Portage County

Emergency Management & EMS

Portage County EMS System Analysis

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Director of Emergency Management

15 September 2016

Overview

- Introduction
- Mission and Vision
- Past Studies and Analysis
- Current System
- EMS System Comparisons
- Areas of Opportunity for Change
- Response Time Importance
- Analysis of Internal, Bordering, and Potential Locations
- Recommendation
- Summary

Introduction

- Past studies provided a wealth of information and recommendations
- Intent of performing studies is to drive future action
- Concerns have been voiced regarding current delivery model

Mission and Vision

Mission Statement: "Portage County Emergency Medical Services is a unified system **dedicated to continuously improving** our efforts to deliver health care services to our community with compassionate, quality care in a timely and fiscally responsible manner."

Vision: "The Portage County EMS will be a unified, regional, performance based, value driven system that provides a **financially sustainable**, high quality, **customer driven** service fueled by state of the art equipment and a highly skilled workforce characterized by innovation, prevention, education, collaboration, and leadership."

Past Studies/Analysis

- 2006 Emergency Services Consulting International (ESCI) Study
- 2012 EMS Strategic Plan
- 2015 ESCI Update

Portage County
Emergency Management & EMS

Comparison of EMS Systems

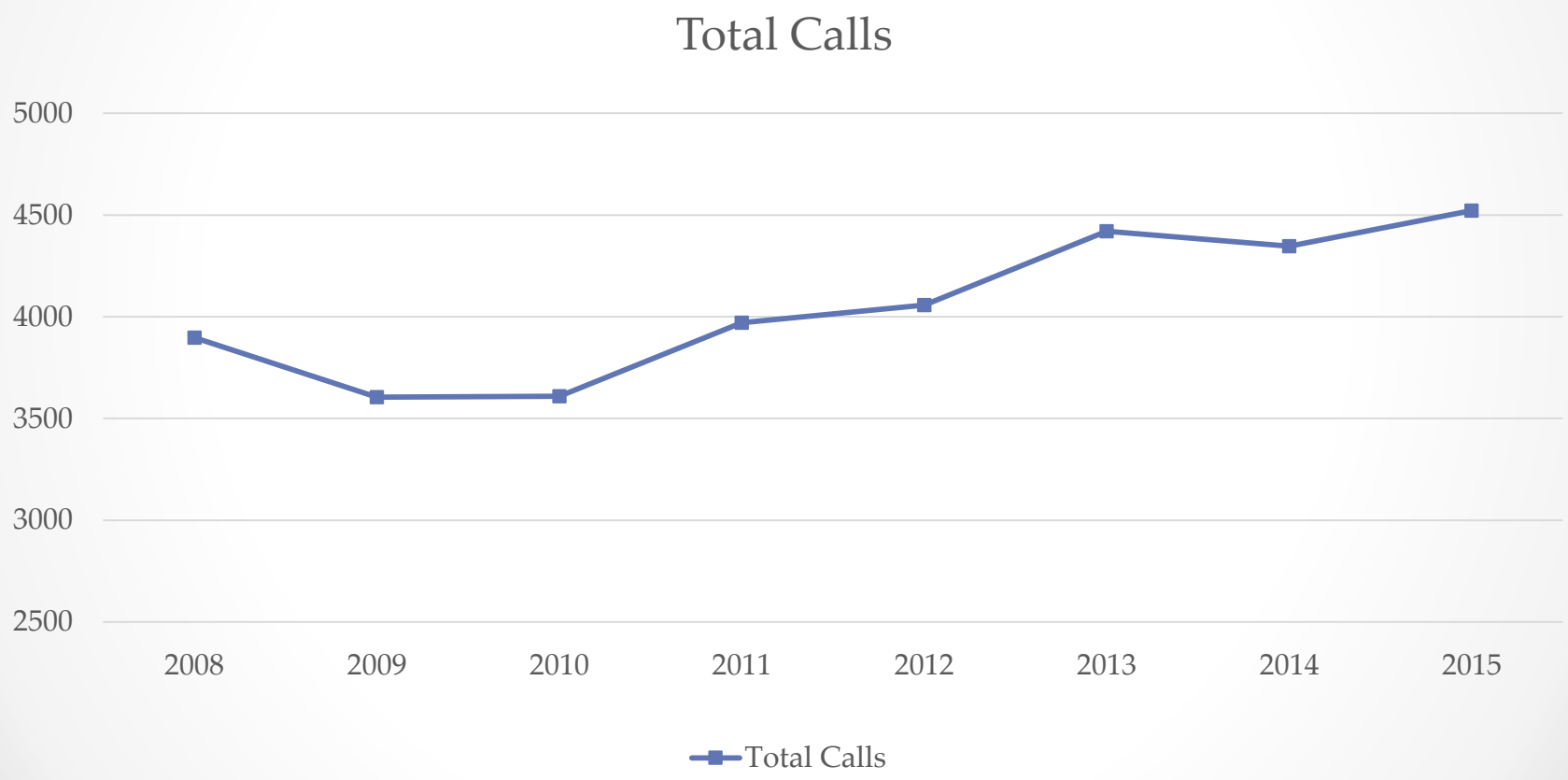
Michael Fraley, BS, NRP
EMS Coordinator

15 September 2016

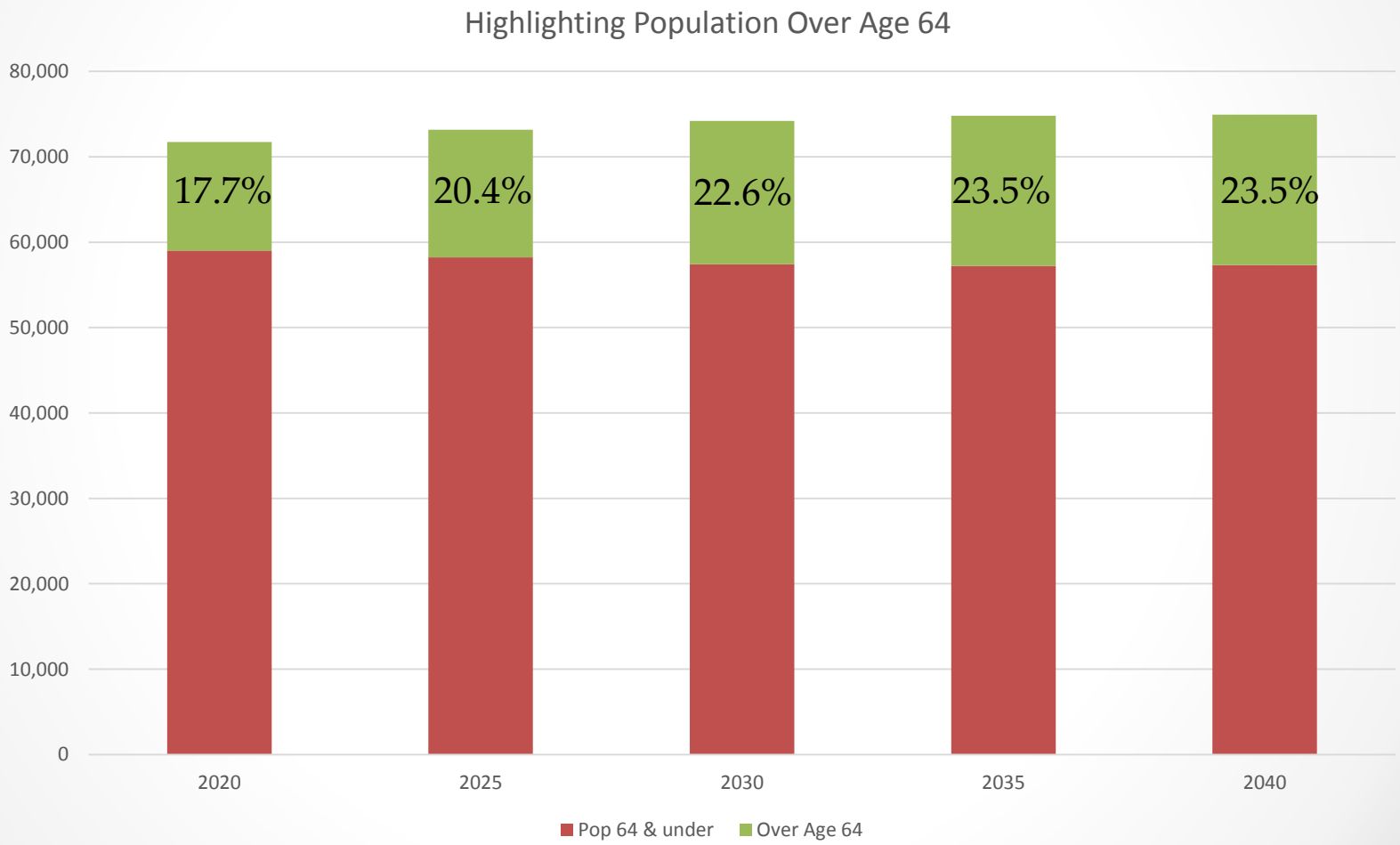
Overview of Current System

- 133 First responders in 13 services
- 3 ALS ambulances staffed 24/7
  - Current deployment
- 3 additional ambulances ready to respond as staff is available
- Rapid Response Unit
- 4,521 responses in 2015
  - 68% are transported

Annual EMS Call Volume



Population growth estimates (WI DOA)



* Excludes Town of Grant

SPFD Simultaneous Ambulance Calls

#	2012	2013	2014	2015
3	97	176	144	164
4	9	33	32	30
5	1	7	5	5

Does not include AFD

Amherst Ambulance Moved Central

Year	#
2012	32
2013	48
2014	42
2015	62

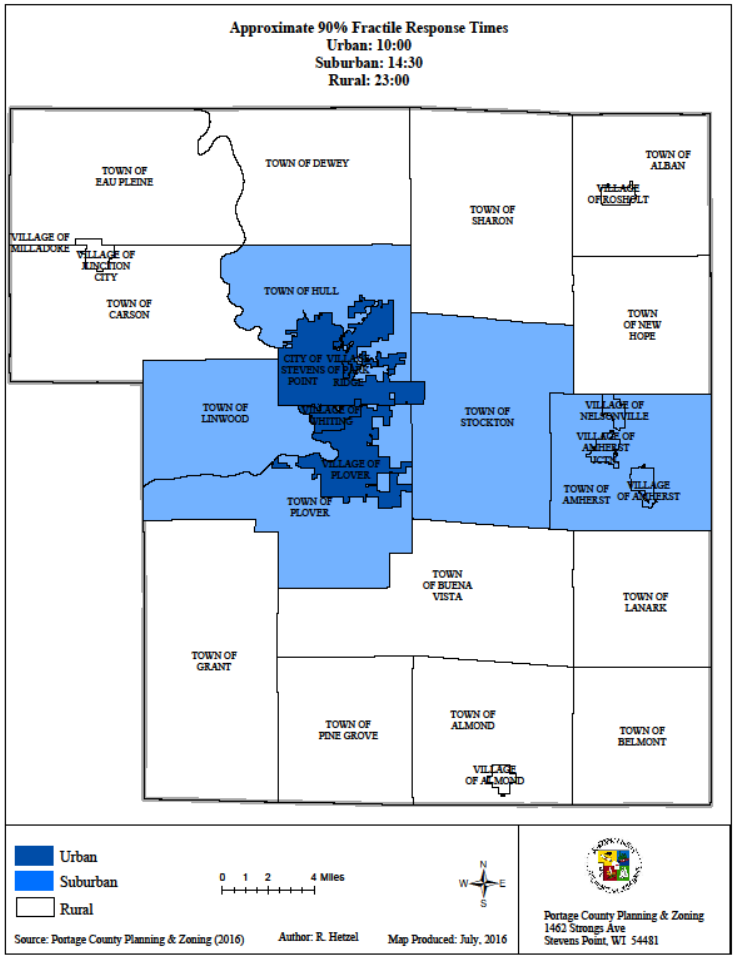
Response Time Reliability

- 15 minutes or less, 90% of calls

Meet Goal	Do Not Meet Goal	
Stevens Point	Stockton	Junction City
Hull	Buena Vista	Eau Pleine
Park Ridge	Sharon	Alban
V Plover	Lanark	Rosholt
Whiting	Dewey	T/V Almond
T/V Amherst	New Hope	Belmont
Amherst Junction	Carson	Pine Grove
Nelsonville	T Plover	
Linwood		

Response Zones

Zone	90% Fractile Response Time - FR	90% Fractile Response Time – Amb
Urban	0:09	10:00
Suburban	0:13	14:35
Rural	0:17	23:00



Responses from Sta 2/PFD

IMPROVED

Municipality	90% Fract From Station 2	90% Fractile from PFD
Whiting	11:00	8:00
V Plover	12:00	7:52
T Plover	15:00	12:56
Buena Vista	21:41	14:00
Pine Grove	21:44	19:48
T/V Almond	26:00	20:00

WORSE

Municipality	90% Fract From Station 2	90% Fractile from PFD
Stevens Point	9:00	11:13
Stockton	13:00	16:00

EMS System Comparison

- Volumes
- Ambulances
- Costs

Participant Services

- 16 surveys sent out
  - Central, northcentral and northwest areas of WI
- 12 services responded
  - 8 career fire departments with cross-trained firefighter paramedics
  - 4 third service municipal providers
    - 3 County-based
  - No private services responded

  - Populations 12,879 – 68,883 (average 28,849)
  - Total call volumes 1,225 – 4,936 (average 2,663)
  - 911 call volumes 1,137 – 4,899 (average 2,390)

Participant Services

- Antigo FD
- Chippewa Fire District
- Clintonville Area Ambulance
- Door County EMS
- Marshfield Fire/Rescue Department
- Merrill FD
- Oneida County EMS
- Rhinelander FD
- South Area Fire District
- Wausau FD
- Waushara County EMS
- Wisconsin Rapids FD

Review Limitations

- Services submitted operating data (budgeted or actual)
  - Data was voluntarily self-submitted and not verified
  - It cannot be certain that other EMS costs were not included in the larger FD budgets (& vice-versa)
- One service had a very small geographic coverage area
- Some if the fire departments gave an estimate of personnel cost because their departments do not separate fire from EMS
- One agency provides administrative services for another agency
- Some agencies see significant population variations for work/shopping and tourism
- Operational budgets include a variety of other expenses (i.e. medical direction, first responders, special events) that may not be funded by all services

Calls per Staffed Ambulance

- Range 551 – 1,805
- Average 1,057

- PC EMS 1,439

Service	Calls
Clintonville	551
Oneida	650
Waushara	677
Door	809
Antigo	813
Rhinelander	823
SAFER	1,030
Chippewa	1,096
Merrill	1,138
Wi Rapids	1,287
PC EMS	**1,439**
Wausau	1,611
Marshfield	1,805

Approx. Average

Formula = (Total calls for service * % of calls answered by staffed ambulances)/ staffed ambulances. Includes 911 and transfer calls. This formula accounts for (excludes) calls run by call in crews.

911 Calls per Capita

- Range 0.063 – 0.132
- Average 0.085

- PC EMS 0.064

Service	Calls per capita
SAFER	0.063
PC EMS	**0.064**
Antigo	0.071
Merrill	0.073
Rhinelander	0.073
Oneida	0.076
Marshfield	0.080
Waushara	0.080
Clintonville	0.089
Chippewa	0.091
Wausau	0.103
Door	0.114
Wi Rapids	0.132

Excluded transfers as some services do not do them

Administrative Staff per 1,000 calls

- Range 0.20 – 2.86
- Average 0.85

- PC EMS 0.44

Includes administrative and support staff that are part of the operating budget put do not make up part of a "staffed" ambulance crew.

For PC EMS this includes: EMS Coordinator, EMS Specialist, SPFD Assistant Chief of EMS. AFD Assistant Chief not included as he is considered part of ambulance staffing.

Service	Admin Staff
Wausau	0.203
Marshfield	0.249
Wi Rap	0.330
Chippewa	0.438
PC EMS	**0.442**
Merrill	0.527
Rhinelander	0.601
Waushara	0.731
Oneida	0.933
Door	1.209
Antigo	1.217
SAFER	1.320
Clintonville	2.857

Staffed Ambulance to Population Ratio

- Range 1:6,125 – 1:31,913
- Average 1:13,821

- PC EMS 1:22,961

Service	Ratio
Waushara	1 : 6,125
Clintonville	1 : 6,439
Antigo	1 : 8,000
Chippewa	1 : 8,142
Door	1 : 8,730
Oneida	1 : 9,377
Wi Rapids	1 : 9,625
Rhinelander	1 : 10,000
Wausau	1 : 15,921
SAFER	1 : 18,442
PC EMS	**1 : 22,961**
Merrill	1 : 24,000
Marshfield	1 : 31,913

Formula = Population / # of staffed ambulances
Staffed ambulance = in-house, on-duty crew with primary assignment of that vehicle

Available Ambulances to Population Ratio

- Range 1:2,714 – 1:11,481
- Average 1:6,084

- PC EMS 1:11,481

Service	Ratio
Chippewa	1 : 2,714
Oneida	1 : 3,126
Clintonville	1 : 3,220
Antigo	1 : 4,000
Waushara	1 : 4,083
Door	1 : 5,710
SAFER	1 : 6,147
Wi Rapids	1 : 6,417
Rhinelander	1 : 6,667
Marshfield	1 : 7,978
Merrill	1 : 8,000
Wausau	1 : 9,553
PC EMS	**1 : 11,481**

Formula = Population / # of available ambulances.
Available ambulances = staffed units plus units that are equipped and ready to respond with call-in crews

Cost per Capita

- Range $30.82 – 138.20
- Average $70.69

- PC EMS $37.06

Service	Cost
Marshfield	$ 30.82
PC EMS	**$ 37.06**
Wi Rapids	$ 40.26
Merrill	$ 42.08
SAFER	$ 43.73
Rhinelander	$ 54.27
Clintonville	$ 64.28
Wausau	$ 64.57
Oneida	$ 75.33
Chippewa	$ 91.80
Antigo	$ 115.58
Waushara	$ 120.96
Door	$ 138.20

Formula = total operating budget / population (Based on census population data or provided by the service)

Cost per Call

- Range $255.78 – 1,192.71
- Average $718.91

- PC EMS $564.65

Service	Cost
Wi Rapids	$ 255.78
Marshfield	$ 370.46
Merrill	$ 532.42
PC EMS	**$ 564.65**
Wausau	$ 625.06
SAFER	$ 626.44
Rhinelander	$ 652.31
Chippewa	$ 654.22
Clintonville	$ 675.77
Oneida	$ 988.40
Waushara	$ 1,082.74
Antigo	$ 1,124.86
Door	$ 1,192.71

Formula = total operating budget / # calls run by service (911 and transfers)

Annual Cost per Staffed Ambulance

- Range $387,500 – 1,206,574
- Average $796,085

- PC EMS $850,925

Service	Cost
Wi Rapids	$ 387,500.00
Clintonville	$ 413,908.50
Rhinelander	$ 542,717.89
Oneida	$ 706,379.33
Waushara	$ 740,867.00
Chippewa	$ 747,450.00
SAFER	$ 806,536.00
PC EMS	**$ 850,925.67**
Antigo	$ 924,638.50
Marshfield	$ 983,583.21
Merrill	$ 1,010,000.00
Wausau	$ 1,028,020.00
Door	$ 1,206,574.92

Formula = total operating budget / # of staffed ambulances

System Ready
Can Handle Change

Areas of Opportunity for Change

Emergency Medical Responders

- Minimal control over groups
- County continues to support
- Risk of decreased volunteerism

Areas of Opportunity for Change

Capital

- Equipment and Personnel
- Computer Aided Dispatch (CAD)
- IamResponding
- Capital Replacement Planning

Areas of Opportunity for Change

Ambulance

- Where?
- Population Coverage
- Historical call volume coverage
- Analyzed by response time

Response Time Considerations

- As a County, we have determined that response times are of importance to our system.
- We are not using response times as an independent measurement of our overall system performance.
- Response times are used in conjunction with other data to determine the need for and location of additional resources.

Response Time Considerations

- About 7% of our run volume are calls that are dependent on having resources within 4-8 minutes of the scene to decrease mortality and morbidity.

- We are not suggesting the "Drive Faster" solution to decrease response times, instead we suggest focusing on the evaluation of potential location to impact response times.

Response Times - Expert Opinions

- *"Responses times are still the common currency by which the general public judges quality in EMS."*
  Brian LaCroix, President, Allina Health EMS

- *Establishing a system's response-time performance is still a good method of articulating service levels to the community and stakeholders and for holding the system accountable for performance."*
  Steve Knight, PhD, Senior Associate, Fitch & Associates

Response Times - Expert Opinions

- *"Response time can be a valuable performance metric for EMS agency design. However, until we use it thoughtfully and honestly, it will continue to have limited utility."*

  Bruce Moeller, PhD, Assistant County Administrator, Pinellas County, Fla.

- *"I believe that for the foreseeable future, response times will remain emotionally significant for the patient, their family, bystanders, etc."*

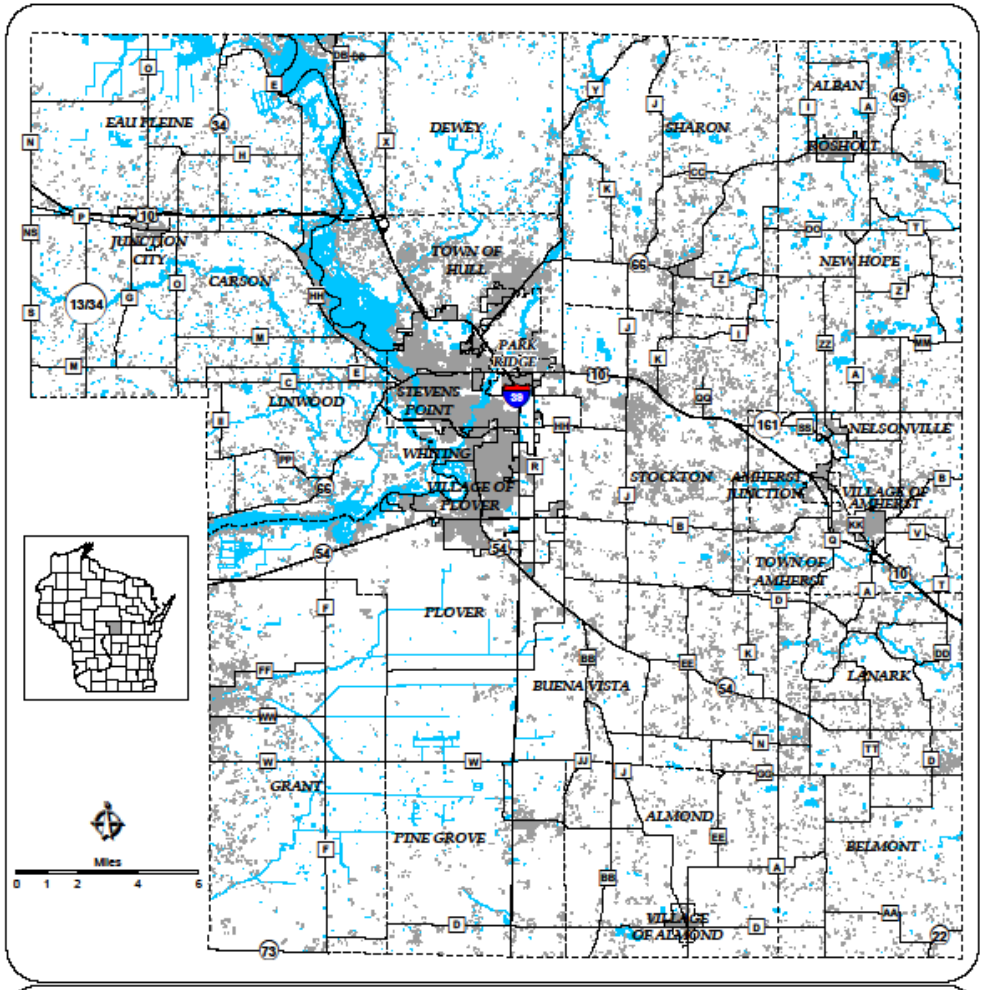
  Todd Stout, Founder and President, FirstWatch

Peer-Reviewed Research

- E. David Bailey, M. T. (2003). Considerations in establishing emergency medical services response time goals. *Prehospital Emergency Care*, 397-9.
- Ludwig, G. g. (2004). EMS Response Time Standards. *Emergency Medical Services*, 44.
- Peter T. Pons, M. V. (2002). Eight minutes or less: does the ambulance response time guideline impact trauma patient outcome? *Journal of Emergency Medicine*, 43-8.
- Sayed, M. J. (2011). Measuring quality in emergency medical services: a review of clinical performance indicators. *Emergency Medical International*, ePub.
- Thomas E. Lambert, P. B. (2008). New and Fringe Residential Development and Emergency Medical Service Response Times in the United States. *State and Local Government Review*, 115-24.
- Thomas H. Blackwell, M. ,. (2002). Response Time Effectiveness: Comparison of Response Time Survival in an Urban Emergency Medical Services System. *Academic Emergency Medicine*, 288-95.

Population Density

Portage County, Wisconsin



Population Density

1 dot = 1 person

State / Federal Highway

County Road

Municipal Boundary

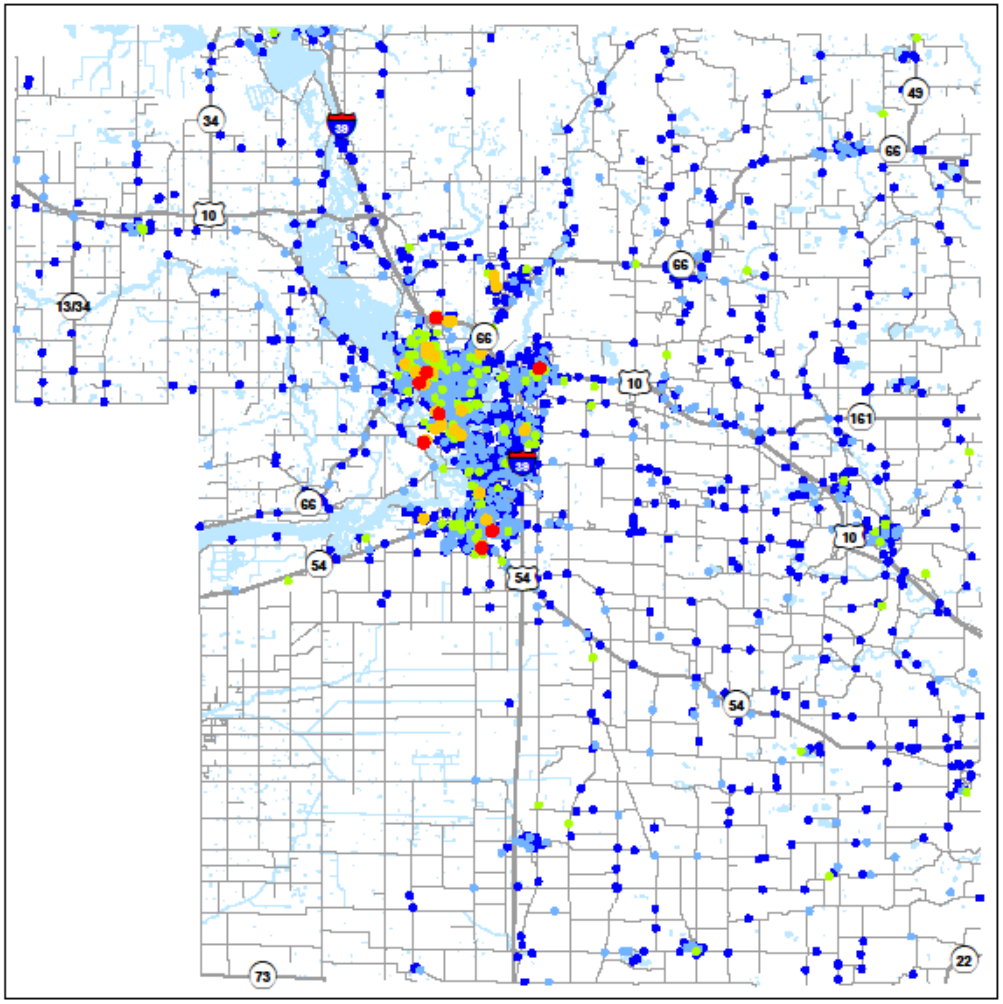
Lakes and Rivers

Sources: Population Density - US Bureau of the Census, 2010
Municipalities and Roadways - Portage County, 2016

September 2, 2016

Portage County Emergency Medical Service Incidents

For 2014 and 2015



Symbols represent a count of emergency medical service incidents at a given location.
There are 8112 incidents in the 2014-2015 file.
7703 are mapped to 2811 unique locations.

Number of Incidents

- 1
- 2 - 5
- 6 - 20
- 21 - 100
- 101 - 276

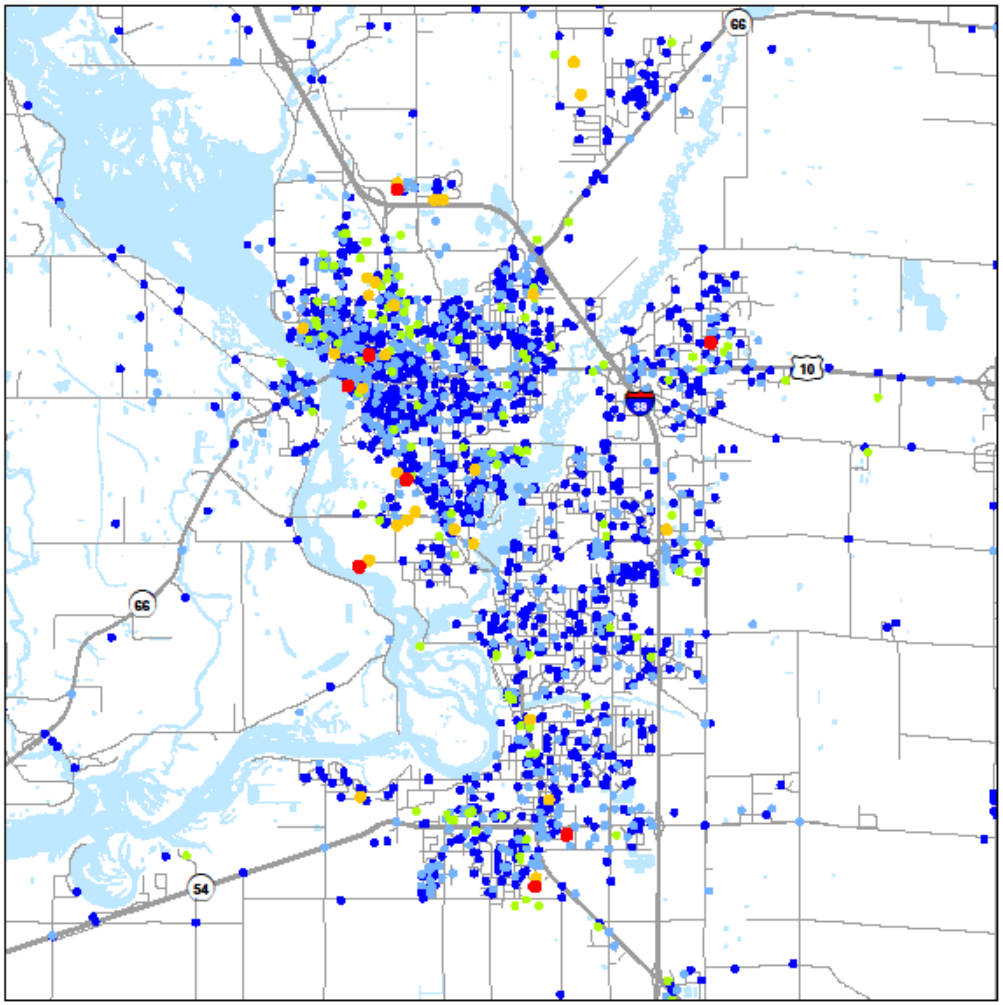
Miles

0 1 2 3 4 5

Source: Portage County EMS incident file, February 8, 2016.
United EMR data not included.
Map Date: February 22, 2016

Portage County Emergency Medical Service Incidents

For 2014 and 2015



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Miles

0 1 2

Source: Portage County EMS incident file, February 8, 2016.
United EMR data not included.
Map Date: February 22, 2016

Current Internal Locations

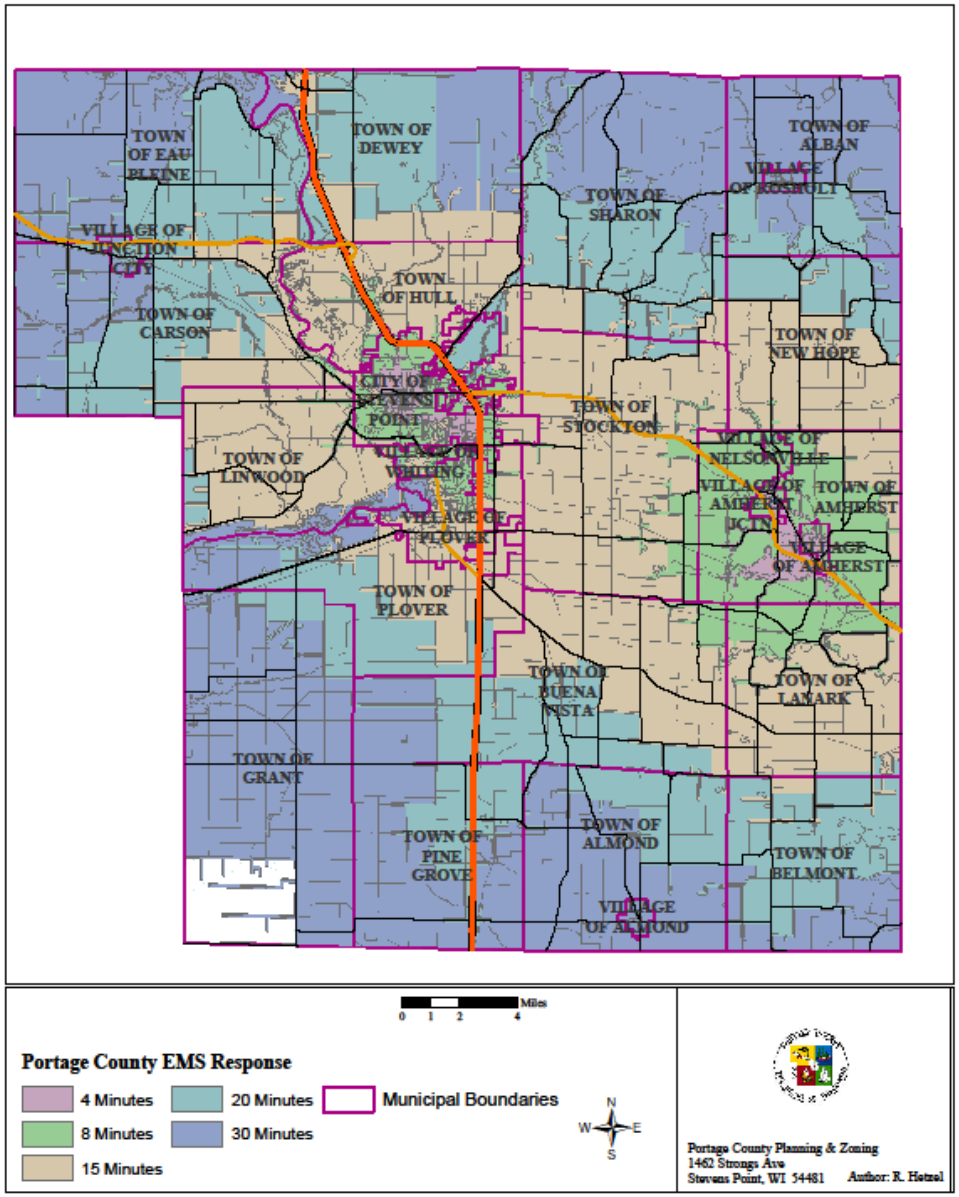
- Stevens Point FD Station 1
- Stevens Point FD Station 2
- Amherst Fire District
- Plover FD (40 hrs/wk)

GIS Modeling for Analysis

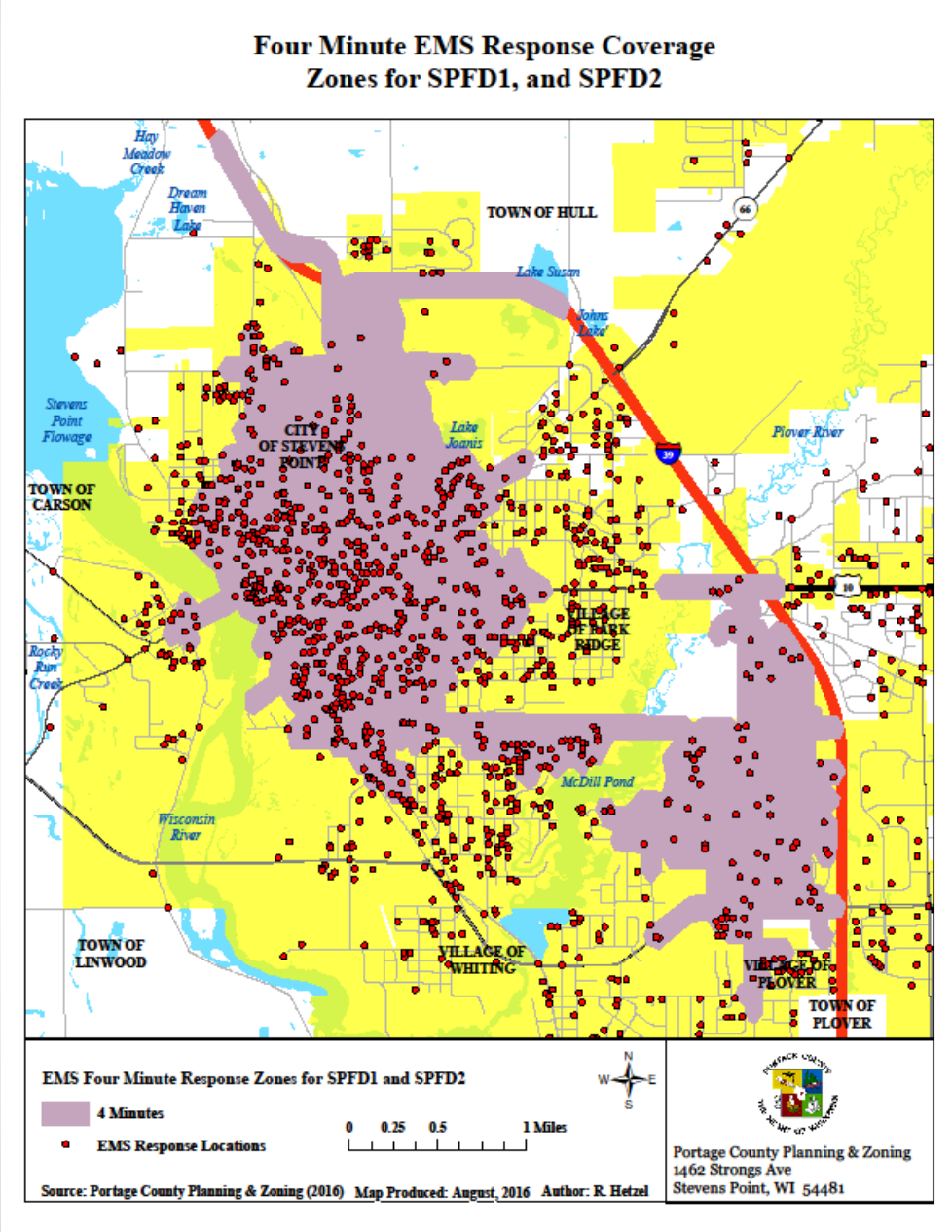
"…jurisdictions vary in their EMS-delivery planning efforts; some use advanced GIS modeling and linear programming models. Those that use advanced modeling consider area population and housing characteristics as well as neighborhood configurations, although residential population density is probably the most important factor."

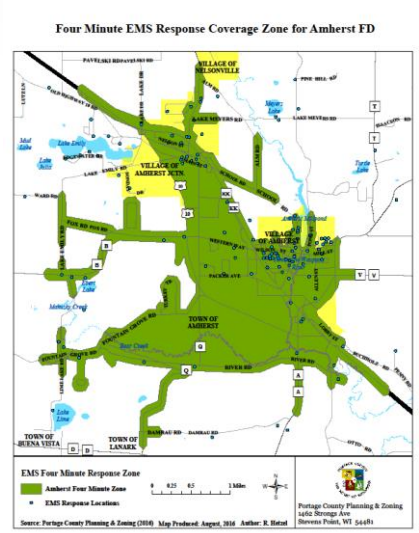
–**Thomas Lambert et al, IU Southeast, University of Louisville**

EMS 4, 8, 15, 20, and 30 Minute Response zones from SPFD1, SPFD2, and Amherst FD, Portage County, WI

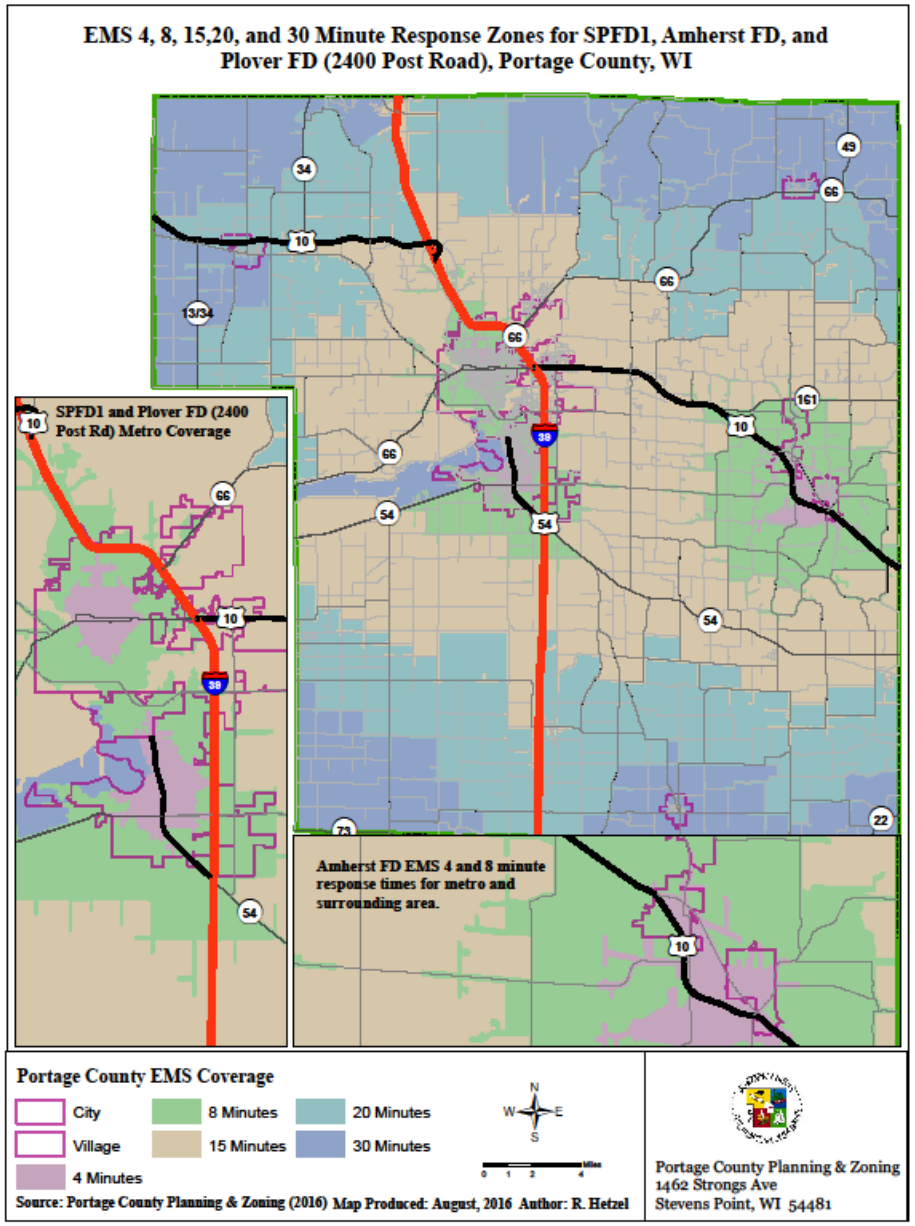


Time	Pop Cvg	Pop %
4 min	17986.3	25.7%
8 min	39021.3	55.7%
15 min	58315.1	83.3%
20 min	63871.8	91.2%
30 min	69903.1	99.8%

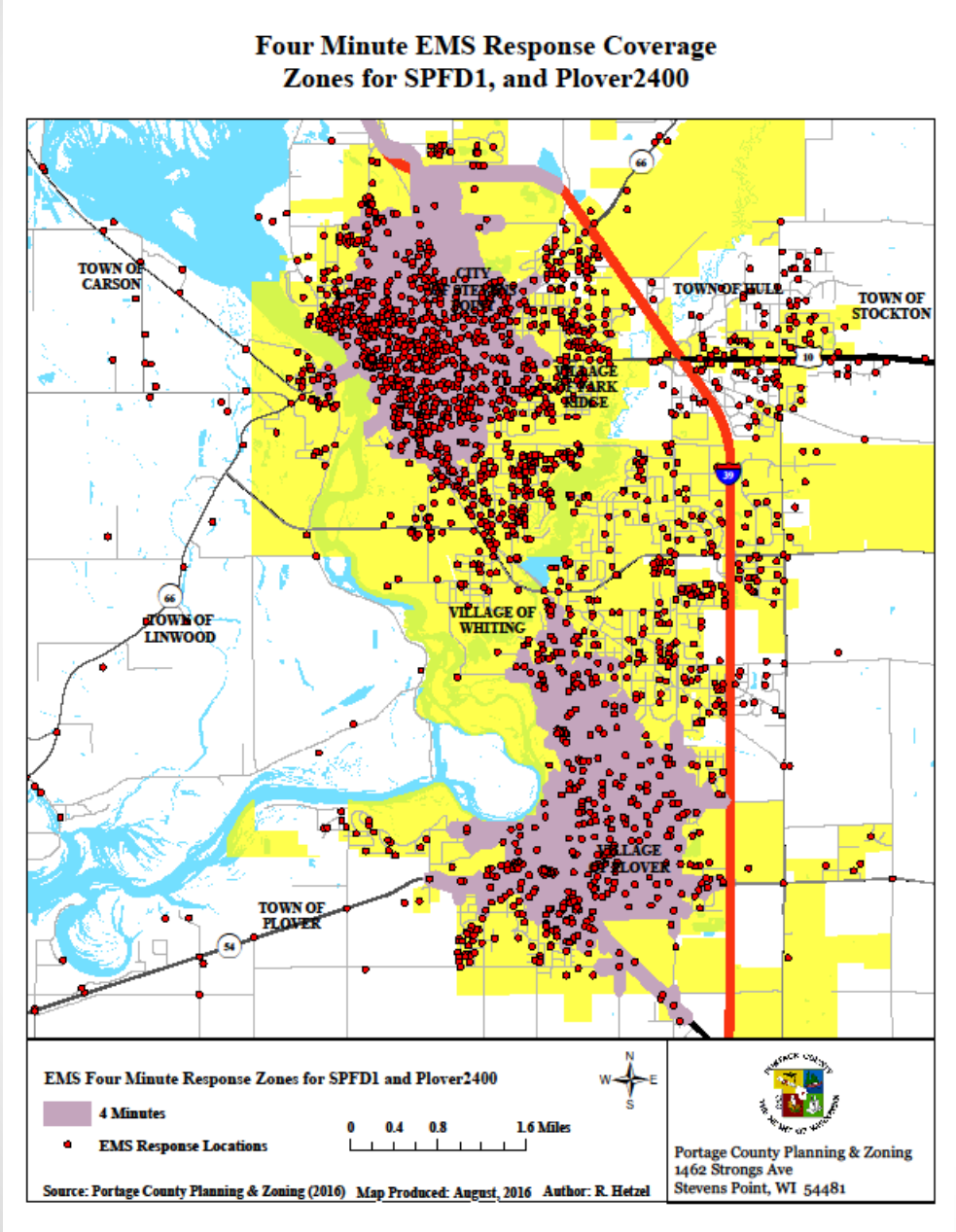


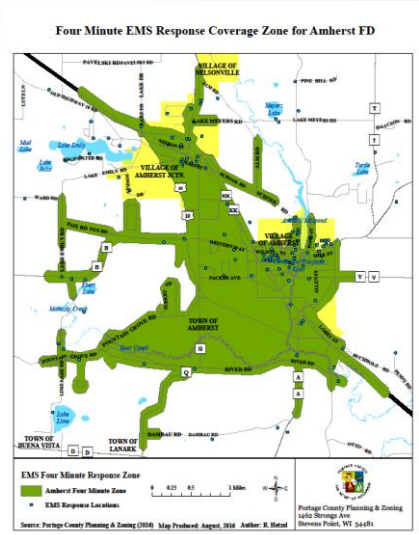


4 Minute Call Coverage	Coverage %
2198	29%



Time	Pop Cvg	Pop %
4 min	25,167.1	35.9%
8 min	47,364.6	67.6%
15 min	59,886.9	85.5%
20 min	66,163.3	94.5%
30 min	70,019.0	100.0%





4 Minute Call Coverage	Coverage %
2824	37%

Bordering Services

- Surveyed neighboring services to see how much they would charge to cover an area
- Nine services contacted; 6 services responded
- Only 2 were paramedic level
- Three BLS services charge a % of their annual budget equal to the area's share of the total population covered by the service
- One ALS service charges $5.25 per capita plus $50 per run
- One ALS service charges a % of their budget based on a formula that includes population, sq. miles and run volume
- One BLS service charges $14 per capita

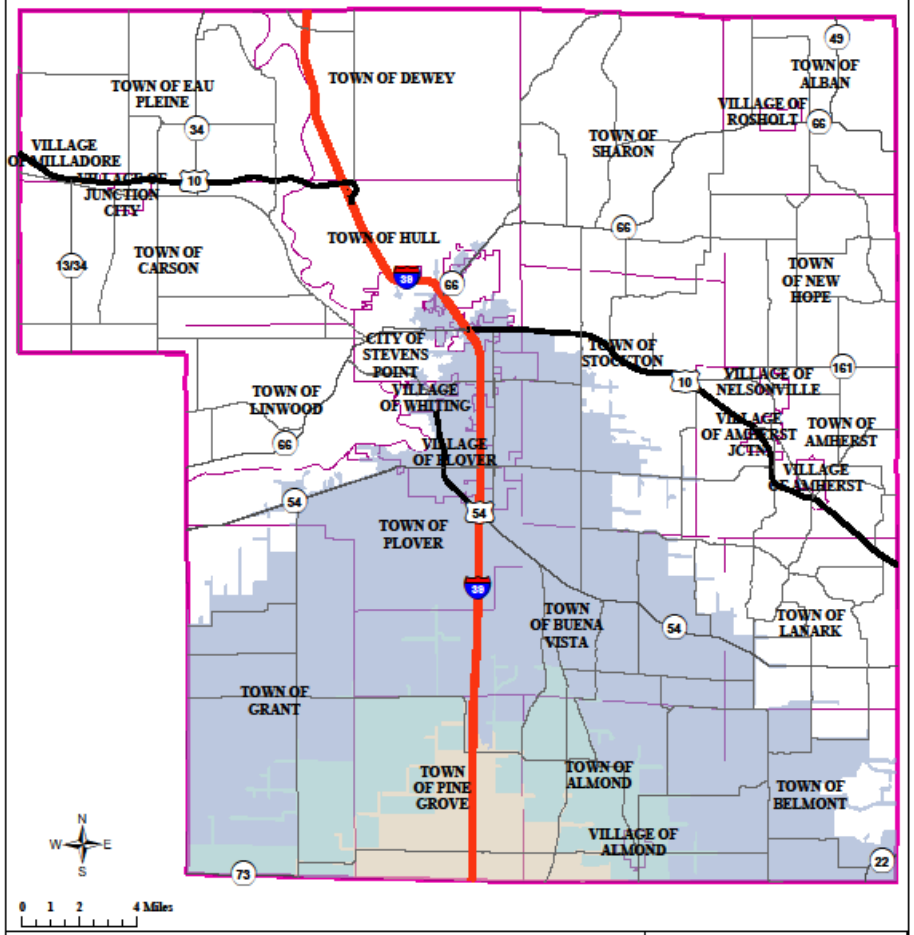
Bordering Services

- Pro's
  - May offer decreased response times to areas in close proximity to deployment location
- Con's
  - No quality control
  - Limited oversight
  - Additional cost to taxpayers
  - No billable/revenue control
  - Varying protocols/medical direction
  - Potential fracture to current County System

Bordering Services

- Hancock
- Iola
- Marshfield
- Mosinee
- SAFER
- United
- Waupaca Gold Cross
- Wisconsin Rapids
- Wittenberg

Hancock Station EMS Response from 227 West North Lake Street, Hancock, Waushara County, WI



Hancock Station EMS Response

4 Minutes | 15 Minutes | 30 Minutes | Municipal Boundaries
8 Minutes | 20 Minutes | Beyond 30 Minutes

Source: Portage County Planning & Zoning (2016) Map Produced: August 2016 Author: R. Hetzel

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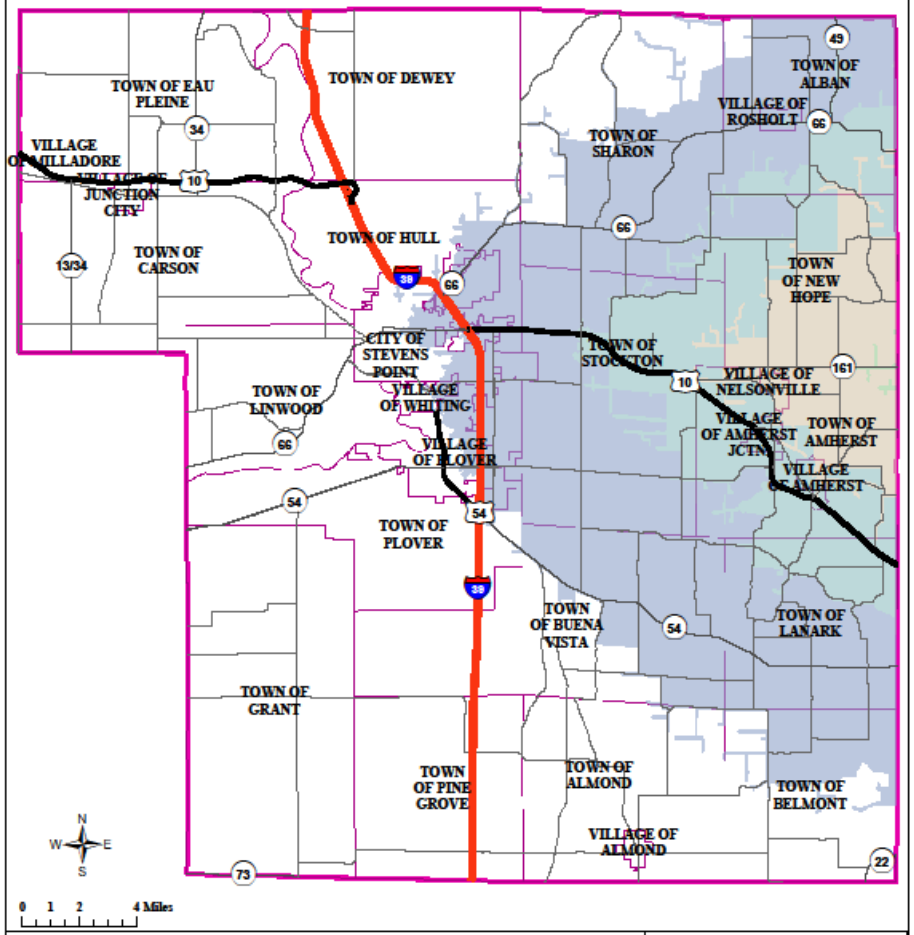
1462 Strongs Ave
Stevens Point, WI 54481

Iola Fire Department EMS Response from 350 West Iola Street, Iola, Waupaca County, WI



Iola EMS Response

4 Minutes | 15 Minutes | 30 Minutes | Municipal Boundaries
8 Minutes | 20 Minutes | Beyond 30 Minutes

Source: Portage County Planning & Zoning (2016) Map Produced: August 2016 Author: R. Hetzel

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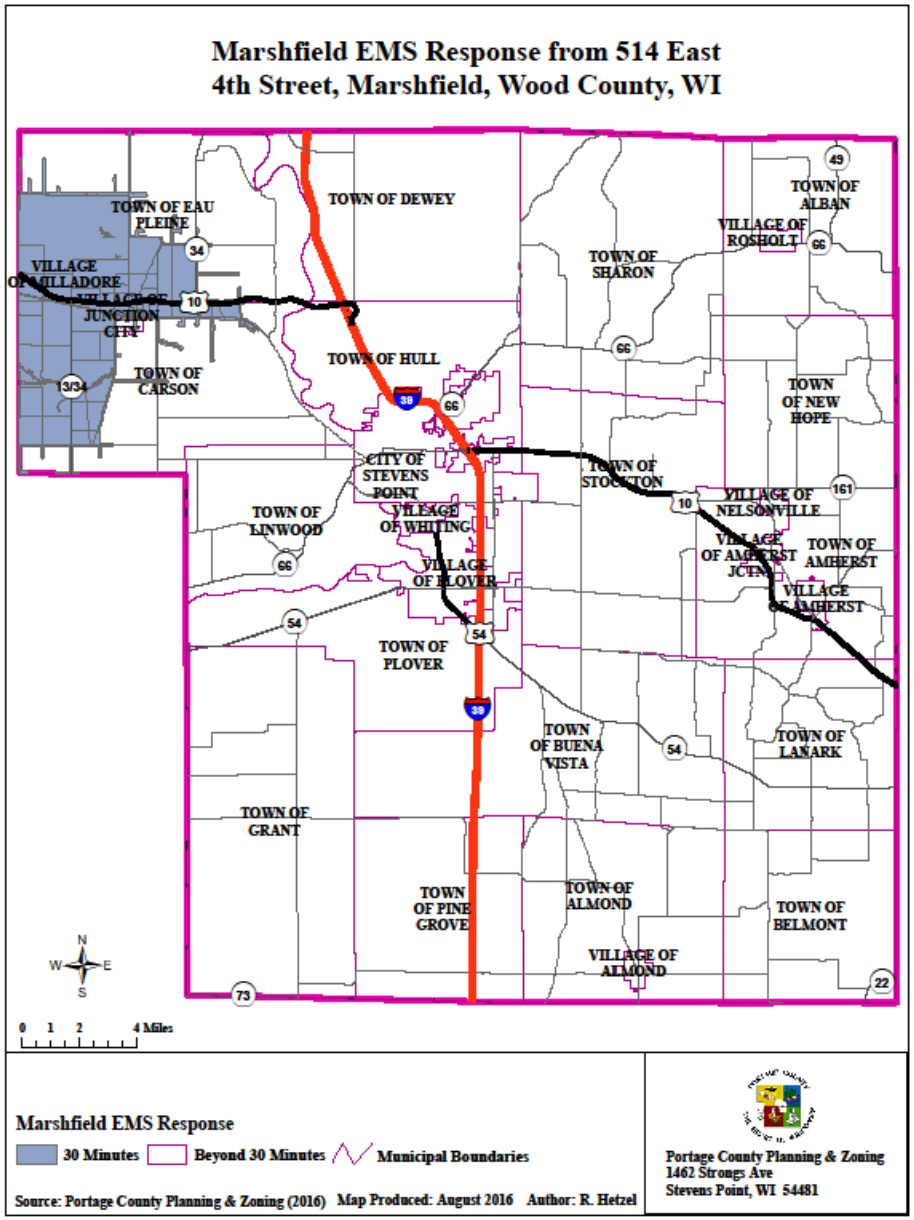
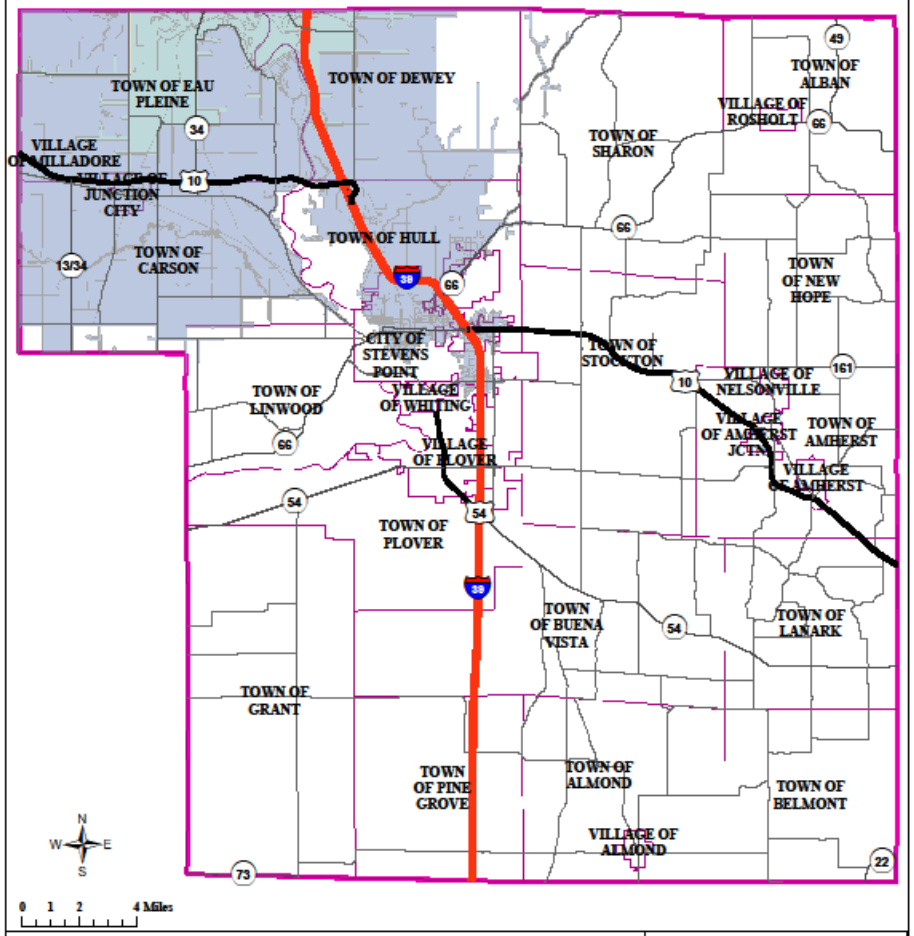

Marshfield EMS Response from 514 East 4th Street, Marshfield, Wood County, WI
TOWN OF EAU PLEINE
VILLAGE OF WILLADORE
VILLAGE OF JUNCTION CITY
TOWN OF CARSON
TOWN OF DEWEY
TOWN OF HULL
TOWN OF SHARON
TOWN OF ALBAN
VILLAGE OF ROSHOLT
TOWN OF NEW HOPE
CITY OF STEVENS POINT
TOWN OF STOCKTON
VILLAGE OF NELSONVILLE
TOWN OF LINWOOD
VILLAGE OF WHITING
VILLAGE OF AMHERST JCTN
TOWN OF AMHERST
VILLAGE OF PLOVER
VILLAGE OF AMHERST
TOWN OF PLOVER
TOWN OF BUENA VISTA
TOWN OF LANARK
TOWN OF GRANT
TOWN OF PINE GROVE
TOWN OF ALMOND
TOWN OF BELMONT
VILLAGE OF ALMOND
N
W
E
S
0 1 2 4 Miles
Marshfield EMS Response
30 Minutes
Beyond 30 Minutes
Municipal Boundaries
Source: Portage County Planning & Zoning (2016) Map Produced: August 2016 Author: R. Hetzel
Portage County Planning & Zoning
1462 Strongs Ave
Stevens Point, WI 54481

Mosinee Fire Department EMS Response from 601 South Rangeline Road, Mosinee, Marathon County, WI



Mosinee EMS Response

15 Minutes
20 Minutes
30 Minutes
Beyond 30 Minutes
Municipal Boundaries

Source: Portage County Planning & Zoning (2016) Map Produced: August 2016 Author: R. Hetzel

Portage County Planning & Zoning
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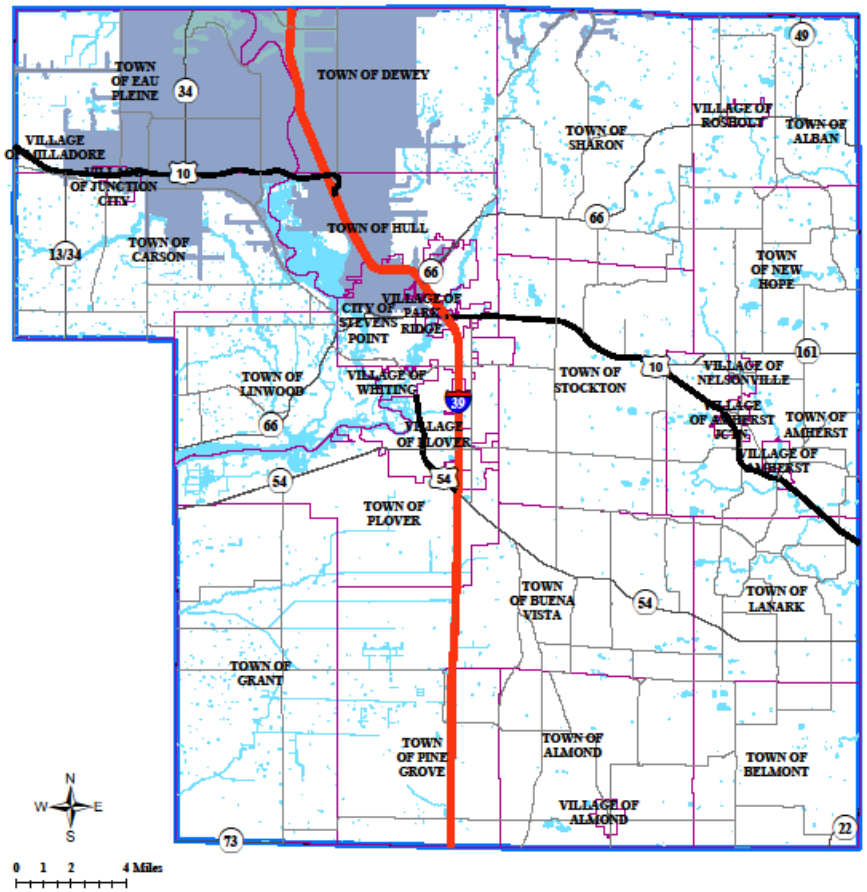
Stevens Point, WI 54481

Wausau South Area Fire Station 1 EMS Response from 5901 Hummingbird Road, Wausau, Marathon County, Wisconsin



Wausau South Area Fire Station 1 EMS Response

20 Minutes
30 Minutes
Beyond 30 Minutes
Municipal Boundaries

Source: Portage County Planning & Zoning (2016) Map Produced: September, 2016 Author: R. Hetzel

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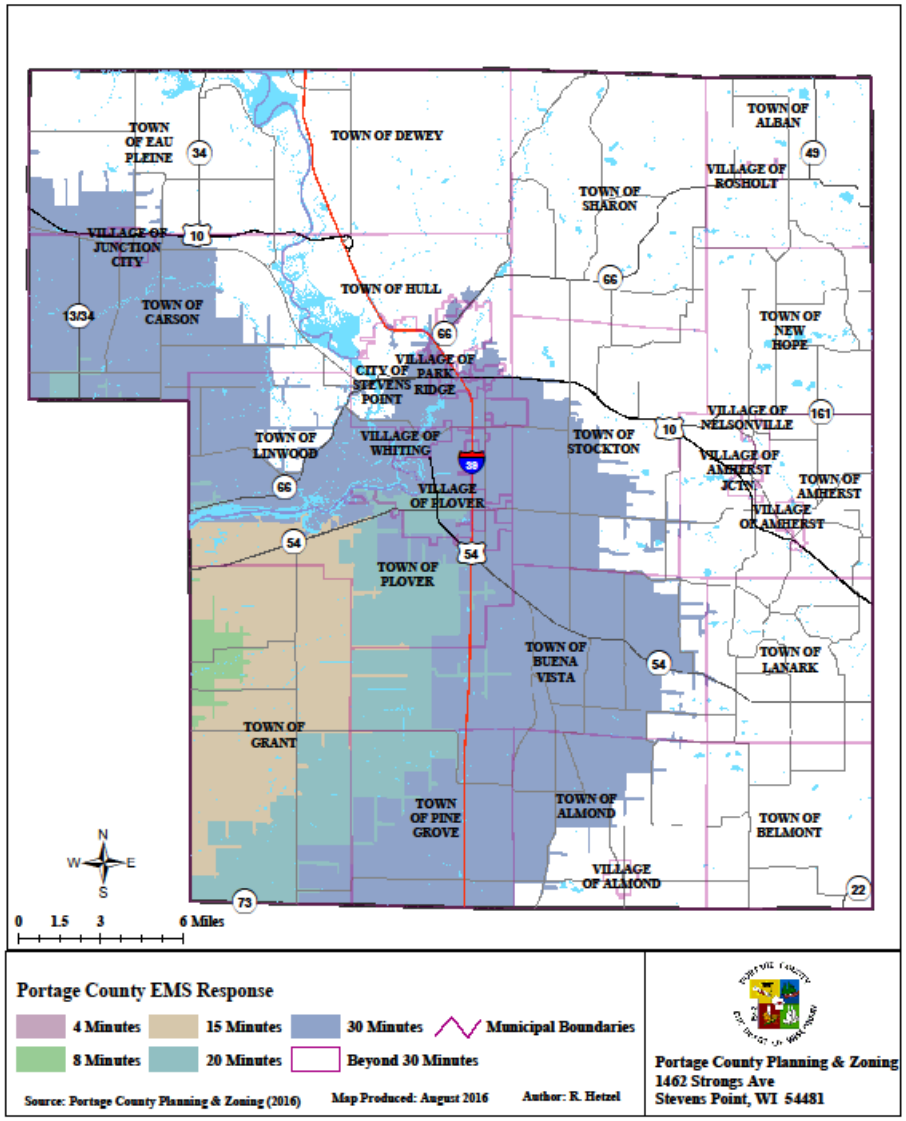
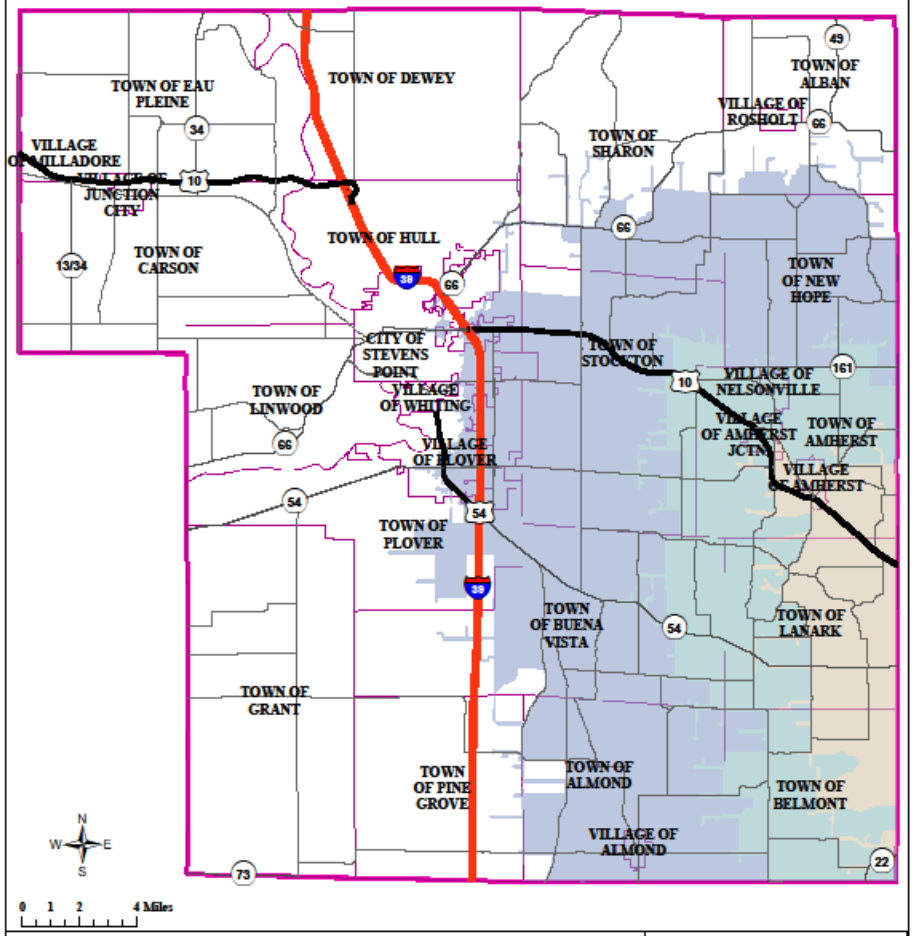


Time	Pop Cvg	Pop %
4 min	0	0%
8 min	1024.25	1%
15 min	1994.74	3%
20 min	7260.36	10%
30 min	42435.43	61%

Time	Call Cvg	Call %
4 min	0	0%
8 min	0	0%
15 min	44	1%
20 min	1014	13%
30 min	5103	66%

Waupaca Gold Cross EMS Response from 500 Lakeside Parkway, Waupaca, Waupaca County, WI



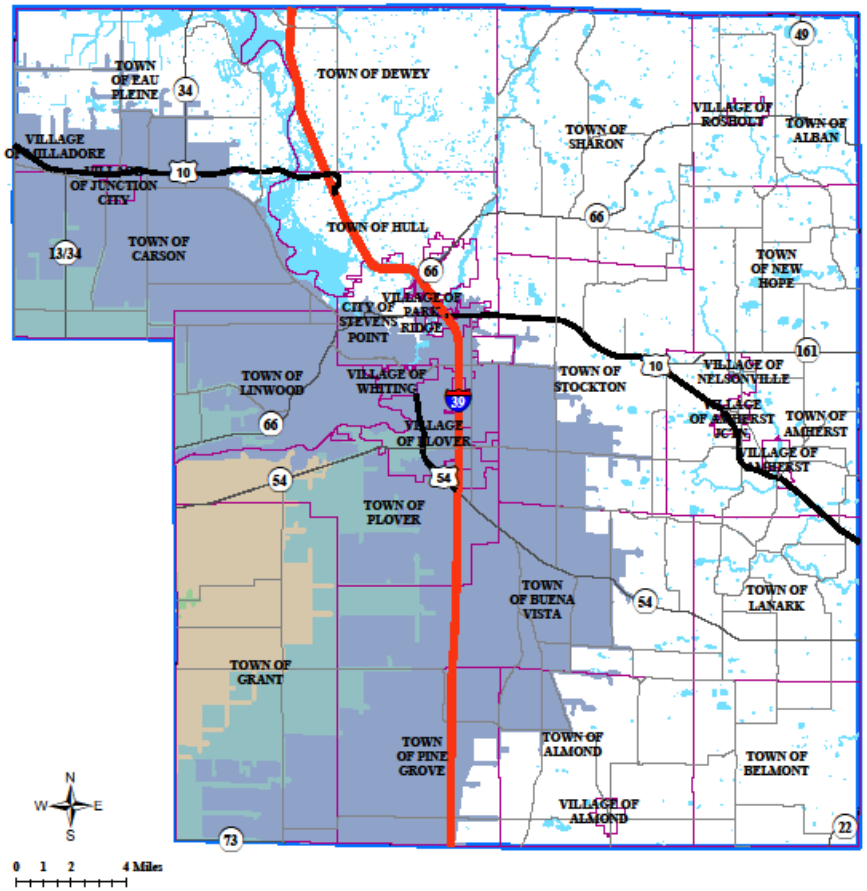
Waupaca Gold Cross EMS Response

4 Minutes | 15 Minutes | 30 Minutes | Municipal Boundaries
8 Minutes | 20 Minutes | Beyond 30 Minutes

Source: Portage County Planning & Zoning (2016) Map Produced: August 2016 Author: R. Hetzel

Portage County Planning & Zoning
1462 Strongs Ave
Stevens Point, WI 54481

Wisconsin Rapids Fire Station 1 EMS Response from 1511 12th Street South, Wisconsin Rapids, Wood County, Wisconsin



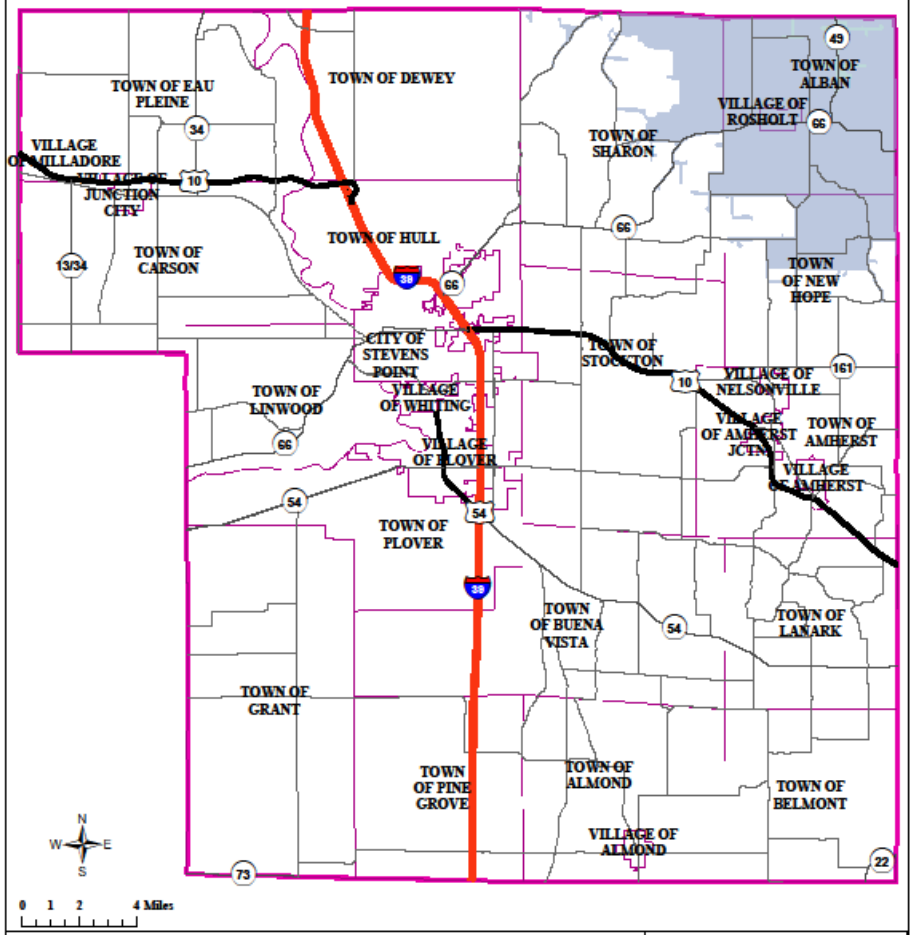
Wisconsin Rapids Fire Station 1 EMS Response

- 4 Minutes
- 8 Minutes
- 15 Minutes
- 20 Minutes
- 30 Minutes
- Beyond 30 Minutes
- Municipal Boundaries

Source: Portage County Planning & Zoning (2016) Map Produced: September, 2016 Author: R. Hetzel

Portage County Planning & Zoning
1462 Strongs Ave
Stevens Point, WI 54481

Wittenberg Fire Department EMS Response from 405 Webb Street, Wittenberg, Shawano County, WI



Wittenberg EMS Response

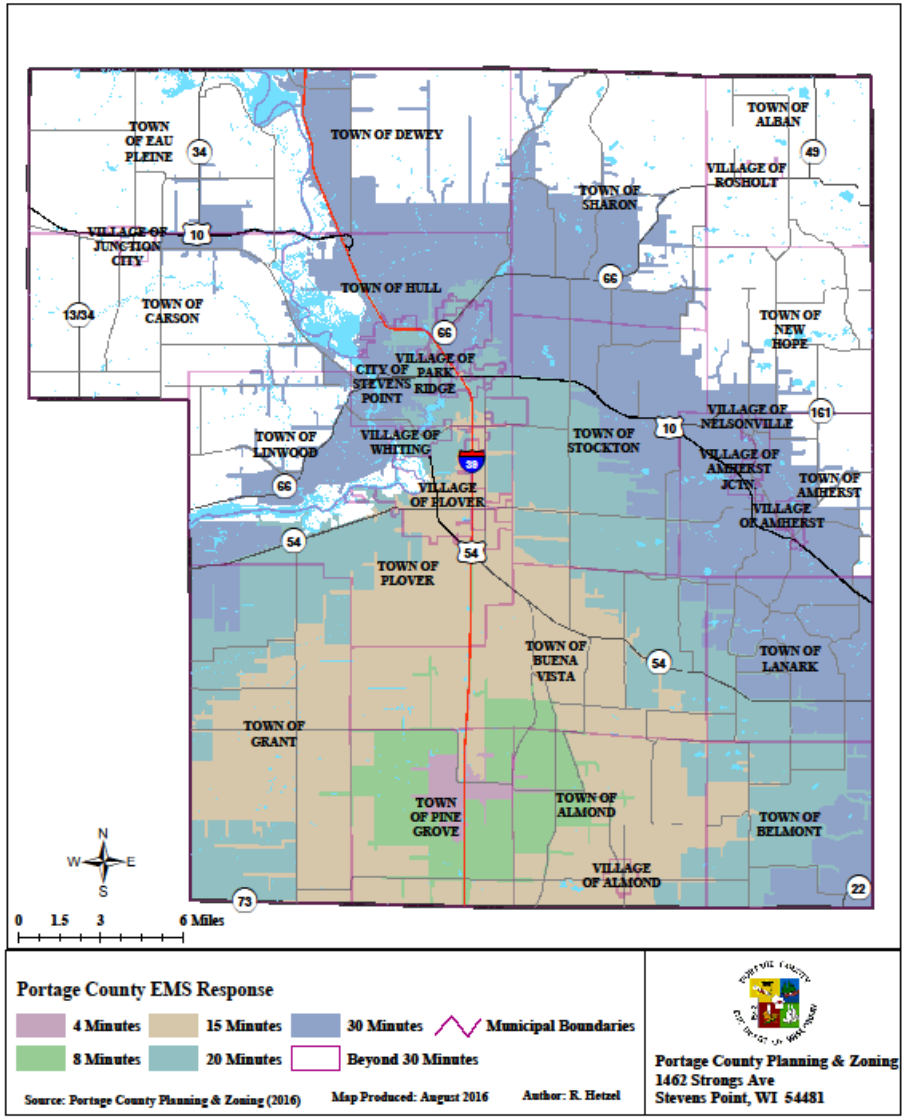
- 20 Minutes
- 30 Minutes
- Beyond 30 Minutes
- Municipal Boundaries

Source: Portage County Planning & Zoning (2016) Map Produced: August 2016 Author: R. Hetzel

Portage County Planning & Zoning
1462 Strongs Ave
Stevens Point, WI 54481

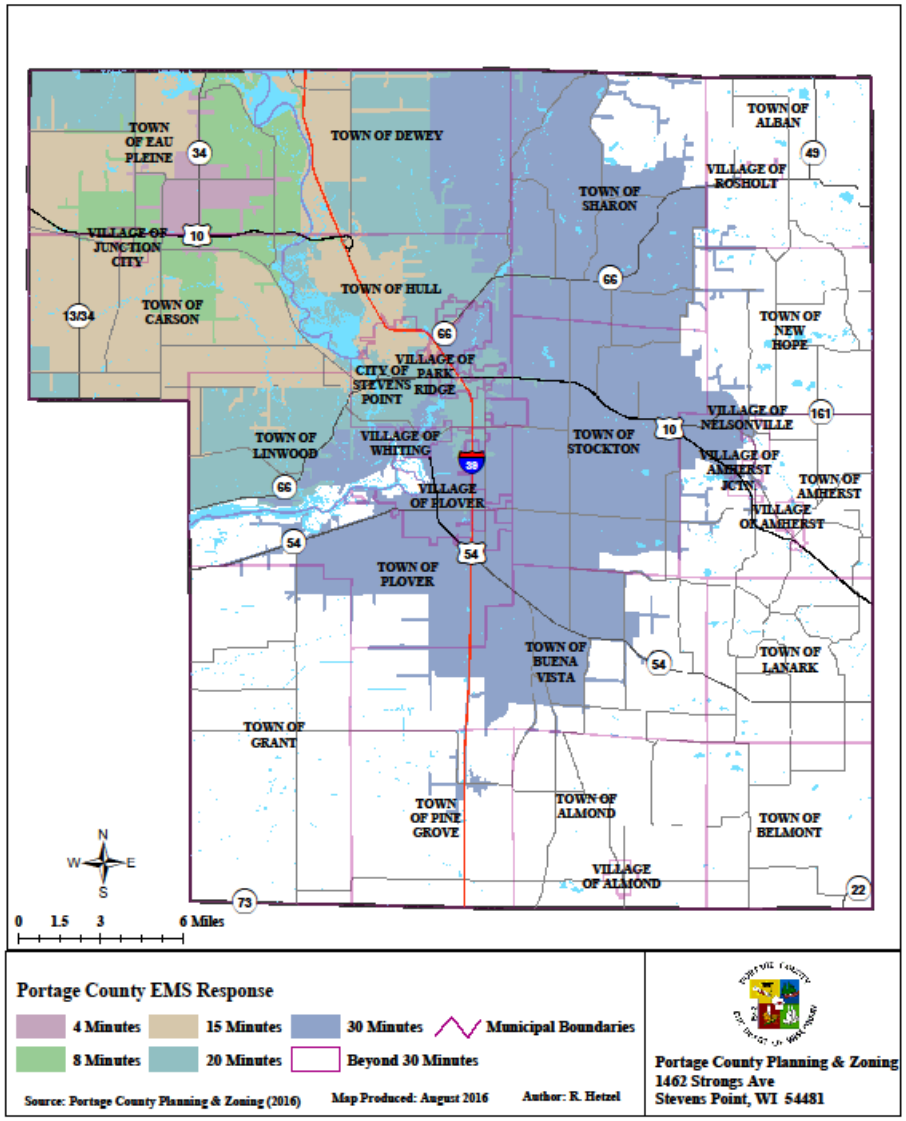
Potential Internal Locations

- Bancroft
- Eau Pleine
- Highway J and 66
- Rosholt
- Plover Locations
  - County Highway Garage
  - Highway 54 and I-39
  - Plover Fire Department



Time	Pop Cvg	Pop %
4 min	518.67	1%
8 min	966.90	1%
15 min	12215.38	17%
20 min	37593.85	54%
30 min	63377.55	91%

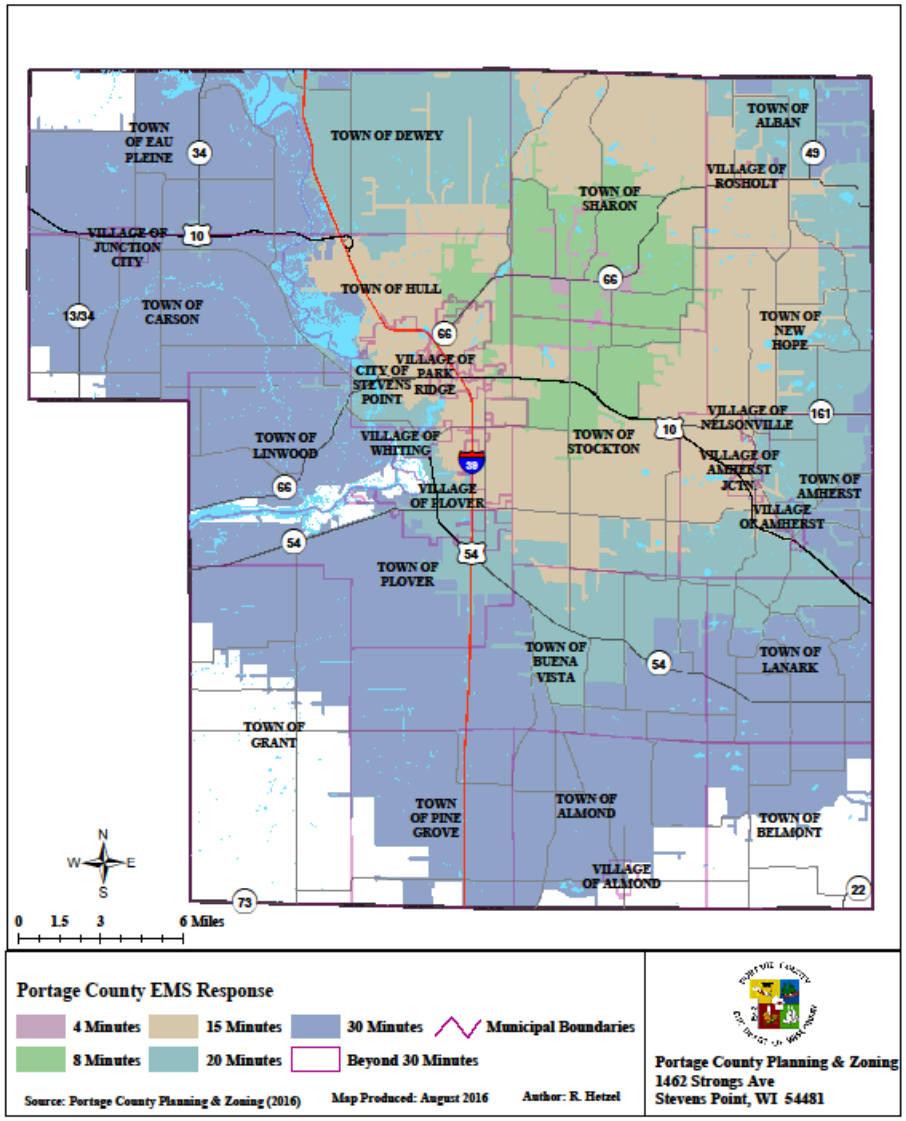
Time	Call Cvg	Call %
4 min	53	1%
8 min	89	1%
15 min	1558	20%
20 min	4151	54%
30 min	7375	96%



Time	Pop Cvg	Pop %
4 min	216.89	0%
8 min	1290.38	2%
15 min	10784.55	15%
20 min	36178.99	52%
30 min	58239.91	83%

Time	Call Cvg	Call %
4 min	27	0%
8 min	109	1%
15 min	1398	18%
20 min	4571	59%
30 min	7083	92%

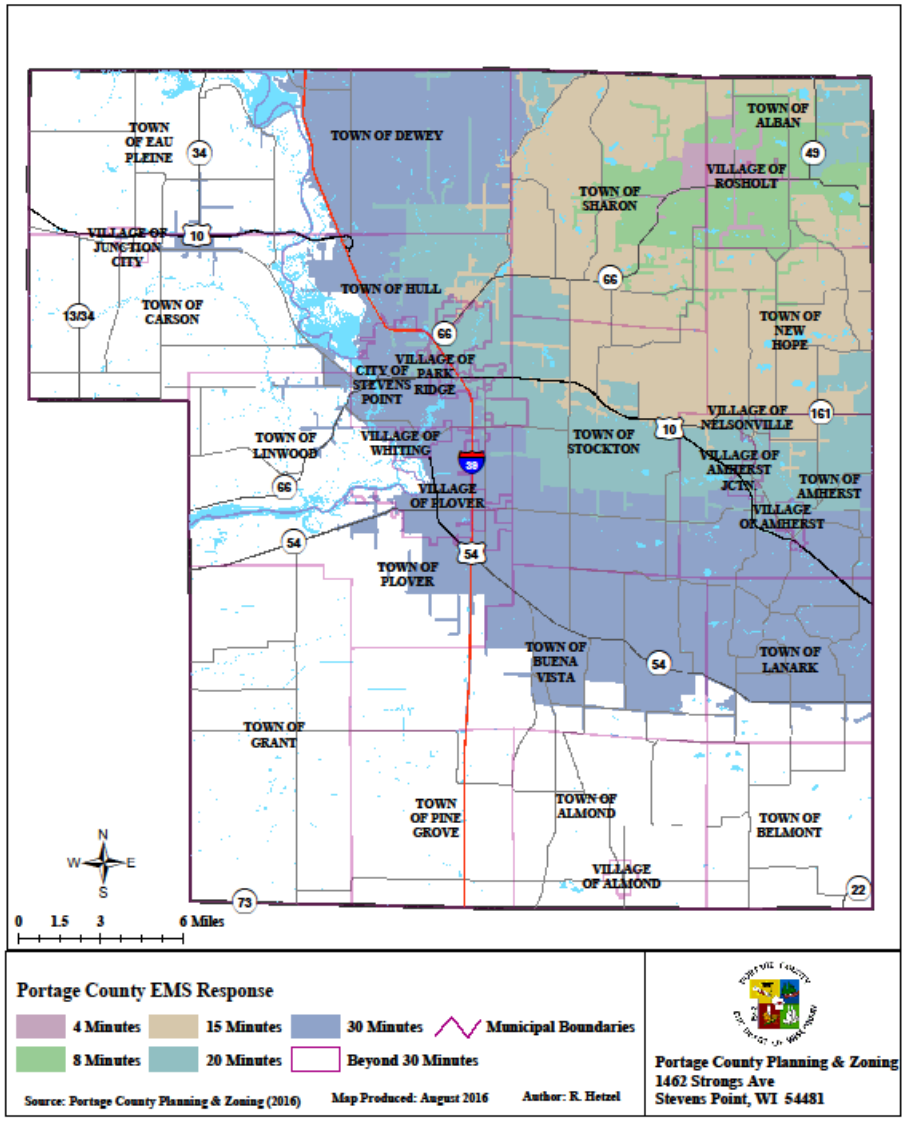
EMS Coverage of 4, 8, 15, 20, and 30 Minute Response Time Zones from 1691 County Hwy J, Custer, Portage County, WI



Time	Pop Cvg	Pop %
4 min	475.71	1%
8 min	5214.72	7%
15 min	38253.74	55%
20 min	57498.06	82%
30 min	67329.29	96%

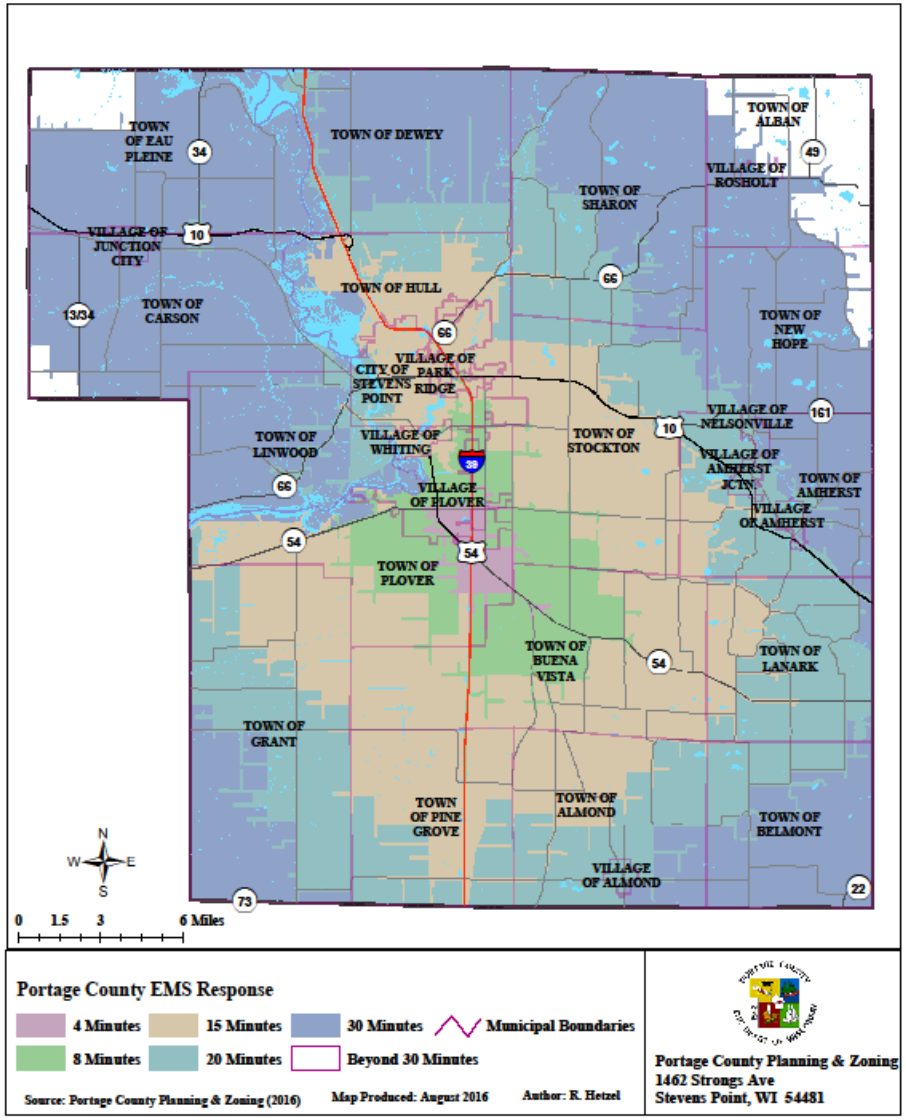
Time	Call Cvg	Call %
4 min	49	1%
8 min	418	5%
15 min	3825	50%
20 min	7024	91%
30 min	7655	99%

EMS Coverage of 4, 8, 15, 20, and 30 Minute Response Time Zones from 9075 WI Hwy 66, Rosholt, Portage County, WI



Time	Pop Cvg	Pop %
4 min	578.13	1%
8 min	1793.00	3%
15 min	6375.33	9%
20 min	18140.11	26%
30 min	60006.59	86%

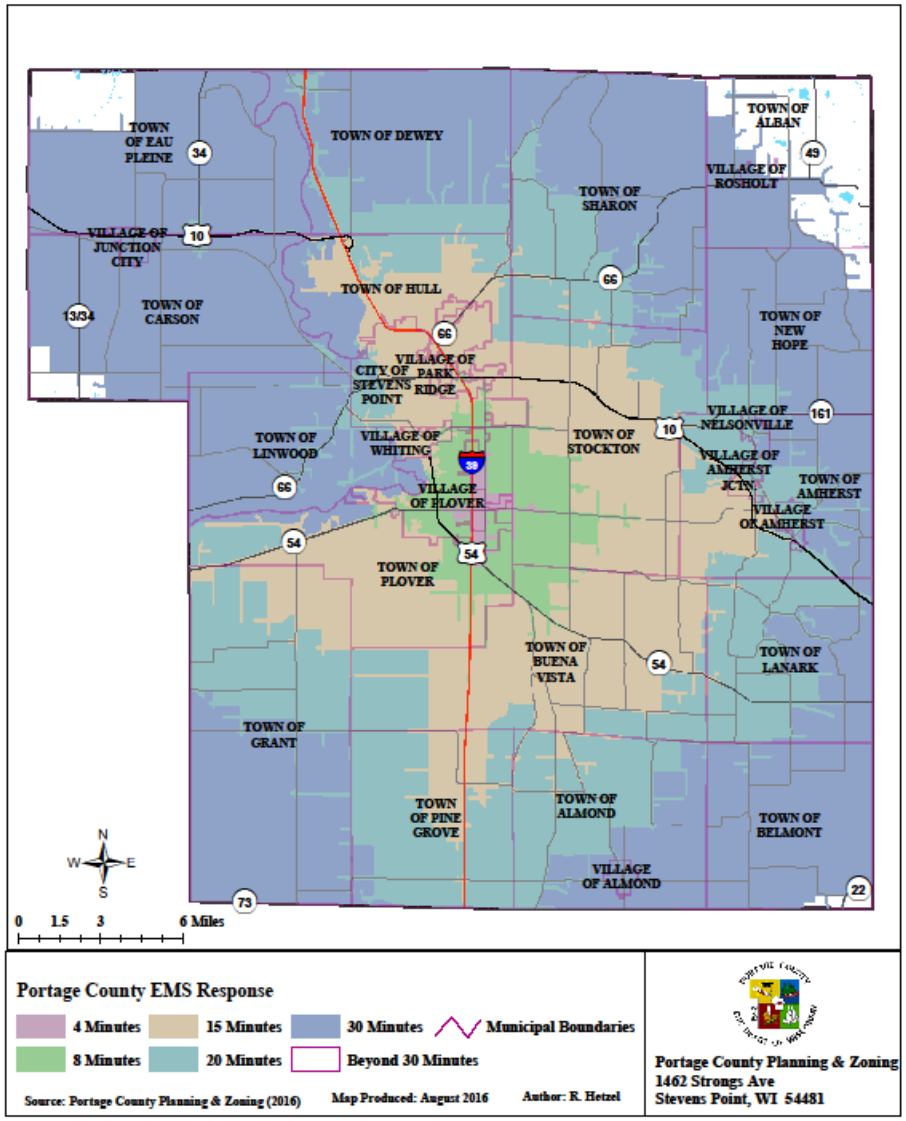
Time	Call Cvg	Call %
4 min	134	2%
8 min	421	5%
15 min	1751	23%
20 min	7202	93%
30 min	134	2%



Time	Pop Cvg	Pop %
4 min	1767.11	3%
8 min	13247.09	19%
15 min	50389.79	72%
20 min	61057.96	87%
30 min	69299.96	99%

Time	Call Cvg	Call %
4 min	592	8%
8 min	1733	22%
15 min	6426	83%
20 min	7278	94%
30 min	7676	100%

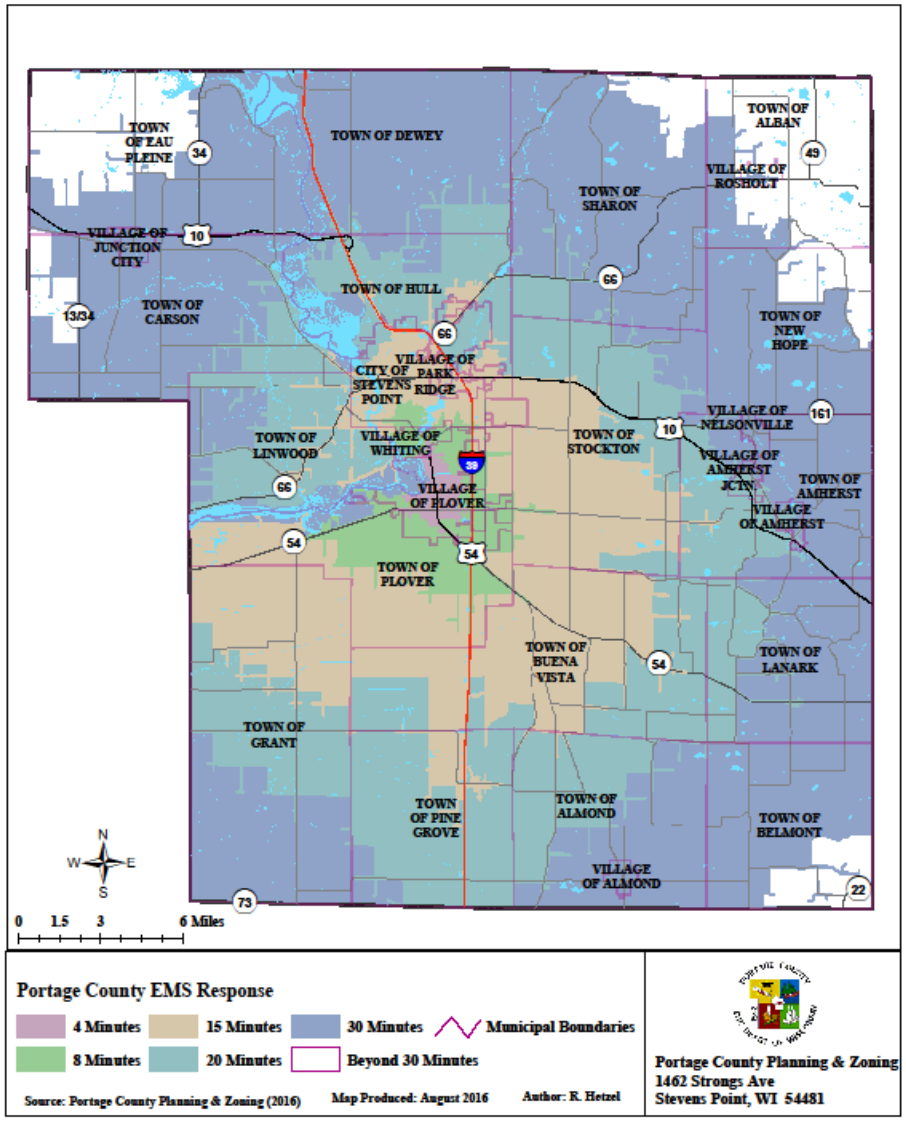
EMS Coverage of 4, 8, 15, 20, and 30 Minute Response Time Zones from 800 Plover Road, Plover, Portage County, WI



Time	Pop Cvg	Pop %
4 min	806.10	1%
8 min	12705.64	18%
15 min	49561.42	71%
20 min	59527.88	85%
30 min	69275.76	99%

Time	Call Cvg	Call %
4 min	120	2%
8 min	1614	21%
15 min	6402	83%
20 min	7184	93%
30 min	7679	100%

EMS Coverage of 4, 8, 15, 20, and 30 Minute Response Time Zones from 2400 Post Road, Plover, Portage County, WI



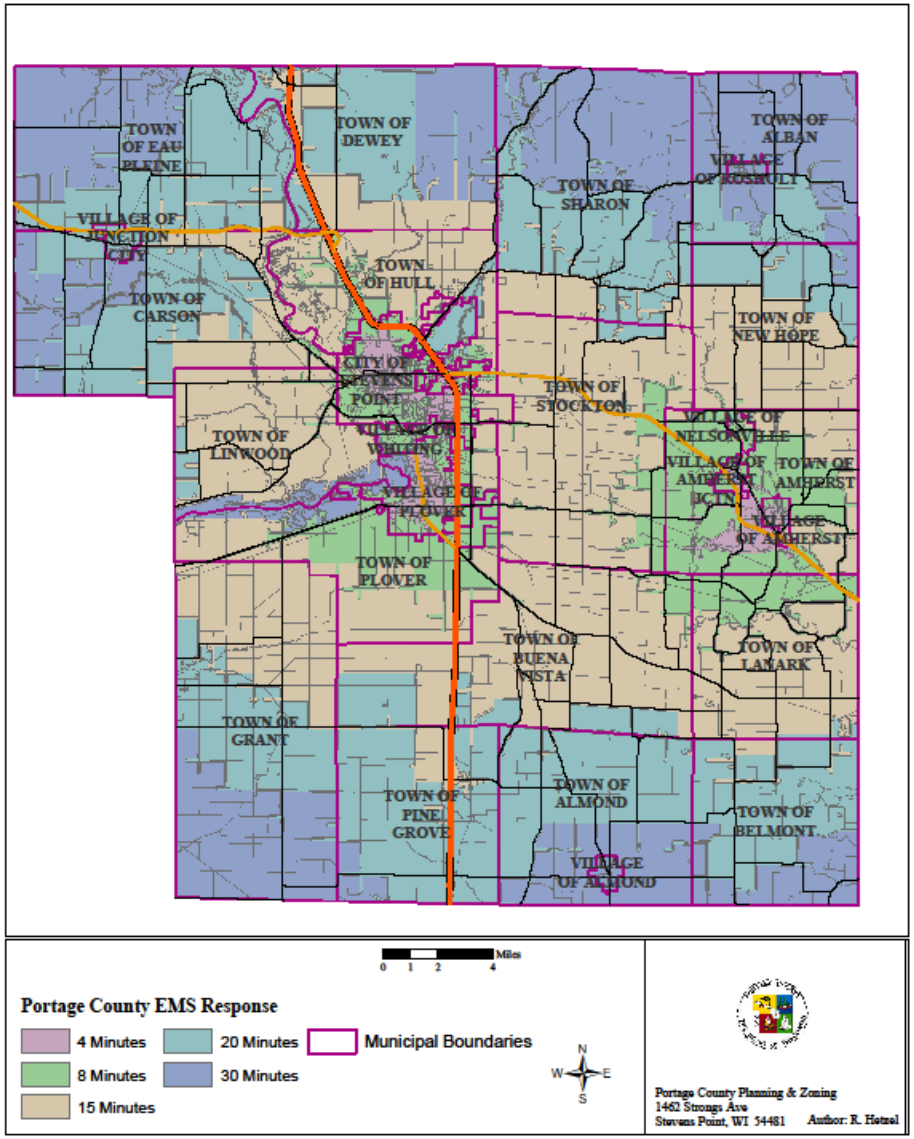
Time	Pop Cvg	Pop %
4 min	5854.79	8%
8 min	17769.81	25%
15 min	47196.96	67%
20 min	57708.19	82%
30 min	68549.16	98%

Time	Call Cvg	Call %
4 min	897	12%
8 min	2534	33%
15 min	6267	81%
20 min	7020	91%
30 min	7653	99%

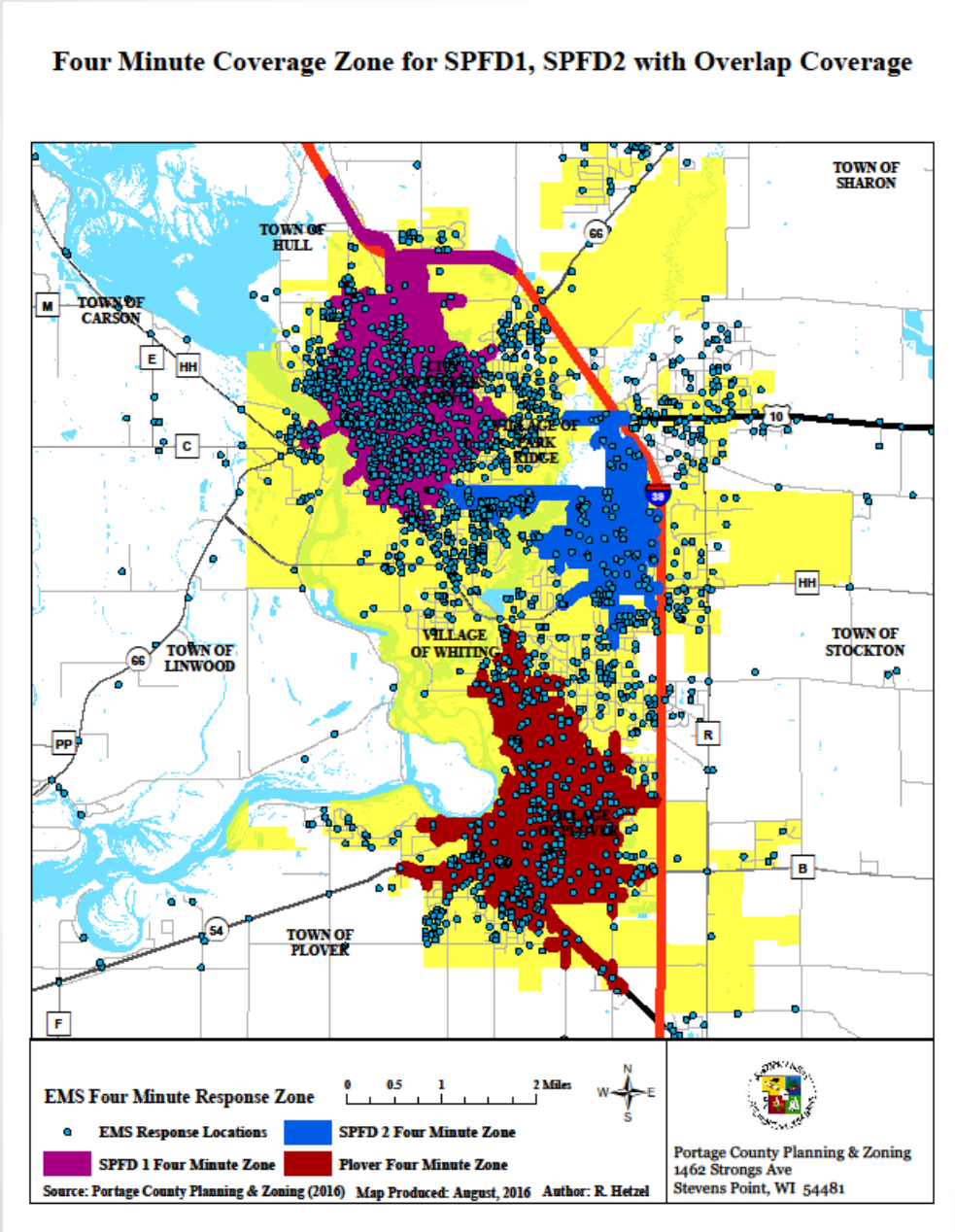
Recommendation

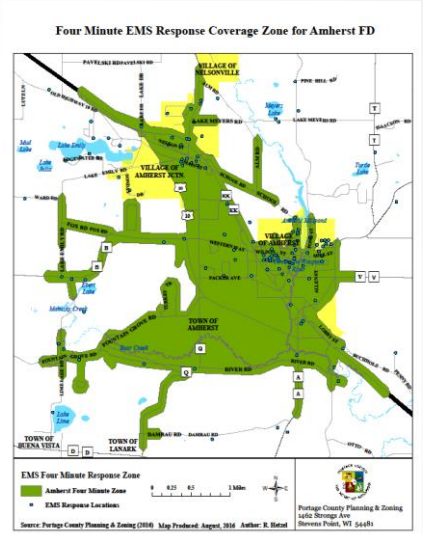
- Add one additional ambulance
- Based on **locations evaluated**; the optimum placement of this resource is Plover Fire Department
- Any future growth should not take away from current resources and placement
- Continue to evaluate data for future use

EMS 4, 8, 15, 20, and 30 Minute Response zones from SPFD1, SPFD2, and Amherst, Plover FD, Portage County, WI



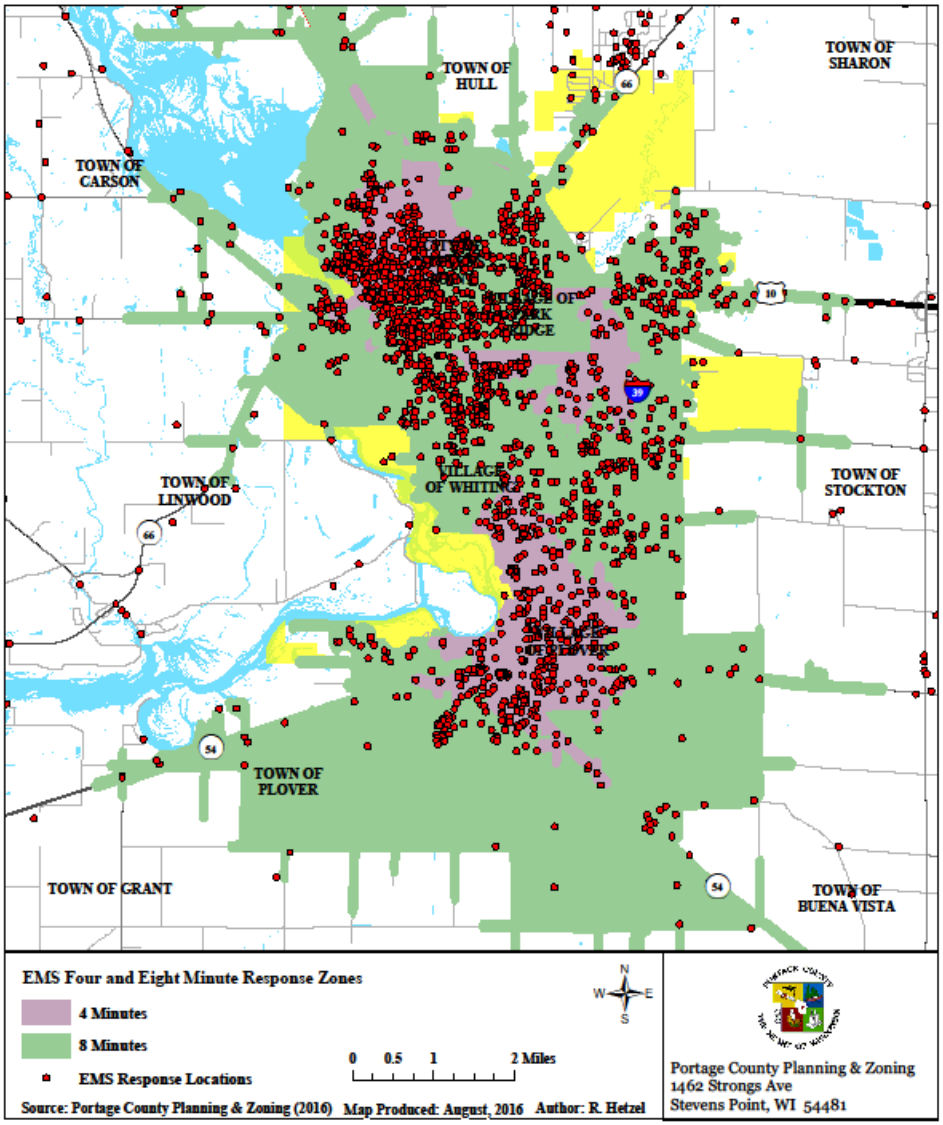
Time	Pop Cvg	Pop %
4 min	25167.13	35.9%
8 min	47364.64	67.7%
15 min	59886.89	85.5%
20 min	66163.30	94.5%
30 min	70019.00	100%



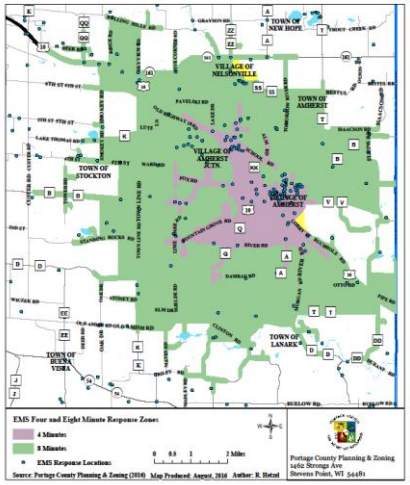


4 minute Call Coverage	Coverage %
3095	41%

Four and Eight Minute EMS Response Coverage Zones for SPFD1, SPFD2, and Plover2400



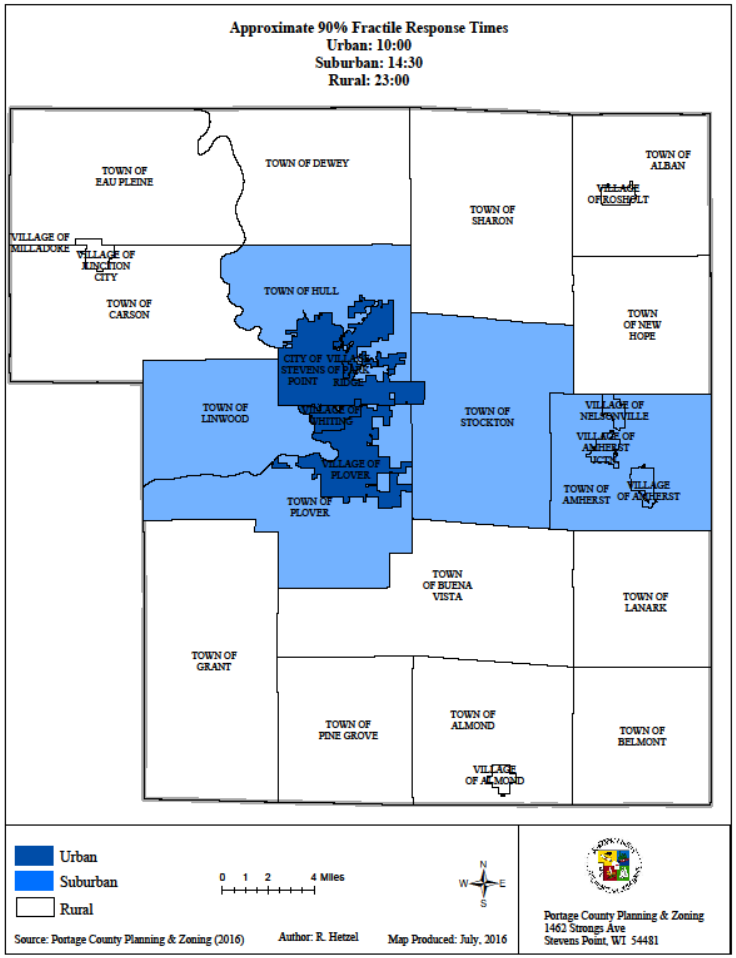
Four and Eight Minute EMS Response Coverage Zones for Amherst FD



Response Zones

Zone	90% Fractile Response Time – Amb	
	Current	With a 4th unit at PFD
Urban	10:00	8:00
Suburban	14:35	13:00
Rural	23:00	22:18

Based on theoretical change in fractile response time to municipalities calculated from actual differences experiences when SPFD unit responded from Station 2 vs PFD



Calls per Staffed Ambulance

With 1 ambulance added to PC EMS

- Range 551 – 1,805
- Average 1,029

- PC EMS 1,439 > 1,079

Service	Calls
Clintonville	551
Oneida	650
Waushara	677
Door	809
Antigo	813
Rhinelander	823
SAFER	1,030
PC EMS	**1,079**
Chippewa	1,096
Merrill	1,138
Wi Rapids	1,287
Wausau	1,611
Marshfield	1,805

Formula = (Total calls for service * % of calls answered by staffed ambulances)/ staffed ambulances. Includes 911 and transfer calls. This formula accounts for (excludes) calls run by call in crews.

Staffed Ambulance to Population Ratio

With 1 ambulance added to PC EMS

- Range 1:6,125 – 1:31,913
- Average 1:13,380
- PC EMS 1:22,961 > 1:17,221

Service	Ratio
Waushara	1 : 6,125
Clintonville	1 : 6,439
Antigo	1 : 8,000
Chippewa	1 : 8,142
Door	1 : 8,730
Oneida	1 : 9,377
Wi Rapids	1 : 9,625
Rhinelander	1 : 10,000
Wausau	1 : 15,921
PC EMS	**1 : 17,221**
SAFER	1 : 18,442
Merrill	1 : 24,000
Marshfield	1 : 31,913

Formula = Population / # of staffed ambulances
Staffed ambulance = in-house, on-duty crew with primary assignment of that vehicle

Cost per Capita

With 1 ambulance added to PC EMS

- Range $30.82 – 138.20
- Average $71.64

- PC EMS $37.06 > $49.40

Assumes cost of one additional ambulance to be $850,925.67 as calculated from previous slide

Formula = total operating budget / population (Based on census population data or provided by the service)

Service	Cost
Marshfield	$ 30.82
Wi Rapids	$ 40.26
Merrill	$ 42.08
SAFER	$ 43.73
PC EMS	**$ 49.40**
Rhinelander	$ 54.27
Clintonville	$ 64.28
Wausau	$ 64.57
Oneida	$ 75.33
Chippewa	$ 91.80
Antigo	$ 115.58
Waushara	$ 120.96
Door	$ 138.20

Cost per Call

With 1 ambulance added to PC EMS

- Range $255.78 – 1,192.71
- Average $733.39

- PC EMS $564.65 > $752.66

Assumes cost of one additional ambulance to be $850,925.67 as calculated from previous slide

Formula = total operating budget / # calls run by service (911 and transfers)

Service	Cost
Wi Rapids	$ 255.78
Marshfield	$ 370.46
Merrill	$ 532.42
Wausau	$ 625.06
SAFER	$ 626.44
Rhinelander	$ 652.31
Chippewa	$ 654.22
Clintonville	$ 675.77
PC EMS	**$ 752.66**
Oneida	$ 988.40
Waushara	$ 1,082.74
Antigo	$ 1,124.86
Door	$ 1,192.71

Summary

- Mission and Vision
- Past Studies and Analysis
- Current System
- EMS System Comparisons
- Opportunity Areas for Change
- Response Time Importance
- Analysis of Internal, Bordering, and Potential Locations
- Recommendation

Thank You

Questions?