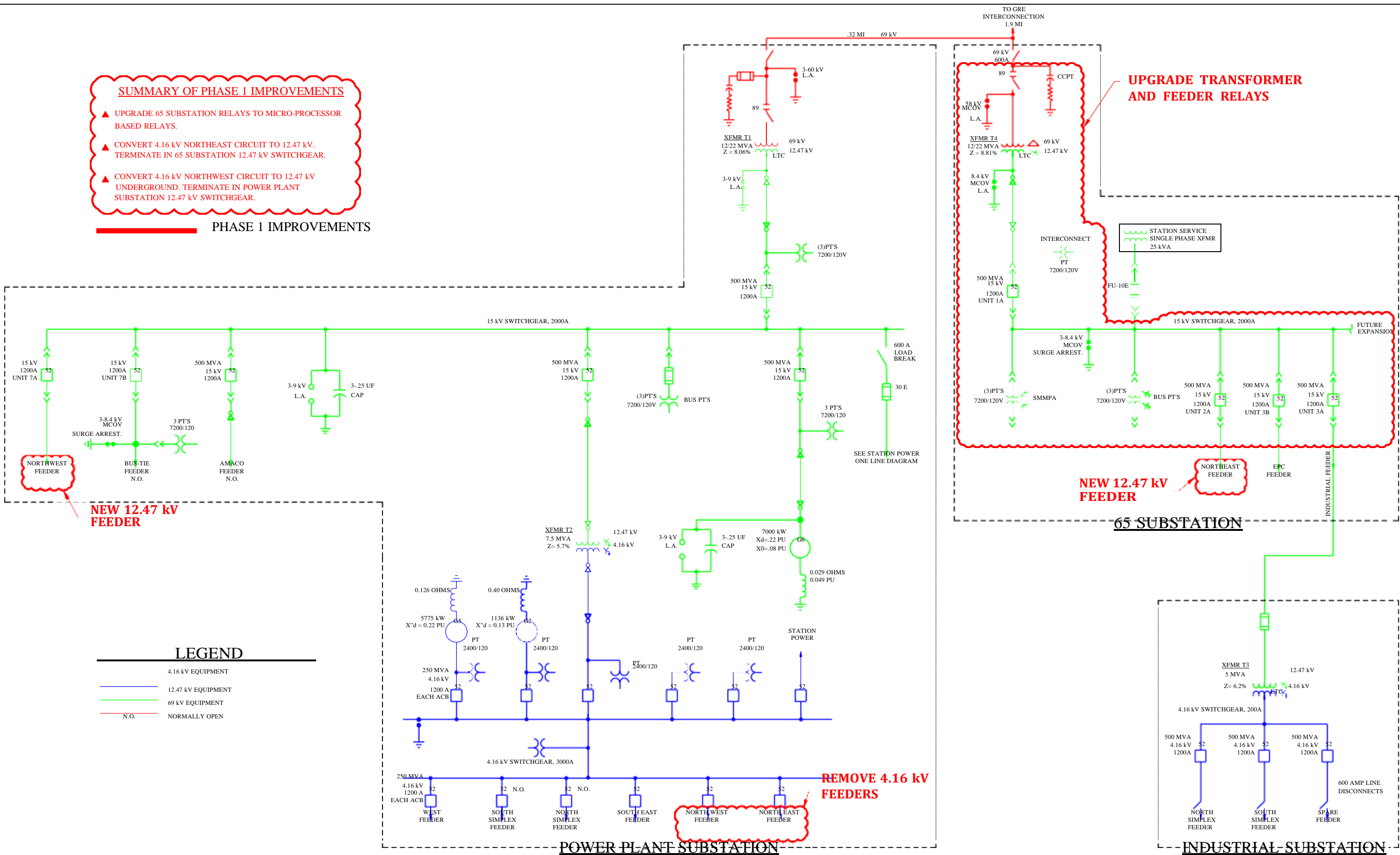




SUMMARY OF PHASE 1 IMPROVEMENTS

- ▲ UPGRADE 65 SUBSTATION RELAYS TO MICRO-PROCESSOR BASED RELAYS.
- ▲ CONVERT 4.16 kV NORTHEAST CIRCUIT TO 12.47 kV. TERMINATE IN 65 SUBSTATION 12.47 kV SWITCHGEAR.
- ▲ CONVERT 4.16 kV NORTHWEST CIRCUIT TO 12.47 kV UNDERGROUND. TERMINATE IN POWER PLANT SUBSTATION 12.47 kV SWITCHGEAR.

PHASE 1 IMPROVEMENTS



REV	DATE	DESCRIPTION



Project Manager: CAR  
Designer: GEM  
Project Number: 427802  
Phone: (712) 472-2531

MUNICIPAL ELECTRIC UTILITY  
MORA, MINNESOTA

PHASE 1 IMPROVEMENTS  
ONE-LINE DIAGRAM

S  
H  
E  
E  
T

FIGURE 7



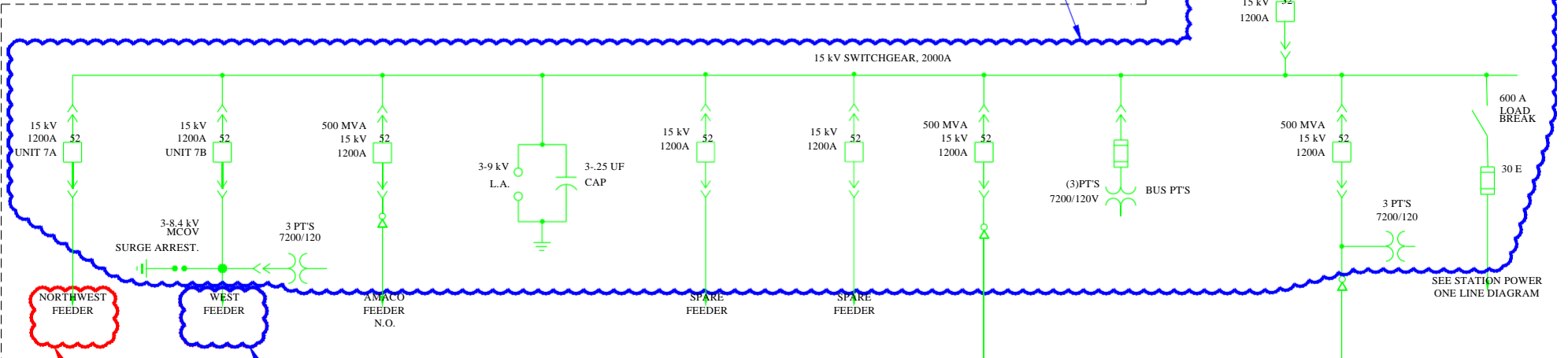


- SUMMARY OF PHASE 2 IMPROVEMENTS
- REPLACE POWER PLANT SUBSTATION 12.47 kV SWITCHGEAR. ADD TWO SPARE FEEDERS FOR FUTURE USE.
  - CONVERT 4.16 kV WEST CIRCUIT TO 12.47 kV. TERMINATE IN POWER PLANT SUBSTATION 12.47 kV SWITCHGEAR.
  - UPGRADE AND INSTALL SCADA SYSTEM IN THE 65 AND POWER PLANT SUBSTATIONS.

PHASE 1 IMPROVEMENTS

PHASE 2 IMPROVEMENTS

REPLACE SWITCHGEAR.  
ADD TWO SPARE FEEDERS  
FOR FUTURE USE.

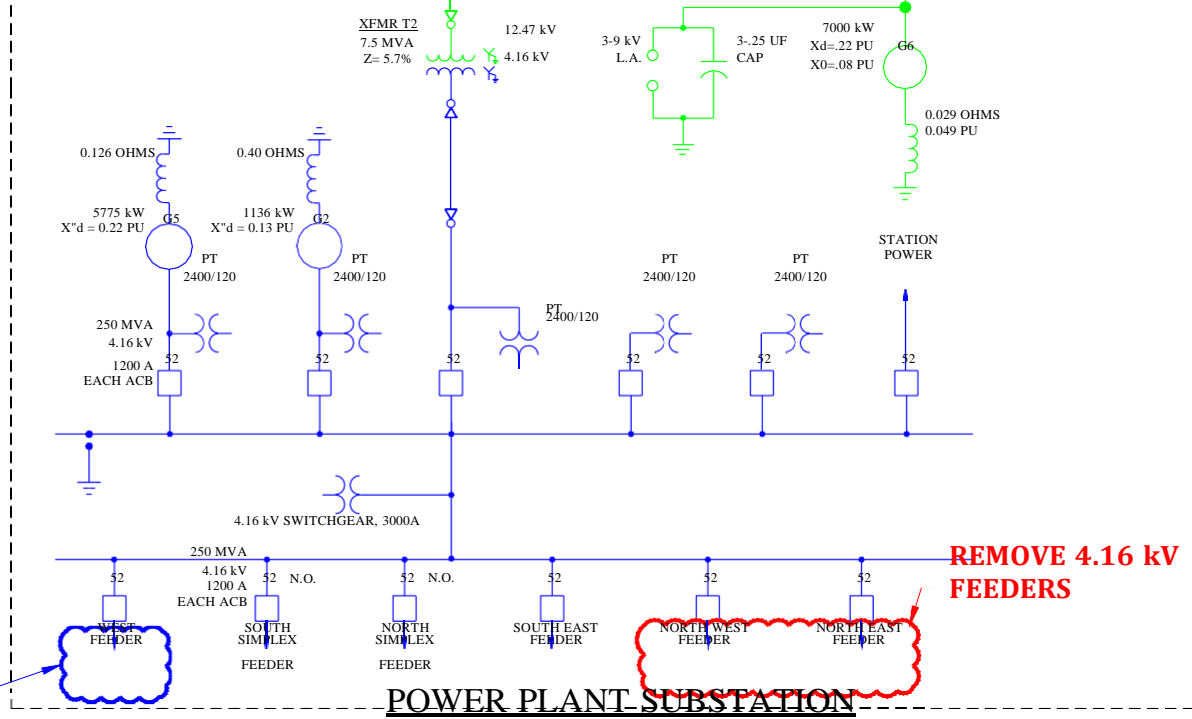


NEW 12.47 kV FEEDER

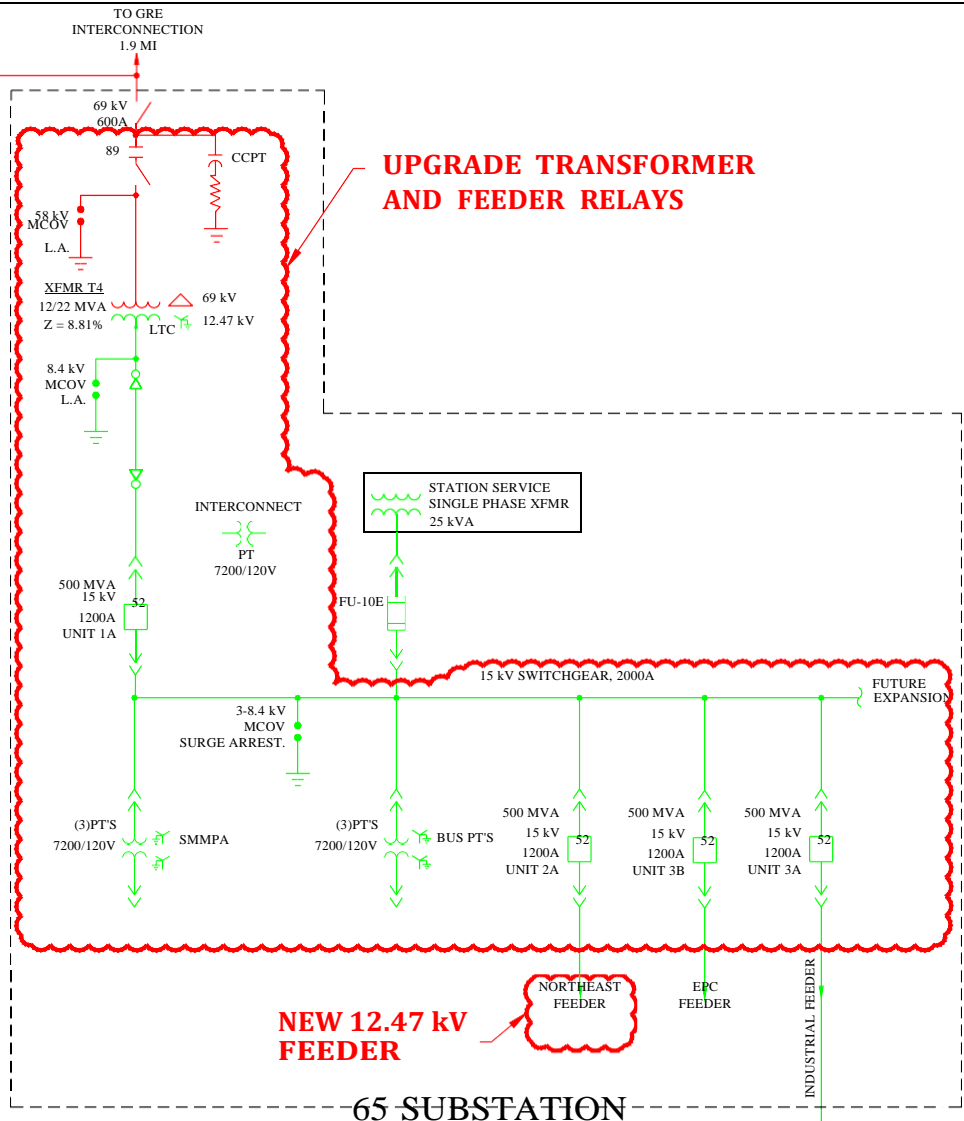
NEW 12.47 kV FEEDER

- LEGEND
- 4.16 kV EQUIPMENT
  - 12.47 kV EQUIPMENT
  - 69 kV EQUIPMENT
  - N.O. NORMALLY OPEN

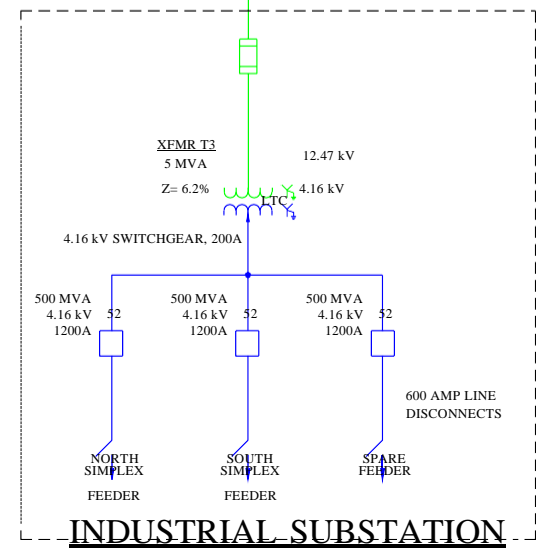
REMOVE 4.16 kV FEEDER



REMOVE 4.16 kV FEEDERS



NEW 12.47 kV FEEDER



REV	DATE	DESCRIPTION



Project Manager: CAR  
Designer: GEM  
Project Number: 427802  
Phone: (712) 472-2531

MUNICIPAL ELECTRIC UTILITY  
MORA, MINNESOTA

PHASE 2 IMPROVEMENTS  
ONE-LINE DIAGRAM

FIGURE 9



**APPENDIX B**

## Table of Contents

- Mora Municipal Utilities
- DGR Project No.: 427802

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### Scenario Legend

Scenario	Unbalanced V-drop: ExSys-ExLoad
0	System Intact
1	Loss of Power Plant Sub T1
2	Loss of Power Plant Sub Bus-tie T2
3	Loss of Industrial Sub T3
4	Loss of 65 Sub T4
5	Loss of Power Plant 12.47 kV Bus
6	Loss of Power Plant 4.16 kV Bus
7	Loss of 65 Sub 12.47 kV Bus
8	Loss of 4.16 kV West Feeder
9	Loss of 4.16 kV Southeast Feeder
10	Loss of 4.16 kV Northwest Feeder
11	Loss of 4.16 kV Northeast Feeder
12	Loss of 12.47 kV Amaco Feeder
13	Loss of 12.47 kV 65 Sub Bus Tie
14	Loss of 12.47 kV EPC Feeder
15	Loss of 12.47 kV Industrial Feeder

16	Loss of 4.16 kV North Simplex
17	Loss of 4.16 kV South Simplex
18	Loss of Generation



- Mora Municipal Utilities

- DGR Project No.: 427802

0	Scenario Selection
System Intact	

System Analysis Configuration
Unbalanced V-drop: ExSys-ExLoad

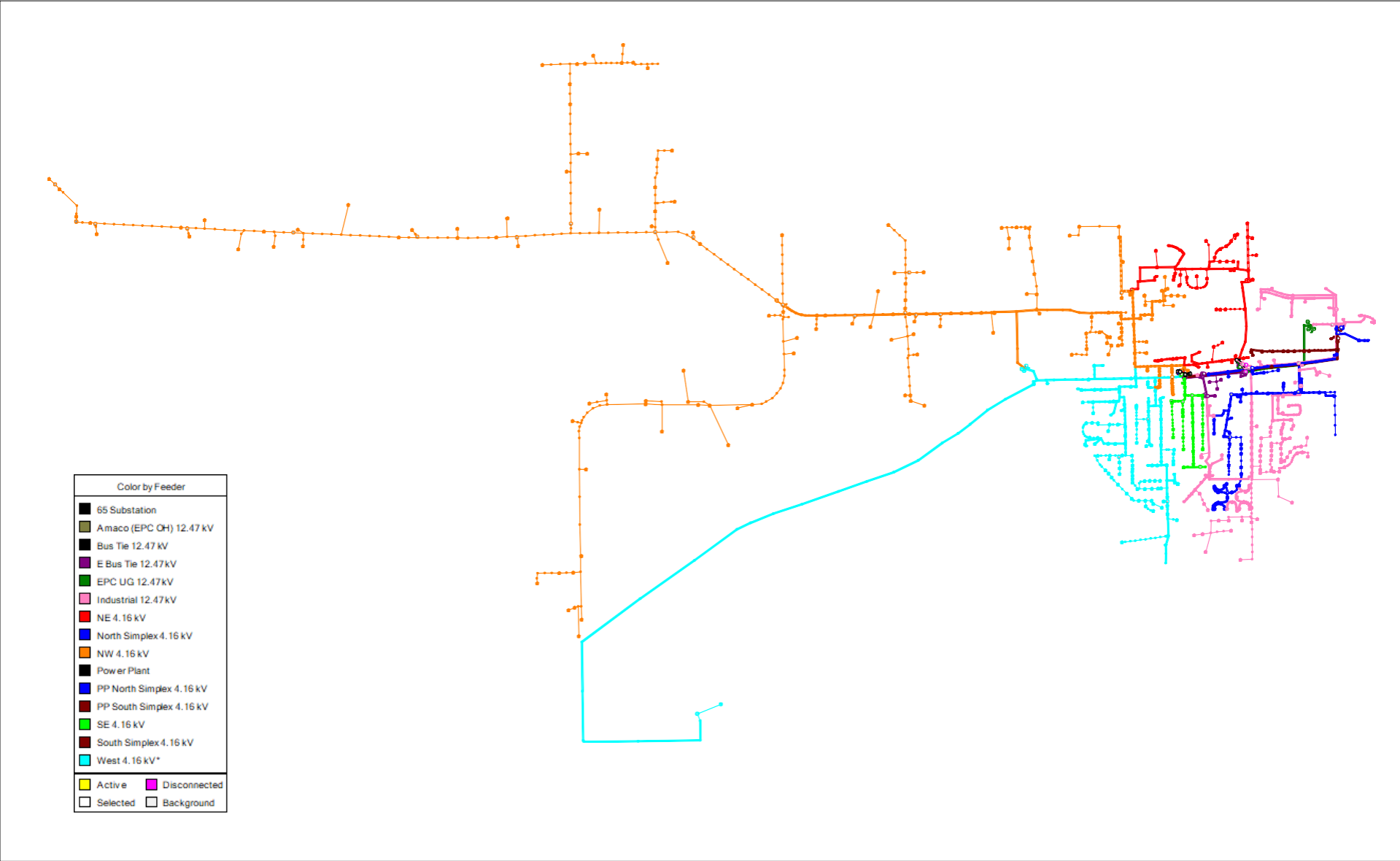
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

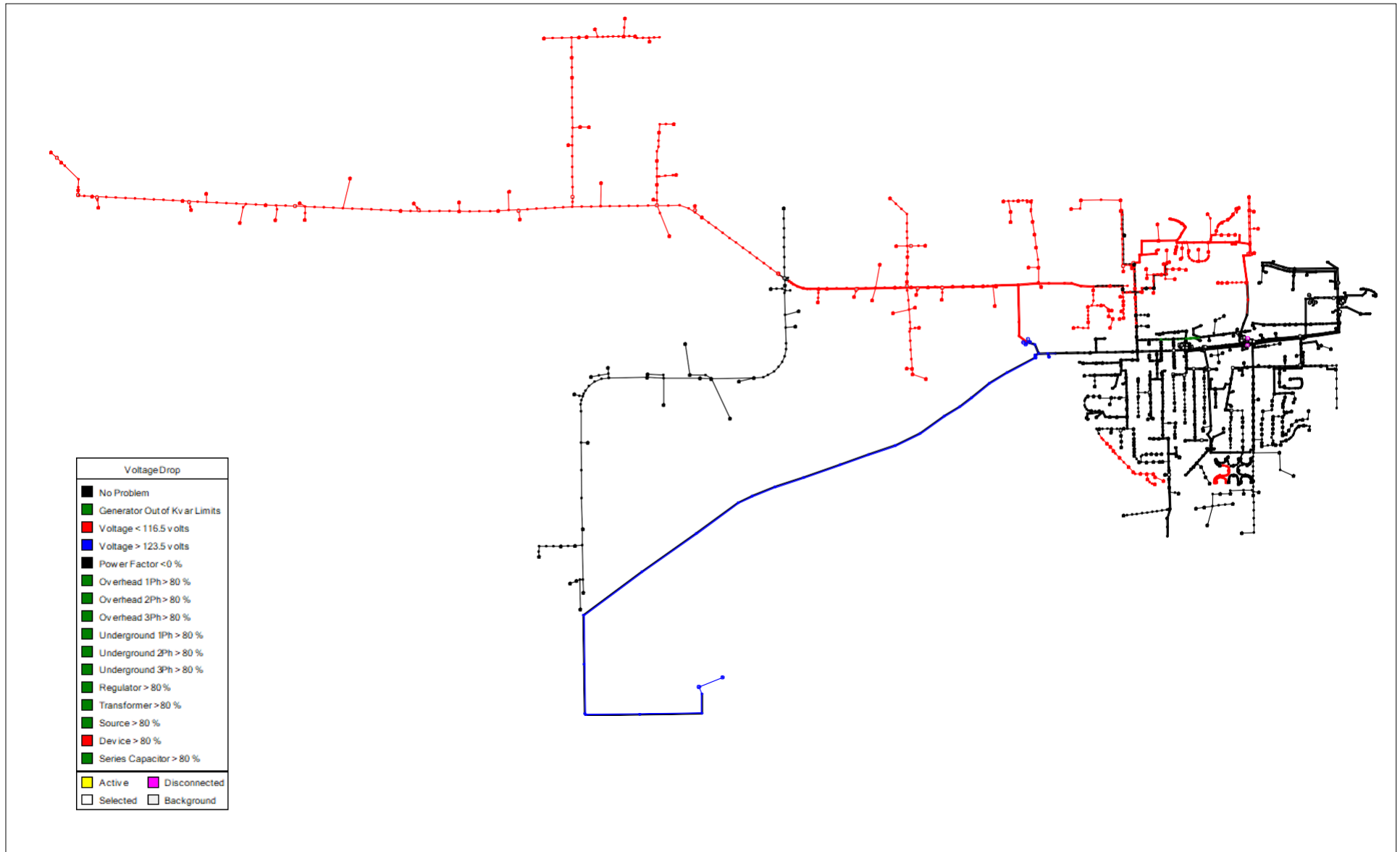
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
0	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	163	141	158	9.77	9.19	7.80	3,385	3,127	1,065	92.37%
0	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	485	420	470	9.77	9.19	7.80	3,385	3,127	1,065	92.37%
0	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.60	1.56	1.50	861	858	38	99.72%
0	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	321	301	323	0.88	0.80	0.85	6,799	6,505	1,658	95.68%
						TOTALS			9.77	9.19	7.80	13,569	9,632	3,788	94.37%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
0	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
0	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
0	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
0	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
0	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.95%
0	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.77	7.05	6.64	1,313	1,287	261	98.00%
0	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
0	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
0	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
0	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
0	Industrial 12.47 kV	12.47 kV Bus	65 Sub	167	143	170	0.88	0.80	0.85	3,454	3,428	419	99.26%
0	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.56	1.50	564	564	(0)	100.00%
0	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.





- Mora Municipal Utilities

- DGR Project No.: 427802

1	Scenario Selection
Loss of Power Plant Sub T1	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

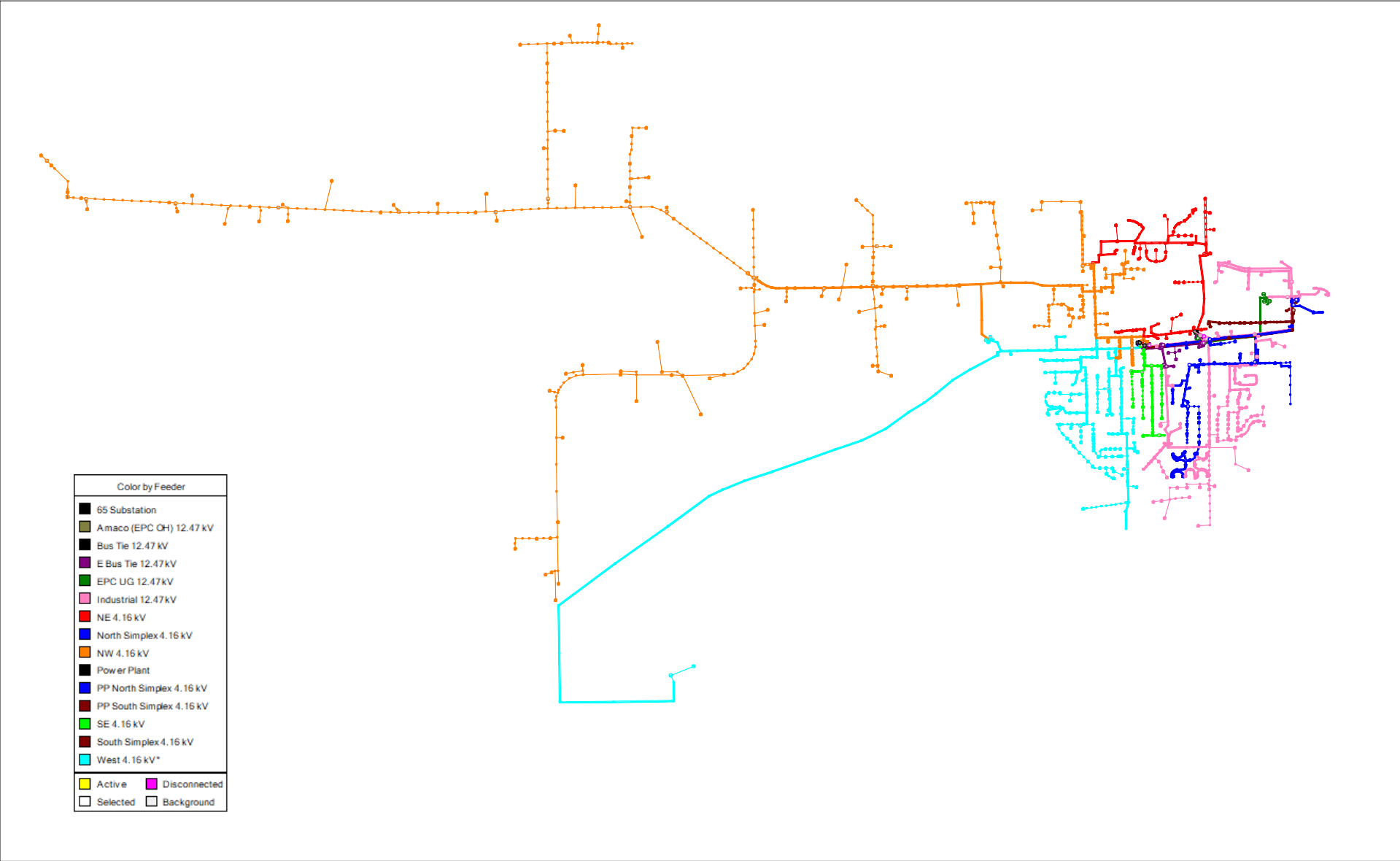
+3.5 = +3.5 Voltage Drop Violation

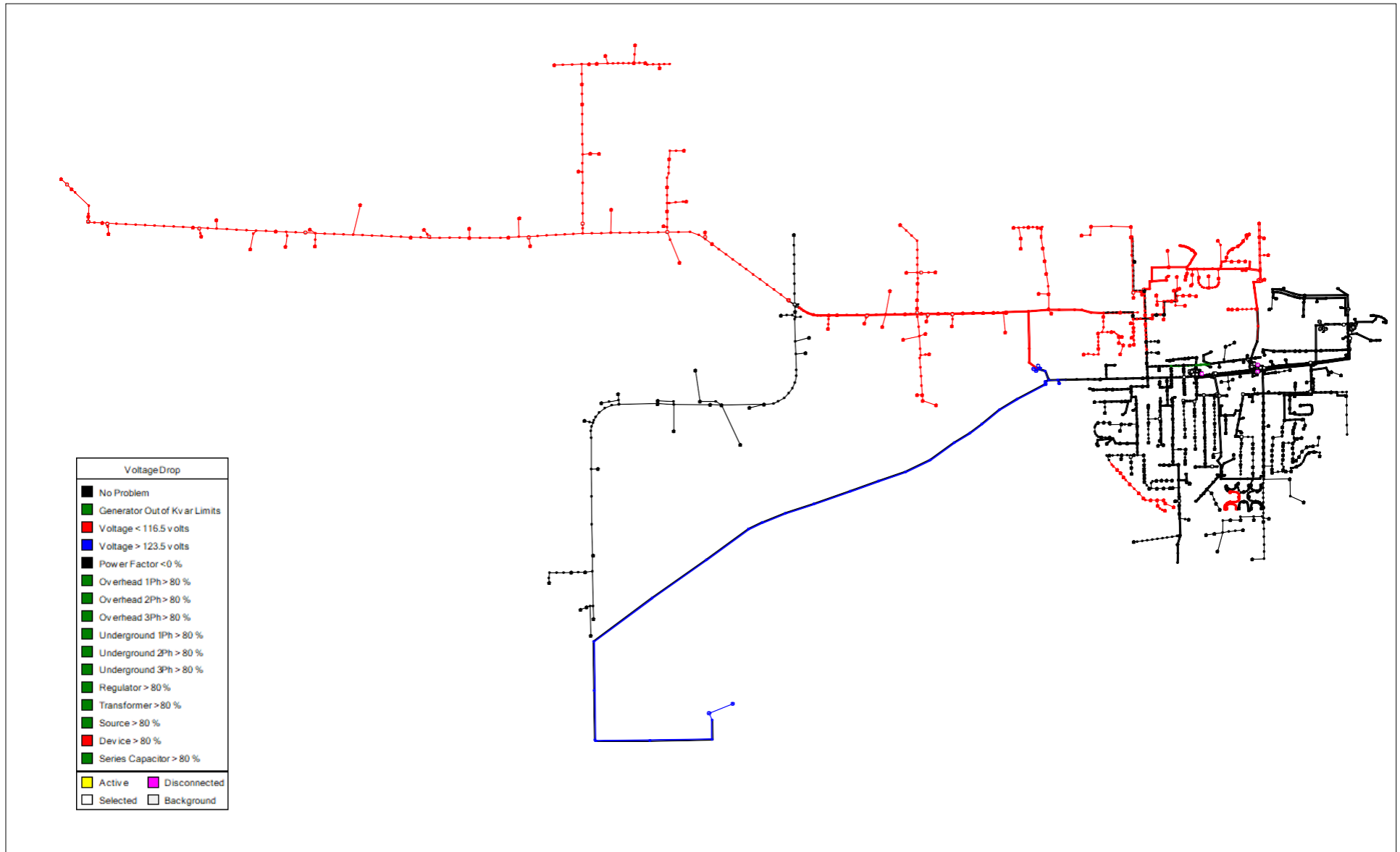
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
1	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
1	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	485	420	470	9.79	9.18	7.79	3,385	3,127	1,065	92.37%
1	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.61	1.56	1.50	861	858	38	99.72%
1	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	484	442	482	0.88	0.80	0.85	10,128	9,641	2,818	95.19%
TOTALS									9.79	9.18	7.79	10,128	9,641	2,818	95.19%

\*\*Xfmr T2 and Xfmr T3 are fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
1	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
1	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
1	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
1	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
1	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.33	9.18	7.79	1,514	1,422	518	93.95%
1	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.79	7.04	6.64	1,313	1,287	261	98.00%
1	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
1	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.18	2.08	3.23	255	121	225	47.36%
1	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	195	177	190	0.44	0.34	0.42	4,048	3,848	1,256	95.06%
1	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
1	Industrial 12.47 kV	12.47 kV Bus	65 Sub	167	143	170	0.88	0.80	0.85	3,454	3,428	419	99.26%
1	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.61	1.56	1.50	564	564	0	100.00%
1	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.





- Mora Municipal Utilities

- DGR Project No.: 427802

2	Scenario Selection
Loss of Power Plant Sub Bus-tie T2	

System Analysis Configuration
Unbalanced V-drop: ExSys-ExLoad

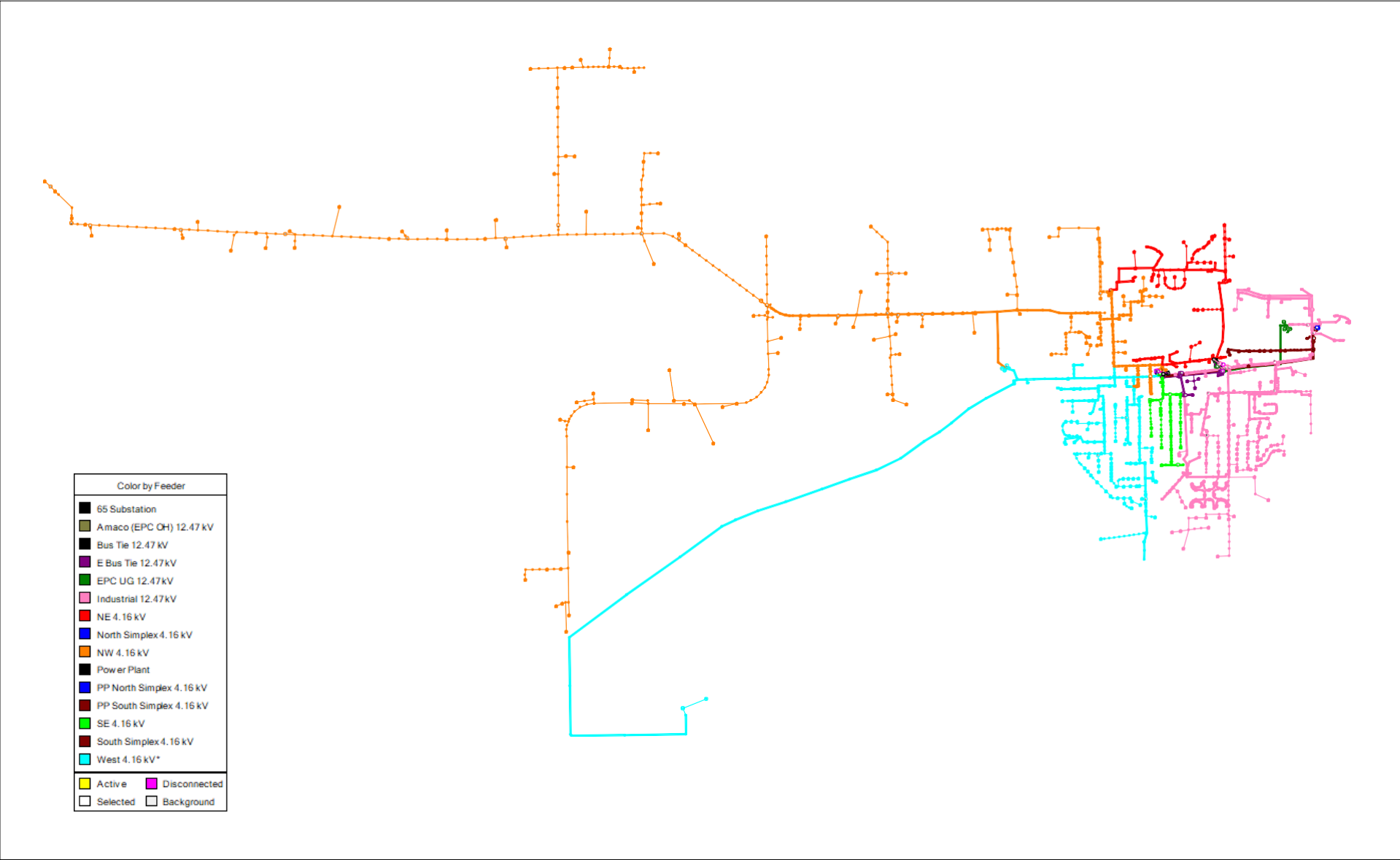
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
2	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	664	554	600	31.99	26.09	21.98	4,308	3,850	1,932	89.38%
2	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	523	467	504	3.32	3.02	3.34	10,767	10,112	3,603	93.92%
						TOTALS			31.99	26.09	21.98	10,767	10,112	3,603	93.92%

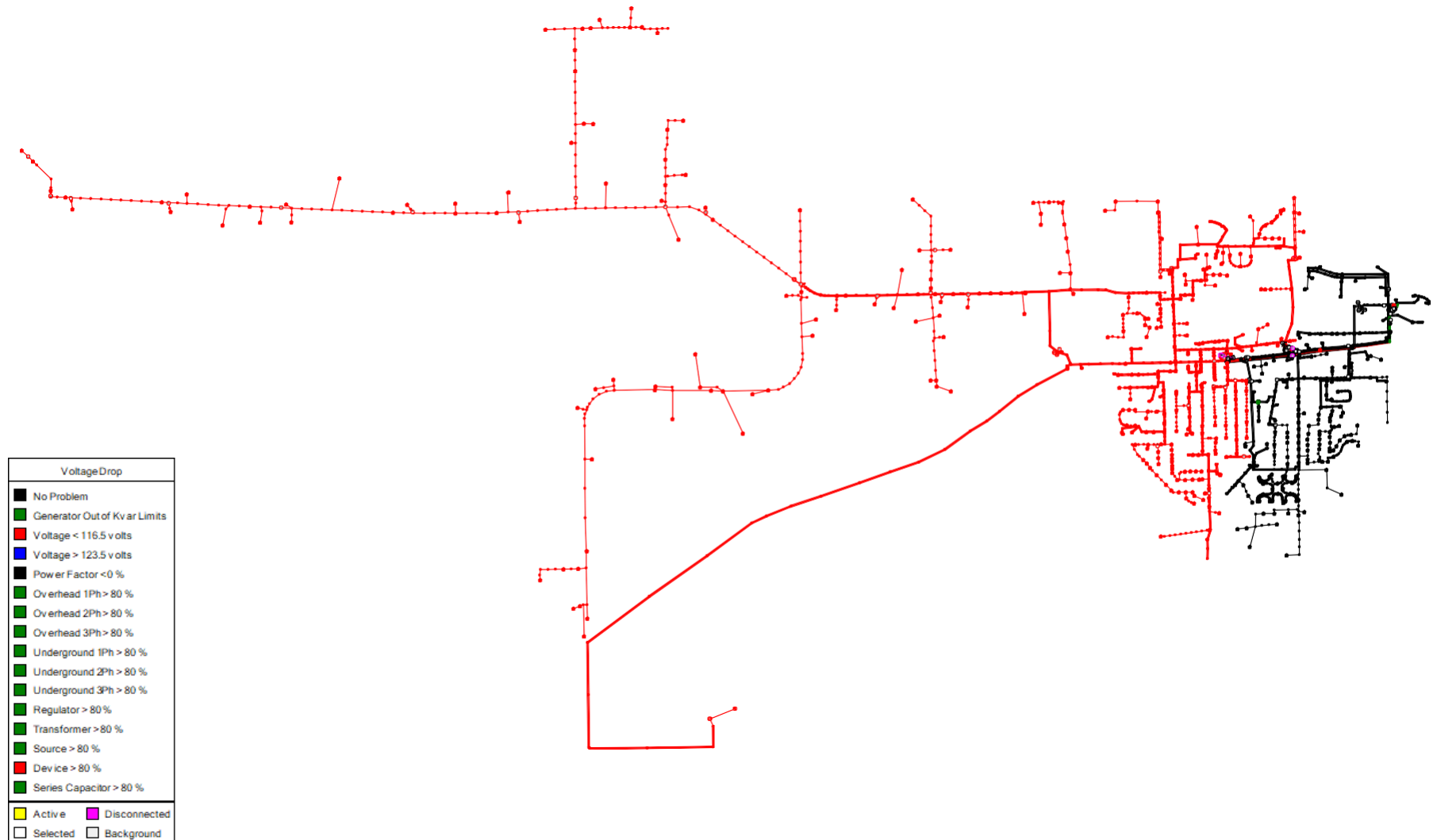
\*\*Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
					AØ	BØ	CØ	AØ	BØ	CØ				
2		Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2		Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2		PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2		PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2		NE 4.16 kV	4.16 kV Bus	Industrial Sub	237	242	280	29.69	26.09	21.98	1,540	1,445	532	93.85%
2		NW 4.16 kV	4.16 kV Bus	Industrial Sub	284	179	183	31.99	23.58	20.92	1,339	1,308	288	97.66%
2		SE 4.16 kV	4.16 kV Bus	Industrial Sub	17	81	47	19.15	16.29	13.63	303	297	61	97.98%
2		West 4.16 kV*	4.16 kV Bus	Industrial Sub	188	182	182	24.25	17.81	17.02	308	140	274	45.50%
2		E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
2		EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
2		Industrial 12.47 kV	12.47 kV Bus	65 Sub	370	309	350	3.32	3.02	3.34	7,423	7,036	2,365	94.79%
2		North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2		South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	638	535	580	18.98	15.48	13.33	4,207	3,850	1,695	91.52%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.







- Mora Municipal Utilities

- DGR Project No.: 427802

3 Scenario Selection

Loss of Industrial Sub T3

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

+3.5 = +3.5 Voltage Drop Violation

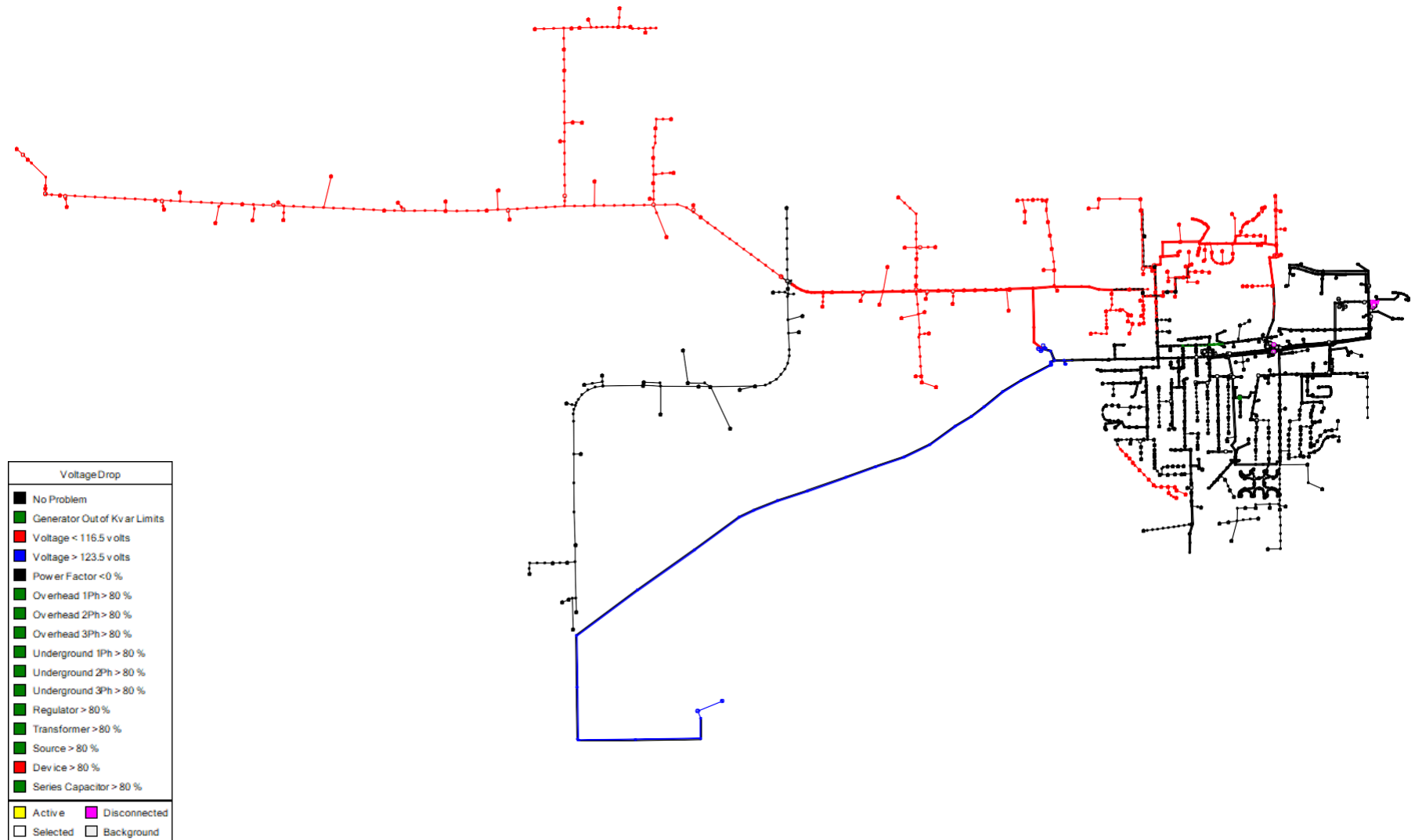
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
3	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	176	155	173	9.77	9.19	7.80	3,684	3,423	1,107	92.91%
3	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	524	463	513	9.77	9.19	7.80	3,684	3,423	1,107	92.91%
3	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
3	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	308	287	310	3.31	3.01	3.34	6,506	6,216	1,606	95.55%
TOTALS									9.77	9.19	7.80	13,874	9,639	3,821	94.15%

\*\*Xfmr T2 is fed by Xfmr T1.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
3	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
3	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
3	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
3	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	40	42	43	1.22	1.53	0.87	299	296	42	98.99%
3	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.96%
3	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.77	7.05	6.64	1,313	1,287	261	98.00%
3	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
3	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
3	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
3	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
3	Industrial 12.47 kV	12.47 kV Bus	65 Sub	154	129	156	3.31	3.01	3.34	3,161	3,140	368	99.32%
3	North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
3	South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.





- Mora Municipal Utilities

- DGR Project No.: 427802

4	Scenario Selection
Loss of 65 Sub T4	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

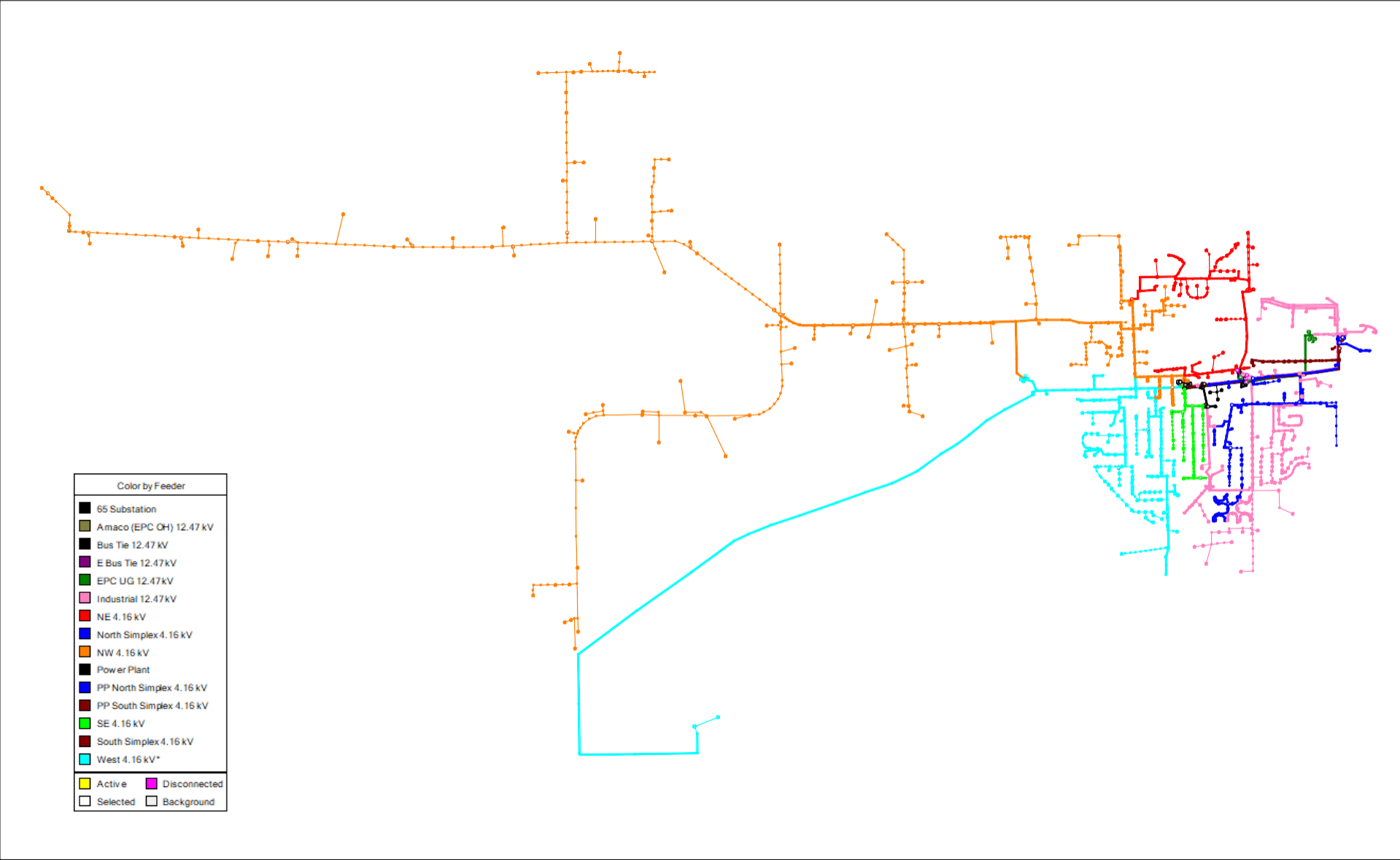
+3.5 = +3.5 Voltage Drop Violation

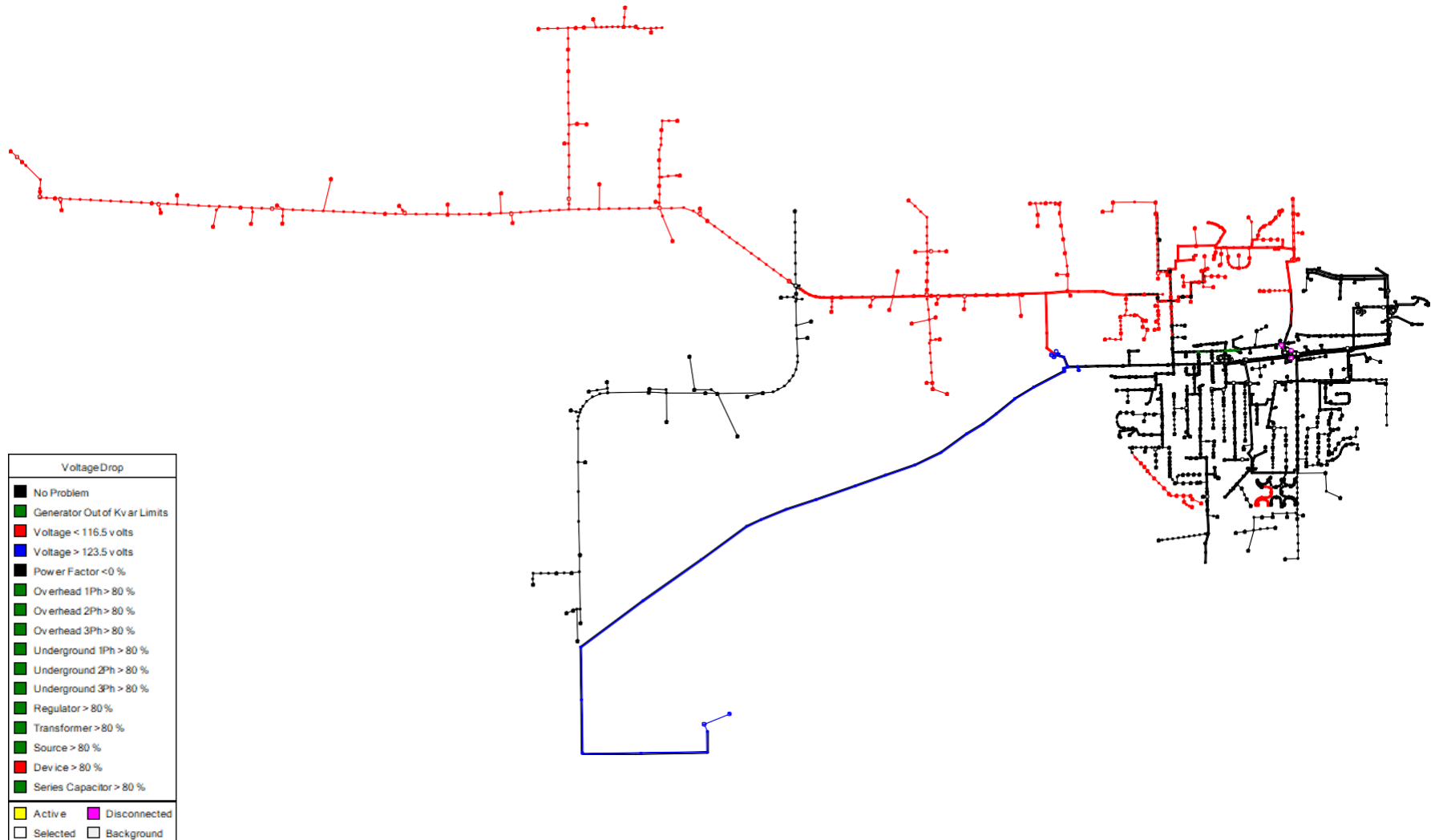
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
4	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	480	438	478	9.79	9.18	7.79	10,125	9,654	2,748	95.34%
4	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	485	420	470	9.79	9.18	7.79	3,385	3,127	1,065	92.37%
4	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.61	1.55	1.50	861	858	38	99.72%
4	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
						TOTALS			9.79	9.18	7.79	10,125	9,654	2,748	94.90%

\*\*Xfmr T2 and Xfmr T3 are fed by Xfmr T1.

Scenario		Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
					AØ	BØ	CØ	AØ	BØ	CØ				
4	Simplex	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
4		Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	318	298	320	0.58	0.41	0.57	6,740	6,526	1,683	96.83%
4		PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
4	Simplex	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
4		NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.33	9.18	7.79	1,514	1,422	518	93.95%
4		NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.79	7.04	6.64	1,313	1,287	261	98.00%
4		SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
4		West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
4		E Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
4		EPC UG 12.47 kV	12.47 kV Bus	Power Plant Sub	123	122	123	1.00	0.76	1.01	2,626	2,364	1,143	90.03%
4	Simplex	Industrial 12.47 kV	12.47 kV Bus	Power Plant Sub	168	144	170	1.46	1.21	1.43	3,454	3,429	420	99.26%
4		North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.61	1.55	1.50	564	564	0	100.00%
4		South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.





- Mora Municipal Utilities

- DGR Project No.: 427802

7	Scenario Selection
Loss of 65 Sub 12.47 kV Bus	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

+3.5 = +3.5 Voltage Drop Violation

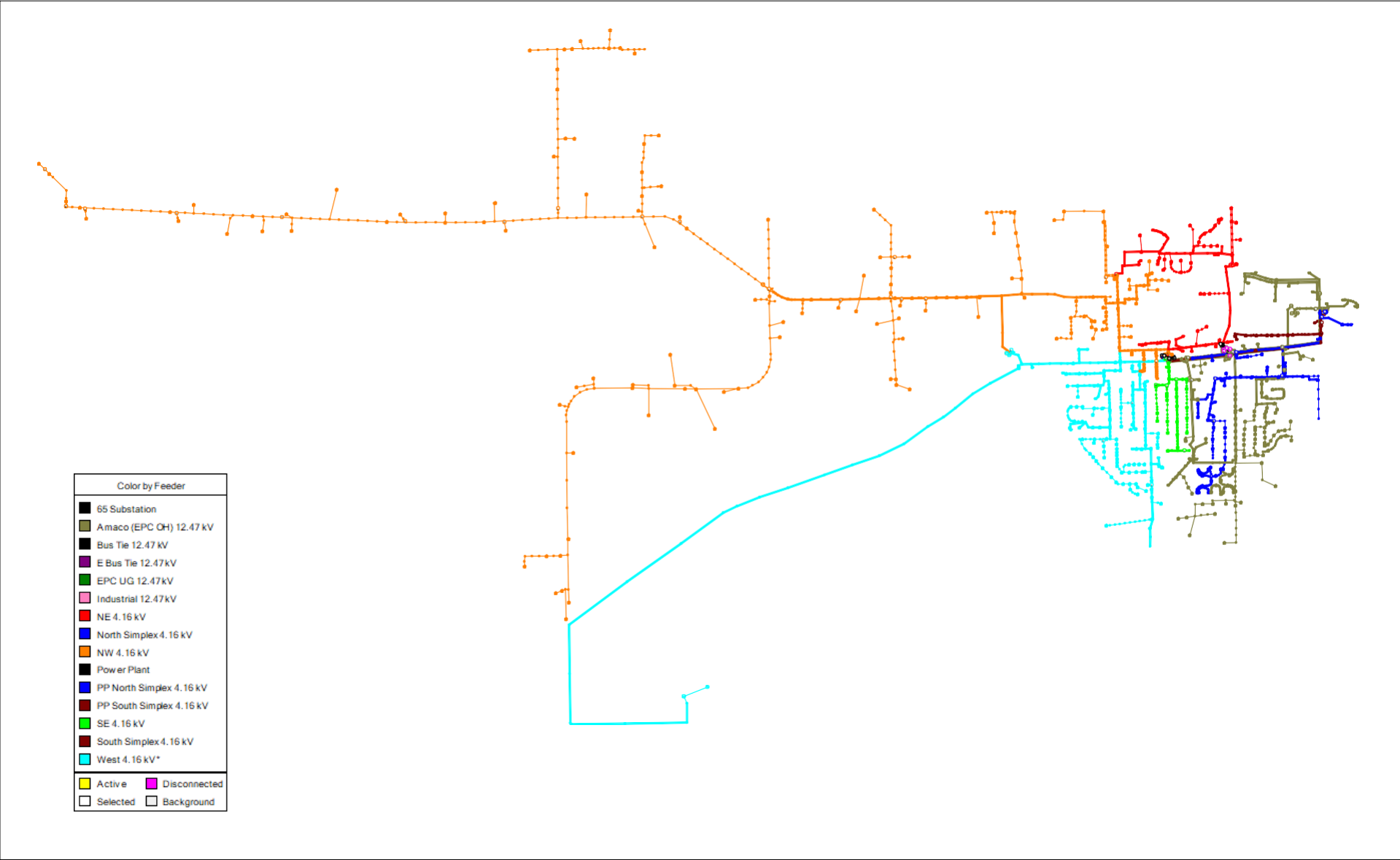
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
7	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	484	443	481	9.78	9.18	7.79	10,199	9,707	2,834	95.18%
7	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	485	420	470	9.78	9.18	7.79	3,385	3,127	1,065	92.37%
7	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.60	1.55	1.51	861	858	38	99.72%
7	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
						TOTALS			9.78	9.18	7.79	10,199	9,707	2,834	95.18%

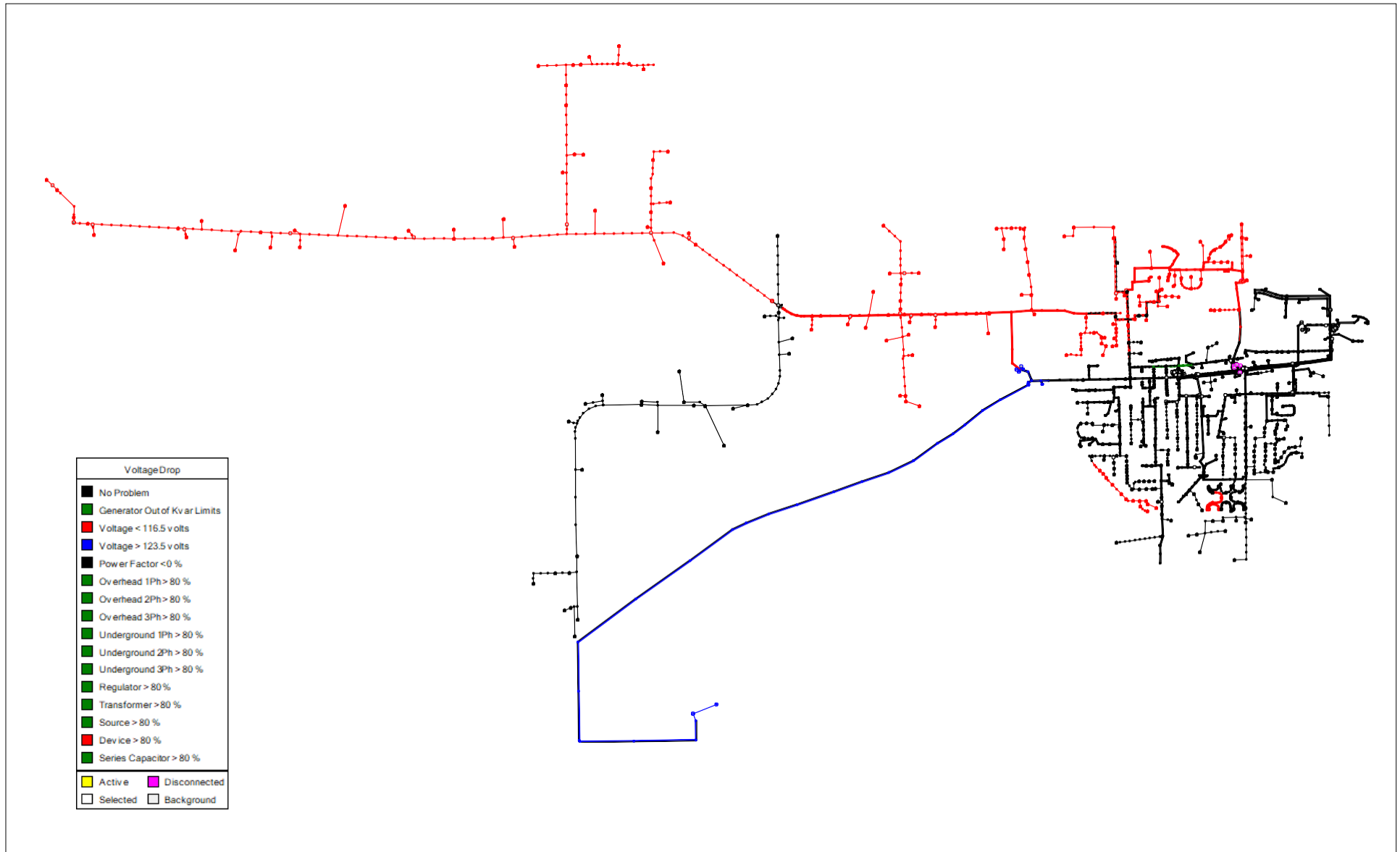
\*\*Xfmr T2 and Xfmr T3 are fed by Xfmr T1.

Scenario		Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
					AØ	BØ	CØ	AØ	BØ	CØ				
7	Simplex	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	322	302	323	2.86	3.04	2.16	6,813	6,580	1,769	96.57%
7		Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7		PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7	Simplex	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7		NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.33	9.18	7.79	1,514	1,422	518	93.95%
7		NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.78	7.04	6.64	1,313	1,287	261	98.00%
7		SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
7		West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
7		E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7		EPC UG 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7	Simplex	Industrial 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7		North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.55	1.51	564	564	(0)	100.00%
7		South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.







- Mora Municipal Utilities

- DGR Project No.: 427802

8	Scenario Selection
Loss of 4.16 kV West Feeder	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

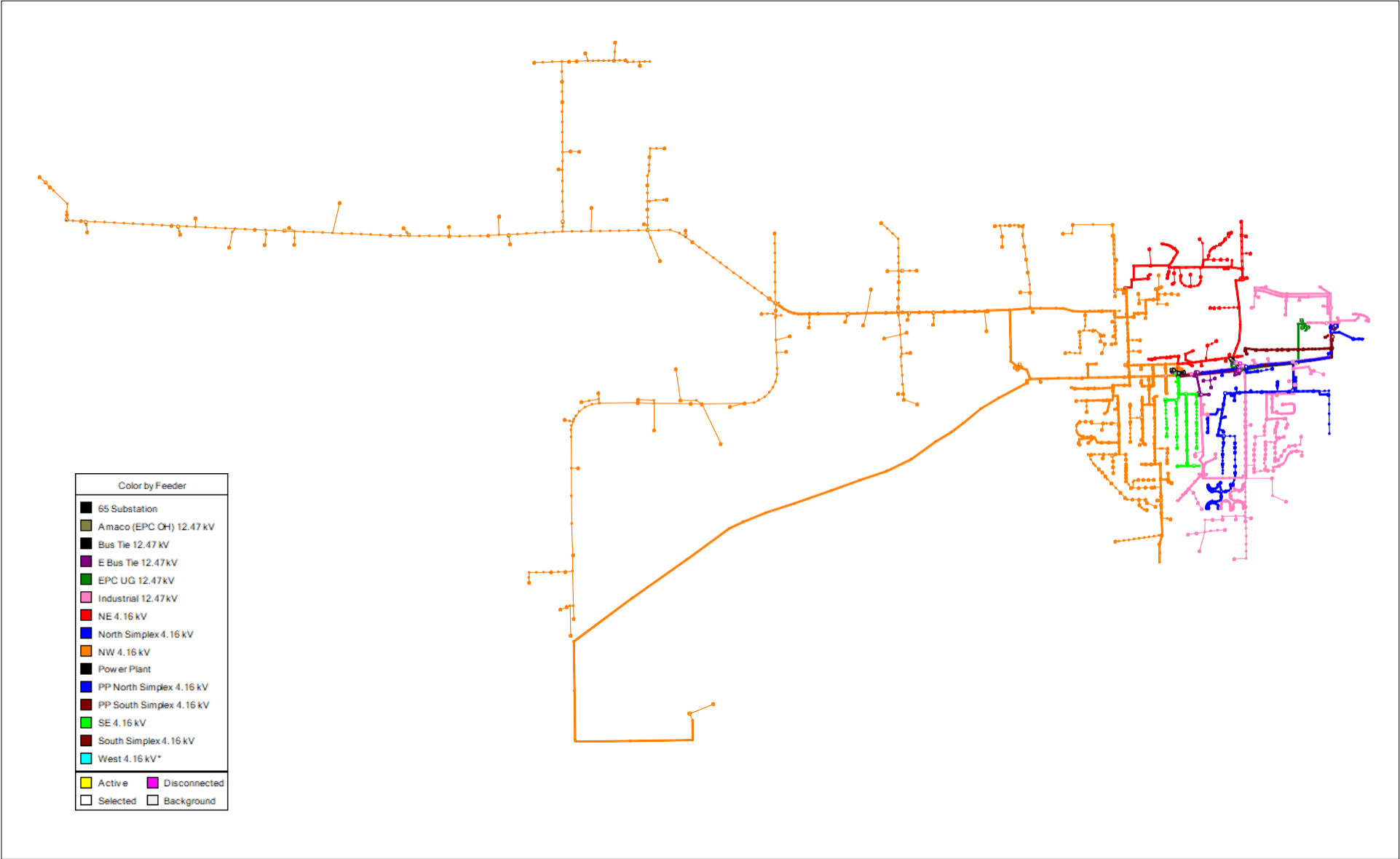
+3.5 = +3.5 Voltage Drop Violation

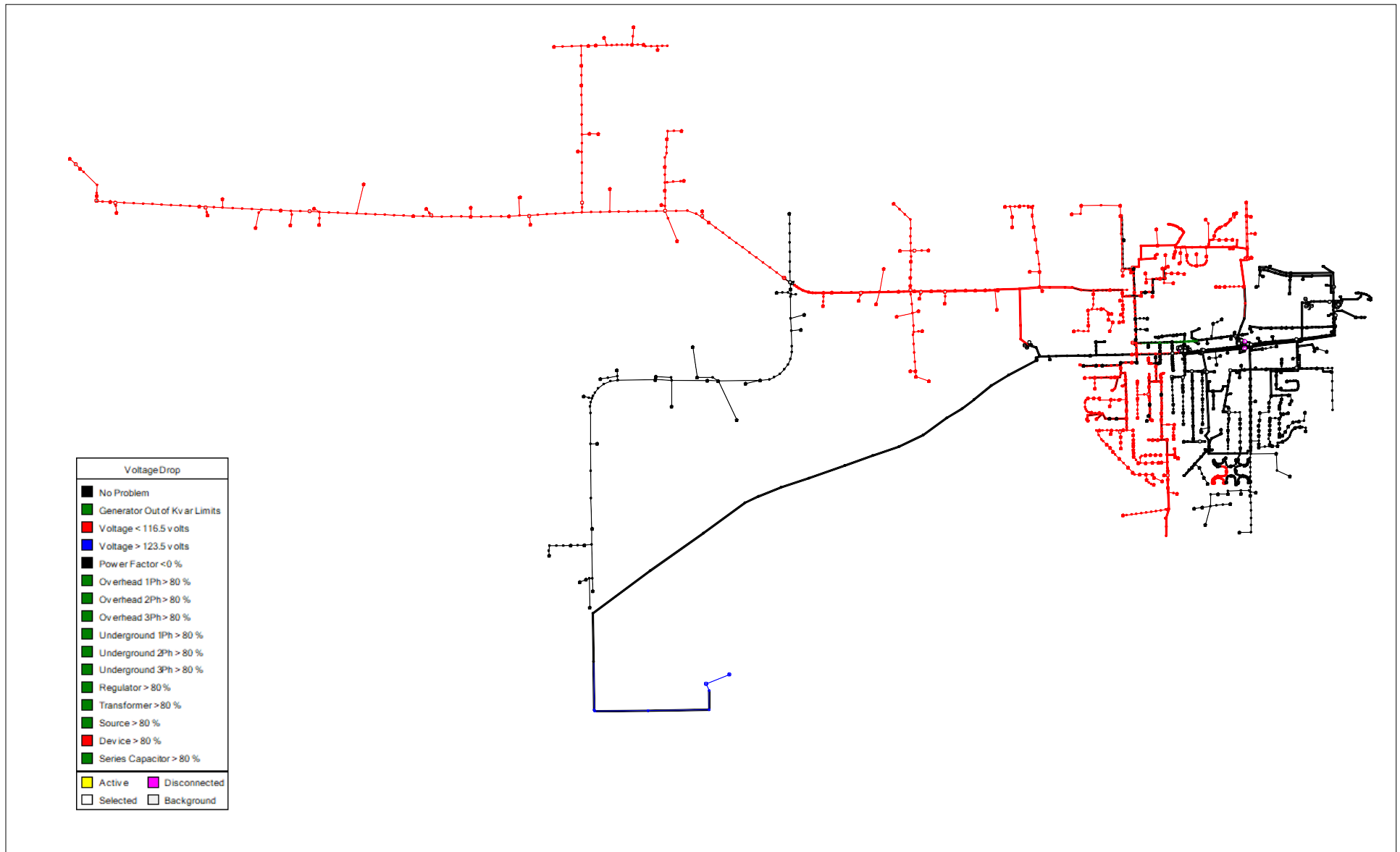
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
8	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	163	141	158	10.53	9.19	7.82	3,321	3,138	1,078	94.49%
8	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	485	420	470	10.53	9.19	7.82	3,321	3,138	1,078	94.49%
8	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.60	1.56	1.50	861	858	38	99.72%
8	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	321	301	323	0.88	0.80	0.85	6,799	6,505	1,658	95.68%
TOTALS									10.53	9.19	7.82	10,119	9,643	2,736	95.37%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
					AØ	BØ	CØ	AØ	BØ	CØ				
8		Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
8		Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
8		PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
8		PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
8		NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.95%
8		NW 4.16 kV	4.16 kV Bus	Power Plant Sub	280	162	203	10.53	6.67	7.82	1,504	1,418	499	94.33%
8		SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
8		West 4.16 kV*	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
8		E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
8		EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
8		Industrial 12.47 kV	12.47 kV Bus	65 Sub	167	143	170	0.88	0.80	0.85	3,454	3,428	419	99.26%
8		North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.56	1.50	564	564	(0)	100.00%
8		South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line on the West feeder.





- Mora Municipal Utilities

- DGR Project No.: 427802

9	Scenario Selection
Loss of 4.16 kV Southeast Feeder	

System Analysis Configuration
Unbalanced V-drop: ExSys-ExLoad

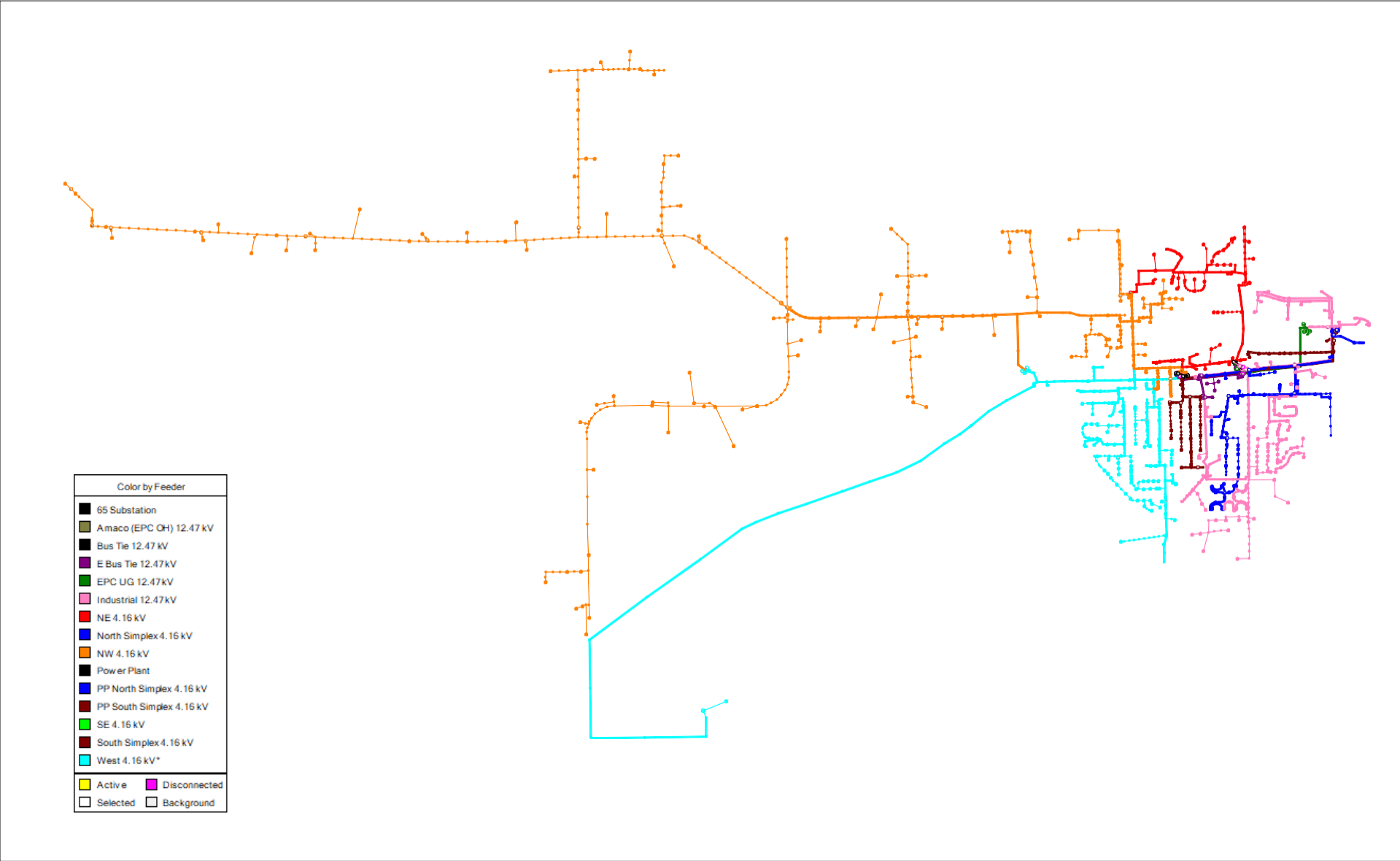
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

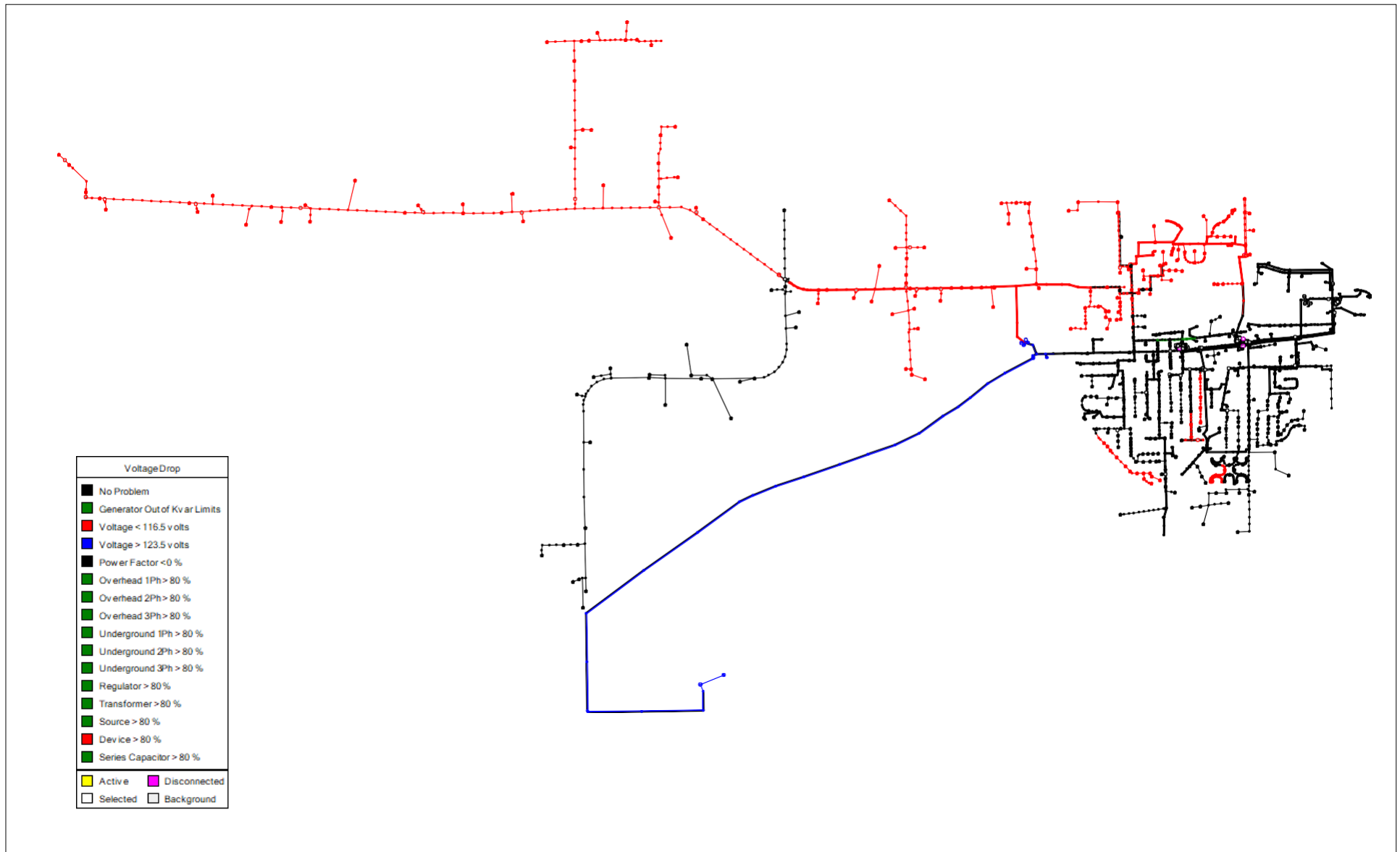
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
9	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	158	118	144	9.79	9.19	7.78	3,082	2,830	1,005	91.82%
9	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	485	420	470	9.79	9.19	7.78	3,082	2,830	1,005	91.82%
9	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	133	184	169	3.59	3.71	1.51	1,168	1,159	104	99.23%
9	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	325	325	338	0.88	0.80	0.86	7,109	6,808	1,735	95.77%
TOTALS									9.79	9.19	7.78	10,191	9,638	2,739	94.57%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
9	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
9	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
9	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
9	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
9	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.33	9.19	7.78	1,514	1,422	518	93.96%
9	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.79	7.05	6.62	1,313	1,287	261	98.00%
9	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
9	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.22	255	121	225	47.36%
9	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
9	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
9	Industrial 12.47 kV	12.47 kV Bus	65 Sub	172	168	184	0.88	0.80	0.86	3,764	3,731	496	99.13%
9	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.59	1.56	1.51	564	564	(0)	100.00%
9	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	53	114	84	0.43	3.71	0.36	604	595	104	98.51%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.







- Mora Municipal Utilities

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10	Scenario Selection
Loss of 4.16 kV Northwest Feeder	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

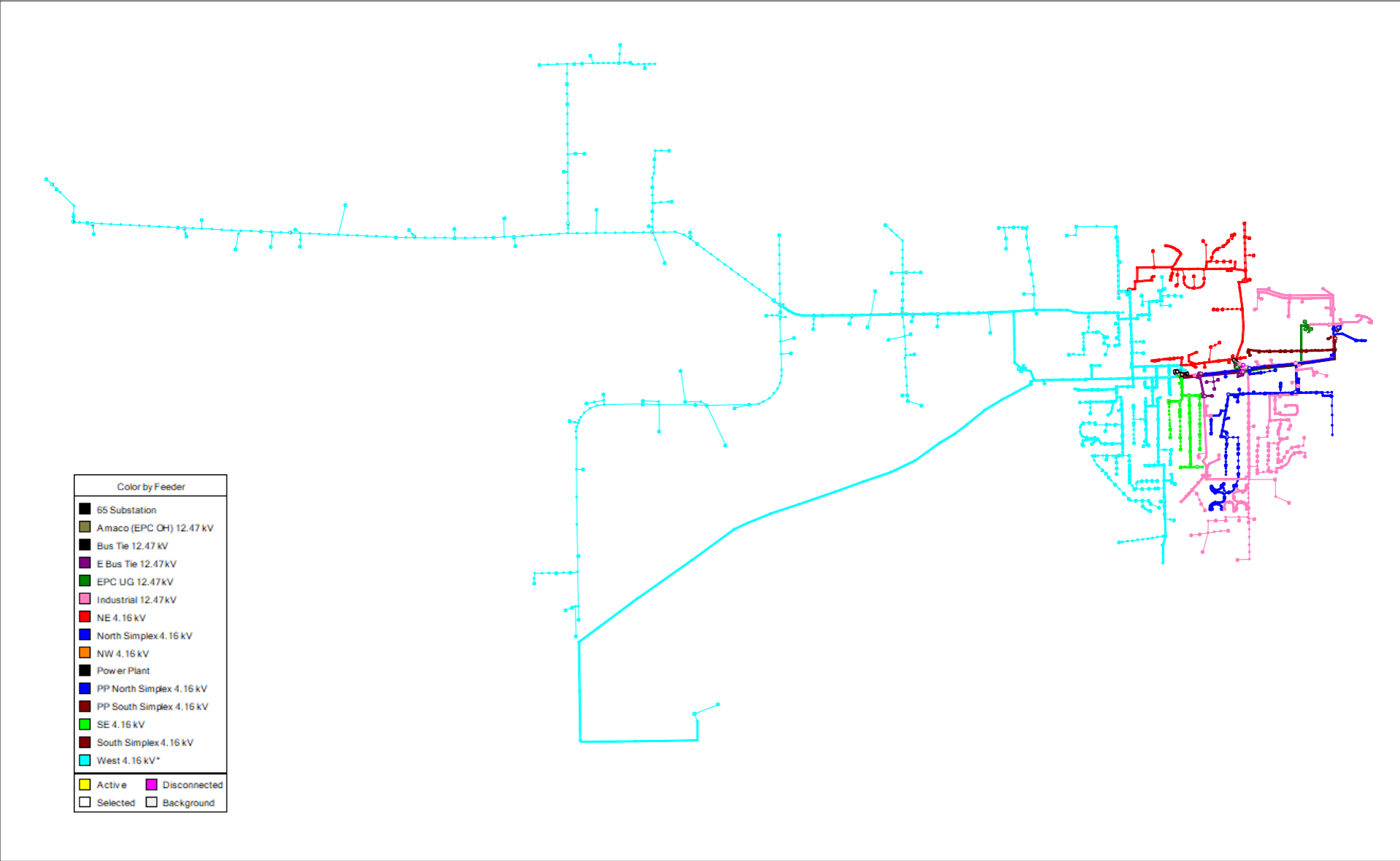
+3.5 = +3.5 Voltage Drop Violation

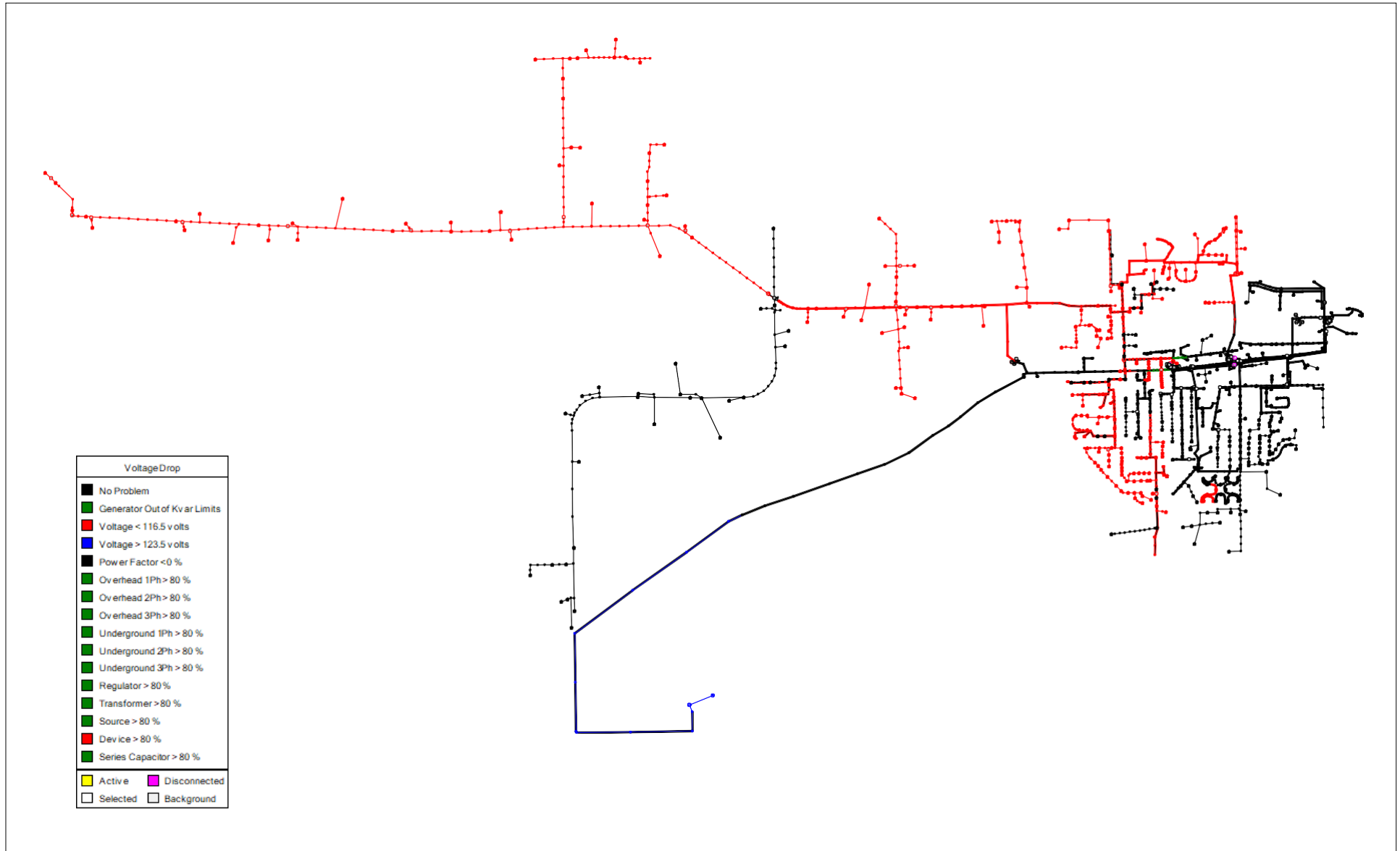
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
10	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	165	141	160	11.70	9.19	8.38	3,329	3,145	1,083	94.46%
10	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	491	419	474	11.70	9.19	8.38	3,329	3,145	1,083	94.46%
10	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.60	1.56	1.50	861	858	38	99.72%
10	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	321	301	323	0.88	0.80	0.85	6,799	6,505	1,658	95.68%
TOTALS									11.70	9.19	8.38	10,127	9,649	2,741	95.28%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
10	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
10	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
10	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
10	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
10	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.96%
10	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
10	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
10	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	233	162	204	11.70	6.33	8.38	1,512	1,425	505	94.26%
10	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
10	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
10	Industrial 12.47 kV	12.47 kV Bus	65 Sub	167	143	170	0.88	0.80	0.85	3,454	3,428	419	99.26%
10	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.56	1.50	564	564	(0)	100.00%
10	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located at the substation feeder breaker.





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11	Scenario Selection
Loss of 4.16 kV Northeast Feeder	

System Analysis Configuration
Unbalanced V-drop: ExSys-ExLoad

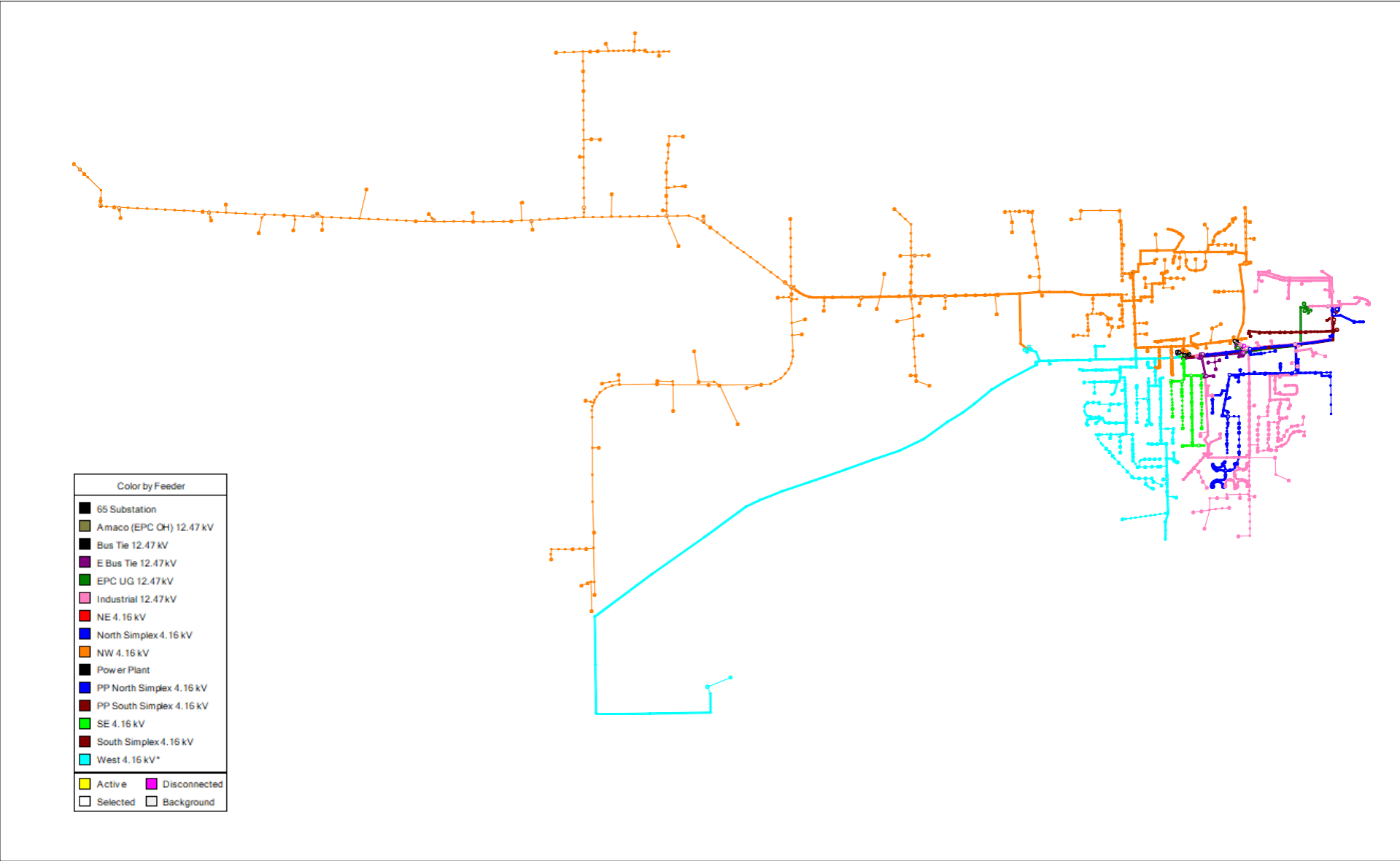
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

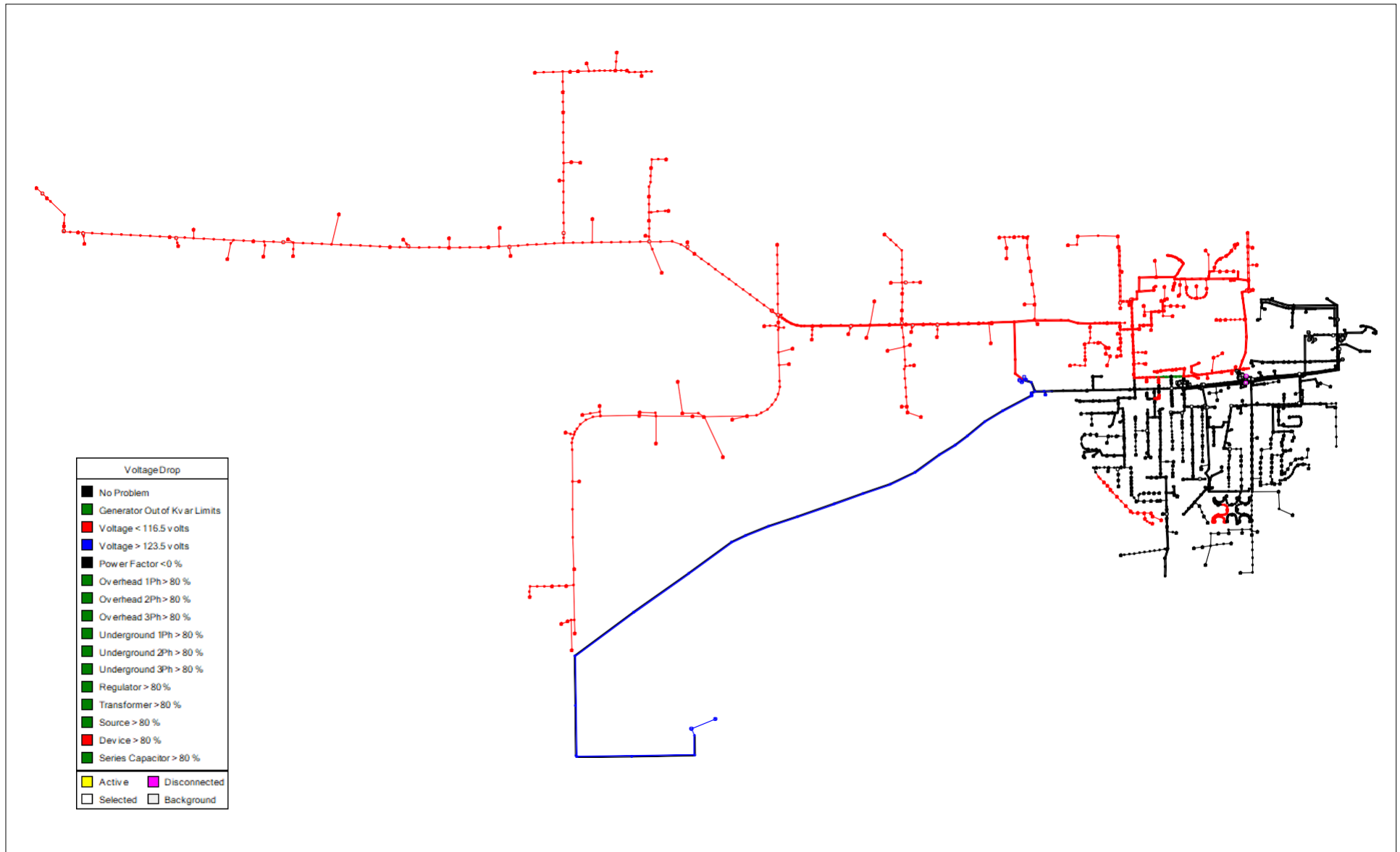
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
11	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	178	154	175	24.41	22.31	26.87	3,686	3,405	1,213	92.37%
11	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	527	457	520	24.41	22.31	26.87	3,686	3,405	1,213	92.37%
11	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.60	1.56	1.50	861	858	38	99.72%
11	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	321	301	323	0.88	0.80	0.85	6,799	6,505	1,658	95.68%
TOTALS									24.41	22.31	26.87	10,484	9,909	2,871	94.52%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
11	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
11	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
11	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
11	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
11	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
11	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	457	396	439	24.41	22.31	26.87	3,127	2,987	928	95.50%
11	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
11	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
11	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
11	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
11	Industrial 12.47 kV	12.47 kV Bus	65 Sub	167	143	170	0.88	0.80	0.85	3,454	3,428	419	99.26%
11	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.56	1.50	564	564	(0)	100.00%
11	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.





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12	Scenario Selection
Loss of 12.47 kV Amaco Feeder	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

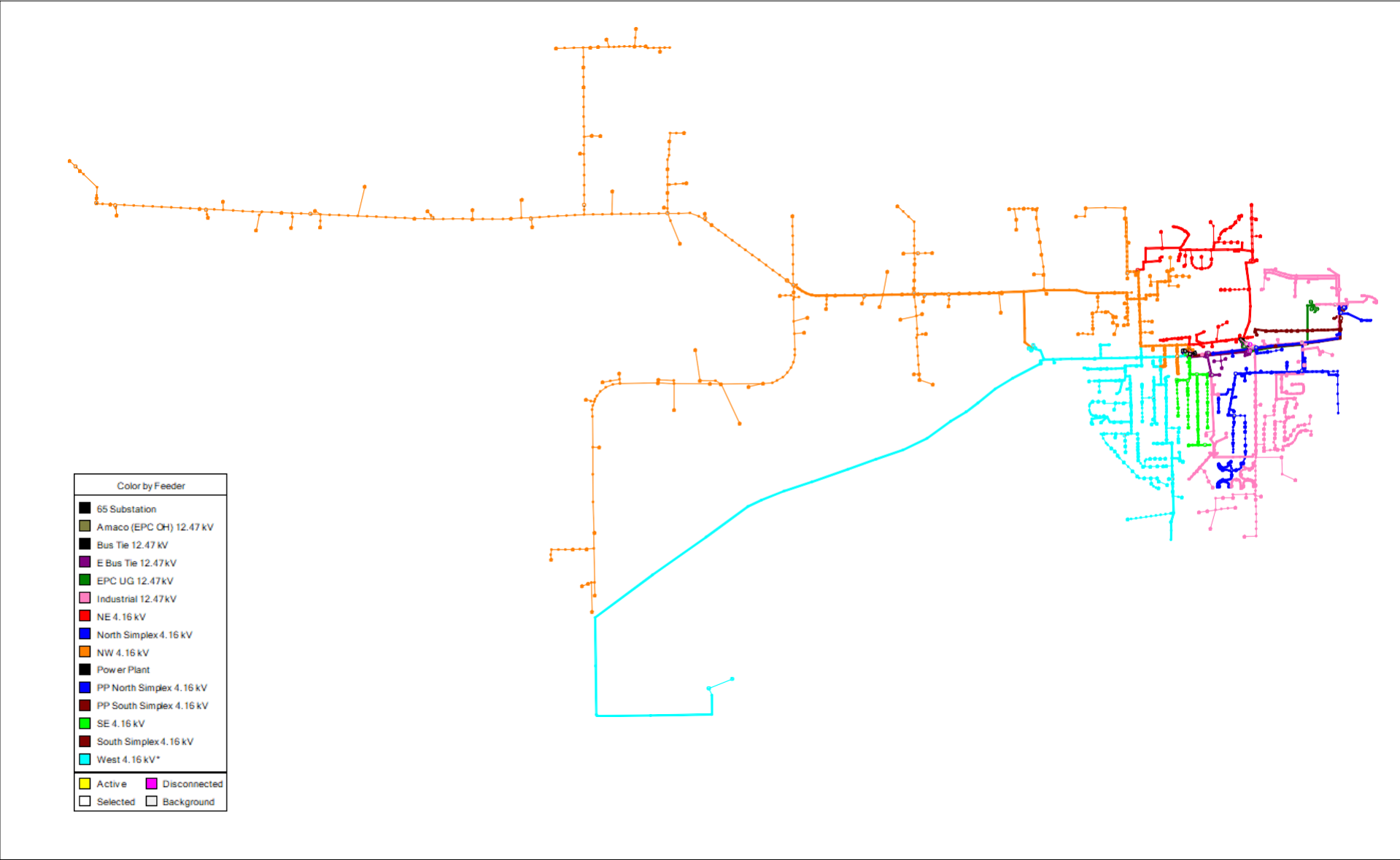
+3.5 = +3.5 Voltage Drop Violation

Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
12	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	161	140	157	9.77	9.19	7.80	3,385	3,127	1,065	92.37%
12	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	484	421	470	9.77	9.19	7.80	3,385	3,127	1,065	92.37%
12	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.60	1.56	1.50	861	858	38	99.72%
12	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	321	301	323	0.88	0.80	0.85	6,799	6,505	1,658	95.68%
TOTALS									9.77	9.19	7.80	10,184	9,632	2,723	94.58%

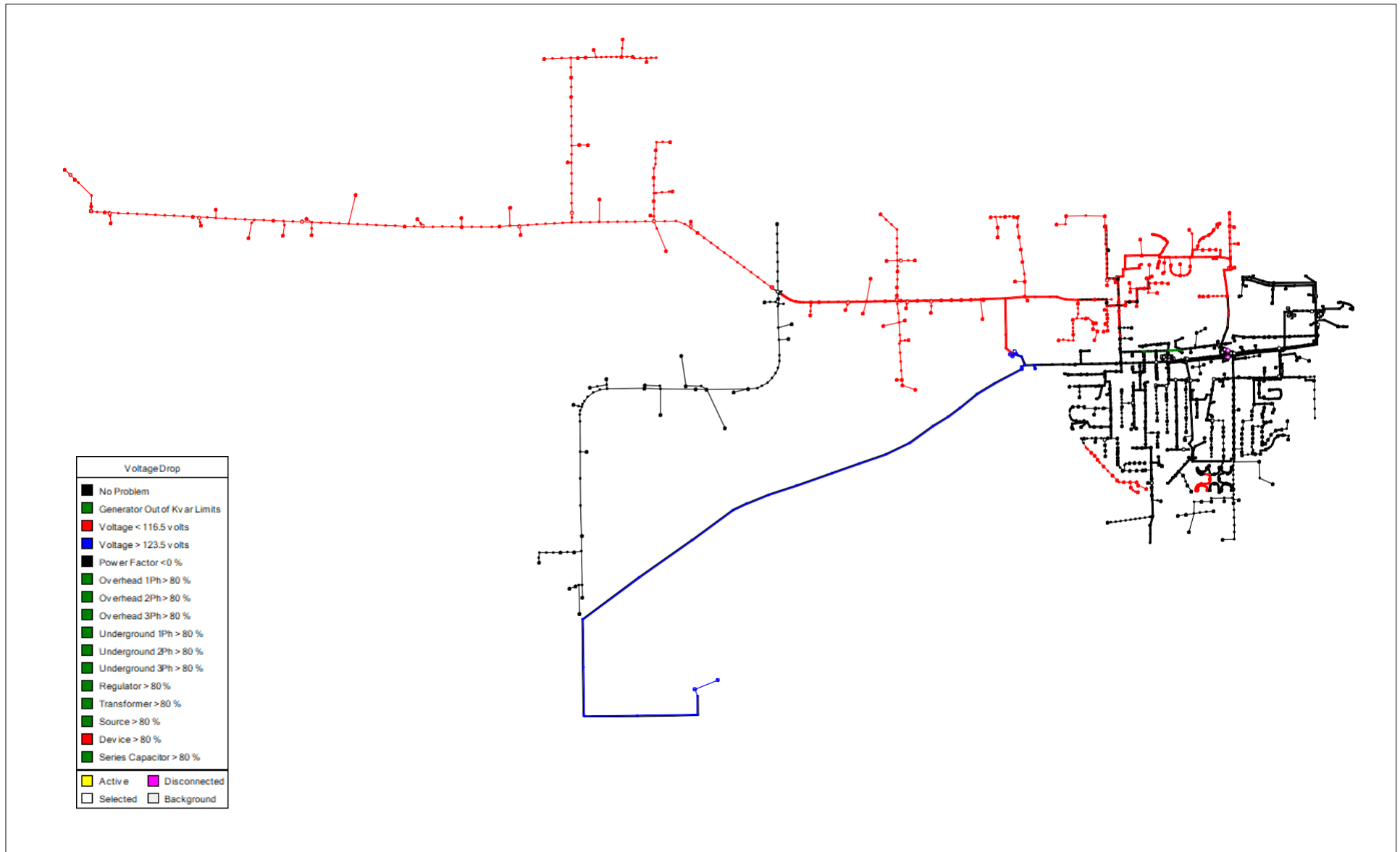
\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
12	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
12	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
12	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
12	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
12	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.95%
12	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.77	7.05	6.64	1,313	1,287	261	98.00%
12	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
12	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
12	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
12	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
12	Industrial 12.47 kV	12.47 kV Bus	65 Sub	167	143	170	0.88	0.80	0.85	3,454	3,428	419	99.26%
12	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.56	1.50	564	564	(0)	100.00%
12	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transfor







- Mora Municipal Utilities

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13	Scenario Selection
Loss of 12.47 kV 65 Sub Bus Tie	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

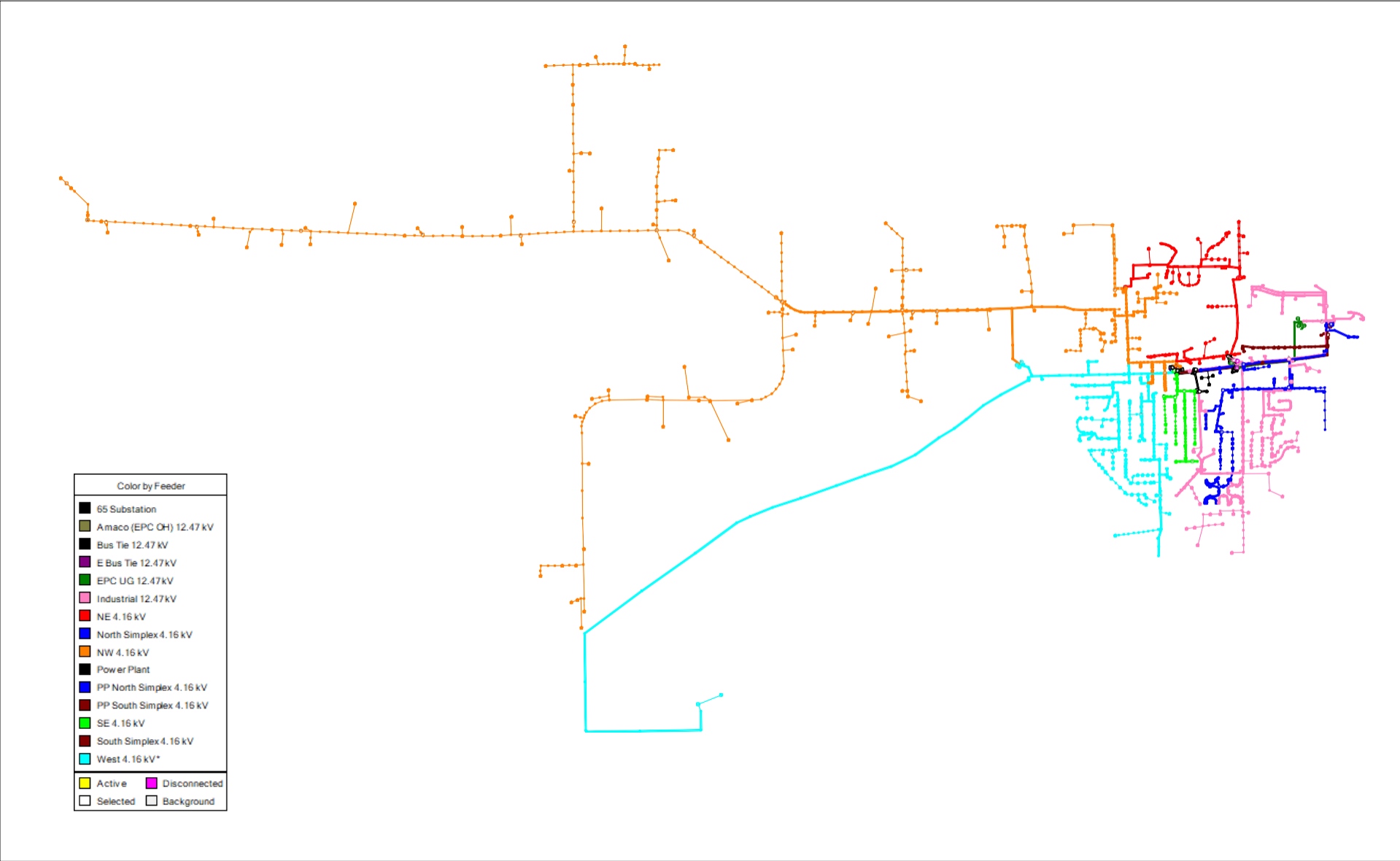
+3.5 = +3.5 Voltage Drop Violation

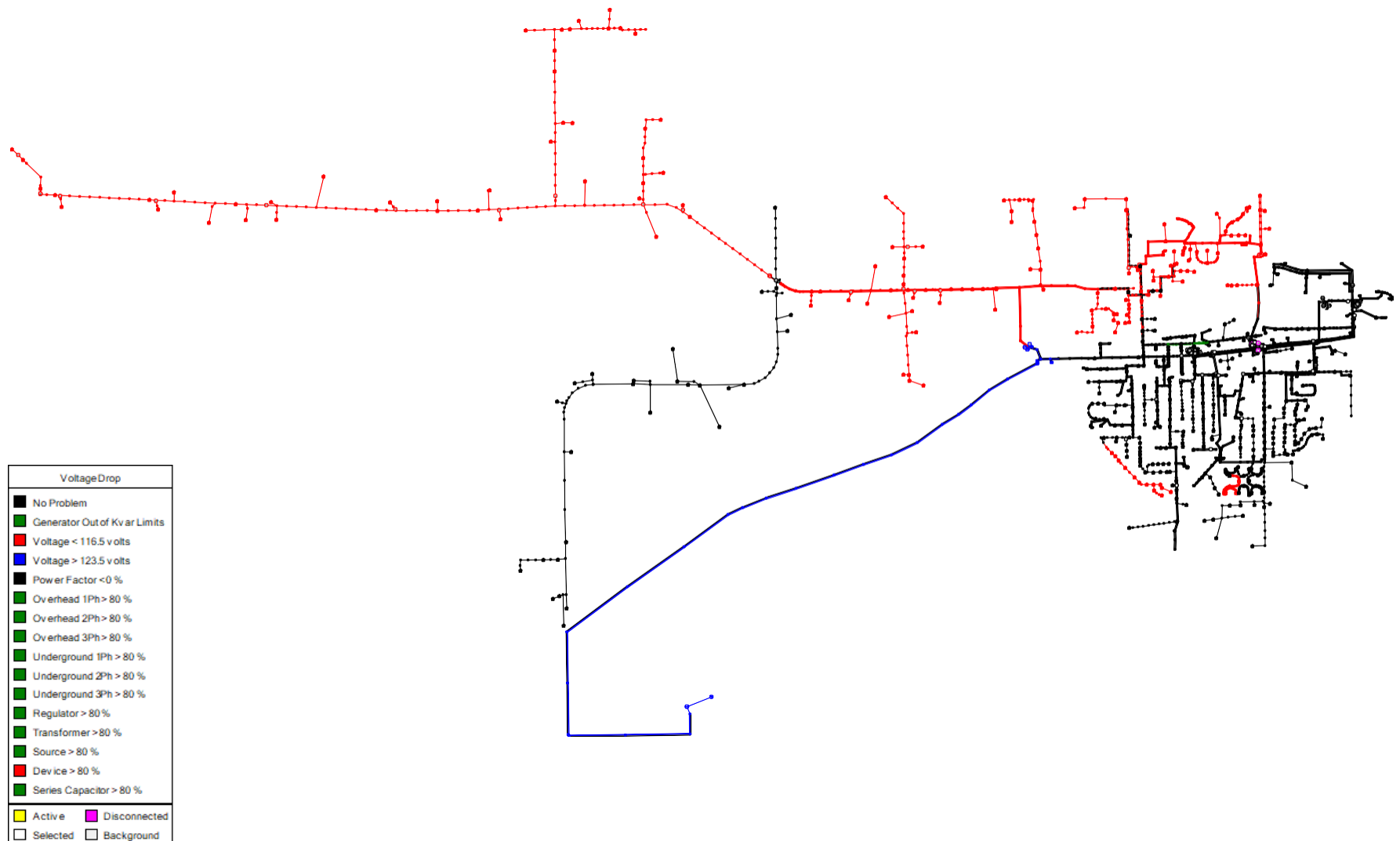
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
13	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	194	177	190	9.77	9.19	7.80	4,104	3,839	1,160	93.55%
13	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	484	421	471	9.77	9.19	7.80	3,385	3,127	1,065	92.37%
13	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.60	1.56	1.50	861	858	38	99.72%
13	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	289	265	291	0.88	0.80	0.85	6,080	5,793	1,562	95.27%
TOTALS									9.77	9.19	7.80	10,184	9,632	2,722	94.58%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
13	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
13	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	32	36	32	0.08	0.09	0.07	718	712	96	99.11%
13	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
13	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
13	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.96%
13	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.77	7.05	6.64	1,313	1,287	261	98.00%
13	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
13	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.09	3.23	255	121	225	47.36%
13	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
13	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
13	Industrial 12.47 kV	12.47 kV Bus	65 Sub	167	143	170	0.88	0.80	0.85	3,454	3,428	419	99.26%
13	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.56	1.50	564	564	0	100.00%
13	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.





- Mora Municipal Utilities

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14	Scenario Selection
Loss of 12.47 kV EPC Feeder	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

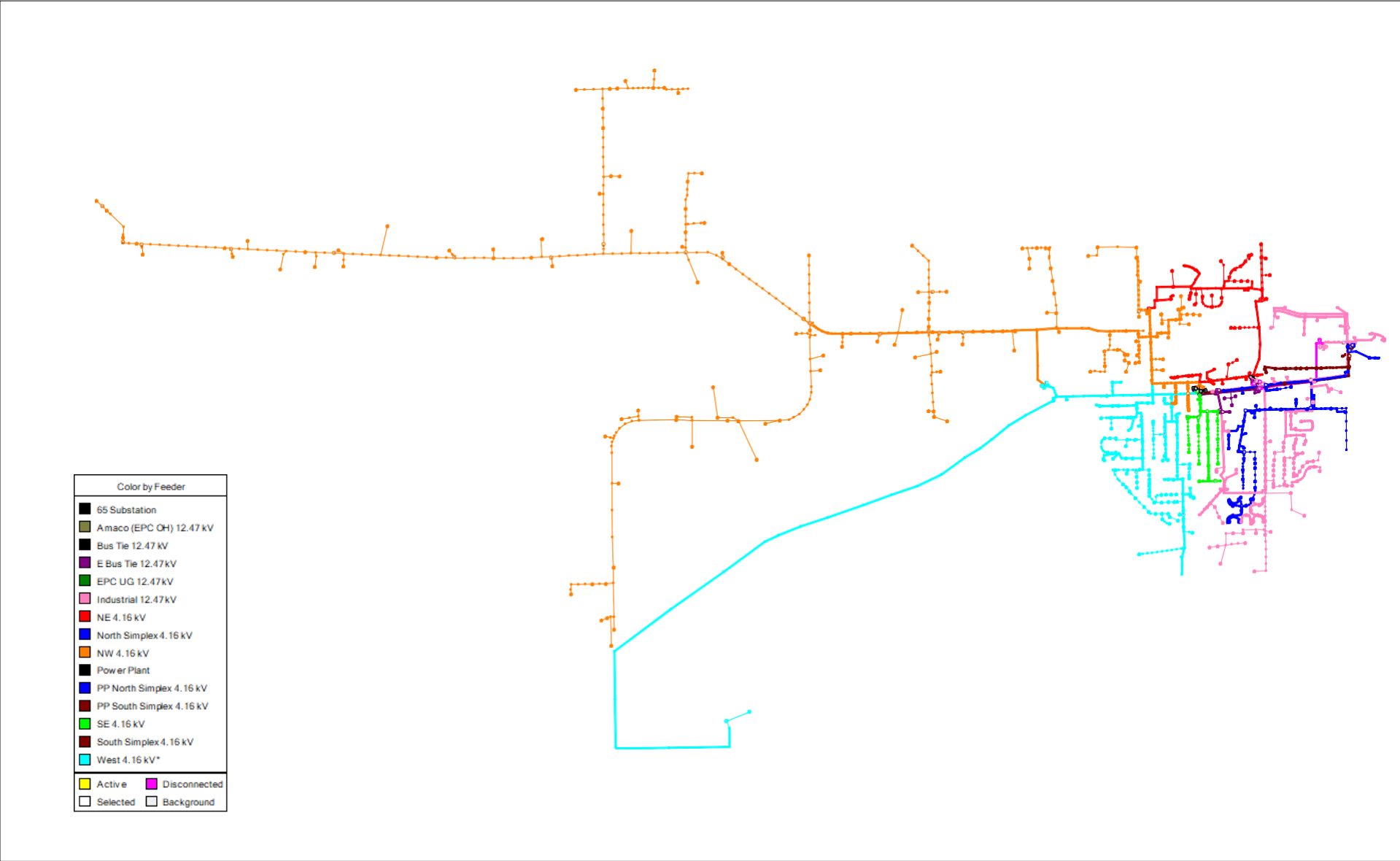
+3.5 = +3.5 Voltage Drop Violation

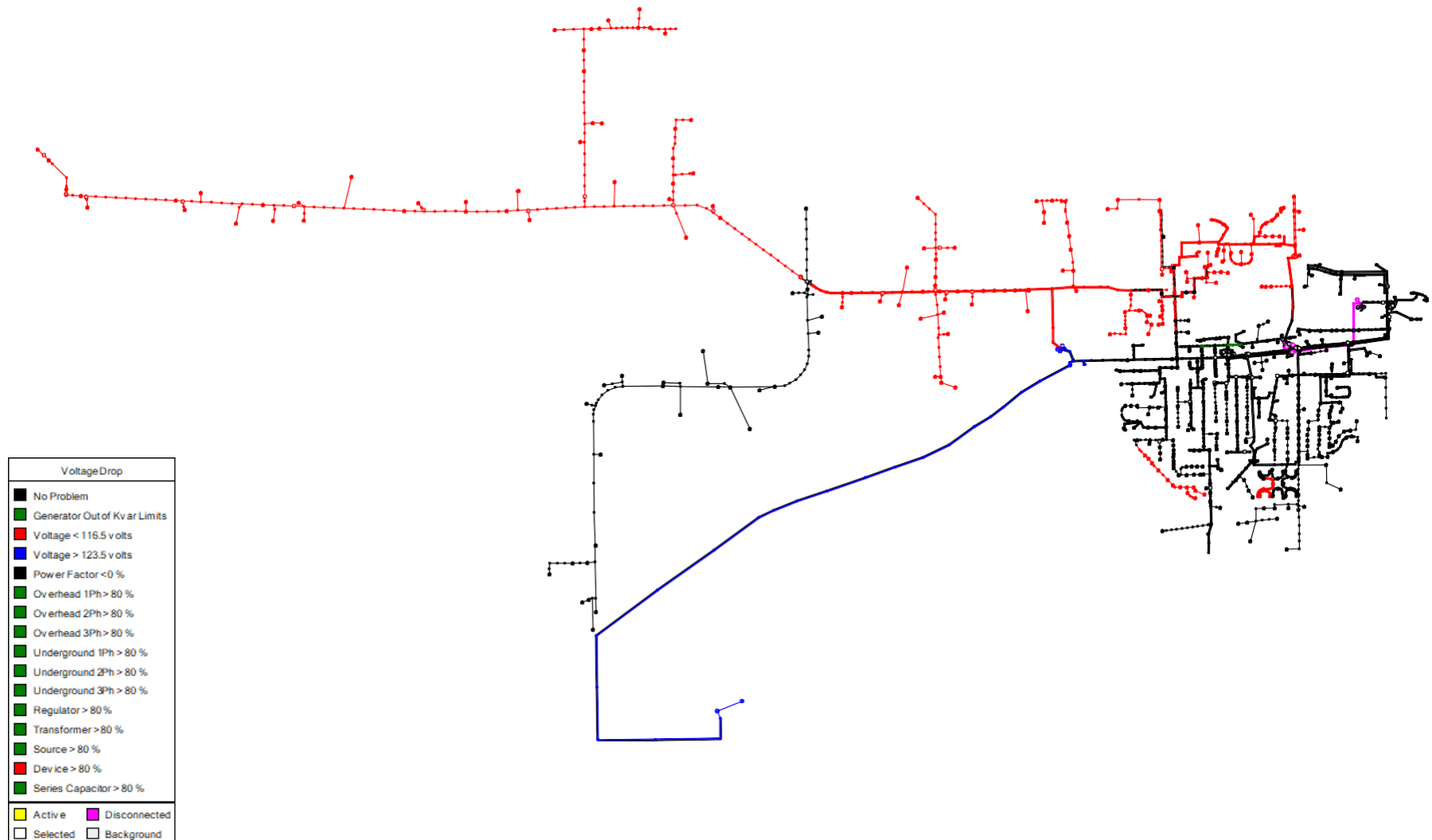
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
14	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	161	140	157	9.77	9.19	7.80	3,385	3,127	1,065	92.37%
14	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	484	421	470	9.77	9.19	7.80	3,385	3,127	1,065	92.37%
14	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.60	1.55	1.50	861	858	38	99.72%
14	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	318	299	321	1.49	1.56	1.16	6,754	6,528	1,710	96.65%
						TOTALS			9.77	9.19	7.80	10,140	9,655	2,775	95.22%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
14	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
14	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
14	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
14	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
14	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.96%
14	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.77	7.05	6.64	1,313	1,287	261	98.00%
14	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
14	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
14	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
14	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
14	Industrial 12.47 kV	12.47 kV Bus	65 Sub	287	263	289	1.49	1.56	1.16	6,036	5,816	1,615	96.36%
14	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.55	1.50	564	564	(0)	100.00%
14	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.





- Mora Municipal Utilities

- DGR Project No.: 427802

15	Scenario Selection
Loss of 12.47 kV Industrial Feeder	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

+3.5 = +3.5 Voltage Drop Violation

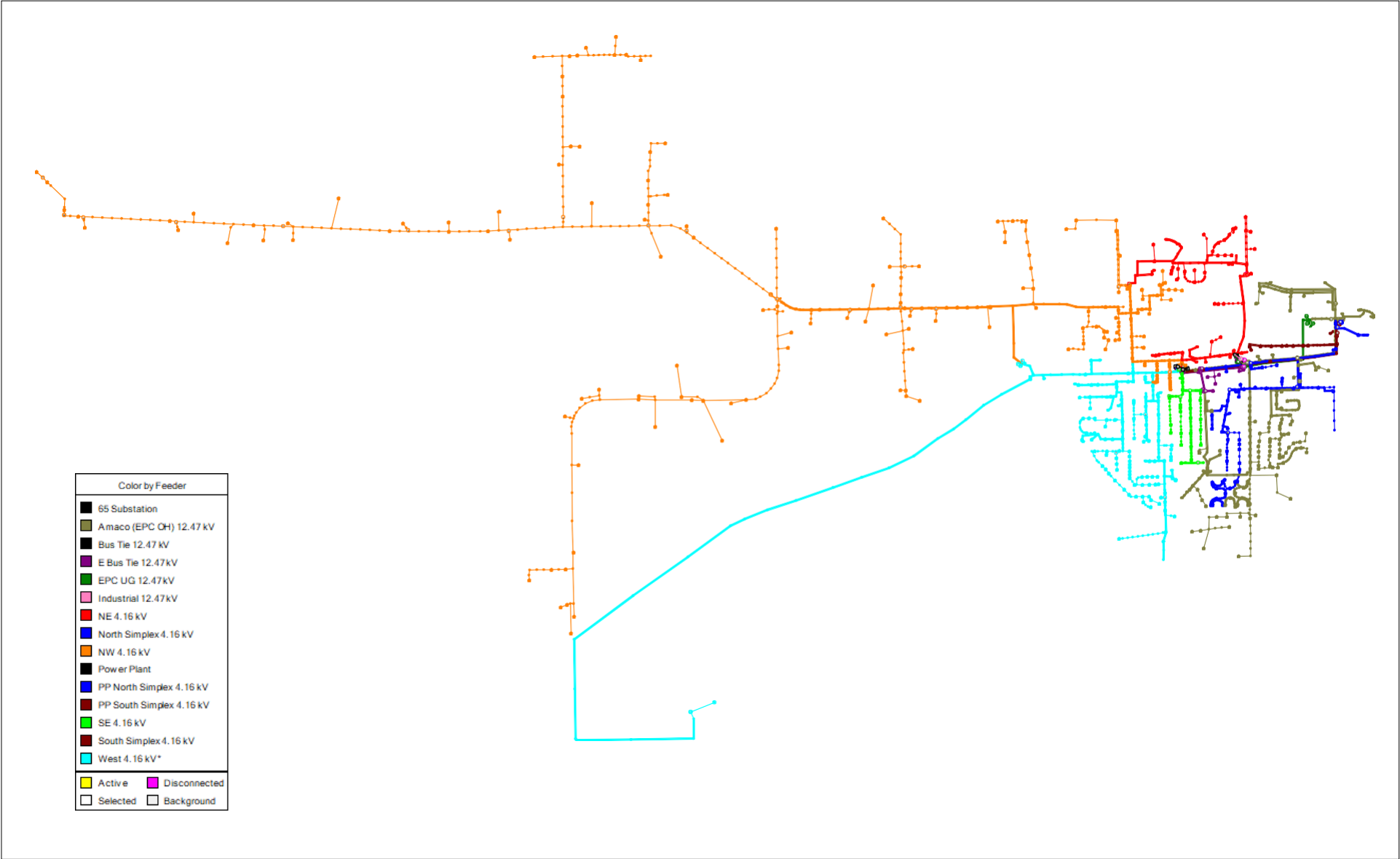
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
15	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	329	284	327	9.79	9.18	7.79	6,851	6,566	1,499	95.83%
15	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	484	421	470	9.79	9.18	7.79	3,385	3,127	1,065	92.37%
15	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.61	1.55	1.50	861	858	38	99.72%
15	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	154	158	154	0.42	0.35	0.43	3,345	3,076	1,239	91.98%
						TOTALS			9.79	9.18	7.79	10,196	9,642	2,737	94.57%

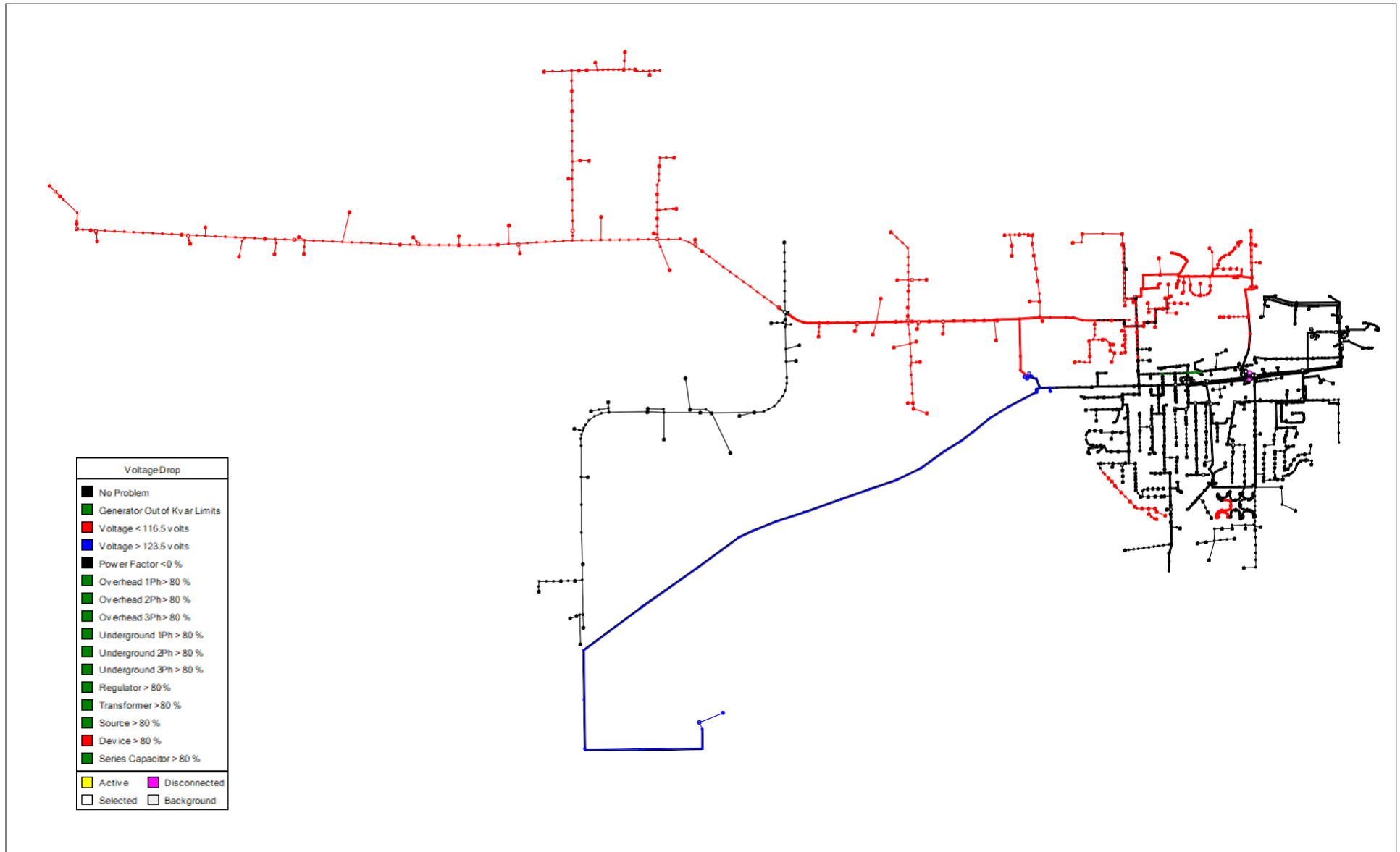
\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
15	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	168	144	170	1.35	1.23	1.21	3,466	3,438	434	99.21%
15	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
15	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
15	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
15	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.33	9.18	7.79	1,514	1,422	518	93.95%
15	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.79	7.04	6.64	1,313	1,287	261	98.00%
15	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
15	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
15	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
15	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
15	Industrial 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
15	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.61	1.55	1.50	564	564	(0)	100.00%
15	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.







- Mora Municipal Utilities

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16	Scenario Selection
Loss of 4.16 kV North Simplex	

System Analysis Configuration
Unbalanced V-drop: ExSys-ExLoad

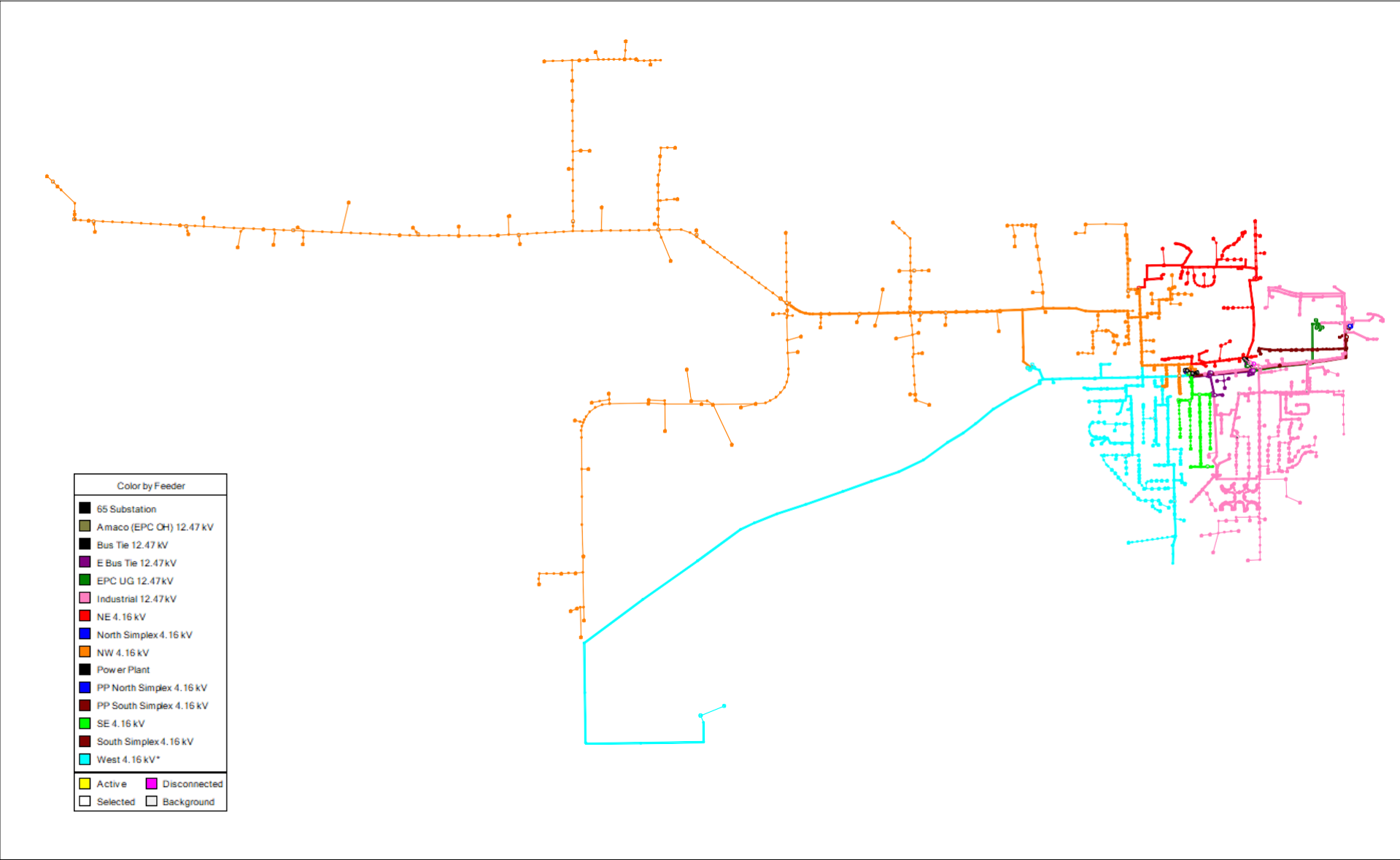
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

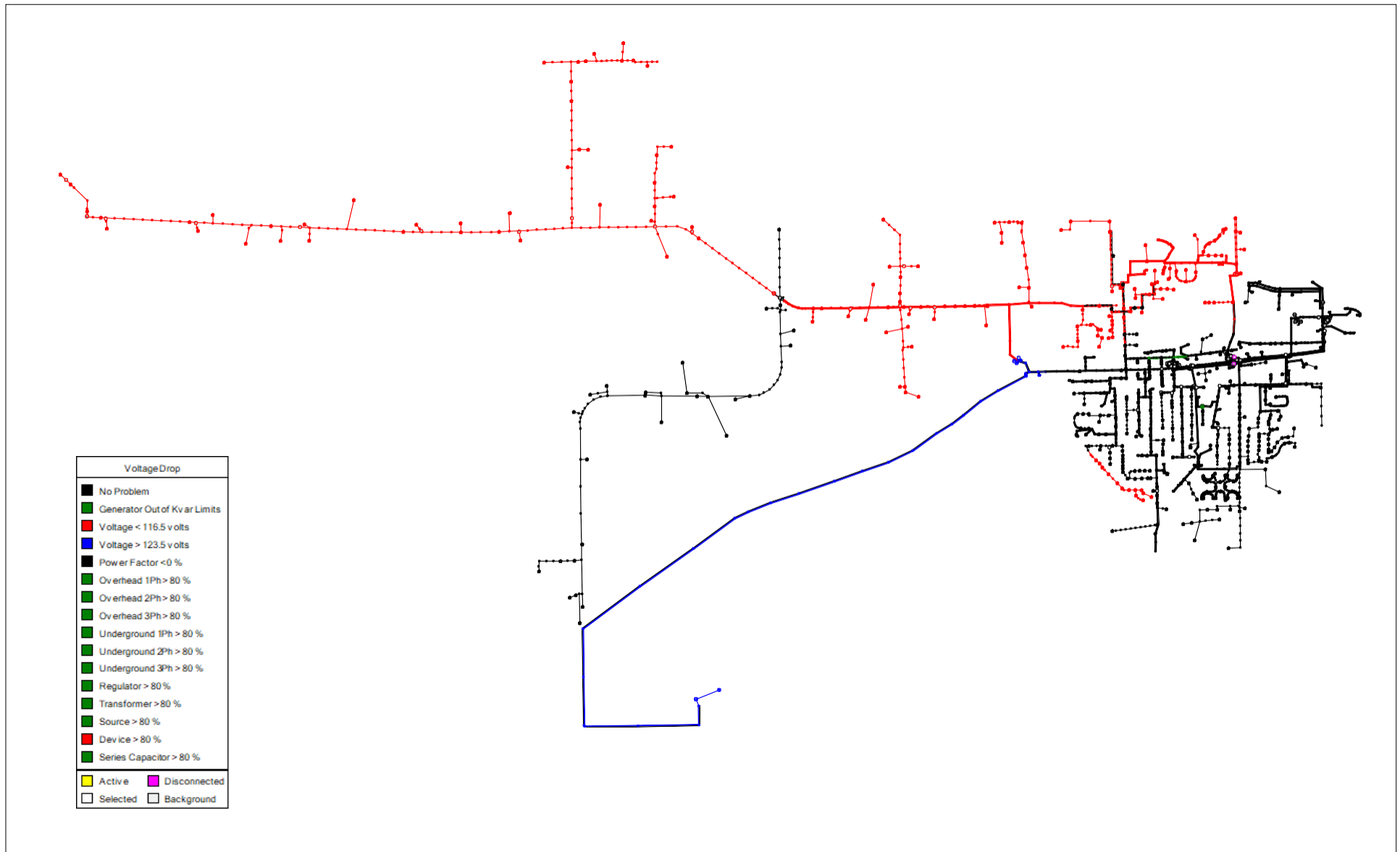
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
16	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	161	140	157	9.77	9.19	7.80	3,385	3,127	1,065	92.37%
16	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	484	421	470	9.77	9.19	7.80	3,385	3,127	1,065	92.37%
16	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%
16	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	321	301	324	3.31	3.01	3.34	6,804	6,511	1,647	95.70%
TOTALS									9.77	9.19	7.80	10,189	9,638	2,712	94.60%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
16	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
16	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
16	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
16	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
16	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.95%
16	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.77	7.05	6.64	1,313	1,287	261	98.00%
16	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
16	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
16	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
16	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
16	Industrial 12.47 kV	12.47 kV Bus	65 Sub	167	144	170	3.31	3.01	3.34	3,459	3,435	408	99.30%
16	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
16	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.





- Mora Municipal Utilities

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17	Scenario Selection
Loss of 4.16 kV South Simplex	

System Analysis Configuration
Unbalanced V-drop: ExSys-ExLoad

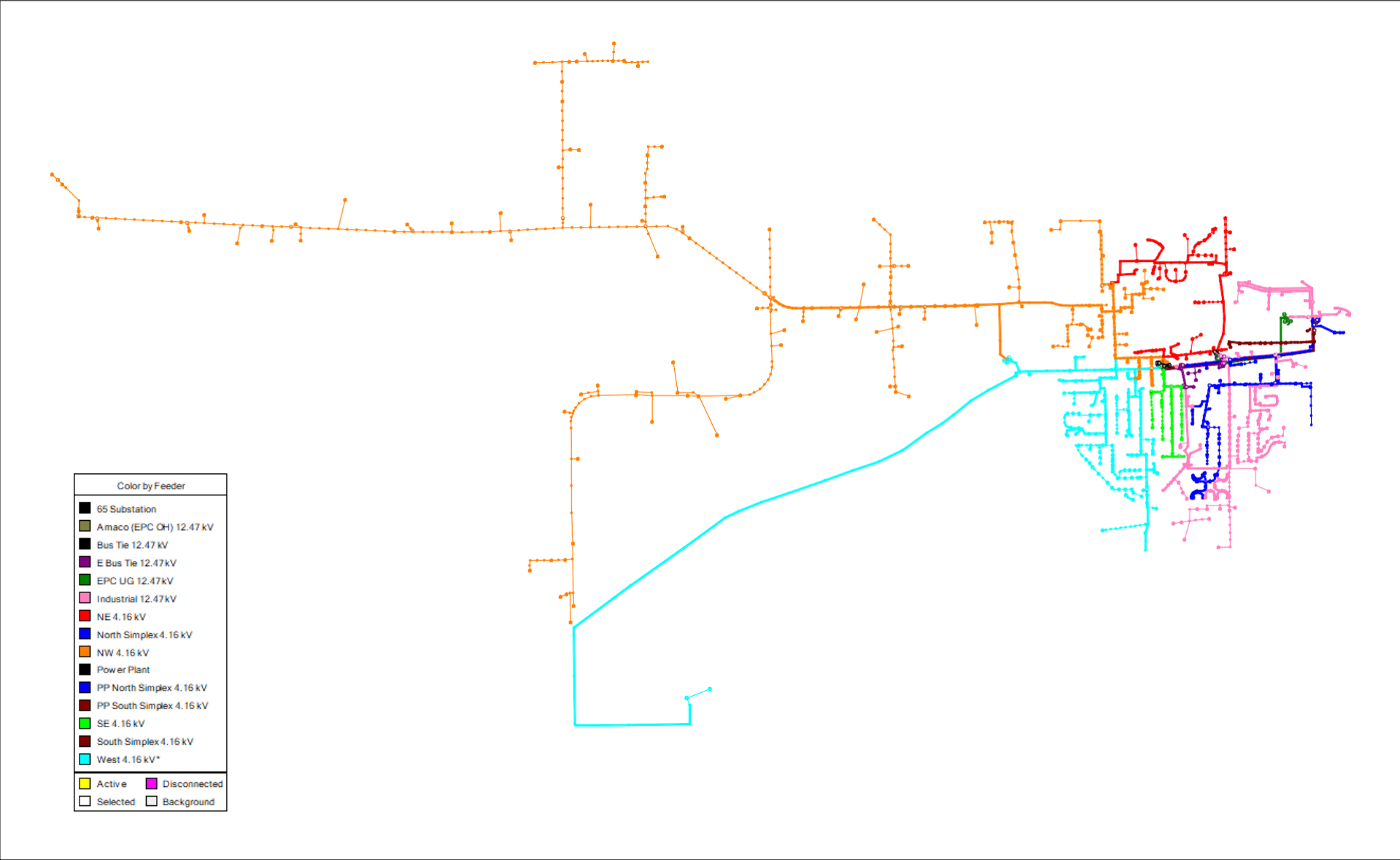
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

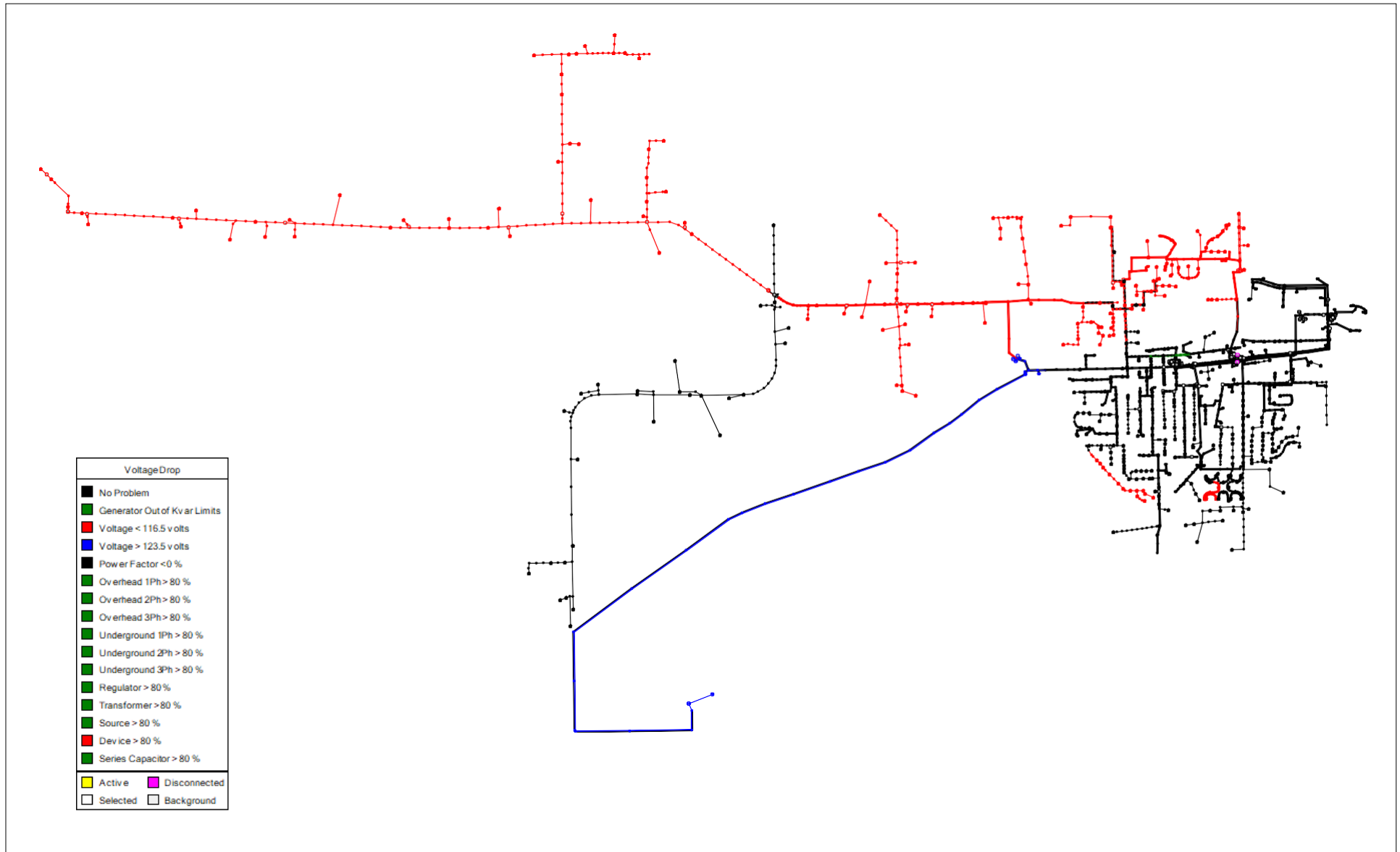
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
17	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	175	154	171	9.77	9.19	7.80	3,684	3,423	1,107	92.91%
17	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	524	462	513	9.77	9.19	7.80	3,684	3,423	1,107	92.91%
17	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.56	1.50	564	564	(0)	100.00%
17	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	308	287	309	0.88	0.80	0.85	6,500	6,209	1,612	95.53%
TOTALS									9.77	9.19	7.80	10,184	9,632	2,719	94.58%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
17	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
17	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
17	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
17	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	40	42	43	1.22	1.53	0.87	299	296	42	98.99%
17	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.95%
17	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.77	7.05	6.64	1,313	1,287	261	98.00%
17	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
17	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	161	160	163	4.17	2.08	3.23	255	121	225	47.36%
17	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
17	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
17	Industrial 12.47 kV	12.47 kV Bus	65 Sub	154	129	155	0.88	0.80	0.85	3,155	3,133	373	99.30%
17	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.56	1.50	564	564	(0)	100.00%
17	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%

\*1200 kW landfill gas generator running at end of the line. Maximum phase amps on this circuit are located on the 4.16 kV side of the 12.47/4.16 kV step-down transformer.







- Mora Municipal Utilities

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18	Scenario Selection
Loss of Generation	

System Analysis Configuration

Unbalanced V-drop: ExSys-ExLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

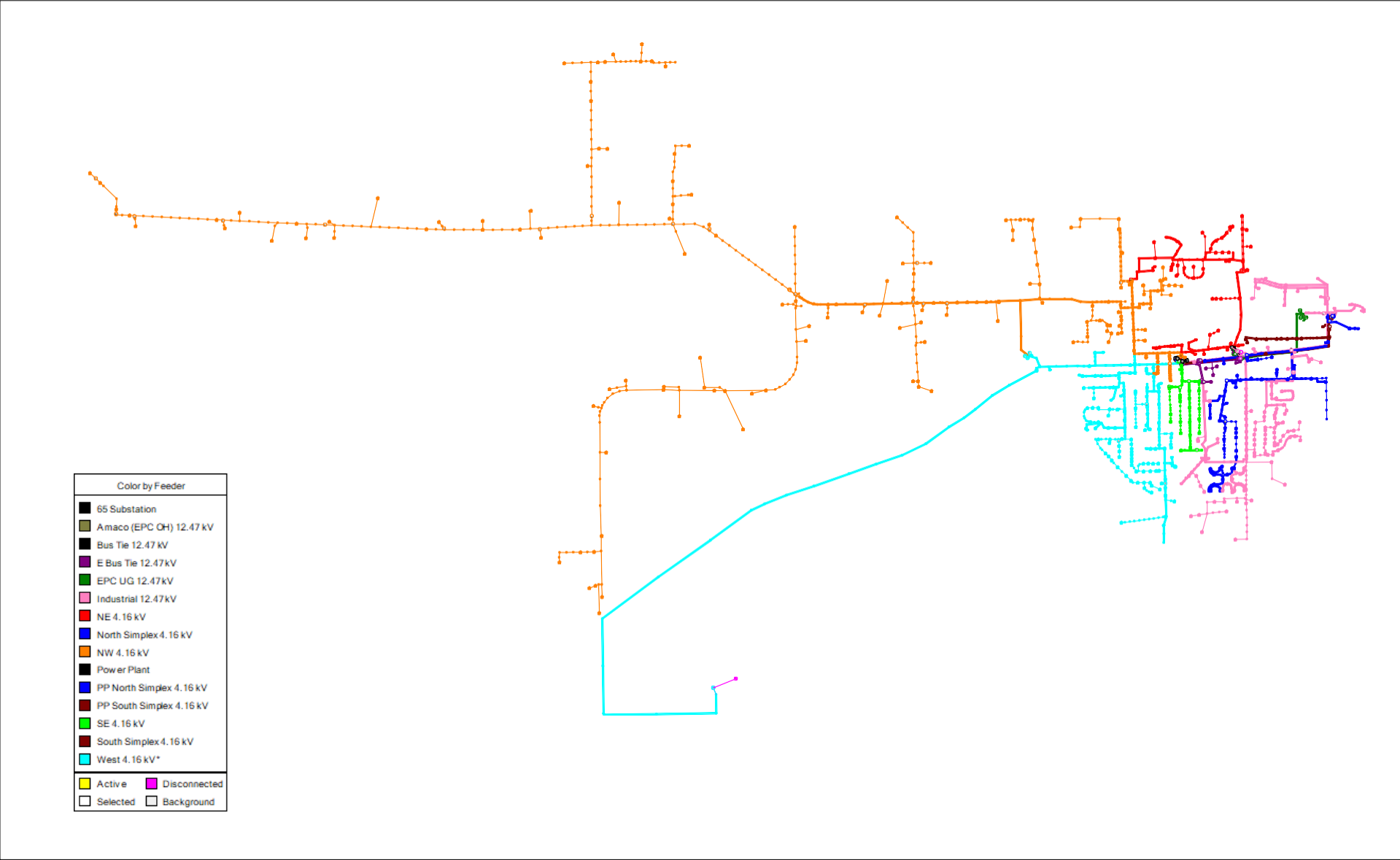
+3.5 = +3.5 Voltage Drop Violation

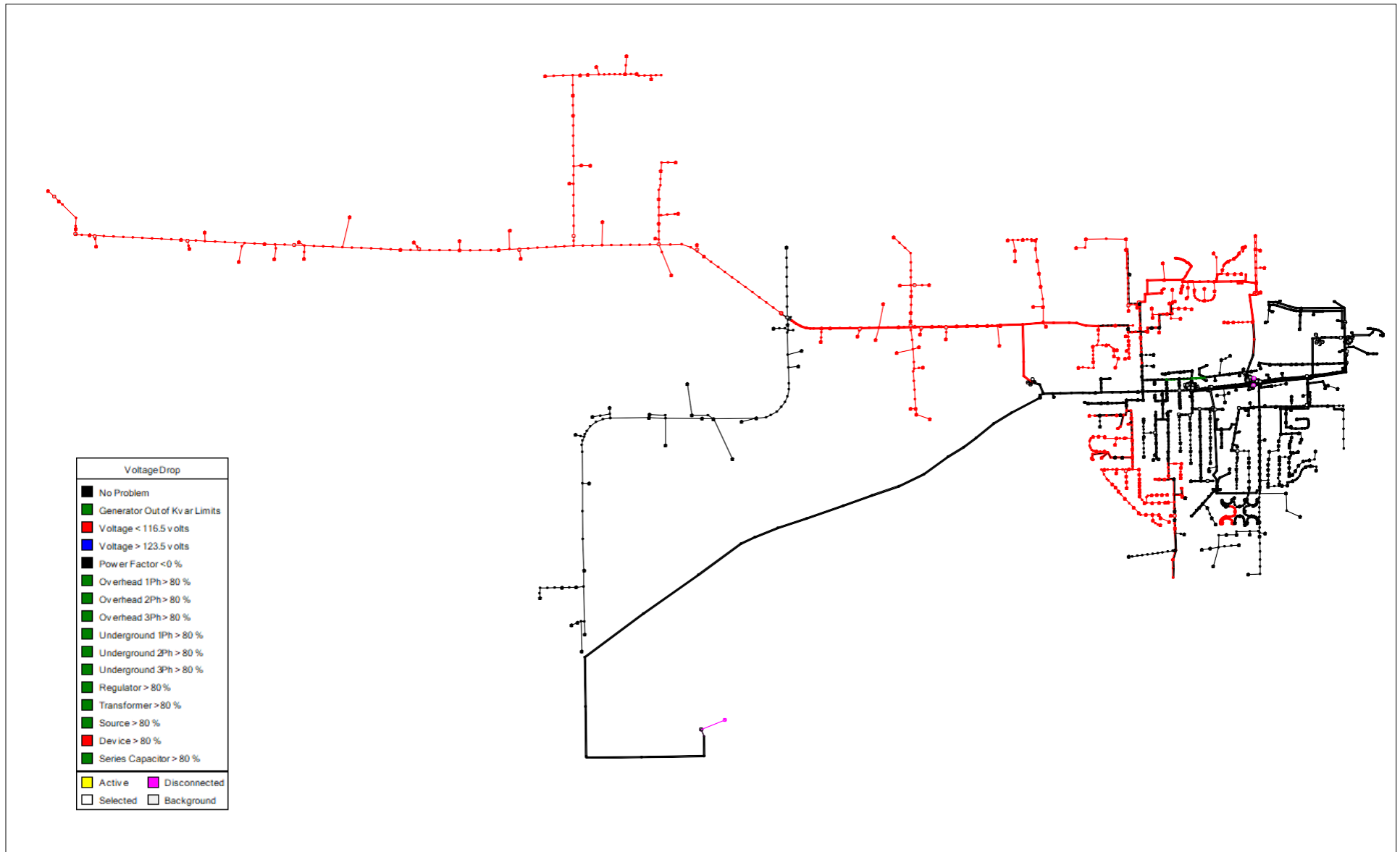
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
18	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	214	191	209	9.77	9.19	7.80	4,439	4,302	1,024	96.92%
18	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	9.77	9.19	7.80	4,439	4,302	1,024	96.92%
18	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	119	112	127	3.60	1.56	1.50	861	858	38	99.72%
18	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	321	301	323	0.88	0.80	0.85	6,773	6,505	1,277	96.04%
						TOTALS			9.77	9.19	7.80	11,212	10,807	2,301	96.39%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
18	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
18	Bus Tie 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
18	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
18	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
18	NE 4.16 kV	4.16 kV Bus	Power Plant Sub	195	207	229	8.31	9.19	7.80	1,514	1,422	518	93.96%
18	NW 4.16 kV	4.16 kV Bus	Power Plant Sub	231	154	161	9.77	7.05	6.64	1,313	1,287	261	98.00%
18	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	14	70	42	0.14	0.70	0.27	303	297	60	98.00%
18	West 4.16 kV*	4.16 kV Bus	Power Plant Sub	203	144	197	6.21	3.26	4.32	1,309	1,296	185	99.00%
18	E Bus Tie 12.47 kV	12.47 kV Bus	65 Sub	32	36	32	0.12	0.13	0.12	719	712	96	99.11%
18	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	122	122	122	0.42	0.35	0.43	2,626	2,364	1,143	90.03%
18	Industrial 12.47 kV	12.47 kV Bus	65 Sub	167	143	170	0.88	0.80	0.85	3,429	3,428	38	99.99%
18	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	80	70	85	3.60	1.56	1.50	564	564	(0)	100.00%
18	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	39	42	42	0.44	0.53	0.34	296	294	38	99.18%

\*1200 kW landfill gas generator is not running at end of the line.





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### Scenario Legend

Scenario	Unbalanced V-drop: PropSys-PropLoad
0	System Intact
1	Loss of Power Plant Sub T1
2	Loss of Power Plant Sub Bus-tie T2
3	Loss of Industrial Sub T3
4	Loss of 65 Sub T4
5	Loss of Power Plant 12.47 kV Bus
6	Loss of Power Plant 4.16 kV Bus
7	Loss of 65 Sub 12.47 kV Bus
8	Loss of 12.47 kV West Feeder
9	Loss of 4.16 kV Southeast Feeder
10	Loss of 12.47 kV Northwest Feeder
11	Loss of 12.47 kV Northeast Feeder
12	Loss of 12.47 kV Amaco Feeder
13	Loss of 12.47 kV EPC Feeder
14	Loss of 12.47 kV Industrial Feeder
15	Loss of 4.16 kV North Simplex
16	Loss of 4.16 kV South Simplex
17	Loss of Generation

- Mora Municipal Utilities

- DGR Project No.: 427802

0	Scenario Selection
System Intact	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

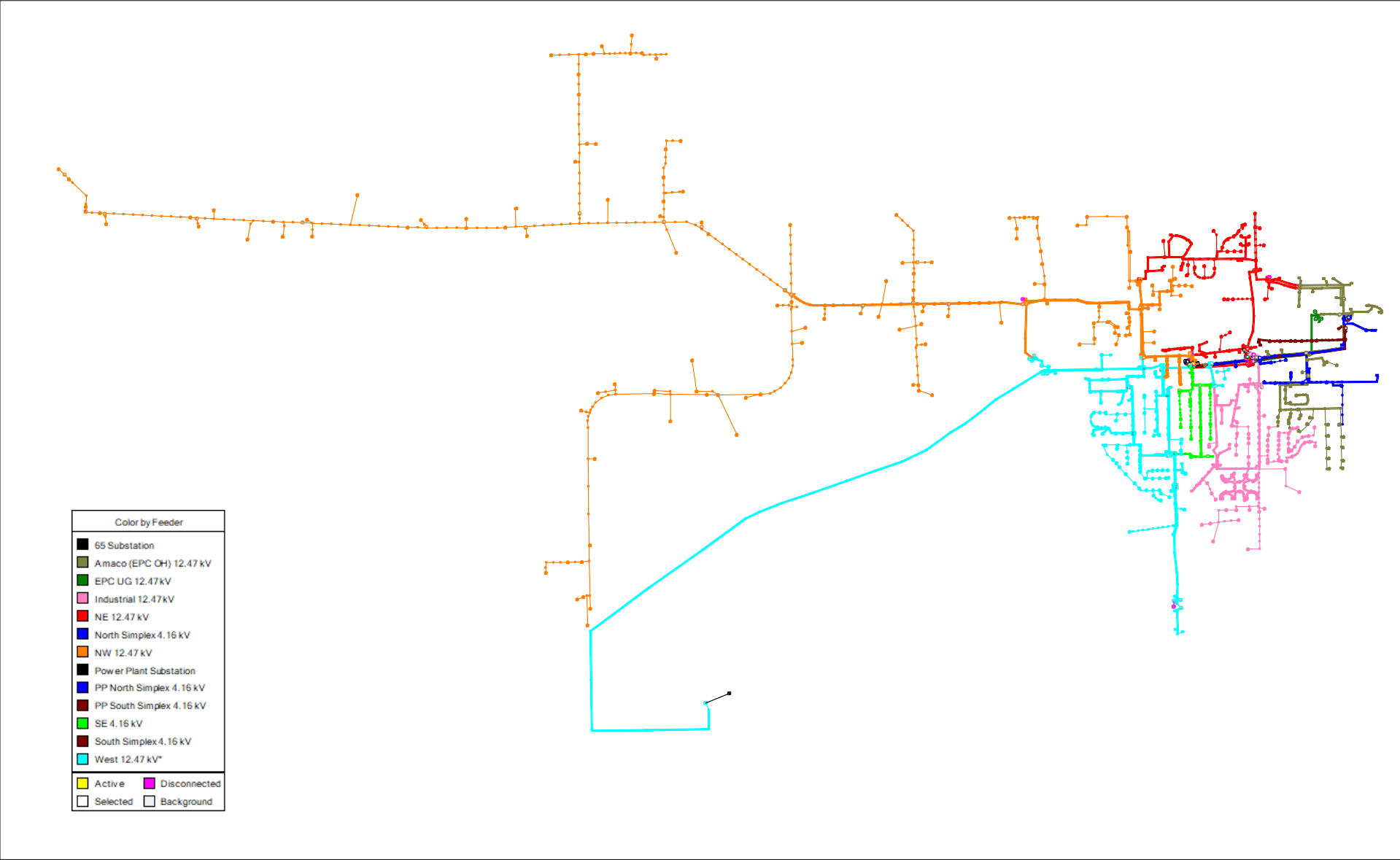
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

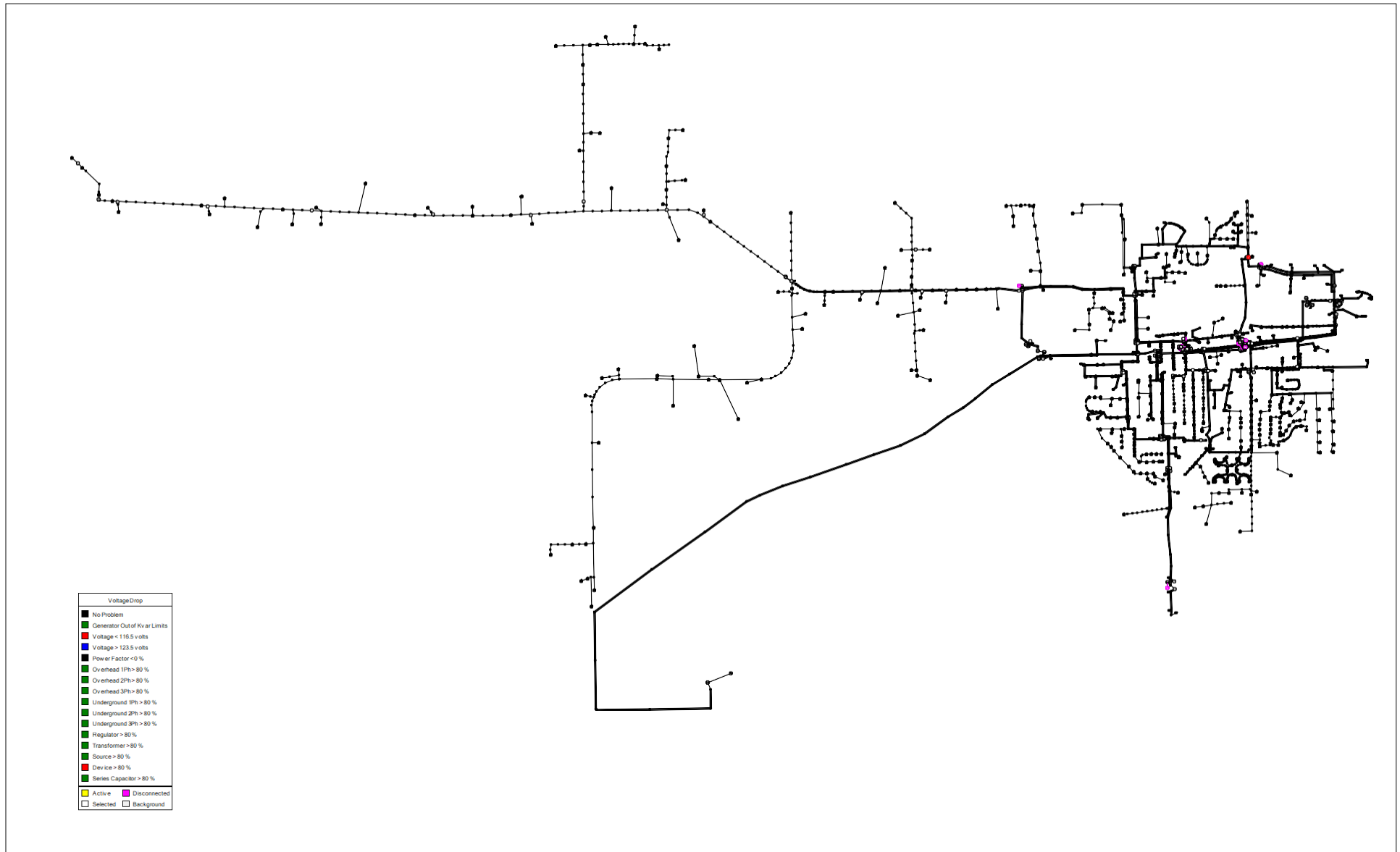
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
0	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	512	434	481	1.64	1.96	0.81	6,192	6,105	1,026	98.59%
0	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
0	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
0	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.04	1.96	1.90	13,427	12,969	3,080	96.59%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
0	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.22	1.16	0.81	3,045	3,007	484	98.73%
0	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	99.03%
0	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	72	56	70	0.66	0.55	0.66	1,420	1,392	284	97.98%
0	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
0	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
0	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
0	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
0	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
0	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
0	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
0	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

- DGR Project No.: 427802

1	Scenario Selection
Loss of Power Plant Sub T1	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

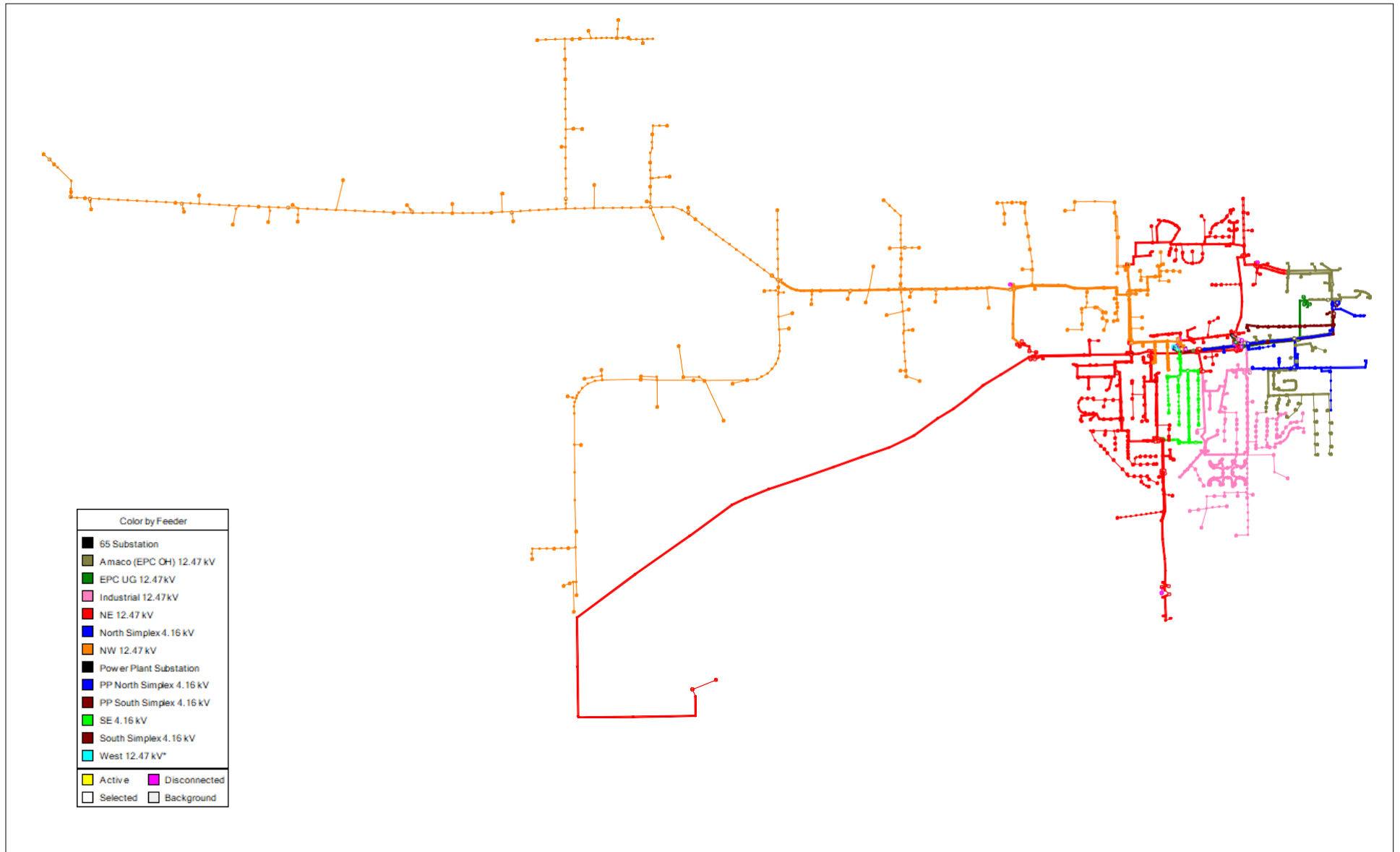
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
1	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	-	-	-	-	-	-	-	-	-	98.77%
1	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
1	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.16	0.92	776	770	81	99.27%
1	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	640	595	635	2.10	1.99	1.94	13,450	12,992	3,110	96.60%
						TOTALS			2.24	2.36	1.94	18,222	17,706	3,854	97.16%

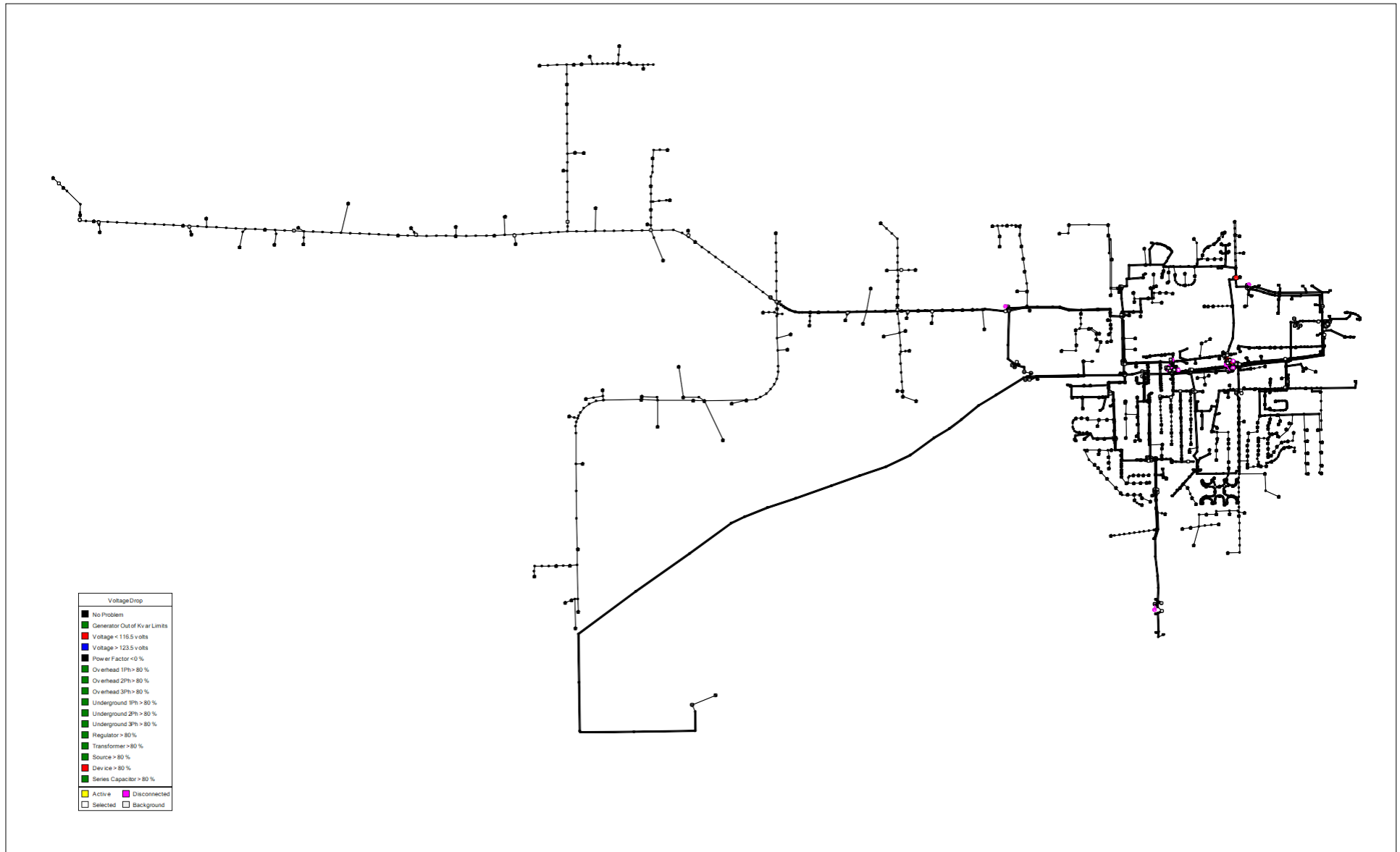
\*\*Xfmr T2 and Xfmr T3 are fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
1	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	133	146	1.82	1.56	1.35	3,045	3,007	484	0.00%
1	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	82	55	58	2.24	2.36	1.25	1,392	1,378	195	0.00%
1	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
1	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
1	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
1	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	0.00%
1	NE 12.47 kV	12.47 kV Bus	65 Sub	432	396	427	2.10	1.99	1.94	9,032	8,872	1,691	98.23%
1	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
1	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
1	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.16	0.92	446	445	23	99.87%
1	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.







- Mora Municipal Utilities

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2	Scenario Selection
Loss of Power Plant Sub Bus-tie T2	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

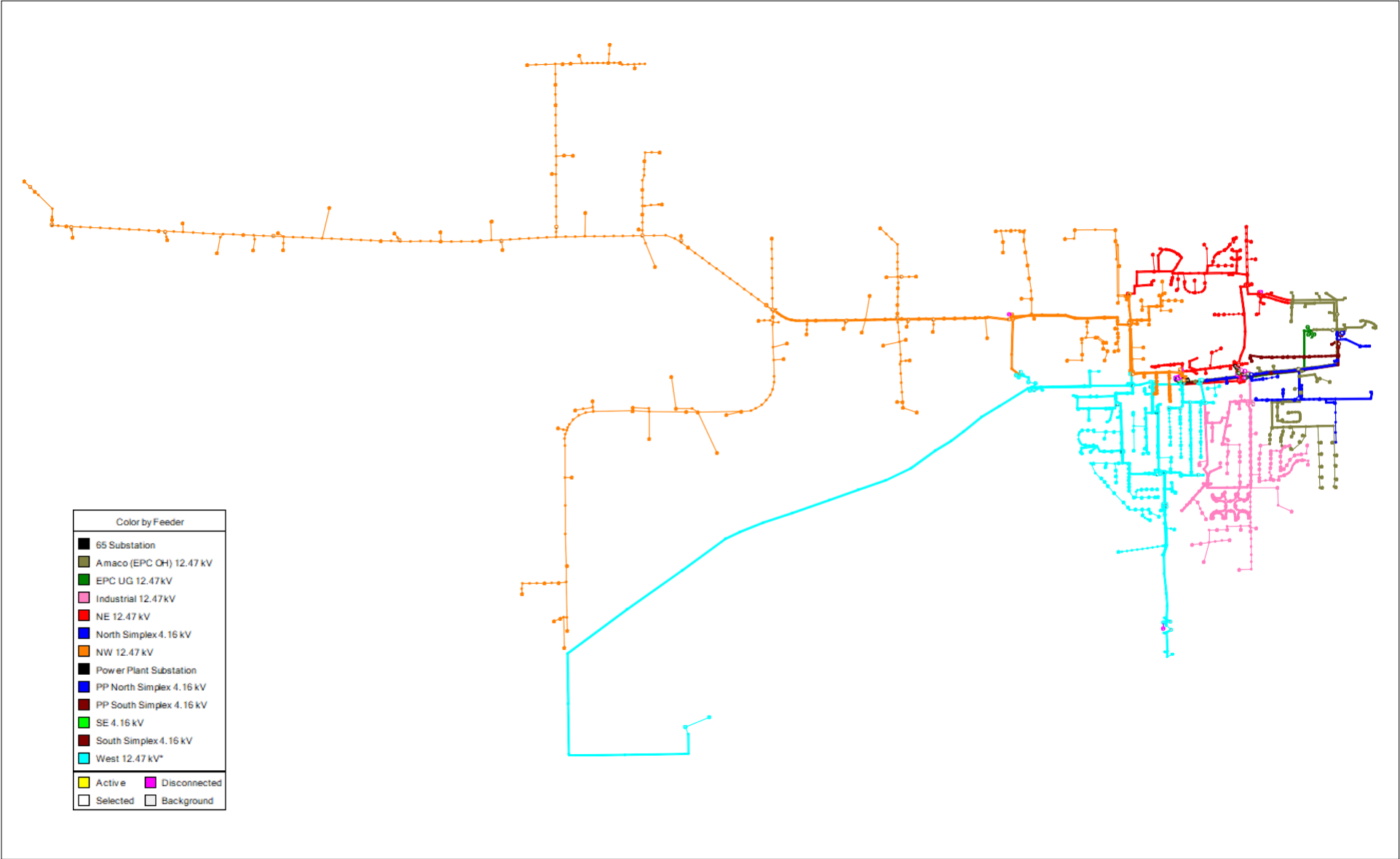
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

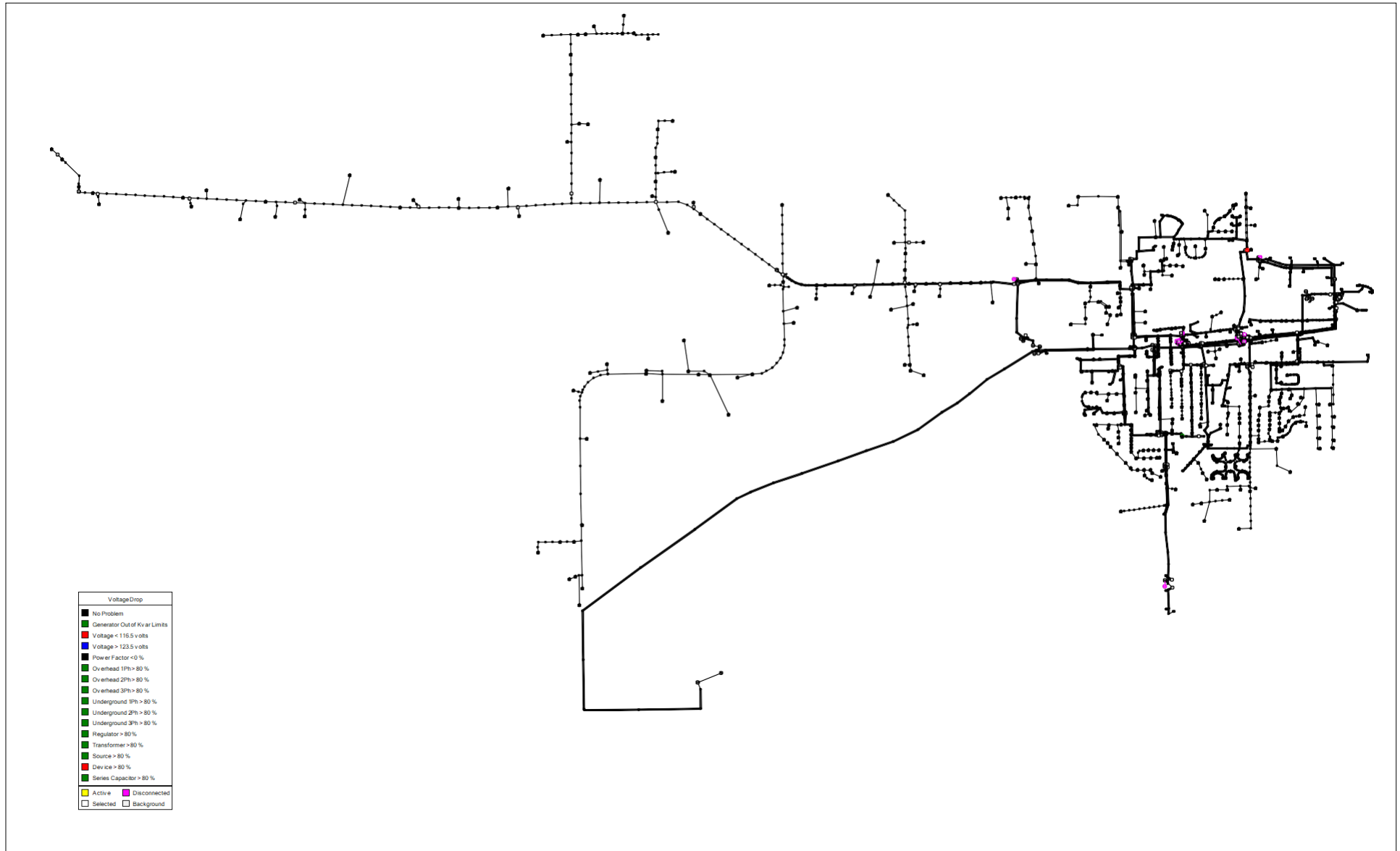
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
2	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	304	269	288	1.64	3.05	1.14	6,197	6,109	1,029	98.58%
2	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	0.00%
2	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
2	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.04	3.05	1.90	13,432	12,973	3,083	96.59%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
2	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.22	1.16	0.81	3,045	3,007	484	0.00%
2	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	0.00%
2	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	77	82	85	0.63	3.05	1.14	1,760	1,725	352	97.98%
2	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
2	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
2	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
2	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
2	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
2	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

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3	Scenario Selection
Loss of Industrial Sub T3	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

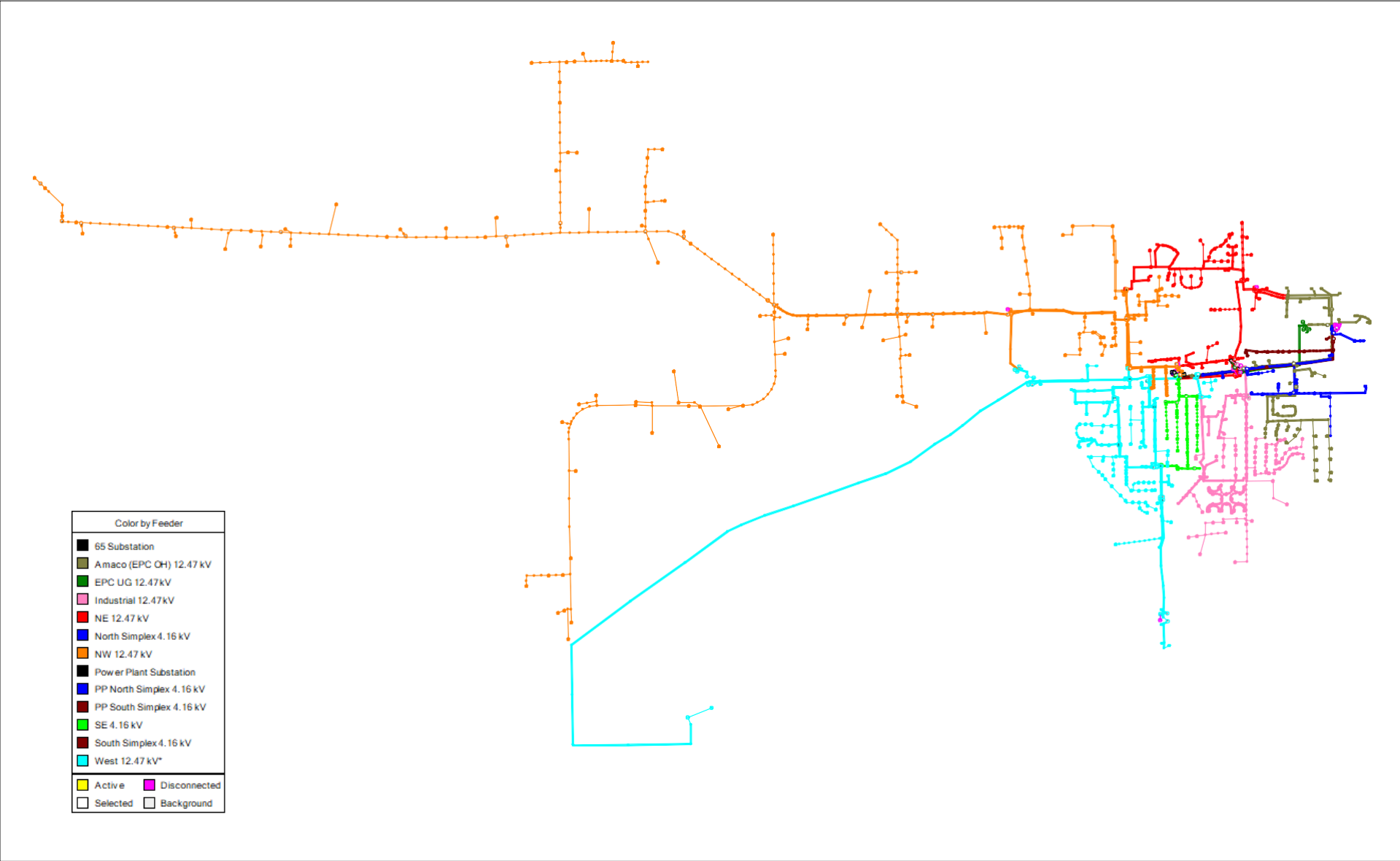
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

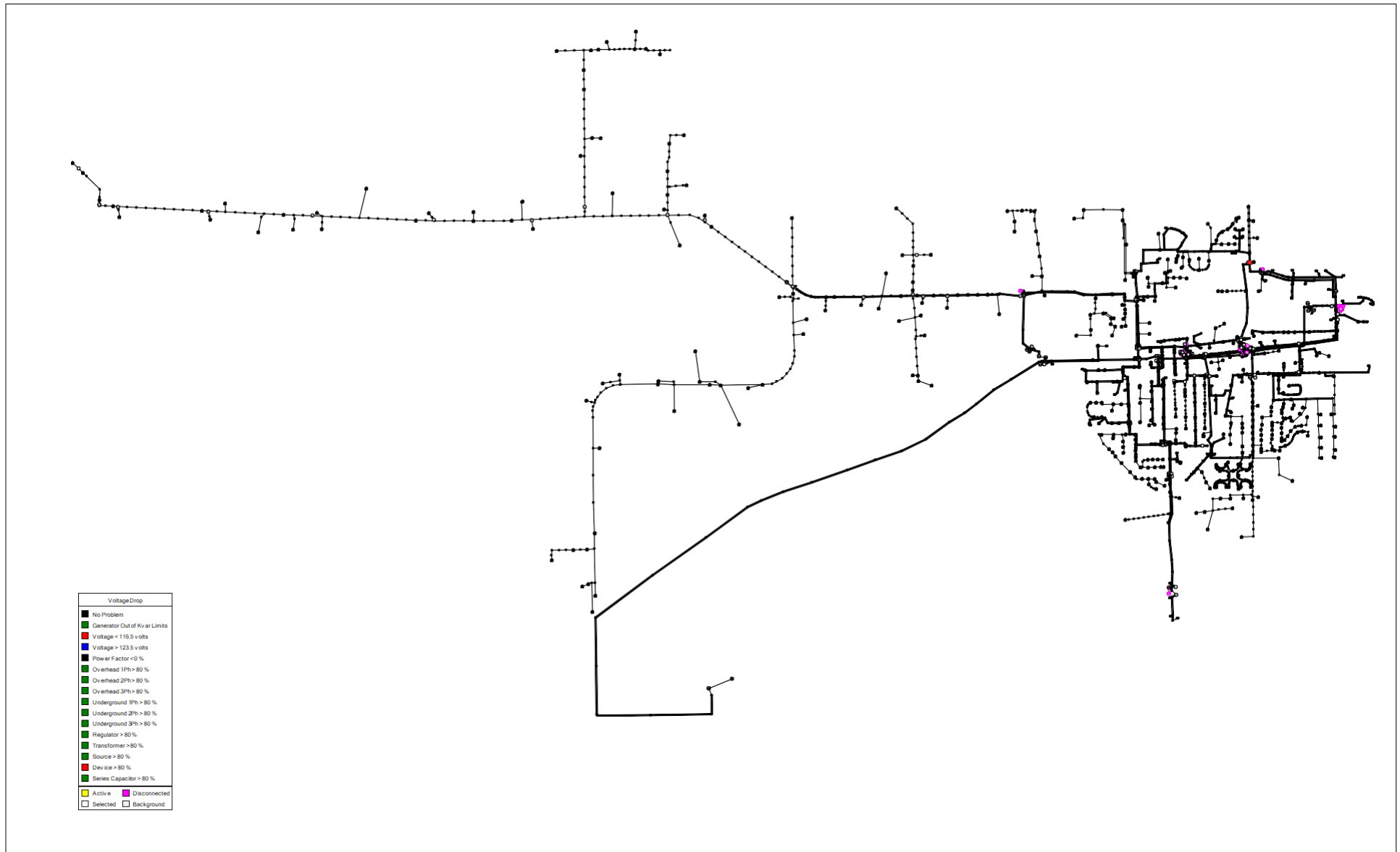
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
3	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	479	399	441	1.64	1.96	0.72	6,188	6,100	1,013	98.58%
3	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	1.38	1.75	1.22	1,115	1,102	152	98.83%
3	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
3	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.04	1.96	1.90	13,422	12,964	3,067	96.58%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
3	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	112	97	105	1.08	0.95	0.58	2,261	2,228	383	98.55%
3	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	99.03%
3	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	72	56	70	0.66	0.55	0.66	1,420	1,392	284	97.98%
3	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	55	58	73	1.09	1.52	1.22	447	446	24	99.85%
3	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	44	47	47	1.38	1.75	1.03	333	327	63	98.19%
3	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
3	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
3	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
3	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
3	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
3	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%

\*1200 kW landfill gas generator running at end of the line.







- Mora Municipal Utilities

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4	Scenario Selection
Loss of 65 Sub T4	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

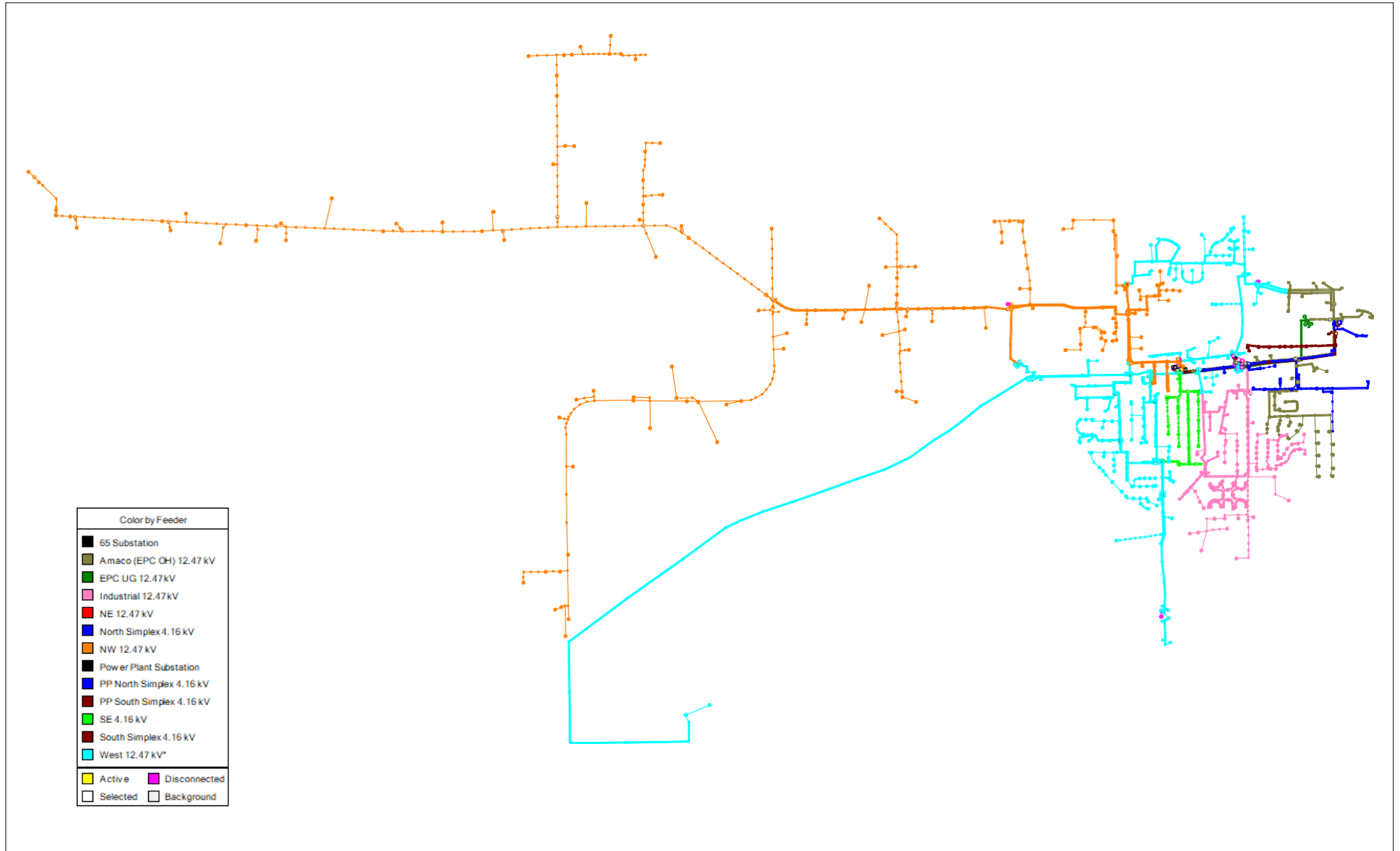
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

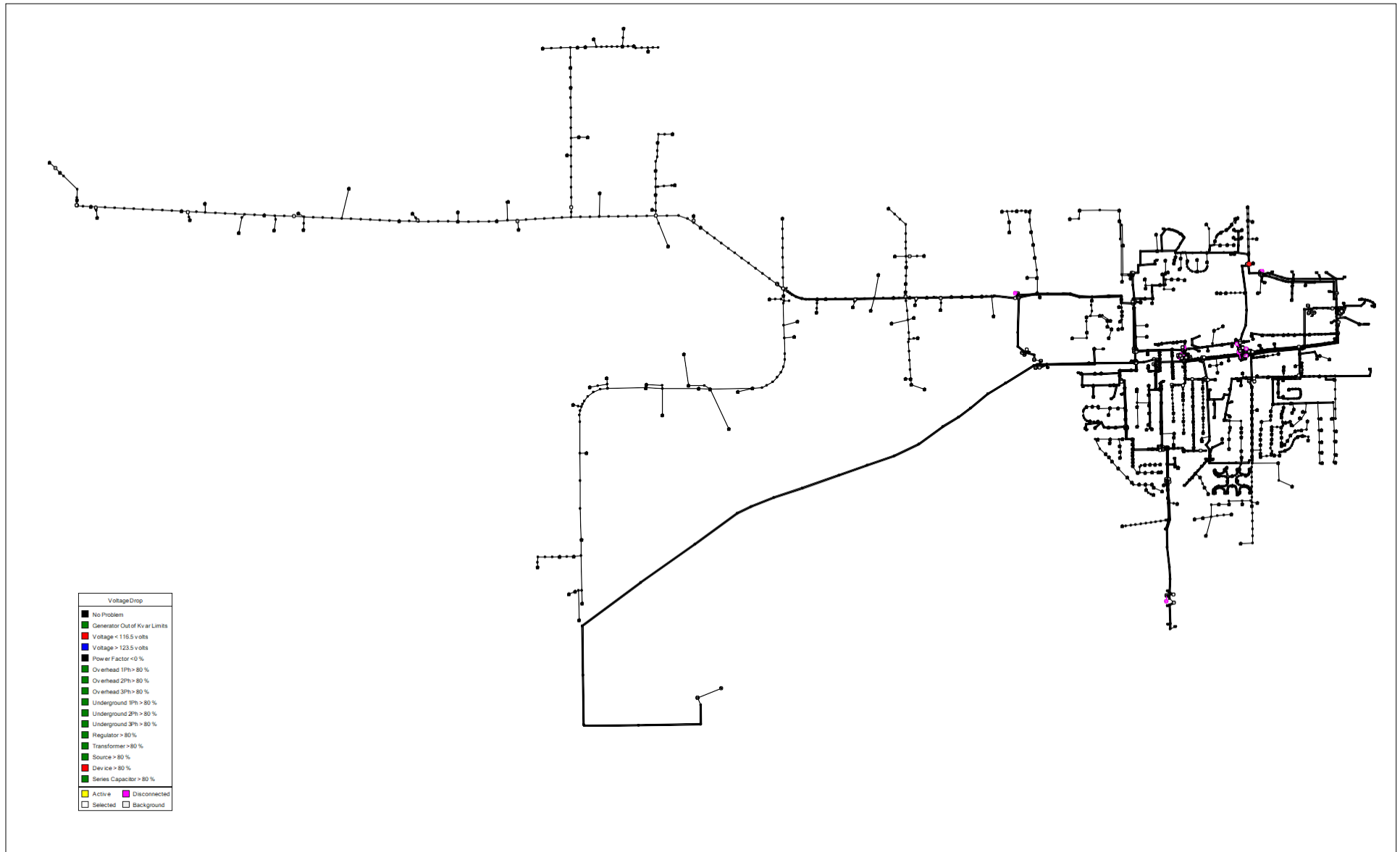
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
4	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	844	757	825	2.63	2.41	2.51	13,388	12,997	3,112	97.08%
4	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
4	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.16	0.92	776	770	81	99.27%
4	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	0.00%
						TOTALS			2.63	2.41	2.51	13,388	12,997	3,112	97.08%

\*\*Xfmr T2 and Xfmr T3 are fed by Xfmr T1.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
4	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.23	1.16	0.81	3,045	3,007	484	0.00%
4	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	0.00%
4	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	404	379	414	2.63	2.41	2.51	8,616	8,284	2,370	96.14%
4	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
4	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
4	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	0.00%
4	NE 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
4	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	136	135	136	1.11	0.88	1.15	-	-	-	0.00%
4	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.67	1.41	1.61	-	-	-	0.00%
4	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.16	0.92	446	445	23	99.87%
4	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

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5	Scenario Selection
Loss of Power Plant 12.47 kV Bus	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

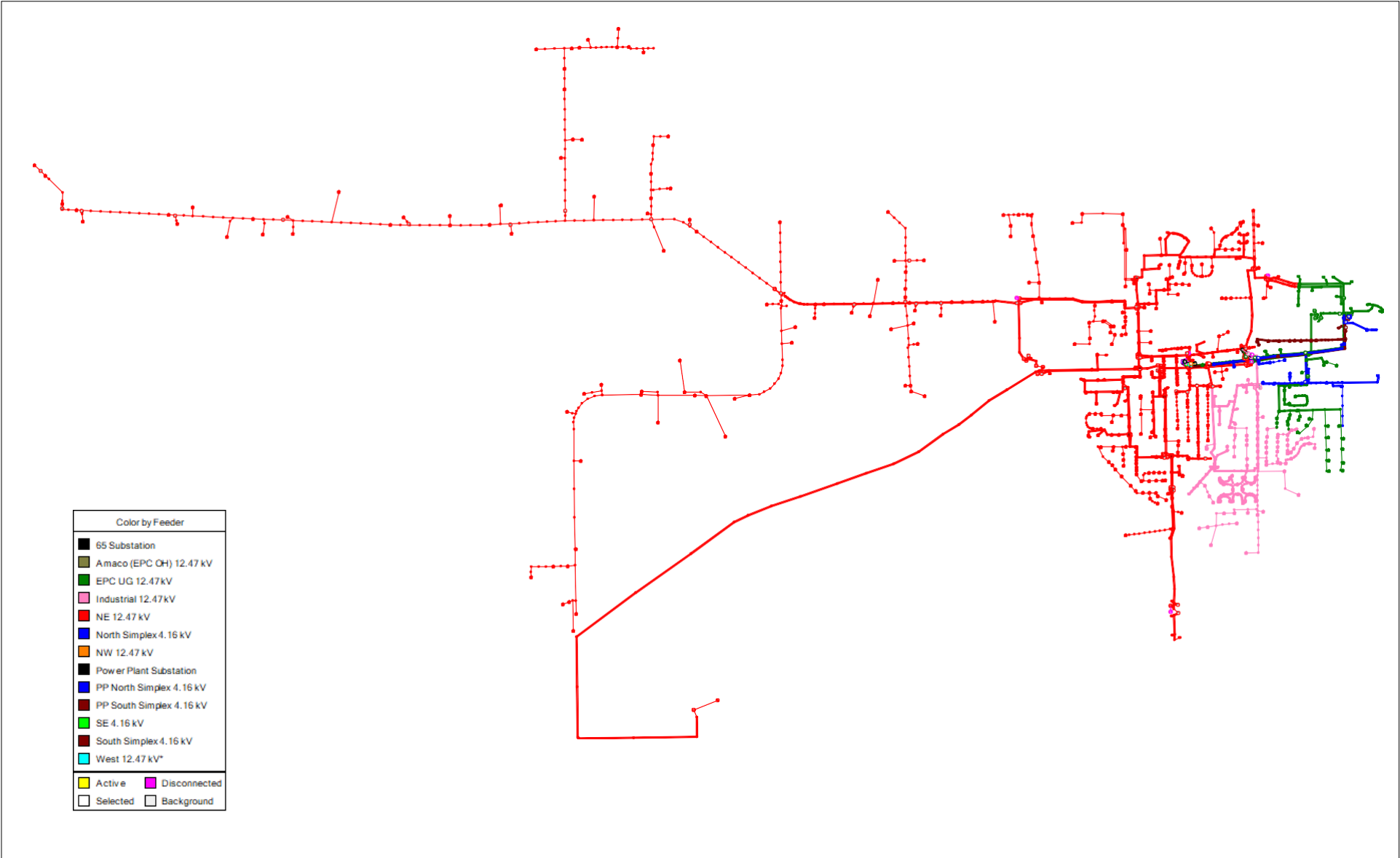
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

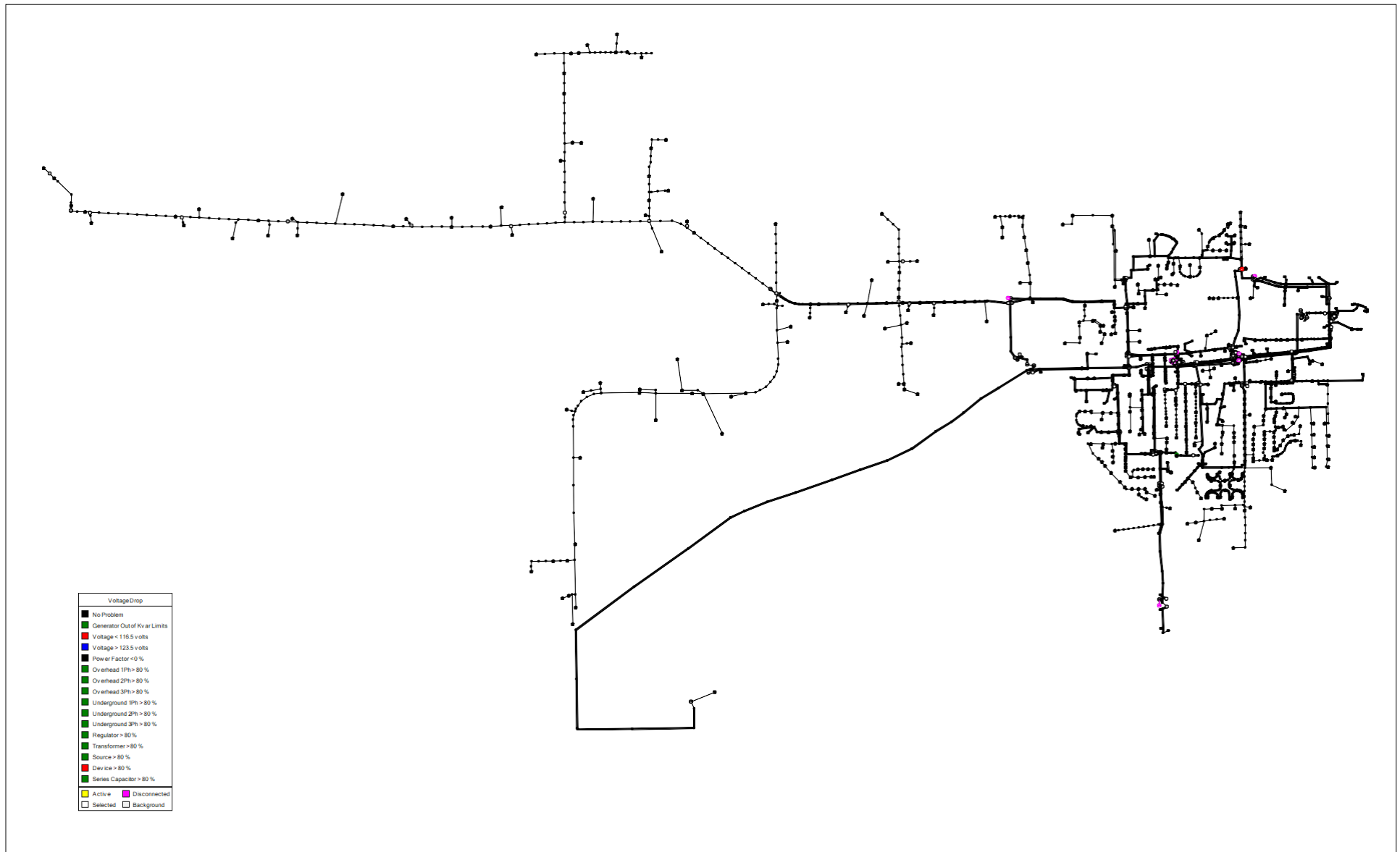
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
5	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
5	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
5	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
5	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	637	592	632	2.58	3.33	1.92	13,394	12,997	3,105	97.04%
						TOTALS			2.58	3.33	1.92	13,394	12,997	3,105	97.04%

\*\*Xfmr T2 and Xfmr T3 are fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
5	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
5	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
5	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
5	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
5	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
5	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
5	NE 12.47 kV	12.47 kV Bus	65 Sub	286	263	281	2.58	3.33	1.92	5,979	5,859	1,194	97.99%
5	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	278	264	278	1.75	1.45	1.31	5,900	5,632	1,758	95.46%
5	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
5	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
5	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

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6	Scenario Selection
Loss of Power Plant 4.16 kV Bus	

System Analysis Configuration

Unbalanced V-drop: PropSys-PropLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

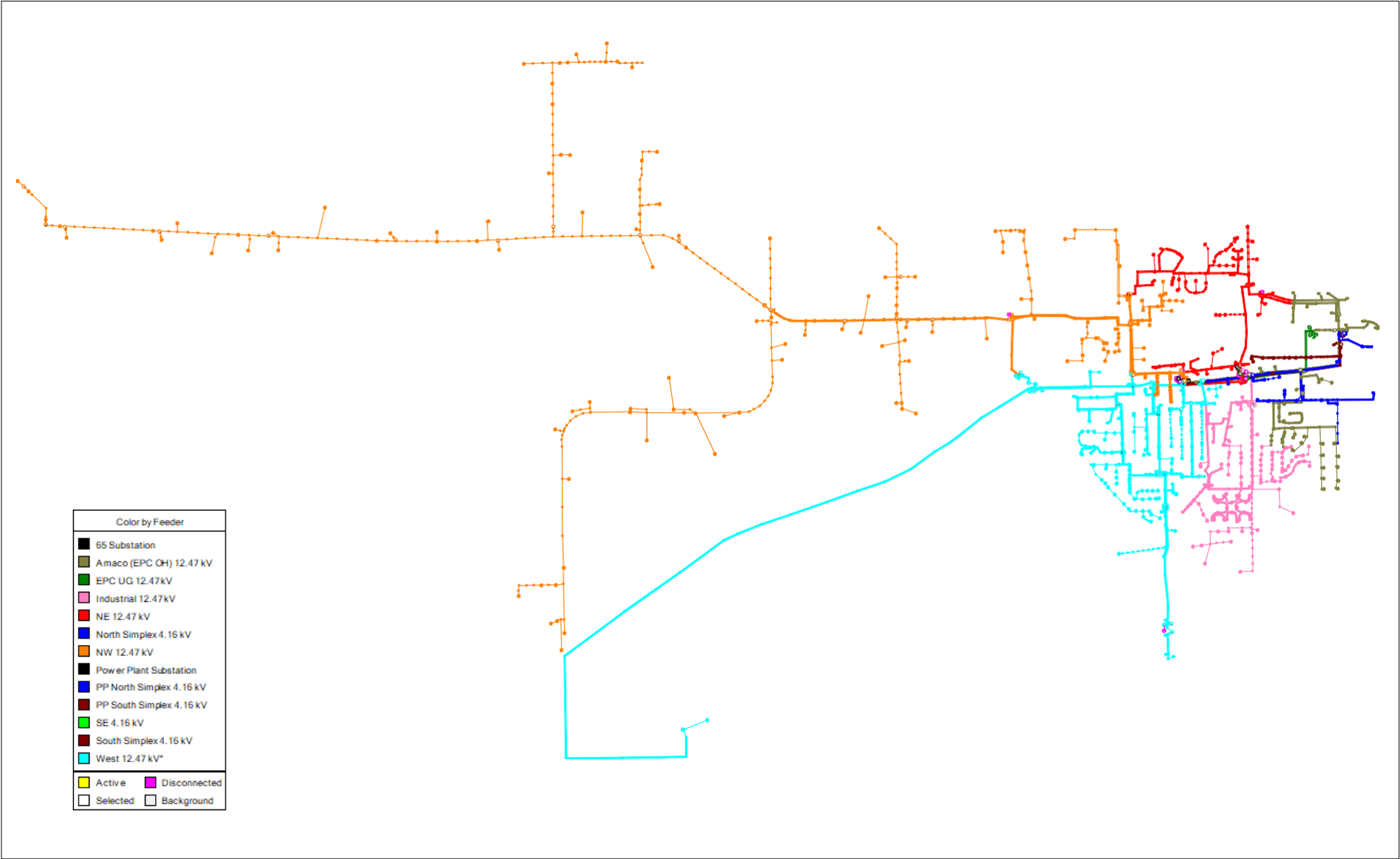
+3.5 = +3.5 Voltage Drop Violation

Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
6	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	304	269	288	1.64	3.05	1.14	6,197	6,109	1,029	98.58%
6	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	0.00%
6	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
6	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.04	3.05	1.90	13,432	12,973	3,083	96.59%

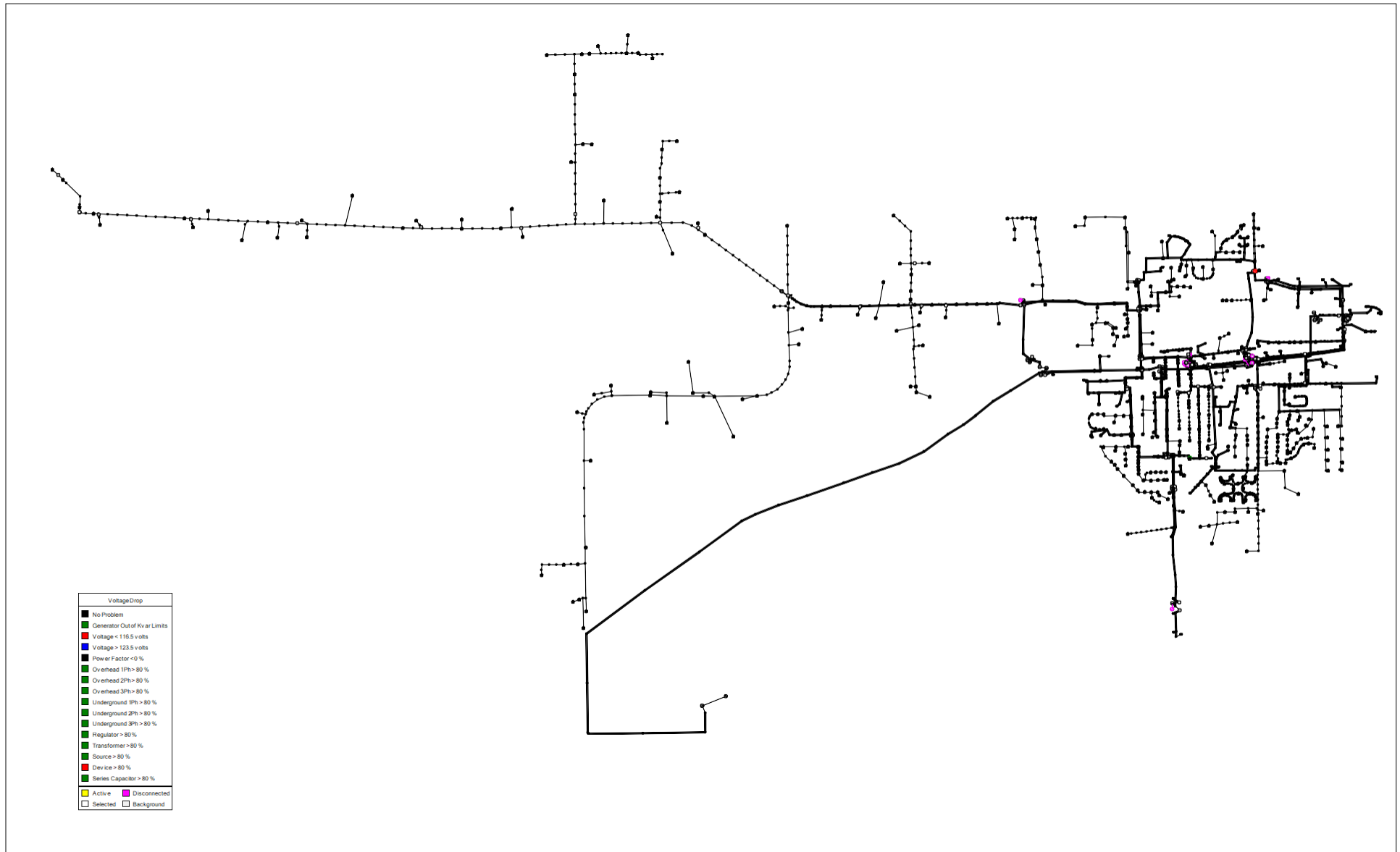
\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
6	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.22	1.16	0.81	3,045	3,007	484	0.00%
6	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	0.00%
6	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	77	82	85	0.63	3.05	1.14	1,760	1,725	352	97.98%
6	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
6	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
6	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
6	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
6	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
6	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
6	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
6	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.







- Mora Municipal Utilities

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7	Scenario Selection
Loss of 65 Sub 12.47 kV Bus	

## System Analysis Configuration

### Unbalanced V-drop: PropSys-PropLoad

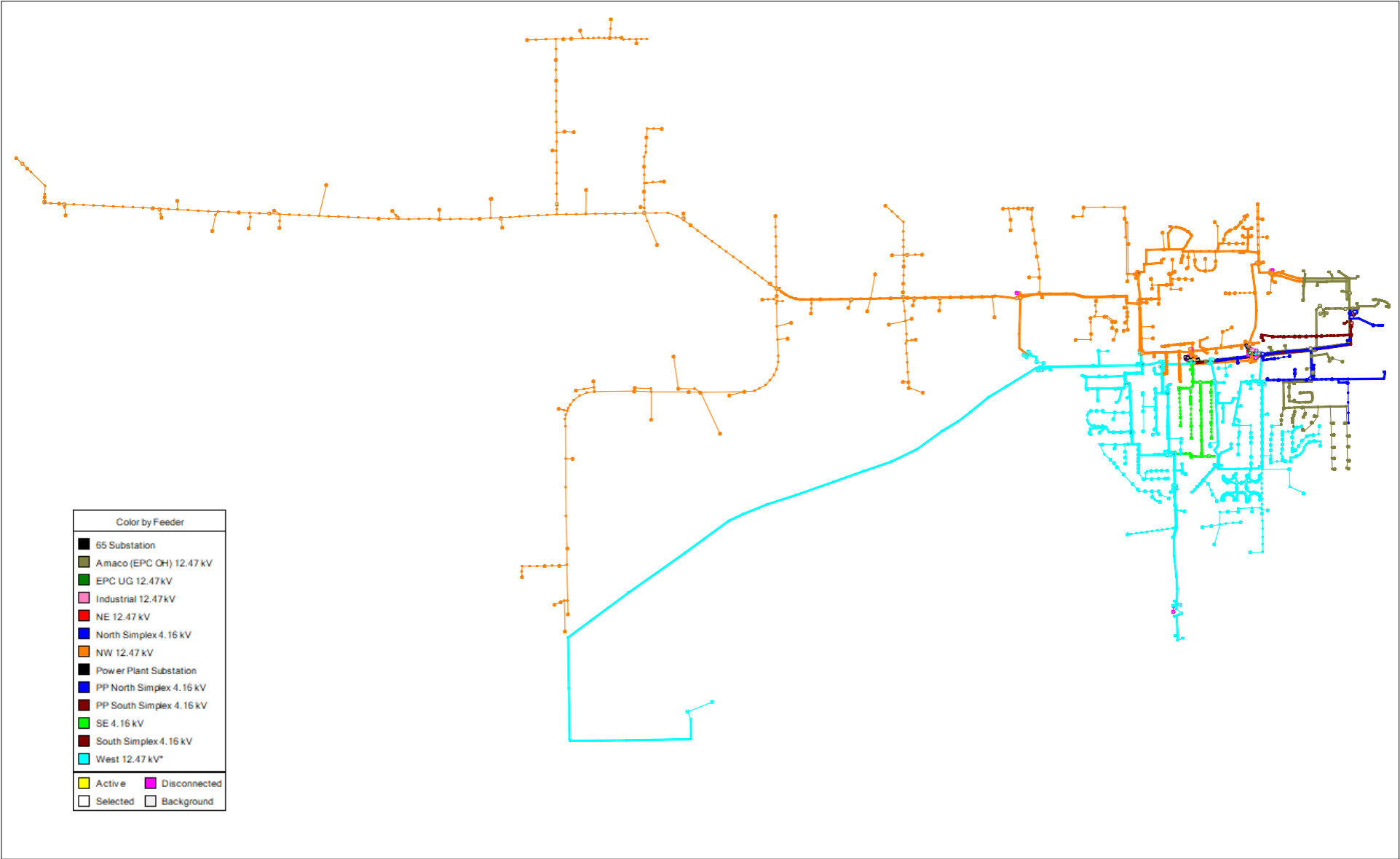
80 = 80% Capacity Warning  
 100 = 100% Capacity Violation  
 +3.5 = +3.5 Voltage Drop Violation

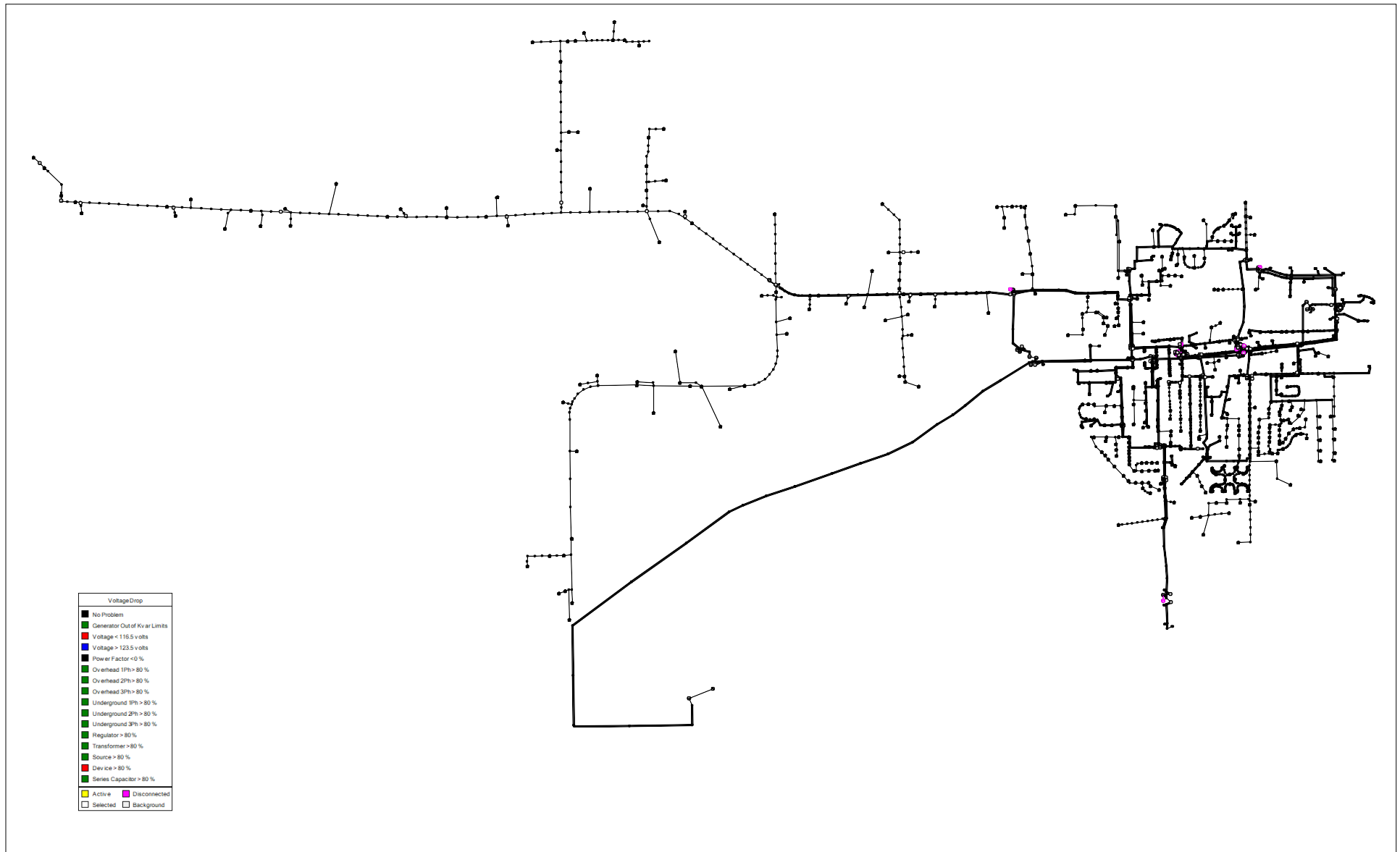
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
7	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	848	761	828	2.80	2.80	3.01	13,463	13,050	3,182	96.93%
7	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
7	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.16	0.93	776	770	81	99.27%
7	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
						TOTALS			2.80	2.80	3.01	13,463	13,050	3,182	96.93%

\*\*Xfmr T2 and Xfmr T3 are fed by Xfmr T1.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
7	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	281	268	279	2.57	2.80	1.96	5,960	5,673	1,828	95.18%
7	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	209	182	197	2.80	2.80	3.01	4,234	4,148	850	97.97%
7	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	145	120	142	1.39	0.88	1.20	2,934	2,901	439	98.87%
7	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
7	NE 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7	Industrial 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
7	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.16	0.93	446	445	23	99.87%
7	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

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8	Scenario Selection
Loss of 12.47 kV West Feeder	

System Analysis Configuration

Unbalanced V-drop: PropSys-PropLoad

80 = 80% Capacity Warning

100 = 100% Capacity Violation

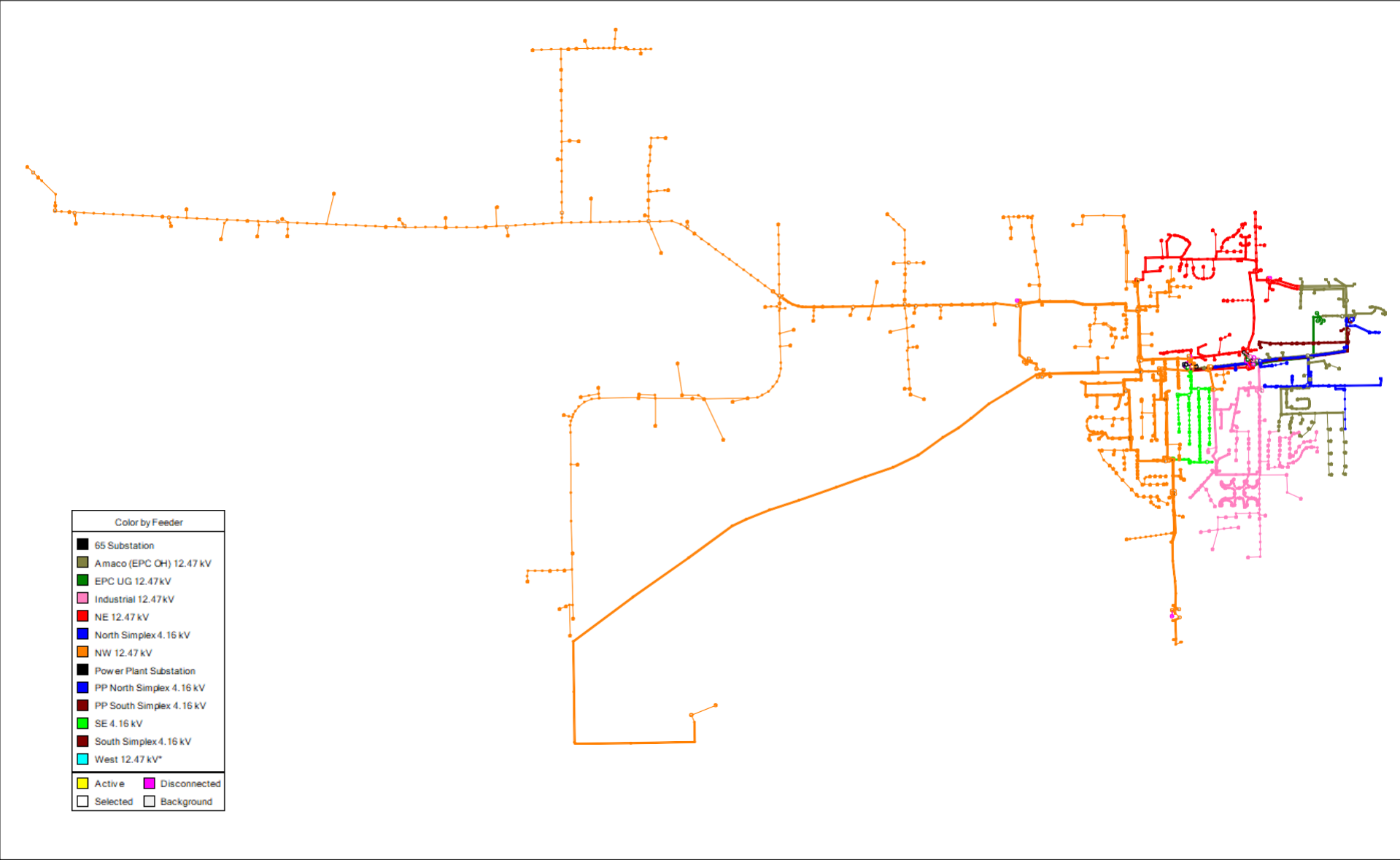
+3.5 = +3.5 Voltage Drop Violation

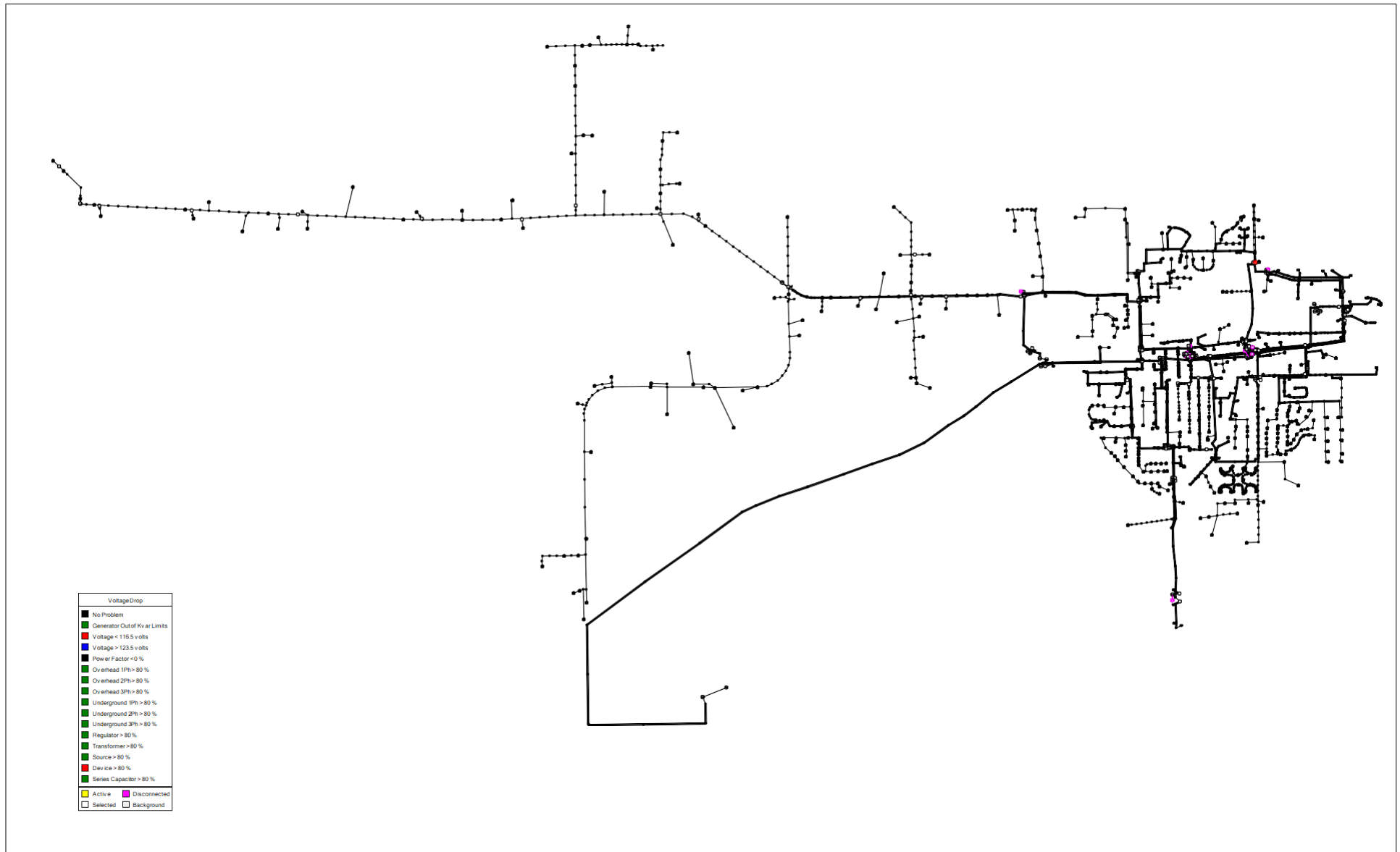
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
8	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	513	434	482	1.94	2.13	1.16	6,202	6,115	1,035	98.59%
8	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
8	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
8	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.04	2.13	1.90	13,436	12,979	3,088	96.59%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
8	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.22	1.16	0.81	3,045	3,007	484	98.73%
8	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	154	111	127	1.94	2.13	1.16	2,822	2,780	486	98.51%
8	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
8	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
8	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
8	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
8	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
8	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
8	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
8	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
8	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

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9	Scenario Selection
Loss of 4.16 kV Southeast Feeder	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

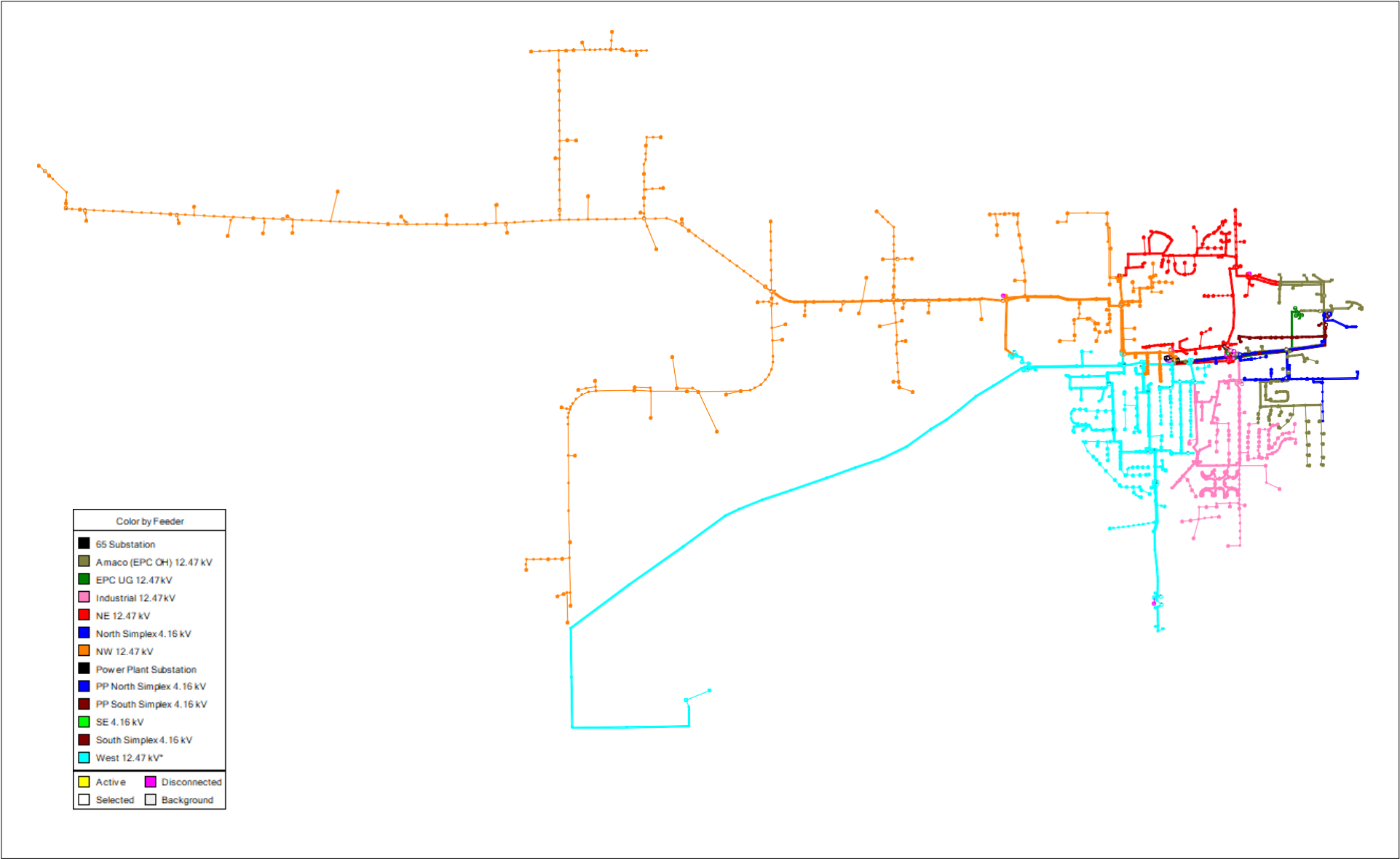
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
9	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	517	460	497	1.64	3.05	1.14	6,197	6,109	1,029	98.58%
9	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.00	0.00	0.00	-	-	-	0.00%
9	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
9	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.04	3.05	1.90	13,432	12,973	3,083	96.59%

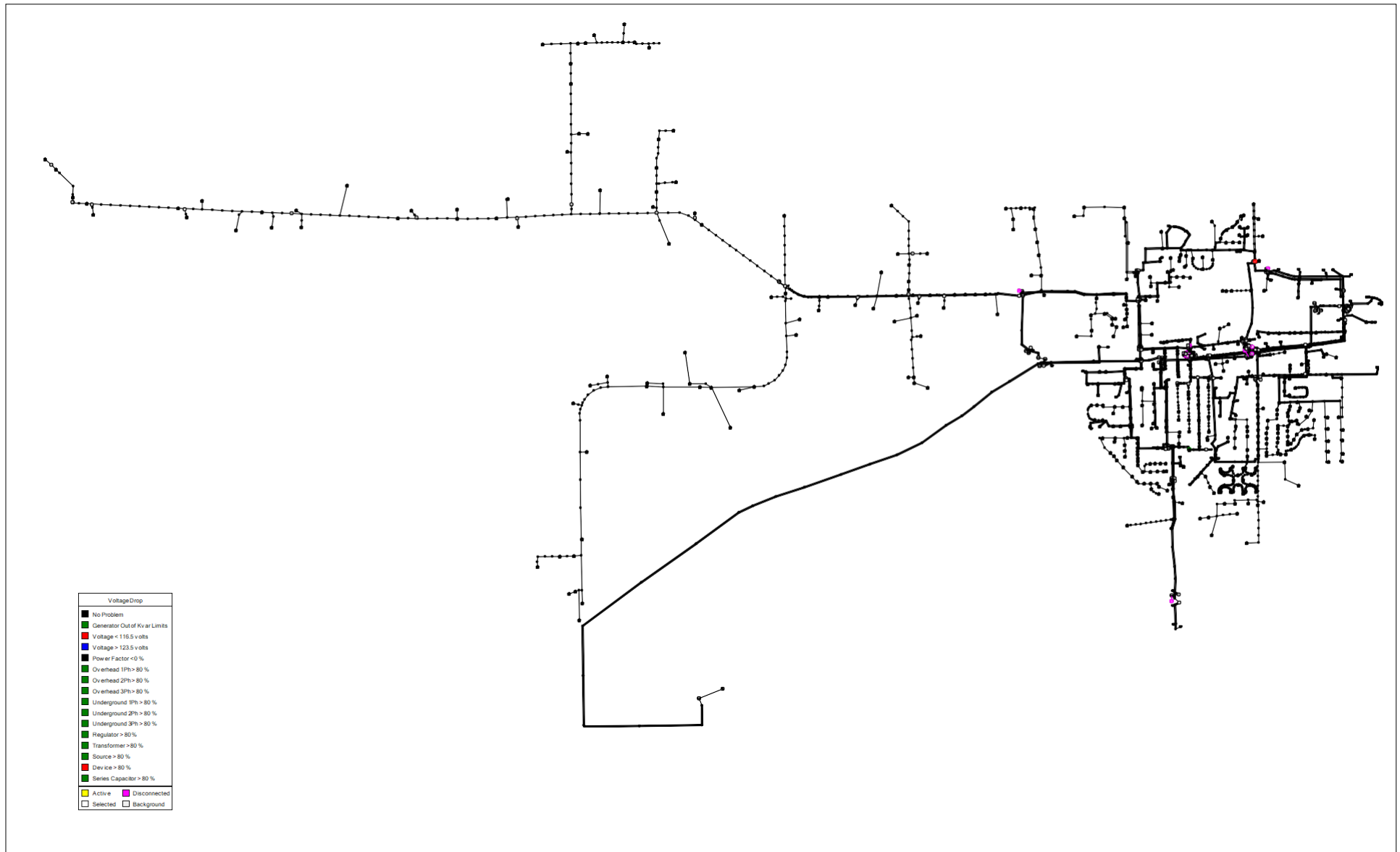
\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
9	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.22	1.16	0.81	3,045	3,007	484	98.73%
9	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	99.03%
9	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	77	82	85	0.63	3.05	1.14	1,760	1,725	352	97.98%
9	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
9	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
9	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
9	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
9	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
9	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
9	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
9	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.







- Mora Municipal Utilities

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10	Scenario Selection
Loss of 12.47 kV Northwest Feeder	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

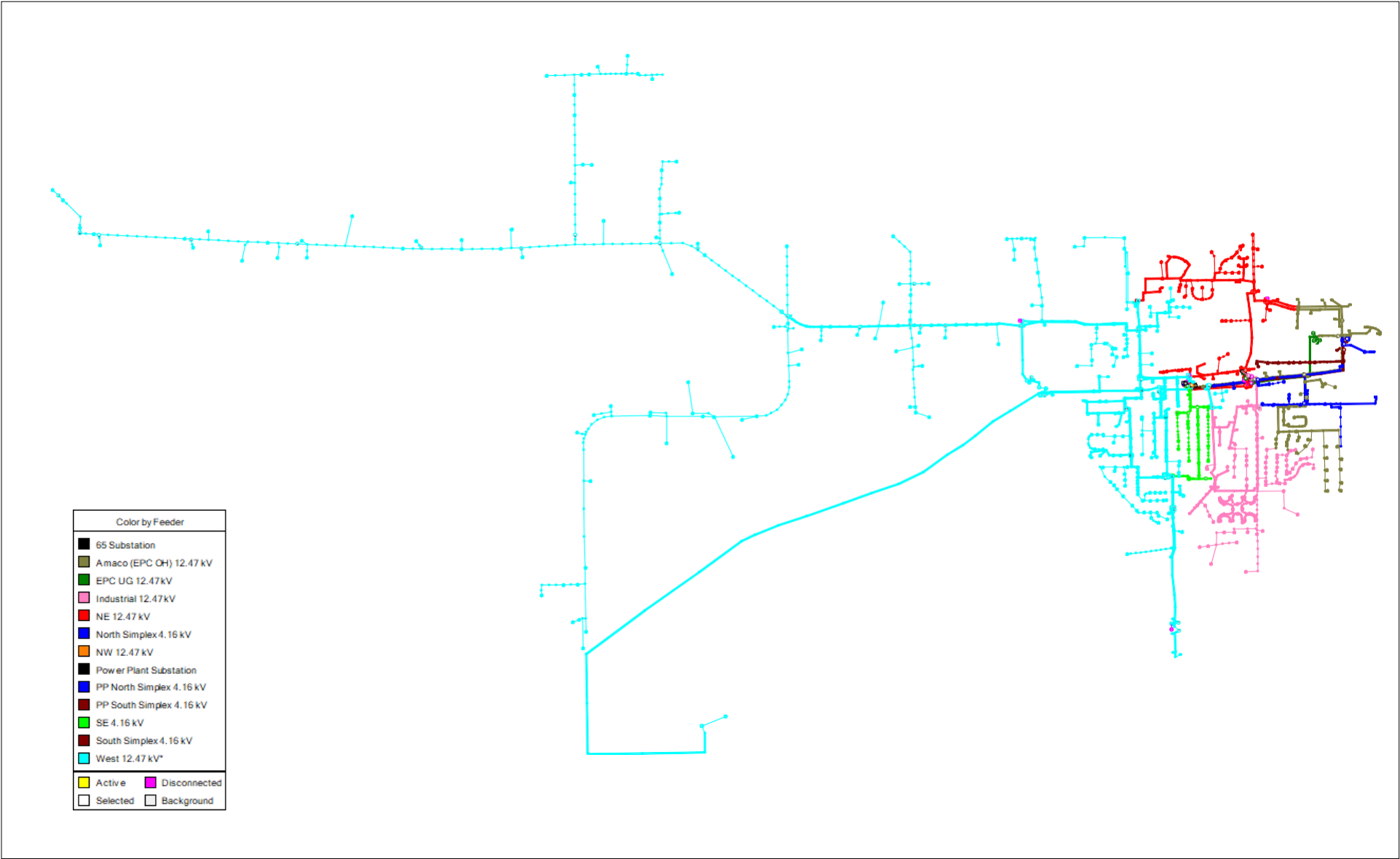
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

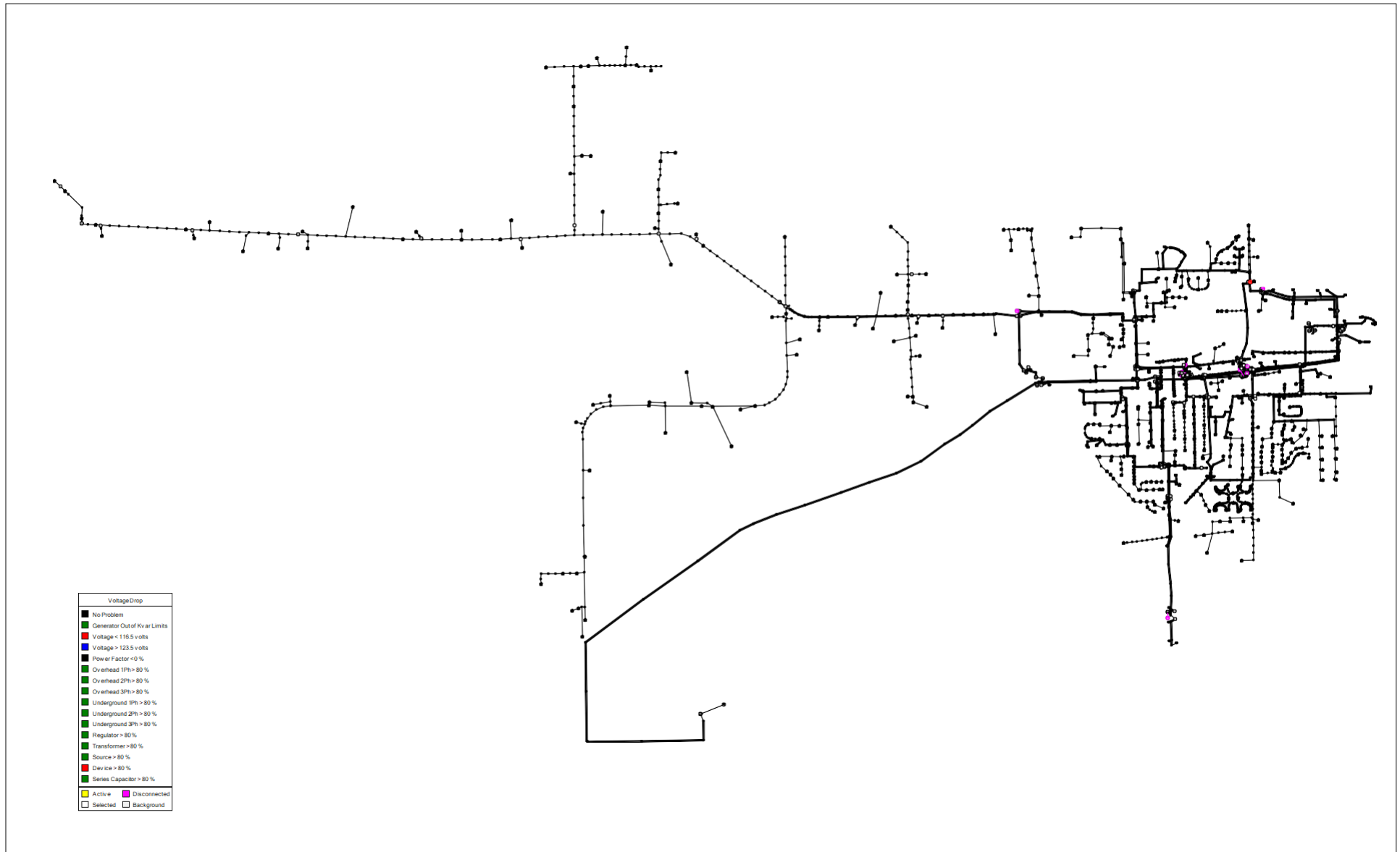
		Ratings (kVA)				Phase Amps			Max V Drop						
Scenario	Transformer	Base	Top	Substation Bus	Substation	AØ	BØ	CØ	AØ	BØ	CØ	kVA	kW	kVAR	PF
10	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	513	434	481	2.29	2.09	1.15	6,197	6,111	1,031	98.60%
10	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
10	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
10	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.29	2.09	1.90	13,432	12,975	3,085	96.60%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

				Phase Amps			Max V Drop						
Scenario	Circuit	Substation Bus	Substation	AØ	BØ	CØ	AØ	BØ	CØ	kVA	kW	kVAR	PF
10	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.22	1.16	0.81	3,045	3,007	484	98.73%
10	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
10	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	154	111	127	2.29	2.09	1.15	2,817	2,776	482	98.52%
10	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
10	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
10	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
10	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
10	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
10	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
10	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
10	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

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11	Scenario Selection
Loss of 12.47 kV Northeast Feeder	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

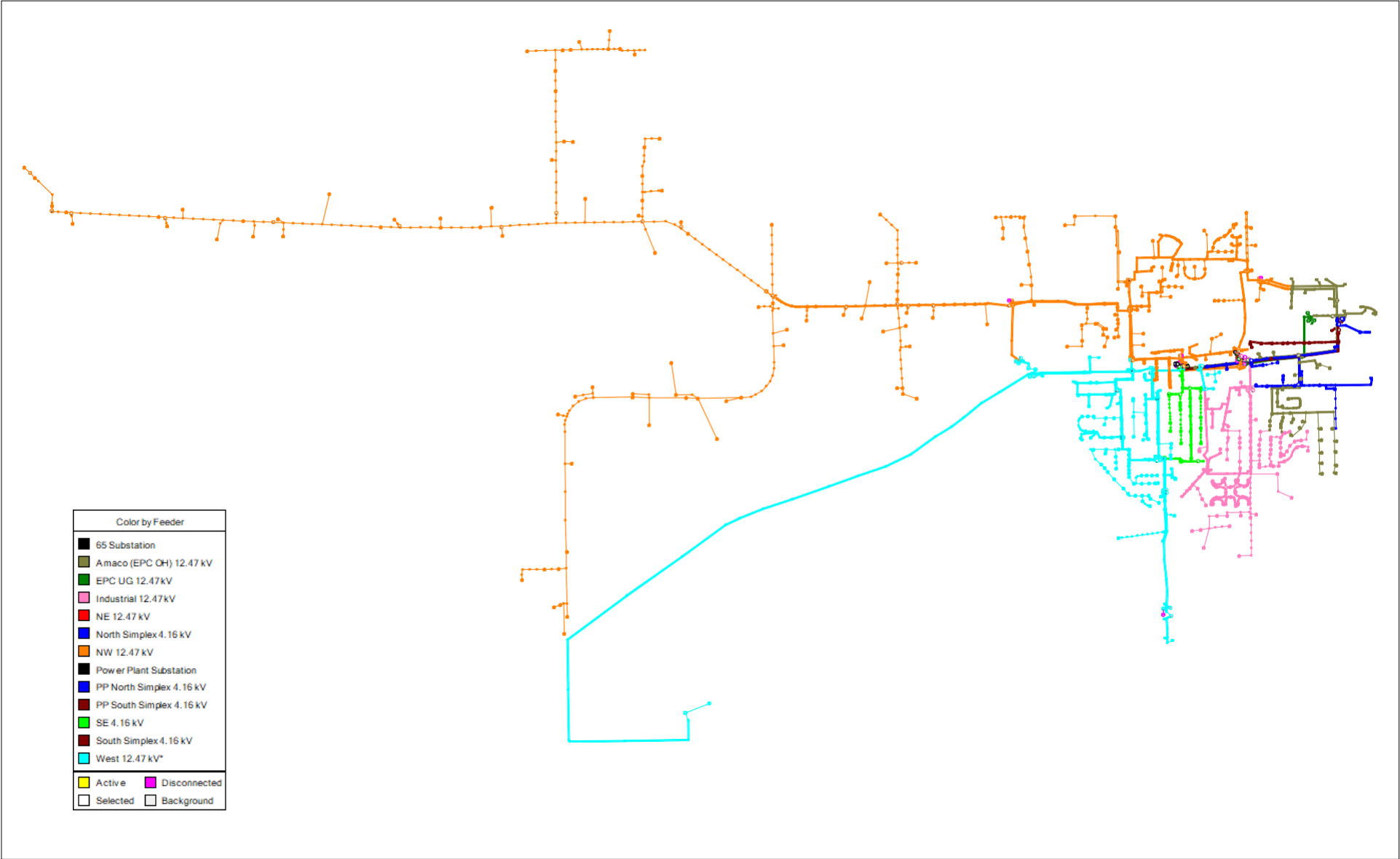
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

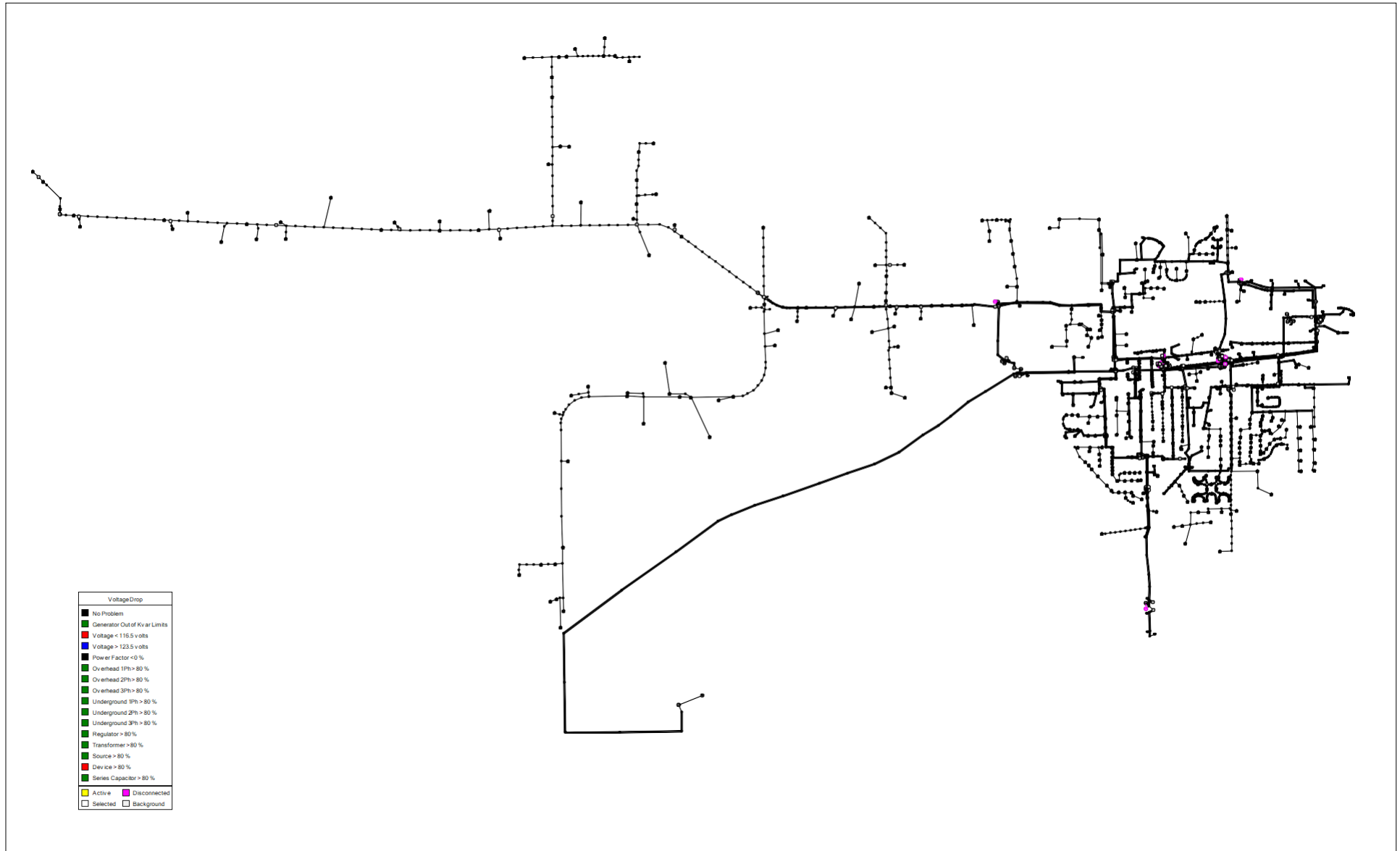
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
11	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	640	561	621	2.79	2.80	3.01	9,034	8,875	1,682	98.23%
11	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
11	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
11	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	208	200	208	1.01	0.91	0.93	4,418	4,120	1,419	93.25%
						TOTALS			2.79	2.80	3.01	13,453	12,995	3,101	96.60%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
11	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.22	1.16	0.81	3,045	3,007	484	98.73%
11	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	209	182	197	2.79	2.80	3.01	4,234	4,148	850	97.97%
11	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	72	56	70	0.66	0.55	0.66	1,420	1,392	284	97.98%
11	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
11	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
11	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
11	NE 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
11	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
11	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
11	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
11	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.







- Mora Municipal Utilities

- DGR Project No.: 427802

12	Scenario Selection
Loss of 12.47 kV Amaco Feeder	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

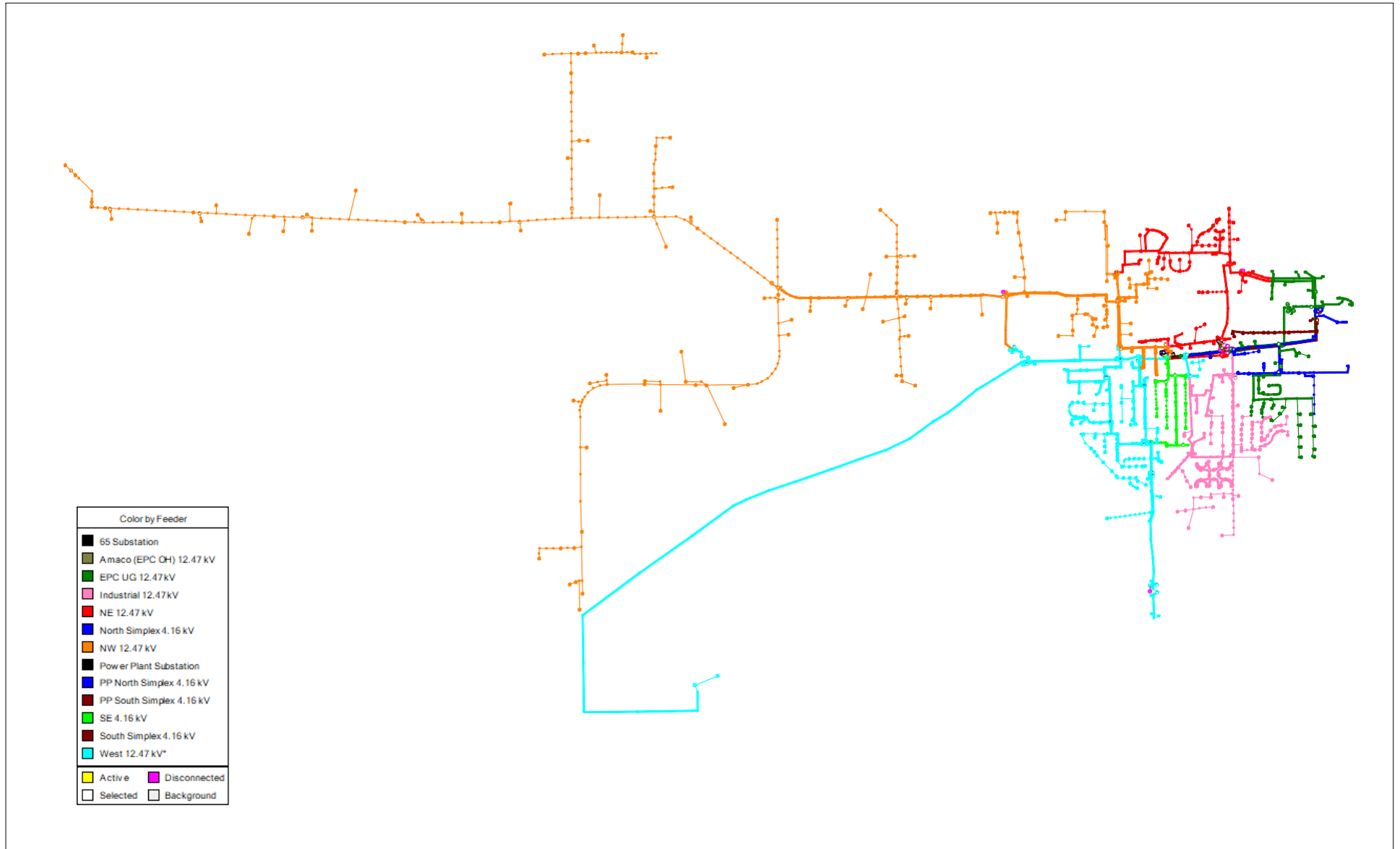
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

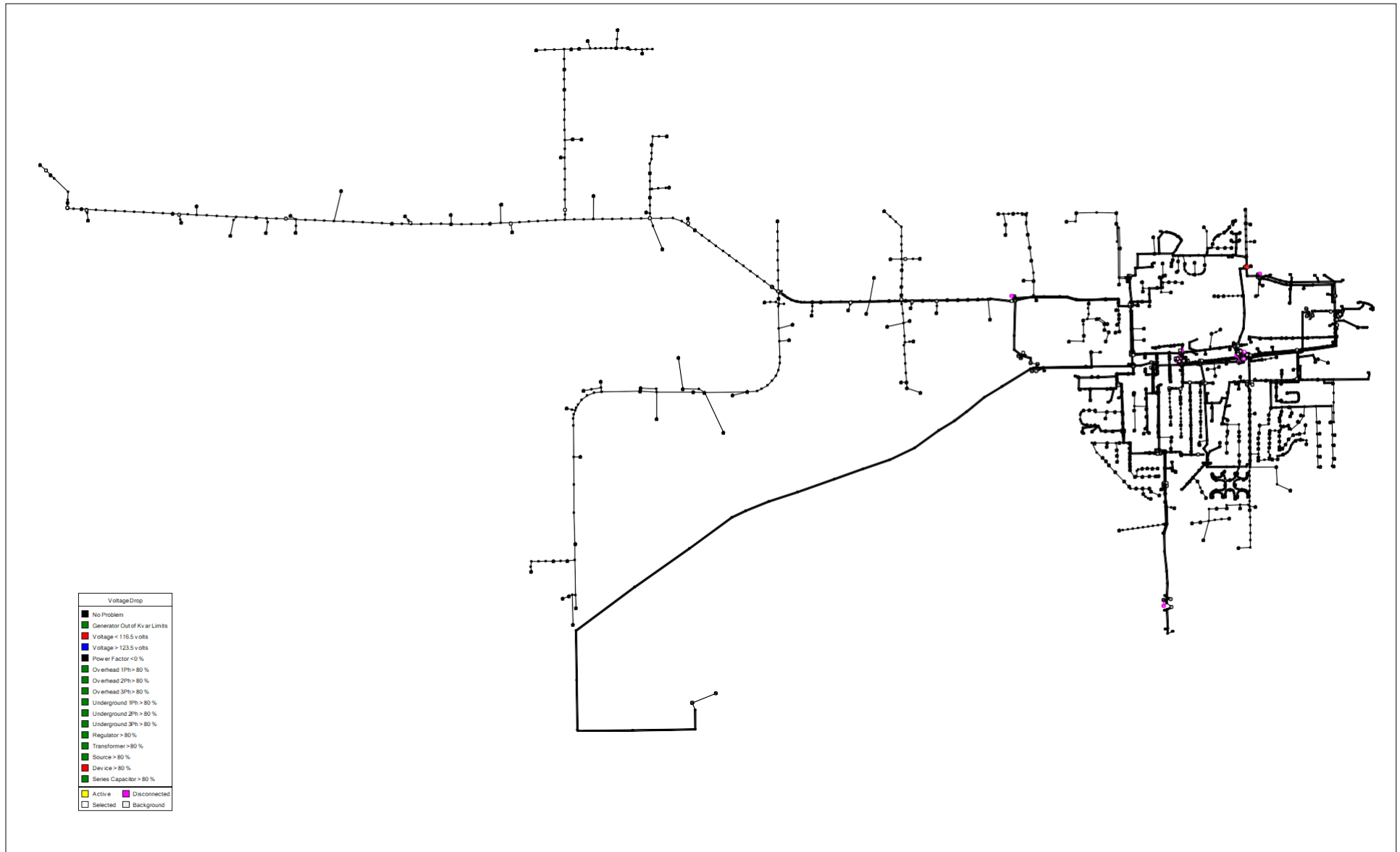
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
12	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	367	302	336	1.64	1.96	0.72	3,147	3,098	542	98.46%
12	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
12	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
12	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	478	455	489	2.04	1.95	1.89	10,230	9,882	2,547	96.59%
						TOTALS			2.04	1.96	1.89	13,377	12,980	3,089	97.03%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
12	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
12	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	99.03%
12	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	72	56	70	0.66	0.55	0.66	1,420	1,392	284	97.99%
12	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
12	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
12	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
12	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.89	2,816	2,744	635	97.43%
12	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	278	264	278	1.75	1.45	1.31	5,900	5,632	1,758	95.45%
12	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
12	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
12	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

- DGR Project No.: 427802

13	Scenario Selection
Loss of 12.47 kV EPC Feeder	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

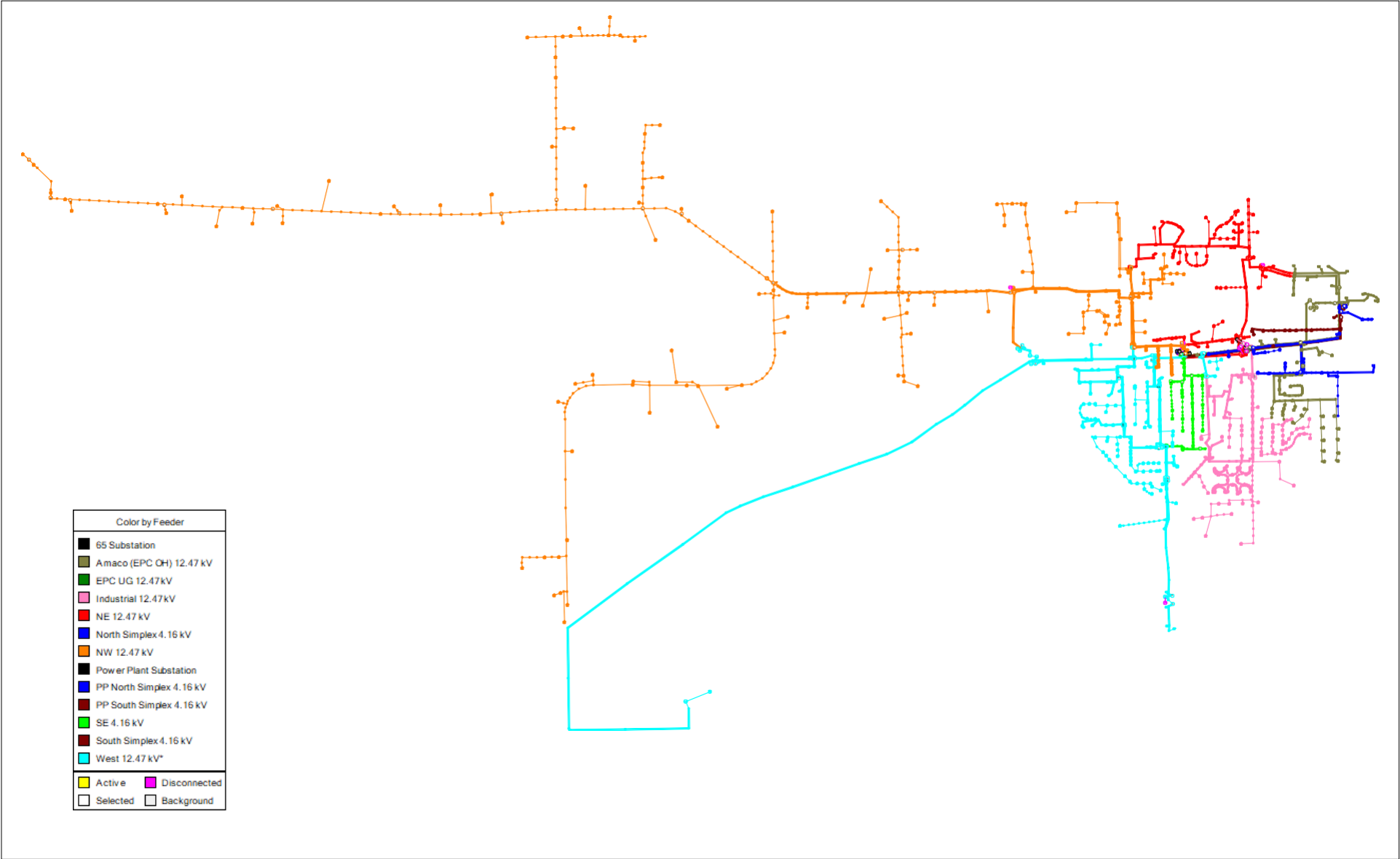
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

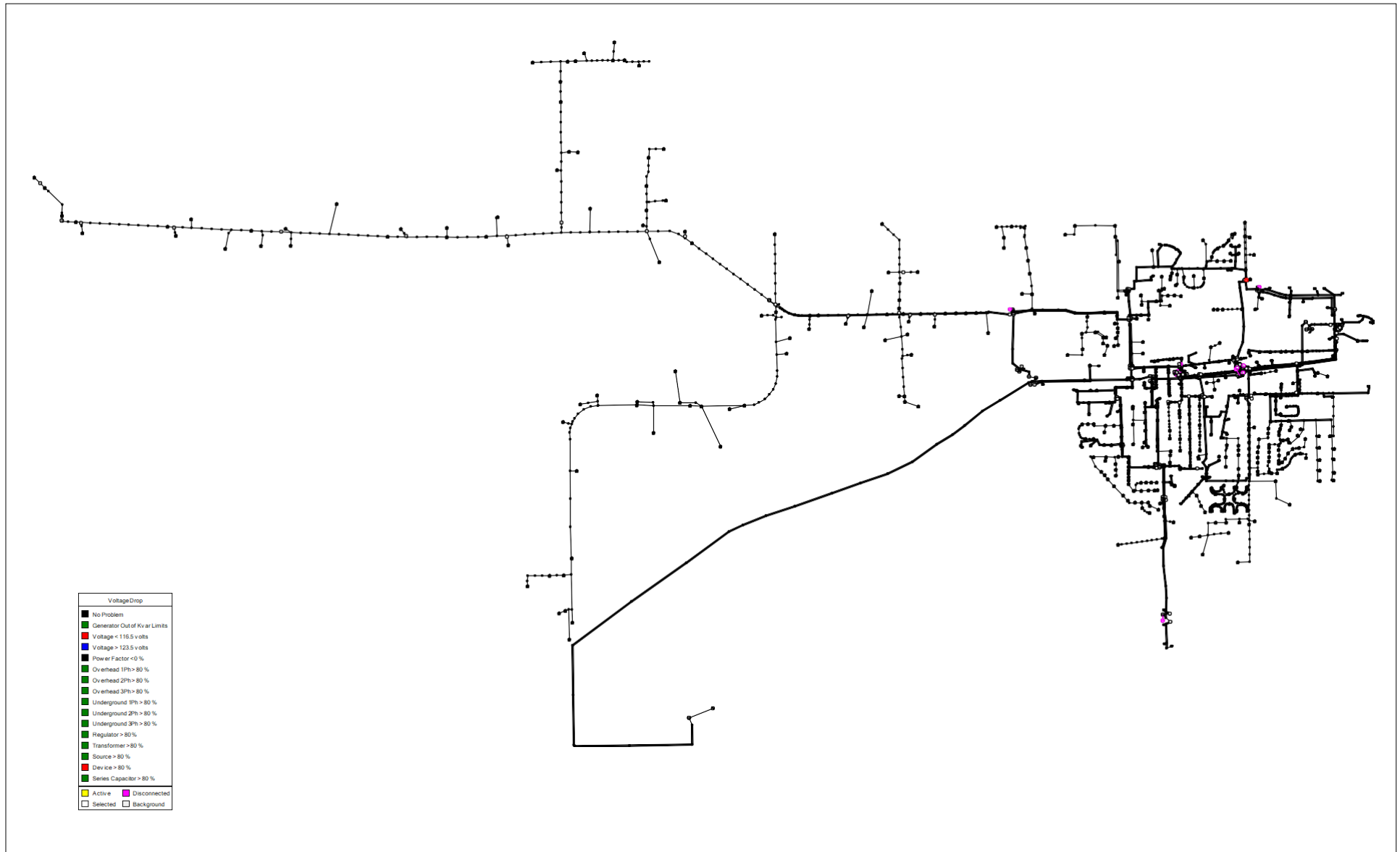
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
13	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	647	570	615	2.57	2.81	1.96	9,107	8,771	2,371	96.31%
13	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
13	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.16	0.92	776	770	81	99.27%
13	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	199	191	211	2.04	1.95	1.90	4,331	4,250	788	98.15%
						TOTALS			2.57	2.81	1.96	13,438	13,022	3,159	96.90%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
13	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	281	268	279	2.57	2.81	1.96	5,960	5,673	1,828	95.18%
13	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	99.03%
13	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	72	56	70	0.66	0.55	0.66	1,420	1,392	284	97.98%
13	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
13	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
13	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
13	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
13	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
13	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
13	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.16	0.92	446	445	23	99.87%
13	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

- DGR Project No.: 427802

14	Scenario Selection
Loss of 12.47 kV Industrial Feeder	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

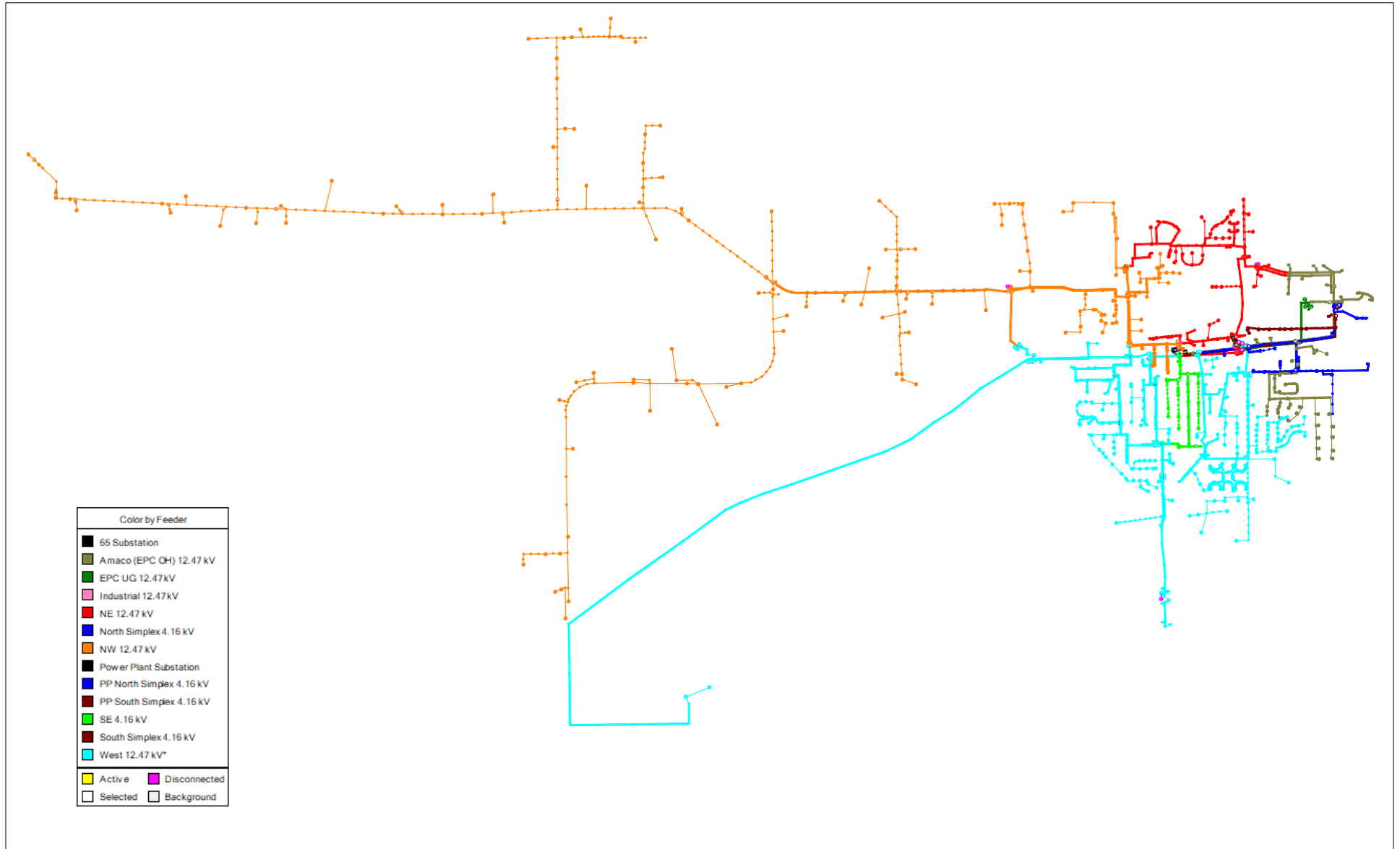
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
14	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	585	498	554	1.64	1.96	1.20	7,705	7,614	1,181	98.81%
14	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
14	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
14	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	261	261	273	2.03	1.95	1.90	5,720	5,357	1,901	93.66%
						TOTALS			2.03	1.96	1.90	13,426	12,971	3,082	96.61%

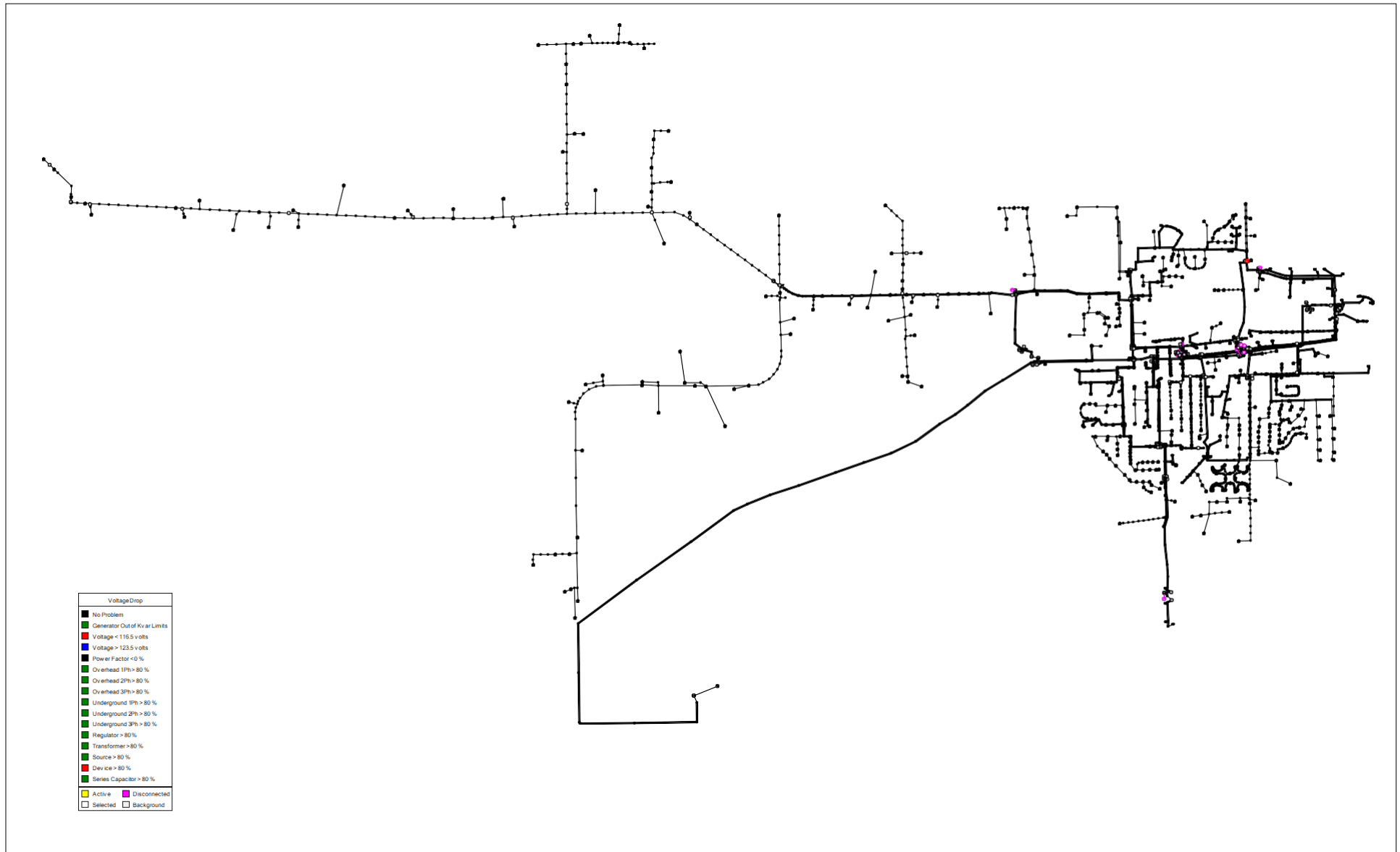
\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
14	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.22	1.16	0.81	3,045	3,007	484	98.73%
14	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	99.03%
14	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	145	120	142	1.39	0.89	1.20	2,934	2,901	439	98.87%
14	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
14	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
14	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
14	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.03	1.95	1.90	2,816	2,744	635	97.43%
14	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
14	Industrial 12.47 kV	12.47 kV Bus	65 Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
14	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
14	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.







- Mora Municipal Utilities

- DGR Project No.: 427802

15	Scenario Selection
Loss of 4.16 kV North Simplex	

## System Analysis Configuration

### Unbalanced V-drop: PropSys-PropLoad

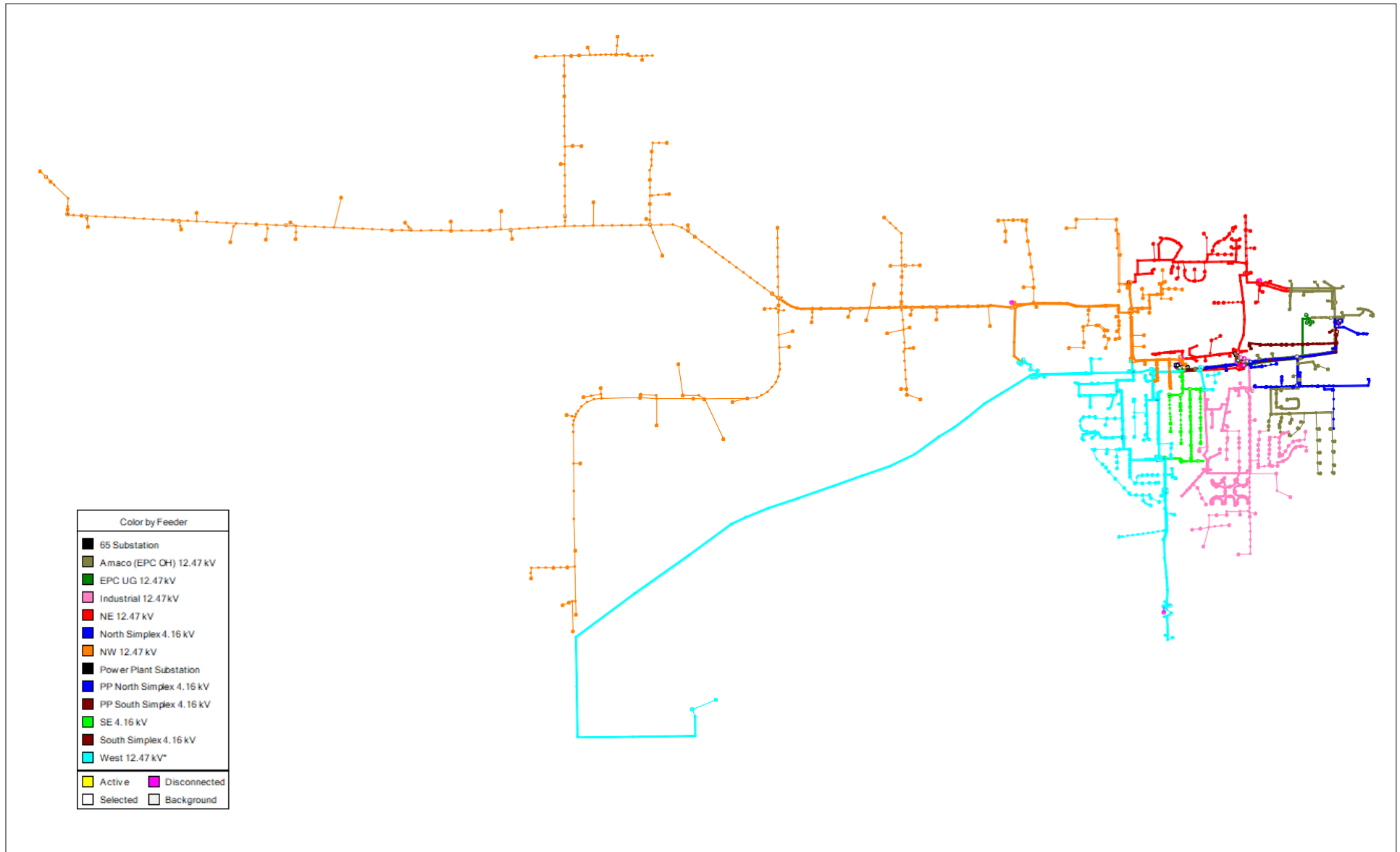
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

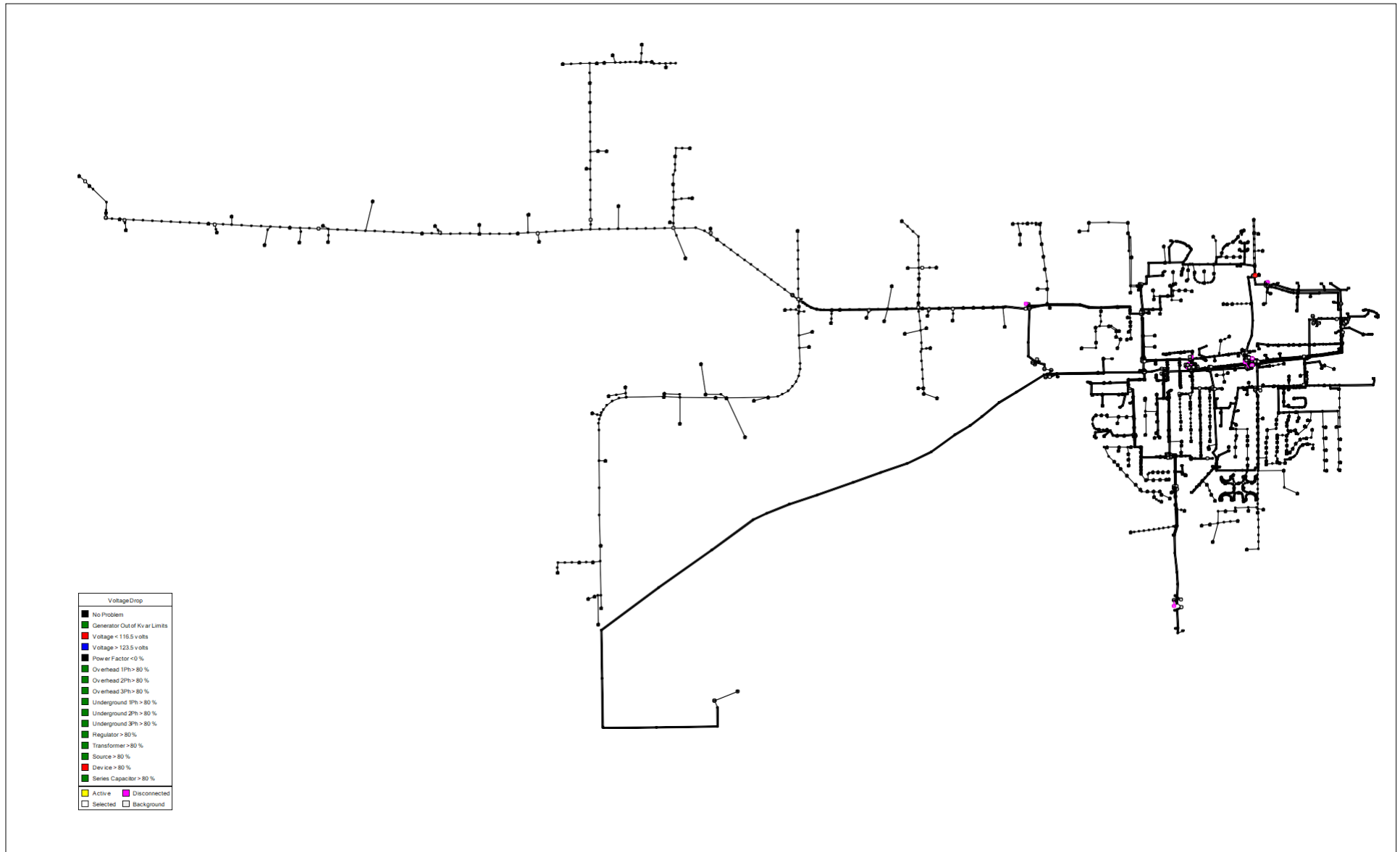
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
15	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	494	414	457	1.64	1.96	0.72	6,189	6,101	1,014	98.58%
15	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	1.09	1.52	1.22	782	775	89	99.10%
15	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%
15	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.04	1.96	1.90	13,423	12,965	3,068	96.58%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
15	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	127	113	120	1.15	1.04	0.67	2,595	2,556	447	0.00%
15	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	0.00%
15	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	72	56	70	0.66	0.55	0.66	1,420	1,392	284	97.98%
15	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	55	58	73	1.09	1.52	1.22	447	446	24	99.85%
15	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
15	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	0.00%
15	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
15	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
15	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
15	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
15	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

- DGR Project No.: 427802

16	Scenario Selection
Loss of 4.16 kV South Simplex	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

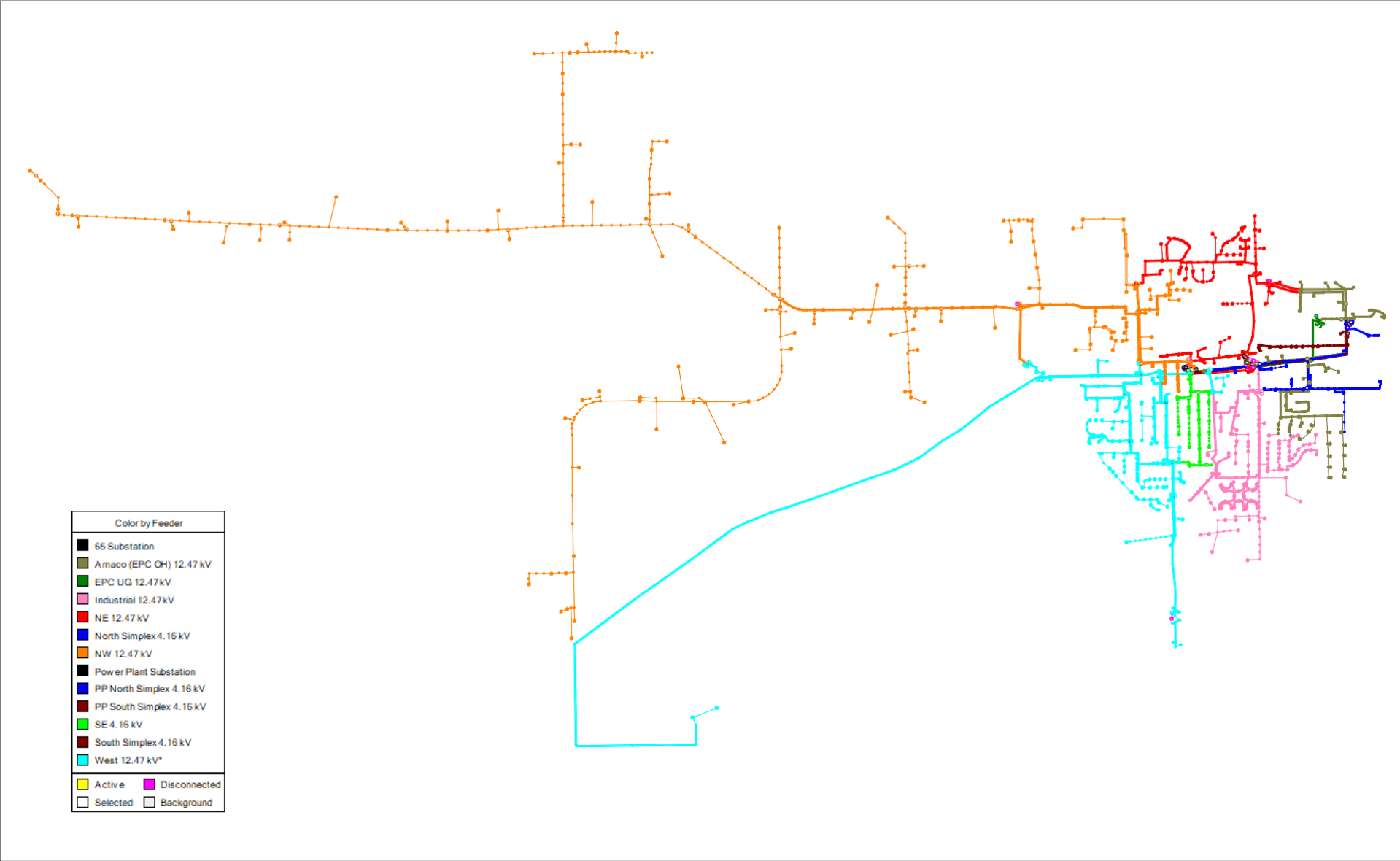
80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

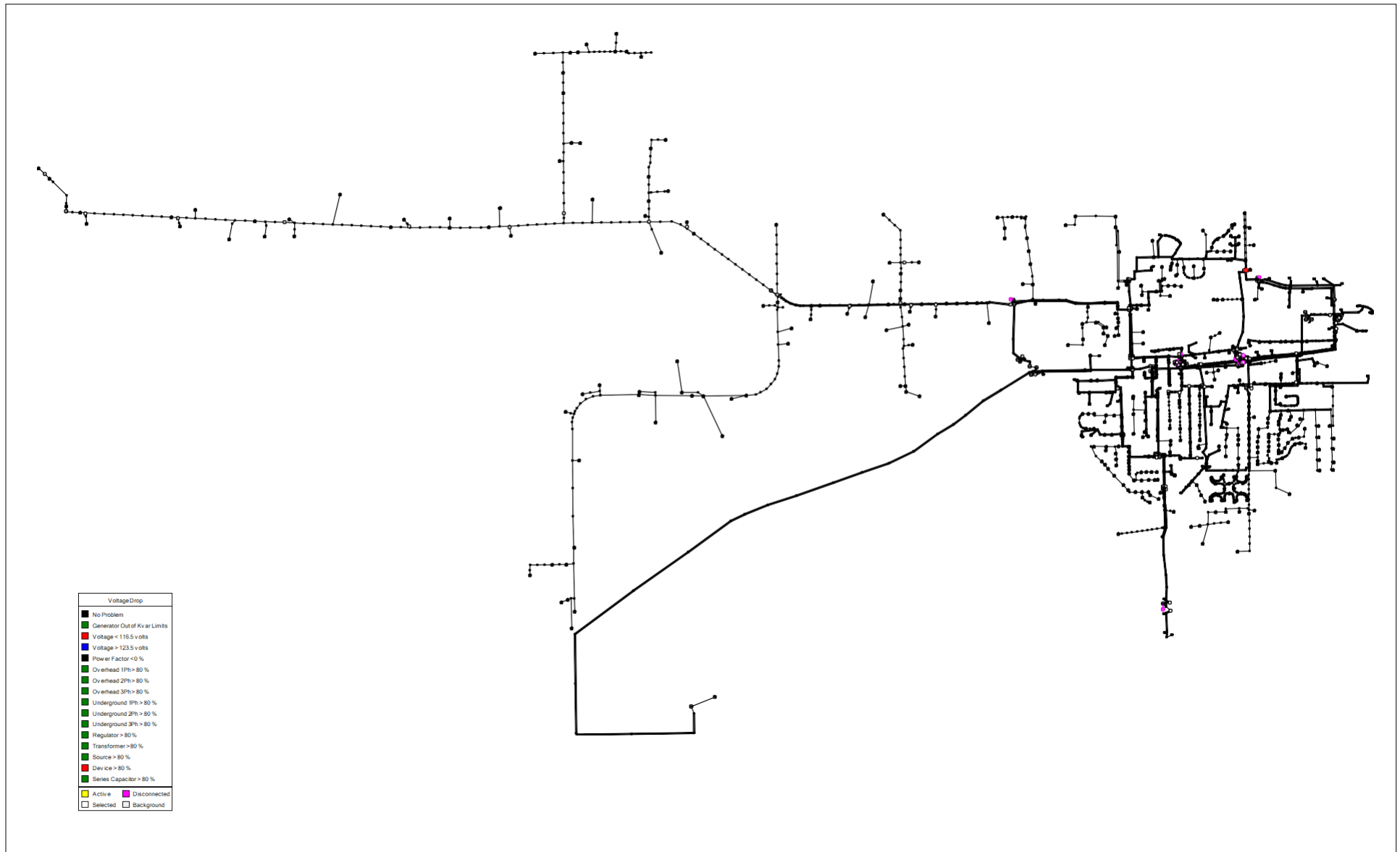
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
16	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	497	418	465	1.64	1.96	0.72	6,190	6,103	1,021	98.60%
16	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	1.38	1.75	1.03	668	655	128	98.14%
16	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
16	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.04	1.96	1.90	13,424	12,967	3,075	96.59%

\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
16	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	131	116	129	1.15	1.06	0.72	2,710	2,678	415	98.82%
16	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	99.03%
16	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	72	56	70	0.66	0.55	0.66	1,420	1,392	284	97.98%
16	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
16	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	44	47	47	1.38	1.75	1.03	333	327	63	98.19%
16	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
16	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
16	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
16	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
16	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
16	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%

\*1200 kW landfill gas generator running at end of the line.





- Mora Municipal Utilities

- DGR Project No.: 427802

17	Scenario Selection
Loss of Generation	

System Analysis Configuration
Unbalanced V-drop: PropSys-PropLoad

80	= 80% Capacity Warning
100	= 100% Capacity Violation
+3.5	= +3.5 Voltage Drop Violation

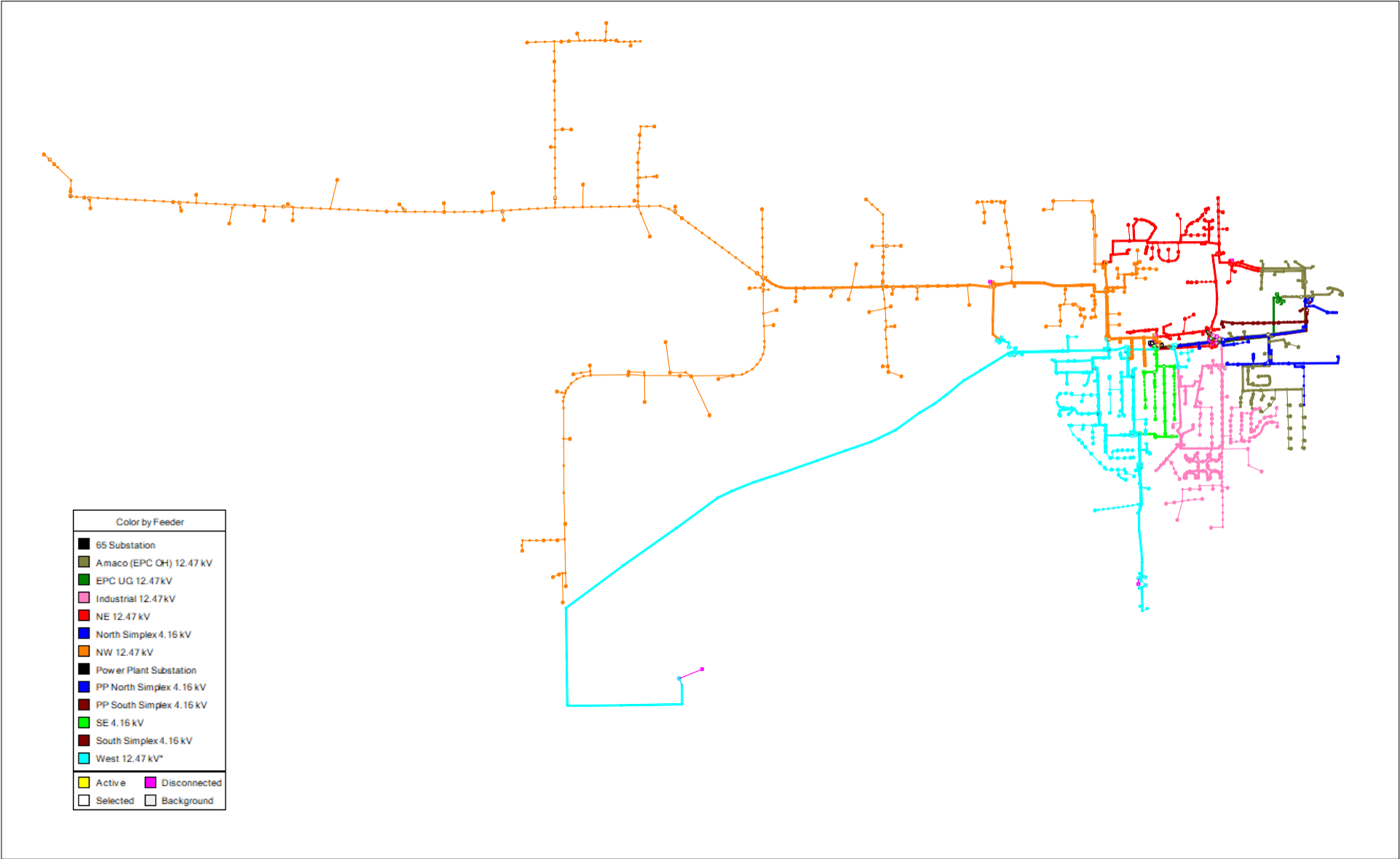
Scenario	Transformer	Ratings (kVA)		Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
		Base	Top			AØ	BØ	CØ	AØ	BØ	CØ				
17	Power Plant Sub T1	12,000	22,000	12.47 kV Bus	Power Plant Sub	567	488	535	1.64	1.96	0.81	7,365	7,292	1,016	99.01%
17	Power Plant Sub T2**	7,500	7,500	4.16 kV Bus	Power Plant Sub	641	573	627	0.15	0.78	0.30	335	328	65	98.10%
17	Industrial Sub T3**	5,000	5,000	4.16 kV Bus	Industrial Sub	99	104	120	0.89	1.17	0.92	776	770	81	99.27%
17	65 Sub T4	12,000	22,000	12.47 kV Bus	65 Sub	334	326	346	2.04	1.95	1.90	7,235	6,864	2,054	94.88%
						TOTALS			2.04	1.96	1.90	14,600	14,156	3,070	96.96%

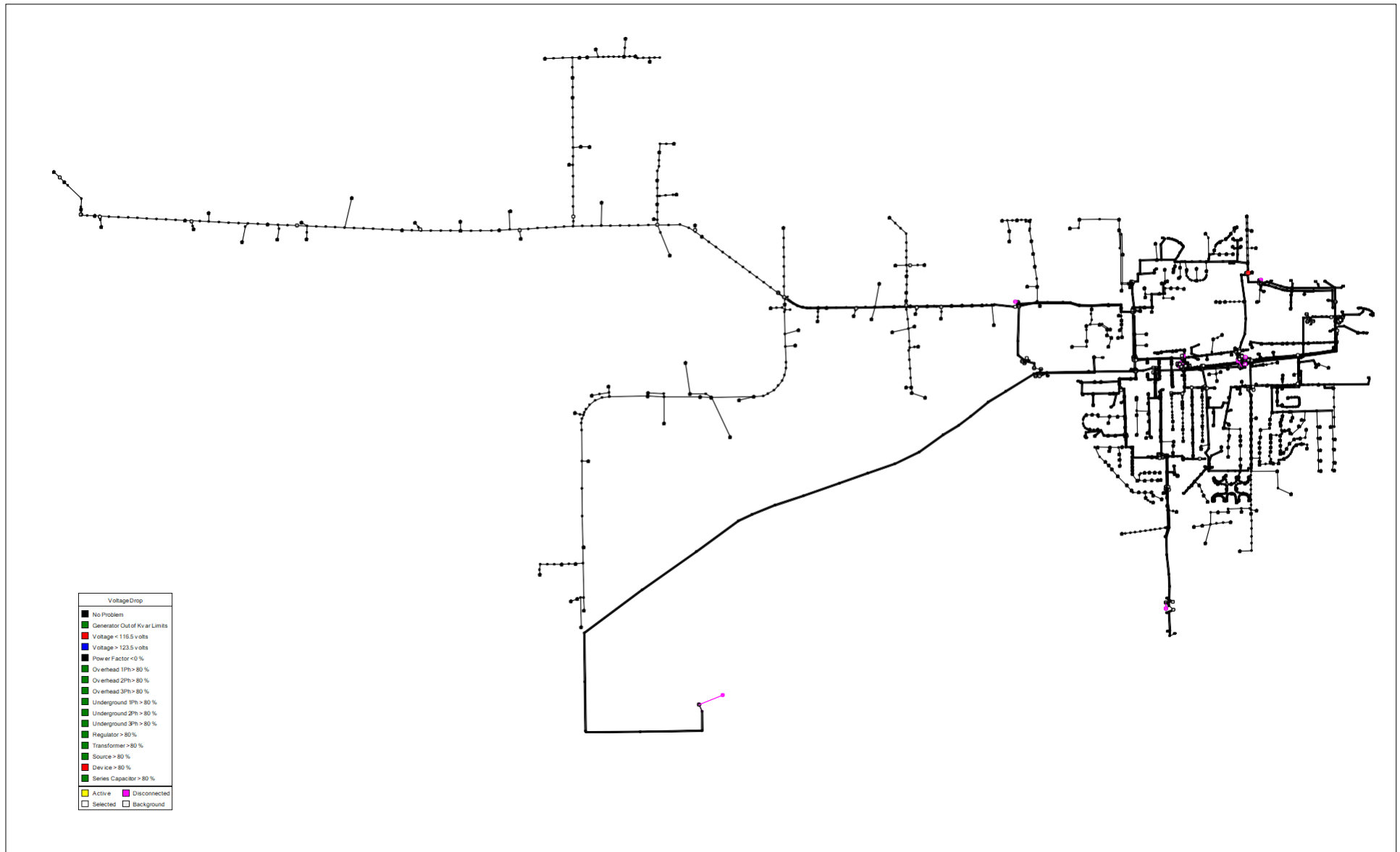
\*\*Xfmr T2 is fed by Xfmr T1, and Xfmr T3 is fed by Xfmr T4.

Scenario	Circuit	Substation Bus	Substation	Phase Amps			Max V Drop			kVA	kW	kVAR	PF
				AØ	BØ	CØ	AØ	BØ	CØ				
17	Amaco (EPC OH) 12.47 kV	12.47 kV Bus	Power Plant Sub	146	132	145	1.22	1.16	0.81	3,045	3,007	484	98.73%
17	NW 12.47 kV	12.47 kV Bus	Power Plant Sub	81	55	57	1.64	1.96	0.72	1,392	1,378	194	99.03%
17	West 12.47 kV*	12.47 kV Bus	Power Plant Sub	126	110	124	0.77	0.65	0.76	2,594	2,579	273	99.44%
17	PP North Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
17	PP South Simplex 4.16 kV	4.16 kV Bus	Power Plant Sub	0	0	0	0.00	0.00	0.00	-	-	-	0.00%
17	SE 4.16 kV	4.16 kV Bus	Power Plant Sub	15	77	46	0.15	0.78	0.30	335	328	65	98.10%
17	NE 12.47 kV	12.47 kV Bus	65 Sub	127	126	138	2.04	1.95	1.90	2,816	2,744	635	97.43%
17	EPC UG 12.47 kV	12.47 kV Bus	65 Sub	135	135	135	0.46	0.38	0.48	2,904	2,614	1,266	90.00%
17	Industrial 12.47 kV	12.47 kV Bus	65 Sub	73	65	73	1.01	0.91	0.93	1,514	1,507	153	99.49%
17	North Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	55	57	73	0.89	1.17	0.92	446	445	23	99.87%
17	South Simplex 4.16 kV	4.16 kV Bus	Industrial Sub	44	47	47	0.49	0.59	0.38	330	325	58	98.45%

\*1200 kW landfill gas generator is not running at end of the line.









# MEMORANDUM

Date: November 16, 2021  
To: Public Utilities Commission  
From: Sara B. King, Accountant  
RE: Proposed Assessment of Unpaid Utility Bills

---

## SUMMARY

The attached list of unpaid utility bills represent past-due homeowner and/or business owner accounts. If recommended by the PUC, the list of unpaid charges will be considered for certification to the respective property tax statements for taxes payable in 2022 by City Council at their next meeting on November 16, 2021.

---

## BACKGROUND INFORMATION

In accordance with Minnesota state law and Mora City Code § 50.24, property owners have been notified of the pending certification and have the right to attend the public hearing to object to the certification of the unpaid bill.

For the purpose of certifying unpaid utility accounts, it is the practice of MMU to review past due accounts periodically.

---

## OPTIONS & IMPACTS

1. Recommend to City Council the certification of the entire list of unpaid charges.
2. Recommend to City Council the certification of a partial list of unpaid charges.
3. Do not recommend certifications.

---

## RECOMMENDATIONS

Motion to recommend the certification of the entire list of unpaid charges to City Council.

### *Attachments*

Pending Assessment Roll for Unpaid Utility Charges

**CITY OF MORA / MORA MUNICIPAL UTILITIES****PROPOSED SPECIAL ASSESSMENTS FOR UNPAID UTILITY CHARGES**

For the Public Hearing on November 16, 2021

Parcel ID	Service Address	Balance	10% Cert Fee	To Certify	Full Billing Name
22.04055.00	312 GROVE ST S	218.99	21.90	240.89	HENRY, GLENN
22.01355.00	712 BEAN AVE	594.78	59.48	654.26	TETENS, DONALD
22.05940.00	EDGEWOOD MH PARK WATER	28,370.42	2,837.04	31,207.46	MORA ACQUISITIONS LLC/EDGEWOOD PARK
22.02735.00	30 UNION ST N	605.00	60.50	665.50	MI TIERRA I SABOR REAL INC
<b>TOTAL UTILITY SPECIAL ASSESSMENTS</b>		29,789.19	2,978.92	32,768.11	



# MEMORANDUM

Date: November 16, 2021  
To: Public Utilities Commission  
From: Lindy Crawford, Public Utilities General Manager  
RE: 2022 PUC Meeting Schedule

---

## BACKGROUND INFORMATION

Traditionally the PUC meets at 3:00pm at City Hall on the Monday before the third Tuesday of the month. Staff recommends keeping with this meeting date in 2022. Below are proposed meeting dates which incorporate holidays and one joint meeting with the City Council. Additional special meetings may be called throughout the year as needed.

January 18; this is the 3<sup>rd</sup> Tuesday – moved due to Dr. Martin Luther King, Jr. Day  
February 14  
March 14  
April 18  
May 16  
June 20  
July 19; this is the 3<sup>rd</sup> Tuesday.  
July 19; 4:30pm joint meeting with City Council  
August 15  
September 19  
October 17  
November 14  
December 19

---

## RECOMMENDATIONS

Motion to approve the 2022 meeting dates as presented.

## *Attachments*

None



# MORA MUNICIPAL UTILITIES



## Financial Reports

*Electric Fund*  
*Water Fund*  
*Sewer Fund*

September 30, 2021  
[unaudited]

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Graphical Presentation – Sewer Fund .....	
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**MORA MUNICIPAL UTILITIES**

## Fund Budgetary Performance

For the Quarter Ended September 30, 2021

	2021 YTD Budget	2021 YTD Actual	2021 YTD Balance	2021 % YTD Budget
<b>ELECTRIC FUND</b>				
Revenues	6,098,216.00	4,916,564.88	1,181,651.12	80.62%
Expenditures	5,890,445.00	4,356,373.60	1,534,071.40	73.96%
Surplus/(Deficit)		560,191.28		
<b>WATER FUND</b>				
Revenues	791,278.00	680,727.53	110,550.47	86.03%
Expenditures	777,380.00	558,590.61	218,789.39	71.86%
Surplus/(Deficit)		122,136.92		
<b>SEWER FUND</b>				
Revenues	1,072,725.00	880,187.87	192,537.13	82.05%
Expenditures	1,128,217.00	755,796.24	372,420.76	66.99%
Surplus/(Deficit)		124,391.63		
<b>TOTAL ALL FUNDS</b>				
Revenues	7,962,219.00	6,477,480.28	1,484,738.72	81.35%
Expenditures	7,796,042.00	5,670,760.45	2,125,281.55	72.74%
Surplus/(Deficit)		806,719.83		

**CITY OF MORA****BALANCE SHEET**

Current Period: September 2021

Page 2

Year End

Account Descr	Begin Yr	YTD Debit	YTD Credit	Current Balance
Fund 651 ELECTRIC FUND				
Bal Type A				
G 651-11011 Cash NNB Checking	\$1,894,431.20	\$5,821,665.04	\$6,284,862.33	\$1,431,233.91
G 651-11013 Petty Cash	\$0.00	\$0.00	\$0.00	\$0.00
G 651-11014 ChangeFund/AirportVending/N	\$400.00	\$0.00	\$0.00	\$400.00
G 651-11018 Cash FCB HI-FI	\$625,466.24	\$20,991.65	\$0.00	\$646,457.89
G 651-11020 Investments	\$5,030,950.93	\$930,191.75	\$456,796.29	\$5,504,346.39
G 651-11022 Spire Savings	\$0.00	\$0.00	\$0.00	\$0.00
G 651-11041 Interest Receivable	\$37,272.77	\$0.00	\$0.00	\$37,272.77
G 651-11151 Accounts Receivable	\$52,295.08	\$656,680.06	\$668,135.54	\$40,839.60
G 651-11152 Accounts Receivable - UB	\$442,389.49	\$4,667,227.72	\$4,557,829.51	\$551,787.70
G 651-11154 Return Checks	\$0.00	\$0.00	\$0.00	\$0.00
G 651-11155 Accounts Rec - Other	\$0.00	\$0.00	\$0.00	\$0.00
G 651-11212 Special Assess Rec - Unamort	\$0.00	\$0.00	\$0.00	\$0.00
G 651-11213 Special Assess Rec - Amortized	\$0.00	\$0.00	\$0.00	\$0.00
G 651-11410 Distribution Inventory	\$130,105.52	\$107,166.72	\$0.00	\$237,272.24
G 651-11551 Prepaid Ins	\$0.00	\$45,780.51	\$34,421.89	\$11,358.62
G 651-12600 Fixed Assets	\$6,162,048.97	\$262,194.46	\$210.08	\$6,424,033.35
G 651-12601 Allowance for Depreciation	-\$4,098,651.79	\$0.00	\$145,413.34	-\$4,244,065.13
G 651-12647 Construction in Progress	\$5,222.49	\$0.00	\$5,222.49	\$0.00
G 651-13300 Advance To Wood & Grove Fu	\$493,894.56	\$0.00	\$31,816.16	\$462,078.40
G 651-13305 Advance To Water Fund	\$141,443.26	\$0.00	\$9,111.62	\$132,331.64
G 651-13310 Advance To Sewer Fund	\$135,890.42	\$0.00	\$8,753.91	\$127,136.51
G 651-13315 Advance To Fire Station Proj F	\$0.00	\$0.00	\$0.00	\$0.00
G 651-13320 Advance To Liquor Fund	\$900,000.00	\$0.00	\$0.00	\$900,000.00
G 651-13325 Advance To TIF District 1-11	\$199,103.98	\$0.00	\$10,854.98	\$188,249.00
G 651-13340 Advance to General Fund	\$0.00	\$129,198.12	\$0.00	\$129,198.12
G 651-15600 Deferred Outflow - Pensions	\$47,458.00	\$0.00	\$0.00	\$47,458.00
G 651-15650 Deferred Outflow - OPEB	\$3,417.00	\$0.00	\$0.00	\$3,417.00
Bal Type A	\$12,203,138.12	\$12,641,096.03	\$12,213,428.14	\$12,630,806.01
Bal Type E				
G 651-24204 Fund Bal-Undes/Net Asset (ent	\$10,239,286.04	\$4,450,595.07	\$5,010,786.35	\$10,799,477.32
G 651-24502 FB/Net Asset-Des Cap Proj/De	-\$1,000,000.00	\$0.00	\$0.00	-\$1,000,000.00
Bal Type E	\$11,239,286.04	\$4,450,595.07	\$5,010,786.35	\$11,799,477.32
Bal Type L				
G 651-20610 Contracts Payable - Retainage	-\$5,222.49	\$5,222.49	\$0.00	\$0.00
G 651-21500 Accrued Interest Payable	\$0.00	\$0.00	\$0.00	\$0.00
G 651-21600 Accrued Wages/Salaries Payab	-\$5,495.77	\$0.00	\$0.00	-\$5,495.77
G 651-22021 Accounts Payable	-\$471,969.05	\$3,292,994.49	\$3,168,589.19	-\$347,563.75
G 651-22050 Franchise Fee Payable	\$0.00	\$199,895.14	\$199,895.14	\$0.00
G 651-22082 Sales Tax Payable	-\$20,347.00	\$220,453.08	\$225,493.66	-\$25,387.58
G 651-22161 Accrued Vac-Sick Wages	-\$28,613.76	\$0.00	\$0.00	-\$28,613.76
G 651-22190 OPEB Liability	-\$30,157.00	\$0.00	\$0.00	-\$30,157.00
G 651-22201 Deposits	-\$62,940.00	\$23,000.00	\$13,600.00	-\$53,540.00
G 651-22202 Deposits - Other	-\$100.00	\$0.00	\$0.00	-\$100.00
G 651-22223 Deferred Revenues	\$0.00	\$0.00	\$0.00	\$0.00
G 651-22250 Undistributed Receipts (UR)	-\$17,407.01	\$65,383.80	\$66,847.62	-\$18,870.83
G 651-22850 EFT Clearing Account	\$0.00	\$3,663.66	\$3,663.66	\$0.00
G 651-23000 Net Pension Liability	-\$305,991.00	\$0.00	\$0.00	-\$305,991.00
G 651-23500 Deferred Inflow - Pensions	-\$15,609.00	\$0.00	\$0.00	-\$15,609.00
Bal Type L	-\$963,852.08	\$3,810,612.66	\$3,678,089.27	-\$831,328.69
Fund 651 ELECTRIC FUND	\$0.00	\$20,902,303.76	\$20,902,303.76	\$0.00

**CITY OF MORA****BALANCE SHEET**

Current Period: September 2021

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Year End

Account Descr	Begin Yr	YTD Debit	YTD Credit	Current Balance
Fund 652 WATER FUND				
Bal Type A				
G 652-11011 Cash NNB Checking	\$584,970.34	\$851,950.29	\$900,924.15	\$535,996.48
G 652-11012 INV Restr Cap Imp/Debt-K/W/	\$37,369.63	\$23.50	\$0.00	\$37,393.13
G 652-11018 Cash FCB HI-FI	\$62,999.34	\$37.74	\$10,503.34	\$52,533.74
G 652-11020 Investments	\$643,216.72	\$343,063.07	\$170,409.55	\$815,870.24
G 652-11041 Interest Receivable	\$4,765.40	\$0.00	\$0.00	\$4,765.40
G 652-11151 Accounts Receivable	\$1,325.22	\$5,097.03	\$6,284.01	\$138.25
G 652-11152 Accounts Receivable - UB	\$126,547.87	\$706,004.22	\$681,896.43	\$150,655.66
G 652-11154 Return Checks	\$0.00	\$0.00	\$0.00	\$0.00
G 652-11155 Accounts Rec - Other	\$0.00	\$0.00	\$0.00	\$0.00
G 652-11212 Special Assess Rec - Unamort	\$57,300.06	\$20,298.45	\$4,765.94	\$72,832.57
G 652-11213 Special Assess Rec - Amortized	\$0.00	\$0.00	\$0.00	\$0.00
G 652-11420 Inventory Materials/Supplies	\$12,534.02	\$9,352.13	\$0.00	\$21,886.15
G 652-11551 Prepaid Ins	\$0.00	\$13,106.40	\$9,864.49	\$3,241.91
G 652-12600 Fixed Assets	\$7,827,990.79	\$98,649.67	\$3,300.00	\$7,923,340.46
G 652-12601 Allowance for Depreciation	-\$4,290,447.08	\$0.00	\$250,468.23	-\$4,540,915.31
G 652-15600 Deferred Outflow - Pensions	\$21,152.00	\$0.00	\$0.00	\$21,152.00
G 652-15650 Deferred Outflow - OPEB	\$1,604.00	\$0.00	\$0.00	\$1,604.00
Bal Type A	\$5,091,328.31	\$2,047,582.50	\$2,038,416.14	\$5,100,494.68
Bal Type E				
G 652-24204 Fund Bal-Undes/Net Asset (ent	-\$3,626,430.66	\$565,493.04	\$687,629.95	-\$3,748,567.58
G 652-24502 FB/Net Asset-Des Cap Proj/De	-\$100,000.00	\$0.00	\$0.00	-\$100,000.00
Bal Type E	-\$3,726,430.66	\$565,493.04	\$687,629.95	-\$3,848,567.58
Bal Type L				
G 652-20900 Advance From Electric Fund	-\$141,443.26	\$9,111.62	\$0.00	-\$132,331.64
G 652-21500 Accrued Interest Payable	-\$9,190.31	\$0.00	\$0.00	-\$9,190.31
G 652-21600 Accrued Wages/Salaries Payab	-\$2,458.41	\$0.00	\$0.00	-\$2,458.41
G 652-22021 Accounts Payable	-\$5,150.51	\$5,521.19	\$370.68	\$0.00
G 652-22026 State Water Fee	-\$0.17	\$8,738.00	\$8,738.59	-\$0.76
G 652-22031 Bonds Payable	-\$1,031,672.00	\$99,182.00	\$0.00	-\$932,490.00
G 652-22034 Unamortized Premium on Bon	-\$1,525.82	\$0.00	\$0.00	-\$1,525.82
G 652-22082 Sales Tax Payable	-\$752.00	\$8,479.89	\$8,952.88	-\$1,224.99
G 652-22161 Accrued Vac-Sick Wages	-\$15,013.17	\$0.00	\$0.00	-\$15,013.17
G 652-22190 OPEB Liability	-\$14,151.00	\$0.00	\$0.00	-\$14,151.00
G 652-22201 Deposits	-\$200.00	\$250.00	\$250.00	-\$200.00
G 652-22223 Deferred Revenues	\$0.00	\$0.00	\$0.00	\$0.00
G 652-22850 EFT Clearing Account	\$0.00	\$0.00	\$0.00	\$0.00
G 652-22860 Edgewood Tenant Rent Collect	\$0.00	\$0.00	\$0.00	\$0.00
G 652-23000 Net Pension Liability	-\$136,384.00	\$0.00	\$0.00	-\$136,384.00
G 652-23500 Deferred Inflow - Pensions	-\$6,957.00	\$0.00	\$0.00	-\$6,957.00
Bal Type L	-\$1,364,897.65	\$131,282.70	\$18,312.15	-\$1,251,927.10
Fund 652 WATER FUND	\$0.00	\$2,744,358.24	\$2,744,358.24	\$0.00



**CITY OF MORA**  
**BALANCE SHEET**  
 Current Period: September 2021

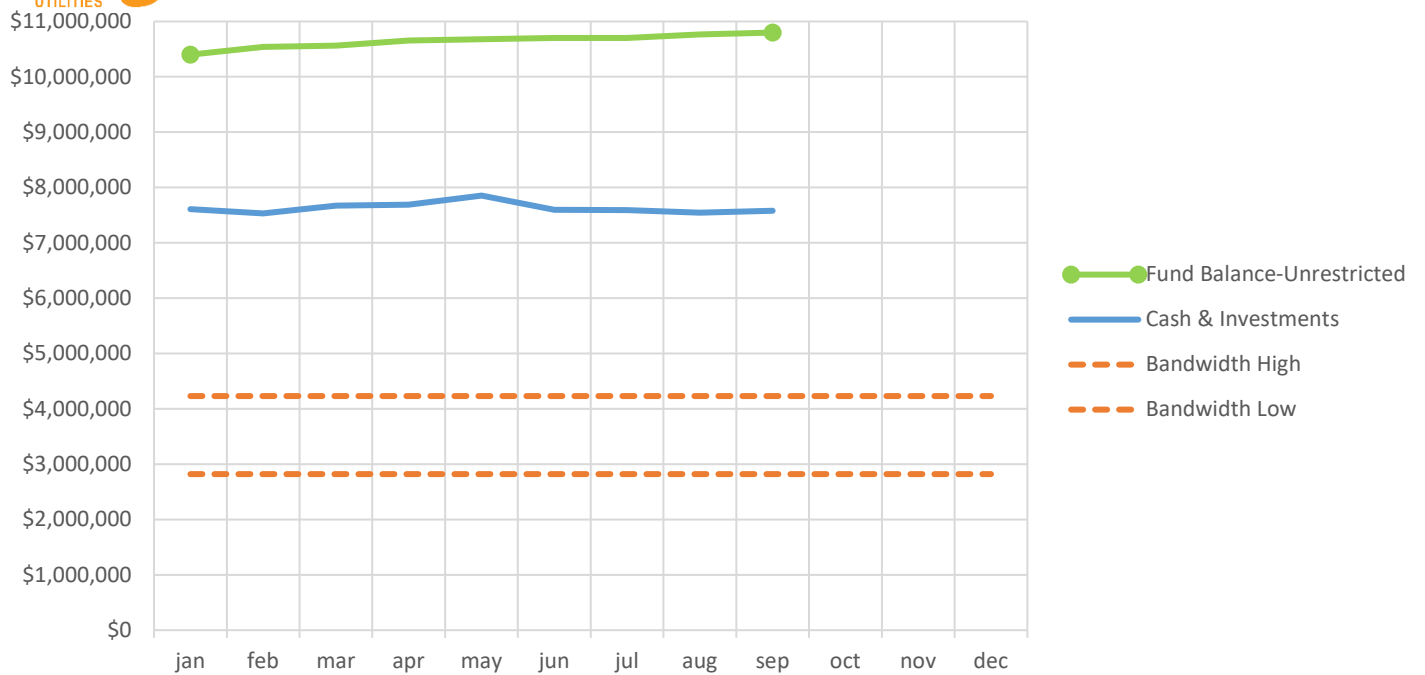
Page 4

Year End

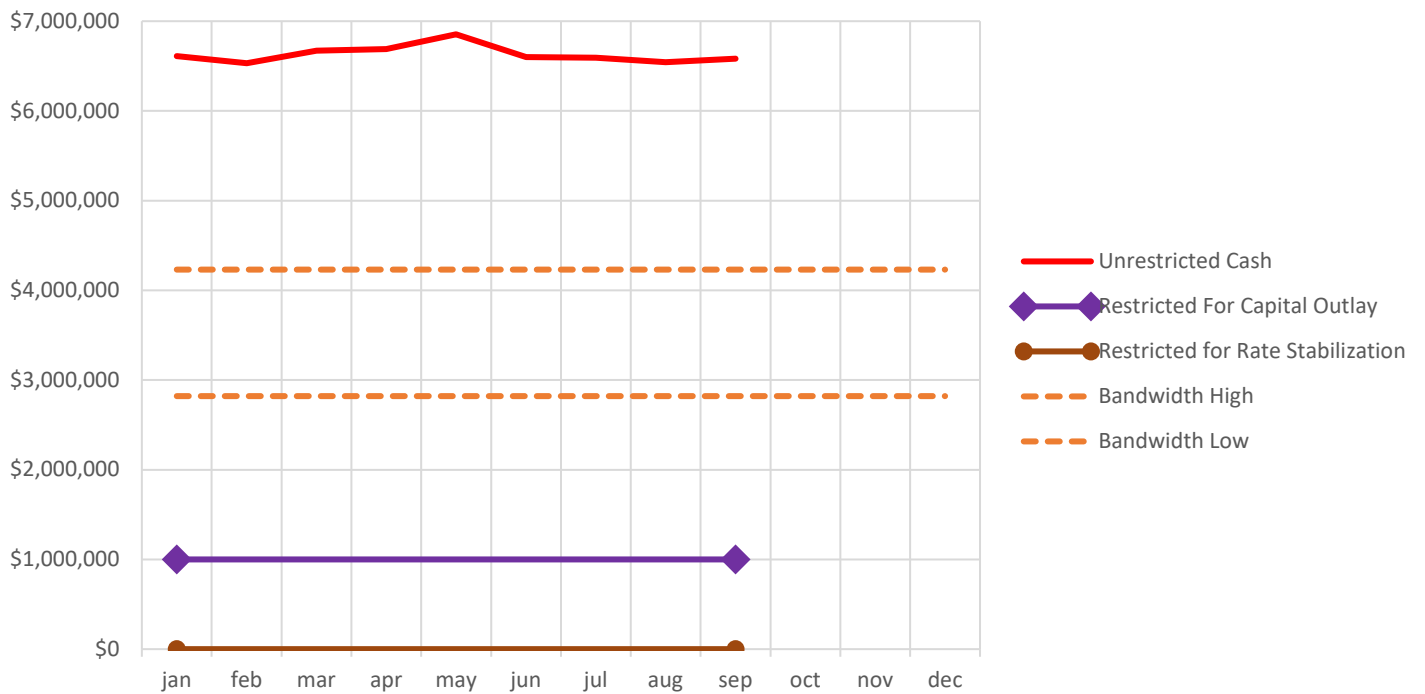
Account Descr	Begin Yr	YTD Debit	YTD Credit	Current Balance
<b>Fund 653 SEWER FUND</b>				
<b>Bal Type A</b>				
G 653-11011 Cash NNB Checking	\$867,152.71	\$1,081,990.62	\$1,073,678.76	\$875,464.57
G 653-11018 Cash FCB HI-FI	\$637,179.65	\$399.13	\$10,090.98	\$627,487.80
G 653-11020 Investments	\$1,622,292.46	\$407,103.70	\$200,846.39	\$1,828,549.77
G 653-11041 Interest Receivable	\$12,019.07	\$0.00	\$0.00	\$12,019.07
G 653-11151 Accounts Receivable	\$414.98	\$2,715.52	\$3,130.50	\$0.00
G 653-11152 Accounts Receivable - UB	\$108,621.46	\$869,617.46	\$843,276.12	\$134,962.80
G 653-11155 Accounts Rec - Other	\$0.00	\$0.00	\$0.00	\$0.00
G 653-11212 Special Assess Rec - Unamort	\$0.00	\$0.00	\$0.00	\$0.00
G 653-11213 Special Assess Rec - Amortized	\$0.00	\$0.00	\$0.00	\$0.00
G 653-11551 Prepaid Ins	\$0.00	\$23,313.31	\$17,549.31	\$5,764.00
G 653-12600 Fixed Assets	\$13,761,445.78	\$52,777.36	\$0.00	\$13,814,223.14
G 653-12601 Allowance for Depreciation	-\$6,059,028.45	\$0.00	\$356,228.18	-\$6,415,256.63
G 653-12647 Construction in Progress	\$20,000.00	\$0.00	\$20,000.00	\$0.00
G 653-15600 Deferred Outflow - Pensions	\$31,989.00	\$0.00	\$0.00	\$31,989.00
G 653-15650 Deferred Outflow - OPEB	\$2,712.00	\$0.00	\$0.00	\$2,712.00
<b>Bal Type A</b>	<b>\$11,004,798.66</b>	<b>\$2,437,917.10</b>	<b>\$2,524,800.24</b>	<b>\$10,917,915.52</b>
<b>Bal Type E</b>				
G 653-24204 Fund Bal-Undes/Net Asset (ent	-\$7,596,705.11	\$771,202.41	\$895,594.04	-\$7,721,096.74
G 653-24502 FB/Net Asset-Des Cap Proj/De	-\$220,000.00	\$0.00	\$0.00	-\$220,000.00
<b>Bal Type E</b>	<b>-\$7,816,705.11</b>	<b>\$771,202.41</b>	<b>\$895,594.04</b>	<b>-\$7,941,096.74</b>
<b>Bal Type L</b>				
G 653-20610 Contracts Payable - Retainage	-\$20,000.00	\$20,000.00	\$0.00	\$0.00
G 653-20900 Advance From Electric Fund	-\$135,890.42	\$8,753.91	\$0.00	-\$127,136.51
G 653-21500 Accrued Interest Payable	-\$12,975.12	\$0.00	\$0.00	-\$12,975.12
G 653-21600 Accrued Wages/Salaries Payab	-\$4,232.52	\$0.00	\$0.00	-\$4,232.52
G 653-22021 Accounts Payable	-\$16,261.86	\$16,261.86	\$0.00	\$0.00
G 653-22027 Quamba Payable-Reserve & D	-\$3,460.00	\$0.00	\$10,559.00	-\$14,019.00
G 653-22031 Bonds Payable	-\$2,731,833.00	\$176,818.00	\$0.00	-\$2,555,015.00
G 653-22034 Unamortized Premium on Bon	-\$775.33	\$0.00	\$0.00	-\$775.33
G 653-22082 Sales Tax Payable	\$0.00	\$0.00	\$0.00	\$0.00
G 653-22161 Accrued Vac-Sick Wages	-\$21,956.30	\$0.00	\$0.00	-\$21,956.30
G 653-22190 OPEB Liability	-\$23,934.00	\$0.00	\$0.00	-\$23,934.00
G 653-22223 Deferred Revenues	\$0.00	\$0.00	\$0.00	\$0.00
G 653-23000 Net Pension Liability	-\$206,254.00	\$0.00	\$0.00	-\$206,254.00
G 653-23500 Deferred Inflow - Pensions	-\$10,521.00	\$0.00	\$0.00	-\$10,521.00
<b>Bal Type L</b>	<b>-\$3,188,093.55</b>	<b>\$221,833.77</b>	<b>\$10,559.00</b>	<b>-\$2,976,818.78</b>
<b>Fund 653 SEWER FUND</b>	<b>\$0.00</b>	<b>\$3,430,953.28</b>	<b>\$3,430,953.28</b>	<b>\$0.00</b>



## ELECTRIC FUND - 2021 Cash & Investments/Fund Balance



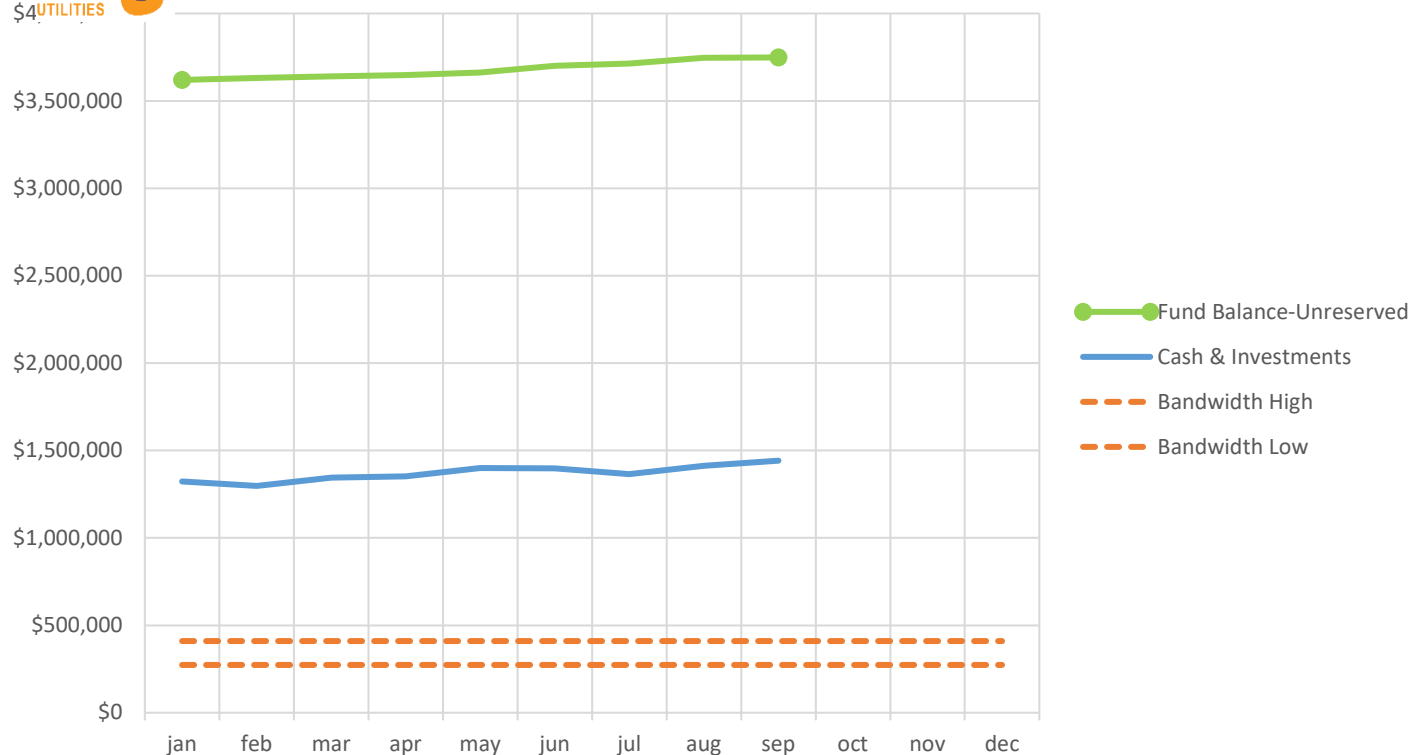
## ELECTRIC FUND - 2021 Fund Balance Components Cash & Investments





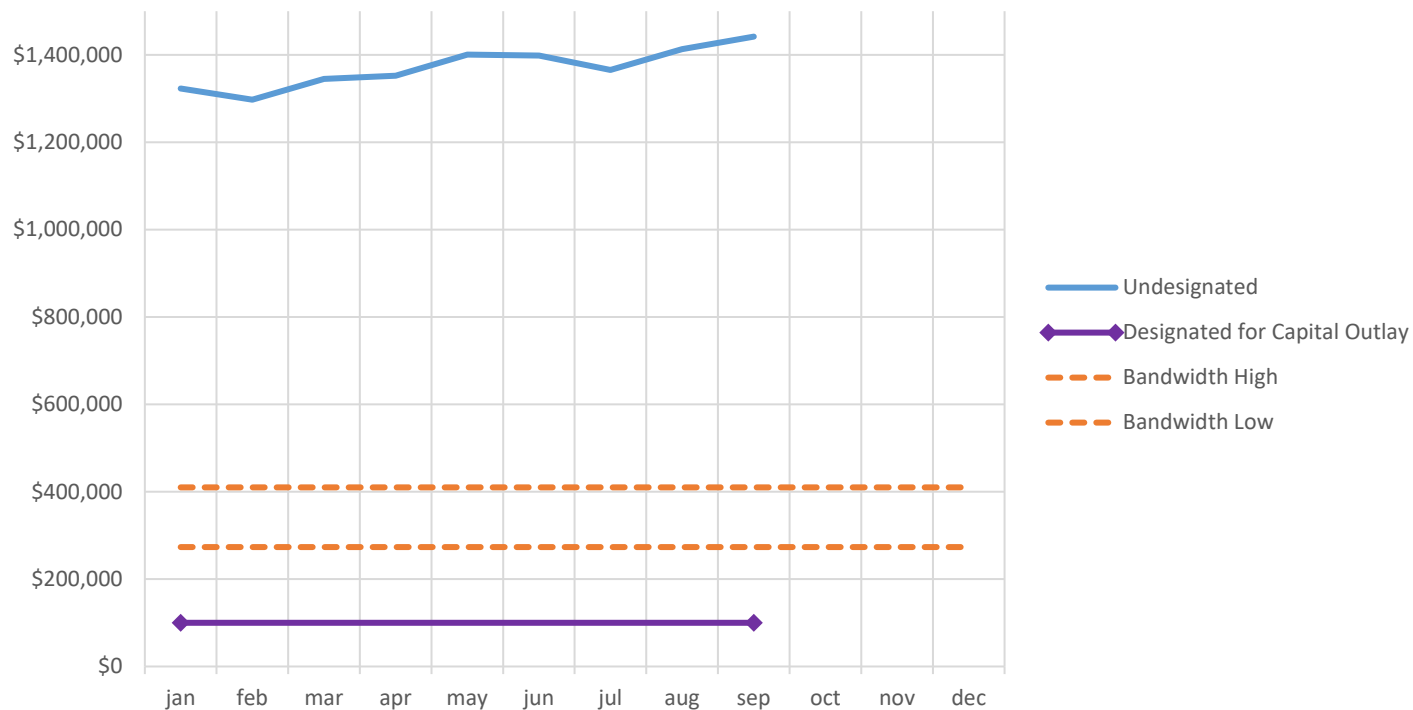
## WATER FUND - 2021

### Cash & Investments/Fund Balance



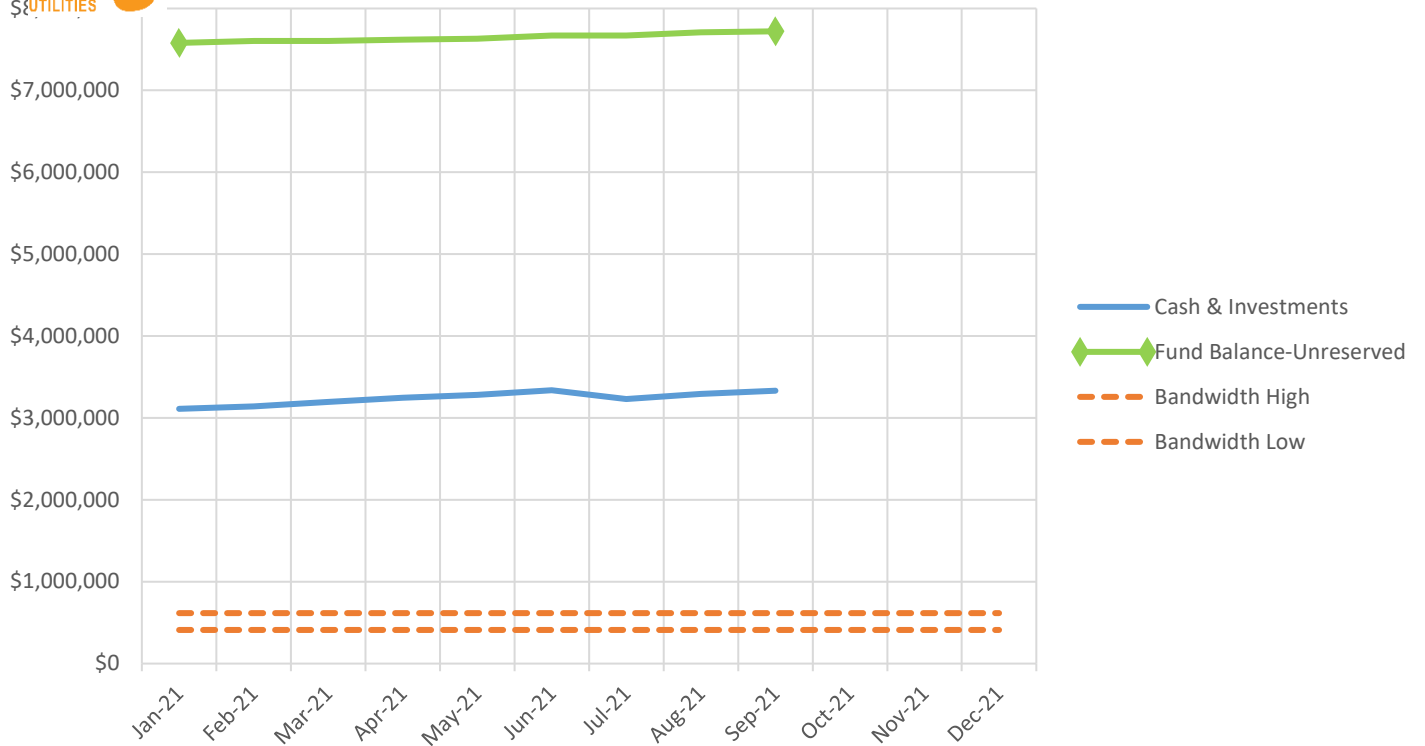
## WATER FUND - 2021

### Fund Balance Components Cash & Investments

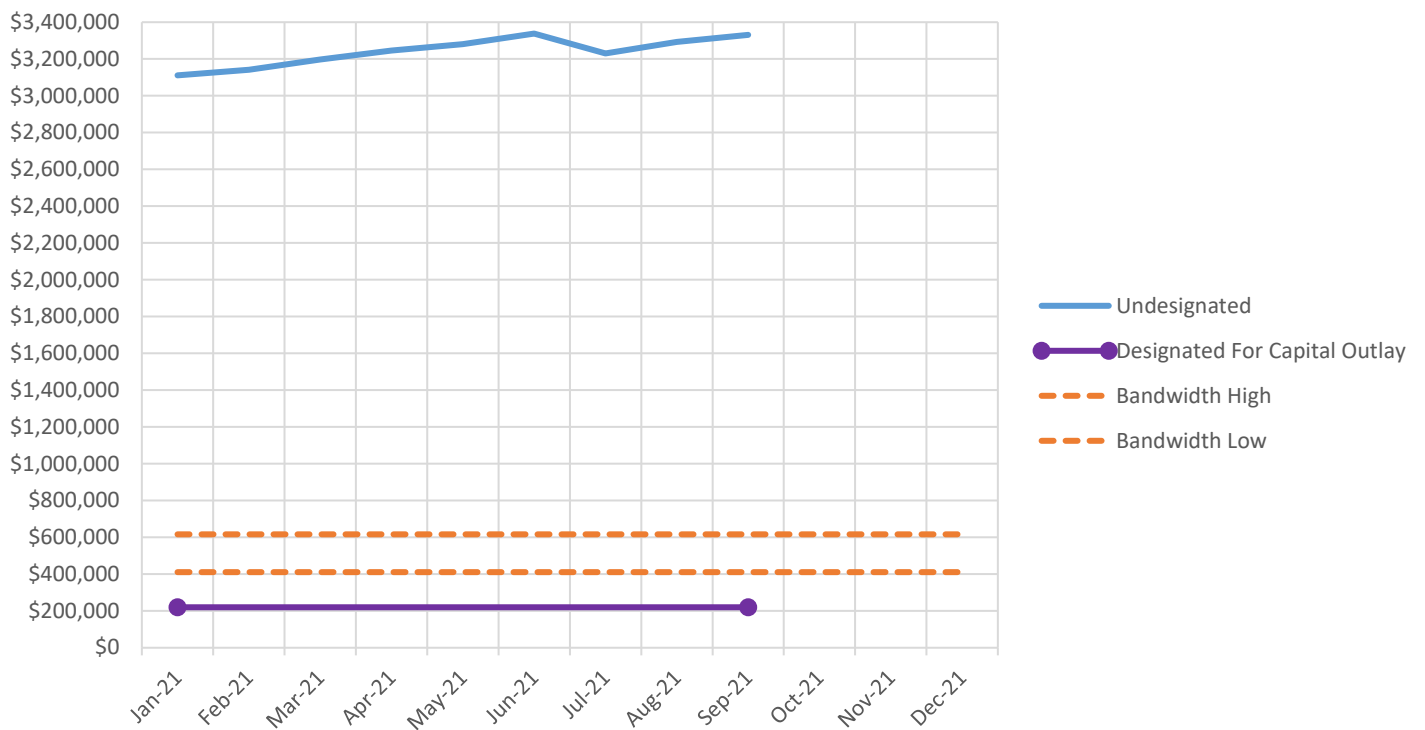




## SEWER FUND - 2021 Cash & Investments/Fund Balance



## SEWER FUND - 2021 Fund Balance Components Cash & Investments



**CITY OF MORA/MORA MUNICIPAL UTILITIES**  
 Current Investments  
 Information current as of September 30, 2021

Bank/Agency	Location	Type	FDIC #	Broker	Amount	DTD/Issued	Due	Rate
State Bank of India NY	New York, NY	CD	33682	4M Fund	\$ 245,000.00	1/26/2017	1/26/2022	2.30%
First National Bank	Paragould, AR	CD	3887	4M Fund	\$ 235,100.00	8/9/2019	8/8/2022	1.98%
Latino Community Credit Union	Durham, NC	CD	68430	4M Fund	\$ 232,000.00	8/16/2019	8/16/2022	2.39%
Western Alliance Bank	Oakland, CA	cd	57512	4M Fund	\$ 249,300.00	8/18/2021	8/18/2022	0.25%
American Express Bank	Salt Lake City, UT	CD	35328	4M Fund	\$ 245,000.00	9/6/2017	9/6/2022	2.40%
Greenstate Credit Union	North Liberty, IA	CD	60269	4M Fund	\$ 248,500.00	8/18/2021	8/18/2023	0.30%
Neighborhood National Bank	Mora, MN	CD	18885	None	\$ 245,000.00	1/26/2018	1/26/2022	2.00%
East Boston Savings Bank	Boston, MA	CD	33510	RBC Wealth	\$ 235,000.00	9/28/2017	9/28/2022	2.05%
Ally Bank	Midvale, UT	CD	57803	RBC Wealth	\$ 140,000.00	10/11/2019	10/11/2022	1.90%
Morgan Stanley Bank	Salt Lake City, UT	CD	32992	RBC Wealth	\$ 245,000.00	6/19/2018	6/23/2023	3.20%
Discover Bank	Greenwood, DE	CD	5649	RBC Wealth	\$ 139,000.00	9/28/2016	9/28/2023	1.80%
Comenity Capital Bank	Salt Lake City, UT	CD	57570	RBC Wealth	\$ 245,000.00	6/27/2019	6/27/2024	2.50%
Lakeside Bank	Chicago, IL	CD	19573	RBC Wealth	\$ 170,000.00	3/30/2020	3/31/2025	1.40%
Texas Exchange Bank	Crowley, TX	CD	20099	RBC Wealth	\$ 245,000.00	6/19/2020	6/19/2025	1.00%
Medallion Bank	Salt Lake City, UT	CD	57449	RBC Wealth	\$ 245,000.00	8/30/2021	8/31/2026	0.85%
EnerBank	Salt Lake City, UT	CD	57293	RBC Wealth	\$ 245,000.00	5/20/2020	5/14/2027	1.10%
Washington County Bank	Blair, NE	CD	12241	RBC Wealth	\$ 155,000.00	3/30/2021	9/30/2027	1.10%
Frazer Bank	Altus, OK	CD	4031	RBC Wealth	\$ 245,000.00	6/25/2021	6/26/2028	1.10%
Merrick Bank	South Jordan, UT	CD	34519	RBC Wealth	\$ 245,000.00	7/31/2020	7/31/2028	1.00%
Safra National Bank	New York, NY	CD	26876	Wells Fargo	\$ 150,000.00	9/15/2020	10/15/2021	0.15%
Comenity Bank	Wilmington, DE	CD	27499	Wells Fargo	\$ 200,000.00	8/15/2019	8/15/2022	2.10%
Federal Home Loan Mortgage Company	McLean, VA	AG		Wells Fargo	\$ 147,000.00	9/1/1993	9/1/2023	6.50%
Synchrony Bank		CD	27314	Wells Fargo	\$ 245,000.00	9/5/2021	9/5/2023	0.25%
Synovus Bank	Columbus, GA	CD	873	Wells Fargo	\$ 245,000.00	3/11/2021	3/11/2024	0.30%
BankUnited, NA	Miami Lakes, FL	CD	58979	Wells Fargo	\$ 244,000.00	4/14/2021	4/15/2024	0.45%
UBS Bank	Salt Lake City, UT	CD	57565	Wells Fargo	\$ 124,000.00	6/23/2021	6/23/2024	0.35%
BMW Bank of North America	Salt Lake City, UT	CD	35141	Wells Fargo	\$ 106,000.00	7/16/2021	7/16/2024	0.50%
New York Community Bank		CD	16022	Wells Fargo	\$ 245,000.00	9/10/2021	9/10/2024	0.65%
Toyota Financial Savings Bank	Henderson, NV	CD	57542	Wells Fargo	\$ 245,000.00	8/19/2021	8/19/2025	0.70%
Federal Home Loan Bank	McLean, VA	AG		Wells Fargo	\$ 150,000.00	1/21/2021	1/29/2026	0.30%
Goldman Sachs Bank	New York, NY	CD	33124	Wells Fargo	\$ 245,000.00	8/11/2021	2/11/2026	1.00%
Sallie Mae Bank	Salt Lake City, UT	CD	58177	Wells Fargo	\$ 118,000.00	7/8/2021	7/8/2026	1.00%
Sallie Mae Bank	Salt Lake City, UT	CD	58177	Wells Fargo	\$ 129,000.00	8/25/2021	8/25/2026	1.05%
JP Morgan Chase	Columbus, OH	CD	628	Wells Fargo	\$ 245,000.00	9/23/2020	9/23/2026	0.50%
BMO Harris Bank	Chicago, IL	CD	16571	Wells Fargo	\$ 245,000.00	7/13/2021	7/13/2028	1.00%

\$ 7,336,900.00

CD = Certificate of Deposit

AG = Agency/Government Asset Backed

Note: This list represents the combined portfolios of the City of Mora and Mora Municipal Utilities. For breakdown by fund, please refer to the Balance Sheet.



**CITY OF MORA/MORA MUNICIPAL UTILITIES**  
 Debt Retirement Schedule  
 For the Year Ending December 31, 2021

SUM OF ALL DEBT			Series 2011A	Series 2015B	Series 2015C			Series 2017A	MnPFA Water	MnPFA WWTP	Mora HRA Bonds*	
			Fund 530	Fund 532	Fund 533	Fund 652	Fund 653	Fund 535	G 652-22031	G 653-22031	Series 2019A	Series 2009B
Year	Year-End Balance	Principal Reduction	Year-End Balance	Year-End Balance	Year-End Balance	Year-End Balance	Year-End Balance	Year-End Balance	Year-End Balance	Year-End Balance	Year-End Balance	Year-End Balance
2016	11,387,000.00		435,000.00	1,385,000.00	1,251,495.00	267,364.00	221,141.00	1,325,000.00	1,151,000.00	3,326,000.00		350,000.00
2017	12,039,957.75	652,957.75	370,000.00	1,345,000.00	1,125,495.00	246,858.00	202,647.00	1,325,000.00	1,078,000.00	3,056,957.75		290,000.00
2018	11,484,957.75	(555,000.00)	300,000.00	1,290,000.00	1,039,495.00	223,036.00	182,469.00	1,325,000.00	1,004,000.00	2,895,957.75		225,000.00
2019	11,080,000.00	(404,957.75)	230,000.00	1,230,000.00	942,495.00	201,854.00	165,651.00	1,290,000.00	928,000.00	2,842,000.00	2019	3,095,000.00
2020	10,433,000.00	(647,000.00)	155,000.00	1,170,000.00	840,495.00	180,672.00	148,833.00	1,235,000.00	851,000.00	2,677,000.00	2020	3,095,000.00
2021	9,759,000.00	(674,000.00)	80,000.00	1,110,000.00	733,495.00	159,490.00	132,015.00	1,180,000.00	773,000.00	2,511,000.00	2021	3,080,000.00
2022	9,046,000.00	(713,000.00)	-	1,050,000.00	622,995.00	137,648.00	114,357.00	1,125,000.00	693,000.00	2,343,000.00	2022	2,960,000.00
2023	8,400,000.00	(646,000.00)		985,000.00	512,495.00	115,806.00	96,699.00	1,070,000.00	612,000.00	2,173,000.00	2023	2,835,000.00
2024	7,731,000.00	(669,000.00)		920,000.00	398,495.00	89,990.00	76,515.00	1,010,000.00	529,000.00	2,002,000.00	2024	2,705,000.00
2025	7,059,000.00	(672,000.00)		855,000.00	284,495.00	64,174.00	56,331.00	950,000.00	445,000.00	1,829,000.00	2025	2,575,000.00
2026	6,378,000.00	(681,000.00)		790,000.00	166,995.00	37,698.00	35,307.00	890,000.00	359,000.00	1,654,000.00	2026	2,445,000.00
2027	5,684,000.00	(694,000.00)		720,000.00	50,995.00	10,562.00	13,443.00	830,000.00	272,000.00	1,477,000.00	2027	2,310,000.00
2028	5,067,000.00	(617,000.00)		650,000.00	-	-	-	765,000.00	183,000.00	1,299,000.00	2028	2,170,000.00
2029	4,516,000.00	(551,000.00)		580,000.00				700,000.00	92,000.00	1,119,000.00	2029	2,025,000.00
2030	3,952,000.00	(564,000.00)		505,000.00				630,000.00	-	937,000.00	2030	1,880,000.00
2031	3,473,000.00	(479,000.00)		430,000.00				560,000.00		753,000.00	2031	1,730,000.00
2032	2,987,000.00	(486,000.00)		350,000.00				490,000.00		567,000.00	2032	1,580,000.00
2033	2,485,000.00	(502,000.00)		265,000.00				415,000.00		380,000.00	2033	1,425,000.00
2034	1,976,000.00	(509,000.00)		180,000.00				340,000.00		191,000.00	2034	1,265,000.00
2035	1,455,000.00	(521,000.00)		90,000.00				260,000.00		-	2035	1,105,000.00
2036	1,115,000.00	(340,000.00)		-				175,000.00			2036	940,000.00
2037	860,000.00	(255,000.00)						90,000.00			2037	770,000.00
2038	595,000.00	(265,000.00)						-			2038	595,000.00
2039	415,000.00	(180,000.00)									2039	415,000.00
2040	-	(415,000.00)									2040	-
2041	-	-										
2042	-	-										
2043	-	-										

\* These Bonds are special obligations of the Authority but are general obligations of the City for which the City pledges its full faith, credit and taxing powers.



# CITY OF MORA

## Revenue Guideline For Commission

Current Period: September 2021

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Last Dim Descr	2021 YTD Budget	2021 YTD Amt	2021 YTD Balance	2021 % of Budget Remain	Explanation
Fund 651 ELECTRIC FUND					
Other State Grants & Aids	\$0.00	\$0.00	\$0.00	0.00%	
PERA Aid	\$0.00	\$0.00	\$0.00	0.00%	
Int/Pen on Spec Assmts	\$500.00	\$305.53	\$194.47	38.89%	
Interest Earnings	\$99,670.00	\$97,684.42	\$1,985.58	1.99%	
Unrealized Gain/(Loss) on Inv	\$0.00	-\$43,265.74	\$43,265.74	0.00%	
Dividends	\$598.00	\$0.00	\$598.00	100.00%	
Service Chg on NSF Checks	\$600.00	\$480.00	\$120.00	20.00%	
Electricity Sales	\$5,489,700.00	\$4,130,951.22	\$1,358,748.78	24.75%	
Misc Income	\$1,000.00	\$4,203.94	-\$3,203.94	-320.39%	See Note A.
Excess Equity	\$0.00	\$0.00	\$0.00	0.00%	
SMMPA Contract	\$400,000.00	\$443,376.20	-\$43,376.20	-10.84%	
CIP Reimbursements	\$40,000.00	\$26,219.06	\$13,780.94	34.45%	
Penalties	\$28,000.00	\$27,157.70	\$842.30	3.01%	
Misc Service Revenues	\$20,000.00	\$18,244.13	\$1,755.87	8.78%	
Rent from Elec Property	\$6,088.00	\$6,558.00	-\$470.00	-7.72%	
Distributed Energy Resources	\$0.00	\$200.00	-\$200.00	0.00%	
Labor Sales	\$4,000.00	\$5,860.00	-\$1,860.00	-46.50%	
Recoveries of Bad Debt	\$200.00	\$0.00	\$200.00	100.00%	
Cash Over/Short	\$0.00	\$0.00	\$0.00	0.00%	
Sale of Fixed Assets	\$0.00	\$0.00	\$0.00	0.00%	
Trf from General Fund	\$0.00	\$0.00	\$0.00	0.00%	
Trf from Special Revenue Fund	\$7,860.00	\$7,856.68	\$3.32	0.04%	
Trf from Enterprise Fund	\$0.00	\$0.00	\$0.00	0.00%	
Special Items	\$0.00	\$190,733.74	-\$190,733.74	0.00%	See Note B.
Fund 651 ELECTRIC FUND	\$6,098,216.00	\$4,916,564.88	\$1,181,651.12	19.38%	
Fund 652 WATER FUND					
Other State Grants & Aids	\$0.00	\$0.00	\$0.00	0.00%	
PERA Aid	\$0.00	\$0.00	\$0.00	0.00%	
Special Assessments	\$0.00	\$0.00	\$0.00	0.00%	
Int/Pen on Spec Assmts	\$600.00	\$152.76	\$447.24	74.54%	
Interest Earnings	\$8,010.00	\$8,820.04	-\$810.04	-10.11%	
Unrealized Gain/(Loss) on Inv	\$0.00	-\$5,505.28	\$5,505.28	0.00%	
Dividends	\$68.00	\$0.00	\$68.00	100.00%	
Service Chg on NSF Checks	\$0.00	\$0.00	\$0.00	0.00%	
Water Sales	\$742,600.00	\$649,533.54	\$93,066.46	12.53%	
Misc Income	\$4,000.00	\$433.93	\$3,566.07	89.15%	
Penalties	\$10,000.00	\$13,618.87	-\$3,618.87	-36.19%	
Labor Sales	\$2,000.00	\$625.00	\$1,375.00	68.75%	
Antenna Leases	\$4,000.00	\$4,048.67	-\$48.67	-1.22%	
WAC Fees	\$20,000.00	\$9,000.00	\$11,000.00	55.00%	
Water/Sewer Buy-In	\$0.00	\$0.00	\$0.00	0.00%	
Sale of Fixed Assets	\$0.00	\$0.00	\$0.00	0.00%	
Trf from General Fund	\$0.00	\$0.00	\$0.00	0.00%	
Trf from Special Revenue Fund	\$0.00	\$0.00	\$0.00	0.00%	
Trf from Enterprise Fund	\$0.00	\$0.00	\$0.00	0.00%	
Fund 652 WATER FUND	\$791,278.00	\$680,727.53	\$110,550.47	13.97%	
Fund 653 SEWER FUND					
Other State Grants & Aids	\$0.00	\$0.00	\$0.00	0.00%	
PERA Aid	\$0.00	\$0.00	\$0.00	0.00%	
Point Source Imp Grant (PFA)	\$0.00	\$0.00	\$0.00	0.00%	
Clean Water Grant (PFA)	\$0.00	\$0.00	\$0.00	0.00%	



# CITY OF MORA

## Revenue Guideline For Commission

Current Period: September 2021

Last Dim Descr	2021 YTD Budget	2021 YTD Amt	2021 YTD Balance	2021 % of Budget Remain	Explanation
Special Assessments	\$0.00	\$0.00	\$0.00	0.00%	
Int/Pen on Spec Assmts	\$600.00	\$152.77	\$447.23	74.54%	
Interest Earnings	\$21,370.00	\$22,295.75	-\$925.75	-4.33%	
Unrealized Gain/(Loss) on Inv	\$0.00	-\$13,939.31	\$13,939.31	0.00%	
Dividends	\$395.00	\$0.00	\$395.00	100.00%	
Misc Income	\$0.00	\$881.52	-\$881.52	0.00%	
Penalties	\$20,000.00	\$21,705.54	-\$1,705.54	-8.53%	
Labor Sales	\$0.00	\$0.00	\$0.00	0.00%	
Water/Sewer Buy-In	\$0.00	\$0.00	\$0.00	0.00%	
Land Rent - WWTP	\$4,560.00	\$2,216.00	\$2,344.00	51.40%	
Sewer Charges - Treatment	\$995,800.00	\$830,368.49	\$165,431.51	16.61%	
SAC Fees	\$30,000.00	\$14,400.00	\$15,600.00	52.00%	
Sale of Fixed Assets	\$0.00	\$0.00	\$0.00	0.00%	
Comp. for Loss of Fixed Assets	\$0.00	\$2,107.11	-\$2,107.11	0.00%	See Note C.
Trf from General Fund	\$0.00	\$0.00	\$0.00	0.00%	
Trf from Special Revenue Fund	\$0.00	\$0.00	\$0.00	0.00%	
Trf from Enterprise Fund	\$0.00	\$0.00	\$0.00	0.00%	
Fund 653 SEWER FUND	\$1,072,725.00	\$880,187.87	\$192,537.13	17.95%	
	\$7,962,219.00	\$6,477,480.28	\$1,484,738.72	18.65%	



# CITY OF MORA

## Expenditure Guideline For Commission

Current Period: September 2021

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Last Dim Descr	2021 YTD Budget	2021 YTD Amt	2021 YTD Balance	2021 % of Budget Remain	Explanation
Fund 651 ELECTRIC FUND					
Dept 49510 GENERATION & POWER SUPPLY					
Wages & Salaries	\$88,743.00	\$26,753.12	\$61,989.88	69.85%	
PERA	\$6,656.00	\$2,006.40	\$4,649.60	69.86%	
FICA	\$5,502.00	\$1,517.40	\$3,984.60	72.42%	
Medicare	\$1,287.00	\$354.88	\$932.12	72.43%	
VEBA	\$327.00	\$89.97	\$237.03	72.49%	
Health Insurance	\$17,626.00	\$5,531.40	\$12,094.60	68.62%	
Life Insurance	\$164.00	\$59.94	\$104.06	63.45%	
Office Supplies	\$0.00	\$0.00	\$0.00	0.00%	
Cleaning Supplies	\$150.00	\$44.95	\$105.05	70.03%	
Motor Fuels	\$200.00	\$120.70	\$79.30	39.65%	
Other Operating Supplies	\$2,000.00	\$663.82	\$1,336.18	66.81%	
Uniforms	\$3,500.00	\$1,110.06	\$2,389.94	68.28%	
Repair/Maint - Bldg & Equip	\$2,500.00	\$4,903.39	-\$2,403.39	-96.14%	
Small Tools & Equipment	\$1,000.00	\$767.58	\$232.42	23.24%	
Large Tools & Equipment	\$500.00	\$0.00	\$500.00	100.00%	
Meetings, Training, & Travel	\$350.00	\$483.03	-\$133.03	-38.01%	
Advertising	\$600.00	\$0.00	\$600.00	100.00%	
Workers Comp Insurance	\$3,372.00	\$2,098.89	\$1,273.11	37.76%	
Water	\$1,300.00	\$1,155.08	\$144.92	11.15%	
Natural Gas - Heat	\$7,000.00	\$3,738.73	\$3,261.27	46.59%	
Garbage Removal	\$1,000.00	\$733.00	\$267.00	26.70%	
Sewer	\$1,000.00	\$851.43	\$148.57	14.86%	
Storm Water	\$220.00	\$162.76	\$57.24	26.02%	
Fuel Oil	\$70,000.00	\$150,820.32	-\$80,820.32	-115.46%	See Note D.
Dues & Subscriptions	\$1,900.00	\$1,981.57	-\$81.57	-4.29%	
Miscellaneous	\$1,500.00	\$1,056.75	\$443.25	29.55%	
Generation Exp	\$15,000.00	\$2,513.57	\$12,486.43	83.24%	
Purchased Power	\$4,400,000.00	\$3,166,191.19	\$1,233,808.81	28.04%	
Maint of Structure	\$10,000.00	\$42.89	\$9,957.11	99.57%	
Maint of Gen Equip	\$20,000.00	\$9,158.44	\$10,841.56	54.21%	
Landfill Gen Exp	\$15,000.00	\$24,219.19	-\$9,219.19	-61.46%	
Dept 49510 GENERATION & P	\$4,678,397.00	\$3,409,130.45	\$1,269,266.55	27.13%	
Dept 49515 LANDFILL GENERATION					
Wages & Salaries	\$71,838.00	\$50,065.31	\$21,772.69	30.31%	
PERA	\$5,388.00	\$3,754.90	\$1,633.10	30.31%	
FICA	\$4,454.00	\$2,835.42	\$1,618.58	36.34%	
Medicare	\$1,042.00	\$663.11	\$378.89	36.36%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$348.00	\$195.54	\$152.46	43.81%	
Health Insurance	\$13,224.00	\$9,465.67	\$3,758.33	28.42%	
Life Insurance	\$124.00	\$102.97	\$21.03	16.96%	
Workers Comp Insurance	\$2,730.00	\$1,699.29	\$1,030.71	37.75%	
Dept 49515 LANDFILL GENER	\$99,148.00	\$68,782.21	\$30,365.79	30.63%	
Dept 49520 ELECTRIC DISTRIBUTION					
Wages & Salaries	\$112,545.00	\$84,352.15	\$28,192.85	25.05%	
PERA	\$8,435.00	\$6,318.62	\$2,116.38	25.09%	
FICA	\$6,978.00	\$4,749.57	\$2,228.43	31.94%	
Medicare	\$1,632.00	\$1,110.66	\$521.34	31.94%	
VEBA	\$435.00	\$474.28	-\$39.28	-9.03%	
Health Insurance	\$22,082.00	\$16,357.06	\$5,724.94	25.93%	



# CITY OF MORA

## Expenditure Guideline For Commission

Current Period: September 2021

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Last Dim Descr	2021 YTD Budget	2021 YTD Amt	2021 YTD Balance	2021 % of Budget Remain	Explanation
Life Insurance	\$206.00	\$180.09	\$25.91	12.58%	
Cleaning Supplies	\$60.00	\$0.00	\$60.00	100.00%	
Other Operating Supplies	\$50.00	\$0.00	\$50.00	100.00%	
Uniforms	\$3,500.00	\$6,017.67	-\$2,517.67	-71.93%	See Note E.
Repair/Maint - Bldg & Equip	\$500.00	\$4.59	\$495.41	99.08%	
Small Tools & Equipment	\$30,000.00	\$5,171.36	\$24,828.64	82.76%	
Engineering	\$20,000.00	\$27,220.50	-\$7,220.50	-36.10%	
Professional Services - Misc	\$7,000.00	\$2,895.25	\$4,104.75	58.64%	
ECE Services	\$60,000.00	\$24,571.83	\$35,428.17	59.05%	
Postage	\$300.00	\$171.53	\$128.47	42.82%	
Meetings, Training, & Travel	\$16,000.00	\$9,212.34	\$6,787.66	42.42%	
Workers Comp Insurance	\$4,418.00	\$2,749.95	\$1,668.05	37.76%	
Rentals	\$0.00	\$0.00	\$0.00	0.00%	
Miscellaneous	\$500.00	\$101.96	\$398.04	79.61%	
Maint of Substation Equip	\$15,000.00	\$2,181.43	\$12,818.57	85.46%	
Maint of Overhead Lines	\$75,000.00	\$99,279.89	-\$24,279.89	-32.37%	
Maint of Underground Lines	\$30,000.00	\$100,740.73	-\$70,740.73	-235.80%	See Note F.
Maint of St. Lights & Signals	\$15,000.00	\$12,798.29	\$2,201.71	14.68%	
Maint of Meters	\$6,000.00	\$744.11	\$5,255.89	87.60%	
Maint of GIS	\$16,000.00	\$25,609.46	-\$9,609.46	-60.06%	See Note G.
Misc Distribution Exp	\$8,000.00	\$2,457.04	\$5,542.96	69.29%	
Line Transformer Exp	\$12,000.00	\$3,131.72	\$8,868.28	73.90%	
Truck Expense	\$5,500.00	\$9,123.28	-\$3,623.28	-65.88%	
Trf to General Fund	\$0.00	\$0.00	\$0.00	0.00%	
Dept 49520 ELECTRIC DISTRI	\$477,141.00	\$447,725.36	\$29,415.64	6.16%	
Dept 49530 ELECTRIC ADMINISTRATION					
Wages & Salaries	\$176,753.00	\$119,189.07	\$57,563.93	32.57%	
PERA	\$12,953.00	\$8,711.46	\$4,241.54	32.75%	
FICA	\$10,959.00	\$7,094.39	\$3,864.61	35.26%	
Medicare	\$2,563.00	\$1,659.35	\$903.65	35.26%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$948.00	\$691.62	\$256.38	27.04%	
Health Insurance	\$23,364.00	\$13,959.68	\$9,404.32	40.25%	
Life Insurance	\$384.00	\$305.26	\$78.74	20.51%	
Unemployment Benefit Pmts	\$0.00	\$0.00	\$0.00	0.00%	
Office Supplies	\$1,400.00	\$632.27	\$767.73	54.84%	
Other Operating Supplies	\$150.00	\$109.86	\$40.14	26.76%	
Uniforms	\$200.00	\$39.00	\$161.00	80.50%	
Small Tools & Equipment	\$700.00	\$1,853.40	-\$1,153.40	-164.77%	See Note H.
Auditing	\$4,550.00	\$5,185.00	-\$635.00	-13.96%	
Engineering	\$4,000.00	\$0.00	\$4,000.00	100.00%	
Legal Services	\$1,000.00	\$530.90	\$469.10	46.91%	
Professional Services - Misc	\$22,500.00	\$17,987.88	\$4,512.12	20.05%	
Telephone	\$6,700.00	\$2,571.44	\$4,128.56	61.62%	
Postage	\$800.00	\$375.00	\$425.00	53.13%	
Meetings, Training, & Travel	\$2,500.00	\$3,161.21	-\$661.21	-26.45%	
Advertising	\$150.00	\$222.95	-\$72.95	-48.63%	
Contributions	\$500.00	\$170.00	\$330.00	66.00%	
Depreciation	\$194,600.00	\$145,413.34	\$49,186.66	25.28%	
Insurance	\$33,600.00	\$24,551.73	\$9,048.27	26.93%	
Workers Comp Insurance	\$4,782.00	\$2,976.48	\$1,805.52	37.76%	
Bad Debts/NSF Checks	\$300.00	\$110.00	\$190.00	63.33%	
Dues & Subscriptions	\$11,000.00	\$10,442.00	\$558.00	5.07%	



# CITY OF MORA

## Expenditure Guideline For Commission

Current Period: September 2021

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Last Dim Descr	2021 YTD Budget	2021 YTD Amt	2021 YTD Balance	2021 % of Budget Remain	Explanation
Miscellaneous	\$500.00	\$71.74	\$428.26	85.65%	
Payment Processing Expenses	\$6,000.00	\$5,075.54	\$924.46	15.41%	
Change in Pension	\$0.00	\$0.00	\$0.00	0.00%	
Cust UB/Collection	\$7,300.00	\$5,272.01	\$2,027.99	27.78%	
Misc General Exp	\$0.00	\$0.00	\$0.00	0.00%	
Energy Conservation	\$50,000.00	\$35,957.78	\$14,042.22	28.08%	
Interest Expense	\$0.00	\$0.00	\$0.00	0.00%	
Interest on Customer Deposits	\$0.00	\$415.19	-\$415.19	0.00%	
Trf to General Fund	\$34,603.00	\$1,000.00	\$33,603.00	97.11%	
Trf to Special Revenue Fund	\$20,000.00	\$15,000.03	\$4,999.97	25.00%	
Trf to Enterprise Fund	\$0.00	\$0.00	\$0.00	0.00%	
Dept 49530 ELECTRIC ADMINI	\$635,759.00	\$430,735.58	\$205,023.42	32.25%	
Fund 651 ELECTRIC FUND	\$5,890,445.00	\$4,356,373.60	\$1,534,071.40	26.04%	
Fund 652 WATER FUND					
Dept 49410 WATER SUPPLY					
Wages & Salaries	\$5,134.00	\$4,827.74	\$306.26	5.97%	
PERA	\$385.00	\$337.11	\$47.89	12.44%	
FICA	\$318.00	\$253.78	\$64.22	20.19%	
Medicare	\$74.00	\$59.35	\$14.65	19.80%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$30.00	\$0.25	\$29.75	99.17%	
Health Insurance	\$947.00	\$791.71	\$155.29	16.40%	
Life Insurance	\$11.00	\$11.67	-\$0.67	-6.09%	
Motor Fuels	\$800.00	\$0.00	\$800.00	100.00%	
Lubricants & Additives	\$50.00	\$0.00	\$50.00	100.00%	
Other Operating Supplies	\$50.00	\$15.96	\$34.04	68.08%	
Repair/Maint - Bldg & Equip	\$25,000.00	\$8,698.98	\$16,301.02	65.20%	
Small Tools & Equipment	\$12,300.00	\$0.00	\$12,300.00	100.00%	
Professional Services - Misc	\$1,000.00	\$1,543.00	-\$543.00	-54.30%	
Meetings, Training, & Travel	\$250.00	\$0.00	\$250.00	100.00%	
Workers Comp Insurance	\$255.00	\$158.76	\$96.24	37.74%	
Electricity	\$10,000.00	\$8,167.40	\$1,832.60	18.33%	
Natural Gas - Heat	\$700.00	\$330.71	\$369.29	52.76%	
Garbage Removal	\$0.00	\$0.00	\$0.00	0.00%	
Storm Water	\$250.00	\$205.06	\$44.94	17.98%	
Miscellaneous	\$50.00	\$0.00	\$50.00	100.00%	
Dept 49410 WATER SUPPLY	\$57,604.00	\$25,401.48	\$32,202.52	55.90%	
Dept 49420 WATER TREATMENT					
Wages & Salaries	\$42,203.00	\$27,889.89	\$14,313.11	33.91%	
PERA	\$3,165.00	\$1,890.07	\$1,274.93	40.28%	
FICA	\$2,617.00	\$1,414.45	\$1,202.55	45.95%	
Medicare	\$612.00	\$330.78	\$281.22	45.95%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$246.00	\$2.20	\$243.80	99.11%	
Health Insurance	\$7,782.00	\$5,375.19	\$2,406.81	30.93%	
Life Insurance	\$87.00	\$68.16	\$18.84	21.66%	
Lab Supplies	\$8,000.00	\$0.00	\$8,000.00	100.00%	
Cleaning Supplies	\$100.00	\$0.00	\$100.00	100.00%	
Chemicals	\$26,000.00	\$23,636.82	\$2,363.18	9.09%	
Other Operating Supplies	\$200.00	\$0.00	\$200.00	100.00%	
Repair/Maint - Bldg & Equip	\$10,000.00	\$8,824.89	\$1,175.11	11.75%	
Small Tools & Equipment	\$1,000.00	\$40.63	\$959.37	95.94%	



# CITY OF MORA

## Expenditure Guideline For Commission

Current Period: September 2021

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Last Dim Descr	2021 YTD Budget	2021 YTD Amt	2021 YTD Balance	2021 % of Budget Remain	Explanation
Engineering	\$0.00	\$0.00	\$0.00	0.00%	
Professional Services - Misc	\$5,000.00	\$5,095.00	-\$95.00	-1.90%	
Postage	\$50.00	\$0.00	\$50.00	100.00%	
Meetings, Training, & Travel	\$300.00	\$0.00	\$300.00	100.00%	
Workers Comp Insurance	\$2,086.00	\$1,298.43	\$787.57	37.76%	
Electricity	\$11,500.00	\$9,617.73	\$1,882.27	16.37%	
Natural Gas - Heat	\$1,800.00	\$700.66	\$1,099.34	61.07%	
Storm Water	\$130.00	\$102.53	\$27.47	21.13%	
Miscellaneous	\$100.00	\$140.00	-\$40.00	-40.00%	
Dept 49420 WATER TREATME	\$122,978.00	\$86,427.43	\$36,550.57	29.72%	
Dept 49430 WATER DISTRIBUTION					
Wages & Salaries	\$24,341.00	\$28,297.99	-\$3,956.99	-16.26%	
PERA	\$1,804.00	\$1,932.59	-\$128.59	-7.13%	
FICA	\$1,509.00	\$1,518.04	-\$9.04	-0.60%	
Medicare	\$353.00	\$354.98	-\$1.98	-0.56%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$126.00	\$28.28	\$97.72	77.56%	
Health Insurance	\$4,737.00	\$5,217.80	-\$480.80	-10.15%	
Life Insurance	\$52.00	\$67.84	-\$15.84	-30.46%	
Cleaning Supplies	\$100.00	\$0.00	\$100.00	100.00%	
Motor Fuels	\$2,500.00	\$2,019.06	\$480.94	19.24%	
Lubricants & Additives	\$500.00	\$0.00	\$500.00	100.00%	
Other Operating Supplies	\$300.00	\$0.00	\$300.00	100.00%	
Uniforms	\$200.00	\$15.49	\$184.51	92.26%	
Tires	\$500.00	\$1,093.00	-\$593.00	-118.60%	
Landscaping Materials	\$500.00	\$0.00	\$500.00	100.00%	
Repair/Maint - Bldg & Equip	\$35,000.00	\$26,519.16	\$8,480.84	24.23%	
Small Tools & Equipment	\$1,000.00	\$3,583.45	-\$2,583.45	-258.35%	See Note I.
Professional Services - Misc	\$3,000.00	\$1,208.42	\$1,791.58	59.72%	
Postage	\$100.00	\$24.42	\$75.58	75.58%	
Meetings, Training, & Travel	\$0.00	\$0.00	\$0.00	0.00%	
Workers Comp Insurance	\$1,251.00	\$778.68	\$472.32	37.76%	
Electricity	\$550.00	\$373.45	\$176.55	32.10%	
Storm Water	\$150.00	\$114.51	\$35.49	23.66%	
Miscellaneous	\$100.00	\$0.00	\$100.00	100.00%	
Dept 49430 WATER DISTRIBU	\$78,673.00	\$73,147.16	\$5,525.84	7.02%	
Dept 49440 WATER ADMINISTRATION					
Wages & Salaries	\$91,200.00	\$60,340.96	\$30,859.04	33.84%	
PERA	\$6,688.00	\$4,384.04	\$2,303.96	34.45%	
FICA	\$5,654.00	\$3,574.80	\$2,079.20	36.77%	
Medicare	\$1,322.00	\$836.17	\$485.83	36.75%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$513.00	\$360.27	\$152.73	29.77%	
Health Insurance	\$12,250.00	\$7,080.45	\$5,169.55	42.20%	
Life Insurance	\$199.00	\$153.83	\$45.17	22.70%	
Office Supplies	\$300.00	\$101.58	\$198.42	66.14%	
Other Operating Supplies	\$100.00	\$1.87	\$98.13	98.13%	
Uniforms	\$500.00	\$95.48	\$404.52	80.90%	
Small Tools & Equipment	\$300.00	\$804.72	-\$504.72	-168.24%	
Auditing	\$2,280.00	\$2,591.50	-\$311.50	-13.66%	
Engineering	\$0.00	\$55.62	-\$55.62	0.00%	
Legal Services	\$100.00	\$0.00	\$100.00	100.00%	
Professional Services - Misc	\$14,500.00	\$5,596.05	\$8,903.95	61.41%	





# CITY OF MORA

## Expenditure Guideline For Commission

Current Period: September 2021

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Last Dim Descr	2021 YTD Budget	2021 YTD Amt	2021 YTD Balance	2021 % of Budget Remain	Explanation
Telephone	\$4,000.00	\$2,068.35	\$1,931.65	48.29%	
Postage	\$300.00	\$150.00	\$150.00	50.00%	
Meetings, Training, & Travel	\$500.00	\$83.45	\$416.55	83.31%	
Advertising	\$250.00	\$226.33	\$23.67	9.47%	
Contributions	\$0.00	\$85.00	-\$85.00	0.00%	
Depreciation	\$334,800.00	\$250,468.23	\$84,331.77	25.19%	
Insurance	\$7,320.00	\$5,906.61	\$1,413.39	19.31%	
Workers Comp Insurance	\$2,544.00	\$1,583.46	\$960.54	37.76%	
Bad Debts/NSF Checks	\$0.00	\$0.00	\$0.00	0.00%	
Dues & Subscriptions	\$950.00	\$818.64	\$131.36	13.83%	
Miscellaneous	\$50.00	\$11.93	\$38.07	76.14%	
Payment Processing Expenses	\$2,500.00	\$2,353.10	\$146.90	5.88%	
Change in Pension	\$0.00	\$0.00	\$0.00	0.00%	
Cust UB/Collection	\$3,000.00	\$2,111.79	\$888.21	29.61%	
Interest Expense	\$21,770.00	\$21,770.31	-\$0.31	0.00%	
Trf to General Fund	\$4,235.00	\$0.00	\$4,235.00	100.00%	
Dept 49440 WATER ADMINIS	\$518,125.00	\$373,614.54	\$144,510.46	27.89%	
Fund 652 WATER FUND	\$777,380.00	\$558,590.61	\$218,789.39	28.14%	
Fund 653 SEWER FUND					
Dept 49460 SEWER COLLECTION SYSTEM					
Wages & Salaries	\$16,133.00	\$11,303.09	\$4,829.91	29.94%	
PERA	\$1,158.00	\$785.09	\$372.91	32.20%	
FICA	\$1,000.00	\$597.21	\$402.79	40.28%	
Medicare	\$234.00	\$139.70	\$94.30	40.30%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$63.00	\$0.53	\$62.47	99.16%	
Health Insurance	\$3,509.00	\$2,345.99	\$1,163.01	33.14%	
Life Insurance	\$36.00	\$28.71	\$7.29	20.25%	
Cleaning Supplies	\$50.00	\$0.00	\$50.00	100.00%	
Motor Fuels	\$4,000.00	\$2,098.12	\$1,901.88	47.55%	
Lubricants & Additives	\$50.00	\$0.00	\$50.00	100.00%	
Chemicals	\$500.00	\$0.00	\$500.00	100.00%	
Other Operating Supplies	\$200.00	\$0.00	\$200.00	100.00%	
Tires	\$1,000.00	\$0.00	\$1,000.00	100.00%	
Repair/Maint - Bldg & Equip	\$30,000.00	\$29,741.28	\$258.72	0.86%	
Small Tools & Equipment	\$1,000.00	\$3,808.23	-\$2,808.23	-280.82%	See Note I.
Professional Services - Misc	\$10,000.00	\$1,329.51	\$8,670.49	86.70%	
Meetings, Training, & Travel	\$500.00	\$0.00	\$500.00	100.00%	
Workers Comp Insurance	\$824.00	\$512.91	\$311.09	37.75%	
Rentals	\$0.00	\$0.00	\$0.00	0.00%	
Miscellaneous	\$200.00	\$0.00	\$200.00	100.00%	
Dept 49460 SEWER COLLECTI	\$70,457.00	\$52,690.37	\$17,766.63	25.22%	
Dept 49463 QUAMBA COLLECTION SYSTEM					
Wages & Salaries	\$2,465.00	\$458.27	\$2,006.73	81.41%	
PERA	\$181.00	\$24.46	\$156.54	86.49%	
FICA	\$153.00	\$18.26	\$134.74	88.07%	
Medicare	\$36.00	\$4.32	\$31.68	88.00%	
VEBA	\$12.00	\$0.10	\$11.90	99.17%	
Health Insurance	\$496.00	\$116.72	\$379.28	76.47%	
Life Insurance	\$5.00	\$1.27	\$3.73	74.60%	
Motor Fuels	\$500.00	\$0.00	\$500.00	100.00%	
Lubricants & Additives	\$50.00	\$0.00	\$50.00	100.00%	





# CITY OF MORA

## Expenditure Guideline For Commission

Current Period: September 2021

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Last Dim Descr	2021 YTD Budget	2021 YTD Amt	2021 YTD Balance	2021 % of Budget Remain	Explanation
Chemicals	\$0.00	\$0.00	\$0.00	0.00%	
Other Operating Supplies	\$0.00	\$0.00	\$0.00	0.00%	
Repair/Maint - Bldg & Equip	\$5,000.00	\$1,250.59	\$3,749.41	74.99%	
Small Tools & Equipment	\$0.00	\$0.00	\$0.00	0.00%	
Professional Services - Misc	\$5,000.00	\$652.00	\$4,348.00	86.96%	
Meetings, Training, & Travel	\$0.00	\$0.00	\$0.00	0.00%	
Workers Comp Insurance	\$124.00	\$77.22	\$46.78	37.73%	
Miscellaneous	\$0.00	\$0.00	\$0.00	0.00%	
Dept 49463 QUAMBA COLLEC	\$14,022.00	\$2,603.21	\$11,418.79	81.43%	
Dept 49470 SEWER LIFT STATIONS					
Wages & Salaries	\$5,784.00	\$5,196.13	\$587.87	10.16%	
PERA	\$433.00	\$362.25	\$70.75	16.34%	
FICA	\$359.00	\$273.89	\$85.11	23.71%	
Medicare	\$84.00	\$64.06	\$19.94	23.74%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$33.00	\$3.64	\$29.36	88.97%	
Health Insurance	\$1,080.00	\$971.44	\$108.56	10.05%	
Life Insurance	\$12.00	\$15.44	-\$3.44	-28.67%	
Motor Fuels	\$300.00	\$0.00	\$300.00	100.00%	
Lubricants & Additives	\$100.00	\$0.00	\$100.00	100.00%	
Chemicals	\$2,000.00	\$0.00	\$2,000.00	100.00%	
Other Operating Supplies	\$200.00	\$0.00	\$200.00	100.00%	
Repair/Maint - Bldg & Equip	\$20,000.00	\$10,354.96	\$9,645.04	48.23%	
Small Tools & Equipment	\$500.00	\$0.00	\$500.00	100.00%	
Professional Services - Misc	\$0.00	\$1,288.00	-\$1,288.00	0.00%	See Note J.
Workers Comp Insurance	\$288.00	\$179.28	\$108.72	37.75%	
Electricity	\$12,000.00	\$7,799.96	\$4,200.04	35.00%	
Storm Water	\$150.00	\$102.53	\$47.47	31.65%	
Miscellaneous	\$0.00	\$0.00	\$0.00	0.00%	
Dept 49470 SEWER LIFT STAT	\$43,323.00	\$26,611.58	\$16,711.42	38.57%	
Dept 49480 WASTEWATER TREATMENT					
Wages & Salaries	\$149,327.00	\$70,217.06	\$79,109.94	52.98%	
PERA	\$10,782.00	\$5,591.89	\$5,190.11	48.14%	
FICA	\$9,258.00	\$3,586.61	\$5,671.39	61.26%	
Medicare	\$2,165.00	\$838.41	\$1,326.59	61.27%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$621.00	\$71.28	\$549.72	88.52%	
Health Insurance	\$31,823.00	\$14,283.46	\$17,539.54	55.12%	
Life Insurance	\$332.00	\$177.60	\$154.40	46.51%	
Lab Supplies	\$200.00	\$760.26	-\$560.26	-280.13%	
Cleaning Supplies	\$100.00	\$39.51	\$60.49	60.49%	
Motor Fuels	\$5,000.00	\$387.28	\$4,612.72	92.25%	
Lubricants & Additives	\$500.00	\$399.60	\$100.40	20.08%	
Chemicals	\$1,000.00	\$0.00	\$1,000.00	100.00%	
Other Operating Supplies	\$2,000.00	\$901.78	\$1,098.22	54.91%	
Uniforms	\$300.00	\$15.49	\$284.51	94.84%	
Tires	\$200.00	\$0.00	\$200.00	100.00%	
Landscaping Materials	\$50.00	\$196.00	-\$146.00	-292.00%	
Repair/Maint - Bldg & Equip	\$20,000.00	\$8,843.67	\$11,156.33	55.78%	
Small Tools & Equipment	\$3,000.00	\$1,200.58	\$1,799.42	59.98%	
Professional Services - Misc	\$20,000.00	\$23,311.59	-\$3,311.59	-16.56%	
Meetings, Training, & Travel	\$200.00	\$0.00	\$200.00	100.00%	
Workers Comp Insurance	\$7,593.00	\$4,726.17	\$2,866.83	37.76%	



# CITY OF MORA

## Expenditure Guideline For Commission

Current Period: September 2021

Last Dim Descr	2021 YTD Budget	2021 YTD Amt	2021 YTD Balance	2021 % of Budget Remain	Explanation
Electricity	\$45,000.00	\$28,880.57	\$16,119.43	35.82%	
Water	\$2,200.00	\$1,188.73	\$1,011.27	45.97%	
Natural Gas - Heat	\$4,500.00	\$1,661.00	\$2,839.00	63.09%	
Garbage Removal	\$2,300.00	\$1,521.00	\$779.00	33.87%	
Sewer	\$0.00	\$0.00	\$0.00	0.00%	
Storm Water	\$250.00	\$211.01	\$38.99	15.60%	
Rentals	\$0.00	\$0.00	\$0.00	0.00%	
Miscellaneous	\$100.00	\$10.00	\$90.00	90.00%	
Dept 49480 WASTEWATER TR	\$318,801.00	\$169,020.55	\$149,780.45	46.98%	
Dept 49490 SEWER ADMINISTRATION					
Wages & Salaries	\$91,235.00	\$68,934.01	\$22,300.99	24.44%	
PERA	\$6,685.00	\$5,031.37	\$1,653.63	24.74%	
FICA	\$5,657.00	\$4,066.80	\$1,590.20	28.11%	
Medicare	\$1,323.00	\$950.76	\$372.24	28.14%	
ICMA	\$0.00	\$0.00	\$0.00	0.00%	
VEBA	\$510.00	\$440.27	\$69.73	13.67%	
Health Insurance	\$12,311.00	\$9,269.97	\$3,041.03	24.70%	
Life Insurance	\$200.00	\$180.98	\$19.02	9.51%	
Unemployment Benefit Pmts	\$0.00	\$0.00	\$0.00	0.00%	
Office Supplies	\$400.00	\$101.58	\$298.42	74.61%	
Other Operating Supplies	\$50.00	\$1.87	\$48.13	96.26%	
Uniforms	\$1,000.00	\$143.47	\$856.53	85.65%	
Small Tools & Equipment	\$1,000.00	\$804.72	\$195.28	19.53%	
Auditing	\$2,280.00	\$2,591.50	-\$311.50	-13.66%	
Engineering	\$1,000.00	\$55.61	\$944.39	94.44%	
Legal Services	\$500.00	\$0.00	\$500.00	100.00%	
Professional Services - Misc	\$3,000.00	\$1,088.37	\$1,911.63	63.72%	
Telephone	\$4,000.00	\$4,063.33	-\$63.33	-1.58%	
Postage	\$300.00	\$150.00	\$150.00	50.00%	
Meetings, Training, & Travel	\$2,000.00	\$636.71	\$1,363.29	68.16%	
Advertising	\$100.00	\$45.33	\$54.67	54.67%	
Contributions	\$0.00	\$85.00	-\$85.00	0.00%	
Depreciation	\$487,700.00	\$356,228.18	\$131,471.82	26.96%	
Insurance	\$13,270.00	\$10,210.86	\$3,059.14	23.05%	
Workers Comp Insurance	\$2,548.00	\$1,585.98	\$962.02	37.76%	
Bad Debts/NSF Checks	\$0.00	\$0.00	\$0.00	0.00%	
Dues & Subscriptions	\$2,000.00	\$1,450.00	\$550.00	27.50%	
Miscellaneous	\$200.00	\$500.00	-\$300.00	-150.00%	See Note K.
Payment Processing Expenses	\$3,000.00	\$2,353.10	\$646.90	21.56%	
Property Tax Expense	\$1,200.00	\$942.00	\$258.00	21.50%	
Change in Pension	\$0.00	\$0.00	\$0.00	0.00%	
Cust UB/Collection	\$3,000.00	\$2,049.09	\$950.91	31.70%	
Interest Expense	\$30,910.00	\$30,909.67	\$0.33	0.00%	
Trf to General Fund	\$4,235.00	\$0.00	\$4,235.00	100.00%	
Trf to Debt Service Fund	\$0.00	\$0.00	\$0.00	0.00%	
Dept 49490 SEWER ADMINIST	\$681,614.00	\$504,870.53	\$176,743.47	25.93%	
Fund 653 SEWER FUND	\$1,128,217.00	\$755,796.24	\$372,420.76	33.01%	
	\$7,796,042.00	\$5,670,760.45	\$2,125,281.55	27.26%	

**MORA MUNICIPAL UTILITIES****Notes to the Financial Statements****For the Quarter Ended September 30, 2021**

**Revenues** - The following notes attempt to explain the reason for revenues outside what would be expected as shown on the following reports.

- A. Lighting rebates received
- B. SMMPA distribution of general operating reserves
- C. Insurance claim proceeds for lightning damage at the Wastewater Treatment Plant

**Expenditures** - The following notes attempt to explain the reason for expenditures outside what would be expected as shown on the following reports.

- D. Diesel fuel for generators in Power Plant
- E. Expenses relating to fire resistant clothing
- F. Expenses relating to new service for new high school
- G. Transition to MPower GIS services for the electric department
- H. Desk purchased for office relocation of M. Yoder
- I. New digging trench box purchased
- J. Expenses relating to lift station generator inspections
- K. Sewer back-up deductible paid