# Regional Policy Committee

## September 9, 2015

## Handout Materials

# Overview of How E-911 Communications Work in King County

## State & King County 911 Offices

- ## Citizen Dials 911
  - State 911 office and King County contract with Century Link
  - Century Link also sub-contracts with Intrado
  - Develop & Maintain Infrastructure to route calls from caller to correct 911 center
    - Old Legacy
    - Next Generation 911

## 12 King County 911 Centers (PSAPs)

- ## 911 Call Answering
  - 12 King County PSAPs answer, triage, prioritize calls
  - Receive, screen and dispatch Police, Fire and EMS calls routed to them
- ## How PSAPs Funded?
  - 75% from Assessments Charged to Police and Fire Agencies we serve
  - 10-15% from E-911 Taxes paid by Consumers / Collected by County
- ## Purpose to pay for equip & personnel to answer 911
  - Does not cover dispatch of calls
  - Each PSAP funds the dispatch portion
  - 87% of NORCOM funded by its agencies

## Radio Dispatch System

- Dispatch of Police/Fire/EMS
  - 12 King County PSAPs use 2 systems to dispatch calls.
  - 800 MHz Radio – majority of agencies
  - VHF Radio – a few more remote Fire Districts
- Not the subject of today
- PSERN Ballot Measure passed to Fund

# Nine King County PSAP Coalition

## Who We Represent

## Who We Serve

| PSAP Name (911 Call Center) | Population Served | Total 911 Calls (Source: KC E-911 Office) | No. of Jurisdictions Served | Police/Fire/Both | Square Miles | Agencies Served |
|---|---|---|---|---|---|---|
| Valley Communications | 735,694 | 678,724 | 22 | Both Fire and Police | 380 | **9 Police Agencies**: Renton, Tukwila, Kent, Auburn, Pacific, Federal Way, Black Diamond, Algona, Des Moines<br>**13 Fire Departments/Districts**: Kent, Valley Regional Fire Authority (Auburn, Algona, Pacific), Renton, Tukwila, South King Fire (Federal Way/Des Moines) Burien/Normandy Park, Skyway, Maple Valley, Mountain View Fire & Rescue, Palmer/Seleck, KC Medic One, North Highline, Sea Tac. |
| NORCOM | 640,000 | 284,635 | 19 | Both Fire and Police | 1400 | **8 Police Agencies**: Bellevue (Police and Fire), Kirkland (Police and Fire), Mercer Island (Police and Fire), Clyde Hill (Police), Medina (Police), Bothell (Fire), Redmond (Fire), Snoqualmie (Fire)<br>**14 total Fire/EMS Agencies/Districts**: Above cities plus Eastside Fire & Rescue, Duvall Fire, Fall City Fire, Shoreline Fire, Northshore Fire, Woodinville Fire, Snoqualmie Pass Fire & Rescue, and Skykomish Fire & Rescue. |
| Redmond | 66,924 | 58,523 | 2 | Police | 19.43 | Redmond, Duvall |
| Bothell | 54,721 | 57,705 | 2 | Police | 17.35 | Bothell, Lake Forest Park, UW Bothell Campus Officers (when requested) |
| Issaquah | 46,835 | 48,141 | 3 | Police | 22.2 | Issaquah, Snoqualmie, North Bend |
| Univ. of Washington | 70,000 | 45,000 | 1 | Police | 2 | University of Washington |
| Wash. State Patrol (Bellevue Communications Center) | 2,044,000 | 252,715 | 19 | Police | 2,307 | **11 State Agencies serving Seattle & all of King County**: Washington State Patrol, WA Dept. of Fish & Wildlife, DOT, State Parks, DSHS, DNR, WA Forest Service, Gambling Commission, Liquor Control Board, DOC, Utilities & Transportation<br>**6 Federal Agencies serving Seattle & all of King County**: US Fish & Wildlife, Nat'l Marine Fisheries, ATF, US Forest Service, Dept. of Agriculture, Immigration & Customs Enforcement<br>**2 Transport Entities serving Seattle & all of King County**: BNSF Railroad, Union Pacific Railroad |
| Enumclaw | 31,479 | 25,471 | 3 | Both Fire and Police | 85.1 | City of Enumclaw, Fire District 28, National Park Service - Mt. Rainier (after hours) |
| Port of Seattle | 65,000 | 54,777 | 3 | Both Fire and Police | 15 | Normandy Park, SEATAC International Airport, Port of Seattle International Marina/Port |
| **Nine PSAP Coalition Total** | **3,754,653** | **1,505,691** | **75** | **Both Fire and Police** | **4,248** | **26 King County Cities**<br>**27 Fire/EMS Districts**<br>**2 Major University Campuses**<br>**1 International Airport**<br>**1 International Seaport**<br>**11 State Agencies**<br>**7 Federal Agencies** |

# 12 King County PSAPs

*Source: State OFM Tables - 2014*

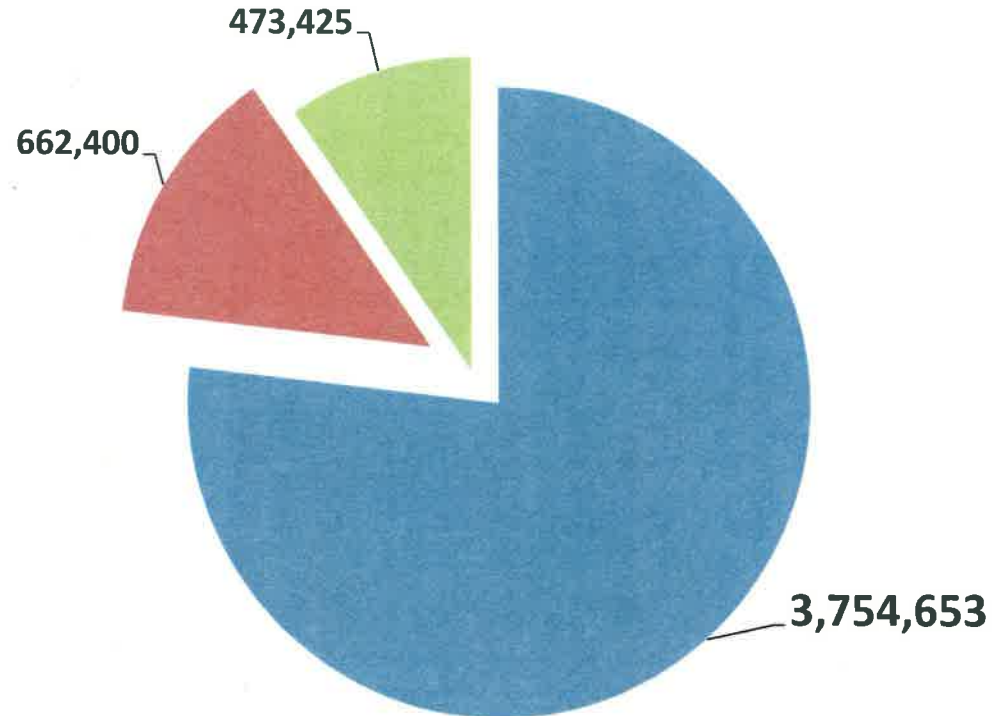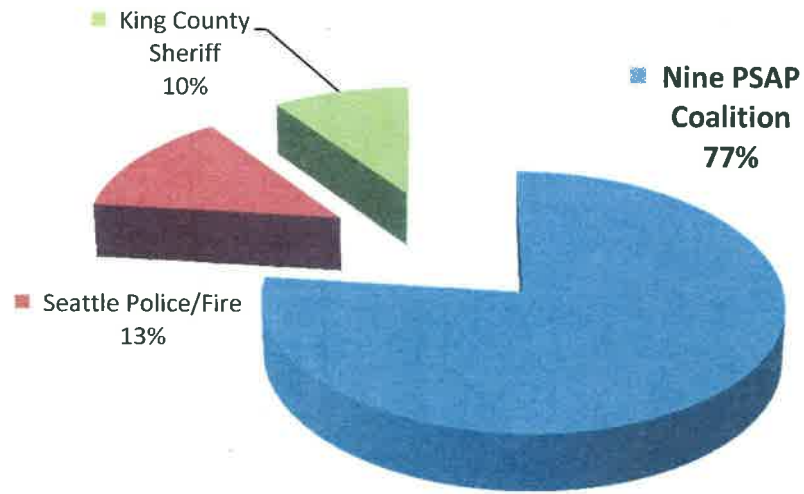| PSAPs | Population Served (Source: State OFM) | Total 911 Calls (Source: KC E-911 Office) | No. of Jurisdictions Served | Police/Fire /Both | Square Miles | Agencies Served |
|---|---|---|---|---|---|---|
| Nine PSAP Coalition | 3,754,653 | 1,505,691 | 75 | Both Fire and Police | 4,248 | Valley Communications, NORCOM, Redmond, Bothell, Issaquah, Univ. of Washington, Wash. State Patrol-Bellevue, Enumclaw, Port of Seattle serving citizens in Seattle & King County including: 26 King County Cities 27 Fire/EMS Districts 2 Major University Campuses 1 International Airport 1 International Seaport 11 State Agencies 7 Federal Agencies |
| Seattle Police/Fire | 662,400 | 752,238 | 1 | Both Fire and Police | 89 | City of Seattle |
| King County Sheriff | 473,425 | 566,787 | 18 | Police | 1,821 | Unincorporated King County, Carnation, Sammamish, Skykomish, Woodinville, Beaux Arts Village, Covington, Maple Valley, Muckleshoot Tribe, Newcastle, Burien, SeaTac, Kenmore, Shoreline, King County Int'l Airport, King County Metro, Sound Transit |

# 12 King County PSAPs

## Without WSP "Population Served"

*Source: State OFM Tables - 2014*

| PSAPs | Population Served (Source: State OFM) | Total 911 Calls (Source: KC E-911 Office) | No. of Jurisdictions Served | Police/Fire /Both | Square Miles | Agencies Served |
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# King County Population Served
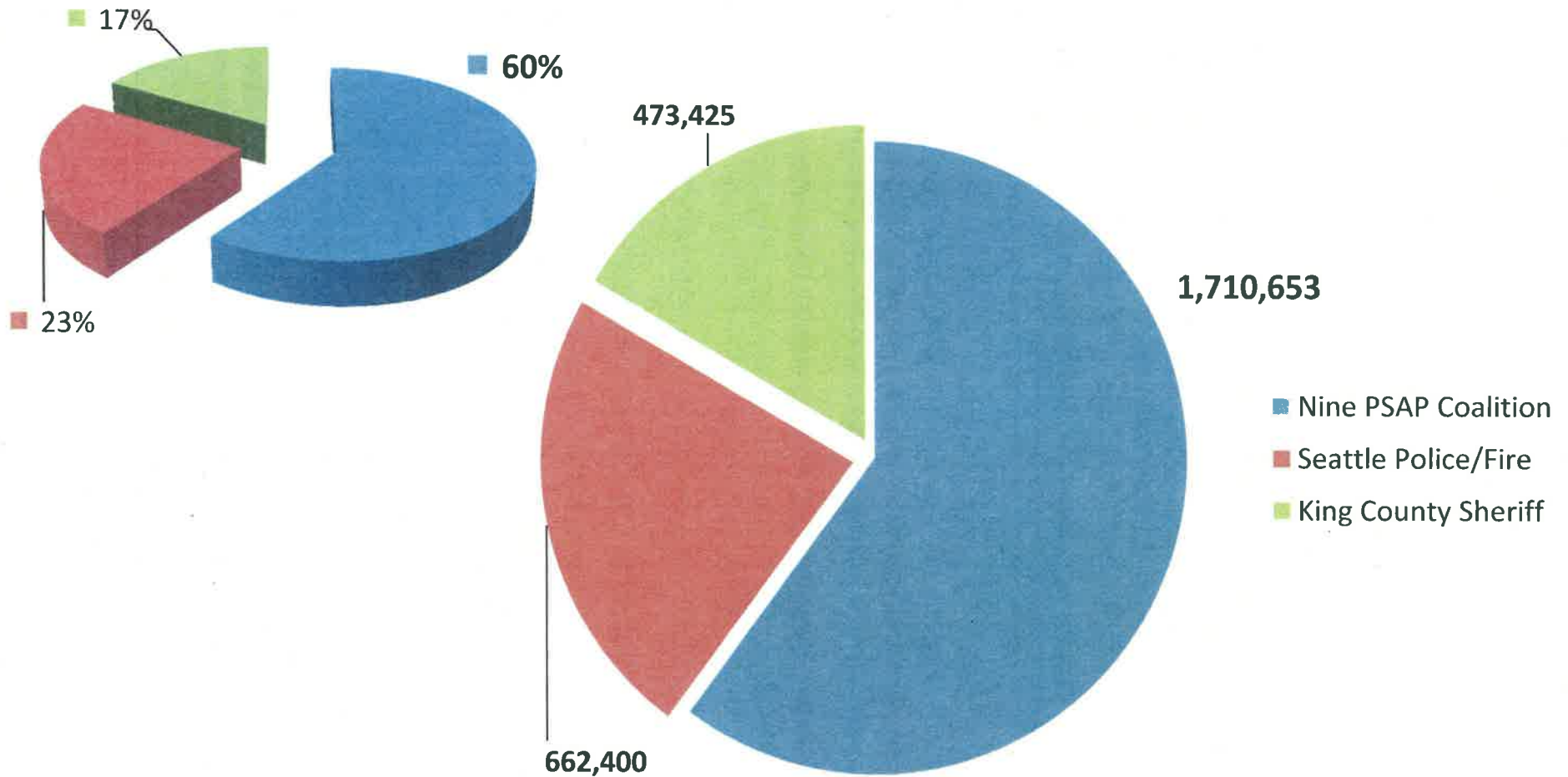
*Source: State OFM Tables - 2014*



King County Sheriff 10%

Nine PSAP Coalition 77%

Seattle Police/Fire 13%

473,425

662,400

3,754,653

■ Nine PSAP Coalition  ■ Seattle Police/Fire  ■ King County Sheriff

# King County Population Served

## Without WSP "Population Served"
### Source: State OFM Tables - 2014

17%

60%

23%

473,425

1,710,653

662,400

- Nine PSAP Coalition
- Seattle Police/Fire
- King County Sheriff

# King County PSAPs – Total 911 Calls

*Source: King County E-911 Office – 2014 Totals*



King County Sheriff 20%

Nine PSAP Coalition 53%

Seattle Police/Fire 27%

566,787

1,505,691

752,238

- All Calls are of Equal Importance
- Each Caller Deserves a Fast Answer and Quick Fire/Police Response

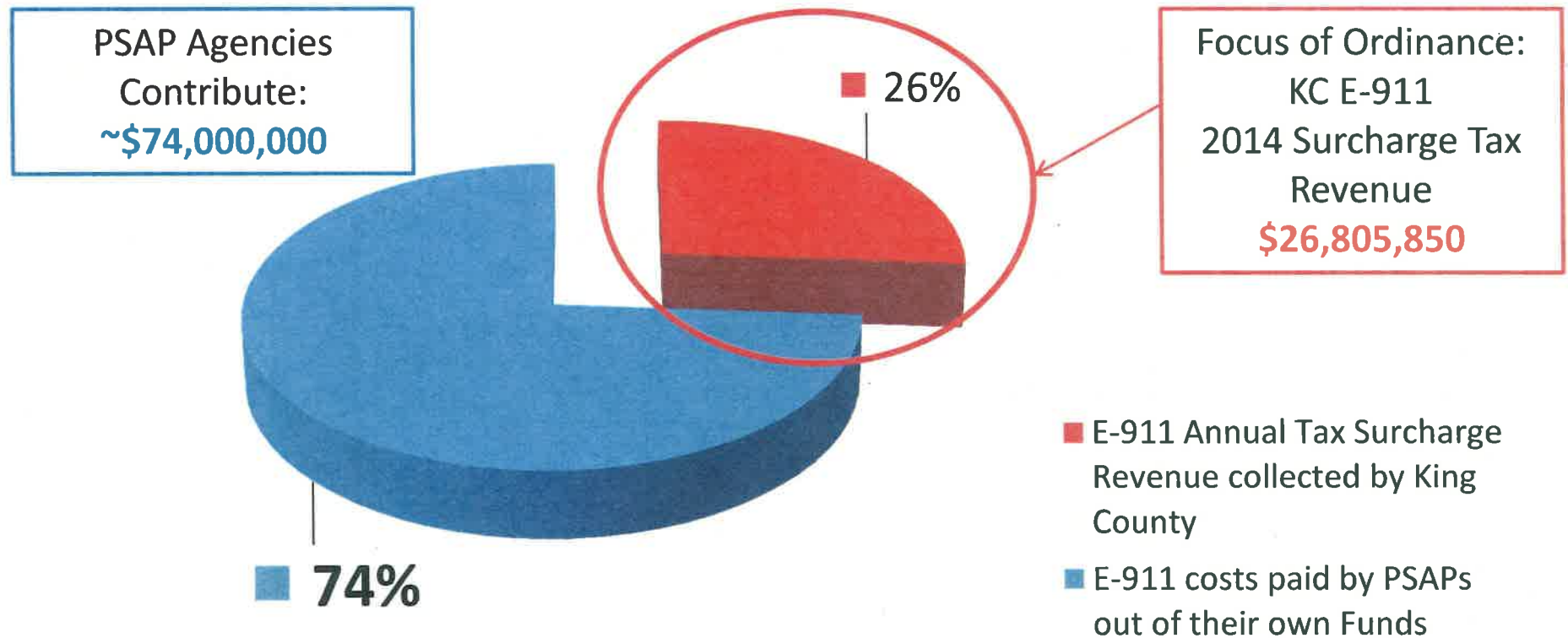■ Nine PSAP Coalition   ■ Seattle Police/Fire   ■ King County Sheriff
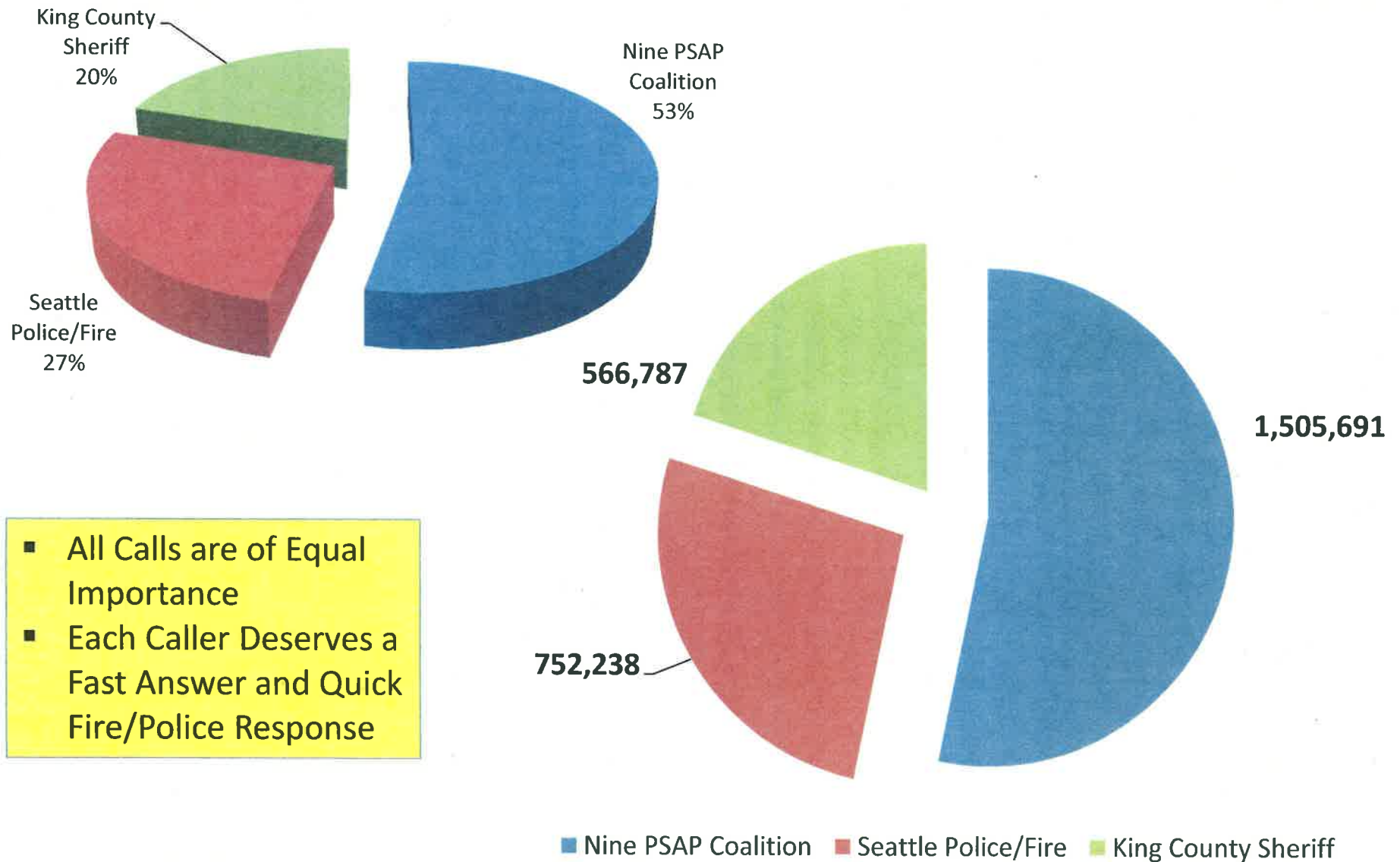
# E-911 Emergency Communications in King County

- What does it cost?

- Who pays those costs?

- What are the types of costs?

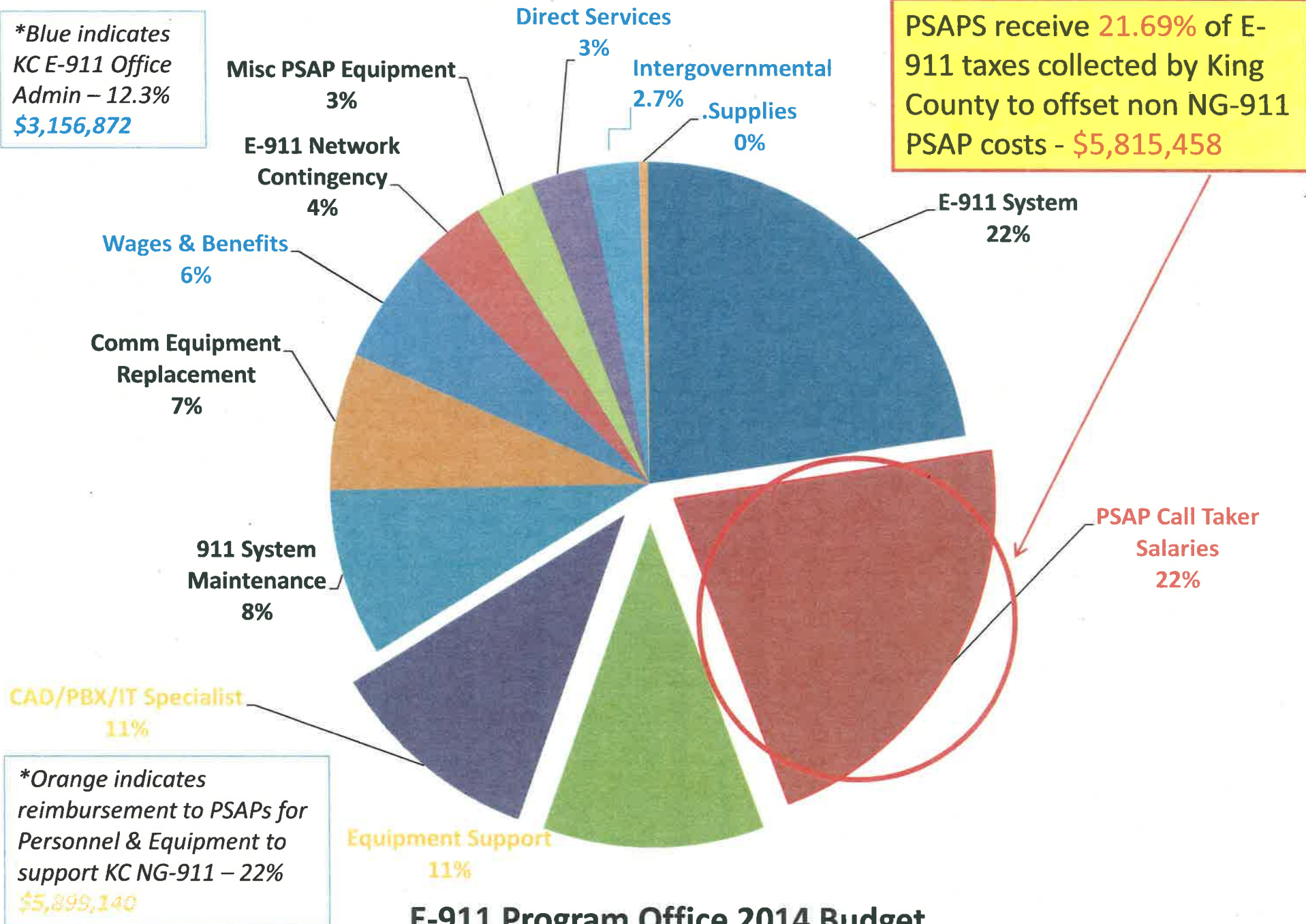# Total Cost of E-911 Emergency Communications & Dispatch

*Source: King County 2010 GeoComm Survey, Published Budgets 2013-2015*

PSAP Agencies Contribute: **~$74,000,000**

■ 26%

Focus of Ordinance: KC E-911 2014 Surcharge Tax Revenue **$26,805,850**

■ E-911 Annual Tax Surcharge Revenue collected by King County

■ E-911 costs paid by PSAPs out of their own Funds

**74%**

Present Day Annual Total Cost of E-911 Services: **~$100,000,000.00**

**E-911 Program Office 2014 Budget**

Pie chart labels:

- *Blue indicates KC E-911 Office Admin – 12.3% $3,156,872*
- Misc PSAP Equipment 3%
- Direct Services 3%
- Intergovernmental 2.7%
- .Supplies 0%
- E-911 Network Contingency 4%
- Wages & Benefits 6%
- Comm Equipment Replacement 7%
- 911 System Maintenance 8%
- CAD/PBX/IT Specialist 11%
- *Orange indicates reimbursement to PSAPs for Personnel & Equipment to support KC NG-911 – 22% $5,899,140*
- Equipment Support 11%
- E-911 System 22%
- PSAP Call Taker Salaries 22%

PSAPS receive 21.69% of E-911 taxes collected by King County to offset non NG-911 PSAP costs - $5,815,458
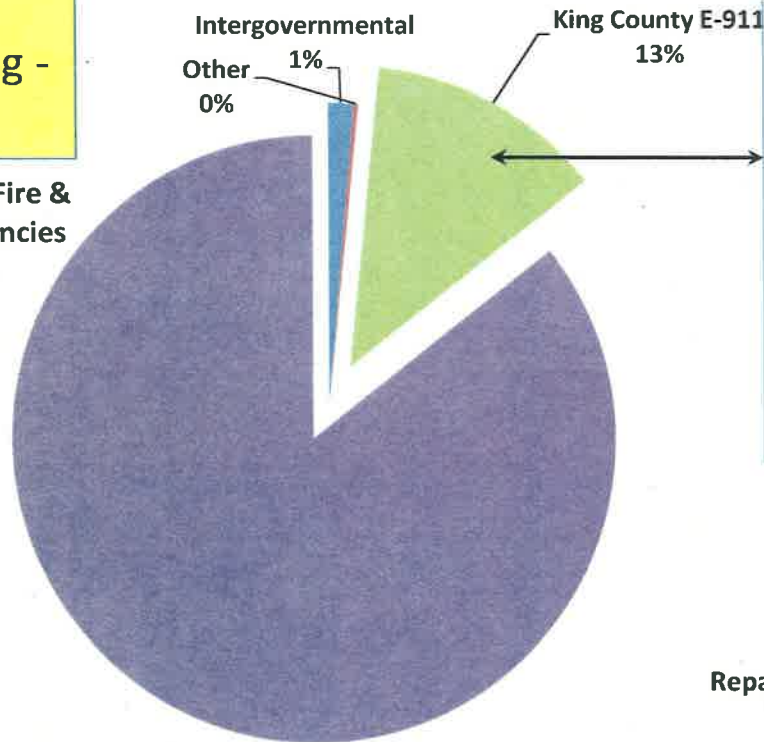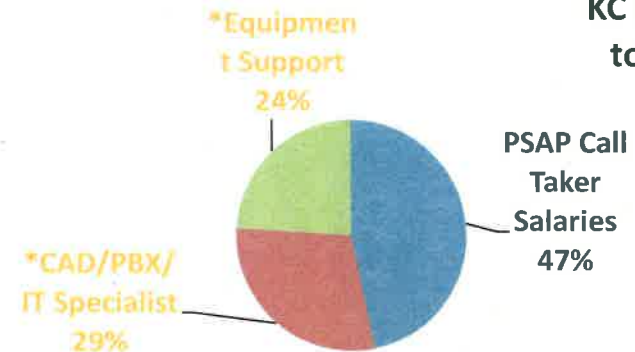
Source: * E-911 Budget information from KC E-911 Doc 061014-08     ** PSAP Revenue Distribution from KC E-911 Doc 012115-02.5

**Example of PSAP Funding - NORCOM**

Intergovernmental 1%
Other 0%
King County E-911 13%
NORCOM Fire & Police Agencies 86%

**KC E-911 Funds to NORCOM**

*Equipment Support 24%
PSAP Call Taker Salaries 47%
*CAD/PBX/ IT Specialist 29%

*Orange indicates reimbursement for Personnel & Equipment to support KC E-911 Office and related NG-911 technology*

| NORCOM Revenues | |
|---|---|
| Intergovernmental | 162,853 |
| Other | 29,313 |
| King County E-911 | 1,504,571 |
| Participants & Subscribers | 10,106,944 |
| **Total NORCOM Revenues $** | **11,803,681** |
| | |
| **Expenditures** | |
| Salaries | 6,647,030.00 |
| Benefits | 2,450,857.00 |
| Office & Operating Supplies | 95,654.00 |
| Professional Services | 292,730.00 |
| Training, Travel & Accreditation | 95,025.00 |
| Facility & Operating Leases | 549,291.00 |
| Insurance | 54,700.00 |
| Local & Wide Area Network Operations | 304,586.00 |
| Repairs & Maintenance | 863,808.00 |
| Capital Purchases | 35,000.00 |
| Transfer to Equipment Replacement | 415,000.00 |
| **Total NORCOM Expenses $** | **11,803,681** |

**NORCOM Expenditures**

Repairs & Maintenance 7%
Transfer to Equipment Replacement 4%
Local & Wide Area Network Operations 3%
Capital Purchases 0%
Insurance 0%
Facility & Operating Leases 5%
Training, Travel & Accreditation 1%
Professional Services 2%
Office & Operating Supplies 1%
Benefits 21%
Salaries 56%
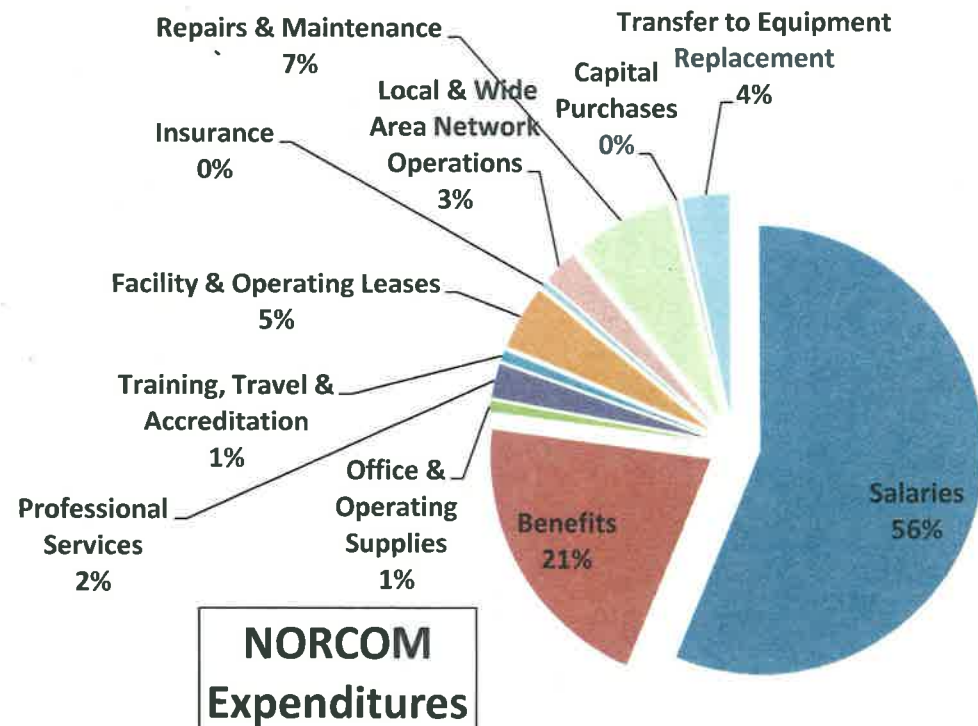
# Nine King County PSAP Coalition

How did we get here?

Why we are here?

# How Did We Get Here?

- KC E-911 office funded consultant study (GeoComm) in 2010-11
  - KC proposed PSAP consolidation as a way to pay for future NG-911 technology
  - KC has invested/committed $30 million in NG-911 since 2005
  - KC E-911 reported it was running out of money
  - GeoComm ultimately supported KC interest in consolidating PSAPs

- KC E-911 implemented process designed to consolidate PSAPs
  - Non-KC Electeds/Appointed determined problem was "Financial Management"
    - Identified "consolidation" as one of many options to explore
    - Pointed out that "consolidation" might save $ for PSAPs on their 75%
    - But consolidation does not save KC E-911 significant $ on their 25%
  - Voted to change title to "E-911 Financial Stability Discussions"
  - KC E-911 did not concur
  - Process was one-sided – not collaborative

- PSAPs engaged and partnered with King County Council
  - Council created 2015-16 budget provisos requiring:
    - Financial & Technical Audits of KC E-911 Office
    - Ordinance to assure transparency and inclusiveness

- Executive submitted proposed Ordinance on July 1
  - Executive revised proposal on September 4

# Why are we here today?

- Nine PSAP Coalition does not concur with Executive Proposal
  - No collaboration in its development
  - Not consistent with Audits & National Stds. for Governance
  - Repeats key elements of prior unilateral process
    - Unilaterally establishes "work plan" without input or review
    - Unilaterally establishes "time line" without input or review
    - Retains control of Project Management Team & Facilitator – no independence
- Request the RPC approve and forward Substitute Ordinance:
  - Reflects recommendations of Audits, KC Council & PSAPs
  - Follows FCC 2014 Recommendations & National Emergency Number Assn. Stds.
  - Establishes open and transparent process
    - Collaboration starts at the beginning including work plan, timeline, facilitator
  - Implements Audit recommendations for oversight of E-911
    - Titled to reflect oversight of KC E-911 – not PSAPs
    - Focus is on 25% of money spent by KC E-911
    - Audits confirm KC E-911 running out of money under present tech spending
    - Focus not on 75% spent by PSAPs
  - Based on Audit recommended models from King County and U.S.
    - Oversight must be regional, representative, collaborative with all stakeholders

# Nine King County PSAP Coalition

## What is at stake?

# FCC Chairman Wheeler describes multistate 911 outage report as 'terrifying,' vows to take action quickly

Donny Jackson | *Urgent Communications*

"**We're pro- new technology, but we're even more pro- public safety,**" Wheeler said during the meeting, which was webcast."

Excerpts from Executive Summary of FCC Investigative Report:

"The April 2014 multistate outage was far more than a simple software error on an otherwise uneventful Spring evening in Englewood, Colorado. **It was a vivid example of the vulnerabilities that IP-supported architectures may present, without sufficient network safeguards and clear lines of accountability**."

"The outage was caused by a software coding error in the Colorado facility, and resulted in a loss of 911 service for more than 11 million people for up to six hours. Over 6,600 calls never reached a PSAP. **Although, fortunately, it appears no one died as a result, the incident – and the flaws it revealed – is simply unacceptable**."

"The introduction of NG911 and IP-based technologies will require industry as well as **state, local, tribal and territorial governments and commissions to move aggressively to ensure that technology optimization does not introduce unacceptable risks that threaten imperiling 911 reliability** and resiliency."

"The transition to **NG911 creates a need for closer coordination of evolving practices and expectations regarding 911 among all governmental and commercial entities**, as well as broad-based understanding **among all stakeholders** regarding the status of deployments of NG911 from all stakeholders involved.

# What is at Stake?

- **Complex and Expensive New Technology**
  - Nationally: Technology a Major Focus
    - Next Generation 911 - Includes Text-to-911
    - Security Vulnerabilities
    - Need for Regional Vision/Planning/Collaboration
  - Locally: NG-911 efforts since 2005 - $30 million
- **Technology Risks - April, 2014 911 Outage**
  - Nationally: April 911 outage – 6 hours
    - FCC & Wash. State Investigations
    - Affected 7 states – Washington the worst
    - Due to Faulty Intrado Router in Colorado
    - $17 million FCC fine to Century Link/Intrado
    - $3.4 million FCC fine to Verizon
    - $2.9 million WA State fine to Century Link
    - New York under Investigation - $700 million over budget
  - Locally:
    - KC E-911 Office responsible for 911 Phone System
    - Technical, Financial & Performance Audits of KC E-911
    - Issues: Smart 911, Wireless Call Routing, Ongoing Phone Upgrades, NG-911, Collaboration, Regional Approach



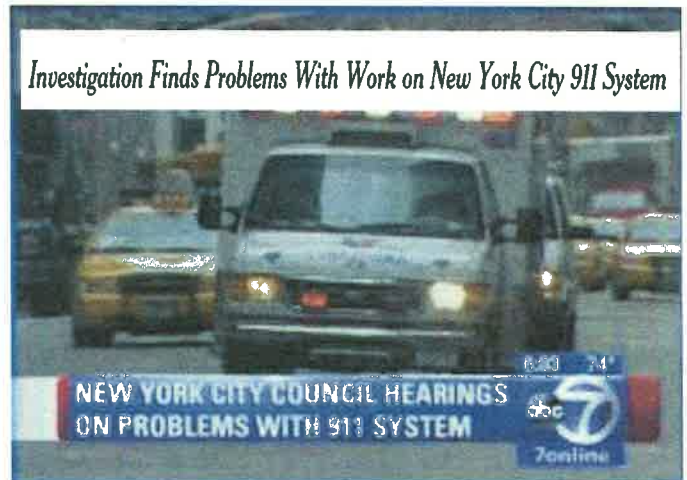**FCC fines CenturyLink $16M over multistate 911 outage**

Riham Feshir    Busir

≡ The Seattle Times

**CenturyLink fine up to $2.9M suggested for big 911 failure**



*Investigation Finds Problems With Work on New York City 911 System*

NEW YORK CITY COUNCIL HEARINGS ON PROBLEMS WITH 911 SYSTEM
7online



Luzerne County Considers 911 Investigation

# National Emergency Number Association (NENA) & National E9-1-1 Implementation Office

*(Responsible for setting NG-911 standards)*
*Source:  A National Plan for Migrating to IP-Enabled 9-1-1 System*

- "The **deployment of NG 9-1-1 will require increased coordination and partnerships among government and public safety stakeholders, 9-1-1 Authorities, service and equipment providers, and PSAP administrators planning and implementing NG 9-1-1.**"

- "Underlying this kind of implementation [NG-911] is the need for coordination among multiple 9-1-1 Authorities.  **The roles and responsibilities and intergovernmental arrangements for the IP-enabled 9-1-1 system will need to be defined across jurisdictional boundaries and within new partnerships**. This is more complicated than the independent, unilateral style of deployment."

# What is at stake?

- Next Generation 911 is long-term, complex, standards not fully set
  - FCC does not mandate NG-911 – Response to Redmond PD:

  **"Currently, there are no regulations that require local 911 authorities to adopt NG911 technologies or services, as the Commission can only impose regulations on wireless carriers."**

- NG-911 standards not fully developed
  - Beta-Max vs. VHS
  - HD vs. Blue Ray
  - $30 million invested in King County before standards fully adopted

- Independent Audit calls for "All Stop" to NG-911 in King County until new regional governance and plan in place

# Why is Regional Coordination So Necessary?
## KC E-911 must coordinate with Technology & Resources at PSAPs
### (NORCOM example)

- 1600+ users
- 254 Police and Fire mobile data computers
- 75+ NORCOM desktops/laptops
- 806 Registered users in NOTIS
- 2,995 Service tickets opened -- 10% decrease over 2013
- 3,113 service tickets closed – 3% increase in closures
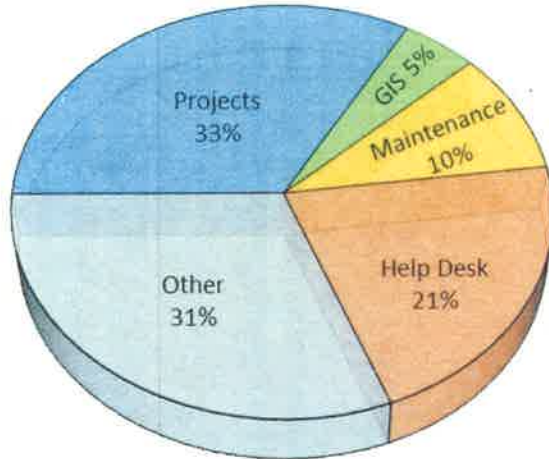


| NOTIS Tickets by Priority | % |
|---|---|
| 1 - Critical | 0.2% |
| 2 - Major | 1.9% |
| 3 - Important | 25.8% |
| 4 - Desirable | 68.8% |
| 5 - Low Impact Low Urgency | 1.4% |
| Non-SLA | 1.9% |
| Total | 100% |

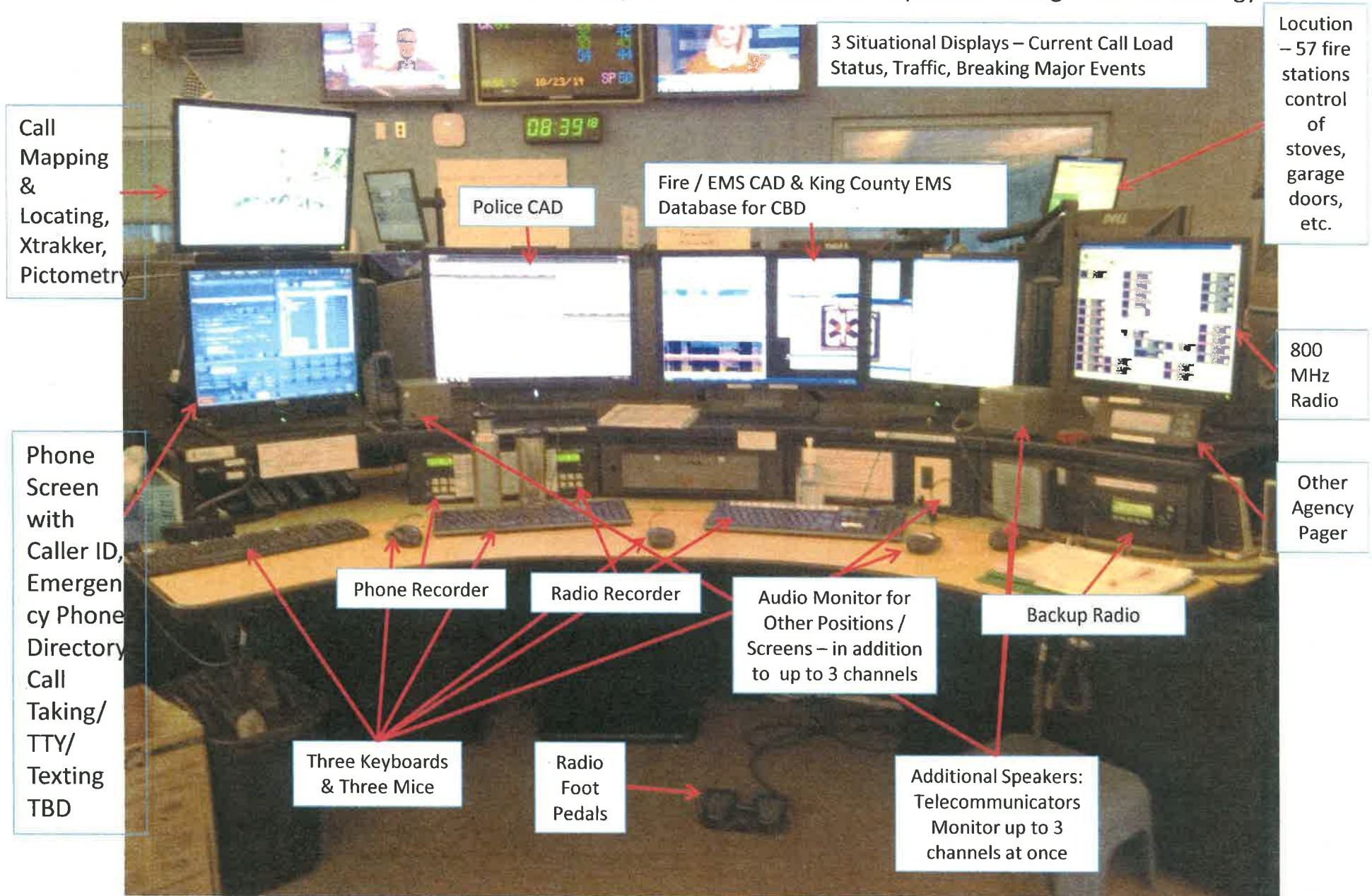| IT Service | Service Description | Percentage of Support Hours |
|---|---|---|
| **Help Desk** | | |
| Agency Support | End user support of NORCOM based software applications and related hardware. | 21% |
| Application Maintenance & Support | Upgrade, maintenance, and support of applications and interfaces for Communications, Police, Fire and NORCOM administration. | |
| Mobile Computer Hardware | Support relating to mobile data computers (MDC) in Police and Fire vehicles. | |
| Fire Alerting | Support relating to Location and Paging. | |
| Police Alerting | Support for Paging | |
| Reporting | Agency special report requests. | |
| Public Disclosure | Public disclosure data gathering. | |
| **Infrastructure and System Administration** | | |
| Network/Server | Network & Server infrastructure support and maintenance. | 10% |
| Telephony | Phone Systems and related technologies. | |
| Radio Infrastructure | Radio support for Fire, Police and Dispatch. | |
| **GIS Services** | | |
| GIS Maintenance and Services | Support and maintenance of GIS data, layers and maps. GIS service requests. | 5% |
| **Projects** | | |
| Projects | Projects supporting NORCOM and its Police and Fire agencies | 33% |
| **Other** | | |
| Other | Non-project meetings, training, vacation, general tasks, etc. | 31% |

# Example of 2-YEAR PSAP Technology Work Plan (NORCOM)
## (All stakeholders most collaborate on plan, system standards, resources, timetable)

| Start Date | End Date | Activity Catalog | Stakeholder Priority # | Title | Estimated Costs | Budgeted? Yes/No | Total Estimated Resource Days 59 days = 1 FTE | Status |
|---|---|---|---|---|---|---|---|---|
| 2013 Q2 | 2015 Q1 | A11 | 1 | NWS 10.x Pre-GA to 10.x GA Migration | $450,509 | Yes | 28 | In Progress |
| 2014 Q4 | 2015 Q1 | A70 | 3 | Phone System Replacement-VIPER | $0 | | 45 | In Progress |
| 2015 Q1 | 2015 Q1 | A75 | 4 | GIS - GeoDatabase Consolidation | $13,560 | Yes | 20 | In Progress |
| 2015 Q1 | 2015 Q3 | A33 | 1 | *TriTech CAD Major Update* Includes the following projects: -Interface Build - TEST Environment -Electronic Criteria Based Dispatch (e-CBD) -Fire Dispatch Workstation Replacement -Fire Mobile Pre-Plans | $27,675 | Yes* | 166 | In Progress |
| 2015 Q1 | 2015 Q2 | A25 | 10 | KIPD Inmate Status Inquiry Website | TBD | | 8 | In Progress |
| 2015 Q1 | 2015 Q1 | A83 | 1 | Replace Production Storage Area Network (SAN) | ERR | Yes | 3 | In Progress |
| 2015 Q2 | 2015 Q4 | A28 | 7 | Bellevue MDC replacement | TBD | | 7 | Planning |
| 2015 Q2 | 2015 Q2 | A69 | 2 | Intrusion Detection/Prevention Implementation | $62,323 | Yes | 45 | Not Started |
| 2015 Q2 | 2015 Q2 | A62 | 1 | ESFR MDC Replacement (Tablets?) * | TBD | | 21 | Not Started |
| 2015 Q2 | 2105 Q2 | A56 | 2 | Bellevue Fire MDC Replacement | TBD | | 10 | Not Started |
| 2015 Q2 | 2015 Q2 | A46 | 7 | Fire RMS Strategy | TBD | | 5 | On Hold |
| 2015 Q2 | 2015 Q2 | A26 | 2 | Kirkland 2 Factor Authentication | TBD | | 15 | In Progress |
| 2015 Q2 | | A27 | 9 | Bellevue Police False Alarm Invoicing | TBD | | 4 | On Hold |
| 2015 Q2 | | | 8 | BEPD Quetel Evidence Conversion | TBD | | | Planning |
| 2015 Q3 | TBD | A23 | 6 | NWS Address Remaining LERMS Gaps | $0 | | 10 | Not Started |
| 2015 Q3 | 2016 Q2 | A81 | 5 | Disaster Recovery Site Planning | TBD | | 80 | Not Started |
| 2015 Q3 | 2015 Q3 | A101 | 4 | Logging Radio Replacement | TBD | | 21 | Not Started - Preparing RFP |
| 2015 Q3 | 2015 Q3 | A65 | 3 | Redmond Fire MDC Replacement | TBD | | 27 | Not Started |
| 2015 Q3 | 2015 Q3 | A42 | 4 | New ESFR Volunteer Station (2 stations)-Locution install * | TBD | No* | 14 | Not Started |
| 2015 Q3 | 2015 Q3 | A48 | 5 | Zoll RMS Major Upgrade | TBD | | 11 | Not Started |
| 2015 Q3 | 2015 Q4 | A16 | 3 | NWS DSS Module Install | TBD | | 8 | Not Started |
| 2015 Q3 | 2015 Q4 | A21 | 4 | NWS FIR Module Install | TBD | | 8 | Not Started |
| 2015 Q3 | 2015 Q4 | A80 | 4 | Phone System Replacement-CISCO | TBD | | 42 | Not Started |
| 2016 Q1 | TBD | A47 | 6 | Hosting of First Watch transfer to NORCOM | TBD | | ?? | Not Started |
| 2016 Q1 | TBD | A76 | 7 | Interim Text to 911 Testing | TBD | | 51 | Not Started |
| 2016 Q3 | 2017 Q2 | A82 | 6 | Disaster Recovery Site Build | $333,333 | No* | ?? | Not Started |
| TBD | | A24 | 11 | LINX Interface | TBD | | 6 | On Hold |
| TBD | | A54 | 8 | Fire Hydrant Inventory | TBD | | 11 | Not Started |
| TBD | | | 5 | Virtual Partner Update/Replace | TBD | | | Not Started |

# Technology Over-Saturation?

## Balancing Technology with Human Factors Analysis – Focus must be on "Operationalizing" New Technology



3 Situational Displays – Current Call Load Status, Traffic, Breaking Major Events

Locution – 57 fire stations control of stoves, garage doors, etc.

Call Mapping & Locating, Xtrakker, Pictometry

Police CAD

Fire / EMS CAD & King County EMS Database for CBD

800 MHz Radio

Phone Screen with Caller ID, Emergency Phone Directory Call Taking/ TTY/ Texting TBD

Other Agency Pager

Phone Recorder

Radio Recorder

Audio Monitor for Other Positions / Screens – in addition to up to 3 channels

Backup Radio

Three Keyboards & Three Mice

Radio Foot Pedals

Additional Speakers: Telecommunicators Monitor up to 3 channels at once

# Video of Current Technology

## From the Viewpoint of a Telecommunicator