

Village of Carol Stream

SPECIAL WORKSHOP MEETING

MONDAY SEPTEMBER 15, 2014

6:00 P.M.

GREGORY J. BIELAWSKI MUNICIPAL CENTER

**500 N. GARY AVENUE
CAROL STREAM, ILLINOIS 60188**

LOWER LEVEL TRAINING ROOM

AGENDA

1. CALL TO ORDER
2. ATTENDANCE
3. UPDATE AND RECOMMENDATION ON VILLAGE BOARD GOALS FOR RELIABLE INFRASTRUCTURE ASSET MANAGEMENT, COMPREHENSIVE GIS IMPLEMENTATION AND INTEGRATED SERVICE BASE TECHNOLOGY.

This workshop will update the Board on the status of three Village Board Goals: Reliable Infrastructure Asset Management, Comprehensive GIS Implementation and Integrated Service Based Technology. Recommendations will be provided on the GIS Utility System Update & Implementation Project, future purchase of asset and operations management programs, contracting of GIS management services, modular integration and justification of various software packages, utilization of web-based solutions, project scheduling and deployment of GIS applications.

4. OTHER BUSINESS
5. ADJOURNMENT

ADOPTED VILLAGE GOALS

RELIABLE INFRASTRUCTURE

ASSET MANAGEMENT

&

COMPREHENSIVE GIS

IMPLEMENTATION

&

INTEGRATED SERVICE

BASE TECHNOLOGY



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

- **Utility System**
- **Goals**
- **Scope of Services**
- **Schedule**
- **Issues**
- **Alternatives & Recommendations**



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

- **Utility System**
 - **Water Distribution System**
 - **Sanitary Sewer Collection System**
 - **Stormwater Management System**



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

➤ Goals

- Long Term (Longer Than 1 Year)
- Short Term (Less Than 1 Year)



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

➤ Goals

- Long Term (Longer Than 1 Year)
 - Strategic Asset Management (SAM)



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

- **Examples of Village GIS Utility SAM Needs**
 - **Southwest Reservoir & Pumping Station**
 - **Southwest DPWC Connection & Metering Station**
 - **Water System Improvements**
 - **Water Main Replacements**
 - **Sanitary Sewer Rehabilitations & Replacements**
 - **Sanitary Force Mains**
 - **Stormwater & Flood Control Studies**
 - **Roadway Drainage Improvements**



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

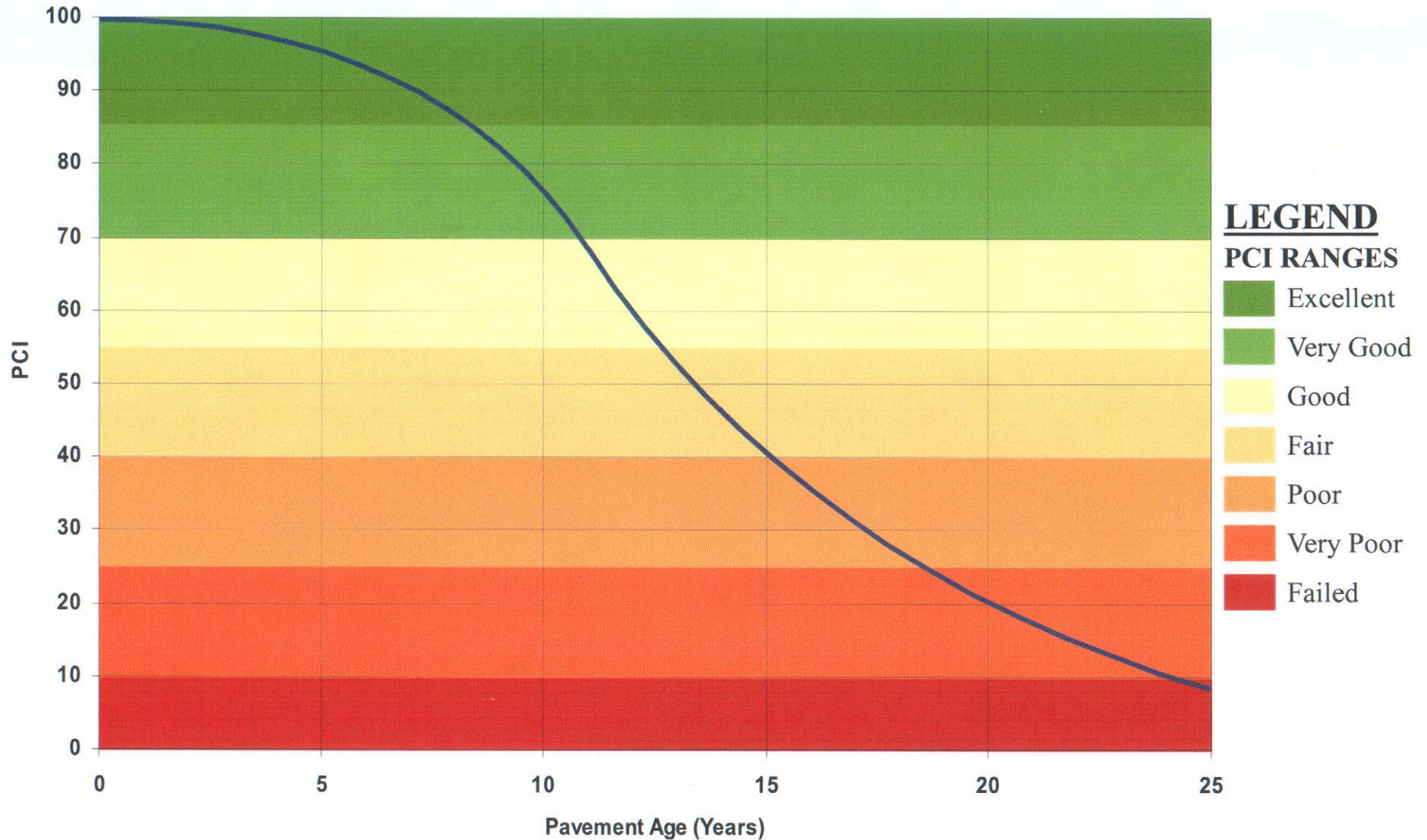
- **SAM Application Examples**



Asphalt Surfaced Roads and Parking Lots

ASPHALT SURFACED ROADS AND PARKING LOTS CONDITION SURVEY DATA SHEET FOR ONE SAMPLE UNIT					SKETCH
BRANCH _____ SURVEYOR _____		SECTION _____ DATE _____	SAMPLE UNIT _____ SAMPLE AREA _____		
1. <i>Alligator Cracking</i> (SF)	2. Bleeding (SF)	3. <i>Block Cracking</i> (SF)	4. Bumps and Sags (LF)	5. Comugation (SF)	
6. Depression (SF)	7. <i>Edge Cracking</i> (LF)	8. Joint Reflection Cracking (LF)	9. Lane/Shoulder Drop Off (LF)	10. <i>Long. and Trans. Cracking</i> (LF)	
11. <i>Patching and Util. Cut Patching</i> (SF)	12. Polished Aggregate (SF)	13. Potholes (CNT)	14. Railroad Crossing (SF)	15. <i>Rutting</i> (SF)	
16. Shoving (SF)	17. Slippage Cracking (SF)	18. Swell (SF)	19. Weathering and Raveling (SF)	COMMENTS _____ _____ _____	

PAVEMENT CONDITION DETERIORATION CURVE WITHOUT MAINTENANCE STRATEGIES APPLIED



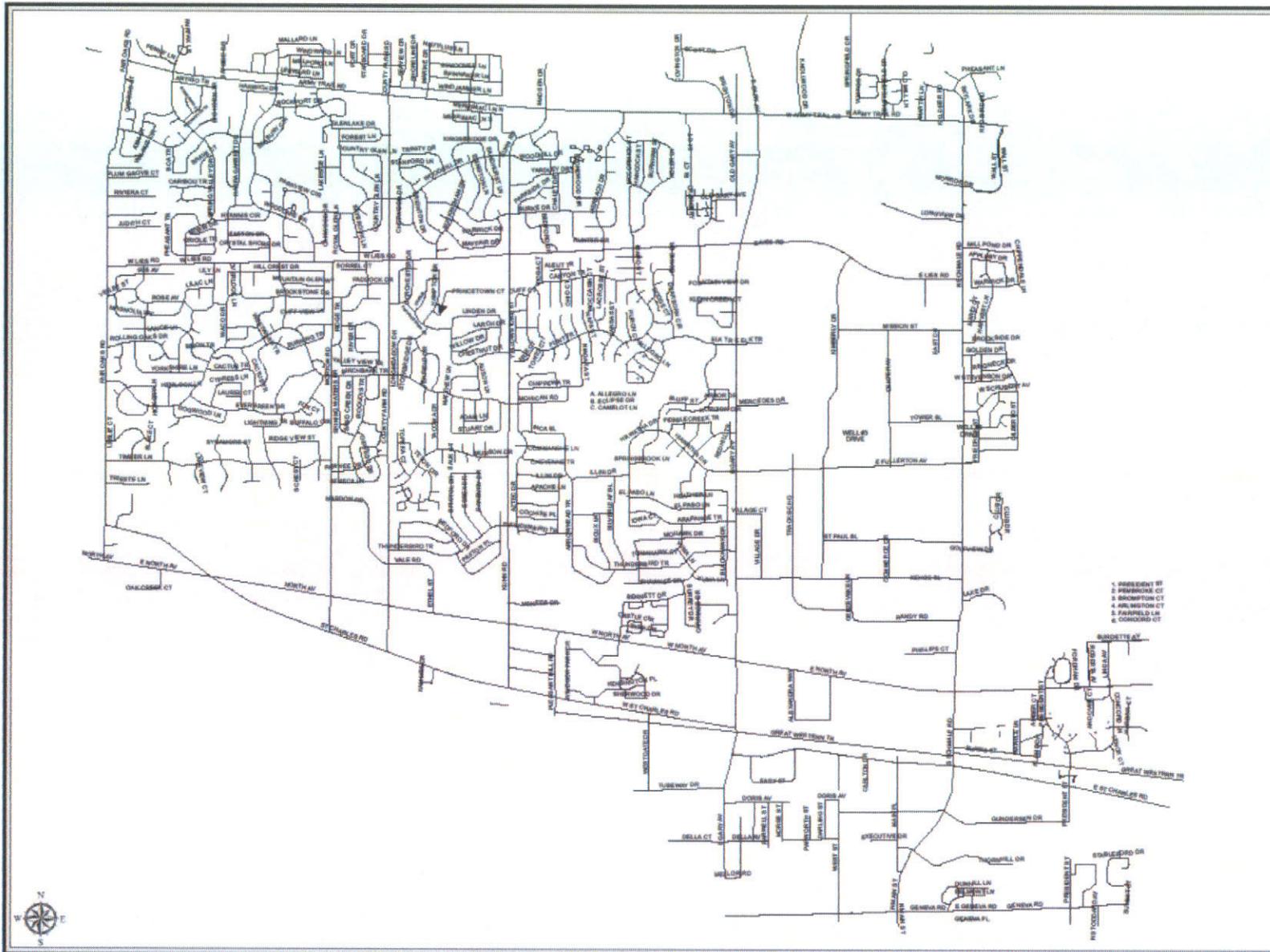
Name	From	To	Section ID	Length	Width	SQFT	SQYD	Last Inspection Date	Last Local/Major Work Date	PCI	PCI Category
ABBINGTON LN	YARLEY	WOODHILL	1	150		25 3,750.00	416.67	9/21/2011		8/1/2004	44 Poor
ADAM LANE	BIRCHBARK TRAIL	DAVID LANE	1	1,005.00		25 25,125.00	2,791.67	7/10/2011		7/6/2005	72 Satisfactory
ADLER LN	IDAHO TRAIL	MERBACH RD	1	3,711.00		25 92,775.00	10,308.33	9/22/2011		8/1/1999	88 Good
ADOBE CT	MOHICAN RD	INCA BLVD	1	664		24 15,936.00	1,770.67	7/2/2011		8/1/1996	87 Good
ALABAMA TR	E SIDE IDAHO ST	CUL-DE-SAC	1	189		24 4,536.00	504.00	10/3/2011		8/1/1997	51 Poor
ALABAMA TR	W SIDE IDAHO ST	CUL-DE-SAC	2	424		24 10,176.00	1,130.67	10/3/2011		7/1/2007	82 Satisfactory
ALAMO CT	DEARBORN CIR	CUL-DE-SAC	1	257		23 8,698.00	966.44	10/4/2011		7/1/2007	78 Satisfactory
ALEUT TR	CUL-DE-SAC	CUL-DE-SAC	1	492		23 16,890.00	1,876.67	7/2/2011		8/1/1997	67 Fair
ALEXANDRA WAY	NORTH AVE	NORTH AVE	1	2,744.00		35 96,040.00	10,671.11	10/5/2011		8/1/2002	46 Poor
ALISON LN	BIRCHBARK TRAIL	TOWN & COUNTRY P/L	1	932		25 23,300.00	2,588.89	7/21/2011		7/6/2005	69 Fair
ALLEGHENY CT	PAWNEE DR	OSWEGO DR	1	92		22 2,024.00	224.89	10/12/2011		8/1/2000	91 Good
ALLEGRO LN	DAYBREAK LANE	HOOVER DRIVE	1	435		25 10,875.00	1,208.33	10/4/2011		7/22/2008	88 Good
ALTON COURT	TETON CIR	COURT	1	1,164.00		21 24,444.00	2,716.00	10/3/2011		7/19/2006	47 Poor
ANDREW LANE	ADAM LANE	BIRCHBARK TRAIL	1	462		25 11,550.00	1,283.33	7/10/2011		7/6/2005	73 Satisfactory
ANTELOPE TRAIL	EAST CUL-DE SAC	IDAHO ST	1	189		24 7,247.00	805.22	7/19/2011		8/1/1997	81 Satisfactory
ANTELOPE TRAIL	IDAHO ST	WEST CUL-DE-SAC	2	425		24 12,911.00	1,434.56	7/19/2011		8/1/1997	75 Satisfactory
ANTIGO	SPRING VALLEY DR	BIG HORN TRAIL	1	1,011.00		25 25,275.00	2,808.33	9/20/2011		7/22/2008	90 Good
APACHE LANE	AZTEC DR	INDIANWOOD DR	1	955		23 21,965.00	2,440.56	7/2/2011		8/1/1999	43 Poor
APPALOOSA	MUNSON DR	CUL-DE-SAC	1	324		19 7,460.00	828.89	10/3/2011		7/1/2007	94 Good
APPOMATTOX	SPRING VALLEY DR	ANTIGO	1	1,001.00		25 25,025.00	2,780.56	9/20/2011		7/22/2008	94 Good
ARAPAHOE	HIAWATHA	GARY AVE	1	2,542.00		23 58,466.00	6,496.22	12/22/2011		8/1/2000	54 Poor
ARBOR DRIVE	LEGENDS DRIVE	HORIZON CIRCLE	1	360		25 9,000.00	1,000.00	7/2/2011		8/21/1994	50 Poor
ARLINGTON COURT	PRESIDENT STREET	END OF CUL-DE-SAC	1	390		25 9,750.00	1,083.33	10/12/2011		7/22/2008	82 Satisfactory
ARROWHEAD	THUNDERBIRD TR	THUNDERBIRD TR	1	2,011.00		23 46,253.00	5,139.22	7/2/2011		8/1/1998	61 Fair
ARROWHEAD	THUNDERBIRD TR	INCA BLVD	2	2,368.00		25 59,200.00	6,577.78	10/4/2011		6/20/2006	43 Poor
ASH	BIG HORN TR	COURT	1	636		25 22,186.00	2,465.11	9/20/2011		7/1/2007	92 Good
ASPEN COURT	MERBACH	CUL-DE-SAC	1	216		25 9,081.00	1,009.00	7/9/2011		8/1/1996	81 Satisfactory
AZTEC	THUNDERBIRD TR	ILLINI	1	1,394.00		25 34,850.00	3,872.22	12/21/2011		10/1/1999	100 Good
AZTEC	TAMA CT.	UTE LANE	3	970		25 24,250.00	2,694.44	10/4/2011		6/20/2006	54 Poor
AZTEC	ILLINI	TAMA CT	2	2,250.00		25 56,250.00	6,250.00	10/4/2011		8/1/1996	26 Very Poor
BARTON PLACE	THUNDERBIRD TR	MEDFORD DRIVE	1	570		25 14,250.00	1,583.33	7/10/2011		6/1/1997	51 Poor
BASSWOOD	MERBACH	CUL-DE-SAC	1	361		25 12,706.00	1,411.78	9/21/2011		8/1/2000	37 Very Poor
BAYBROOK	LIES RD	WOODHILL DR	1	1,127.00		27 30,429.00	3,381.00	7/1/2011		8/1/1997	65 Fair
BEAR PAW COURT	BIRCHBARK TR	CUL-DE-SAC	1	525		25 13,420.00	1,491.11	10/12/2011		7/1/2007	45 Poor
BEDFORD	CANTERBURY	LIES RD	1	824		25 20,600.00	2,288.89	7/10/2011		6/1/1998	54 Poor
BEECH	MERBACH	CUL-DE-SAC	1	149		25 7,406.00	822.89	9/21/2011		8/1/1996	32 Very Poor
BELAIR COURT	PEBBLECREEK TR	CUL-DE-SAC	1	160		25 4,000.00	444.44	10/4/2011		8/6/2004	65 Fair
BENNETT DR	NORTH AVE	SYPE	1	355		60 21,300.00	2,366.67	8/1/2007		8/1/2007	100 Good
BENNETT DR	SYPE	SURREY	2	2,000.00		25 50,000.00	5,555.56	8/1/2007		8/1/2007	100 Good
BENNINGTON DR.	GLENLAKE DR	ARMY TRAIL RD	1	1,061.00		25 28,128.00	3,125.33	7/1/2011		8/9/2005	93 Good
BERKSHIRE LANE	MEDFORD	BARTON PL	1	1,291.00		25 32,275.00	3,586.11	7/10/2011		7/1/1997	52 Poor
BIG EAGLE	BIRCHBARK TR	MORTON RD	1	1,049.00		25 26,225.00	2,913.89	7/2/2011		7/1/2001	69 Fair
BIG EAGLE COURT	BIG EAGLE TR	CUL-DE-SAC	1	115		25 6,684.00	742.67	7/2/2011		7/1/2001	84 Satisfactory
BIG HORN TRAIL	SPRING VALLEY DR	ANTIGO TRAIL	3	2,278.00		25 56,950.00	6,327.78	9/20/2011		7/22/2008	90 Good
BIG HORN TRAIL	31'EAST OF WALNUT	SPRING VALLEY DR	2	1,221.00		30 36,630.00	4,070.00	7/2/2011		8/1/1999	84 Satisfactory
BIG HORN TRAIL	SPRING VALLEY	31'W SIDE WALNUT	1	734		30 22,020.00	2,446.67	7/2/2011		8/1/1999	83 Satisfactory
BILOXIE COURT	TETON CIR	COURT	1	332		21 6,972.00	774.67	10/3/2011		7/19/2006	49 Poor
BIRCHBARK COURT	BIRCHBARK TR	CUL-DE-SAC	1	260		25 6,500.00	722.22	12/22/2011		8/1/1997	73 Satisfactory
BIRCHBARK TRAIL	264' W OF COUNTY FARM	COUNTY FARM RD	5	264		29 8,976.00	997.33	9/29/2011		8/1/1997	99 Good

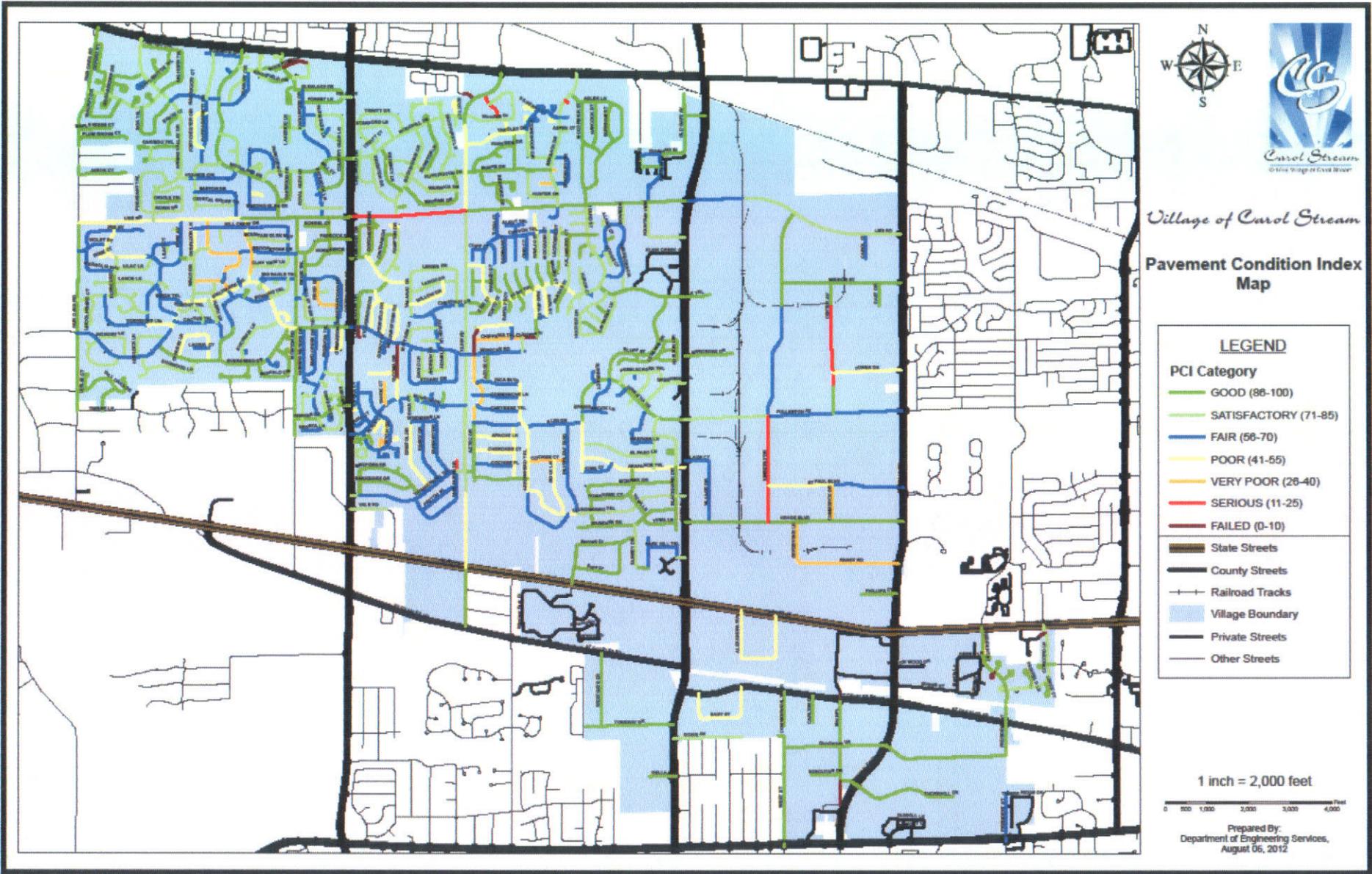


Carol Stream
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Village of Carol Stream

STREETS





Village of Carol Stream

Pavement Condition Index Map

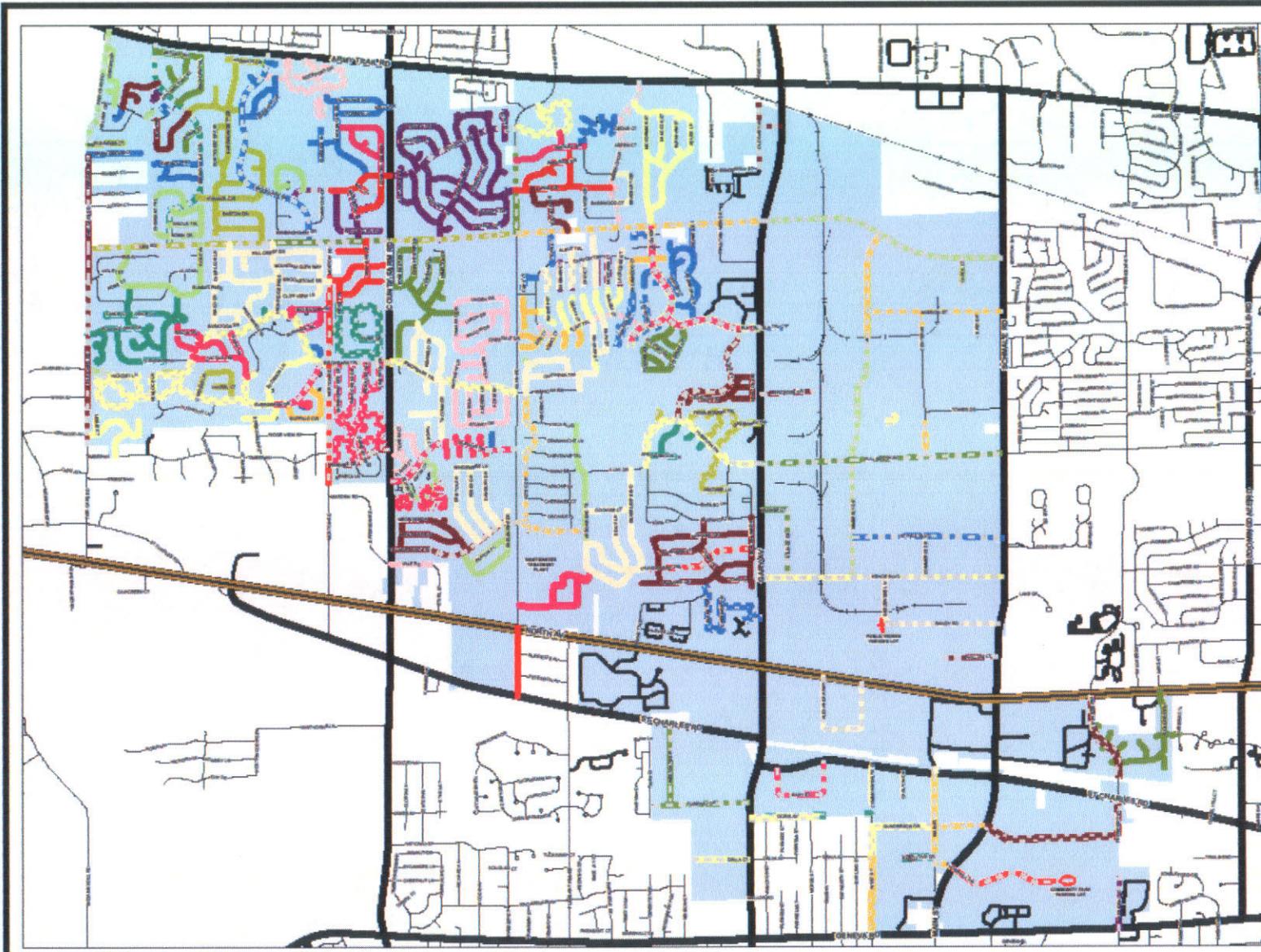
LEGEND

- PCI Category**
- GOOD (86-100)
 - SATISFACTORY (71-85)
 - FAIR (56-70)
 - POOR (41-55)
 - VERY POOR (26-40)
 - SERIOUS (11-25)
 - FAILED (0-10)
- State Streets
 - County Streets
 - Railroad Tracks
 - Village Boundary
 - Private Streets
 - Other Streets

1 inch = 2,000 feet



Prepared By:
Department of Engineering Services,
August 06, 2012



Village of Carol Stream

Flexible Pavement History Map

LEGEND

Flexible Pavement Year

- 2014
- 2013
- 2012
- 2011
- 2010
- 2009
- 2008
- 2007
- 2006
- 2005
- 2004
- 2003
- 2002

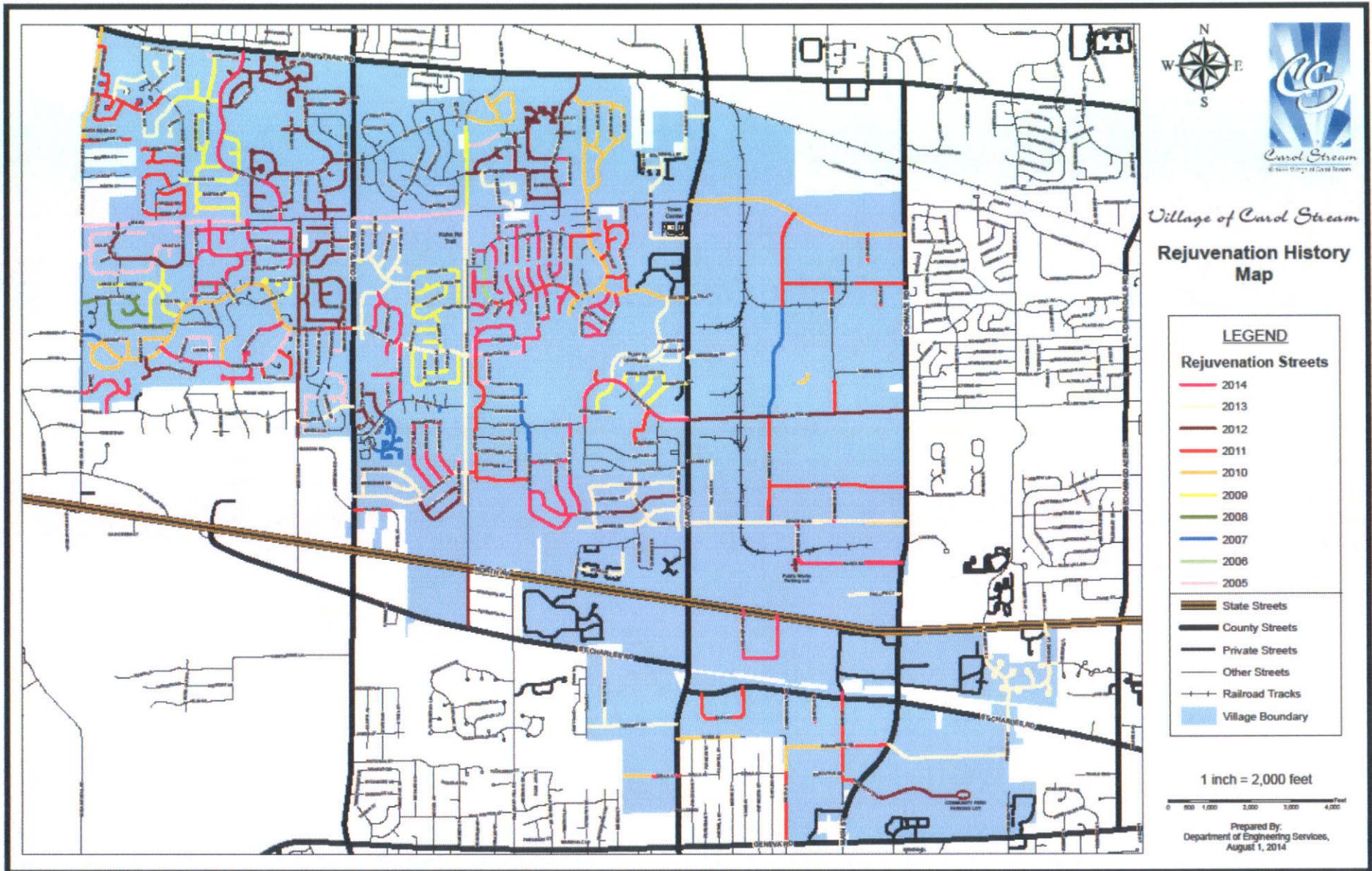
Project Category

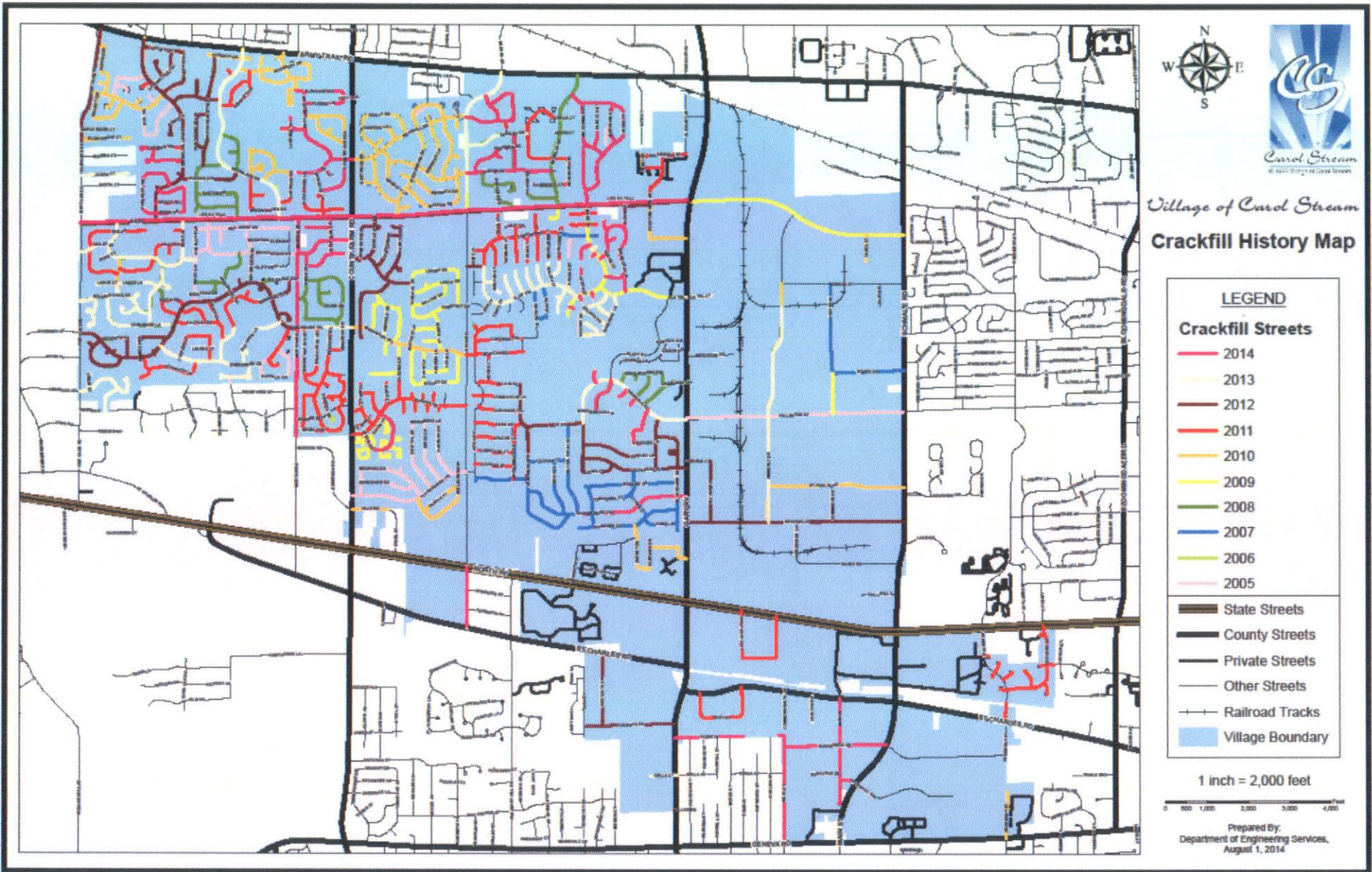
- Resurfacing
- Structural Overlay
- Reconstruction
- State Streets
- County Streets
- Private Streets
- Other Streets
- Railroad Tracks
- Village Boundary

1 inch = 2,000 feet

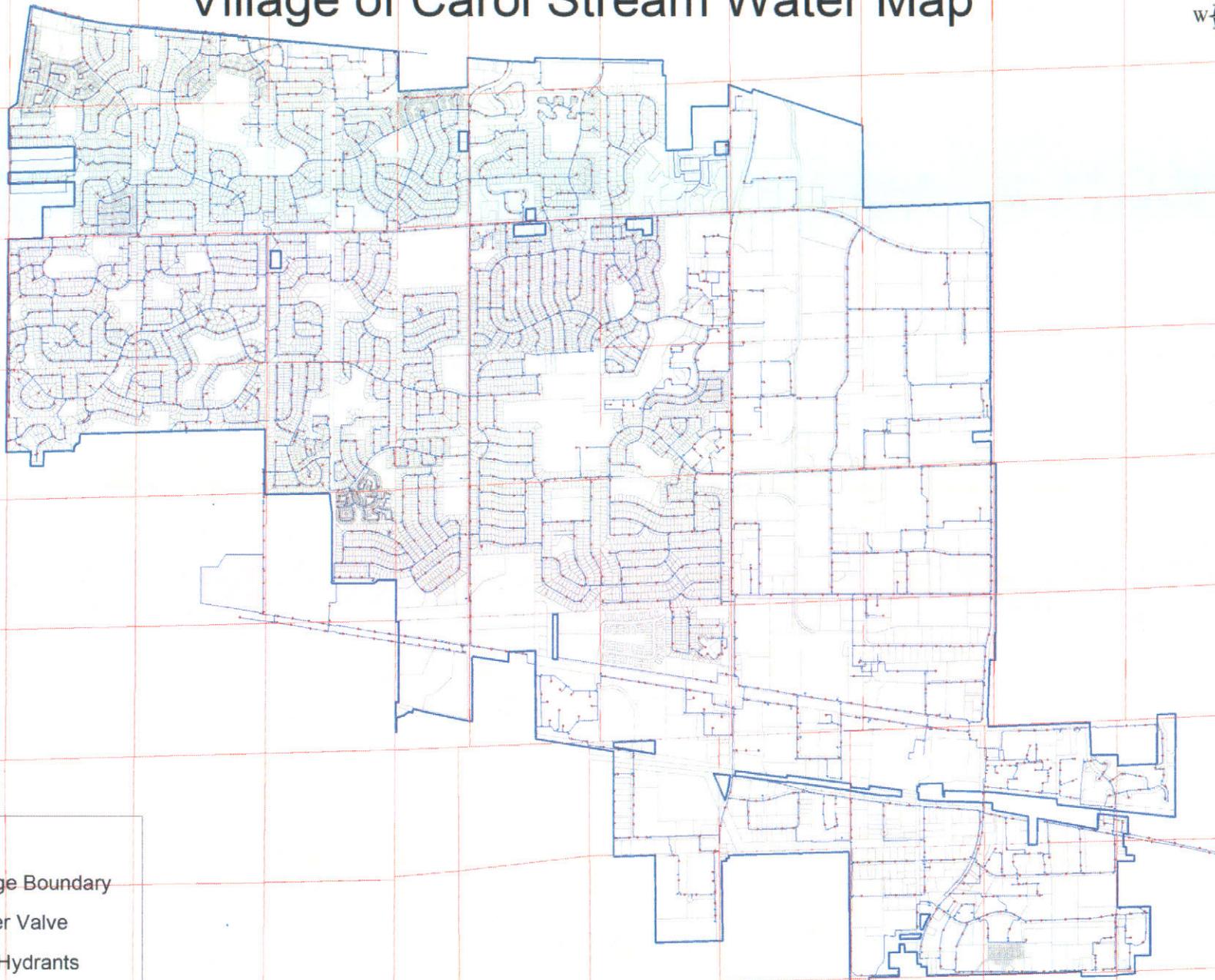


Prepared By:
Department of Engineering Services,
August 1, 2014





Village of Carol Stream Water Map



Legend

-  Village Boundary
-  Water Valve
-  Fire Hydrants
-  Watermain

0 0.1 0.2 0.4 0.6 0.8 Miles



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

➤ Goals

- Long Term (Longer Than 1 Year)
 - Strategic Asset Management (SAM)
 - Operations Management System (OMS)



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

- **Examples of GIS Utility OMS Needs**
 - **Work Orders & Work Flow**
 - **Inventory Controls**
 - **Project Management**
 - **Permits**
 - **Preventative Maintenance**
 - **Compliance Documentation**
 - **Cost & Efficiency Analysis**
 - **Level of Service (LOS) Impact**
 - **Citizen Service Request (CSRs)**
 - **Emergency & Disaster Response**
 - **Program Management**



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

- OMS Application Examples





Inspection Report Number

10001

Site/Subdivision/Project Name

Easton Park

Inspection Date

6/23/2010

Address or Location:

North Avenue

Permittee Name

M.I. Homes

Site in Compliance? Check if yes.

Concrete Washout Satisfactory Unsatisfactory Not Applicable

Construction Entrance/Pavement Satisfactory Unsatisfactory Not Applicable

Construction Sequencing Satisfactory Unsatisfactory Not Applicable

Detention/Sedimentation Basin Satisfactory Unsatisfactory Not Applicable

Dewatering Facilities Satisfactory Unsatisfactory Not Applicable

Ditch Checks Satisfactory Unsatisfactory Not Applicable

Diversion Channel Satisfactory Unsatisfactory Not Applicable

Dust Control Satisfactory Unsatisfactory Not Applicable

ECB/TRM Satisfactory Unsatisfactory Not Applicable

Inlet Protection Satisfactory Unsatisfactory Not Applicable

Mulch Satisfactory Unsatisfactory Not Applicable

Other (1) Satisfactory Unsatisfactory Not Applicable

Overland Flow Routs/Channels/Swales Satisfactory Unsatisfactory Not Applicable

Rip Rap Satisfactory Unsatisfactory Not Applicable

Silt Fence Satisfactory Unsatisfactory Not Applicable

SE/SC Installation Satisfactory Unsatisfactory Not Applicable

SE/SC Maintenance Satisfactory Unsatisfactory Not Applicable

Soil Stockpile Stabilized/Protected Satisfactory Unsatisfactory Not Applicable

Stabilization Measures Satisfactory Unsatisfactory Not Applicable

Storm Sewer System Satisfactory Unsatisfactory Not Applicable

Vegetative Cover Satisfactory Unsatisfactory Not Applicable

Wetland/Riparian/Buffer Protection Satisfactory Unsatisfactory Not Applicable

Other (2) Satisfactory Unsatisfactory Not Applicable

Please Identify

Please Identify

Date of Required Corrective Action

Date Permittee Notified

Date Corrective Action Completed

Any Impacts? Check if yes.

Date Action Taken to Reduce Impacts

Engineering Inspector

Jim Ludman

Signature Date

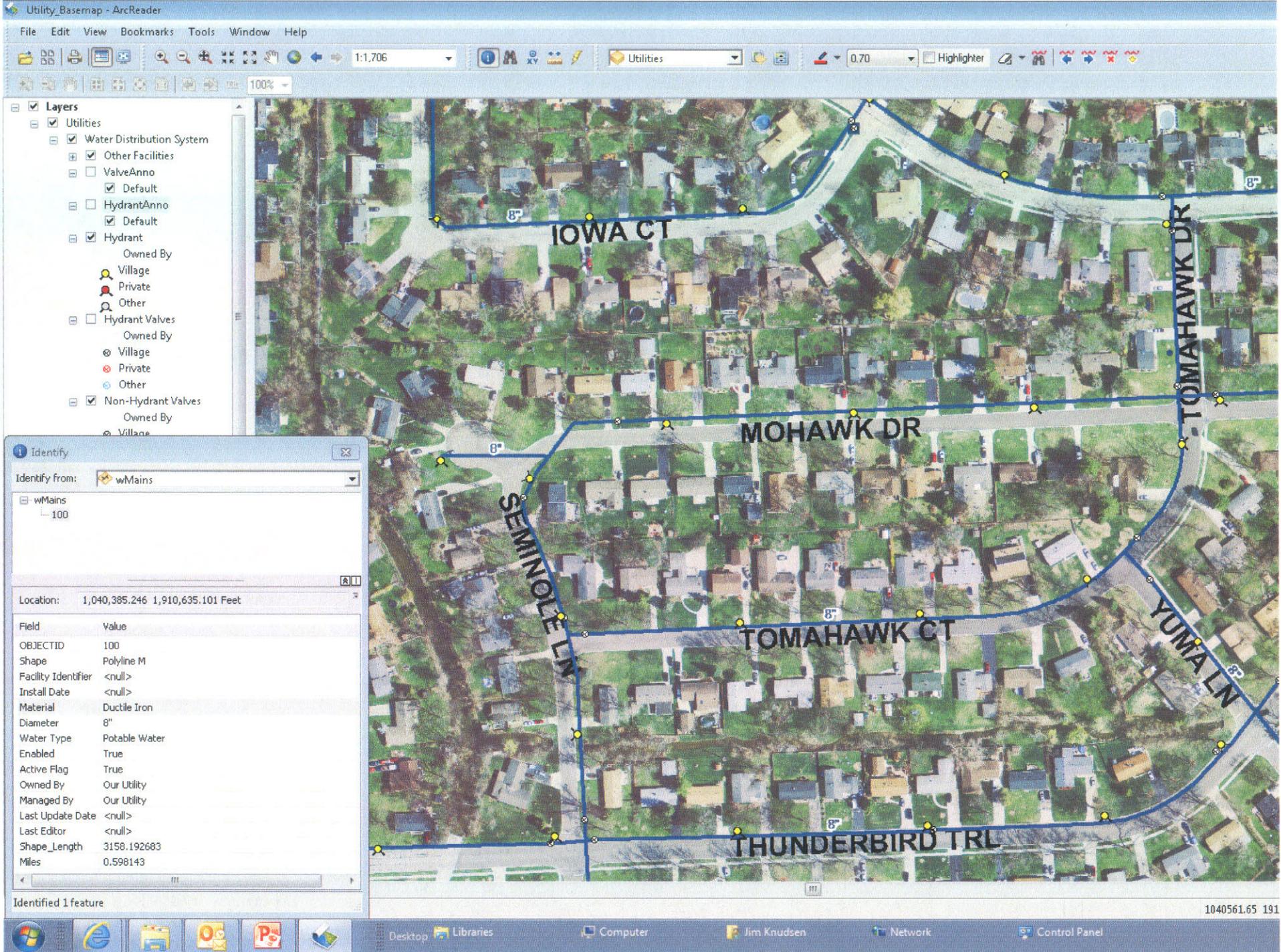
6/23/2010

Comments

Site Runoff Control - Inspection Compliance Report

SiteCompliant?	Inspection Report Number	Inspection Date	Site/Subdivision/Project Name	Date Corrective Action Completed	Engineering Inspector
<u>Yes</u>	10001	6/23/2010	Easton Park		Jim Ludman
	10002	6/23/2010	Geneva Crossing Phase II	6/23/2010	Jim Ludman
	10004	6/30/2010	S&S International		Jesse Bahraini
	10005	7/12/2010	S&S International		Jesse Bahraini
	10006	7/13/2010	Great Lakes Principal		Jim Ludman
	10007	7/13/2010	Carol's Court Car Wash	7/13/2010	Jim Ludman
	10008	7/13/2010	Easton Park		Jim Ludman
	10009	7/26/2010	S&S International		Jesse Bahraini
	10015	9/1/2011	NTA Precision	9/1/2011	Jesse Bahraini
	11001	2/22/2011	Scheffler Proeprty		Jim Ludman
	11003	3/3/2011	Carol's Court	3/3/2011	Jim Ludman
	11004	3/3/2011	Firestone	3/3/2011	Jim Ludman
	11005	3/3/2011	Schefflers	3/3/2011	Jim Ludman
	11006	3/10/2011	Spicetec		Jesse Bahraini
	11007	3/24/2011	Spicetec		Jesse Bahraini
	11008	4/8/2011	Spicetec	5/31/2011	Jesse Bahraini
	11009	4/22/2011	Spicetec		Jesse Bahraini
	11010	5/6/2011	Spicetec		Jesse Bahraini
	11011	5/16/2011	Spicetec		Jesse Bahraini
	11013	5/31/2011	Spicetec	5/31/2011	Jesse Bahraini
	11014	8/18/2011	NTA Precision	8/18/2011	Jesse Bahraini
	11018	10/13/2011	NTA Precision	10/13/2011	Jesse Bahraini
	11019	10/27/2011	NTA Precision Axle Corp.	10/27/2011	Jesse Bahraini
	11022	11/8/2011	Temple Inland		Jesse Bahraini





Water.mxd - ArcMap - ArcInfo

File Edit View Insert Selection Tools Window Help

1:6,453

Editor Task: Create New Feature Target: Load Objects...

Network: WaterNetwork Flow Analysis Trace Task: Find Disconnected

Identify Results

Layers: <Top-most layer>

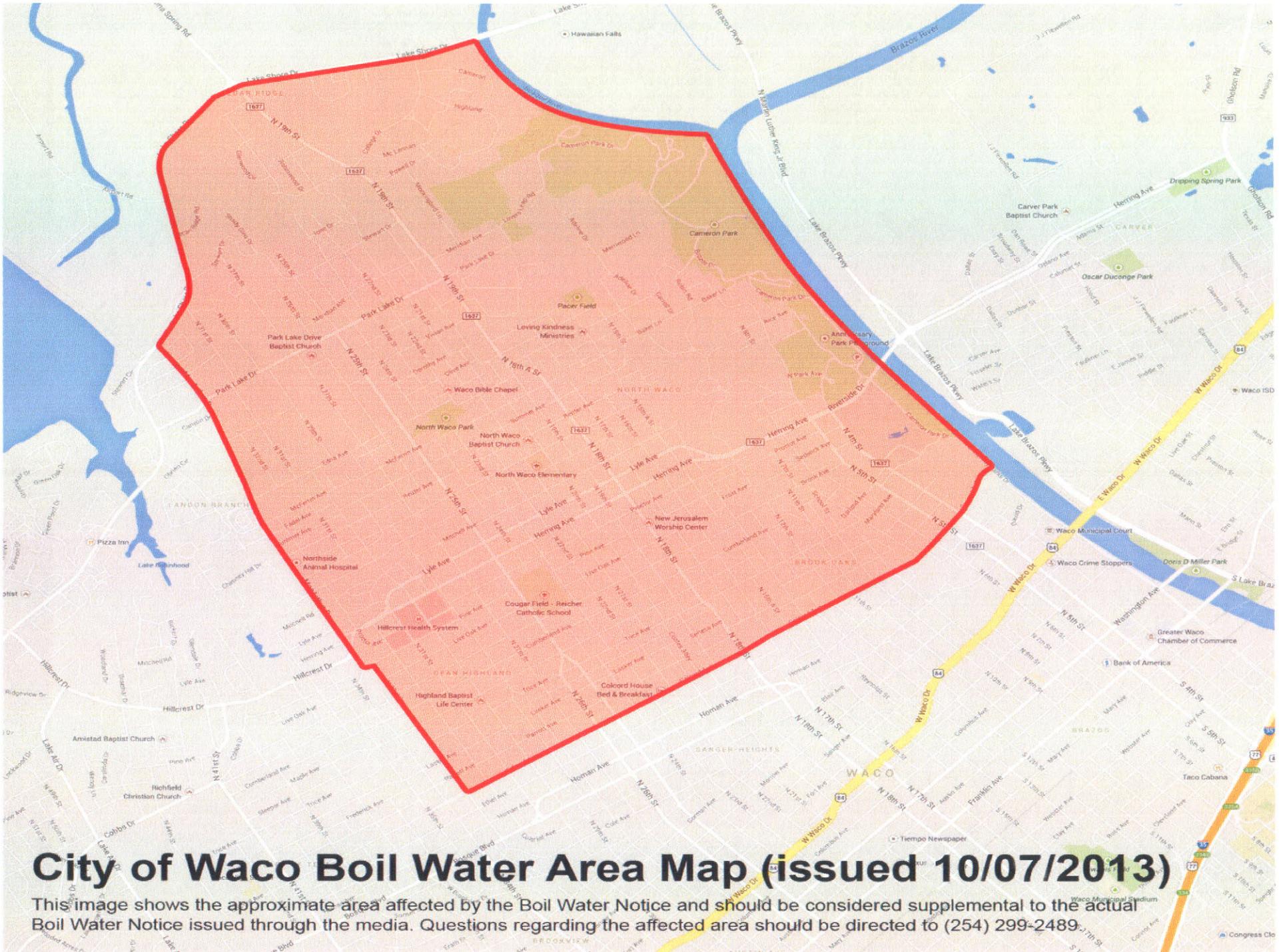
- SystemValve
 - 160
 - 140
- HydrantValve

Field	Value
OBJECTID	2033
SUBTYPE	Gate Valve
DEVICEID	160
FACILITYID	105N160
PRINT_ST	3C
SUBDIVISIO	BONITA SHORES
MICRO_SUBD	3RD ST
NEAR_CROSS	
GPS	Y
X_COORD	385230.865711
Y_COORD	725672.01371
TURNS_OPER	1S
VALVE_PURP	INLINE
VALVE_POSI	0
VALVE_SIZE	6
CURB_MARK	Y
WATERTYPE	POTABLE
REMARKS	
LOCATION	5' SOUTH OF EOP THIRD STREET, 22' EAST 0
CREW_LEAD	
DATE	9/9/9999
Enabled	True
U_2004	Y
CREW_2004	MT
DATE_2004	3/10/2004
U_2005	Y
CREW_2005	BO
DATE_2005	6/13/2005
OWNERSHIP	COUNTY
STATUS	IS
U_2006	N
CREW_2006	
DATE_2006	9/9/9999

Display Source Selection

Drawing Arial 10 B I U A

386505.78 726460.64 Feet



City of Waco Boil Water Area Map (issued 10/07/2013)

This image shows the approximate area affected by the Boil Water Notice and should be considered supplemental to the actual Boil Water Notice issued through the media. Questions regarding the affected area should be directed to (254) 299-2489.



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

➤ Goals

- Short Term (Less Than 1 Year)



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

- **Scope of Services**
 - **Project Administration**
 - **GIS Data Reorganization & Centralization**
 - **Inventory & Needs Assessment**
 - **Geodatabase Implementation**
 - **Topology & Geometric Networks**
 - **Conceptual System Design**
 - **Asset & Operations Management Program Evaluation**
 - **Implementation Plan**
 - **Project Close-Out**



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

➤ **Schedule**



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

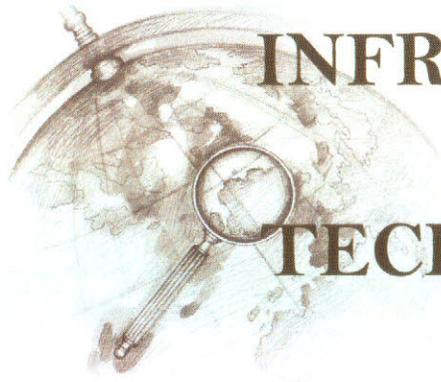
➤ Issues

- Limited Response & Schedule
- Integration
- Limited Implementation
- Future GIS Management



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

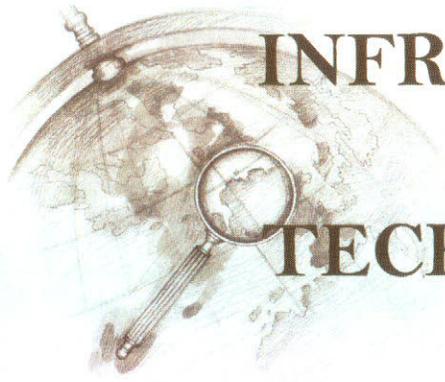
- **Alternatives & Recommendations**
 - **Multi-Year Project Schedule & Phasing**
 - **Modular Integration**
 - **Comprehensive Implementation & Program Justification**
 - **Managed Costs**



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

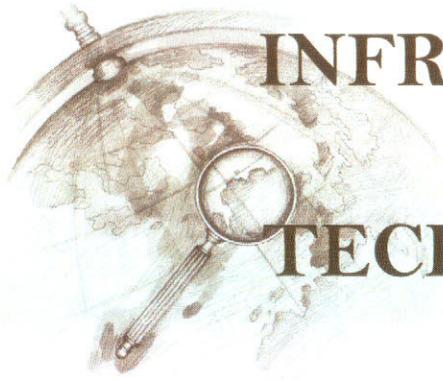
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

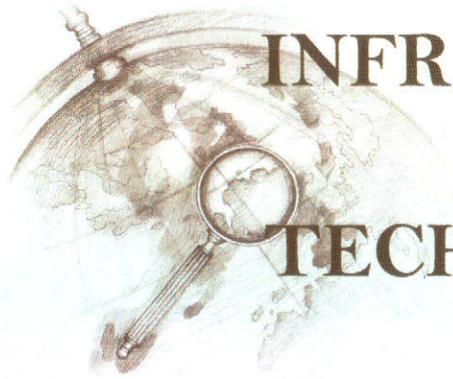
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

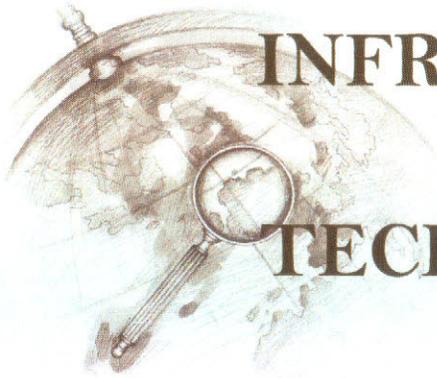
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated
	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

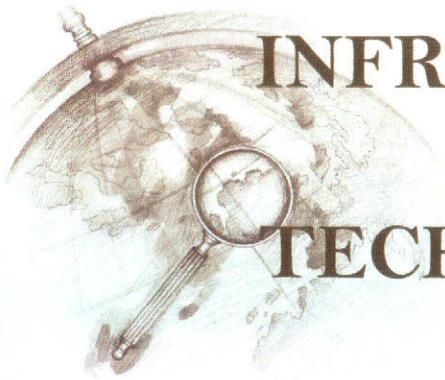
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated
	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

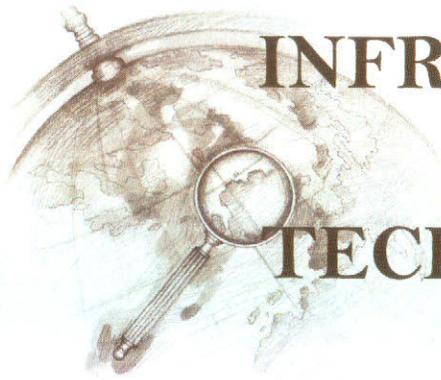
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

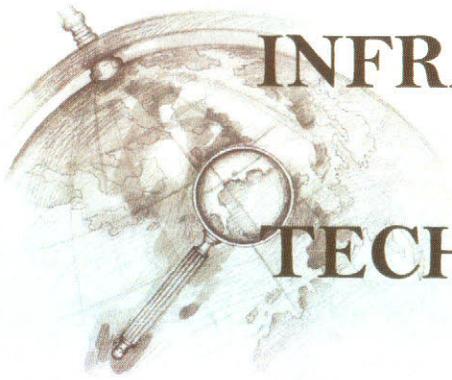
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

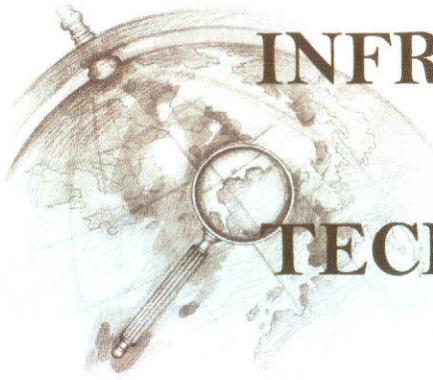
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

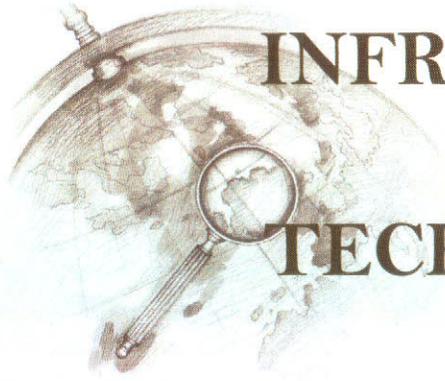
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

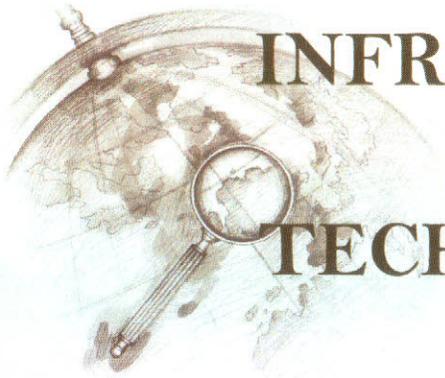
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated
	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

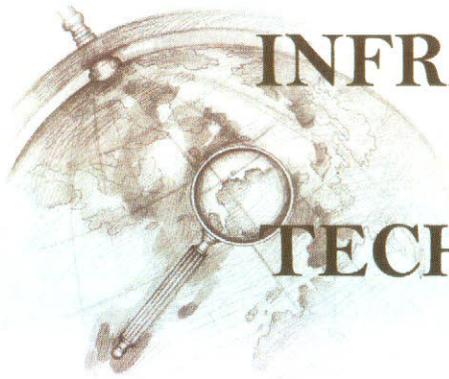
Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated	Projected	Estimated
	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense	Budget	Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted Budget	Estimated Expense	Projected Budget	Estimated Expense								
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
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INFRASTRUCTURE MANAGEMENT & TECHNOLOGY IMPLEMENTATION

FIVE YEAR COST ESTIMATE

Description	FY15		FY16		FY17		FY18		FY19		TOTAL	
	Adopted Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense	Projected Budget	Estimated Expense
Implementation	\$36,000	\$84,761	\$192,000	\$143,338	\$0	\$147,319	\$0	\$151,420	\$0	\$155,644	\$228,000	\$682,482
CIP GIS Utility Project	\$140,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,000	\$7,000
Software & Hardware	\$4,170	\$1,510	\$4,190	\$178,930	\$4,210	\$98,650	\$4,230	\$64,070	\$4,250	\$79,590	\$21,050	\$422,750
NIU GIS Intern	\$45,000	\$42,442	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$145,000	\$142,442
TOTALS	\$225,170	\$135,713	\$221,190	\$347,268	\$29,210	\$270,969	\$29,230	\$240,490	\$29,250	\$260,234	\$534,050	\$1,254,674



GIS UTILITY SYSTEM UPDATE & IMPLEMENTATION PROJECT

