

GIS: The past, present and future within Shakopee public utilities

Safety, Reliability, Efficiency,
Cost Efficiencies

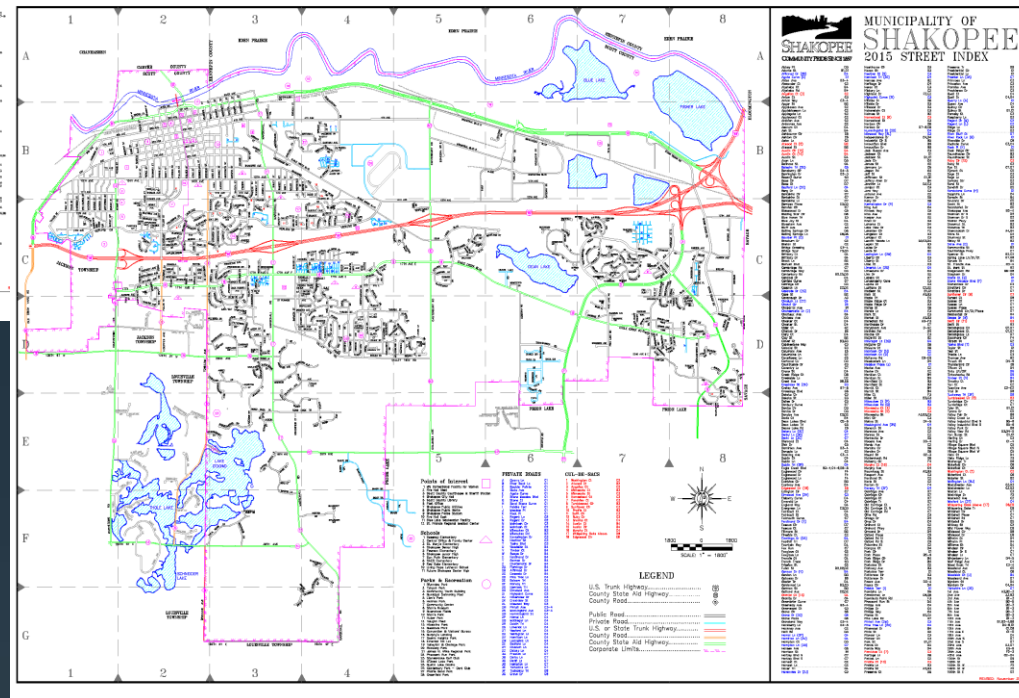
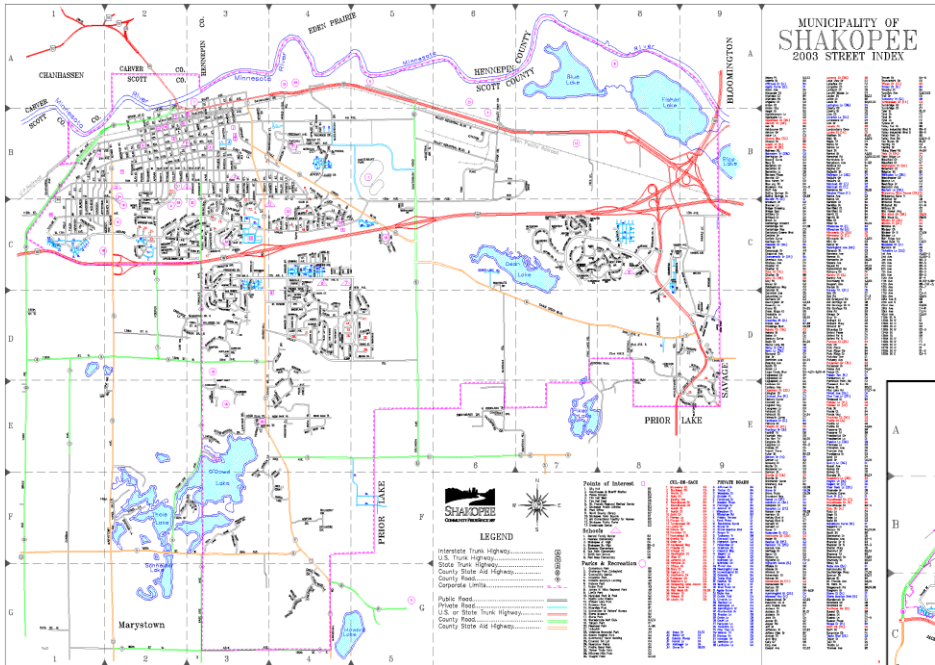


I SKATE TO WHERE THE PUCK IS GOING
TO BE, NOT WHERE IT HAS BEEN.
- WAYNE GREZKY



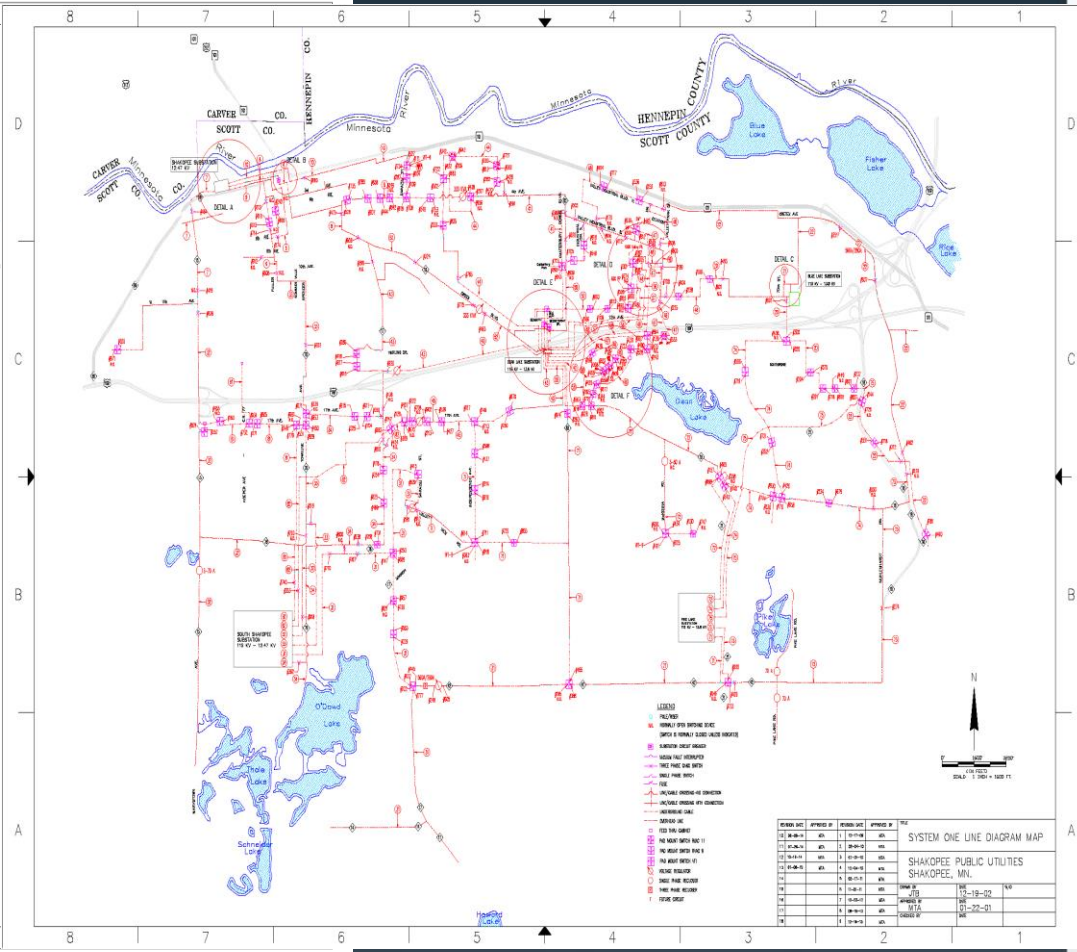
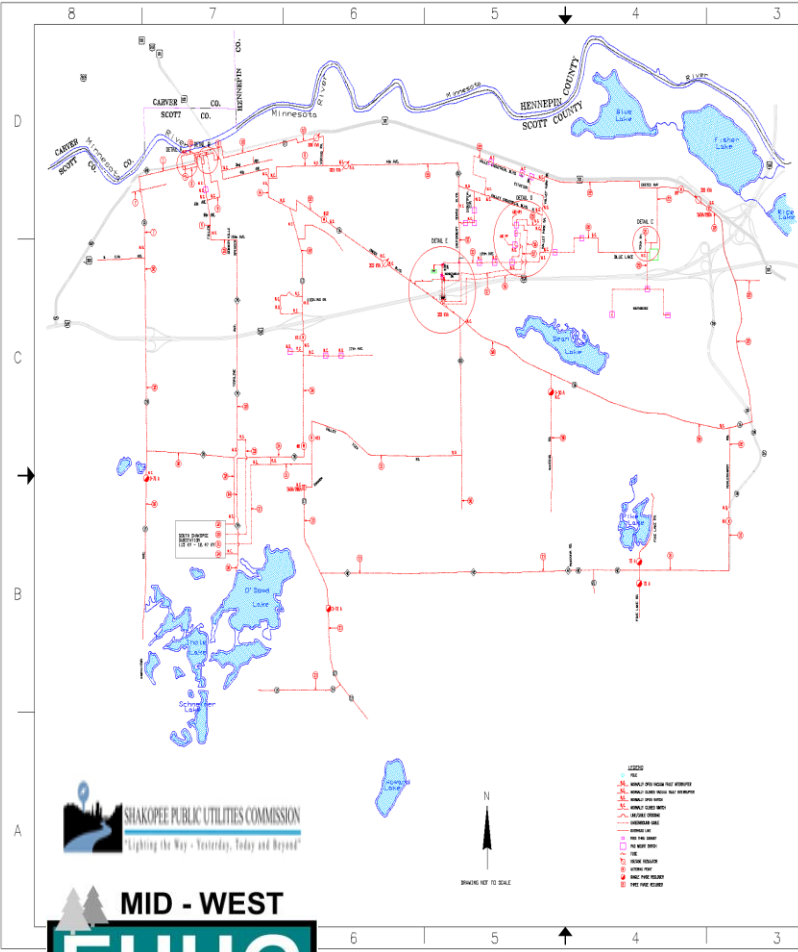


Shakopee Street Maps 2003 & 2015





SPU One-Line Electric Diagram 2001 & 2015

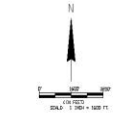


SHAKOPEE PUBLIC UTILITIES COMMISSION
"Lighting the Way - Yesterday, Today and Beyond"

MID - WEST



REVISED DATE	APPROVED BY	REVISION DATE	APPROVED BY	REV
11-11-11	AKS	11-11-11	AKS	1
08-11-11	AKS	08-11-11	AKS	2
11-11-10	AKS	11-11-10	AKS	3
11-11-10	AKS	11-11-10	AKS	4
11-11-10	AKS	11-11-10	AKS	5
11-11-10	AKS	11-11-10	AKS	6
11-11-10	AKS	11-11-10	AKS	7
11-11-10	AKS	11-11-10	AKS	8
11-11-10	AKS	11-11-10	AKS	9
11-11-10	AKS	11-11-10	AKS	10
11-11-10	AKS	11-11-10	AKS	11
11-11-10	AKS	11-11-10	AKS	12
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11-11-10	AKS	11-11-10	AKS	28
11-11-10	AKS	11-11-10	AKS	29
11-11-10	AKS	11-11-10	AKS	30



SYSTEM ONE LINE DIAGRAM MAP
SHAKOPEE, MN.



SPU Personal between 2003, 2006 & 2015

37 EMPLOYEES
NOT INCLUDING
METER READERS

SHAKOPEE PUBLIC UTILITIES
EMPLOYEE PHONE
9/9/2003

48 TOTAL EMPLOYEES
•26 EMPLOYEES FROM 2003
•22 NEW EMPLOYEES

SHAKOPEE PUBLIC UTILITIES
EMPLOYEE PHONE
6/27/2006

50 TOTAL EMPLOYEES

•21 EMPLOYEES FROM 2003
•9 EMPLOYEES FROM 2006
•20 EMPLOYEES SINCE 2006

SHAKOPEE PUBLIC UTILITIES
EMPLOYEE PHONE
6/2/2015

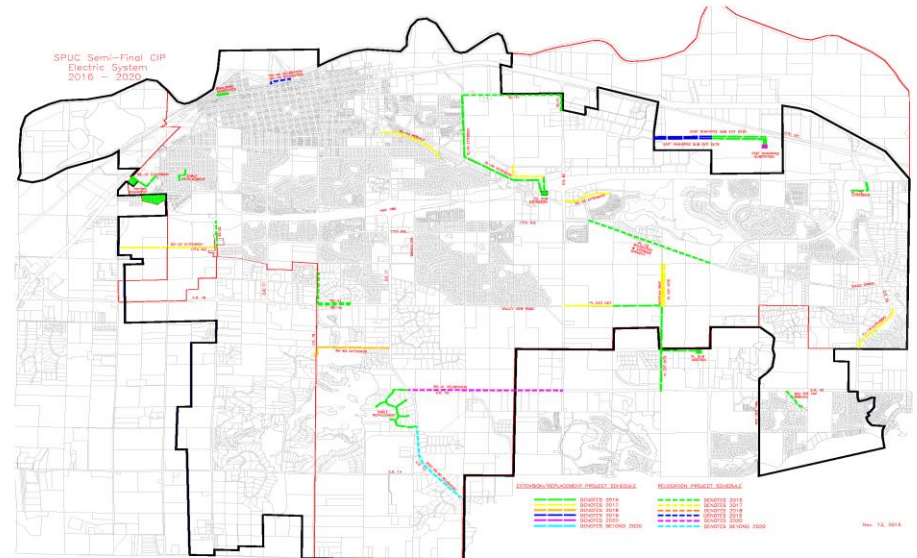
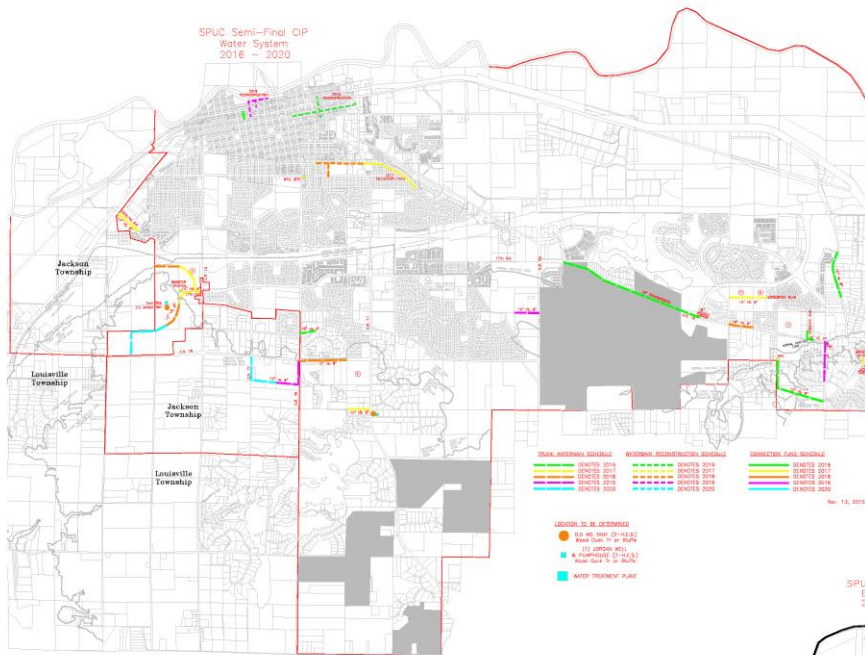
NAME	LOCATION/POSITION
SPUC ON CALL PHONE	MOBILE
ATHMANN MARVIN	ELECTRIC SUPT.
ATHMANN, MARVIN	PERSONAL MOBILE
ATHMANN, BRIAN	LINE WORKER
ENRIGHT, MIKE	LINE WORKER
GUSTAFSON, BRAD	LEAD LINE WORKER
HANGAARD, THOMAS	LOCATOR/METER TECH.
HARMON, ROSEMARIE	DISPATCHER
HENNEN, ROGER	LEAD LINE WORKER
HURD, SCOTT	LINE WORKER
PASS, EUGENE	LINE WORKER
PUDWILL, JAY	GROUNDSMAN/EQUIPTMEN
ROTERT, JUSTIN	LINE WORKER
SANDERS, KENT	LINE FOREMAN
SCHUETT, CODY	SERVICEMAN APPRENTICE
SENST, WAYNE	LINE WORKER
ZAMBRANO, EDWARD	STOREKEEPER
CROOKS, JOHN	WATER SUPT.
CROOKS, KEVIN	WATER SYSTEM OP.
GLYNN, MARTY	WATER SYSTEM OP.
HAGEN, DAVE	WATER SYSTEM OP.
HILLSTROM, JOE	SENIOR WATER OP.
MYERS, TONY	METER TECHNICIAN
OVERBEY, DON	WATER SYSTEM OP.
VEST, CHUCK	WATER SYSTEM OP.
VAN HOUT, LOU	MANAGER
BRANDES, DEB	
KONECNY, JULIE	MARKETING/KEY ACCTS
ADAMS, JOE	PLANNING / ENG. DIR.
BERKEN, JAY	
MOMAH, SAMUEL	
FOX, JERRY	FINANCIAL / ADMIN. DIR.
ANDERSON, SHERRI	
CAIN, TREY	
DEGGENDORF, LEANN	
ELLINGBOE, TARA	
HUTH, NANCY	
MCMAHON, MARY ELLEN	
NEVIN, BARB	
ROQUETTE, TERRILL	
YOUNG, ANNIE	
DEAN LAKE SUB	3755 EAGLE CRK. BLVD.

NAME	LOCATION/POSITION
SPUC ON CALL PHONE	MOBILE
ATHMANN MARVIN	ELECTRIC SUPT.
ATHMANN, MARVIN	PERSONAL MOBILE
ABRAHAMSON, JAY	APPRENTICE LINE WORKER
CARLSON, BRAD	GROUNDSMAN
ENRIGHT, MIKE	LINE WORKER
GRIEBEL, MATTHEW	SERVICEMAN APPRENTICE
GUSTAFSON, BRAD	LEAD LINE WORKER
HANGAARD, THOMAS	LOCATOR/METER TECH.
HENNEN, ROGER	LEAD LINE WORKER
HOHMANN, BRENT	APPRENTICE LINE WORKER
HURD, SCOTT	LINE WORKER
JOHNSON, MARK	GROUNDSMAN
PASS, EUGENE	SYSTEM TECH
ROTERT, JUSTIN	LINE WORKER
SANDERS, KENT	LINE FOREMAN
SCHUETT, CODY	LINE WORKER
THIELHORN, PENNY	DISPATCHER
WERMERSKIRCHEN, RYAN	SERVICEMAN APPRENTICE
ZAMBRANO, EDWARD	STOREKEEPER
CROOKS, JOHN	WATER SUPT.
CROOKS, JOHN	PERSONAL MOBILE
BARTUSEK, RON	WATER SYSTEM OP.
GLYNN, MARTY	WATER SYSTEM OP.
HAGEN, DAVE	WATER SYSTEM OP.
HILLSTROM, JOE	SENIOR WATER OP.
MYERS, TONY	METER TECHNICIAN
OVERBEY, DON	WATER SYSTEM OP.
VEST, CHUCK	WATER SYSTEM OP.
VAN HOUT, LOU	UTILITIES MANAGER
BRANDES, DEB	ADMINISTRATIVE ASSISTANT
PETRICH, TAMI	MARKETING DIRECTOR
ADAMS, JOE	PLANNING / ENG. DIR.
BERKEN, JAY	ENGINEERING TECHNICIAN
KUENNEN, JERRY	PROJECT ENGINEER
MOMAH, SAMUEL	ENGINEERING TECHNICIAN
WOLFE, DICK	ENGINEERING TECHNICIAN
ARCHERD, KENT	FINANCE/ADMINISTRATIVE DIR.
ANDERSON, SHERRI	ACCOUNTS COORDINATOR
CAIN, TREY	MIS COORDINATOR
EGGL, DOUG	METER READER
ELLINGBOE, TARA	CUSTOMER SERVICE REP.
HANGAARD, JEAN	CUSTOMER SERVICE REP.
HUTH, NANCY	ACCTS PAYABLE/PAYROLL CLERK
LACINA, TOM	METER READER
MASSIE, STEVE	METER READER
MCMAHON, MARY ELLEN	CUSTOMER SERVICE REP.
ROQUETTE, TERRILL	CUST. SERVICE COORDINATOR
STEINHOFF, DIA	INVENTORY SPECIALIST
SWEDBERG, JODY	CUSTOMER SERVICE REP.
DEAN LAKE SUB	METER READER
DEAN LAKE SUB	3755 EAGLE CRK. BLVD.

NAME	LOCATION/POSITION
SPUC ON CALL PHONE	MOBILE
ATHMANN MARVIN	ELECTRIC SUPT.
ATHMANN, MARVIN	PERSONAL MOBILE
CARLSON, BRAD	LINEMAN JOURNEYMAN
ENRIGHT, MIKE	SYSTEM TECH
GRIEBEL, MATTHEW	LINEMAN JOURNEYMAN
GUSTAFSON, BRAD	LEAD LINE WORKER
HANGAARD, THOMAS	LOCATOR/METER SPECIALIST
HANSON, TYLER	GROUNDSMAN/EQUIPMENT OPERATOR
HENNEN, ROGER	LEAD LINE WORKER
KING, ERIC	SERVICE WORKER JOURNEYMAN
KOCHLIN, NICK	LINEMAN APPRENTICE
ROTERT, JUSTIN	LINEMAN JOURNEYMAN
SANDERS, KENT	LINE FOREMAN
SCHUETT, CODY	LINEMAN JOURNEYMAN
SCHUETTPELZ, JORDAN	APPRENTICE SERVICEMAN
SKOUG, MICHAEL	STOREKEEPER
THIELHORN, PENNY	DISPATCHER
VONBANK, JAMIE	LINEMAN APPRENTICE
WERMERSKIRCHEN, RYAN	METER/ELECTRONIC TECHNICIAN
SCHEMEL, LON	WATER SUPT.
BARTUSEK, RON	WATER OPERATOR/APPRENTICE
GLYNN, MARTY	WATER OPERATOR/APPRENTICE
HAGEN, DAVE	SENIOR WATER OP.
HILLSTROM, JOE	SENIOR WATER OP.
MYERS, TONY	WATER OPERATOR/APPRENTICE
OVERBEY, DON	WATER OPERATOR/APPRENTICE
VEST, CHUCK	WATER OPERATOR/JOURNEYMAN
CROOKS, JOHN	UTILITIES MANAGER
BRANDES, DEB	ADMINISTRATIVE ASSISTANT
WALSH, SHARON	MARKETING/CUSTOMER RELATIONS DIR.
ANDERSEN, SHELBY	CUSTOMER SERVICE REP.
BALDWIN, MARY ELLEN	BILLING CLERK
BERENS, DENISE	CUSTOMER SERVICE REP.
BERGELAND, SHERI	BILLING CLERK
BERNDTSON, BOB	METER READER
LACINA, TOM	METER READER
MOY, TARA	BILLING CLERK
NICKOLAY, CINDY	METER READER
RAINES, SHARON	BILLING & COLLECTIONS COORDINATOR
STEINHOFF, DIA	CUSTOMER RELATIONS COORDINATOR
TRIPLETT, GREG	METER READER
3RD CASH DRAWER	CUSTOMER SERVICE/FRONT DESK
ADAMS, JOE	PLANNING / ENG. DIR.
BERKEN, JAY	ENGINEERING TECHNICIAN
FENSTERMACHER, CHRISTIAN	ENGINEERING TECHNICIAN
MOMAH, SAMUEL	ENGINEERING TECHNICIAN
SCHMID, RENEE	FINANCE/ADMINISTRATIVE DIR.
ANDERSON, SHERRI	SENIOR ACCOUNTING SPECIALIST
KRATOCHVIL, TYRA	ACCOUNTING SPECIALIST I
MENKE, CINDY	ACCOUNTS PAYABLE/HR SPECIALIST
ROMANSKY, BOB	IT COORDINATOR
ZAMBRANO, EDWARD	PURCHASING SPECIALIST
DEAN LAKE SUB	3755 EAGLE CRK. BLVD.
PIKE LAKE SUB	13560 EAGLE CREEK AVE NW
SOUTH SHAKOPEE SUB	13590 TOWNLINE AVE.



SPU ELECTRIC AND WATER 5 YEAR CIP MAPS



MID - WEST





Goals of GIS Presentation

1. What was completed in the past year with the Sagefire/SEH contract?
2. What are the recommendations for GIS in 2016? Why? Estimated costs?
3. What could be the long term goals with GIS and SPU?





Completed in the past year...

1. Install and update each GPS unit with the same software (TerrSync and Trimble Positions)
2. Determine and projected all GIS electric and water layers into the same datum
3. Determine and document GPS workflows
4. Streamline various electric and water layers to allow GIS to be more efficiently connect with other databases and spreadsheets
5. Rolled out ArcOnline for electric and water department heads





What are the possibilities for 2016?

1. Upgrade the ArcGIS for Server software from Basic to Standard
 - a) Allows SPU to more efficiently update maps with ArcOnline
 - Data that is viewed and edited through ArcOnline is retrieved from the SPU server behind SPU firewall and viewed through the ESRI cloud
 - b) Allows SPU to have more functionality and editing of data with ArcOnline





ARCGIS FOR SERVER PURCHASE OPTIONS

S.W. = NEW SOFTWARE COSTS

A.M. = ANNUAL MAINTENANCE COSTS

EDN = ESRI DEVELOPER NETWORK - \$1,500, 20% MAINTENANCE

EXISTING OPTION A

OPTION A

(3) ARC
ONLINE
USERS

EXISTING ARC
SERVER BASIC
A.M. = \$7,130
W/ TAX

(3) ARC EDITOR
CONCURRENT
LICENSE

- (3) ONLINE DESKTOP EL, W, P/E MANAGERS

OPTION B

EXISTING ARC SERVER BASIC
WITH ARC ONLINE LICENSE
EXTENSION

A.M. = \$9,830
S.W. = \$2,700

(3) ARC EDITOR
CONCURRENT
LICENSE

(8) ARC
ONLINE
USERS

- (3) ONLINE DESKTOP EL, W, P/E MANAGERS
 - (2) ONLINE MOBILE ELECTRIC
 - (2) ONLINE MOBILE WATER
- (1) ONLINE MOBILE ENGINEERING

OPTION C

UPGRADE ARC SERVER
SOFTWARE TO STANDARD WITH
ARC ONLINE LICENSE EXTENSION
WITH EDN LICENSE

A.M. = \$11,900
S.W. = \$12,500

(8) ARC ONLINE
USERS WITH
EXPANDED FIELD
COLLECTION

(3) ARC EDITOR
CONCURRENT
LICENSE

BUILD GIS
APPLICATIONS FOR
DESKTOP, MOBILE
AND SERVER
DEVELOPER

- (3) ONLINE DESKTOP EL, W, P/E MANAGERS
 - (2) ONLINE MOBILE ELECTRIC
 - (2) ONLINE MOBILE WATER
- (1) ONLINE MOBILE ENGINEERING



ARCGIS FOR SERVER PURCHASE OPINIONS

S.W. = NEW SOFTWARE COSTS

A.M. = ANNUAL MAINTENANCE COSTS

ELA = ENTERPRISE LICENCE AGREEMENT (3 YEAR AGREEMENT)



OPTION D

PURCHASE SMALL UTILITY
ELA WITH STANDARD ARC
SERVER SOFTWARE

A.M. = \$25,000

S.W. = \$18,000

- (6) ONLINE DESKTOP EL, W, P/E, CS, F, UM MANAGERS
- (2) ONLINE DESKTOP CREW & SERVICE FOREMAN
- (2) ONLINE DESKTOP SENIOR WATER OPERATORS
- (2) ONLINE DESKTOP ELECTRIC & WATER SCADA
- (7) ONLINE DESKTOP CUSTOMER SERVICE AND FINANCE
 - (13) ONLINE MOBILE ELECTRIC
 - (4) ONLINE MOBILE WATER
 - (1) ONLINE MOBILE ENGINEERING

BUILD GIS
APPLICATIONS FOR
DESKTOP, MOBILE
AND SERVER
DEVELOPER

SPATIAL ANALYST,
SCHEMATIC AND
OTHER ARC GIS
EXTENSIONS

(50) ARC EDITOR
CONCURRENT
LICENSE

(50) ARC ONLINE
USERS WITH
EXPANDED FIELD
COLLECTION

OPTION E

PURCHASE LOCAL
GOVERNMENT ELA WITH CITY
OF SHAKOPEE WITH STANDARD
ARC SERVER SOFTWARE

A.M. = \$15,000

S.W. = \$18,000

BUILD GIS
APPLICATIONS FOR
DESKTOP, MOBILE
AND SERVER
DEVELOPER

SPATIAL ANALYST,
SCHEMATIC AND
OTHER ARC GIS
EXTENSIONS

(50) ARC EDITOR
CONCURRENT
LICENSE

(50) ARC ONLINE
USERS WITH
EXPANDED FIELD
COLLECTION



Purchase of new tablets and data plans. Why?

1. Faster processing to view maps
2. A tablet that is easier to use and more stable software with ArcOnline APPs
 - a) Explorer APP allows the search of utilities' maps and to view information about your assets
 - b) Collector APP allows the collection of assets (including photos) and updating of the Utilities' assets as well as track and report areas you visited
3. Purchase of data plans
 - a) To allow more efficiently upload up-to-date changes (feature and tile data)
 - b) To allow more functionality of editing data
 - c) Allow sending and receiving correspondences via other ArcOnline users or email



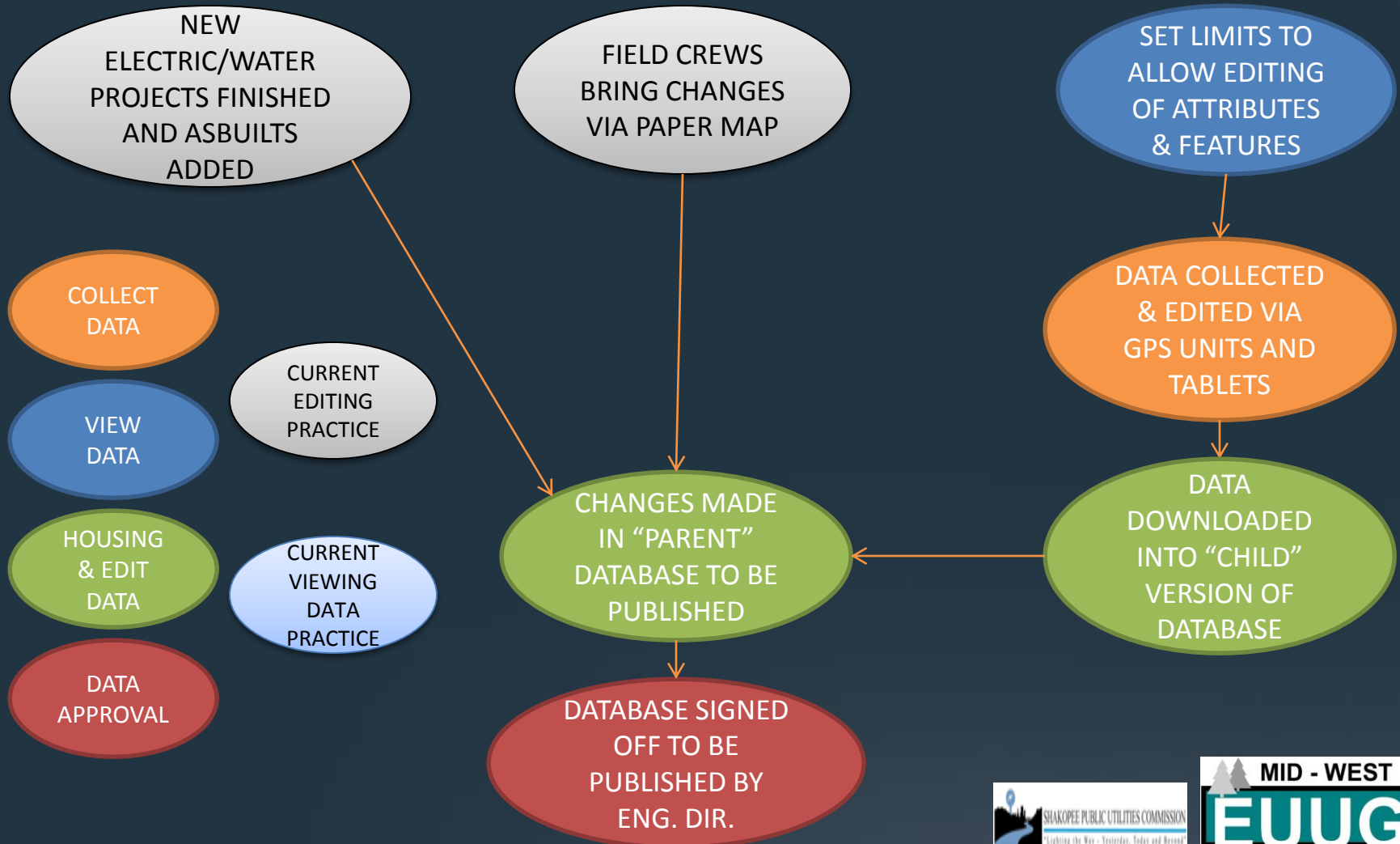
DISCUSSED PAST, CURRENT AND LONG TERM PLANS FOR SPU

I tried to capture the spirit of the thing. – Dickie Dunn



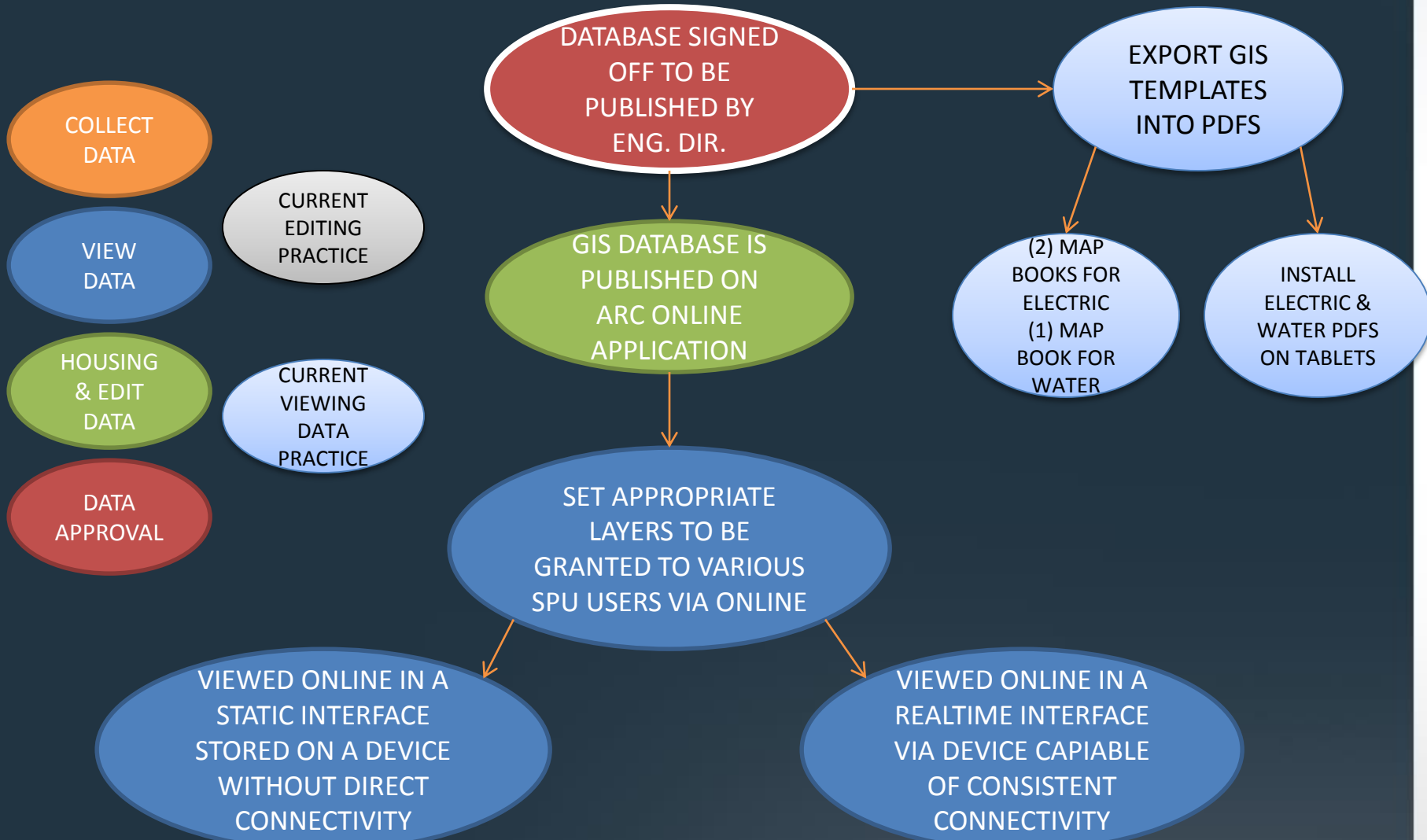


DATA COLLECTION & EDITING



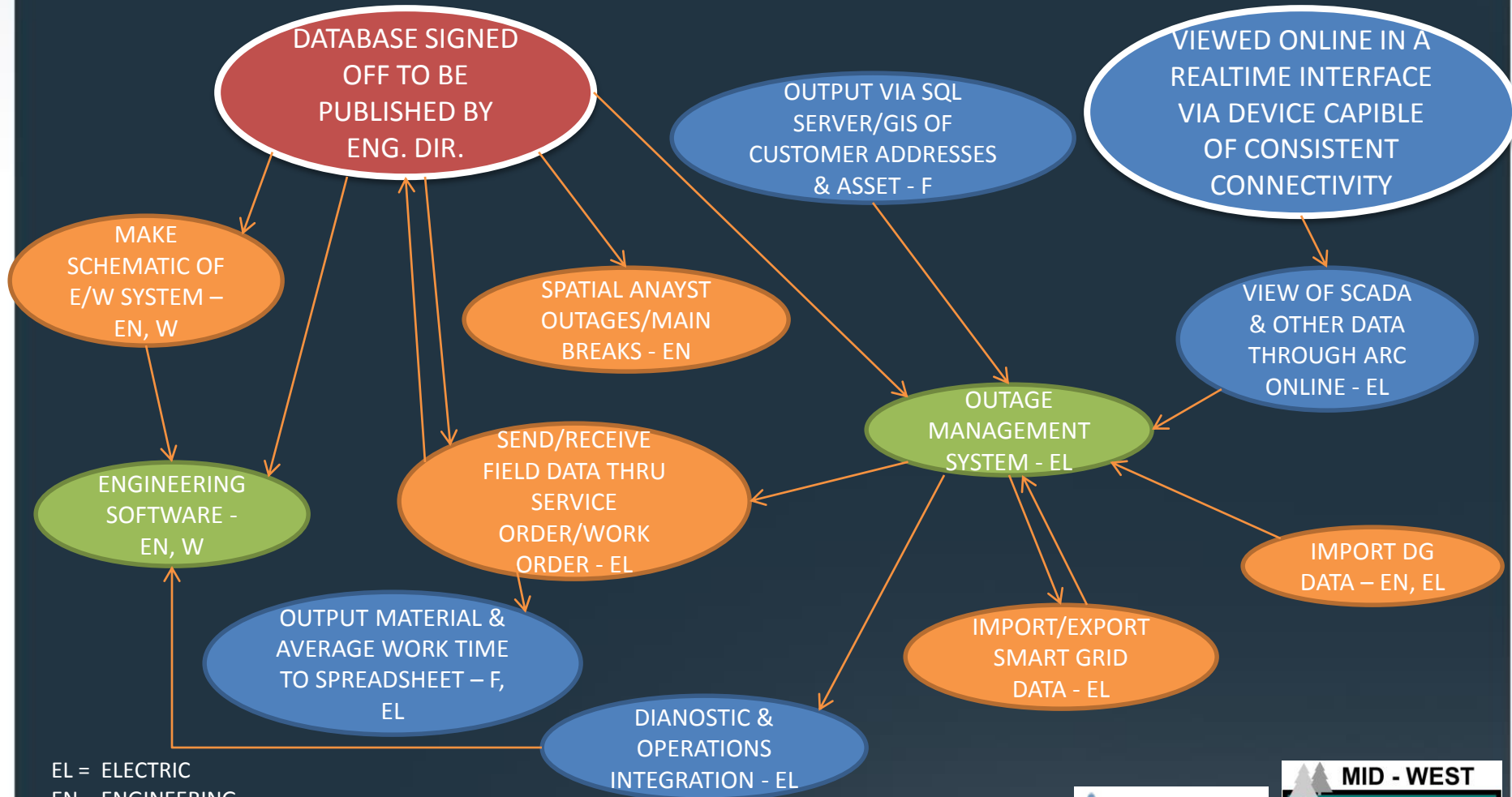


EXPEDITION OF MAPS WITHIN SPU





FUTURE CONNECTIONS TO OTHER SOFTWARE...



EL = ELECTRIC
EN = ENGINEERING
F = FINANCE
W = WATER





RECOMMENDATIONS FOR 2016

- **UPGRADE TO ARCGIS FOR SERVER STANDARD WITH EXTENSION OF (5) ARC ONLINE LICENSES – OPTION C**
 - ANNUAL MAINTANENCE = **\$11,900** VS. \$25,000 IN CIP (IN 2016, WOULD BE PRORATED AND CREDITED \$6,900)
 - SOFTWARE UPGRADE = **\$12,500**
 - INSTALL IMPACTS WITH SERVER
 - STANDARD SOFTWARE REPLACING EXISTING SOFTWARE (FROM BASIC) ON EXISTING SERVER
 - INSTALL STANDARD ONTO SEPARATE SERVER FROM THE SERVER WHICH THE SQL AND ARC LICENSES STORED
- **PURCHASE OF (5) TABLETS WITH CAPABILITY OF DATA PLANS**
 - (5) TABLETS ESTIMATED \$600 = **\$3,000** VS. (8) TABLETS BUDGETED FOR \$4,800 IN CIP
 - PLUS ESTIMATED \$30 DATA PLANS PER TABLET PER MONTH = **\$1,800** PER YEAR FOR (5) TABLETS
 - TOTAL UPFRONT COST OF TABLETS FOR 2016 = **\$4,800** IN 2016
- **DATABASE DEVELOPMENT, IMPLEMENTATION AND TRAINING IN 2016**
 - ESTIMATED **\$7,000** FOR LABOR OF CONSULTANT (SEH?)
 - ESTIMATED (48) HOURS OF ENGINEER TECH & IT COORDINATOR



Safety, Reliability, Efficiency, Cost Efficiencies

QUESTIONS?

