Camas-Washougal Fire Department

East County Fire & Rescue

ASSESSMENT OF THE EMS DELIVERY SYSTEM

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Purpose of the Study

Evaluate the current emergency medical services delivery system…

…with an emphasis on alternative methods for continuing ambulance service.

Emergency Medical Transport Options

- **Option A:** Maintain status quo
- **Option B:** In-House Medic Services with Contracted Transport
- **Option C:** Contracted Medic Services & Transport
- **Option D:** Combined In-House Medic Services/Contracted ALS Service & Transport

Options Details

For each option, the following was addressed:

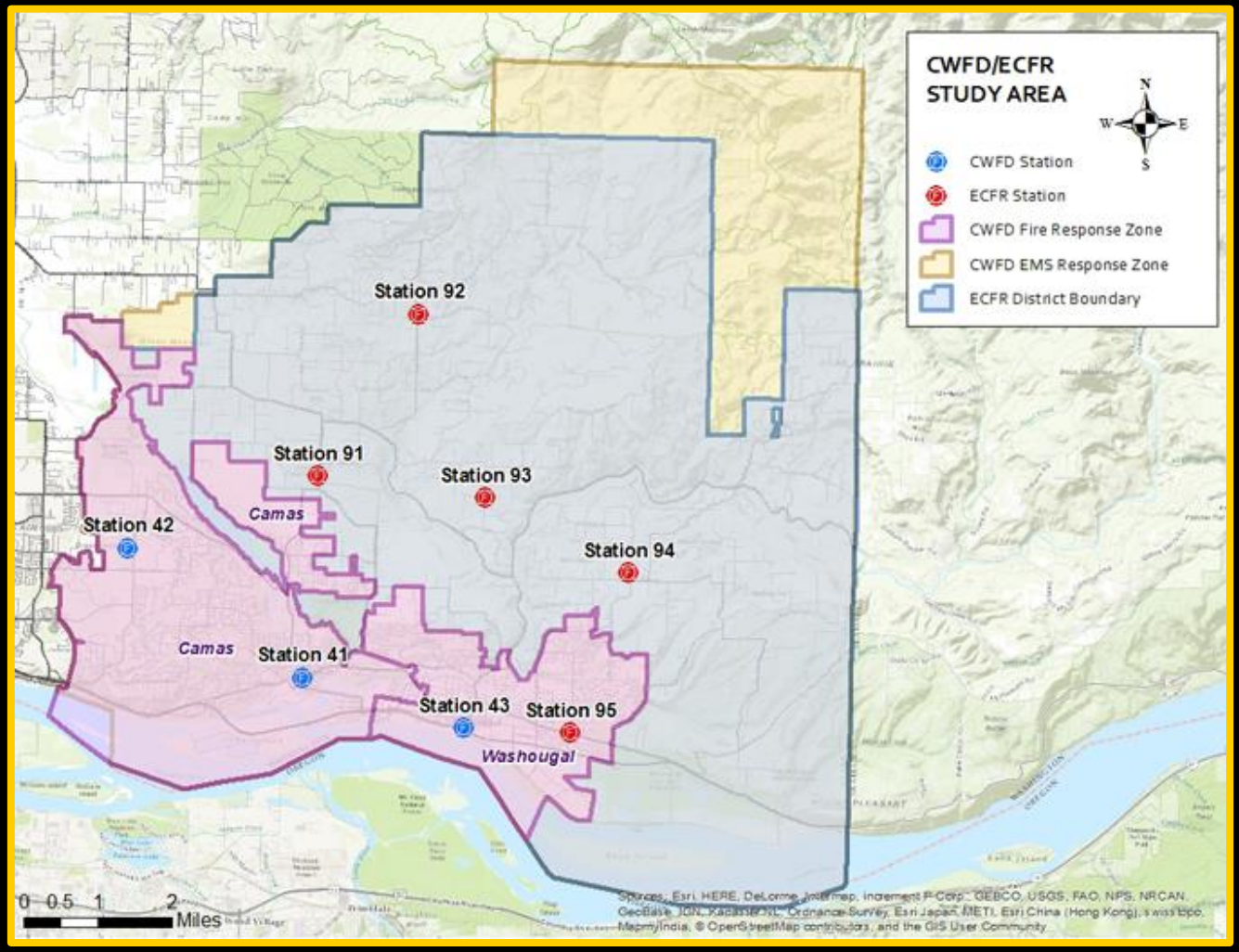
- Operations & deployment details
- Staffing details
- Financial impacts
- Advantages
- Disadvantages
- Other issues

Status of the Final Report

Why so much detail in the report?

- EMS is a *system* comprised of numerous components that must work effectively to produce the best patient outcomes
- Modifications to the EMS system can have an impact on the department's ability to provide other emergency services.
  - Necessary for ESCI to look at how changes would effect CWFD's ability to provide fire suppression, rescue, and other services.
  - Also, how it would impact ECFR and the citizens it serves.

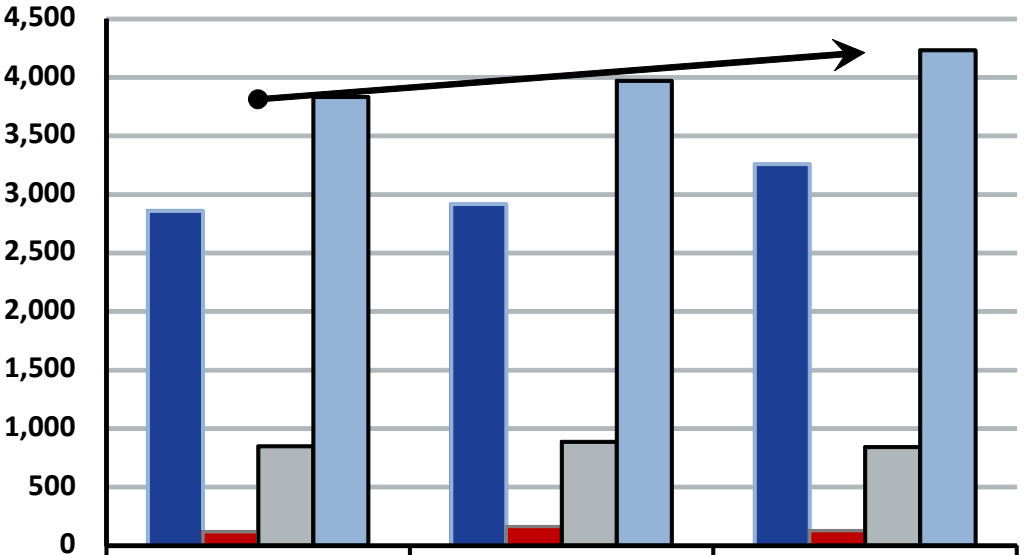
Study Area


CWFD/ECFR
STUDY AREA
N
W
E
S
CWFD Station
ECFR Station
CWFD Fire Response Zone
CWFD EMS Response Zone
ECFR District Boundary
Station 92
Station 91
Station 93
Station 42
Camas
Station 94
Camas
Station 41
Station 43
Station 95
Washougal
0 0.5 1 2
Miles

Service Delivery & Performance

CWFD Service Demand Study

CWFD Historical Service Demand (2014–2016



	2014	2015	2016
EMS	2,862	2,918	3,261
Fires	119	165	127
Others	850	887	843
Totals	3,831	3,970	4,231

Service-Delivery & Performance

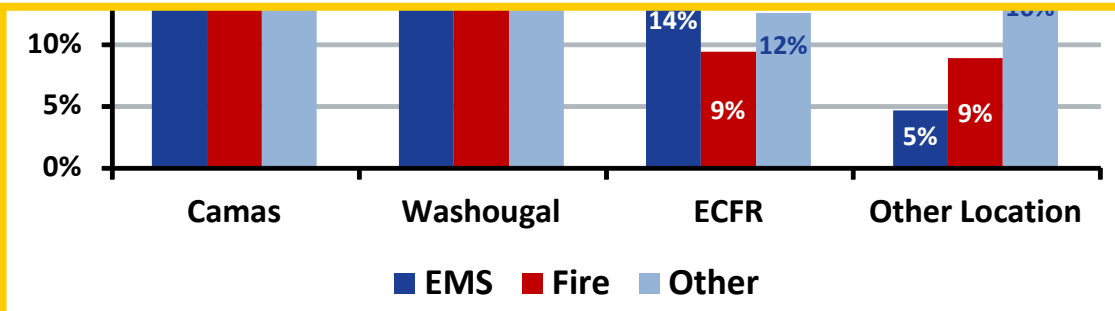
CWFD Service Demand Study *continued*

Figure 1: CWFD Service Demand by Incident Type & Location (2014–2016)

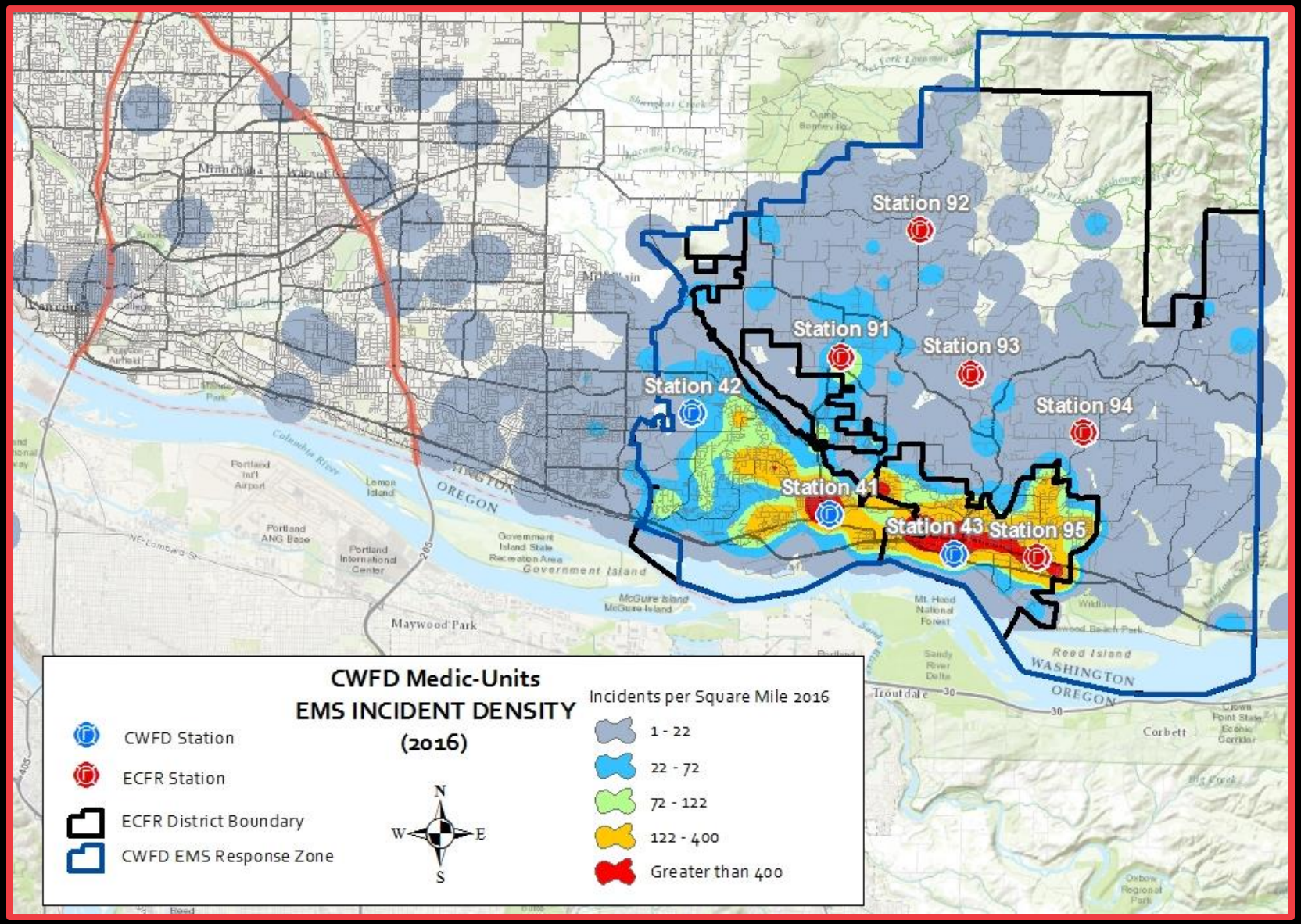
Medic Unit (only) Service Demand by City Location

City	2014	2015	2016	COMBINED
Camas	45%	45%	45%	**45%**
Washougal*	47%	48%	49%	**48%**
Vancouver	9%	6%	6%	**7%**

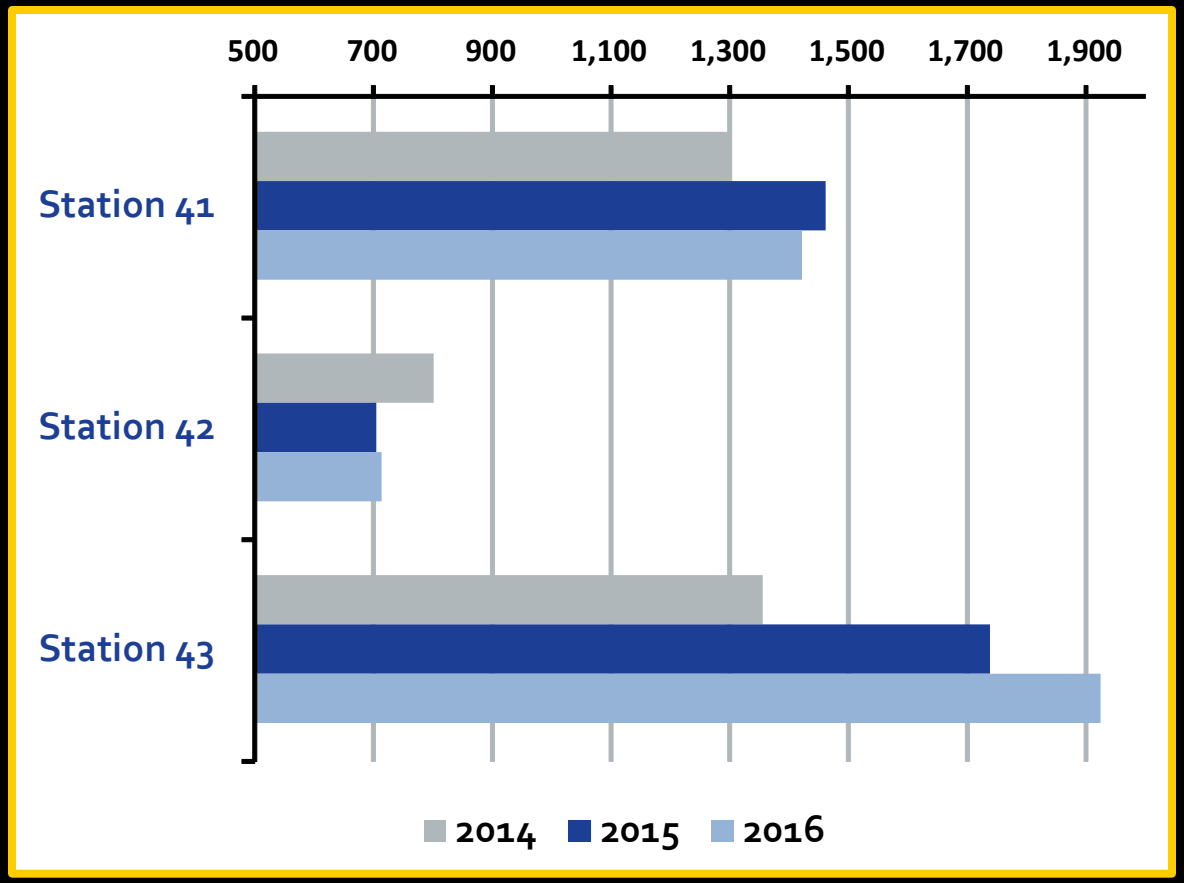
*Calls with Washougal addresses located within the ECFR response zone were excluded



CWFD Medic Unit EMS Incident Density (2016)



CWFD Service Demand by Station (2014–2016)



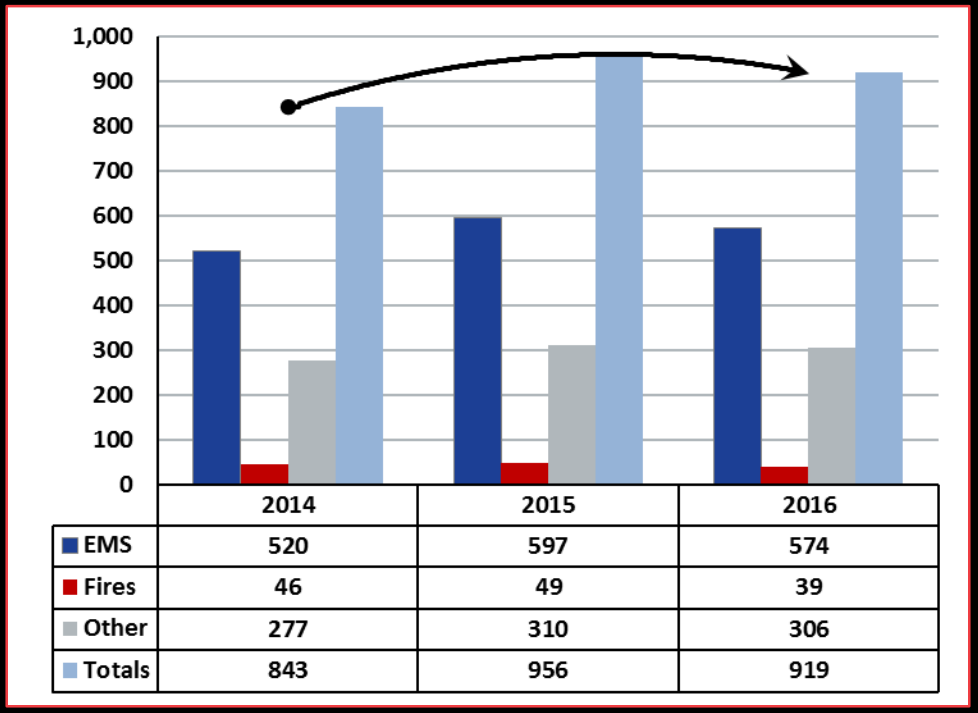
- Represents all incident types
- Station 43 (in Washougal) busiest, then Station 41

Service Demand in ECFR

CWFD EMS Service Demand in ECFR District (2014–2016)

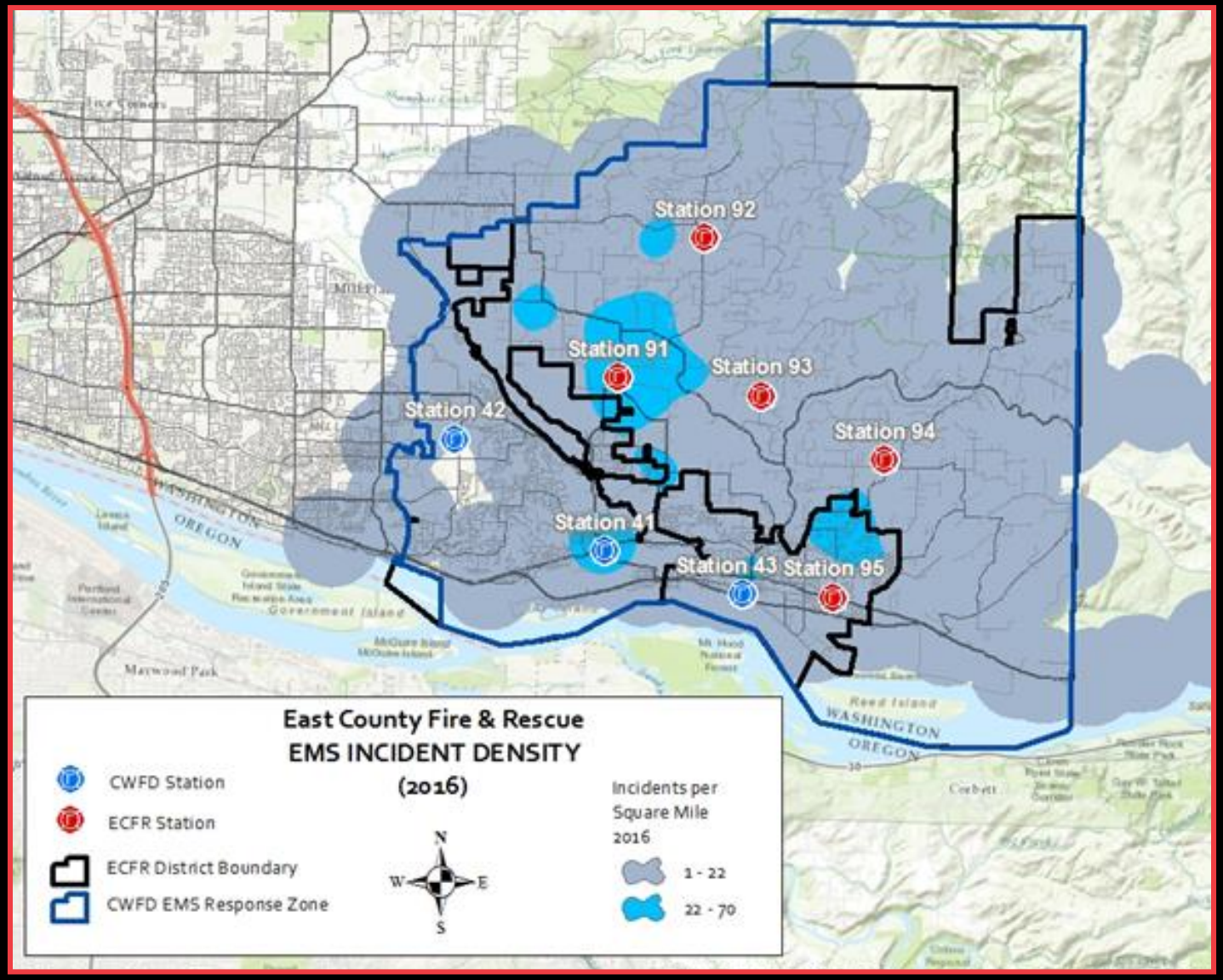
Year	CWFD Medic Unit Calls	Increase from Previous Year
2014	386	Not available
2015	456	17.5%
2016	478	5.5%

ECFR Historical Service Demand (2014–2016)



	2014	2015	2016
EMS	520	597	574
Fires	46	49	39
Other	277	310	306
Totals	843	956	919

ECFR EMS Incident Density (2016)



Apparatus Drawdown & Concurrent Calls

CWFD Engine & Medic Unit Drawdown (2016)

Incident Type	One Apparatus	Two	Three	Four or More
EMS Incidents				0.3%
Fires & Others				3.5%
Overall				**0.8%**

- Does not include

CWFD Concurrent Incidents (2016)

Concurrent Incidents	Percent
Single Incident	57.0%
Two Incidents	31.4%
Three Incidents	9.6%
Four or more	2.0%

- Two or more calls occurred simultaneously **43%** of the time

CWFD Engine & Medic Unit Commit Times

CWFD Apparatus Average Time & Total Time Committed by Type (2016)

	Fires & Other Incident Types		EMS Incidents Only	
Apparatus	Total Time Committed	Average Time Committed	Total Time Committed	Average Time Committed
Medic 41	29:43:51	0:14:09	1381:57:01	1:11:51
Medic 42	12:01:09	0:12:01	526:05:31	1:16:59
Medic 43	49:14:58	0:16:14	1508:53:35	1:09:55
Medic 44	5:53:27	0:15:22	316:07:25	1:25:50
Engine 41	101:05:54	0:20:55	339:41:16	0:25:08
Engine 42	51:43:55	0:20:25	63:36:00	0:27:15
Engine 43	135:22:22	0:19:07	494:05:16	0:25:20

- Medic units averaged **1 hour, 13 minutes** to complete an EMS incident
  - **24 minutes, 59 seconds** for fires & other non-EMS calls
- Engines averaged nearly **26 minutes** for EMS calls
  - **33 minutes** for fires & other non-EMS calls

Unit Hour Utilization (UHU)

- A calculation that measures productivity.
- Measures percentage of on-duty time consumed by emergency operations.
- A unit-hour (UH) is defined as one hour of service by a fully equipped unit available for dispatch or assigned to a call.
- Fire-based services may choose a target of 0.15–0.25 (15–25%) in order to maintain effective response times.

CWFD Medic Unit & Engine Unit Hour Utilization (2016)

	Fires & Others		EMS Only	
Apparatus	**UHU**	**UHU %**	**UHU**	**UHU %**
Medic 41	0.0034	0.34%	0.1578	15.78%
Medic 42	0.0014	0.14%	0.0601	6.01%
Medic 43	0.0056	0.56%	0.1722	17.22%
Medic 44	0.0007	0.07%	0.0361	3.61%
Engine 41	0.0115	1.15%	0.0388	3.88%
Engine 42	0.0059	0.59%	0.0073	0.73%
Engine 43	0.0155	1.55%	0.0564	5.64%
*Medic 42/Engine 42**	*0.0073*	*0.73%*	*0.0673*	*6.73%*

*Calculated as total hours committed for both units combined

Patient Transport Analysis

Average Transport Times by Medic Unit (2014–2016)

CWFD Medic Unit	Average Transport Time
Medic 41	23 minutes
Medic 42	24 minutes
Medic 43	27 minutes
Medic 44	22 minutes
Overall Average	**26 minutes**

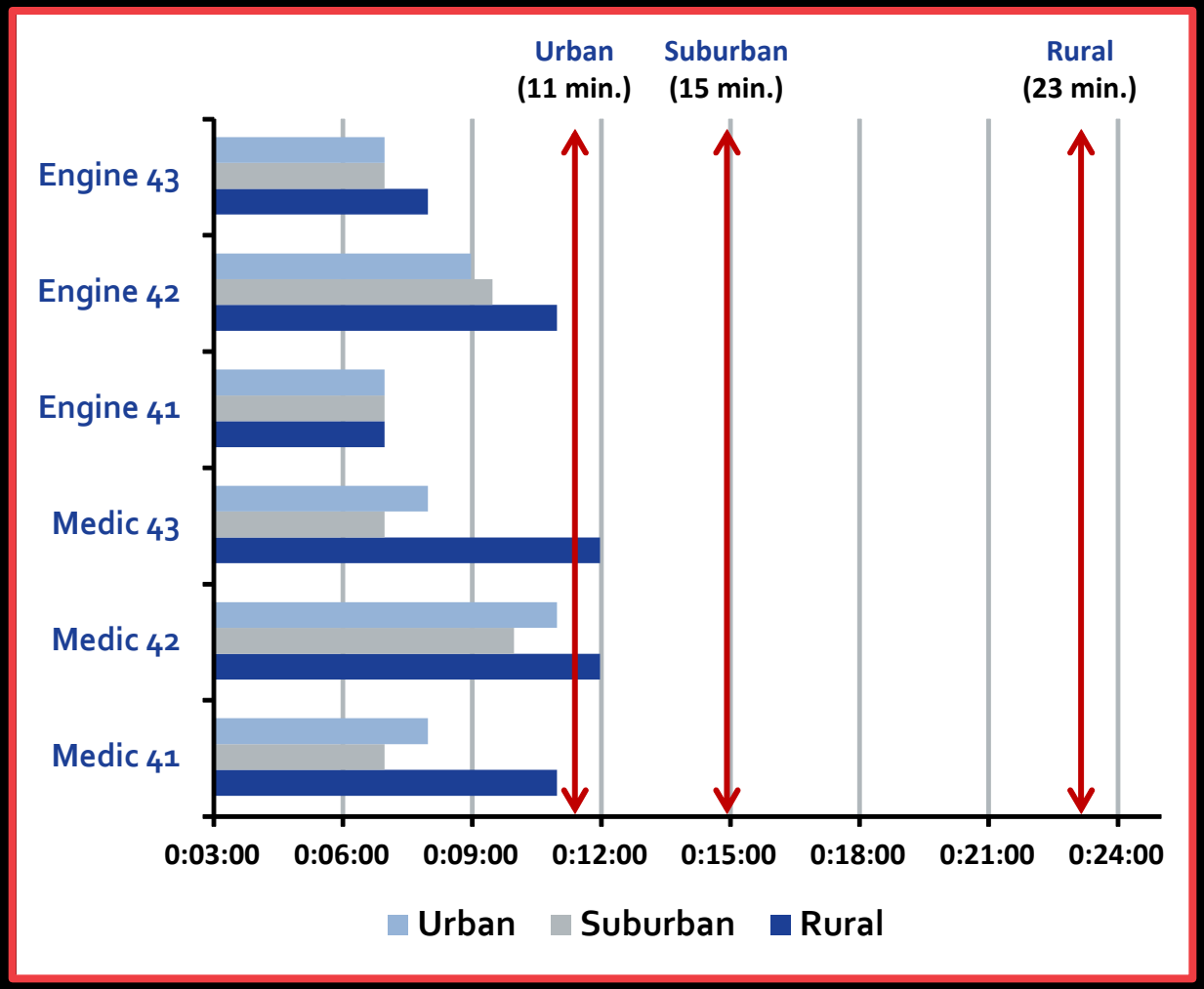
- Time-interval between beginning transport & arrival at the hospital

Average Hospital Turnaround Times (2014–2016)

CWFD Medic Unit	Average Turnaround Time*
Medic 41	39 minutes
Medic 42	38 minutes
Medic 43	41 minutes
Medic 44	40 minutes
Overall Average	**39.5 minutes**

- Time-interval between arrival at hospital & return to service

CWFD Response Time Performance by Population Density (2016)



CWFD Criteria

CWFD Medic Unit Performance at 90% Compared to Other Standards (2016)

Population Density[1]	CWFD Medic Actuals[2]	CWFD SOC[3, 4]	WA Trauma Standards[3, 5]	NFPA Standards[3]
Urban	**0:08:00**	0:11:00	0:10:00	0:09:00
Suburban	**0:07:30**	0:15:00	0:20:00	0:09:00
Rural	**0:12:00**	0:23:00	0:45:00	0:14:00

[1]Based on Washington trauma verification definitions [2]All at 90% [3]Excluding alarm-handling time
[4]Includes turnout time [5]Requires response times to be met at 80%

Response Time Performance Criteria in Accordance with Vancouver Ambulance Contract

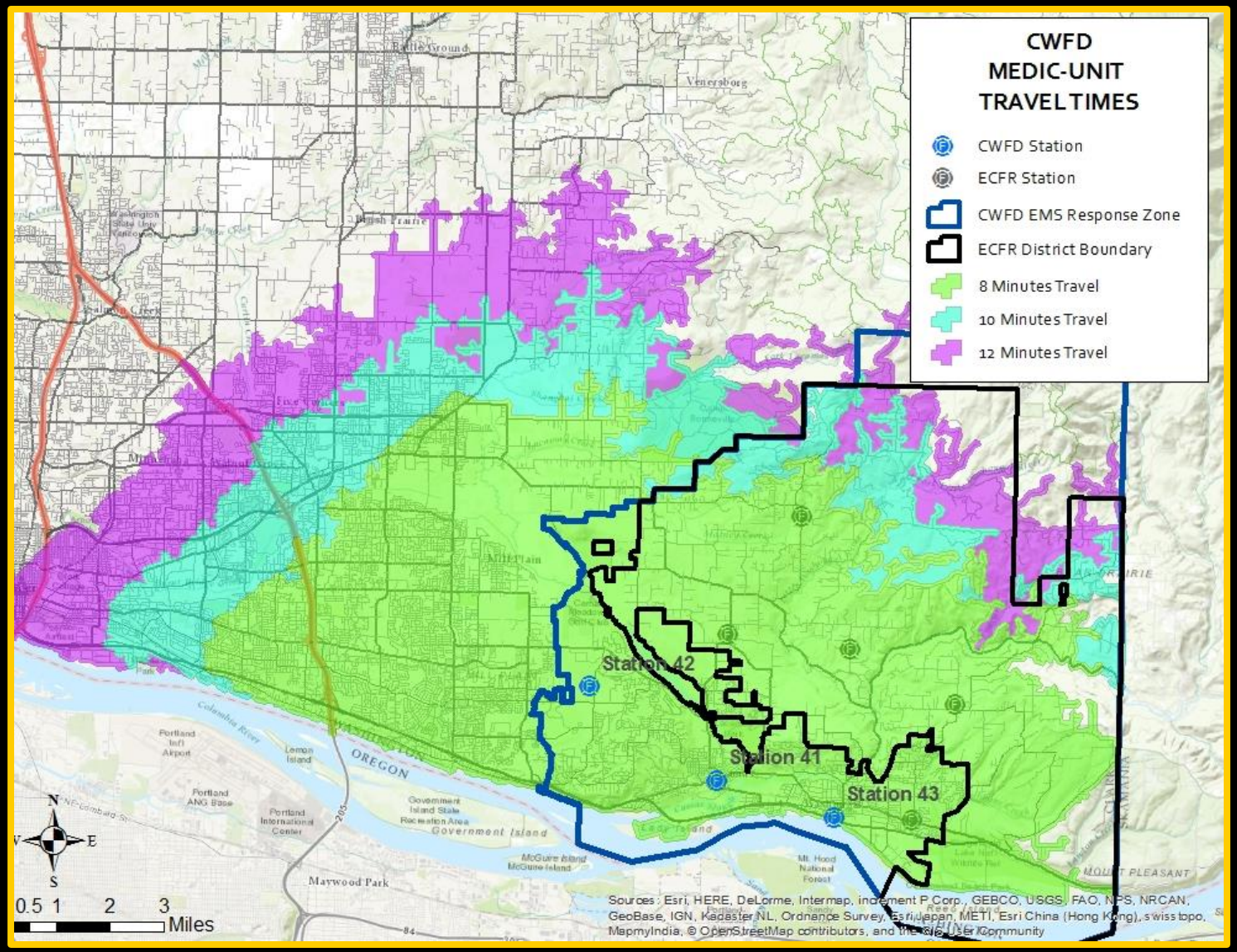
PRIORITIES 1 & 2	Time Life Priority ≥ 90% Compliance		
	High Call Density (Urban)	Low Call Density (Suburban)	Remote (Rural)
ALS Ambulance:	≤ 9:59 minutes	≤ 19:59 minutes	Best effort

PRIORITIES 3 & 4	Emergent ≥ 90% Compliance		
	High Call Density (Urban)	Low Call Density (Suburban)	Remote (Rural)
ALS Ambulance:	≤ 12:59 minutes	≤ 19:59 minutes	Best effort

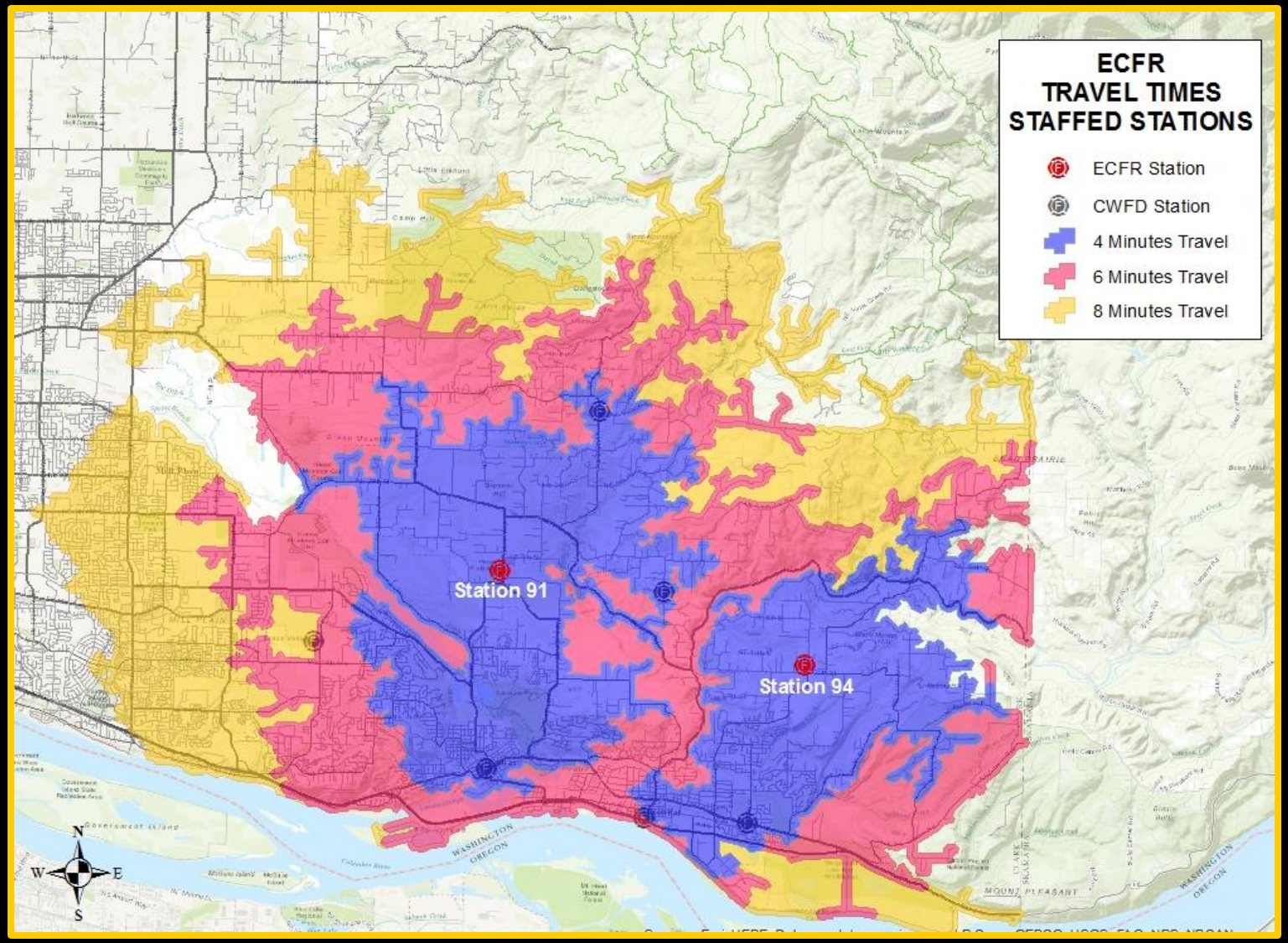
Note: Priorities 5 & 6, and "routine" criteria have been excluded

Source: City of Vancouver Ambulance Services Agreement with AMR (2014)

CWFD Medic Unit Travel Time Capability



ECFR Travel Time Capability from Stations 91 & 94



Ambulance Service Outsourcing

- American Medical Response (AMR) currently under contract to provide ambulance service in Vancouver and west side areas.
  - City of Vancouver manages the contract through an interlocal agreement with EMS District #2.
- Easiest option would be to negotiate participation in the ILA; but attempt to get the best terms possible.
  - VFD Fire Chief & AMR management believes this to be best option.
  - Alternatively, an offer of a financial subsidy to ensure more desired service-levels could be considered.
- AMR unwilling to provide estimated deployment & service-level model.
  - Concern they would be at a disadvantage in the event of a competitive bid process.

Alternative: Competitive Bid Process

- Initiate a competitive bid process for ambulance service.
  - Consistent with franchise models seen in many systems.
  - Could be done jointly within an ILA, or put out separate bids.
  - One jurisdiction could participate in the Vancouver ILA and the others go out to bid…
- Competitive bid would entail additional expenses & produce some potential complexities.
- Would anticipate AMR being the only bidder (only speculation).

Financial Analysis

Overview

- Total estimated 2016 EMS expenses were $6.3 million
  - CWFD EMS = $4.9 million or 54.5% of total; Fire 41.5% & Prevention 4%
  - ECFR EMS = $1.4 million or 75% of expenses (excluding CWFD payment)
  - Roughly 82% of expenses were personnel-related
- Funding for CWFD in 2016 was 49% Camas, 30% Washougal, 13% Ambulance Fees, 5% ECFR and 3% Other
- Estimated CWFD expense increase between 2015 and 2018 budget is an average annual increase of 3.7%
  - Assumes status quo staffing
- ECFR's total property tax levy in 2017 was roughly the same as its total levy in 2009—no increase in 8 years

Financial Analysis *continued…*

Observation Summary

- High levels of overtime in 2015 & 2016 unusual and caused by unique events in those years
  - Significant fire activity in 2015 with wildland deployments
  - Five vacancies and very high injury leave in 2016
  - Overtime expense through May 2017 is under budget
- ECFR payments for EMS/Transport services in 2016 appear to be below the estimated cost associated with CWFD EMS responses to ECFR
- Transport fees and collection rates are reasonable, but higher fees and collection rates might be achievable
- Report includes other observations on the Camas/Washougal cost-sharing framework

Financial Analysis *continued…*

Financial Forecast to 2021

- Expenses assumed to increase roughly 4% annually, and revenues assume current funding framework continues
- Significant increases in EMS levies at renewal due to substantial increases in assessed values in recent years
  - Stable to declining Camas and Washougal General Fund requirements for CWFD operations compared to 2016–2017
- Additional improvement over baseline from new Medicaid reimbursement program ($150,000), overtime at historical levels ($100,000), increase in ECFR EMS levy/payments ($125,000) & other recommendations ($100,000+)

Recommended System Enhancements

Service Delivery Recommendations

- Continue with **Option A: Status Quo**
- Rationale
  - Medical transport service would likely decline (longer response times; no ambulances located in Camas & Washougal, etc.).
  - Staffing reductions would reduce CWFD's ability to provide fire protection mitigate other non-EMS incidents; more reliance on mutual aid
  - No net cost-savings through reduction of Firefighter FTEs; over $1 million in transport revenue lost; ECFRs EMS contribution eliminated.
  - If Camas, Washougal & ECFR were to participate in current ILA, response-time standards would probably be longer.

System Enhancements *continued…*

Service Delivery Recommendations

- Option A: Status Quo Rationale *continued…*
  - Small subset of critical patients (severe trauma, strokes, certain cardiac events) benefit from immediate transport to specialized facilities—transport delays can impact outcomes.
  - Participation in the ILA would limit control by Camas, Washougal, and ECFR over ambulance service in their communities.
  - CWFD would need to spend additional staff time conducting some form of clinical and operational oversight to ensure contractual requirements are being met.
  - Financial options and projections indicate potential expense reductions and revenue enhancement to continue current service.

System Enhancements *continued…*

Service Delivery Alternative Option

- Should Camas elect to discontinue medical transport by CWFD, ESCI recommends:
- Option B: In-House Medic Services with Contracted Transport
  - Cities and ECFR should pursue participation in the interlocal agreement with Vancouver and EMS District #2.
  - Consider a minimum daily staffing of 9 firefighters and 1 Battalion Chief.
  - Maintain three-person engine companies at each CWFD station.
  - ECFR should consider hiring Firefighter/Paramedics with revenue not paid to Camas.

System Enhancements *continued…*

Alternative Option B Financial Impacts

Option B Reductions—Three-Person Staffing at Station 42 (2018–2021)

Reductions	2018	2019	2020	2021
Revenue Reduction	($1,849,000)	($1,882,000)	($2,042,000)	($2,079,000)
Expense Reduction	$498,000	$528,000	$560,000	$594,000
Net Financial Gain/(Loss)	**($1,351,000)**	**($1,354,000)**	**($1,482,000)**	**($1,485,000)**

Option B Reductions—Two-Person Staffing at Station 42 (2018–2021)

Reductions	2018	2019	2020	2021
Revenue Reduction	($1,849,000)	($1,882,000)	($2,042,000)	($2,079,000)
Expense Reduction	$996,000	$1,056,000	$1,120,000	$1,188,000
Net Financial Gain/(Loss)	**($853,000)**	**($826,000)**	**($922,000)**	**($891,000)**

System Enhancements *continued…*

Financial Recommendations

- Continue with existing funding framework, but consider modifications after considering EMS system enhancements
- Washougal
  - EMS levy at $0.50 in 2018
  - Lid lift at $0.10 in 2021; option to consider ambulance utility
- Camas
  - EMS levy renewal in 2019
  - Need to discuss implication of higher EMS levy revenue
- ECFR
  - Increase EMS levy in 2020 to fully fund CWFD EMS/transport costs
  - Consider lid-lift in interim/future for EMS and/or other services

System Enhancements *continued…*

General Recommendations

- Station 41 EMS Incident Deployment
- Engine Company Staffing
- Overtime & Elective Leave
- Administrative Staff Enhancements
- Vehicles & Capital Equipment
- Records Management
- EMS Quality Management
- Emergency Communications
- CWFD Turnout Times

Future Considerations

- Fire District?
  - Annex Camas & Washougal into ECFR.
  - Restructure to a seven-member Board.
  - Good idea from an operational and administrative perspective.
  - Not financially feasible at present; possibly in a couple of years.
  - ESCI *does not* recommended pursuing at present.
- Functional Consolidation
  - Recommend pursuing this option.
  - First step already taken with one Fire Chief for CWFD & ECFR.
  - Would be some challenges, but likely feasible.

Future Considerations *continued…*

Functional Consolidation Staffing & Deployment

- Units Staffed:
  - 2 dedicated engine companies
  - 2 dedicated medic units
  - 2 cross-staffed engine/medic units
- CWFD Stations 41, 42, & 43: Current staffing (minor changes)
- ECFR Station 91: Change to 2-person, cross-staffed ALS medic unit/engine
- ECFR Station 94: Career staffing discontinued
- Ensure proper roles and employment of ECFR command & administrative staff.
- Peak-Activity Unit: When funding available and service-demand increases, consider adding 10- or 12-hour unit during times of peak activity

QUESTIONS?